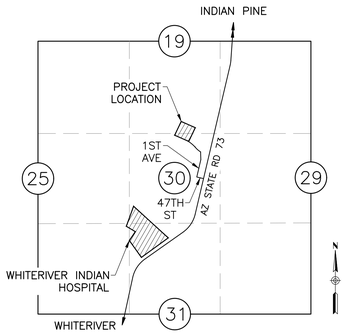
IHS SURFACE WATER TREATMENT PLANT

A PORTION OF SECTIONS 19 AND 30, TOWNSHIP 6 NORTH, RANGE 23 EAST OF THE GILA AND SALT RIVER MERIDIAN, NAVAJO COUNTY, ARIZONA



VICINITY MAP

SEC 19&30, T6N, R23E NTS

BENCHMARK

▲ POINT NUMBER 50
FOUND NGS PUBLISHED BENCHMARK DESCRIBED AS:
BRASS CAP IN ROCK OUTCROP ON THE SOUTH SIDE OF SR73, NEAR SOUTH ENTRANCE OF HOSPITAL. HORIZONTAL VALUES DERIVED FROM PERFORMING "OPUS" SOLUTION ON POINT 50.
OBSERVED GROUND NORTHING = 1045372.40
OBSERVED GROUND EASTING = 762569.85
PUBLISHED ELEVATION = 5398.06
PLANS ARE IN NAVD88 DATUM UNLESS OTHERWISE NOTED

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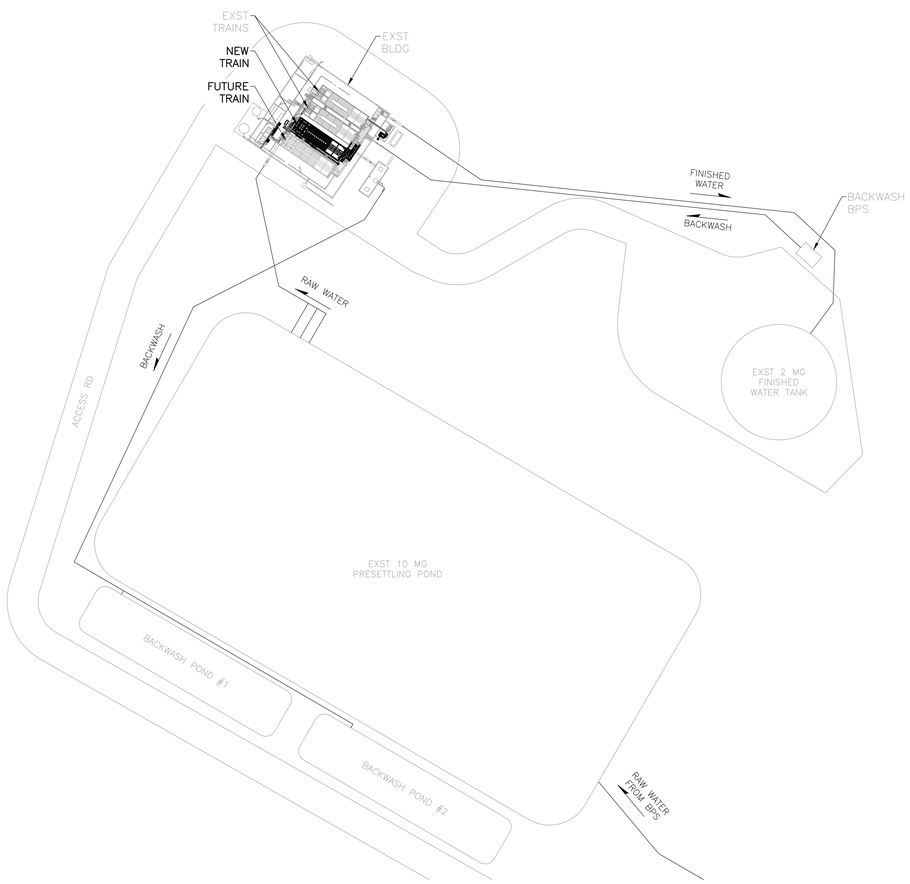

KEY MAP

NTS

CONTACT INFORMATION

HOSPITAL OWNER:
IHS WHITERIVER HOSPITAL
200 W HOSPITAL DRIVE
WHITERIVER, AZ 85941

PLANT OWNER:
WHITE MOUNTAIN APACHE
TRIBAL UTILITY AUTHORITY
1306 INDUSTRIAL RD,
WHITERIVER, AZ,
UNITED STATES, ARIZONA
P: 928.338.4825

ARCHITECT:
SMITHGROUP
455 N THIRD STREET
SUITE 250
PHOENIX, AZ 85004
P: 602.265.2200

ENGINEER:
DIBBLE
15150 WEST PARK PLACE
SUITE 317
GOODYEAR, AZ 85395
P: 623.935.2258
CONTACT: MIKE LOGAN
www.dibblecorp.com

IHS REVIEW AND APPROVAL

REVIEWED BY	DATE
CIVIL: Thomas Armitage -S — Digitally signed by Thomas Armitage -S Date: 2026.03.11 15:02:15 -05'00'	
MECHANICAL: Hung M. Nguyen -S — Digitally signed by Hung M. Nguyen -S Date: 2026.03.11 15:32:30 -05'00'	
APPROVED: Scott P. Fillerup -S — Digitally signed by Scott P. Fillerup -S DN: OID.0.9.2342.19200300.100.1.1=2000120248 + CN=Scott P. Fillerup -S, OU=People, OU=IHS, OU=HHS, O=U.S. Government, C=US Date: 2026.03.11 11:46:51-07'00'	DATE
DES PROJECT MANAGER	
CONCURRENCE: Denman K. Ondelacy -S — Digitally signed by Denman K. Ondelacy -S Date: 2026.03.11 12:25:50 -07'00'	DATE
DES DEPUTY DIRECTOR: Roger N. Dahozy -S — Digitally signed by Roger N. Dahozy -S Date: 2026.03.12 08:23:31 -07'00'	
AREA FACILITY PROGRAM DIRECTOR: Kenny R. Hicks -S — Digitally signed by Kenny R. Hicks -S Date: 2026.03.11 19:15:22 -07'00'	
AREA OEHE DIRECTOR	

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "AS-BUILT" INFORMATION SHOWN HEREON WAS OBTAINED UNDER MY DIRECT SUPERVISION AND IS CORRECT AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY DATE (SEAL)

IN ACCORDANCE WITH THE SAFE DRINKING WATER ACT AND AAC R18-4-213, ALL MATERIALS INSTALLED AFTER JANUARY 1, 1993 WHICH MAY COME INTO CONTACT WITH DRINKING WATER SHALL CONFORM TO NATIONAL SANITATION FOUNDATION STANDARD 60, 61, & 372. ALL POTABLE WATER LINES AND FITTINGS SHALL HAVE A NSF-PW SEAL. ALL MATERIALS SHALL BE LEAD FREE AS DEFINED IN NSF 372, AAC R18-5-504 AND R18-4-101.

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

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

SMITHGROUP
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

DIBBLE
15150 WEST PARK PLACE
SUITE 317
GOODYEAR, AZ 85395
623.935.2258
dibblecorp.com

ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

SHEET TITLE
COVER

DRAWN BY: KCR CHECKED BY: MJL
24034
PROJECT NUMBER
100% CW1.00
PHASE SHEET NUMBER

G:\2024\1\024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\COVER.DWG
Plot Date: 2/26/2026 4:09 PM

ENGINEER'S GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DRAWINGS, SPECIAL PROVISIONS, TECHNICAL SPECIFICATIONS, SUPPLEMENTAL GENERAL CONDITIONS, AND THE NAVAJO COUNTY STANDARDS AND SPECIFICATIONS STANDARD DETAILS AND SPECIFICATIONS (LATEST EDITION).

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ARIZONA 811 (602–263–1100) OR BY DIALING 811 FOR UTILITY LOCATION A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION. UTILITY LOCATIONS SHALL BE PROTECTED, MAINTAINED AND UPDATED IN ACCORDANCE WITH APPLICABLE STATE AND MUNICIPAL LAWS.

3. PRIOR TO THE START OF ANY WORK ACTIVITIES, THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO THE OWNER AND THE ENGINEER. A PRE–ACTIVITY MEETING (PRECONSTRUCTION CONFERENCE) MAY BE REQUIRED.

4. EXISTING UTILITIES AND OTHER FACILITIES HAVE BEEN SHOWN ON THE CONTRACT DRAWINGS BASED ON FIELD SURVEYS, EXISTING MAPS AND OTHER INFORMATION GATHERED BY THE ENGINEER DURING DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATIONS OF ALL UTILITIES IMPACTING CONSTRUCTION AND PROTECTION OF SAID UTILITIES. IF RELOCATION OF UTILITIES IS REQUIRED, THE CONTRACTOR SHALL COORDINATE THE RELOCATION WITH THE OWNER. UTILITIES DAMAGED BY CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED WITH NEW MATERIALS AT NO COST TO THE OWNER TO THE OWNER'S SATISFACTION.

5. CONTRACTOR SHALL SUPPORT AND PROTECT IN–PLACE UTILITIES WITHIN THE EXCAVATION IN ACCORDANCE WITH MAG SPECIFICATIONS, UNLESS OTHERWISE APPROVED IN WRITING BY THE OWNER OF THE UTILITY.

6. EXISTING FEATURES AND FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH HORIZONTAL AND VERTICAL CONTROLS ARE LOCATED APPROXIMATELY WITH THE BEST AVAILABLE INFORMATION. VARIATIONS BETWEEN PLAN LOCATION AND ACTUAL DIMENSIONS WILL NOT BE A BASIS FOR A MODIFICATION OF THE CONTRACT AMOUNT.

7. THE OWNER HAS OBTAINED PERMIT APPROVAL FROM DESIGNATED AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS, PAYING PERMIT FEES, COORDINATING DESIGNATED AGENCY INSPECTIONS AND CLOSURE OF PERMITS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF THE DESIGNATED PERMITS AND THE REGULATIONS OF THE PERMITTING AGENCIES.

8. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE GOVERNING AGENCY'S REQUIREMENTS. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO THE BUREAU OF INDIAN AFFAIRS (BIA) – DEPARTMENT OF TRANSPORTATION AS REQUIRED BY THE AGENCY. THE CONTRACTOR CAN CONTACT BIA THROUGH GEORGIA PUENTE MEZA – SUPERVISORY CIVIL ENGINEER AT (928) 338–5486.

9. CONTRACTOR'S WORK ACTIVITIES SHALL BE SCHEDULED AND PHASED SO AS NOT TO UNDULY IMPEDE OR PREVENT ACCESS TO PRIVATE RESIDENCES, PUBLIC FACILITIES, SCHOOLS, OR BUSINESSES EXCEPT BY PRIOR WRITTEN AGREEMENT WITH THE IMPACTED OWNER(S) OR OPERATORS.

10. ALL EQUIPMENT, MATERIALS, VEHICLES AND CONSTRUCTION ACTIVITIES SHALL REMAIN WITHIN PUBLIC RIGHTS–OF–WAY OR DESIGNATED EASEMENTS.

11. ANY EXISTING FEATURES OR FACILITIES DISTURBED BY THE CONTRACTOR SHALL BE REPLACED IN KIND WITH NEW MATERIALS MEETING THE OWNER'S APPROVAL AT NO ADDITIONAL COST TO THE OWNER.

12. CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

13. THE CONTRACTOR SHALL PROVIDE CLEAR AND ACCURATE REDLINES TO THE OWNER FOR PREPARATION OF RECORD DRAWINGS. THE REDLINES SHALL BE UPDATED ON A DAILY BASIS TO REFLECT THE CURRENT CONSTRUCTION ACTIVITIES AT ALL TIMES AND MAY BE INSPECTED BY THE OWNER/ENGINEER AT ANY TIME UPON REQUEST.

14. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON THE CONSTRUCTION SITE. THE CONTRACTOR SHALL IMPLEMENT AN APPROVED SAFETY PLAN, AND ALL PERSONNEL ON THE JOB SHALL FOLLOW THE APPROVED SAFETY PLAN.

15. THE CONTRACTOR SHALL PROVIDE SUITABLE PROTECTION FOR EXCAVATIONS. AT A MINIMUM, OSHA REGULATIONS REQUIRE PROTECTION FROM CAVE–INS FOR EXCAVATIONS GREATER THAN FIVE FEET IN DEPTH. WHERE EXCAVATIONS ARE DEEPER THAN TWENTY FEET, EXCAVATION PLANS AND SHORING SYSTEM DESIGN SHALL BE SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF ARIZONA.

16. TRENCH EXCAVATION, BACKFILL, AND SURFACE REPLACEMENT SHALL BE AS SHOWN ON THE DRAWINGS AND/OR REQUIRED BY THE CONTRACT DOCUMENTS. IN NO CASE SHALL TRENCH EXCAVATION, BACKFILL AND SURFACE REPLACEMENT BE LESS STRINGENT THAN MAG REQUIREMENTS, EXCEPT AS MAY BE SPECIFICALLY ALLOWED IN WRITING BY THE ENGINEER.

17. UNLESS OTHERWISE DESIGNATED, ALL COMPACTION DENSITIES SHALL MEET THE REQUIREMENTS OF MAG SPECIFICATION SECTION 601, TYPE I.

18. CONTRACTOR SHALL USED EXTREME CAUTION WHILE WORKING IN THE VICINITY OF ALL GAS AND POWER LINES. THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF THE GAS AND POWER TRENCHES AND PIPELINES AT ALL TIMES. SPECIAL ATTENTION SHALL BE GIVEN TO BRACING AND SUPPORT FOR UNDERGROUND POWER CROSSINGS. POLE BRACING MAY BE REQUIRED BY THE POWER COMPANY WHEN EXCAVATING NEAR POWER POLES.

19. CONTRACTOR TO PROVIDE A MAINTENANCE OF OPERATIONS PLAN (MOPO) THAT ALLOWS THE WATER TREATMENT PLANT (WTP) TO CONTINUE TO PROVIDE POTABLE WATER THROUGHOUT CONSTRUCTION. THE MOPO WILL NEED TO BE SUBMITTED AND APPROVED BY THE OWNER AND THEIR ENGINEER PRIOR TO START OF CONSTRUCTION.

20. CONTRACTOR SHALL RESTORE ANY DAMAGED CONCRETE, DRYWALL, PAINT, ETC THAT OCCURS DURING THE COURSE OF THE WORK.

21. CONTRACTOR SHALL COORDINATE WORK WITH THE OPERATIONS STAFF TO ENSURE PLANT OPERATIONS CAN CONTINUED UNINTERRUPTED.

22. THE INTENT OF THIS EXPANSION PROJECT IS TO MATCH THE EXISTING LAYOUT AND FUNCTIONALITY OF THE EXISTING PLANT AS MUCH AS POSSIBLE UNLESS OTHERWISE NOTED.

23. ALL NEW PIPING SHALL BE PAINTED PER SPEC NO. 400205. COORDINATE WITH PLANT STAFF PRIOR TO ORDERING COLORS.

24. CONTRACTOR SHALL TRIM EXST GRATING TO CONFORM TO NEW PIPING PENETRATIONS AND SHALL ENSURE REMAINING PORTION OF GRATING PANEL IS SUFFICIENT TO MAINTAIN ITS STRUCTURAL INTEGRITY. WHERE COMPROMISED, CONTRACTOR SHALL REPLACE PANEL(S) TO ENSURE A SAFE PLATFORM AND TO MATCH EXST.

MAINTENANCE OF PLANT OPERATIONS (MOPO) SPECIFICATIONS

1. CONTRACTOR'S MEANS AND METHODS SHALL BE IMPLEMENTED SUCH THAT THE EXISTING PLANT SHALL REMAIN IN CONTINUOUS SATISFACTORY OPERATION DURING THE ENTIRE CONSTRUCTION PERIOD, EXCEPT FOR THE SHUTDOWN PERIODS SPECIFIED IN THIS SECTION.
2. WORK SHALL BE SO SCHEDULED AND CONDUCTED BY THE CONTRACTOR SUCH THAT IT SHALL NOT IMPEDE ANY TREATMENT PROCESS, COMPROMISE PLANT SECURITY, CREATE POTENTIAL HAZARDS TO OPERATING EQUIPMENT AND PLANT PERSONNEL, REDUCE THE QUALITY OF PLANT EFFLUENT OR CAUSE ODOR OR OTHER NUISANCES.
3. THE CONTRACTOR MAY PROVIDE ADDITIONAL TEMPORARY FACILITIES THAT CAN ELIMINATE A CONSTRAINT PROVIDED IT IS DONE WITHOUT ADDITIONAL COST TO THE OWNER, PRESENTS NO SAFETY HAZARDS, AND PROVIDED THAT ALL REQUIREMENTS IN THIS SECTION ARE FULFILLED.
4. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL SHUTDOWNS WITH THE OWNER AND THE ENGINEER. WHENEVER POSSIBLE, COMBINE DISCRETE SHUTDOWN PROCEDURES INTO A SINGLE SHUTDOWN TO MINIMIZE IMPACTS UPON PLANT OPERATIONS AND PROCESSES.
5. CONTRACTOR SHALL NOT SHUT–OFF OR DISCONNECT ANY OPERATING SYSTEM OF THE PLANT, UNLESS APPROVED BY THE ENGINEER, IN WRITING. ALL PLANT EQUIPMENT OPERATIONS AND SHUTDOWNS SHALL BE EXECUTED BY THE OWNER, UNLESS OTHERWISE NOTED. SEAL OWNER OPERATED GATES AND VALVES TO PREVENT UNNECESSARY LEAKAGE. AFTER CONTRACTOR'S WORK HAS BEEN COMPLETED, REMOVE SEAL TO THE SATISFACTION OF THE ENGINEER.
6. THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL TEMPORARY PIPELINES, VALVES, PUMPS, METERS, SPARE PARTS, ELECTRICAL, CONTROLS, ANY OTHER APPURTENANCES, AND LABOR REQUIRED FOR THE INSTALLATION AND OPERATION OF TEMPORARY BYPASS LINES, PUMPING SYSTEMS, OR CONVEYANCE SYSTEMS REQUIRED TO MAINTAIN OPERATIONS OF THE PLANT DURING CONSTRUCTION ACTIVITIES.
7. CONTRACTOR SHALL SUBMIT A PROJECT–LEVEL MAINTENANCE OF PLANT OPERATIONS PLAN AND SCHEDULE FOR KEEPING THE PLANT IN OPERATION DURING CONSTRUCTION. AT A MINIMUM, THIS PROJECT–LEVEL PLAN AND SCHEDULE SHALL INCLUDE:
   - 7.1 SEQUENCE OF CONSTRUCTION, INCLUDING WHEN KEY EQUIPMENT SYSTEMS WILL BE TEMPORARILY OFFLINE FOR CONNECTIONS.
   - 7.2 IDENTIFIED TIME AND SCHEDULING CONSTRAINTS / MILESTONES.
8. ANY SYSTEM SHUTDOWN SHALL BE CLOSELY COORDINATED WITH PLANT STAFF. A MINIMUM OF 7 DAYS ADVANCE NOTICE IS REQUIRED FOR ANY SHUTDOWN. OWNER APPROVAL IS REQUIRED FOR ANY SHUTDOWN.
9. NO SYSTEM MAY BE OFFLINE LONGER THAN 4 HOURS. NO TWO SYSTEMS SHALL BE OFFLINE CONSECUTIVELY IN THE SAME DAY.
10. ANY TEMPORARY EQUIPMENT SHUTDOWN SHALL BE COORDINATED WITH THE OWNER AND PLANT MAINTENANCE STAFF.
11. IF CONTRACTOR'S PROCEDURES CAUSE AN UNSCHEDULED SHUTDOWN OF THE FACILITIES, PERFORM WORK AS NECESSARY TO RE–ESTABLISH SATISFACTORY OPERATION. NOTIFY THE ENGINEER, IN WRITING, IMMEDIATELY OF ANY UNSCHEDULED SHUTDOWN. PERMIT OWNER'S PERSONNEL TO WORK WITH CONTRACTOR'S PERSONNEL, AS REQUIRED, TO MAINTAIN THE PLANT IN CONTINUOUS SATISFACTORY OPERATION.
12. UNSCHEDULED SHUTDOWNS OR INTERRUPTIONS OF CONTINUED SAFE AND SATISFACTORY OPERATION OF FACILITIES THAT RESULT IN FINES LEVIED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF IT IS DEMONSTRATED THAT THE CONTRACTOR WAS NEGLIGENT IN THE WORK OR DID NOT EXERCISE PROPER PRECAUTIONS IN THE CONDUCT OF THE WORK.

START-UP SPECIFICATIONS

GENERAL STARTUP REQUIREMENTS:
1. ALL STARTUP AND COMMISSIONING SHALL BE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND SHALL NOT COMMENCE WITHOUT THE OWNER'S AND TRIBAL UTILITY AUTHORITY REPRESENTATIVE'S APPROVAL.
2. PRIOR TO, AND AFTER SUCCESSFUL STARTUP AND COMMISSIONING, THE CONTRACTOR SHALL:
   - 2.1. REMOVE TEMPORARY PROTECTIVE COATINGS.
   - 2.2. CLEAN AND LUBRICATE THE EQUIPMENT.
   - 2.3. CHECK SHAFT ALIGNMENTS.
   - 2.4. CHECK AND SET MOTOR, PUMP, AND OTHER EQUIPMENT ROTATION, SAFETY INTERLOCKS, AND BELT TENSIONS.
   - 2.5. CHECK LEVELING PLATES, GROUT, BEARING PLATES, ANCHOR BOLTS, FASTENERS, AND ALIGNMENT OF PIPING WHICH MAY PUT STRESS ON PUMPING EQUIPMENT.
3. CONTRACTOR SHALL CALIBRATE ALL INSTRUMENTS, SENSORS, AND GAUGES. CALIBRATION SHALL BE WITHIN +/– 2% OF ACTUAL VALUE.
4. MANUFACTURER'S REPRESENTATIVES SHALL BE ONSITE DURING STARTUP AND FOR ONSITE TRAINING, UNLESS A MORE STRINGENT REQUIREMENT IS PROVIDED IN THE SPECIFICATIONS. MANUFACTURER'S REPRESENTATIVES SHALL BE ONSITE A MINIMUM OF THREE DAYS (TWO FOR STARTUP AND ONE FOR TRAINING). REFER TO HOSPITAL/UTILITY SPECIFICATION SECTION 019200 FACILITY OPERATION, MAINTENANCE AND TROUBLESHOOTING MOBILE GRAPHICAL INFORMATION MANAGEMENT PLATFORM, FOR COORDINATION OF STARTUP AND TRAINING WITH DIGITAL MENTOR.
5. EQUIPMENT SHALL BE RECHECKED AFTER STARTUP (PROPER ALIGNMENT, LUBRICATION, LOOSE CONNECTIONS UNUSUAL MOVEMENT, VIBRATION, OR ANY OTHER INDICATIONS OF IMPROPER OPERATING CHARACTERISTICS.
6. CONTRACTOR SHALL SUBMIT OPERATION AND MAINTENANCE MANUALS FOR EQUIPMENT, SENSORS, GEAR, INSTRUMENTS, GAUGES, OR OTHER ITEMS TO MOBILE GRAPHICAL INFORMATION MANAGEMENT CONTRACTOR – DIGITAL MENTOR AND THE OWNER TO SUFFICIENTLY ALLOW OWNER TO OPERATE AND MAINTAIN THE SYSTEM(S). MANUAL REQUIREMENTS SHALL BE PER SPECIFICATION SECTION 460713.1.7.

STARTUP PLAN AND SCHEDULE
7. CONTRACTOR SHALL SUBMIT A TESTING, STARTUP, AND COMMISSIONING PLAN AND SCHEDULE TO THE OWNER AND TRIBAL UTILITY AUTHORITY REPRESENTATIVES FOR REVIEW AND APPROVAL. THE PLAN AND SCHEDULE SHALL INCLUDE:
   - 7.1. SEQUENCE FOR TESTING, STARTUP, AND COMMISSIONING.
   - 7.2. DOCUMENTATION PROGRAM TO RECORD THE RESULTS OF ALL EQUIPMENT AND SYSTEM TESTS.
   - 7.3. A CALIBRATION PROGRAM AND DOCUMENTATION FOR ALL INSTRUMENTS, METERS, MONITORS, GAUGES, INSTRUMENTS.
   - 7.4. PLAN SHOULD INCLUDE PROVISIONS FOR PROVIDING TEMPORARY FLUIDS AND LIQUIDS, DISCHARGE LOCATIONS AND OR/RECIRCULATION PLANS.

STARTUP
8. CONTRACTOR STARTUP PLAN SHALL INCLUDE THE FOLLOWING:
   - 8.1. PRESSURE AND LEAKAGE TESTING AND PIPE DISINFECTION (SWAB METHOD).
   - 8.2. ELECTRICAL TESTING (PER ELECTRICAL PLANS/SPECS).
   - 8.3. PRE–OPERATIONAL CHECKOUT FOR ALL MECHANICAL EQUIPMENT (ALIGNMENT OF EQUIPMENT, LUBRICATION, OTHER TESTS REQUIRED BY MANUFACTURER).
   - 8.4. FUNCTIONAL TESTS – EACH ITEM OF MECHANICAL, ELECTRICAL, AND INSTRUMENTATION EQUIPMENT SHALL BE STARTED AND OPERATED UNDER SIMULATED OPERATING CONDITIONS TO DEMONSTRATE COMPLIANCE WITH OPERATIONAL REQUIREMENTS AND MANUFACTURER'S TOLERANCES.
   - 8.5. CONTRACTOR TESTING (OR SYSTEM OPERATIONAL TESTING) – THE CONTRACTOR SHALL SUCCESSFULLY OPERATE ALL SYSTEMS AS A WHOLE FOR A MINIMUM OF 3 DAYS, SIMULATING ACTUAL OPERATING CONDITIONS TO THE GREATEST EXTENT POSSIBLE, WITHOUT DISCHARGING TO THE SYSTEM. THE CONTRACTOR SHALL INSTALL TEMPORARY CONNECTIONS, BULKHEADS, AND MAKE OTHER PROVISIONS TO RECIRCULATE PROCESS FLUIDS AND FLOW TO SIMULATE ANTICIPATED OPERATING CONDITIONS.
   - 8.6. DEMONSTRATION TESTING – THE CONTRACTOR SHALL DEMONSTRATE THE SUCCESSFUL OPERATION OF THE SYSTEM TO THE OWNER ON THE SECOND DAY OF STARTUP. DEMONSTRATION SHALL INCLUDE ALL MODES OF OPERATION (MANUAL AND AUTOMATIC) AND THE VARIOUS CONDITIONS OF OPERATION.

ALTERNATE CHEMICAL DOSING TRIAL
9. THE CONTRACTOR SHALL PERFORM A TRIAL RUN OF ALTERNATE CHEMICALS AND INJECTION PORTS PRIOR TO PLACING THE UNIT INTO SERVICE. THE FOLLOWING ALTERNATE CHEMICALS SHOULD BE USED:
   - 9.1. ALTERNATIVE COAGULANT – HIGH ALUMINUM CONTENT POLYALUMINUM CHLORIDE (PACL) (KEMIRA PAX 18, CHEMTRADE EC 309, OR EQUAL).
   - 9.2. ALTERNATIVE POLYMER – 10% CHARGE ANIONIC POLYMER.
   - 9.3. THE CONTRACTOR SHALL OBTAIN A SEPARATE TOTE OF PACL AND A SEPARATE TOTE FOR DILUTING THE ANIONIC POLYMER AND SET UP TEMPORARY SUCTION TUBING TO THE CHEMICAL FEED SKIDS FOR THE NEW UNIT.
   - 9.4. CHEMICALS SHALL BE DOSED IN ACCORDANCE WITH SURFACE WATER TREATMENT PLANT DESIGN REPORT, APPENDIX A.
   - 9.5. THE CONTRACTOR SHALL RUN THE ALTERNATE CHEMICAL DOSING TRIAL FOR 1 DAY AND MONITOR EFFLUENT TURBIDITY FOR THE NEW UNIT USING SCADA.
   - 9.6. THE CONTRACTOR SHALL CONNECT THE POLYMER FEED TO THE (2) ALTERNATE INJECTION PORTS SHOWN ON THE PLANS FOR 1 DAY EACH AND MONITOR EFFLUENT TURBIDITY FOR THE NEW UNIT USING SCADA.
   - 9.7. THE CONTRACTOR SHALL FLUSH THE CHEMICAL TUBING WITH WATER AFTER THE ALTERNATE CHEMICAL DOSING TRIAL IS COMPLETE.
   - 9.8. THE CONTRACTOR SHALL CONNECT THE CHEMICAL SKIDS TO THE EXISTING POLYMER AND ALUM SUPPLY TANKS.
   - 9.9. THE OWNER WILL SWITCH TO THE NEW CHEMICAL IF THEY DESIRE.

COMMISSIONING
10. COMMISSIONING – ONCE ALL SYSTEMS HAVE BEEN SUCCESSFULLY TESTED THE CONTRACTOR SHALL WORK WITH THE OWNER AND TRIBAL UTILITY AUTHORITY REPRESENTATIVES TO PLACE THE SYSTEM INTO OPERATION.
   - 10.1. THE CONTRACTOR WILL RETAIN RESPONSIBILITY FOR THE OPERATION OF THE SYSTEM FOR 3 FULL DAYS DURING COMMISSIONING TO DEMONSTRATE FULL FUNCTIONALITY. DURING COMMISSIONING THE CONTRACTOR SHALL OPERATE THE SYSTEM(S) IN ALL MODES OF OPERATION AND IN THE VARIOUS CONDITIONS OF OPERATION. THE OWNER WILL PROVIDE AN OPERATOR FOR ASSISTANCE DURING COMMISSIONING.
   - 10.2. COMMISSIONING SHALL CONTINUE FOR 7 ADDITIONAL CONSECUTIVE DAYS AND NO SYSTEMS FAILURES HAVE OCCURRED. DURING COMMISSIONING THE SYSTEM SHALL BE AVAILABLE TO THE OWNER'S OPERATORS FOR USE IN NORMAL OPERATION OF THE SYSTEM.

SCADA PROGRAMMING
11. CONTRACTOR SHALL COORDINATE WITH THE SPECIFIED PROGRAMMER TO ENSURE AUTOMATIC OPERATION OF THE SYSTEM DURING STARTUP.

STANDARD ABBREVIATIONS & LEGEND

EXISTING

- BENCHMARK
- BRASS CAP FLUSH
- BRASS CAP IN HANDHOLE
- BACKFLOW PREVENTER
- CACTUS
- DRYWELL
- FIRE HYDRANT
- FIRE DEPT CONNECTION
- FLAG POLE
- GATE
- GRATE
- GUY WIRE
- HEADWALL
- MAILBOX
- MANHOLE (TYPE NOTED)
- METER (TYPE NOTED)
- PEDESTAL (TYPE NOTED)
- PULLBOX (TYPE NOTED)
- RIPRAP
- ROCK
- SHRUB
- SIGN
- STREET LIGHT
- TREE
- UTILITY POLE
- VALVE (TYPE NOTED)
- BUILDING SETBACK
- DISTRICT BOUNDARY OR CITY LIMITS
- EASEMENT
- FOREST BOUNDARY LINE
- MID–SECTION
- PROPERTY LINE
- RIGHT–OF–WAY
- SECTION
- CHANNEL
- CURB & GUTTER
- EDGE OF PAVEMENT
- FENCE WOOD
- FENCE WIRE
- FENCE CHAINLINK
- FLOWLINE
- GUARDRAIL
- MASONRY WALL/RETAINING WALL
- MAJOR CONTOUR
- MINOR CONTOUR
- RAILROAD
- SINGLE CURB
- SIDEWALK
- CABLE TV
- COMMUNICATION
- ELECTRIC (UNDERGROUND)
- ELECTRIC (OVERHEAD)
- FIBER OPTIC
- FIRE LINE
- GAS
- IRRIGATION LINE 18" OR SMALLER
- SEWER LINE 12" OR SMALLER
- SEWER LINE LARGER THAN 12"
- WATER LINE 12" OR SMALLER
- WATER LINE LARGER THAN 12"

NEW

- BENCHMARK
- BRASS CAP FLUSH
- BRASS CAP IN HANDHOLE
- BACKFLOW PREVENTER
- BORING LOCATION
- CACTUS
- CORROSION TEST STATION
- DRYWELL
- FIRE HYDRANT
- FIRE DEPT CONNECTION
- FLAG POLE
- GATE
- HEADWALL
- MAILBOX
- MANHOLE (TYPE NOTED)
- METER
- PIPE PLUG
- POTHOLE LOCATION
- PULLBOX
- RIPRAP
- ROCK
- SHRUB
- SIGN
- STREET LIGHT
- TREE
- THRUST BLOCK
- UTILITY POLE
- VALVE
- BUTTERFLY VALVE
- BUILDING SETBACK
- CENTERLINE
- EASEMENT
- LIMITS OF CONSTRUCTION
- RIGHT–OF–WAY
- BASE FLOOD ELEVATION
- CHANNEL
- CURB & GUTTER
- DAYLIGHT LINE, CUT
- DAYLIGHT LINE, FILL
- EDGE OF PAVEMENT
- FENCE WOOD
- FENCE WIRE
- FENCE CHAINLINK
- FLOWLINE
- GUARDRAIL
- MASONRY WALL/RETAINING WALL
- MAJOR CONTOUR
- MINOR CONTOUR
- SIDEWALK
- SINGLE CURB

MECHANICAL LEGEND

- AIR RELEASE VALVE
- FLANGED COUPLING ADAPTER
- FLOWMETER
- MANUAL VALVE
- MOTOR OPERATED VALVE
- PVC BALL VALVE
- PVC UNION
- STL BALL VALVE

ABBREVIATIONS

ABAND	ABANDONED
ABC	AGGREGATE BASE COURSE
AC	ACRES
AC	ASPHALT CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASBESTOS CEMENT PIPE
ADA	AMERICANS WITH DISABILITIES ACT
ADOT	ARIZONA DEPARTMENT OF TRANSPORTATION
APS	ARIZONA PUBLIC SERVICE
ARV	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AV	COMBINATION AIR/VACUUM VALVE
AVE	AVENUE
B/C	BACK OF CURB
BC	BRASS CAP
BCF	BRASS CAP FLUSH
BCHH	BRASS CAP IN HANDHOLE
BCR	BEGIN CURB RETURN
BFV	BUTTERFLY VALVE
BIA	BUREAU OF INDIAN AFFAIRS
Bk	BACK
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCHMARK
BOT	BOTTOM
BPS	BOOSTER PUMP STATION
C	CONCRETE ELEVATION, CONDUIT
C&G	CURB AND GUTTER
CATV	CABLE TELEVISION
CB	CATCH BASIN
CBC	CONCRETE BOX CULVERT
CCP	CONCRETE CYLINDER PIPE
CIP	CAST IRON PIPE
CIPP	CAST IN PLACE
CK	CHECKED
℄	CENTERLINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COMM	COMMUNICATION
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
COR	CORNER
CPVC	CHLORINATED POLY VINYL CHLORIDE
CSP	CORRUGATED STEEL PIPE
D/W	DRIVEWAY
DB	DUCT BANK
DEFL	DEFLECTION
DES	DESIGN
DET	DETAIL
DG	DECOMPOSED GRANITE
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DNF	DID NOT FIND
DR	DRIVE
DRN	DRAWN
DRNG	DRAINAGE
DW	DEWATERING STANDPIPE
DWG	DRAWING
E	EAST, EASTING
E/P	EDGE OF PAVEMENT
EA	EACH
EGL	ENERGY GRADE LINE
EL	ELEVATION, ELECTRIC PULLBOX
ELEC	ELECTRIC
ELEV	ELEVATION
ESMT	EASEMENT
EXST	EXISTING
FC, F/C	FACE OF CURB
FF	FINISH FLOOR ELEVATION
FG	FINISH GRADE ELEVATION
FH	FIRE HYDRANT
FIK	FLANGE ISOLATION KIT
FKM	FLUOROELASTOMER
FL	FIRE LINE, FLOWLINE, FLANGE
FM	SEWER FORCE MAIN
FND	FOUND
FO	FIBER OPTIC
FT	FOOT OR FEET
G	GAS, GUTTER ELEVATION
GAF	GRID ADJUSTMENT FACTOR
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GM	GAS METER
GND	GROUND
GPM	GALLONS PER MINUTE
GS	GAS SERVICE
GV	GAS VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HDWL	HEADWALL
HGL	HYDRAULIC GRADE LINE
HORZ	HORIZONTAL
HP	HIGH PRESSURE, HORSEPOWER
HW	HIGH WATER
HWY	HIGHWAY
ID	INSIDE DIAMETER
INEG	INGRESS EGRESS
INV	INVERT
IRR	IRRIGATION
IV	IRRIGATION VALVE
LDPE	LOW DENSITY POLYETHELYNE
LF	LINEAR FEET
LS	LUMP SUM
LT	LEFT
MAG	MARICOPA ASSOCIATION OF GOVERNMENTS
MAX	MAXIMUM
MB	MAILBOX
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
ME	MATCH EXISTING
MFGR	MANUFACTURER
MH	MANHOLE
MI	MILES
MIN	MINIMUM
MJ	MECHANICAL JOINT
ⅿ	MONUMENT LINE
MOD	MODIFIED
MOV	MOTOR OPERATED VALVE
MTS	MANUAL TRANSFER SWITCH
N	NORTH, NORTHING
N.C.	NORMALLY CLOSED GATE VALVE
NC	NORMAL CROWN
NE	NORTHEAST
NF	NOT FOUND
NHWL	NORMAL HIGH WATER LEVEL
N.O.	NORMALLY OPEN GATE VALVE
NO	NUMBER
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NPI	NON–PAY ITEM
NPT	NATIONAL PIPE TAPER
NPW	NON–POTABLE WATER
NSF	NATIONAL SANITATION FOUNDATION
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHCATV	OVERHEAD CABLE TELEVISION
OHE	OVERHEAD ELECTRIC
OHT	OVERHEAD TELEPHONE
P	PAVEMENT ELEVATION, PHONE NUMBER
PB	PULLBOX
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	POLYETHYLENE PIPE, POLYETHYLENE TUBING, PLAIN END
PED	TELEPHONE PEDESTAL
PH#	POTHOLE NUMBER
PI	POINT OF INTERSECTION
PIP	PROTECT IN PLACE
ⅿ	PROPERTY LINE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLSS	PUBLIC LAND SURVEY SYSTEM
POLY	POLYETHELYNE
PP	POWER POLE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PUE	PUBLIC UTILITY EASEMENT
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
PW	POTABLE WATER
QS	QUARTER SECTION
R	RADIUS, RANGE
R/W	RIGHT–OF–WAY
RCBC	REINFORCED CONCRETE BOX CULVERT
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REF	REFERENCE
RELOC	RELOCATE
RES	RESERVOIR
RGRCP	RUBBER GASKET REINFORCED CONCRETE PIPE
RR	RAILROAD
RT	RIGHT
S	SLOPE, SEWER, SOUTH
SCH	SCHEDULE
S/W	SIDEWALK
SD	STORM DRAIN
SE	SOUTHEAST
SEC	SECTION
SF	SQUARE FOOT
SFC	SANITATION FACILITIES CONSTRUCTION
SG	SUBGRADE ELEVATION
SHT	SHEET
SPEC	SPECIFICATIONS
SRP	SALT RIVER PROJECT
SS	SEWER SERVICE
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
SW	SOUTHWEST
SWG	SOUTHWEST GAS COMPANY
SY	SQUARE YARD
T	TOWNSHIP, TELEPHONE
T	TANGENT LENGTH
T/W	TOP OF WALL
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TD	TOP OF DIRT
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPORARY
THD	THREADED
TG	TOP OF GRATE
TN	TOP OF NUT
TOE	TOE OF EMBANKMENT
TPE	THERMOPLASTIC ELASTOMERE
TRAN	TRANSITE PIPE
TS	TRAFFIC SIGNAL, TEST STATION
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
UNK	UNKNOWN
V	VERTICAL
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VG	VALLEY GUTTER
VNAE	VEHICULAR NON ACCESS EASEMENT
W	WATER, WEST
W/	WITH
W/O	WITHOUT
WM	WATER METER, WATER MAIN
WMATUA	WHITE MOUNTAIN APACHE TRIBE UTILITY AUTHORITY
WS	WATER SERVICE
WSE	WATER SURFACE ELEVATION
WTM	WATER TRANSMISSION MAIN
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
XFRMR	TRANSFORMER

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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GOODYEAR, AZ 85395
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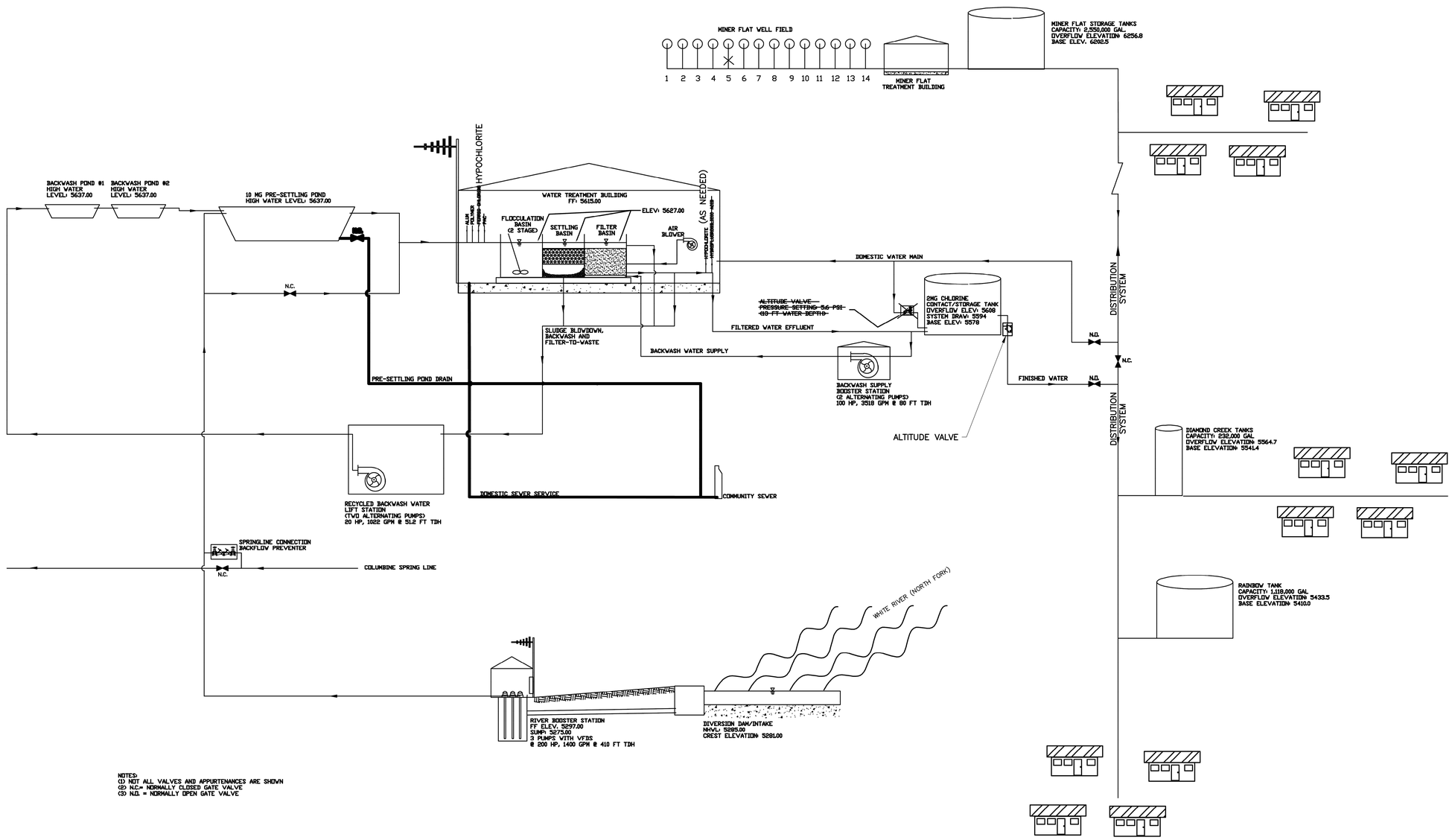
dibblecorp.com

ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 02/09/26

SHEET P1: SIMPLIFIED PROCESS FLOW DIAGRAM
(NOT TO SCALE)



NOTES:
(1) NOT ALL VALVES AND APPURTENANCES ARE SHOWN
(2) N.C.= NORMALLY CLOSED GATE VALVE
(3) N.O. = NORMALLY OPEN GATE VALVE

NOTES:

1. PROCESS FLOW DIAGRAM SHOWN HERE IS FROM THE ORIGINAL AS-BUILT PLANS OF THE PLANT DATED 08/2013. MINOR CORRECTIONS ARE NOTED TO THE CHEMICAL LABELING AND ALTITUDE VALVE LOCATION FOR CLARITY.
2. CONTRACTOR TO COORDINATE WITH THE WMATUA AND SFC ON SETTLING POND IMPROVEMENT PROJECT (BY OTHERS). PROJECT CONTACT INFORMATION IS BELOW:

KIEL HILLOCK: KIEL.HILLOCK@IHS.GOV (O) 928-338-3657
LORENZO SANTANA: LORENZO.SANTANA@IHS.GOV (O) 928-338-3654

INIT.	REVISIONS	DATE
R.A.B.	Stover's Stamp (Construction ONLY)	08-2013
	AS BUILTS	08-2013

STATE OF NEW YORK · MICHAEL AUGUSTINE STOVER · 074819 · LICENSED PROFESSIONAL ENGINEER

INDIAN HEALTH SERVICE
OFFICE OF ENVIRONMENTAL HEALTH & ENGINEERING
EASTERN ARIZONA DISTRICT OFFICE
5448 S. WHITE MTN. BLVD. SUITE 220
LAKESIDE, AZ 85929
(928) 537-0578

INDIAN HEALTH SERVICE · 1955

THE WHITE MOUNTAIN APACHE TRIBE
WHITERIVER - NAVAJO COUNTY, ARIZONA
WHITERIVER SURFACE WATER DIVERSION AND TREATMENT PROJECT
BUILDING LAYOUT
PH 03-C23/PH 03-S38/PH 06-T07/PH 06-D30/PH 07-D64; EA 04-07

DRAWING NO.: _____ SCALE: _____
DRAWN BY: M.A.S. DATE: _____
CHECKED BY: _____ DATE: _____
PROJ ENG: MICHAEL A. STOVER
FILE NAME: Master Final SWTP 01-40.dwg
LAYOUT NAME: FLOW DIAG (P1)

SHEET 3 OF 97 TOTAL SHEETS

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IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
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IHS Award Date: 02/02/2024

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SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

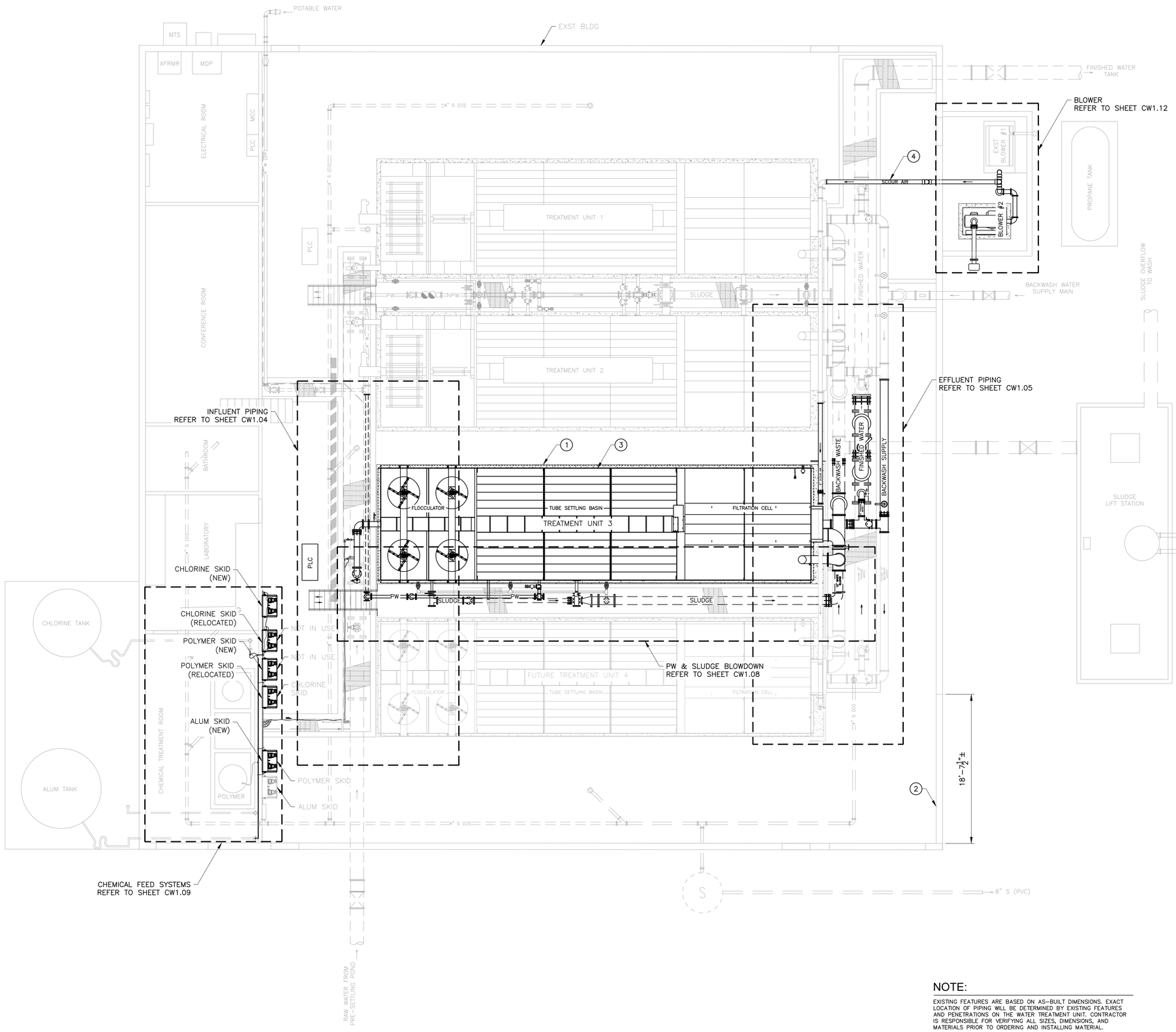
SEALS AND SIGNATURES

Registered Professional Engineer (Civil) · CERTIFICATE NO. 68119 · MICHAEL LOGAN · Date Signed 03/09/26 · Arizona · U.S.A.

SHEET TITLE
EXISTING SIMPLIFIED PROCESS FLOW DIAGRAM

DRAWN BY: KCR CHECKED BY: MJL
24034
PROJECT NUMBER
100% CW1.02
PHASE SHEET NUMBER

G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-P&ID.DWG
Plot Date: 2/26/2026 4:11 PM



CONSTRUCTION NOTES

1	6" CONCRETE HOUSEKEEPING PAD 6X6-W4XW4 WWF ON CENTER USE 8 EA 3/4" ANCHORS TO SECURE PAD TO EXISTING BUILDING FLOOR	1 EA
2	REMOVABLE SIDING & GIRTS (NO X-BRACING) ENTRY POINT FOR TREATMENT UNIT. CONTRACTOR SHALL RESTORE WALL TO EXISTING CONDITION AFTER USE.	LS
3	NEW 1 MGD TONKA UNITIZED CONVENTIONAL TREATMENT UNIT OR APPROVED EQUAL REFER TO SHT CW1.13 – CW1.15	1 EA
4	REMOVE EXST 6" PVC BLOWER PIPING & REPLACE W/ 6" CPVC SCH 80 BLOWER PIPING & FITTINGS	40 LF

NOTE:

EXISTING FEATURES ARE BASED ON AS-BUILT DIMENSIONS. EXACT LOCATION OF PIPING WILL BE DETERMINED BY EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.

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0' 2.5' 5' 10'
SCALE: 1"=5'

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
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SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

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CERTIFICATE NO. 68119
MICHAEL LOGAN
Date Signed 03/09/26
ARIZONA U.S.A.

SHEET TITLE
PLAN VIEW SWTP

DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100%
PHASE

CW1.03
SHEET NUMBER

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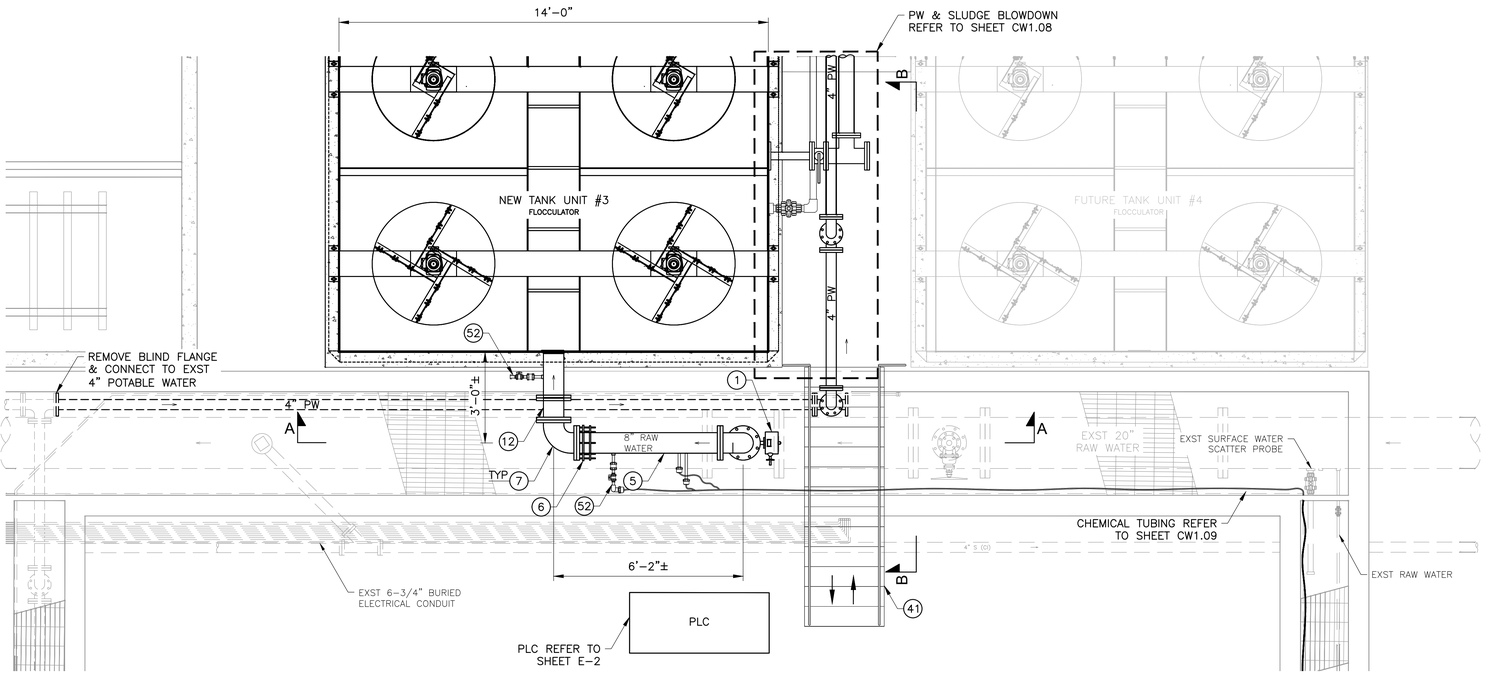
Plot Date: 2/26/2026 4:10 PM



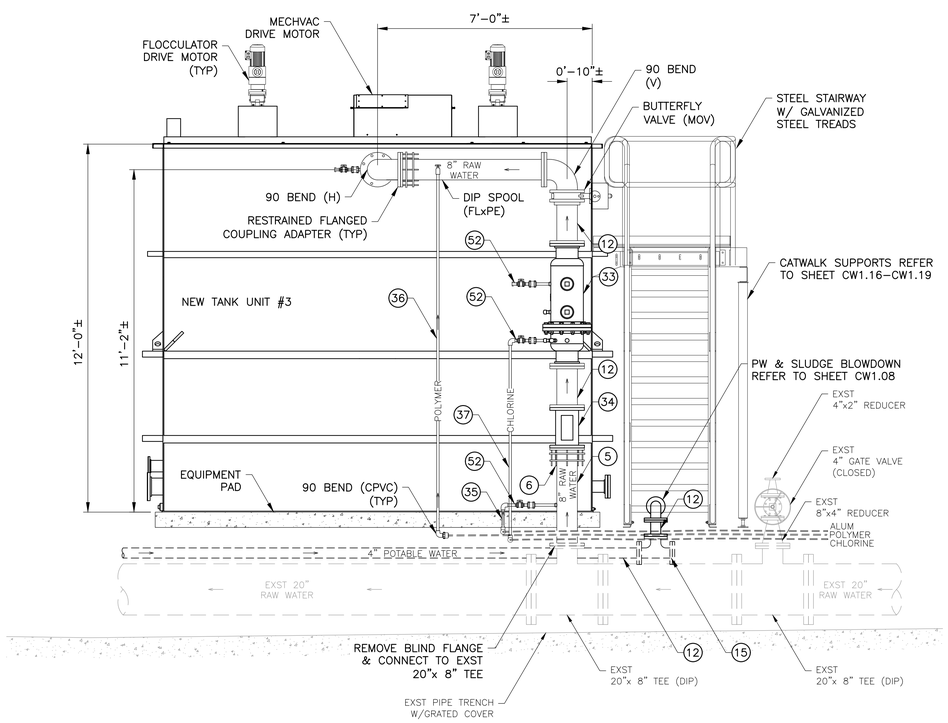
INFLUENT PIPING – ENLARGED PLAN

REFER TO SHT CW1.03 1"=2'

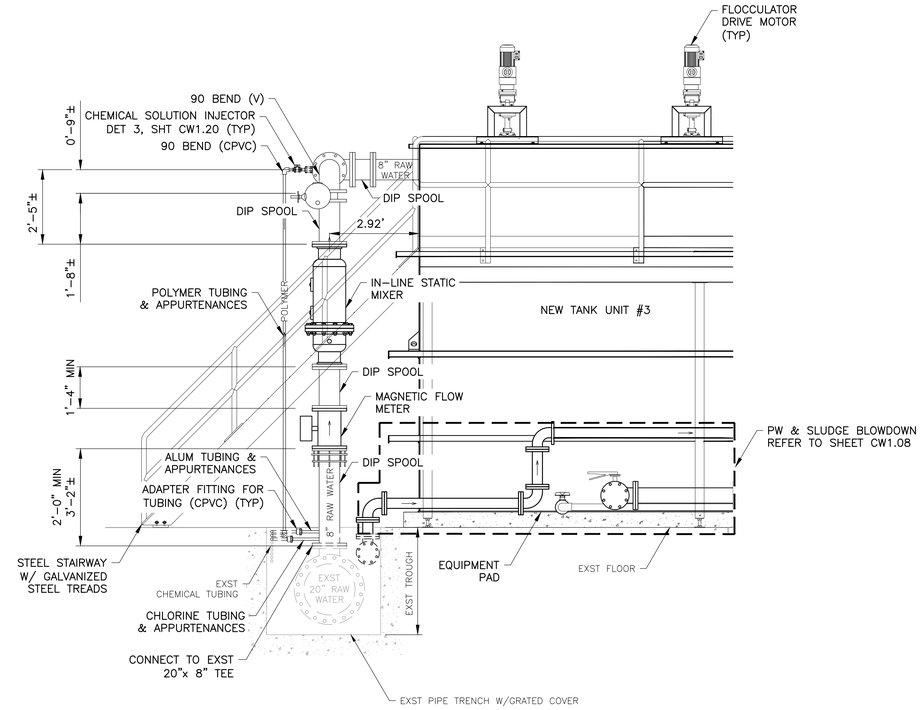
NO.	DESCRIPTION	MANUFACTURER – MODEL NO.	PRESSURE CLASS (PSI)	TYPE	QTY
1	BUTTERFLY VALVE (MOV)	BRAY 3W	250	FLxFL	1
5	PIPE SPOOL (DIP)	--	250	FLxPE	2
6	RESTRAINED FLANGED COUPLING ADAPTER	ROMAC RFCA	250	FLxMJ	2
7	90° BEND (DIP)	--	250	FLxFL	2
12	PIPE SPOOL (DIP)	--	250	FLxFL	5
15	TEE (DIP)	--	250	FLXFL	1
33	IN-LINE STATIC MIXER	SWIRL-FLO	250	FLxFL	1
34	MAGNETIC FLOW METER	BADGER M2000	175	FLxFL	1
35	ALUM TUBING & APPURTENANCES	--	30	--	1
36	POLYMER TUBING & APPURTENANCES	--	30	--	1
37	CHLORINE TUBING & APPURTENANCES	--	30	--	1
41	STEEL STAIRWAY PER SPECIFICATIONS	--	--	--	1
52	CHEMICAL SOLUTION INJECTOR DET 3, SHT CW1.20	--	--	--	5

NOTES:

1. EXISTING FEATURES ARE BASED ON AS-BUILT DIMENSIONS. CONTRACTOR SHALL CONFIRM EXACT LOCATIONS OF PIPING BY FIELD VERIFYING EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.
2. ISOLATE DISSIMILAR METALS.
3. PAINT ALL EXPOSED PIPING PER SPECIFICATIONS.
4. PIPE HANGERS AND SUPPORTS NOT SHOWN FOR CLARITY; LOCATE AND SPACE PIPE HANGERS AND SUPPORTS PER SPECIFICATIONS.
5. USE STAINLESS STEEL HARDWARE FOR MOUNTING PER SPECIFICATIONS.
6. REFER TO CONTRACTOR SHOP DRAWINGS FOR ACTUAL TANK DIMENSIONS AND PENETRATION SIZES AND LOCATIONS.



1 SECTION A–A – INFLUENT PIPING
1"=2'



2 SECTION B–B – INFLUENT PIPING
1"=2'

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0' 2.5' 5' 10'
SCALE: 1"=5'

IHS Whiteriver Hospital

200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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dibblecorp.com

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SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil)
CERTIFICATE NO. 68119
MICHAEL LOGAN
Date Signed 03/09/26
ARIZONA U.S.A.

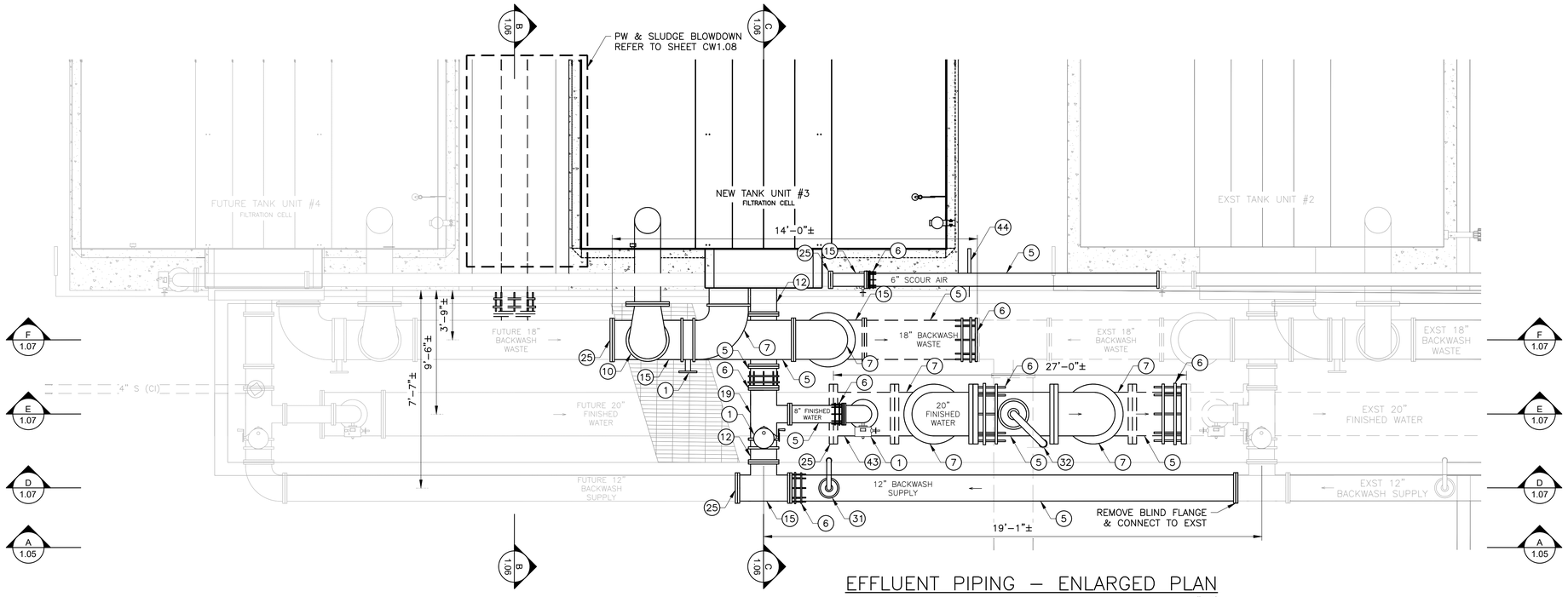
SHEET TITLE
INFLUENT PIPING

DRAWN BY: KCR CHECKED BY: MJL

24034
PROJECT NUMBER

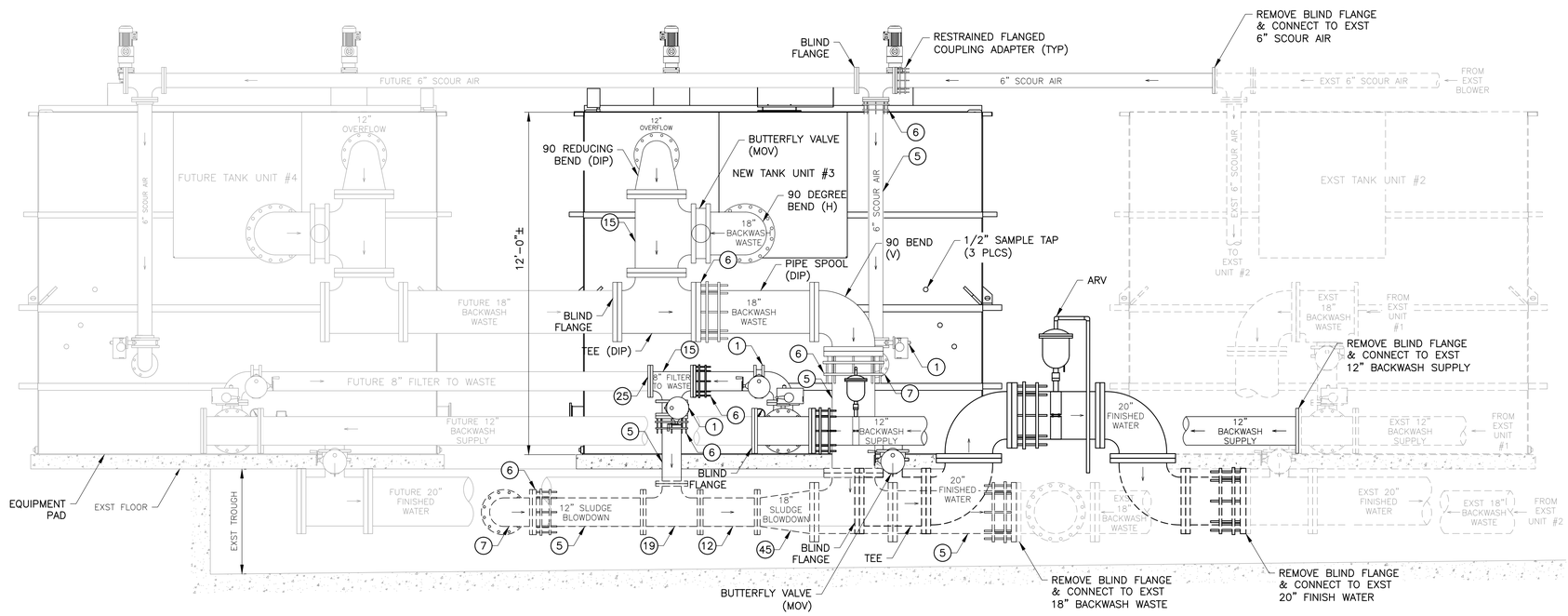
100% CW1.04
PHASE SHEET NUMBER

Plot Date: 2/26/2026 4:10 PM G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-INFLUENT FP.DWG



EFFLUENT PIPING – ENLARGED PLAN

REFER TO SHT CW1.03 1"=2'



1 SECTION A–A – EFFLUENT PIPING

1"=2'

NO.	DESCRIPTION	MANUFACTURER – MODEL NO.	PRESSURE CLASS (PSI)	TYPE	QTY
1	BUTTERFLY VALVE (MOV)	BRAY 3W	250	FLxFL	6
5	PIPE SPOOL (DIP)	--	250	FLxPE	13
6	RESTRAINED FLANGED COUPLING ADAPTER	ROMAC RFCA	250	FLxMJ	13
7	90° BEND (DIP)	--	250	FLxFL	8
10	90° REDUCING BEND (DIP)	--	250	FLxFL	1
12	PIPE SPOOL (DIP)	--	250	FLxFL	3
15	TEE (DIP)	--	250	FLxFL	6
19	12"x8" TEE (DIP)	--	250	FLxFL	2

NO.	DESCRIPTION	MANUFACTURER – MODEL NO.	PRESSURE CLASS (PSI)	TYPE	QTY
25	BLIND FLANGE (DIP)	--	250	FL	5
31	1" AIR RELEASE VALVE (ARV) W/PVC DRAIN TO TROUGH	APCO 200A R532	300	NPT	1
32	2" AIR RELEASE VALVE (ARV) W/PVC DRAIN TO TROUGH	APCO 200A R532	300	NPT	1
43	20"X8" TEE (DIP)	--	250	FLxFL	1
44	TURBIDIMETER DET A, SHT E4 & DET 2, SHT CW1.20	HACH TU5300 SC	--	--	1
45	18"x12" CONCENTRIC REDUCER (DIP)	--	250	FLFL	1

NOTES:

1. EXISTING FEATURES ARE BASED ON AS–BUILT DIMENSIONS. CONTRACTOR SHALL CONFIRM EXACT LOCATIONS OF PIPING BY FIELD VERIFYING EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.
2. ISOLATE DISSIMILAR METALS.
3. PAINT ALL EXPOSED PIPING PER SPECIFICATIONS.
4. PIPE HANGERS AND SUPPORTS NOT SHOWN FOR CLARITY; LOCATE AND SPACE PIPE HANGERS AND SUPPORTS PER SPECIFICATIONS.
5. USE STAINLESS STEEL HARDWARE FOR MOUNTING PER SPECIFICATIONS.
6. REFER TO CONTRACTOR SHOP DRAWINGS FOR ACTUAL TANK DIMENSIONS AND PENETRATION SIZES AND LOCATIONS.
7. DIAMETER OF VALVES, FITTINGS AND APPURTENANCES SHALL MATCH DIAMETER OF CONNECTING PIPE.

IHS Whiteriver Hospital

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IHS Project #: 131445
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ISSUED FOR	DATE
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SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

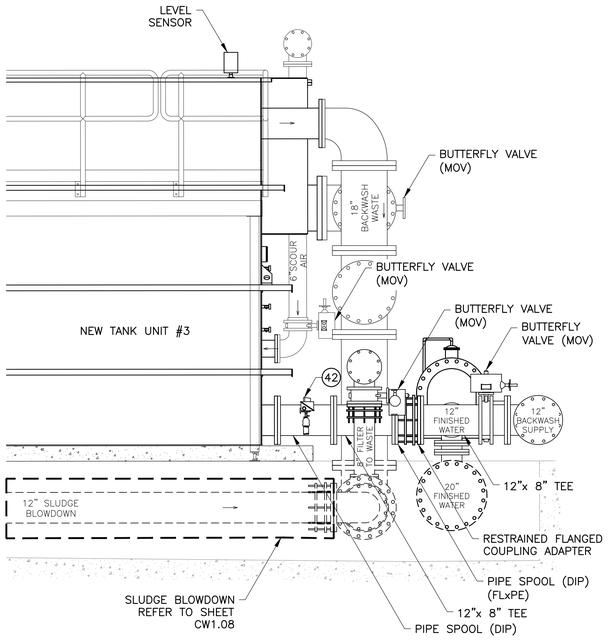
SHEET TITLE
EFFLUENT PIPING

DRAWN BY: KCR CHECKED BY: MJL

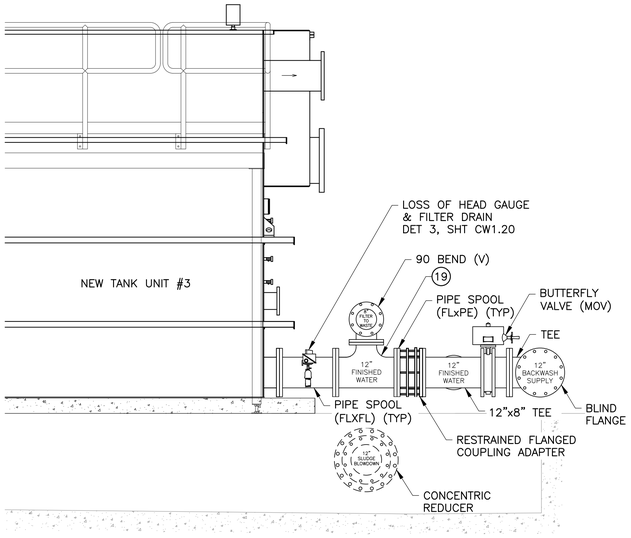
24034
PROJECT NUMBER

100% CW1.05
PHASE SHEET NUMBER

Plot Date: 2/26/2026 4:10 PM G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-EFFLUENT FP.DWG



2 SECTION B–B – EFFLUENT PIPING
1" = 2'



3 SECTION C–C – FINISHED WATER EFFLUENT PIPING
1" = 2'

NOTES:

1. EXISTING FEATURES ARE BASED ON AS–BUILT DIMENSIONS. CONTRACTOR SHALL CONFIRM EXACT LOCATIONS OF PIPING BY FIELD VERIFYING EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.
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6. REFER TO CONTRACTOR SHOP DRAWINGS FOR ACTUAL TANK DIMENSIONS AND PENETRATION SIZES AND LOCATIONS.
7. DIAMETER OF VALVES, FITTINGS AND APPURTENANCES SHALL MATCH DIAMETER OF CONNECTING PIPE.

NO.	DESCRIPTION	MANUFACTURER – MODEL NO.	PRESSURE CLASS (PSI)	TYPE	QTY
19	12"x8" TEE (DIP)	--	250	FLxFL	1
42	LOSS OF HEAD GAUGE & FILTER DRAIN DET 1, SHT CW1.20	--	-10–10	--	1

IHS Whiteriver Hospital

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SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

SHEET TITLE
EFFLUENT PIPING

DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100%
PHASE

CW1.06
SHEET NUMBER

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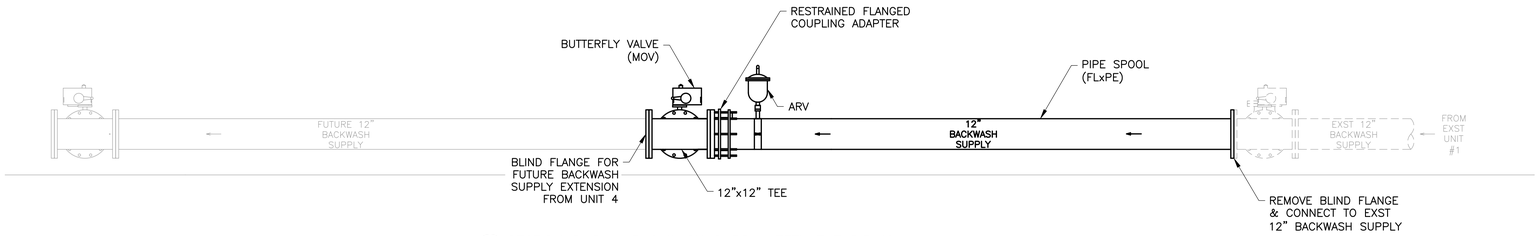
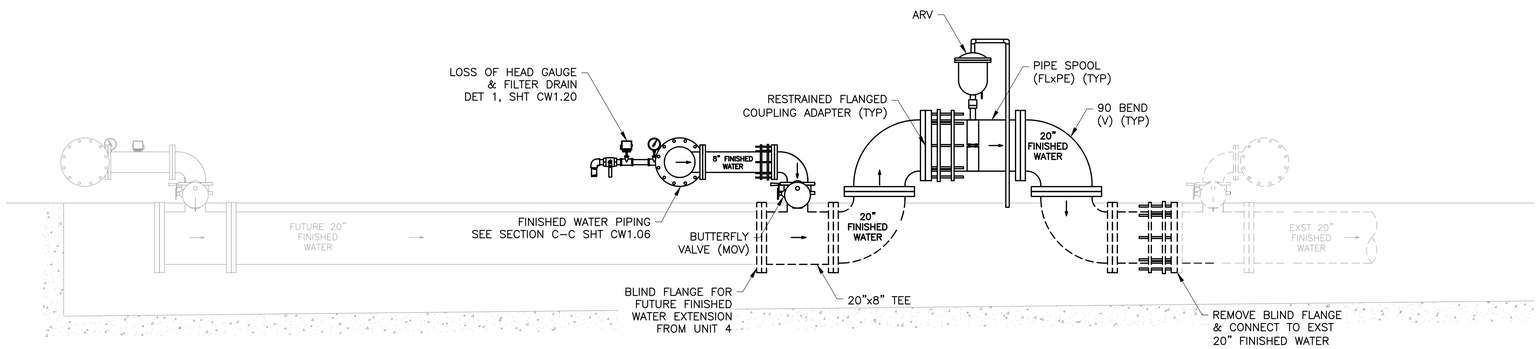
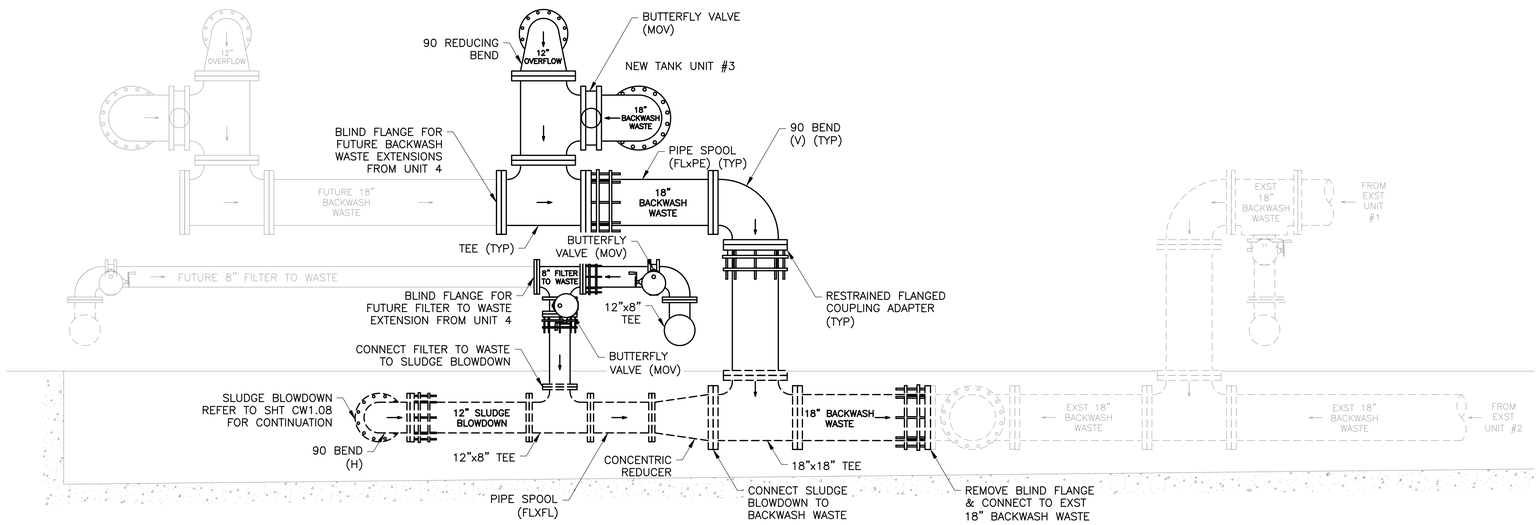


4 SECTION D–D – BACKWASH SUPPLY EFFLUENT PIPING
1"=2



5 SECTION E–E – FINISHED WATER EFFLUENT PIPING
1"=2



6 SECTION F–F – BACKWASH WASTE EFFLUENT PIPING
1"=2

NOTES:

1. EXISTING FEATURES ARE BASED ON AS–BUILT DIMENSIONS. CONTRACTOR SHALL CONFIRM EXACT LOCATIONS OF PIPING BY FIELD VERIFYING EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.
2. ISOLATE DISSIMILAR METALS.
3. PAINT ALL EXPOSED PIPING PER SPECIFICATIONS.
4. PIPE HANGERS AND SUPPORTS NOT SHOWN FOR CLARITY; LOCATE AND SPACE PIPE HANGERS AND SUPPORTS PER SPECIFICATIONS.
5. USE STAINLESS STEEL HARDWARE FOR MOUNTING PER SPECIFICATIONS.
6. REFER TO CONTRACTOR SHOP DRAWINGS FOR ACTUAL TANK DIMENSIONS AND PENETRATION SIZES AND LOCATIONS.
7. DIAMETER OF VALVES, FITTINGS AND APPURTENANCES SHALL MATCH DIAMETER OF CONNECTING PIPE.

IHS Whiteriver Hospital

200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

SHEET TITLE
EFFLUENT PIPING

DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100%
PHASE

CW1.07
SHEET NUMBER

G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-EFFLUENT FP.DWG
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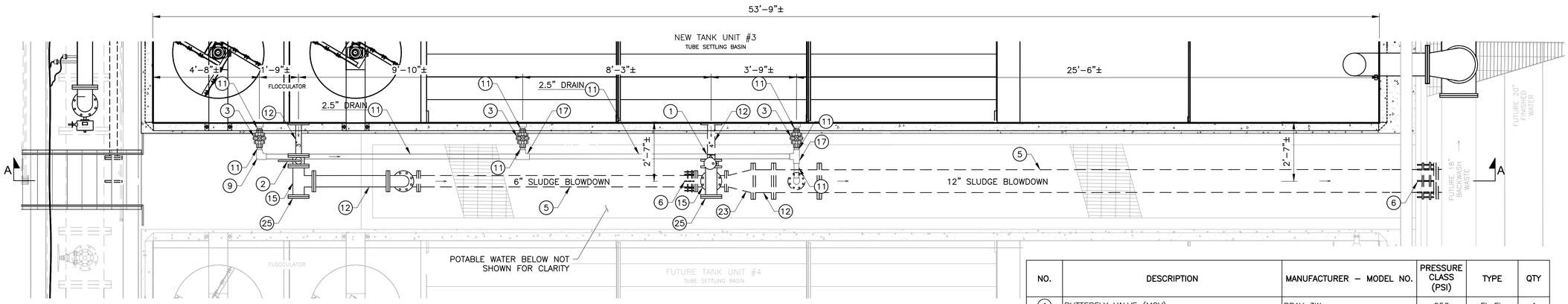
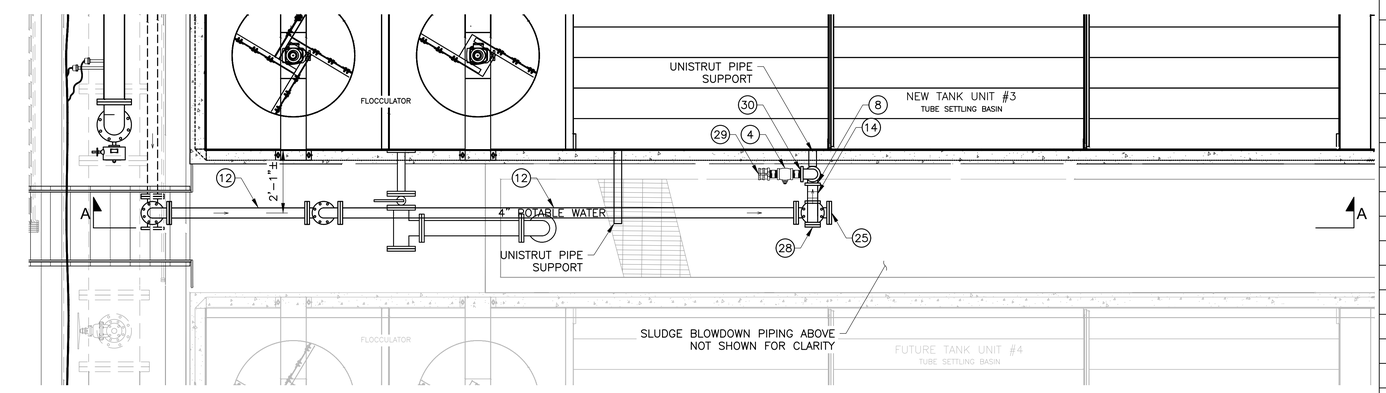


SLUDGE BLOWDOWN – ENLARGED PLAN

REFER TO SHT CW1.03 1"=2'



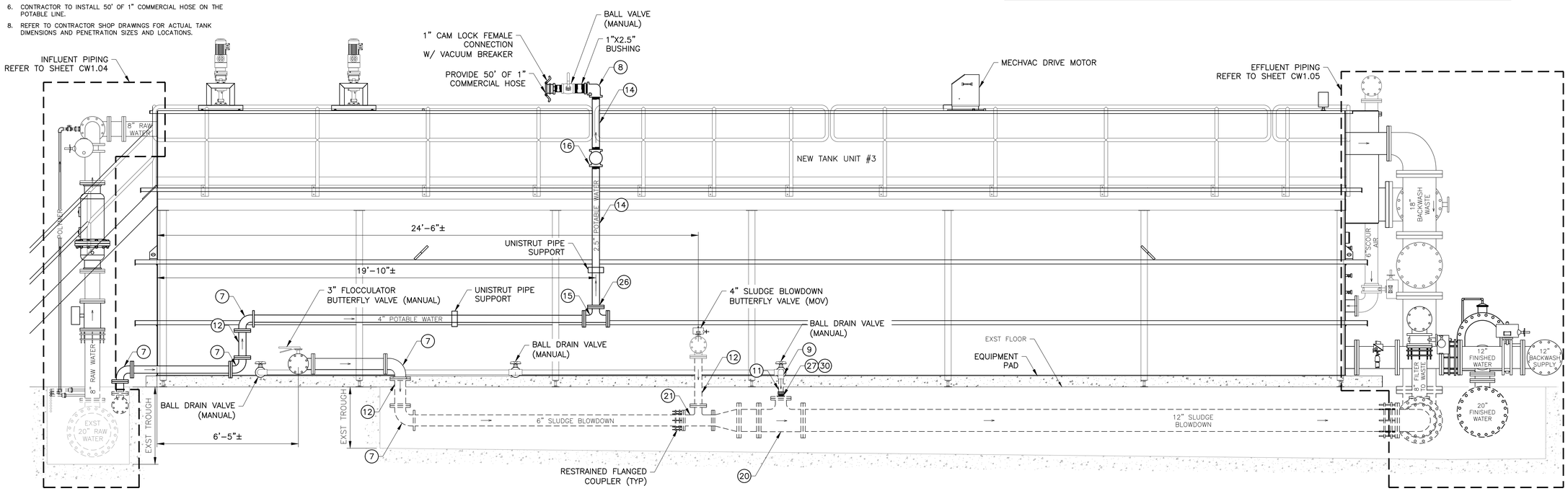
POTABLE WATER – ENLARGED PLAN

REFER TO SHT CW1.03 1"=2'

NO.	DESCRIPTION	MANUFACTURER – MODEL NO.	PRESSURE CLASS (PSI)	TYPE	QTY
1	BUTTERFLY VALVE (MOV)	BRAY 3W	250	FLxFL	1
2	BUTTERFLY VALVE (MANUAL)	BRAY 3W	250	FLxFL	1
3	BALL VALVE	--	250	PVC	3
4	BALL VALVE	--	250	BRASS	1
5	PIPE SPOOL (DIP)	--	250	FLxPE	2
6	RESTRAINED FLANGED COUPLING ADAPTER	ROMAC RFCA	250	FLxMJ	2
7	90° BEND (DIP)	--	250	FLxFL	5
8	90° BEND (STL)	--	250	THDxTHD	2
9	90° BEND (PVC)	--	250	PVC	2
11	PVC, SCH 80	--	250	PVC	10
12	PIPE SPOOL (DIP)	--	250	FLxFL	8
14	PIPE SPOOL (STL)	--	250	THDxTHD	3
15	TEE (DIP)	--	250	FLxFL	3
16	TEE (STL)	--	250	THDxTHD	1
17	TEE (PVC)	--	250	PVC	2
20	12"x6" TEE (DIP)	--	250	FLxFL	1
21	6"x4" TEE (DIP)	--	250	FLxFL	1
23	12"x6" CONCENTRIC REDUCER (DIP)	--	250	FLxFL	1
25	BLIND FLANGE (DIP)	--	250	FL	3
26	BLIND FLANGE W/2.5" THREADED TAP (DIP)	--	250	FLxTHD	1
27	BLIND FLANGE W/2" THREADED TAP (DIP)	--	250	FLxTHD	1
28	END CAP	--	--	THD	1
29	CAM LOCK FEMALE CONNECTION W/ VACUUM BREAKER	--	--	THD	1
30	BUSHING	--	--	THD	2

NOTES:

1. EXISTING FEATURES ARE BASED ON AS-BUILT DIMENSIONS. CONTRACTOR SHALL CONFIRM EXACT LOCATIONS OF PIPING BY FIELD VERIFYING EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.
2. ISOLATE DISSIMILAR METALS.
3. PAINT ALL EXPOSED PIPING PER SPECIFICATIONS.
4. PIPE HANGERS AND SUPPORTS NOT SHOWN FOR CLARITY; LOCATE AND SPACE PIPE HANGERS AND SUPPORTS PER SPECIFICATIONS.
5. USE STAINLESS STEEL HARDWARE FOR MOUNTING PER SPECIFICATIONS.
6. CONTRACTOR TO INSTALL 50' OF 1" COMMERCIAL HOSE ON THE POTABLE LINE.
8. REFER TO CONTRACTOR SHOP DRAWINGS FOR ACTUAL TANK DIMENSIONS AND PENETRATION SIZES AND LOCATIONS.



1 SECTION A–A – PW & SLUDGE BLOWDOWN

1"=2'

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

SHEET TITLE
PW & SLUDGE BLOWDOWN

DRAWN BY: KCR CHECKED BY: MJL

24034
PROJECT NUMBER

100% CW1.08
PHASE SHEET NUMBER

G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-MECH.DWG

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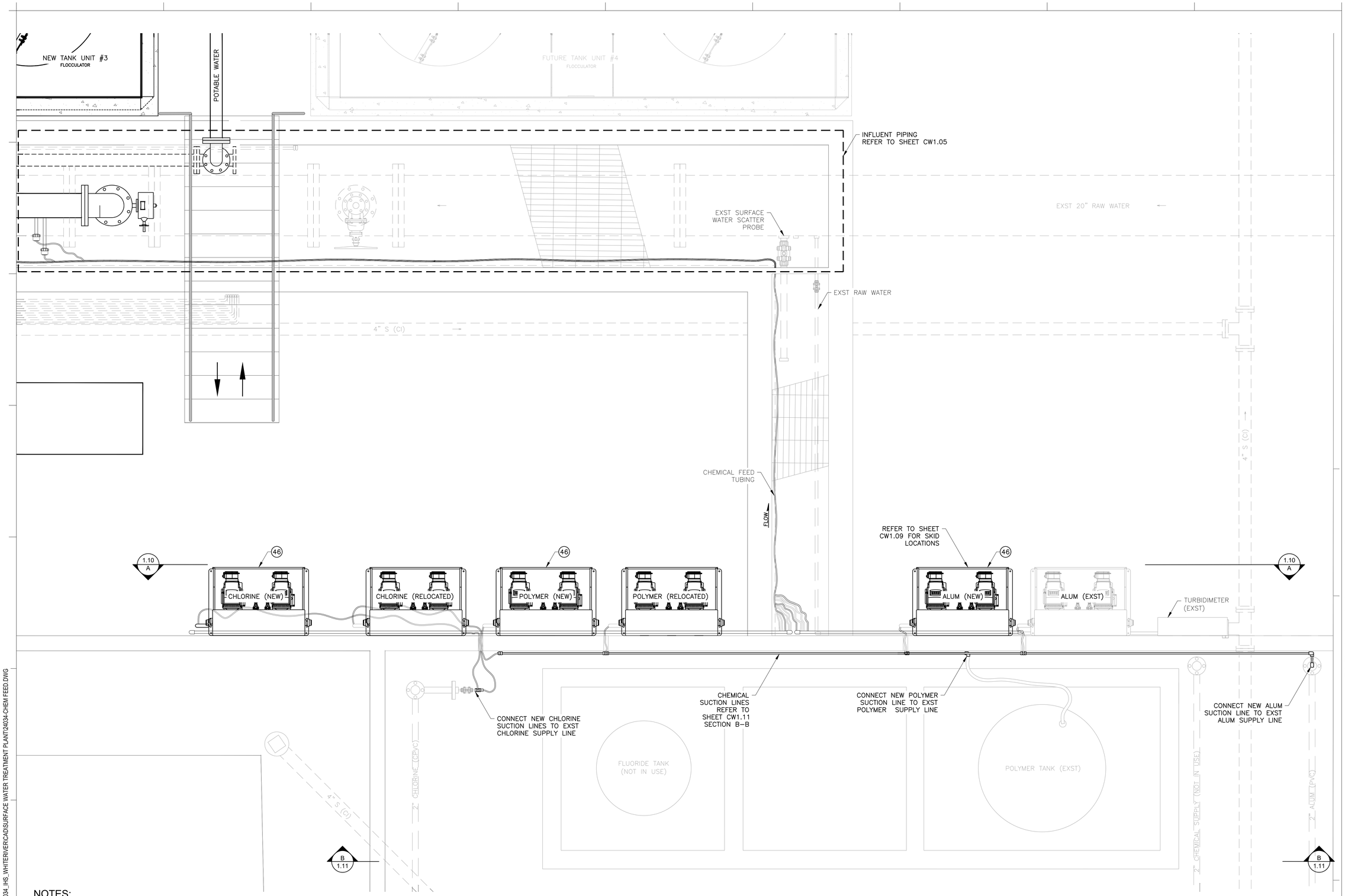

CHEMICAL FEED SYSTEMS – ENLARGED PLAN

REFER TO SHT CW1.03 1"=1'

NOTES:

EXISTING FEATURES ARE BASED ON AS–BUILT DIMENSIONS. EXACT LOCATION OF PIPING WILL BE DETERMINED BY EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.

NO.	DESCRIPTION	MANUFACTURER – MODEL NO.	PRESSURE CLASS (PSI)	TYPE	QTY
46	CHEMICAL SKID	FLOMOTION	––	––	3 EA

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

0' 2.5' 5' 10'
SCALE: 1"=5'

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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dibblecorp.com

ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil)
CERTIFICATE NO. 68119
MICHAEL LOGAN
Date Signed 03/09/26
ARIZONA U.S.A.

SHEET TITLE
CHEMICAL FEED SYSTEMS

DRAWN BY: KCR CHECKED BY: MJL

24034
PROJECT NUMBER

100% CW1.09
PHASE SHEET NUMBER

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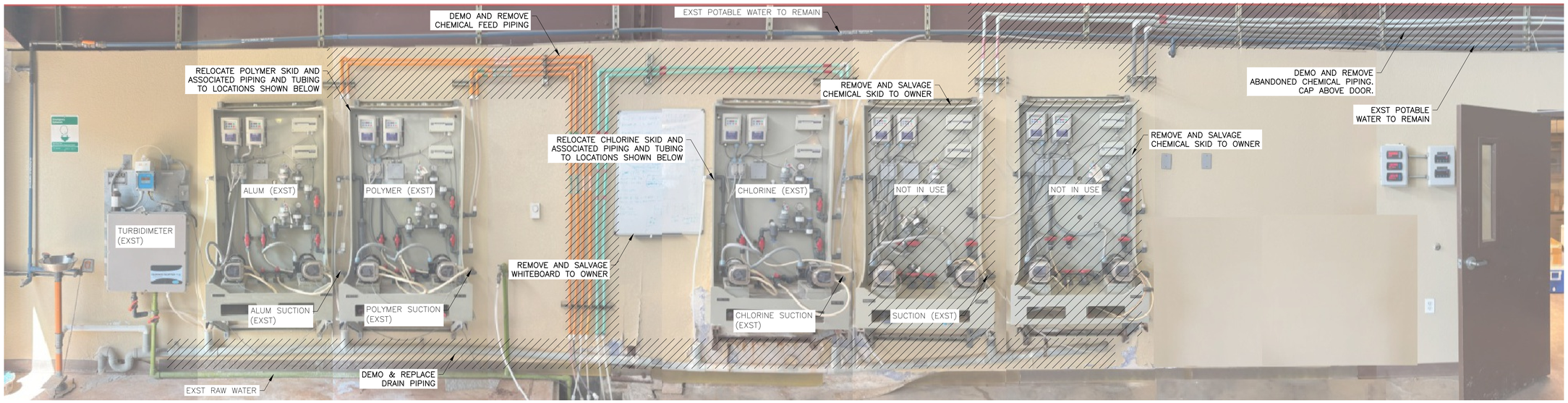
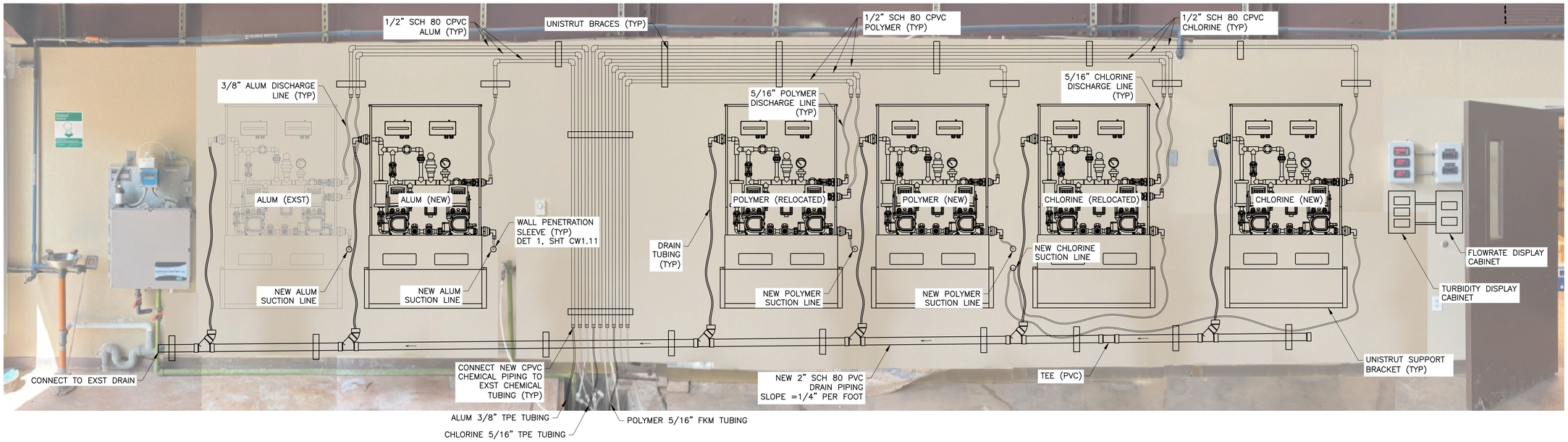
Plot Date: 2/26/2026 4:11 PM



1 SECTION A–A – DEMO CHEMICAL FEED SYSTEMS
REFER TO SHT CW1.09 1"=1'

NOTES:
1. LOCATE NEW AND RELOCATED SKIDS IN THE SAME FOOTPRINT AS EXISTING TO AVOID CONFLICTS WITH EXISTING WALL FEATURES.
2. CONTRACTOR TO PATCH DRYWALL AND MATCH TEXTURE. RECOAT WITH PAINT FROM CHANGE IN PLANE TO DOOR TO MATCH EXISTING COLOR AND SHEEN



NOTES:

1. EXISTING FEATURES ARE BASED ON AS–BUILT DIMENSIONS. EXACT LOCATION OF PIPING WILL BE DETERMINED BY EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.
2. CONTRACTOR TO INSTALL FLOWMOTION CHEMICAL FEED ASSEMBLIES IN ACCORDANCE WITH MFGR'S REQUIREMENTS, AND SHALL ALLOW FOR ADEQUATE SPACE BEHIND THE PANELS FOR TUBING AND PIPING INSTALLATION.
3. FLEXIBLE TUBING SHALL BE INSTALLED CONNECTING THE FEED ASSEMBLIES TO THE RIGID CPVC PIPE, AND THEN TO THE RESPECTIVE FILTER TRAIN.
4. CHEMICAL FEED TUBING SIZES SHALL BE AS FOLLOWS: ALUM 3/8", CHLORINE 5/16", POLYMER 5/16".
5. BALL VALVES INSTALLED ON CHLORINE SHALL BE EQUAL TO CHEMTROL BLEACH BALL VALVE BY NIBCO.
6. CHEMICAL RIGID PIPING SHALL BE CPVC WITH PRIMER PER ASTM F656 AND SOLVENT CEMENT PER ASTM F493.
7. ALUM AND CHLORINE CHEMICAL TUBING SHALL BE THERMOPLASTIC ELASTOMERE (TPE), NSF61 SANTOPRENE OR EQUAL. POLYMER CHEMICAL TUBING SHALL BE FLUOROELASTOMER (FKM), NSF61 VITON OR EQUAL. CHEMICAL TUBING SHALL BE RATED FOR 20 PSI WORKING PRESSURE.
8. PIPING AND TUBING COLOR CODING SHALL FOLLOW THE SCHEDULE OUTLINED IN THE SPECIFICATIONS.
9. DRAIN TUBING FROM FLOWMOTION ASSEMBLIES SHALL BE 3/8".

2 SECTION A–A – CHEMICAL FEED SYSTEMS
REFER TO SHT CW1.09 1"=1'

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

0' 2.5' 5' 10'
SCALE: 1"=5'

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

SMITHGROUP
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

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GOODYEAR, AZ 85395
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dibblecorp.com

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SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

SHEET TITLE
CHEMICAL FEED SYSTEMS

DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100%
PHASE

CW1.10
SHEET NUMBER

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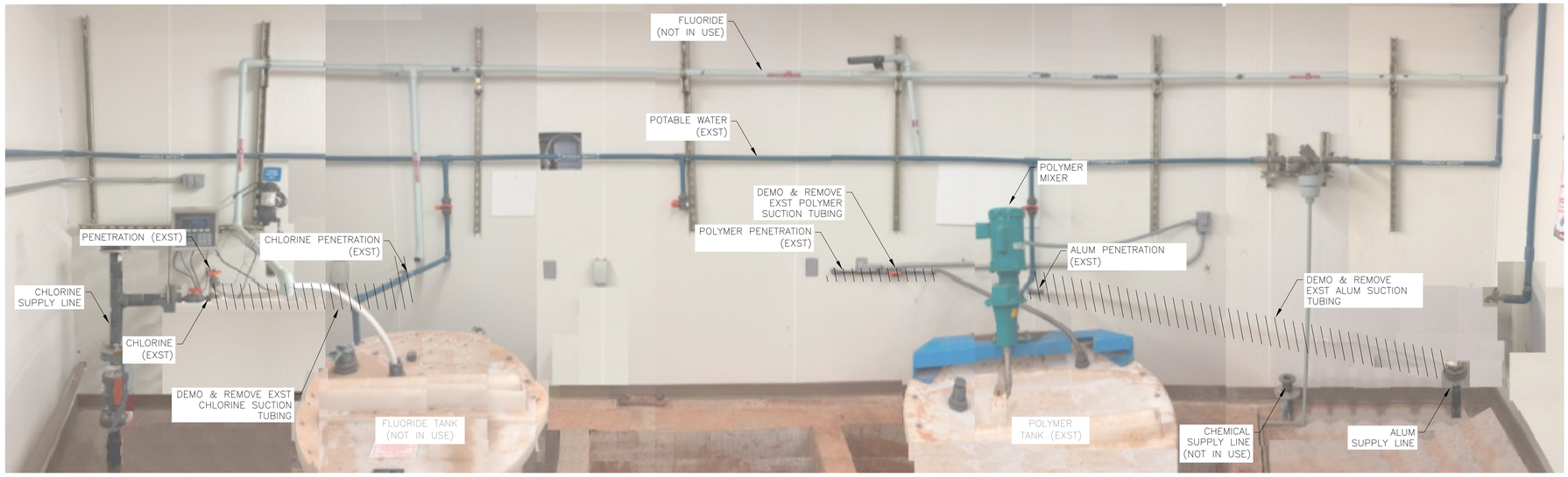
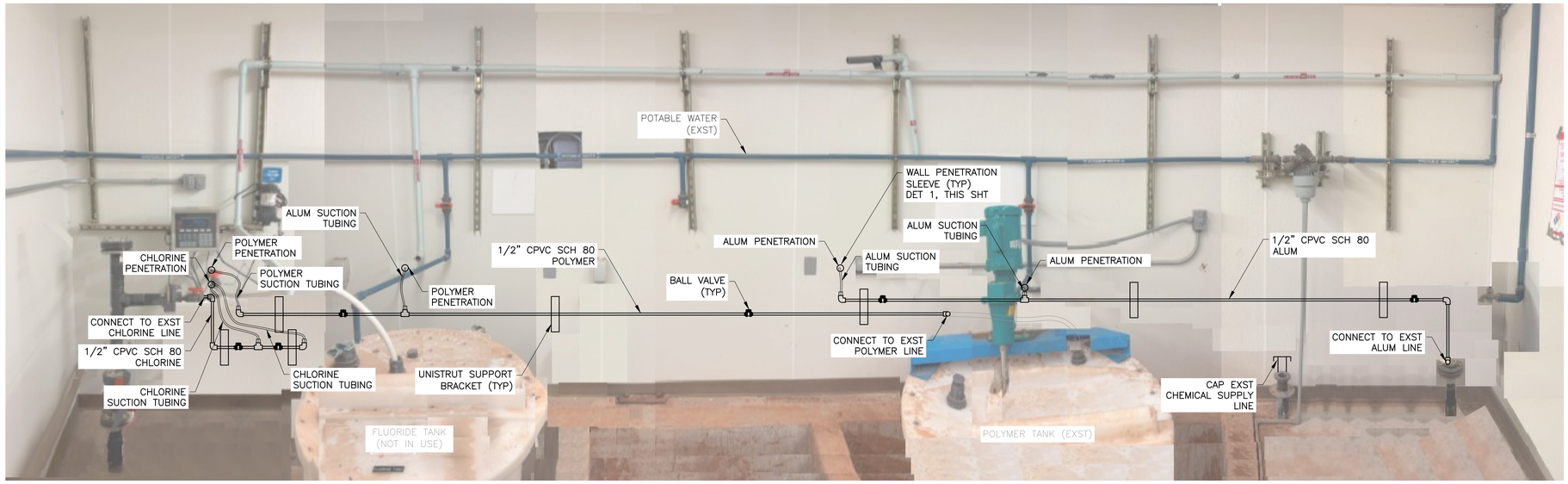


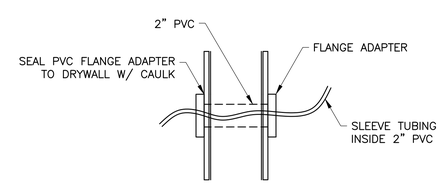
3 SECTION B–B – DEMO CHEMICAL FEED SYSTEMS
REFER TO SHT CW1.09 1"=1'



4 SECTION B–B – CHEMICAL FEED SYSTEMS
REFER TO SHT CW1.09 1"=1'

NOTES:

1. EXISTING FEATURES ARE BASED ON AS–BUILT DIMENSIONS. EXACT LOCATION OF PIPING WILL BE DETERMINED BY EXISTING FEATURES AND PENETRATIONS ON THE WATER TREATMENT UNIT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND MATERIALS PRIOR TO ORDERING AND INSTALLING MATERIAL.
2. CONTRACTOR TO INSTALL FLOWMOTION CHEMICAL FEED ASSEMBLIES IN ACCORDANCE WITH MFGR'S REQUIREMENTS, AND SHALL ALLOW FOR ADEQUATE SPACE BEHIND THE PANELS FOR TUBING AND PIPING INSTALLATION.
3. FLEXIBLE TUBING SHALL BE INSTALLED CONNECTING THE FEED ASSEMBLIES TO THE RIGID CPVC PIPE, AND THEN TO THE RESPECTIVE FILTER TRAIN.
4. CHEMICAL FEED TUBING SIZES SHALL BE AS FOLLOWS: ALUM 3/8", CHLORINE 5/16", POLYMER 5/16".
5. BALL VALVES INSTALLED ON CHLORINE SHALL BE EQUAL TO CHEMTROL BLEACH BALL VALVE BY NIBCO.
6. CHEMICAL RIGID PIPING SHALL BE CPVC WITH PRIMER PER ASTM F656 AND SOLVENT CEMENT PER ASTM F493.
7. ALUM AND CHLORINE CHEMICAL TUBING SHALL BE THERMOPLASTIC ELASTOMERE (TPE), NSF61 SANTOPRENE OR EQUAL. POLYMER CHEMICAL TUBING SHALL BE FLUOROELASTOMER (FKM), NSF61 VITON OR EQUAL. CHEMICAL TUBING SHALL BE RATED FOR 20 PSI WORKING PRESSURE.
8. PIPING AND TUBING COLOR CODING SHALL FOLLOW THE SCHEDULE OUTLINED IN THE SPECIFICATIONS.
9. DRAIN TUBING FROM FLOWMOTION ASSEMBLIES SHALL BE 3/8".



1 WALL SLEEVE PENETRATION
NTS

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

0' 2.5' 5' 10'
SCALE: 1"=5'

IHS Whiteriver Hospital
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SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil)
CERTIFICATE NO. 68119
MICHAEL LOGAN
Date Signed 02/26/26
ARIZONA U.S.A.

SHEET TITLE
CHEMICAL FEED SYSTEMS

DRAWN BY: KCR CHECKED BY: MJL

24034
PROJECT NUMBER

100% CW1.11
PHASE SHEET NUMBER

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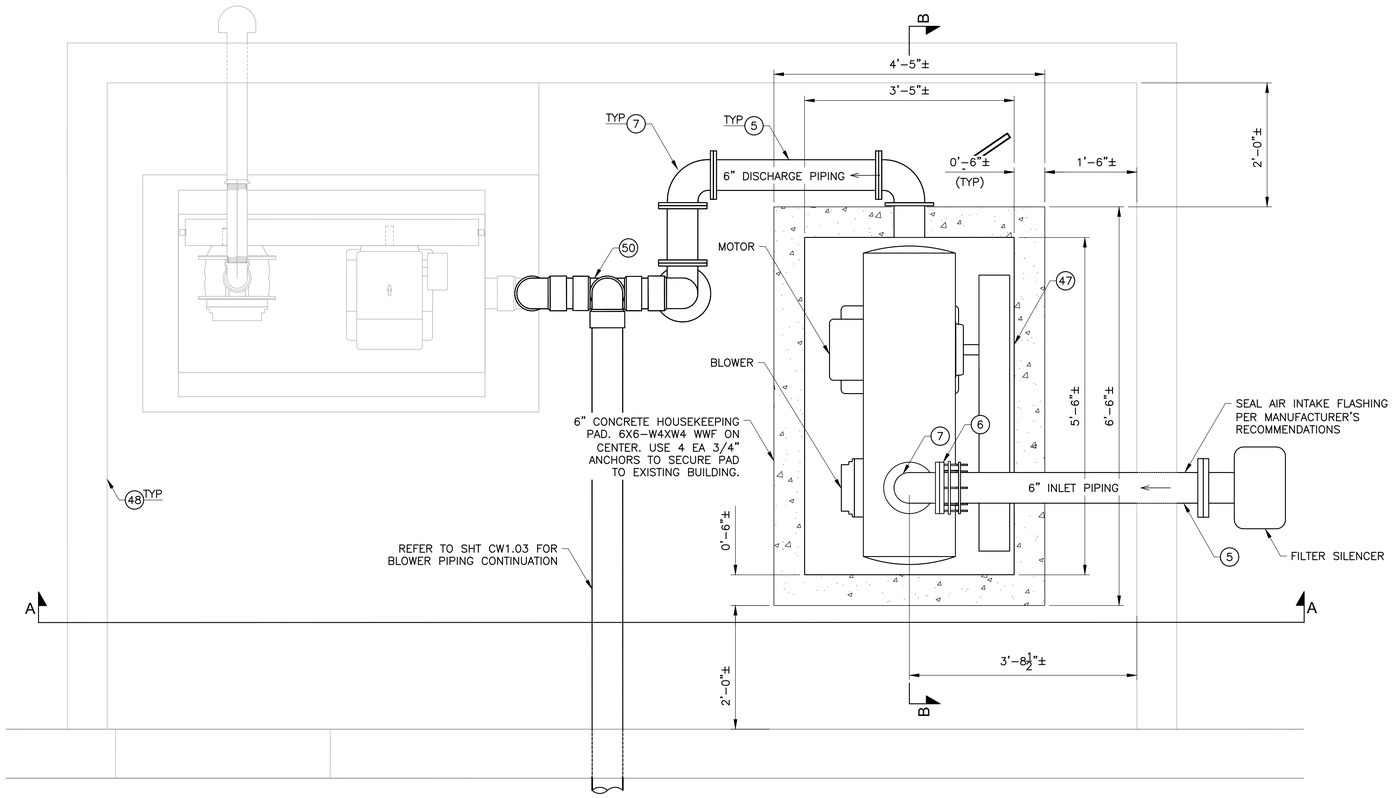


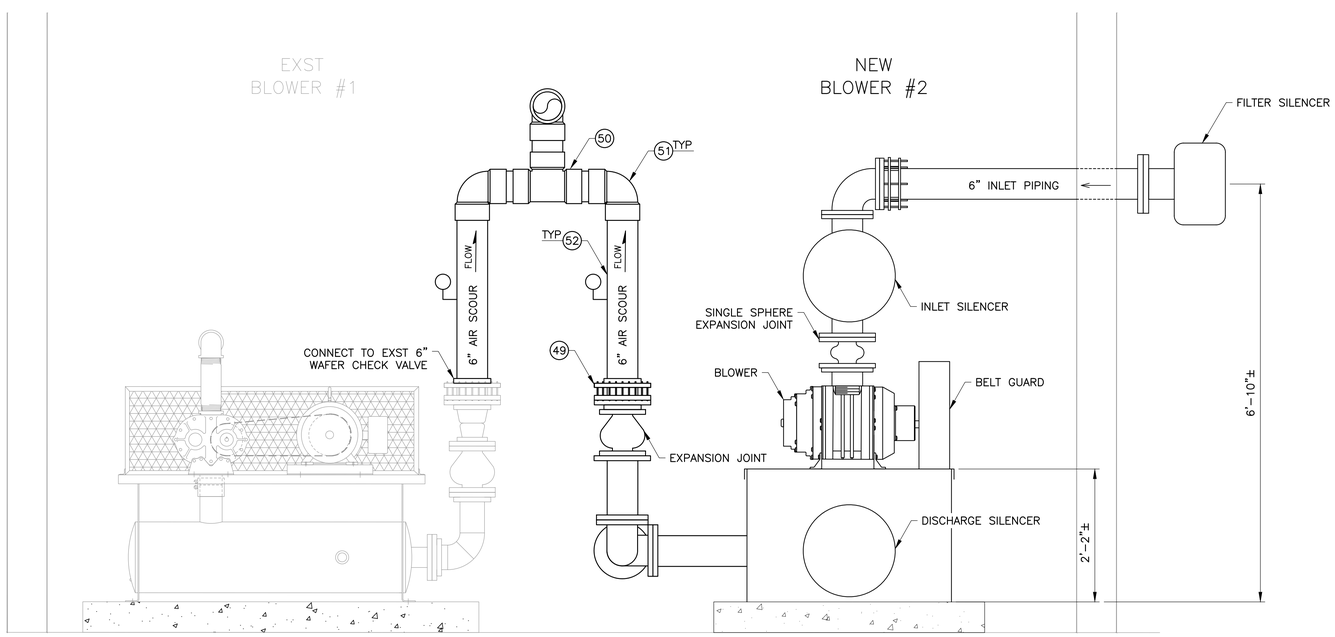
BLOWER – ENLARGED PLAN

REFER TO SHT CW1.03 1"=1'

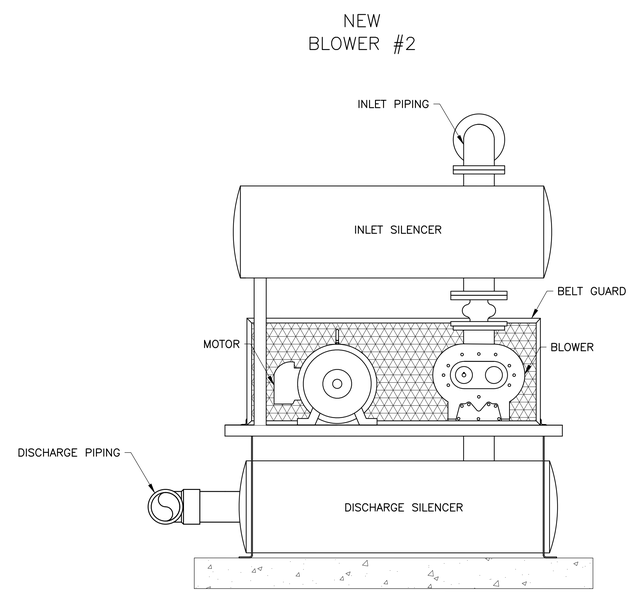
NO.	DESCRIPTION	MANUFACTURER – MODEL NO.	PRESSURE CLASS (PSI)	TYPE	QTY
5	PIPE SPOOL (DIP)	--	250	FLxPE	5
6	RESTRAINED FLANGED COUPLING ADAPTER	ROMAC RFCA	250	FLxMJ	1
7	90° BEND (DIP)	--	250	FLxFL	4
47	BLOWER ASSEMBLY SKID	SUTORBILT 6L BLOWER OR APPROVED EQUIVALENT 704 SCFM @ 5 PSIG	--	--	1
48	2" ACOUSTIC PANELS – COVER 50% OF WALLS AND CEILINGS IN BLOWER ROOM	OWENS CORNING 703	--	--	LS
49	WAFER STYLE CHECK VALVE	--	250	--	1
50	TEE (CPVC, SCH 80)	--	--	--	1
51	90° BEND (CPVC)	--	--	--	3
52	CPVC, SCH 80	--	--	--	6

NOTES:

1. CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO INSTALLING MECHANICAL PIPING. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF PIPING BY CONNECTING TO EXST SCOUR AIR PIPING AND BLOWER ASSEMBLY PENETRATIONS.
2. SUPPORT PIPE FROM CEILING WITH HANGERS.
3. ANCHOR NEW BLOWER TO CONCRETE HOUSEKEEPING PAD PER MANUFACTURER'S RECOMMENDATIONS.
4. EXST BLOWER PVC PIPING TO BE REMOVED & REPLACED WITH CPVC FROM THE EXST BLOWER CHECK VALVE TO THE CONNECTION TO DIP AT FILTER UNIT 1. CONTRACTOR TO COORDINATE WITH MAINTENANCE STAFF TO MAINTAIN BLOWER OPERATION DURING CONSTRUCTION. TEMPORARY PIPING MAY BE REQUIRED. REFER TO MOPO SPECIFICATIONS (SHT CW1.01).
5. CONTRACTOR TO COORDINATE WITH WMATUA OPERATIONS ON ACOUSTIC PANEL LOCATIONS PRIOR TO INSTALLING THE PANELS.



1 SECTION A–A – BLOWER
1"=1'



2 SECTION B–B – BLOWER
1"=1'

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

SHEET TITLE
BLOWER

DRAWN BY: KCR CHECKED BY: MJL

24034
PROJECT NUMBER

100% CW1.12
PHASE SHEET NUMBER

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2/26/2026 4:10 PM
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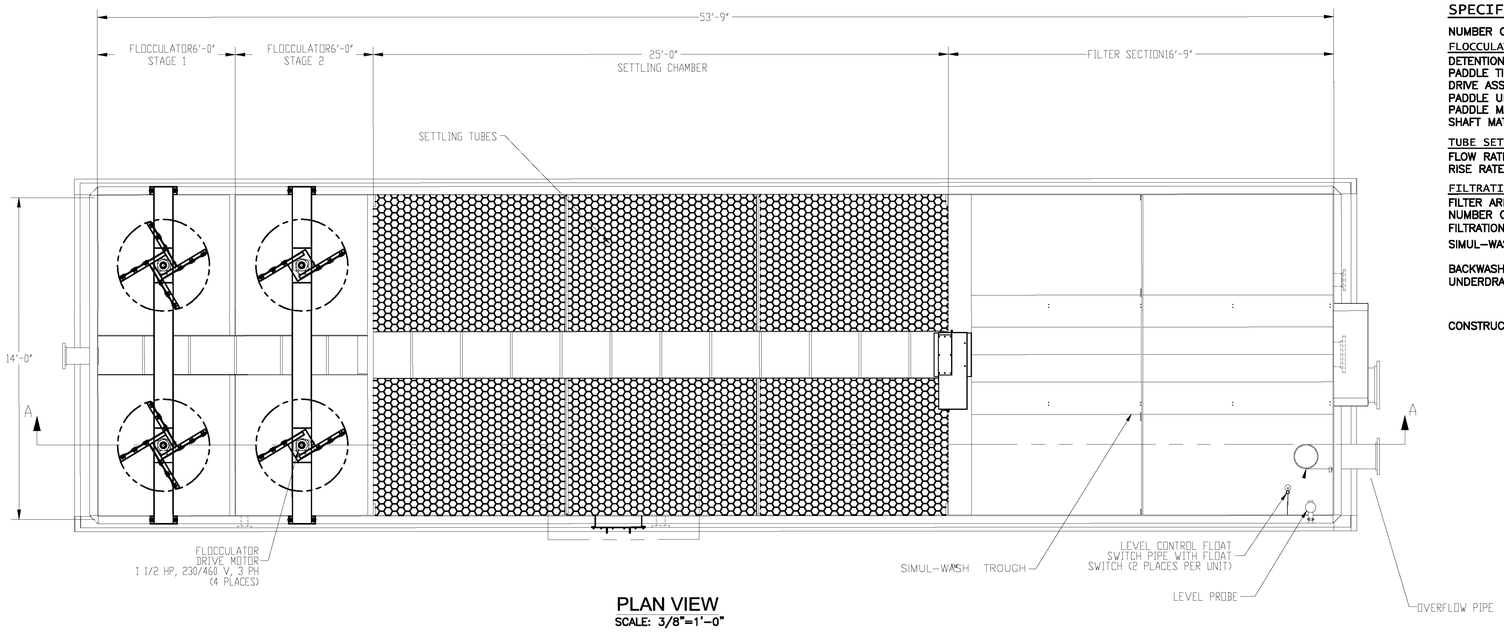
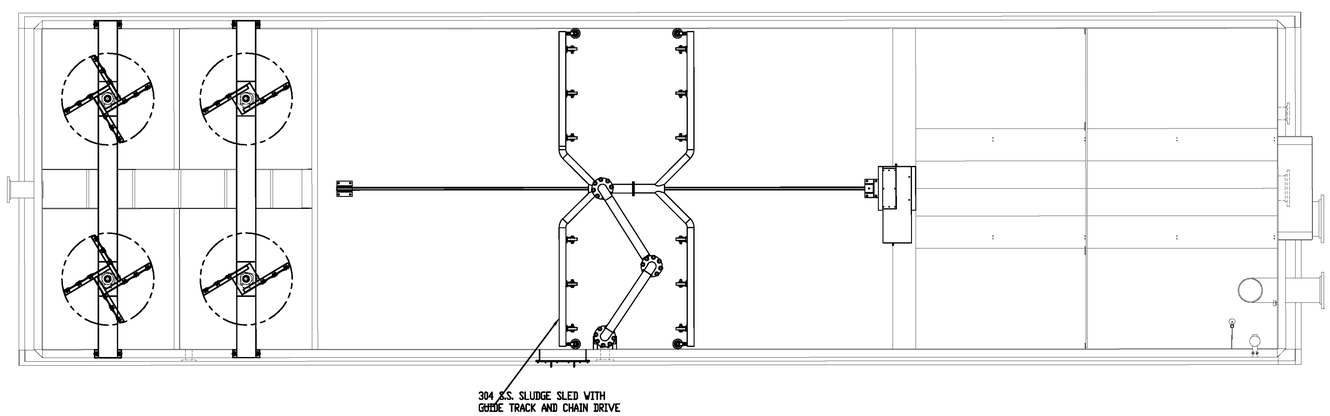


PLAN VIEW

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



SLUDGE REMOVAL SYSTEM PLAN VIEW

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

SPECIFICATIONS

NUMBER OF VESSELS:	ONE (1)
FLOCCULATOR:	
DETENTION TIME:	30 MINUTES AT 400 GPM/UTS
PADDLE TIP VELOCITY:	< 2 FPS
DRIVE ASSEMBLY:	EURODRIVE PARALLEL HELICAL TYPE
PADDLE UNIT DIAMETER:	(4) 4'-0" DIA.
PADDLE MATERIAL:	1/4" STEEL FLAT BAR
SHAFT MATERIAL:	CRS STEEL SHAFTING
TUBE SETTLING BASIN:	
FLOW RATE:	700 GPM
RISE RATE:	2.0 GPM/SF
FILTRATION CELL:	
FILTER AREA:	234.5 SQ. FT./UTS
NUMBER OF CELLS:	(1) ONE/UTS
FILTRATION RATE:	700 GPM (3.0 GPM/SQ. FT.)
SIMUL-WASH RATE:	WATER: 1,173 GPM (5 GPM/SQ. FT.) AIR: 679 CFM (3 CFM/SQ. FT.)
BACKWASH RATE:	3,517.5 GPM (15 GPM/SQ. FT.)
UNDERDRAIN:	TONKA STANDARD PVC HEADER/LATERAL UNDERDRAIN ASSEMBLY WITH TONKA ABS DIFFUSER NOZZLES ON 12" CENTERS
CONSTRUCTION:	SIDEWALL – 1/4" STEEL TANK BOTTOM – 3/8" STEEL

SUPPORT GRAVELS:
4" – 3/4" x 1/2" GRADED GRAVEL
4" – 1/2" x 1/4" GRADED GRAVEL
4" – 1/4" x 1/8" GRADED GRAVEL
3" – 0.8–1.2 mm TORPEDO GARNET SAND
3" – 0.35–0.45 mm GARNET SAND

FILTER MEDIA:
18" – 0.45–0.55mm SILICA SAND WITH A UNIFORMITY COEFFICIENT OF LESS THAN 1.6
12" – 0.8–1.0mm ANTHRACITE WITH A UNIFORMITY COEFFICIENT OF LESS THAN 1.6

VESSEL DETAILS

(SEE DRAWING 154415 FOR STAIR AND WALKWAY DETAILS)

DRAWING SIZE: D

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DRAWN BY: MRR	START DATE: 10/22/2025
PROJECT MGR: NRB	DWG. SCALE: AS NOTED
APPR. BY:	APPR. DATE:

UTS™
14'-0" WIDE X 53'-9" LONG X 12'-0" HIGH
PROPOSAL DRAWING
WHITERIVER, AZ

SHEET NUMBER: 1 OF 3 REV: 0
DRAWING NUMBER: 154414
PROJECT NUMBER: 23409

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 Arizona U.S.A.

SHEET TITLE

SHOP DRAWINGS

DRAWN BY: KCR CHECKED BY: MJL

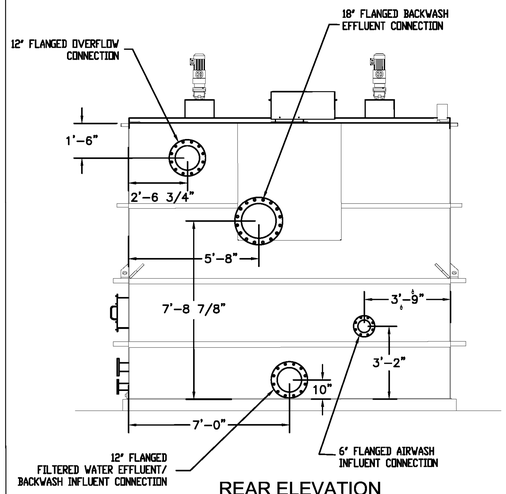
24034
PROJECT NUMBER

100% CW1.13
PHASE SHEET NUMBER

Plot Date: 3/4/2026 3:47 PM G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-SHOP DRAWINGS.DWG

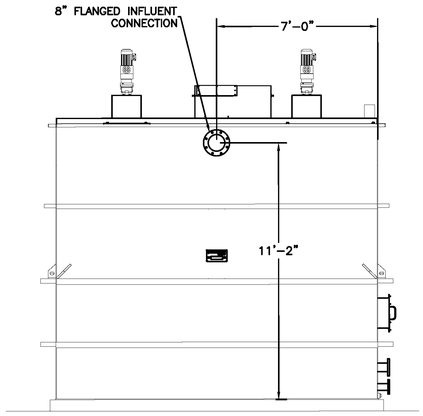
VALVES SUPPLIED AND SHIPPED LOOSE BY TONKAWATER - ALL FACEPIPING AND FACEPIPING DESIGN AND INSTALLATION BY ENGINEER/INSTALLING CONTRACTOR

ENGINEER VERIFY ALL NOZZLE LOCATIONS

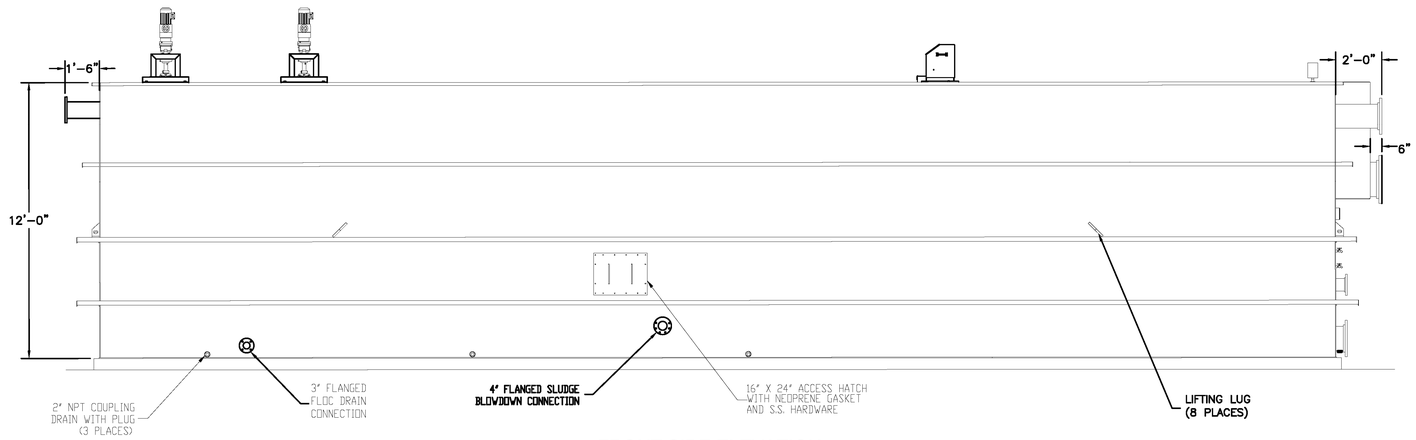


REAR ELEVATION
SCALE: 3/8"=1'-0"

REAR SIDE ELEVATION
SCALE: 3/8"=1'-0"



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



FRONT SIDE ELEVATION
SCALE: 3/8"=1'-0"

VESSEL DETAILS

(SEE DRAWING 154415 FOR STAIR AND WALKWAY DETAILS)

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PROJECT MGR: NRB	DWG. SCALE: AS NOTED		DRAWING NUMBER: 154414
APPR. BY:	APPR. DATE:		PROJECT NUMBER: 23409

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

SHEET TITLE

SHOP DRAWINGS

DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100%
PHASE

CW1.14
SHEET NUMBER

G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-SHOP DRAWINGS.DWG

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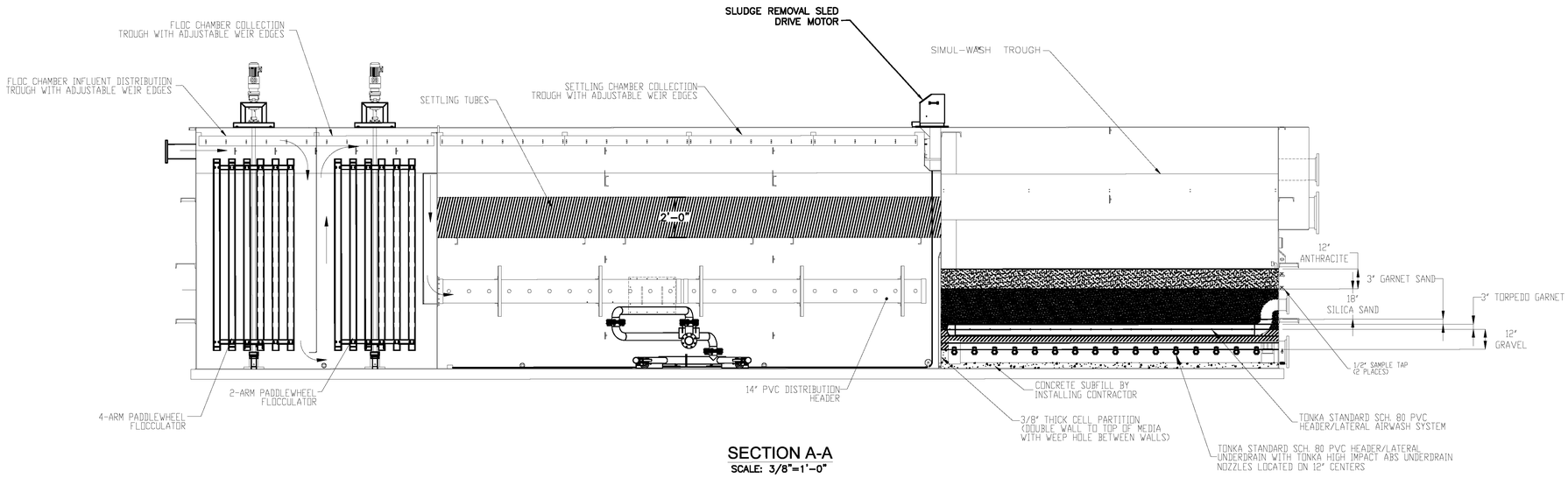
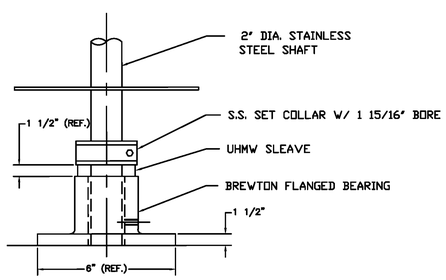


SECTION A-A
SCALE: 3/8"=1'-0"



WATER LUBRICATED BEARING DETAIL
SCALE: NONE

VESSEL DETAILS
(SEE DRAWING 154415 FOR STAIR AND WALKWAY DETAILS)

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PROJECT MGR: NRB	DWG. SCALE: AS NOTED		REV: 0
APPR. BY:	APPR. DATE:		DRAWING NUMBER: 154414
			PROJECT NUMBER: 23409

IHS Whiteriver Hospital

200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

SHEET TITLE

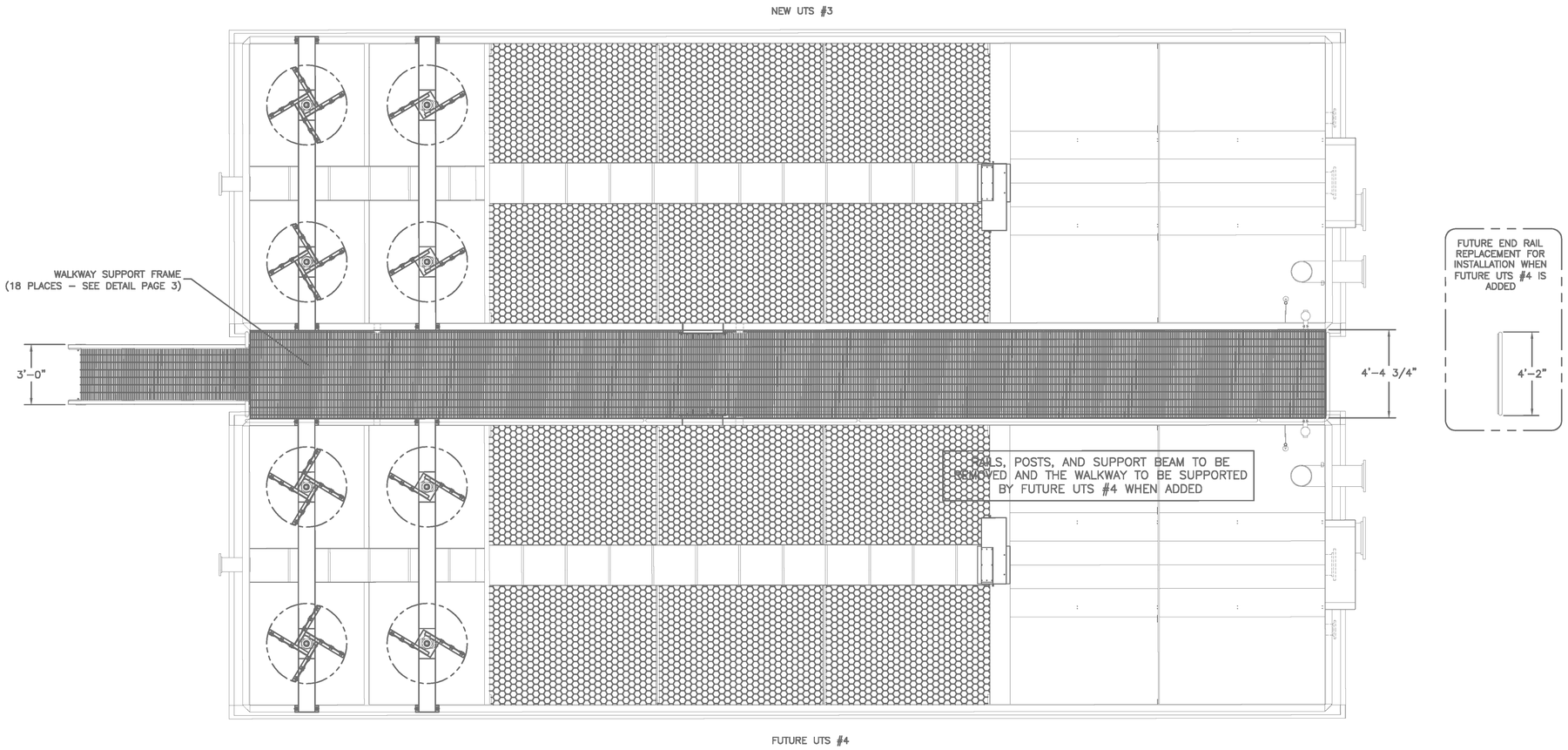
SHOP DRAWINGS

DRAWN BY: KCR CHECKED BY: MJL

24034
PROJECT NUMBER

100% CW1.15
PHASE SHEET NUMBER

Plot Date: 3/4/2026 3:52 PM G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-SHOP DRAWINGS.DWG



PLAN VIEW
SCALE: 3/8"=1'–0"

VESSEL WITH STAIR AND WALKWAY DETAILS

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DRAWN BY: MRR / START DATE: 11/3/2025	UTS™ 14'-0" WIDE X 53'-9" LONG X 12'-0" HIGH PROPOSAL DRAWING WHITERIVER, AZ	SHEET NUMBER: 1 OF 4	REV: 0
PROJECT MGR: NRB / DWG. SCALE: AS NOTED		DRAWING NUMBER: 154415	PROJECT NUMBER: 23409
APPR. BY: / APPR. DATE:			

IHS Whiteriver Hospital

200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

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SHEET TITLE

SHOP DRAWINGS

DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100% CW1.16
PHASE SHEET NUMBER

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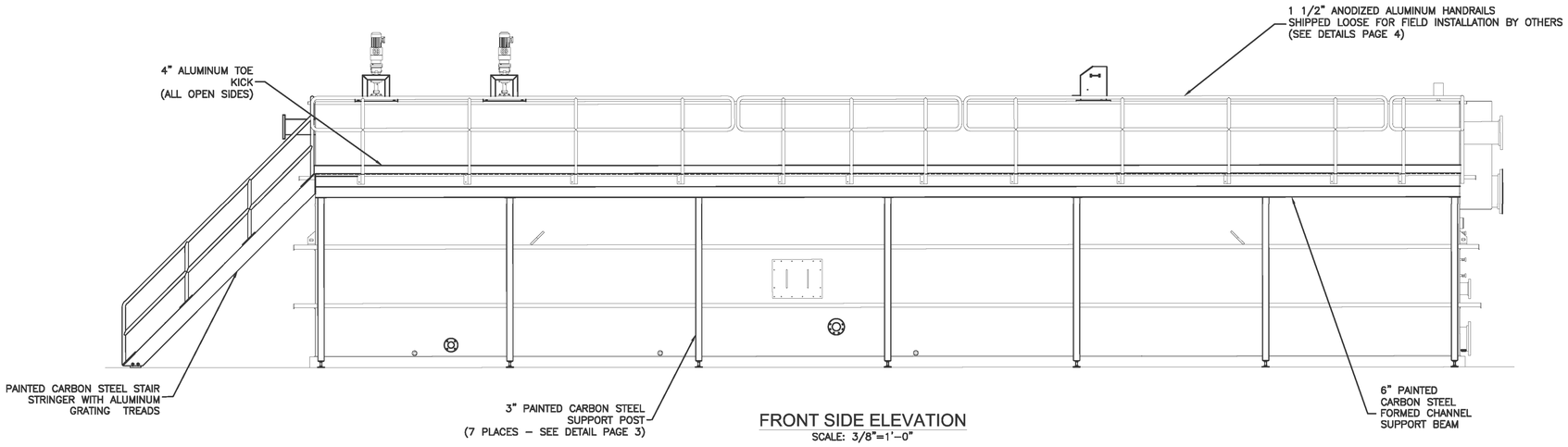
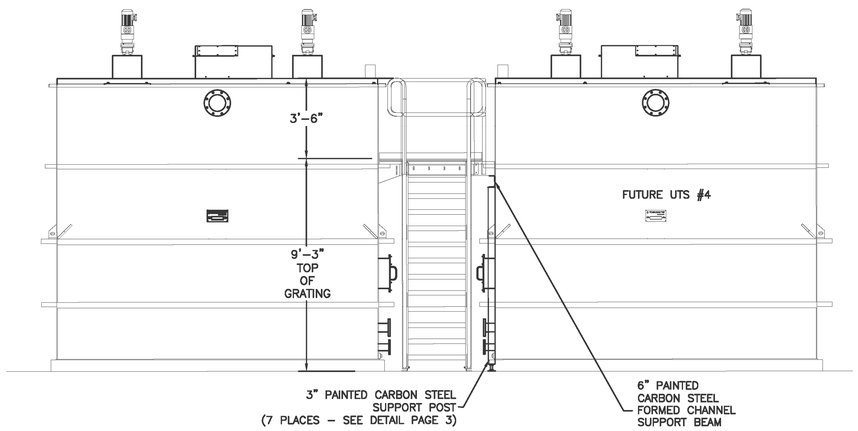


FRONT SIDE ELEVATION
SCALE: 3/8"=1'–0"

RAILS, POSTS, AND SUPPORT BEAM TO BE REMOVED AND THE WALKWAY TO BE SUPPORTED BY FUTURE UTS #4 WHEN ADDED



FRONT ELEVATION
SCALE: 3/8"=1'–0"

VESSEL WITH STAIR AND WALKWAY DETAILS

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PROJECT MGR: NRB	DWG. SCALE: AS NOTED		REV: 0
APPR. BY:	APPR. DATE:		DRAWING NUMBER: 154415
			PROJECT NUMBER: 23409

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Plot Date: 3/4/2026 3:55 PM

IHS Whiteriver Hospital

200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

Registered Professional Engineer (Civil) 68119 MICHAEL LOGAN Date Signed 03/09/26 Arizona U.S.A.

SHEET TITLE

SHOP DRAWINGS

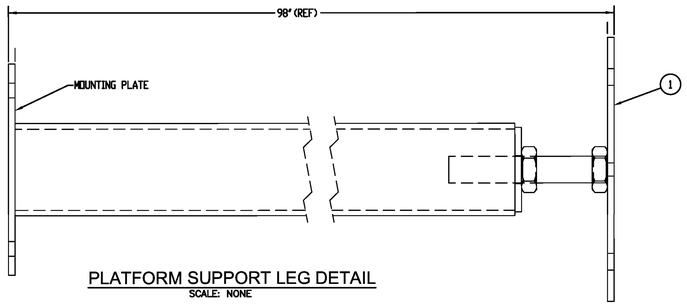
DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100%
PHASE

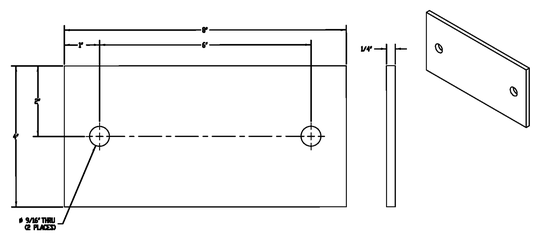
CW1.17
SHEET NUMBER

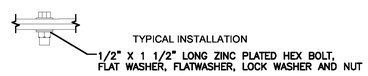
ITEM NO.	QTY.	DESCRIPTION	STOCK SIZE	LENGTH	WIDTH	HEIGHT
1	7	FOOT, PLATFORM LEG		10"	4"	6 1/4"
2	7	LEG, PLATFORM	3"	92"		
3	7	MOUNTING PLATE, PLATFORM LEG		8"	4"	



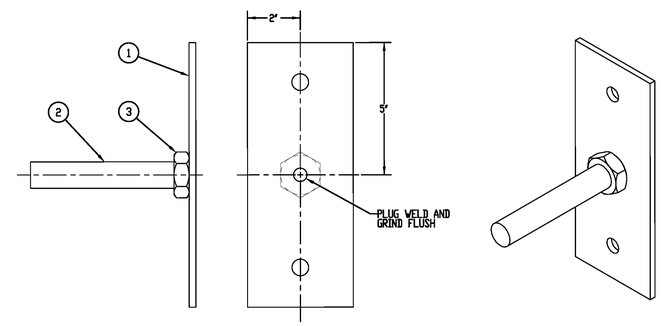
PLATFORM SUPPORT LEG DETAIL
SCALE: NONE

ITEM NO.	QTY.	DESCRIPTION	O.D.	STOCK SIZE	THICKNESS	LENGTH	WIDTH	MATERIAL
1	7	PLATE, PLATFORM LEG BASE			1/4"	10"	4"	SA36 CARBON STEEL
2	7	ROD, THREADED	1"	1-8		6"		B7 CARBON STEEL
3	7	NUT, HEX JAM		1-8				CARBON STEEL



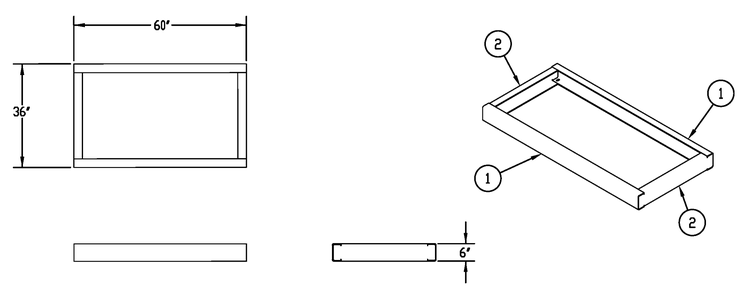


PLATFORM LEG MOUNTING PLATE DETAIL
SCALE: NONE



PLATFORM LEG BASE PLATE DETAIL
SCALE: NONE

ITEM NO.	QTY.	DESCRIPTION	THICKNESS	LENGTH	WIDTH	HEIGHT	MATERIAL
1	36	CHANNEL, FORMED SUPPORT	1/4"	60"	6"	3"	SA36 CARBON STEEL
2	36	CHANNEL, FORMED SUPPORT	1/4"	36"	6"	3"	SA36 CARBON STEEL



PLATFORM STRUCTURAL FRAME DETAILS

DRAWING SIZE: D

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PROJECT MGR: NRB	DWG. SCALE: AS NOTED	
APPR. BY:	APPR. DATE:	

SHEET NUMBER: 3 OF 4 REV: 0
DRAWING NUMBER: 154415
PROJECT NUMBER: 23409

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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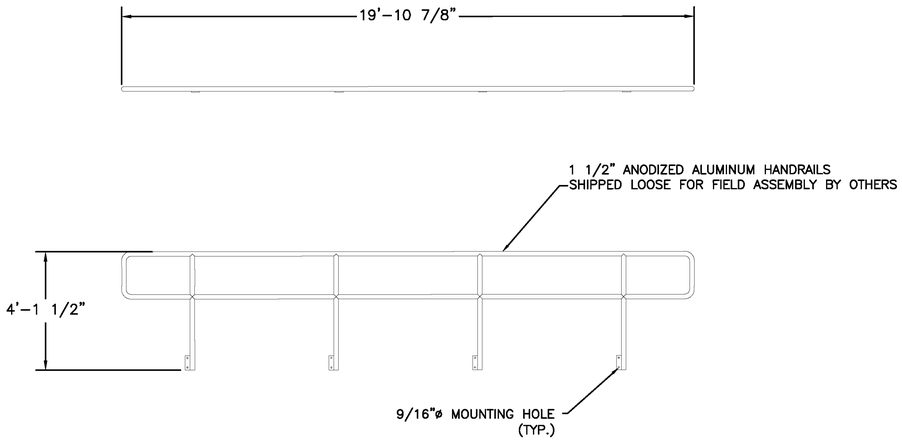
SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

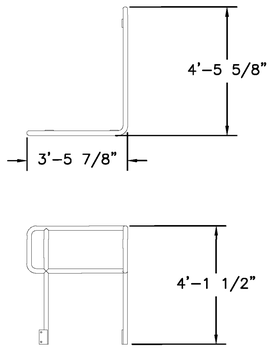
SHEET TITLE
SHOP DRAWINGS

DRAWN BY: KCR CHECKED BY: MJL
24034
PROJECT NUMBER
100% CW1.18
PHASE SHEET NUMBER

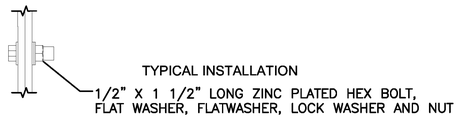
Plot Date: 3/4/2026 3:56 PM G:\2024\1024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-SHOP DRAWINGS.DWG

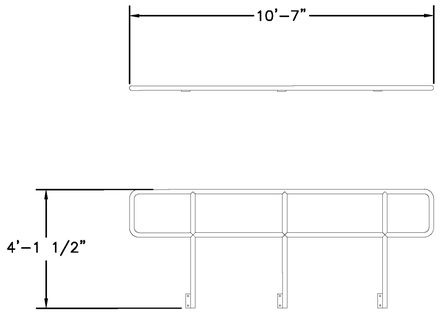


PLATFORM HANDRAIL #1 DETAIL
SCALE: NONE



PLATFORM HANDRAIL #3 DETAIL
SCALE: NONE





PLATFORM HANDRAIL #2 DETAIL
SCALE: NONE

PLATFORM HANDRAIL DETAIL

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PROJECT MGR: NRB / DWG. SCALE: AS NOTED		DRAWING NUMBER: 154415	PROJECT NUMBER: 23409
APPR. BY: / APPR. DATE:			

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
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SEALS AND SIGNATURES

SHEET TITLE

SHOP DRAWINGS

DRAWN BY: KCR
CHECKED BY: MJL

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PROJECT NUMBER

100% — PHASE
CW1.19 — SHEET NUMBER

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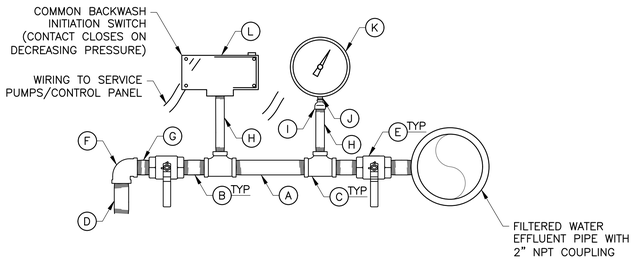
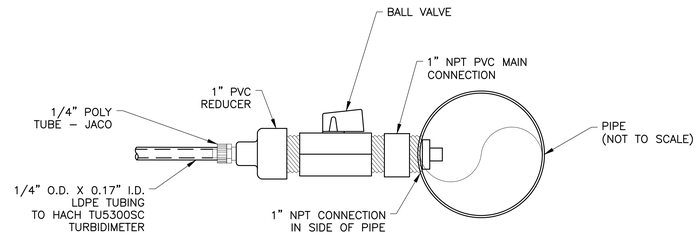
Plot Date: 3/4/2026 3:56 PM



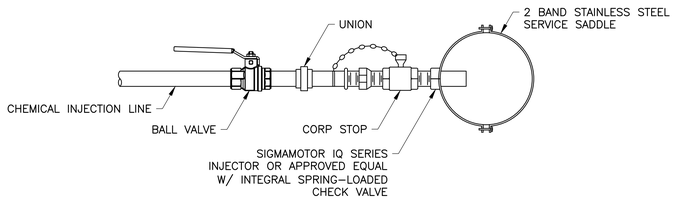
FRONT VIEW

A. 2" X 6" THREADED NIPPLE
B. 2" X 1-1/2" LONG THREADED NIPPLE
C. 2" X 1/2" TEE (FEMALE)
D. 2" SAMPLE COCK
E. 2" BRASS BALL VALVE
F. 2" 90° BEND (FEMALE)
G. 2" CLOSE NIPPLE
H. 1/4" THREADED NIPPLE
I. 1/4" CLOSE NIPPLE
J. 1/2" X 1/4" BRASS REDUCER COUPLING
K. LOSS OF HEAD GAUGE 4-1/2" DIA. WIKA #212.34 -10-10 PSI OR EQUAL
L. UE PRESSURE SWITCH 0-20 PSI: J400-453

1 LOSS OF HEAD GAUGE & FILTER DRAIN ASSEMBLY
SCALE: NTS



2 TURBIDIMETER PIPE CONNECTION DETAIL
SCALE: NTS



NOTES:
1. VERIFY INJECTION QUILL MATERIALS FOR CHEMICAL COMPATIBILITY PRIOR TO ORDERING MATERIALS.
2. PRESSURE RATING: 150 PSI.

3 CHEMICAL SOLUTION INJECTOR
SCALE: NTS

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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dibblecorp.com

ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

Registered Professional Engineer (Civil) CERTIFICATE NO. 68119 MICHAEL LOGAN Date Signed 03/09/26 ARIZONA U.S.A.

SHEET TITLE
DETAILS

DRAWN BY: KCR
CHECKED BY: MJL

24034
PROJECT NUMBER

100%
PHASE

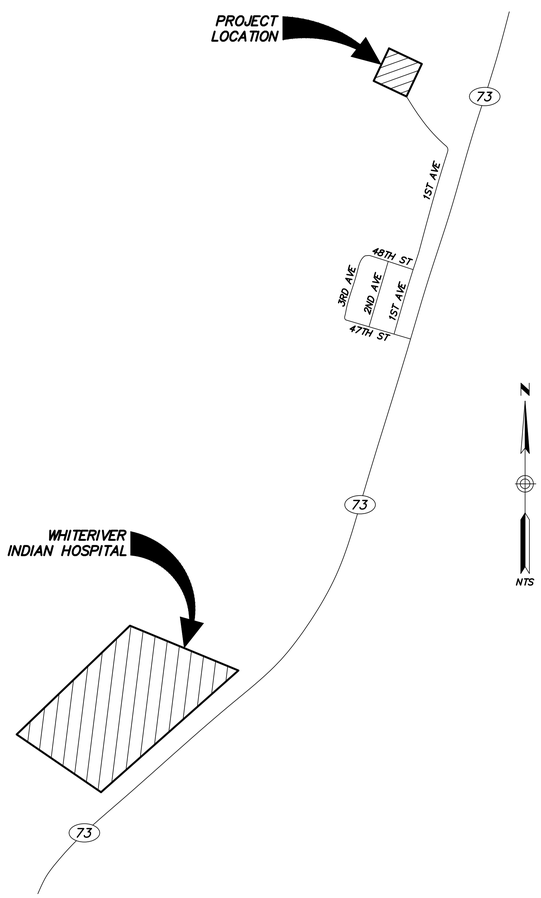
CW1.20
SHEET NUMBER

G:\202411\024034_IHS_WHITERIVER\CAD\SURFACE WATER TREATMENT PLANT\24034-DET.DWG
Plot Date: 2/26/2026 4:14 PM

PLAN LEGEND

- EXPOSED CONDUIT
- UNDERGROUND CONDUIT DUCTBANK
- CONDUIT STUBUP
- CONDUIT TURNED DOWN
- UTILITY CONDUIT DUCTBANK
- CONDUIT RUN CONCEALED IN CEILING, FLOOR, OR IN WALLS
- EXISTING CONDUIT
- GROUNDING ELECTRODE CONDUCTOR
- OHE — EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- FENCE
- 120V, 20A DUPLEX RECEPTACLE
- $ — 120V, 20A SPDT OR SPST SWITCH
- TELEPHONE JACK
- CS — CONDUCTIVITY SWITCH
- FS — FLOAT SWITCH
- J — ABOVE GROUND JUNCTION BOX
- LE — LEVEL ELEMENT
- LT — LEVEL TRANSMITTER
- PC — PHOTOCELL
- PT — PRESSURE TRANSMITTER
- PS — PRESSURE SWITCH
- TS — TEMPERATURE SWITCH
- TE — TEMPERATURE ELEMENT
- T — THERMOSTAT
- NS — INTRUSION ALARM SWITCH
- MS — MOTION SENSOR
- JB — UNDERGROUND JUNCTION BOX
- F — FUSED DISCONNECT SWITCH
- S — SOLENOID VALVE (ENERGIZE TO CLOSE)
- S — SOLENOID VALVE (ENERGIZE TO OPEN)
- BUTTERFLY VALVE
- PLUG VALVE
- GATE VALVE
- WALL MOUNTED LIGHT
- CXXXX — CONDUIT DESIGNATION
- GROUND ROD AND WELL
- EXHAUST FAN
- RTU ANTENNA
- PANELBOARD
- JB1 / TYP — DETAIL REFERENCE
- AA / — ELEVATION SECTION REFERENCE

VICINITY MAP



SINGLE LINE DIAGRAM AND SCHEMATIC LEGEND

- INTERNAL WIRING — FIELD WIRING
- TERMINAL BLOCK — TERMINAL BLOCK
- R — PILOT LIGHT (LETTER DENOTES COLOR)
- H — R — PUSH-TO-TEST PILOT LIGHT (LETTER DENOTES COLOR)
- CR — CONTROL RELAY
- 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)
- NORMALLY OPEN CONTACT TIME TO OPEN (OFF DELAY)
- NORMALLY CLOSED CONTACT TIME TO CLOSE (OFF DELAY)
- FLOW SWITCH CLOSES ON RISING FLOW
- FLOW SWITCH OPENS ON RISING FLOW
- FLOAT SWITCH OPENS ON RISING LEVEL
- FLOAT SWITCH CLOSES ON RISING LEVEL
- LIMIT SWITCH (N.C.)
- LIMIT SWITCH (N.O.)
- LIMIT SWITCH (N.C.)
- LIMIT SWITCH (N.O.)
- TEMPERATURE SWITCH OPENS ON RISING TEMPERATURE
- TEMPERATURE SWITCH CLOSES ON RISING TEMPERATURE
- ETM — ELAPSED TIME METER
- HORN
- BUZZER
- N — NEUTRAL BUS
- G — GROUND BUS
- DIODE
- DISCONNECT SWITCH (N.O.)
- DISCONNECT SWITCH (N.C.)
- TERMINAL BLOCK
- TERMINAL BLOCK IN FIELD DEVICE OR EXTERNAL EQUIPMENT
- MLO — MAIN LUG ONLY
- POWER DISTRIBUTION 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 — MOTOR STARTER (NUMBER INDICATES NEMA RATING)
- NORMALLY OPEN MOMENTARY-CONTACT PUSHBUTTON
- NORMALLY CLOSED MOMENTARY-CONTACT PUSHBUTTON
- 3-POSITION SELECTOR SWITCH
- 2-POSITION SELECTOR SWITCH
- LO STOP — LOCKOUT STOP PUSHBUTTON
- PUSH-PULL EMERGENCY STOP PUSHBUTTON
- EARTH GROUND CONNECTION
- LEVEL PROBE
- WATER OR GAS BOND
- FUSE
- FUSED TERMINAL BLOCK
- OVERLOAD (ELECTRONIC TYPE)
- THERMAL OVERLOAD (BI-METALLIC)

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 PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.

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 ARCHITECTURAL FEATURES.

G. REFER TO SPECIFICATIONS ON DRAWINGS E2 & E3 FOR ADDITIONAL PROJECT REQUIREMENTS.

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

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

J. 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. AS-BUILT DRAWINGS MUST INCLUDE DIMENSIONS TO PERMANENT STRUCTURES SUCH AS CONCRETE PADS, WALLS, ETC.

ABBREVIATIONS

2/C	TWO CONDUCTOR	MBJ	MAIN BONDING JUMPER
2S	TWO SPEED	MCC	MOTOR CONTROL CENTER
AFF	ABOVE FINISHED FLOOR	MTRING	METERING
AFG	ABOVE FINISHED GRADE	MFR	MANUFACTURER
AI	ANALOG INPUT	MLO	MAIN LUG ONLY
AO	ANALOG OUTPUT	NPW	NON-POTABLE WATER
APS	ARIZONA PUBLIC SERVICE	PHF	PASSIVE HARMONIC FILTER
ATS	AUTOMATIC TRANSFER SWITCH	PIT	PRESSURE INDICATING TRANSMITTER
C	CONDUIT	PLC	PROGRAMMABLE LOGIC CONTROLLER
CKT	CIRCUIT	PR	PAIR
CPT	CONTROL POWER TRANSFORMER	REQ'TS	REQUIREMENTS
Cu	COPPER	RMC	RIGID METAL CONDUIT
DIST	DISTRIBUTION	RTU	REMOTE TERMINAL UNIT
DI	DISCRETE INPUT	RVNR	REDUCED VOLTAGE NON-REVERSING
DO	DISCRETE OUTPUT	REX	REQUEST TO EXIT
EQMNT	EQUIPMENT	SAC	SECURITY AND ACCES CONTROL
FIT	FLOW INDICATING TRANSMITTER	SES	SERVICE ENTRANCE SECTION
FM	FLOWMETER	SOCAA	SEDONA-OAK CREEK AIRPORT AUTHORITY
FVNR	FULL VOLTAGE NON-REVERSING	SPC	SPARE CONDUIT
FVR	FULL VOLTAGE REVERSING	SSS	SOLID-STATE SOFT STARTER
GEC	GROUNDING ELECTRODE CONDUCTOR	STT	SHIELDED TWISTED TRIAD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SWBD	SWITCHBOARD
GFI	GROUND FAULT INDICATOR	TSP	TWISTED SHIELDED PAIR
GFP	GROUND FAULT PROTECTION	TST	TWISTED SHIELDED TRIAD
GND	GROUND	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
GRS	GALVANIZED RIGID STEEL	TTB	TELEPHONE TERMINAL BOARD
INST	INSTRUMENT	VFD	VARIABLE FREQUENCY DRIVE
LCC	LIGHTING CONTROL CABINET	WU	WEATHERPROOF WHILE-IN-USE
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT	WP	WEATHERPROOF
LIT	LEVEL INDICATING TRANSMITTER	WSF	WATER SUPPLY FACILITY

Contact Arizona 811 at least two full working days before you begin excavation
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IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

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

SHEET TITLE

ELECTRICAL COVER SHEET

DRAWN BY: VC
CHECKED BY: JLG

24034
PROJECT NUMBER

100%
PHASE

E-1
SHEET NUMBER

Plot Date: 3/2/2026 11:38 AM
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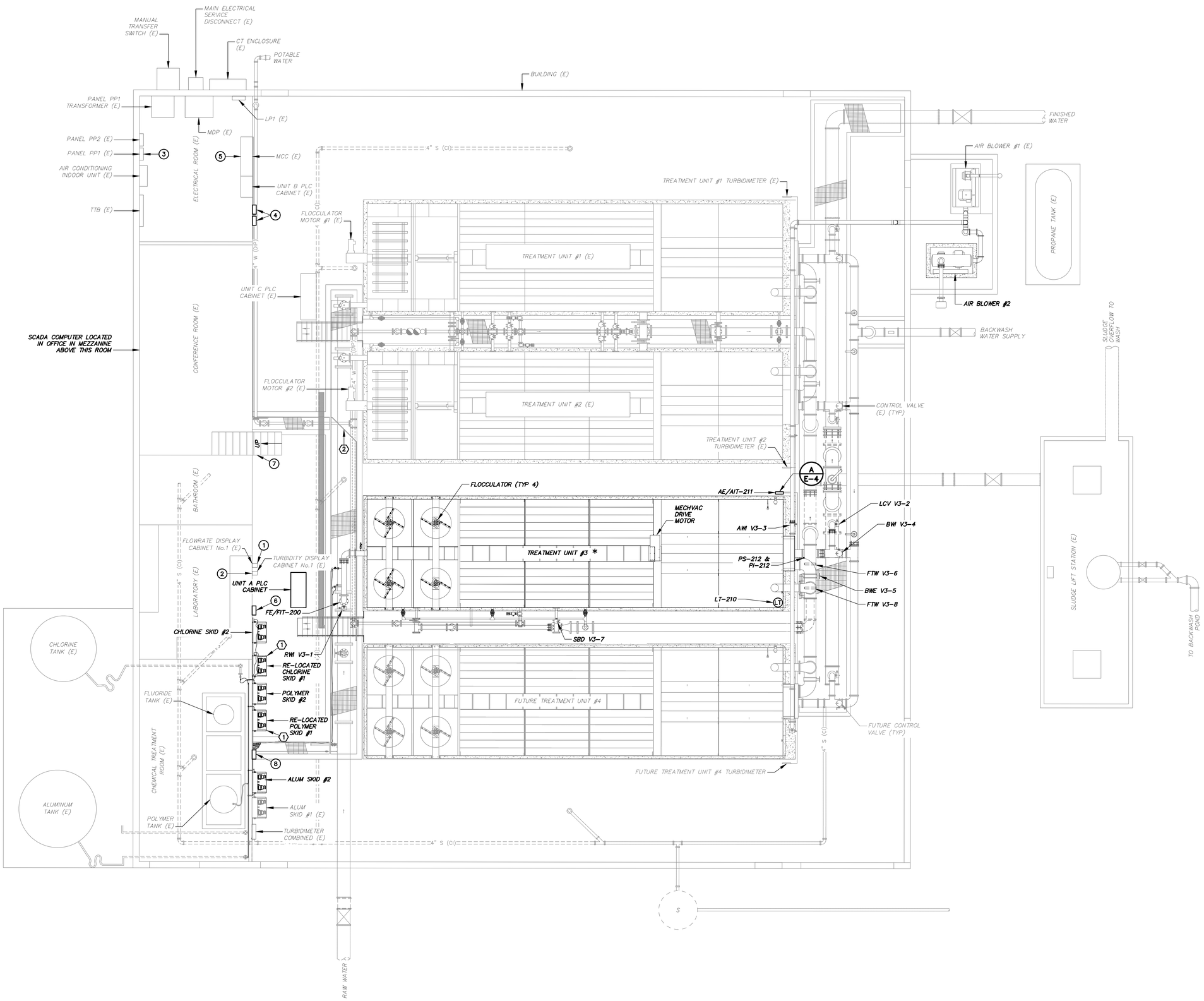

* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

GENERAL DEMOLITION NOTES

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

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

C. DISCONNECT AND REMOVE ALL CONDUCTORS. DEMOLITION OF CONDUITS INCLUDES REMOVAL AND DISPOSAL OF EXISTING EXPOSED CONDUITS, UNLESS OTHERWISE SPECIFIED.

DEMOLITION KEY NOTES

1. DISCONNECT AND RE-LOCATE EXISTING CHEMICAL PUMPS. DISCONNECT AND REMOVE EXISTING CONDUCTORS BACK TO SOURCE. EXISTING CONDUIT MAY REMAIN AND BE REUSED.
2. DISCONNECT AND RE-LOCATE EXISTING CONDUITS TO THE OPPOSITE SIDE OF THE CHANNEL TO AVOID CONFLICT WITH THE NEW WATER LINE.

GENERAL NOTES

A. THE CHEMICAL FEED AREA IS CONSIDERED A CORROSIVE AREA. ALL ENCLOSURES, FITTINGS, ETC. SHALL BE STAINLESS STEEL OR GRS, AND ALL BOXES SHALL BE NEMA 4X, UNLESS OTHERWISE INDICATED OR SPECIFIED. ROUTE CONDUIT AND BOXES FOR CHEMICAL SKIDS ABOVE THE CHEMICAL SKIDS.

B. SEE SINGLE LINE DIAGRAM ON SHEET E-3 AND CONDUIT BLOCK DIAGRAM ON SHEET E-5 FOR CONDUIT AND CONDUCTOR REQUIREMENTS.

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

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

E. CONDUIT ROUTING NOT SHOWN FOR CLARITY. CONTRACTOR SHALL ROUTE CONDUITS SUCH THAT THERE ARE NO MORE THAN 360 DEGREES OF CONDUIT BENDS PER RUN. FINAL ROUTING OF CONDUIT SHALL BE CLEARLY INDICATED ON THE CONTRACTOR "AS-BUILT" DRAWINGS.

F. 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 DOWN TIMES, OPERATIONAL UPSETS AND AS SPECIFIED AND SHOWN ON THESE SHEETS.

G. ALL CONDUIT ROUTING SHALL BE INSTALLED OVERHEAD.

H. FURNISH AND INSTALL CONDUITS, FITTINGS, PULL BOXES, ETC. CIRCUIT CONDUCTORS CAN BE COMBINED WITH OTHER CIRCUIT CONDUCTORS, IF NECESSARY AND APPLIED WITH DERATING FACTORS PER NEC. CONTROL CABLES CAN BE COMBINED WITH OTHER CONTROL CABLES, IF NECESSARY.

KEY NOTES

1. INSTALL FLOWRATE DISPLAY CABINET No.2 UNDER THE EXISTING FLOWRATE DISPLAY CABINET No.1.
2. INSTALL TURBIDITY DISPLAY CABINET No.2 UNDER THE EXISTING TURBIDITY DISPLAY CABINET No.1.
3. SEE DRAWING E-3 FOR MODIFICATIONS REQUIRED IN EXISTING PANELBOARD.
4. INSTALL TWO JUNCTION BOXES, ONE FOR POWER CONDUITS (JUNCTION BOX #1) FROM PANEL "PP1" AND ONE FOR CONTROL CONDUITS (JUNCTION BOX #3) FROM UNIT B PLC CABINET.
5. SEE ELEVATION DETAIL "MCM" ON SHEET E-4 FOR MODIFICATIONS REQUIRED FOR THE EXISTING MOTOR CONTROL CENTER.
6. INSTALL JUNCTION BOX #2 FOR POWER CONDUITS TO THE CHEMICAL PUMP SKIDS.
7. ROUTE NEW CONDUITS UNDER STAIRWAY AS NECESSARY.
8. INSTALL JUNCTION BOX #4 FOR CONTROL CONDUITS TO THE CHEMICAL PUMP SKIDS.

IHS Whiteriver Hospital

200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

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

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

SHEET TITLE

ELECTRICAL SITE PLAN

DRAWN BY: VC
CHECKED BY: JLG

PROJECT NUMBER
24034

PHASE
100%

SHEET NUMBER
E-2

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Z:\2024\24014-DIBBLE (WHITERIVER INDIAN HOSPITAL WATER SYSTEM IMPROVEMENTS)\DRAWINGS\24014 - E2 (OVERALL SITE PLAN).DWG
Plot Date: 3/2/2026 11:44 AM

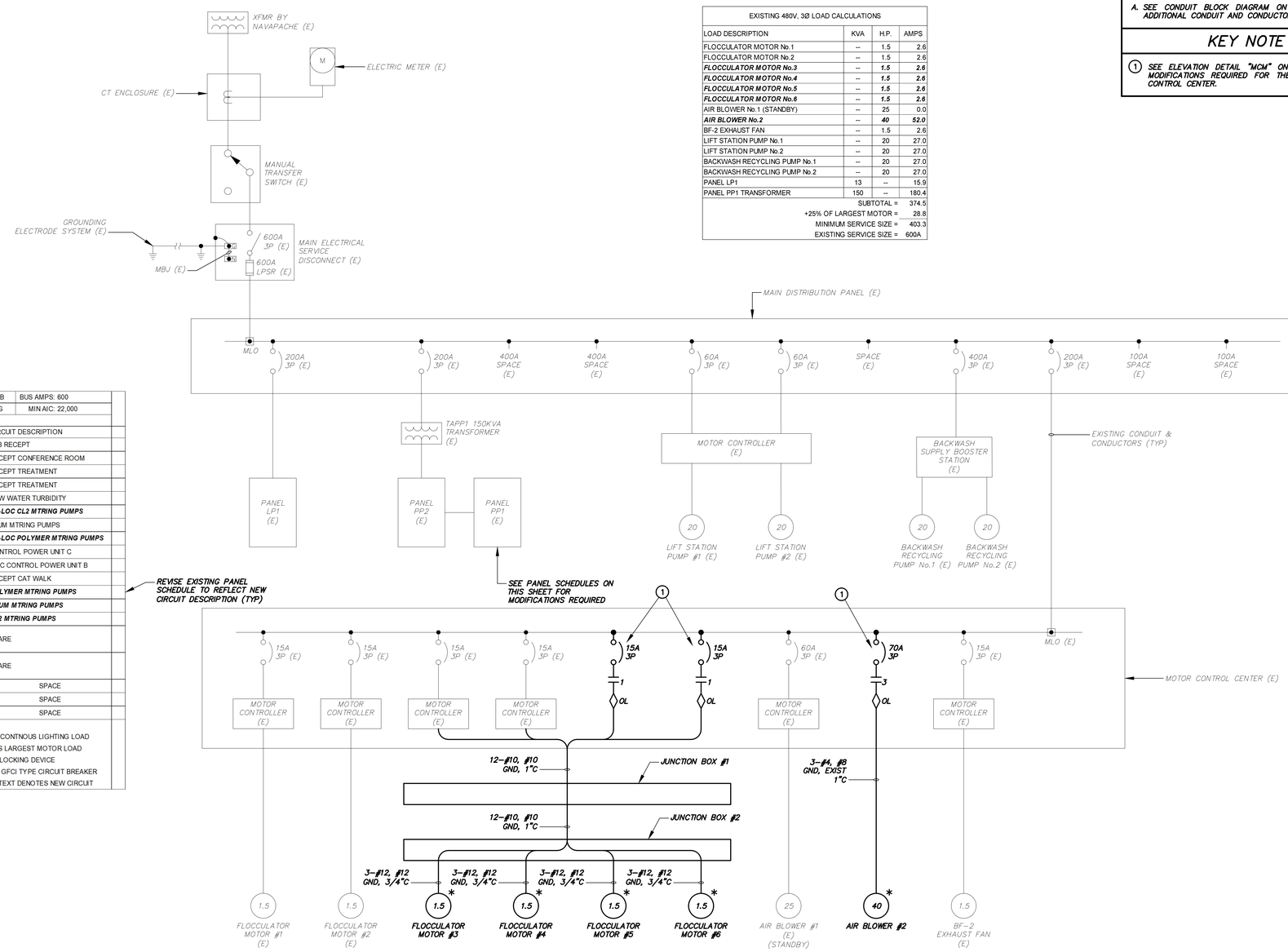
GENERAL NOTE

A. SEE CONDUIT BLOCK DIAGRAM ON SHEET E-5 FOR ADDITIONAL CONDUIT AND CONDUCTOR REQUIREMENTS.

KEY NOTE

1. SEE ELEVATION DETAIL "MCM" ON SHEET E-4 FOR MODIFICATIONS REQUIRED FOR THE EXISTING MOTOR CONTROL CENTER.

EXISTING 480V, 3Ø LOAD CALCULATIONS			
LOAD DESCRIPTION	KVA	H.P.	AMPS
FLOCCULATOR MOTOR No.1	--	1.5	2.6
FLOCCULATOR MOTOR No.2	--	1.5	2.6
FLOCCULATOR MOTOR No.3	--	***1.5***	***2.6***
FLOCCULATOR MOTOR No.4	--	***1.5***	***2.6***
FLOCCULATOR MOTOR No.5	--	***1.5***	***2.6***
FLOCCULATOR MOTOR No.6	--	***1.5***	***2.6***
AIR BLOWER No.1 (STANDBY)	--	25	0.0
AIR BLOWER No.2	--	***40***	***52.0***
BF-2 EXHAUST FAN	--	1.5	2.6
LIFT STATION PUMP No.1	--	20	27.0
LIFT STATION PUMP No.2	--	20	27.0
BACKWASH RECYCLING PUMP No.1	--	20	27.0
BACKWASH RECYCLING PUMP No.2	--	20	27.0
PANEL LP1	13	--	15.9
PANEL PP1 TRANSFORMER	150	--	180.4
SUBTOTAL =			374.5
+25% OF LARGEST MOTOR =			28.8
MINIMUM SERVICE SIZE =			403.3
EXISTING SERVICE SIZE =			600A



UTILIZE EXISTING SPARE CIRCUIT BREAKER AND RELABEL PANEL SCHEDULE ACCORDINGLY (TYP)

REVISE EXISTING PANEL SCHEDULE TO REFLECT NEW CIRCUIT DESCRIPTION (TYP)

PANEL: PP1	VOLTAGE: 208 / 120 3Ø				MAINS: 400A MCB		BUS AMPS: 600
TYPE: EXISTING	ENCLOSURE: EXISTING				MOUNTING: EXISTING		MIN AIC: 22,000
VA LOAD							
CIRCUIT DESCRIPTION	BKR	CKT	AØ	BØ	CØ	CKT	BKR	CIRCUIT DESCRIPTION
RECEPT/LAB	20	1	450 / 1500			2	20	TTB RECEPT
RECEPT/LAB	20	3		840 / 900		4	20	RECEPT CONFERENCE ROOM
RECEPT CHEM STORAGE	20	5			900 / 180	6	20	RECEPT TREATMENT
RECEPT/FLXFER PUMP	20	7	1000 / 720			8	20	RECEPT TREATMENT
RECEPT/FeCL3 MIXER	20	9		1000 / 1176		10	20	RAW WATER TURBIDITY
RECEPT/POLYMER MIXER	20	11			1000 / 500	12	20	***RE-LOC CL2 MTRING PUMPS***
CHLORINE MTRING PUMPS	20	13	500 / 500			14	20	ALUM MTRING PUMPS
FeCL2 MTRING PUMPS	20	15		500 / 500		16	20	***RE-LOC POLYMER MTRING PUMPS***
CL2 MTRING PUMPS	20	17			500 / 1000	18	20	CONTROL POWER UNIT C
ACH METER PUMP	20	19	500 / 1000			20	20	MCC CONTROL POWER UNIT B
WATER HEATER	30	21		2250 / 180		22	30	RECEPT CAT WALK
		23			2250 / ***500***	24	20	***POLYMER MTRING PUMPS***
UNIT A PLC CABINET	20	25	***1000 / 500***			26	20	***ALUM MTRING PUMPS***
SPARE	20	27		0 / ***500***		28	20	***CL2 MTRING PUMPS***
BACKWASH FLOW	20	29				30	30	SPARE
SPARE	30	31				32		
		33				34	20	SPARE
		35				36		
SPARE	30	37				38		SPACE
		39				40		SPACE
SPARE	20	41				42		SPACE
CONNECTED VA PER PHASE			7670.0	7846.0	6830.0	NOTES:		
CONNECTED AMPS PER PHASE			63.9	65.3	56.9	"X" DENOTES CONTNOUS LIGHTING LOAD		
+25% LARGEST MOTOR VA			0	0	0	"XX" DENOTES LARGEST MOTOR LOAD		
+25% CONTINUOUS LOAD VA			0	0	0	"L" DENOTES LOCKING DEVICE		
DEMAND VA PER PHASE			7670	7846	6830	"G" DENOTES GFCI TYPE CIRCUIT BREAKER		
TOTAL AMPS PER PHASE			63.9	65.4	56.9	BOLD ITALIC TEXT DENOTES NEW CIRCUIT		

PANEL: PP2	VOLTAGE: 208 / 120 3Ø				MAINS: 400A MCB		BUS AMPS: 600
TYPE: EXISTING	ENCLOSURE: EXISTING				MOUNTING: EXISTING		MIN AIC: 22,000
VA LOAD							
CIRCUIT DESCRIPTION	BKR	CKT	AØ	BØ	CØ	CKT	BKR	CIRCUIT DESCRIPTION
CU-1A/FCU-1A LAB	30	1	2279 / 2279			2	30	CU-1E/FCU-1E OFFICE
		3		2279 / 2279		4		
		5			2279 / 2279	6		
CU-1C/FCU-1C CONF	30	7	2279 / 2279			8	30	CU-1D/FCU-1D ELEC
		9		2279 / 2279		10		
		11			2279 / 2279	12		
CU-1B/FCU-1B CONF	30	13	2279 / 450			14	20	RADIANT TUBE HEAT
		15		2279 / 1176		16	20	HEATER CHEM STORAGE
		17			2279 / 1176	18	20	EF-1 CHEM STORAGE
SPARE	20	19	0 / 0			20	20	SPARE
RECEPT OFFICE	20	21		900 / 0		22	20	SPARE
RECEPT OFFICE	20	23			1260 / 0	24	20	SPARE
TURBIDITY METER TR1,2	20	25	1176 / 0			26	20	SPARE
HEATER #1 INFRARED	20	27		1176 / 0		28	20	SPARE
HEATER #2 INFRARED	20	29			1176 / 0	30	20	SPARE
HEATER #3 INFRARED	20	31	0			32	20	SPARE
SPARE	20	33		0 / 0		34	20	SPARE
SPARE	20	35			0 / 0	36	20	SPARE
SPARE	20	37	0 / 0			38	20	SPARE
SPARE	20	39		0 / 0		40	20	SPARE
SPARE	20	41			0 / 0	42	20	SPARE
CONNECTED VA PER PHASE			13021.0	14647.0	15007.0	NOTES:		
CONNECTED AMPS PER PHASE			108.4	122.0	125.0	"X" DENOTES CONTNOUS LIGHTING LOAD		
+25% LARGEST MOTOR VA			0	0	0	"XX" DENOTES LARGEST MOTOR LOAD		
+25% CONTINUOUS LOAD VA			0	0	0	"L" DENOTES LOCKING DEVICE		
DEMAND VA PER PHASE			13021	14647	15007	"G" DENOTES GFCI TYPE CIRCUIT BREAKER		
TOTAL AMPS PER PHASE			108.5	122.1	125.1	BOLD ITALIC TEXT DENOTES NEW CIRCUIT		

PANEL: LP1	VOLTAGE: 480 / 277 3Ø				MAINS: 225		BUS AMPS: 200
TYPE: EXISTING	ENCLOSURE: EXISTING				MOUNTING: EXISTING		MIN AIC: 25,000
VA LOAD							
CIRCUIT DESCRIPTION	BKR	CKT	AØ	BØ	CØ	CKT	BKR	CIRCUIT DESCRIPTION
LTG/UPSTAIRS	20	1	1500 / 0			2	20	SPARE
LTG/DOWNSTAIRS	20	3		2055 / 0		4	20	SPARE
LTG/TREATMENT	20	5			4000 / 0	6	20	SPARE
LTG/TREATMENT	20	7	4000 / 0			8	20	SPARE
LTG/EXTERIOR	20	9		1670 / 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
SPACE		25				26		SPACE
		27				28		
		29				30		
		31				32		
		33				34		
		35				36		
		37				38		
		39				40		
		41				42		
CONNECTED VA PER PHASE			5500.0	3725.0	4000.0	NOTES:		
CONNECTED AMPS PER PHASE			19.8	13.4	14.4	"X" DENOTES CONTNOUS LIGHTING LOAD		
+25% LARGEST MOTOR VA			0	0	0	"XX" DENOTES LARGEST MOTOR LOAD		
+25% CONTINUOUS LOAD VA			0	0	0	"L" DENOTES LOCKING DEVICE		
DEMAND VA PER PHASE			5500	3725	4000	"G" DENOTES GFCI TYPE CIRCUIT BREAKER		
TOTAL AMPS PER PHASE			19.9	13.4	14.4	BOLD ITALLIC TEXT DENOTES NEW CIRCUIT		

* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

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

SHEET TITLE

SINGLE LINE DIAGRAM

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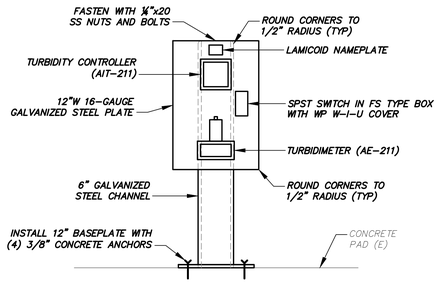
DRAWN BY: VC
CHECKED BY: JLG
24034
PROJECT NUMBER
100%
PHASE
E-3
SHEET NUMBER

Z:\2024\24014- DIBBLE (WHITERIVER INDIAN HOSPITAL WATER SYSTEM IMPROVEMENTS)\DRAWINGS\24014 - E3 (SINGLE LINE DIAGRAM).DWG
Plot Date: 3/2/2026 11:44 AM

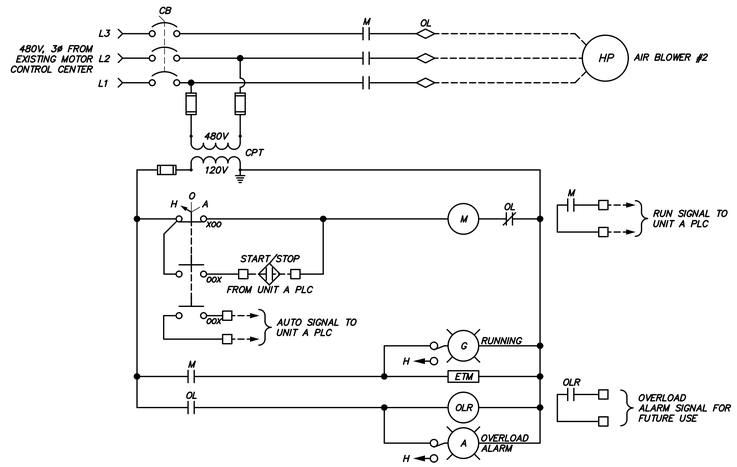


NOTES:

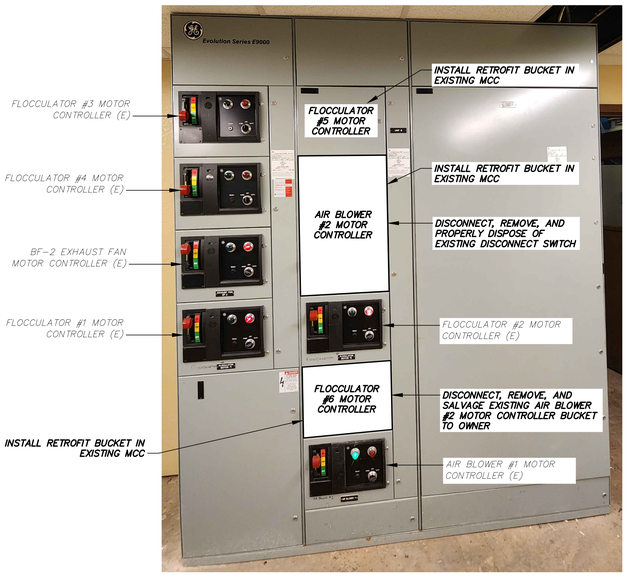
1. HEIGHT TO BE COORDINATED IN THE FIELD WITH THE TREATMENT UNIT MFR.
2. CONDUITS NOT SHOWN FOR CLARITY.

A / E-2 TURBIDIMETER MOUNTING STAND DETAIL

NTS

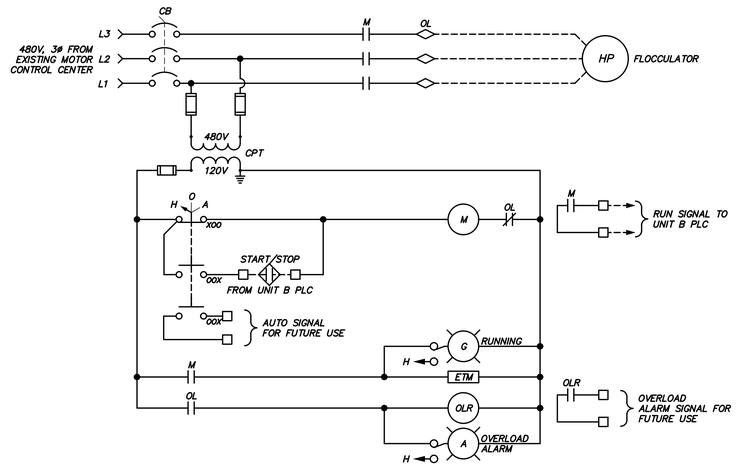


AIR BLOWER #2 MOTOR CONTROL SCHEMATIC



MCM / TYP MOTOR CONTROL CENTER MODIFICATIONS

NTS



NOTE: SCHEMATIC IS TYPICAL FOR FLOCCULATORS #5 & #6.

TYPICAL FLOCCULATOR MOTOR CONTROL SCHEMATIC

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SEALS AND SIGNATURES

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SHEET TITLE

CONTROL SCHEMATICS

DRAWN BY: VC
CHECKED BY: JLG

24034
PROJECT NUMBER

100%
PHASE

E-4
SHEET NUMBER

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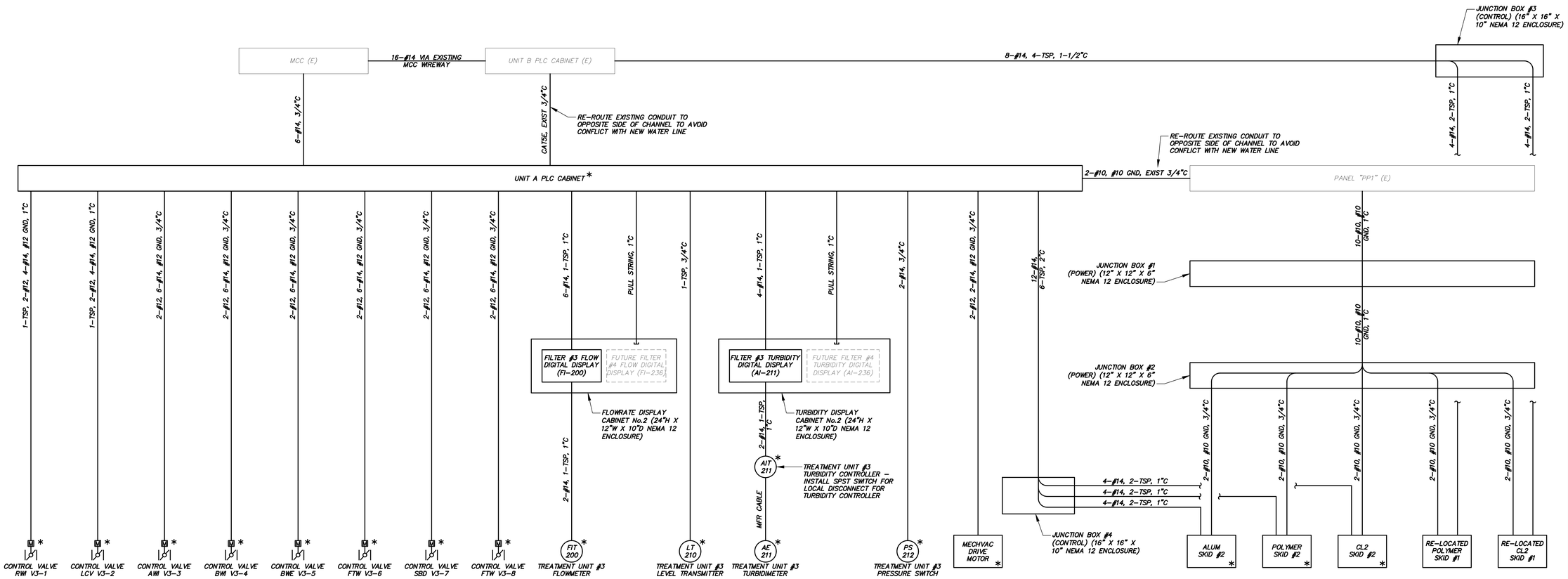
Plot Date: 3/3/2026 2:02 PM

GENERAL NOTE

A. SEE SINGLE LINE DIAGRAM ON SHEET E-3 FOR ADDITIONAL CONDUIT AND CONDUCTOR REQUIREMENTS.



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Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

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

SHEET TITLE

CONDUIT BLOCK DIAGRAM

DRAWN BY: VC
CHECKED BY: JLG

PROJECT NUMBER: 24034

PHASE: 100%

SHEET NUMBER: E-5

Z:\2024\24014 - DIBBLE (WHITERIVER INDIAN HOSPITAL WATER SYSTEM IMPROVEMENTS)\DRAWINGS\24014 - E5 (CONDUIT BLOCK DIAGRAM).DWG

Plot Date: 3/3/2026 2:02 PM

	FIRST LETTER	SUCCEEDING LETTER(S)	
	MEASURED VARIABLE	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS	ALARM	
B	BURNER , COMBUSTION		
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,	

GENERAL NOTES

A. NOT ALL VALVES, FITTINGS AND APPURTENANCES ARE SHOWN ON THE P&ID DRAWINGS. REFER TO "PM" DRAWINGS FOR MECHANICAL REQUIREMENTS.

ABBREVIATIONS

AI	ANALOG INPUT	NTU	TURBIDITY
AO	ANALOG OUTPUT	OF	OVER FLOW
BKP	BACKUP MODE	OIS	OPERATOR INTERFACE STATION
CLL	CHLORINE LIQUID	OL	OVERLOAD
CLS	CHLORINE SOLUTION	OR	OVERRIDE
CV	CONTROL VALVE	OT	OVERTORQUE
D	DECANT WATER	O/O	ON/OFF (MAINTAINED)
DCS	DISTRIBUTED CONTROL SYSTEM	P/B	PLC/BACKUP (MAINTAINED)
DI	DIGITAL INPUT	PCP	PROCESS CONTROL PANEL
DO	DIGITAL OUTPUT	PE	PRIMARY EFFLUENT
DS	DIGESTED SLUDGE	PFS	PRIMARY FINE SCREEN
ETM	ELAPSED TIME METER	PI	PROCESS INFLUENT
FA	FOUL AIR	PLC	PROGRAMMABLE LOGIC CONTROLLER
FC	FAIL CLOSED	PS	PRIMARY SLUDGE
FE	FINAL EFFLUENT	PW	POTABLE WATER
FeCL2	FERROUS CHLORIDE	RAS	RETURN ACTIVATED SLUDGE
F/S	FAST/SLOW	RF	RADIO FREQUENCY
GR	GRIT	RIO	REMOTE INPUT/OUTPUT
HOA	HAND–OFF–AUTO	RS	RAW SEWAGE
HOR	HAND–OFF–REMOTE	RST	RESET
HS	HYDRAULIC SUPPLY	SBR	SEQUENCING BATCH REACTOR
HMI	HUMAN MACHINE INTERFACE	SD	SANITARY DRAIN
I/O	INPUT/OUTPUT	SE	SECONDARY EFFLUENT
IAS	INSTRUMENT AIR SUPPLY	SLC	SINGLE LOOP CONTROLLER
L/R	LOCAL/REMOTE	SP	SET POINT
LAN	LOCAL AREA NETWORK	SPD	SPEED
LCP	LOCAL CONTROL PANEL	SPC	SET POINT CONTROL
LOR	LOCAL OFF REMOTE	S/S	START/STOP (MOMENTARY)
M/A	MANUAL/AUTO	SSS	SOLID STATE SOFT STARTER
MCC	MOTOR CONTROL CENTER	SW	SEAL WATER
ML	MIXED LIQUOR	TE	TREATED EFFLUENT
MLR	MIXED LIQUOR RECYCLE	TPS	THICKENED PRIMARY SLUDGE
MMI	MAN MACHINE INTERFACE	TWAS	THICKENED WASTE ACTIVATED SLUDGE
MH	MANHOLE	UW	UTILITY/PROCESS WATER
NaOCL	SODIUM HYPOCHLORITE	VFD	VARIABLE FREQUENCY DRIVE
NPW	NON POTABLE WATER	WAS	WASTE ACTIVATED SLUDGE
NS	NITROGEN SUPPLY	1/2/B	PUMP 1/PUMP 2/BOTH
NaHSO3	SODIUM BISULFITE	SC	SCUM
NG	NATURAL GAS		

INSTRUMENT LINES

PRIMARY PROCESS SIGNAL
SECONDARY PROCESS SIGNAL
PROCESS AIR
ELECTRICAL SIGNAL
SOFTWARE LINK
PNEUMATIC AIR
ELECTRICAL DIRECTION ARROW
SIGNAL CONTINUATION

INSTRUMENT SYMBOLS

HOA
HS 101
DEVICE FUNCTION (SEE ABBREVIATIONS)
DEVICE IDENTIFICATION (SEE IDENTIFICATION TABLE)
DEVICE TAG NUMBER (LOOP NUMBER REFERENCE)
pH — ADDITIONAL INSTRUMENT IDENTIFICATION SEE FUNCTION DESIGNATIONS AND ABBREVIATIONS.
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
HUMAN MACHINE INTERFACE (HMI)
GENERALIZED, UNDEFINED COMPLEX INTERLOCK LOGIC
ANALOG I/O
DIGITAL I/O
PLC INPUT/OUTPUT

PROCESS FLOW AND MECHANICAL EQUIPMENT SYMBOLS

AIR COMPRESSOR
CENTRIFUGAL BLOWER
CENTRIFUGAL PUMP
FLOATING MIXER OR AERATOR
GRINDER PUMP
CHEMICAL METERING PUMP
MIXER
PROGRESSIVE CAVITY PUMP
ROTARY LOBE BLOWER OR PUMP
SUBMERSIBLE PUMP
VERTICAL TURBINE PUMP
SCREW (LIFT) PUMP
HORN
PARSHALL FLUME
WIER
MOTOR OPERATOR
DESSICANT BOX
SOLENOID OPERATOR
HAND OPERATOR
INJECTOR
AIR RELIEF VALVE

AIR RELIEF/VACUUM BREAK VALVE
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)
GATE VALVE (NORMALLY CLOSED)
PLUG VALVE (NORMALLY OPENED)
PLUG VALVE (NORMALLY CLOSED)
CHECK VALVE
DIAPHRAGM VALVE (NORMALLY OPEN)
DIAPHRAGM VALVE (NORMALLY CLOSED)
SLUICE GATE
TELESCOPING VALVE
ULTRASONIC LEVEL SENSOR
LEVEL PROBE(S)
DOPPLER TYPE ULTRASONIC (PRIMARY FLOW ELEMENT)
THERMAL FLOWMETER
THERMAL FLOW SWITCH
MAGNETIC FLOWMETER

RADAR AREA/VELOCITY FLOWMETER
ORIFICE PLATE (PRIMARY FLOW ELEMENT)
PITOT TUBE (PRIMARY FLOW ELEMENT)
PROPELLER FLOWMETER
ROTAMETER (PRIMARY FLOW ELEMENT)
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)
SUBMERSIBLE MIXER
FLOAT SWITCH
COMMUNICATION MODULE

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IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO LOPEZ 3/6/26 ARIZONA U.S.A.

SHEET TITLE
P&ID SYMBOLS & LEGEND

DRAWN BY: VC
CHECKED BY: JLG
24034
PROJECT NUMBER
100%
PHASE
E-6
SHEET NUMBER

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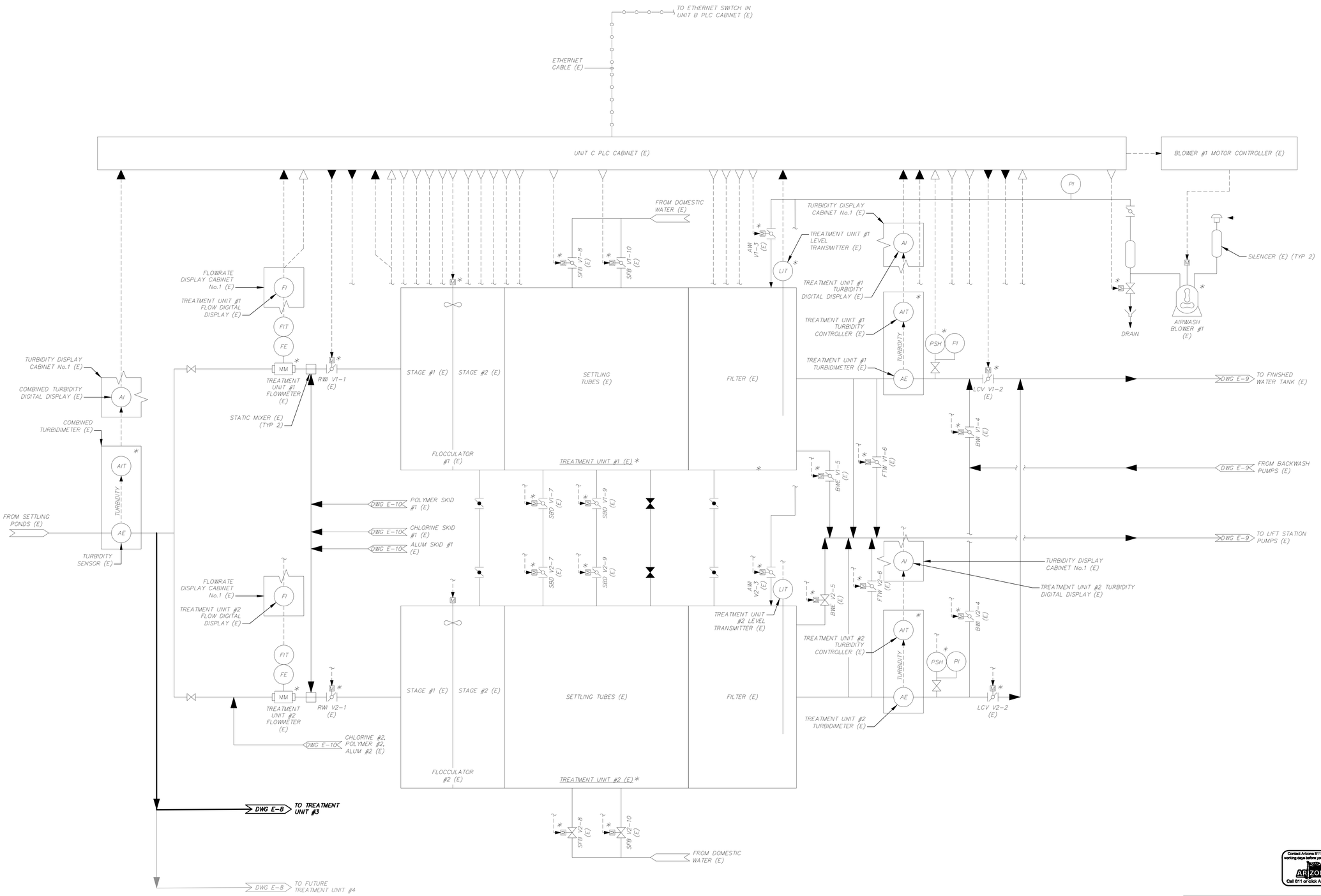

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200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

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SHEET TITLE
P&ID - I

DRAWN BY: VC
CHECKED BY: JLG

24034
PROJECT NUMBER

100%
PHASE

E-7
SHEET NUMBER

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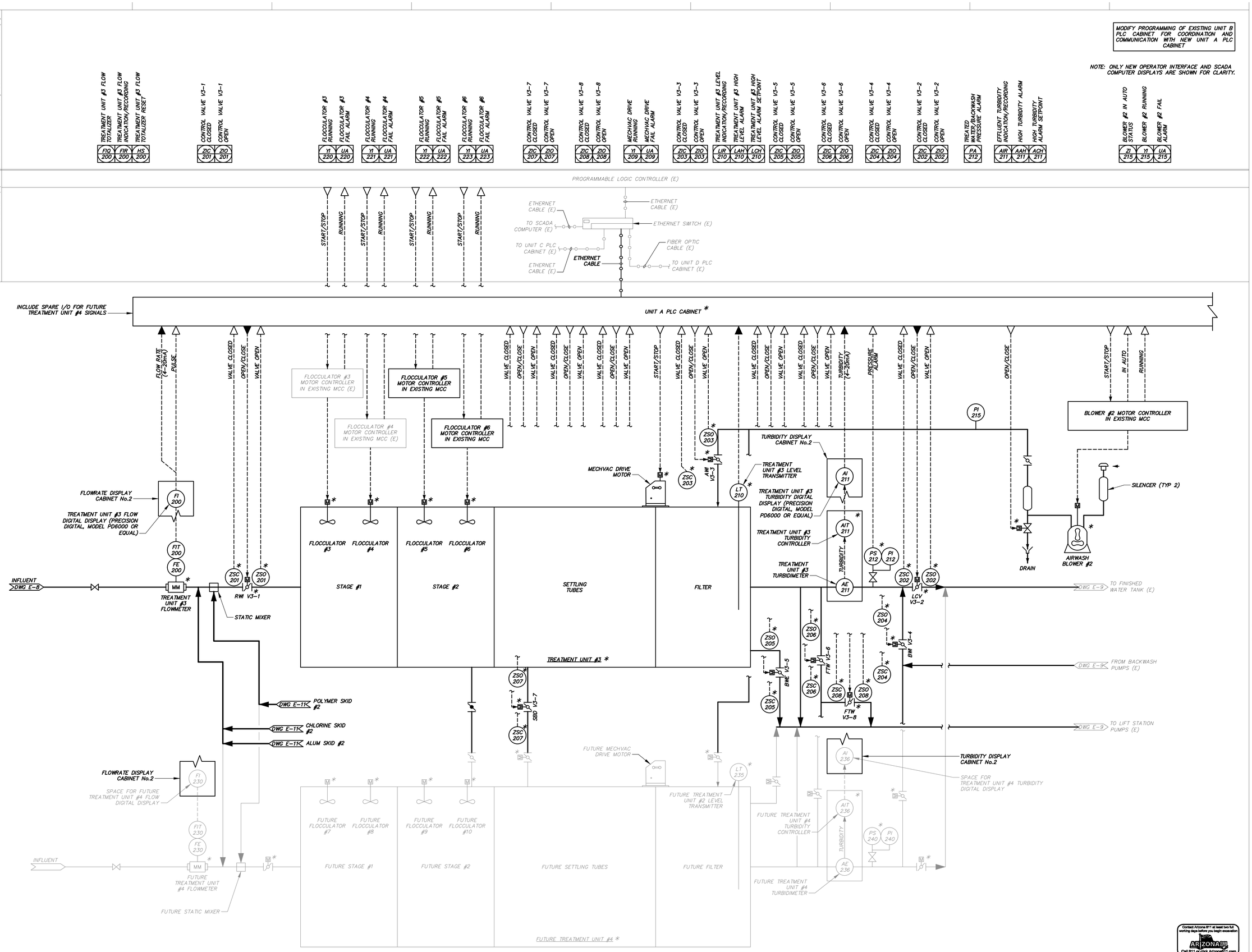
Z:\2024\24014- DIBBLE (WHITERIVER INDIAN HOSPITAL WATER SYSTEM IMPROVEMENTS)\DRAWINGS\24014 - E7 (P&ID - I).DWG

MODIFY PROGRAMMING OF EXISTING UNIT B PLC CABINET FOR COORDINATION AND COMMUNICATION WITH NEW UNIT A PLC CABINET

NOTE: ONLY NEW OPERATOR INTERFACE AND SCADA COMPUTER DISPLAYS ARE SHOWN FOR CLARITY.



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200 W Hospital Drive
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IHS Project #: 131445
IHS Contract #: 75H70123R00008
IHS Award Date: 02/02/2024

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SEALS AND SIGNATURES

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

SHEET TITLE

P&ID - II

DRAWN BY: VC
CHECKED BY: JLG

PROJECT NUMBER
24034

PHASE
100%

SHEET NUMBER
E-8

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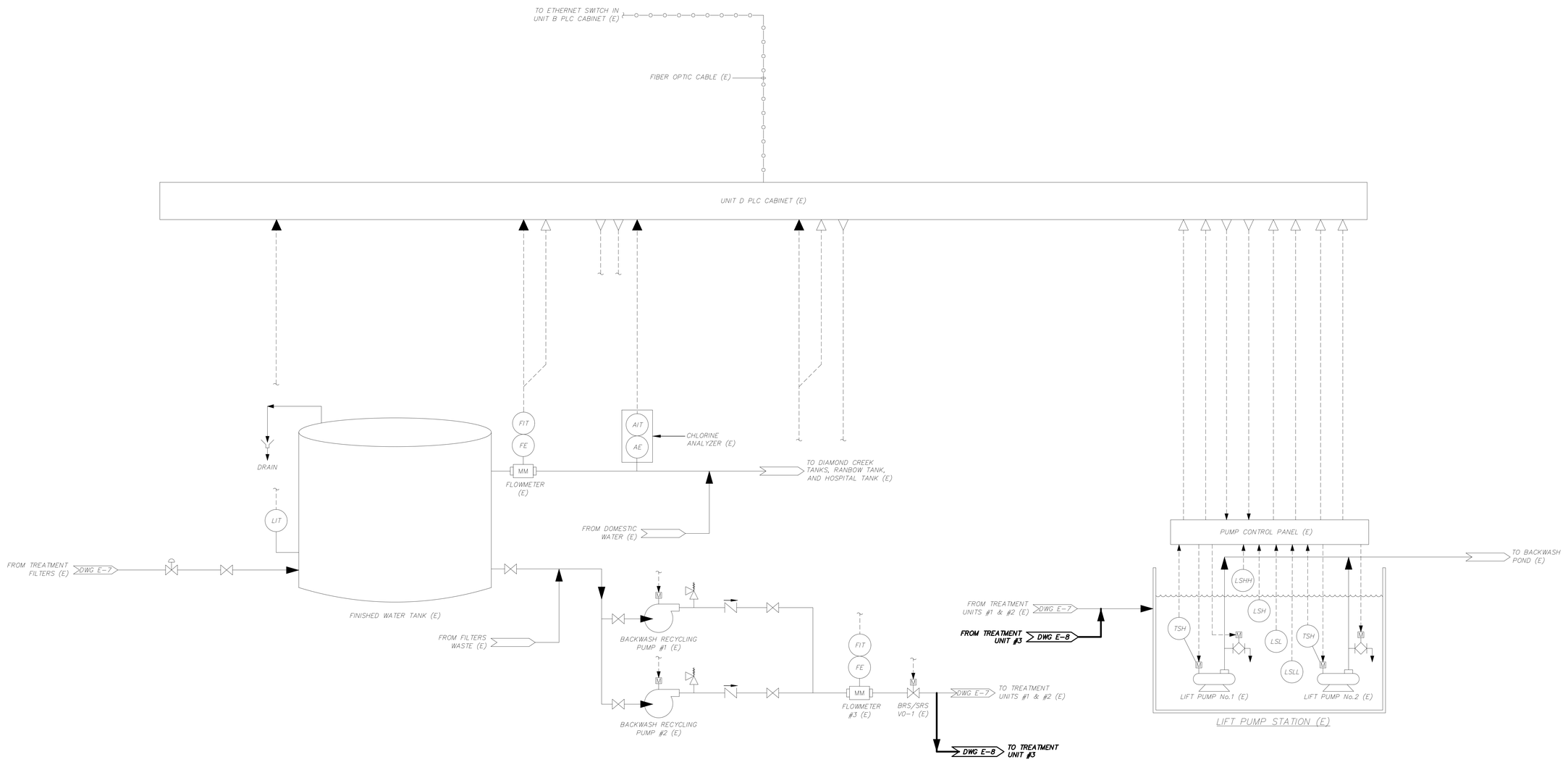
Plot Date: 3/3/2026 2:05 PM



Z:\2024\24014- DIBBLE (WHITERIVER INDIAN HOSPITAL WATER SYSTEM IMPROVEMENTS)\DRAWINGS\24014 - E9 (P&ID - III).DWG

Plot Date: 3/2/2026 11:47 AM

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IHS Project #: 131445
IHS Contract #: 75H70123R00008
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SEALS AND SIGNATURES

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CERTIFICATE NO. 53839
JORGE GERARDO LOPEZ
3/9/26
ARIZONA U.S.A.

SHEET TITLE

P&ID - III

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24034
PROJECT NUMBER

100%
PHASE

E-9
SHEET NUMBER

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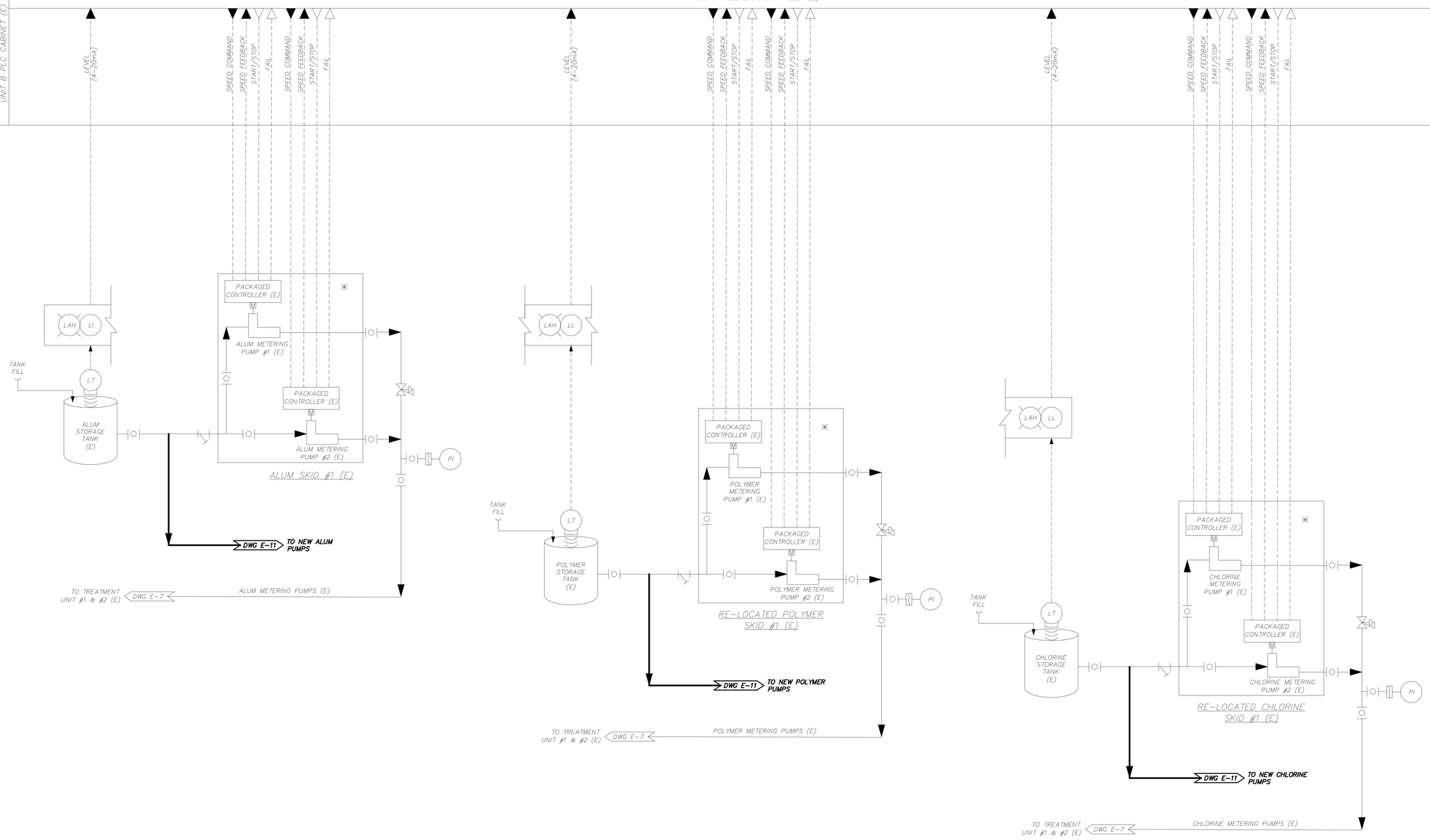
OPERATOR INTERFACE/SCADA COMPUTERS (E)

NOTE: ONLY NEW OPERATOR INTERFACE AND SCADA COMPUTER DISPLAYS ARE SHOWN FOR CLARITY.

UNIT B PLC CABINET (E)

PROGRAMMABLE LOGIC CONTROLLER (E)



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Plot Date: 3/2/2026 11:48 AM

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IHS Whiteriver Hospital
200 W Hospital Drive
Whiteriver, Arizona, 85941

IHS Project #:	131445
IHS Contract #:	75H70123R00008
IHS Award Date:	02/02/2024

SMITHGROUP
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

DIBBLE
15150 W. PARK PLACE
SUITE 317
GOODYEAR, AZ 85395
623.935.2258
dibblecorp.com

ISSUED FOR	DATE
SWTP FINAL CONSTRUCTION DOCUMENTS	09MAR26

SEALS AND SIGNATURES

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

SHEET TITLE

P&ID - IV

DRAWN BY: VC

CHECKED BY: JLG

24034

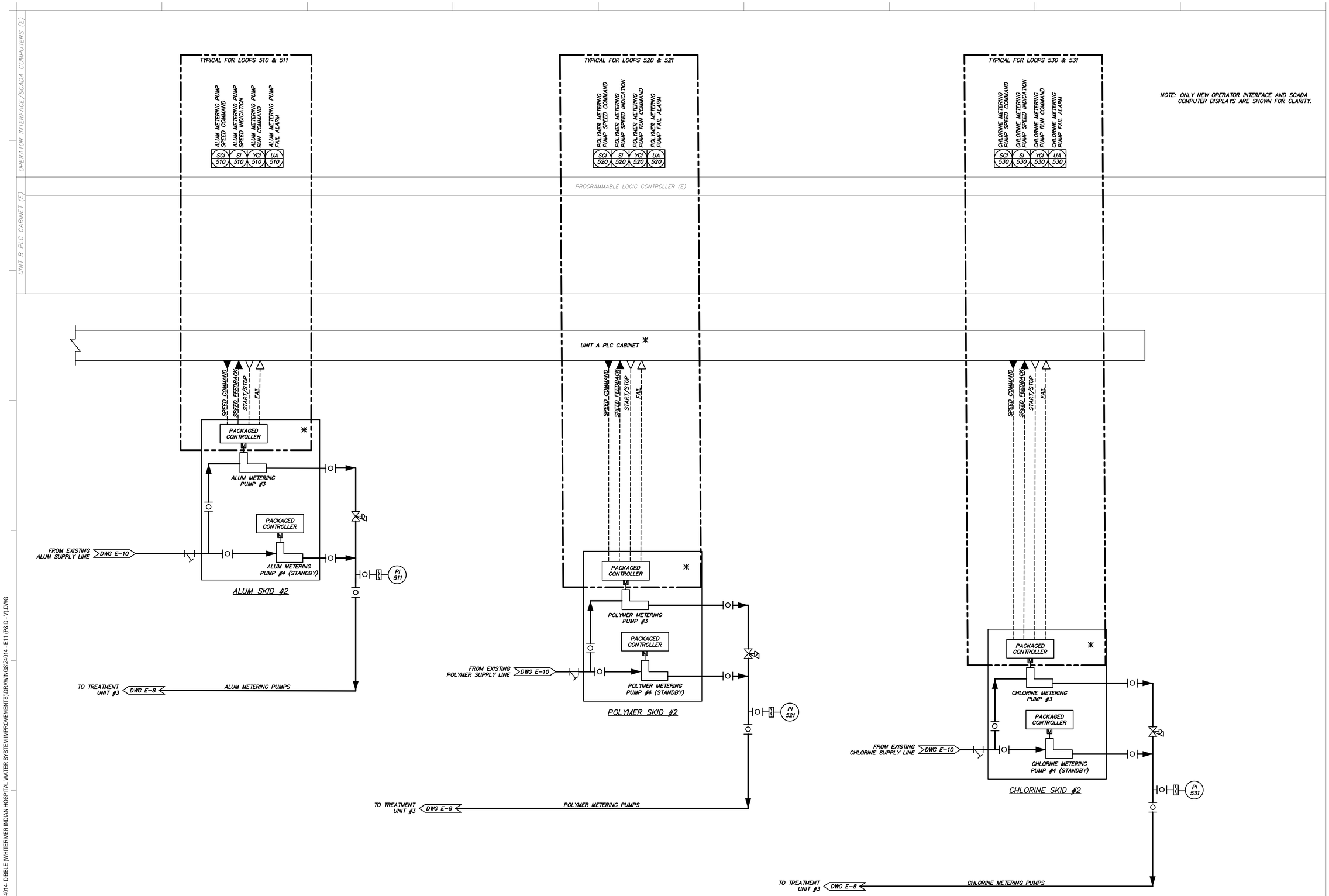
PROJECT NUMBER

100%

PHASE

E-10

SHEET NUMBER



NOTE: ONLY NEW OPERATOR INTERFACE AND SCADA COMPUTER DISPLAYS ARE SHOWN FOR CLARITY.

* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

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

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE.
SUITE 140
PHOENIX, AZ 85027
Ph: (602) 785-9599
WWW.DARCORINC.COM

INDIAN HEALTH SERVICE · PHS · 1955 · DEPARTMENT OF HEALTH & HUMAN SERVICES, USA

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3/9/26
Signature
ARIZONA, U.S.A.

SHEET TITLE

P&ID - V

DRAWN BY: VC
CHECKED BY: JLG

24034
PROJECT NUMBER

100%
PHASE

E-11
SHEET NUMBER

Z:\02242014- DIBBLE (WHITERIVER INDIAN HOSPITAL WATER SYSTEM IMPROVEMENTS)\DRAWINGS\24014 - E11 (P&ID - V).DWG

Plot Date: 3/2/2026 11:48 AM