

Symbol Legend

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	COLD WATER PIPING		2-WAY SOLENOID VALVE
	HOT WATER PIPING		2-WAY MODULATING VALVE
	HOT WATER CIRCULATION PIPING		3-WAY SOLENOID VALVE
	WASTE PIPING		3-WAY MODULATING VALVE
	VENT PIPING		DRAIN/BLOWDOWN VALVE W/ 3/4" HOSE CONNECTION
	GAS PIPING		METER
	FIRE SPRINKLER PIPING		FUNNEL DRAIN
	HEATING WATER SUPPLY PIPING		TEMPERATURE GAUGE
	HEATING WATER RETURN PIPING		PRESSURE GAUGE
	POOL WATER RETURN PIPING		FLOW SWITCH
	POOL WATER SUPPLY PIPING		VACUUM OR COMPOUND PRESSURE/VACUUM GAUGE
	PIPE DOWN		VARIABLE FREQUENCY DRIVE
	PIPE UP		POINT OF CONNECTION TO EXISTING
	BRANCH - TOP CONNECTION		SCOPE OF WORK
	BRANCH - BOTTOM CONNECTION		
	BRANCH - SIDE CONNECTION		
	CAP END OF PIPE		
	PIPE OR DUCT BREAK (GRAPHIC ONLY - CONTINUOUS PIPE/DUCT)		
	FLOW DIRECTION		
	GATE VALVE		
	BUTTERFLY VALVE		
	PRESSURE REDUCING VALVE		
	CHECK VALVE		
	FOOT VALVE		
	FLOW CONTROL VALVE		
	TEMPERATURE & PRESSURE RELIEF VALVE		
	BALL VALVE		
	FLOAT VALVE		
	PETE'S PLUG		
	HOSE BIBB		
	PUMP		
	CIRCUIT SETTER		
	BACKFLOW PREVENTER ASSEMBLY		
	FLOOR DRAIN		
	FLOOR & FUNNEL DRAIN		
	FLEXIBLE PIPE CONNECTION		
	AUTOMATIC OR MANUAL AIR VENT		
	REDUCER		
	STRAINER		
	STRAINER W/ BLOWDOWN VALVE & 3/4" HOSE CONNECTION		
	UNION		
	3-WAY CONTROL VALVE		

Abbreviations List

*F	DEGREES FAHRENHEIT
(E)	EXISTING
AE	ARCHITECT/ENGINEER
ABV	ABOVE
ACCEPT	ACCEPTANCE
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AG	AIRGAP
AMPS	AMP
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASSY	ASSEMBLY
AVG	AVERAGE
BFP	BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CV	COEFFICIENT OF FLOW
DE	DIATOMACIOUS EARTH
DEG	DEGREE (FAHRENHEIT)
DI	DEIONIZED
DIA	DIAMETER
DISCH	DISCHARGE
DN	DOWN
EC	ELECTRICAL CONTRACTOR
EFF	EFFICIENCY
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAHRENHEIT
FD	FLOOR DRAIN
FBM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
GA	GAUGE
GAL	GALLON
GPM	GALLONS PER MINUTE
H	HEIGHT
HB	HOSE BIBB
HP	HORSEPOWER
IBC	INTERNATIONAL BUILDING CODE
IN	INCH
L	LENGTH
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MFG	MANUFACTURER
MIN	MINIMUM
NC	NORMALLY CLOSED
NEBB	NATIONAL ENVIRONMENTAL BALANCING BUREAU
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NORMALLY OPEN
OA	OUTSIDE AIR
PD	PRESSURE DROP
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RPM	REVOLUTION PER MINUTE
SCO	SURFACE CLEANOUT
SS	STAINLESS STEEL
ST	STORM DRAIN
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UPC	UNIFORM PLUMBING CODE
UV	ULTRAVIOLET
W	WITH
W	WASTE
WB	WET-BULB TEMPERATURE
WFS	WATER FEATURE SUPPLY
VFD	VARIABLE FREQUENCY DRIVE

Work Scope

- DEMOLISH AND REPLACE THE EXISTING COOLING TOWER AND RECIRCULATION PUMPS.
- REPLACE PNEUMATIC AIR CONTROL VALVE FOR CP-2 WITH DDC VALVE. UPDATE DDC SYSTEM FOR OPERATION.
- PROVIDE NEW PUMPS WITH VFDS, A DIGITAL FLOWMETER, PRESSURE GAUGES AT PUMP DISCHARGES AND VACUUM GAGUES AT PUMP SUCTION.

General Notes

- PROVIDE SYSTEM STARTUP, TESTING, ADJUSTMENTS, AND REPORTS TO MEET THE PERFORMANCE INDICATED IN THESE DOCUMENTS.
- BASIS OF DESIGN: THE PRODUCTS OR SERVICES IN THE BASIS OF DESIGN AND EQUIPMENT/PRODUCT SCHEDULES ON THESE DRAWINGS WERE PURPOSELY SELECTED BY THE ENGINEER TO MEET THE OWNER'S PROGRAMMING REQUIREMENTS AND ARE NOT BEING "SOLE-SOURCED" BY THE OWNER UNLESS NOTED OTHERWISE. PRODUCTS FROM OTHER MANUFACTURERS WITH EQUAL SALIENT CHARACTERISTICS, EQUAL LEAD TIMES, AND EQUAL MAINTENANCE COSTS MAY BE USED TO BID AND CONSTRUCT THE PROJECT. BIDDERS SHALL CONTACT THE ENGINEER OF RECORD DURING THE BID PHASE FOR APPROVAL OF THE SUBSTITUTION REQUEST ON EACH ITEM. IN THE EVENT A CONTRACTOR IS AWARDED THE PROJECT WITHOUT OBTAINING ENGINEER'S APPROVAL OF THE SUBSTITUTION REQUEST DURING THE BID PHASE, THEN THE CONTRACTOR MAY BE REQUIRED, AT THE ENGINEER'S OPTION, TO INSTALL THE BASIS OF DESIGN PRODUCTS OR SERVICES AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CHANGES RESULTING FROM PROJECT SUBSTITUTIONS. NON-APPROVED PRODUCTS OR SERVICES ARE AT THE CONTRACTOR'S RISK AND NO EQUITABLE ADJUSTMENT TO TIME OR MONEY WILL BE MADE FOR COST DIFFERENCES BETWEEN APPROVED VERSUS NON-APPROVED AFTER BIDDING HAS BEEN CLOSED. ALLOW SEVEN CALENDAR DAYS BEFORE BIDS ARE DUE TO OBTAIN APPROVAL.
- ALL VALVES, TRAPS, TEST PORTS, CONTROLS, CLEANOUTS, ETC. SHALL BE LOCATED SO AS TO BE ACCESSIBLE FOR MAINTENANCE, ADJUSTMENT, & TESTING. PROVIDE ACCESS PANELS FOR ALL CONCEALED DEVICES.
- PIPING SHALL BE ROUTED SO AS NOT TO OBSTRUCT ACCESS OR CAUSE TRIPPING OR OTHER HAZARDS.
- PIPING SHALL BE ROUTED SO AS TO MAINTAIN CODE-REQUIRED CLEARANCES FOR ELECTRICAL EQUIPMENT, ADA ACCESSIBILITY, AS WELL AS MAINTAINING CLEAR ACCESS AT ALL DOORS, WINDOWS, & OTHER ARCHITECTURAL FEATURES IN THE BUILDING.
- PROVIDE COMPLETE DRAINAGE PIPING SYSTEM FOR DISCHARGE FROM ALL AIR VENTS INSTALLED ON HYDRONIC PIPING. FIELD ROUTE DRAINAGE PIPING FROM EQUIPMENT TO NEAREST DRAIN LOCATION. SLOPE NON-PRESSURIZED DRAIN PIPING TO DRAIN LOCATION. PIPING & FITTINGS SHALL BE SCHEDULE 80 PVC GLUED FITTINGS. MINIMUM PIPE SIZE SHALL BE 3/4".
- PROVIDE SEISMIC SUPPORT, BRACING, AND ATTACHMENTS FOR PIPING AND EQUIPMENT. SEISMIC PROVISIONS SHALL BE PROVIDED TO MEET REQUIREMENTS FOR ASCE-7 SEISMIC DESIGN CATEGORY E & RISK CATEGORY II.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 70 STANDARDS AND LOCAL REQUIREMENTS.
- ALL FIELD WIRING SHALL REQUIRE AN ELECTRICAL PERMIT AND SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.
- ALL NEW ELECTRICAL ENCLOSURES (INCLUDING THOSE PROVIDED WITH EQUIPMENT OR SYSTEMS) IN NATATORIUMS AND/OR CHEMICAL STORAGE ROOMS SHALL BE NEMA 4X RATED.
- ALL EQUIPMENT AND COMPONENTS REQUIRING GROUNDING SHALL BE PROVIDED WITH FACTORY-INSTALLED GROUNDING LUGS OR FACTORY DRILLED & TAPPED FOR FIELD INSTALLATION OF GROUNDING LUGS.
- A SHORT DASH IN A SCHEDULE TABLE CELL INDICATES THAT THE COLUMN HEADING IS NOT USED OR NOT APPLICABLE TO THAT SCHEDULED ITEM.
- MAINTAIN AND RESTORE (IF INTERRUPTED) ALL CONDUITS & CONDUCTORS, PIPING, & DUCTWORK PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.
- REMOVE ALL ABANDONED DUCTWORK, PIPING, CONTROLS, WIRING, ETC., WHERE ACCESSIBLE IN RENOVATED AREAS.
- WHERE CONTROLS ARE DEMOLISHED, REMOVE WIRING BACK TO NEAREST CONTROL PANEL OR JUNCTION BOX. REMOVE ACCESSIBLE CONDUIT, JUNCTION BOXES, ETC.
- OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL EQUIPMENT AND COMPONENTS REMOVED DURING DEMOLITION.
- CONTRACTOR SHALL SCAN WALLS, FLOORS, CEILINGS, AND OTHER SURFACES THAT COULD CONCEAL COMPONENTS SUCH AS EXISTING PIPING, ELECTRICAL ITEMS, OR OTHERS PRIOR TO ANY CUTTING, DRILLING, OR SIMILAR OPERATION TO VERIFY THAT THE AREA OF WORK IS CLEAR OF COMPONENTS THAT COULD BE DAMAGED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL CUTTING & RESTORATION WORK NECESSARY IN EXISTING AREAS OF THE BUILDING TO PROVIDE WORK SHOWN ON THESE DOCUMENTS. RESTORATION SHALL INCLUDE PATCHING TO MATCH EXISTING SURROUNDING CONSTRUCTION AND FINISHES. PATCHED AREAS SHALL BE RE-PAINTED FULL HEIGHT OF WALL FROM WALL CORNER TO WALL CORNER.
- WHERE DIRECTION REGARDING RESTORATION AT SPECIFIC LOCATIONS OF CUTTING, CORE-DRILLING, & SIMILAR ACTIVITIES DOES NOT EXIST IN THE ARCHITECTURAL DOCUMENTS, RESTORATION SHALL INCLUDE PATCHING TO MATCH EXISTING SURROUNDING CONSTRUCTION AND FINISHES. PATCHED AREAS SHALL BE RE-PAINTED FULL HEIGHT OF WALL FROM WALL CORNER TO WALL CORNER.

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PROJECT TITLE

Puyallup High School Pool Mechanical Repairs

PROJECT ADDRESS

105 7th St SW
Puyallup, WA 98371

OWNER INFORMATION

Puyallup School District
302 2nd St SE
Puyallup, WA 98372

DRAWING REVISIONS

DRAWING ISSUE
Construction Set

DRAWING ISSUE DATE
2024/01/30

DRAWN	JB
CHECKED	JB
GDM PROJECT #	22-162
CLIENT PROJECT #	

SHEET TITLE

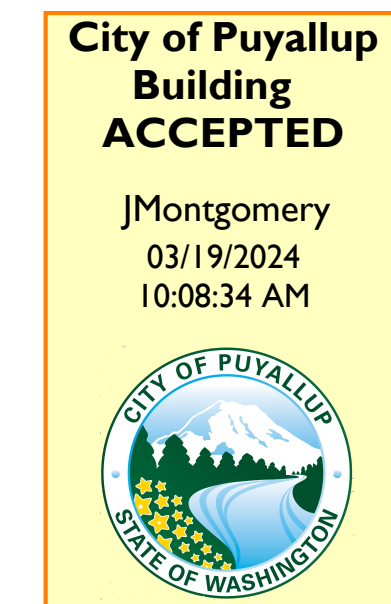
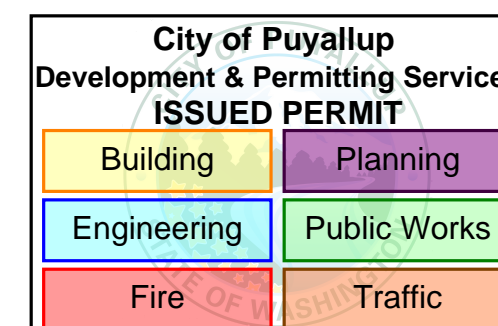
General Information

SHEET NUMBER

M001.01

SHEET 001 OF 004

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITTEE ON SITE FOR ALL INSPECTIONS (MIN. PLAN SIZE 24" X 36")



EQUIPMENT SCHEDULE																							
SYMBOL	MANUFACTURER	MODEL	SERVICE	TYPE	DESCRIPTION/DATA	FLOW				HEAD (FT)	NPSHR (FT)	RPM	ELECTRICAL			STARTER			MOUNTING	WEIGHT (LBS)	WORK SCOPE	NOTES	
						GPM (DESIGN)	GPM (MIN)	GPM (MAX)	GPD				HP	VOLT	PHASE	VFD	MFG	EC					NA
CT-1	EVAPCO	LSTE-446	-	FORCED AIR UP DISCHARGE	NOMINAL (TONS) 60, 900 MBH, 13700 CFM, COIL VOLUME 79 GAL, 180 GPM, OA WB 65°F, EWT 87°F, LWT 77°F, PD 3.47 FT, FLA 21.1, MCA 26.4	-	-	-	-	-	-	-	7.5	208	3	-	-	-	-	-	2,390	EXISTING TO REFURBISH	6,7
CP-7A (E)	BELL & GOSSET	1510 -2BC	COOLING TOWER	BASE-MOUNT CENTRIFUGAL	-	180	152	200	-	75.00	7.00	1,750	5.00	208	3	X	-	-	-	FLOOR	-	EXISTING TO REPLACE	1,2,3,5
CP-7B (E)	BELL & GOSSET	1510 -2BC	COOLING TOWER	BASE-MOUNT CENTRIFUGAL	-	180	152	200	-	75.00	7.00	1,750	5.00	208	3	X	-	-	-	FLOOR	-	EXISTING TO REPLACE	1,2,3,5
CP-7A (N)	BELL & GOSSET	1510 -2BC	COOLING TOWER	BASE-MOUNT CENTRIFUGAL	-	180	152	200	-	75.00	7.00	1,750	5.00	208	3	X	-	-	-	FLOOR	-	NEW	1,2,3,5
CP-7B (N)	BELL & GOSSET	1510 -2BC	COOLING TOWER	BASE-MOUNT CENTRIFUGAL	-	180	152	200	-	75.00	7.00	1,750	5.00	208	3	X	-	-	-	FLOOR	-	NEW	1,2,3,5
HE-1 (E)	BAC	EC5-030-1	COOLING TOWER	WATER TO WATER STAINLESS STEEL	HOT SIDE: HIGH: 102°F LOW 82°F 90 GPM 2.75 PSI DROP COLDE SIDE: LOW 77° HIGH 87°F 180 GPM 9.3 PSI DROP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FLOOR	1,410	EXISTING TO REPLACE	7
HE-2 (E)	BAC	EC2-032-2	COOLING TOWER	WATER TO WATER STAINLESS STEEL	HOT SIDE: HIGH: 80°F LOW 70°F 130 GPM 9.6 PSI DROP COLDE SIDE: LOW 60° HIGH 70°F 130 GPM 8.9 PSI DROP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FLOOR	820	EXISTING TO REPLACE	7
HE-1 (N)	SONDEX	A19A-IG10-32	COOLING TOWER	WATER TO WATER TITANIUM	HOT SIDE: HIGH: 102°F LOW 82°F 90 GPM 2.72 PSI DROP COLDE SIDE: LOW 77° HIGH 87°F 180 GPM 9.9 PSI DROP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FLOOR	586	NEW	7
HE-2 (N)	SONDEX	A19A-IG10-49	COOLING TOWER	WATER TO WATER TITANIUM	HOT SIDE: HIGH: 80°F LOW 70°F 130 GPM 9.2 PSI DROP COLDE SIDE: LOW 60° HIGH 70°F 130 GPM 9.4 PSI DROP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FLOOR	532	NEW	7

NOTES:
1. CLOSE-COUPLED PUMP CONFIGURATION.
2. PROVIDE NEW EQUIPMENT WITH SHAFT GROUNDING KIT FOR PUMP MOTOR.
3. NEW MOTOR SHALL BE NEMA MG-1 INVERTER READY TYPE.
4. PROVIDE NEW PUMP WITH 9.45" IMPELLER.
5. PROVIDE NEW PUMP WITH 9" IMPELLER.
6. REFERBISHED EQUIPMENT SHALL BE PROVIDED WITH VFD FOR EACH FAN.
7. WEIGHT INDICATED IS OPERATING WEIGHT.

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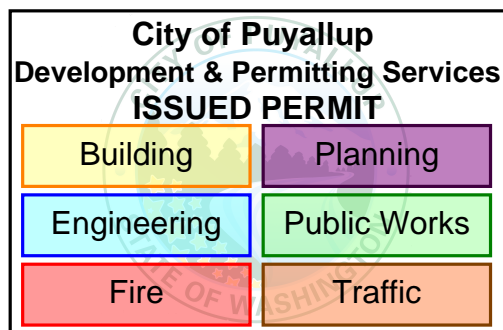
SHEET TITLE

Schedules

SHEET NUMBER

M002.01

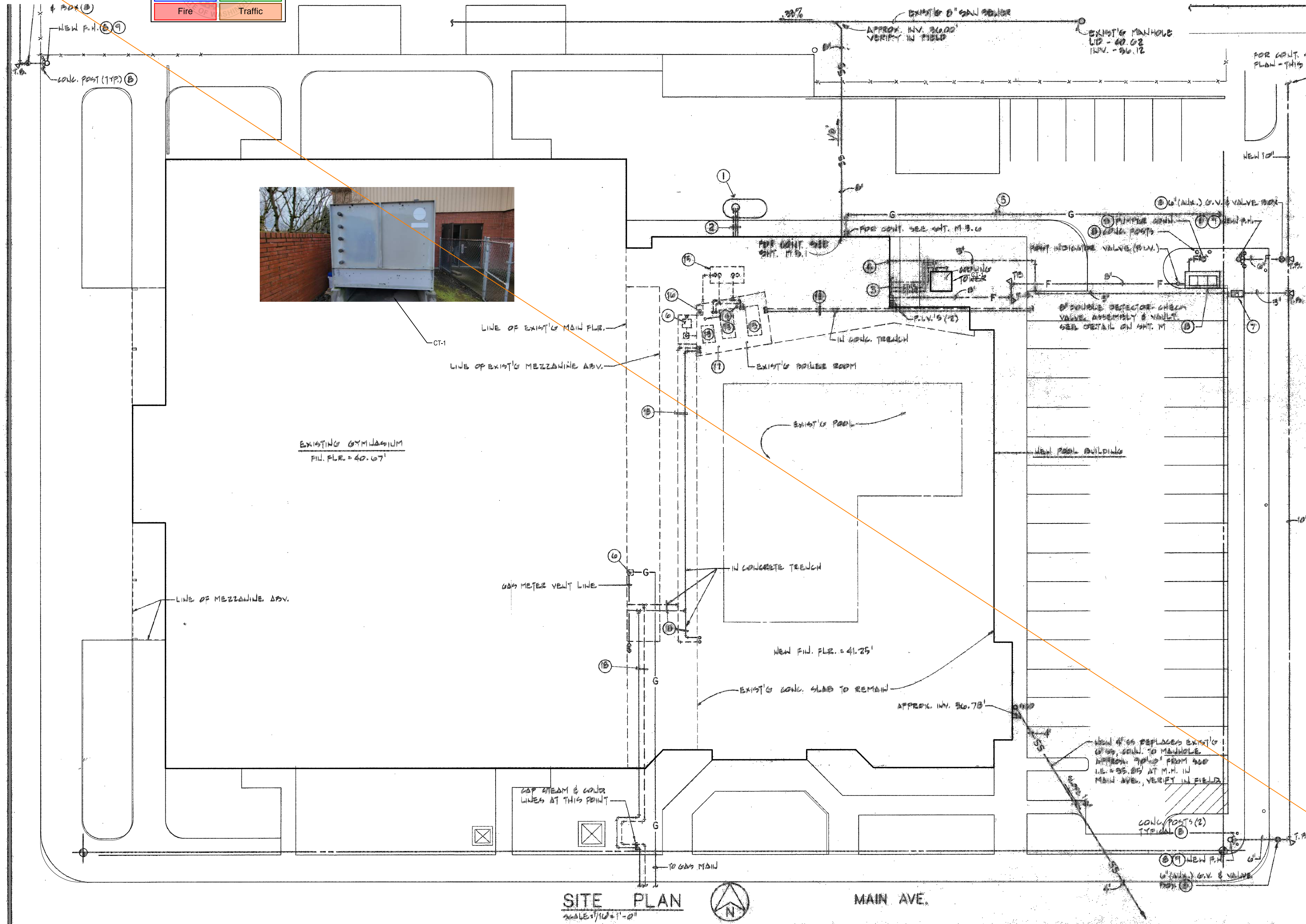
SHEET 002 OF 004



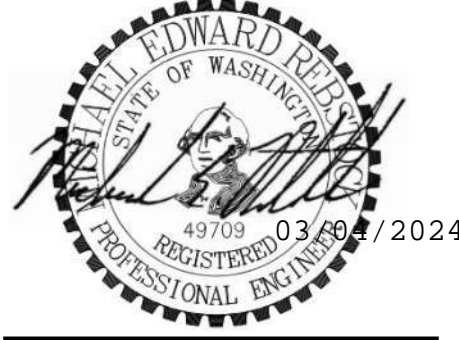
SEE REVISED PLAN

NOT LEGIBLE
PROVIDE COPY OF PLAN THAT CAN PRINT CORRECTLY
PG K004

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Building	Planning
Engineering	Public Works
Fire	Traffic



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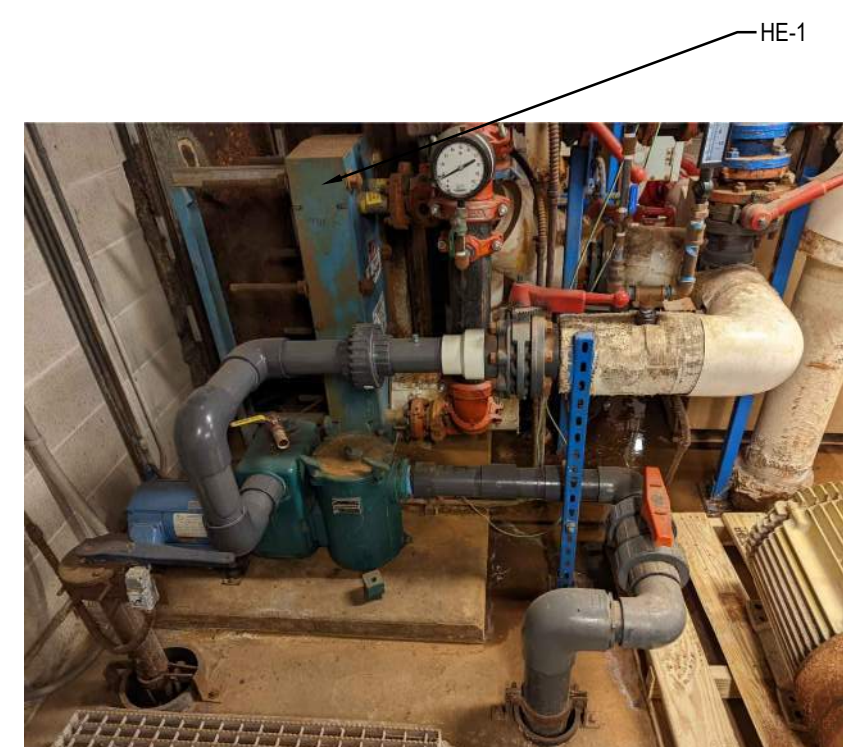
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SHEET TITLE	Site Plan
SHEET NUMBER	K004
SHEET OF	

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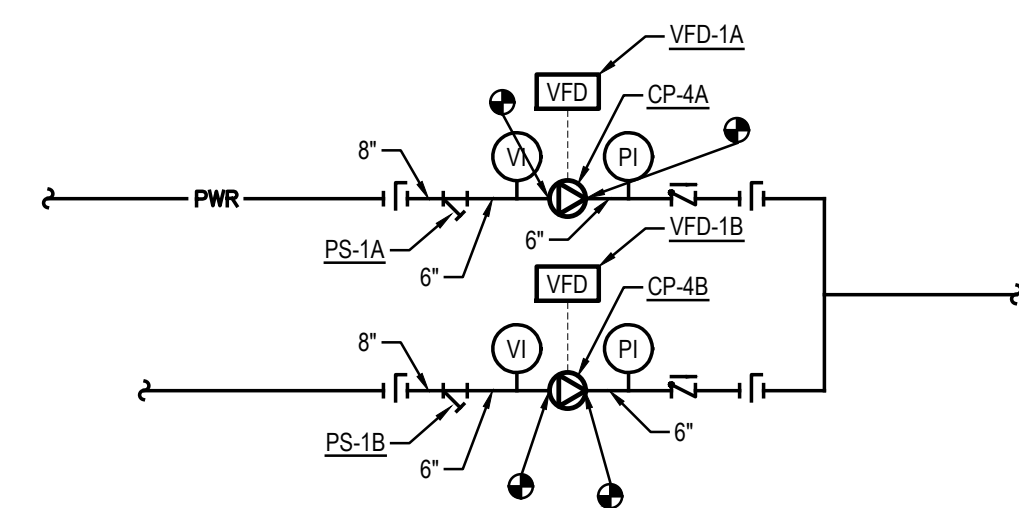
1 Heat Exchanger Pump Location
SCALE: NONE



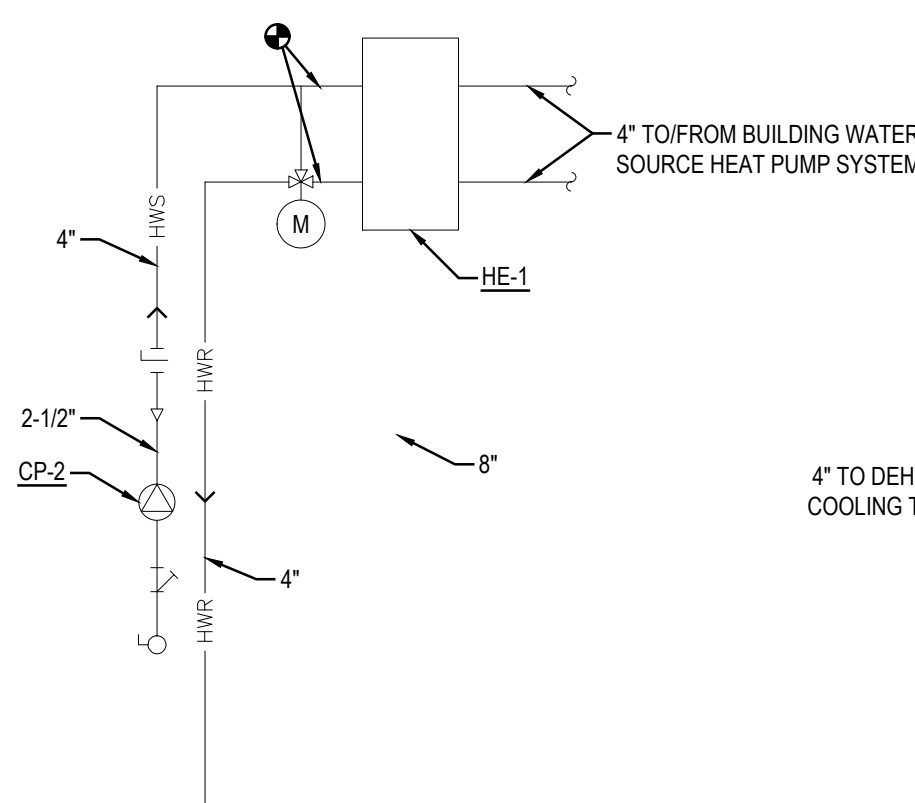
2 Heat Exchanger 1 Location
SCALE: NONE



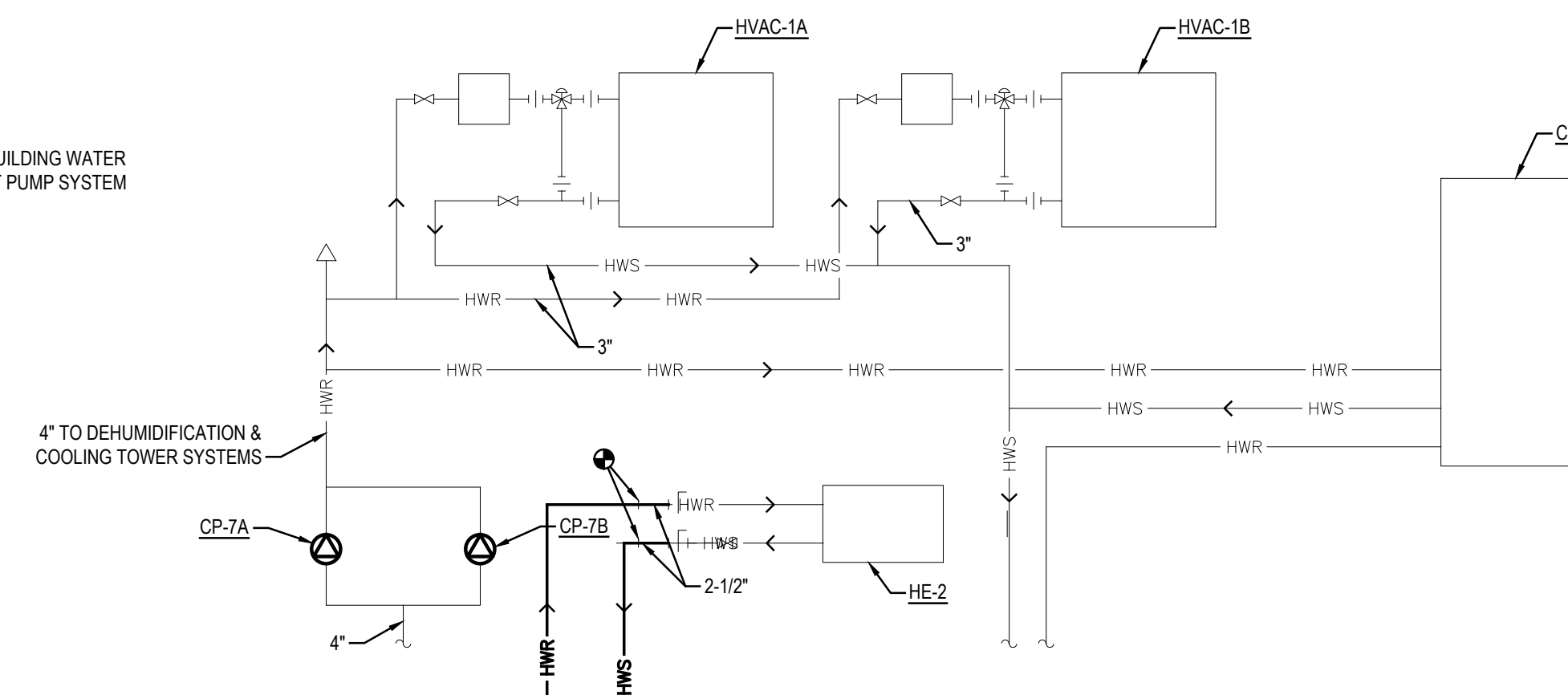
3 Heat Exchanger 2 Location
SCALE: NONE



1 Heat Exchanger Pump
SCALE: NONE



2 Heat Exchanger 1 Flow Diagram
SCALE: NONE



3 Heat Exchanger 2 Flow Diagram
SCALE: NONE

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Pool Flow Diagram

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SHEET 004 OF 004