HOT WATER AND CONDENSATE PUMP REPLACEMENT GRADUATE SCIENCES

STATE PROJECT NUMBER H27-6094
COLUMBIA, SC
CONSTRUCTION DOCUMENTS

DRAWING INDEX

CAMPUS PLANNING AND CONSTRUCTION
COLUMBIA, SC 29208

SEAL:

CHECKED BY: WCL
ORIG. BY DRAWN BY:

DRAWN BY: DEM
DATE

DATE: 02.20.15
DESCRIPTION

DRAWING: CP00365636
BUILDING: 114
REV:

PROJECT TITLE: HOT WATER AND CONDENSATE PUMP REPLACEMENT – GRADUATE SCIENCES
STATE PROJECT NUMBER H27-6094

University of South Carolina

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SHEET: T1
OF
SHEET IN SET:
OF

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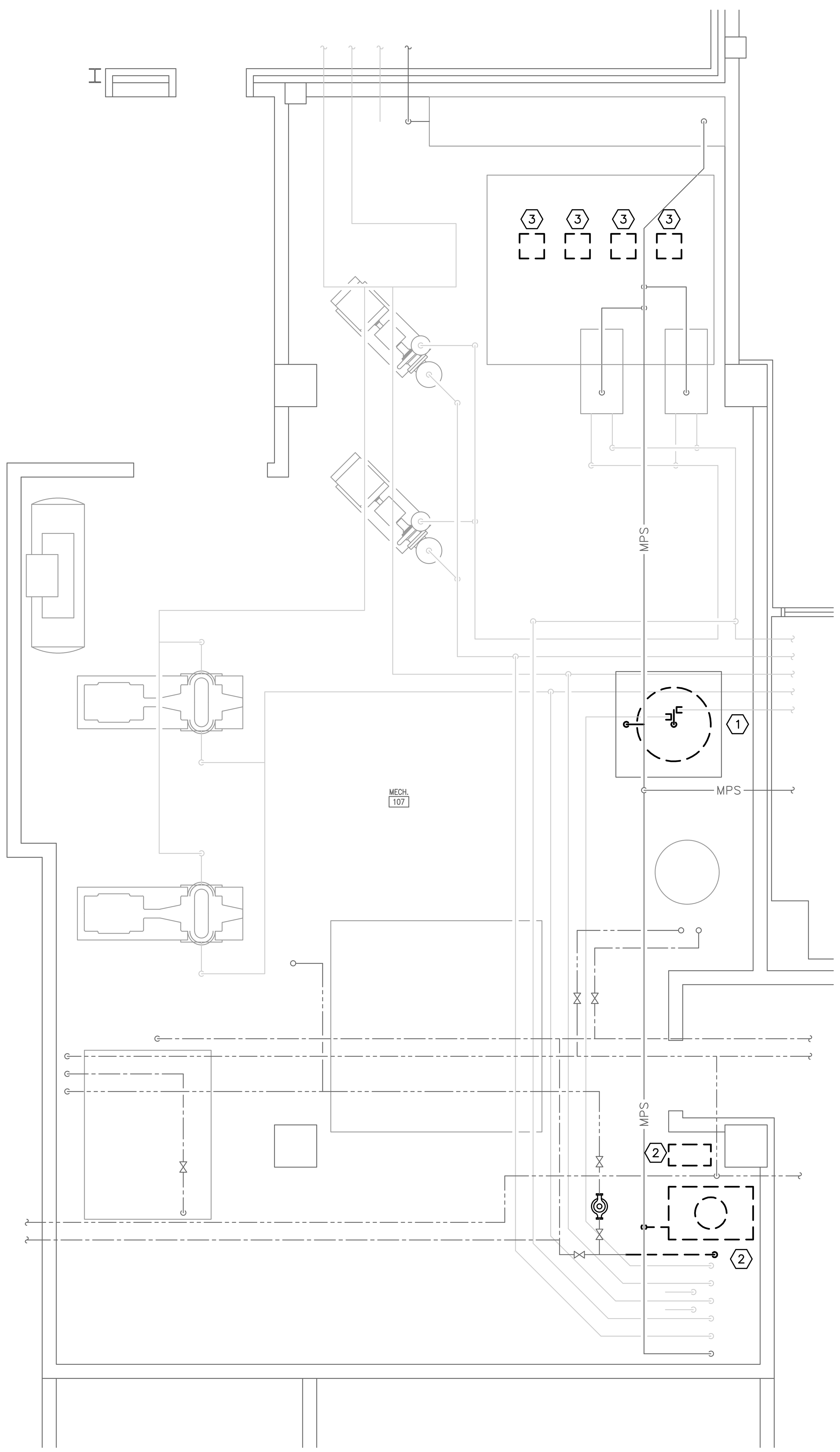
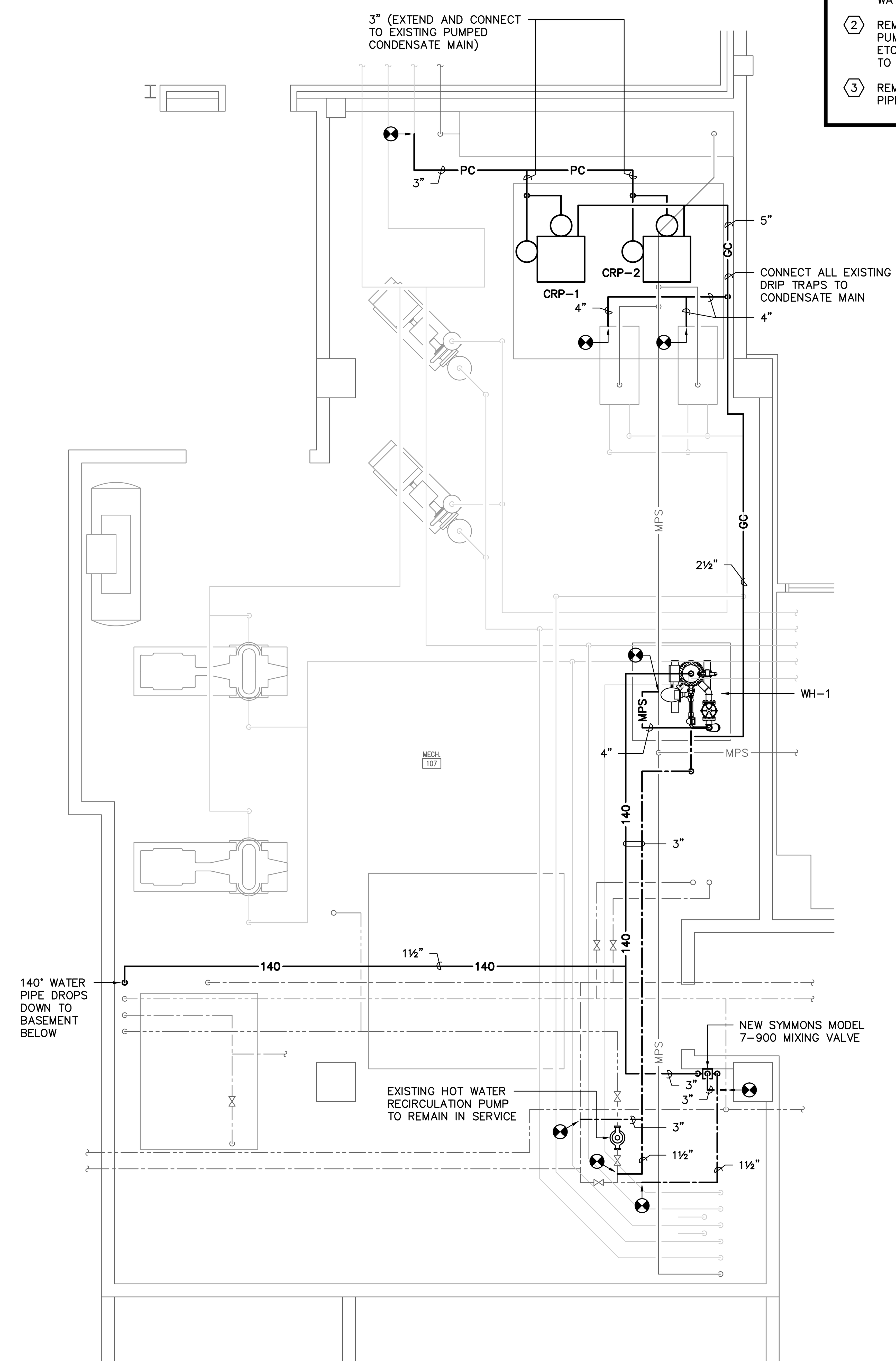
DEMOLITION NOTES

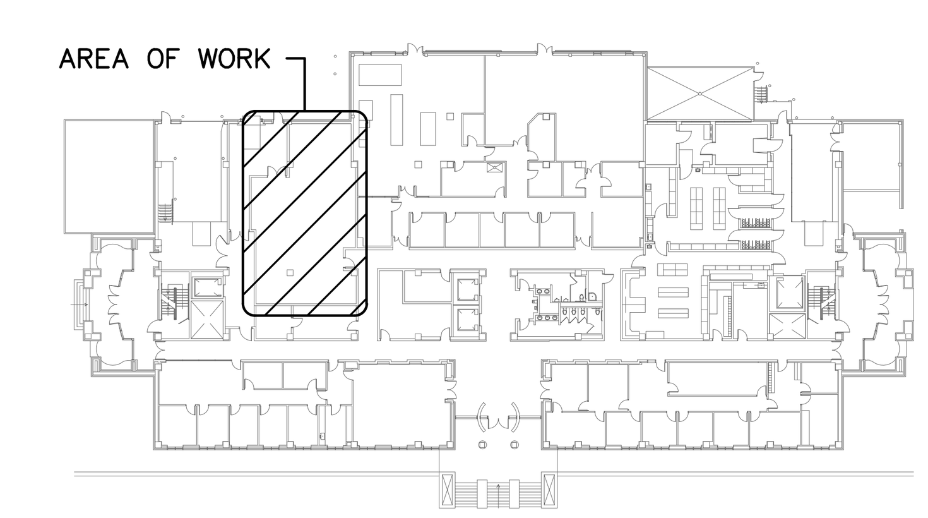
1. REMOVE EXISTING CLEAN STEAM GENERATOR AND ALL ASSOCIATED WATER MAKE UP SYSTEM, PIPING CONNECTIONS, CONTROLS AND WIRING. CAP ALL DOMESTIC WATER PIPING AND MEDIUM PRESSURE STEAM PIPING AT MAINS. CAP AND ABANDON CLEAN STEAM PIPING, FOR FUTURE CONNECTION. EXISTING HOUSEKEEPING PAD WILL REMAIN IN PLACE FOR USE WITH NEW WATER HEATER.
2. REMOVE EXISTING STEAM WATER HEATER AND CONDENSATE RETURN PUMP COMPLETE, INCLULDING ALL WIRING, PIPING, HANGERS, SUPPORTS, ETC. EXISTING STEAM AND DOMESTIC WATER PIPE SHALL BE ROUTED TO AND CONNECTED TO NEW WATER HEATER.
3. REMOVE EXISTING STEAM MOTIVE CONDENSATE PUMPS COMPLETE, INCLUDING ALL PIPING AND STEAM FEED PIPE.



1 / P1 MECHANICAL ROOM PLAN – DEMOLITION
SCALE: 1/4" = 1'-0"



2 / P1 MECHANICAL ROOM PLAN
SCALE: 1/4" = 1'-0"



KEY PLAN – FIRST FLOOR
NO SCALE

SOUTH CAROLINA SWYGERT AND ASSOCIATES, LTD. NO. C00227 CERTIFICATE OF AUTHORIZATION

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CAMPUS PLANNING AND CONSTRUCTION
COLUMBIA, SC 29208

SEAL: SOUTH CAROLINA PROFESSIONAL ENGINEER No. 17994 WILLIAM C. LIVINGSTON 2-20-15

BUILDING:	DRAWING:	DATE:	DRAWN BY:	CHECKED BY:
114	CP00365636	02.20.15	DEM	WCL
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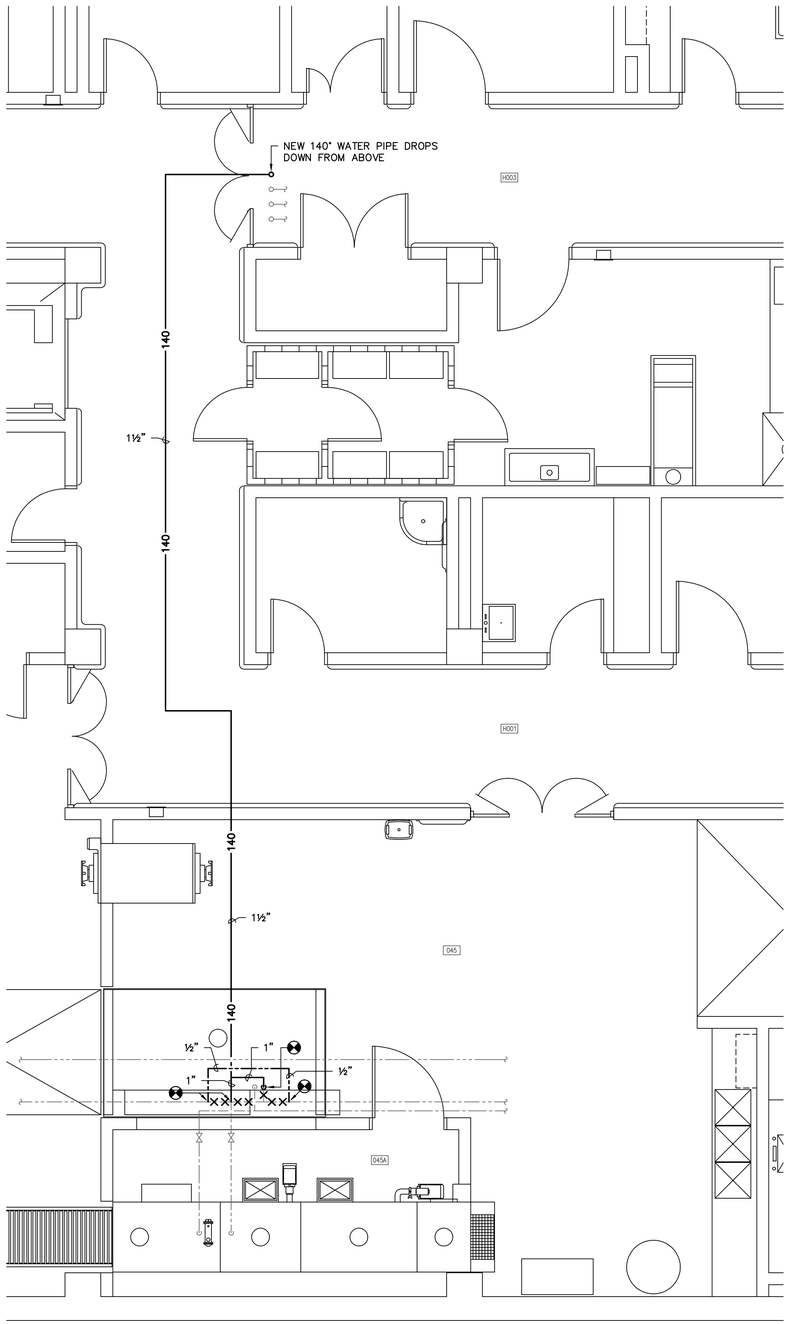
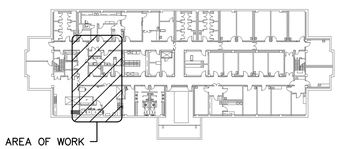


1 P2 PARTIAL BASEMENT PLAN
SCALE: 1/4" = 1'-0"



KEY PLAN – BASEMENT
NO SCALE

CAMPUS PLANNING
AND CONSTRUCTION
COLUMBIA, SC 29208

SEAL: NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WILLIAM C. LITTLEJOHN No. 17994 2-20-15

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WATER HEATER SCHEDULE

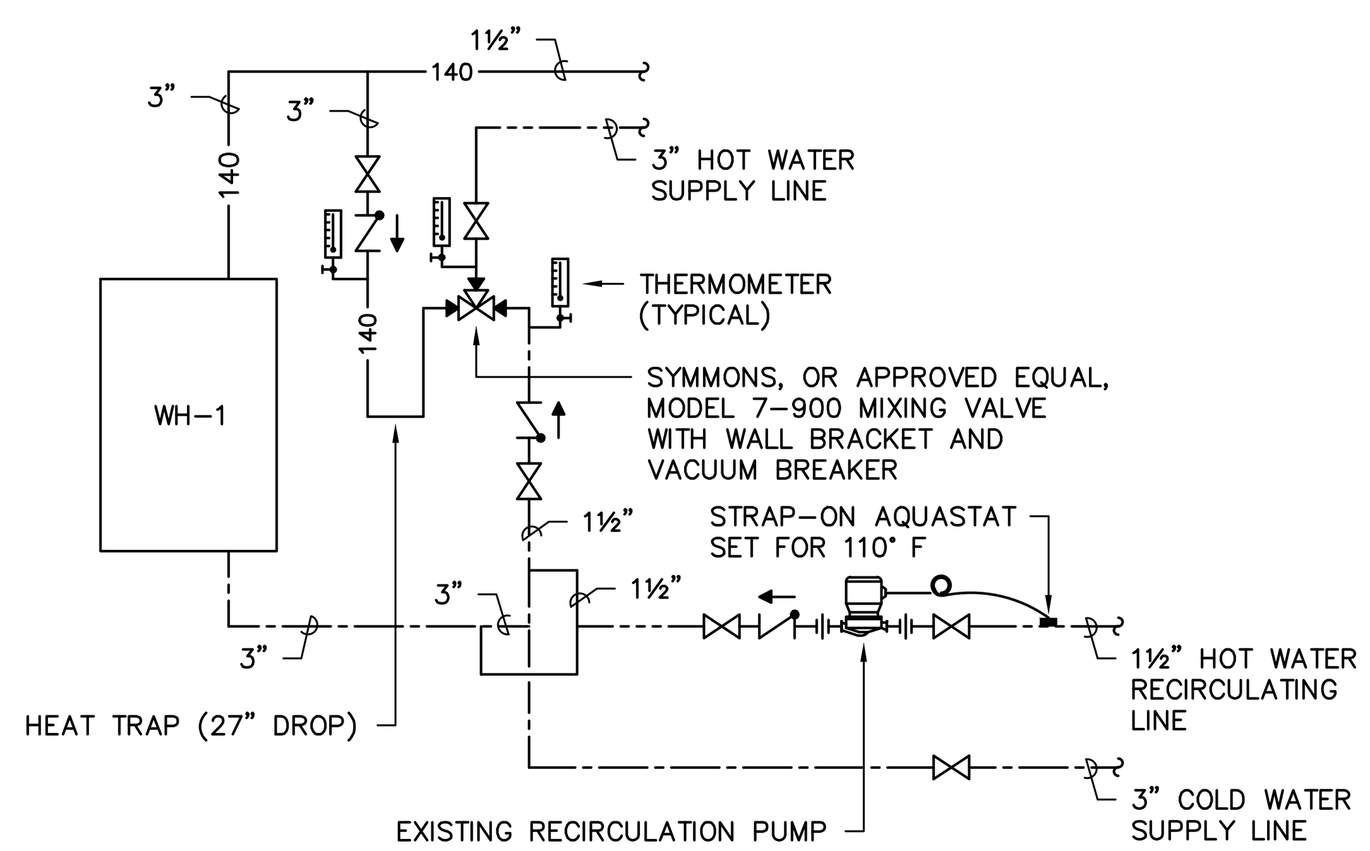
TAG	MANUFACTURER	MODEL NUMBER	STEAM PRESSURE	TANK CAPACITY (GAL.)	TEMP. SETTING	RECOVERY		REMARKS
						GPM	DEG. RISE	
WH–1	CEMLINE	V10SEH1036DW	50 PSI	INSTANTANEOUS	140°F	80	100	1

1. PROVIDE INSTANTANEOUS STEAM WATER HEATER WITH DOUBLE WALL HEAT EXCHANGER INCOMING STEAM STRAINER, ELECTRIC PERATED TEMPERATURE REGULATOR, MAIN AND AUXILIARY F&T TRAPS, INTRA TANK CIRCULATOR, ASME PRESSURE–TEMP RELIEF VALVES, WATER AND STEAM PRESSURE GAUGES, SOLID STATE CONTROL MODULE WITH BUILT IN PID CONTROL SIGNAL, WITH LED DISPLAY OF SET POINT AND OPERATING TEMPERATURE AND 0–20 SIGNAL INTERFACE FOR TEMPERATURE SETPOINT AND SUPPLY TEMPERATURE OUTPUT, WITH ALARM CONTACTS FOR REMOTE CONNECTION TO EXISTING BUILDING AUTOMATION SYSTEM.

CONDENSATE RETURN UNIT

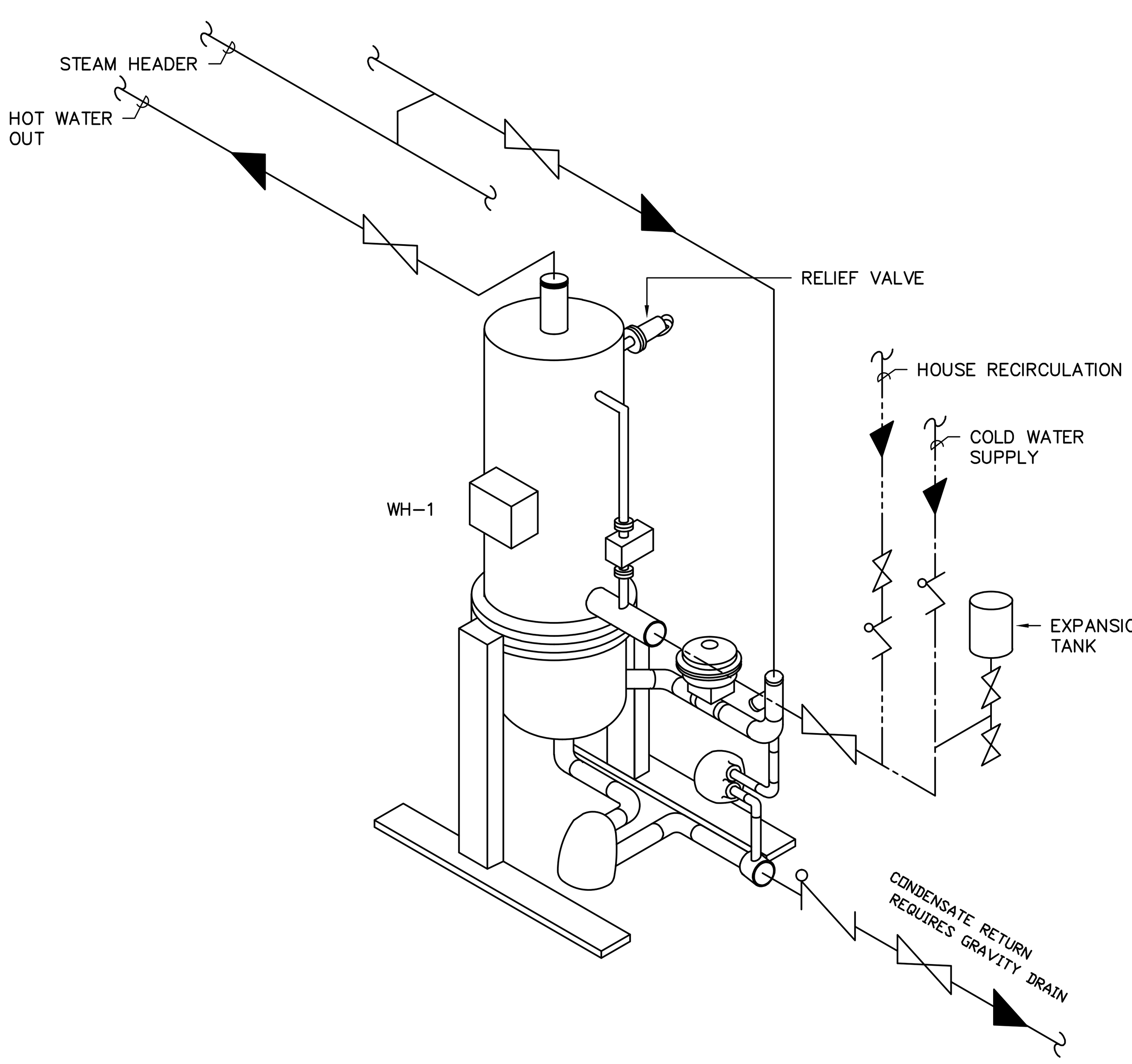
TAG	ITT B&G MODEL NO.	CAP. GPM	DIS. PRESS. PSIG	MOTOR H.P.	MOTOR RPM	RECEIVER CAP.–GALS.	REMARKS
CRP–1	604CC	60	30	(2) 3	3500	52	1,2
CRP–2	604CC	60	30	(2) 3	3500	52	1,2

1. PROVIDE CONTROL PANEL, GAUGE GLASS, DIAL THERMOMETER, INLET BASKET STRAINER, FLASH TANK, DISCHARGE PRESSURE GAUGE, AND BUTTERFLY SUCTION VALVE.
2. PUMPS SHALL BE DUPLEX ARRANGEMENT.



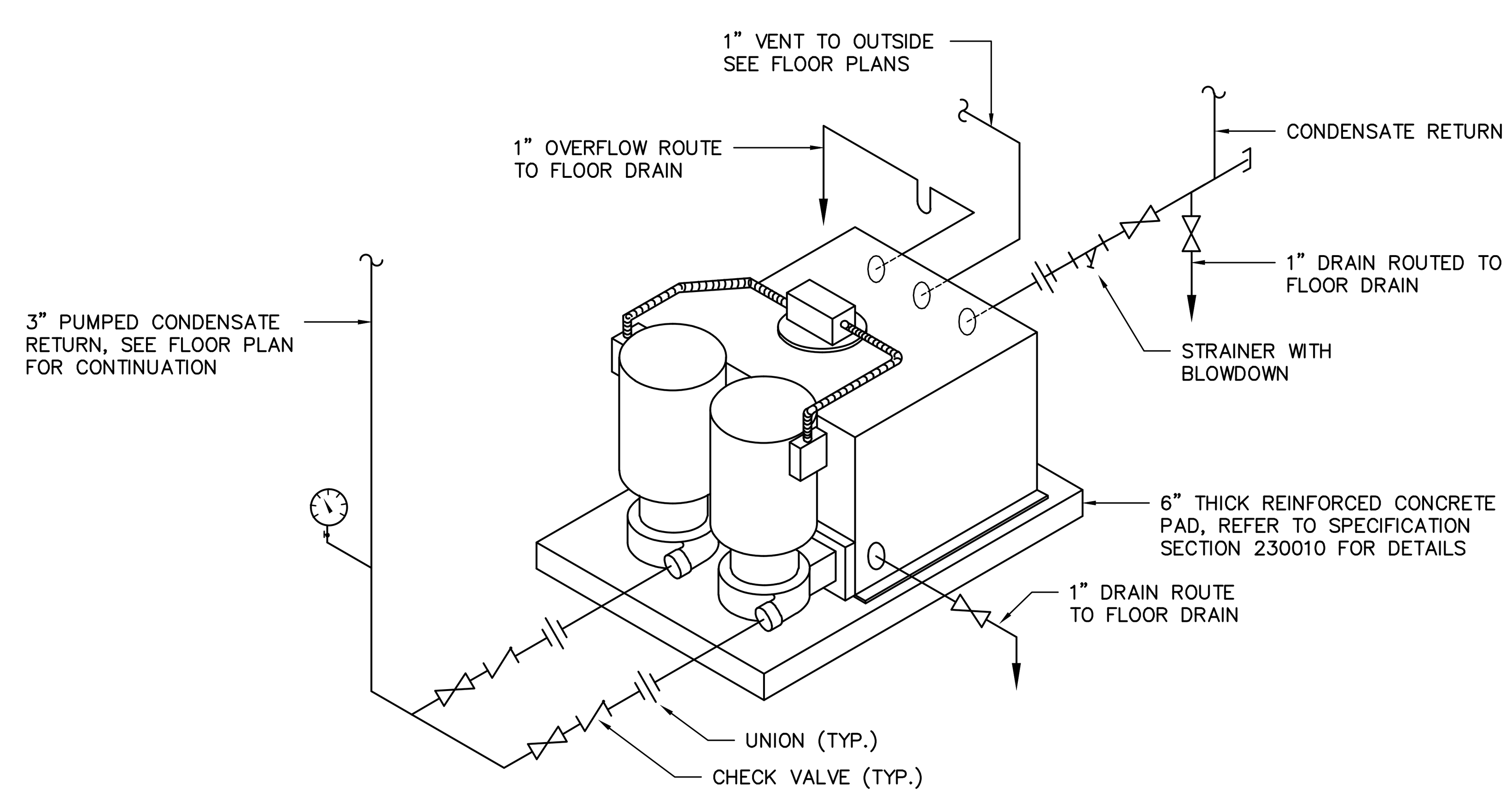
MIXING VALVE DETAIL

NO SCALE



WATER HEATER PIPING DETAIL

NO SCALE



DUPLEX CONDENSATE RETURN UNIT

NO SCALE

GENERAL NOTES

1. VISIT SITE PRIOR TO BIDDING. THIS CONTRACTOR SHALL DETERMINE DIFFICULTY OF INSTALLATION AND REFLECT THIS IN HIS BIDDING.
2. DO NOT SCALE DRAWINGS. THIS CONTRACTOR SHALL VERIFY ALL EXISTING ITEMS AND LOCATIONS IN THE FIELD.
3. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE.
4. EXISTING PIPE, DUCTWORK, CONDUIT, ETC. THAT INTERFERES WITH THE ROUTING OF NEW SYSTEMS SHALL BE RELOCATED. THIS CONTRACTOR SHALL INCLUDE THE COST OF SUCH IN HIS BID UNLESS NOTED OTHERWISE.
5. WATER SYSTEMS SHALL BE DRAINED AS REQUIRED FOR INSTALLATION OF WORK. UPON COMPLETION, SYSTEM SHALL BE FILLED WITH WATER AND VENTED OF ALL AIR.
6. ALL PIPING INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS, ROOFS AND PARTITIONS.
7. ALL PIPING IS SHOWN DIAGRAMMATIC. HOWEVER, THIS CONTRACTOR SHALL PROVIDE ALL REQUIRED FITTINGS, PIPING AND INSULATION FOR ALL OFFSETS AND/OR CHANGES IN ELEVATION.
8. EXTEND ALL DRAIN LINES TO NEAREST FLOOR DRAIN OR AS INDICATED – SO ROUTED AS TO AVOID INTERFERENCE WITH PASSAGEWAYS AND MAINTENANCE. DRAINS FROM AIR HANDLING UNITS SHALL BE TRAPPED PER STATIC PRESSURE REQUIREMENTS.
9. EXTEND DRAIN LINES FROM RELIEF VALVES TO NEAREST FLOOR DRAIN UNLESS OTHERWISE NOTED OR INDICATED.
10. ALL WATER PIPING SHALL PITCH DOWN IN DIRECTION OF FLOW ONE–INCH PER FIFTY FEET WITH MANUAL AIR VENTS AT ALL HIGH POINTS AND 3/4–INCH DRAIN VALVES WITH STANDARD HOSE CONNECTION AT ALL LOW POINTS.
11. ALL VALVES AND SPECIALTIES SHALL BE LINE SIZE UNLESS NOTED OTHERWISE, USING ECCENTRIC REDUCERS ON PUMP SUCTION AND CONCENTRIC REDUCERS ON PUMP DISCHARGE. USE ECCENTRIC REDUCERS ON AUTOMATIC VALVES AS REQUIRED.
12. MINIMUM PIPE SIZE SHALL BE 3/4–INCH UNLESS INDICATED OTHERWISE.
13. ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS AND FURTHER SUPPORTS OR HANGERS SHALL BE PROVIDED TO PREVENT WEIGHT OF PIPING BEING PLACED ON EQUIPMENT.
14. ALL ITEMS OF EQUIPMENT IN MECHANICAL ROOM AND ON GRADE SHALL BE LOCATED ON REINFORCED CONCRETE FOUNDATIONS, MINIMUM 6–INCH THICK OR AS DETAILED ON THESE PLANS AND SPECIFICATIONS AND 6 INCHES LARGER THAN EQUIPMENT IN EACH DIRECTION. PADS SHALL BE REINFORCED PER THE HOUSEKEEPING PAD SECTION OF THE ASHRAE PRACTICAL GUIDE FOR SEISMIC RESTRAINT. ALL UNITS SHALL BE SECURED TO THE HOUSEKEEPING PAD WITH SEISMIC RESTRAINTS. PROVIDE 1–INCH CHAMFERS ON ALL SIDES.
15. PROVIDE FOR ACCESS TO ALL EQUIPMENT REQUIRING CLEANING OR ADJUSTMENT.
16. THIS CONTRACTOR SHALL PROVIDE ALL ITEMS OF MISCELLANEOUS STEEL AS REQUIRED FOR INSTALLATION OF ALL MECHANICAL ITEMS.
17. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY DISMANTLING OF EQUIPMENT TO BE REMOVED. ITEMS REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY.
18. CONTACT JOHNSON CONTROLS FOR CONNECTION OF NEW WATER HEATER TO EXISTING METASYS CONTROL SYSTEM.

LEGEND

SYMBOL	DESCRIPTION
XXXXX	EXISTING PIPING TO BE REMOVED
———	SANITARY WASTE LINE
---------	SANITARY VENT LINE
— – —	DOMESTIC COLD WATER LINE
— – – —	DOMESTIC HOT WATER LINE
— – – – —	DOMESTIC HOT WATER RECIRCULATING LINE
—140—	HIGH TEMPERATURE HOT WATER LINE
—MPS—	MEDIUM PRESSURE STEAM LINE
—PC—	PUMPED CONDENSATE LINE
—GC—	GRAVITY CONDENSATE LINE
	SHUTOFF VALVE (GATE OR BALL DEPENDING ON SIZE)
	BALANCING VALVE
	AUTOFLOW VALVE
	PRESSURE REDUCING VALVE (ADJUSTABLE)
	PIPE ANCHOR
"A"	SHOCK ARRESTOR (P.D.I. RATING OF "A")
	PIPE TURNS TO, AWAY
	CONNECTION POINT OF NEW TO EXISTING

CAMPUS PLANNING AND CONSTRUCTION
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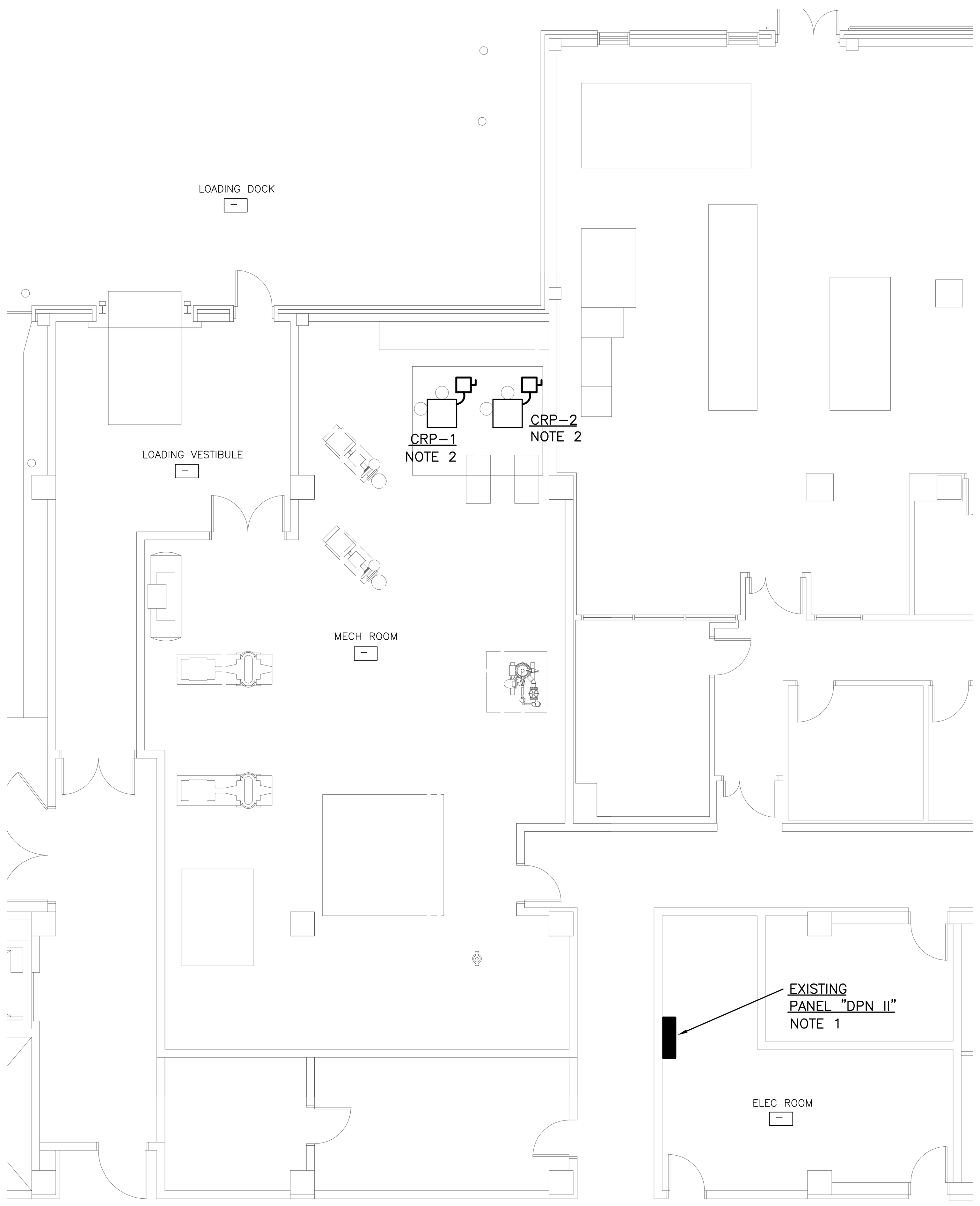
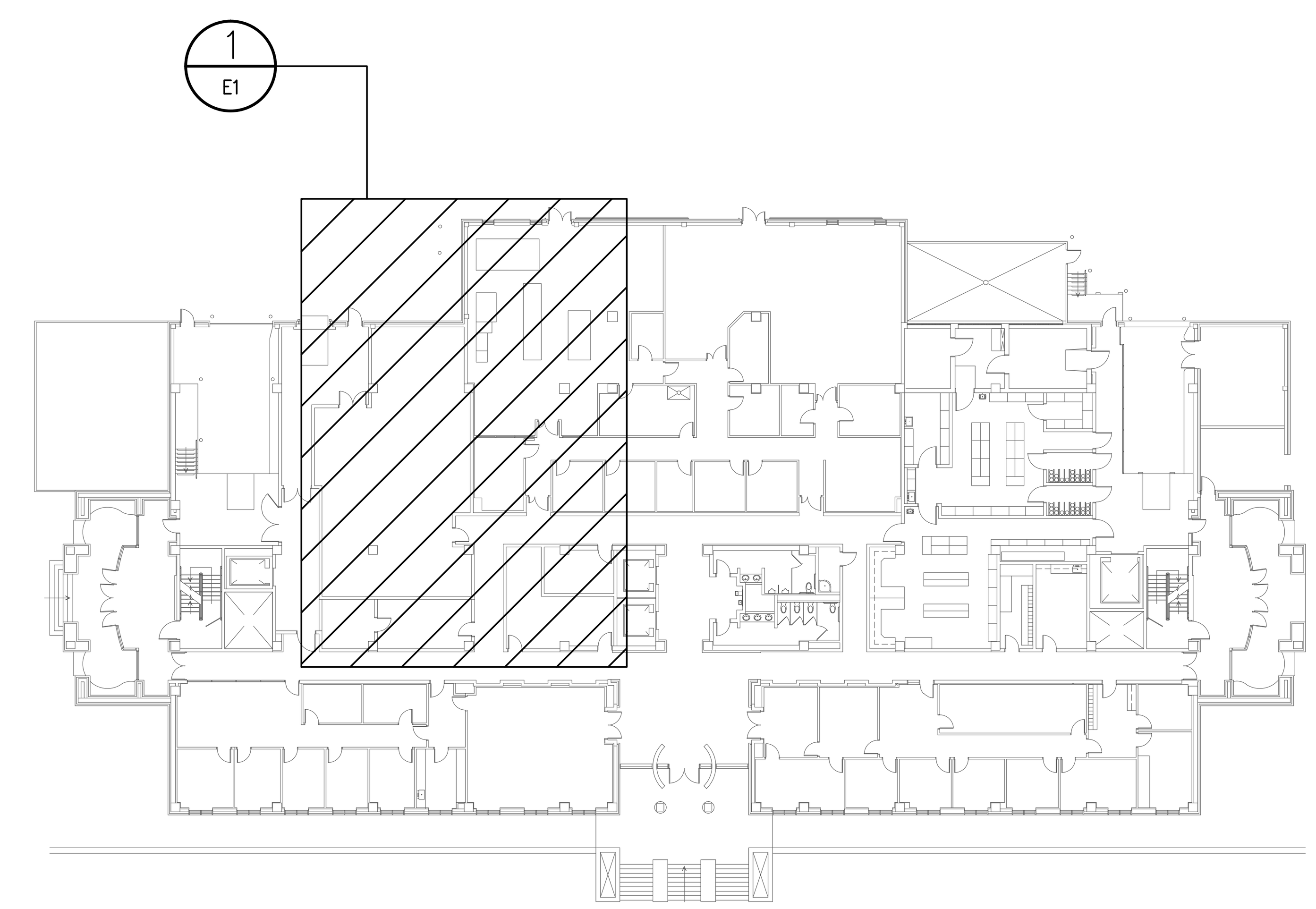


1 E1 ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

ELECTRICAL NOTES

1. PROVIDE TWO (2) 15 AMP, 3 POLE BREAKERS IN EXISTING PANEL "DPN II" TO FEED NEW CONDENSATE PUMPS. EXISTING PANEL "DPN II" IS A 800 AMP, 480V, 3 PHASE, SQUARE D I-LINE TYPE PANEL THAT USES "FCB" OR "FC" TYPE BREAKERS.
2. PROVIDE TWO (2) 15 AMP, 480V, 3 PHASE BRANCH CIRCUITS FOR CONDENSATE PUMPS (ONE CIRCUIT PER TWO-PUMP ASSEMBLY). FOR EACH CIRCUIT, PROVIDE 3#12, 1#12G. IN 3/4"C. AND 30A/600V RATED/3P/NEMA 1 FUSIBLE DISCONNECT SWITCH. THESE SHALL BE SINGLE POINT CONNECTIONS; COORDINATE LOCATIONS, CONNECTIONS, AND FUSING WITH MECHANICAL CONTRACTOR. PROVIDE FIRESTOPPING FOR CONDUIT PENETRATIONS AS REQUIRED.



KEY PLAN
SCALE: NONE

1/8"=1'-0" 4 0 4 8 16 scale feet

US21504
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SEAL: SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 26181 JASON L. AREHEART 2-20-15

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114	CP00365636	02.20.15	JJS	CES

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JOHN M PALMS CENTER FOR GRADUATE SCIENCE RESEARCH
STATE PROJECT NUMBER H27-6094
University of South Carolina

SHEET: E1
1 OF 1
SHEET IN SET: 1 OF 1