

HOT WATER GENERATOR SPECIFICATION

A. ARMSTRONG FLO-RITE-TEMP MODEL 665 DWPP-P DOUBLE WALL PARALLEL INSTANTANEOUS WATER HEATER.

B. GENERAL:

- THE PARALLEL INSTANTANEOUS WATER HEATER PACKAGE SHALL BE MOUNTED ON AN ANGLE IRON FRAME. THE PACKAGE SHALL BE PRE-PLUMBED FOR BOTH SIMULTANEOUS AND REDUNDANT OPERATION WITH ALL REQUIRED COMPONENTS AND PRESSURE TESTED. PACKAGES WHICH REQUIRE FIELD ASSEMBLY OTHER THAN BASIC WATER AND STEAM SERVICE SHALL BE UNACCEPTABLE. THE INSTANTANEOUS WATER HEATER SHALL OPERATE ON WATER DIFFERENTIAL USING THE FEED FORWARD PRINCIPLE AND SHALL NOT USE A FEEDBACK TEMPERATURE CONTROL DEVICE WITH CAPILLARY SYSTEM. THE TUBES SHALL BE DOUBLE WALL WITH A U-BEND. HELICAL TUBES SHALL BE UNACCEPTABLE. THE WATER CONTROLLING VALVE SHALL BE MOUNTED INTEGRAL TO THE HEAT EXCHANGER WITHOUT THE USE OF CONNECTING PIPING. ONLY THE NECESSARY STEAM, WATER AND CONDENSATE CONNECTIONS TO THE INSTANTANEOUS WATER HEATER SHALL BE PRE-PLUMBED.

C. MATERIALS OF CONSTRUCTION AND ITEMS INCLUDED SHALL BE:

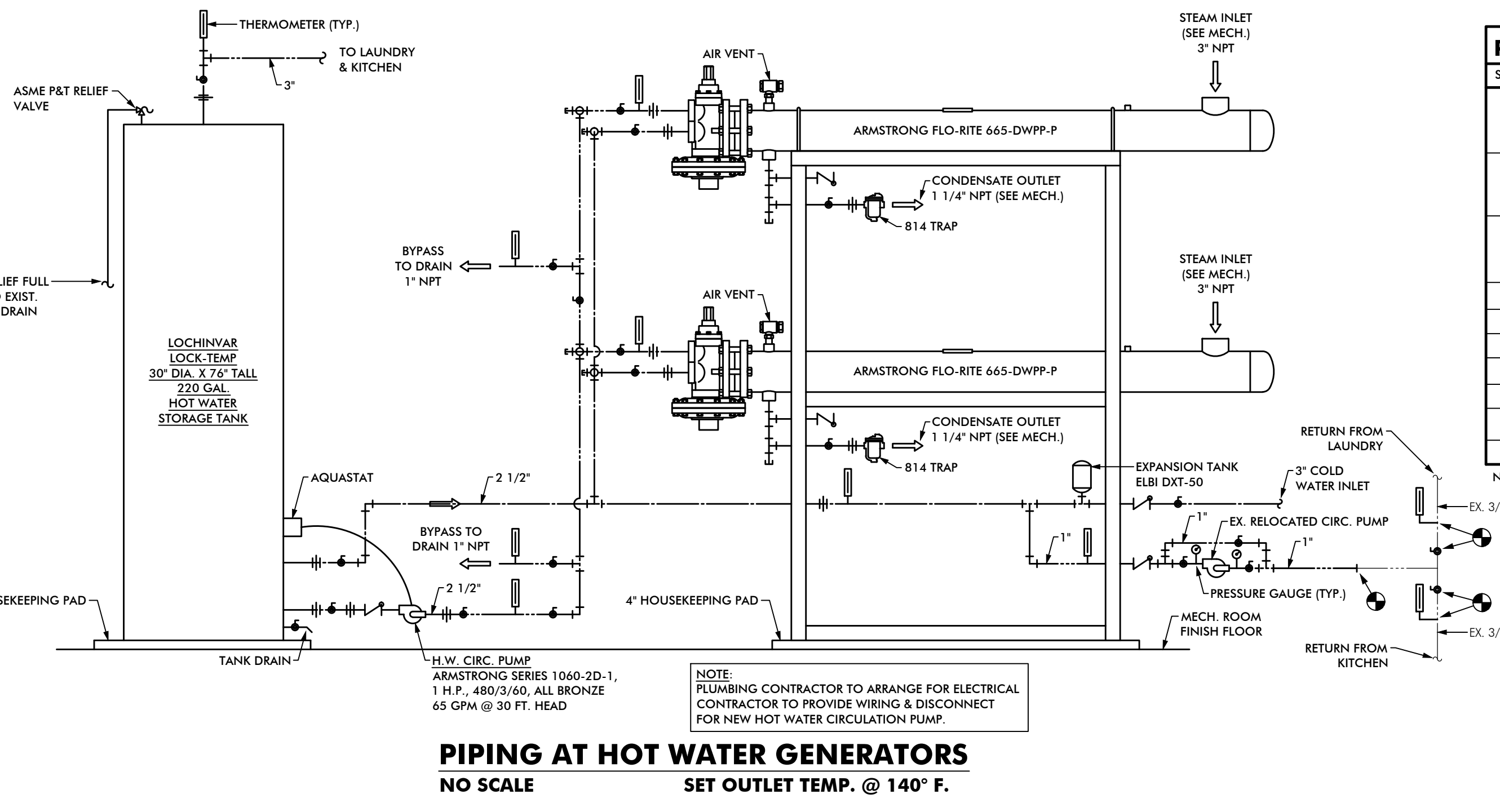
- SHELLS OF CARBON STEEL WITH 3" NPT STEAM INLET AND 1-1/4" NPT CONDENSATE EXIT PORTS
- TUBES OF 5/8" COPPER INNER, 3/4" ID GROOVED COPPER OUTER EXPANDED INTO STEEL (STEAM SIDE) AND BRASS (WATER SIDE) TUBE SHEETS
- WATER CONTROL VALVE BODY OF BRONZE WITH BRASS AND STAINLESS STEEL INTERNALS AND HAVING 2-1/2" NPT WATER CONNECTIONS FOR EACH HEATER
- STAND OF 2" CARBON STEEL ANGLE
- WATER PIPE OF TYPE L COPPER
- ARMSTRONG STEAM TRAP MODEL B14 FOR EACH HEATER
- ARMSTRONG THERMOSTATIC AIR VENT FOR EACH HEATER
- INTEGRAL THERMOSTATIC RETURN LIMITER TO MAINTAIN CIRCUIT TEMPERATURE DURING NO-DEMAND PERIODS
- ALL REQUIRED VALVE FITTINGS AND ISOLATION VALVES, PRESSURE GAUGES, INLET COMBINATION BALL VALVE STRAINERS, INLET/RETURN CHECK VALVES, INLET, SYSTEM BLEND AND RETURN LINE THERMOMETERS

D. PERFORMANCE:

- THE INSTANTANEOUS WATER HEATER SHALL BE OF THE HORIZONTAL SHELL AND TUBE DESIGN PROVIDING EASY ACCESS TO THE INDIVIDUAL TUBES WITHOUT MOVING THE HEATER FROM ITS INSTALLED POSITION. NO OVERHEAD CLEARANCE SHALL BE REQUIRED FOR SERVICING. THE CONTROLLING VALVE SHALL FAIL IN THE CLOSED POSITION TO PREVENT OVERHEATING AND SCALDING OF THE WATER. HEATERS SHALL DELIVER UP TO 48 GPM EACH (90° - 140°F) AT A PEAK DEMAND AT A MAXIMUM 20 PSI PRESSURE DROP WITH NO MINIMUM SYSTEM DRAW-OFF REQUIREMENT. MODEL SHALL BE 665 DWPP-P.
- THE PARALLEL INSTANTANEOUS WATER HEATER PACKAGE SHALL INCLUDE ALL OF THE FOLLOWING CAPABILITIES:
 - MAXIMUM WATER PRESSURE DROP NOT EXCEEDING 10 PSI IN THE INSTANTANEOUS HEATER
 - MAINTAIN A CONSISTENT SYSTEM "IDLING" TEMPERATURE AND CONTROL "TEMPERATURE CREEP" WITHOUT THE USE OF A MANUAL THROTTLING DEVICE OR BALANCE VALVE
 - DELIVERY WATER TEMPERATURE WITHIN 5° F SET POINT AT A LOCATION MEASURED 15 FEET DOWNSTREAM OF TANK DURING CONSISTENT DEMAND PERIODS
 - OPERATIONAL STEAM PRESSURE OF 2-15 PSIG
 - MAXIMUM ALLOWABLE STEAM PRESSURE OF 150 PSIG
 - OPERATIONAL WATER PRESSURE OF 20-150 PSIG
 - MAXIMUM ALLOWABLE WATER PRESSURE OF 150 PSIG
 - SYSTEM SHALL REQUIRE A TEMPERATURE ACTIVATED PUMP SHUT-OFF DEVICE (AQUASTAT).

E. HOT WATER STORAGE TANK: 30" DIAMETER X 76" TALL, 220 GALLON CAPACITY, GLASS LINED STORAGE TANK, ASME STAMPED FOR 125 PSI WORKING PRESSURE, LOCK-TEMP RAFFLES TO CREATE STRATIFICATION OF HOT WATER AT TOP OF TANK, 2" FOAM INSULATION PER ASHRAE 90.1 REQUIREMENTS AND HEAVY GAUGE GALVANIZED JACKET FINISHED AND FINISHED WITH ACRYLIC ENAMEL. LOCHINVAR LOCK-TEMP OR APPROVED EQUAL.

F. HOT WATER CIRCULATING PUMP: ARMSTRONG SERIES 1060-2D-1, ALL BRONZE, 1 H.P., 480/3/60, 65 GPM AT 30 FT. HEAD.



PLUMBING LEGEND

SYMBOL	DESCRIPTION
	COLD WATER LINE: TYPE L HARD COPPER, WROUGHT COPPER FITTINGS, 95/5 LEAD FREE SOLDER AND FLUX. INSULATE WITH 1" FIBERGLASS INSULATION AND INSTALL ON CLEVIS HANGERS 5'-0" ON CENTER WITH SHEET METAL SADDLES MINIMUM 12" LONG.
	HOT WATER LINE: TYPE L HARD COPPER, WROUGHT COPPER FITTINGS, 95/5 LEAD FREE SOLDER AND FLUX. INSULATE WITH 1" FIBERGLASS INSULATION AND INSTALL ON CLEVIS HANGERS 5'-0" ON CENTER WITH SHEET METAL SADDLES MINIMUM 12" LONG.
	HOT WATER RETURN LINE: TYPE L HARD COPPER, WITH PRO PRESS COPPER FITTINGS. INSULATE WITH 1" FIBERGLASS INSULATION AND WATER TIGHT ALUMINUM JACKET ON ROOF.
	BALL VALVE - WATTS B-6080 OR B-6081/FULL PORT
	PIPE DOWN
	PIPE UP
	UNION
	CHECK VALVE - NIBCO S-413-B
	CONNECT TO EXISTING
	EXISTING PIPING OR EQUIPMENT TO BE REMOVED

NOTE: ALL MATERIALS TO COMPLY WITH THE BUY AMERICA ACT, NO FOREIGN MATERIALS WILL BE USED.

PLUMBING SPECIFICATION

GENERAL:

- FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR PROPER COMPLETION OF ALL PLUMBING, PIPING AND DRAINAGE WORK.
- WORK SHALL COMPLY WITH ALL APPLICABLE NFPA, STATE, COUNTY AND LOCAL LAWS AND ORDINANCES. IN THE ABSENCE OF LOCAL REGULATIONS, WORK SHALL MEET STANDARD BUILDING, PLUMBING AND GAS CODES AND THESE DOCUMENTS.
- SUBMIT FOR REVIEW SHOP DRAWINGS (MINIMUM 6 COPIES) FOR ALL MATERIALS, FIXTURES AND EQUIPMENT PROPOSED. ALL SUBMITTALS BEHIND UNDER ONE COVER.
- CONTRACTOR SHALL KEEP ACCURATE RECORDS OF INSTALLATIONS. AT THE END OF INSTALLATION, CONTRACTOR SHALL SUBMIT TWO SETS OF BLUE PRINTS MARKED WITH AS-BUILT CONDITIONS.

MATERIALS PIPING:

- WATER PIPING:
 - COPPER TUBING:
 - PIPE: ASTM B88, TYPE L, HARD DRAWN.
 - FITTINGS: ASME B16.22, WROUGHT COPPER AND BRONZE.
 - JOINTS: PRO PRESS.
- INSULATION - GLASS FIBER PIPE INSULATION EQUAL TO OWENS-CORNING MODEL 556-11

INSULATE DOMESTIC HOT WATER RETURN PIPING INTERIOR ABOVE GRADE AS FOLLOWS:

- 1" THICK
- 1" THICK W/ALUMINUM JACKET EXPOSED ON ROOF.

GENERAL:

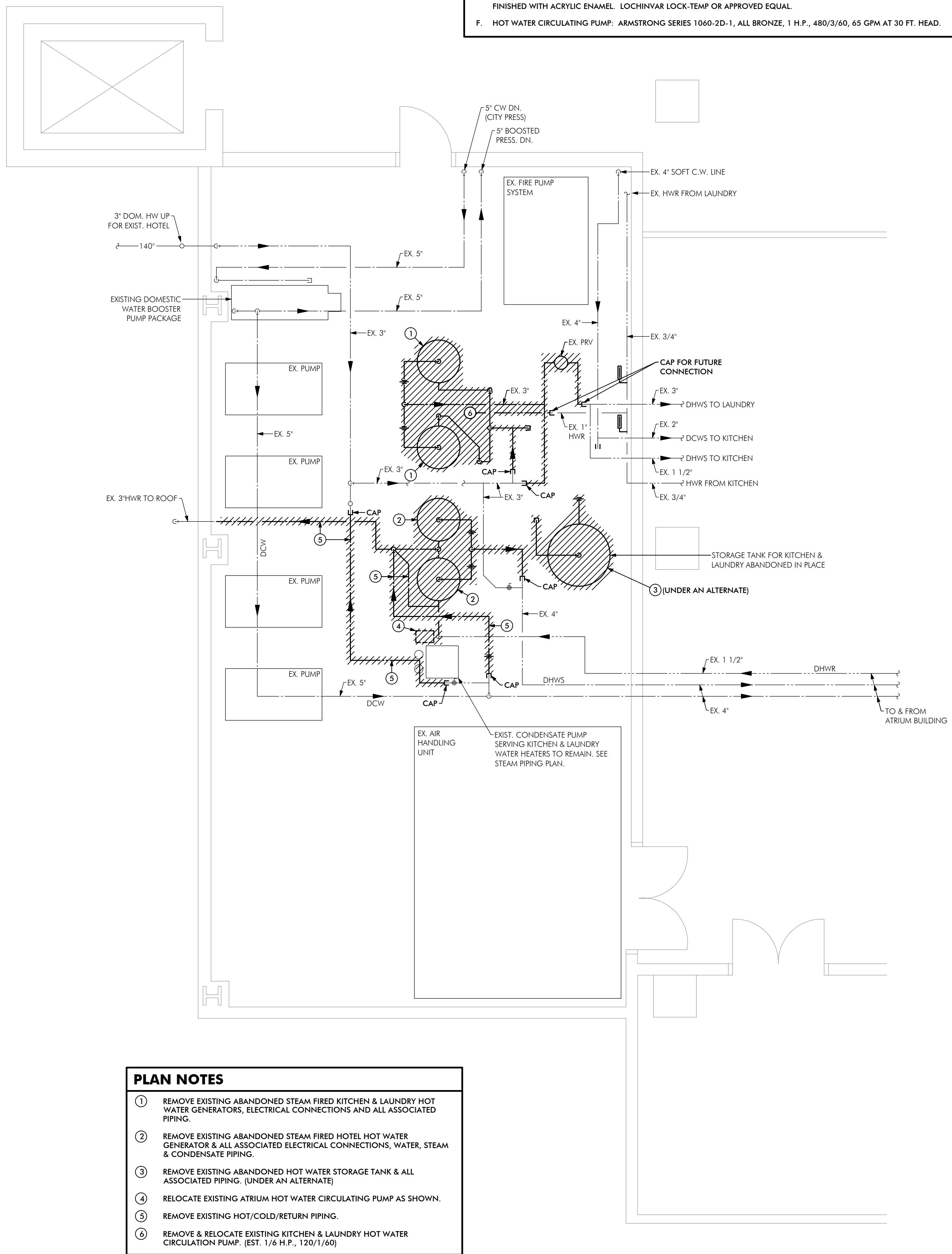
- PROVIDE SLEEVES AT ALL WALL AND FLOOR PENETRATIONS. SEAL AS REQUIRED TO PREVENT LEAKAGE. MAINTAIN FIRE RATINGS AND MAINTAIN BUILDING INTEGRITY.
- PROVIDE HANGERS, SUPPORTS AND ACCESSORIES REQUIRED FOR INSTALLATION. SPACE HANGERS AND SUPPORTS AS REQUIRED BY CODES AND MANUFACTURER'S RECOMMENDATIONS.

INSTALLATION:

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL LOCATIONS OF COMPONENTS. VERIFY DIMENSIONS BEFORE INSTALLATION.
- PROVIDE CHROMIUM PLATED BRASS FLANGES WHEREVER PIPES PASS THROUGH EXPOSED FINISHED FLOORS, WALLS OR CEILINGS.
- IDENTIFY ALL PIPE WITH STENCILS OR STRAP-ON PIPE MARKERS. COLORS TO MATCH ASTM STANDARD A-133.
- AFTER INSTALLATION IS COMPLETE, ALL DOMESTIC HOT WATER PIPING SHALL BE THOROUGHLY FLUSHED AND DISINFECTED WITH HYPOCHLORITE SOLUTION.
- PROVIDE PIPE JOINTS AS REQUIRED TO COMPLETE WORK. ALL JOINTS SHALL BE AIR AND WATER TIGHT.
- QUALITY ASSURANCE:
 - INSTALLER'S QUALIFICATIONS: FIRM EXPERIENCED IN INSTALLATION OF SYSTEMS SIMILAR IN SIZE AND COMPLEXITY TO THOSE REQUIRED FOR THIS PROJECT, PLUS THE FOLLOWING:
 - ACCEPTABLE TO OR LICENSED BY MANUFACTURER.
 - NOT LESS THAN 3 YEARS EXPERIENCE WITH SYSTEMS.
 - SUCCESSFULLY COMPLETED NO LESS THAN 5 COMPARABLE SCALE PROJECTS USING SYSTEMS SIMILAR TO THESE FOR THIS PROJECT.
 - CURRENT MASTER PLUMBERS CERTIFICATE AND MASTERS GAS CERTIFICATE ISSUED BY STATE, COUNTY, AND CITY IN WHICH THE WORK OCCURS.

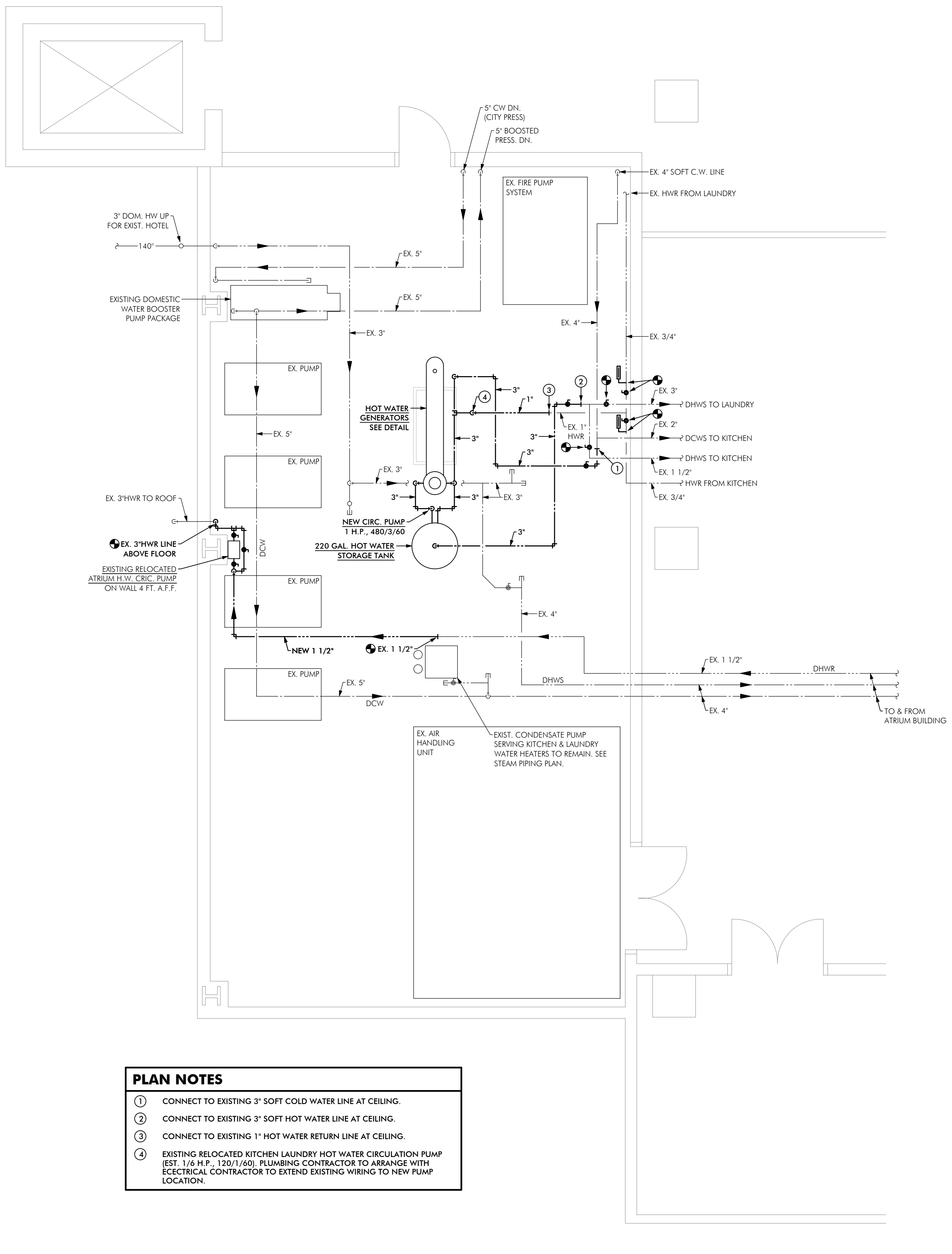
GENERAL NOTES:

- CONTRACTOR SHALL VERIFY LOCATION, SIZE AND ELEVATION OF ALL EXISTING PIPING PRIOR TO INSTALLING ANY NEW PIPE.
- WHEREVER DISSIMILAR METALS ARE CONNECTED ON WATER LINES, A DIELECTRIC UNIONS SHALL BE USED.
- ALL HORIZONTAL WATER PIPING IS RUN AT CEILING ON PLAN WHICH SHOWN UNLESS OTHERWISE NOTED.
- COORDINATE ALL PIPE ROUTING TO AVOID CONFLICTS WITH STRUCTURAL, MECHANICAL, AND ELECTRICAL FEATURES OF BUILDING.
- WHERE FIXTURES OR EQUIPMENT ARE INDICATED TO BE REMOVED, THE FIXTURE OR EQUIPMENT IS TO REMAIN THE PROPERTY OF THE OWNER AND THE CONTRACTOR SHALL DELIVER THE FIXTURES AND EQUIPMENT TO THE OWNERS STORAGE FACILITY AS DIRECTED BY THE OWNER. SHOULD THE OWNER DECIDE NOT TO RETAIN THE FIXTURES OR EQUIPMENT, THE FIXTURES AND EQUIPMENT BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
- WHERE FIXTURES OR EQUIPMENT ARE INDICATED TO BE REMOVED, CONTRACTOR SHALL REMOVE ALL PIPING AND CAP OR PLUG SAME BELOW FLOOR, ABOVE CEILING OR IN PARTITIONS AS REQUIRED.
- PLUMBING DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL DETAILS OF THE WORK. OBTAIN DIMENSIONS AND PERTINENT INFORMATION FROM VISITING THE SITE.



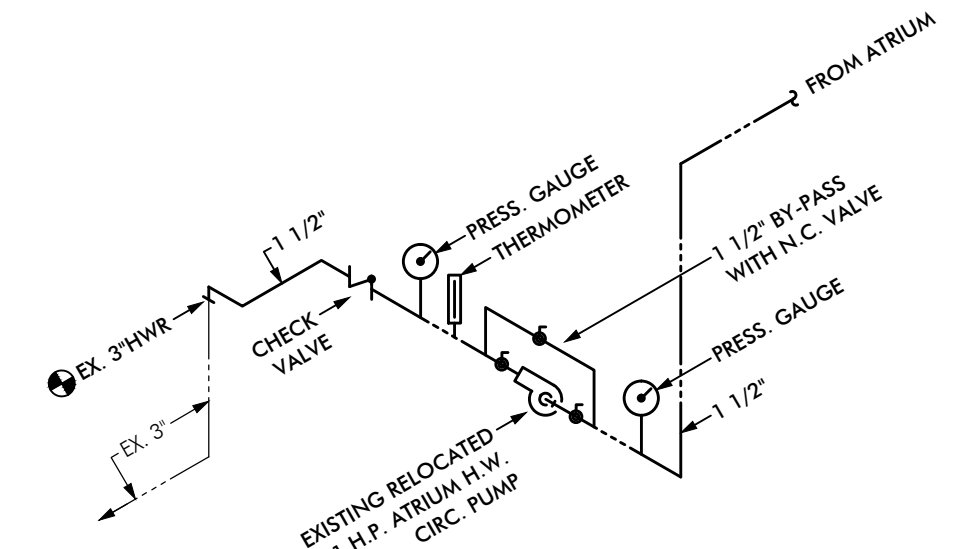
PLAN NOTES

- REMOVE EXISTING ABANDONED STEAM FIRED KITCHEN & LAUNDRY HOT WATER GENERATORS, ELECTRICAL CONNECTIONS AND ALL ASSOCIATED PIPING.
- REMOVE EXISTING ABANDONED STEAM FIRED HOTEL HOT WATER GENERATOR & ALL ASSOCIATED ELECTRICAL CONNECTIONS, WATER, STEAM & CONDENSATE PIPING.
- REMOVE EXISTING ABANDONED HOT WATER STORAGE TANK & ALL ASSOCIATED PIPING. (UNDER AN ALTERNATE)
- RELOCATE EXISTING ATRIUM HOT WATER CIRCULATING PUMP AS SHOWN.
- REMOVE EXISTING HOT/COLD/RETURN PIPING.
- REMOVE & RELOCATE EXISTING KITCHEN & LAUNDRY HOT WATER CIRCULATING PUMP. (EST. 1/6 H.P., 120/1/60)



PLAN NOTES

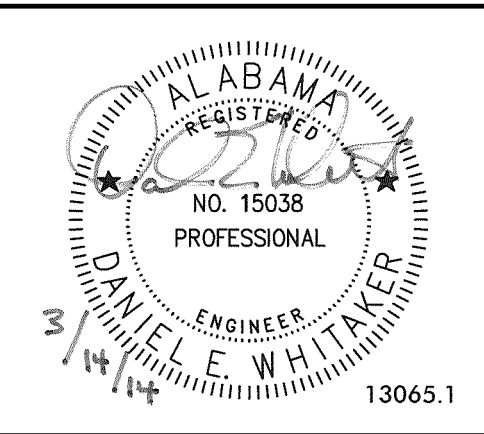
- CONNECT TO EXISTING 3" SOFT COLD WATER LINE AT CEILING.
- CONNECT TO EXISTING 3" SOFT HOT WATER LINE AT CEILING.
- CONNECT TO EXISTING 1" HOT WATER RETURN LINE AT CEILING.
- EXISTING RELOCATED KITCHEN LAUNDRY HOT WATER CIRCULATING PUMP (EST. 1/6 H.P., 120/1/60). PLUMBING CONTRACTOR TO ARRANGE WITH ELECTRICAL CONTRACTOR TO EXTEND EXISTING WIRING TO NEW PUMP LOCATION.



PIPING AT RELOCATED ATRIUM H.W. CIRC. PUMP NO SCALE

NOTE: PLUMBING CONTRACTOR TO ARRANGE FOR ELECTRICAL CONTRACTOR TO EXTEND EXISTING WIRING TO NEW PUMP LOCATION AND PROVIDE DISCONNECT ON WALL.

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**BJCC Sheraton
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Domestic Hot Water System Modifications**
Birmingham, Alabama

BID DOCUMENTS

JOB	13065.1
DRAWN BY	DFC/BON
CHECKED BY	DEW
DATE	03/14/2014
REVISIONS	

TITLE:
ATRIUM MECH. ROOM
PLAN - PLUMBING
DEMO. & NEW WORK
SHEET:
P1.0