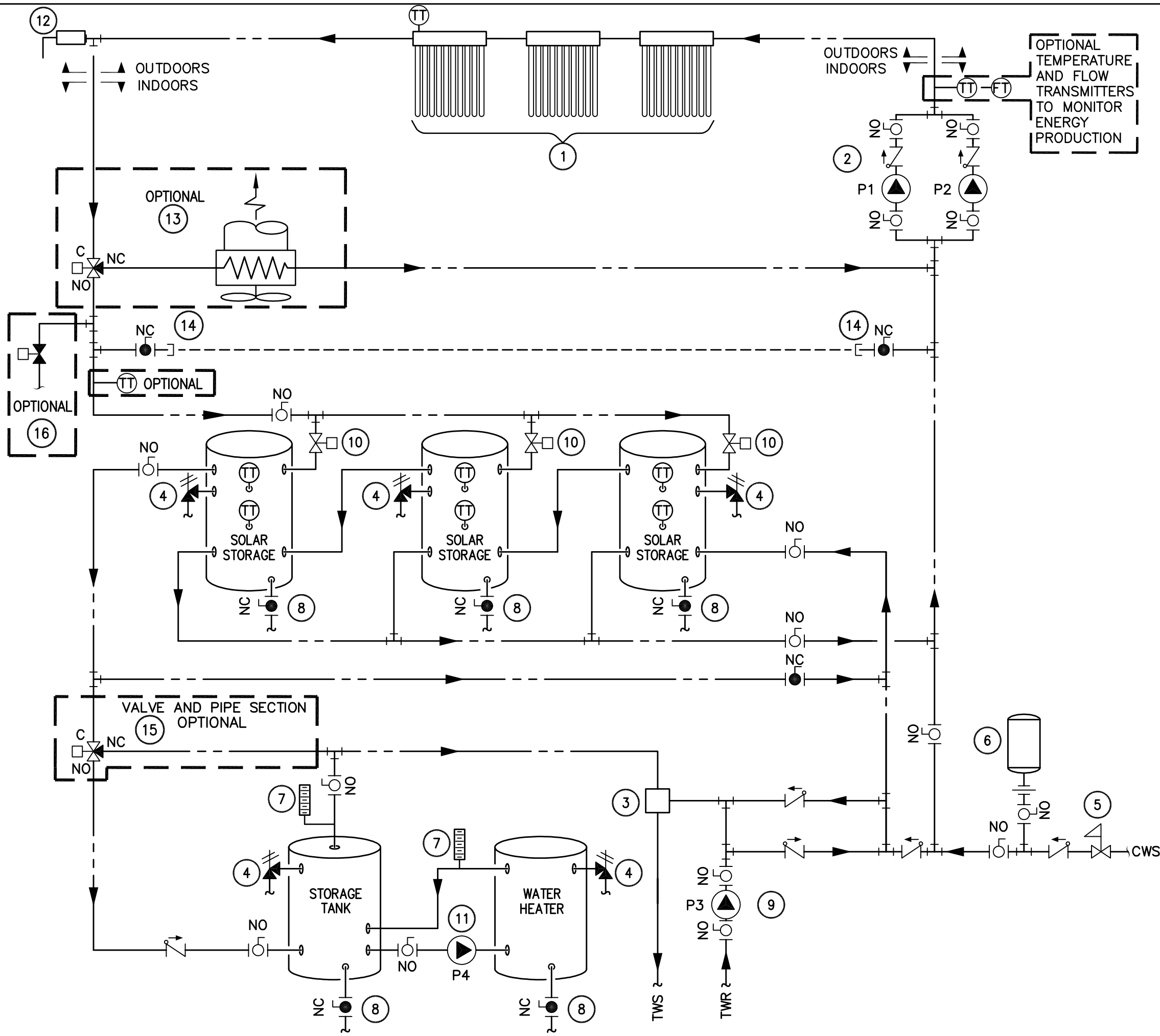


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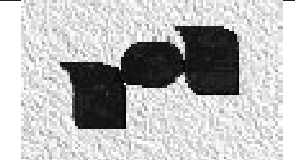


GENERAL NOTES :

1. ADD ISOLATION VALVES AND UNIONS AS NEEDED.

KEYED NOTES :

- ① INSTALL KINGSPAN, HP-450 SOLAR COLLECTORS IN SERIES UP TO 6 UNITS. FOR MULTIPLE ROW SYSTEMS REFER TO SOLAR ARRAY FLOW DIAGRAM, DHW-10.
- ② SOLAR CONTROL AND PUMP STATION. CONNECT TO ALL RTD's (TT), OPTIONAL HEAT DISSIPATER (13) AND VALVE ACTUATORS (10).
- ③ MIXING VALVE (SEE MIXING VALVE DETAIL DHW-0)
- ④ ROUTE T&P RELIEF VALVE (PRESSURE RELIEF ONLY FOR SOLAR STORAGE TANKS) DISCHARGE, FULL SIZE, TO FLOOR DRAIN.
- ⑤ PRESSURE REDUCING VALVE - INSTALL ONLY IF WATER SUPPLY PRESSURE EXCEEDS 75% OF WATER HEATING SYSTEM DESIGN PRESSURE.
- ⑥ ASME THERMAL EXPANSION TANK - SIZE ACCORDING TO MANUFACTURER'S RECOMMENDATION.
- ⑦ COMBINATION TEMPERATURE AND PRESSURE GAUGE. INSTALL WITHIN 12" OF HOT WATER OUTLET.
- ⑧ PROVIDE FULL-PORT DRAIN VALVE AND ROUTE TO FLOOR DRAIN.
- ⑨ RECIRCULATION PUMP. PROVIDE AQUASTAT ONLY IF REQUIRED BY CODE WITH LETTER TO OWNER REQUIRING RELEASE OF LIABILITY (NON-MOVING WATER PROMOTES LEGIONELLA).
- ⑩ ACTUATOR VALVES FOR TANK PRIORITY.
- ⑪ RECIRC. PUMP TO BE CONTROLLED BY TSTAT IN STORAGE TANK.
- ⑫ FREEZE PROTECTION VALVE, THERMO-MEGA TECH MODEL 3/4" IC/FP-035, INSTALL ON COMMON SOLAR HOT WATER RETURN LINE TO DISCHARGE ON ROOF. VALVE AND TEE TO REMAIN UN-INSULATED.
- ⑬ FAN COIL UNIT, SIZED TO DISCHARGE AT LEAST 5,000 BTUH PER COLLECTOR. 3 PORT VALVE TO DIVERT COLLECTOR RETURN AWAY FROM STORAGE TANKS TO DISSIPATER AND ACTIVATE HEAT DISSIPATER FAN WHEN COLLECTOR REACHES 230 DEG F. DUCT DISCHARGE THROUGH NEAREST OUTSIDE WALL.
- ⑭ PROVIDE 3/4" SHUTOFF VALVES FOR FUTURE ACCESS POINTS, ACCESSIBLE WITHIN SAME AREA.
- ⑮ 3-WAY VALVE DIVERTS HOT WATER FROM SOLAR STORAGE TANK DIRECTLY TO MIXING VALVE WHEN TEMPERATURE IS 160 DEG F OR HIGHER.
- ⑯ FOR MX AND PLC CONTROLS ONLY, INSTALL MOTORIZED FREEZE PROTECTION BALL VALVE, 3/4", STAINLESS VALVE BODY, WITH ACTUATOR TO OPEN TO FLOOR DRAIN WHEN COLLECTOR TEMPERATURE SENSOR DETECTS ABOUT 38 DEG. F AND SOLAR PUMP IS NOT ACTIVATED.



RAND ASSOCIATES INCORPORATED
 Domestic Hot Water Flow Diagram
 Water Heater w/Separate Storage Tank
 and Triple Solar Storage Tanks

PIPING
 DIAGRAM

Size: B	FSCM No: -	Drawing No: DHW-8	Version: 15
Drawn By: BLW	Scale: NONE	Date: 09.15.2012	Sheet: 1 of 1