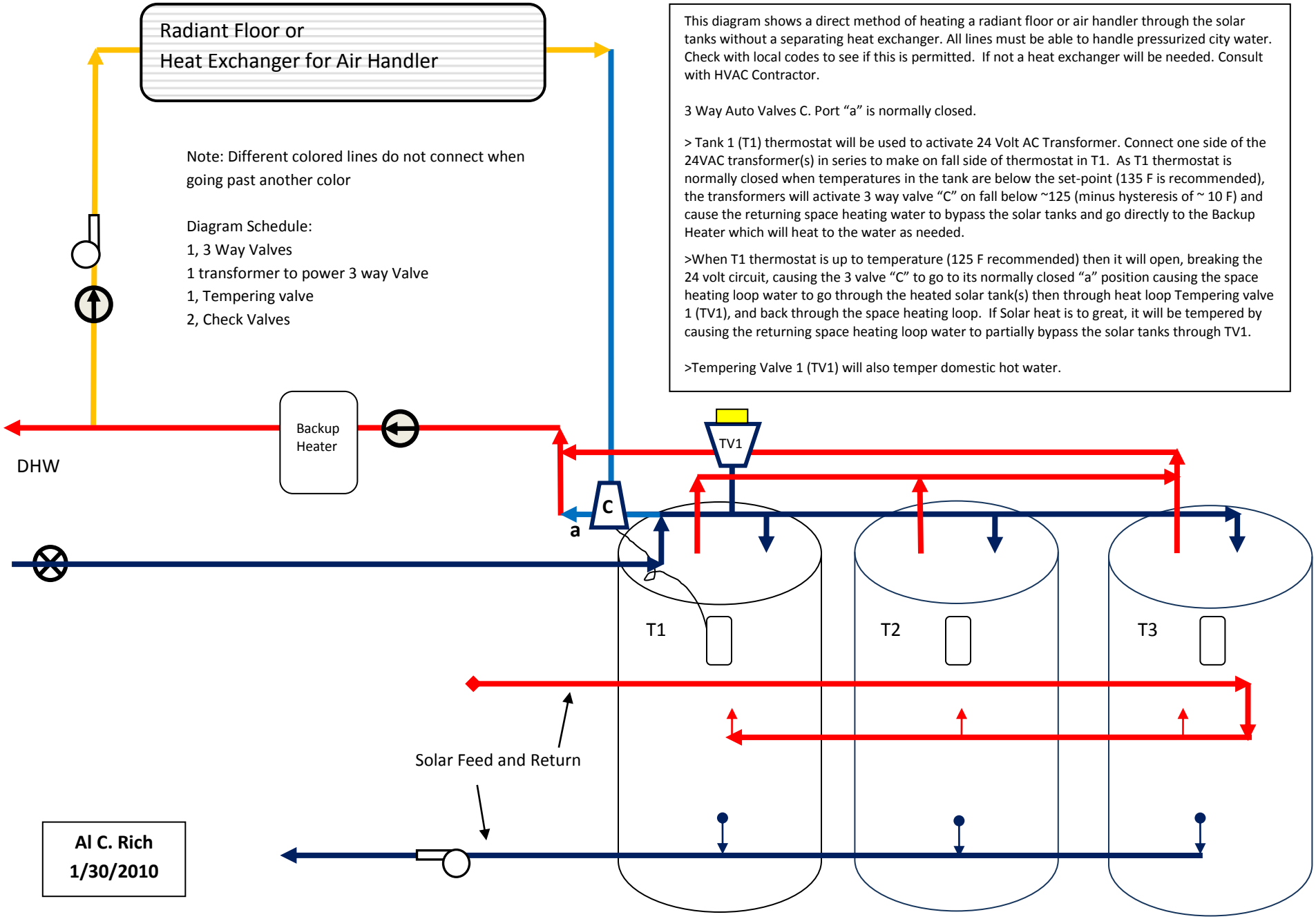
SolarRoofs.com Direct Solar Space and Water Heating Diagram



This diagram shows a direct method of heating a radiant floor or air handler through the solar tanks without a separating heat exchanger. All lines must be able to handle pressurized city water. Check with local codes to see if this is permitted. If not a heat exchanger will be needed. Consult with HVAC Contractor.

3 Way Auto Valves C. Port "a" is normally closed.

> Tank 1 (T1) thermostat will be used to activate 24 Volt AC Transformer. Connect one side of the 24VAC transformer(s) in series to make on fall side of thermostat in T1. As T1 thermostat is normally closed when temperatures in the tank are below the set-point (135 F is recommended), the transformers will activate 3 way valve "C" on fall below ~125 (minus hysteresis of ~ 10 F) and cause the returning space heating water to bypass the solar tanks and go directly to the Backup Heater which will heat to the water as needed.

>When T1 thermostat is up to temperature (125 F recommended) then it will open, breaking the 24 volt circuit, causing the 3 valve "C" to go to its normally closed "a" position causing the space heating loop water to go through the heated solar tank(s) then through heat loop Tempering valve 1 (TV1), and back through the space heating loop. If Solar heat is to great, it will be tempered by causing the returning space heating loop water to partially bypass the solar tanks through TV1.

>Tempering Valve 1 (TV1) will also temper domestic hot water.

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