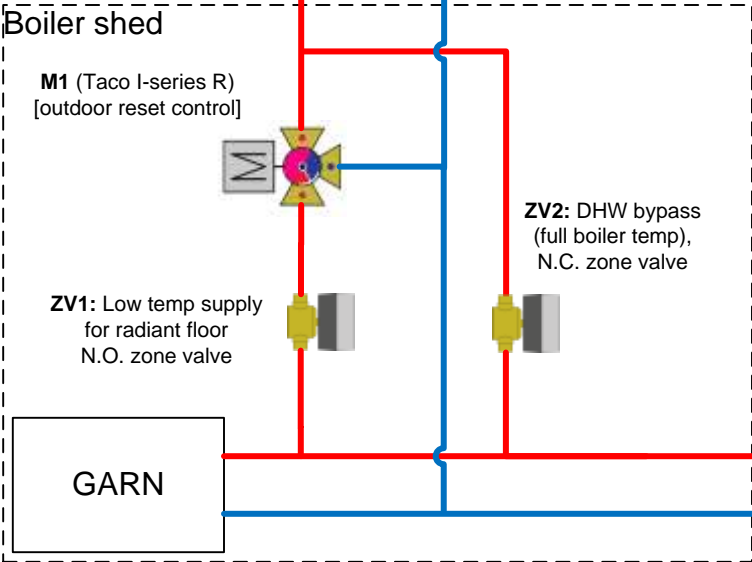


100' each way 1-1/4" PEX



Description:

System has two modes, radiant floor, and DHW. I haven't filled in the details, this is just conceptual. If this looks ok, I will start sizing the piping, circulators, etc.

The idea: DHW and radiant circuits require different flow rates and water temperatures circulators. The underground PEX run is about 100' each way, and the quality of insulation on the run is questionable. Minimize heat loss to the ground by mixing the floor supply temp at the GARN shed, and bypass the mixing valve to send full tank temperature only when DHW calls.

Radiant floor mode:
Thermostat calls for heat -> circ C1 on, mixing valve M1 on, 00-VDT (variable speed delta-T) circulator pumps to radiant floor (zoned by a combination of manifold actuators and zone valves)

DHW mode:
Operate as priority zone. ZV1 closes, ZV2 opens, C1 stops, C2 runs. Use differential controller & aquastat to only call for heat if the water from the GARN is reasonably hot (optional?) Otherwise, let the electric take over.