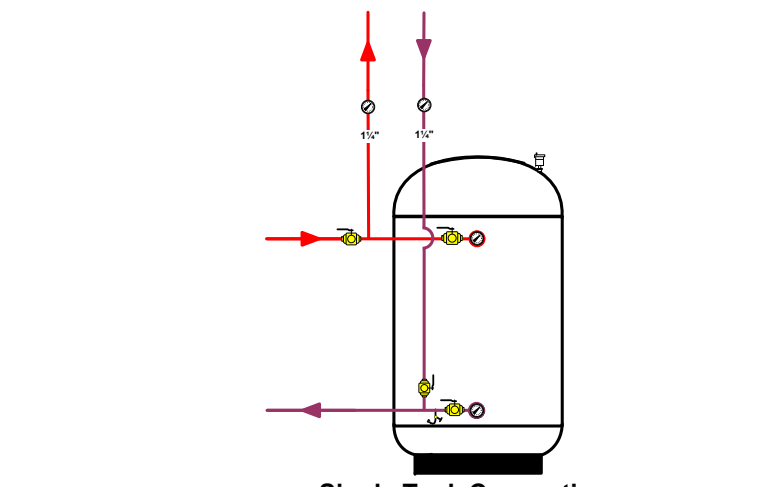
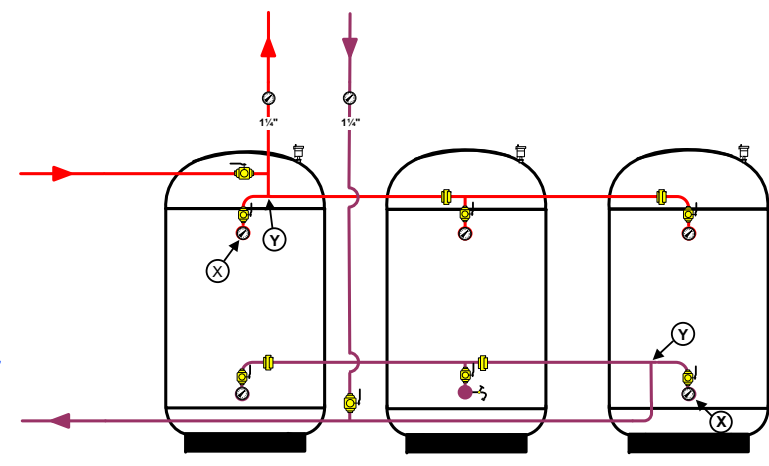
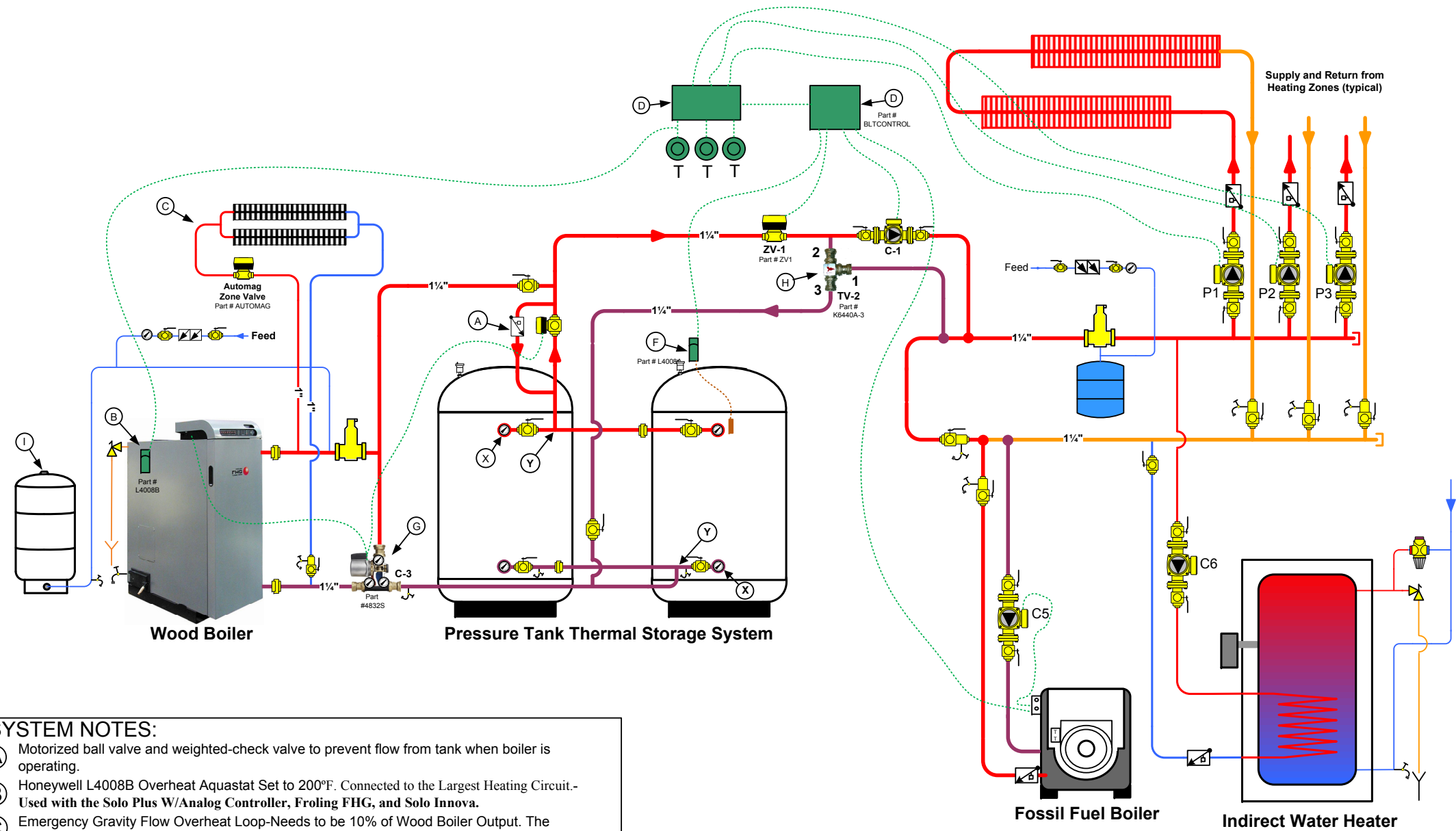


<b>BioHeatUSA</b> 4 Britton Lane Lyme, NH 03768	<b>BioHeatUSA Piping Layout Concept Diagram</b>		
	<b>Two Boiler Primary Secondary Design with Pressure Thermal Tanks</b>		
<b>Drawn by: TSP</b>	Date <b>04-16-2009</b>	DWG NO <b>PT4</b>	REV <b>1</b>
<b>Checked by:</b>	SCALE <b>N/A</b>	SHEET <b>1 OF 1</b>	

Symbol Key	
	Circulator w/ Isolation Flanges
	Ball Valve
	Purging Valve
	Weighted Check Valve
	Swing Check Valve
	Backflow Preventer
	Ball Valve with Actuator
	Central Air Separator
	Pressure Reducing Valve
	Pressure Relief Valve
	Union
	Drain Valve
	Temperature Gauge
	Thermostat
	Motorized Zone Valve



**SYSTEM NOTES:**

- (A) Motorized ball valve and weighted-check valve to prevent flow from tank when boiler is operating.
- (B) Honeywell L4008B Overheat Aquastat Set to 200°F. Connected to the Largest Heating Circuit.- Used with the Solo Plus W/Analog Controller, Froling FHG, and Solo Innova.
- (C) Emergency Gravity Flow Overheat Loop-Needs to be 10% of Wood Boiler Output. The Automag Zone Valve Must be Mounted Horizontally.
- (D) BioHeat USA Switch Control Part # BLTCONTROL
- (E) Circulator Switch Relay-Typical Controller
- (F) Backup Boiler Control Honeywell Aquastat L4008A or Equivalent. Mount sensor bulb on tank surface near top tapping with either tape or strap.
- (G) Termovar Loading Unit Part # 4832S (Loading Unit recommended, but Termovar K440A-3 could also be Used).
- (H) Termovar Diverting Valve-Part # K6440A3
- (I) Expansion Tank Sizing-2 Thermal Tanks-Amtrol SX90V or Equivalent  
3 Thermal Tanks-Amtrol SX110V or Equivalent
- (J) Check Valve Should be a Swing Check and not a Weighted Check Valve to Prevent Ghost Flow to Heating Circuits.

**TANK NOTES:**

Sizing: 2 Tanks for boilers up to 140,000Btuh  
 3 Tanks for Boilers 175,000-200,000Btuh

The Tanks should be located next to each other and as close as possible to the boiler. Connections to the tanks must use approximately the same length pipe. This is accomplished by:

1. Connect the boiler connections diagonally, X-X.
2. Connect the radiator connections diagonally, Y-Y.

This is only a **concept** drawing. Final design, installation and code compliance details are the responsibility of the designer/installer of the system.