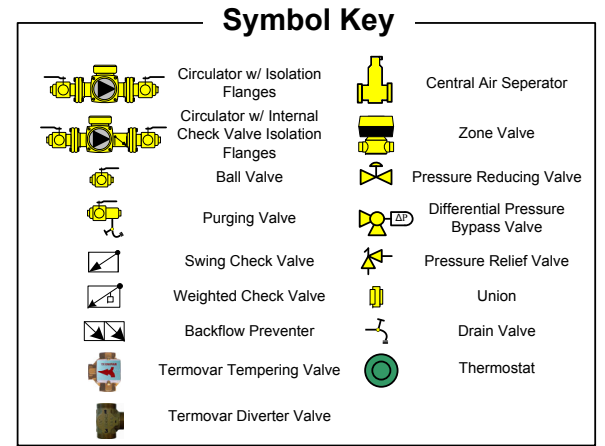


BioHeat USA 4 Britton Lane Lyme, NH 03768	BioHeat USA Piping Layout Concept Diagram		
	Wood Boiler (Up to 140,000Btuh) with Fossil Fuel Boiler and STSS Bladder Type Tank		
Drawn by: TSP	Date 9-04-2008	DWG NO STSS1	REV 6
Checked by:	SCALE N/A	SHEET 1 OF 1	

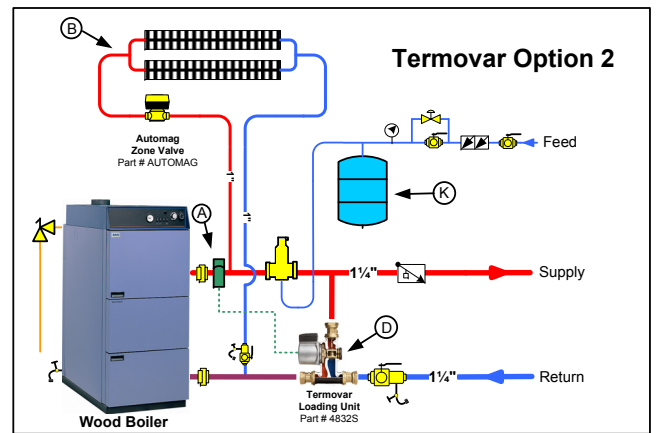
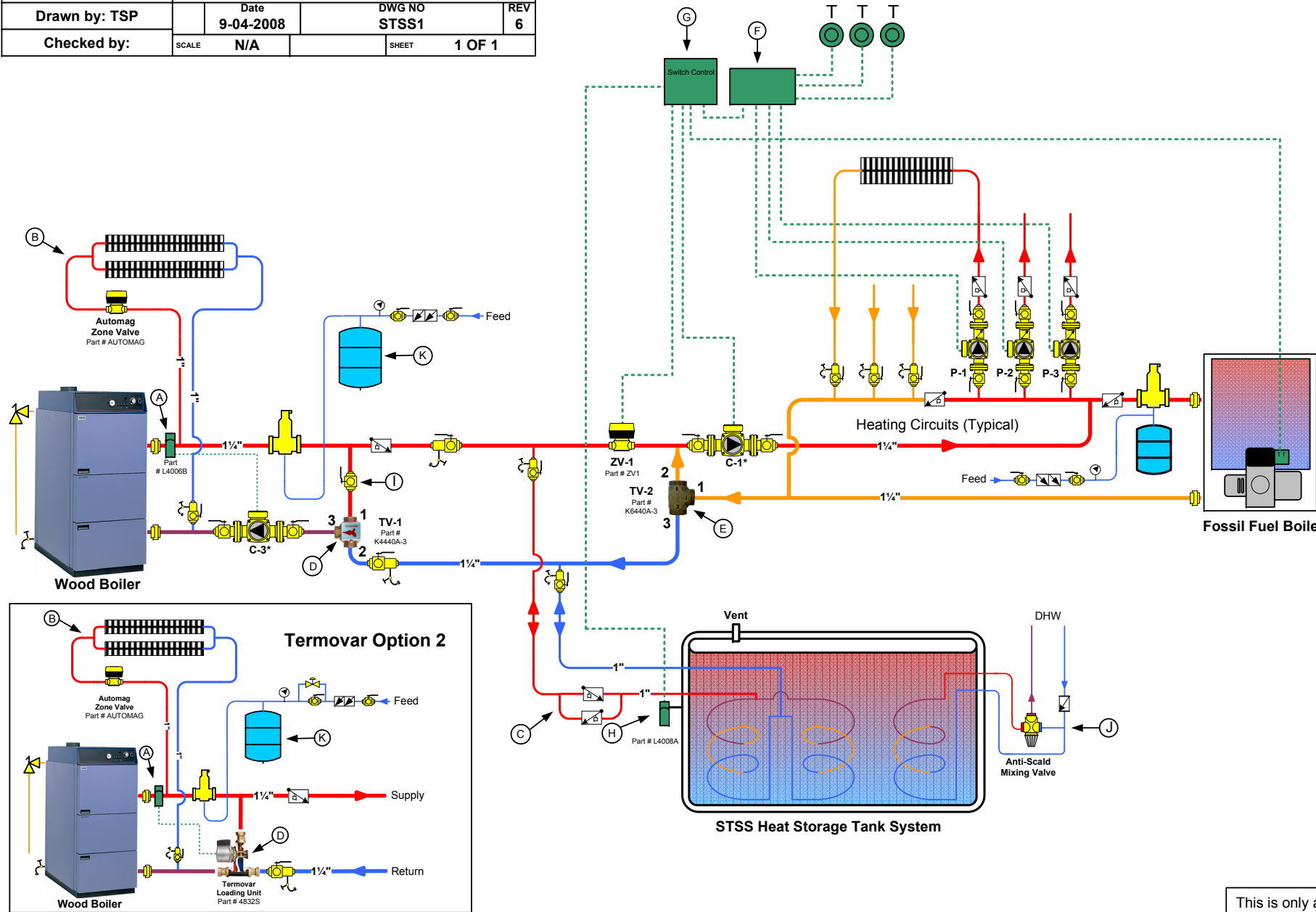


NOTES:

- (A) Aquastat-Honeywell L4006B or Equivalent Part # L4006B
- (B) Emergency Gravity Flow Overheat Loop Needs to be 10% of Wood Boiler Output
- (C) Weighted Check Valves Used as Heat Traps
- (D) Termovar Mixing Valve (2 Options Available)
- (E) Termovar Diverter Valve Termovar Kit-Part #K6440AF
- (F) Circulator Switch Relay-Typical Controller
- (G) BioHeat USA Switch Control Part # BLTCONTROL
- (H) Backup Boiler Control Honeywell Aquastat L4008A or Equivalent
- (I) Balancing Valve Required. (Start with Valve Closed halfway, i.e., at 45 degrees)
- (J) Anti-Scald Valve needs to be installed below tank's water line or swing check installed on cold water line to prevent hot water from entering cold water
- (K) Amtrol 60 or Equivalent Expansion Tank is Suitable for most Solo Plus Installations up to 86 gallons

***Circulator Notes:**
 C-3 and C-1 Circulator Sizing:
 (Multi-Speed Circulator Recommended)
 2-120' coils-Taco 007 or Equivalent.
 2-180' coils-Taco 010 or Equivalent.
 3-180' coils-Taco 010 or Equivalent.

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BioHeat USA
4 Britton Lane
Lyme, NH 03768

BioHeat USA Piping Layout Concept Diagram

Wood Boiler (175,000-200,000Btuh) with Fossil Fuel Boiler and STSS Bladder Type Tank

Drawn by: TSP

Date
9-4-2008

DWG NO
STSS2

REV
6

Checked by:

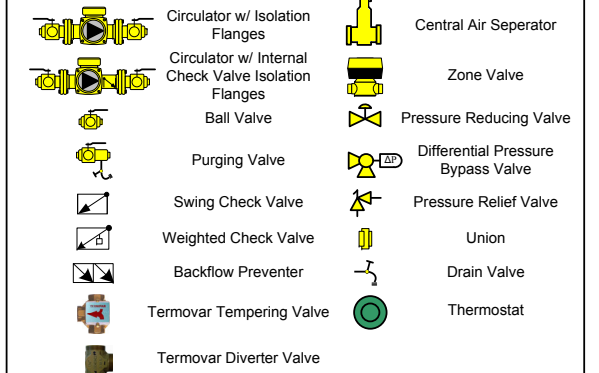
SCALE

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SHEET

1 OF 1

Symbol Key



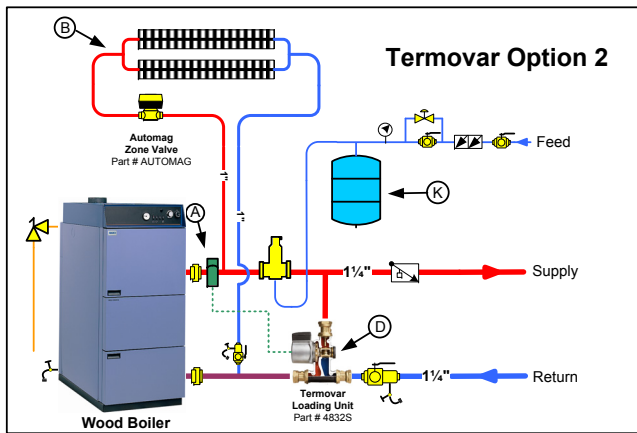
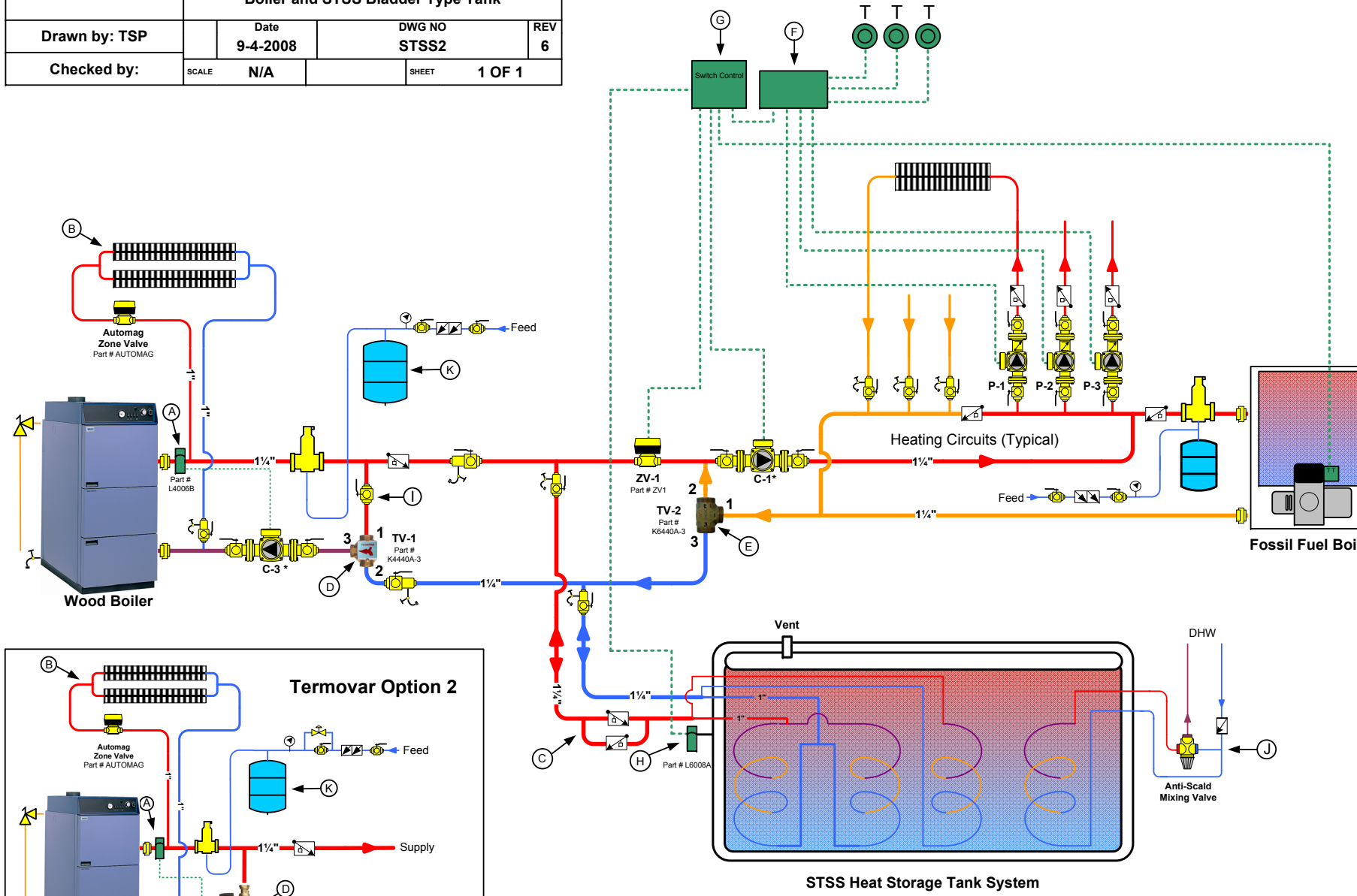
NOTES:

- (A) Aquastat-Honeywell L4006B or Equivalent Part # L4006B
- (B) Emergency Gravity Flow Overheat Loop Needs to be 10% of Wood Boiler Output
- (C) Weighted Check Valves Used as Heat Traps
- (D) Termovar Mixing Valve (2 Options Available)
- (E) Termovar Diverter Valve(See Bulletin #Termovar6440AF.pub) Termovar Kit-Part #K6440AF
- (F) Circulator Switch Relay-Typical Controller
- (G) BioHeat Switch Control Part # BLTCONTROL
- (H) Backup Boiler Control Honeywell Aquastat L6008A or Equivalent
- (I) Balancing Valve Required. (Start with Valve Closed halfway, i.e., at 45 degrees)
- (J) Anti-Scald Valve needs to be installed below tank's water line or swing check installed on cold water line to prevent hot water from entering cold water
- (K) Amtrol 60 or Equivalent Expansion Tank is Suitable for most Solo Plus Installations up to 86 gallons

*Circulator Notes:

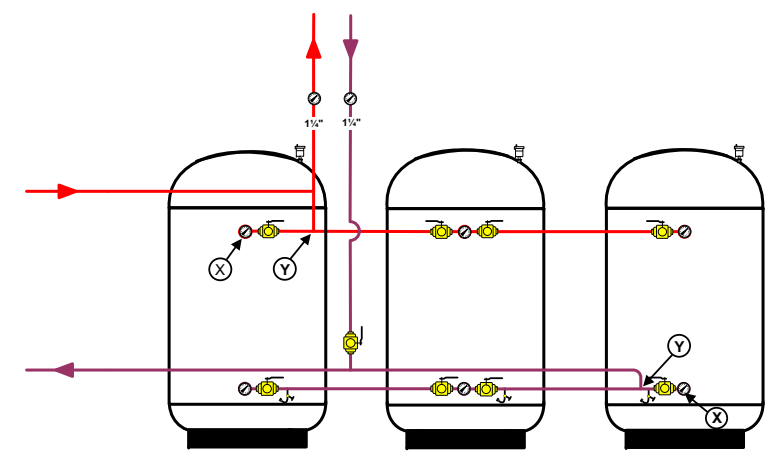
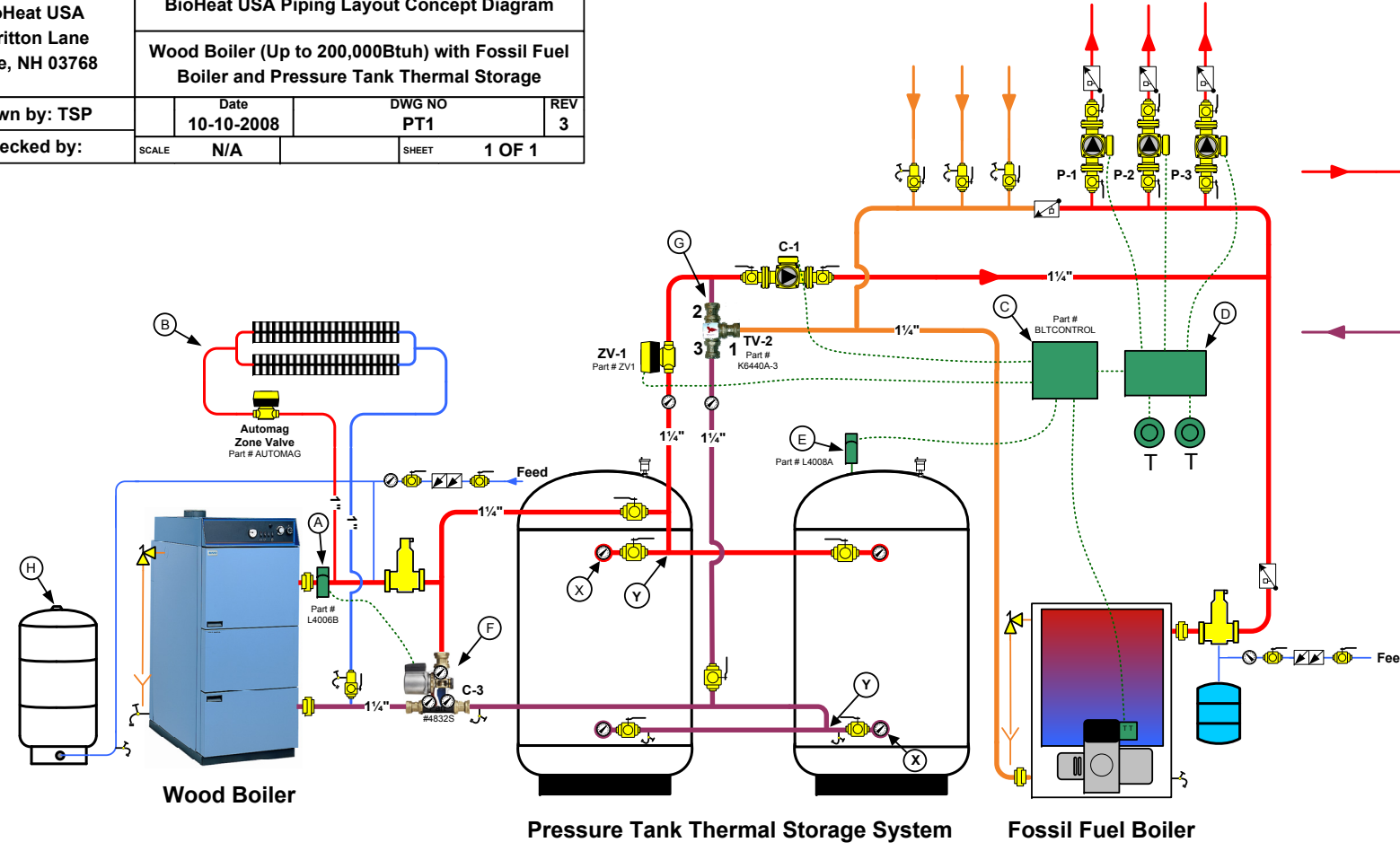
- C-3 and C-1 Circulator Sizing:
(Multi-Speed Circulator Recommended)
- 2-120' coils-Taco 007 or Equivalent.
- 2-180' coils-Taco 010 or Equivalent.
- 3-180' coils-Taco 010 or Equivalent.

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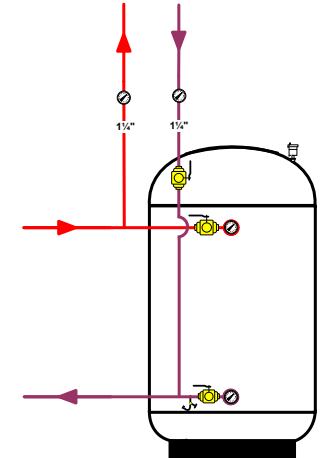


BioHeat USA 4 Britton Lane Lyme, NH 03768	BioHeat USA Piping Layout Concept Diagram		
	Wood Boiler (Up to 200,000Btuh) with Fossil Fuel Boiler and Pressure Tank Thermal Storage		
Drawn by: TSP	Date 10-10-2008	DWG NO PT1	REV 3
Checked by:	SCALE N/A	SHEET 1 OF 1	

Heating Circuits (Typical)



Three Tank Connections



Single Tank Connections

Symbol Key

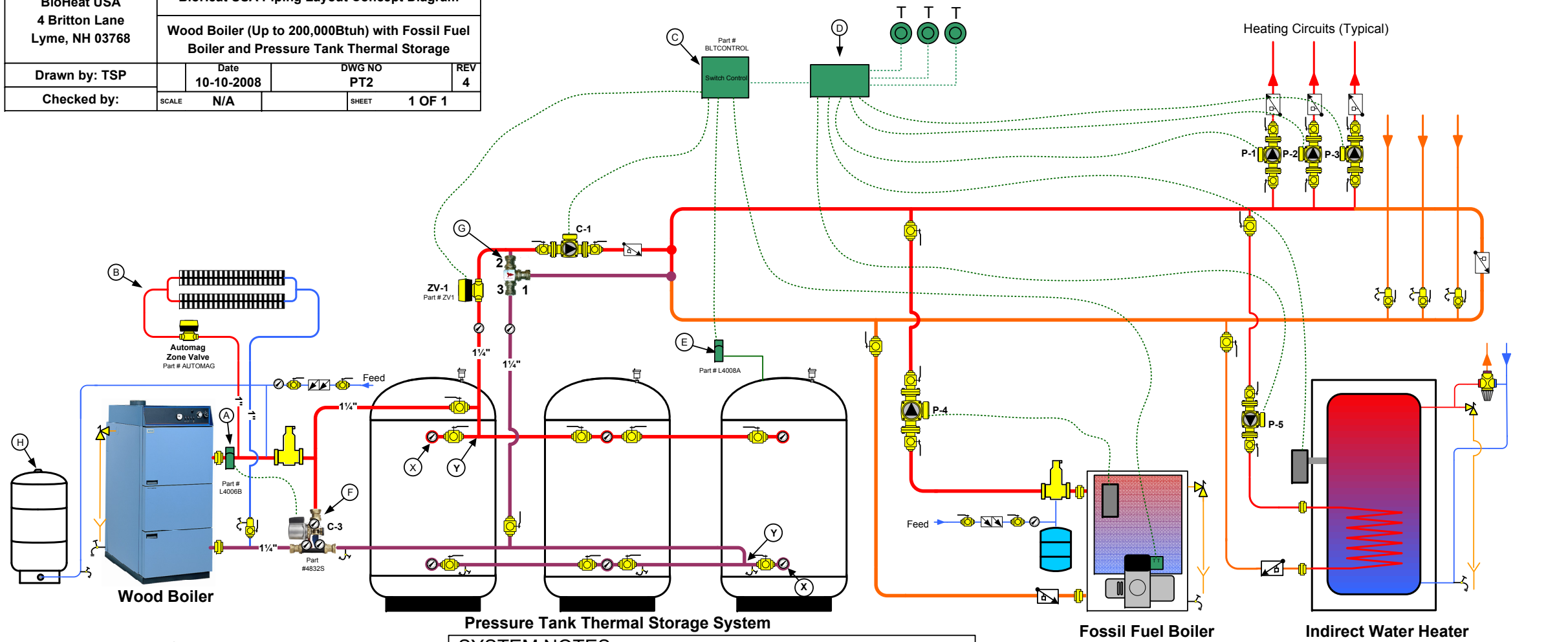
	Circulator w/ Isolation Flanges		Central Air Separator
	Ball Valve		Pressure Reducing Valve
	Purging Valve		Pressure Relief Valve
	Weighted Check Valve		Union
	Backflow Preventer		Drain Valve
	Thermostat		Pressure/Temperature Gauge

- SYSTEM NOTES:**
- (A) Honeywell Aquastat L4006B BioHeat Part # L4006B-Used Only for the Solo Plus Boiler
 - (B) Emergency Gravity Flow Overheat Loop-Needs to be 10% of Wood Boiler Output
 - (C) BioHeat USA Switch Control Part # BLTCONTROL
 - (D) Circulator Switch Relay-Typical Controller
 - (E) Backup Boiler Control Honeywell Aquastat L4008A or Equivalent
 - (F) Termovar Loading Unit Part # 4832S
 - (G) Termovar Diverting Valve-Part # K6440A3
 - (H) Expansion Tank Sizing-2 Thermal Tanks-Amtrol SX90V or Equivalent
3 Thermal Tanks-Amtrol SX110V or Equivalent

- 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.

BioHeat USA 4 Britton Lane Lyme, NH 03768	BioHeat USA Piping Layout Concept Diagram		
	Wood Boiler (Up to 200,000Btuh) with Fossil Fuel Boiler and Pressure Tank Thermal Storage		
Drawn by: TSP	Date 10-10-2008	DWG NO PT2	REV 4
Checked by:	SCALE N/A	SHEET 1 OF 1	



Symbol Key

	Circulator w/ Isolation Flanges		Central Air Separator
	Ball Valve		Pressure Reducing Valve
	Purging Valve		Pressure Relief Valve
	Weighted Check Valve		Union
	Backflow Preventer		Drain Valve
	Thermostat		Pressure/Temperature Gauge

- SYSTEM NOTES:**
- (A) Honeywell Aquastat L4006B Part # L4006B-Used Only for the Solo Plus Boiler
 - (B) Emergency Gravity Flow Overheat Loop-Needs to be 10% of Wood Boiler Output
 - (C) BioHeat USA Switch Control Part # BLTCONTROL
 - (D) Circulator Switch Relay-Typical Controller
 - (E) Backup Boiler Control Honeywell Aquastat L4008A or Equivalent
 - (F) Termovar Loading Unit Part # 4832S
 - (G) Termovar Diverting Valve-Part # K6440A3
 - (H) Expansion Tank Sizing-2 Thermal Tanks-Amtrol SX90V or Equivalent
3 Thermal Tanks-Amtrol SX110V or Equivalent

- 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.
- Follow the same guidelines for a single or two tank configuration.

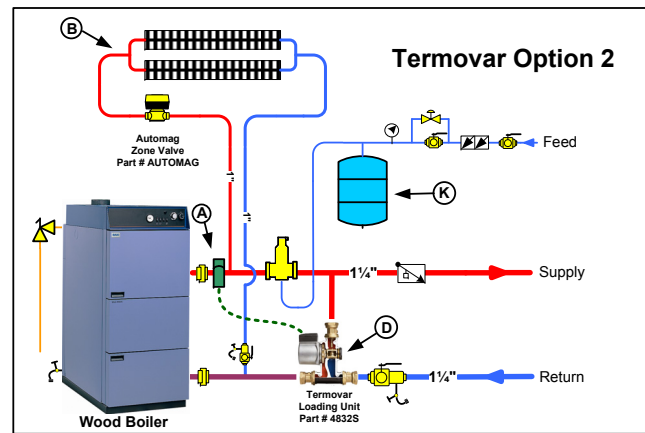
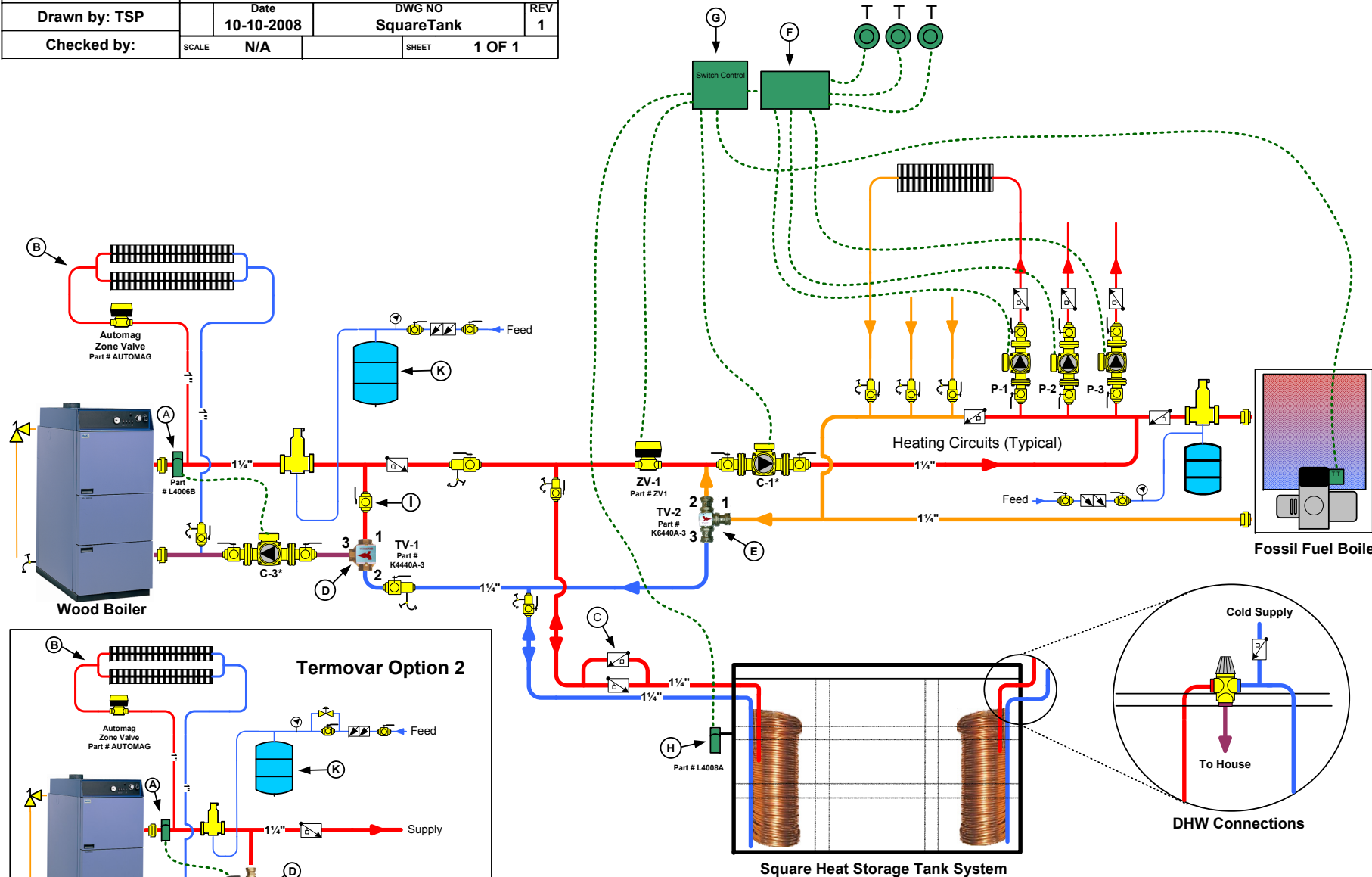
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BioHeat USA 4 Britton Lane Lyme, NH 03768	BioHeat USA Piping Layout Concept Diagram		
	Wood Boiler with Fossil Fuel Boiler and Square Bladder Type Tank		
Drawn by: TSP	Date 10-10-2008	DWG NO SquareTank	REV 1
Checked by:	SCALE N/A	SHEET 1 OF 1	

Symbol Key

	Circulator w/ Isolation Flanges		Central Air Separator
	Circulator w/ Internal Check Valve Isolation Flanges		Zone Valve
	Ball Valve		Pressure Reducing Valve
	Purging Valve		Differential Pressure Bypass Valve
	Swing Check Valve		Pressure Relief Valve
	Weighted Check Valve		Union
	Backflow Preventer		Drain Valve
	Termovar Tempering Valve		Thermostat
	Termovar Diverter Valve		

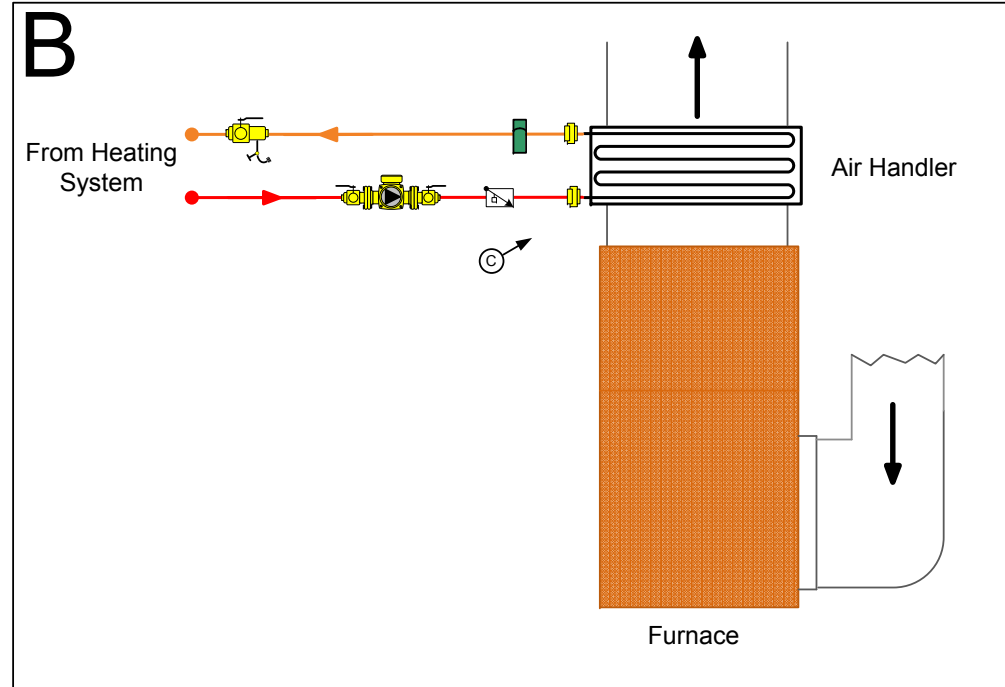
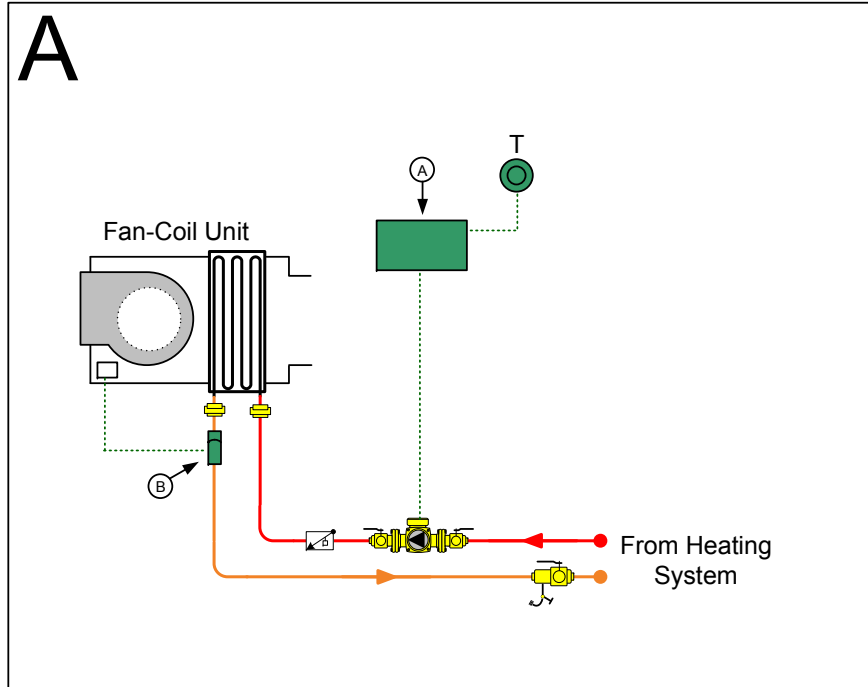
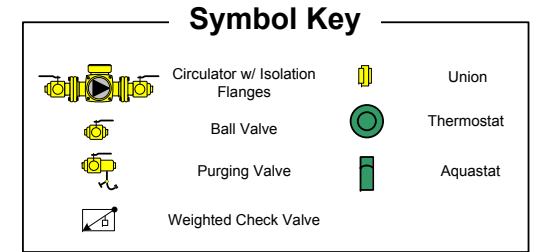
- ### NOTES:
- (A) Aquastat-Honeywell L4006B or Equivalent Part # L4006B
 - (B) Emergency Gravity Flow Overheat Loop Needs to be 10% of Wood Boiler Output
 - (C) Weighted Check Valves Used as Heat Traps
 - (D) Termovar Mixing Valve (2 Options Available)
 - (E) Termovar Diverter Valve Termovar Kit-Part #K6440AF
 - (F) Circulator Switch Relay-Typical Controller
 - (G) BioHeat USA Switch Control Part # BLTCONTROL
 - (H) Backup Boiler Control Honeywell Aquastat L4008A or Equivalent
 - (I) Balancing Valve Required. (Start with Valve Closed halfway, i.e., at 45 degrees)
 - (K) Amtrol 60 or Equivalent Expansion Tank is Suitable for most Solo Plus Installations up to 86 gallons



***Circulator Notes:**
 C-3 and C-1 Circulator Sizing:
 (Multi-Speed Circulator Recommended)
 2-120' coils-Taco 007 or Equivalent.
 2-180' coils-Taco 010 or Equivalent.
 3-180' coils-Taco 010 or Equivalent.

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BioHeat USA 4 Britton Lane Lyme, NH 03768	BioHeat USA Piping Layout Concept Diagram		
	Fan-Coil/Air Handler Supplemental Plumbing Diagram		
Drawn by: TSP	Date 9-25-2008	DWG NO FanCoil	REV 1
Checked by:	SCALE N/A	SHEET 1 OF 1	



NOTES:

- (A) Circulator Switch Relay-Typical Controller
- (B) An aquastat (Honeywell L6006 or equivalent) can be used to switch on the Fan Coil's Fan. Typically set to 140 °F (60 °C).
- (C) Example B Notes: Due to the many variables of furnace manufacturers, heating systems, and air handlers, control wiring and set-up needs to be installed by a qualified HVAC professional.

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