BOCK™ WATER HEATERS

Submittal Sheet

ELECTRITHERM™ SWING TANK PLUS

Job Name _____

Location _____

Arch./Engr. _____

Wholesaler _____

Mech. Contractor _____

Model No. _____

Voltage _____

kW Input _____

Recovery Rate in GPH _____ **°F Rise**

Notes _____

Designed for use in Commercial Heat Pump Water Heating Systems as a swing tank for single-pass or multi-pass heat pump systems.

PLUS

- A means to augment energy input for multi-pass heat pumps when ambient temperature < 40°F
- An emergency backup unit in a single-pass or multi-pass system

Featuring:

- **Step modulation** between three inputs – *Min, Mid, or Max*
  - At call-for-heat, the initial input is based on (supplied) outdoor temperature sensor reading (≥40°F = Min; <40°F and ≥24°F = Med; <24°F = Max)
  - Attempts to recover tank temperature at lowest electric resistance input
  - Additional input added if sensor continues to drop from setpoint
- **Two input configurations available**
  - 12.1 / 24 / 36kW
  - 18 / 36 / 49.5kW
- 208, 240, or 480 VAC
- 50 and 119 gallon models
- **ASME Section IV HLW** – available on 119 gallon model
- **Versatile Piping Options**
  - (5) 2” NPT connections (50 gal)
  - (5) 2.5” NPT connections (119 gal)
  - Optional upper side connections (extra pipe nipples supplied)
- **Three thermowells** for temperature monitoring (up to ø0.38” sensor)
- **Two Operating Modes** – Swing Tank Plus Mode or Standard Electric Water Heater Mode (for emergency backup only)
- **BACnet MSTP** standard
- Alarm Out (normally open, volt-free dry contact)
- Enable/Disable (w/ factory jumper)
- Dip switches to limit maximum input
- 182°F maximum setpoint
- AHRI Certified
- UL listed
  - UL 1453 – *Electric Booster and Commercial Storage Tank Water Heaters*
  - NSF 372 and NSF 5
- **5-year limited tank warranty**

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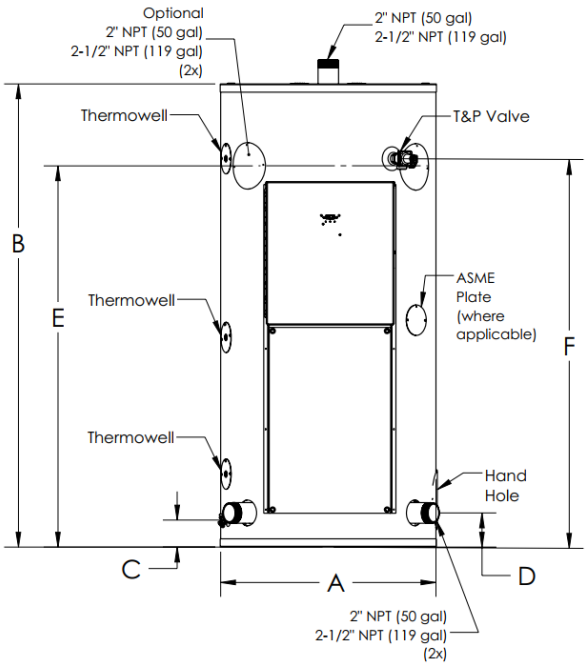
Dimensions and Capacities

Model	Nominal Storage Capacity (gallons)	Actual Storage Capacity (gallons)	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (deg)	J (deg)	K (deg)	L (deg)	Shipping Weight (lbs)
SWP050-*#	50	46	24	52.95	3.91	4.79	41.41	41.91	17.87	29.89	89	57	62	89	275
SWP119-*#	119	108	30	64.82	3.79	4.79	53.35	55.91	17.87	36.97	49	36	68	54	525
SWP119-A-*#	119	108	30	64.82	3.79	4.79	53.35	54.35	17.87	36.97	49	36	68	54	550

* denotes input configuration (kW) with a number, *see Input Designations table*

\# denotes voltage (V) with a letter, *see Voltage Designations table*

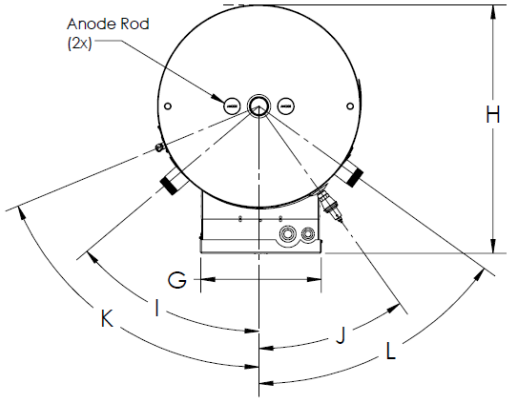


Input Designations

	Input Configurations (kW)	
	12.1 / 24 / 36	18 / 36 / 49.5
Number	1	2

Voltage Designations

	Voltage (V)			
	208	240	277	480
Letter	A	B	n/a	D



Input and Recovery Rate

Input Configuration	Number of Elements ON	Rated Input (kW)	Rated Input (BTU/hr)	Element Rating (kW)			Recovery (GPH) at Temperature Rise				
				Bottom Row	Middle Row	Top Row	10°F	15°F	80°F	90°F	100°F
12.1 / 24 / 36	3	12.1	41,285	4.0	OFF	OFF	486	324	61	54	49
	6	24.0	81,888	4.0	4.0	OFF	963	642	120	107	96
	9	36.0	122,832	4.0	4.0	4.0	1,445	963	181	161	145
18 / 36 / 49.5	3	18.0	61,416	6.0	OFF	OFF	723	482	90	80	72
	6	36.0	122,832	6.0	6.0	OFF	1,445	963	181	161	145
	9	49.5	168,894	6.0	6.0	4.5	1,987	1,325	248	221	199

Amperage & Overcurrent Protection

Input (kW)	208 V				240 V				480 V			
	1 ϕ		3 ϕ		1 ϕ		3 ϕ		1 ϕ		3 ϕ	
	Full Load Current (Amps)	Overcurrent Protection* (Amps)	Full Load Current (Amps)	Overcurrent Protection* (Amps)	Full Load Current (Amps)	Overcurrent Protection* (Amps)	Full Load Current (Amps)	Overcurrent Protection* (Amps)	Full Load Current (Amps)	Overcurrent Protection* (Amps)	Full Load Current (Amps)	Overcurrent Protection* (Amps)
12.1	58.2	80	33.6	45	50.4	70	29.1	40	25.2	35	14.6	20
18.0	86.5	110	50.0	70	75.0	100	43.3	60	37.5	50	21.7	30
24.0	115.4	150	66.6	90	100.0	125	57.7	80	50.0	70	28.9	40
36.0	173.1	225	99.9	125	150.0	200	86.6	110	75.0	100	43.3	60
49.5	238.0	300	137.4	175	206.3	300	119.1	150	103.1	150	59.5	80

*Denotes recommended values. Always follow local codes.

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Location Requirements

The water heater must be installed indoors. Locate the water heater as close as practical to the water piping system and leave sufficient clearances for servicing the heater. This water heater may be installed on combustible flooring. DO NOT install this water heater on carpeting.

Clearance From Combustible Materials

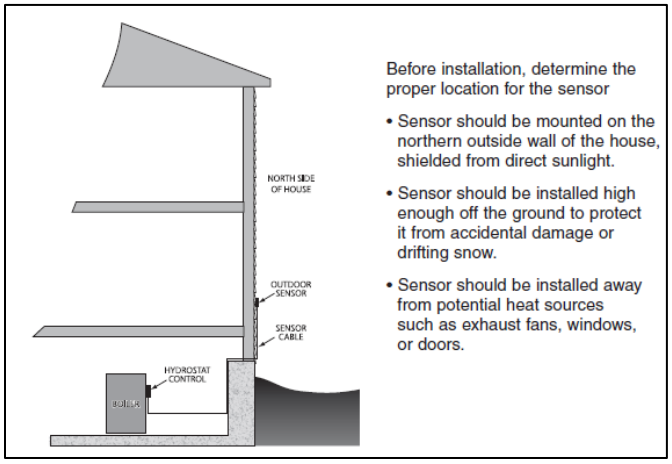
Top	Sides	Front	Rear
0"	0"	0"	0"

Recommended Service Clearances

Top	Sides (non-piping)	Side (Hand Hole)	Front	Rear
36"	4"	36"	24"	0"

Outdoor Temperature Sensor

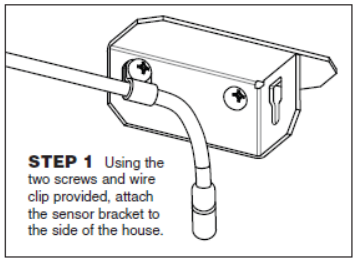
Factory supplied, Hydrolevel Model OS-100 Outdoor Sensor Kit



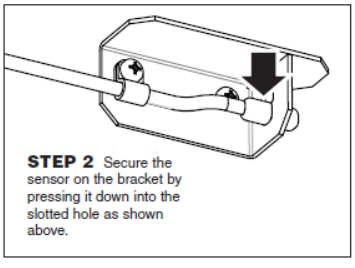
Before installation, determine the proper location for the sensor

- Sensor should be mounted on the northern outside wall of the house, shielded from direct sunlight.
- Sensor should be installed high enough off the ground to protect it from accidental damage or drifting snow.
- Sensor should be installed away from potential heat sources such as exhaust fans, windows, or doors.

INSTALLING THE SENSOR



STEP 1 Using the two screws and wire clip provided, attach the sensor bracket to the side of the house.



STEP 2 Secure the sensor on the bracket by pressing it down into the slotted hole as shown above.

STEP 3 Using an extended wood or masonry bit, drill a ¼" hole through the side of the house at a location giving the best access to the boiler and the HydroStat control.

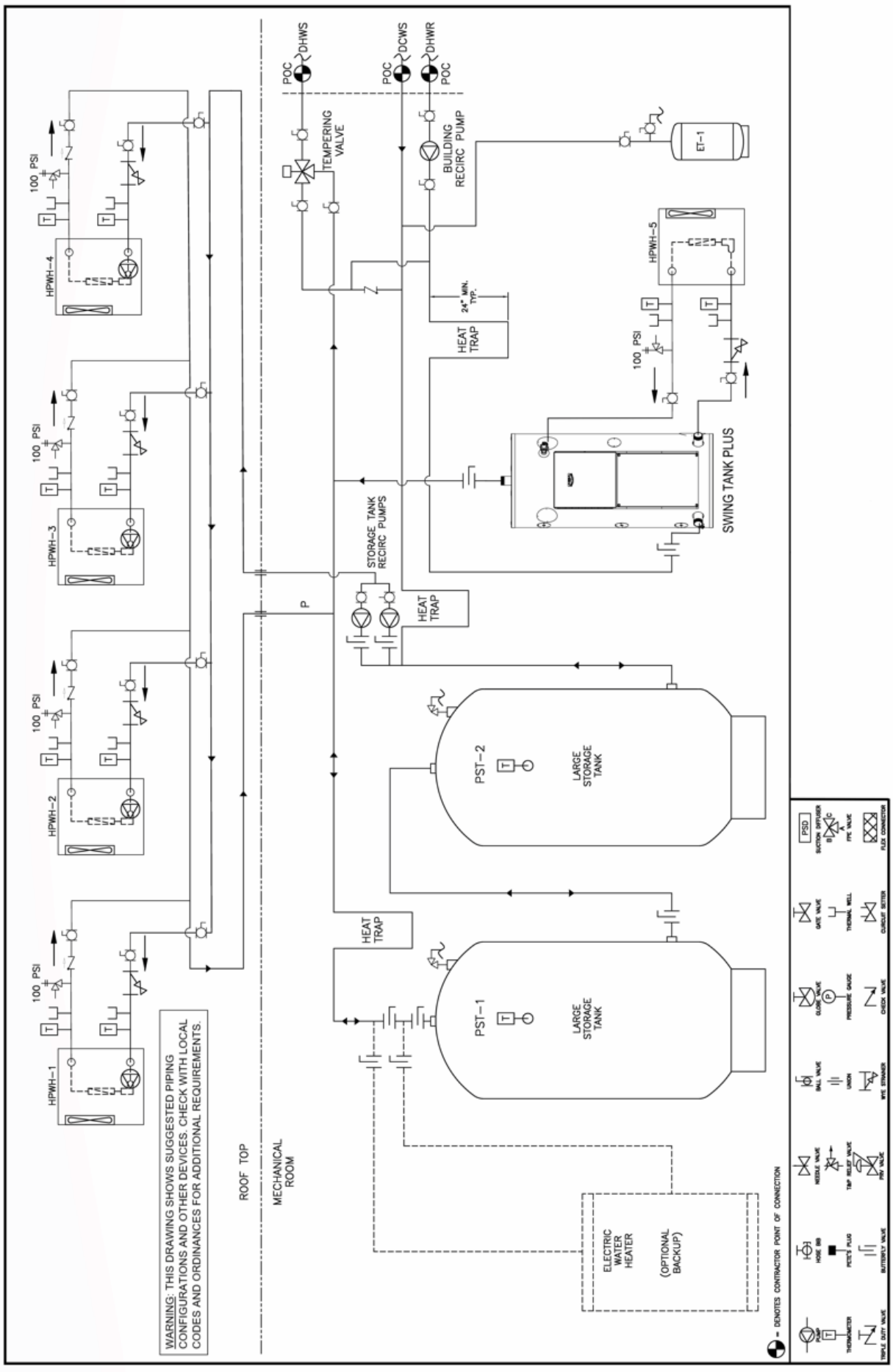
WARNING: Use caution to select the hole location away from wires or piping within the house wall.

STEP 4 Feed the sensor cable through the hole and into the house. Seal the hole with a bead of silicone or other appropriate caulking material.

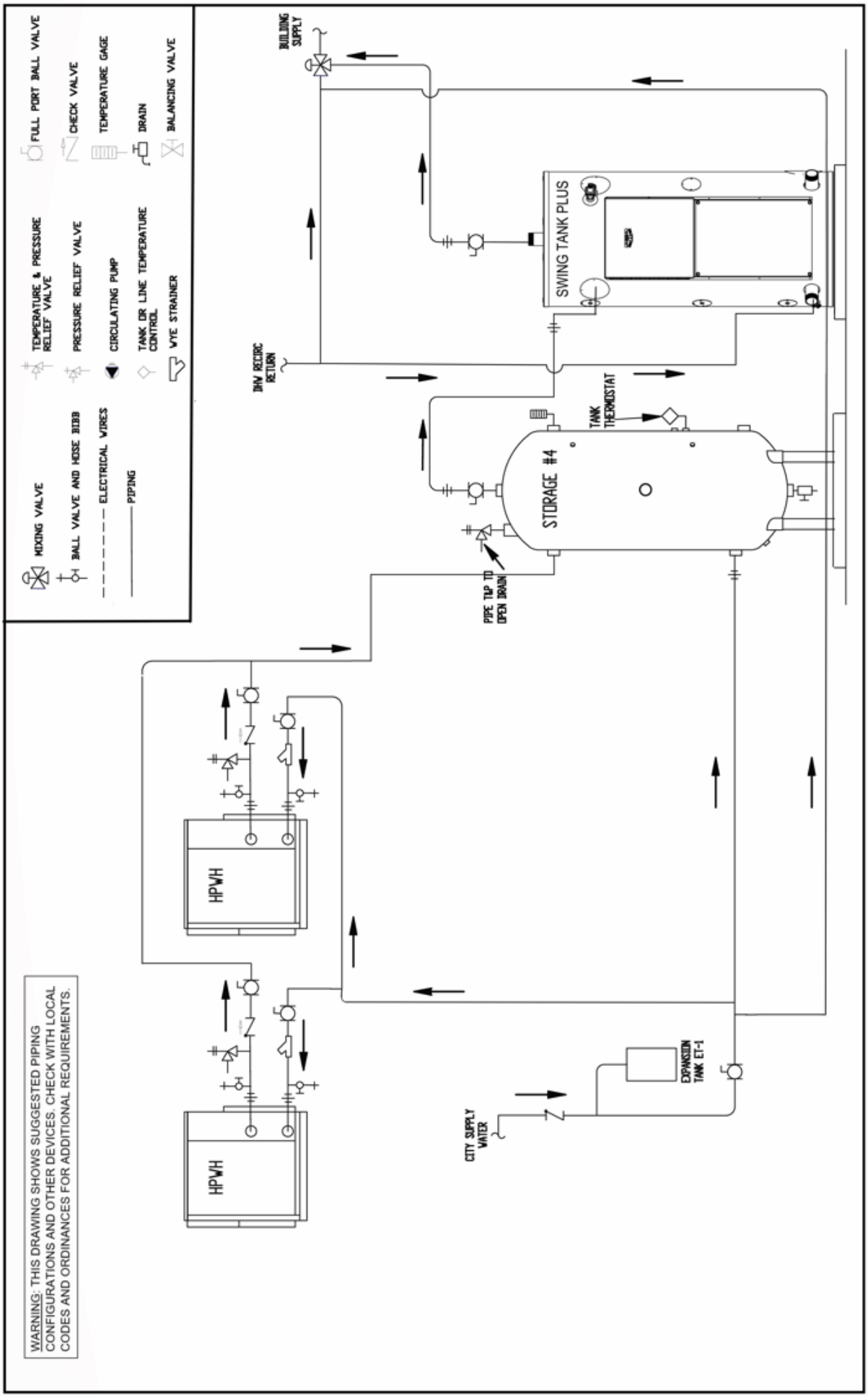
STEP 5 Inside the house, route the sensor cable to the HydroStat control. Splice in an additional length of wire, up to 500 feet, as needed. Use 18 awg wire for distances up to 250 feet or 16 awg wire for distances over 250 feet. Using a crimping tool, terminate wires with the two spade connectors provided.

NOTE: To avoid interference with the sensor signal, do not run the sensor cable close to any other wiring such as telephone, cable, power, etc.

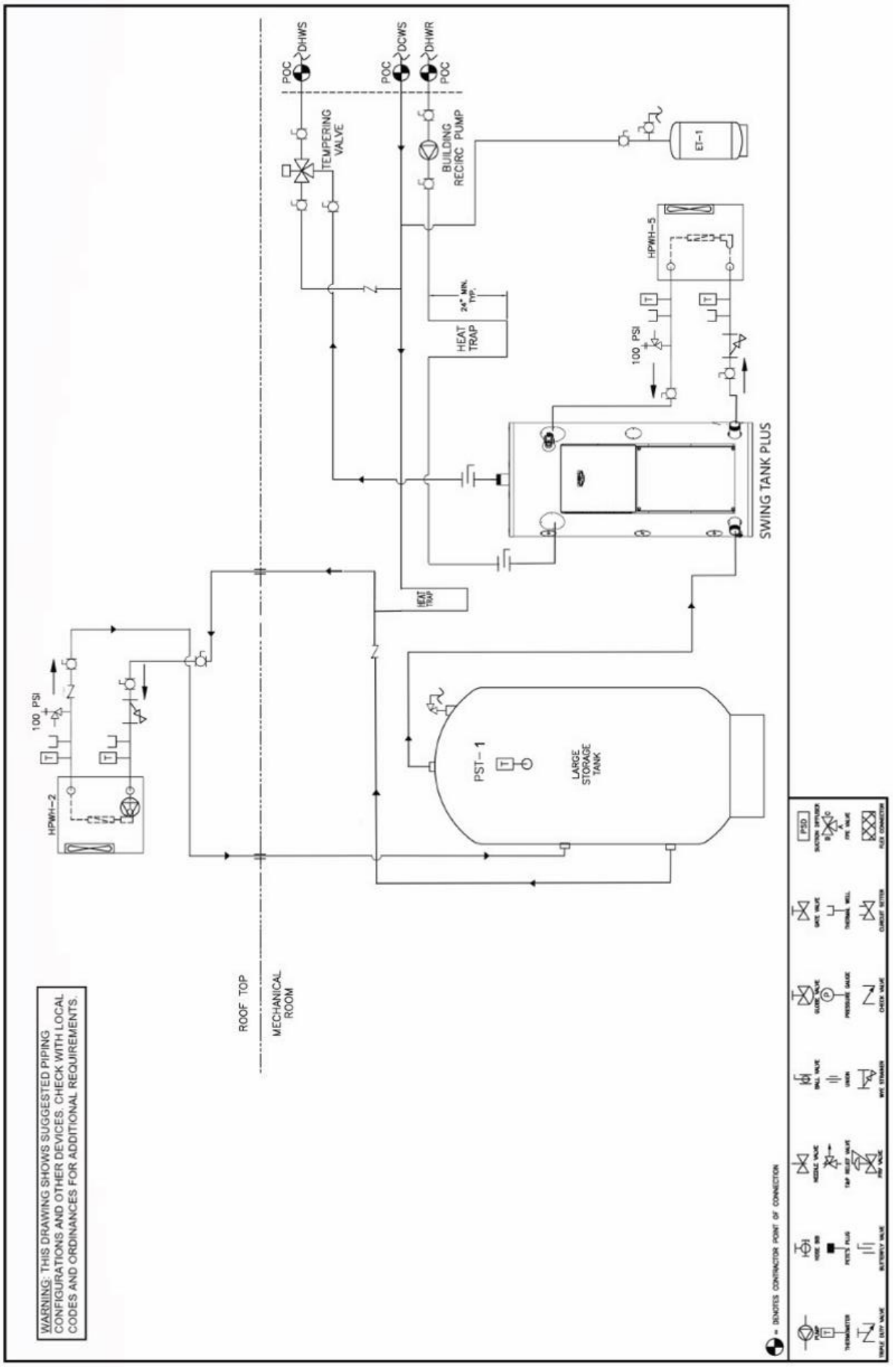
Swing Tank in Single-Pass System



“Low Ambient Emergency Heat” in Single-Pass System



Swing Tank in Multi-Pass System



Augmenting Energy Input in Multi-Pass System