

Figure 8 - Zoning with Zone Valves and Indirect Water Heating - Direct Piping

NOTES:

1. This drawing is meant to show system piping concept only. Installer is responsible for all equipment and detailing required by local codes.
2. All closely spaced tees shall be within 4 pipe diameters center to center spacing.
3. A minimum of 6 pipe diameters of straight pipe shall be installed upstream and downstream of all closely spaced tees.
4. The **minimum** pipe size of DHW piping should be ¾" diameter. See Table 11 for **minimum** CH pipe sizing.
5. Circulators are shown with isolation flanges. The alternative is standard flanges with full port ball valves. Purge valves can be used with circulator flanges as an alternative.
6. Install a minimum of 12 diameters of straight pipe upstream of all circulators.
7. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
8. In a valve-based system, each heating zone has a zone valve which opens when that zone calls for heat. Each zone thermostat is wired to its corresponding zone valve. Contacts in the zone valves provide a signal to the boiler to operate when there is a call for heat.
9. Install a check valve on the return line to the boiler.

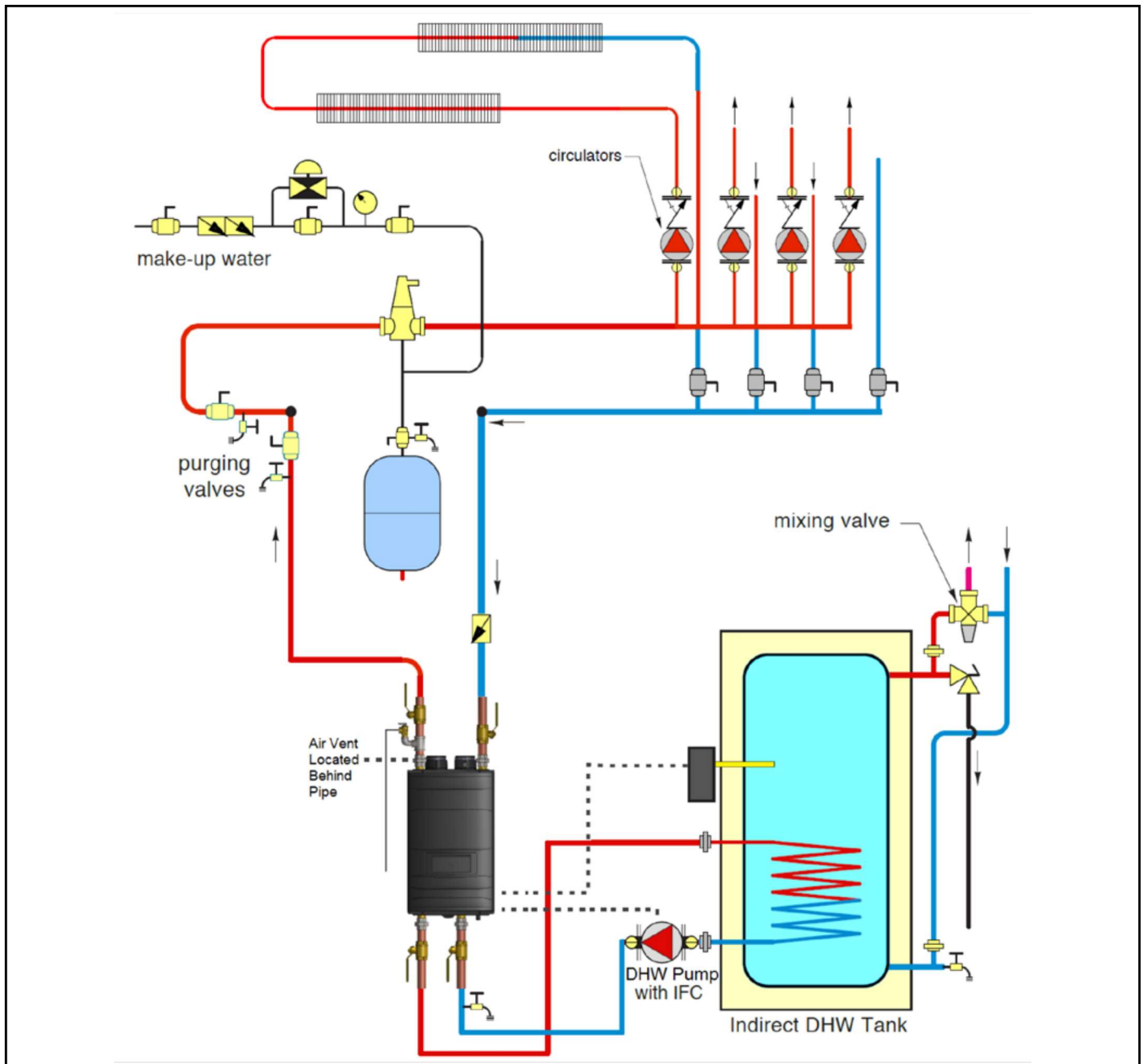


Figure 9 - Zoning with Pumps and Indirect Water Heating - Direct Piping

NOTES:

1. This drawing is meant to show system piping concept only. Installer is responsible for all equipment and detailing required by local codes.
2. All closely spaced tees shall be within 4 pipe diameters center to center spacing.
3. A minimum of 6 pipe diameters of straight pipe shall be installed upstream and downstream of all closely spaced tees.
4. The **minimum** pipe size of DHW piping should be $\frac{3}{4}$ " diameter. See Table 11 for **minimum** CH pipe sizing.
5. Circulators are shown with isolation flanges. The alternative is standard flanges with full port ball valves. Purge valves can be used with circulator flanges as an alternative.
6. Install a minimum of 12 diameters of straight pipe upstream of all circulators.
7. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
8. Each heating zone of a pump-based system has its own circulator with turns on when a zone thermostat calls for heat.
9. Install a check valve on the return line to the boiler.

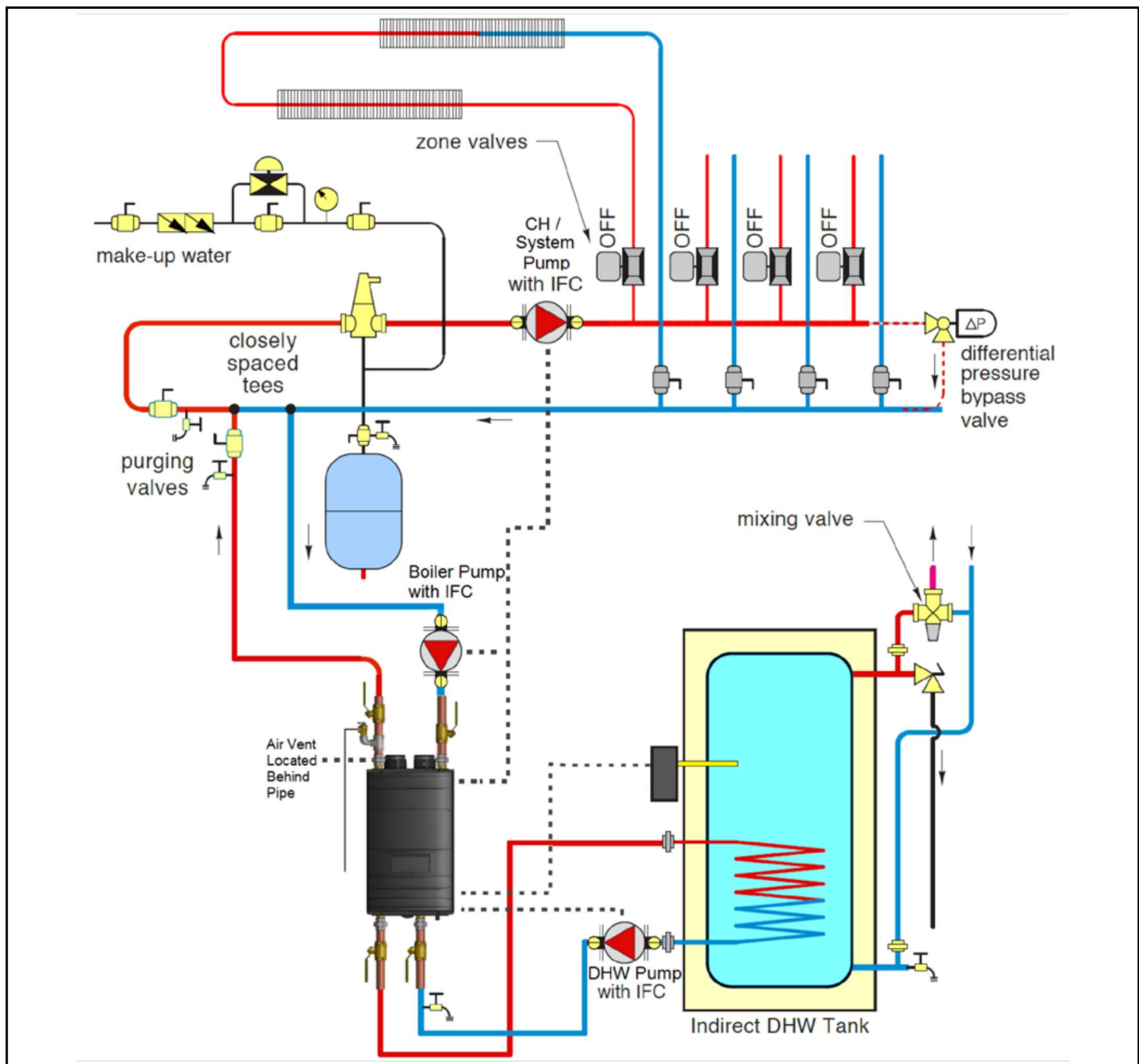


Figure 10 - Zoning with Zone Valves and Indirect Water Heating - Primary / Secondary Piping

NOTES:

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3. A minimum of 6 pipe diameters of straight pipe shall be installed upstream and downstream of all closely spaced tees.
4. The **minimum** pipe size of DHW piping should be ¾" diameter. See Table 11 for **minimum** CH pipe sizing.
5. Circulators are shown with isolation flanges. The alternative is standard flanges with full port ball valves. Purge valves can be used with circulator flanges as an alternative.
6. Piping shown is Primary/Secondary. System flow (secondary loop) must be greater than the boiler's primary loop flow.
7. Install a minimum of 12 diameters of straight pipe upstream of all circulators.
8. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
9. In a valve-based system, each heating zone has a zone valve which opens when that zone calls for heat. Each zone thermostat is wired to its corresponding zone valve. Contacts in the zone valves provide a signal to the boiler to operate when there is a call for heat.
10. If Boiler Pump on the return line does not have an internal flow check, install a check valve on the return line to the boiler.

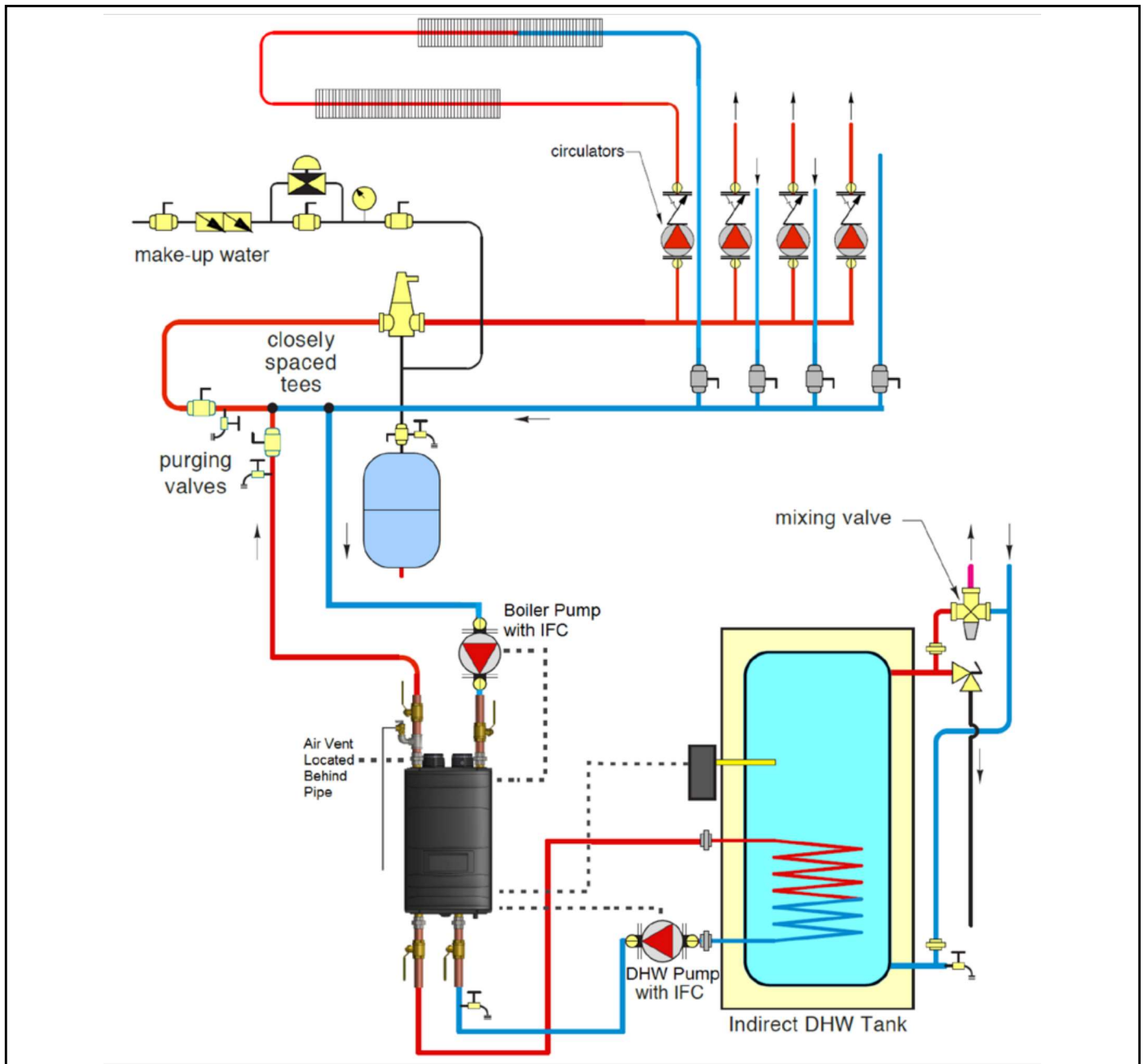


Figure 11 - Zoning with Pumps and Indirect Water Heating - Primary / Secondary Piping

NOTES:

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7. Install a minimum of 12 diameters of straight pipe upstream of all circulators.
8. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
9. Each heating zone of a pump-based system has its own circulator with turns on when a zone thermostat calls for heat.
10. If Boiler Pump on the return line does not have an internal flow check, install a check valve on the return line to the boiler.

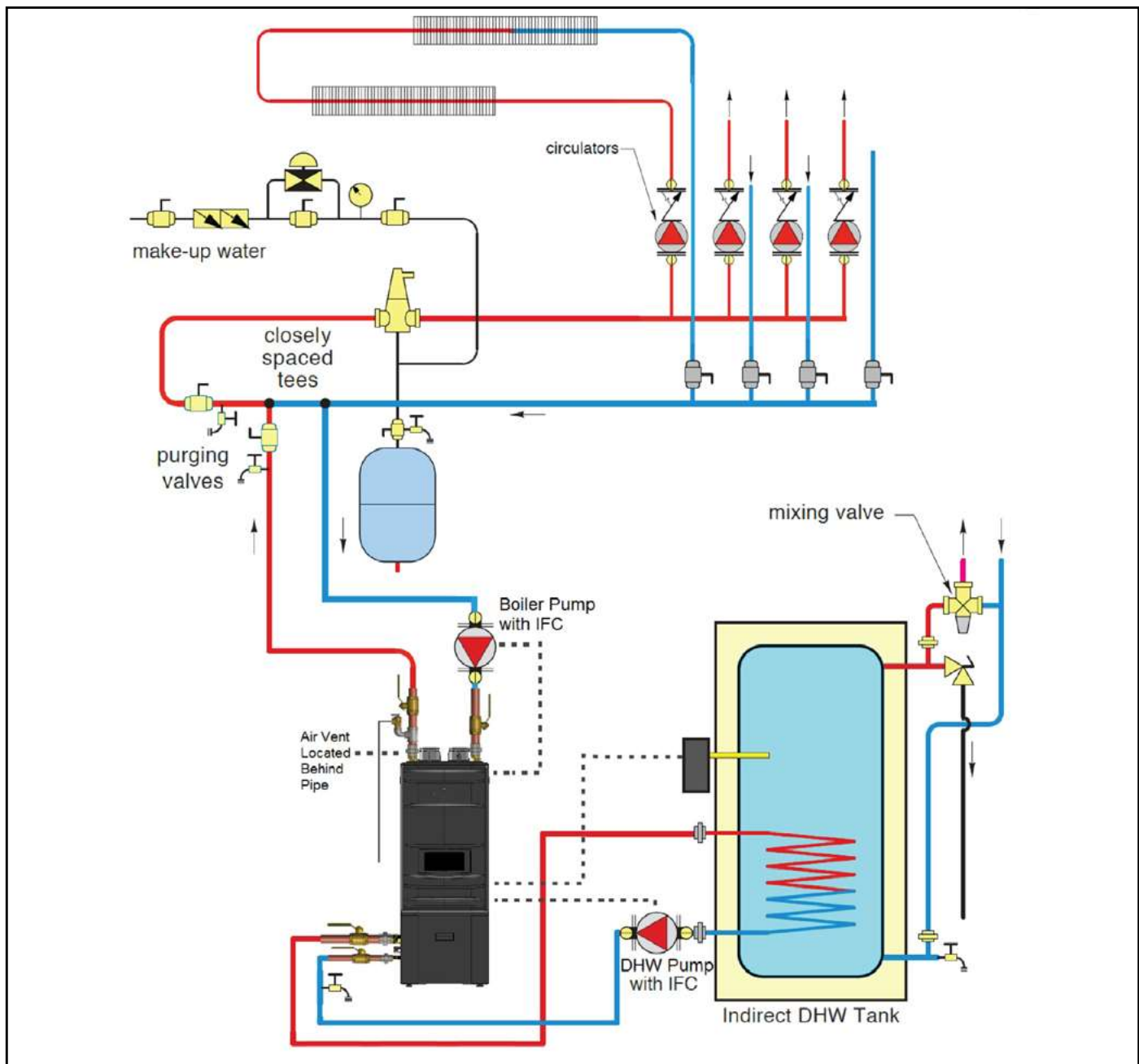


Figure 12 - Zoning with Pumps and Indirect Water Heating - Primary / Secondary Piping - Floor Model

NOTES:

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7. Install a minimum of 12 diameters of straight pipe upstream of all circulators.
8. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
9. Each heating zone of a pump-based system has its own circulator with turns on when a zone thermostat calls for heat.
10. If Boiler Pump on the return line does not have an internal flow check, install a check valve on the return line to the boiler.

NOTE: The piping configuration of the Floor Model can be changed from the left to the right side of the boiler.

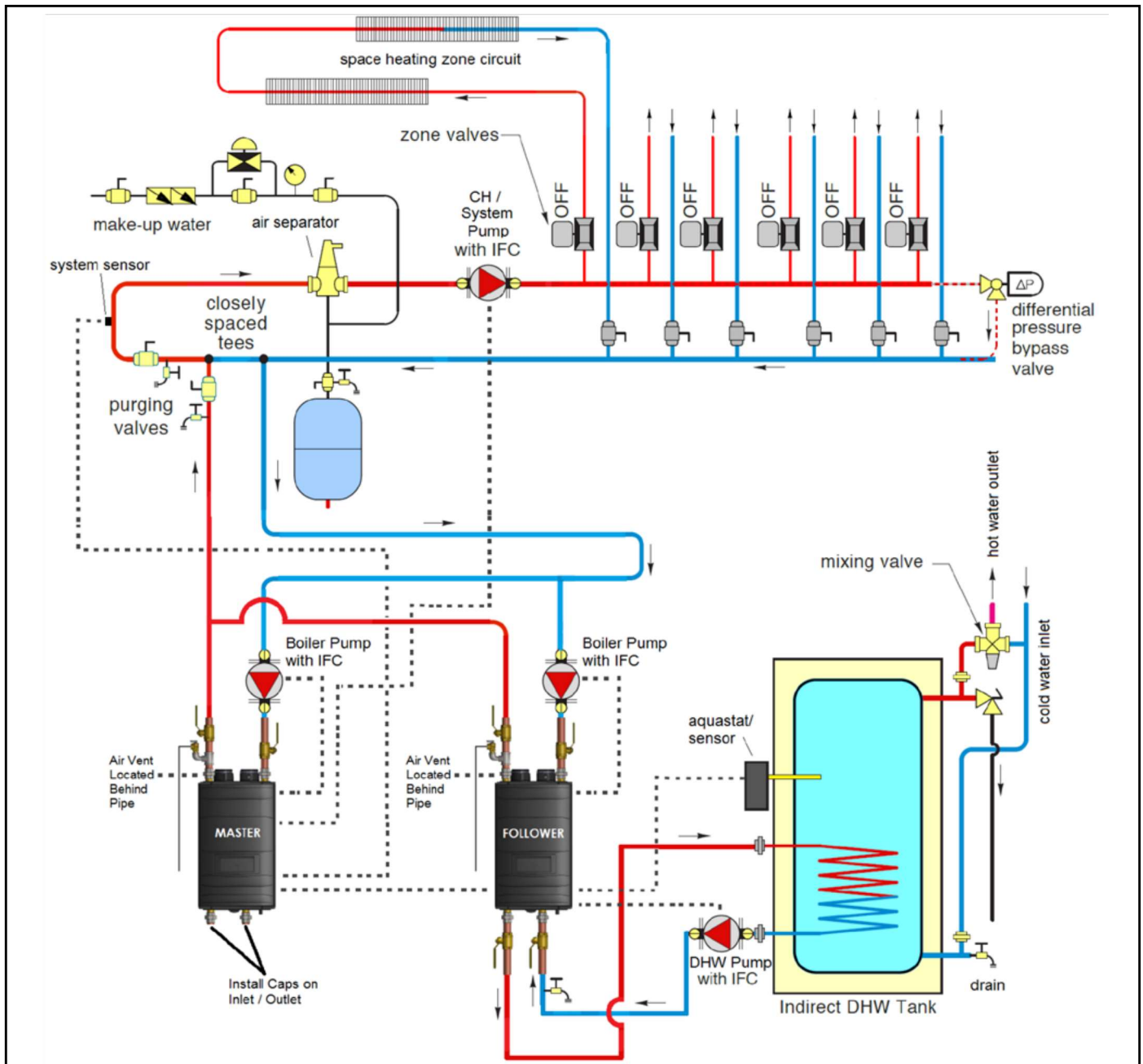


Figure 13 - Cascaded System - Zoning with Zone Valves and Indirect Water Heating - Primary / Secondary Piping

NOTES:

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8. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
9. In a valve-based system, each heating zone has a zone valve which opens when that zone calls for heat. Each zone thermostat is wired to its corresponding zone valve. Contacts in the zone valves provide a signal to the boiler to operate when there is a call for heat.
10. If Boiler Pump on the return line does not have an internal flow check, install a check valve on the return line to the boiler.

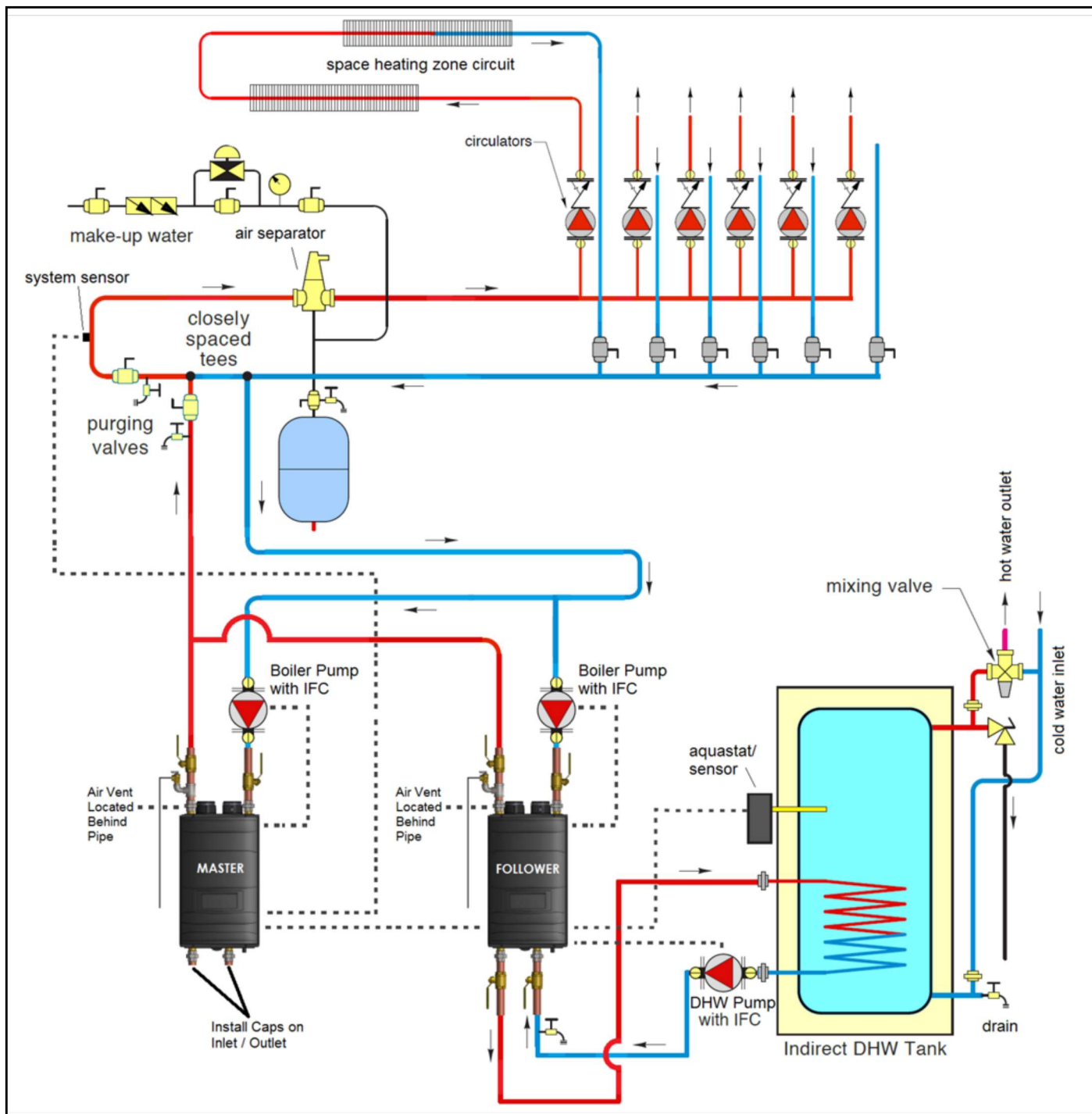


Figure 14 - Cascaded System - Zoning with Pumps and Indirect Water Heating - Primary / Secondary Piping

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7. Install a minimum of 12 diameters of straight pipe upstream of all circulators.
8. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
9. Each heating zone of a pump-based system has its own circulator with turns on when a zone thermostat calls for heat.
10. If Boiler Pump on the return line does not have an internal flow check, install a check valve on the return line to the boiler.

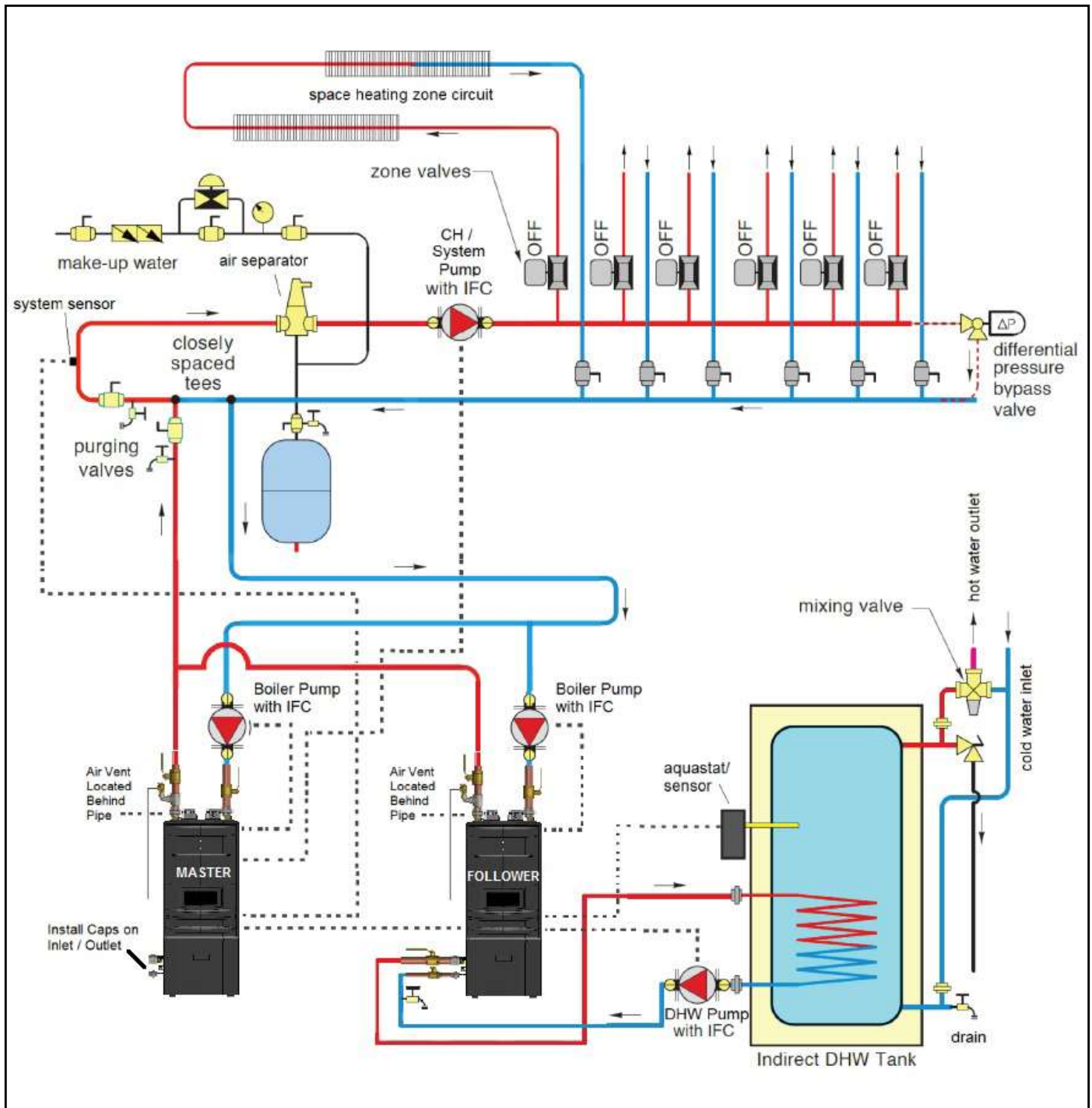


Figure 15 - Cascaded System - Zoning with Pumps and Indirect Water Heating - Primary / Secondary Piping - Floor Model

NOTES:

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8. **VERY IMPORTANT** – Minimum flow rates outlined in this manual must be maintained through the heat exchanger to minimize short cycling.
9. Each heating zone of a pump-based system has its own circulator with turns on when a zone thermostat calls for heat.
10. If Boiler Pump on the return line does not have an internal flow check, install a check valve on the return line to the boiler.

NOTE: The piping configuration of the Floor Model can be changed from the left to the right side of the boiler.

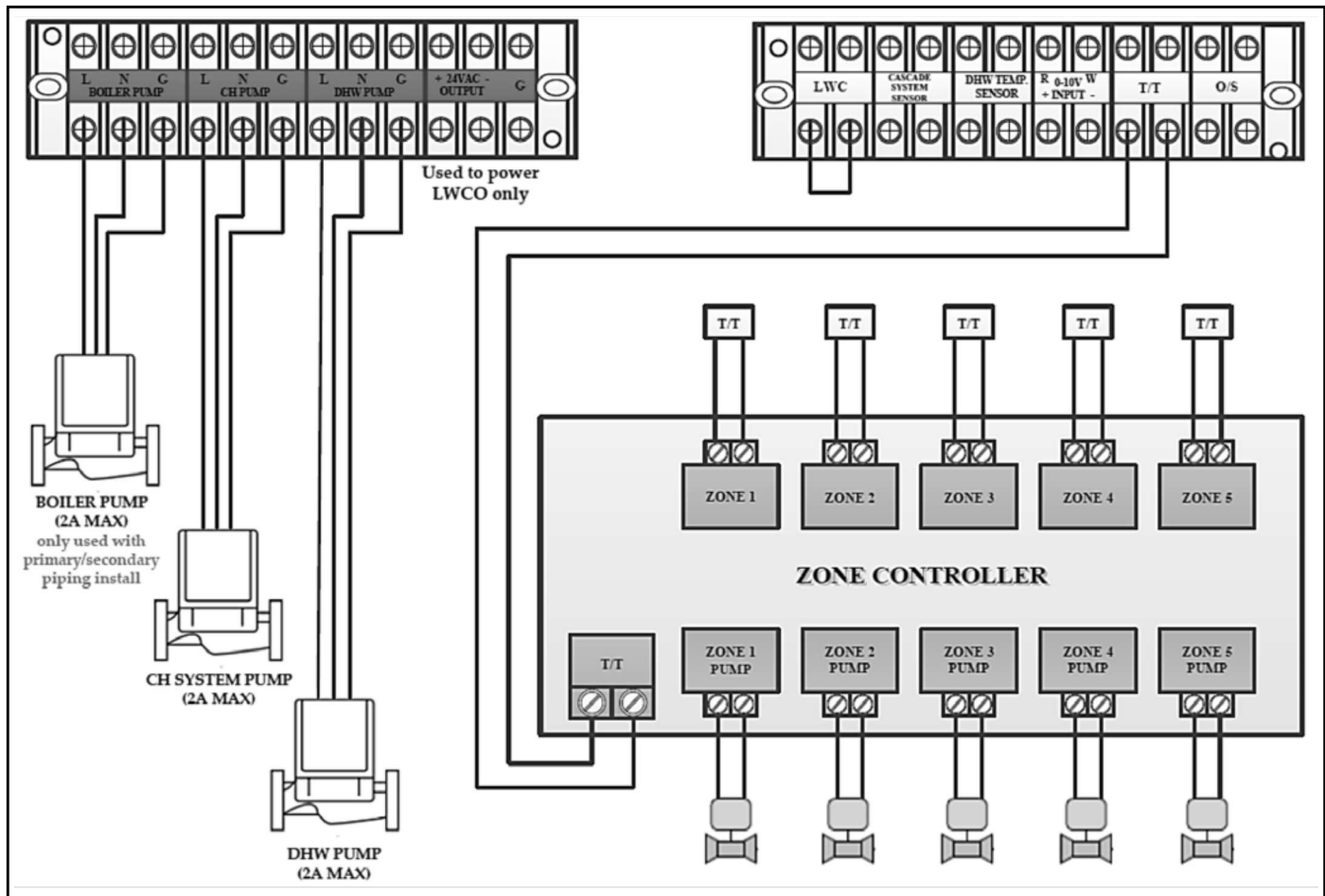


Figure 16 - Wiring - Zoning with Zone Valves and Indirect Water Heating

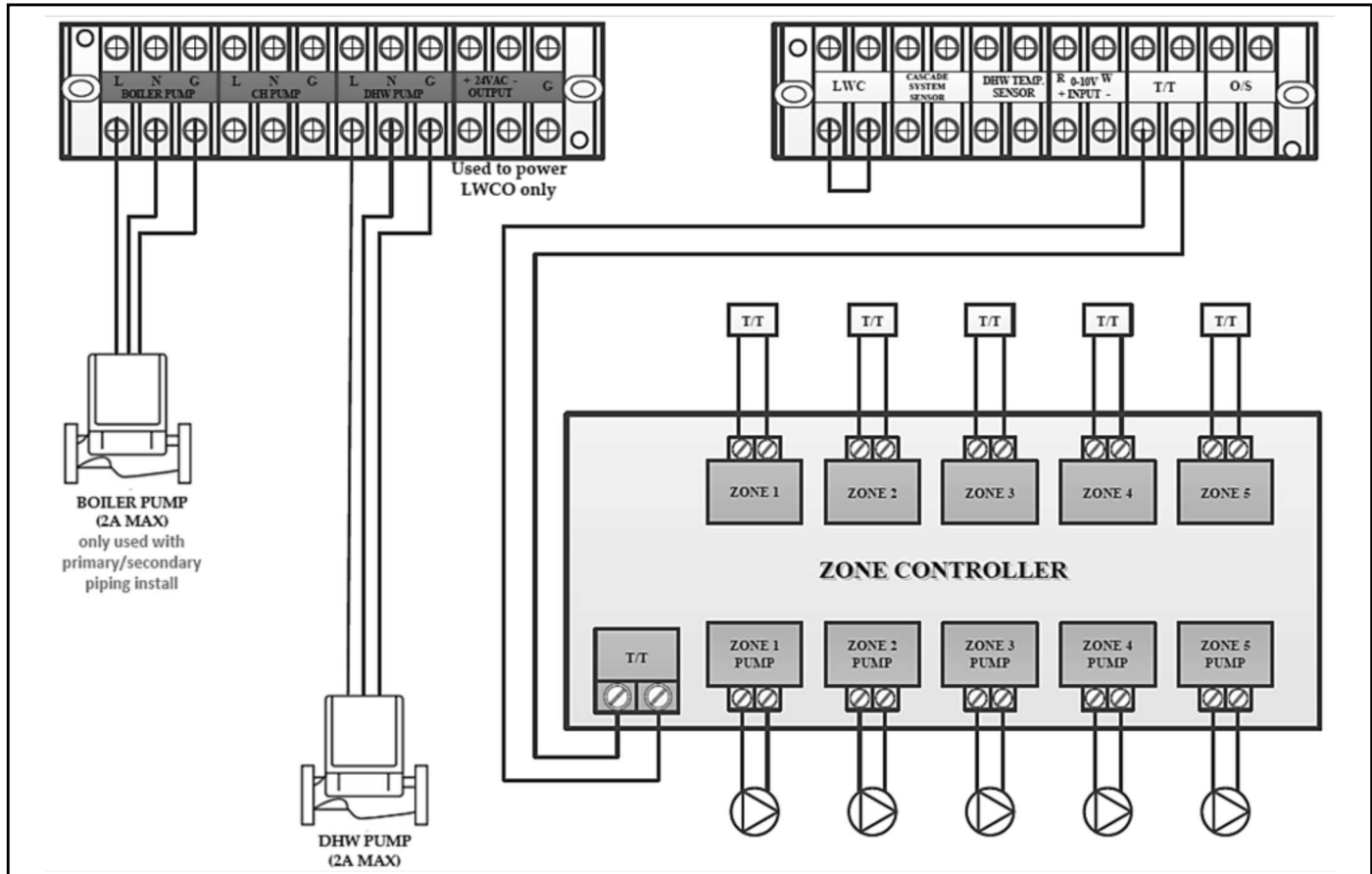


Figure 17 - Wiring - Zoning with Pumps and Indirect Water Heating