Piping Schematic Level I Control

- Modulating-condensing boiler
- Single-temperature radiant floor heating

Where: All radiant and snow melt applications

Why: This illustration shows a condensing boiler supplying water to a single radiant manifold for space heat or snow melting. Condensing boilers are designed to operate safely and efficiently at low return water temperatures. As a result, no additional water temperature control device is required. The boiler operating control is set up to provide the correct supply water temperature to the radiant panel. When using a condensing boiler in radiant and snow melt applications, consult the boiler manufacturer's installation and operation instructions for specific near-boiler piping information and return water temperature limitations.

What to look for:

- **Bypass loop** – A bypass loop is not required when using a condensing boiler with radiant heat.
- **Boiler circulator** – Many condensing boilers are packaged with an internal circulator (BP), but require an additional system circulator (P1). Consult the boiler manufacturer's installation and operation instructions for specific requirements. If the boiler is equipped with a system circulator, flow (gpm) and head requirements for the radiant panels may exceed the capacity of that circulator. Review radiant flow requirements and size the system circulator appropriately.
- **Isolation valves** – Isolation valves are recommended at the supply and return radiant manifolds to facilitate purging and service. Isolation valves or flanges are recommended at all circulators for easy service.
- **Zoning options** – See **pages 137-131**.
- **Specific wiring schematic** – See **page 163**.