

Mode of Operation - No Pump Boost: In this mode the ICV (supply side control valve) controls differential pressure (DP) across building load, pump is off. ICV DP set point is typically 6-12 psid. Return water set point is 54 degrees F (selectable/adjustable).

Mode of Operation - Pump Boost: ICV controls mixed water temperature, pump controls DP across building load. When DP falls below set point, and ICV is fully open for selectable time period (typically 10 minutes) the building pump will turn on to minimum speed and the speed controlled by its motor VSD to meet the building DP set point. When pump is running ICV will control to meet mixed water temperature of 48 degrees F (adjustable and selectable), flow is recirculated through check valve V2 to the pump suction. When the pump speed drops to 15% rated speed (or minimum speed) for 10 minutes the pump will then be commanded off and the system will return to NO Pump Boost Mode.

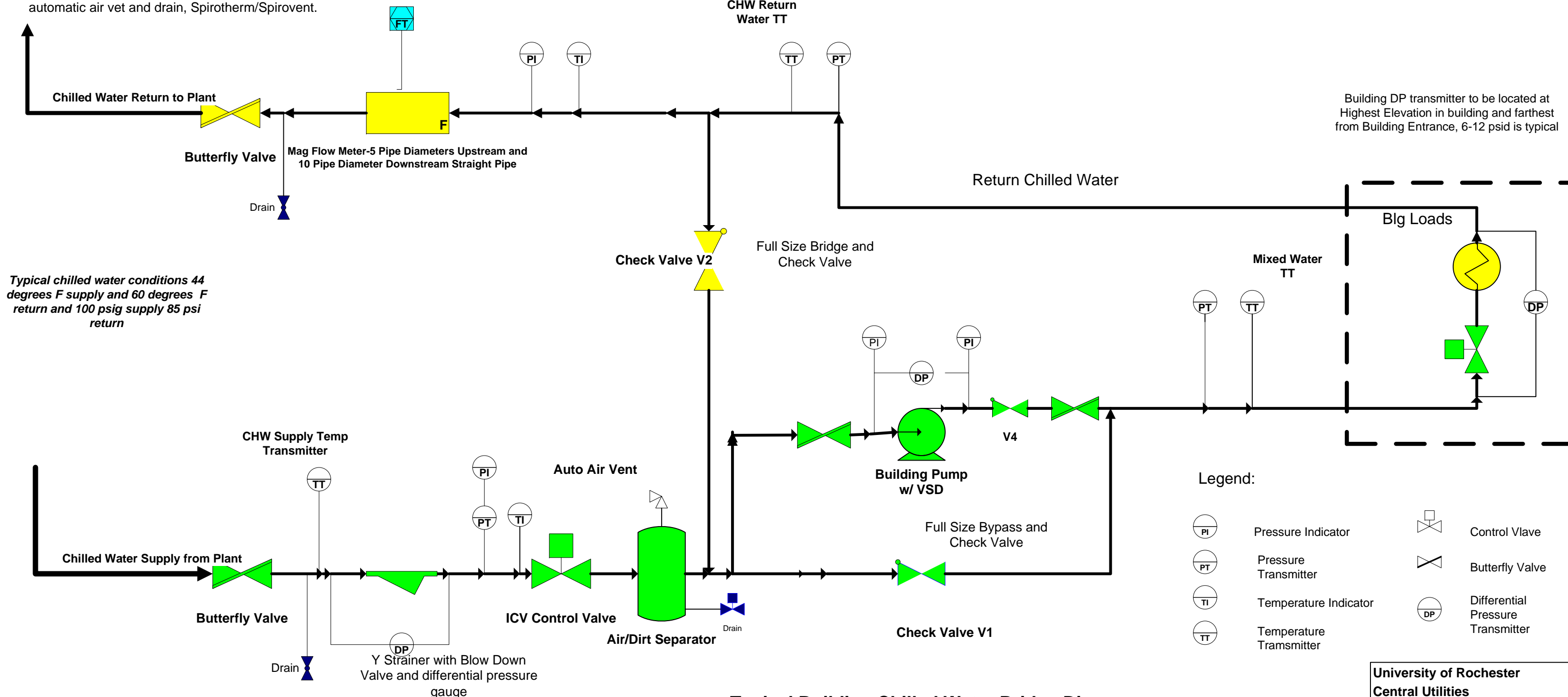
Return Temperature Alarm-If the return temperature falls below 54 degrees for 45 minutes or more with flow being recorded, an alarm to the Building Automation System shall occur 'Low Return Water Temperature'.

When the pump speed is at its minimum (typically 15% of its speed range) for a selectable time period (10 minutes typical) the pump will be turned off and the system default back to un-boosted mode of operation.

Chilled Water BTU meter to be mounted locally with Supply and Return chilled water temperatures from pipe mounted RTDs and flow values from magnetic flow meter. Mag flow meter to be manufactured by Onicon, Yokogawa or Rosemount.

System design pressure is 150 psig, test pressure 225 psig. All piping to be welded steel, schedule 40 pipe wall, ASTM A53 Grade B. All valves to be ANSI 150# Class.

Inlet strainer to building to have 1/8 inch perforated basket, Y type, ANSI 150# flanges. Provide differential pressure gauge, design for pressure loss of approximately 1 psi. Dirt /air separator to be full line size with pressure drop of not more than 2 psi with automatic air vent and drain, Spirotherm/Spirovent.



Typical Building Chilled Water Bridge Diagram

University of Rochester
 Central Utilities
 Chilled Water Bridge Diagram
 Sketch CHW01-2014
 By: sgm