GENERAL:

1. The objective of this guideline is to provide minimum standards for design and installation plumbing systems. This section covers requirements for common work.

DESIGN GUIDELINES:

1. Section 22 0513 Common Motor Requirements.
   1.1. All motors shall meet minimum ASHRAE energy efficiency requirements.

2. Section 22 0516 Expansion Fittings, loops for plumbing piping
   2.1. System design shall provide adequate pipe offsets or loops and shall not use any manufactured expansion joint products.
   2.2. Provisions shall be made on vertical pipe risers to accommodate pipe growth when selecting pipe hangers and supports.

3. Section 22 0519 Meters and gauges for plumbing
   3.1. Water meters will be provided as specified in section 33 1233.
   3.2. Thermometers shall be provided on water heaters on both CW and HW piping.
   3.3. Pressure gauges shall be provided on the following pieces of equipment:
      3.3.1. After the building backflow preventer
      3.3.2. After the building water meter.
      3.3.3. After the water softeners
      3.3.4. After the water heater on HW piping. Where thermostatic mixing valves are installed, include thermometers on the hot & cold inlets and tempered outlet of the master mixing valves. (To aid in the initial setup of the valve as well as any future adjustments.)
      3.3.5. After the branch or isolation valve on each floor for both HW and CW piping.

4. Section 22 0548 Vibration, seismic Controls for Plumbing Piping and Equipment
   4.1. Follow requirements of IPC

5. Section 22 0553 Identification for Plumbing Piping and Equipment
   5.1. The following abbreviations SHALL BE used in design documents and as actual labels on piping in the finished building:
      5.1.1. CW Domestic Cold Water
      5.1.2. HW Domestic Hot Water
      5.1.3. HWR Domestic Hot Water Return
      5.1.4. NPCW Non-potable Cold Water
      5.1.5. NPCW Non-potable Hot Water
      5.1.6. NPHWR Non-potable Hot Water Return
      5.1.7. SW Sanitary Waste
      5.1.8. SV Sanitary Vent
      5.1.9. LW Laboratory Waste
5.1.10. LV Laborary Vent
5.1.11. SPD Sump Pump Discharge
5.1.12. ST Storm Water