Plumbing

I. Water Distribution

A. Domestic Water

1. Domestic cold water supplied to a building shall incorporate dedicated a backflow preventer. Use of either a double check assembly or RPZ (Reduced Pressure Zone) is dependent on risk of contamination the building poses to the site.
2. Hot Water
   a. When centrally located hot water generators are provided in large facilities, hot water mains shall be insulated and fitted with recirculation pumps and the water recirculated back to the central water heaters as per local plumbing code(s). Consider providing time clocks or other means to turn off recirculation during unoccupied hours.
   b. Point-of-use water heaters may be provided instead of a central hot water system, or for remotely located points of use, or higher temperature applications.
3. Emergency fixtures (showers and eyewashes)
   a. Emergency fixtures, if provided, shall be supplied with tempered water at 85°F through a thermostatic mixing valve. Emergency equipment thermostatic mixing valve shall incorporate a built-in cold-water bypass with positive hot water shutdown device in the event of cold-water shutdown.

B. Distribution

1. Above-ground domestic hot and cold-water piping shall be Type L copper tube with wrought copper fittings.
2. Underground domestic hot and cold-water piping shall be Type K copper tube with wrought copper fittings.
3. Solder shall be lead-free, 95-5 tin-antimony.
4. Provide domestic water riser diagrams.

II. Sanitary Sewerage

A. General

1. Sewage ejector pumps (grinder pumps) may be required for some applications. Ejector pump discharge shall be connected to the building house sanitary drain or sewer. Duplex pump package shall consist of a main control pump panel, lead/lag controls, disconnect switch and local and/or remote alarms.
2. Pumps shall be sized for 100% redundancy.

B. Industrial Waste and Vent System

1. A separate industrial waste and vent system shall be provided to receive the discharge of any fixture into which acid, oils or corrosive chemicals are intended or may be placed.
2. No industrial waste shall be discharged into the ground, local sewer, or elsewhere without being thoroughly diluted, neutralized or treated by passing through the facility's industrial wastewater treatment plant or a stand-alone treatment system specifically approved by Amtrak's Environmental Department.

III. Plumbing Fixtures

A. General

1. Plumbing fixtures are to be made of graffiti and vandalism resistant materials.
2. All Plumbing fixtures shall be mounted on carriers rated for a minimum of 1000 pounds.
3. Lavatories and urinals in multiple occupant toilet rooms shall be equipped with hands free, electrically operated Automatic Motion Sensor controls.

B. Toilets (Water Closets) and Urinals

1. Water closets and urinals are to be commercial grade, wall-mounted, with high efficiency, low consumption flush valve, rather than tank.

C. Lavatories

1. Lavatories are to be commercial grade wall mounted units.
   a. Countertop vanities are not acceptable unless the fixture is intended to match an existing adjacent fixture.
   b. No pop-up drains (strainer only).