

PLUMBING SYSTEMS NOTES & SPECIFICATIONS:

1. **CODES, STANDARDS AND REGULATIONS:** Materials, Equipment, Installation, Disinfection and Testing shall be in compliance with, but not limited to, the following codes and standards:  
A. Local Codes or Ordinances.  
B. Virginia Construction Code (VCC).  
C. Piping, fittings and equipment that are connected to potable water system shall meet the 1996 Safe Water Drinking Act and where applicable shall meet NSF Standard 61 and shall be labeled and certified.
2. **SHOP DRAWINGS:** Furnish six copies of plumbing materials and equipment to Architect for review.
3. **DESCRIPTION OF WORK:**  
A. The work includes providing a complete plumbing system including, but not necessarily restricted to, the following:  
(1) Domestic water system to Roanoke City provided capped outlets.  
(2) Installation and connections to equipment furnished by Owner.  
(3) Connections to equipment provided under other sections of these specifications.  
(4) Miscellaneous work as described herein, as shown on drawings, and as required for a complete system.
4. **PIPE AND EQUIPMENT SUPPORTS, PIPE SLEEVES AND WALL CEILING PLATES:**  
A. Provide in accordance with the Virginia Construction Code.
5. **DOMESTIC WATER PIPING:**  
A. Copper Tube and Fittings:  
(1) Tube: ASTM B88  
a. Above ground floor: Type L, hard drawn.  
(2) Fittings: Wrought copper, ASME B16.22 or cast copper alloy ASME B16.18.  
(3) Joints:  
a. Above ground floor: ASTM B32 lead free solder, ASTM B813 lead free flux. Lead free shall mean less than 0.2 percent lead.
6. **VALVES: (DOMESTIC WATER)**  
A. Hose bibbs: (Toilets) Chicago No. 293-XKRCF, 3/4" or equal, loose key, rough chrome plated, with wall flange.  
B. Shock absorbers: Josam "Absorbolton" Series 75000 or equal. SA-A Max. 11 SFU. Provide on cold water branches. Job fabricated air chambers will not be permitted. (ASME/ANSI A112.26.1 OR ASSE 1010.)
7. **BACKFLOW PREVENTERS:**  
A. Provide backflow prevention devices at all locations shown or specified. Device shall be same size as line in which installed. Listed below is a list of connection to the potable water system that shall be protected against backflow or back siphonage:  
(1) Hose Vacuum Breaker Type (ASSE 1011; CSA CAN/CSA-B64.2):  
a. Watts No. NF8C, NF8 or equal, with non-removable and manual drain feature.
8. **INSTALLATION:**  
A. General:  
(1) Suspended horizontal piping shall be supported by adjustable wrought steel clevis hangers. Where supports bear on copper pipe, they shall be copper plated. Chain, strap, wire or other makeshift devices will not be permitted as hangers or supports.  
(2) Install branch piping for water from the respective piping systems and connect to all valves, cocks, outlets and equipment, including those furnished by the Owner or specified in other sections of these specifications.  
(3) Install trim and fittings provided and including those furnished by the Owner.  
(4) Welded joints shall be fusion welded by qualified welders in accordance with ANSI B31.1 Section 6, unless otherwise required.  
B. Piping shall conform to the following:  
(1) Domestic Water: Grade all lines to facilitate drainage. Provide hosed-end drain valves at locations indicated on the drawings. All unnecessary traps in circulating lines shall be avoided.
9. **TESTS:**  
A. General: Contractor shall provide all instruments, materials, and labor required. Tests shall be made in the presence of the Owner or Authority having jurisdiction, or as otherwise directed by, the City of Roanoke, who shall be given five (5) days notice by this Contractor of his readiness to perform such tests. Any leaks that develop during the tests shall be repaired by remaking the joint or replacing pipe and fittings. Temporary caulking will not be permitted. No piping shall be concealed until it has been tested, with results acceptable to the City of Roanoke. Air testing will be acceptable where permitted by the Virginia Construction Code. Test systems either in its entirety or in sections.  
B. Potable Water System: Test after installation of piping but before piping is concealed, before covering is applied. Fill systems with water and maintain hydrostatic pressure of 125 psig or at 50 percent higher than actual operating pressure which ever is greater for one hour during inspection and prove tight without any loss of pressure.
10. **DISINFECTION:** After tests have been successively completed, thoroughly flush and disinfect the interior domestic water distribution system in accordance with the Virginia Construction Code.
11. **CLEANING:**  
A. Remove trash, plaster, dust, paint spots and all foreign matter from inside and outside of all fixtures and equipment.  
B. The Contractor shall check each length of pipe before it is put in place to make certain there is not foreign material (stones, sand, etc.) in the systems. Provide temporary bypass around equipment if or as required. All plumbing pipes shall be thoroughly flushed with water to remove construction debris before final connections are made to equipment and fixtures.
12. **REPORTS:** Report of cleaning, sterilizing and testing: Contractor shall verify in writing before completion of the job that all specified cleaning procedures, tests and sterilizing have been performed, with results as specified or as required by codes.

PLUMBING LEGEND

