

**22 00 00: GENERAL**

1.01 General Requirements

- A. Building utilities are required to be metered & compatible with current SHSU BAS System including but not limited to domestic water and gas. Locate metering equipment inside a mechanical room. Meter runs shall be constructed in accordance with SHSU details. Provide isolation valves to accommodate meter service. Install bypass on water meters. For buildings with mixed occupancy (E&G and non-E&G), provide sub-metering to property allocate utility costs between organizations. Coordinate sub-metering requirements with the University.
- B. For hot water systems that require sub metering individual systems shall be isolated from each other.
- C. 2-1/2", 3-1/2 and 5 inch pipe diameters ARE NOT ALLOWED
- D. Do not locate plumbing piping or equipment in transformer vaults, elevator hoist-ways, elevator equipment rooms, electrical rooms, or telecommunications rooms.
- E. Provide sufficient unions, flanges, and isolation valves to permit removal of equipment.
- F. Provide one-piece stainless steel escutcheons for piping entering floors, walls, and ceilings in exposed spaces.
- G. For equipment providing critical services provide N+1 redundancy for all restaurant and laboratory buildings, to be evaluated during programming.
- H. In all Residence Life Buildings provide a clean-out for each lavatory and /or kitchen drain above flood plane located in wall above counter. Cleanout plug flush with wall so a mirror or access cover can be mounted.
- I. For sanitary piping clean outs must be provided

**22 05 00: COMMON WORK RESULTS FOR PLUMBING**

1.01 Requirements:

A. Valves:

1. Full throat ball valves only
2. Provide valves with extended stems to be accessible on outside of insulation. Valve body and

C. Check Valves:

1. Provide spring-loaded silent check valves.
  - a. For valves 3” or larger split wafer check valve
2. SHSU require; Watts or Nibco brand, Bronze, full throated.

**22 07 00: PLUMBING INSULATION**

1.01 Requirements:

2.01 Pipes and Pipe Fittings:

- A. Pipe sizes 3/4" to 2" and smaller shall be Type L copper with lead free soldered connections using wrought-copper, solder-joint fittings. Copper Pro Press fittings with rubber o-rings joined using a hydraulic compression tool may be used. Piping smaller than 3/4" shall not be allowed.
- B. Domestic Hot Water return lines shall be Type K
- C. Pipe sizes 3" to 6" shall be Type K copper with soldered silver phosphate connections. Copper piping 4" and larger may be joined using roll grooved fittings or Pro Press. 2 1/2", 3 1/2 & 5" Pipe NOT ALLOWED
- D. Piping larger than 6" shall be ASTM A53 galvanized steel pipe, schedule 40, with rolled grooved ends and mechanical couplings.
- E. One-piece stainless steel riser for will be allowed for below grade under slab water supply.
- F. Below building concrete slab - Tube size 3/4" and larger: type "K" soft - annealed copper coil tubing. Copper tubing installed below building concrete slab on grade shall be installed without any joints.
- G. Underground water main piping systems: NO CAST IRON.

2.02 Piping Specialties:

- A. Provide basket strainers with cast-iron body, 125-psi flanges, bolted type or yoke type cover. Furnish with removable, non-corrosive perforated strainer basket, with 1/8" perforations and lift



- A. Heavy Duty Couplings for Hubless Cast-Iron Soil Pipe: Hubless Clamps, heavy weight, stainless steel bands. Clamps shall be constructed and tested per ASTM C-1277. For pipe sizes 1-1/2" through 4" minimum four (4) bands and for pipe sizes 5" through 15" minimum six (6) bands.

## 2.02 Underground Drain Pipe And Fittings

- A. Cast-Iron Soil Pipe: ASTM A74, Service weight, hub-and-spigot soil pipe and fittings
- B. Neoprene Compression Gaskets: ASTM C564.
  
- C. Sewer Pipe and Fittings: Conform to ASTM D2729 for pipe and fittings.

## 2.03 Drainage Piping Specialties

- A. Cleanout Plugs: Cast-bronze or brass, threads complying with ANSI B2.1, countersunk head.
  
- B. Floor Cleanouts: EXTERIOR ONLY - Cast-iron body and frame, with cleanout plug and adjustable round nickel bronze top. 1.6 (l) (ni)\_oe 0 Tw (oorca)6.5 (l)-3.2 heanoutron(i)-3.3 (u)1







