

SECTION 15460

SPECIAL PLUMBING EQUIPMENT SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Grease Interceptor.
2. Sand, Oil and Gas Trap.
3. Acid Neutralization Basin.
4. Kitchen Equipment.
5. Laboratory Equipment.
6. Casework Equipment.
7. HVAC Equipment.
8. Automatic Water Softener.
9. Deionizer and Accessories.
10. Filter Equipment and Accessories.
11. Reverse Osmosis Equipment and Accessories.

B. Related Sections:

1. Section 15010 - Basic Mechanical Requirements.
2. Section 15050 - Basic Mechanical Materials and Methods.
3. Section 15410 - Plumbing Piping.
4. Section 15430 - Plumbing Specialties.
5. Section 15450 - Plumbing Equipment.

1.02 REFERENCES

- A. **International Plumbing Code (IPC).**
- B. National Sanitation Foundation (NSF).
- C. American Society for Testing and Materials (ASTM).
- D. American Society of Sanitary Engineering (ASSE).

1.03 SYSTEM DESCRIPTION

A. Design Requirements:

1. Grease Interceptors:
 - a. In accordance with jurisdictional authorities requirements, **IPC**, and NSF for "inside" traps.
 - b. Bolts for interceptor lid access stainless steel type 316 only. Cast iron, steel, or brass not acceptable.
2. Sand-Oil-Gas Interceptor:

- a. In accordance with jurisdictional authorities requirements, EPA and **IPC**.
3. Acid Neutralization Basin:
 - a. The UCB department of Environmental Health and Safety has requested that chemical neutralization systems not be installed as part of construction projects or renovations (memo of July 25, 1995).
4. Kitchen Equipment:
 - a. In general, most items of kitchen furnishings will be provided under Division 11.
 - b. Verify items of trim and fixtures not furnished by these suppliers and specify all items necessary to complete the installation.
5. Laboratory Equipment:
 - a. In general, most items of laboratory furnishings will be provided under Division 11.
 - b. Verify items of trim and fixtures not furnished by these suppliers and specify all items necessary to complete the installation.
 - c. Make sure that Fuseal cleanout above sink fits within ceiling-to-bench chase.
6. Casework Equipment:
 - a. In general, casework will be provided under Division 12.
 - b. Verify items of trim and fixtures not furnished by these suppliers and specify all items necessary to complete the installation.
7. HVAC Equipment:
 - a. See Part 3 - Execution portion of this Guideline Section for design requirements.
8. Automatic Water Softener:
 - a. Determine water softener requirements, if any, from University Department user survey.
9. Deionizer and Accessories:
 - a. Determine de-ionized water requirements, if any, from University Department user survey.
10. Filter Equipment and Accessories:
 - a. Determine special water filter requirements, if any, from University Department user survey.
11. Reverse Osmosis Equipment and Accessories:
 - a. Determine if sophisticated filtration techniques will be required, if any, from University Department user survey.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acid Neutralization Basins:

1. Town and Country Plastics Inc.
2. Enfield Industrial Corporation.
3. R & G Sloan.

B. Automatic Water Softener:

1. Culligan

C. Deionizer:

1. Culligan-Continental.

D. Filter Equipment:

1. AMF CUNO
2. Culligan

E. Reverse Osmosis Equipment:

1. Culligan
2. Osmonics, Inc.

2.02 MATERIALS

A. Kitchen Equipment:

1. When required, specify the following:
 - a. Traps: Chrome plated cast brass 17 gauge with brass slip-ons.
 - b. Tailpieces: Chrome plated 17 gage copper.
 - c. Arms: Chrome plated 17 gage copper.
 - d. Escutcheons: Chrome plated, cast brass.
 - e. Stops: 1/4-Turn, chrome plated brass with wheel handle operators.
Housing – Stops to be Aquqflo V-101-A an LPS Company
 - f. Supplies: Chrome plated type L copper tube or braided SS flexible.
 - g. Indirect Wastes: "L" copper tube.
 - h. Water Piping: Type K copper.
 - i. Waste & Vent Piping: No-Hub Cast Iron System.
 - j. Gas: Schedule 40 A-53 black steel T&C with malleable fittings up to 1-1/2". 2" and larger, schedule 40 A-53 with butt weld steel fittings and couplers.
 - k. Gas Connectors: When specifically required provide Thermo Tech Co. braided flexible connectors with armor shield, approved for gas, and of lengths required for fixed or movable equipment.
 - l. Joints: Where joints of piping systems are welded, soldered or brazed and are exposed to view or cleaning - buff joints to smooth cleanable surface in accordance with NSF.

B. Laboratory Equipment:

1. When required, specify the following:
 - a. Traps: Polypropylene, Cast brass, or Duriron, complete with tailpiece and arm.
 - b. Escutcheons: Nickel plated brass.
 - c. Stops & Supplies: 1/4-Turn, nickel plated brass wheel handle operated stops and nickel plated copper supplies or braided SS flexible.
 - d. Water Piping: Type chrome or nickel plated finish where exposed with wrought copper fittings of same finish.
 - e. Waste & Vent Piping: Acid-resistant to be of same material as rest of building. Non-acid resistant piping to be of same material as balance of building waste system: cast iron with no-hub joints.
 - f. Gas: Schedule 40 A-53 black steel T&C with malleable fittings up to 1-1/2". 2" and larger schedule 40 A-53 with butt weld steel fittings and couplers.
 - g. Solenoid Valves: Provide "ASCO" gas air or water rated (115 psi) 2-way valves with actuation and control as required. Refer to Section 15485 - Natural Gas System. Gas solenoid valves shall not be located in plenums .

specialties within cabinets will not be considered concealed.

B. Laboratory Equipment:

1. Provide schedule of responsibilities of the University, Division 11 and Division 15 as determined in design meetings similar to the following schedule.
2. Schedule:

Existing Furniture or Equipment	UCCS	11	15
Disconnected by:			
Removed by:			
Relocated by:			

New Furniture or Equipment	UCCS	11	15
Provide by			
Uncrated by:			
Set in place by:			
Rough-in by:			
Connected by:			
Faucets by:			
Service Cocks by:			
Trap and Waste by:			

UCCS = University of Colorado at Colorado Springs
11 = Division 11
15 = Division 15

3. Furnish and install all equipment and trim as scheduled above and under Division 15 as hereinafter specified.
 - a. All traps and wastes shall conform to materials as specified under soil waste and vent, acid resistant drain, waste and vent in Section 15410.
 - b. All supplies, stops, and valves nickel-plated brass where installed in areas subject to acid fumes.
 - c. Provide ¼-turn shut-off valves at each piece of laboratory equipment and each piece of laboratory furniture for all services in accordance with the following schedule and as specified in "Valves" in Section 15050.

d. Schedule:

Service	Valve Type
Water	Ball, globe, or loose key compression stop
Air	Ball or globe.
Vacuum	Ball
Gas	Plug or Ball certified for gas service.

Special As noted on Drawings or as specified herein.

4. All plumbing through walls or floors shall be provided with nickel-plated brass escutcheons, set screw type or screw-on type. Loose or split type escutcheons will be accepted only in concealed or enclosed locations.
5. All potable water supplies to water faucets provided with means for hose or tubing connections shall be installed with branch vacuum breaker, atmospheric or pressure type, with the ASSE Seal affixed to each vacuum breaker, in accordance with Standard #1001.

C. Casework Equipment:

1. Provide schedule of responsibilities of the University, Division 12 and Division 15 as determined in design meetings and similar to the following schedule.
2. Schedule:

Existing Casework UCCS 12 15

Disconnected by:

Removed by:

Relocated by:

New Casework UCCS 12 15

Provided by:

Uncrated by:

Set in place by:

Rough-in by:

Connected by:

Faucets by:

Service Cocks by:

Trap and Waste by:

UCCS = University of Colorado at Colorado Springs

12 = Division 12

15 = Division 15

3. Furnish and install all equipment and trim as scheduled above and under Division 15 as hereinafter specified.
 - a. Traps with cleanouts, tubing waste to wall including escutcheons, of sizes as required.
 - b. Chrome-plated water supplies and branches complete with individual ¼-turn shut-off chrome-plated valves, and chrome-plated brass escutcheons as required.
 - c. Gas supplies, complete with isolation valve, flexible hose with armor shield from branch to appliance, and connections to the appliance made with "Hanson Gas-Mate" quick coupler type valves only.
 - d. All extensions of chrome-plated brass indirect waste piping from unit connection to air-gapped connections to floor drains or waste receptacles at termination point.
 - e. All necessary solenoid or motorized valves not furnished as parts of casework equipment.
 - f. All necessary specialties not specifically mentioned but necessary for proper and complete operation of the unit, or for good appearance and a clean finished contract.
 - g. Provide a minimum of one set of water-supply branch lines per laboratory, each with shut-off ball valves.
4. All trim and specialties, including valves and piping, shall be chrome plated brass or chrome plated copper where components are not concealed from view. Trim and specialties within cabinets will not be considered concealed.

a. Schedule:

Service	Valve Type
Water	Gate, globe, or loose key compression stop.
Air	Ball or globe.
Vacuum	Ball.
Gas	Plug or ball certified for gas service.
Special	As noted on Drawings or as specified herein.

- b. All plumbing through walls for floors shall be provided with chrome-plated brass escutcheons, set-screw type or screw-on type. Loose or split type escutcheons will be accepted in concealed or enclosed spaces.
- c. All potable water supplies to water faucets provided with means for hose or tubing connections shall be installed with branch vacuum breaker atmospheric or pressure type with the ASSE Seal affixed to each spill-resistant vacuum breaker, in accordance with Standard #1001.

D. HVAC Equipment:

- 1. List here all domestic water hook-ups to items such as Boilers, Chilled and Hot Water Systems, Solar Fluid Systems, Glycol Systems, Evaporative Coolers, Condensers, Cooling Towers, Computer Room Units, Humidifiers, etc.

END OF SECTION