SECTION 11 27 00
PHOTOGRAPHIC PROCESSING EQUIPMENT

SPEC WRITER NOTES:
1. Delete between // ____ // if not applicable to project.
2. Delete other items or paragraphs in the section that are not applicable and renumber the paragraphs.

PART 1 - GENERAL

1.1 DESCRIPTION
This section specifies sinks, cabinets, and fittings required for photographic processing.

1.2 RELATED WORK
//A. Metal Casework: Section 12 31 00, MANUFACTURED METAL CASEWORK.//
//B. Plastic Casework: Section 12 34 00, MANUFACTURED PLASTIC CASEWORK.//
C. Plumbing Connections: Section 22 11 00, FACILITY WATER DISTRIBUTION and Section 22 66 00, CHEMICAL-WASTE SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES.
D. Electrical Connections: Section 26 05 21, LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES (600 VOLTS AND BELOW).

1.3 QUALITY CONTROL
A. Manufacturer Qualifications: Manufacturer regularly and presently manufactures photographic lab equipment.
B. Chemical Resistance: Photographic lab equipment is resistant to the following chemicals, as evidenced by manufacturer's standard 24-hour test for spill resistance:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid</td>
<td>98%</td>
</tr>
<tr>
<td>Acetone</td>
<td></td>
</tr>
<tr>
<td>Ammonium Hydroxide</td>
<td>28%</td>
</tr>
<tr>
<td>Amyl Acetate</td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td></td>
</tr>
<tr>
<td>Butyl Alcohol</td>
<td></td>
</tr>
<tr>
<td>Calcium Hypochlorite</td>
<td>Saturated</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>Saturated</td>
</tr>
<tr>
<td>Chromic Acid</td>
<td>20%</td>
</tr>
<tr>
<td>Ethyl Acetate</td>
<td></td>
</tr>
<tr>
<td>Ethyl Alcohol</td>
<td></td>
</tr>
<tr>
<td>Hydrochloric Acid</td>
<td>33%</td>
</tr>
<tr>
<td>Methyl Alcohol</td>
<td></td>
</tr>
<tr>
<td>Mineral Oil</td>
<td></td>
</tr>
<tr>
<td>Nitric Acid</td>
<td>60%</td>
</tr>
<tr>
<td>Phenol</td>
<td>10%</td>
</tr>
<tr>
<td>Phosphoric Acid</td>
<td>5%</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>20%</td>
</tr>
<tr>
<td>Sodium Sulfate</td>
<td>Saturated</td>
</tr>
<tr>
<td>Sulfuric Acid</td>
<td>77%</td>
</tr>
<tr>
<td>Toluene</td>
<td></td>
</tr>
<tr>
<td>Trichlorethylene</td>
<td></td>
</tr>
</tbody>
</table>
C. Electrical Components and Devices: UL listed and labeled for intended use.

1.4 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Manufacturer's Literature and Data: Include the following:
   1. Illustrations and descriptions of photographic lab equipment.
   2. Optional auxiliary equipment and controls that will be included for project.

C. Shop Drawings: Show details of fabrication, installation, adjoining construction, coordination with plumbing work, anchorage, and other work required for complete installation.

D. Certification: Submit manufacturer's certification that units conform to chemical-resistance requirements.

E. Field Test Reports: Indicate dates and times of tests and certify test results.

1.5 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. Scientific Equipment and Furniture Association (SEFA):
   2-2010 .................. Installation, Recommended Practices for Scientific Laboratory Furniture and Equipment
   7-2010 .................. Fixtures

PART 2 - PRODUCTS

2.1 SINKS UNITS

A. Manufactured from a blended-resin formulation that resists the corrosive effects of rapid fixers, color bleaches, iron chloride, and other chemicals required in photographic and graphic arts processing.

B. Fabrication: Molded in one piece with radius outside and inside corners.

C. Sink Bottom Surface: Constructed to produce positive drainage while supporting processing trays and tanks in a level position.
2.2 MECHANICAL SERVICE FIXTURES

A. General: Heavy grade, designed for photographic laboratory use, complying with requirements in SEFA 7.

B. Valve Bodies: Stainless steel or red brass alloy with minimum 81 percent copper.

C. Thermostatic Water Temperature Control Unit:
   1. Control unit capable of maintaining preselected temperature range of 18 to 24 degrees C (65 to 75 degrees F); consisting of thermostatic temperature-control valve, stop-check valves with removable strainers, dial thermometer, and fittings as required for complete assembly; ready for connection to hot-, cold-, and chilled-water supply.
   2. Install removable cartridge filter capable of removing particulate matter 5 microns or larger. Locate filter in line after thermostatic valve and in position where cartridge may be easily replaced.

D. Gooseneck Faucet:

   SPEC WRITER NOTE: Nickel-copper alloy is marketed under the Monel trade name.

   1. Compression-type valve with stainless-steel or nickel-copper-alloy seat, thermostetting heat-resisting valve disc, and stainless-steel or nickel-copper-alloy locking screw or nut.
   2. Equip each gooseneck with removable 10 serrated hose connector.
   3. Equip each faucet with angle-type vacuum breaker.

E. Washer Jet System:

   1. Compression-type valve with stainless-steel or nickel-copper-alloy seat, thermostetting valve disc, and stainless-steel or nickel-copper-alloy locking screw or nut; four stainless-steel, brass, or bronze water jets designed for circulation of water; and fittings as required for complete assembly.

F. Finish: Exposed parts, except stainless-steel, polished chrome plate.

2.3 WATER CHILLER

A. Hermetically sealed, water-cooled water chiller mounted remotely or adjacent to unit served, capable of producing chilled water when blended with water at 29 degrees C (85 degrees F).

B. Incoming water supply, will produce flow rate of 0.095 L/s (1-1/2 gpm) of water at 18 degrees C (65 degrees F).
2.4 TRAPS AND PIPES

Provide chemical-resisting pipe traps with clean-out plugs and fittings as specified for chemical waste service in Section 22 66 00, CHEMICAL-WASTE SYSTEMS FOR LABORATORY AND HEALTHCARE FACILITIES. Clean-out plug is removable without tools.

2.5 CABINETS

A. Material: // Metal // Plastic laminate // Metal or plastic laminate //.
   //1. For metal cabinets, see Section 12 31 00, MANUFACTURED METAL CASEWORK.//
   //2. For plastic-laminate cabinets, see.//

B. Hardware: Factory installed; exposed surfaces with chrome-plated satin finish.
   1. Hinges: Hospital type, steel or brass, 5 knuckle, 64 mm (2-1/2 inches).
   2. Catches: Plunger type, top and bottom each door, or roller type, top each door.
   3. Pulls: Cast or forged metal, or metal-reinforced plastic bar.
   4. Silencers: Rubber, two per door.

2.6 FABRICATION

A. Plumbing: Plumb each sink unit at factory.
   1. Factory test plumbing at 689 kPa (100 psig) hydrostatic pressure.

B. For sink units containing electrically controlled components, wire and make connections within unit at factory.

C. Factory install service fixtures in locations shown on drawings.

PART 3 – EXECUTION

3.1 INSTALLATION

Install units according to manufacturer’s written instructions and relevant requirements in SEFA 2.

3.2 TESTING

A. Field test installed units after water systems are pressurized for proper operation.
   1. Operate each component of equipment. During and after testing, there shall be no evidence of leaks, electrical malfunction, or other symptom of failure.
   2. For units that fail testing, make adjustments and corrections to installation, or replace units, and repeat tests until units operate properly.
3.3 PROTECTING AND CLEANING

A. Protect equipment from dirt, water, and chemical or mechanical injury during the remainder of the construction period.

B. At the completion of work, clean equipment as required to produce ready-for-use condition.

3.4 INSTRUCTIONS

Instruct personnel and transmit operating instructions in accordance with requirements in .

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