PART 1 - INTRODUCTION

1.1 This section applies to Plumbing Fixtures and Trim for campus institutional facilities.
   A. Purpose: Yale University preferences and requirements are indicated in this document.

PART 2 - GENERAL DESIGN REQUIREMENTS

2.1 Water Closet Installations
   A. Comprehensive and limited scope capital projects shall incorporate hard wired sensor operated flush valves.
   B. Replacement of water closets shall incorporate battery operated flush valves.
2.2 Mop, Service Sink, and all other Faucets
   A. Fixture shall have internal reverse flow mechanism to prevent bi-directional flow between cold and hot water, with valves in open or closed position.
2.3 Potable Water Rating
   A. Plumbing items such as but no limited to valves, and faucets shall comply with most current Federal and State no-lead requirement.
2.4 Laboratory Waste and Vent
   A. Waste and vent piping, including P-Traps, material shall be compatible and suitable for service
2.5 Fixtures shall be specified per the included fixture table, additionally fixtures shall be annotated in the contract documents per the fixture table.
2.6 Quality:
   A. Assurance requirements beyond standard 1 year warranty: None required.

PART 3 - MINIMUM PRODUCT REQUIREMENTS

3.1 Flush valves shall comply with ASSE 1037 / ASME A112.19.2 / CSA 845.1
3.2 Fixtures shall be in conformance with ASTM Alloy Classification for Semi-Red Brass. Plumbing fixtures, including pipe and fittings shall contain less than 15 percent zinc.
<table>
<thead>
<tr>
<th>Fixture Code</th>
<th>Description</th>
<th>General Use</th>
</tr>
</thead>
</table>
| WC-1-HW      | Water Closet (wall hung, hard wired)  
**Fixture:** ST-2459 Wall Hung Closet and Sloan111 ESS TMO Flushometer  
Model: WETS-2450.1320-1.28 ES-S, Hard wired, sensor operated wall mounted sensor, Wall Mounted Bowl, 1.28 GPM Flush Valve, mechanical override.  
**Carrier:** Zurn "Rigid System" chair carrier | For both Standard and ADA compliant application, mount ADA at Code required elevation. |
| WC-2-BO      | Water Closet (wall hung, battery operated)  
**Fixture:** ST-2459 Wall Hung Closet and G2 8111 Flushometer  
Model: WETS-2450.1401-1.28 ES-S, ST-2459 Wall Hung Closet and G2 8111 Flushometer, Battery Powered Sensor Operated, Wall Mounted Bowl, 1.28 GPM Flush Valve, mechanical override  
**Carrier:** Zurn "Rigid System" chair carrier | For both Standard and ADA compliant application, mount ADA at Code required elevation. |
| WC-3-HW      | Water Closet (floor mount, hard wired)  
**Fixture:** Sloan, ST-2009 Floor Mount Closet and Royal 111 ESS TMO Flushometer  
Model: WETS-2020.1304-1.28, Floor Mounted Closet, Hard Wired, Sensor Operated Flush valve, mechanical override (Verify manual override for battery operated)  
**Carrier:** Zurn "Rigid System" chair carrier | Standard Toilet |
| WC-4-HW      | Water Closet (floor mounted, Hard wired)  
**Fixture:** ST-2029 ADA Closet and Sloan 8111 Flushometer  
**Carrier:** Zurn "Rigid System" chair carrier | ADA Compliant |
| WC-5-BO      | Water Closet (floor mounted, battery operated)  
**Fixture:** ST-2009 Floor Mount Closet and G2 OPT 8111 Flushometer  
**Carrier:** Zurn "Rigid System" chair carrier | Standard Toilet |
<table>
<thead>
<tr>
<th>WC-6-BO</th>
<th>Water Closet (floor mounted, battery operated)</th>
<th>ADA Compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixture:</strong></td>
<td>ST-2029 ADA Closet and G2 8111 Flushometer</td>
<td></td>
</tr>
<tr>
<td><strong>Carrier:</strong></td>
<td>Zurn &quot;Rigid System&quot; chair carrier</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L-1</th>
<th>Lavatory (counter mounted)</th>
<th>Standard Toilets Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Standard 0475.047 &quot;AQUALYN&quot; 20 x 17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair C.P. supplies and angle stops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.P. brass &quot;P&quot; trap with cleanout</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L-1A</th>
<th>Lavatory (counter mounted)</th>
<th>H.C. Toilets</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Standard 0475.047 &quot;AQUALYN&quot; 20 x 17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair C.P. supplies and angle stops (barrier free)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.P. brass &quot;P&quot; trap with cleanout</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TrueBro #102W and #105W insulation kit for supplies and waste.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L-2</th>
<th>Lavatory (wall hung)</th>
<th>Standard Toilet Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Standard (0356.041 exposed brackets) (0356.421 concealed bracket) &quot;Lucerne&quot; 20x18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair C.P. supplies and angle stops</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L-2A</th>
<th>Lavatory (wall hung)</th>
<th>H.C. Toilets</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Standard 0356.041 &quot;Lucerne&quot; 20 x 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair C.P. supplies and angle stops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.P. brass &quot;P&quot; trap with cleanout</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TrueBro #102W and #105W insulation kit for supplies and waste.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UR-1-HW</th>
<th>Urinal (wall hung, Hard wired)</th>
<th>Lavatory, Mount at required elevation for ADA compliance.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixture:</strong></td>
<td>Flushometer and OPTIMA® ES-S TMO Unit</td>
<td></td>
</tr>
<tr>
<td>Model:</td>
<td>WEUS-1006.1304, Hard wired, Sensor Operated Flush Valve, mechanical override</td>
<td></td>
</tr>
<tr>
<td><strong>Carrier:</strong></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>UR-2-BO</td>
<td>Urinal (wall hung, battery operated)</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>
| **Fixture:** SU-1009 Standard Urinal and G2 8186 Flushometer  
Model: WEUS-1005.1401-0.5 G2, Battery Powered, Sensor Operated Flush Valve.  
**Carrier:** - |
| **Date:** 08/05/2017  
**Author:** Office of Facilities |
| LS-1  | Laboratory sink (stainless steel)  
Elkay Model MDLR-XXXX; Just Model SLXD-316-XXXX  
Type 316 stainless steel, 18 gauge, self rimming, 12" deep sink with LK-372 316 stainless steel perforated grid strainer and 1 1/2" O.D. 316 ST. ST. tailpiece.  
T&S brass Model BL-5700-9 double ledge mixing faucet with BL-5500-1 wrist action handles, rigid/swing convertible gooseneck spout, integral vacuum breaker, chrome plated finish and T&S brass Model BL-5550-0-1F15 1.4 GPM non-splash aerator.  
Hydro Service and Supplies Picotap Model 04313 RO/DI pure water faucet with meter valve and vacuum breaker and MPT inlet.  
Pair supplies and angle stops Enfield 1 1/2" polypropylene "P" trap |
| **Carrier:** - |
| MSB-1  | Mop Service Basin  
Fiat MSB-36x24x10 with shelf or 24x24x10 without shelf T&S Brass No. B-665-BSTR faucet (Confirm integral shutoff, see Kohler)  
Mop Hanger Fiat No. 889-CC  
Hose and Hose Bracket. Fiat No. 832-AA Vinyl bumper guard. Fiat No. E-77-AA.  
Provide cold water hose bibb T&S Brass No. B-720-POL and reduced pressure backflow preventer Watts No. 909 for cleaning solution system.  
Fixture shall have internal reverse flow mechanism to prevent bi-directional flow between cold and hot water. |
| **Date:** 08/05/2017  
**Author:** Office of Facilities |
| MSB-1  | Mop Service Basin  
Fiat MSB-36x24x10 with shelf or 24x24x10 without shelf T&S Brass No. B-665-BSTR faucet (Confirm integral shutoff, see Kohler)  
Mop Hanger Fiat No. 889-CC  
Hose and Hose Bracket. Fiat No. 832-AA Vinyl bumper guard. Fiat No. E-77-AA.  
Provide cold water hose bibb T&S Brass No. B-720-POL and reduced pressure backflow preventer Watts No. 909 for cleaning solution system.  
Fixture shall have internal reverse flow mechanism to prevent bi-directional flow between cold and hot water. |
| **Date:** 08/05/2017  
**Author:** Office of Facilities |
| SS-1 | Service Sink (slop sink)  
American Standard 7692.049 Lakewell service sink. T&S Brass No. B-674-BSTR  
service sink faucet  
American Standard 7798.176 trap standard with strainer.  
Provide cold water hose bibb T&S Brass No. B-720-POL and reduced pressure  
backflow preventer Watts No. 909 for cleaning solution system.  
Fixture shall have internal reverse flow mechanism to prevent bi-directional flow  
between cold and hot water. |
| EWC-1 | Electric Water Cooler (barrier-free) Halsey Taylor HAC8FS-Q  
Self closing, front and side push bar actuators Stainless steel finish  
Supply stop  
Brass "P" trap with cleanout |
| EWC-2 | Water Cooler High Low Halsey Taylor OVLII Series Q Recessed with integral  
chiller Stainless steel finish |
| EWC-3 | Water Cooler Single barrier free  
Halsey Taylor OVL-ER-Q Recessed with integral chiller Stainless steel finish |
| ES-1 | Emergency Shower / Eyewash  
Supply an emergency shower / eyewash assembly where indicated on the drawings  
Guardian Model GBF-2150 or GBF-2160(barrier free) Recessed stainless steel  
cabinet |
| ES-2 | Emergency Shower,  
Supply an emergency shower where indicated on the drawings Guardian Model G-  
1672SSH (barrier free)  
Recessed stainless steel cabinet |
| ES-3 | Emergency Shower / Eyewash  
Supply an emergency shower / eyewash assembly where indicated on the drawings  
Guardian Model G21-SL701 (barrier free)  
Recessed stainless steel cabinet with valve slot cover. |
| EW-1 | Emergency Eyewash/Drench Hose Unit with Vacuum Breaker Deck Mounted  
Install separate ball valve shut-off under sink. |
| SH-1 | Shower  
Symmons Model No. S-25-1-131 shower assembly modified with Symmons  
Model No. 4-228 2.0 gpm flow rate Clear-Flo shower head.  
Fiat Model MFT3636 Base. |
| SH-1A | Handicap Shower  
Symmons SafetyMix Visu-Temp Model No. 1-117VT-FS-XB30 shower unit modified with Symmons Model No. 4-228 2.0 gpm flow rate Clear-Flo shower head and Symmons Model No. EF-100 Euro-Flo wall/hand shower wand with 2.0 gpm flow restrictor.  
Fiat Model WTR-5000 Base. | H.C. Bathroom |