SECTION 15540 - CENTRIFUGAL PUMP STANDARD
CONSTRUCTION STANDARD

CENTRIFUGAL PUMPS

PART 1  GENERAL

1.01  Purpose:

A. This design guidelines contained herein includes the requirements for pumps utilized at The University of Texas at Austin. It is the intention of this document to provide a standard for pumps at The University to provide the highest quality and consistency possible; it is not intended to be a guide specification.

1.02  Description Of Standard:

A. Types of pumps described in this section include the following:

1. In-Line Circulator
3. Horizontal Split Case

1.03  Quality Assurance:

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of general-use centrifugal pumps with characteristics, sizes and capacities required, whose products have been in satisfactory use in similar service for not less than 5 years.

1.04  Codes And Standards:

A. HI Compliance: Design, manufacture, and install pumps in accordance with HI "Hydraulic Institute Standards."

B. UL Compliance: Design, manufacture, and install pumps in accordance with UL 778 "Motor Operated Water Pumps."

C. Motor Data: Request manufacturer's technical data indicating compliance with Motor Specification Section 15170.

D. Motor Data: Request manufacturer's product data indicating compliance with Motor Specification Section 15170.

E. UL and NEMA Compliance: Provide electric motors and components which are listed and labeled by Underwriters Laboratories and comply with NEMA standards.

F. Pump Selections: All pumps shall be selected on the ascending side of the efficiency curve. All pumps shall be non-overloading.
1.05 **Submittals:**

A. **Product Data:** Request manufacturer's pump specifications, installation and start-up instructions, and current accurate pump characteristic performance curves with selection points clearly indicated (design point, shut-off head, performance point at 50% flow), to be provided to the University of Texas Project Manager.

**PART 2 PRODUCTS**

2.01 **Pumps:**

A. Provide pumps of same type by same manufacturer. With the exception of the central plant, split-case horizontal pumps are not allowed without specific permission of the University of Texas Project Manager.

2.02 **In-Line Circulator Pumps:**

A. **General:** Specify in-line circulator pumps where required, and of capacities as scheduled. All wetted surfaces shall be non-ferrous materials.

B. **Type:** Maintenance free, horizontal or vertical mount, designed for 125 psi working pressure, and 225°F (107°C) continuous water temperature.

C. **Body:** Cast iron with bronze or stainless steel – fitted construction.

D. **Shaft:** Stainless steel; metal impregnated carbon thrust bearing.

E. **Motor:** Non-overloading at any point on pump curve, open, drip-proof, oil-lubricated journal bearings, resilient mounted construction, built-in thermal overload protection on single phase motors.

F. **Coupling:** Self-aligning, flexible coupling.

G. **Impeller:** Bronze or stainless steel enclosed type, hydraulically and dynamically balanced, and keyed to shaft.

H. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering in-line circulator pumps which may be incorporated in the work include; but are not limited to, the following:

1. Grundfos
2. Engineer-approved equivalent
2.03 Base-Mounted End Suction Pumps:

A. **General**: Specify base-mounted end suction pumps where indicated, and of capacities and having characteristics as scheduled.

B. **Type**: Horizontal mount, single stage, vertical split case, flexible coupling, base mounted, designed for 175 psi working pressure.

C. **Casing**: Cast iron, 125-psi ANSI flanges, and tappings for gage and drain connections.

D. **Shaft**: Steel with replaceable shaft sleeve.

E. **Shaft Sleeves**: 316 Stainless Steel with Buna O Ring Sealing between the impeller and the hub. Threaded to tighten when rotating in normal service direction.

F. **Impeller Ring**: Bronze. Easily replaceable.

G. **Construction**: Bronze fitted.

H. **Seal**: Mechanical Seal with ceramic seat.

I. **Available Manufacturers**: Subject to compliance with requirements, manufacturers offering frame mounted end suction pumps which may be incorporated in the work include, but are not limited to, the following:

   1. Amtrol Inc.
   2. Armstrong Pumps, Inc.
   3. Bell & Gossett ITT; Fluid Handling Div.
   4. Peerless Pump; Indian Head Co.
   5. Paco Pumps.

2.04 Horizontal Split Case Pump:

**PART 3 EXECUTION**

3.01 Installation Of Pumps:

A. **Access**: Specify access space around pumps for service as indicated, but in no case less than that recommended by manufacturer.

B. **Support**: Specify that the installation of base-mounted pumps be on minimum of 4” high concrete base equal or greater than 3 times total weight of pump and motor, with anchor bolts poured in place. Set and level pump, grout under pump base with non-shrink grout.

C. Install in-line pumps, supported from piping system.

END OF STANDARD 15540