

SECTION 15446 - SUMP PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes sump pumps for the elevator sump pit.

1.3 SUBMITTALS

- A. Product Data: Include performance curves, furnished specialties, and accessories for each type and size of pump indicated.
- B. Shop Drawings: Show layout and connections for pumps. Include setting drawings with templates, directions for installing foundation and anchor bolts, and other anchorages.
 - 1. Wiring Diagrams: Detail wiring for power, signal, and control systems and differentiate between manufacturer-installed and field-installed wiring.
- C. Maintenance Data: For each type and size of pump specified to include in maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

- A. Product Options: Drawings indicate size, profiles, connections, and dimensional requirements of pumps and are based on specific manufacturer types and models indicated. Other manufacturers' pumps with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Retain shipping flange protective covers and protective coatings during storage.
- B. Protect bearings and couplings against damage.
- C. Comply with pump manufacturer's rigging instructions for handling.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Submersible Sump Pumps:
 - a. Zoeller Pump Co.
 - b. Chicago Pump Co.
 - c. Crane Pumps & Systems, Inc.; Weinman Div.
 - d. Gorman-Rupp Co.
 - e. Goulds Pumps, Inc.
 - f. Grundfos Pumps Corp.
 - g. Little Giant Pump Co.
 - h. PACO Pumps, Inc.
 - i. Weil Pump Co.

2.2 SUMP PUMPS, GENERAL

- A. Description: Factory-assembled and -tested, single-stage, centrifugal, end-suction sump pump units complying with UL 778. Include motor, operating controls, and construction for permanent installation.
- B. Discharge Pipe End Connections NPS 2 and Smaller: Threaded. Pumps available only with flanged-end discharge pipe may be furnished with threaded companion flanges.
- C. Motors: Single speed, with grease-lubricated ball bearings, and non-overloading through full range of pump performance curves.
- D. Finish: Manufacturer's standard paint applied to factory-assembled and -tested units before shipping.
- E. Manufacturer's Preparation for Shipping: Clean flanges and exposed machined metal surfaces and treat with anticorrosion compound after assembling and testing. Protect flanges, pipe openings, and nozzles with wooden flange covers or with screwed-in plugs.

2.3 COMPACT, SUBMERSIBLE SUMP PUMPS

- A. Description: Zoeller Model 57 Simplex, submersible, direct-connected sump pump.
 1. Casing: Cast iron with metal inlet strainer, stainless steel handle. Include discharge companion flange suitable for plain-end pipe connection arranged for vertical discharge.
 2. Impeller: Cast iron, bronze, brass, or stainless steel.
 3. Pump and Motor Shaft: Steel, with factory-sealed, grease-lubricated ball bearings.
 4. Seal: ceramic carbon.
 5. Motor: Hermetically sealed, capacitor-start type; with built-in overload protection; and three-conductor waterproof power cable of length required, with grounding plug and cable-sealing assembly for connection at pump.
 6. Pump Discharge Piping: Refer to Section 15150 Plumbing Sanitary Vent and Storm Piping.
 7. Controls: Integral mechanical float switch, which shall require no adjustment, nor additional equipment for operation.

2.4 ALARM PANEL

- A. (115V/1Ph) Zoeller A-Pak Model 10-0053 complete with sensor float and Nema 1 metal enclosure (cord and plug). Solid state warning light and horn, which can be manually turned off. UL listed and CSA certified on complete alarm system. The alarm will include an alarm horn, alarm light, silence and test buttons, and a 15' float switch.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in of plumbing piping systems to verify actual locations of piping connections before pump installation.

3.2 CONCRETE

- A. Concrete for pits and sumps is specified in Division 3 Section "Cast-in-Place Concrete."

3.3 INSTALLATION

- A. Install pumps according to manufacturer's written instructions.
- B. Install pumps and arrange to provide access for maintenance, including removal of motors, impellers, couplings, and accessories.
- C. Support piping so weight of piping is not supported by pumps.
- D. Submersible Sump Pumps:
 - 1. Set pumps on basin, pit, or sump floor.
 - 2. Coordinate pit size.
 - 3. Coordinate location of GFI 3-prong grounded electrical receptacle, extension cords are not permitted.
 - 4. Drill a 3/16" hole in the discharge pipe below the check valve and sump cover to allow proper purging of air.
 - 5. Pit must be cleaned of debris after installation.
- E. Sump Pump Pits: Refer to Division 3 Section "Cast-in-Place Concrete" for concrete work.

3.4 CONNECTIONS

- A. Sanitary drainage piping installation requirements are specified in Division 15 Section "Drainage and Vent Piping." Drawings indicate general arrangement of piping and specialties. The following are specific connection requirements:
 - 1. Install discharge pipe sizes equal to or greater than diameter of pump nozzles, and connect to sanitary drainage piping.
 - 2. Install swing check valve and gate or ball valve on each sump pump discharge.
 - 3. Install swing check valve and gate or ball valve on each automatic, packaged pump discharge.

- B. Install electrical connections for power, controls, and devices.
- C. Electrical power and control components, wiring, and connections are specified in Division 16 Sections.

3.5 ADJUSTING

- A. Pump Controls: Set pump controls for automatic start, stop, and alarm operation as required for system application.

3.6 COMMISSIONING

- A. Final Checks before Starting: Perform the following preventive maintenance operations:
 - 1. Lubricate bearings.
 - 2. Disconnect couplings and check motors for proper direction of rotation.
 - 3. Verify that each pump is free to rotate by hand. Do not operate pump if it is bound or drags, until cause of trouble is determined and corrected.
 - 4. Verify that pump controls are correct for required application.
- B. Starting procedure for pumps with shutoff power not exceeding safe motor power is as follows:
 - 1. Start motors.
 - 2. Open discharge valves slowly.
 - 3. Check general mechanical operation of pumps and motors.

END OF SECTION 15446