

SECTION 15412

PLUMBING EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. This section includes, but not limited to storm drain sump pumps.

1.2 RELATED SECTIONS

A. The following sections contain requirements that relate to this section:

1. Division 3 "Concrete Work" for specifications concrete and reinforcing materials.
2. Division 16 "Electrical Connections for Equipment" for power-supply wiring including field installed disconnects and required electrical devices.

1.3 SUBMITTALS

A. Submit the following in accordance with conditions of contract and Division 1.

1. Product data including certified performance curves, weights (shipping, installed, and operating), furnished specialties, and accessories, plus installation and start-up instructions.
2. Shop drawings showing layout and connections. Include setting, drawings with templates and directions for installation of foundation bolts, anchor bolts, and other anchorages.
3. Wiring diagrams detailing wiring for power, signal, and control systems; differentiating between manufacture installed wiring and field-installed wiring.
4. Maintenance data for plumbing equipment, for inclusion in Operating and Maintenance Manuals specified in Division 1 and Division 15 Section "Basic Mechanical Requirements".

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with the provisions of the following codes, standards:

1. Hydraulic Institute Compliance: Design, manufacture, and install plumbing pumps in accordance with "Hydraulic Institute Standards".
2. California Electrical Code Compliance: Components shall comply with 1998 "California Electrical Code".
3. UL Compliance: Plumbing pumps shall be listed and labeled by UL and comply with UL Standard 778 "Motor Operated Water Pumps".
4. NEMA Compliance: Electric motors and components shall be listed and labeled NEMA.
5. SSPMA Compliance: Test and rate sump sewage pumps in accordance with the Sump and Sewage Pump Manufacturers Association (SSPMA) Standards.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store equipment in a dry location.
- B. Retain shipping flange protective covers and protective coatings during storage.
- C. Protect bearings and couplings against damage from sand, grit, and other foreign matter.

- D. Comply with manufacturer's rigging and installation instructions for unloading equipment, and moving units to final location for installation.

1.6 SPECIAL PROJECT WARRANTY

- A. Provide written warranty, signed by manufacturer, agreeing to replace/repair, within warranty period, inadequate or defective materials and workmanship, including leakage, breakage, improper assembly, or failure to perform as required; provided manufacturer's instructions for handling, installing, protecting, and maintaining units have been adhered to during warranty period. Replacement is limited to component replacement only, and does not include labor for removal and reinstallation.

PART 2 PRODUCTS

2.1 PUMPS

- A. Storm drain sump pumps - duplex
 1. Pump system shall be a Weil heavy duty automatic non-clog sewage type pump.
 2. Pump capacity shall be as scheduled on the drawings. Motors shall be non-overloading across the pump curve.
 3. Pump Construction: Enclosed, non-clog type, gray iron impeller, renewable stainless steel pump shaft. Pump volute shall be close-grained gray iron and suspended from individual subplate by standard weight Schedule 40 steel pipe column with machined flanges. Pump rotating element shall be carried by grease packed deep-groove radial ball thrust bearing in dust-proof housing machined in motor support base. Bottom column bearing at pump shall be renewable, water lubricated, fluted synthetic rubber. Provide self-lubricating composition intermediate shaft bearings or bronze grease lubricated bearing, with grease piping connection to subplate. Discharge pipe shall be provided between pump and subplate.
 4. Motor: Vertical, drip-proof, ball bearing motor, mounted on combination motor support base and bearing housing.
 5. Sump Cover and Frame: Main sump cover shall be steel plate, gas-tight, suitable for a basin size as scheduled and include manhole plate, vent flange connection, and recessed frame. Top of cover shall be flush with adjacent floor.
 6. Duplex Pump Controls: Control equipment shall consist of one enclosed, automatic heavy duty float switch and one mechanical alternator, each mounted on independent rigid support bolted to the main sump cover and each actuated by a heavy copper float with brass rod and adjustable stops. Each pump shall operate alternately, and if one pump cannot handle the inflow, alternator shall start the other pump automatically. Auxiliary float switch shall operate both pumps in the event of alternator failure or loss of power to one stage. Provide a motor control panel in single NEMA 1 enclosure having fusible disconnect switches, motor circuit protectors, each stage shall be served from a separate power source, magnetic motor starters with overload protection on all phased, hand-off-automatic selector switches, running lights, two control transformers, power on pilot light, pump failure alarm. Control panel shall be wall mounted. Provide all required wiring and conduit between motors, controls and panel. A compression type high water alarm shall be furnished with mounting bracket and alarm bell and auxiliary dry contact for remote alarm.

PART 3 EXECUTION

3.1 GENERAL

- A. All equipment furnished under this section shall be installed in compliance with the manufacturers specifications and tested to prove performance.
- B. All equipment shall be installed in compliance with the requirements of all authorities having jurisdiction.

END OF SECTION