

SECTION 22 13 29 – SANITARY AND STORM SEWER PUMPS

PART 1 - GENERAL

PART 2 - PRODUCTS

2.1 GENERAL

- A. Sanitary or storm sewer sumps that receive any solid waste or that have sumps deeper than 5 feet shall incorporate duplex self-priming sewage pumps by Gorman-Rupp, Hydromatic, ITT Flygt, or Metropolitan.
- B. Sanitary or storm sewer pumps within sumps no deeper than 5 feet receiving only liquids and no rainwater shall be submersible type as manufactured by Blue Angel, Flygt, Grundfos, and Zoeller.

2.2 SANITARY AND STORM SEWER PUMP REQUIREMENTS

- A. Main sanitary and storm sewer sumps shall have duplex pumps.
- B. Sump pits shall be fiberglass with fiberglass anti-floatation flanges. A concrete collar shall be poured around the flanges. *[Note to PSC: Other pit materials will be considered if requested.]*
- C. Pit cover shall be bolted, powder coated or epoxy coated steel gasketed cover with inspection access plate and all other necessary access plates and openings. Cover shall be rated for no less than 300 pounds per square foot.
- D. Pump controls shall consist of the following:
 - 1. Four (4) non-mercury weighted float switches installed in pit. Switches shall be anchored to a 316 stainless steel support. *[Note to PSC: A NEMA-1 cover mounted, pedestal-mounted mechanical switch that alternates pumps and brings on the second pump if water level continues to rise is also acceptable. A stainless steel float ball with stainless steel rod shall be provided to operate the switch. Then, an automatic alternator does not have to be provided in the control panel. A non-mercury weighted float switch shall be installed in pit to activate the high water alarm if water reaches an unsafe level. Switch shall be anchored to a 316 stainless steel support.]*
 - 2. NEMA-1 UL labeled/listed duplex control panel with a lockable main door. All circuit breakers, disconnects and starters shall be NEMA rated. Panel shall contain the following:
 - a) Top mounted high water alarm light.
 - b) High water alarm horn and silencing switch.
 - c) Panel Mounted Lights: Pump 1 Fail, Pump 2 Fail, Pump 1 Run, Pump 2 Run.
 - d) Two (2) circuit breakers.
 - e) Two (2) disconnect switches.
 - f) Two (2) NEMA-sized starters.
 - g) Overload blocks.
 - h) Fuse blocks.

- i) Two (2) HOA switches.
- j) Automatic alternator.
- k) Elapsed time meter for each pump.
- l) Minimum of two (2) control transformers.
- m) Microprocessor-based logic controller. Unit shall provide seven (7) alarm codes for personnel to monitor.
- n) High water alarm contact for connection to Building Automation System.

2.3 ELEVATOR-RELATED REQUIREMENTS

- A. Installation of Sump Discharge lines shall be coordinated with Elevator Contractor before installation.
- B. Elevator Sump Pumps are required by Elevator Code to be rated at 3000 gph and be provided one sump and pump per elevator including hoistways with multiple elevators installed.
- C. Hydraulic elevator sump pumps: Sump pumps installed in hydraulic elevator pits shall be provided so that they will not pump or discharge any types of oil. Water only sump pumps shall be used in all hydraulic elevator pits and will continue to pump water down to the level of oil as water infiltrates into the elevator pit.
- D. Elevator Pit Sump Pump Service: A submersible type pump shall be used. It shall be provided complete with following items:
 - 1. Manual test button and waterproof cord and plug
 - 2. Ball valve, check valve and union in discharge line.
- E. Fiberglass or formed concrete sump pit. Fiberglass sump pit shall have fiberglass anti-floatation flange. A concrete collar shall be poured around the flange. *[Note to PSC: Other pit materials will be considered if requested.]*
 - 1. Flush fitting pit cover perforated to accept drainage. Cover shall be bolted, powder coated or epoxy coated steel and shall be rated for no less than 300 pounds per square foot.
 - 2. Sump Discharge shall not be located within the elevator machine room.
 - a. Under no circumstances shall elevator pits be used as a collection basin for any type of drainage. The elevator pit shall contain a sump pit with sump pump.
 - b. Discharge Lines: Elevator pit sump pumps shall be routed so that they are not a tripping hazard, will not take up any elevator pit refuge space and installed against a wall or other location where they will not interfere with any equipment or personnel working in the elevator pit area. Placement of the discharge line must be coordinated with the elevator contractor for clearance and equipment requirements. Discharge shall be into a sanitary sewer hub drain within a mechanical room.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide separate electrical feeds for each pump motor with separate disconnecting means to allow for servicing motor without interrupting the operation of the other motor. Control circuits shall likewise be capable of independent operation.

- B. Pumps shall be connected to emergency power system when available.
- C. A high water float switch and alarm bell shall be provided for each sewage ejector or sump pump. This alarm shall connect to the Building Automation System.
- D. It is preferred that discharge from sanitary sewer and storm sewer pumps shall be taken directly to an external manhole without connecting to gravity drained lines prior to the manhole.

END OF SECTION 22 13 29

This section of the *U of I Facilities Standards* establishes minimum requirements only.
It should not be used as a complete specification.