

SECTION 333216

PACKAGED WASTEWATER GRINDER PUMP ASSEMBLY

PART 1 - GENERAL

1.01 Summary: This section covers the furnishing, installation, and testing of a complete, operational sanitary sewage grinder lift station, including the wet well, pumps, piping, valves, controls, and alarm systems.

1.03 References: This system shall be constructed and installed to meet applicable national and local standards, including NFPA 820 (Standard for Fire Protection in Wastewater Facilities), the National Electrical Code (NEC), ASTM standards, and local municipal codes.

1.04 Submittals: Provide shop drawings, product data, manufacturer's instructions, operation and maintenance manuals, and a written warranty.

1.05 Warranty: A minimum one-year warranty on all materials and workmanship shall be provided.

PART 2 - PRODUCTS

2.01 Grinder Pumps:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Liberty Pumps
 - b. Zoeller
 - c. Goulds
2. Type: Submersible, vertical, grinder-type pumping units designed specifically for raw wastewater.
3. Capacity: Provide pump capacity and type to meet the minimum requirements shown on the drawings.
4. Motor: Explosion-proof, rated for continuous and intermittent duty, with thermal overload protection.
5. Grinder Mechanism: Capable of grinding all normal domestic sewage materials (plastics, rubber, sanitary napkins, etc.) into a finely ground slurry with particle output dimensions no greater than 1/4 inch.
6. Materials: Major components shall be stainless steel, resistant to corrosion and erosion.

2.02 Wet Well:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. SCI Precast
- b. Liberty Pumps
- c. Zoeller
- d. Goulds

2. Material: Fiberglass, concrete, or other approved material, designed for specific site requirements and capacity.

3. Configuration: Single wet well configuration with a minimum of one pump and one spare or two pumps with controller able to switch between pumps.

2.03 Piping, Valves, and Fittings:

1. Piping (e.g., 1-1/4" or 2" Schedule 80 PVC, ductile iron).
2. Valves: Provide heavy-duty check valves and brass or ductile iron gate/shut-off valves.

2.04 Control Panel and Alarm System:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Liberty Pumps
- b. Zoeller
- c. Dayton
- d. Cox Research and Technology

2. NEMA rated enclosure (e.g., NEMA 4X for controls).

3. Includes motor controllers, disconnect switches, and an automatic transfer switch if a backup generator is specified.

4. Alarm system (high water alarm float, audible/visual alarms).

5. Level Sensing: Non-contact ultrasonic level sensors are common.

2.05 Ancillary Features: Ventilation and odor control system.

PART 3 - EXECUTION

3.01 Installation: Installation must be performed by a licensed contractor and electrician in accordance with manufacturer instructions and approved plans.

3.02 Field Testing:

1. Perform field tests on each pump to confirm operation at or above the design point.

2. Ensure proper motor rotation and automatic mode functionality.

3.03 Training: Provide instruction to the owner's personnel on operation and maintenance of the system.

END OF SECTION 333216