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SECTION: Z8.00.650

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Supersedes

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MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347  
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961  
(502) 778-2731 • 1 (800) 928-PUMP • FAX (502) 774-3624

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## PACKAGED PUMP STATION GUIDE SPECIFICATION SUBMERSIBLE PUMP SYSTEM



### 1.01 GENERAL

Contractor shall furnish and install a packaged submersible pump station as manufactured by Zoeller Engineered Products Co. (800-928-7867). The packaged pump station shall include submersible pump(s), controls and a fiberglass basin assembly. The basin assembly is prepackaged with the rail system(s), discharge piping, check and shut-off valves, discharge fitting and electrical conduit connection. The control panel and basin inlet hub will be field installed. After the basin has been installed, the pump(s) will be lowered down the rail system with a stainless steel lifting cable and seated onto the disconnect fitting. The field installed sewer pipe, electrical disconnect box and all other miscellaneous equipment shall be supplied by the contractor.

### 2.01 OPERATING CONDITIONS

Each Pump shall be capable of delivering \_\_\_\_\_ GPM against a total dynamic head of \_\_\_\_\_ Feet. The pump shall be capable of passing a \_\_\_\_\_ inch spherical solid.

The electrical power source will be \_\_\_\_\_ Volts, \_\_\_\_\_ Phase.

The system shall be constructed around a \_\_\_\_\_ SIMPLEX or \_\_\_\_\_ DUPLEX configuration.

The pump discharge pipe size shall be \_\_\_\_\_ inches, and made of \_\_\_\_\_ PVC, \_\_\_\_\_ Galvanized steel or \_\_\_\_\_ Stainless steel material.

### 3.01 BASIN ASSEMBLY

The basin shall be \_\_\_\_\_" Diameter by \_\_\_\_\_" Depth. It shall be supplied with an anti-floatation collar and cover, constructed of \_\_\_\_\_ solid fiberglass, \_\_\_\_\_ hatched steel, \_\_\_\_\_ 300 PSF hatched aluminum. The wet-well's fiberglass laminate must be constructed to withstand or exceed two times the assumed loading on any depth of the basin's side wall. The package shall be manufactured by a firm who has a minimum of 5 years experience in producing prepackaged basin assemblies for submersible pumps.

Assembled inside the basin will be the rail system, discharge piping and valves for each pump. The basin sidewall will have a factory mounted discharge fitting. Each rail system shall have a guide rail assembly with \_\_\_\_\_ galvanized or \_\_\_\_\_ stainless steel rail pipes for ease of installation and removal of pump. A disconnect fitting shall easily engage and seal the pump to the discharge piping with minimal effort. A potting kit shall be supplied and field-installed, preventing groundwater from entering the J-box through the conduit.

Optional: \_\_\_\_\_ A junction box for electrical connections shall be mounted inside the basin and have a terminal connection designated for each pump and float lead. The junction box shall be protected from moisture and gases by both an o-ring cover seal and cord seals.

A \_\_\_\_\_ steel or \_\_\_\_\_ stainless steel conduit fitting shall be mounted on the outside of the basin wall. Float switches will be suspended from SS float brackets. Weights, located on the float cords, will be adjusted to the liquid levels desired for an optimum pump duty cycle. The \_\_\_\_\_" inlet hub, provided loose for field installation, shall be mounted at an elevation that allows the wastewater to flow into the basin. The inlet hub shall be installed at a location that does not interfere with the operation of the float switches.

The basin will be installed using a sufficient amount of concrete material on the anti-floatation collar to prevent floatation from high groundwater conditions. Additionally, 12 inches of backfill material, pea-gravel or crushed stone, shall be provided to support the sides and bottom surfaces of the basin.

#### 4.01 PUMP

The pump shall be equal to a Model \_\_\_\_\_ as manufactured by Zoeller Engineered Products Co. The pump shall consist of powder coated cast iron construction and have a finned oil filled motor housing with 25' electrical cables. The motor shall be non-overloading and not exceed the motor rating at any point on the impeller performance curve. Additional motor protection is provided by a 1.15 service factor. Air filled motors will be unacceptable since they fail to meet the heat dissipation and lubricating properties of an oil filled motor. The motor shall be protected from water wicking through the electrical cord by isolating the cord cap junction chamber from the motor housing.

Optional: \_\_\_\_\_ 50' Electrical cable length

The pump shall be constructed with of two carbon/ceramic mechanical seals mounted in tandem. A seal leak sensing probe shall be located in the seal chamber and used to alert the operator of a lower seal failure through a panel alarm feature.

Optional : Silicon carbide/ carbon: \_\_\_\_\_ Lower mechanical seal/ \_\_\_\_\_ Upper mechanical seal  
Silicon carbide/ silicon carbide: \_\_\_\_\_ Lower mechanical seal/ \_\_\_\_\_ Upper mechanical seal

#### 5.01 CONTROL PANEL

The control panel shall be housed in a NEMA 4X enclosure with lockable hasp. The panel shall have a disconnect and motor starter for each pump. Overload protection shall be provided in the panel for pumps not having an internal overload. The panel shall include a pump starting circuit for capacitor start/capacitor run motors. Pump run lights, HOA selector switches and seal leak indication shall be provided for each pump. The panel will have an audible and visible high water alarm with dry contact used for remote monitoring.

Panels used with grinder pumps having an Auto-Reversing feature shall contain the circuitry enabling this operation to function.

Optional features :

|  |                                 |
|--|---------------------------------|
| _____ Inner door with dead front       | _____ ALT-1-2 selection switch  |
| _____ Elapsed time meter for each pump | _____ High water alarm flasher  |
| _____ Condensation heater              | _____ Manual alarm reset switch |
| _____ Lightning arrestor               | _____ Intrinsically safe relays |

Contractor shall be responsible for installing the panel in a manner that maintains the NEMA 4X rating. All conduit, cord connections, and enclosure openings are to be properly sealed in a manner that prevents any liquid or vapors from entering the enclosure.

The contractor shall also furnish and install a properly sized and rated main disconnect switch, separate from the panel, located on the electrical service side of the panel and pump per NEC code.

#### 6.01 TESTING

All system components shall be fully tested at the factory for proper operation. Audits indicating these tests were performed shall be recorded and kept on file.

Once installed, the contractor shall complete the start-up report furnished by the factory. A copy of this report shall be kept with the owner's records and another shall be sent to the system's manufacturer.

#### 7.01 WARRANTY

Standard warranty shall be 18 months from date of manufacture, 12 months from date of purchase or 12 months from the date of start-up when a start-up report is on file with Zoeller Company.



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