Large Sump or Drainage Pumps

General

Furnish and install, as shown on the plans _____ Deming Fig. 4500 Series Heavy Duty Vertical Sump Pumps, each pump to be capable of pumping ____GPM when operating against a total pumping head of _____ feet at temperature, specific gravity and viscosity indicated. Each pump shall operate at _____ RPM and shall have _____ percent efficiency at the design point. Shut-off head shall be not less than _____ feet. Pump shall be (clockwise)(counter-clockwise) rotation when viewed from the driver. The unit shall be designed for installation in a sump _____ feet deep and furnished with (above)(below) plate discharged of size indicated.

Construction Details

The pump liquid end including casing, impeller, suction head, strainer and bearing housing shall be of cast iron having minimum tensile strength of 30,000 lbs. Impeller shall be semi-open type secured to shaft with key, washer and lock nut and shall be fully adjustable, without dismantling the pump, by means of an adjusting nut located above the thrust bearing in the motor support. Flanged column pipe shall be full weight steel pipe with a machined register fit at all assembly points to assure concentric alignment. Pump shaft shall be of a high grade carbon steel of sufficient size to transmit required horsepower.

Replaceable shaft guide bearings, of material suitable for the liquid being pumped, shall be contained in precision machined bearing housings; flanged for machined register fit in column pipe flanges and spaced on recommended bearing centers, but not to exceed 5-foot centers. Bottom bearing assembly shall include choker ring. Suitable lubrication shall be provided to each shaft guide bearing.Cast iron motor support, mounted on heavy steel support plate, shall align the motor with column pipe and shafting. High capacity ball thrust bearing, in waterproof housing, shall be mounted in the motor support. Bearing shall be grease lubricated with provision for purging old grease from bearing housing.

The pump assembly shall include a heavy steel support plate _____ inches diameter, for mounting on a pit _____ inches diameter. Pump discharge pipe shall extend above the plate and shall be supported from the plate by two lock nuts. Duplex pump sump cover shall include a manhole 11 x 15 inches, or larger with cover and with _____ inch (flanged)(threaded) vent connection.

Control

For single pump, a suitable float switch shall be mounted on support plate and shall be operated by a guided corrosion resisting float. Switch shall operate motor directly or with starter, as required.

For duplex pumps, supply mechanical or electric alternator and control which will alternate the normal operation of the two pumps, operate both pumps simultaneous, if required, and provide standby control should one pump become inoperative.

Motor

The motor shall be not less than _____ hp _____ RPM, NEMA design B squirrel cage type, (drip proof)(TEFC)(EISA)(premium) efficiency motor with (1.15)(1.0) service factor and suitable for operation on (115)(230) volt, 1 phase, (50)(60) Hertz power supply OR (200)(230)(460)(575) volt, 3 phase, 60 hertz power supply. Motor size shall be sufficient to prevent overloading at operating conditions or at the lowest listed head conditions, whichever point requires greater horsepower. Following installation, grouting and connection of all piping, pump and motor must be checked for alignment in accordance with standards of the Hydraulic Institute.