

SEWAGE PUMPING SYSTEM FOR ONE SINGLE BATH ROOM

Complete System Includes

Quantity	Description
1	Automatic submersible non-clog sewage pump;
1	Fiberglass basin;
1	8 feet of Stainless Steel lifting cable;
2	Mercury float switches;

OPERATING CONDITIONS:

Pumps shall have a capacity of 40 GPM against a Total Dynamic Head of 40 feet. Motor size shall be _____ horsepower, _____ phase 60 HZ for operation at _____ voltage. Pumps shall be operated by two of mercury float switches. A high water conditions in the basin activates the alarm.

PUMP:

The sewage pump shall be submersible type with recessed impeller to give complete unobstructed volute opening for passing of 2" diameter solids.

Discharge of pump shall be provided with bolt on 1 1/4" grinder pump) or 3" NPT flange.

MOTOR:

Pump motor shall be of the submersible type 1 or 2 horsepower as required. Motor shall operate at 1750 RPM and shall be for 208 or 230 volts single phase or 200, 230, 460 volts three phase. Single-phase motors shall be of the permanent split capacitor type with no relays or starting switches.

Pump motor shall be hermetically sealed, submersible type, operating in high quality dielectric oil for cooling the windings and for lubrication of the motor bearings and ceramic-carbon shaft seal. Single-phase motor shall have internal automatically resetting, thermal overload protection. Construction shall be of cast iron. All fasteners and external metal parts shall be of stainless steel. Impeller shall be of vortex non-clog design. The motor power cord shall be 12 ft SJTW/SJTW-A type. Pumps shall be UL Listed, manufacture in North America by a company regularly engaged in the manufacture and assembly of similar for a minimum of five (5) years.

CORROSION PROTECTION: All iron castings shall be pretreated with phosphate and chromic rinse and shall be painted with a high quality, lead free, alkyd enamel air-dry paint. All fasteners to be 316 stainless steel.

CORD SEAL: The cord shall be potted into a steel connector with polyurethane resin for leak proof seal. A cord nut and rubber grommet shall clamp the cord into the bushing. Cords shall withstand a pull of 100 pounds.

OUTDOOR BASIN:

The basin shall be 150 gallons of fiberglass constructed tank with solid cover and anti-floatation device.

CITY OF PACIFICA PUBLIC WORKS / ENGINEERING DIVISION DESIGNED BY: DRAWN BY: RDD CHK'D BY: SH APPROVED BY: SH					SEWAGE PUMP SPECIFICATIONS (SINGLE)	STANDARD SEWER DETAILS SCALE: NONE PLAN NO.
	REV.	DATE	DESCRIPTION	BY		
REVISIONS						

SEWAGE PUMPING SYSTEM FOR MORE THAN ONE SINGLE BATH ROOM

Complete System Included:

Quantity	Description
2	Automatic submersible non-clog sewage pumps;
1	Nema 4x pump control panel;
1	Fiberglass basin;
1	Lift-out rail system;
1	8 feet of Stainless Steel lifting cable;
4	Mercury float switches;

OPERATING CONDITIONS:

Pumps shall have a capacity of 40 GPM against a Total Dynamic Head of 40 feet. Motor size shall be _____ horsepower, _____ phase 60 HZ for operation at _____ voltage. Pumps shall be operated by two of mercury float switches. As liquid level in basin rises, the float switch activates a magnetic contactor to run the pump on and off. A low water condition overrides the on switch to prevent the pump from running dry. A high water conditions in the basin activates the alarm.

PUMP:

The sewage pump shall be submersible type with recessed impeller to give complete unobstructed volute opening for passing of 2" diameter solids.

Discharge of pump shall be provided with bolt on 1 1/4" (grinder pump) or 3" NPT flange.

MOTOR:

Pump motor shall be of the submersible type 1, or 2 horsepower as required. Motor shall operate at 1750 RPM and shall be for 208 or 230 volts single phase or 200, 230, 460 volts three phase. Single-phase motors shall be of the permanent split capacitor type with no relays or starting switches.

Pump motor shall be hermetically sealed, submersible type, operating in high quality dielectric oil for cooling the windings and for lubrication of the motor bearings and ceramic-carbon shaft seal. Single-phase motor shall have internal automatically resetting, thermal overload protection.

Construction shall be of cast iron. All fasteners and external metal parts shall be of stainless steel. Impeller shall be of vortex non-clog design. The motor power cord shall be 12 ft SJTW/SJTW-A type. Pumps shall be UL Listed, manufacture in North America by a company regularly engaged in the manufacture and assembly of similar for a minimum of five (5) years.

Three-phase motor shall be protected by 3-leg overload element in control box. Overload shall be of the quick trip ambient compensated type and shall have a manual reset button.

Motor to be a completely assembled unit with end plate for mounting in volute case. Complete motor and pump impeller to be removable as a unit from the volute casing.

CORROSION PROTECTION: All iron castings shall be pretreated with phosphate and chromic rinse and shall be painted with a high quality, lead free, alkyl enamel air-dry paint. All fasteners to be 316 stainless steel.

SHAFT SEALS: Motor shall be protected by two mechanical seals mounted in tandem, with a seal chamber between the seals. Seal chamber shall be oil filled to lubricate seal face and to transmit heat from shaft to outer shell. Seal face shall be carbon and ceramic and lapped to flatness.

IMPELLER: Shall be cast iron and of the recess type. Pump-out vane shall be used on back shroud. Impeller shall be dynamically balanced. Impeller to be threaded on shaft and held in position with locknut.

Impeller and motor shall have top lift-out of case so that the assembly can be removed without disturbing any piping.

PUMP CASE: The volute case shall be of cast iron and shall be provided with bolt-on flange so the 2" pipe size may be used.

CORD SEAL: The cord shall be potted into a steel connector with polyurethane resin for leak proof seal. A cord nut and rubber grommet shall clamp the cord into the bushing. Cords shall withstand a pull of 100 pounds.

CONTROL PANEL: A NEMA 4X fiberglass control panel shall be furnished with each pumping unit to be installed.

The control panel enclosure shall be molded of glass reinforced polyester resins, which are chemically resistant to corrosive atmospheres. The resin system shall be pigmented to impart a gray color to the enclosure and be resistant to ultraviolet light.

The resin system also shall include a flame retardant to obtain a flammability rating which meets U.L. 94V-0. Heat distortion temperature shall be 350 degrees Fahrenheit.

The enclosure shall be of one piece, weatherproof construction with smooth, rounded corners and shall be constructed to have a smooth exterior and interior. The enclosure shall be fitted with a closed cell neoprene gasketed cover. The enclosure shall be provided with back panel mounting provisions.

The cover shall be hinged with a heavy duty corrosion resistant stainless steel piano hinge. The cover shall be lockable by means of two (2) high quality combination stainless steel latches and padlock hasps.

The enclosure shall be provided with external mounting feet on the top and bottom of the enclosure. These mounting feet shall be of fiberglass and molded as an integral part of the enclosure.

The panel shall include pump circuit breaker, control circuit breaker (breakers rated at 10,000 A.I.C.), alarm circuit fuse, control circuit fuse, I.E.C. rated motor starter with 1-pole ambient compensated bimetal overload relay, pump hand-off-auto switch (momentary in the hand position), alarm test switch, pump run light, seal leak light, start and run capacitors, start relay, terminal blocks, ground lug, and all necessary wiring and brackets.

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