

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.


PUMP COMPANY
Zoeller Family of Water Solutions™

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

visit our web site:
www.zoeller.com

SPECIFICATIONS

SEWAGE/SUMP DUPLEX SYSTEM

ZOELLER COMPANY SUBMERSIBLE SEWAGE OR DEWATERING PUMPS

SINGLE SEAL	264	266	267	268	270	282	284	292	293	294	295	404	405
DOUBLE SEAL					4270	4282	4284	4292	4293	4294	4295	4404	4405

CAST IRON SERIES

DUPLEX SYSTEM

Furnish two Zoeller nonautomatic submersible pumps, Model _____ Single Seal or Model _____ Double Seal, with an _____ Electrical or _____ Mechanical Alternating System. Pumps shall have a capacity of _____ GPM against a Total Dynamic Head of _____ feet. Motor specification: _____ voltage, _____ cycle, _____ phase, _____ HP. Discharge to be _____ 2" or _____ 3" NPT or _____ 4" flange (404/4404, 405/4405 only). Cord length to be _____ feet. Pump shall be mounted on rail system with NPT _____ or flange _____ discharge. Pumps will pass _____ 2" Solids (264, 266, 267, 268, 270/4270, 282/4282, 284/4284, 292/4292, 293/4293, 294/4294, 295, 4295), or _____ 3" Solids (404/4404, 405/4405). Pumps shall be _____ UL listed, _____ CSA approved, _____ SSPMA certified, _____ State of Wisc. approved, _____ other (Specify _____).

SINGLE PHASE SYSTEM

GENERAL

Pump motor shall be hermetically sealed, submersible type, operating in a 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 with 100% baked-on powder coated epoxy finish for corrosion resistance and longer casting durability. All fasteners and external metal parts shall be of stainless steel. Impeller shall be of vortex non-clog design. (Addition noted below.)

Check Applicable Series:

- _____ 264 (.4 HP) model pump shall have a permanent split capacitor motor with capacitor attached to the motor. Cast iron switch case, pump housing, motor housing with plastic impeller and base.
- _____ 266 (1/2 HP) model pump shall have split phase motor with current sensing, starting relay enclosed in switch housing cast iron switch case, motor housing and pump housing with plastic impeller and base.

- _____ 267 (1/2 HP) model pump shall have split phase motor with current sensing, starting relay enclosed in switch housing.
- _____ 268 (1/2 HP) model pump shall have split phase motor with current sensing, starting relay enclosed in switch housing. Discharge shall have a permanently affixed 2" female - 3" male combination discharge hub.
- _____ 270 (1 HP) model pump shall have a permanent split capacitor motor with capacitor in the switch housing attached to the pump. The impeller shall be cast bronze. Motor housing shall be cast iron. Discharge shall be a 2" female NPT hub.
- _____ 4270 (1 HP) model pump with double carbon/ceramic shaft seals shall have a permanent split capacitor motor with capacitor in the switch housing attached to the pump. The impeller shall be cast bronze. Motor housing shall be cast iron. Discharge shall be a 2" female NPT hub. The lower seal cavity shall be oil-filled.
- _____ 282 (1/2 HP) _____ 284 (1 HP) cast iron series pump shall have a permanent split capacitor motor with run capacitor and magnetic contactor (284 only) enclosed in a switch housing attached to the pump.

Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability.

_____ 4282 (½ HP) _____ 4284 (1 HP) cast iron series pump with double carbon/ceramic shaft seals shall have a permanent split capacitor motor with run capacitor and magnetic contactor (4284 only) enclosed in a switch housing attached to the pump. Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability. The lower seal cavity shall be oil-filled.

_____ 292 (½ HP) _____ 293 (1 HP) _____ 294 (1½ HP) _____ 295 (2 HP) cast iron series pump shall have a permanent split capacitor motor with capacitor and magnetic contactor enclosed in a switch housing attached to the pump. The impeller shall be cast bronze. Motor housing shall be cast iron and finned for extra cooling capability.

_____ 4292 (½ HP) _____ 4293 (1 HP) _____ 4294 (1½ HP) _____ 4295 (2 HP) cast iron series pump with double carbon/ceramic shaft seals shall have a permanent split capacitor motor with capacitor and magnetic contactor enclosed in a switch housing attached to the pump. The impeller shall be cast bronze. Motor housing shall be cast iron and finned for extra cooling capability. The lower seal cavity shall be oil-filled.

_____ 404 (2 HP) _____ 405 (3 HP) cast iron series pump shall have a permanent split capacitor motor with capacitor enclosed in a switch housing attached to the pump. Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability.

_____ 4404 (2 HP) _____ 4405 (3 HP) cast iron series pump with double carbon/ceramic shaft seals shall have a permanent split capacitor motor with capacitor enclosed in a switch housing attached to the pump. The impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability. The lower seal cavity shall be oil-filled.

THREE PHASE PUMPS

Pump motor shall be hermetically sealed, submersible type, operating in a high quality dielectric oil for cooling the windings and for lubrication of the motor bearings and ceramic-carbon shaft seal. Pump motor shall have external magnetic contactor and overload protection. All fasteners and external metal parts shall be of stainless steel. Impeller shall be of vortex non-clog design.

_____ 266 (½ HP) _____ 267 (½ HP) _____ 268 (½ HP) Series shall have a 4-pole squirrel cage induction motor.

_____ 282 (½ HP) _____ 284 (1 HP) Series shall have a 4-pole squirrel cage induction motor. The motor housing shall be finned for extra cooling capability.

_____ 4282 (½ HP) _____ 4284 (1 HP) cast iron series pump with double carbon/ceramic shaft seals shall have a 4-pole squirrel cage induction motor. Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability. The lower seal cavity shall be oil-filled.

_____ 293 (1 HP) _____ 294 (1½ HP) _____ 295 (2 HP) Series shall have a 2-pole squirrel cage induction motor. Impeller shall be of cast bronze and pump housing shall be cast iron. The motor housing shall be finned for extra cooling capability.

_____ 4293 (1 HP) _____ 4294 (1½ HP) _____ 4295 (2 HP) cast iron series pump with double carbon/ceramic shaft seals shall have 2-pole squirrel cage induction motor. The impeller shall be cast bronze. Motor housing shall be cast iron and finned for extra cooling capability. The lower seal cavity shall be oil-filled.

_____ 404 (2 HP) _____ 405 (3 HP) series shall have a 4-pole squirrel cage induction motor. Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability.

_____ 4404 (2 HP) _____ 4405 (3 HP) cast iron series pump with double carbon/ceramic shaft seals shall have 4-pole squirrel cage induction motor. Impeller and motor housing shall be cast iron. The motor housing shall be finned for extra cooling capability. The lower seal cavity shall be oil-filled.

ALTERNATING SYSTEM ELECTRICAL ALTERNATING SYSTEM

Alternator - Single Phase

A Zoeller _____ Electrical Alternator Panel with three (3) 10-0225 Variable Level Float controls shall be furnished. Panel shall be _____ UL Listed or _____ CSA approved and shall include an alternating circuit, separate contact relays, run lights, circuit breakers and H-O-A switches for each pump. Also included shall be a numbered terminal strip and a high-water alarm and light. Overload protection shall be furnished in the pump motor. Panel shall have NEMA _____ rating. Electrical components sized for a Zoeller model _____, _____ volt, _____ cycle, _____ phase, _____ HP pump.

Alternator - Three Phase

A Zoeller _____ Electrical Alternator Panel with three 10-0225 Variable Level Float controls shall be furnished. Panel shall be _____ UL Listed or _____ CSA approved and shall include an alternating circuit, separate magnetic starter with overload protection, run lights, circuit breakers, and H-O-A switches for each pump. The control panel shall include a transformer to reduce control voltage to 115 volts. Also included shall be a numbered terminal strip and a high water alarm and light. Panel shall have a NEMA-4X rating. Electrical components shall be sized for a Zoeller model _____, _____ volt, _____ cycle, _____ phase, _____ HP pump.

Variable Level Float Controls - Single Phase or Three Phase

Variable Level Float Controls shall provide automatic operation of pumps and alarm. Two controls shall close circuit for on/off operation at selected levels as required to rotate operation of pumps. The third variable level float switch shall close an override circuit to operate both pumps and to activate the alarm. The variable level float control switch shall be omnidirectional, normally open, and shall include a 15' SJOWA neoprene cord. All controls shall be fastened to a float switch mounting pipe with plastic tie mounting straps. The pipe, attached to the underside of the removable inspection plate on the basin cover, shall be furnished and installed by the contractor.

MECHANICAL ALTERNATING SYSTEM

Alternator - Single Phase

A Zoeller _____ 10-0072 or _____ 10-0075 (includes alarm switch) "M-Pak" mechanical alternator shall be supplied to control sump level. Alternator shall be UL Listed and shall have 2-pole alternating switch with adjustable tension. Alternator shall provide on/off operation at selected levels and shall provide an override to operate both pumps in parallel when required. Alternator control shall be contained in a NEMA 1 enclosure and shall be fastened to and furnished with a separate cast iron stand. Stainless steel float shall be 7" diameter and mounted on a 6' brass rod. Rod shall be sealed in a gas-tight neoprene convoluted tube sealed where it passes through the cover mount stand. Four adjustable stops shall be included. (Addition noted below.)

_____ A 10-0075 "M-Pak" mechanical alternator shall provide an alarm switch to sound a _____ 10-0015 (115V) or a _____ 10-0016 (230V) "A-Pak" alarm when activated. Included shall be a six (6) inch steel alarm bell, which shall sound sixty-eight (68) decibels at a distance of ten (10) feet, and a dual mount UL Listed transformer, which shall step down 115V or 230V 1 Ph line voltage to 8V. (For three phase mechanical alternating systems - Consult Factory.)

ACCESSORIES/MISCELLANEOUS

UNICHECK

_____ 30-0021, (Clamp union valve) (2 inch) full flow check valve, rated at 4.3 psi pressure (10 feet TDH) at 130° F shall be furnished to fit 2 inch ABS, PVC, CPVC, steel or copper piping. Unichheck shall have valve body and seat of PVC plastic and shall be assembled with thru bolts. Gasket and flapper shall be neoprene with brass or stainless steel backing plates and stainless steel rivet. Unichheck shall include two (2) neoprene unions and four (4) stainless steel clamps and fasteners.

_____ 30-0151 (Clamp Union Valve) 2 inch full flow check valve, shall be cast iron, shall be furnished to fit 2 inch ABS, PVC, CPVC, steel, or copper piping. Unichheck valve body, gasket and flapper shall be neoprene with brass backing plates and stainless steel rivet. Unichheck shall include two (2) neoprene unions and four (4) stainless steel clamps and fasteners.

_____ 30-0020 (2 inch) or _____ 30-0030 (3 inch) IPS full flow compression union check valve shall be furnished. Unichex body and compression end fittings shall be constructed of PVC. Flapper and end seals be Buna-N. Valve shall include no metallic parts. Pressure rated at 25 PSI (57 feet TDH) at 130° F.

_____ 30-0152 (2 inch) or _____ 30-0160 (3 inch) cast iron full flow check valve with female N.P.T. Rated 50 PSI (115 feet TDH) at 130° F Neoprene polyester reinforced flapper with cast iron and brass backing plates and stainless steel fastener.

_____ 30-0170 (4 inch) Flanged cast iron check valve. Rated at 125 PSI steam pressure. Cast iron body, cover and case, bronze disc, stainless steel fitted, shall be installed in horizontal position.

_____ Tri-Check/Combo, 30-0101 or 30-0103.

SUMP BASIN

A Zoeller IAPMO approved _____ polyethylene basin, .230 inch thick, or Zoeller _____ fiberglass basin, 3/16 inch minimum thick, _____ inches inside diameter by _____ inches deep shall be furnished. The basin shall include _____ four (4) inch cast iron caulk hub inlets with anticorrosion coating. The center line of the hub(s) shall be located nine (9) inches from the top of the basin. The basin shall also include a .125 inch thick steel sump cover. Cover shall have two (2) pump installation plates and an inspection plate. Optional anti-flotation ring can also be provided. Also included shall be two (2) neoprene seals for pump cords, neoprene seal for vent and discharge flanges, foam cover seal and plated steel fasteners. Cover shall include a _____ inch vent and two (2) _____ inch discharge flanges with mounting hardware.

PIPING & POWER WIRING

All piping shall be rigid and permanent in nature and shall be furnished and installed by the contractor. A unichex shall be installed in the discharge pipe. A 3/16" vent hole shall be drilled in the discharge pipe below the check valve and pit cover to purge the system of trapped air. Power wiring shall be supplied by the electrical contractor. Power wiring for pumping system and alarm system shall be connected to separate circuits.

EXTRA DUTY

Where conditions require, specify extra duty for adverse operating conditions.

HI TEMPERATURE PUMPS

For applications up to 200° F continuous operation, specify High Temperature Zoeller Co. models. See literature on High Temperature pumps, FM0806 and FM0807, for additional information. For 200° F specification sheet, see FM0817.

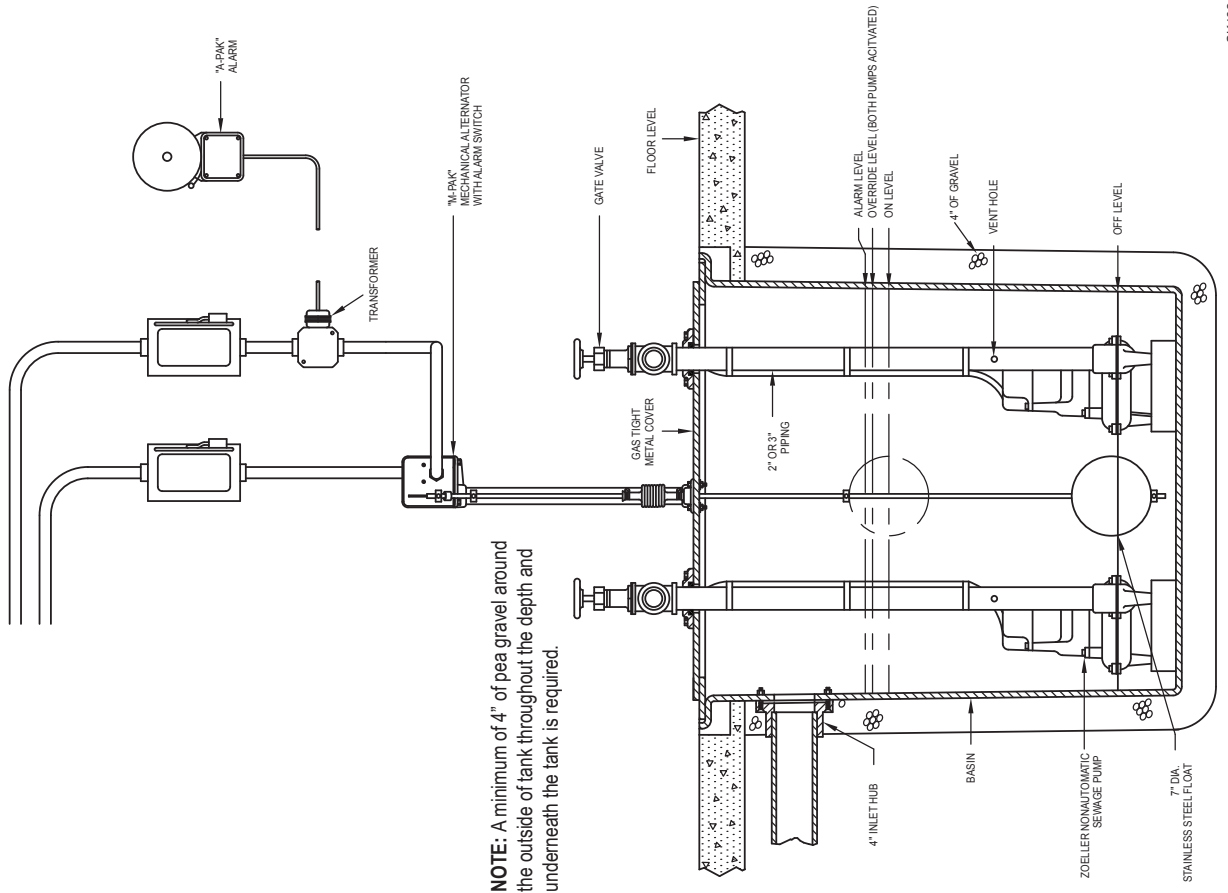
PUMP DISCONNECTS AND RAIL SYSTEMS

Where conditions, due to safety, health and the economy of maintenance require pump disconnects or rail systems specify:

- _____ 39-0002, 2" NPT Disconnect (Non-pump Supporting)
- _____ 39-0004, 2" NPT Rail System (Non-pump Supporting)
- _____ 39-0083, 2" NPT Galv. Ez Out (Pump Supporting)
- _____ 39-0084, 2" NPT S.S. Ez Out (Pump Supporting)
- _____ 39-0074, 3" NPT Galv. Ez Out (Pump Supporting)
- _____ 39-0075, 3" NPT S.S. Ez Out (Pump Supporting)
- _____ 39-0073, 4" Flanged Rail System Carbon Steel Fitted (Pump Supporting)
- _____ 39-0016, 4" Flanged Rail System S.S. Fitted (Pump Supporting)

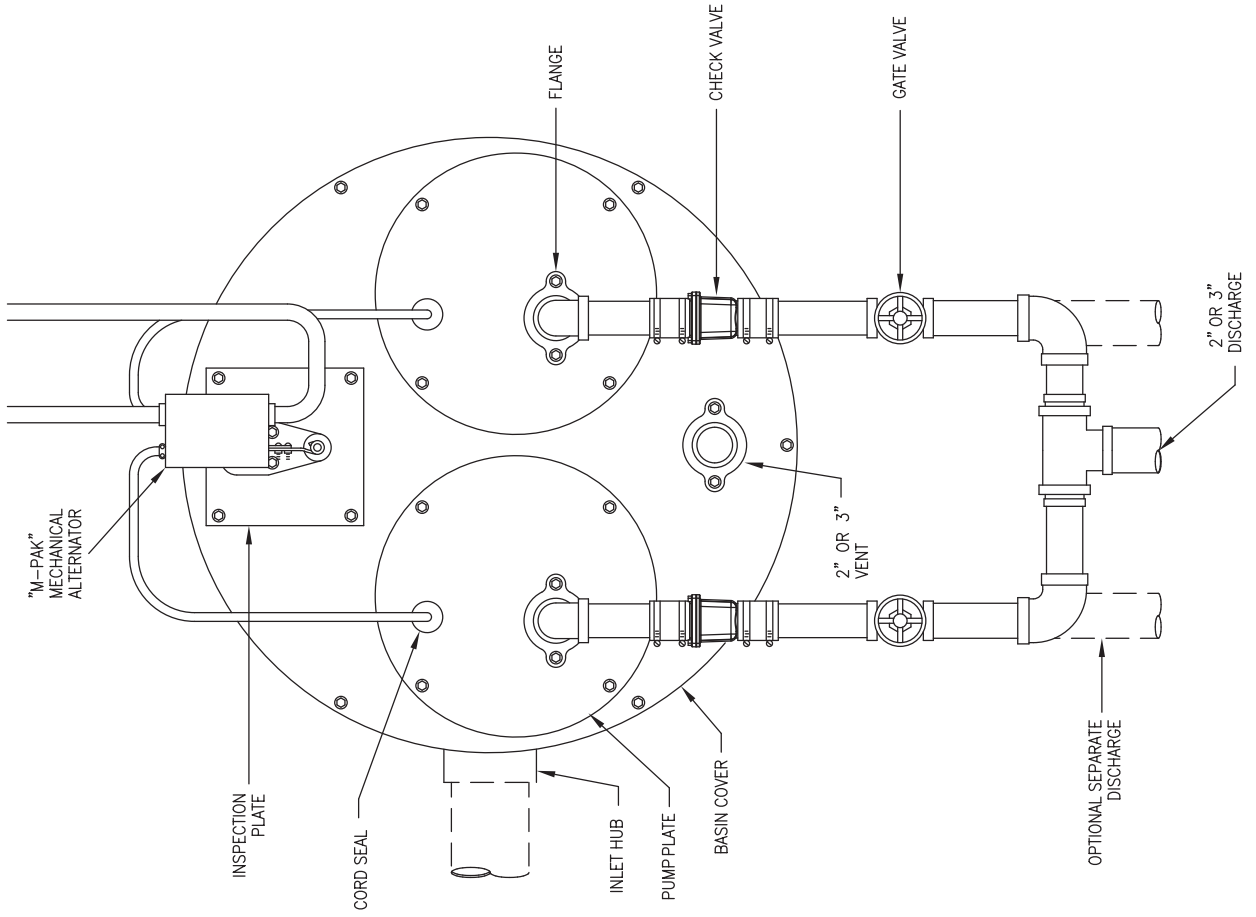
Square Guide Rail Systems shall include single rigid stainless steel square rail design, red brass disconnect fitting, cast iron angle arm bracket and guide plates. _____ Galvanized or _____ stainless piping, PVC ball valve, cast iron check valve. Rail system shall be for a Zoeller Model _____ with a _____ inch discharge. Rail system will be for a _____ inch diameter basin.

SEWAGE DUPLEX SYSTEM WITH MECHANICAL ALTERNATOR (SINGLE PHASE)



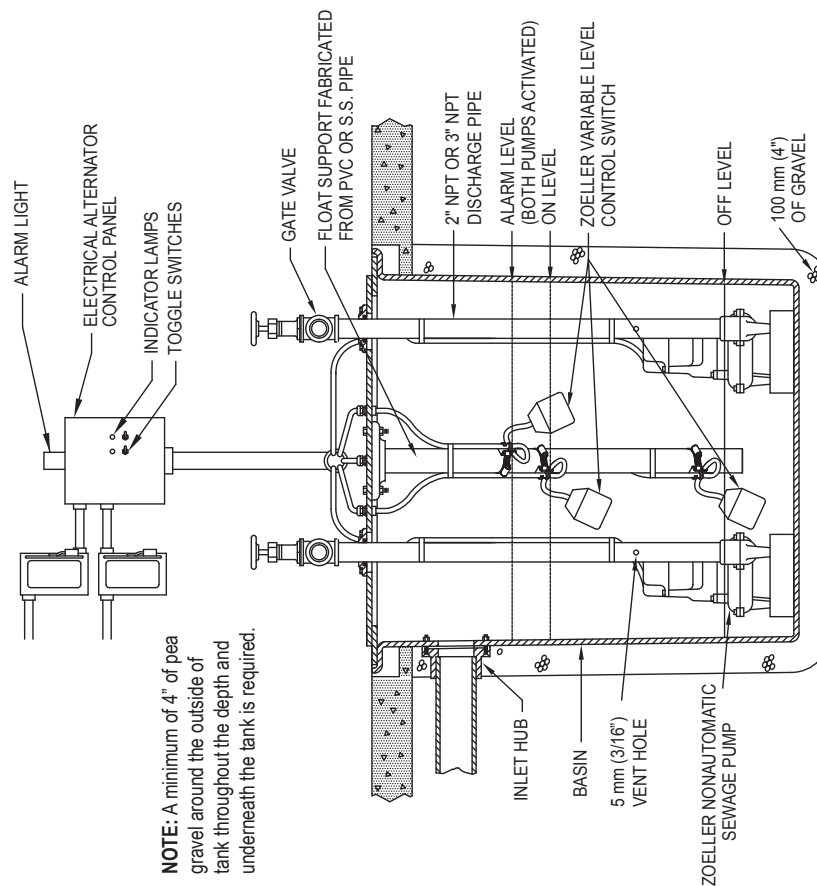
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SEWAGE DUPLEX SYSTEM WITH MECHANICAL ALTERNATOR (SINGLE PHASE)



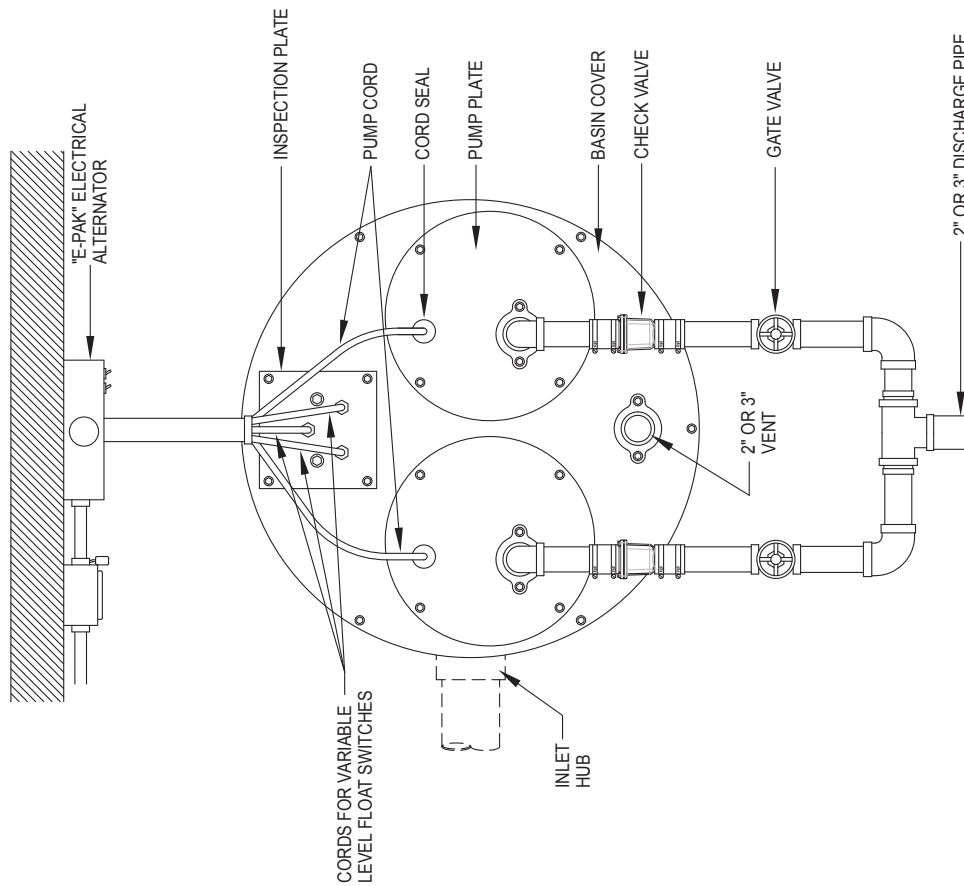
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SEWAGE DUPLEX SYSTEM WITH ELECTRICAL ALTERNATOR (SINGLE OR THREE PHASE)



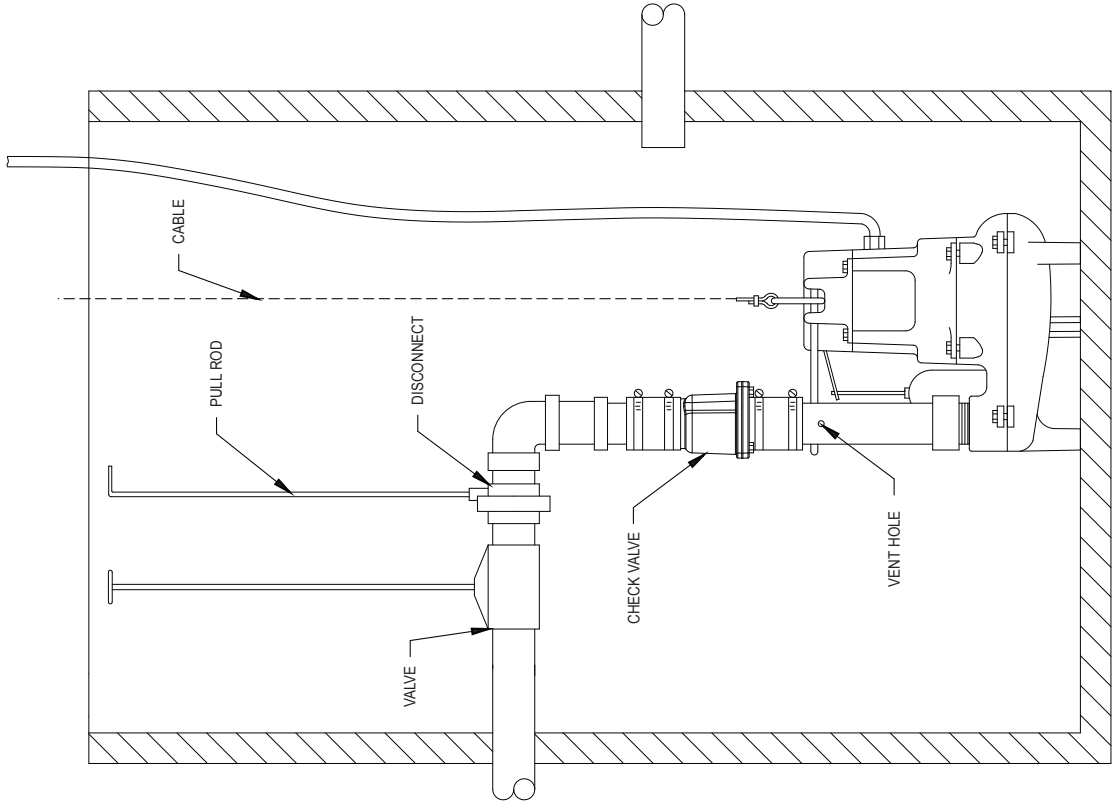
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SEWAGE DUPLEX SYSTEM WITH ELECTRICAL ALTERNATOR (SINGLE OR THREE PHASE) TOP VIEW



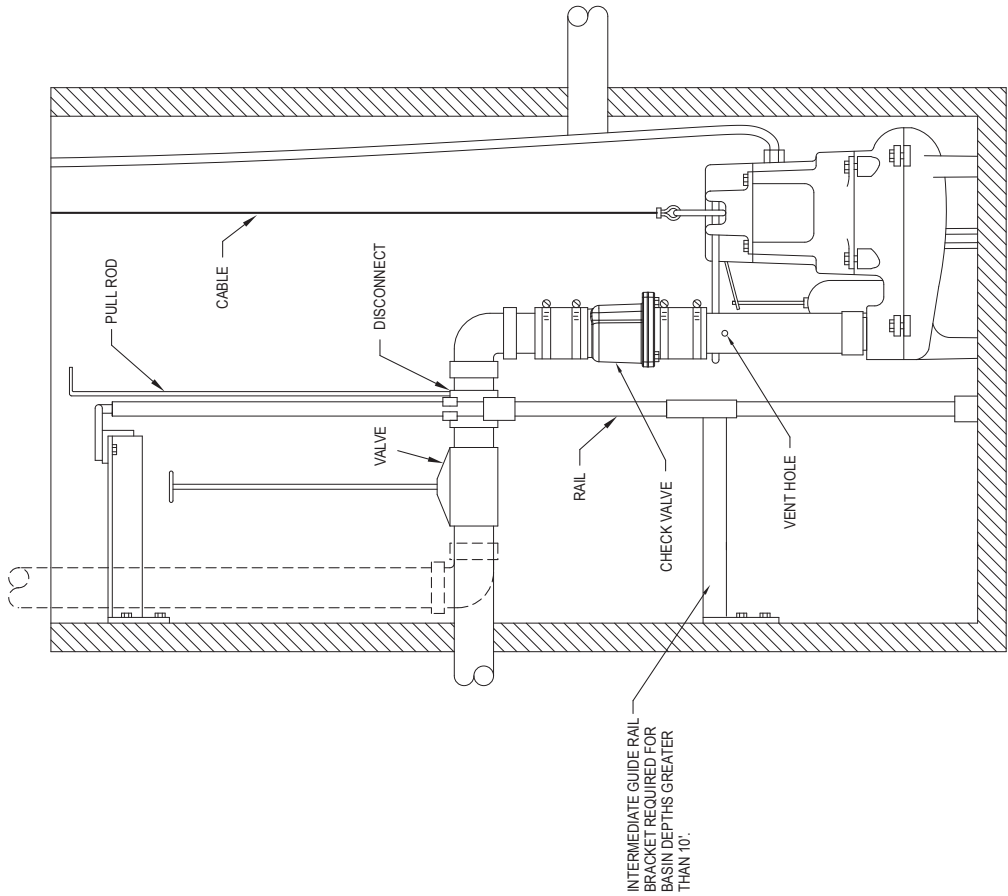
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PUMP DISCONNECT SYSTEM



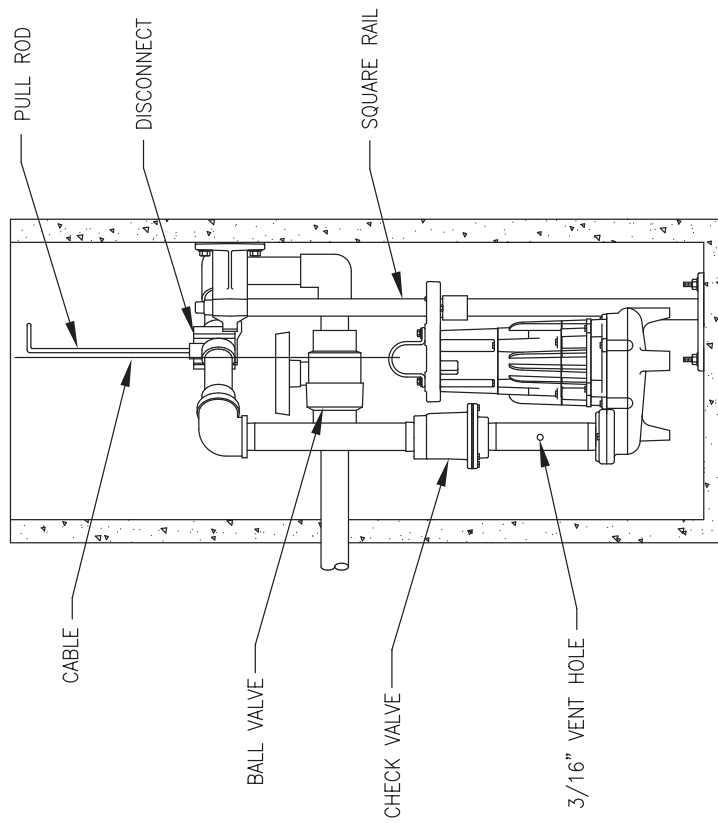
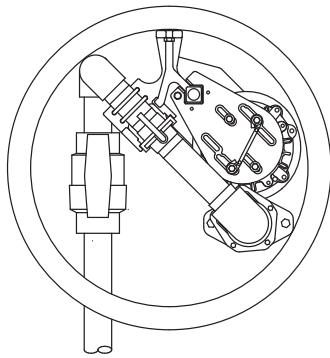
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PUMP DISCONNECT WITH RAIL SYSTEM



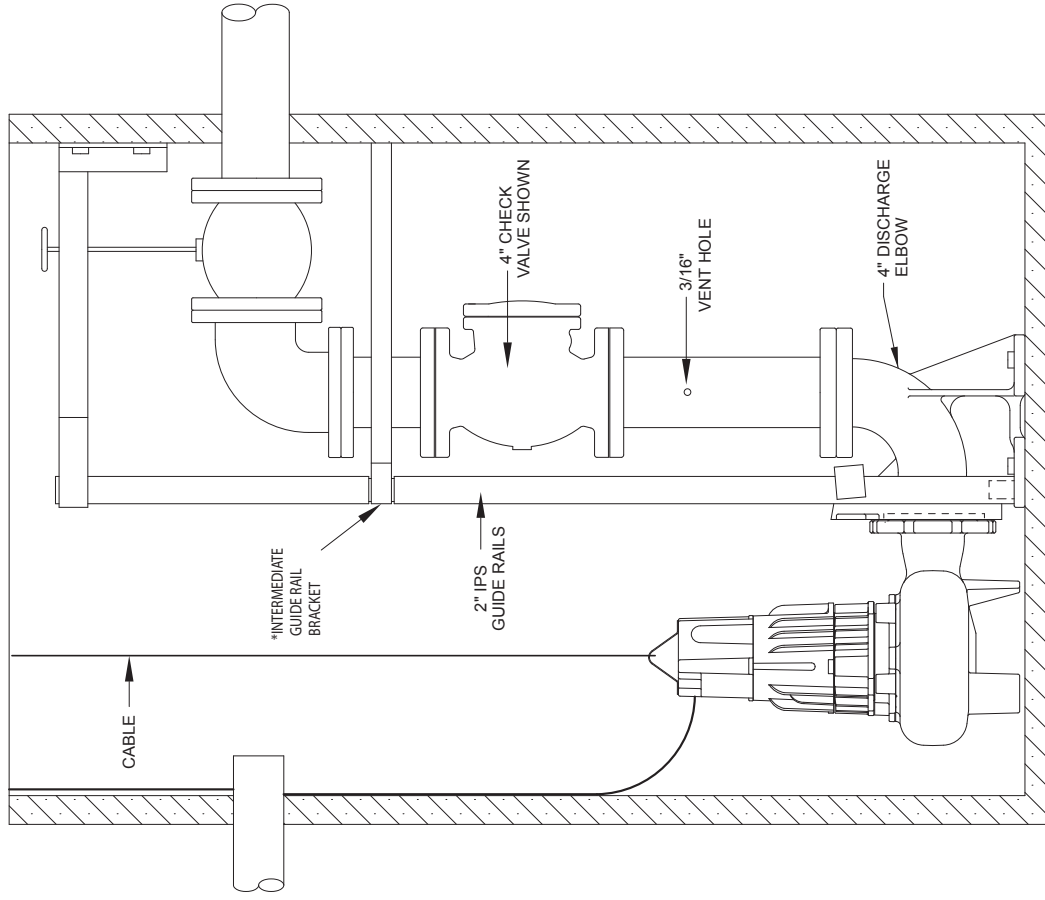
SK1735

SQUARE RAIL SYSTEM



SK1650

404/405, 4404/4405 AND SEWAGEWASTE GUIDE RAIL SYSTEMS



SK1100