

ELEVATOR SUMP PUMP SYSTEM

General

The contractor shall furnish and install a ParkUSA EleVader Model ELV-050 complete pump, separator, and control and alarm system as shown on the drawings. Pump(s) shall be provided for each elevator hoistway. The system shall be capable of pumping all water & fluids automatically from the elevator pit as required by TDLR (Texas Department of Licensing and Regulation) elevator rules and ASME A17.1/CSA B44 Safety Code for Elevators and Escalators, 2007, Section 2.2.2.5. The system shall function automatically to remove water and fluids from the pit automatically without any human intervention. Systems that do not remove all the fluid including oil are not compliant and will not be accepted. An oil-water separator or equivalent protection shall be used to treat oily wastewater automatically from the elevator pit prior to discharge into the public sanitary sewer as required by The Texas Commission on Environmental Quality (TCEQ) and local plumbing codes. Pumping into the storm sewer is not permitted. Systems that do not remove the oil will not be accepted.

Sump Pump

A submersible sump pump is located in the sump area of the elevator (refer to plan drawings). The sump pump shall be as specified on the schedule, heavy duty submersible type, capable of pumping water, water/oil and oil at a minimum capacity of 50 GPM, (3000 GPH as per ASME A17.1 Section 2.2.2.5 (2007)). The pump shall be constructed and tested to meet UL 778 standards and shall include thermal overload protection. Refer to the schedule for capacity and electrical requirements. The pump shall be capable of operating with the water level covering only 50% of the motor casing and shall operate automatically either continuously or intermittently as required by the on-off float switch control. The pump shall have a size 1-1/4" minimum discharge connection. The motor housing and fastening bolts shall be constructed of 304 Stainless Steel and have carbon ceramic seals. The pump shall have a semi-open, non-clogging Vortex impeller and shall be designed for floor mounting complete with support legs. A stainless chain shall be provided for easy maintenance.

Oil/Water Separator

The separator is located freestanding near the shaft. Refer to the schedule for capacity and size requirements. The separator unit is rated from 50 to 200 GPM depending on the quantity of elevator shafts to be served, 50 GPM or 3000 GPH as per ASME A17.1 Section 2.2.2.5 (2007). The oil/water separator shall be a pre-engineered filter separator capable of treating wastewater discharge free of petroleum hydrocarbons, concentration of less than 100 parts per million. Operating range of the influent is 40F to 180F and ambient air temperature from 0F to 140F. The specific gravity of the oils at these operating temperatures is .70 to .95. The separator shall be designed to withstand static and dynamic hydraulic loadings while empty and during operation. The separator of 3/16" carbon steel conforming to ASTM A36 for tanks, weirs, flow distributors, and energy dissipator devices or constructed of 3/16" carbon steel conforming to ASTM A36. All internal components shall consist of corrosion resistant materials or be epoxy coated. All welding shall be in accordance with AWA D1.1 to provide watertight vessel that will not warp or deform excessively under load. Access cover shall be bolted and gasketed. The separator shall utilize a polymer infused filter that is replaceable.

Control System

The control system shall consist of three stage float sensor in elevator sump, pressure differential switch in separator and a single control panel (NEMA 4X weatherproof) that is wall mounted near the elevator shaft. The control panel shall be constructed and tested to meet UL508 standards and shall be housed in a weatherproof NEMA 4X electrical enclosure with a wiring terminal strip for field wiring to the J-Box in the hoistway.

The control panel shall have the following functions:

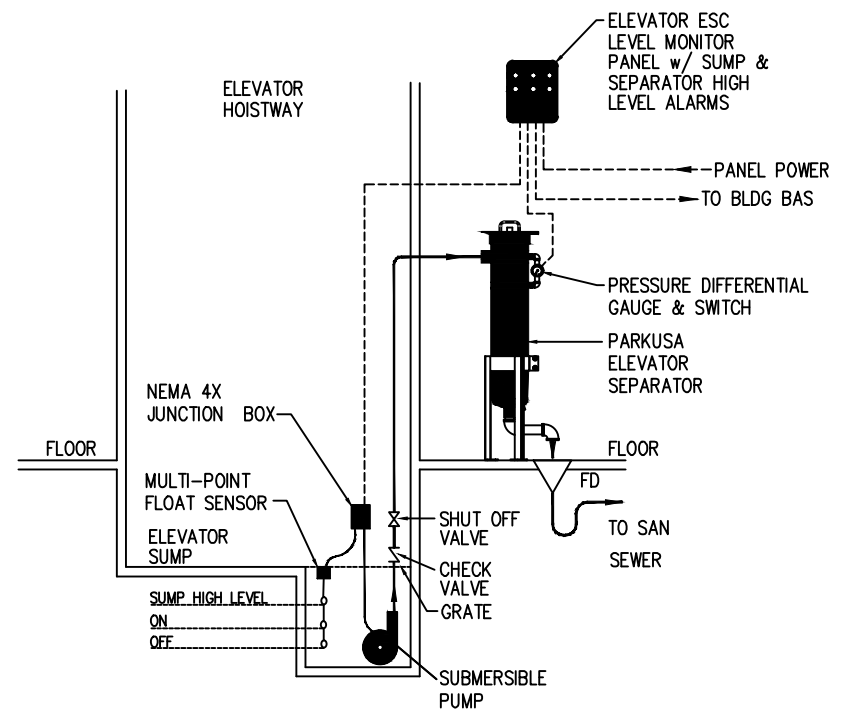
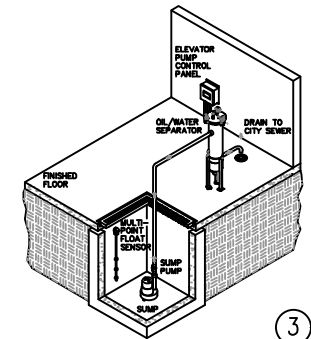
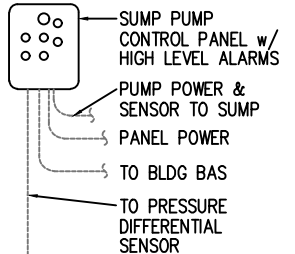
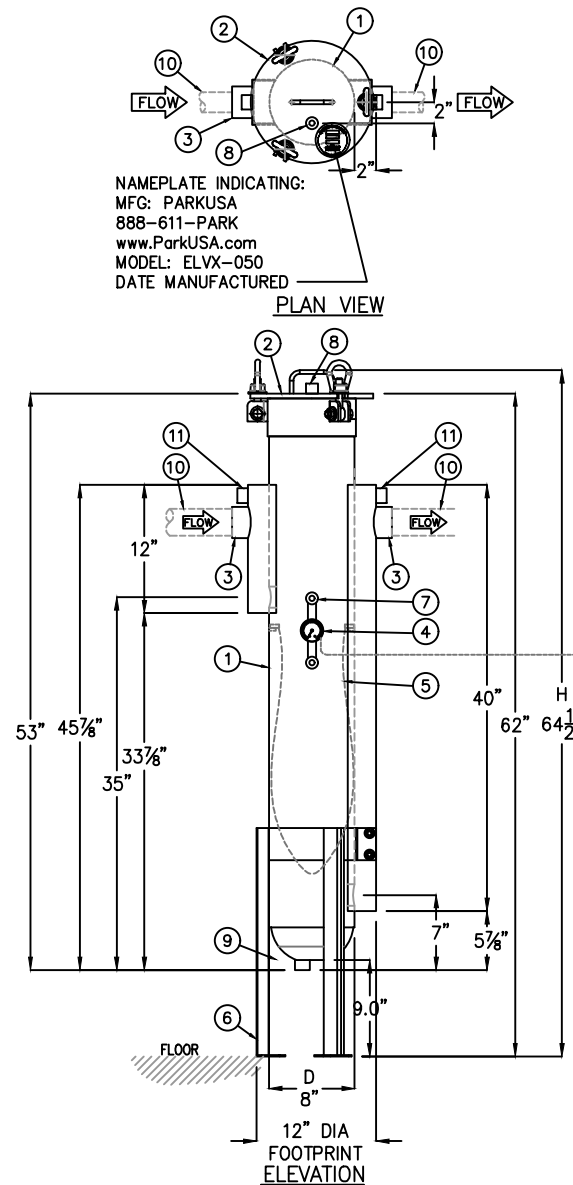
- a. Operates the sump pump, "On/Off" depending on shaft water levels. The panel shall have a "Hand-Off-Auto" switch, a "Pump Run" light, and auxiliary contacts for a BAS system.
- b. Indicates "Sump High Level" of the elevator shaft. In the event of pump malfunction, the panel shall have a "Sump High Level" illuminated red light and high decibel warning horn, a "Silence" switch and auxiliary dry contacts for BAS system.
- c. Indicates "High Oil Level" of the separator. In the event of a high accumulation of oil in the separator, the panel shall have a "Separator High Level" illuminated red light & high decibel warning horn, a "Silence" switch, and auxiliary dry contacts for BAS system. NOTE: The presence of oil DOES NOT prevent the pump from operating.

The panel also includes a separate over-current relay and field adjustable motor overload having a range of 5 to 15 amps, factory set at 8 amps for this pump application. The control panel shall have a combination manual "Reset/Push" to test switch for motor overload with both automatic, manual reset and control diagnostics. The control system must be factory set for automatic overload restart.

The control system shall include three field adjustable float switches located in the sump; Pump Off, Pump On, and High Level. Provide a factory prewired NEMA 6P watertight junction box with a din rail mounted wiring terminal strip. Provide factory installed wiring of pump and floats into a NEMA 6P junction box. All cables between the pump and junction box shall be a maximum of 6' long per NEC 2008. The cable shall be heavy usage, watertight and oil resistant. The floats and oil sensing probe shall be factory mounted on the pump housing. All cable entries into the J-Box from the pump pit shall have NEMA 6P watertight cord grips. The oil sensing probe is to be factory mounted and positioned within the separator and factory tested as a complete system.

Acceptable Manufacturers:

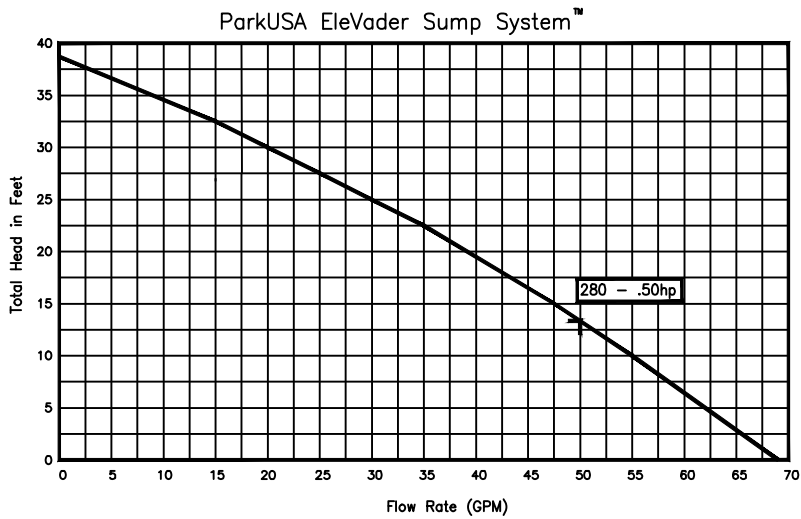
ParkUSA Elevader System, 888-611-PARK, www.Park-USA.com or Engineered pre-approved equal, provided all of the specifications are met.



10 ELEVATOR SUMP DETAIL NOT TO SCALE (ABOVEGROUND SEPARATOR)

SYSTEM MODEL		SEPARATOR DATA								SUBMERSIBLE PUMP DATA							
SYSTEM SIZE	ELEVATORS	SEPARATOR MARK	SEPARATOR MODEL	FLOW CAP GPM	TOTAL CAPACITY	OIL SPILL CAPACITY	DIA D	HEIGHT H	INLET FL1	OUTLET FL2	FLOW CAP GPM	TDH	DISCH SIZE	RPM	HP	VOLT/PH	PUMP
ELVX-050	1	SP-1	EX-050	50	5 GAL	2.5 GAL	8"	64 1/2"	50"	50"	50	14'	1 1/2"	3450	.50	115/1	LIBERTY 280

- NOTES
- 1 SEPARATOR BASIN WITH INTERIOR/EXTERIOR EPOXY FINISH
 - 2 GASTITE REMOVABLE STEEL ACCESS COVER w/ NEOPRENE GASKET, SECURED w/ SS BOLTS AND QUICKTEE HANDLER
 - 3 2" 3000# NPT STEEL FULL CPLG
 - 4 DIFFERENTIAL PRESSURE GAUGE AND SENSOR
 - 5 POLYMER INFUSED BAG FILTER TO SEPARATE OIL & SOLIDS
 - 6 ADJUSTABLE STEEL STAND
 - 7 GAUGE - 1/2" 3000# NPT STEEL HALF CPLG
 - 8 VENT - 1/2" 3000# NPT STEEL HALF CPLG
 - 9 DRAIN - 3/4" 3000# NPT STEEL HALF CPLG
 - 10 PIPING BY OTHERS
 - 11 VENT - 3/4" 3000# NPT STEEL HALF CPLG



4 PUMP CURVE NOT TO SCALE



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PARK USA
A Northwest Pipe Company

ELEVATOR SUMP SYSTEM - ONE (1) HOISTWAY
REDUCED FOOTPRINT MODEL ELVX

PM	PC	DRN	ENG	DWG. NO.	REV.
.	.	.	.	ELVX-1H-DD-WA	A
DATE	8/24				

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