

PACKAGE SEWAGE LIFT STATION - SAM'S CLUB SEWAGE - #SC6463

SCOPE OF SUPPLY:

Furnish and install complete pre-packaged duplex sewage Lift Station model #PSI-SAM21219 as manufactured by Pacific Southwest Industries (national phone # 800-358-9095)

The pre-packaged Lift Station, in its entirety, is to be non-corrosive and shall incorporate a quick removal system manufactured by the pump manufacturer. The pump(s) shall be guided to the discharge base elbow by stainless steel guide rails. The rails shall extend from the discharge base elbow to the upper guide bracket mounted on fiberglass channel just below the basin cover. Stainless steel lifting chain or cable shall be supplied and properly installed to remove the pump from the wet well. The internal discharge piping shall be completely pre-plumbed in PVC pipe and extend 12" beyond the wet well side wall for contractor connection to the force main piping. The pump(s) discharge pipe shall have a check and ball valve installed on each discharge line. The Lift Station shall include three liquid level controls on a removable float tree and a control panel suitable for surface mounting. The pump(s), quick removal system and the level sensors shall be housed in a fiberglass wet well (basin) and shall be of sufficient length to maintain the rim of the wet well at grade.

PUMPS:
Furnish and install Liberty, Grinder Model LSG202M submersible pump(s). Each unit shall be capable of delivering 50 GPM at 20 Feet TDH. The submersible pump shall be capable of handling residential and commercial sewage and grinding it to a fine slurry, enabling it to be pumped over long distances in pipelines as small as 1.25" in diameter. The LSG series single stage submersible pump shall have a shut-off head of 110 feet and a maximum flow of 50 GPM at 10 feet of total dynamic head. The pump(s) shall be designed so that the shaft power required (BHP) shall not exceed the motor rated output throughout the entire operating range of the pump performance curve. A two year warranty "out of the box" shall be standard.

MATERIALS OF CONSTRUCTION:
Each centrifugal grinder pump shall be equal to the certified series LSG Grinder pumps as manufactured by Liberty Pumps, Bergen NY. The castings shall be constructed of class 25 cast iron. The motor housing shall be oil filled to dissipate heat. Air filled motors shall not be considered equal since they do not properly dissipate heat from the motor. All mating parts shall be machined and sealed with a Buna-N o-ring. All fasteners exposed to the liquid shall be stainless steel. The motor shall be protected on the top side with sealed cord entry plate assembly, with molded pins to conduct electricity eliminating the ability of water to enter internally through the cord. The motor shall be protected on the lower side with a dual seal arrangement. The first seal is a double lip seal molded in elastomeric rubber. The second / main seal shall be a unitized hard face silicon carbide seal with stainless steel housings and springs. The upper and lower bearing shall be capable of handling all radial thrust loads. The lower bearing shall have the additional ability to handle the downward axial thrust produced by the impeller and cutters by design of angular contact roller races. The pump housing shall be of the concentric design thereby equalizing the pressure forces inside the housing which will extend the service life of the seals and bearings. Additionally there shall be no cutwater in the housing volute in order to discourage the entrapment of flowing debris. The pump shall be furnished with stainless steel handle having a nitrile grip.

ELECTRICAL POWER CORD:
The submersible pump shall be supplied with 25 feet of multi-conductor power cord (35 feet for LSG202M-C and LSGX202M-C external capacitor models). It shall be cord type SJOOOW (1 phase) or SEOOOW (external capacitor models), capable of continued exposure to the pumped liquid. The power cord shall be sized for the rated full load amps of the pump in accordance with the National Electric Code. The power cable shall not enter the motor housing directly but will conduct electricity to the motor by means of a water tight compression fitting cord plate assembly, with molded pins to conduct electricity. This will eliminate the ability of water to enter internally through the cord, by means of a damaged or wicking cord.

MOTOR(S):
All motors shall be oil filled, class B insulated NEMA B design, rated for continuous duty. Since air filled motors are not capable of dissipating heat they shall not be considered equal. Single phase pump motors shall be capacitor start / capacitor run and have an integral thermal overload switch in the windings for protecting the motor. Three phase motors shall be used with an appropriate controller with integral overload protection. On all single phase models (excluding LSG202M-C and LSGX202M-C).

BEARING AND SHAFT:
An upper radial and lower thrust bearing shall be required. The upper bearing shall be a single ball / race type bearing. The lower bearing shall be an angular contact heavy duty ball / race type bearing, designed to handle axial grinder pump thrust loads. Both bearings shall be permanently lubricated by the oil, which fills the motor housing. This bearing system shall be designed to enable proper cutter alignment from shut off head to maximum load at 10" of TDH. The motor shaft shall be made of 300 or 400 series stainless steel and have a minimum diameter of .670".

SEALS:
The pump shall have a dual seal arrangement consisting of a lower and upper seal to protect the motor from the pumping liquid. The lower seal shall be an elastomeric rubber molded double lip seal, designed to exclude foreign material away from the main upper seal. The upper seal shall be a unitized silicon carbide hard face seal with stainless steel housings and spring equal to Crane Type T-6a. The motor plate / housing interface shall be sealed with a Buna-N o-ring.

IMPELLER:
The impeller shall be an investment cast stainless steel impeller, with pump out vanes on the back shroud to keep debris away from the seal area. It shall be keyed and bolted to the motor shaft.

CUTTER MECHANISM:
The cutter and plate shall consist of 440 stainless steel with a Rockwell C hardness of 55-60. The stationary cutter plate shall have specially designed orifices through it, which enable the slurry to flow through the pump housing at an equalized pressure and velocity. The stationary cutter shall consist of V shapes to maximize cutting action and arc shape exclusion slots to outwardly eject debris from under the rotary cutter. The rotary cutter shall have (4) blades and be designed with a recessed area behind the cutting edge to prevent the accumulation and binding of any material between rotary cutter and the stationary cutter. The cutting system must incorporate close tolerances for optimum performance. Ring or radial cutters, or those that grind on the outside circumference of shall not be considered equal.

QUICK REMOVAL SYSTEM:
The pumping unit(s) shall be equipped with quick removal system (QRS). The construction shall be such that the pump(s) will automatically connect to the discharge piping when lowered into place on the discharge connector. There shall be no need for personnel to enter the wet well to accomplish installation or removal of the pump(s). The pumping unit(s) shall be fitted with stainless steel lifting chain(s) of sufficient length and strength to permit the raising and lowering of the unit(s). The chain(s) shall be fastened at the top of the structure near the access opening. All parts of the QRS system including base elbow, sliding guide bracket, and guide support shall be manufactured from recyclable, application appropriate resins. The need for a protective coating shall not be required.

A sliding guide bracket shall be an integral part of the pumping unit and the pump casing shall have a machined connection with a bracket to connect with the discharge connection

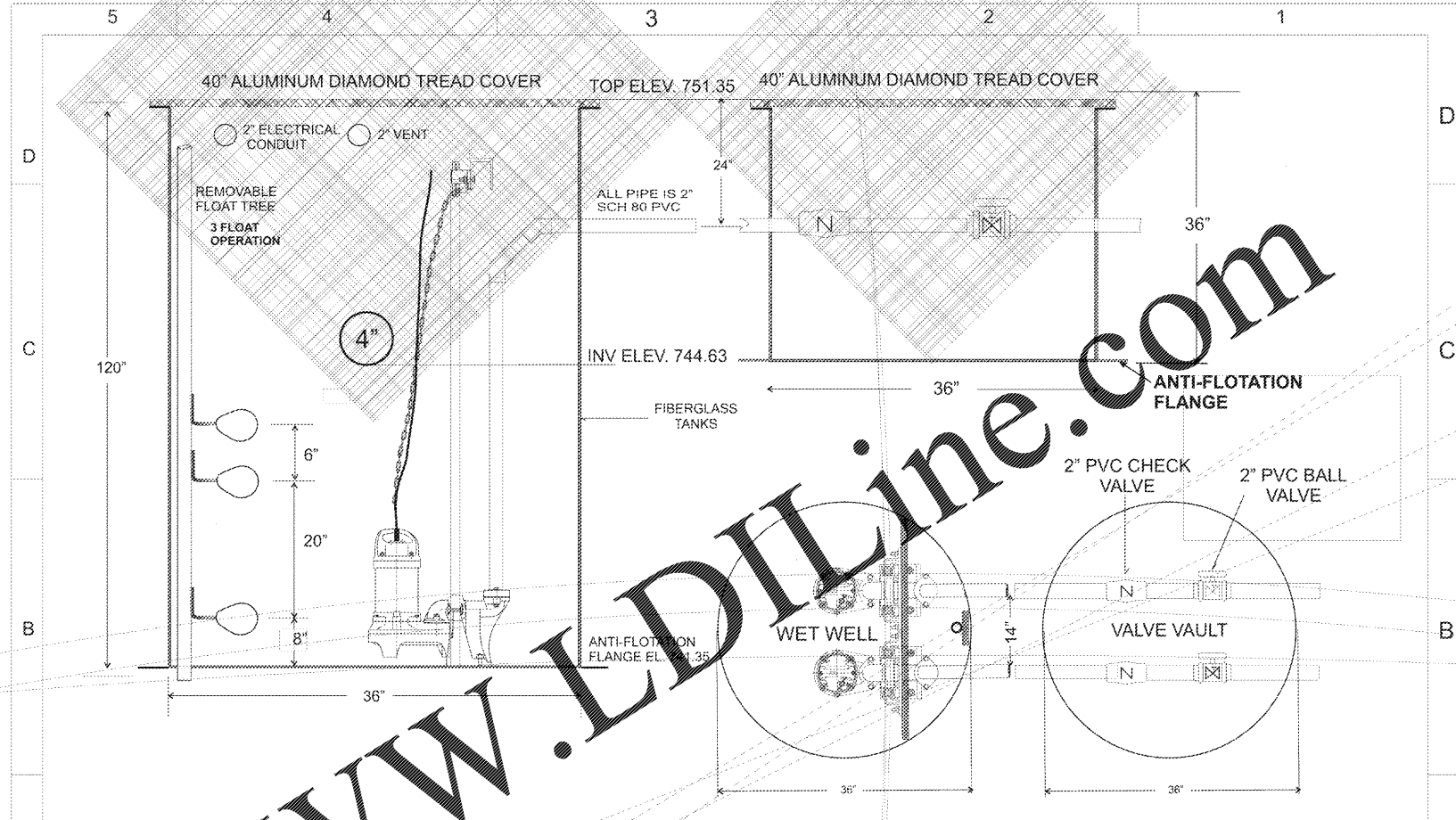
Sealing of the pumping unit to the discharge connection shall be accomplished by a single linear downward motion of the pump with the entire weight of the pumping unit guided by a pawl, thereby wedging the pumping unit tightly against the discharge connector. No portion of the pump shall bear directly on the floor of the sump nor shall a rotary motion of the pump be required for sealing. All fasteners coming into contact with the pumpage shall be stainless steel.

Two corrosion resistant guide pipes shall be furnished and installed for each pump to permit raising and lowering of the pump. Guide pipes shall be 1.25" inch (33 mm) in diameter and shall be of adequate length to extend from the lower guide holder to the upper guide bar bracket(s) mounted on the access frame.

CONTROL PANEL:
The control panel shall have a NEMA 4X semi dead front enclosure suitable for wall mounting. The outer face of the door shall have only the following: 1 high water alarm light with silence switch, 1 buzzer. The inner workings of the control panel shall have no less than motor circuit protectors (overloads) that shall be adjustable, motor contactors, HOA selector switch, circuit breakers, alternating relay with load selector, dry contacts, numbered terminal switch, and shall be listed by U.L. 508. The control panel will have an alternating sequence of operation; an alarm will sound if there should be a failure of a pump in the lead position. Total connected amps will be 32. Amps on a 230 volt circuit.

FIBERGLASS WET WELL AND VALVE VAULT:
The fiberglass wet well with an anti-floatation flange shall have a minimum inside diameter of 36 inches and shall be 120 inches in length. The fiberglass wet well shall be manufactured using a process that insures that the bottom of the basin will be fabricated at the same time as the sidewalls, eliminating the possibility of any joints or seams in the wet well. The area of greatest stress concentration. The laminate shall have a barcol hardness of at least 90% of the resin manufacturer's minimum specified thickness for cured resin on the interior and exterior surfaces. The minimum wall thickness of the wet well shall not be less than 3/16". Stainless steel studs will be bonded into the bottom of the tank for attachment of the quick removal systems. The top rim flange will be no less than 2" wider than the I.D. of the wet well (40" O.D.). The wet well shall be provided with "seal" fittings that can be installed in the field to insure proper elevation of the inlet, vent, and electrical on the side of the wet well. The valve vault shall be 36 inches in diameter and 36 inches in length.

ALUMINUM DIAMOND TREAD FOOT TRAFFIC COVERS:
The wet well will be covered with a solid 1/4" thick aluminum diamond tread cover suitable for load up to 300 psf. The cover will be rigid with no penetrations through it. The cover will be gasketed and bolted to the rim flange of the fiberglass tank using 7/16" stainless steel hex head bolts. No covering epoxy paint will be acceptable.



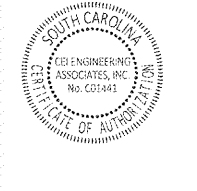
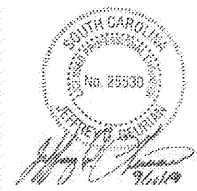
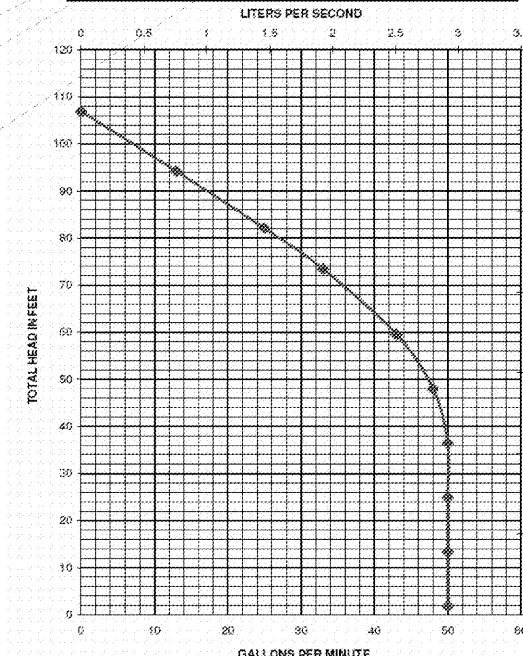
REV	BY	DESCRIPTION
A	SR	FIRST ISSUE

PUMP MODEL: LSG202M-2
2 HP 230V 1 PH FLA 12 AMP
50 GPM AT 20 FT TDH

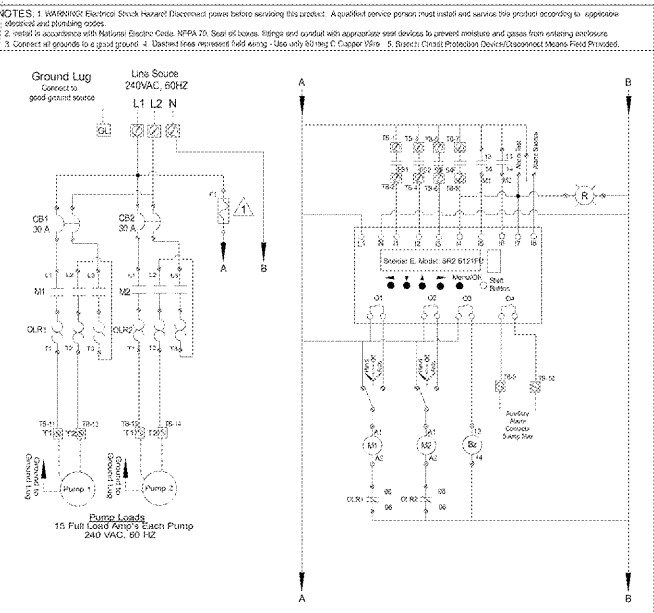
PSI pacific southwest industries
ENGINEERED - PUMPS/FLUID HANDLING & DISPOSAL SYSTEMS
TOLL FREE 800-258-9095

SCALE	DRAWN BY	DATE	PROJECT	DRAWING NO.	REV
NTS	OR	8/14/19	SAMS CLUB SEWAGE PUMP	SAM21219	A

Submersible Grinder Pump LSG200-SERIES, Omnivore™

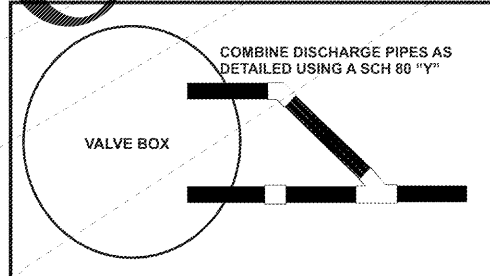


NO.	DESCRIPTION	DATE
1	REVISION	



PANEL ENCLOSURE DIMENSION 14 IN WIDTH X 16 IN LENGTH X 8 IN. DEPTH
TOTAL CONNECTED AMP DRAW FOR DUPLEX SYSTEM 32 AMPS.

Order Plans @



SEWAGE PUMP SYSTEMS DETAILS

PSI pacific southwest industries
ENGINEERED - PUMPS/FLUID HANDLING & DISPOSAL SYSTEMS
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LIFT STATION DETAILS
SAM'S CLUB SEWAGE
ANDERSON, SC

Date: 08/14/19
Drawn by: OR
Checked by: SR

Scale: NTS
Sheet No. 1 OF 1

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