

# TRIPLE "D"

Pump Company, Inc.  
254-772-7623



Water & Sewage Pumps  
Complete Systems  
Sales & Service

301 Cotton, Waco 76712  
Fax 254-772-2924

October 2, 2013

## QUOTATION

Reese & Associates, Inc.  
920 Chambers, St. 14  
Ogden, Utah 84403  
Attn: John P. Reese, V.P.

Re: Huntsville, Utah 84317  
Email: jreeve@reeve-assoc.com

### EDGEWATER BEACH RESORT PACKAGED DUPLEX LIFT STATION

Rated Capacity: 120 GPM  
Rated Head: 124 Ft.  
Electrical Service: 208 Volt, 1PH  
Wet Well Size: 5' Dia. X 14' Deep FRP Basin

- 118/3
- 2 GRP79/1, 13 HP, Submersible Grinder Pumps, 30' Power Cord, HOMA
  - 2 2" Flg. Auto Couplings
  - 2 UGBB, #8732305, T-304
  - 2 3/16" Lifting Chains, SST
  - 4 1 1/2" Dia. X 14' Guide Rails, SST T-304
  - 1 Duplex Control Panel, Complete W/ Red High Level Alarm Light & Horn, Seal Fail Panel Lights, Alternator, NEMA 3R Enclosure
  - 4 GSE30NO Float Controls, 30'
  - 1 Float Control Bracket, SST T-304
  - 1 CZQ Aluminum Access Door, 300 Lb. Load Rating
  - 1 5' Dia. X 14' Deep FRP Basin W/ Attached Valve Box
  - A/R 3" PVC, Sch 80 Pipe & Fittings
  - 2 3" Flg. Check Valve
  - 2 3" Flg. Gate Valve
  - 1 3" PVC, Sch 80 Vent
  - 1 8" Inlet Gasket, "Field Installed"
  - 1 Item of Factory Assembly
  - 1 Item of Freight and Delivery

LOT NET F.O.B. JOBSITE \$34,796.00

Delivery 6 – 8 Weeks

Respectfully,

David C. Miller

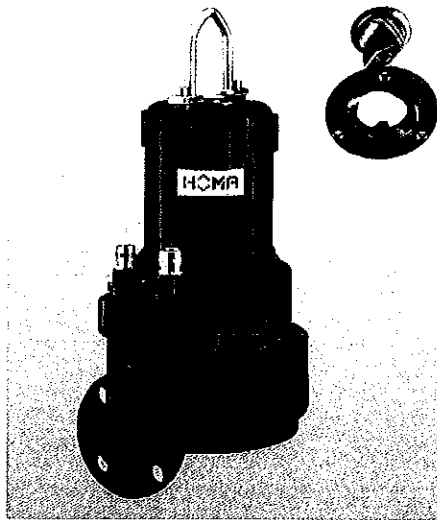
jobs/2013 quotations/reese

**RECEIVED**

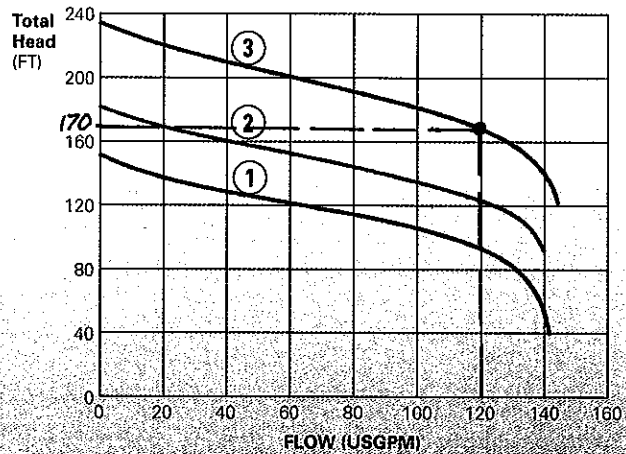
By Michael Tuttle at 8:32 am, Oct 23, 2013

## Electric Submersible Wastewater Pumps with Cutter System 2" Discharge

### Barracuda GRP 59-118



Performance



#### Application

HOMA Barracuda GRP Grinder Pumps are designed for high-head pumping applications of waste water and sewage. Their hard stainless steel cutter system grinds all soft solids to small pieces, enabling the pumps to provide high pressure pumping at low motor rating. It also allows the use of cost saving small diameter pipework.

The Barracuda GRP 59 – GRP 118 series pumps are typically used in:

- Commercial wastewater and sewage
- Small municipal collection systems
- Waste treatment plants
- Industrial wastewater
- Effluent distribution systems
- Agricultural wastewater
- Processing plants
- Optional Factory Mutual (FM) label for Class I, Div 1 EX construction.

#### Features

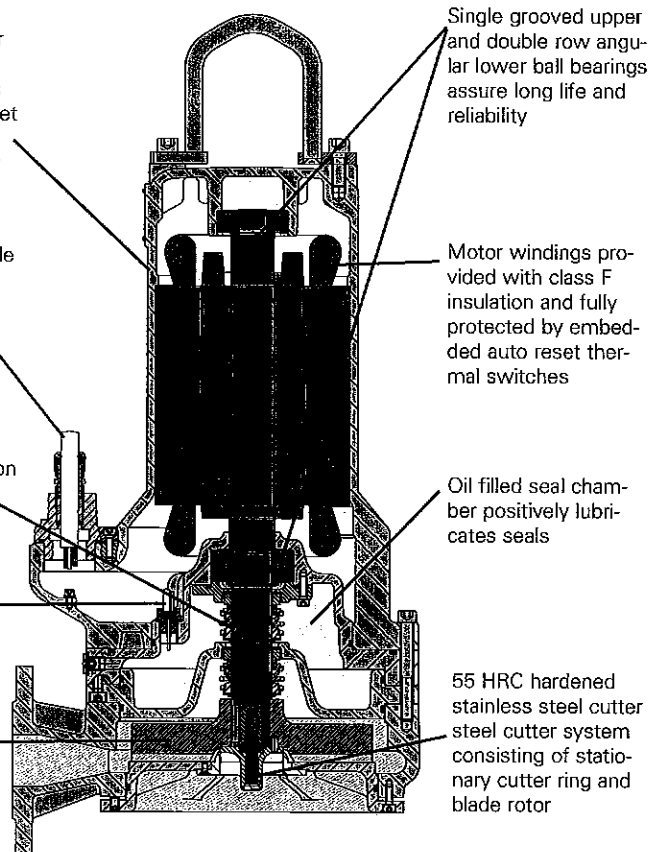
Cast iron construction with epoxy coating for maximum corrosion resistance. All models are available with jacket cooling for dry well installation or not fully submerged operation

Extra Long Replaceable power cable of 33' length is retained and sealed with a strain relief gland

Combination of two mechanical seals (Silicon Carbide / Silicon Carbide)

Seal leakage probe in motorhousing and oil chamber

Open multi-channel impeller for smooth vibration free operation



## Motor Construction

Motor Type:  
enclosed submersible

NEMA insulation code:  
class J

Service Factor:  
1.15

NEMA Design Type:  
B

Standard Cable Length:  
33 ft

Available Motor Voltages:

1 Phase: 200V, 230 V

3 Phase: 200 V, 230 V, 380 V,  
460 V, 575 V

Optional Expulsion Proof  
construction:

Factory Mutual approved for Class I,  
Div. 1, Group C & D.

## Materials

Motor housing, Volute and Impeller:  
Cast Iron ASTM A 48, class 40B

Mechanical seal – Impeller side:  
Silicon Carbide vs Silicon Carbide

Shaft seal – Motor side:  
Silicon Carbide vs Silicon Carbide

O-Rings  
Nitrile rubber

Upper bearing:  
Single grooved Ball Bearing

Lower bearing:  
Double angular Ball Bearing

Power cable sheathing:  
Nitrile rubber

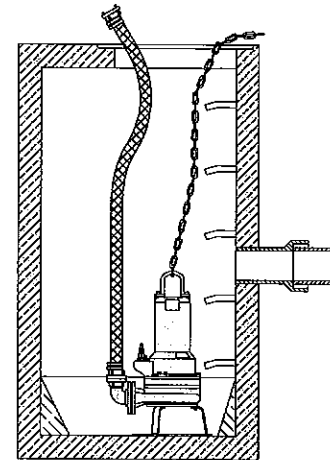
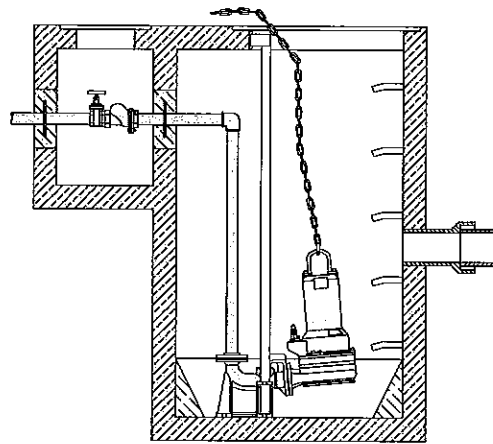
Shaft:  
AISI 430 F

Fasteners:  
AISI 304 SS

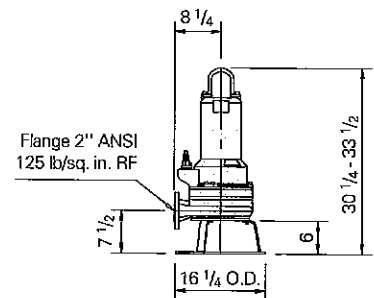
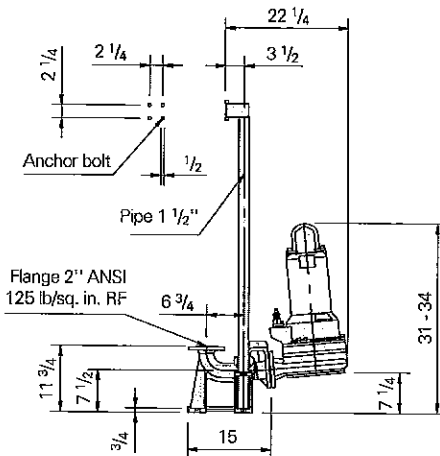
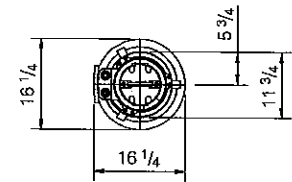
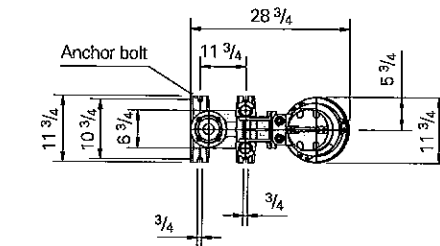
## Installations

Wet pit with autocoupling

Basestand



## Dimensions (inches) (Tolerance +/- 1/4")



## Technical Data

Curve No.	Pump Type	Rated B.H.P.	Phase	Voltage (V)	Full Load Amps	Speed (rpm)	Weight (LBS)	NEMA code
1	GRP59(U)/1	10.3	1	230	37.0	3450	238	F
2	GRP79(U)/1	12.6	1	230	44.8	3450	238	F
3	GRP118(U)/1	14.8	1	230	52.3	3450	238	F
1	GRP59(U)/3	8.9	3	230/380/460	22.0/13.3/11.0	3450	238	G
2	GRP79(U)/3	8.9	3	230/380/460	22.0/13.3/11.0	3450	238	G
3	GRP118(U)/3	13.1	3	230/380/460	31.0/18.8/15.5	3450	238	J



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## ***Municipal Installations***

### **GRP Series Pumps**

HOMA Pump Technology Incorporated (referred to hereafter as the Company) warrants its GRP Series pumps to be free from defects in workmanship and materials for the period of one year from date of shipment to end customer, when used in a Sewage Lift Station for intermittent duty cycle (less than 50% duty cycle) pumping raw sewage or municipal waste water of a non-corrosive, non-abrasive nature.

Obligation of this warranty shall be to replace defective part with a new or remanufactured part, FOB: Factory, upon payment of the indicated percentage of the list price of any part in effect at time of claim.

Time in field shall be determined from shipment date to date warranty claim is registered with Company.

This warranty excludes failures caused by improper mechanical or electrical installation, defects in power supply or electrical protection, abrasive wear or improper maintenance or service activities. There must be no splice in the electrical cable within the wet well and pump thermal overload protection must be properly wired into control panel.

The Company's sole obligation under this warranty shall be to make repairs and/or replace parts when necessary on products that have been returned and found to be defective by the Company. The Company shall not be liable for any special, indirect, or consequential damages of any kind. Major components not manufactured by the Company are covered by the original manufacturer's warranty in lieu of this warranty.

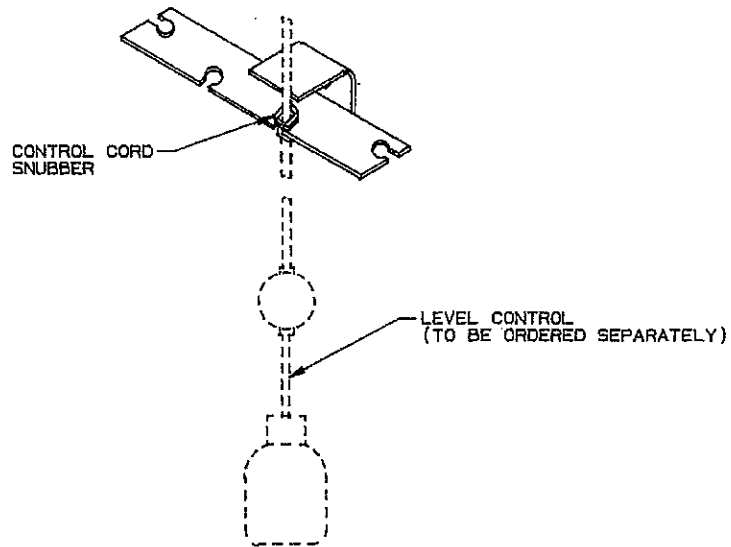
***The Company will not be held responsible for travel expenses, rented equipment, outside contractors fees, or unauthorized repair expenses.***

The company neither assumes nor authorizes any person or other company to assume for it, any other obligation in connection with the sale of its equipment. Any enlargement or modification of this Warranty by a Representative, Distributor or other Sales Agent is expressly forbidden by the company. This warranty shall extend only to the original Owner and shall not apply to any products that have been repaired or altered without the Company's consent or have been subject to misuse, accident or neglect.

**NO OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WILL APPLY.**

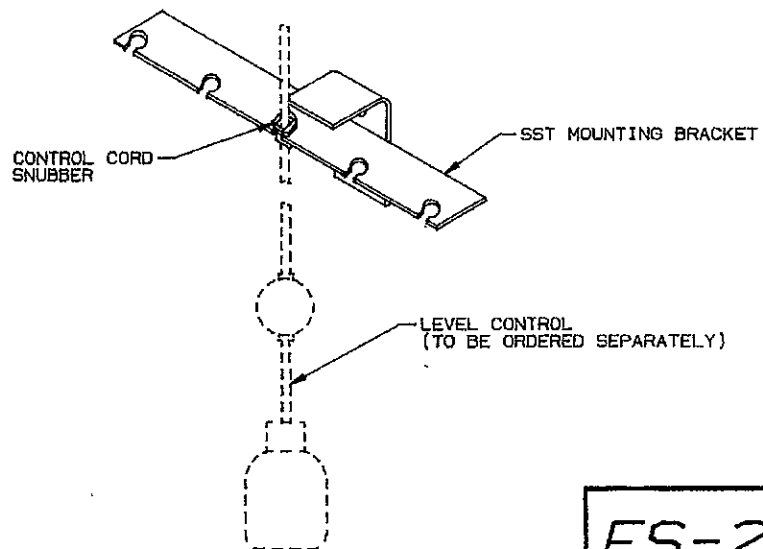
# CSB4-SS

FLOAT BRACKET FOR MOUNTING UP  
TO (4) FOUR CONTROLS



# CSB5-SS

FLOAT BRACKET FOR MOUNTING UP  
TO (5) FIVE CONTROLS



ES-2365A

## Available Diameters...

LFM builds fiberglass basins to your specified dimensions with standard diameters from 24 inches through 96 inches. Depths are available from 2 feet through 20 feet. Greater depths can be custom fabricated. Ask your LFM sales representative for details.

## Design...

LFM's fiberglass basins are built with a fiberglass anti-flotation bottom which has a 3 inch wide flange to counteract the effects of flotation after installation. Our basins also have an open top with 3 inch wide mounting flange. The mounting flange provides a surface area to attached a cover to the basin. Upon request we can also manufacture a fiberglass cover for our basins.

## Connections...

LFM can build fiberglass basins to fit your specific requirements complete with pipe stub outs already in place, making installation and assembly easier and less time consuming.

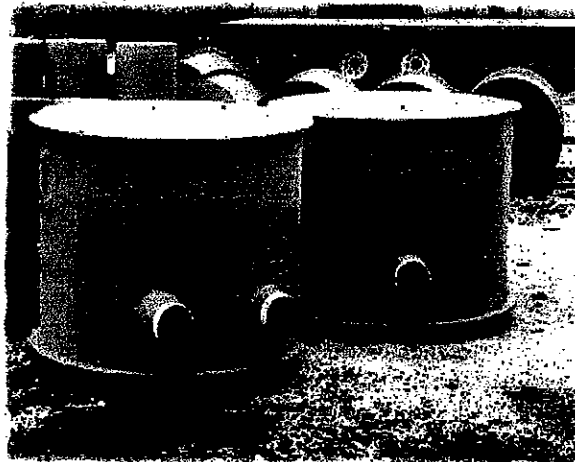
## Quality Assurance...

We stand behind the products that we build. Our fiberglass basins carry a one year limited warranty. For additional information, see the warranty section of our brochure.

## Valve Boxes...

42

LFM offers a fiberglass valve box that can be attached directly to the basin, making a one piece fiberglass unit for lift station packages. This saves time and money during installation. The valve box is 48 inches square and also has an open top with a 3 inch wide mounting flange.



## Pump Mounting Bolts...

LFM can install pump mounting bolt glassed into the bottom of our basins. This allows easier installation of pumps into our basins.

## ASTM Certified...

Our fiberglass basins are built to meet the rigid requirements of ASTM Specification D3753. LFM strives to supply its customers with the highest quality fiberglass basins available on the market today by meeting or exceeding all applicable ASTM requirements.

### Summary of Test Results

Tests Performed	Average Results
Stiffness	5% Deflection @ 2.45 lbs. / in <sup>2</sup> 10% Deflection @ 2.28 lbs. / in <sup>2</sup>
Material Composition	54.25 wt. % Resin
Compressive Strength	Transverse: 22,700 psi Longitudinal: 10,500 psi
Flexural Strength	Transverse: 56,000 psi Longitudinal: 11,700 psi
Modulus	Transverse: 2,084,000 psi Longitudinal: 1,114,000 psi
Load Rating	24,000 lbs. – 0.157" Deflection 40,000 lbs. – No Damage
Barcol Hardness	Cylinder: 43.1 Reducer: 41.0
Wall Thickness	Cylinder: 0.308
Soundness	No Leaks Detected at 5 psi Air Pressure

**LFM**  
FRP SPECIALISTS



**Technical Support & Sales:**

800.237.5791

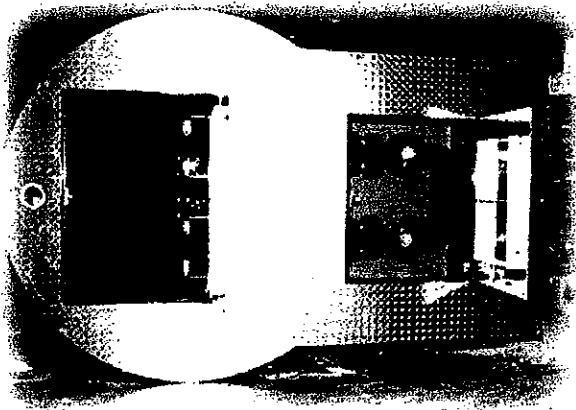
[www.lfm-frp.com](http://www.lfm-frp.com)



## Fiberglass Basins

### Experience...

Let us put our experience to work for you. LFM has been building quality fiberglass reinforced manholes, wetwells and basins since 1982. We utilize the latest in chop and filament winding equipment, therefore providing our customers with the highest quality fiberglass products on the market today. Our production facility is located on 35 acres near Giddings, Texas and covers 83,000 square feet.



### Quality Built Right In...

LFM incorporates a comprehensive in-plant testing program. Our quality control enables us to provide our customers with consistent workmanship in every fiberglass basin that we build. We inspect and test each fiberglass basin before it is released for shipping. Wall thickness reports, raw material analysis and continuous chemical analysis reports are just some of the test procedures that we perform. Testing reports are recorded and maintained at our office, and are available upon request.

### Light-weight...

Fiberglass basins by LFM are light-weight, making them easier to handle. This means easier, safer, faster and less costly installations.

### Corrosion Resistant...

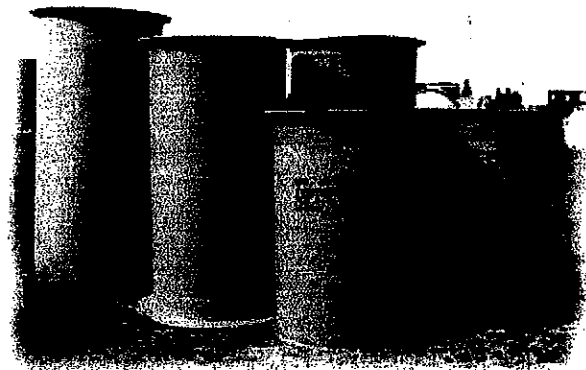
The environment is always a concern when dealing with waste water systems. Fiberglass basins by LFM are environmentally safe. Our basins are corrosion resistant to waste water gases such as hydrogen sulfide.

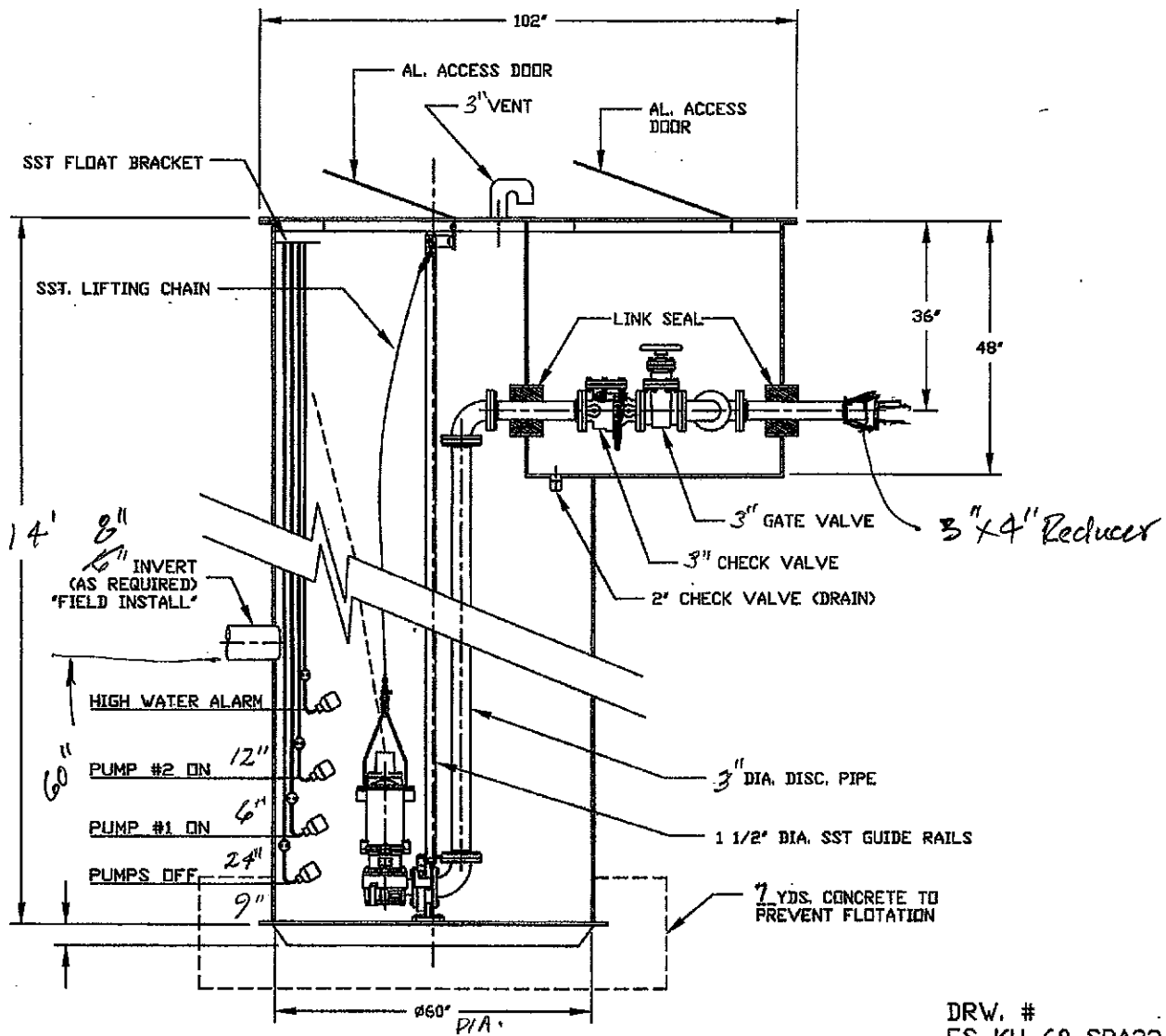
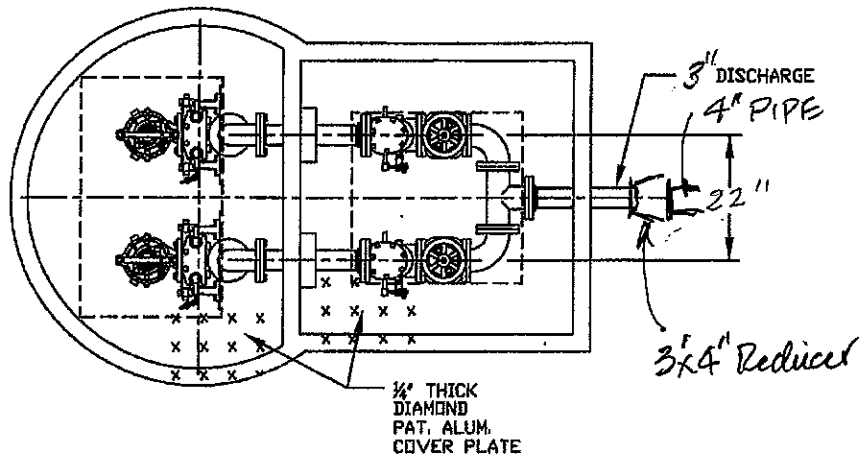
### Economical...

Fiberglass basins by LFM are an economical value. The need to repair or replace is greatly reduced because our fiberglass basins can withstand years of exposure to the most severe conditions within a waste water system. As a result, the cost of repairs, disruptive excavations and maintenance is minimized; saving you money over the long run.

### Professional Delivery...

LFM maintains its own fleet of delivery trucks; helping to lower delivery costs considerably. Our fiberglass basins are light-weight and can be easily loaded and unloaded on construction job sites.





DRW. #  
ES-KH-60-SRA33

FIBERGLASS LIFTSTATION W/ATTACHED VALVE BOX





## Technical Specification

### GRP 59-79-118 Series Grinder Pump Explosion Proof Construction

- **SCOPE**

These specifications cover the design, performance and installation of submersible Grinder pumps intended for wetwell applications. The pump assembly, including the liquid end and motor shall be of the design and production of only one manufacturer, and shall be in full compliance with these specifications.

- **GENERAL CONDITIONS**

Furnish and install Qty \_\_\_ HOMA Model GRP \_\_\_ Electric Submersible Grinder Pump(s), each consisting of a single-stage, non-clog centrifugal pump, with a cutter attachment, close coupled by a common shaft to a squirrel cage, induction type electric motor, assembled in a single body, watertight aggregate, suitable for wet well.

- **PERFORMANCE GUARANTEE**

The pump shall be capable of delivering raw, unscreened sewage at: \_\_\_ GPM at \_\_\_ FT TDH.

- **PUMP DESIGN**

The liquid end shall be a centrifugal pump with a rotating cutter mounted on the shaft immediately adjacent to the impeller. The stationary cutter disk shall be mounted in an axially adjustable bottom plate. A short overhang shaft, shared by the rotating cutter, impeller and motor, will have generous shoulder fillet radii to minimize stress concentration and fatigue. The shaft shall be supported by anti-friction bearings. The lower bearing shall be a double-row, deep groove ball bearing, axially retained to sustain both axial and radial loads. The upper bearing shall be a single-row, deep groove ball bearing, axially floating to sustain radial loads only. The impeller shall be cast in one piece and of the multi-vane, centrifugal (radial) design. Watertight integrity shall be maintained by a Cable Entry Assembly, an isolated Junction Box, Mechanical Shaft Seal and, between major castings, by O-Rings, confined within closely fitted, high surface quality rabbet joints, compressed to the prescribed dimension only by metal-to-metal contact.

- **MATERIALS OF CONSTRUCTION**

Major castings: ASTM A48 Class 40B Cast Iron,- The cutter parts shall be made of Stainless Steel similar to AISI 440C, alloyed with cobalt, vanadium and molybdenum for a hardness of 55 Rockwell C minimum, to provide lasting abrasion resistance.- Shaft: AISI 430F Stainless Steel. - Fasteners: AISI 304 Stainless Steel. - All O-Rings: Nitrile Rubber. - Shaft Seals: Impeller and Motor side; Silicon Carbide/Silicon Carbide. Cable Jacket: Chloroprene Rubber. Exterior Protective Coating: High Build Epoxy.

- **SHAFT**

Pump shaft must have generous shoulder fillet radii to minimize stress concentration and fatigue. Deflection at the Shaft Seal within the operating range shall not be more than 0.002 inch.

- **BEARINGS**

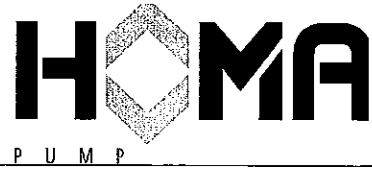
Pump shaft shall be supported by anti-friction bearings, designed for minimum 50,000 hours B-10 Life at the pumps Best Efficiency Point ,and shall be factory pre-lubricated. The lower impeller-side bearing will be a double-row, deep groove ball bearing, axially retained, to sustain both axial and radial loads. The upper motor-end bearing is a single-row, deep groove ball bearing axially floating, to sustain radial loads only.

- **WATERTIGHT INTEGRITY**

The watertight integrity of the single-body pump-motor assembly shall be assured.

Each Cable Entry Assembly shall contain an elastomer grommet, flanked by two washers, closely fitted to the cable O.D. A watertight seal shall be maintained by screwing a threaded cable entry gland into a cable inlet flange which bolts into the motor cap. The cable entry gland threads down to a positive stop, thereby tightly compressing the grommet around the cable. The gland will provide a strain-relieving , anti-kink feature, functioning independently from the separate sealing action. The cable inlet flange shall contain an oring groove on the bottom side of the flange to allow for watertight integrity of the bolt-on cable entry assembly when bolted into the entry holes in the motor cap. For pumps above 10 horsepower an isolated Junction Box containing the Terminal Board, and sealed from the Motor Compartment by a watertight isolation plate, will provide a secondary barrier against water or moisture penetration. Each pump shall be supplied with 30 feet of SO Type power cable.

# Technical Specification



- **SEALS**

Motor Compartment shall be isolated from the Liquid End by Single Mechanical Shaft Seals in tandem arrangement (dual-independent, both oriented to resist pressure from the impeller). The upper motor side seal shall run in an Oil Chamber, which separates the Motor Compartment from the Liquid End and provides permanent lubrication and cooling. The lower impeller side seal will also get lubrication from the Oil Chamber. Each seal will have a stationary portion and a positively driven rotary portion. Springs must be protected from the pumped liquid; and under no circumstances can solid particles accumulate on the external spring and hamper its effectiveness. Seals must not require repeated checking or readjustment, except periodic inspection of the oil chamber. At the interfaces of major castings, sealing shall be accomplished by resilient Buna-N O-Rings, confined within closely fitted, high surface quality rabbet joints, compressed only to the prescribed dimension by metal-to-metal contact, allowing radial movement and preventing permanent set. Flat gaskets and seal rings, which may be squeezed unevenly or beyond the permanent deformation limit, are not allowed.

- **SEAL PROBE**

A two wire conductive seal probe shall be provided with pump. Probe shall be mounted into mechanical seal chamber and when interlocked with control panel, probe shall indicate the presence of contaminants within mechanical seal chamber. Option for external seal probe devices shall be readily available and field retrofittable for all pumps.

- **ELECTRIC MOTOR**

Each pump shall be driven by a Submersible Squirrel Cage Induction Motor in accordance with NEMA MG I Section IV Part 30, rated at \_\_\_\_\_ HP 3450 RPM \_\_\_\_\_ Volts \_\_\_\_ Phase. Motor shall be NEMA Design B for continuous duty, capable of sustaining 15 starts per hour. The pump and motor shall be produced by one manufacturer and shall be of submersible design.

All stator windings and leads shall be insulated with moisture resistant Class H insulation. Upon assembly, the stator shall be heat-shrink fitted into the stator housing; the use of bolts, pins or other fastening devices which would require penetration of the stator housing, shall not be acceptable.

In each phase winding there shall be embedded a temperature sensor, wired in series. Any of these thermal sensors shall cut out electric power if the temperature in its winding exceeds 140°C, but shall automatically reset when the winding temperature returns to normal. The motor shall have a SF (Service Factor) of 1.15 and shall be non-overloading for the selected performance curve. Full load current shall not exceed \_\_\_\_ FLA at \_\_\_\_ Volts.

When the application requires, motor shall be approved for use in Hazardous (Classified) areas. Pumps shall be suitable for operation in Class I, Division 1 Groups C & D Areas only, and shall be approved by Factory Mutual (FM) for use in the area classification indicated.

- **WETWELL AUTOCOUPLING APPLICATION**

An Autocoupling assembly shall be employed to eliminate the need for entering the wet well to service pumps. The system shall allow the lowering of the pump unit(s) into the well along 2 rigid guide pipes, resulting in a self-engaging, firm, leakproof coupling of the volute outlet to a receiving Base anchored to the floor which forms the discharge pipe connection. To assure a leakproof junction between movable and stationary components, a retained resilient seal ring shall be employed which is easily replaceable as part of the pump assembly, is axially and evenly compressed upon contact. O Ring Design Seals or Metal-to-metal contact faces shall not be allowed. Once seated, the pump shall be entirely supported by the Autocoupling Base, without any reliance on additional supports. Autocoupling discharge connection shall be flanged for all Grinder pumps above 5 HP to assure positive, permanent sealing.

- **WETWELL PORTABLE APPLICATION**

The pump unit, without modification to the basic, watertight pump-motor aggregate, shall be suitable for portable use when combined with a ring stand.