PHOTOGRAPHS of the RV PARK SANITARY SEWER WASTEWATER LIFT STATION
PUMPS and CONTROLS REPLACEMENT
PUBLIC WORKS DEPARTMENT, NAS-KINGSVILLE

Photo 1 – View of the RV Park sanitary sewer wastewater lift station that shall have its pumps, floats, control enclosure, and control enclosure's internals removed and provided with new replacements. The lift station is 4 feet in diameter and is 10 feet deep. See the Contract, Contract Attachments and Specifications.

Photo 2 – View of the lift station control enclosure's internal panel and its components.

Photo 3 – View of the lift station control enclosure's internal panel and internal components.

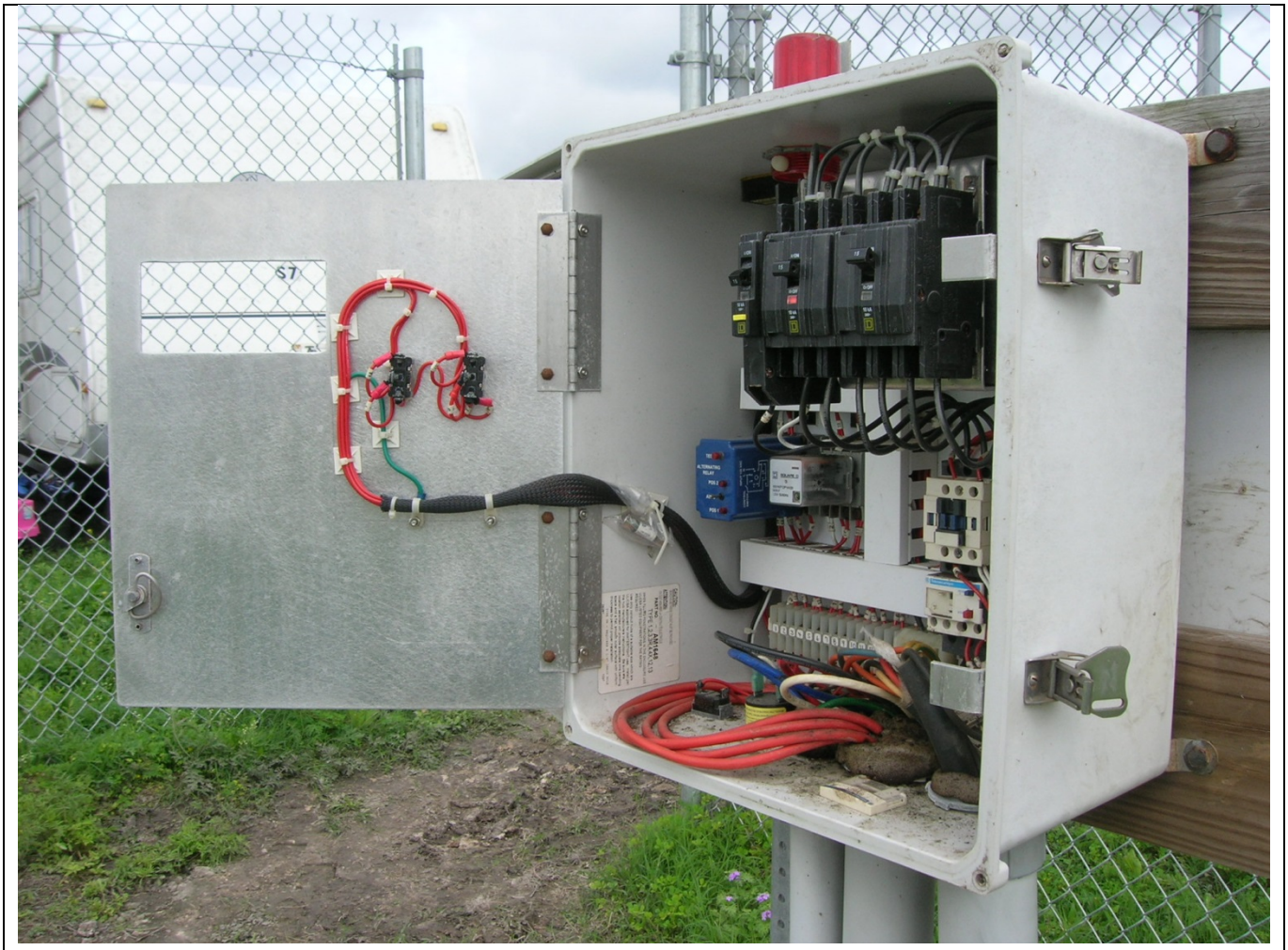

Photo 4 – View of the lift station control enclosure's internal panel and internal componenets. The red alarm light, and stainless steel door twist latches with padlock provision, are also shown.

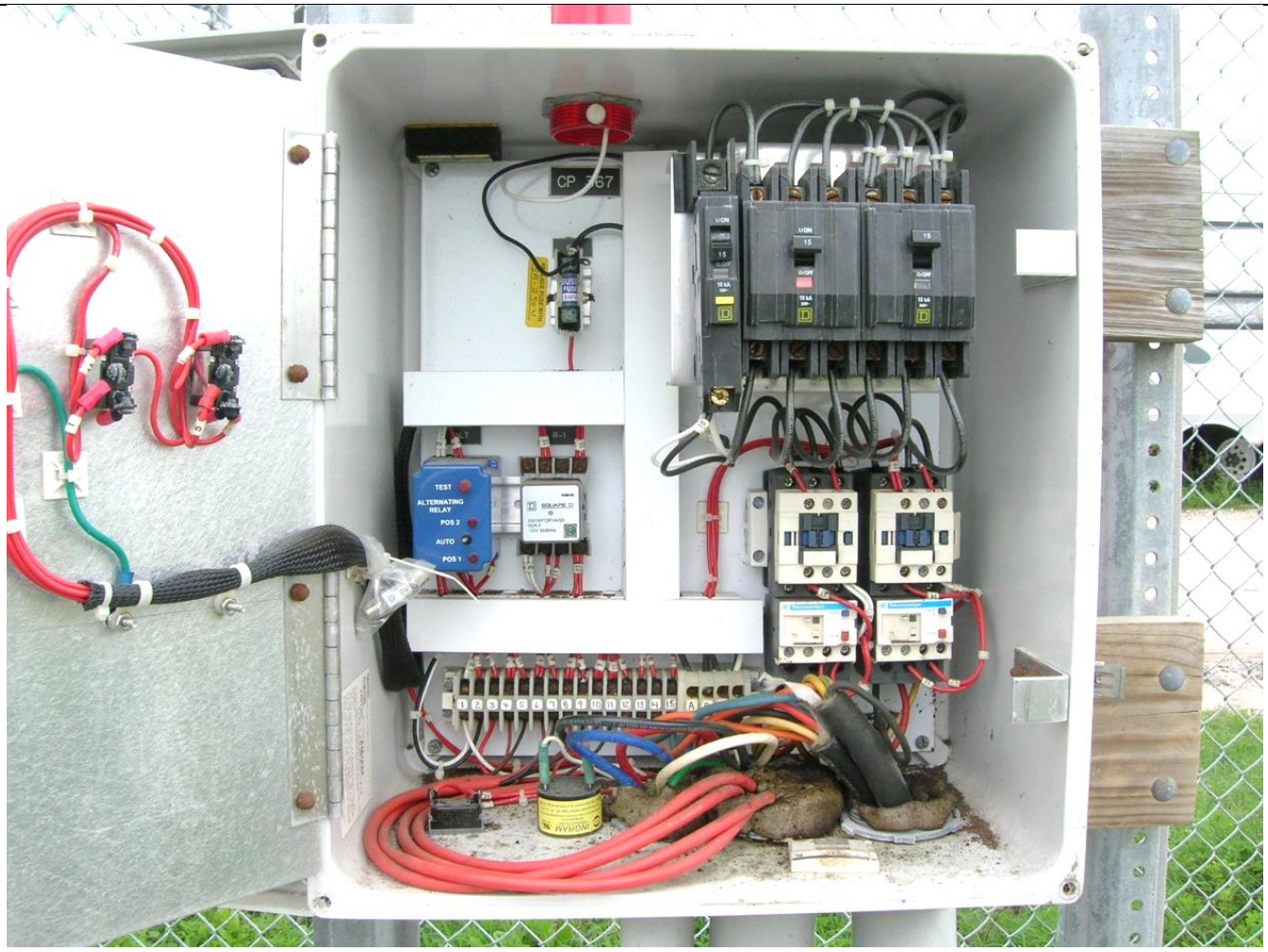

Photo 5 – View of the lift station control enclosure's internal panel and internal components.

Photo 6 – View of the lift station control enclosure's piezo horn audible alarm and its alarm silence.

Photo 7 – Provide circumferential re-sealing of the two (2) sanitary sewer gravity drain lines' penetration into the lift station sump basin. The gravity drain lines penetrate the sump basin at approximately 3 feet and 8 feet from the top of the sump basin. The sump basin has a depth of ten (10) feet. Also, provide all the repairs and replacements necessary for the re-setting of one (1) pump's guide rail system.

NOTE:

See the Contract, Contract Attachments and Specifications.

SPECIFICATION
RV PARK SANITARY SEWER WASTEWATER LIFT STATION
PUMPS and CONTROLS REPLACEMENT
PUBLIC WORKS DEPARTMENT, NAVAL AIR STATION-KINGSVILLE

PART 1 GENERAL

1.01 DESCRIPTION OF SYSTEM

All the equipment specified herein shall be engineered equipment for macerating and pumping all material found in sanitary sewer wastewater lift stations.

1.02 QUALIFICATIONS

A. All of the equipment furnished herein shall be the product of a manufacturer experienced in the design and manufacture of grinder pumps designed for use in sanitary sewer wastewater lift stations.

B. All equipment furnished under this specification shall be new and unused, shall be the standard product of pump manufacturer having a successful record of manufacturing and servicing the equipment and systems specified herein.

C. Any pump manufacturer not specified, but wishing to be pre-approved as an acceptable supplier shall submit drawings and specifications 30 days prior to bid date. All manufacturers must have been in the business of manufacturing grinder pumps for a minimum of ten years. Manufacturer shall demonstrate that the proposed pumping equipment will meet existing system flows and heads required. In addition, pre-submittal shall also demonstrate that the equipment being proposed meets or exceeds all performance and safety requirements, materials of construction and user benefits of the specified equipment. All bids utilizing manufacturers not pre-approved will be considered non-responsive.

1.03 SUBMITTALS

A. Submittals shall include the following:

1. MP3068.170 2.7 HP 230 volt three phase centrifugal grinder pump specification sheet, with motor and performance curve.

2. Grinder pumps' submersible power cables.

3. Stainless steel lifting chain, weighted floats, float bracket, and conduit seal-off fittings.

4. Alarms, power, and controls' wire schematic and spare parts list. Cut sheets for the alarms, power, controls and control enclosure.

5. Start-up Report form.

1.04 OPERATING INSTRUCTIONS

A. Four (4) copies of an operating and maintenance manual for the grinder pump station shall be furnished to the Owner prior to completion. The manuals shall be prepared specifically for this installation and shall include cut sheets, drawings, equipment lists, descriptions, etc. that are required to instruct operating and maintenance personnel familiar and unfamiliar with such equipment.

B. A factory service technician or factory trained service technician, who has complete knowledge of proper operation and maintenance, shall be provided for one (1) day onsite to instruct representatives of the Owner on proper operation and maintenance. If there are difficulties in the operation of the equipment due, for example, to the manufacturer's design or fabrication, additional service shall be provided at no cost to the Owner.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. The pumps and equipment covered by this Section are intended to be of robust designs and proven ability as manufactured by reputable firms having extensive experience in the production of such pumps and equipment. The pumps and equipment furnished shall be designed and constructed in accordance with the best practice and methods.

B. All parts shall be so designed and proportioned as to have liberal strength and stiffness and to be especially adapted for the work to be done.

C. Brass or stainless steel nameplates giving the name of the manufacturer, the rated capacity, head, speed, serial number, model number, horsepower, voltage, amperes and all other pertinent data shall be attached to each pump.

2.02 SUBMERSIBLE GRINDER PUMP LIFT STATION

A. General

The lift station has an existing fiberglass sump basin which is 4 feet in diameter, 10-feet deep and is not requiring replacement. Currently, the lift station pumps are not fitted with a lifting chain.

B. Wiring

1. Pump power and float level control wiring shall be field installed by a certified electrician. All electrical cables penetrating or passing through the conduit flange of the pump station must be water-tight and sealed by the electrician immediately upon installation.

2. The pump power cable shall be connected directly into the NEMA rated control enclosure and spliced connected with the appropriate color coded wire gage for proper terminal strip placement. Control enclosure will be equipped with float cord compression grommets and power cord compression grommets.

C. Liquid Level Detection

1. Level detection for controlling pump and alarm operation shall be accomplished by use of four (4) float switches. Switches utilized in the system shall be hermetically sealed in a submersible watertight protective housing with a weight attachment.

2. The float switch's design shall protect switch from solids, greases, oils, fats and corrosive sewer gases. Float switch shall be high impact, corrosion resistant, polypropylene housing for use in sewage and water up to 140F (60C).

3. The float switch assembly shall be provided with water-resistant cable 100% tested prior to shipment. Float switch shall be guaranteed by the manufacturer to meet UL approval for submersion.

4. The level control shall be suspended by a float bracket and easily adjustable for proper height requirements in the field.

D. Fiberglass Basin

1. Float bracket shall be fabricated from 300 series stainless steel with four (4) compression style cord grips to maintain and secure float level position. It shall be installed with at least 0.375 inches in diameter 300 series stainless steel fasteners. The wet well wall penetrations shall be sealed with silicone sealer.

2.03 PUMPS

A. Design

1. Each grinder pump shall be a heavy duty pump used as a grinder. Each grinder pump shall be capable of reducing all components in normal domestic sewage, including a reasonable amount of "foreign objects", such as paper, wood, plastic, glass, rubber and the like, to finely-divided particles which will pass freely through the passages of the pump and the discharge piping. The stationary cutter and rotary cutter shall consist of hardened stainless steel.

2. The cutter materials shall provide maximum corrosion and abrasion resistance. The remaining portion of the grinder pumps shall be similar to the heavy duty pumps used in larger pump stations for daily operation.

3. The MP3068 Grinder pump shall be automatically and firmly connected to the discharge connection, guided by the two (2) existing guide bars extending from the top of the station to the bottom. No portion of the pump shall bear directly on the sump floor.

4. Each pump shall be equipped with a 2.7HP, submersible electric motor with submersible cable suitable for submersible pump applications. The power cable shall be sized according to National Electric Code (NEC) and Insulated Cable Engineers Association (ICEA) standards and also meet with Mine Safety and Health Administration (P-MSHA) approval.

5. Each pump shall be fitted with a stainless steel lifting chain with safety chain hooks. The working load of the lifting system shall be 50% greater than the pump unit weight.

B. Performance

1. In order to ensure proper operation under all conditions, pump must provide, without overheating in continuous operation, the maximum head condition required by the system. Pump must also be capable of operating at zero or negative heads without damage to the pump.

C. Construction

1. Major pump components shall be of grey cast iron, ASTM A-48, Class 30B, with smooth surfaces devoid of blow holes or other irregularities. All exposed nuts or bolts shall be AISI type 304 stainless steel or brass construction. All metal surfaces coming into contact with the pumpage, other than stainless steel or brass, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate and a polyester resin enamel finish.

2. Motor cooling system is sufficiently cooled by the surrounding environment or pumped media. Water jackets are not required.

D. Cable Entry System

1. The cable entry seal design shall preclude specific torque requirements to insure a watertight and submersible seal. The cable entry shall consist of a single cylindrical elastomer grommet, flanked by washers, all having a close tolerance fit against the cable outside diameter and the entry inside diameter and compressed by the body containing a strain relief function, separate from the function of sealing the cable. The assembly shall provide ease of changing the cable when necessary using the same entry seal. Epoxies, silicones, or other secondary sealing systems make it difficult to replace power cable and shall not be considered acceptable.

E. Electric Submersible Motor

1. The pump motor shall be induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber, NEMA B type. The stator windings and stator leads shall be insulated with moisture resistant Class F insulation rated for 155 C (311 F). The stator shall be dipped and baked three times in Class F varnish and shall be heat-shrink fitted into the stator housing. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is not acceptable.

   The motor shall be designed for continuous duty handling pumped media of 40 C (104 F) and capable of no less than 15 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of cast aluminum. The motor and pump shall be designed and manufactured by the same source.

2. A performance chart shall be provided showing curves for torque, current, power factor, input/output kW and efficiency. This chart shall also include data on starting and no-load characteristics.

3. The power cable shall be sized according to the NEC and ICEA standards and shall be of sufficient length to reach the control box without the need of any splices. The outer jacket of the cable shall be oil resistant chlorinated polyethylene rubber. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet or greater. The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

F. Bearings

1. The pump shaft shall rotate on two bearings. Motor bearings shall be permanently grease lubricated. The upper and lower bearings shall be single row ball bearings. Sleeve bearings do not provide adequate alignment and shall not be acceptable.

G. Mechanical Seal (2x), Pump Shaft, Impeller, Volute, Protection

1. Each grinder pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in a lubricant reservoir that hydro-dynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating, corrosion resistant tungsten carbide ring. The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary ceramic seal ring and one positively driven rotating carbon seal ring. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment nor depend on direction of rotation for sealing.

The position of both mechanical seals shall depend on the shaft. Mounting of the lower mechanical seal on the impeller hub will not be acceptable.

2. The following seal types shall not be considered acceptable or equal to the dual independent seal specified: shaft seals without positively driven rotating members, or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces. No system requiring a pressure differential to offset pressure and to affect sealing shall be used. Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. The motor shall be able to operate dry without damage while pumping under load. Seal lubricant shall be FDA Approved, nontoxic.

3. Pump and motor shaft shall be the same unit. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The shaft shall be ASTM type 431 stainless steel. If a shaft material of lower quality than stainless steel is used, a shaft sleeve of stainless steel is used to protect the shaft material. However, shaft sleeves only protect the shaft around the lower mechanical seal. No protection is provided in the oil housing and above. Therefore, the use of stainless steel sleeves will not be considered equal to stainless steel shafts.

4. The impeller {s} shall be of gray iron, Class 30B, dynamically balanced, single shrouded design having a long throughlet without acute turns.

5. The impellers {s} shall be capable of handling fine slurry from the special cutters. Impeller {s} shall be taper collet fitted and retained with an Allen head bolt. All impellers shall be coated with an acrylic dispersion zinc phosphate primer.

6. Pump volute {s} shall be single-piece grey cast iron, ASTM A48 Class 30B, non-concentric design with smooth passages large enough to pass any media that may enter the impeller. Minimum inlet and discharge size shall be as specified.

2.04 AUTOMATIC CONTROL / ALARM PANEL

A. General

1. The pump controls shall be housed in a NEMA rated enclosure with a red alarm light, Hand-Off-Auto switch and an audible alarm with push to silence switch which shall all be outdoor-rated, weather resistant, weatherproof and rainproof. The enclosure shall be mounted type with exterior mounting tabs and sized to house all the required components and allow adequate space for testing and maintenance as necessary. The enclosure shall have back plate mounting studs, padlocking provisions, door twist latches, continuous hinge and fastening, all of stainless steel.

The panel shall have a formed aluminum switch mounting plate. All control switches shall be mounted on the switch mounting plate.

All conduit entrances shall be made in a NEC approved manner. The conduits to the wet well shall have approved seal-off fittings installed and properly sealed to protect the control panel from adverse damage from the wet well.

All components shall be securely mounted to the back plate with plated machine screws through machine thread tapped holes in the back plate. The screws shall be of adequate size for the device being secured.

B. Power Distribution

1. The panel power distribution shall include all components as indicated below and be completely wired with stranded conductors having a minimum of 90 degree insulation rating and an ampacity rating a minimum of 125% of the motor ampere rating.

   All power wiring shall be neatly routed and totally accessible. All conductor terminations shall be as recommended by the device manufacturer and be secure to provide adequate electrical conductivity.

C. Pump Motor / Control Circuit Breakers and Electrical Components

1. The pump breakers shall be thermal magnetic trip devices and provide for individual motor disconnect and overload / short circuit protection as required by the NEC rating for motor branch circuit protection. The voltage rating shall match that of the panel incoming service. The 120 volt common control circuit shall be protected by a circuit breaker. Breakers shall be Square D type “QOU”.

2. The motor starters shall be full voltage non-reversing I.E.C. rated three (3) pole devices with three (3) pole overload relay protection. They shall provide the electrical start / stop control and running overload protection for each pump and have 120 volt operating coils. Contactors and overloads shall be Square D type “LC1D and “LRD”.

3. “Hand-Off-Auto” switch shall be provided for each motor and mounted on the formed aluminum switch bracket.

4. Alarm light shall be constructed of shatter-resistant lexan. The red light shall be NEMA rated and be supplied with a heavy duty one piece porcelain lamp holder and 15 watt rough service bulb. The red light will be mounted on top of the enclosure. Under high level conditions, the red light shall glow bright and flash, via a solid-state flasher and the electronic piezo horn shall sound. Provide electronic piezo horn. The

light & horn shall go out automatically after water level drops below the high level elevation.

5. Terminal strips shall be provided for all wiring termination. The control panel assembly shall be complete factory tested and shall be "UL" 508A listed and labeled. The control panel described in these specifications shall be manufactured specifically for the grinder pumps.

6. The pump level control shall be weighted non-mercury mechanical float switches. 1st float – Pumps off, 2nd float – Start lead pump, 3rd float – Start lag pump, 4th float – High level alarm.

2.05 SPARE PARTS

A. A complete set of manufacturer's recommended spare parts shall be provided.

B. All spare parts shall be properly protected for long periods of storage and packed in containers which are clearly identified with indelible markings as to the contents.

2.05 CORROSION PROTECTION

A. All materials exposed to wastewater shall have inherent corrosion protection: i.e., coated cast iron, fiberglass, polyethylene, engineered polypropylene copolymer, stainless steel, and bronze, PVC or CPVC.

2.06 SAFETY

A. The grinder pump and control station shall be free from electrical and fire hazards and shall be listed by Underwriters Laboratories.

2.07 PRODUCT HANDLING

A. All parts shall be properly protected so that no damage or deterioration will occur during a prolonged delay from time of shipment.

B. Factory assembled parts and components shall not be dismantled for shipment.

C. Finished surfaces of all exposed pump openings shall be protected.

D. After hydrostatic or other tests have been completed, all trapped water shall be removed prior to shipment and proper care shall be taken to protect parts from the entrance of water during shipment, storage and handling.

E. Each box or package shall be properly marked to show its contents.

2.08 LIMITED WARRANTY

A. A warranty shall be provided on materials and workmanship for a period of twenty-four (24) months after notice of Owner's acceptance. During the warranty period, the Contractor shall un-install and shall return any equipment found defective to the manufacturer. Defective equipment shall be repaired or replaced and shipped back to Owner at no charge. Contractor shall re-install equipment at no charge to Owner.

PART 3 EXECUTION

3.01 FACTORY TESTING

A. Each grinder pump shall be submerged and operated for 5 minutes (minimum). Actual appurtenances and controls which will be installed in the field, shall be 100% factory tested. The pump performance test shall cover three (3) different points of operation on its curve, with the maximum pressure not less than that required by the system.

3.02 INSTALLATION

A. The grinder pump station and related components shall be installed in accordance with the manufacturer's recommendations.

3.03 TRAINING, START UP SERVICES and COMMISSIONING

A. A factory authorized service technician shall conduct operation and maintenance training service on site for the benefit of Owner and operating personnel. Owner to provide building facilities for conducting training service. The grinder pumps and control station exactly as furnished for the project including all appurtenances and product handling, shall be provided and demonstrated. Training time and date will be mutually agreed upon.

B. A factory authorized service technician will perform start up and commissioning on the grinder pump station. The Contractor and Owner shall be present during this start up and commissioning.

END OF SECTION

RV PARK SANITARY SEWER WASTEWATER LIFT STATION
PUMPS and CONTROLS REPLACEMENT
PUBLIC WORKS DEPARTMENT, NAVAL AIR STATION-KINGSVILLE

Existing Grinder Pumps Information Sheets

FLYGT

PERFORMANCE CURVE

PRODUCT	TYPE
MP3068.170	HT

DATE	PROJECT	CURVE NO	ISSUE
2008-11-03	NAS Kingsville RV Park - Package Grinder L/S	63-216-00-0120	9

	1/1-LOAD	3/4-LOAD	1/2-LOAD
POWER FACTOR	0.86	0.81	0.70
EFFICIENCY	77.5 %	80.0 %	80.0 %
MOTOR DATA	---	---	---

RATED POWER	2.7	hp
STARTING CURRENT ...	40	A
RATED CURRENT ...	7.5	A
RATED SPEED	3315	rpm
TOT.MOM.OF INERTIA ...	0.0020	kgm2
NO. OF BLADES	10	

IMPELLER DIAMETER: 130 mm

MOTOR #	STATOR	REV
13-08-2BB	6 Y//	10

FREQ.	PHASES	VOLTAGE	POLES
60 Hz	3	230 V	2

GEARTYPE	RATIO
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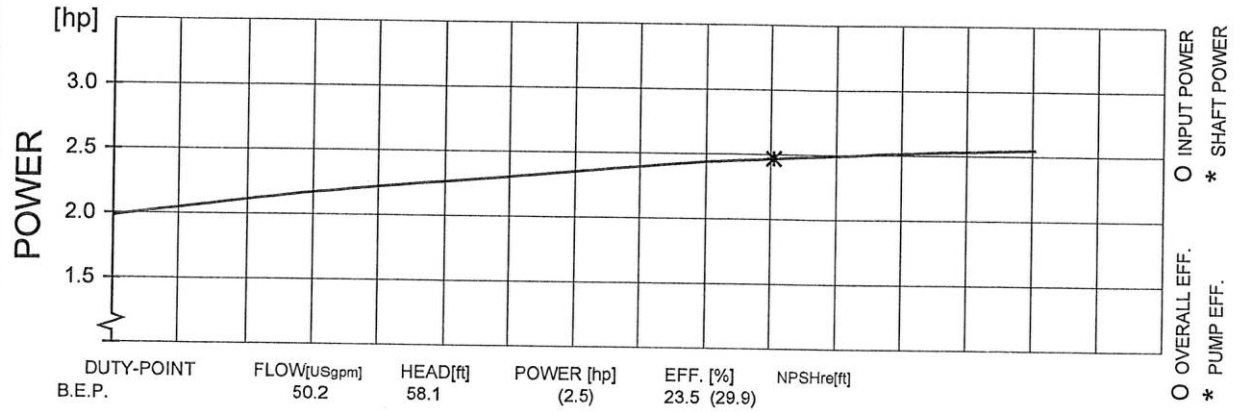
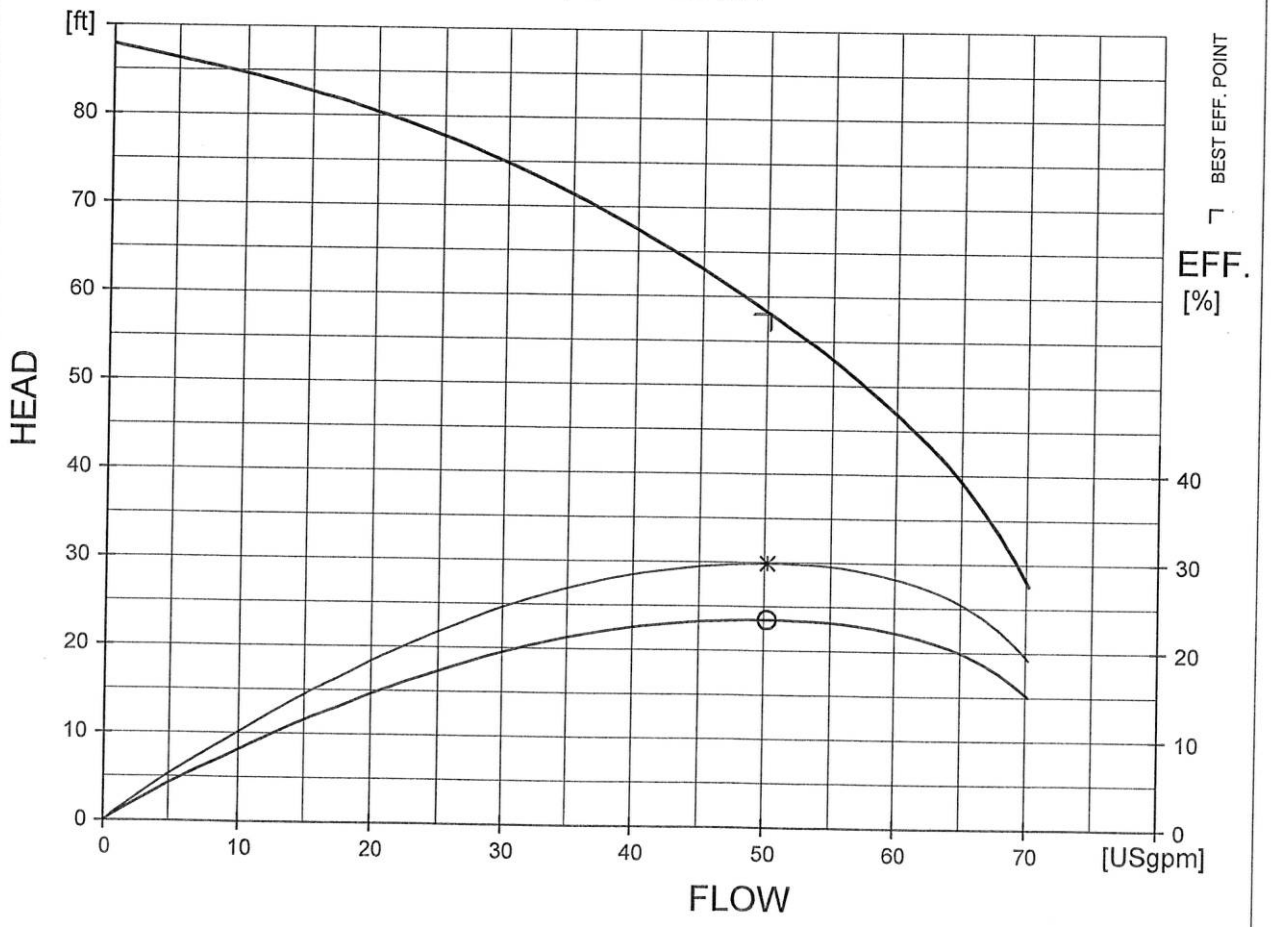
COMMENTS: NEMA Code Letter: G

INLET/OUTLET: - / 1.5 inch

IMP. THROUGHLET: 0.24 inch



DUTY-POINT	FLOW[USgpm]	HEAD[ft]	POWER [hp]	EFF. [%]	NPSHre[ft]
B.E.P.	50.2	58.1	(2.5)	23.5 (29.9)	



FLYPS 3.1.6.3 (20060531)

Performance with clear water and ambient temp 40 °C

FLYGT CURVE

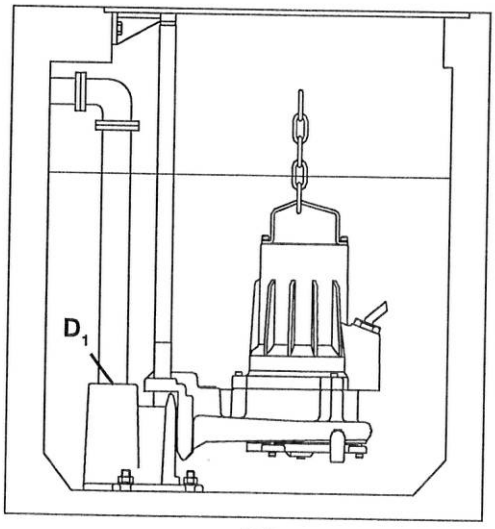
ITT
Water & Wastewater

M-3068

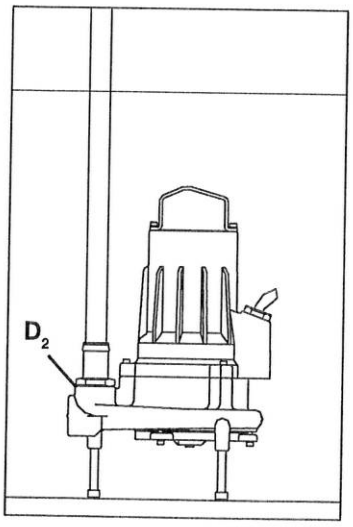
Impeller/Motor/ Nominal Sizes | Issued: 11/04 | Supersedes: 8/04

GRINDER MODEL	IMPELLER CODE	HP RATING MP	HP RATING MF	VAC	D1	D2
M-3068 3Ø	214 HT	3.8	3.8	200 230/460 575	2"	1.5"
	216 HT	2.7	2.7			
~~M-3068 1Ø~~	~~218 HT~~	~~2.3~~	~~2.3~~	~~230~~	~~2"~~	~~1.5"~~

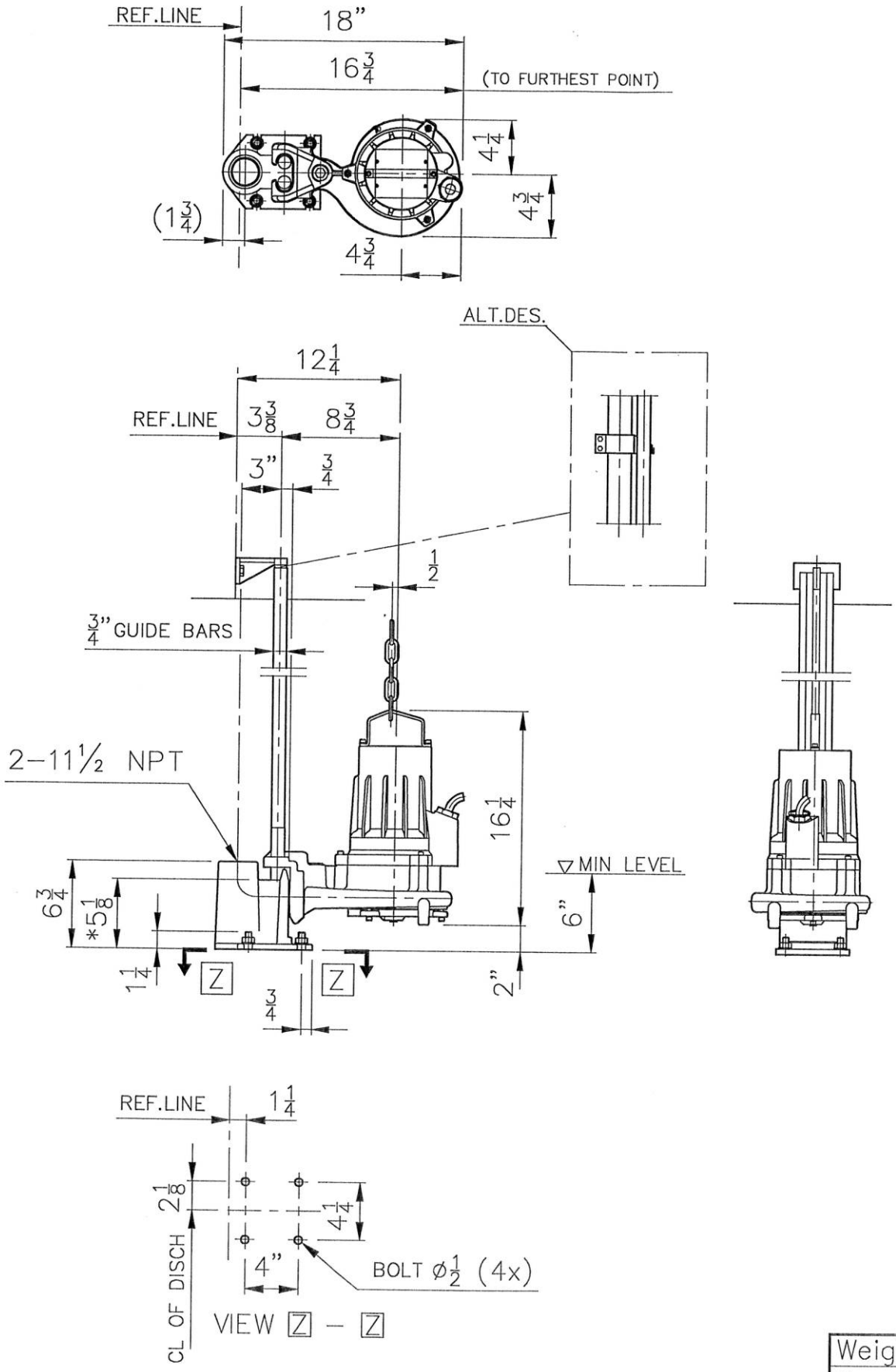
Notice:
For other than domestic grinder pump usage, please consult Flygt Engineering for evaluation of product application.



MP



MF



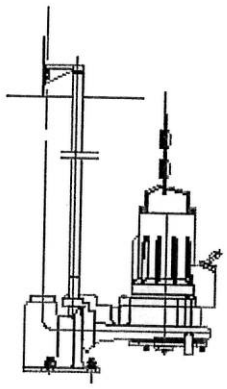
* DIMENSION TO ENDS OF GUIDE BARS

Weight (lbs)	
Pump	Disch
70	20

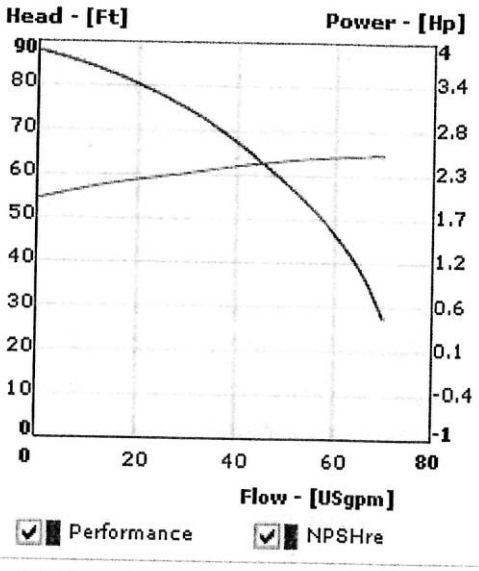
FLYGT AUTOCAD DRAWING	Denomination: Dimensional drwg MP 3068 HT ø2"	Drawn by KA	Checked by RB	Date 070118
		Scale		Reg no 5399
		6455500		1

PRODUCT: MP 3068 HT

Product picture



Curves ⊕ **Enlarge**



Pump Data

Curve id: 63-216-00-0120 Impeller: 216 Poles: 2 - pole Motor: 13-08-2BB Frequency: 60 Hz

Motor Data

Rated output power Hp (kW)	Ø	Nominal voltage (V)	Full load current (A)	Locked rotor current (A)	Locked rotor kVA	Locked rotor code letter kVA/Hp	Poles/rpm
2.7 (2)	3	460	3.7	20	16	G	2/3315
2.7 (2)	3	230	7.5	40	16	G	2/3315

Pump motor Hp	Efficiency			Power factor		
	100% load	75% load	50% load	100% load	75% load	50% load
2.7	77.5	80	80	0.86	0.81	0.7

Cable Data

HP	Cables	Volts	Max. length (Ft)	Cable size/Nominal OD.	Conductors (In one cable)	Type	Part number
2.7	1	230 460	185 760	#14/7 0.75"-(19.0mm)	(3) 14 AWG (PWR) (2) 14 AWG (CTRL) (1) 14 AWG (GND) (1) 14 AWG (GC)	STD	942102

Available Outlet Size

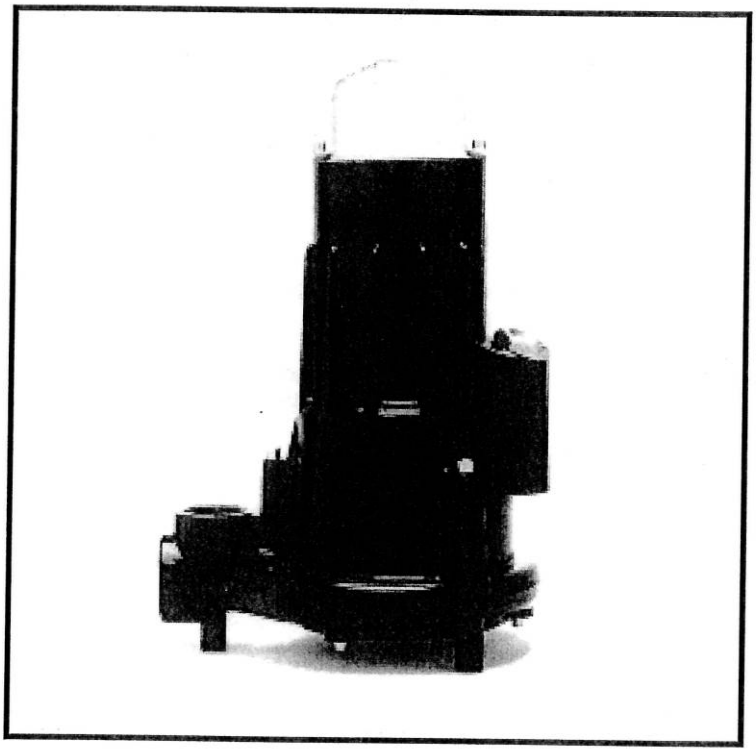
Outlet Drilled Flange	1.5"

ITT

FLYGT SUBMERSIBLE PUMP

PARTS LIST MP 3068 HT

SERIAL NO 3068.170 0930782



ITT FLYGT CORPORATION
35 NUTMEG DRIVE

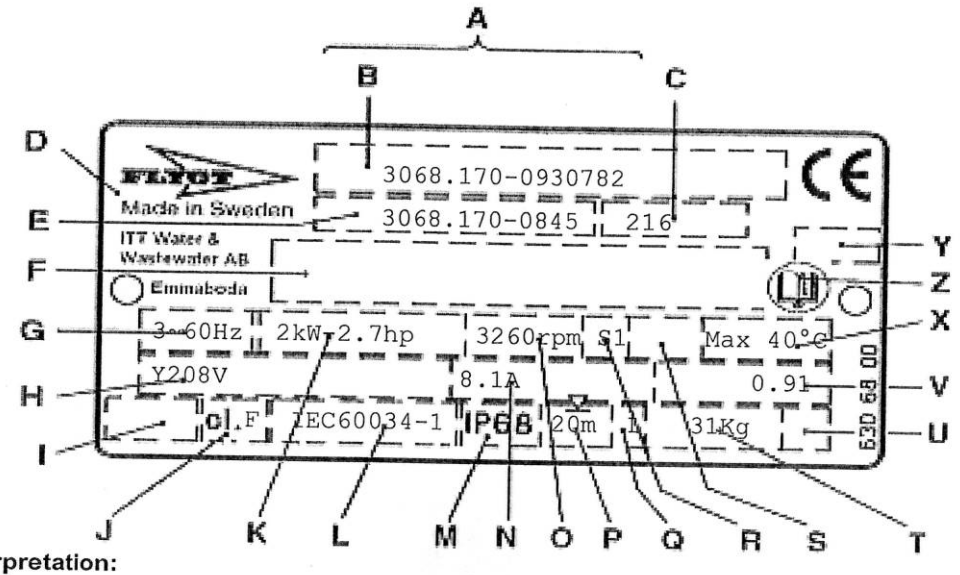
TRUMBULL, CT 06611
USA
TELEPHONE NO: 203-3804700

DATAPLATE

FLYGT MP 3068 HT

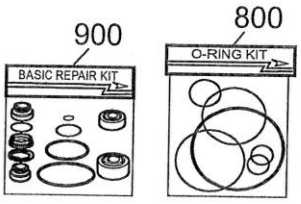
DATE: 2009-05-20

SERIAL NO: 3068.170 0930782



Dataplate interpretation:

- **A** Serial number
- **B** Product code + Number
- **C** Curv code / Propeller code
- **D** Country of origin
- **E** Product number
- **F** Additional information
- **G** Phase; Type of current; Frequency
- **H** Rated voltage
- **I** Thermal protection
- **J** Thermal class
- **K** Rated shaft power
- **L** International standard
- **M** Degree of protection
- **N** Rated current
- **O** Rated speed
- **P** Max. submergence
- **Q** Direction of rotation R=right, L=left
- **R** Duty class
- **S** Duty factor
- **T** Product weight
- **U** Locked rotor code letter
- **V** Power factor
- **X** Max. ambient temperature
- **Y** Notified body
  Only for EN-approved Ex-products
- **Z** Read Installation Manual



(1 kg = 2.2 pound, 1 Lit=0.26 US gallon, 1 l = 0,22 UK gallon)

Recommended spare parts:

See REC. column: **A** = Parts for inspection and maintenance
B = Parts for major overhaul

For service;
To ensure long operating life use Flygt Bearing Grease 90 20 61 (Cartridge).
Lubrication kit 84 15 40 contains two 90 20 61 and one 84 15 30 (Grease gun).

The O-ring kit contains a full set of O-rings. Position no 800.

The Basic Repair kits contain both inner and outer Mechanical seals, bearings and a O-ring kit. Position no 900.

A complete set of tools can be ordered for repair and maintenance work, i.e. standard hand tools and special tools for seal change and hydraulic-end use.
Order:
This partlist can be used as an order form by marking out the number of parts in the Qty/Order column.
Please send or fax the form to your Flygt representative.

PARTS LIST

FLYGT MP 3068 HT

SERIAL NO 3068.170 0930782

Item no	Partno	Rec	Denomination	Qty/ord.
1	555 61 01		Lifting handle V2A	1
2	82 00 13	B	Hex.socket hd screw M6X16-A2-70	8
3	630 68 00		Data plate USE 6306801 AS SPARE PART	2
5	601 43 00		Instruction plate	1
5	604 31 00		Caution plate	1
5	604 32 00		Sticker	1
5	604 33 00		Caution plate	1
9	82 20 88		Drive screw 4X5-A2-70	6
10	722 51 03		Stator housing	1
11	82 00 36		Hex.socket hd screw M8X35-A2-70	3
15	550 24 00		Connection plate	1
15	698 99 00		Connection plate	1
16	82 78 26	B	O-ring 156,0X3,0 NBR	2
17	83 33 07	B	Ball bearing 6004-2Z	1
18	638 90 00		Shaft unit	1
19	638 93 07		Stator 13-08-2b	1
20	83 65 00	B	Insulating hose DIAM=25,L=90MM	2
21	83 45 59		Cable tie 200X2,4 PA 6/6 -55+105	3
23	94 21 02	B	Motor cable	10.2 m
24.1	397 81 00		Gland screw	1
24.6	82 17 61		Cutting screw TAPTITE-M6X12	2
24.7	83 43 45		Cable lug 1,0-2,5MM2;M6	2
24.8	83 44 23		Closed end splice 5.1-10,6;(AWG 18-8)L=3	1
24.8	83 44 24		Closed end splice 3,0-6,0(AWG 12-10)	6
40	539 83 00		Bearing holder GD-AL	1
41	83 33 13	B	Ball bearing 6304-2Z/C3WT 20X52X15	1
44	593 75 02	B	Mechanical seal AL2O3/CSB-TYPE O	1
48	82 79 12	AB	O-ring 13,3X2,4 FPM	1
49	303 44 03	B	Hex.socket hd screw	1
53	593 75 05	B	Mechanical seal WCCR/WCCR	1
64	638 84 03		Impeller	1
66	638 81 00		Cutter wheel	1
67	638 87 00		Pump housing	1
67.1	555 59 01		Seal ring PERBUNAN	1
68	638 82 00		Cutting ring	1

Ordered by:

Company:.....Ref:.....Tel:.....Date:.....

PARTS LIST

Item no	Partno	Rec	Denomination	Qty/ord.
70	517 53 00		Plain washer	1
72	83 02 99		Hex.socket hd screw M8X20-A4-70	1
75	80 68 60	B	Parallel key V2A	1
79	638 83 00	B	Suction cover	1
80	82 00 17		Hex.socket hd screw M6X25-A2-70	3
89	312 88 00	AB	Washer	5
89	312 88 01	AB	Washer	5
144	82 62 07		Retaining ring SGH 52	1
145	82 50 60		Lock washer DUBO NR 301	3
169	667 40 00		Sticker	1
215	82 40 61		Plain washer (10)-22MM	1
216	84 17 94		Seal sleeve (18)-20MM	1
217	678 58 20		Cable clip (18)-20MM	1
800	83 10 34		O-ring kits 3068.170	1
900	601 89 51		Basic repair kit 3068.170	1
	90 17 52		Oil MARCOL 152 2.1L	0.6 l
...	.....		.....	....
...	.....		.....	....
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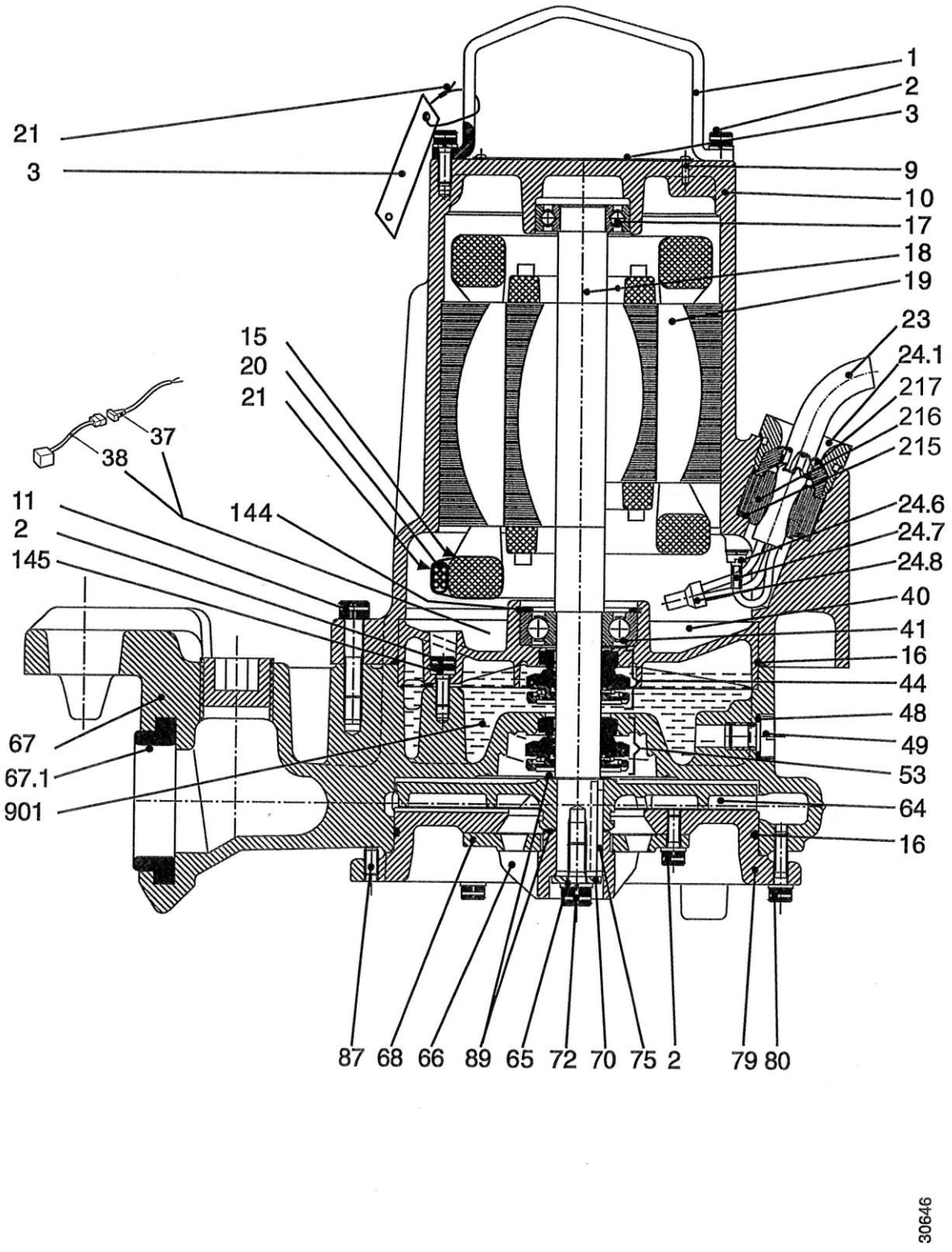
...	.....		.....	....

Ordered by:

Company:.....Ref:.....Tel:.....Date:.....

EXPLODED VIEW

MP 3068.170



RV PARK SANITARY SEWER WASTEWATER LIFT STATION
PUMPS and CONTROLS REPLACEMENT
PUBLIC WORKS DEPARTMENT, NAVAL AIR STATION-KINGSVILLE

Existing Control Panel Information Sheets

FLYGT

An **ITT Industries** company

BILL OF MATERIAL

QUOTE NO.	**68482AA**	**Date: 4/7/2009**	**Rev:**
JOB NAME	**NAS KINGSVILLE RV PARK**		**CP-367**
CUSTOMER	**FLYGT, CORPUS- DOUG WALTHALL**		**Po# 350373**

QTY	LEGEND	DESCRIPTION	MFG.	PART #	Check Off
1		ENCLOSURE	ALLIED	AM1648RT	☒
1		SUB PANEL	ALLIED	P-1648	☒
2	MB	MOTOR BREAKER (3 PHASE, 230V)	SQD	QOU315	☒
1	CCB	CONTROL BREAKER (1 PHASE,115V)	SQD	QO115GFI	☒
1		QO PLUG-ON MOUNTING BASE	SQD	QOMB1	☒
2	MS	CONTACTOR	SQD	**LC1D12G7**	☒
2	OL	OVERLOAD RELAY 9 – 13 AMP	SQD	**LRD16**	☒
1	AL	ALARM LIGHT	INGRAM	MX-15	☒
1	AH	ALARM HORN	PROJECTS	AI-382K	☒
15	TS	TERMINAL STRIP	SQD	9080-GK6	☒
4	TS	TERMINAL STRIP	SQD	9080-GR6	☒
1		FUSE HOLDER	BUSSMAN	NDNF1	☒
1	* F	FUSE	BUSSMAN	BAF –5/250V	☒
1	P/B	PUSH BUTTON	MCGILL	100-L	☒
2	HOA	HAND OFF AUTO SELECTOR	MCGILL	91-0001	☒
1	R1	CONTROL RELAY (120VAC) 8 PIN	SQD	8501-KP12P14V20	☒
2		8 PIN SOCKET	IDEC	SR2P-06	☒
1	ALT	AUTO ALTERNATOR (13SP)	FLYGT	14-40 31 86	☒

NOTES:

*** OR EQUAL**
+ INDICATES LINE ITEM CHANGE
SPECIAL ITEMS **IN BOLD TYPE**
@ PROVIDED BY PUMP REP

AS BUILT

PACKING LIST

Quote#: 68482AA	Date: 4/7/2009	Rev:

SPARE PARTS

QTY	LEGEND	DESCRIPTION	MFG	PART #	
1	F	FUSE	BUSSMAN	BAF-5/250V	☒
4		FLOATS	STA-CON	FFS100	☒

SHOP CHECK SHEET

Quote#: 68482AA	Date: 4/7/2009	Rev:

P.O.#	350373			Ship Date	4/15/2009		
H.P.'s	2	# PUMPS	2	VOLTAGE	240	PHASE	3
FUS. #	C581266	DRIPSHIELD	NA	SERIAL #	CP-367		
DEADFRONT	Alum.	ENCLOSURE TYPE	4X	MATL.	FIBERGLASS		

SPECIAL INSTRUCTIONS	Check OFF
CORROSION INHIBITOR	[ ]
Floats Qty. 4 Cable length 40'	[ ]
Legends and Legend Sheet	[ ]
Ground Lugs	[ ]
Overload Heater Chart	[ ]
Pump Data Sheet	[ ]
Drawings on Door	[ ]
Picture of Panel	[ ]
UL Serial No. BU-383513	[ ]

Spare Parts

[ ] In Panel See Packing List [ ]

[ ] In Separate Box See Packing List [ ]

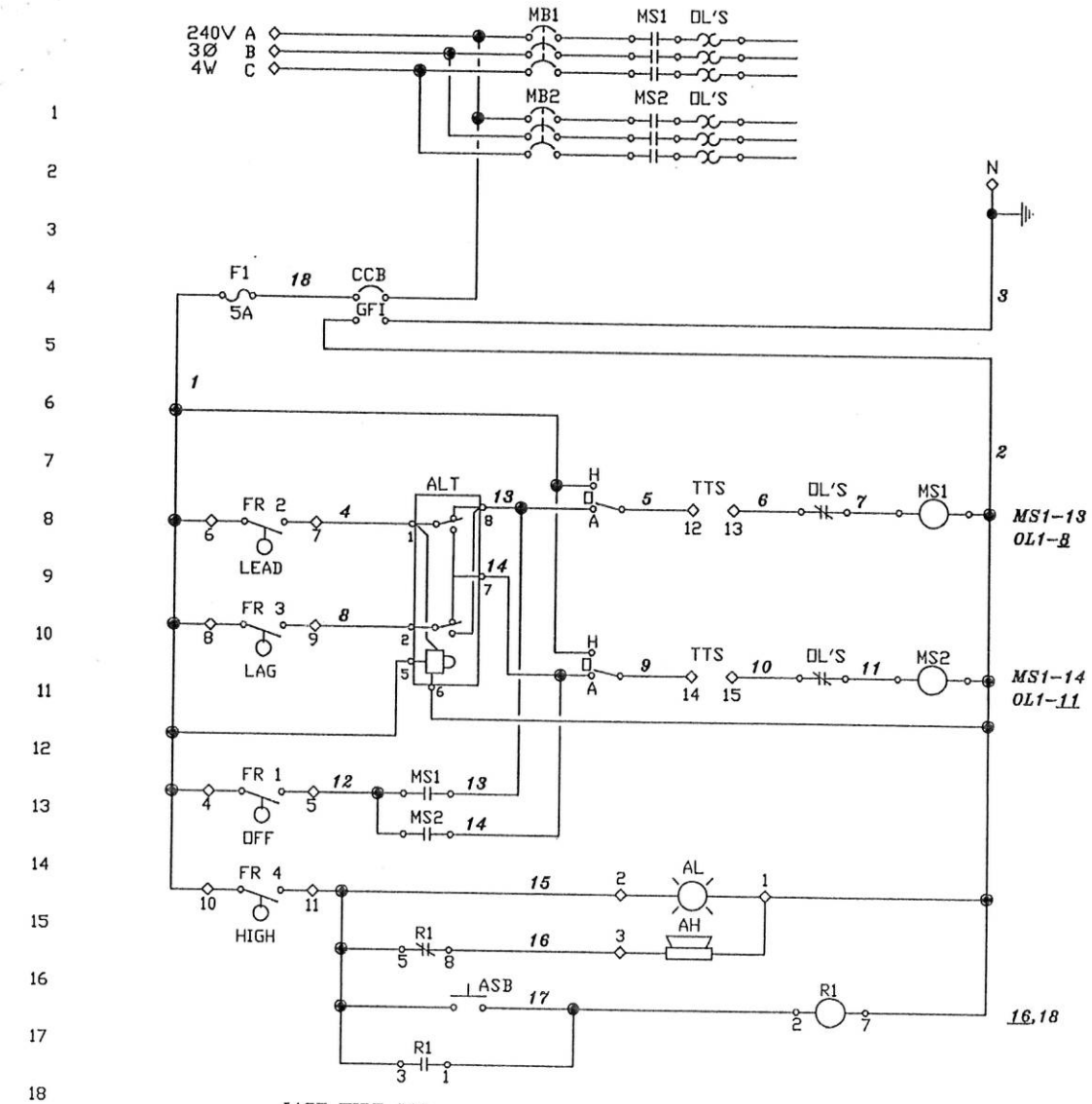
AS BUILT

Wired by: subpanel _____ MR _____ door/deadfront _____ MR _____

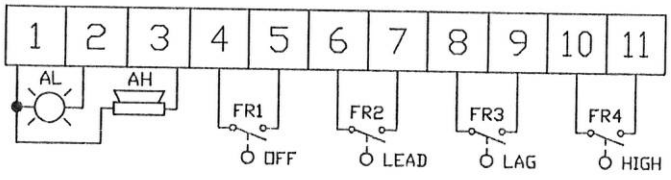
Tester _____ MR _____

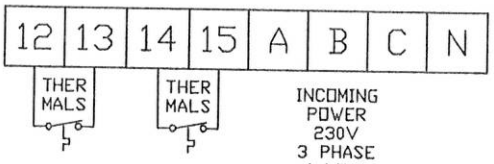
Inspector _____ MR _____

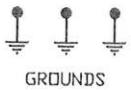
Comments 4 FLOATS FFS100 SHIPPED WITH PANEL



Nonintrinsically safe wiring terminals







UL LISTED
508 STANDARD
SERIAL NO.

SERVICE ENT
HAZ LOCATION
SERIAL NO.

AS BUILT

CUSTOMER	FLYGT, CORPUS
JOB NAME	NAS KINGSVILLE RV PARK
ENCLOSURE	UL TYPE RATING: UL TYPE 1
VOLTAGE	240V PHASE 3 HZ 60
H.P.	#1 2 #2 2 #3 X #4 X
F.L.A.	10A 10A X X
TOTAL F.L.A.	25A
SERIAL #	- DATE: 4/7/2009
SCCR:	5KA SYMMETRICAL RMS,240V. MAX.

MANUFACTURED BY:
STA CON INC 2525 S. DBT APOPKA FL 32703

DEVICES ON THE BOTTOM OF THE TERMINAL STRIP ARE REMOTE COMMING INTO CONTROL PANEL.
DEVICES ON THE TOP OF THE TERMINAL STRIP ARE CONTACTS LEAVING THE CONTROL PANEL.

COMPETITOR

PART # 68482AA