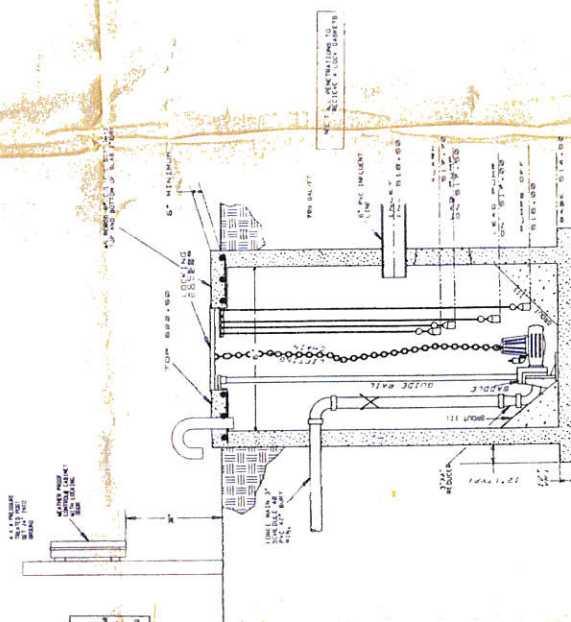
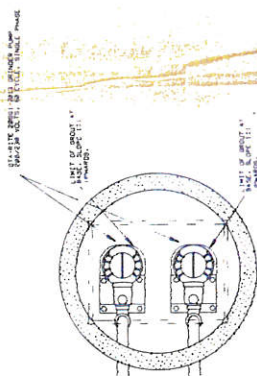
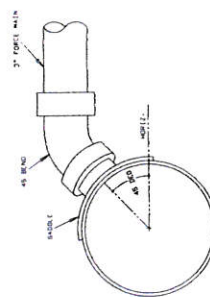
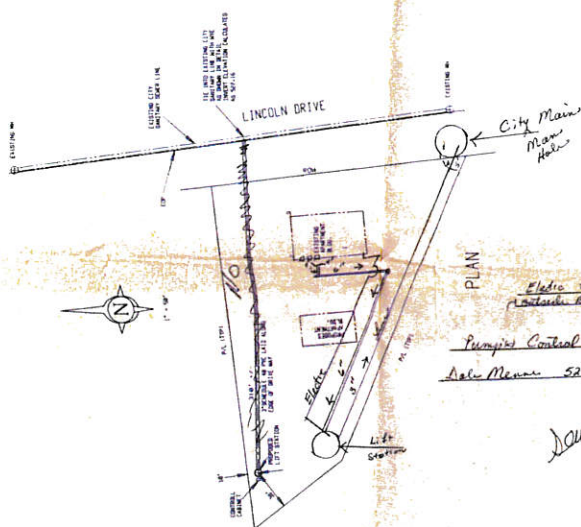


[illegible]

CONTROL SEQUENCES
 AT LUTHERAN SCHOOL, THE LEADERS START.
 THE FIRST DANCE, A TUGGLE FILM TO GO
 WITH THE GOLF.



DETAIL
CONNECTION TO EXISTING
SANITARY SEWER MAIN
NOTES ARE DISCHARGED IN DOWNGUTTER

Cliff Tucker
309 North Lincoln

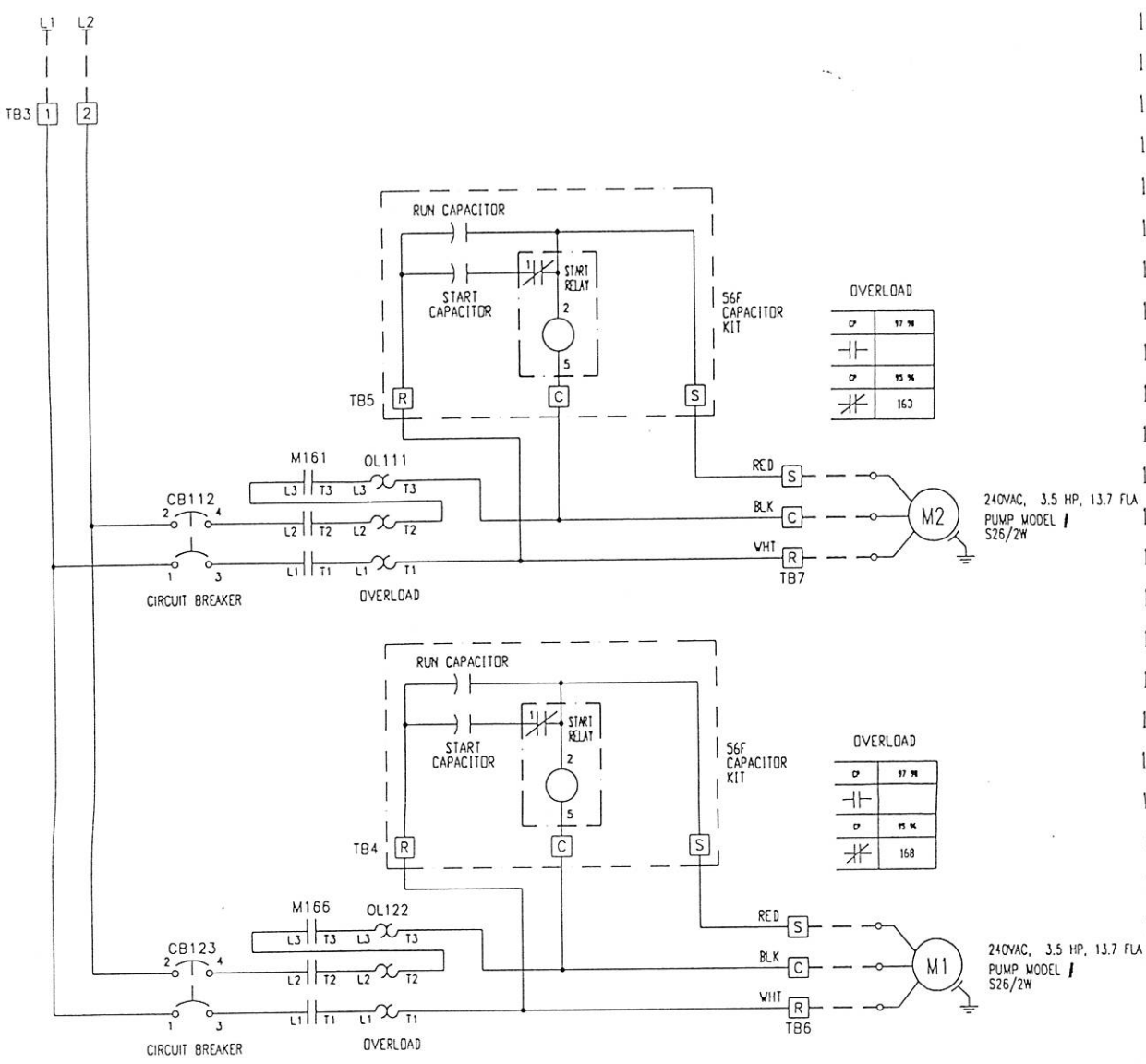
PLAN

Radio to Fuel Pump Unit #7 Brother David
140000 Below Mean

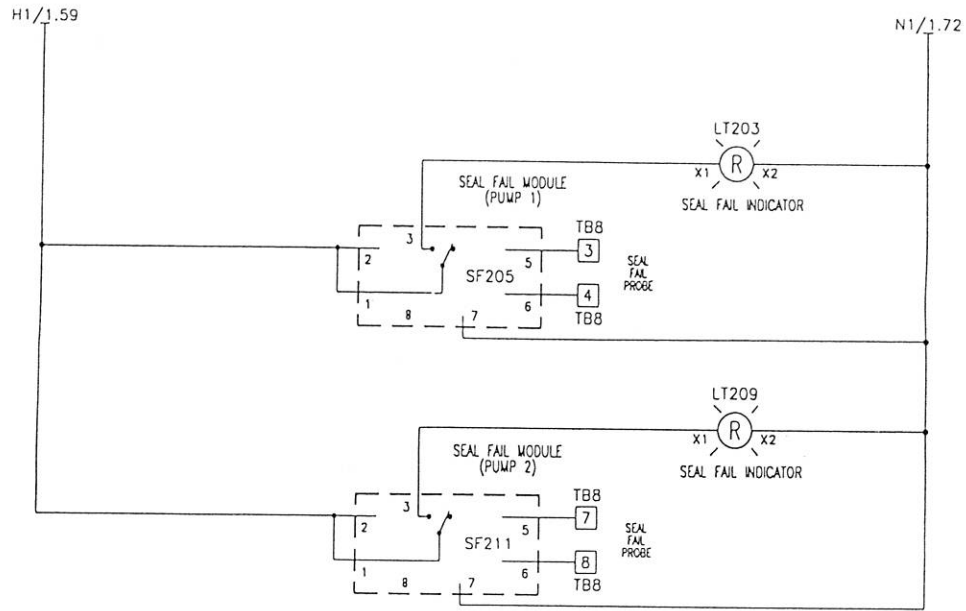
Pumpkin Control Box Lower Butter Supply Tray 529-8572

Below Mean 529-7885/529-4636 Mobile 295-5212

Lower 676-255-0009 202 177
1888-877-5495

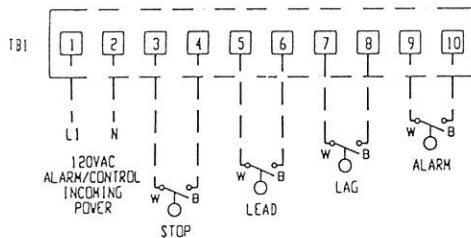


TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140 DEG. F. (60 DEG. C.). TERMINAL STRIPS AND GROUND LUG WILL ACCEPT COPPER CONDUCTORS. TORQUE RATING OF TERMINAL STRIP CLAMPING SCREWS IS 16 IN/LBS FOR ALARM AND PUMP CONTROL SECTION AND 50 IN/LBS FOR GROUND LUG.



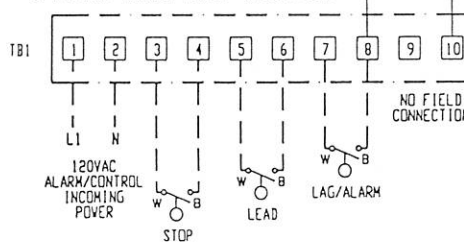
NO JUMPER WIRE CONNECTED
TO TB1 POSITION 8 AND 10

OPTIONAL FOUR FLOAT OPERATION

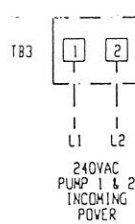
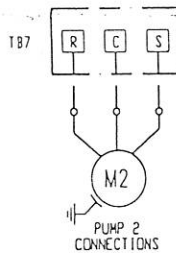
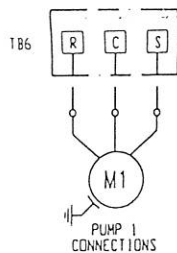


JUMPER WIRE CONNECTED
TO TB1 POSITION 8 AND 10

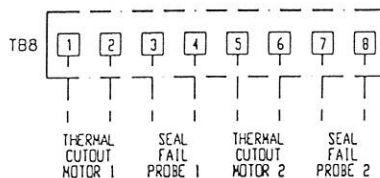
OPTIONAL THREE FLOAT OPERATION



OPTIONAL - WIRE DIFFERENTIAL PUMP SWITCHES OR PRESSURE SWITCHES TO TERMINALS (3,4 (STOP) (PLACE JUMPER WIRE ACROSS 4 & 6)), (7,8 (LAG/ALARM)) AND (9,10 (ALARM) IF SEPERATE ALARM IS REQUIRED)).



THE USE OF SEPARATE
POWER SOURCES FOR
PUMP AND ALARM
ARE RECOMMENDED



OVERLOAD PROTECTION
AND MAIN DISCONNECT
PROVIDED BY OTHERS

IF SEAL FAIL PROBES REQUIRE ONLY ONE LEAD THEN
CONNECT TERMINAL POSITIONS 4 AND 8 ON TB8 TO GROUND LUG.

FIELD WIRING SECTION

REV. DATE: 10/23/00		NOTICE: THIS DRAWING CONTAINS PROPRIETARY INFORMATION AND IT SHALL NOT BE USED OR REPRODUCED OR ITS CONTENTS DISCLOSED IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN CONSENT.				rhombus [®] TECHNOLOGY	
		A DIVISION OF S.J. ELECTRO SYSTEMS, INC.					
DRWN BY	DATE	CHKD BY	DATE	APPD BY	DATE	PROJECT NO.	QUOTE NO.
GDV	5/17/01	DPM	5/17/01	RMS	5/18/01	P2128	N/A
DESIGN NAME		DESIGN P/N		PAGE	SCALE	DWG SIZE	REV.
N/A		N/A		2 of 2	NONE	D	A
TITLE						1231W114H5AE914A10E17019F56F	

1. PANEL SPECIFICATIONS:
MEMA 4X ENCLOSURE
CONTROL/ALARM SECTION
VOLTAGE: 120 VAC
BEACON VATTAGE: 25 W MAX
PUMP CIRCUIT:
LINE VOLTAGE: 240 VAC 1 PHASE
2. DASHED LINES REPRESENT FIELD WIRING REQUIRED.
3. CONNECT GROUND TERMINAL IN BOX TO A GOOD GROUND.

[illegible]

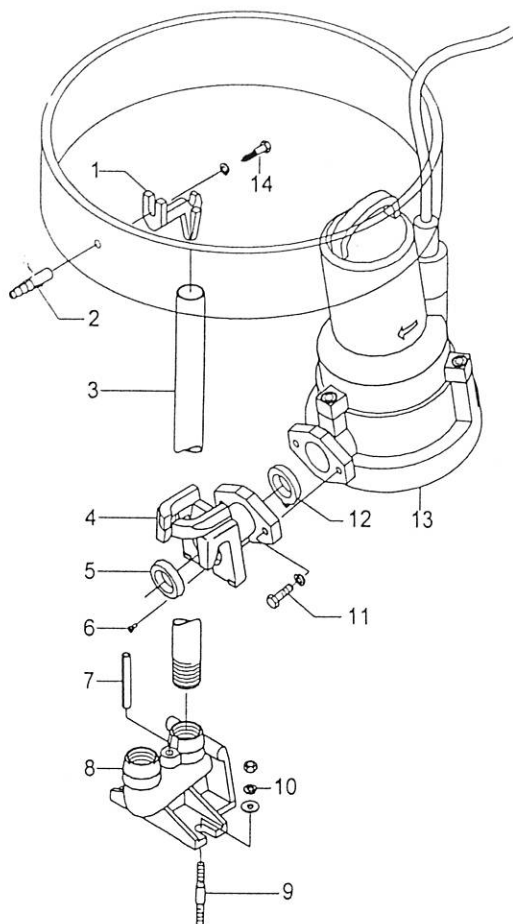


Fig 4

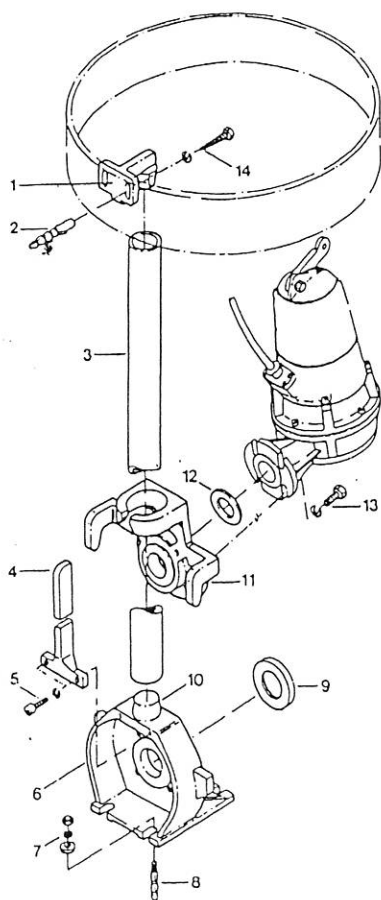


Fig 5

Determine the position of the guide pipe bracket (1) on the inner side of the sump entry opening and fit the pipe retainer using masonry plugs and screws. The screws (14) should not yet be fully tightened.

Note The guide pipe bracket (1) must be positioned vertically above the guide tube location on the guide rail base.

Place the guide rail base (6 or 8) with fixing cone (10) or threaded pipe location for the guide tube on the sump floor vertically below the guide pipe bracket (1).

The guide rail base should be fixed so that it is fully horizontal and fastened to a clean surface.

Place guide tube (3) alongside the locating cone (10) or tapped hole on the guide rail base (8) and determine the final guide tube length (note extra length required for threading into the guide rail base (8). The length is determined by making a measurement to the upper edge of the cone on the guide pipe bracket (1).

Shorten guide tube (3) to the correct length.

ATTENTION Max. guide tube length 20ft.

Place or screw the guide tube between the cone on the guide rail base (10) and guide pipe bracket (1). Ensure that it is vertical and then drill the fixing holes for the masonry bolts (8 or 9) on the guide rail base which should now be in the correct position.

NOTE Masonry bolts with at least $\frac{5}{8}$ " diameter should be used.

Wear safety glasses!

Blow out the dust from the drilled holes, and then place the untensioned masonry bolts (8 or 9) in the hole to a depth level with the washers.

Ensure that the masonry bolts cannot turn by using a screwdriver and finally tighten the guide rail base using Hex nuts (7 or 10).

ATTENTION In order to ensure secure vibration-free running of the pump it is essential that the masonry bolts are a tight fit. For this it is essential that adequate floor thickness and concrete quality is present.

Press the guide pipe bracket (1) into the guide tube so that there is no play in a vertical direction, and fix using Hex screws (14).

Screw the guide piece (4) using socket head screws (5) to the guide rail base (6), or insert the guide pin (7) into guide rail base (8).

WARNING

If leads are not tied and tucked, damage may occur to the wire if near rotor cooling fins.

Refasten cable cap and cable clamp to motor housing. Be careful in fastening the cable clamp that the clamp is snug but not too tight. Over tightening of the cable clamp could shear cable jacket, causing water intrusion into the cable leads.

SECTION IV ELECTRICAL CONTROLS

CAUTION

Only a licensed electrician should service electrical faults

4-1 GENERAL INFORMATION

Electrical control panels are usually supplied with the pumps, although pumps can be provided and connected to customer supplied panels. If a control panel other than that supplied by ABS is used, the panel must be wired so that the built-in **safety features** of the pump are utilized. These safety features are the warning probe in the oil chamber and thermal overloads in the motor windings.

WARNING

It is to the customer's benefit to incorporate the safety feature's to ensure long trouble-free life and validate the pump warranty.

The following paragraphs describe the pump's internal wiring and its correct electrical connections into a control panel.

CAUTION

Under no circumstances shall any motor lead be spliced at a submerged point or in any wet location that *will allow wicking*.

4-2 PUMP INTERNAL WIRING

Motor voltage ratings are shown on the pump nameplate. Each pump is connected at the factory for the voltage called for on the specific order.

- For single phase pumps-leads marked S, R, C, are the start, run, and common power leads.
- For 3 phase pumps-leads marked T1, T2, T3, are the main power leads.
- Lead 12 (Simplex panel) and 12 and 13 (Duplex panel) are the leads for the seal probe and shall be connected to the control panel 12 volt circuit
- The green and yellow lead is ground (G).
- Leads 10 and 11 (Simplex panel) and 8, 9, 10 and 11 (Duplex panel) are motor thermal overloads.

When initially running the pump, the current draw, under no load, should be checked to

ascertain that the pump is wired properly. The current draw, at no load, across each of the three phases shall be approximately 49% of the full load current indicated on the pump nameplate. This current draw should be noted on the panel door for future reference.

CAUTION

Prior to installing the pump permanently, refer to paragraph 4-4 entitled "INITIAL START-UP" to be sure the pump is running with the correct impeller rotation.

4-3 CONTROL PANEL WIRING

There are many variations of control panels and it is impractical to include instructions for each and every variation. The normal panel supplied by ABS is equivalent to a NEMA 3R Door-In-Door enclosure. All connections to this panel are made at the terminal strips. When control panels other than ABS are used, refer to that manufacturer's wiring diagrams and instruction manuals for proper wiring connections.

Mounted on the inside of the ABS control panel door is a complete wiring diagram and terminal strip diagram. The terminal strip diagram indicates how to electrically connect the float switches, water warning electrode lead, thermal overload leads and power leads.

4-4 INITIAL START-UP

4-4-1 IMPELLER ROTATION

Upon completion of the electrical service power connections to the pump, it is very important to be sure that the direction of the pump rotation is correct. This is determined by a quick initial start-up procedure. The pump motor housing top cover contains a cast-in arrow and the words "START REACTION" which indicates the direction in which the pump should kick when it is started. This is the starting reaction. *The impeller rotates in the opposite direction of the arrow for proper operation.*

Stand the pump on a hard surface. Jog the pump by momentarily turning the HAND-OFF-AUTO switch to the HAND position and returning to the OFF position. The pump should react, "twist", in the direction of the arrow on top of the pump. If the pump should twist in the opposite direction of the arrow, the pump is now running backwards. Push the control CKT disconnect red "STOP" switch and turn the RESET-OFF-ON switch(s) to the OFF position. Remove the main power to the control panel. Interchange pump power leads 5 and 6 (Simplex) and T1 and T2 (Duplex) at the terminal strip. In a duplex station be sure to check both pumps. Note that for a single-phase pump, reversed wiring will result in a very high amp draw and little reaction from the pump.

ABS PUMPS Inc.		S/N 39534		02/01	
140. POND VIEW DRIVE,		3450 MIN.			
HERIDEN CT. 06450		NR 05105868			
TEL. (203) 238-2700		UN 230 U ~ 1		IN 13.7A 60 HZ	
		P2N 3.5 HP		X max 33 FT.	
		Q max 66 GPM		H max 128 FT.	
		PA-I		IMP 145 MM	