



Soil & Environmental Consultants, PA

11010 Raven Ridge Road • Raleigh, North Carolina 27614 • Phone: (919) 846-5900 • Fax: (919) 846-9467
www.SandEC.com

Attached is a proposed design for a Pressure Manifold Septic System for a 3-bedroom house, located at BALLARD WOODS LOT 93, Wake, N.C.

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**05-30-06, S&EC PROJECT #9939.S1, DESIGN -J.WOOD
PROJECT MGR -D.WELLS**

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236 LePhillip Court, Suite C
Concord, NC 28025
Phone: (704) 720-9405
Fax: (704) 720-9406

Greensboro Office:
3817-E Lawndale Drive
Greensboro, NC 27455
Phone: (336) 540-8234
Fax: (336) 540-8235

INFORMATION FOR THE INSTALLER:

- The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by DEHNR, and certification supplied by the manufacturer.
- Tanks shall be water tested prior to installation.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom is within 2" from the highest to the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench.
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pinflag locations should be checked by the installer prior to beginning trenches.
- Septic/Pumptank riser shall be 6" above grade, control panel shall be 12" above grade.
- System uses EZ-FLOW
- Repair uses EZ-FLOW.

BALLARD WOODS LOT 93
Project No. 9939.S1
PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: OAK CITY HOMES
Attn: BEAU HARRISON
Address: PO BOX 6127
RALEIGH, NC 27628
Phone: 919-422-3318
County: Wake
Location: BALLARD WOODS LOT 93

Source of Wastewater Flow: 3 BEDROOM SYSTEM
Estimated Daily Wastewater Production: 360
System Flow: 35.26

Design Specifications

Drainfield Size: 315
Loading Rate: 0.3
Depth of Gravel in Trench: NA (EZ-Lay)
Gravel Size: NA (EZ-Lay)
Trench Depth: ~~24 IN~~ 12 in
Trench Width: 36 in.
Septic Tank Size: 1000
Pump Tank Size: 1000
Estimated Supply Line Length: 222
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 35.26
Supply Manifold: 4 in. SCH 80 PVC
Supply Manifold Length: 4.0 FT
Supply Manifold Volume: N/A
Threaded Union: In Tank
Gate Valves: 1 in Tank
1 at Pressure Manifold
Check Valves: In Tank
Anti-Siphon Hole: In Tank

Recommended Float Controls: SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel: SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Recommended Pump: Myers Model ME50 or County Approved Effluent Rated Pump Capable of Delivering 20ft.of Head at 36 gpm Total Flow

Additional Comments: Soil suitability was performed by the Wake County Health Department.

BALLARD WOODS LOT 93
Project No. 9939.S1
DESIGN CALCULATIONS

Supply line length 222 ft
 2" PVC 0.174 gal/ft
Supply line Volume 38.628 gal

Total drain field length 315 ft
 4" pipe 0.6508 gal/ft
 Total drain field volume 205.00 gal
 Percent of dose volume 75%
Dose Volume 153.75 gal

Dose volume 153.75 gal
 Pump tank 20 gal/in
Pump tank Drawdown 7.7 in

Ground rod reading at pump tank 5.5 ft
 Pump elev 5.4 ft
 10.9 ft
 Manifold rod reading 1.6 ft
 9.3 ft
Elevation Head 9.3 ft

System flow 35.26 gal/minute
 Friction factor 2.4 f/100ft
 Supply line length 222 ft
Friction Head 5.3 ft

Pressure Head 2.0 ft

Total Dynamic Head 16.6 ft
 (Friction Factor for fittings) 15 %
(TDH) Total Dynamic Head 19.1 ft

Daily flow 360 gal/day
 LTAR 0.3 sqft/day
 Trench width 3 ft
Required drain field length (gravel) 400 ft
Required drain field length (ezflow) 300 ft

FRICITION FACTOR
INTERPOLATER
2" SCH 40 PVC

GPM	f
20	0.84
24.32	1.21
25	1.27
27.31	1.51
30	1.78
32.2	2.04
35	2.37
35.26	2.40
40	3.03
40.71	3.14
45	3.77
47.69	4.21
50	4.58
52.9	5.11
60	6.42

BALLARD WOODS LOT 93

Project No. 9939.S1

LAYOUT FOR 3 BEDROOM HOME

May 6, 2006

<u>LINE #</u>	<u>FLAG</u> <u>COLOR</u>	<u>BS</u>	<u>HI</u>	<u>FS</u>	<u>ELEVATION</u>	<u>FLAGGED</u> <u>LINE LENGTH</u>	<u>DESIGN</u> <u>LINE LENGTH</u>
TBM		3.3			100.00		
INSTR. 1			103.30				
*1	RED			2.10	101.20	50	50
*2	ORANGE			2.50	100.80	90	90
*3	PINK	<u>FLOW</u>	<u>DIVIDE</u>	3.00	100.30	30	30
*4	BLUE	<u>FLOW</u>	<u>DIVIDE</u>	3.60	99.70	60	30
*5	BLUE			3.20	100.10	45	45
*6	YELLOW	<u>FLOW</u>	<u>DIVIDE</u>	3.90	99.40	40	35
*7	PINK	<u>FLOW</u>	<u>DIVIDE</u>	4.50	98.80	35	35
		0.9					
8	BLUE			5.30	98.00	100+	105
9	PINK			7.40	95.90	100+	105
10	YELLOW			10.10	93.20	100+	105

Total 350 630

	<u>LINE</u> <u>LENGTH</u>	<u>LTAR</u> <u>GPD/FT²</u>	<u>SYSTEM</u> <u>TYPE</u>	<u>SOIL</u> <u>LTAR</u> <u>GPD/FT²</u>	<u>INNOVATIVE</u> <u>SYSTEM</u>	<u>DISTRIBUTION</u>
* System	315	0.30	INNOV.	0.30	EZ-Flow	Pressure Manifold
Repair	315	0.30	Innov.	0.30	EZ-Flow	PUMP TO D-BOX

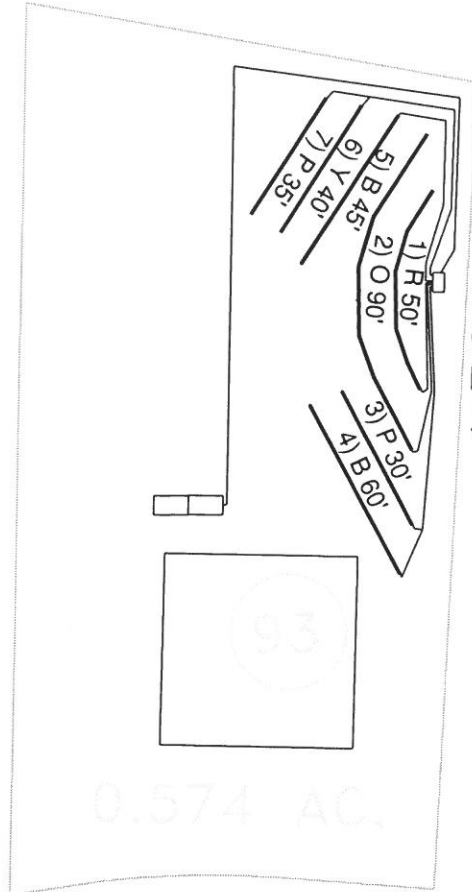
- Notes:**
- ** TBM ON TOP OF EIP; REPAIR= IN "V" OF TREE ABOVE FIELDS
 - **TBM is assumed to be 100'.
 - **All measures in feet.
 - **Nitrification lines are demonstrated on contour via colored pin flags.
 - **BS, HI, and FS indicate rod readings.

**BALLARD WOODS LOT 93
SYSTEM**

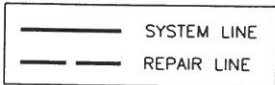
<u>Line #</u>	<u>Color</u>	<u>Elevation</u>	<u>Length</u>	<u>Hole Size</u>	<u>Flow/Tap</u>	<u>gpd</u>	<u>Trench Area</u>	<u>Line LTAR</u>
1	RED	101.2	50	SCH 80 1/2	5.48	55.95	150	0.373
2	ORANGE	100.8	90	SCH 80 3/4	10.1	103.12	270	0.382
3	PINK	100.3	30	FD SCH 40 1/2	3.55	36.25	90	0.403
4	BLUE	99.7	30	FD SCH 40 1/2	3.55	36.25	90	0.403
5	BLUE	100.1	45	SCH 80 1/2	5.48	55.95	135	0.414
6	YELLOW	99.4	35	FD SCH 40 1/2	3.55	36.25	105	0.345
7	PINK	98.8	35	FD SCH 40 1/2	3.55	36.25	105	0.345
	total	feet =	315	gal/min =	35.26			
		Des. Flow	360					
		Pump Run-	10.21					
		soil LTAR	0.3					
		(EZLAY ltar +5%)	0.315					
		LTAR with INNOV. + 5%	0.4					
		LTAR with INNOV.	0.42					
		100% Dose Volume	204.99					
		Percent Dose Volume	75%					
		Total	153.74					
		Pump Run Time	4.36					

3-BEDROOM INNOV. PRESSURE MANIFOLD SYSTEM
 LINES 1,2,3,4,5,6,7 .3 LTAR W/ EZ-FLOW
 3-BEDROOM PUMP TO D-BOX REPAIR
 LINES 8,9,10 .3 LTAR W-EZFLOW

NO FOUNDATION DRAINS



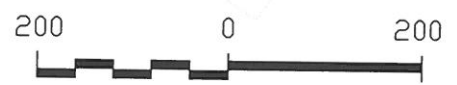
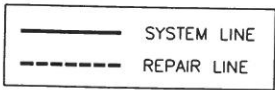
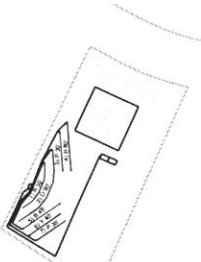
FLOW DIVIDE LINES 3 AND 4
 (2 - 30' LINES) AND FLOW
 DIVIDE LINES 6 AND 7 (2 -
 35' LINES).



PROJECT NO. 9939.S1	SCALE 1" = 50'	SHEET TITLE: LOT 93 SEPTIC SYSTEM LAYOUT	 Soil & Environmental Consultants, PA 11010 Raven Ridge Road • Raleigh, North Carolina 27614 • Phone: (919) 846-5900 • Fax: (919) 846-9467 www.SandEC.com
PROJECT MGR. DW	FIELD WORK JW,CO	PROJECT NAME: OAK CITY HOMES BALLARD WOODS HARNETT COUNTY, NORTH CAROLINA MAY 2006	
DRAWN BY JW			
\\9939.S1\BALLAR.DWG			

3-BEDROOM INNOV. PRESSURE MANIFOLD SYSTEM
 LINES 1,2,3,4,5,6,7 .3 LTAR W/ EZ-FLOW
 3-BEDROOM PUMP TO D-BOX REPAIR
 LINES 8,9,10 .3 LTAR W-EZFLOW

NO FOUNDATION DRAINS



PROJECT NO. 9939.S1	SCALE 1" = 50'	SHEET TITLE: LOT 93 SEPTIC SYSTEM LAYOUT
PROJECT MGR. DW	FIELD WORK JW.CO	PROJECT NAME:
DRAWN BY JW		OAK CITY HOMES BALLARD WOODS HARNETT COUNTY, NORTH CAROLINA MAY 2006
\\9939.S1\BALLAR.DWG		

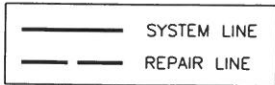
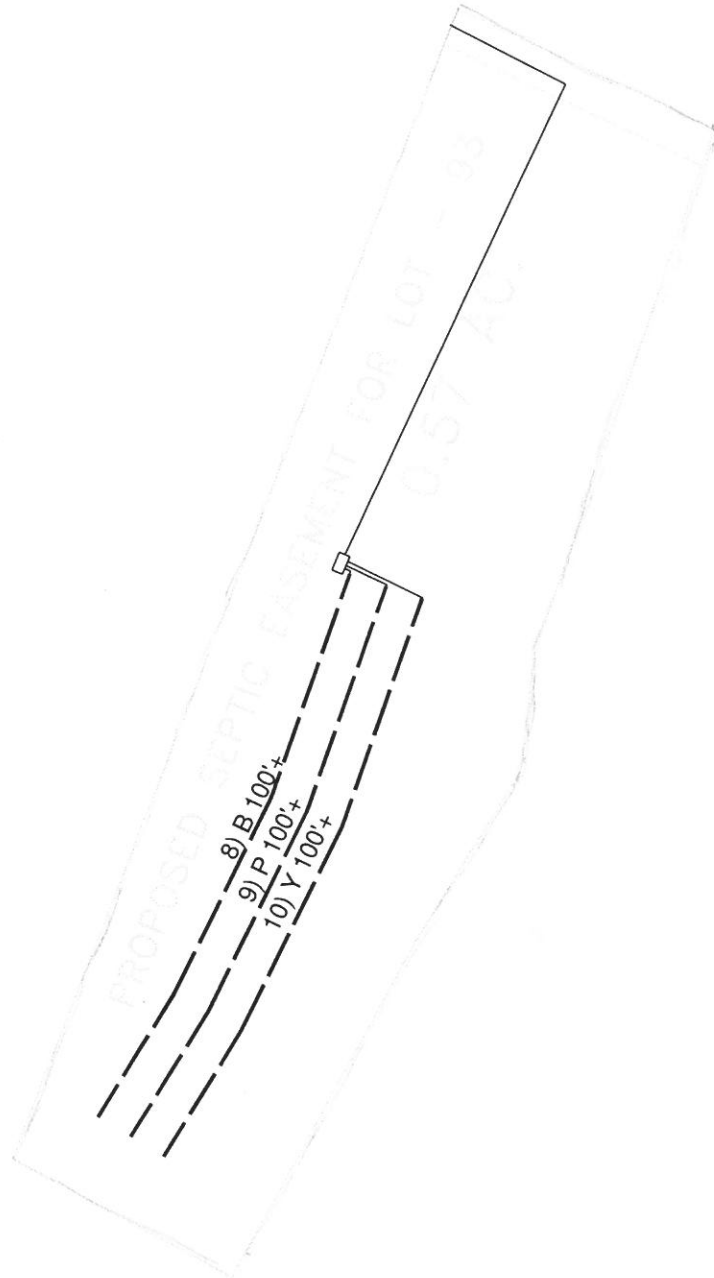


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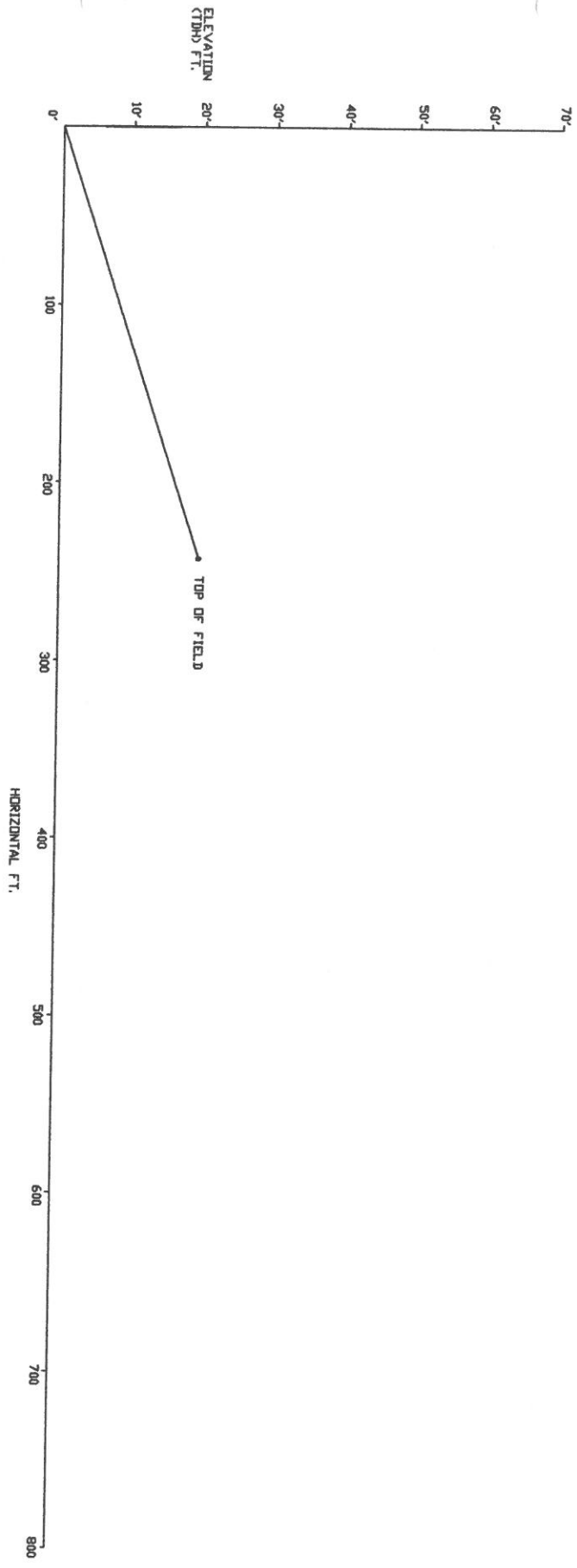
3-BEDROOM INNOV. PRESSURE MANIFOLD SYSTEM
 LINES 1,2,3,4,5,6,7 .3 LTAR W/ EZ-FLOW
 3-BEDROOM PUMP TO D-BOX REPAIR
 LINES 8,9,10 (3 X 100'+) .3 LTAR W-EZFLOW

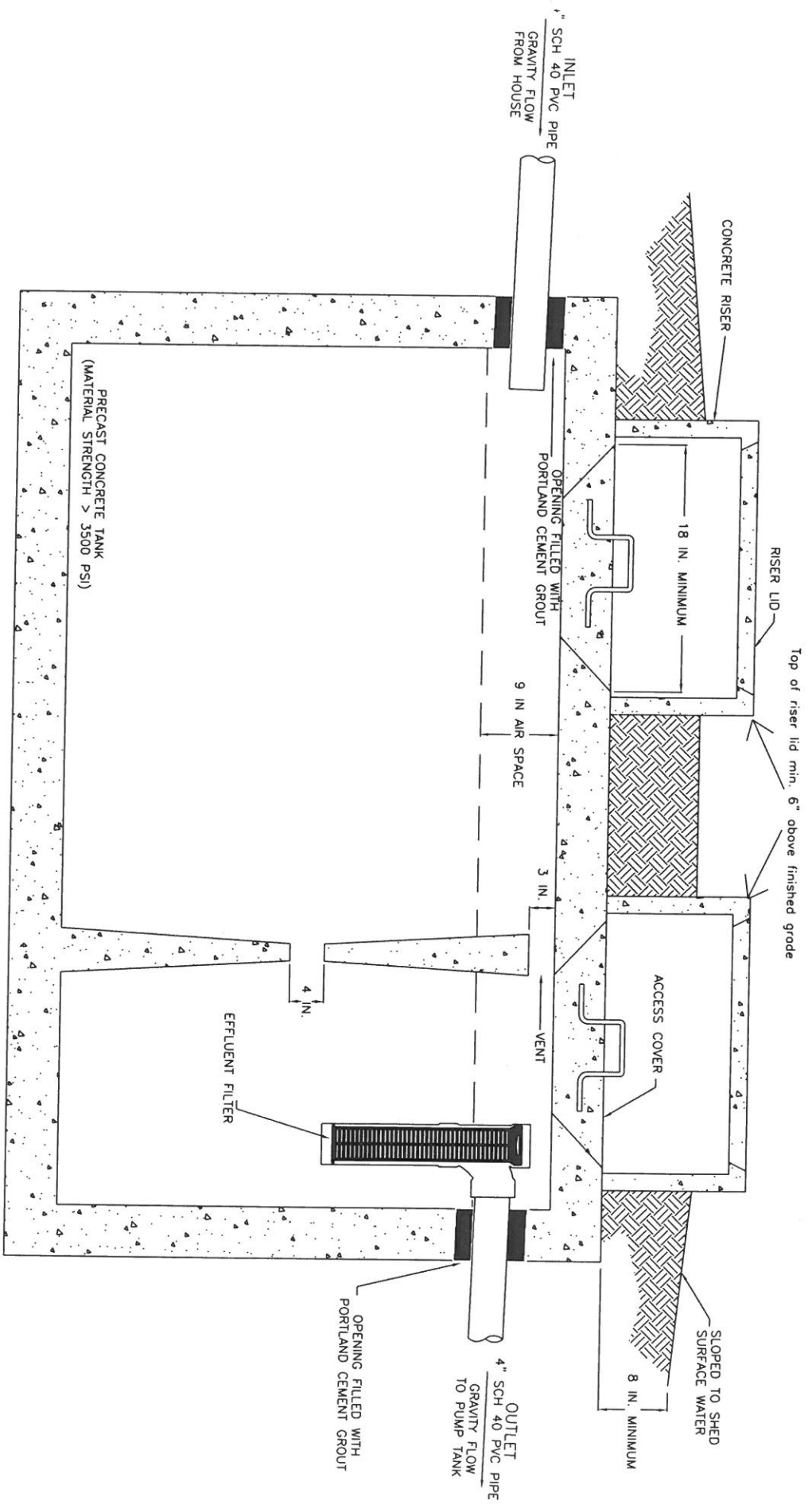
REPAIR SITE PLAN

NO FOUNDATION DRAINS



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PROJECT MGR. DW	FIELD WORK JW,CO	PROJECT NAME: OAK CITY HOMES BALLARD WOODS HARNETT COUNTY, NORTH CAROLINA MAY 2006	
DRAWN BY JW			
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1000

GALLON SEPTIC TANK

SHEET 1 OF 1

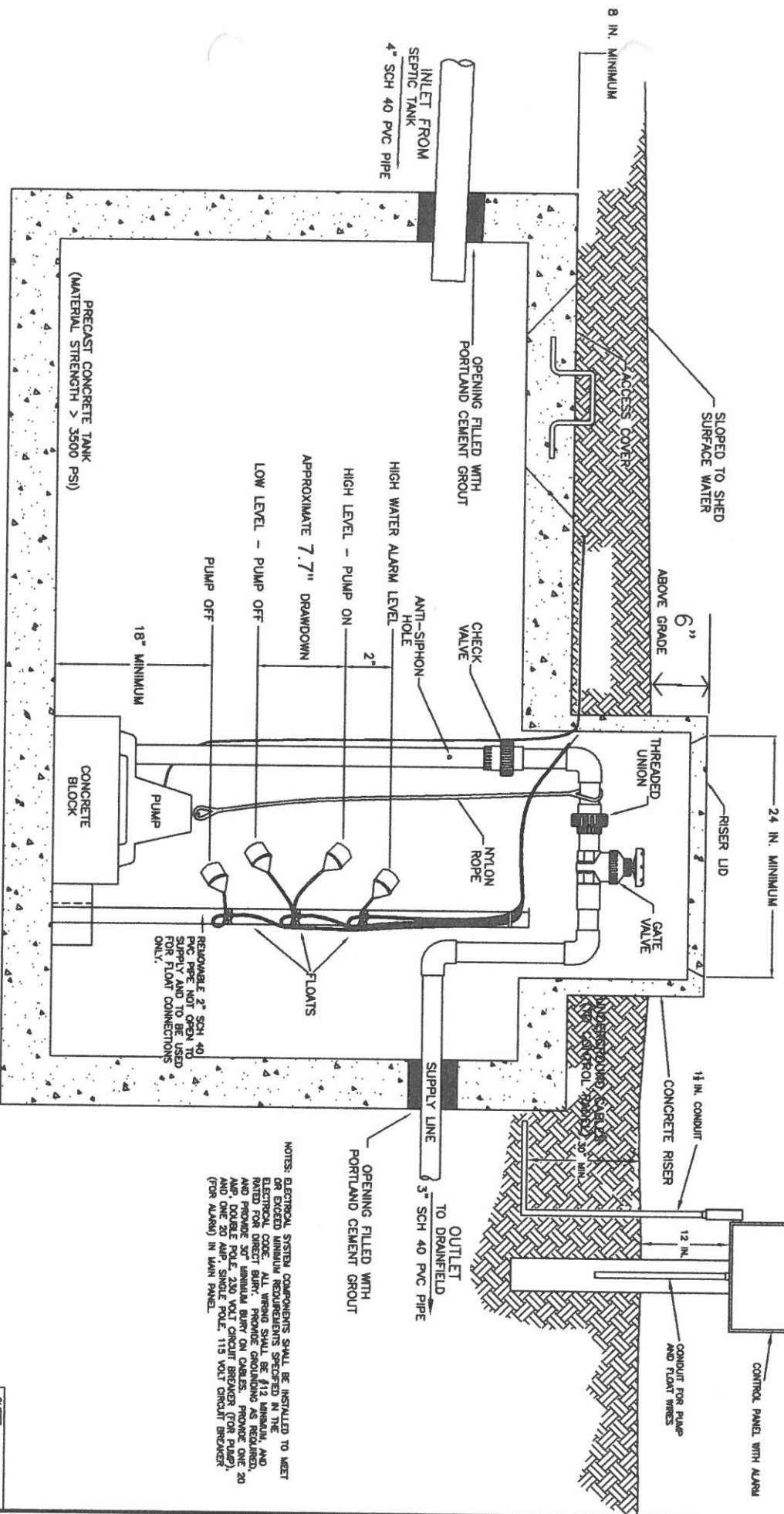
JOB NO.
99319 S1
PROJECT MGR.
DW
SCALE
N/S

PROJECT NAME:
SHEET TITLE:
SEPTIC TANK DIAGRAM

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1000 GALLON PUMP TANK

* DRAWDOWN SPECIFIED 20 GALLONS PER INCH



NOTES: ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED TO MEET OR EXCEED MINIMUM REQUIREMENTS SPECIFIED IN THE ELECTRICAL CODE. ALL WIRING SHALL BE #12 MINIMUM, AND WIRING FOR DIRECT BURIAL. PROVIDE GROUNDING AS REQUIRED, AND PROVIDE 50 AMPERES BURIAL ON CABLES. PROVIDE ONE 20 AMP FUSE PER 20 AMP CIRCUIT BREAKER (FOR PUMP), AND ONE 20 AMP SINGLE POLE, 115 VOLT CIRCUIT BREAKER (FOR ALARM) IN MAIN PANEL.

JOB NO.	PROJECT NAME
9839.51	
PROJECT DGR.	
PP	
SCALE	SHEET TITLE:
NYS	PUMP TANK DIAGRAM



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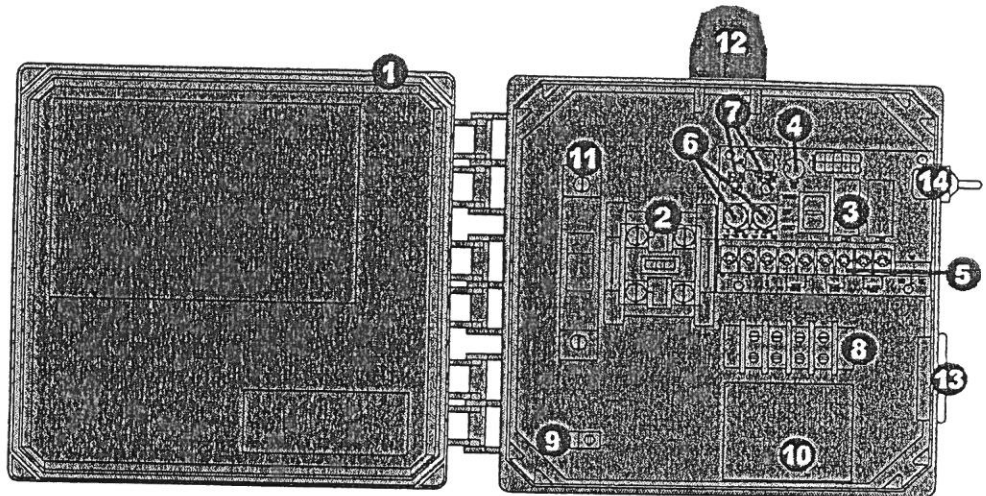
112

Panel Profile

The 112 panel provides a reliable, low cost means of controlling either one 120 VAC or one 120/208/240 VAC single phase pump in pump chambers, sump pump basins, irrigation systems, and lift stations.

**Controls one
120 VAC or one
120/208/240 VAC
single phase
pump**

**Standard package
includes three
20 foot (6 meter)
Sensor Float®
normally open
control switches**



120 VAC Version Shown



features

- 1 8x8x4 inch NEMA 4X or NEMA 1 Enclosure
- 2 Magnetic Motor Contactor
- 3 HOA Switch
- 4 Green Pump Run Indicator Lights
- 5 Float Switch Terminal Block
- 6 Alarm and Control Fuses
- 7 Alarm and Control Power Indicators
- 8 Pump Input Power and Pump Connection Terminal Block
- 9 Ground Lug
- 10 Terminal Block Installation Label
- 11 Circuit Breaker (optional)
- 12 Red Alarm Beacon (Door mounted indicator if NEMA 1)
- 13 Alarm Horn (Buzzer if NEMA 1)
- 14 Exterior Horn Test/Normal/Silence Switch

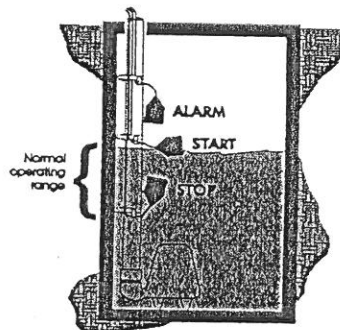
**SJE
RICHMONT
CONTROLS**

1-888-DIAL SJE

1-888-342-5753 ■ 218-847-1317
218-847-4617 Fax
sje@sjerhombus.com

www.sjerhombus.com

22650 County Highway 6, P.O. Box 1708
Detroit Lakes, MN 56502



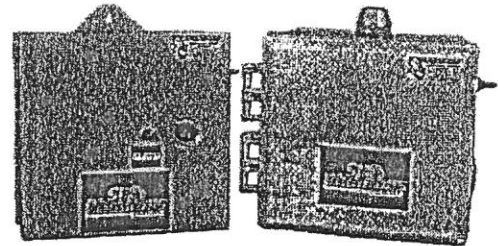
Three float simplex pump down



MODEL 112 Control Panel

Single phase, simplex motor contactor control.

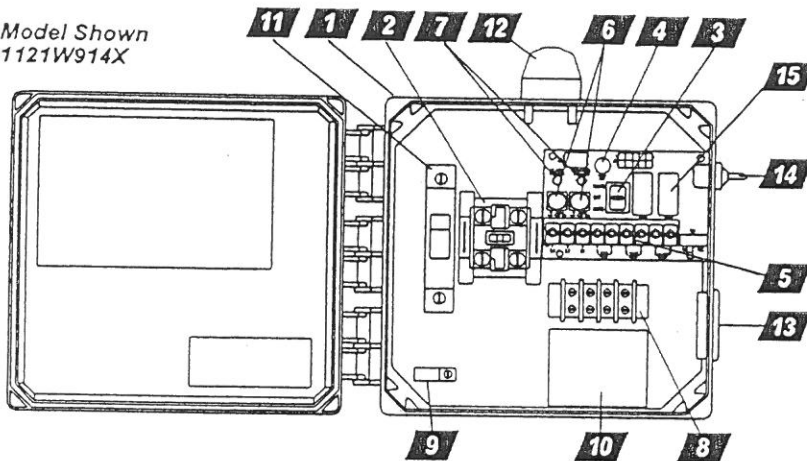
The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single-phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.



indoor

indoor/outdoor

Model Shown
1121W914X



1. Enclosure measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).
* Options selected may increase enclosure size and change component layout.
2. **Magnetic Motor Contactor** controls pump by switching hot electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Pump Input Power and Pump Connection Terminal Block**
9. **Ground Lug**
10. **Terminal Block Installation Label**
11. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection.

STANDARD ALARM PACKAGE (other options available)

12. **Red Alarm Beacon** provides 360° visual check of alarm condition.
Note: NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
13. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating).
Note: NEMA 1 style utilizes an internally mounted buzzer (83 to 85 decibel) in lieu of horn.
14. **Exterior Horn Test/Normal/Silence Switch** allows alarm horn to be silenced and testing of horn and light to ensure proper operation of alarm system.
15. **Horn Silence Relay** automatically resets alarm after alarm condition has been resolved (mounted on circuit board).

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards.
- Dual safety certification for the United States and Canada.
- Standard package includes three 20" Sensor Float® control switches.
- Complete with step-by-step installation instructions.
- Three-year limited warranty.



SJERHOMBUS
CONTROLS
SJ ELECTRO SYSTEMS, INC.

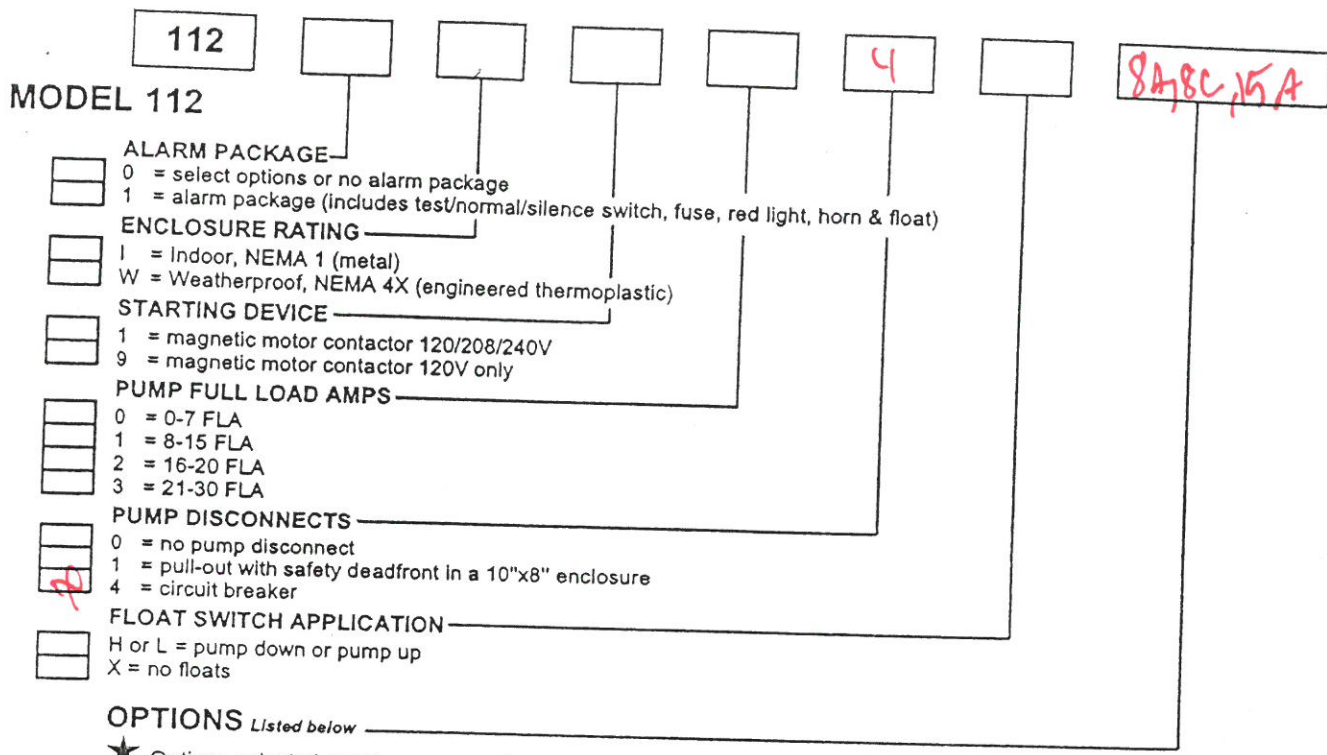
PO Box 1708, Detroit Lakes, MN 56502

1-888-DIAL-SJE • 1-218-847-1317

1-218-847-4617 Fax

email: sje@sjerhombus.com

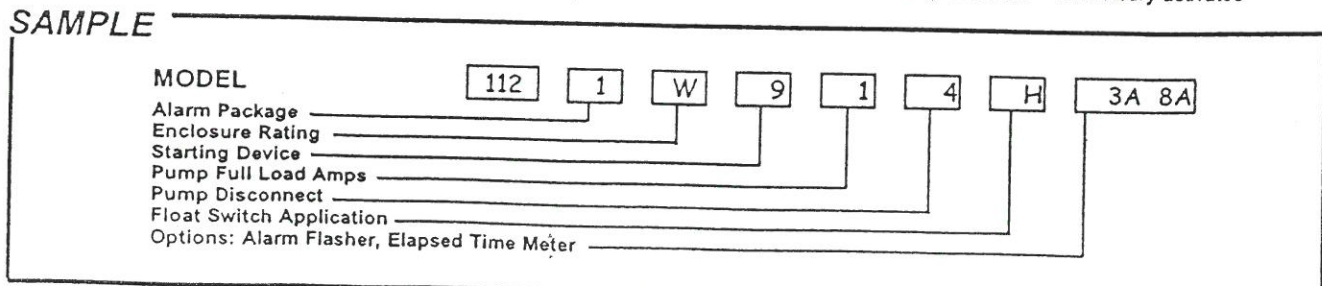
www.sjerhombus.com



★ Options selected may increase enclosure size and change component layout.

If additional features are required, call the factory for a quote on either a Pro-Line or Engineered custom control panel system.

- | CODE | DESCRIPTION | CODE | DESCRIPTION |
|-------------------------------------|---|-------------------------------------|--|
| <input type="checkbox"/> | 1A Red beacon only / no audio
<i>must select 1E if floats included</i> | <input type="checkbox"/> | 11C NEMA 1 alarm panel <i>must select option 6A</i> |
| <input type="checkbox"/> | 1C Horn only / no visual
<i>must select 1E if floats included</i> | <input type="checkbox"/> | 11D NEMA 4X alarm panel <i>must select option 6A</i> |
| <input type="checkbox"/> | 1E Alarm float | <input checked="" type="checkbox"/> | 15A Control / alarm circuit breaker
<i>Does not include the circuit board as in standard.</i> |
| <input type="checkbox"/> | 3A Alarm flasher | <input type="checkbox"/> | 16A 10' cord in lieu of 20' |
| <input checked="" type="checkbox"/> | ★ 4A Low level cutout
<i>select option 4D if floats included</i> | <input type="checkbox"/> | 16B 15' cord in lieu of 20' |
| <input type="checkbox"/> | ★ 4B Red low-level indicator & alarm
<i>must select 4A also</i> | <input type="checkbox"/> | 16C 30' cord in lieu of 20' |
| <input type="checkbox"/> | 4D Low-level float | <input type="checkbox"/> | 16D 40' cord in lieu of 20' |
| <input type="checkbox"/> | 6A Auxiliary alarm contact, form C type | <input type="checkbox"/> | 17A SJE SignalMaster® / mounting strap ● |
| <input checked="" type="checkbox"/> | ★ 8A Elapsed time meter | <input type="checkbox"/> | 17B SJE SignalMaster® / externally weighted ● |
| <input checked="" type="checkbox"/> | ★ 8C Event (cycle) counter | <input type="checkbox"/> | 17C Sensor Float® / internally weighted ▲ |
| <input type="checkbox"/> | 10E Lockable latch - NEMA 4X | <input type="checkbox"/> | 17D Sensor Float® / externally weighted ▲ |
| <input type="checkbox"/> | 10E Lockable latch - NEMA 1 | <input type="checkbox"/> | 17E Sensor Float® Mini / pipe clamp ▲ |
| <input checked="" type="checkbox"/> | ★ 10F Lightning arrester | <input type="checkbox"/> | 17F Sensor Float® Mini / externally weighted ▲ |
| <input type="checkbox"/> | ★ 10K Anti-condensation heater | <input type="checkbox"/> | 19X Door mounted pump run indicator |
| | | <input type="checkbox"/> | 21A Pumpmaster® in lieu of on/off switches ● |
| | | <input type="checkbox"/> | 21B PumpMaster® Plus in lieu of on/off switches ● |
| | | <input type="checkbox"/> | 21C Super Single® in lieu of on/off switches ▲ |
| | | <input type="checkbox"/> | 21D Double Float™ in lieu of on/off switches ▲ |
- Mechanically-activated ▲ Mercury-activated



ME SERIES

1/2 through 1-1/2 HP
Effluent Pumps

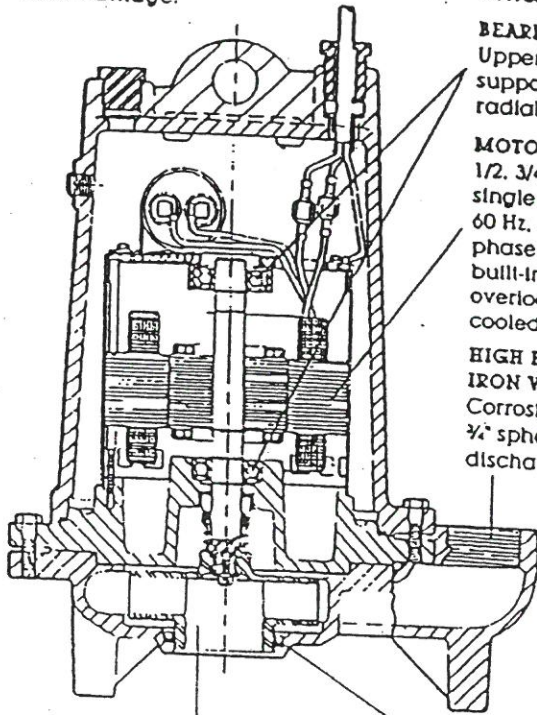
POWER CORD
Jacket sealed with compression fillings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

MOTOR HOUSING
Cast Iron for efficient heat transfer and corrosion resistance.

BEARINGS
Upper and lower ball support rotor. Take radial and thrust loads.

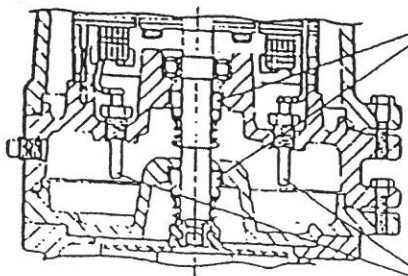
MOTOR
1/2, 3/4, 1 and 1-1/2 HP single or three phase. 60 Hz. 3450 RPM. Single phase PSC motors have built-in on winding overload protection, oil-cooled and lubricated.

HIGH EFFICIENCY CAST IRON VOLUTE
Corrosion resistant. Passes 3/4" spherical solids. 2" NPT discharge.



ENCLOSED TWO VANE IMPELLER
high efficiency. Passes 3/4" spherical solids with stainless steel wear ring. Optional bronze construction available.

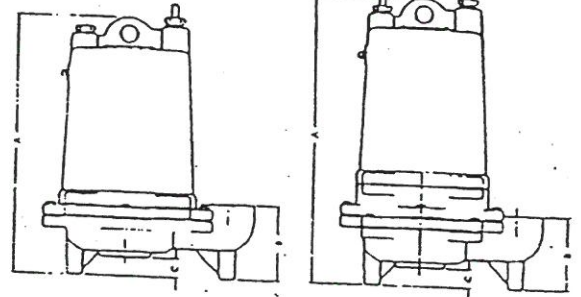
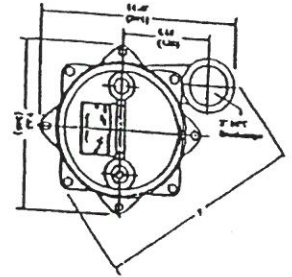
VOLUTE/IMPELLER SEAL RING
Maintains high efficiency and reduces recirculation. Replaceable.



SHAFT SEAL(S)
Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

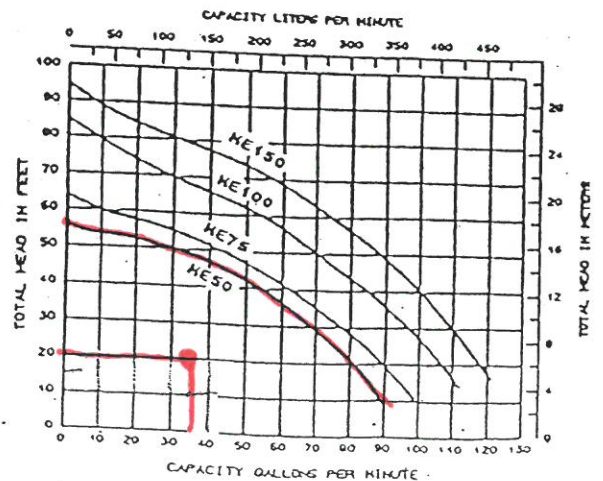
SEAL LEAK PROBES
Optional probes (dual seal only) detect water leakage in seal housing. Activates warning light.

DIMENSIONS



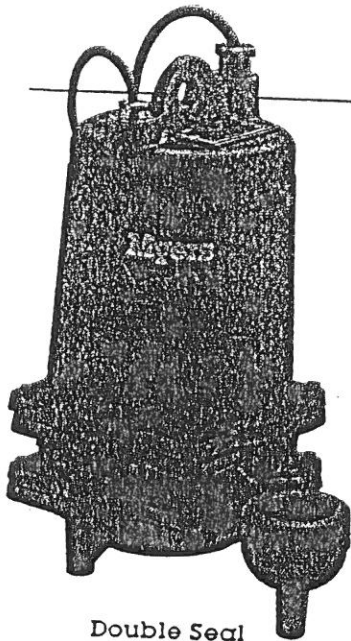
Model Series	Inches (millimeters)			
	A	B	C	F
MES0S	16.8 (427)	4.09 (104)	1.03 (26)	12.13 (308)
MES0D	18.6 (472)	4.09 (104)	1.03 (26)	12.13 (308)
ME75S, ME100S, ME150S	16.8 (427)	4.0 (102)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.6 (472)	4.0 (102)	1.06 (27)	12.5 (318)

PERFORMANCE CURVE



ME SERIES

1/2 through 1-1/2 HP
Effluent Pumps



Double Seal



Single Seal



THE MYERS ME SERIES EFFLUENT PUMPS ARE DESIGNED SPECIFICALLY FOR TODAY'S EFFLUENT PRESSURE DISTRIBUTION MOUNDS, TRENCHES AND HIGH FLOW DRAINAGE APPLICATIONS. The ME Series effluent pumps with their efficient two vane, enclosed impellers, provide the ideal performance for optimum dosing. ME Series pumps are constructed of only corrosion resistant materials like cast iron, stainless steel and thermoplastics to assure that they will perform for years to come in the harsh effluent environment and drainage applications. For more information, call your Myers distributor today or the Myers Ashland, Ohio sales office at 419/289-1144.

ADVANTAGES BY DESIGN

IDEAL FOR USE IN MOUND AND TRENCH PRESSURE DISTRIBUTION SYSTEMS

- High efficiency, two vane, enclosed impeller provides ideal performance for most efficient dosing.
- Impeller passes full 3/4 inch solids.
- Enclosed impeller design eliminates possibility of jamming or corrosion between impeller and volute.

DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- High torque, permanent split capacitor (PSC), single phase motors. No starting switches or relays to wear out.
- Optional seal leak probe warns of seal leak condition. (Dual seal motors only.) Helps prevent costly motor damage.
- Motors have on winding current and temperature sensitive overload. (Single phase only.)

THE ME SERIES EFFLUENT PUMPS ARE DESIGNED FOR YEARS OF MAINTENANCE FREE OPERATION

- Volute seal ring is replaceable. Restores pump to original performance if wear should occur.
- Motor is held in place by 4 screws. Easily removed if service is ever needed.

PRODUCT CAPAILITIES

Capacities To	120 GPM	454 LPM
Heads To	95 ft.	28.9 m
Max. Spherical Solids	3/4 in.	19 mm
Liquids Handling	domestic effluent & drain water	
Intermittent Liquid Temp.	up to 140° F	up to 60° C
Motor Electrical Data	1/2 HP 115 volts, 1 ph 1/2 to 1-1/2 HP 230 volts, 1 ph 208, 230, 460, 575 volts, 3 ph oil-filled, permanent split capacitor type, 1 ph, 3450 rpm, 60 Hz	
Motor Insulation	Class B (130° C)	
Third Party Approvals	UL, CSA	
Acceptable pH Range	6-9	
Specific Gravity	.9-1.1	
Viscosity	28-35 SSU	
Discharge, NPT	2 in.	50.8 mm
Min. Sump Dia. Simplex Duplex	24 in.	61 cm
	36 in.	91.4 cm

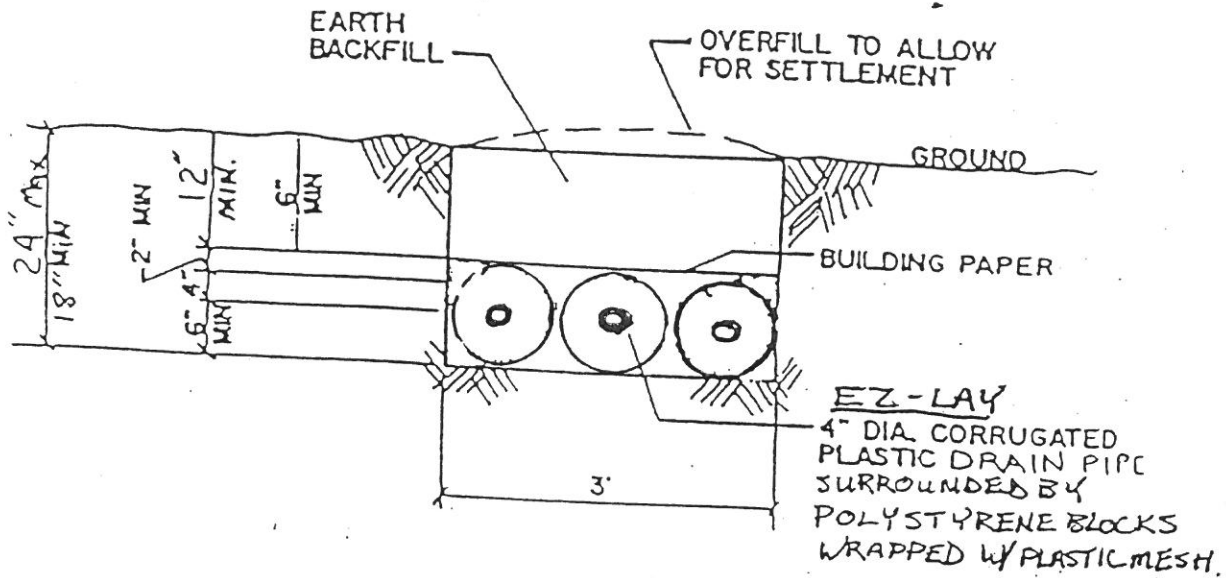
Construction Materials	
Motor Housing, Volute	cast iron, Class 30, ASTM A48-76
Enclosed Two Vane Impeller	Standard: engineered thermoplastic Optional: bronze
Impeller Wear Ring	304 SST
Volute Sealing Ring	Buna-N
Shaft	416 SST
Power Cord	1/2 HP 1 Ph: 20 ft. 16/3 SJOW/SJOW-A 3/4 - 1-1/2 HP 1 Ph: 20 ft. 14/3 SJOW/SJOW-A All 3 Ph: 20 ft. 14/4 SOW/SOW-A
Shaft Seals	Standard: single carbon & ceramic Optional: tandem carbon & ceramic Opt. Lower: tungsten carbide
Fasteners	300 Series SST

WHERE INNOVATION MEETS TRADITION

Myers

PENTAIR PUMP GROUP

NITRIFICATION TRENCH DETAIL



NOTE :

1. PERFORATED CORRUGATED PLASTIC PIPE SHALL MEET REQUIREMENTS OF ASTM D 2729.
2. PIPE SHALL BE LEVEL
3. END CAP SHALL BE PROVIDED AT END OF ALL CORRUGATED PLASTIC PIPE LINES.
4. TRENCH BOTTOM SHALL BE LEVEL