

HTE# 08-5-19474

Harnett County Department of Public Health Improvement Permit

24906

A building permit cannot be issued with only an Improvement Permit

ISSUED TO: PAUL FLAHERTY PROPERTY LOCATION: Vic KEITH RD
 SUBDIVISION: BUFFALO LAKES LOT # 421
 NEW REPAIR EXPANSION
 Type of Structure: SFD (60'x60') Site Improvements required prior to Construction Authorization Issuance:
 Proposed Wastewater System Type: PUMP TO 25% REDUCTION
 Projected Daily Flow: 480 GPD
 Number of bedrooms: 4 Number of Occupants: 8 max
 Basement Yes No
 Pump Required: Yes No May be required based on final location and elevations of facilities
 Type of Water Supply: Community Public Well Distance from well 100 feet Permit valid for: Five years
 Permit conditions: PERMIT BASED ON PROPOSAL FROM APPLICANTS SOIL CONSULTANT No expiration

Authorized State Agent: [Signature] Date: 6/18/08 SEE ATTACHED SITE SKETCH
 The issuance of this permit by the Health Department in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. This site is subject to revocation if the site plan, plat, or the intended use changes. The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to conditions of this permit.

Construction Authorization

(Required for Building Permit)

The construction and installation requirements of Rules .1950, .1952, .1954, .1955, .1956, .1957, .1958, and .1959 are incorporated by references into this permit and shall be met. Systems shall be installed in accordance with the attached system layout.

ISSUED TO: PAUL FLAHERTY PROPERTY LOCATION: Vic KEITH RD
 SUBDIVISION: BUFFALO LAKES LOT # 421
 Facility Type: SFD (60'x60') New Expansion Repair
 Basement? Yes No Basement Fixtures? Yes No
 Type of Wastewater System** PUMP TO 25% REDUCTION (Initial) Wastewater Flow: 480 GPD
 (See note below, if applicable)
EXEMPT (15A NCAC 18A .1945(c)) (Repair)

Installation Requirements/Conditions
 Septic Tank Size 1200 gallons
 Pump Tank Size 1200 gallons
 Number of trenches 5
 Exact length of each trench SEE CHART feet
 Trenches shall be installed on contour at a
 Maximum Trench Depth of: 12 inches
 (Trench bottoms shall be level to +/- 1/4" in all directions)
 Trench Spacing: 9 Feet on Center
 Soil Cover: 6 inches
 (Maximum soil cover shall not exceed 36" above the trench bottom)
 Pump Requirements: 15.12 ft. TDH vs. 30.66 GPM
 Aggregate Depth: _____ inches below pipe
 _____ inches above pipe
 _____ inches total
 Conditions: FOLLOW ALL CONDITIONS AND PARAMETERS ON ATTACHED PROPOSAL

**If applicable: I understand the system type specified is different from the type specified on the application. I accept the specifications of this permit.
 Owner/Legal Representative Signature: _____ Date: _____

This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes. The Construction Authorization shall not be transferred when there is a change in ownership of the site. This Construction Authorization is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit. SEE ATTACHED SITE SKETCH

Authorized State Agent: [Signature] Date: 6/18/08
 Construction Authorization Expiration Date: 6/18/13

421Lot , Buffalo LakesSubdivision

On-Site Wastewater Design Specifications

House Footprint: 60' x 60'

Foundation Drain Possible

Bedrooms: 4 (Daily Flow 480 gallons)

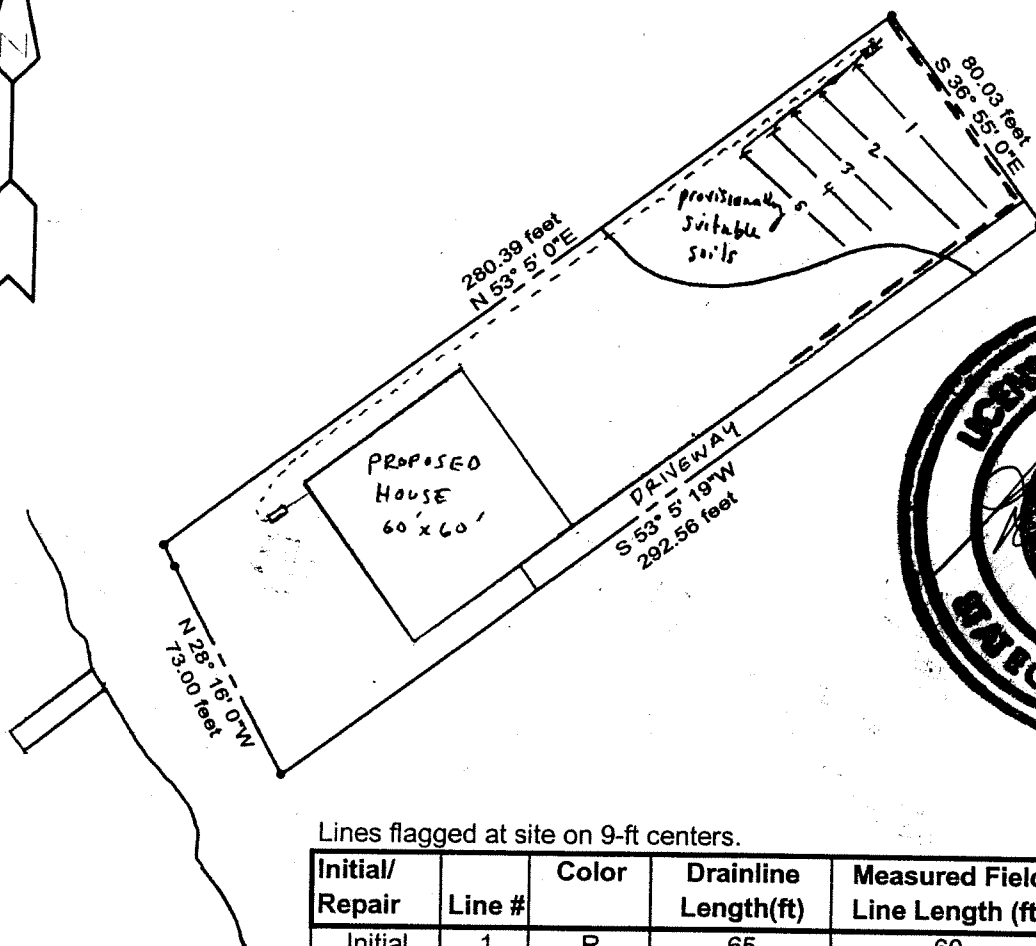
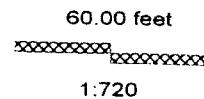
Initial System: Pressure Manifold L1-L5

249' of accepted status drainline installed on contour at 12 inches

Soil LTAR 0.5 gpd/sf

curtain drain: - - -

LEGEND			
☆	EIP	□	Septic Tank
—	Supply Line	■	Pump Tank
⊙	Proposed Well	⊙	D-Box
⊙	Existing Well	⊗	Pressure Manifold



Lines flagged at site on 9-ft centers.

Initial/Repair	Line #	Color	Drainline Length(ft)	Measured Field Line Length (ft)	Relative Elevation (ft)
Initial	1	R	65	60	5.82
Initial	2	W	65	60	7.04
Initial	3	B	45	43	8.13
Initial	4	Y	45	43	9.12
Initial	5	R	45	43	9.94
Pump Tank:					
		Total:	265	249	EIP = 100

Pressure Manifold Design Criteria

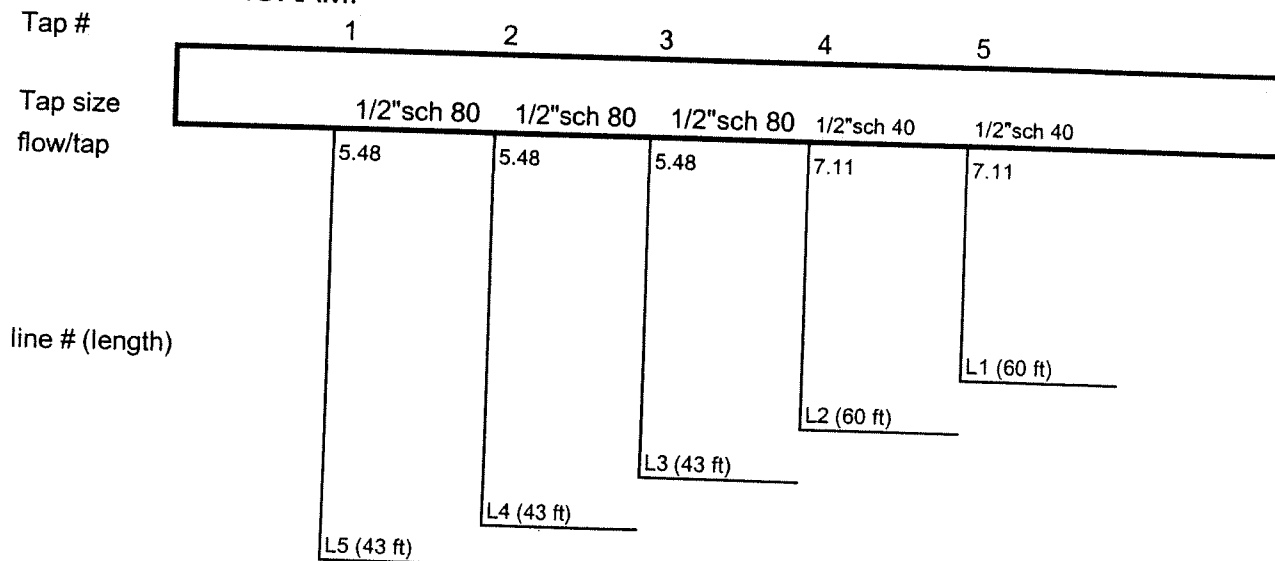
Initial System

Line Number	Line Color	Elevation	Drainline Length(ft)	Tap Size/Schedule	Flow/tap (gpm)	gpd/ft	LTAR (gpd/sqft)
1	R	5.82	60	1/2"sch 40	7.11	1.855	0.618
2	W	7.04	60	1/2"sch 40	7.11	1.855	0.618
3	B	8.13	43	1/2"sch 80	5.48	1.995	0.665
4	Y	9.12	43	1/2"sch 80	5.48	1.995	0.665
5	R	9.94	43	1/2"sch 80	5.48	1.995	0.665

Total Drainline= 249 Total Flow= 30.66

Pressure Head (ft)= 2 Target LTAR= 0.67 gpd/sqft LTAR + 5% 0.70
 Daily Flow= 480 Total Flow (gpm)= 30.66 Daily PRT(min)= 15.66
 Dose Vol= 121.95 gallons w/ Pipe Vol @% 75 Dose PRT (min)= 3.98

MANIFOLD DIAGRAM:



* Soil LTAR 0.5 gpd/sf; convert for accepted system drainlines $0.5 / .75 = 0.667$ gpd/sf

Lot 421 Buffalo Lakes

Pressure Manifold Design Criteria

Applicant: Paul Flaherty Phone #: (919) 795-4287
 Mailing Address: P.O. Box 133 Clayton, NC 27650

D#: _____ PIN: 9586-53-5080 S/D: Buffalo Lakes Lot#: 421
 Site Address: _____

Bedrooms: 4 Daily Flow: 480 gallons
 Septic Tank: 1200 gallons Pump Tank: 1200 gallons
 LTAR: 0.5 gpd/sqft Effective (trench) LTAR: 0.66667 gpd/sqft
 Amt. of Drainline: 720 sqft or 240 linear ft
 TRENCHES Length (ft): see tap chart Depth (in): 12 Stone Depth (in): na
 SUPPLY LINE Length (ft): _____ Diameter: 2" sch 40 pvc
 MANIFOLD Length (ft): 4 Diameter: 4" sch 80 pvc Elevation: 6.82
 # Taps 5 Tap Configuration: 6in. spacing, 1 side of manifold

Tap Chart

Line	Color	Elevation	Length(ft)	Schedule	per tap	gpd/ft	Area	gpd/sqft
1	R	5.82	60	1/2"sch 40	7.11	1.855	180	0.618
2	W	7.04	60	1/2"sch 40	7.11	1.86	180	0.618
3	B	8.13	43	1/2"sch 80	5.48	2.00	129	0.665
4	Y	9.12	43	1/2"sch 80	5.48	2.00	129	0.665
5	R	9.94	43	1/2"sch 80	5.48	2.00	129	0.665

LTAR + 5% = 0.70

Total Drainline: 249 Total Flow: 30.66 Sq. Foot: 747.00

Calculations:

Min Dose Pump Run time is 5 minutes if pumping downhill, change pipe vol
 Dose Volume: 121.95 gallons, with Pipe Volume at % 75
 Dose Pump Run Time (min): 3.98 Daily Pump Run Time (min): 15.66
 Drawdown: 122 gallons divided by 23 gal/ inch = 5.30 inches

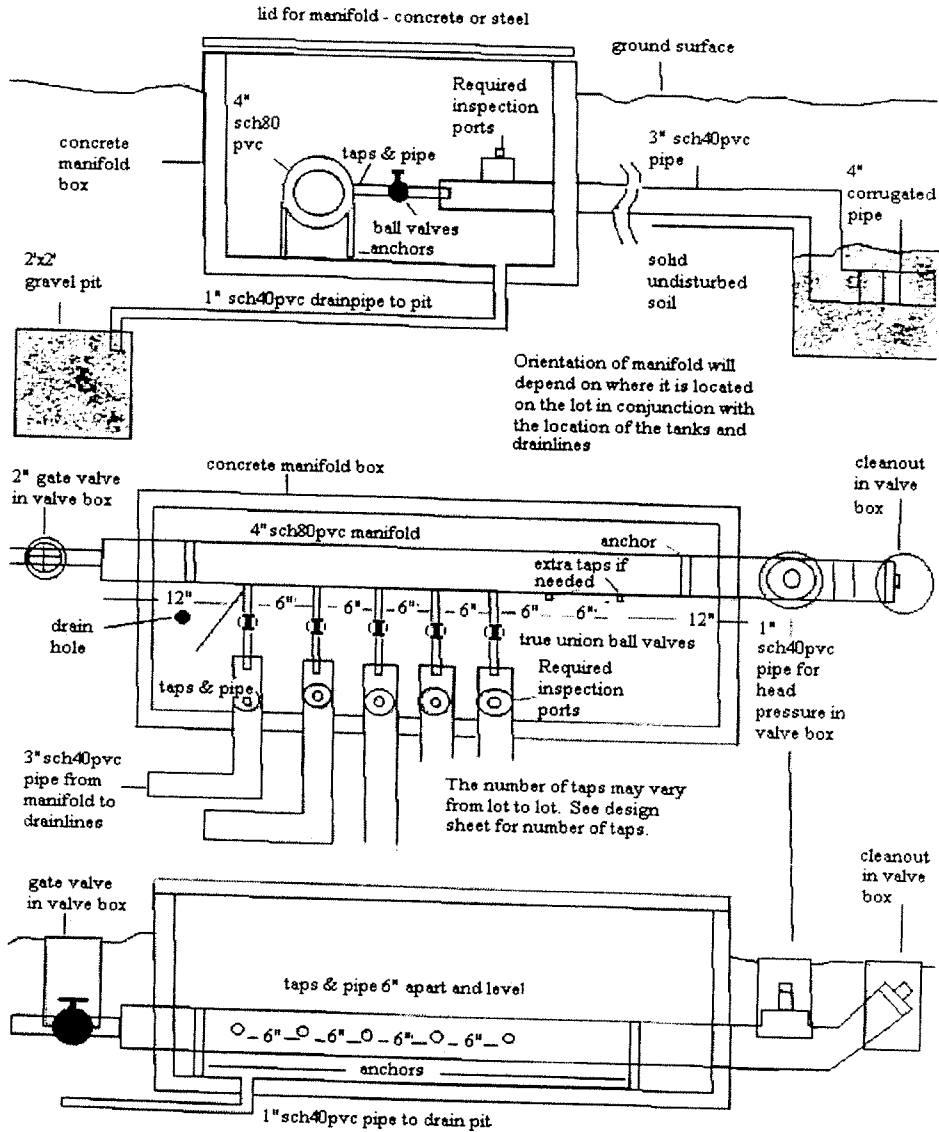
Pump Tank Elevation (ft): 0 Pump Elevation (ft): -5
 Friction Head: 1.30 (supply line length + 70' for fittings in pump tank)
 Elevation Head: 11.82 Design Head: 2 Total Head: 15.12 feet

Pump to Deliver: 30.66 gpm @ 15.12 ft head

Simplex Control Panel (SJE Rhombus 112 or equal) with elapsed time meter, cycle counter, alarm, and pump on separate circuits is required. Floats to be determined by type of pump tank used. A septic filter (Polylok PL-122 or equal) is required.

Possible Pumps Include: Hydromatic: _____ Zoeller: _____

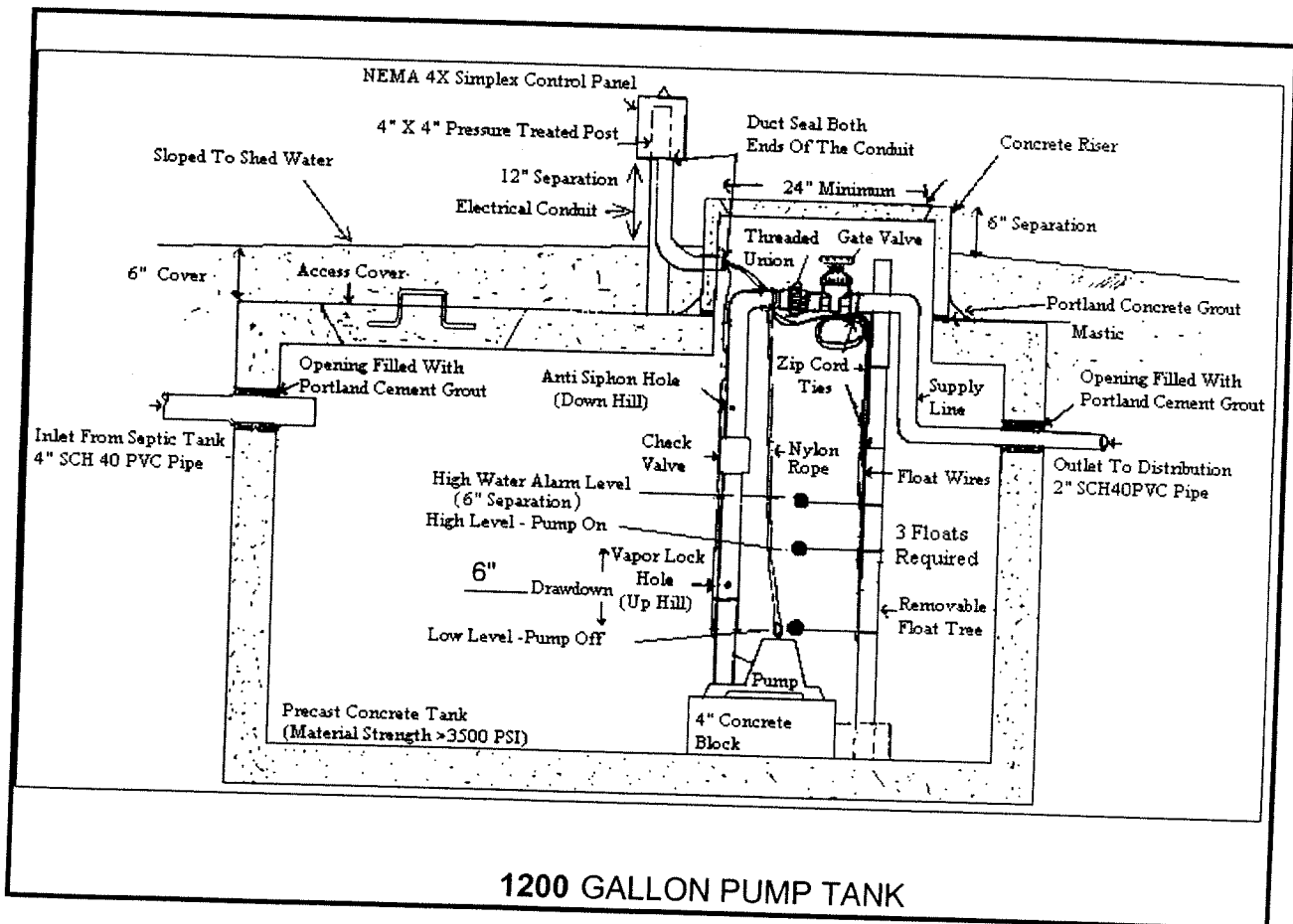
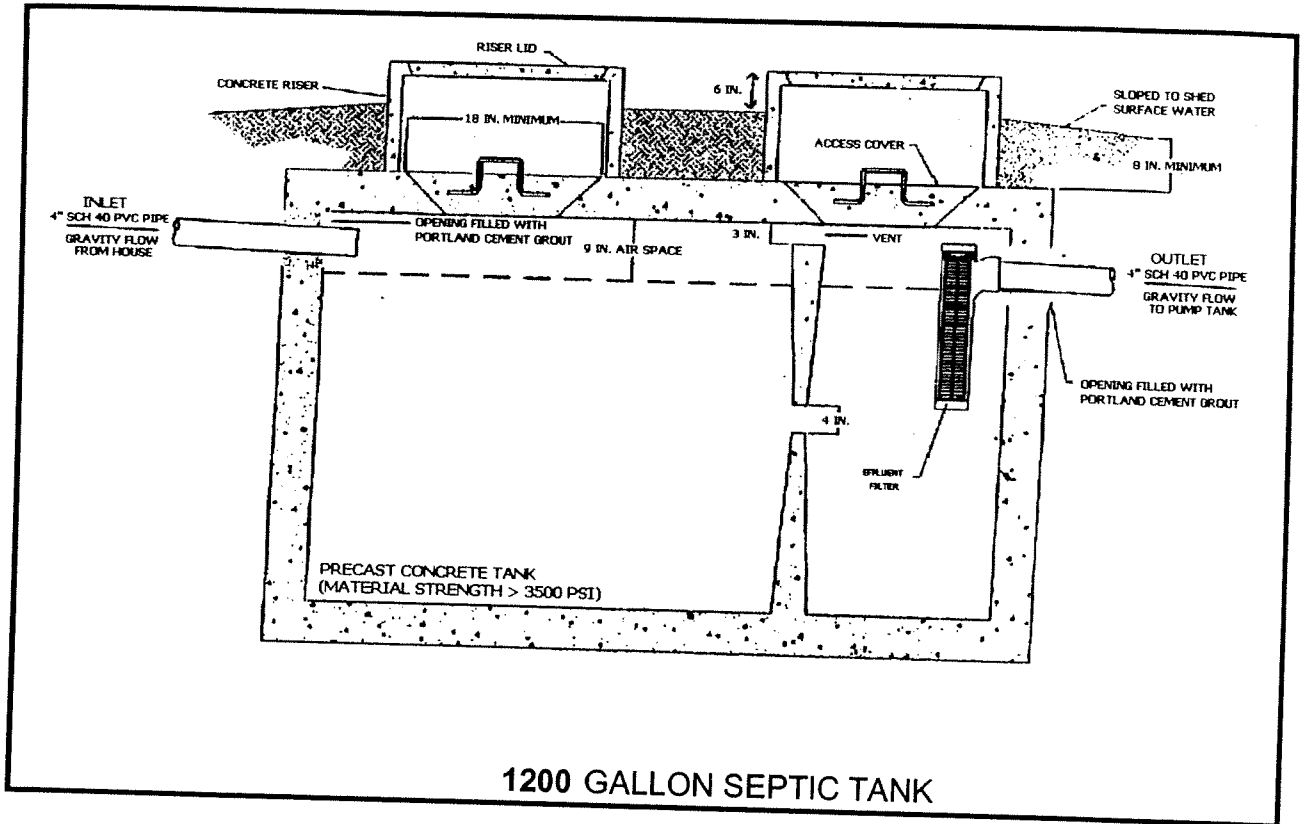
Pressure Manifold Requirements



1 to 80%

MANIFOLD DIAGRAM (Initial System):

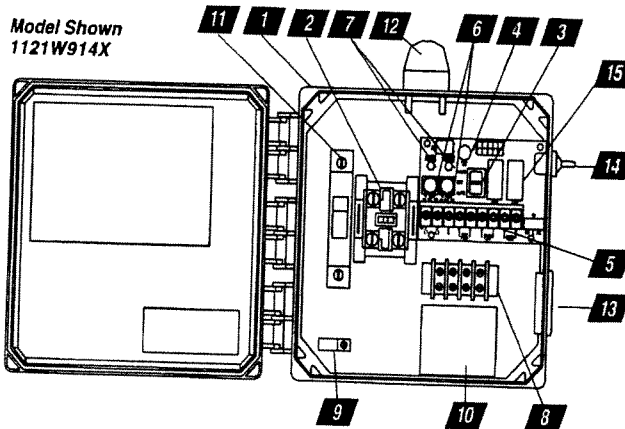
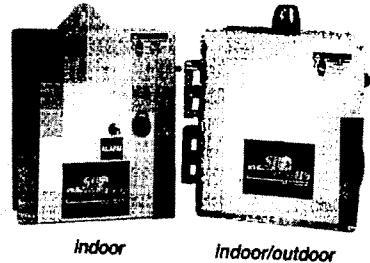
Tap#	1	2	3	4	5
Tap size	1/2"sch 80	1/2"sch 80	1/2"sch 80	1/2"sch 40	1/2"sch 40
flow per tap	5.48	5.48	5.48	7.11	7.11
line(length)	L5 (43 ft)	L4 (43 ft)	L3 (43 ft)	L2 (60 ft)	L1 (60 ft)



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.



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. required

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

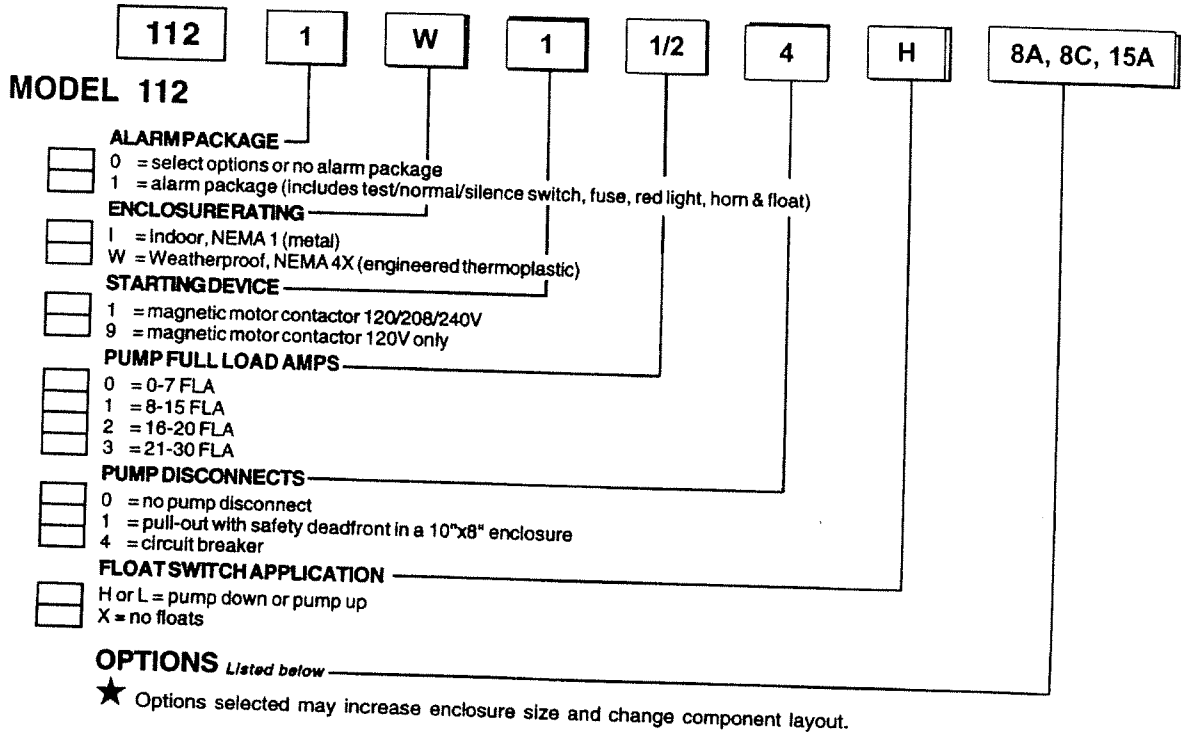
- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' Sensor Float® control switches
- Complete with step-by-step installation instructions
- Three-year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



SJE Rhombus
SJE 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



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 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 checked="" 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 Auxillary 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 checked="" 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

