

HTE# 08-5-19495

Harnett County Department of Public Health

25159

Improvement Permit

A building permit cannot be issued with only an Improvement Permit

ISSUED TO: AGARE KURE BEACH MINISTRIES PROPERTY LOCATION: TYLER DENAR RD
 SUBDIVISION _____ LOT # _____
 NEW REPAIR EXPANSION
 Type of Structure: CABIN (EXISTING) 18 BEDS
 Proposed Wastewater System Type: PUMP TO 25% REDUCTION SYSTEM
 Projected Daily Flow: 1080 GPD
 Number of bedrooms: _____ Number of Occupants: 18 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
 No expiration
 Permit conditions: _____

Authorized State Agent: [Signature] Date: 12/10/08 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: AGARE KURE BEACH MINISTRIES PROPERTY LOCATION: TYLER DENAR RD
 SUBDIVISION _____ LOT # _____
 Facility Type: CABIN (EXISTING) New Expansion Repair
 Basement? Yes No Basement Fixtures? Yes No
 Type of Wastewater System** PUMP TO 25% REDUCTION SYSTEM (Initial) Wastewater Flow: 1080 GPD
 (See note below, if applicable PUMP TO 25% REDUCTION SYSTEM (REPAIR))

Installation Requirements/Conditions
 Number of trenches 5
 Septic Tank Size 4000 gallons EXISTING Exact length of each trench SEE CHART feet Trench Spacing: 10 Feet on Center
 Pump Tank Size 5000 gallons ✓ Trenches shall be installed on contour at a Soil Cover: 6 inches
 Maximum Trench Depth of: 18 inches (Maximum soil cover shall not exceed 36" above the trench bottom)
 in all directions)
 Pump Requirements: _____ ft. TDH vs. _____ GPM _____ inches below pipe
 Aggregate Depth: _____ inches above pipe
 Conditions: SEE ATTACHED PROPOSAL FOR ALL DETAILS. IF ON SITE MEETING _____ inches total
IS DESIRED CONTACT HEALTH DEPARTMENT AT LEAST 3 DAYS PRIOR TO INSTALLATION

**If applicable: I understand the system type specified is different from the type specified on the application. I accept the specifications of this permit.

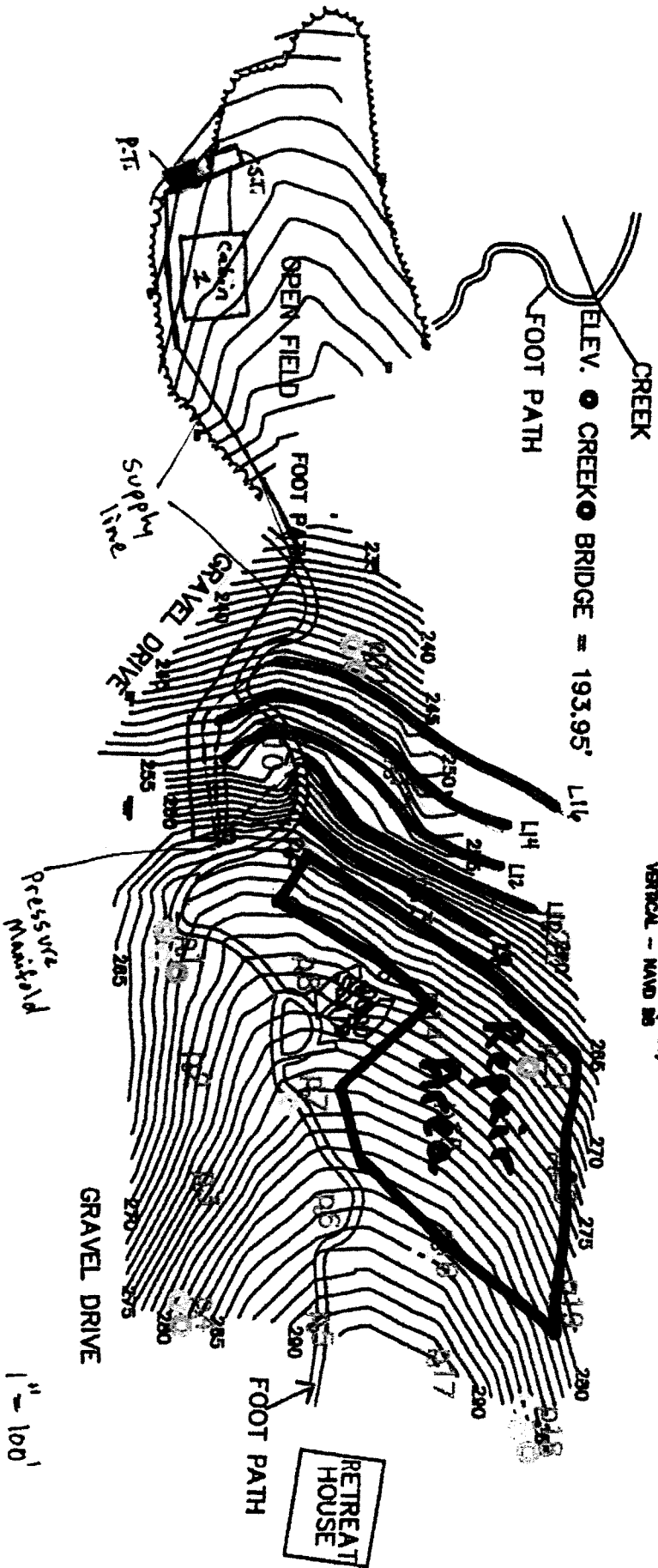
Owner/Legal Representative Signature: _____ Date: _____

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: 12/10/08
 Construction Authorization Expiration Date: 12/10/08

CAMP AGAPE

HORIZONTAL - NAD 83 (1983)
VERTICAL - NAVD 83



Camp Agape - Cabin 1

Lines flagged at site on 5-ft centers.

Initial/Repair	Line #	Color	Drainline Length(ft)	Measured Field Line Length (ft)	Relative Elevation (ft)
Repair	1	W	Partial Repair Area		
Repair	2	B			
Repair	3	R			
Repair	4	Y			
Repair	5	W			
Repair	6	B			
	7	R			
Initial	8	Y	140	145	150.09
	9	W		125	148.94
Initial	10	B	190	193	148.06
	11	R		210	146.58
Initial	12	Y	190	207	145.74
	13	W		210	144.42
Initial	14	B	190	212	143.21
	15	R		200	141.95
Initial	16	Y	190	206	139.75
Pump Tank:					EPT = 100
		Total:	900	1836	

Pressure Manifold Design Criteria

Applicant: Randy Youngquist (Camp Agape) Phone #: (919) 552-9421
 Mailing Address: Camp Agape Kure Beach Ministries, 1369 Tyler Dewar Lane, Fuquay-Varina NC 27526

Tracking Number: _____ Project: Cabin 1 Lot#: N/A

Site Address: same as above

Beds: 18 Daily Flow: 1080 gallons
 Septic Tank: 4000 gallons Pump Tank: 5000 gallons
 LTAR: 0.3 gpd/sqft w/ innov: 0.4 gpd/sqft
 Amt. of Drains: 2700 sqft or 900 linear ft
 TRENCHES Length (ft): see tap chart Depth (in): 18 Stone Depth (in): na
 SUPPLY LINE Length (ft): 450 Diameter: 3" sch 40 pvc
 MANIFOLD Length (ft): 4 Diameter: 3" sch 80 pvc Elevation: 151.09
 # Taps 5 Tap Configuration: 6in. spacing, 1 side of manifold

Tap Chart

Line	Color	Elevation	Length(ft)	Schedule	per tap	gpd	Area	gpd/sqft
8	Y	150.09	140	1/2"sch 40	7.11	172.48	420	0.411
10	B	148.06	160	1/2"sch 40	7.11	172.48	480	0.359
12	Y	145.74	200	3/4"sch 80	10.10	245.01	600	0.408
14	B	143.21	200	3/4"sch 80	10.10	245.01	600	0.408
16	Y	139.75	200	3/4"sch 80	10.10	245.01	600	0.408

LTAR + 5% = 0.42

Total Drains: 900 Total Flow: 44.52 Sq. Foot: 2700.00

Calculations:

Dose Volume: 440.78 gallons, with Pipe Volume at % 75
 Dose Pump Run Time (min): 9.90 Daily Pump Run Time (min): 24.26
 Drawdown: 441 gallons divided by 62.34 gal/ inch = 7.07 inches

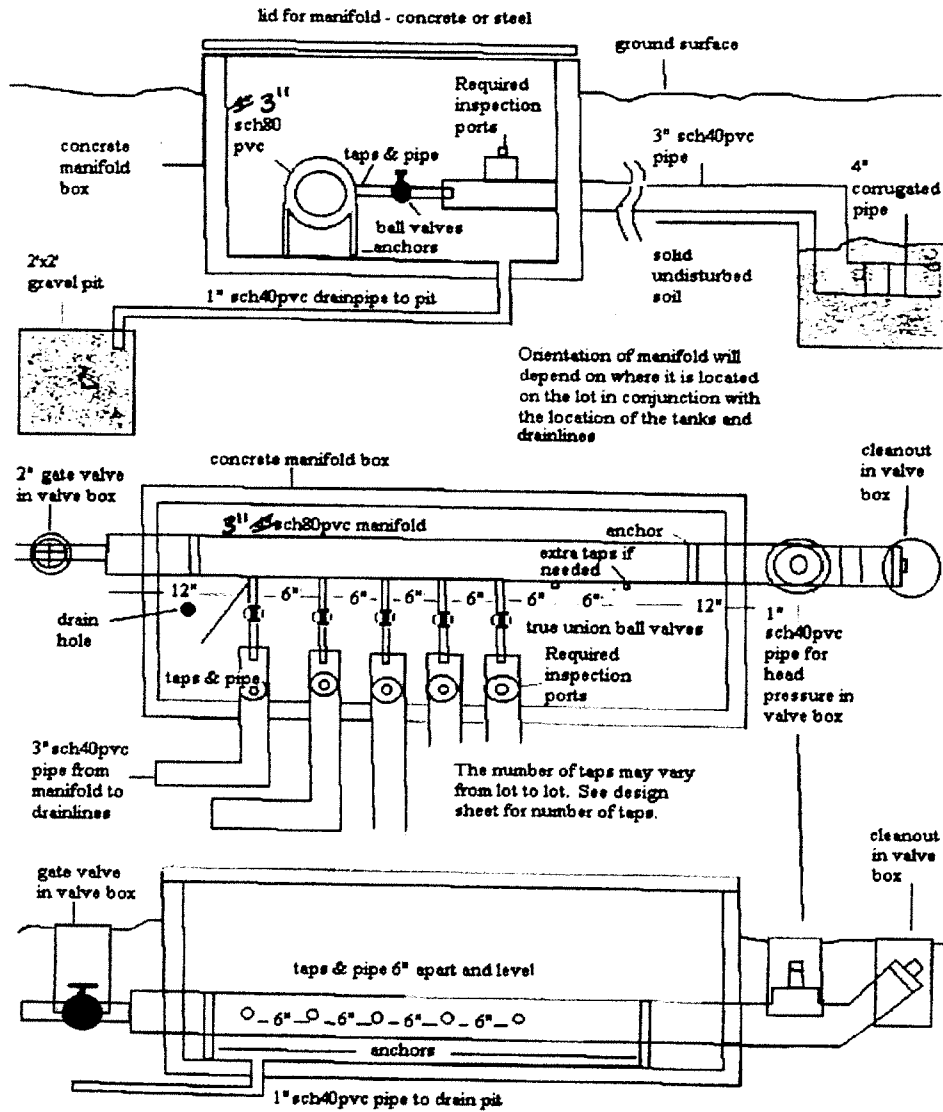
Pump Tank Elevation (ft): 100 Pump Elevation (ft): 93.5
 Friction Head: 2.80 (supply line length + 70' for fittings in pump tank)
 Elevation Head: 57.59 Design Head: 2 Total Head: 62.39 feet

Pump to Deliver: 44.52 gpm @ 62.39 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: Zoeller: High Head Flow-Mate 188 Model (1 & 1/2 HP)

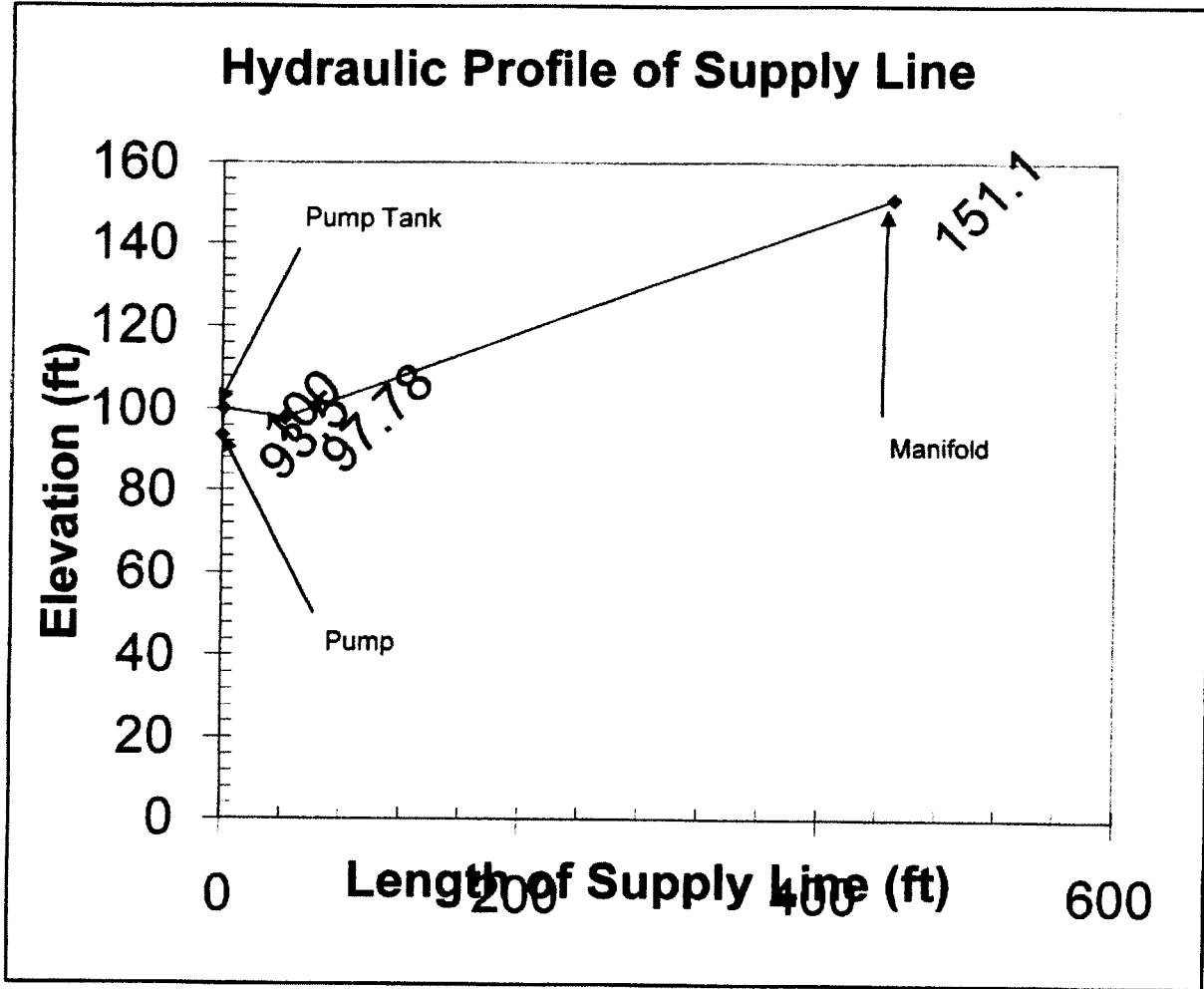
Pressure Manifold Requirements



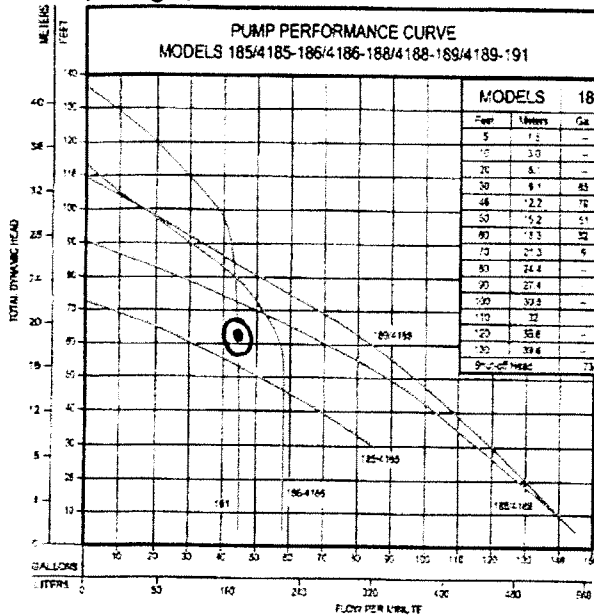
MANIFOLD DIAGRAM (Initial System): 3" sch 80 manifold

Tap#	1	2	3	4	5
Tap size	1/2"sch 40	1/2"sch 40	3/4"sch 80	3/4"sch 80	3/4"sch 80
flow per tap	7.11	7.11	10.10	10.10	10.10
line(length)	L8 (140ft)	L10 (160ft)	L12 (200ft)	L14 (200ft)	L16 (200ft)

Camp Agape-Cabin 1



Camp Agape - Cabin 1



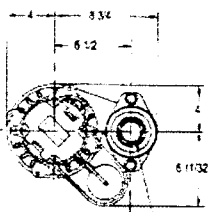
PUMP PERFORMANCE CURVE
MODELS 185/4185-186/4186-188/4188-189/4189-191

Feet	Meters	185/4185		186/4186		188/4188		189/4189		191	
		Gal	Liters	Gal	Liters	Gal	Liters	Gal	Liters	Gal	Liters
5	1.5	—	—	58	220	145	549	145	549	45	170
10	3.0	—	—	58	220	140	530	140	530	45	170
15	4.5	—	—	52	220	128	484	130.5	494	45	170
20	6.0	—	—	46	220	118	449	120	454	45	170
25	7.5	—	—	40	220	108	409	110	414	45	170
30	9.0	—	—	34	220	98	374	100	379	45	170
35	10.5	—	—	28	220	88	339	90	339	45	170
40	12.0	—	—	22	220	78	304	80	304	45	170
45	13.5	—	—	16	220	68	269	70	269	45	170
50	15.0	—	—	10	220	58	234	60	234	45	170
55	16.5	—	—	4	220	48	199	50	199	45	170
60	18.0	—	—	—	—	38	164	40	164	45	170
65	19.5	—	—	—	—	28	129	30	129	45	170
70	21.0	—	—	—	—	18	94	20	94	45	170
75	22.5	—	—	—	—	8	59	10	59	45	170
80	24.0	—	—	—	—	—	—	—	—	45	170
85	25.5	—	—	—	—	—	—	—	—	45	170
90	27.0	—	—	—	—	—	—	—	—	45	170
95	28.5	—	—	—	—	—	—	—	—	45	170
100	30.0	—	—	—	—	—	—	—	—	45	170
105	31.5	—	—	—	—	—	—	—	—	45	170
110	33.0	—	—	—	—	—	—	—	—	45	170
115	34.5	—	—	—	—	—	—	—	—	45	170
120	36.0	—	—	—	—	—	—	—	—	45	170
125	37.5	—	—	—	—	—	—	—	—	45	170
130	39.0	—	—	—	—	—	—	—	—	45	170
Shut-off head	134	—	—	114	429	91.5	349	102	389	137.5	520

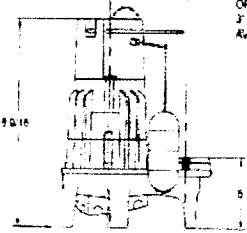
OC9903

WARNING: Model 185 should not be subjected to heads less than 30 feet TDH.

Single Seal-180 Series Automatic Design Weight 82-89 lbs.

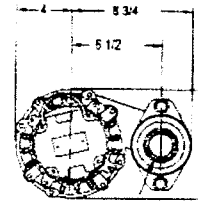


1 1/2" NPT STANDARD
2" NPT
OR
3" NPT
AVAILABLE

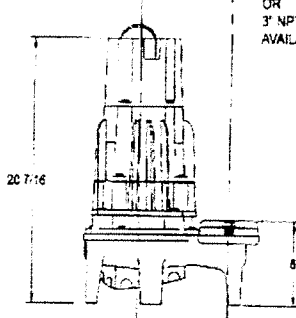


SK374

Double Seal-4180 Series / Weight 89-94 lbs.



1 1/2" NPT STANDARD
2" NPT
OR
3" NPT
AVAILABLE



SK1413

SELECTION GUIDE

1. Integral float operated mechanical switch, no external control required.
2. For automatic use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
3. See FM1228 for correct model of simplex control panel.
4. See FM0712 for correct model of duplex control panel.
5. Variable level control switch 10-0225 used as a control activator, specify simplex (3) float or duplex (4) float system.

CAUTION

For information on additional Zoeller products refer to catalog on Piggyback Variable Level Float Switches, FM0477; Electrical Alternator, FM0486; Mechanical Alternator, FM0495; Sump/Sewage Basins, FM0487; Simplex Pump Control, FM1596; Alarm Systems, FM0732; and Disconnect/Rail Systems, FM0787.

185 MODELS		4185 MODELS		Standard all models - 20 ft. cord - 1 HP		Control Selection		Listings	
Single Seal	Double Seal	Volts	Ph	Mode	Amps	Simplex	Duplex	CSA	UL
D185	—	230	1	Auto	9.8	1	—	Y	Y
E185	E4185	230	1	Non	9.8	2 or 3	4	Y ⁽²⁾	Y
* H185	—	200-208	1	Auto	11.5	1	—	N	N
* I185	* I4185	200-208	1	Non	11.5	2 or 3	4	N	N
* F185	* F4185	230	3	Non	7.4	3 & 5	4 & 5	Y	Y
* J185	* J4185	200-208	3	Non	7.5	3 & 5	4 & 5	Y	Y
* G185	* G4185	460	3	Non	3.7	3 & 5	4 & 5	Y	Y
* BA185	—	575	3	Non	3.3	3 & 5	4 & 5	Y	N

186 MODELS		4186 MODELS		Standard all models - 20 ft. cord - 1 HP		Control Selection		Listings	
Single Seal	Double Seal	Volts	Ph	Mode	Amps	Simplex	Duplex	CSA	UL
D186	—	230	1	Auto	13.7	1	—	N	N
E186	E4186	230	1	Non	13.7	2 or 3	4	N	N
* F186	* F4186	230	3	Non	9.2	3 & 5	4 & 5	N	N
* G186	* G4186	460	3	Non	4.6	3 & 5	4 & 5	N	N

188 MODELS		4188 MODELS		Standard all models - 20 ft. cord - 1 1/2 HP		Control Selection		Listings	
Single Seal	Double Seal	Volts	Ph	Mode	Amps	Simplex	Duplex	CSA	UL
D188	—	230	1	Auto	14.0	1	—	N	Y ⁽³⁾
E188	E4188	230	1	Non	14.0	2 or 3	4	Y ⁽²⁾	Y ⁽³⁾
* H188	—	200-208	1	Auto	15.8	1	—	N	N
* I188	* I4188	200-208	1	Non	15.8	2 or 3	4	N	N
* F188	* F4188	230	3	Non	8.9	3 & 5	4 & 5	Y	Y
* J188	* J4188	200-208	3	Non	10.3	3 & 5	4 & 5	Y	Y
* G188	* G4188	460	3	Non	4.6	3 & 5	4 & 5	Y	Y
* BA188	—	575	3	Non	3.5	3 & 5	4 & 5	Y	N

189 MODELS		4189 MODELS		Standard all models - 20 ft. cord - 2 HP		Control Selection		Listings	
Single Seal	Double Seal	Volts	Ph	Mode	Amps	Simplex	Duplex	CSA	UL
D189	—	230	1	Auto	17.1	1	—	N	Y ⁽³⁾
E189	E4189	230	1	Non	17.1	2 or 3	4	Y ⁽²⁾	Y ⁽³⁾
* H189	—	200-208	1	Auto	20.5	1	—	N	N
* I189	* I4189	200-208	1	Non	20.5	2 or 3	4	N	N
* F189	* F4189	230	3	Non	11.2	3 & 5	4 & 5	Y	Y
* J189	* J4189	200-208	3	Non	13.2	3 & 5	4 & 5	Y	Y
* G189	* G4189	460	3	Non	6.0	3 & 5	4 & 5	Y	Y
* BA189	—	575	3	Non	5.8	3 & 5	4 & 5	Y	N
WD189	* WD4189	230	1	Auto	17.1	1	4	N	N

191 MODEL		Standard all models - 20 ft. cord - 2 HP		Control Selection		Listings			
Single Seal	Double Seal	Volts	Ph	Mode	Amps	Simplex	Duplex	CSA	UL
E191	—	230	1	Non	14.5	2 or 3	4	N	N

* No Milled Plug
(1) UL Listed unit available with 20 Amp Plug.
(2) CSA Approval without plug cap.
(3) 20 Amp Outlet, P/N 10-0060 must be used.

RESERVE POWERED DESIGN

For unusual conditions a reserve safety factor is engineered into the design of every Zoeller pump.

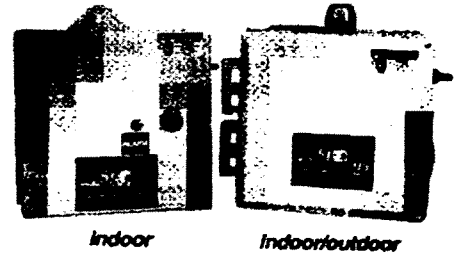
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Control Panel - on-site (should be comparable)

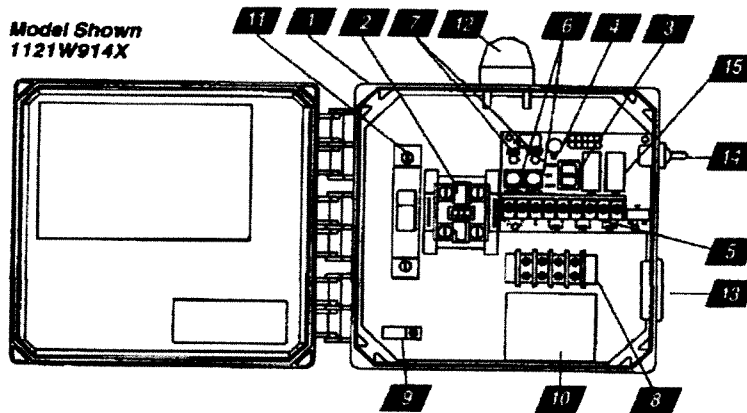
MODEL 112 Control Panel

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 (2X)

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

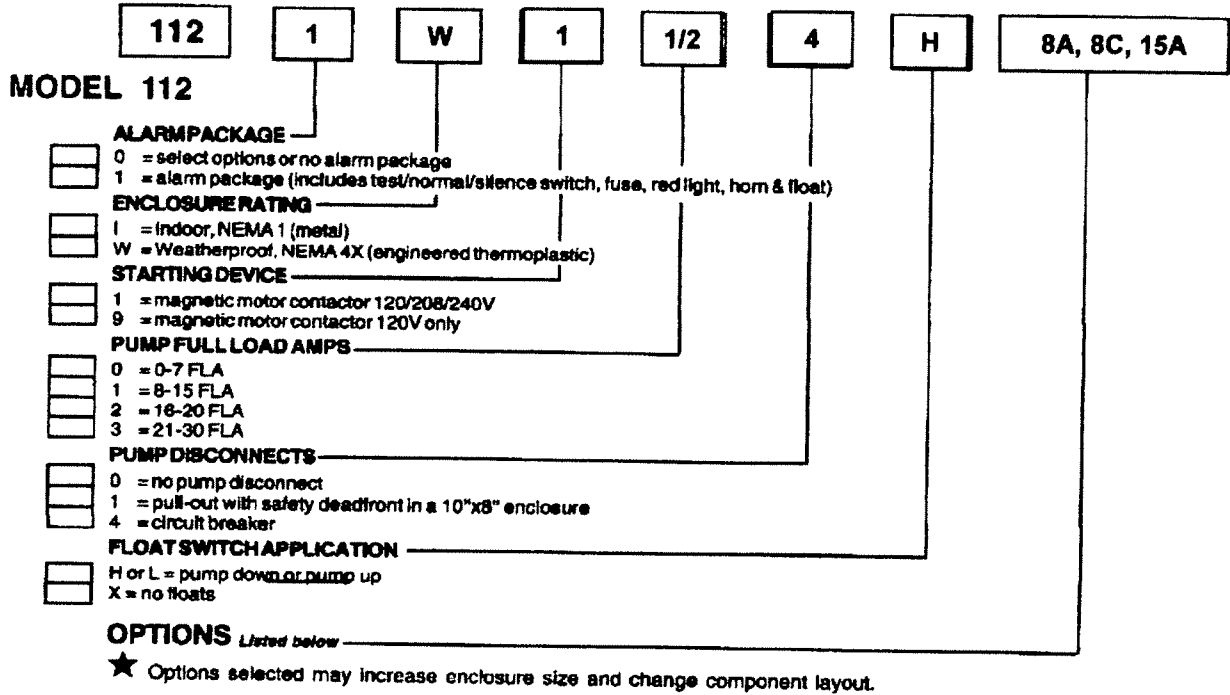
- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' Sensor Float® control switches
- Complete with step-by-step installation instructions
- Three-year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

Camp Agape-Cabin 1



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 8A</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 8A</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 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 type="checkbox"/> ★ 8A Elapsed time meter	<input type="checkbox"/> 17B SJE SignalMaster® / externally weighted ●
<input 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 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

