

# CONSTRUCTION AUTHORIZATION FOR G.S. 130A-335(a2)

County: Harnett
PIN/Lot Identifier: 0643-36-2149
Issued To: J Douglas Contracting
Property Location: 148 Hook Drive, Fuquay-Varina, NC 27526 (Cotton Farms Subdivision, Lot 7)
AOWE/PE Plans/Evaluations Provided: Yes  No  If yes, name and license number of AOWE/PE: Jason Hall, AOWE #10004E  Facility Type: 4-Bedroom, Single Family
✓ New Expansion Repair System Relocation Change of Use
Basement? Yes No Basement Fixtures? Yes No  Type of Wastewater System* IIIB, Pressure Manifold (Accepted) (Initial) IIIB, Pressure Manifold (PPBPS) (Repair
*Please include system classification for proposed wastewater system types in accordance with 15A NCAC 18A .1961 Table V(a)
Design Daily Flow: GPD Wastewater Strength: 🗸 domestic 🗌 high strength 🔲 industrial process
Session Law 2014-120 Section 53, Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies? Yes (if yes, please provide engineering documentation)
Installation Requirements/Conditions
Septic Tank Size: 1200 gallons Total Trench/Bed Length: 450 feet Trench/Bed Spacing: 9 feet on center
Trench/Bed Width:36inches LTAR0.275gpd/ft <sup>2</sup>
Soil Cover: 9 inches Slope Corrected Maximum Trench/Bed Depth <sup>‡</sup> : 21 inches * Measured on the downhill side of the trench
Aggregate Depth: $N/A$ inches above pipe $N/A$ inches below pipe $N/A$ inches total
Pump Tank Size (if applicable):
Pump Requirements: 23.17 ft. TDH vs. 36.91 GPM Grease Trap Size (if applicable): gallons
Distribution Method: ☐ Serial ☐ D-Box or Parallel ☑ Pressure Manifold(s) ☐ LPP ☐ Other:
Artificial Drainage Required: Yes No 🗸 If yes, please specify details:
Legal Agreements (If the answer is "Yes" to any type of legal agreements, please attach a copy of the agreement.)
Multi-party Agreement Required [.1937(h)]: Yes 🗸 No
Easement, Right-of-Way, or Encroachment Agreement Required [.1938(j)]: 🔲 Yes 📈 No
Declaration of Restrictive Covenants:
Pre-Construction Conference Required: Yes ☐ No ✓
Conditions:
The construction and installation requirements of Rules .1950, .1952, .1954, .1955, .1956, .1957, .1958, and .1959 are incorporated by reference into this permit and shall be met. Systems shall be installed in accordance with the attached system layout.
AOWE/PE Print Name: Jason Hall Expiration Date: 12/31/2023
AOWE/PE Signature:
This AOWE/PE submittal is pursuant to and meets the requirements of G.S. 130A-335(a2) and (a5).

\*See attached site sketch\*





# Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110, Wake Forest, NC 27587 Office Number: 919-569-6704

Acknowledgment of Subsurface wastewater evaluation and septic design by Central Carolina Soil Consulting, PLLC. for <u>Cotton Farms, Lot 7 (PIN: 0643-36-2149)</u>, for issuance of an IP and CA.

For Improvement Permit (IP) issuance:

"The LSS/LG evaluation(s) attached to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3)."

For Construction Authorization (CA) issuance:

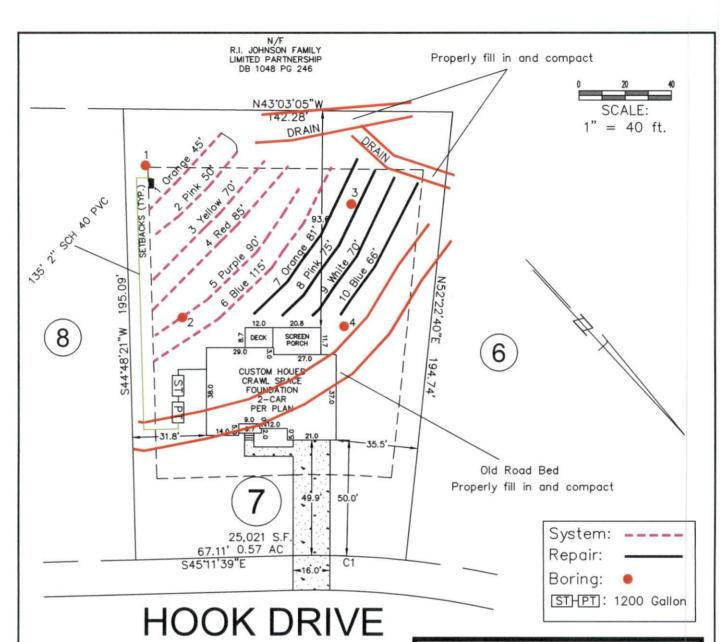
"The plans or evaluations attached to this application are to be used to issue a Construction Authorization in accordance with G.S. 130A-335(a2), (a5) and (a6)."

The LSS evaluation attached to this application was used to produce and design a subsurface wastewater septic system for permitting to obtain an IP and CA in accordance G.S. 130A-335(a2), (a3), (a5) and (a6).

Owner:

Owner's representative:

Date:



- \*Keep tanks and drain lines 10' from property lines.
- \*Not a survey.
- \*Not a guarantee of a septic permit.
- \*Keep supply lines >5' from property lines.
- \*Some lines are flagged longer in the field than lengths indicate.
- \*No grading septic area.

Initial: Pressure Manifold Lines: 1-6, (450') Accepted Status System 0.275 Soil LTAR 21" Trench Bottom

Repair: Pressure Manifold Lines: 7-10, (292') T&J Panel - 50% Reduction 0.275 Soil LTAR 22" Trench Bottom



Central Carolina Soil Consulting, PLLC 1900 South Main Street, Suite 110 Wake Forest, North Carolina 27587 Phone (919)569-6704 Fax (919)569-6703

4-Bedroom Septic Layout Lot 7, Cotton Farms Subdivision Harnett County, North Carolina Job# : 4609 Drawn By : MS Date : 07/11/2023 Revision:

# Pressure Manifold Septic System Design

for

Cotton Farms S/D, Lot 7 Harnett County, North Carolina

Designed by:

James Rice Central Carolina Soil Consulting, PLLC Wake Forest, North Carolina

# Cotton Farms S/D, Lot 7 Contact Information

Client: J Douglas Contracting

Attn: Ronnie Adams

Street Address: 3337 Air Park Road, Suite 3

Fuquay-Varina, NC 27526

Phone: 919-868-3114

Email: ronnie@jdouglascontracting.com

Designer: Central Carolina Soil Consulting, PLLC

Attn: Jason Hall Designed By: James Rice

Street Address: 1900 South Main Street, Suite 110

Wake Forest, NC 27587

Office Phone: 919-569-6704 Cell Phone: 910-740-3226 Fax: 919-569-5703

Email: jrice@centralcarolinasoil.com

## Cotton Farms S/D, Lot 7 Layout/Design Specifications

Facility Type:

Single Family Home

# of Bedrooms:

Daily Flow:

480 gal/day

L.T.A.R.:

0.275 gal/day/sq.ft

Trench Depth:

21 in

Trench Width:

36 in

Stone Depth:

**EZ-FLOW** in

Manifold Length:

48 in

Manifold Diameter:

4 in sch 80pvc

Supply Line Length:

138 ft

Supply Line Diameter:

2 in sch 40pvc

Supply Line Volume: 24.01 gallons

Friction Loss + Fitting Loss:

6.37 ft(supply line length + 70' for fittings

in pump tank)

Design Head:

2 ft

Elevation Head:

14.80 ft

Total Head:

23.17 ft

Dose Volume:

193.05 gals

% of Pipe Vol.

0.66

Drawdown:

9.82 in @ 19.65 gal/in

Pump Run Time:

5.23 Mins

Control Panel: SJE Rhombus Model112 control panel

(or approved equivalent)

Pump: Zoeller: Model 140 (or approved equivalent

Septic Tank Effluent Filter: Polylok PL-68 residential effluent filter (or

approved equivalent)

Septic Tank: Brantley 1,200 Gallon ST

Pump Tank: Brantley 1,200 Gallon PT

# Cotton Farms - Lot 7 Initial System TAP CHART

Bench Mari	Bench Mark: is = 100.00 Location of BM: Elevation H							Elevation Head:	14.80
Pump tank	elev.	11.5	88.50	88.50 Pump elev. 83.10 Manifold elev				Manifold elevation:	97.90
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
1&2	O/Pi	3.10	96.90	90	1/2in SCH 40	7.11	92.46	270	0.3425
3	Yellow	4.60	95.40	70	1/2in SCH 80	5.48	71.27	210	0.3394
4	Red	5.40	94.60	85	1/2in SCH 40	7.11	92.46	255	0.3626
5	Purple	6.20	93.80	90	1/2in SCH 40	7.11	92.46	270	0.3425
6	Blue	7.00	93.00	115	3/4 in SCH 80	10.1	131.35	345	0.3807

	total	feet =	450	gal/min =	36.91	LTAR =	0.2750
						LTAR + %5	0.2888
% of Dose Volume	66		Des. Flow	480		(Itar W/ INOV)	0.3667
Dose Volume	193.05		Pump Run=	13.00		(Itar W/ INOV + 5%)	0.3850
Dose Pump Time	5.23		Tank Gal/IN	19.65			
Drawdown in Inches	9.82						

# Cotton Farms - Lot 7 T&J Panel Block Repair System, TAP CHART

Bench Mark	:	is = 100.00	Location of	BM:	Elevation Head:				9.90		
Pump tank	elev.	11.5	88.50	Pump elev.	83.10			Manifold elevation:	93.00		Spacing of
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR	# of Panels	Panels (in)
7	Orange	8.00	92.00	81	3/4in SCH 40	12.5	140.19	243	0.5769	19	4.9
8	Pink	9.20	90.80	75	3/4 in SCH 80	10.1	113.27	225	0.5034	17	6.6
9	White	10.50	89.50	70	3/4 in SCH 80	10.1	113.27	210	0.5394	16	6.1
10	Blue	11.80	88.20	66	3/4 in SCH 80	10.1	113.27	198	0.5721	15	6.4

	total	feet =	292	gal/min =	42.8	Management desired contractor	Total Number of Panels: T&J Panel Block Orientation:	
						LTAR =	0.2750	
% of Dose Vol.	0		Des. Flow	480		LTAR + %5	0.2888	
Dose Volume	335.00	P	ump Run=	11.21		(Itar W/ INOV)	0.5500	
<b>Dose Pump Time</b>	7.83	Та	ink Gal/IN	19.65		(Itar W/ INOV + 5%)	0.5775	
Drawdown in Inches	17.05							

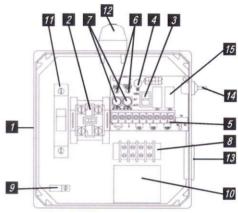
# **MODEL 112 Control Panel**

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.

#### PANEL COMPONENTS

- 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 electrical lines.
- 3. HOA Switch for manual pump control (mounted on circuit board).
- 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
- Circuit Breaker (optional) provides pump disconnect and branch circuit protection.



Model Shown 1121W914X

#### STANDARD ALARM PACKAGE

- Red Alarm Beacon provides 360° visual check of alarm condition.
   Note: NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
- Alarm Horn provides audio warning of alarm condition (83 to 85 decibel rating).

**Note:** NEMA 1 style utilizes an internally mounted buzzer in lieu of horn.

- 14. Exterior Alarm Test/Normal/Silence Switch allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition has been cleared.
- Horn Silence Relay (mounted on circuit board).

NOTE: other options available.

### **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





PO Box 1708, Detroit Lakes, MN 56502 1-888-DIAL-SJE • 1-218-847-1317 1-218-847-4617 Fax

email: sje@sjerhombus.com

112 1 W 1 2	4 H 3A,8A,8C,15A
MODEL 112	
ALARMPACKAGE  0 = select options or no alarm package 1 = alarm package (includes test/normal/silence switch, fuse, red lig	ht, horn & float)
I = Indoor, NEMA 1 (metal)  X W = Weatherproof, NEMA 4X (engineered thermoplastic)	
STARTING DEVICE  1 = magnetic motor contactor 120/208/240V 9 = magnetic motor contactor 120V only	
PUMP FULL LOAD AMPS  0 = 0-7 FLA	
1 = 7-15 FLA X 2 = 15-20 FLA 3 = 20-30 FLA	
PUMP DISCONNECTS—	
0 = no pump disconnect 1 = pull-out with safety deadfront in a 10"x8" enclosure X 4 = circuit breaker 120V(select STARTING DEVICE option 9 above 120/208/240V(select STARTING DEVICE option	
FLOAT SWITCH APPLICATION  X H or L = pump down or pump up	
X = no floats WITH alarm package	
WITHOUT alarm package  OPTIONS Listed below————————————————————————————————————	
ENCLOSURE UPSIZE - If you selected 3 or mo a one-time enclosure upsi	
If additional features are required, call the SJE-Rhombus Pro-Line or Enginee	
CODE DESCRIPTIONCO	DE DESCRIPTION C NEMA 1 alarm panel must select option 6A
(must select 1E if floats included)	D NEMA 4X alarm panel <i>must select option 6A</i> B Main disconnect (rotary style, mounted through door)
(must select 1E if floats included)  1E Alarm float ★★□	non-fused  0-20 FLA (total of both pumps)
	20-30 FLA (total of both pumps)  A Control / alarm circuit breaker
★ 3B Manual alarm reset  ★ 4A Low level cutout	Does not include the circuit board as in standard.
	A 10' cord in lieu of 20' (per float)
	B 15' cord in lieu of 20' (per float) C 30' cord in lieu of 20' (per float)
4D Low-level float	D 40' cord in lieu of 20' (per float)
	A SJE SignalMaster® / mounting strap ● (per float)  B SJE SignalMaster® / externally weighted ● (per float)
★★5E Seal failure circuit & red indicator (2 wire)	C Sensor Float® / internally weighted <b>\( \)</b> (per float) D Sensor Float® / externally weighted <b>\( \)</b> (per float)
on namely alarm contact, form o type	E Sensor Float® Mini / pipe clamp <b>\( \)</b> (per float)
X ★ 8C Event (cycle) counter	'F Sensor Float® Mini / externally weighted ▲ (per float)
★★9_APump overload     specify amperage after number 9 followed by letter "A".  15  16  17  17  18  18  18  18  18  18  18  18	T TOA (Test/Off/Automatic) switch and pump run light through door mounted
Example: 0.127 12 dilip parilp:	U HOA (Hand/Off/Automatic) switch and pump run light through door mounted
** 0-25 FLA ** 25-30 FLA	X Door mounted pump run indicator
	A SJE PumpMaster® in lieu of on/off switches ●  B SJE PumpMaster® Plus in lieu of on/off switches ●
★ 10F Lightning arrester	C Super Single® in lieu of on/off switches ▲
A Total Anti-condensation medici	D Double Float® in lieu of on/off switches ▲  ■ Mechanically-activated ▲ Mercury-activated
SAMPLE	
MODEL 112 1 W 9 1 4 H	3A 8A
Alarm Package ————————————————————————————————————	
Starting Device —	
Pump Full Load Amps — Pump Disconnect — Pump Dis	
Float Switch Application————————————————————————————————————	

#### Trusted. Tested. Tough.®

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.



SECTION: 2.15.070 FM2783 0419 Supersedes 0617

# TECHNICAL DATA SHEET FLOW-MATE SERIES

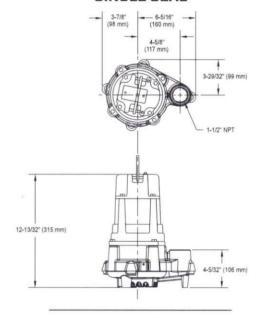
Models 140/4140, 145/4145 Effluent / Dewatering Pumps

#### PRODUCT SPECIFICATIONS

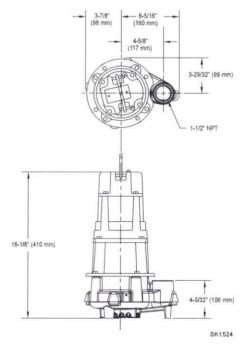
	Horse Power	3/4 - 1
	Voltage	115 or 230
2	Phase	1 Ph
5	Hertz	60 Hz
MOTOR	RPM	3450
Σ	Туре	Permanent split capacitor
	Insulation	Class B
	Amps	6.0 - 13.0
	Operation	Automatic or nonautomatic
	Discharge Size	1-1/2" NPT
	Solids Handling	1/2" (12 mm), 3/4" (19 mm) spherical solids
•	Cord Length	20' (6 m)
PUMP	Cord Type	UL listed, neoprene cord
Ž	Max. Head	50' (15.2 m) or 74' (22.6 m)
	Max. Flow Rate	86 GPM (326 LPM) or 61 GPM (232 LPM)
	Max. Operating Temp.	130 °F (54 °C)
	Cooling	Oil filled
	Motor Protection	Auto reset thermal overload
	Сар	Cast iron
	Motor Housing	Cast iron
	Pump Housing	Cast iron
"	Base	Cast iron
F	Upper Bearing	Sleeve bearing
N N	Lower Bearing	Ball bearing
Ü	Mechanical Seals	Carbon and ceramic
MATERIALS	Impeller Type	Single vane (145) or non-clogging vortex (140)
-	Impeller	Engineered thermoplastic
	Hardware	Stainless steel
	Motor Shaft	JIS S45C steel
	Gasket	Neoprene

NOTE: See model comparison chart for specific details.

### SINGLE SEAL



#### **DOUBLE SEAL**





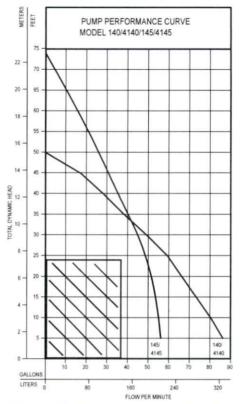






## TOTAL DYNAMIC HEAD FLOW PER MINUTE

МО	DEL	140	/4140	145/4145		
Feet	Meters	Gal.	Liters	Gal.	Liters	
5	1.5	86	326	56	212	
10	3.0	80	303	55	208	
15	4.6	73	276	53	200	
20	6.1	66	250	51	193	
25	7.6	59	223	48	182	
30	9.1	49	185	45	170	
40	12.2	28	106	35	132	
50	15.2		-	26	98	
60	18.3	-	-	16	61	



150090

Madel						MODEL	COMPAR	ISON			
Model	Seal	Mode	Volts	Ph	Amps	HP	Hz	Lbs	Kg	Simplex	Duplex
N140	Single	Non	115	1	12.0	1	60	46	21	1 or 2	3
E140	Single	Non	230	1	6.0	1	60	46	21	1 or 2	3
BN140	Single	Auto	115	1	12.0	1	60	47	21	*	
BE140	Single	Auto	230	1	6.0	1	60	47	21	*	
E145	Single	Non	230	1	6.0	3/4	60	46	21	1 or 2	3
N145	Single	Non	115	1	13.0	3/4	60	46	21	1 or 2	3
BN145	Single	Auto	115	1	13.0	3/4	60	48	22	*	
N4140	Double	Non	115	1	12.0	1	60	65	29	*	
E4140	Double	Non	230	1	6.0	1	60	65	29	1 or 2	3
BN4140	Double	Auto	115	1	12.0	1	60	66	30	*	
BE4140	Double	Auto	230	1	6.0	1	60	66	30	*	
N4145	Double	Non	115	1	13.0	3/4	60	64	29	1 or 2	3
BN4145	Double	Auto	115	1	13.0	3/4	60	64	29	*	

<sup>\*</sup> Single piggyback switch included.

BN and BE models include a 20' (6 m) piggyback variable level pump switch. Additional cord lengths are available in 15' (5 m), 25' (8 m), 35' (11 m) and 50' (15 m). 50' (15 m) cord length is for 230 V only.

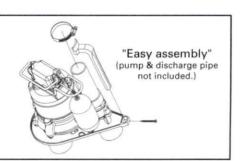
#### **SELECTION GUIDE**

- For automatic, use single piggyback variable level float switch or double piggyback variable level float switch. Refer to
- See FM1228 for correct model of simplex control panel.
- 3. See FM0712 for correct model of duplex control panel.

#### OPTIONAL PUMP STAND P/N 10-2421

- Reduces potential clogging by debris
- · Replaces rocks or bricks under the pump
- Made of durable, noncorrosive ABS
- · Raises pump 2" (5 cm) off bottom of basin
- Provides the ability to raise intake by adding sections of 1-1/2" or 2" (DN40 or DN50) PVC piping
- · Attaches securely to pump
- · Accommodates sump, dewatering and effluent applications

NOTE: Make sure float is free from obstruction.



**CAUTION** All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).



#### PL-68 Filter and Tee

PL-68 is much more than just an effluent filter. The housing can also be used as an inlet baffle (tee) or an outlet baffle. The housing is designed to accept Polylok's snap in gas deflector to deflect gas bubbles away from the tee and to keep the solids in the tank.

#### Features:

- Offers 68 linear feet of 1/16" filter slots, which significantly extends time between cleaning.
- Accepts 3/4" PVC handle.
- Locks in any 360° position when used with PL-68 Tee.
- PL-68 Housing can be used as an inlet or outlet tee.
- · Gasket prevents bypass.

#### PL-68 Installation:

Ideal for residential waste flows up to 800 gallons per day (GPD). Easily installs in any new or existing 4" outlet tee.

- 1. Locate the outlet of the septic tank.
- 2. Remove the tank cover and pump tank if necessary.
- Glue the filter housing to the outlet pipe, or use a Polylok Extend & Lok if not enough pipe exists.
- 4. Insert the PL-68 filter into tee.
- 5. Replace and secure the septic tank cover.

#### PL-68 Maintenance:

The PL-68 Effluent Filter will operate efficiently for several years under normal conditions before requiring cleaning. It is recommended that the filter be cleaned every time the tank is pumped, or at least every three years.

- 1. Do not use plumbing when filter is removed.
- 2. Pull PL-68 out of the tee.
- Hose off filter over the septic tank. Make sure all solids fall back into septic tank.
- 4. Insert filter back into tee/housing.

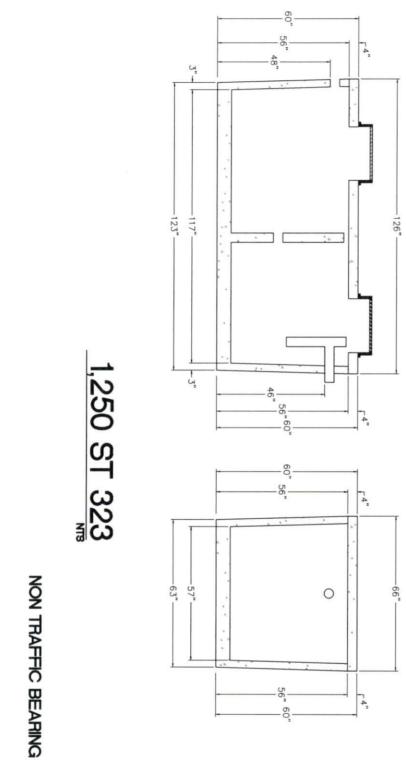
#### **Related Products:**

PL-68 Filter Concrete Baffle Extend & Lok<sup>TM</sup>



Extend & Lok™ Easily installs into existing tanks.

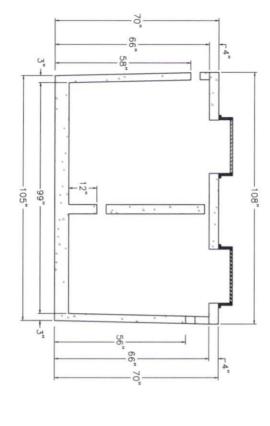




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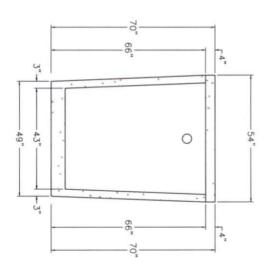
DAVID BRANTLEY & SONS
37 Pine Ridge Rd.
Zebulon, NC 27597
Office 252-478-3721
Fax 919-573-0443
Shadeless and see

PREPARED FOR :	David Brantley & Sone	REVISION NO.	DATE	SPANTLEY TANK MODEL
	37 Pine Ridge Rd.	Original Submittel	April 11, 2014	1,250 ST 323
DATE : April 11, 20	Zabulon, NC 27597	Revision 1		
CONTACT:	UI4	Revision 2		
CORY BRANTLE	Y	Revision 3		
		Master Set		1 of 1
				1



1,200 PT 463

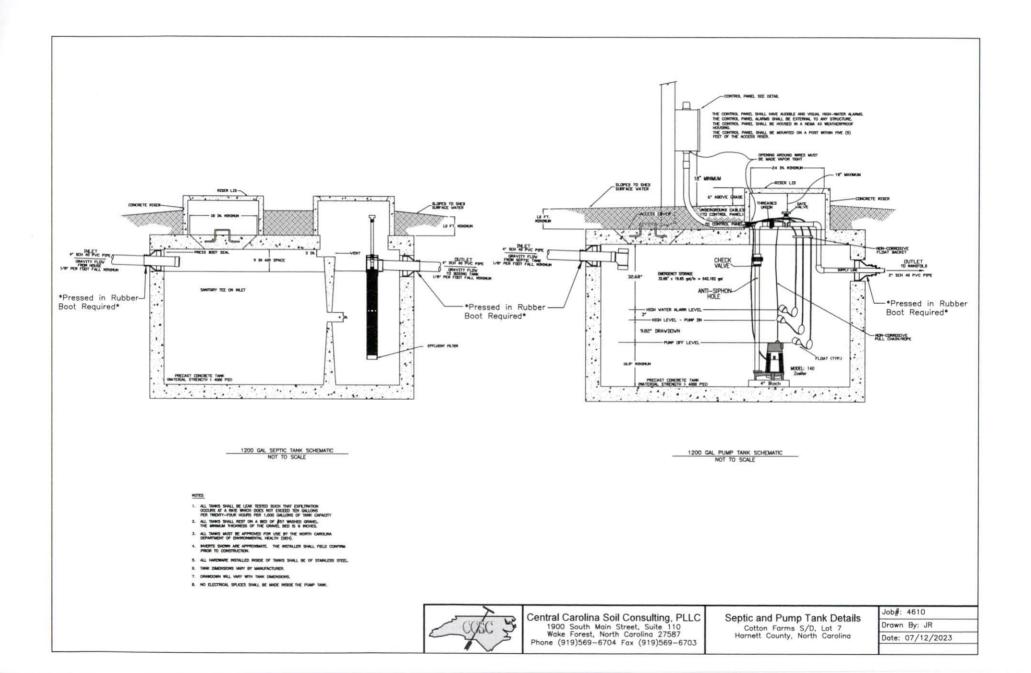
NON TRAFFIC BEARING



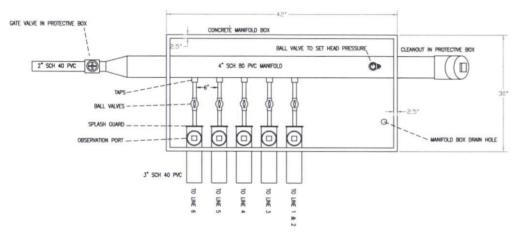
DAVID BRANTLEY & SUNS
37 Pine Ridge Rd.
Zebulon, NC 27597
Office 252-478-3721
Fax 919-573-0443

finstaller\*gmail.com

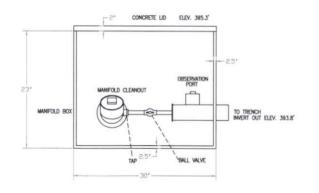
PREPARED FOR : Double Brownley & Some	Organic Submitted April 11, 2  January 11, 2014  Original Submitted April 11, 2  Revision 1  Revision 2	DATE April 11, 2014	1,200 PT 463
37 Pine Ridge Rd.			
DATE : April 11, 2014			
CONTACT:			
CORY BRANTLEY			SHEET NUMBER
	Master Set		1 of 1
		_	1 .011



# PRESSURE MANIFOLD DETAILS TOP VIEW



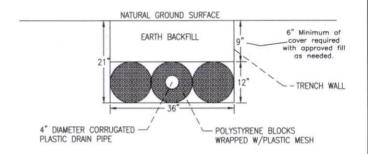
# PRESSURE MANIFOLD DETAILS END VIEW



LINE#	TAP	
1 & 2	½" SCH 40	
3	½" SCH 80	
4	½" SCH 40	
5	½" SCH 40	
6	3 " SCH 80	

## EZ-FLOW DETAILS

Example only: Installed trench bottom should match design.



#### NOTE :

- EZ-FLOW INSTALLATION SHALL MEET THE REQUIREMNTS INCLUDED IN ITS INNOVATIVE APPROVAL
- TRENCH BOTTOM SHALL BE AT LEAST 12" FROM ANY RESTRICTIVE SOIL LAYER
- END CAP SHALL BE PROVIDED AT END OF ALL CORRUGATED PLASTIC PIPE LINES AND TRENCH BOTTOMS SHALL BE LEVEL
- THIS IS A GENERIC TRENCH PROFILE SEE COUNTY PERMIT FOR TRENCH DEPTH.



Central Carolina Soil Consulting, PLLC 1900 South Moin Street, Suite 110 Wake Forest, North Carolina 27587 Phone (919)569-6704 Fox (919)569-6703 Manifold and Trench Details Cotton Farms S/D, Lot 7 Harnett County, North Carolina Job#: 4610 Drawn By: JR Date: 07/12/2023