



**Central Carolina Soil Consulting, PLLC**  
1900 South Main Street, Suite 110, Wake Forest, NC 27587  
Office Number: 919-569-6704

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Acknowledgment of Subsurface wastewater evaluation and septic design by Central Carolina Soil Consulting, PLLC. for 160 Pondhurst Lane, Lot 4 (PIN: 0634-81-3088), 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: Elm Street Builders, LLC

Owner’s representative: Christopher Weir

Date: 12/7/2023

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

County: Harnett

PIN/Lot Identifier: 0634-81-3088

Issued To: Elm Street Builders, LLC

Property Location: 160 Pondhurst Lane, Fuquay-Varina, NC 27615, Lot 4

AOWE/PE Plans/Evaluations Provided: Yes  No  If yes, name and license number of AOWE/PE: Jason Hall, AOWE #10004E

Facility Type: Single Family, 4-Bedroom

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: 480 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  No  
(if yes, please provide engineering documentation)

**Installation Requirements/Conditions**

Septic Tank Size: 1200 gallons Total Trench/Bed Length: 480 feet Trench/Bed Spacing: 9 feet on center

Trench/Bed Width: 36 inches LTAR 0.25 gpd/ft<sup>2</sup>

Additional Soil Cover: 0 inches Slope Corrected Maximum Trench/Bed Depth<sup>‡</sup>: 24 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): 1200 gallons Requires more than 1 pump?  Yes  No

Pump Requirements: 26.33 ft. TDH vs. 42.66 GPM Grease Trap Size (if applicable): n/a 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:  Yes  No

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:

Date: 12/07/2023

This AOWE/PE submittal is pursuant to and meets the requirements of G.S. 130A-335(a2) and (a5).

**\*See attached site sketch\***



**This Section for Local Health Department Use Only**Initial submittal received: \_\_\_\_\_ by \_\_\_\_\_  
Date Initials

G.S. 130A-335(a5) states the following:

*When an applicant for a Construction Authorization, or an Improvement Permit and Construction Authorization together, submits a Construction Authorization, or an Improvement Permit and Construction Authorization application together, the permit fee charged by the local health department, the common form developed by the Department, and any necessary signed and sealed plans or evaluations conducted by a person licensed pursuant to Chapter 89C of the General Statutes as a licensed engineer or a person certified pursuant to Article 5 of Chapter 90A of the General Statutes as an Authorized On-Site Wastewater Evaluator, the local health department shall, within five business days of receiving the application, conduct a completeness review of the submittal. A determination of completeness means that the Construction Authorization or Improvement Permit and Construction Authorization includes all of the required components. If the local health department determines that the Construction Authorization or Improvement Permit and Construction Authorization is incomplete, the local health department shall notify the applicant of the components needed to complete the Construction Authorization or Improvement Permit and Construction Authorization. The applicant may submit additional information to the local health department to cure the deficiencies in the Construction Authorization or Improvement Permit and Construction Authorization. The local health department shall make a final determination as to whether the Construction Authorization or Improvement Permit and Construction Authorization is complete within five business days after the local health department receives the additional information from the applicant. If the local health department fails to act within any period set out in this subsection, the applicant may treat the failure to act as a determination of completeness. The applicant may apply for the building permit for the project upon the decision of completeness of the Construction Authorization or Improvement Permit and Construction Authorization by the local health department or if the local health department fails to act within five business days. The Authorized On-Site Wastewater Evaluator or licensed engineer submitting the evaluation pursuant to this subsection may request that the local health department revoke or suspend the Construction Authorization or Improvement Permit and Construction Authorization for cause. Upon written request of the Authorized On-Site Wastewater Evaluator or licensed engineer, the local health department shall suspend or revoke the Construction Authorization or Improvement Permit and Construction Authorization pursuant to G.S. 130A-23. The Department shall develop a common form for use as the Construction Authorization.*

The review for completeness of this Construction Authorization was conducted in accordance with G.S. 130A-335(a5). This

Construction Authorization is determined to be:

 Incomplete (If box is checked, information in this section is required.)The following items are missing: \_\_\_\_\_  
\_\_\_\_\_Copies of this were sent to the AOWE/PE and the Applicant on \_\_\_\_\_  
Date

State Authorized Agent: \_\_\_\_\_ Date: \_\_\_\_\_

 Complete

State Authorized Agent: \_\_\_\_\_ Date of Issuance: \_\_\_\_\_

**This Construction Authorization is issued pursuant to G.S. 130A-335(a2) and (a5) using the signed and sealed plans or evaluations attached here. This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes. The Construction Authorization shall not be affected by 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.**

**The Department, the Department's authorized agents, and the local health departments shall be discharged and released from any liabilities, duties, and responsibilities imposed by statute or in common law from any claim arising out of or attributed to plans, evaluations, preconstruction conference findings, submittals, or actions from a person licensed pursuant to Chapter 89C of the General Statutes as a licensed engineer or a person certified pursuant to Article 5 of Chapter 90A of the General Statutes as an Authorized On-Site Wastewater Evaluator in GS 130A-335(a2), (a5), and (a7). The Department, the Department's authorized agents, and the local health departments shall be responsible and bear liability for their actions and evaluations and other obligations under State law or rule, including the issuance of the operations permit pursuant to GS 130A-337.**

Construction Authorization Expiration Date: \_\_\_\_\_

**\*See attached site sketch\***

**Re-submittal of Construction Authorization**

LHD USE ONLY: This CA resubmittal received: _____ by _____ <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>Date</span> <span>Initials</span> </div>
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The following items are being resubmitted pursuant to G.S. 130A-335(a5) for issuance of the Construction Authorization:

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I, \_\_\_\_\_ hereby attest that the information required to be included with this re-submittal  
*Authorized Onsite Wastewater Evaluator (Print Name)*  
 is accurate and complete to the best of my knowledge and that the proposed Construction Authorization meets all applicable federal, State, and local laws, regulations, rules, and ordinances.

<i>Signature of Authorized On-Site Wastewater Evaluator</i>	<i>Date</i>
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*The section below is for Local Health Department use after submittal of items noted as missing above.*

**LHD Follow-up Completeness Review of Construction Authorization**

The review for completeness of this Construction Authorization re-submittal was conducted in accordance with G.S. 130A-335(a5). This Construction Authorization is determined to be:

Incomplete (If box is checked, information in this section is required.)

The following items are missing:

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Copies of this were sent to the AOWE/PE and the Applicant on \_\_\_\_\_  
*Date*

State Authorized Agent: \_\_\_\_\_ Date: \_\_\_\_\_

Complete

State Authorized Agent: \_\_\_\_\_ Date: \_\_\_\_\_

System: Pressure Manifold  
 Lines: 1–6, (480')  
 Accepted Status System (EZ-Flow or Chambers)  
 0.25 Soil LTAR  
 24" Trench Bottom

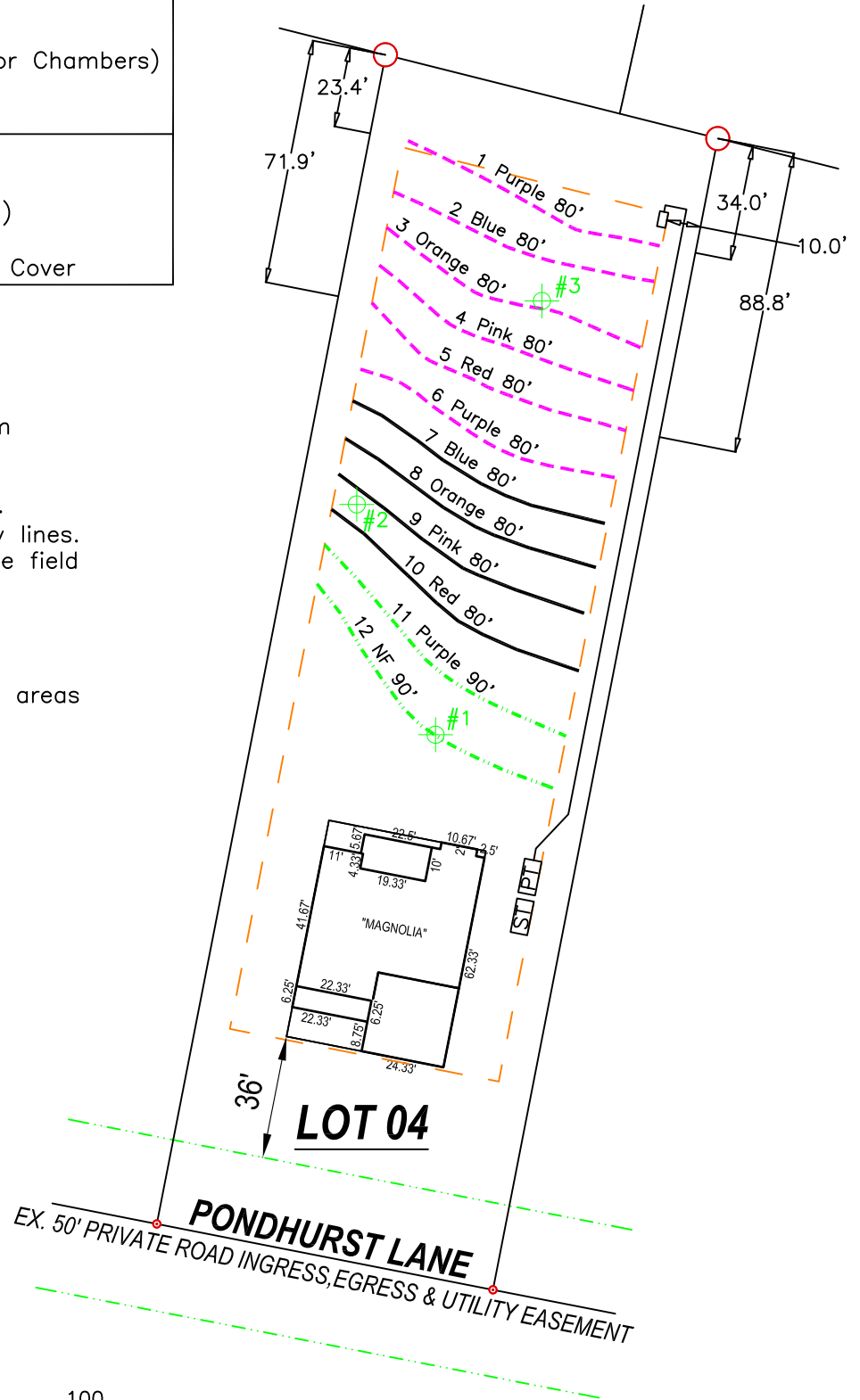
Repair: Pressure Manifold  
 Lines: 7–10, (320')  
 T&J Panel Block System (Horizontal)  
 0.275 Soil LTAR  
 17" Trench Bottom with 5" of Add. Cover

- \*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.
- \*No adding soil within septic area
- \*No rutting-up septic area
- \*No cuts of >2' within 15' of septic areas



System:	--- (dashed magenta)
Repair:	— (solid black)
Not Used:	- - - (dashed green)
ST	= 1200 gallon tanks
PT	= tanks
⊕ #2	= profile description locations

GRAPHIC SCALE  
 1" = 50'



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 4, 160 Pondhurst Lane  
 Harnett County, North Carolina

Job#: 4760
Drawn By: JR
Date: 12/05/2023
Revision:

Pressure Manifold  
Septic System Design

for

Lot 4, 160 Pondhurst Lane  
Harnett County, North Carolina

Designed by:

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

12/05/2023

Lot 4, 160 Pondhurst Lane  
Contact Information

Client: Elm Street Builders, LLC  
Attn: Chris Weir  
Street Address: 3434 Kildaire Farm Road, Suite 240  
Cary, NC 27518  
Phone: 919-529-5993  
Email: [chrisweir@elmstreetbldrs.com](mailto:chrisweir@elmstreetbldrs.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](mailto:jrice@centralcarolinasoil.com)

Lot 4, 160 Pondhurst Lane  
Layout/Design Specifications

Facility Type:	Single Family Home
# of Bedrooms:	4
Daily Flow:	480 gal/day
L.T.A.R.:	0.25 gal/day/sq.ft
Trench Depth:	24 in
Trench Width:	36 in
Stone Depth:	N/A in
Manifold Length:	54 in
Manifold Diameter:	4 in sch 80pvc
Supply Line Length:	208 ft
Supply Line Diameter:	2 in sch 40pvc
Supply Line Volume:	36.19 gallons
Friction Loss + Fitting Loss:	11.13 ft(supply line length + 70' for fittings in pump tank)
Design Head:	2 ft
Elevation Head:	13.20 ft
Total Head:	26.33 ft
Dose Volume:	215.28 gals
% of Pipe Vol.	0.69
Drawdown:	10.96 in @ 19.65 gal/in
Pump Run Time:	5.05 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



## Lot 4, 160 Pondhurst Lane Initial System TAP CHART

<b>Bench Mark:</b>		is = 100.00		Location of BM:		<b>Elevation Head:</b>		13.20		
<b>Pump tank elev.</b>		9.4	90.60	<b>Pump elev.</b>		85.20		<b>Manifold elevation:</b>		98.40
<b>line</b>	<b>color</b>	<b>rod read</b>	<b>Elevation</b>	<b>length</b>	<b>hole size</b>	<b>flow/tap</b>	<b>gal/day</b>	<b>trench area</b>	<b>LINE LTAR</b>	
1	Purple	2.60	97.40	80	1/2in SCH 40	7.11	80.00	240	0.3333	
2	Blue	3.10	96.90	80	1/2in SCH 40	7.11	80.00	240	0.3333	
3	Orange	3.50	96.50	80	1/2in SCH 40	7.11	80.00	240	0.3333	
4	Pink	3.80	96.20	80	1/2in SCH 40	7.11	80.00	240	0.3333	
5	Red	4.50	95.50	80	1/2in SCH 40	7.11	80.00	240	0.3333	
6	Purple	5.00	95.00	80	1/2in SCH 40	7.11	80.00	240	0.3333	

**total feet = 480      gal/min = 42.66      LTAR = 0.2500**

<b>% of Dose Volume</b>	69	<b><u>Des. Flow</u></b>	<b>480</b>	<b><u>LTAR + %5</u></b>	<b>0.2625</b>
<b>Dose Volume</b>	215.28	<b>Pump Run=</b>	11.25	<b>(ltar W/ INOV)</b>	0.3333
<b>Dose Pump Time</b>	5.05	<b>Tank Gal/IN</b>	19.65	<b>(ltar W/ INOV + 5%)</b>	0.3500
<b>Drawdown in Inches</b>	10.96				

## Lot 4, 160 Pondhurst Lane T&J Panel Block Repair System, TAP CHART

<b>Bench Mark:</b>		is = 100.00		Location of BM:		<b>Elevation Head:</b>		10.50				
<b>Pump tank elev.</b>		9.4	90.60	<b>Pump elev.</b>		85.20		<b>Manifold elevation:</b>		95.70		
<b>line</b>	<b>color</b>	<b>rod read</b>	<b>Elevation</b>	<b>length</b>	<b>hole size</b>	<b>flow/tap</b>	<b>gal/day</b>	<b>trench area</b>	<b>LINE LTAR</b>	<b># of Panels</b>	<b>Spacing of Panels (in)</b>	<b>Feet of 1.5in PVC</b>
7	Blue	5.30	94.70	80	1/2in SCH 40	7.11	120.00	240	0.5000	18	6.9	68
8	Orange	5.70	94.30	80	1/2in SCH 40	7.11	120.00	240	0.5000	18	6.9	68
9	Pink	6.30	93.70	80	1/2in SCH 40	7.11	120.00	240	0.5000	18	6.9	68
10	Red	6.90	93.10	80	1/2in SCH 40	7.11	120.00	240	0.5000	18	6.9	68

**total feet = 320      gal/min = 28.44      Total Number of Panels: 72**  
**T&J Panel Block Orientation: Horizontal**

<b>% of Dose Vol.</b>	0	<b><u>Des. Flow</u></b>	<b>480</b>	<b><u>LTAR =</u></b>	<b>0.2750</b>
<b>Dose Volume</b>	360.00	<b>Pump Run=</b>	16.88	<b><u>LTAR + %5</u></b>	<b>0.2888</b>
<b>Dose Pump Time</b>	12.66	<b>Tank Gal/IN</b>	19.65	<b>(ltar W/ INOV)</b>	0.5500
<b>Drawdown in Inches</b>	18.32			<b>(ltar W/ INOV + 5%)</b>	0.5775

**Backfill Sand Needed: 54.4 tons      Total Footage of 1.5in PVC: 272**  
**backfill sand needed +5%: 57.12 tons**

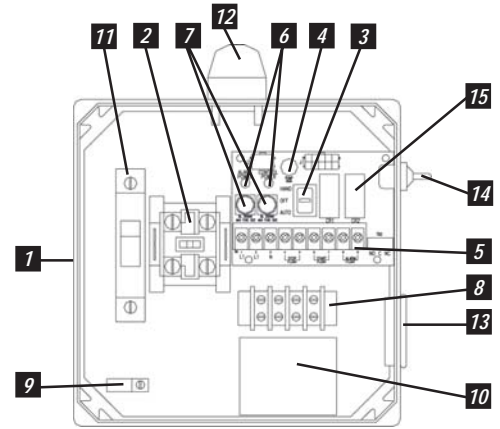
# MODEL 112 Control Panel

## 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

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 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.



Model Shown 1121W914X

## STANDARD ALARM PACKAGE

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 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.
15. **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



**SJE**  
**Rhombus**  
CONTROLS

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**

SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.

**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 light, horn & float)

**ENCLOSURE RATING**

- I = Indoor, NEMA 1 (metal)
- 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
- 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
- 4 = circuit breaker 120V (select STARTING DEVICE option 9 above)  
120/208/240V (select STARTING DEVICE option 1 above)

**FLOAT SWITCH APPLICATION**

- H or L = pump down or pump up
- X = no floats
- WITH alarm package
- WITHOUT alarm package

**OPTIONS** *Listed below*



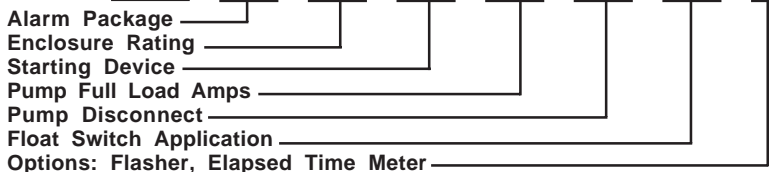
ENCLOSURE UPSIZE - If you selected 3 or more of the ★ options, or one ★★ option, a one-time enclosure upsize fee would apply.

**If additional features are required, call the factory for a quote on either a SJE-Rhombus Pro-Line or Engineered Custom control panel.**

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"/>	★14B Main disconnect (rotary style, mounted through door) non-fused
<input checked="" type="checkbox"/>	3A Alarm flasher	★★ <input type="checkbox"/>	0-20 FLA (total of both pumps)
<input type="checkbox"/>	★ 3B Manual alarm reset	★★ <input type="checkbox"/>	20-30 FLA (total of both pumps)
<input type="checkbox"/>	★ 4A Low level cutout <i>(select option 4D if floats included)</i>	<input checked="" type="checkbox"/>	15A Control / alarm circuit breaker <i>Does not include the circuit board as in standard.</i>
<input type="checkbox"/>	★ 4B Red low-level indicator & alarm <i>(must select 4A also)</i>	<input type="checkbox"/>	16A 10' cord in lieu of 20' <i>(per float)</i>
<input type="checkbox"/>	4D Low-level float	<input type="checkbox"/>	16B 15' cord in lieu of 20' <i>(per float)</i>
<input type="checkbox"/>	★ 5A Thermal cutout/heat sensor auto reset (for pumps w/thermal switch leads)	<input type="checkbox"/>	16C 30' cord in lieu of 20' <i>(per float)</i>
<input type="checkbox"/>	★★5E Seal failure circuit & red indicator (2 wire)	<input type="checkbox"/>	16D 40' cord in lieu of 20' <i>(per float)</i>
<input type="checkbox"/>	6A Auxiliary alarm contact, form C type	<input type="checkbox"/>	17A SJE SignalMaster® / mounting strap ● <i>(per float)</i>
<input checked="" type="checkbox"/>	★ 8A Elapsed time meter	<input type="checkbox"/>	17B SJE SignalMaster® / externally weighted ● <i>(per float)</i>
<input checked="" type="checkbox"/>	★ 8C Event (cycle) counter	<input type="checkbox"/>	17C Sensor Float® / internally weighted ▲ <i>(per float)</i>
<input type="checkbox"/>	★★9_A Pump overload specify amperage after number 9 followed by letter "A". Example: 912A = 12 amp pump.	<input type="checkbox"/>	17D Sensor Float® / externally weighted ▲ <i>(per float)</i>
★★ <input type="checkbox"/>	0-25 FLA	<input type="checkbox"/>	17E Sensor Float® Mini / pipe clamp ▲ <i>(per float)</i>
★★ <input type="checkbox"/>	25-30 FLA	<input type="checkbox"/>	17F Sensor Float® Mini / externally weighted ▲ <i>(per float)</i>
<input type="checkbox"/>	10E Lockable latch - NEMA 4X	<input type="checkbox"/>	19T TOA (Test/Off/Automatic) switch and pump run light through door mounted
<input type="checkbox"/>	10E Lockable latch - NEMA 1	<input type="checkbox"/>	19U HOA (Hand/Off/Automatic) switch and pump run light through door mounted
<input type="checkbox"/>	★10F Lightning arrester	<input type="checkbox"/>	19X Door mounted pump run indicator
<input type="checkbox"/>	★10K Anti-condensation heater	<input type="checkbox"/>	21A SJE PumpMaster® in lieu of on/off switches ●
		<input type="checkbox"/>	21B SJE 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

**SAMPLE**

MODEL **112** **1** **W** **9** **1** **4** **H** **3A 8A**



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



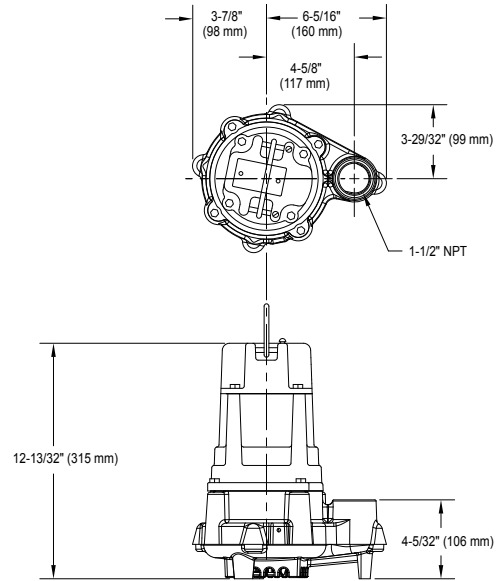
# TECHNICAL DATA SHEET FLOW-MATE SERIES

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

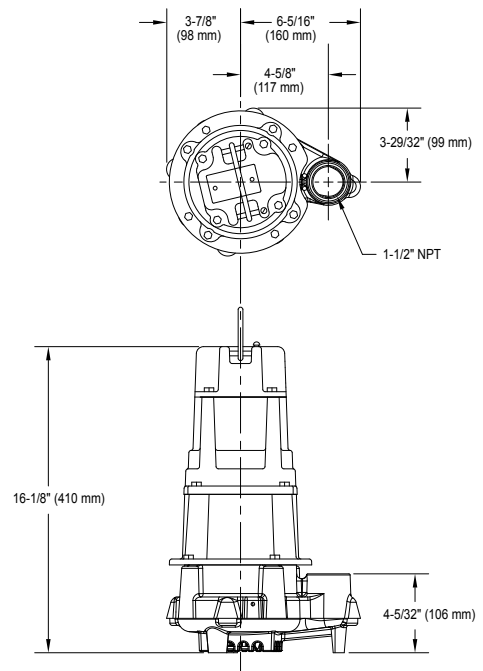
## PRODUCT SPECIFICATIONS

<b>MOTOR</b>	Horse Power	3/4 - 1
	Voltage	115 or 230
	Phase	1 Ph
	Hertz	60 Hz
	RPM	3450
	Type	Permanent split capacitor
	Insulation	Class B
	Amps	6.0 - 13.0
<b>PUMP</b>	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)
	Cord Type	UL listed, neoprene cord
	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
<b>MATERIALS</b>	Cap	Cast iron
	Motor Housing	Cast iron
	Pump Housing	Cast iron
	Base	Cast iron
	Upper Bearing	Sleeve bearing
	Lower Bearing	Ball bearing
	Mechanical Seals	Carbon and ceramic
	Impeller Type	Single vane (145) or non-clogging vortex (140)
	Impeller	Engineered thermoplastic
	Hardware	Stainless steel
	Motor Shaft	JIS S45C steel
	Gasket	Neoprene

### SINGLE SEAL



### DOUBLE SEAL



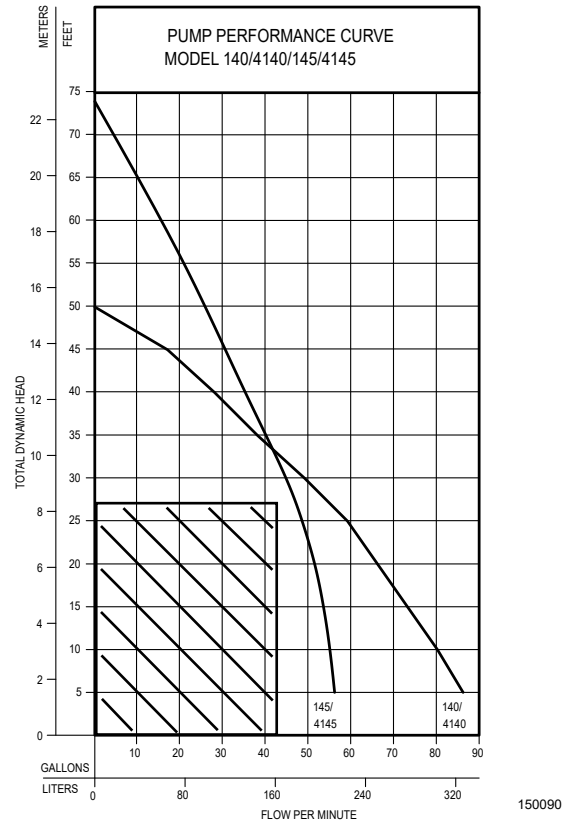
SK1524

NOTE: See model comparison chart for specific details.



## TOTAL DYNAMIC HEAD FLOW PER MINUTE

MODEL		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



Model	MODEL COMPARISON										
	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	*	---

\* Single piggyback switch included.

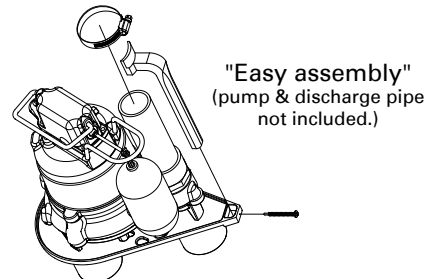
BN and BE models include a 20' (6 m) piggyback variable level pump switch. Additional cord lengths are available in 15' (5 m), 25' (8 m), 35' (11 m) and 50' (15 m). 50' (15 m) cord length is for 230 V only.

### SELECTION GUIDE

- For automatic, use single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
- See FM1228 for correct model of simplex control panel.
- 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.



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).

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**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.
3. 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.

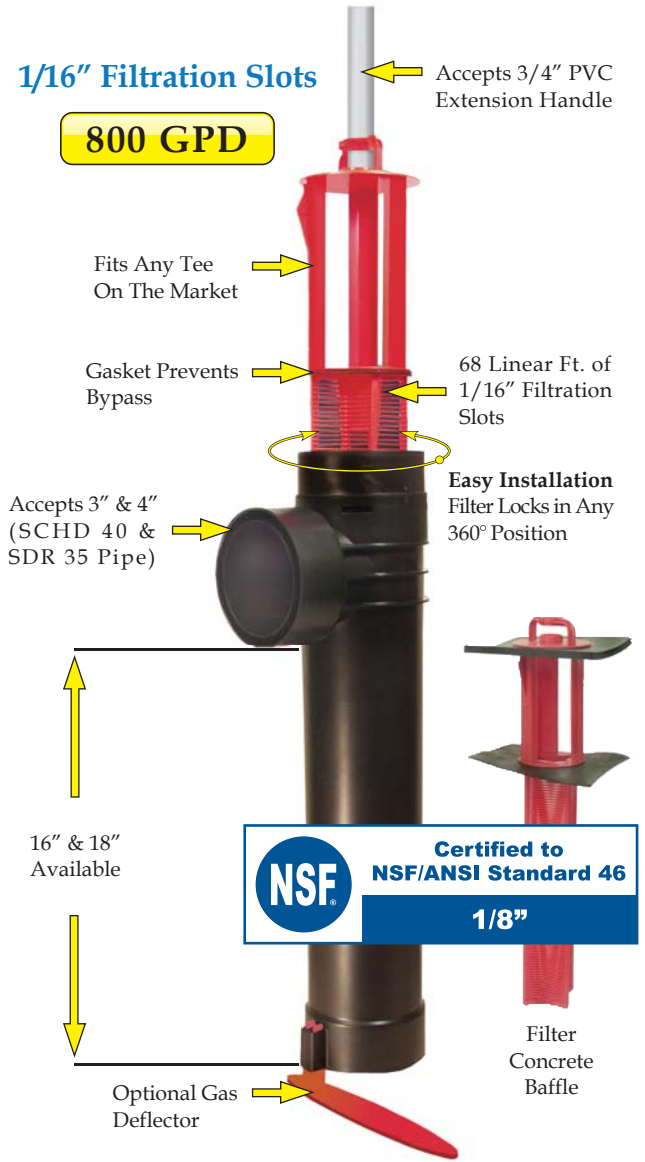
**PL-68 Maintenance:**

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.
3. 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™



**Extend & Lok™**  
 Easily installs into existing tanks.



Spacer Bushing  
 4" SCHD 40 to SDR 35



Spacer Bushing  
 4" SCHD 40 to 110mm Pipe



2" Extender



# CAST-A-SEAL 402/402F

## PIPE TO MANHOLE & TANK CONNECTOR

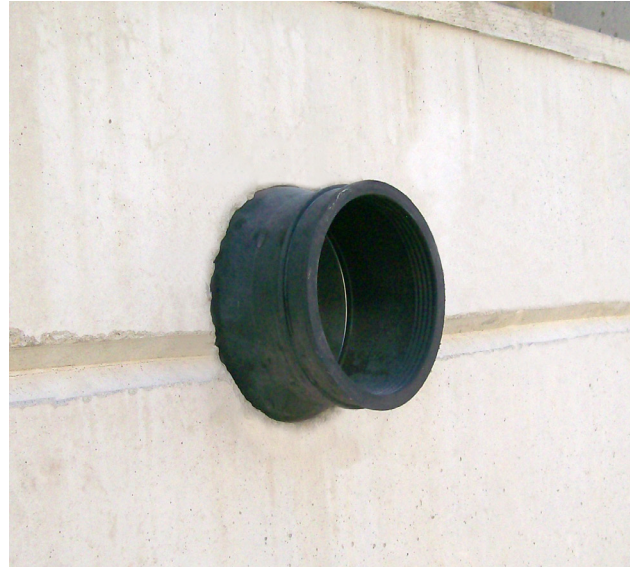
### What It Is

The Cast-A-Seal 402/402F is a simple cast-in pipe-to-manhole connector that offers a watertight flexible connector that is cast into the structure when the concrete is poured.

The key lock is integrally cast-in during the production process providing a secure seal for storm water and sanitary collection systems.

### How It Works

- The connector is folded into the casting position.
- It is placed on the reusable mandrel and then placed on the form.
- After curing, the mandrel is removed.
- The connector is then simply unfolded at the jobsite.
- Take-up clamps made from series 304 stainless steel with quick adjusting screws secure the connector to the pipe.



### Why It's Better

- Durable and reusable mandrel forms.
- Integrally cast into the structure at time of casting.
- Contractor can backfill immediately after pipe insertion.
- The 4" connector is available in either open or closed end face.
- Contractor can save time and money by backfilling immediately.

### Where To Use

- Manholes
- Wet wells
- Square pump and lift stations
- Stormwater structures
- On-site treatment structures
- Junction chambers
- Grease interceptors



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Phone: 800-348-7325  
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**PRESS-SEAL CORPORATION**  
*Protecting Our Planet's Clean Water Supply*  
ISO 9001: Registered • Version 02.16.22.11.17

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Web: [www.press-seal.com](http://www.press-seal.com)

# CAST-A-SEAL 402/402F

## SUBMITTAL SPECIFICATIONS

A flexible pipe-to-structure connector shall be employed in the connection of the sanitary sewer pipe to precast structures. The connector shall be Cast-A-Seal® 402/402F as manufactured by Press-Seal Corporation, Fort Wayne, Indiana, or approved equal. The connector shall be the sole element relied on to assure a flexible, watertight seal of the pipe to the precast structure. The connector shall consist of a rubber gasket and an external take-up clamp.

The rubber gasket element shall be constructed solely of synthetic or natural rubber, and shall meet or exceed the physical property requirements of ASTM C 923.

The external take-up clamp shall be constructed of Series 300 non-magnetic stainless steel and shall utilize no welds in its construction. The clamp shall be installed by torquing the adjusting screw using a torque-setting wrench available from the connector manufacturer.

Selection of the proper size connector for the structure and pipe requirement, and installation thereof, shall be in strict conformance with the recommendations of the connector manufacturer. Any dead end pipe stubs installed in connectors shall be restrained from movement per ASTM C 923.

The finished connection shall provide sealing to 13 psi (minimum) and shall accommodate deflection of the pipe to 7 degrees (minimum) without loss of seal.

Vacuum testing shall be conducted in strict conformance with ASTM C 1244 prior to backfill. Other testing shall be conducted in strict conformance with the requirements of the connector manufacturer.

### Product Performance

Cast-A-Seal 402/402F meets and/or exceeds all requirements of ASTM C 923, including physical properties of materials and performance testing, including:

- 13 PSI minimum in straight alignment
- 10 PSI at minimum 7° angle
- 10 PSI minimum under shear load of 150 lbs/in. pipe diameter

Cast-A-Seal 402/402F meets and/or exceeds the requirements of the following Standards, Specifications, Codes, and Test Methods:

- IAPMO/ANSI Z1000 Standard for Prefabricated Septic Tanks
- IAPMO/ANSI Z1001 Standard for Prefabricated Gravity Grease Interceptors
- NPCA Best Practices Manual for Precast Concrete On-Site Wastewater Tanks
- NOWRA Model Code Framework
- ASTM C 1227 Standard Specification for Precast Concrete Septic Tanks
- ASTM C 1644 Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes (CAS 402)
- ASTM C 1613 Standard Specification for Precast Concrete Grease Interceptor Tanks
- ASTM C 923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals
- ASTM C 1244 Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test
- ASTM C 1478 - Standard Specification for Storm Drain Resilient Connectors Between Reinforced Concrete Storm Sewer Structures, Pipes, and Laterals

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# CAST-A-SEAL 402/402F

## SELECTION GUIDE

PIPE SIZE	CAST-A-SEAL 402	PIPE O.D. RANGE	WALL THICKNESS*	APPLICATION
1.25" - 2" 31 - 51 mm	452.0250	1.5" - 2.75" 38 - 70 mm	2.5" - 6" 64 - 150 mm	STANDARD
4" 100 mm	452.0450	4.2" - 4.7" 107 - 119 mm	2.5" - 6" 64 - 150 mm	STANDARD
4" 100 mm	452.0402F1	4.2" - 4.7" 107 - 119 mm	2.5" - 4.0" 64 - 102 mm	Closed Face
6" 150 mm	452.0650	6.2" - 6.7" 157 - 170 mm	2.5" - 6" 64 - 150 mm	STANDARD
3" 75 mm	CAS ADAPTER	3.2" - 3.6" 81 - 91 mm	---	Use with 4" CAST-A-SEAL

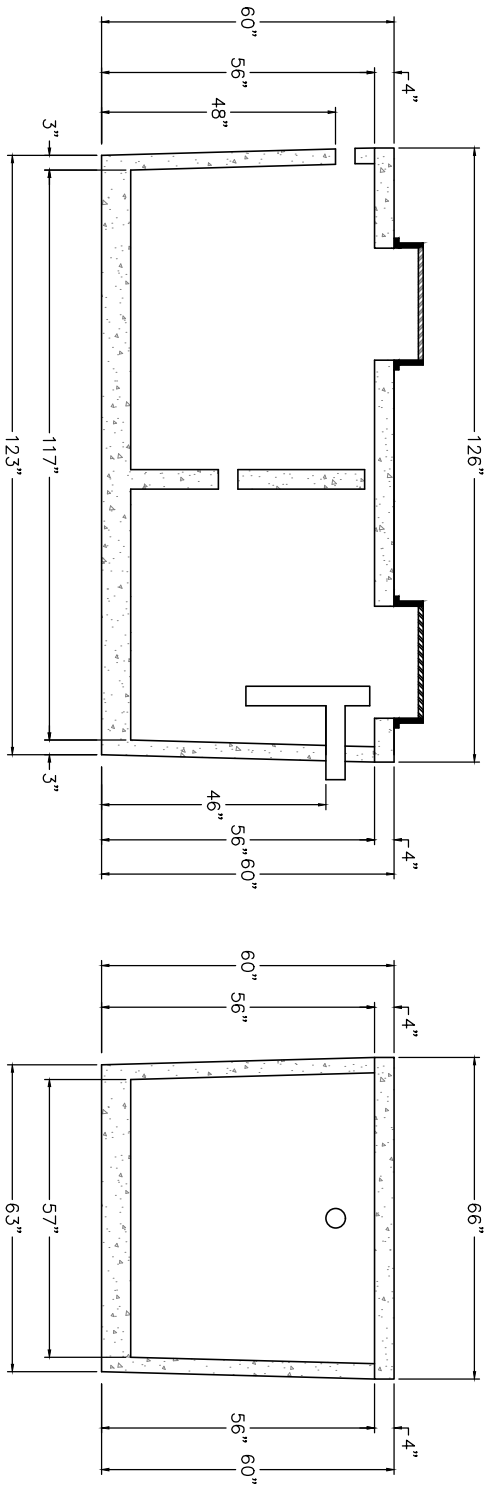


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**1,250 ST 323**  
NTS

**NON TRAFFIC BEARING**

**DAVID BRANTLEY & SONS**  
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Office 252-478-3721  
Fax 919-573-0443  
installer@gmail.com

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37 Pine Ridge Rd.  
Zebulon, NC 27597

DATE : April 11, 2014

CONTACT:  
CORY BRANTLEY

REVISION NO.

Original Submittal

Revision 1

Revision 2

Revision 3

Master Set

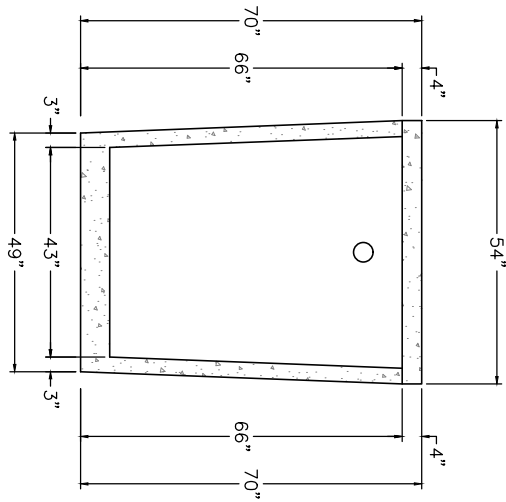
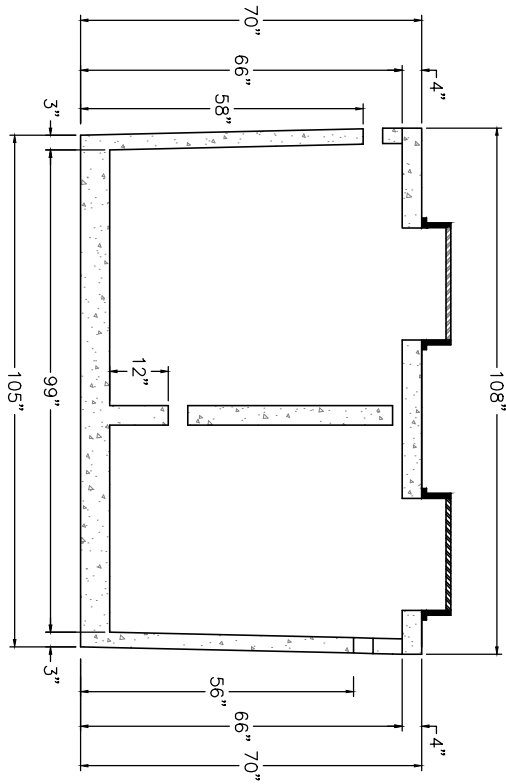
DATE

April 11, 2014

BRANTLEY TANK MODEL  
**1,250 ST 323**

SHEET NUMBER

1 of 1



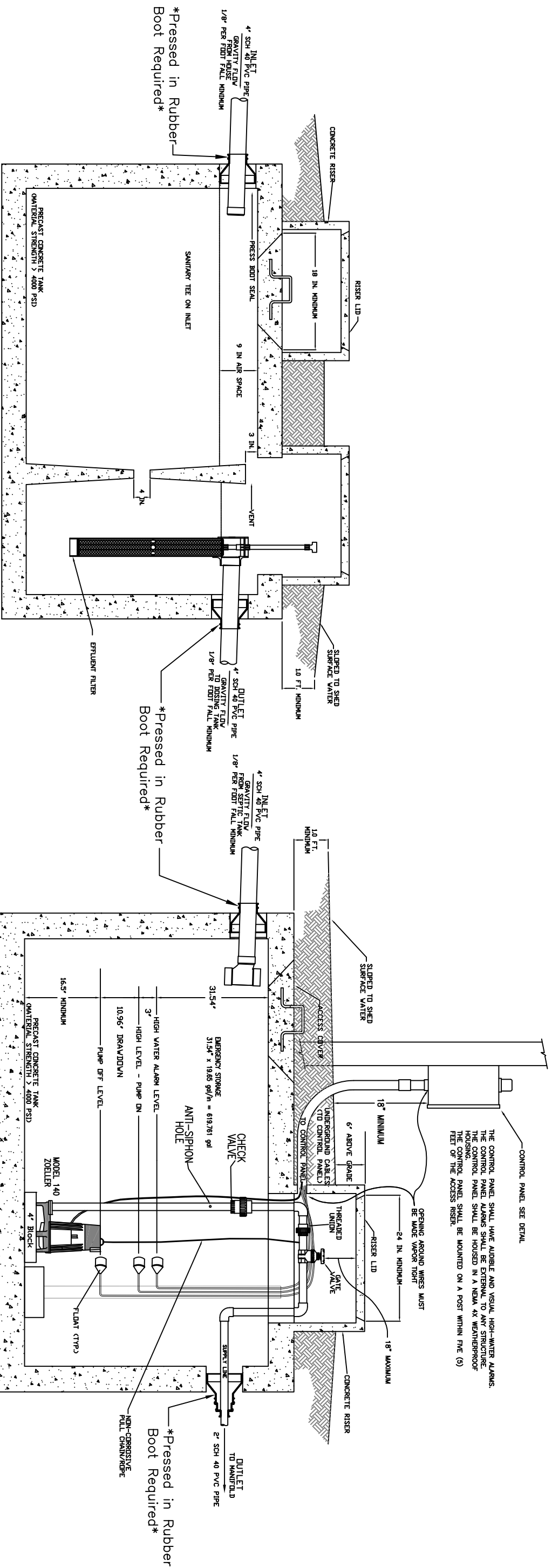
**1,200 PT 463**  
NTS

**NON TRAFFIC BEARING**

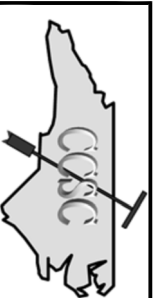
**DAVID BRANTLEY & SONS**  
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PREPARED FOR :	David Brantley & Sons 37 Pine Ridge Rd. Zebulon, NC 27597	REVISION NO.	DATE
		Original Submittal	April 11, 2014
DATE :	April 11, 2014	Revision 1	
		Revision 2	
CONTACT:	CORY BRANTLEY	Revision 3	
		Master Set	-----

BRANTLEY TANK MODEL <b>1,200 PT 463</b>
SHEET NUMBER <b>1 of 1</b>



- NOTES
1. ALL TANKS SHALL BE LEAK TESTED SUCH THAT EXFILTRATION OCCURS AT A RATE WHICH DOES NOT EXCEED TEN GALLONS PER TWENTY-FOUR HOURS PER 1,000 GALLONS OF TANK CAPACITY
  2. ALL TANKS SHALL REST ON A BED OF #57 WASHED GRAVEL. THE MINIMUM THICKNESS OF THE GRAVEL BED IS 6 INCHES.
  3. ALL TANKS MUST BE APPROVED FOR USE BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL HEALTH (DEH).
  4. INSERTS SHOWN ARE APPROXIMATE. THE INSTALLER SHALL FIELD CONFORM PRIOR TO CONSTRUCTION.
  5. ALL HARDWARE INSTALLED INSIDE OF TANKS SHALL BE OF STAINLESS STEEL.
  6. TANK DIMENSIONS VARY BY MANUFACTURER.
  7. DRAWDOWN WILL VARY WITH TANK DIMENSIONS.
  8. NO ELECTRICAL SPLICES SHALL BE MADE INSIDE THE PUMP TANK.

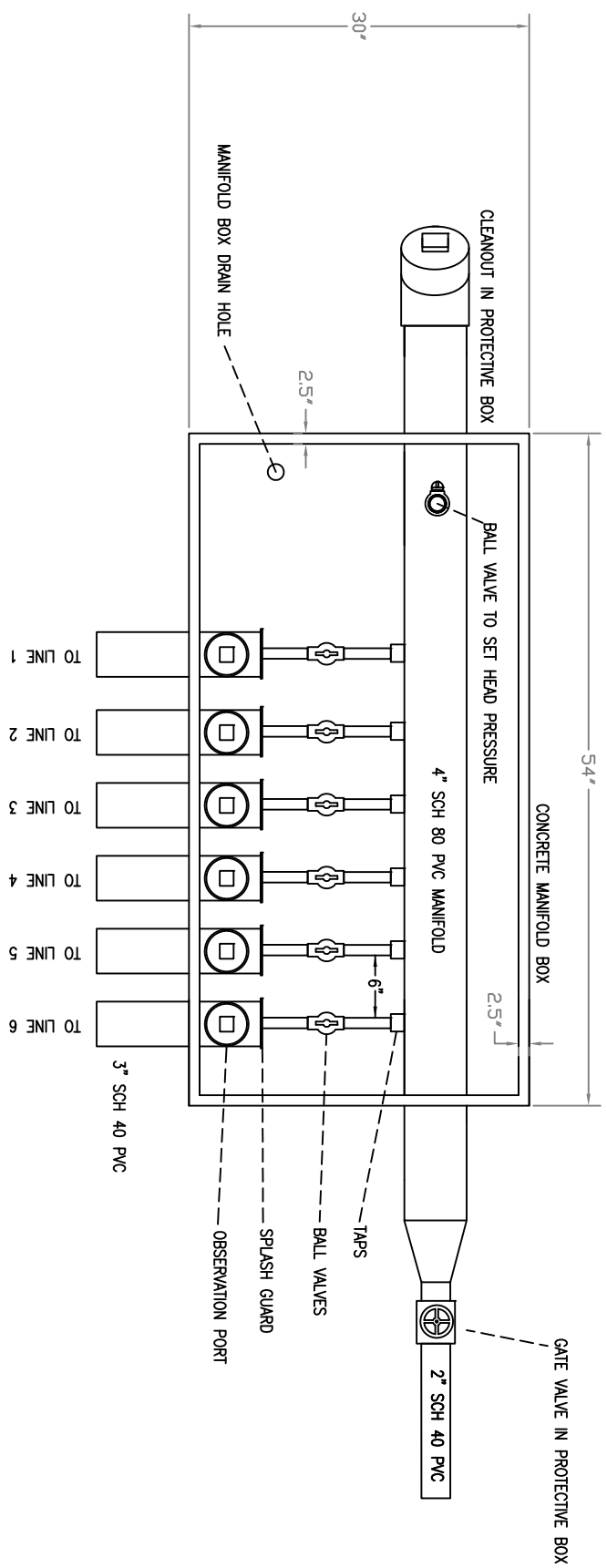


**Central Carolina Soil Consulting, PLLC**  
1900 South Main Street, Suite 110  
Wake Forest, North Carolina 27587  
Phone (919)569-6704 Fax (919)569-6703

**Septic and Pump Tank Details**  
140 Pondhurst Lane, Lot 4  
Person County, North Carolina

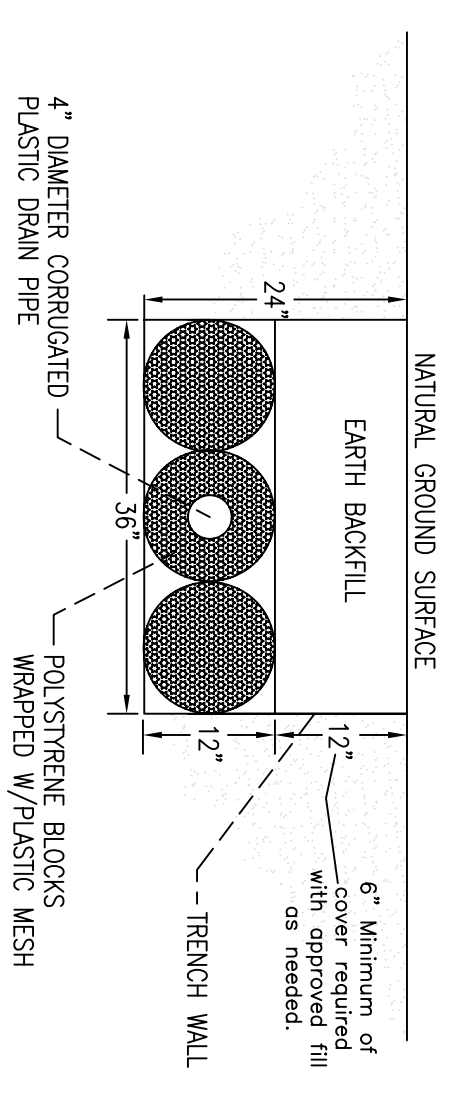
Job#: 4760  
Drawn By: JR  
Date: 12/05/2023

## PRESSURE MANIFOLD DETAILS TOP VIEW

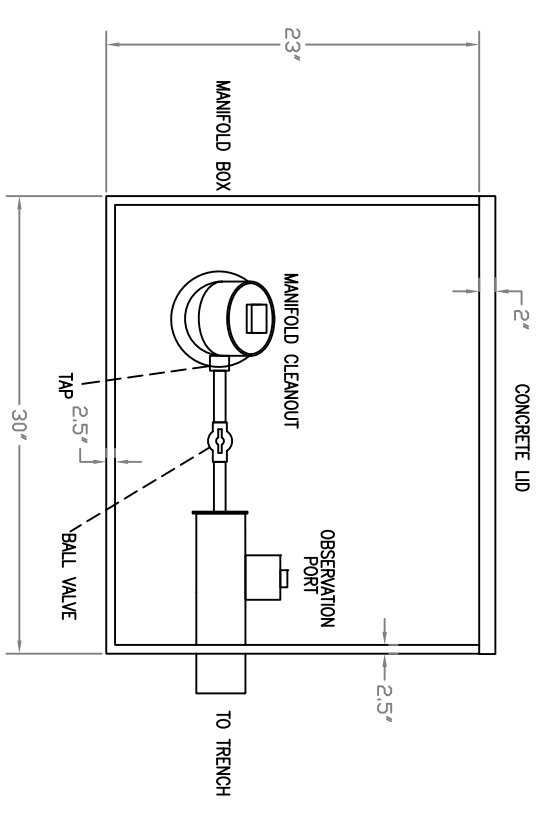


## EZ-FLOW DETAILS

Example only: Installed trench bottom should match design.



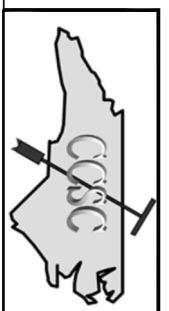
## PRESSURE MANIFOLD DETAILS END VIEW



TAP SCHEDULE	
LINE #	TAP
1	1/2" SCH 40
2	1/2" SCH 40
3	1/2" SCH 40
4	1/2" SCH 40
5	1/2" SCH 40
6	1/2" SCH 40

**NOTE :**

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



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**Manifold and Trench Details**  
 140 Pondhurst Lane, Lot 4  
 Harnett County, North Carolina

Job#: 4760  
 Drawn By: JR  
 Date: 12/05/2023