



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 _____ Manors at Waterstone Reserve, Lot 37 _____, 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: _____

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

County: Wake

Pre-Construction Conference Required: Yes ☐ No ☒

PIN/Lot Identifier: 1821556228

Issued To: Kendall Custom Homes

Property Location: 2360 Ballywater Lea Way The Manors at Waterstone Reserve Lot 37

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

Number of bedrooms: 4 Number of Occupants: ≤8 Other: _____

☒ New ☐ Expansion ☐ Repair ☐ System Relocation ☐ Change of Use

Basement? ☐ Yes ☒ No Basement Fixtures? ☐ Yes ☐ No

Crawl Space? ☒ Yes ☐ No Slab Foundation? ☐ Yes ☐ No

Type of Wastewater System* III bg (Initial) III bg (Repair)

**Please include system classification for proposed wastewater system types in accordance with Rule .1301 Table XXXII*

Design Daily Flow: 480 GPD Wastewater Strength: ☒ Domestic ☐ High Strength ☐ Industrial Process WW

Session Law 2014-120 Section 53, Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies? ☐ Yes ☒ No
(if yes, please provide engineering documentation)

Effluent Standard: ☒ DSE ☐ HSE ☐ NSF/ANSI 40 ☐ TS-I ☐ TS-II ☐ RCW

Type of Water Supply: ☐ Private well ☐ Public well ☐ Shared well ☐ Municipal Supply ☐ Spring ☒ Other: C. Well

Installation Requirements/Conditions

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

Trench/Bed Width: 36 inches LTAR: 0.30 gpd/ft² Usable Depth to LC (Initial)*: 37 ***Limiting condition**

Additional Soil Cover: 0 inches Slope Corrected Maximum Trench/Bed Depth*: 20 inches *** Measured on the downhill side of the trench**

Pump Tank Size (if applicable): 1200 gallons Requires more than 1 pump? ☐ Yes ☒ No

Pump Requirements: 20.87 ft. TDH vs. 40.58 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 [.0204(g)]: ☐ Yes ☒ No Declaration of Restrictive Covenants: ☐ Yes ☒ No

Easement, Right-of-Way, or Encroachment Agreement Required [.0301(b)]: ☐ Yes ☒ No

Management Entity Required: ☐ Yes ☒ No Minimum O&M Requirements: _____

Permit conditions:

fence off the entire septic area from construction traffic

The requirements of 15A NCAC 18E are incorporated by reference into this permit and shall be met. Systems shall be installed in accordance with the attached site sketch. ***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 15A NCAC 18E, or 15A NCAC 18A .1900, as applicable, and to the conditions of this permit.

AOWE/PE Print Name: Jason Hall

AOWE/PE Signature: [Signature]

Date: 03/03/2025

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 _____
Date Initials

The following items are being resubmitted pursuant to G.S. 130A-335(a5) for issuance of the Construction Authorization:

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.

Signature of Authorized On-Site Wastewater Evaluator

Date

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:

Copies of this were sent to the AOWE/PE and the Applicant on _____
Date

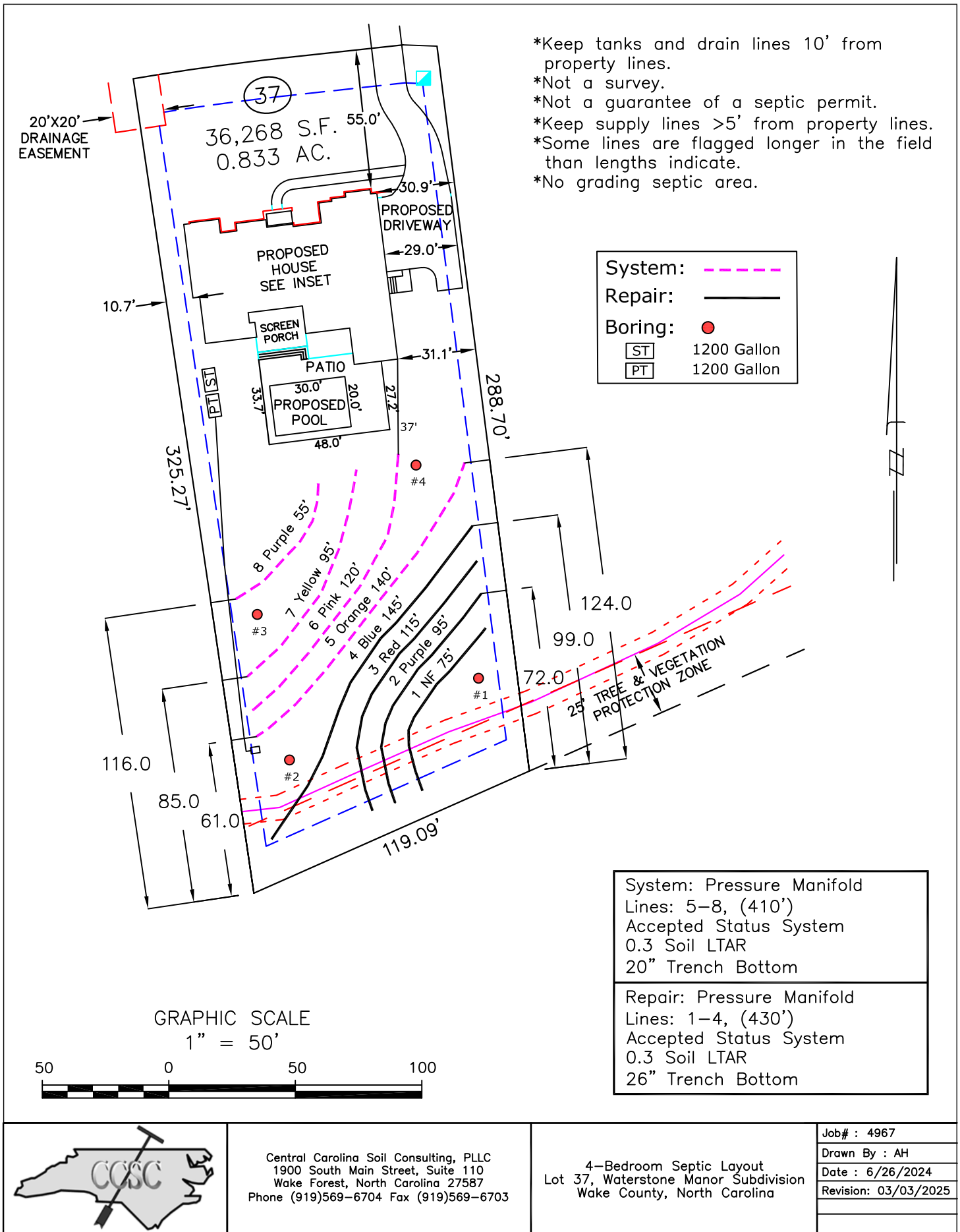
State Authorized Agent: _____

Date: _____

☐ Complete

State Authorized Agent: _____

Date: _____



Pressure Manifold
Septic System Design

for

Waterstone Subdivision, Lot 37
Wake County, North Carolina

Designed by:

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

03/03/2025

Waterstone Subdivision, Lot 37

Layout/Design Specifications

Facility Type:	Singl-Family Dwelling
# of Bedrooms:	4
Daily Flow:	480 gal/day
L.T.A.R.:	0.3 gal/day/sq.ft
Trench Depth:	20 in max on the downhill side of trench
Trench Width:	36 in
Stone Depth:	EZ-FLOW in
Manifold Length:	42 in
Manifold Diameter:	4 in sch 80pvc
Supply Line Length:	140 ft
Supply Line Diameter:	2 in sch 40pvc
Supply Line Volume:	24.36 gallons
Friction Loss + Fitting Loss:	7.67 ft(supply line length + 70' for fittings in pump tank)
Design Head:	2 ft
Elevation Head:	11.20 ft
Total Head:	20.87 ft
Dose Volume:	199.88 gals
% of Pipe Vol.	0.75
Drawdown:	10.17 in @ 19.65 gal/in
Pump Run Time:	4.93 Mins
Control Panel:	SJE Rhombus Model112 control panel (or approved equivalent)
Pump:	Zoeller M140 Flow-Mate (or approved equivalent)
Septic Tank Effluent Filter:	Polylok PL-68 residential effluent filter (or approved equivalent)
Septic Tank:	Brantley 1,250 Gallon ST
Pump Tank:	Brantley 1,200 Gallon PT

Waterstone, Lot 37

Initial System TAP CHART

Bench Mark;		is = 100.00		Location of BM:		Elevation Head:		11.20	
Pump tank elev.		10.00	90.00	Pump elev.		84.60	Manifold elevation:		95.80
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
5	Orange	5.20	94.80	140	3/4in SCH 40	12.5	147.86	420	0.3520
6	Pink	5.80	94.20	120	3/4in SCH 40	12.5	147.86	360	0.4107
7	Yellow	6.20	93.80	95	3/4in SCH 80	10.1	119.47	285	0.4192
8	Purple	7.40	92.60	55	1/2in SCH 80	5.48	64.82	165	0.3928

total feet = 410 gal/min = 40.58

		total feet =	410	gal/min =	40.58	LTAR =	0.3000
						LTAR + %5	0.3150
% of Dose Vol.	75	Des. Flow	480			(ltar W/ INOV)	0.4000
Dose Volume	199.88	Pump Run=	11.83			(ltar W/ INOV + 5%)	0.4200
Dose Pump Time	4.93	Tank Gal/IN	19.65				
Drawdown in Inches	10.17						

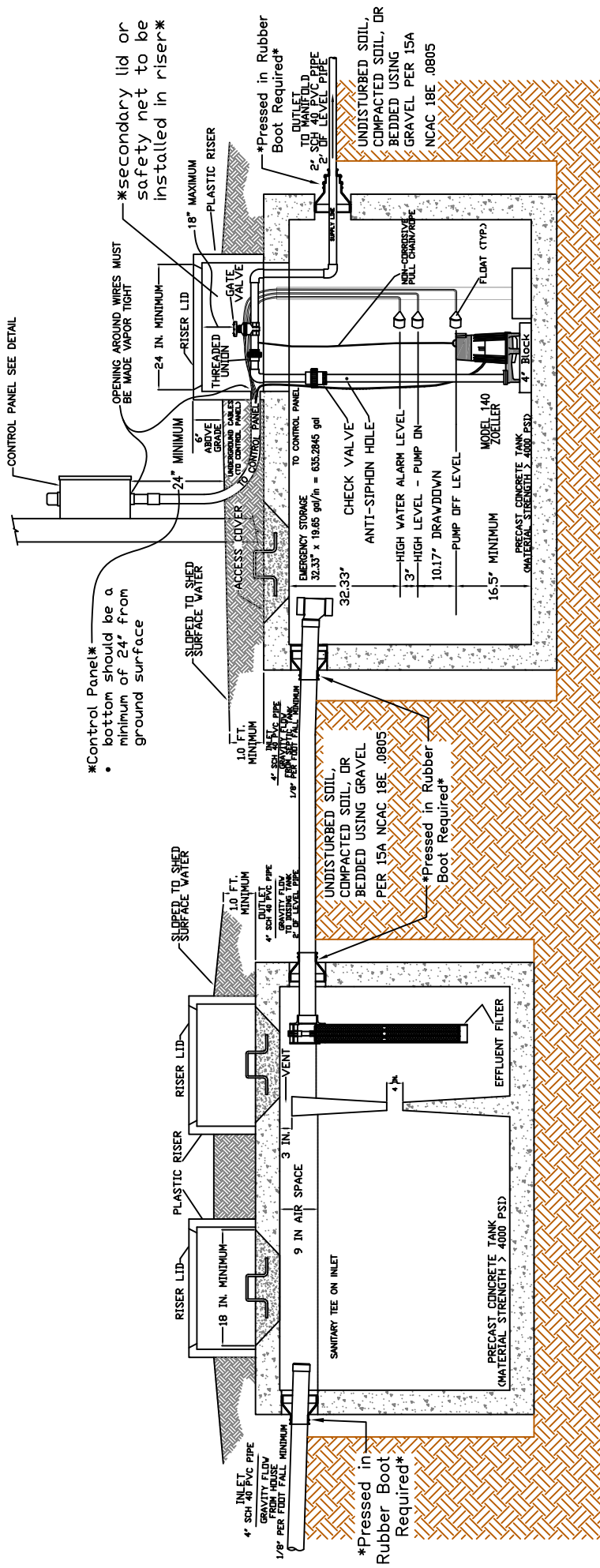
Waterstone, Lot 37

Repair System TAP CHART

Bench Mark:		is = 100.00		Location of BM:		Elevation Head:		12.60	
Pump tank elev.		10.00	90.00	Pump elev.		84.60	Manifold elevation:		97.20
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
1	NF	3.80	96.20	75	1/2in SCH 40	7.11	80.85	225	0.3593
2	Purple	4.00	96.00	95	3/4in SCH 80	10.1	114.85	285	0.4030
3	Red	4.20	95.80	115	3/4in SCH 40	12.5	142.15	345	0.4120
4	Blue	4.60	95.40	145	3/4in SCH 40	12.5	142.15	435	0.3268

total feet = 430 gal/min = 42.21

		total feet =	430	gal/min =	42.21	LTAR =	0.3000
						LTAR + %5	0.3150
% of Dose Vol.	75	Des. Flow	480			(ltar W/ INOV)	0.4000
Dose Volume	209.63	Pump Run=	11.37			(ltar W/ INOV + 5%)	0.4200
Dose Pump Time	4.97	Tank Gal/IN	19.65				
Drawdown in Inches	10.67						



1200 GAL SEPTIC TANK SCHEMATIC
NOT TO SCALE

1200 GAL PUMP TANK SCHEMATIC
NOT TO SCALE

NOTES:

1. ALL TANKS SHALL BE LEAK TESTED (IN OCCURRENCE TO RULE 15A NCAC 18E .0805) WHEN INSTALLED UNDER THE FOLLOWING CONDITIONS
 - (A) when a Soil Wetness Condition (SWC) is present within four feet of the elevation of the top of a mid-seam pump tank;
 - (B) with advanced pretreatment when required in the RWTS or PIA Approval;
 - (C) when required in the approved plans and specifications for a wastewater system designed by a PE;
 - (D) when the tank is constructed in place; or
 - (E) as required by the authorized agent based upon site or system specific conditions, such as misaligned seams, exposed reinforcement, or damage observed that may have occurred during transport or installation.
2. ALL TANKS MUST BE APPROVED FOR USE BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL HEALTH (DEH).
3. INVERTS SHOWN ARE APPROXIMATE. THE INSTALLER SHALL FIELD CONFIRM PRIOR TO CONSTRUCTION.
4. ALL HARDWARE INSTALLED INSIDE OF TANKS SHALL BE OF STAINLESS STEEL.
5. TANK DIMENSIONS VARY BY MANUFACTURER.
6. DRAWDOWN WILL VARY WITH TANK DIMENSIONS.
7. NO ELECTRICAL SPLICES SHALL BE MADE INSIDE THE PUMP TANK.

ALL tank openings (2 for septic tank, 1 for pump tank) shall have a secondary lid or safety net installed

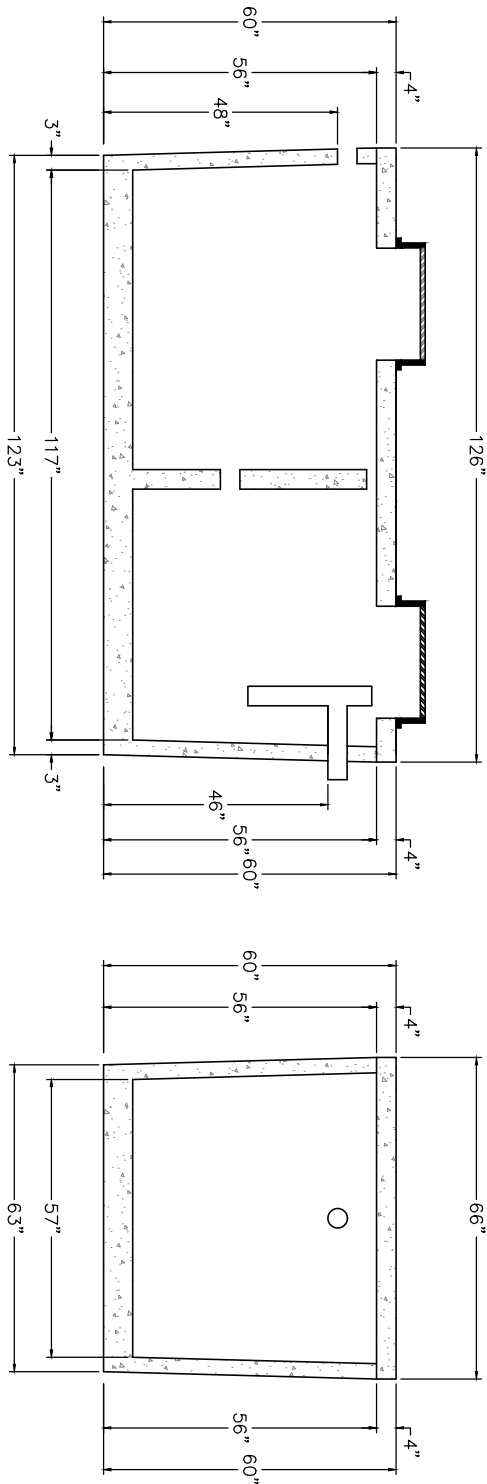
- THE CONTROL PANEL SHALL BE HOUSED IN A NEMA 4X WEATHERPROOF HOUSING.
- THE CONTROL PANEL SHALL INCLUDE:
 - AN INDEPENDENT OVERLOAD PROTECTION, IF NOT INTEGRAL WITH THE PUMP MOTOR
 - CIRCUIT BREAKER(S)
 - A MOTOR CONTRACTOR OR A SOLID-STATE RELAY
 - A HAND-OFF-AUTOMATIC (H-O-A) SWITCH
 - A PUMP RUN LIGHT
 - AN ELAPSED TIME METER
 - AN EVENT COUNTER



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
Waterstone Subdivision, Lot 37
Wake County, North Carolina

Job# : 4967
Drawn By : JR
Date : 03/03/2025



1,250 ST 323
NTS

NON TRAFFIC BEARING

DAVID BRANTLEY & SONS
37 Pine Ridge Rd.
Zebulon, NC 27597
Office 252-478-3721
Fax 919-573-0443
tinstaller@gmail.com

PREPARED FOR : David Brantley & Sons
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

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.

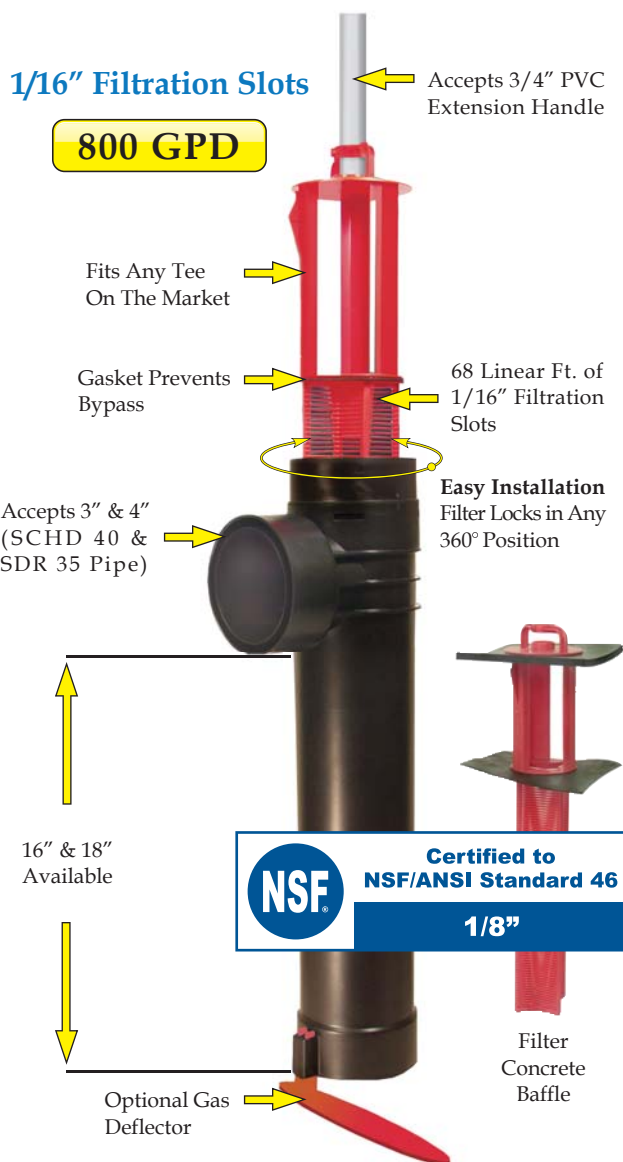
1. Do not use plumbing when filter is removed.
2. Pull PL-68 out of the tee.
3. Hose off filter over the septic tank. Make sure all solids fall back into septic tank.
4. Insert filter back into tee/housing.

Related Products:

PL-68 Filter Concrete Baffle
Extend & LokTM



Extend & LokTM
Easily installs
into existing tanks.



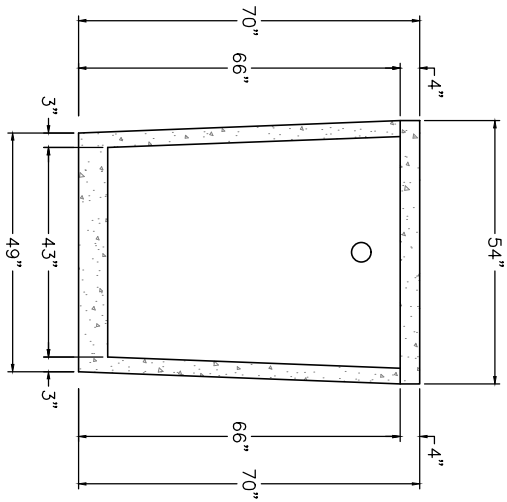
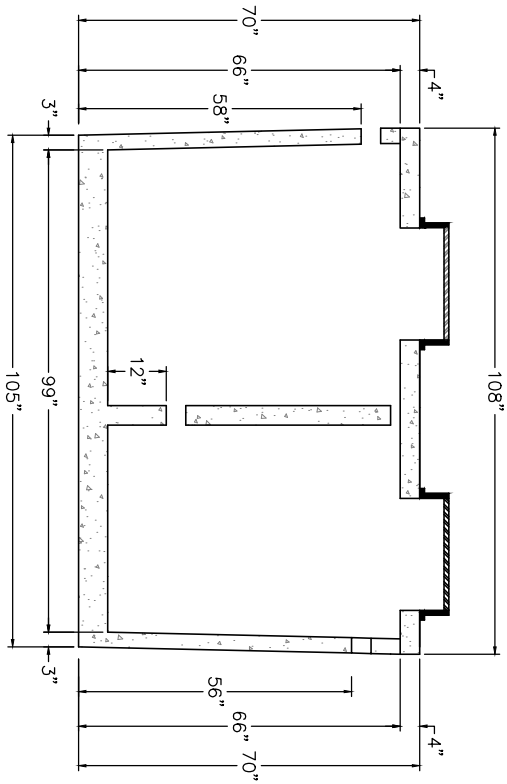
Spacer Bushing
4" SCHD 40
to SDR 35



Spacer Bushing
4" SCHD 40
to 110mm Pipe



2" Extender



1,200 PT 463
NTS

NON TRAFFIC BEARING

DAVID BRANTLEY & SONS
37 Pine Ridge Rd.
Zebulon, NC 27597
Office 252-478-3721
Fax 919-573-0443
tinstaller@gmail.com

PREPARED FOR : David Brantley & Sons
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

1,200 PT 463

SHEET NUMBER

1 of 1

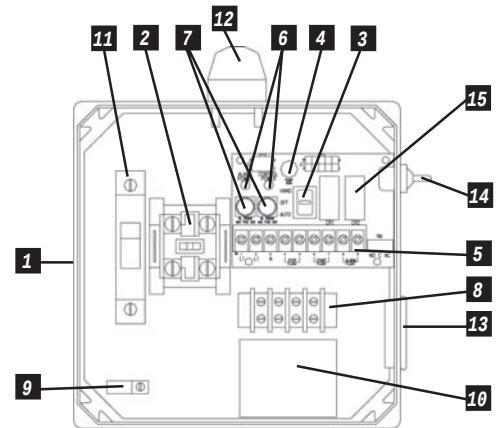
MODEL 112 Control Panel

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**

- ☐ 1A Red beacon only / no audio
(must select 1E if floats included)
- ☐ 1C Horn only / no visual
(must select 1E if floats included)
- ☐ 1E Alarm float
- ☒ 3A Alarm flasher
- ☐ ★ 3B Manual alarm reset
- ☐ ★ 4A Low level cutout
(select option 4D if floats included)
- ☐ ★ 4B Red low-level indicator & alarm
(must select 4A also)
- ☐ 4D Low-level float
- ☐ ★ 5A Thermal cutout/heat sensor auto
reset (for pumps w/thermal switch leads)
- ☐ ★★ 5E Seal failure circuit & red indicator (2 wire)
- ☐ 6A Auxiliary alarm contact, form C type
- ☒ ★ 8A Elapsed time meter
- ☒ ★ 8C Event (cycle) counter
- ☐ ★★ 9_A Pump overload
specify amperage after number 9 followed by letter "A".
Example: 912A = 12 amp pump.
- ★★ ☐ 0-25 FLA
- ★★ ☐ 25-30 FLA
- ☐ 10E Lockable latch - NEMA 4X
- ☐ 10E Lockable latch - NEMA 1
- ☐ ★ 10F Lightning arrester
- ☐ ★ 10K Anti-condensation heater

CODE DESCRIPTION

- ☐ 11C NEMA 1 alarm panel *must select option 6A*
- ☐ 11D NEMA 4X alarm panel *must select option 6A*
- ☐ ★★ 14B Main disconnect (rotary style, mounted through door)
non-fused
- ★★ ☐ 0-20 FLA (total of both pumps)
- ★★ ☐ 20-30 FLA (total of both pumps)
- ☒ 15A Control / alarm circuit breaker
Does not include the circuit board as in standard.
- ☐ 16A 10' cord in lieu of 20' (per float)
- ☐ 16B 15' cord in lieu of 20' (per float)
- ☐ 16C 30' cord in lieu of 20' (per float)
- ☐ 16D 40' cord in lieu of 20' (per float)
- ☐ 17A SJE SignalMaster® / mounting strap ● (per float)
- ☐ 17B SJE SignalMaster® / externally weighted ● (per float)
- ☐ 17C Sensor Float® / internally weighted ▲ (per float)
- ☐ 17D Sensor Float® / externally weighted ▲ (per float)
- ☐ 17E Sensor Float® Mini / pipe clamp ▲ (per float)
- ☐ 17F Sensor Float® Mini / externally weighted ▲ (per float)
- ☐ 19T TOA (Test/Off/Automatic) switch and pump run light through
door mounted
- ☐ 19U HOA (Hand/Off/Automatic) switch and pump run light through
door mounted
- ☐ 19X Door mounted pump run indicator
- ☐ 21A SJE PumpMaster® in lieu of on/off switches ●
- ☐ 21B SJE PumpMaster® Plus in lieu of on/off switches ●
- ☐ 21C Super Single® in lieu of on/off switches ▲
- ☐ 21D 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

Enclosure Rating

Starting Device

Pump Full Load Amps

Pump Disconnect

Float Switch Application

Options: Flasher, Elapsed Time Meter

TECHNICAL DATA SHEET FLOW-MATE SERIES

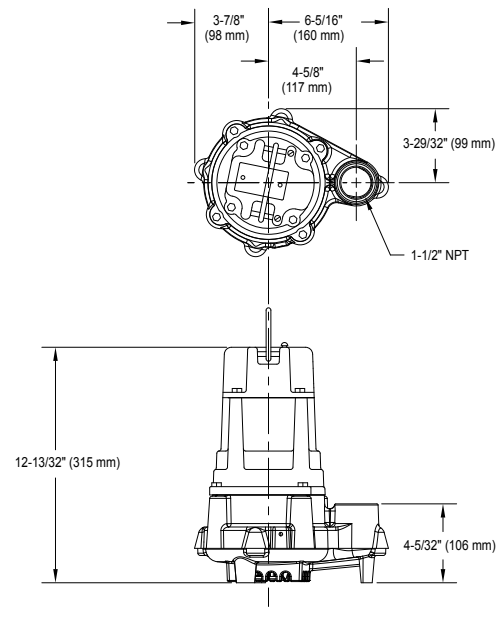
Models 140/4140, 145/4145 Effluent / Dewatering Pumps

PRODUCT SPECIFICATIONS

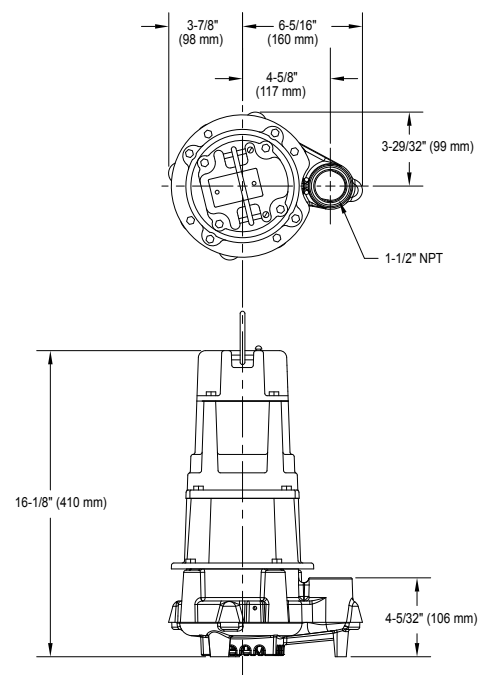
MOTOR	Horse Power	3/4 - 1
	Voltage	115 or 230
	Phase	1 Ph
	Hertz	60 Hz
	RPM	3450
	Type	Permanent split capacitor
	Insulation	Class B
	Amps	6.0 - 13.0
PUMP	Operation	Automatic or nonautomatic
	Discharge Size	1-1/2" NPT
	Solids Handling	1/2" (12 mm), 3/4" (19 mm) spherical solids
	Cord Length	20' (6 m)
	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
MATERIALS	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

NOTE: See model comparison chart for specific details.

SINGLE SEAL



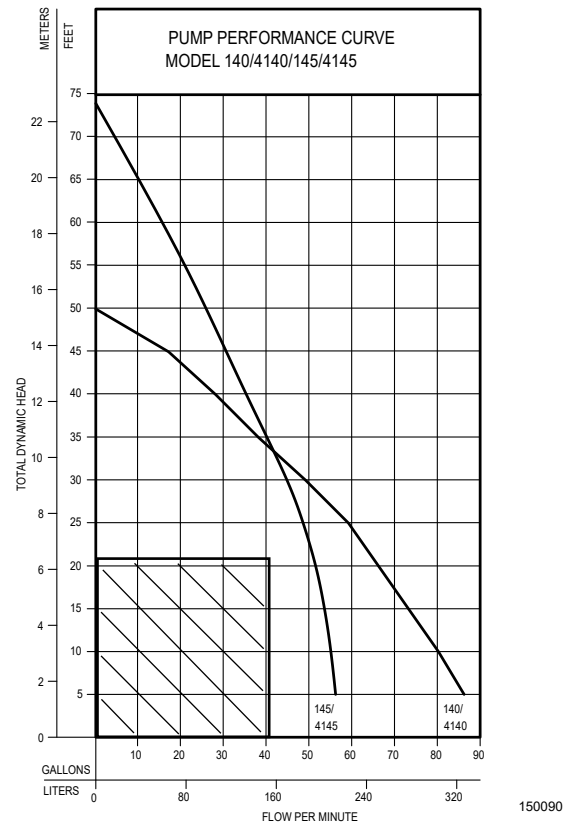
DOUBLE SEAL



SK1524

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.

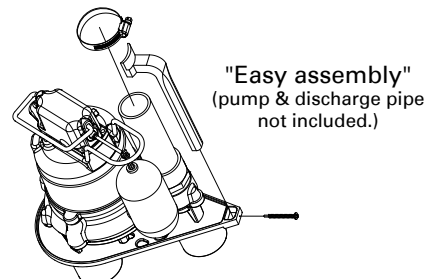
BN and BE models include a 20' (6 m) piggyback variable level pump switch. Additional cord lengths are available in 15' (5 m), 25' (8 m), 35' (11 m) and 50' (15 m). 50' (15 m) cord length is for 230 V only.

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.

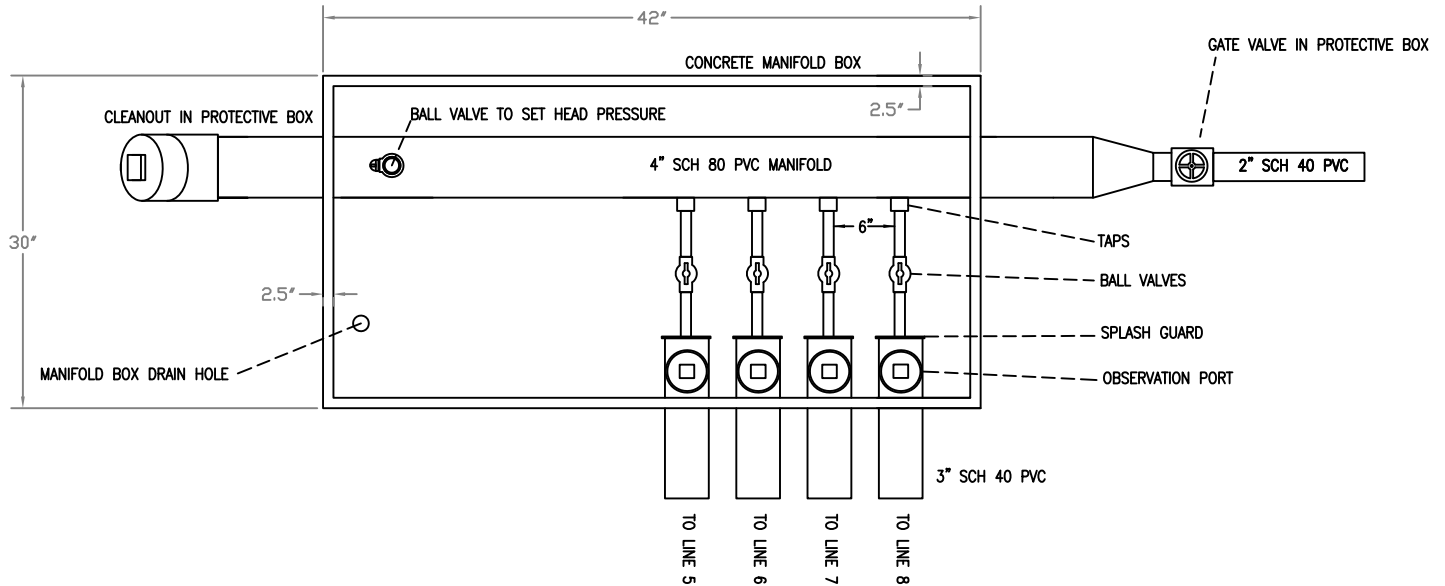


All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

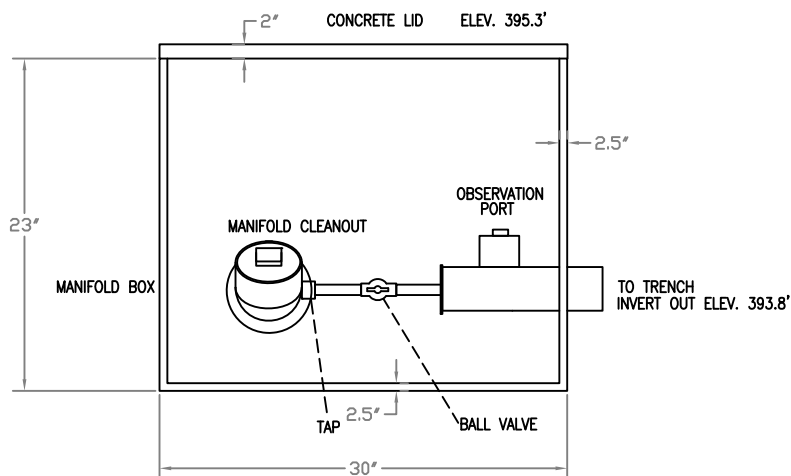
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PRESSURE MANIFOLD DETAILS TOP VIEW



PRESSURE MANIFOLD DETAILS END VIEW



TAP SCHEDULE	
LINE #	TAP
5	$\frac{3}{4}$ " SCH 40
6	$\frac{3}{4}$ " SCH 40
7	$\frac{3}{4}$ " SCH 80
8	$\frac{1}{2}$ " SCH 80



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

Manifold Details
Waterstone Subdivision, Lot 37
Wake County, North Carolina

Job# : 4967
Drawn By : JR
Date : 03/03/2025

CAST-A-SEAL 402/402F

PIPE TO MANHOLE & TANK CONNECTOR

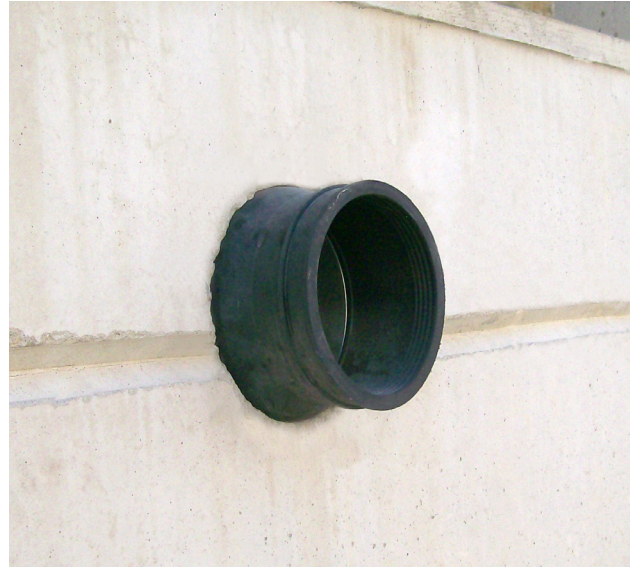
What It Is

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
Fax: (260) 436-1908

PRESS-SEAL CORPORATION
Protecting Our Planet's Clean Water Supply
ISO 9001: Registered • Version 02.16.22.11.17

Email: sales@press-seal.com
Web: 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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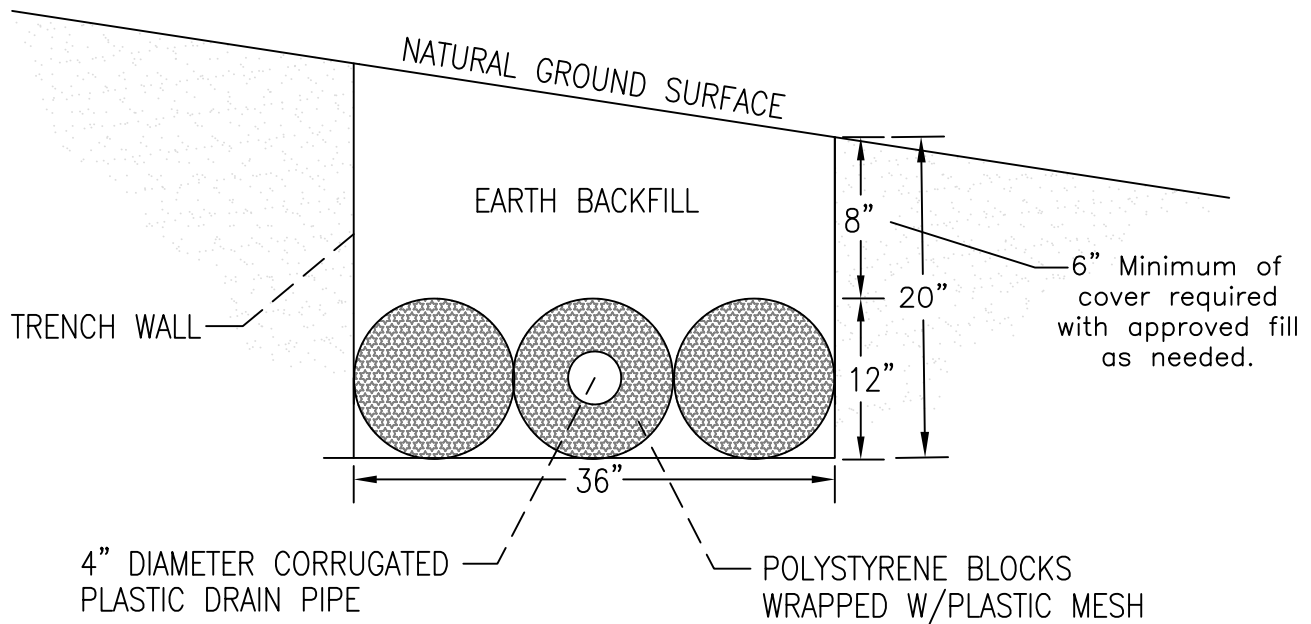
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EZ-FLOW DETAILS

Example only: Installed trench bottom should match design.



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 IP & CA PERMIT FOR TRENCH DEPTH.



Central Carolina Soil Consulting, PLLC
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Wake Forest, North Carolina 27587
Phone (919)569-6704 Fax (919)569-6703

Trench Details
Waterstone Subdivision, Lot 37
Wake County, North Carolina

Job# : 4967
Drawn By : JR
Date : 03/03/2025