North Carolina Onsite Wastewater Contractor Inspector Certification Board
Authorized Onsite Wastewater Evaluator Permit Option for Non-Engineered Systems
Notice of Intent (NOI) to Construct

____New ____ Expansion ____Repair ____ Relocation ____Relocation of Repair Area

Owner or Legal Representative Information:
Name: RiverWILD Homes
Mailing address: 114 W Main St City: Clayton State: NC Zip: 27520
Phone: 919-766-8782 Email: brittany@staywild.com

Authorized Onsite Wastewater Evaluator Information:
Name: Trent Bostic Certification #: 10056E
Mailing address: 501 N Salem St, Ste 203 City: Apex State: NC Zip: 27502
Phone: 919-367-6322 Email: tbostic@agriwaste.com

Site Location Information:
Site address: 3943 Baileys XRDS Rd, Benson, NC
Tax parcel identification number or subdivision lot, block number of property: 1610-58-8499
Stewart Farms - Lot 4 County: Harnett

System Information:
Wastewater System Type: IIIb
Daily Design Flow: 480
Saprolite System: _____Yes X___No Subsurface Operator Required: _____ Yes X___No
Water Supply Type: ____Private Well X___Public Water Supply ____ Spring _____Other: _____

Facility Type:
X___Residential 4_____# Bedrooms 8_____ Maximum # of Occupants
____Business Type of Business and Basis for Flow: _____
____Public Assembly Type of Public Assembly and Basis for Flow: _____

Required Attachments:
X___ Plat or Site Plan
X___ Evaluation of Soil and Site Features by Licensed Soil Scientist

Attest: On this the 24 day of JUN, 2024 by signature below I hereby attest that the information required to be included with this NOI to Construct is accurate and complete to the best of my knowledge. Furthermore, I hereby attest that I have adhered to the laws and rules governing onsite wastewater systems in the state of North Carolina.
This NOI shall expire on 24 day of JUN, 2027.

ONSITE WASTEWATER CONTRACTOR Certification Number 10056E Trent Bostic EVALUATOR

Signature of Authorized Onsite Wastewater Evaluator: _____

Signature of Owner or Legal Representative: _____

Disclosure: The owner may apply for a building permit for the project upon submitting a complete NOI to Construct and the fee required (if any) to the local health department. An onsite wastewater system authorized by an authorized onsite wastewater evaluator shall be transferable to a new owner with the consent of the authorized onsite wastewater evaluator.

Local Health Department Receipt Acknowledgement:
Signature of Local Health Department Representative: _____Date: _____

Engineers and Soil Scientists

Agri-Waste Technology, Inc.
501 N Salem Street, Suite 203, Apex, NC 27502
agriwaste.com | 919.859.0669

LICENSED SOIL SCIENTIST
TRENT BOSTIC
1356
STATE OF NORTH CAROLINA

Soil Suitability for Domestic Sewage Treatment and Disposal Systems
3943 Baileys XRDS Rd, Benson, NC 27504
(PIN: 1610-58-8499; Harnett County)

PREPARED FOR: RiverWILD Homes, c/o Brittany Radziszewski

PREPARED BY: Trent Bostic, Senior Soil Scientist

DATE: June 24, 2024

Soil suitability for domestic sewage treatment and disposal systems was evaluated on May 24, 2024, for the property located at 3943 Baileys XRDS Rd in Benson, NC. A layout was performed on May 24, 2024. Trent Bostic and Heath Clapp of Agri-Waste Technology, Inc. (AWT) conducted the soil evaluation. This evaluation was done to facilitate permitting for a septic system. This report and attached documents were prepared to meet the requirements for an Authorized On-Site Wastewater Evaluator to meet G.S. 130A-336.2

A drawing of the site plan, septic layout, and boring locations is included in Attachment 1. Profile descriptions for each boring are included in Attachment 2. Additional documentation about the property is included in Attachment 3.

Site Conditions

The total property area is approximately 0.69 acres. The property is an open field. The drawing in Attachment 1 details the property boundaries, house location, boring locations, and layout of drain field trenches (Completed by AWT).

Soil Suitability for Domestic Sewage Treatment and Disposal Systems

Multiple soil borings/pits were assessed on the property. Soil borings/pits were examined to determine soil suitability for on-site sewage disposal systems in accordance with 15A NCAC 18E: Wastewater Treatment and Dispersal Systems. These borings/pits were advanced with a hand auger and excavator. All soil borings/pits shown are provisionally suitable for a conventional style trench. The proposed LTAR (Long Term Acceptance Rate) by AWT is 0.4 GPD/ft^2. The soils on this property are group III soils within the distribution and treatment zone as used to define the LTAR. The maximum trench bottom should not exceed 18".

Field Layout & System Design

A septic layout was performed to demonstrate available space (.0508). The layout in the included design packet indicates there is available space for a four-bedroom system utilizing a 25% reduction product (primary) and a 50% reduction product (repair). With an LTAR of 0.4 GPD/ft^2, 300 linear feet of trench is necessary to support a four-bedroom home initial and 200 linear feet of trench is required for the repair system. The attached drawing proves that 500 linear feet of trench can be installed with the proposed home location on the property.

Any disturbances or grading done in the usable soils area may change the potential of using the area designated for a drain field and can result in a revoked permit.

We appreciate the opportunity to assist you in this matter. Please contact us with any questions, concerns, or comments.

Sincerely,

Trent Bostic

Trent Bostic

Engineers and Soil Scientists

Agri-Waste Technology, Inc.
501 N Salem Street, Suite 203, Apex, NC 27502
agriwaste.com | 919.859.0669

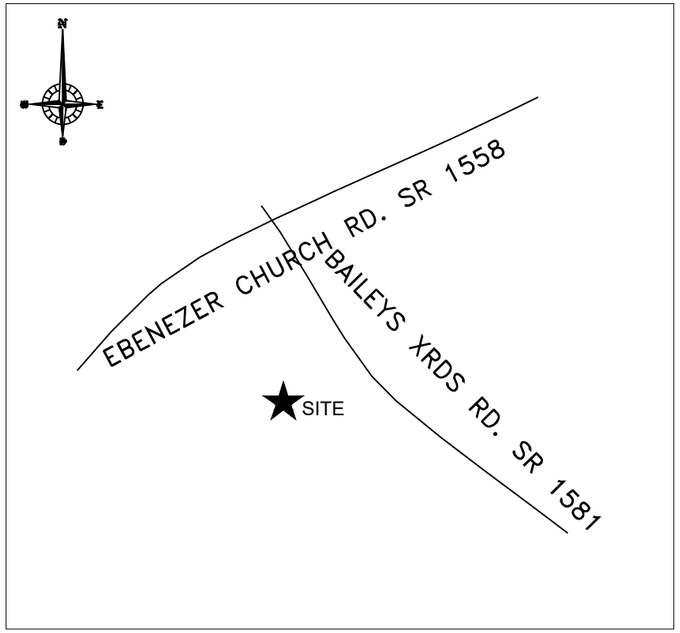
SOIL & SITE EVALUATION for ON-SITE WASTEWATER SYSTEMS

Evaluation Date	6/24/2024	Site Location	3943 Baileys XRDS Rd, Benson, NC	County	Harnett
PIN/Parcel	1610-58-8499	Property Size	0.69	Property Recorded	Yes
Proposed Facility	SFR	Bedrooms	4	Wastewater Strength	Domestic
Water Supply	Municipal	Design Flow (.0400)	480	Evaluation Method	Auger

			Soil Morphology		Other Factors					
Profile #	.0502 Landscape Position Slope %	Horizon Depth (in)	.0503 Structure Texture	.0503 Consistence Mineralogy	.0504 Soil Wetness Color	.0505 Soil Depth (in)	.0506 Saprolite	.0507 Restrictive Horizon	.0509 Profile Class LTAR	.0502(d) Slope Correction
1	3%	Ap 0-13	SL	NS, NP, VFr	10YR 4/3	36	S	S	0.4	1.2
		Bt1 13-22	SCL	SS, SP, Fr	10YR 5/8					
		Bt2 22-36+	SCL	SS, SP, Fr	7.5YR 5/8					
							System Type		Conventional	
2	3%	Ap 0-13	SL	NS, NP, VFr	10YR 4/3	32	S	S	0.4	1.2
		Bt1 13-22	SCL	SS, SP, Fr	10YR 5/8					
		Bt2 22-36+	SCL	SS, SP, Fr	7.5YR 5/8					
							System Type		Conventional	
3	3%	Ap 0-13	SL	NS, NP, VFr	10YR 4/3	32	S	S	0.4	1.2
		Bt1 13-22	SCL	SS, SP, Fr	10YR 5/8					
		Bt2 22-36+	SCL	SS, SP, Fr	7.5YR 5/8					
							System Type		Conventional	
4	3%	Ap 0-13	SL	NS, NP, VFr	10YR 4/3	32	S	S	0.4	1.2
		Bt1 13-22	SCL	SS, SP, Fr	10YR 5/8					
		Bt2 22-36+	SCL	SS, SP, Fr	7.5YR 5/8					
							System Type		Conventional	

STEWART FARMS LOT 4

Project Location	3943 Baileys XRDS Rd
	Benson, NC 27504
	Harnett County
	PIN: 1610-58-8499
Project Owner	RiverWILD Homes
	114 W Main St
	Clayton, NC 27520
	919-766-8782
	brittany@staywild.com
Project Consultant	Trent Bostic, AOWE
	(919) 367-6322
	tbostic@agriwaste.com
	Agri-Waste Technology, Inc.
	501 N. Salem Street, Suite 203
	Apex, NC 27502
	(919) 859-0669
	(919) 233-1970 Fax
System Overview	Single Family Residence
	Four (4) Bedroom, 480 gpd
	Pressure Manifold
	Accepted/Innovative Trench Product



VICINITY MAP

Sheet Index

Sheet 1	Cover Sheet
Sheet 2	Property Layout
Sheet 3	Primary Drainfield
Sheet 4	Repair Drainfield
Sheet 5	Detail Sheet 1
Sheet 6	Detail Sheet 2

AWT
Engineers and Soil Scientists
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501 N. Salem Street, Suite 203
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919-859-0669
www.agriwaste.com

RiverWILD Homes
Stewart Farms Lot 4

Project Location:
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Benson, NC 27504
Harnett County
PIN: 1610-58-8499

Project Owner:
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114 W Main St
Clayton, NC 27520
919-766-8782
brittany@staywild.com

NC ONSITE WASTEWATER EVALUATOR SEAL

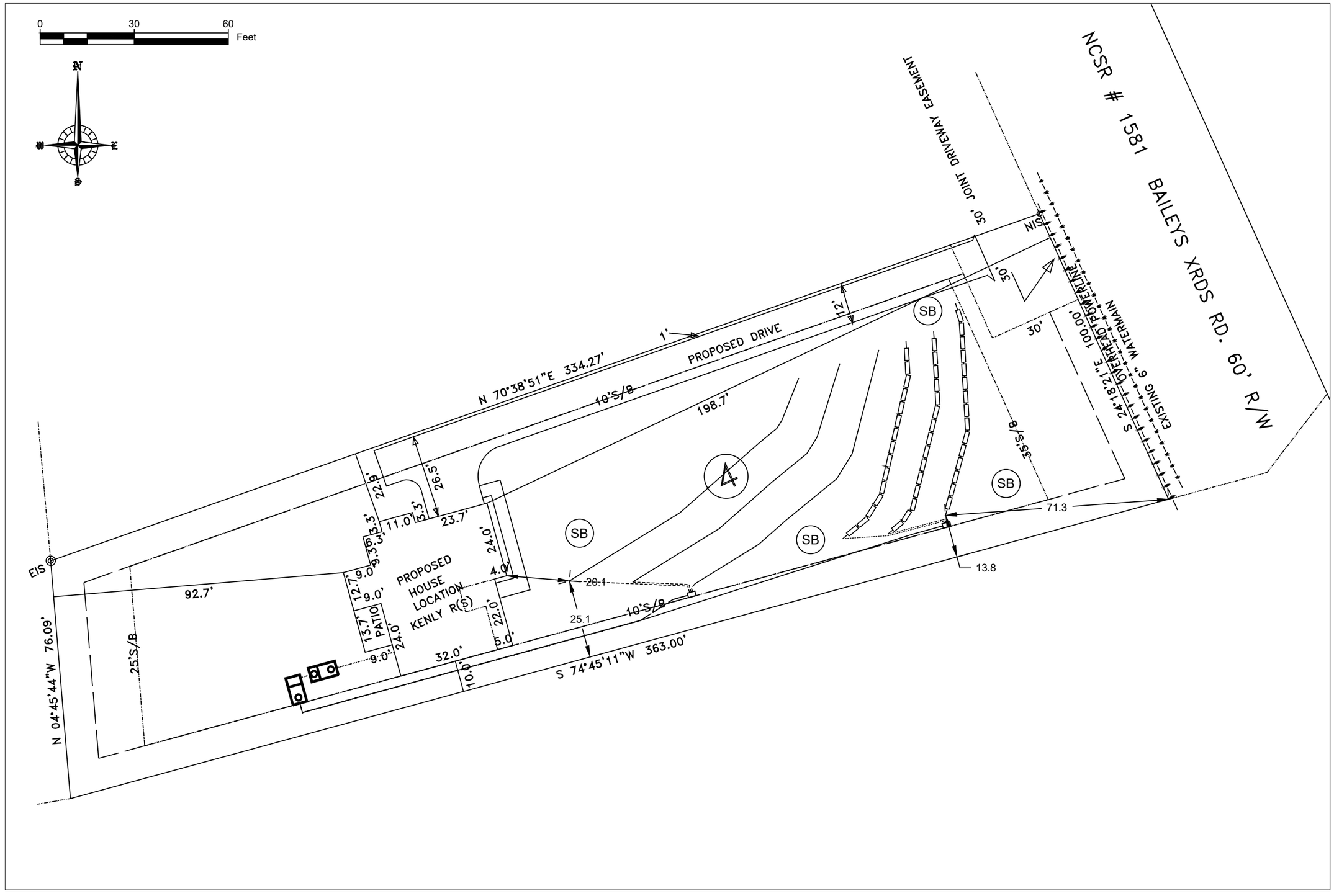
NC ONSITE WASTEWATER EVALUATOR
Certification Number 10056
Trent Bostic

REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE
Cover Sheet

DRAWN BY: T. Bostic	CREATED ON: 06/24/2024
REVISED BY: ####	REVISED ON: ####
RELEASED BY: ####	RELEASED ON: ####

DRAWING NUMBER
WW-1



1 WW-2 PROPERTY LAYOUT

SOURCE: AWT, Inc.

Engineers and Soil Scientists

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Stewart Farms Lot 4

Project Location:
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Benson, NC 27504
Harnett County
PIN: 1610-58-8499

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Clayton, NC 27520
919-766-8782
brittany@staywild.com

NC ONSITE WASTEWATER EVALUATOR SEAL

NC ONSITE WASTEWATER EVALUATOR
Certification Number 10056
Trent Bostic

REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE

Property Layout

DRAWN BY:	CREATED ON:
T. Bostic	06/24/2024
REVISED BY:	REVISED ON:
####	####
RELEASED BY:	RELEASED ON:
####	####

DRAWING NUMBER

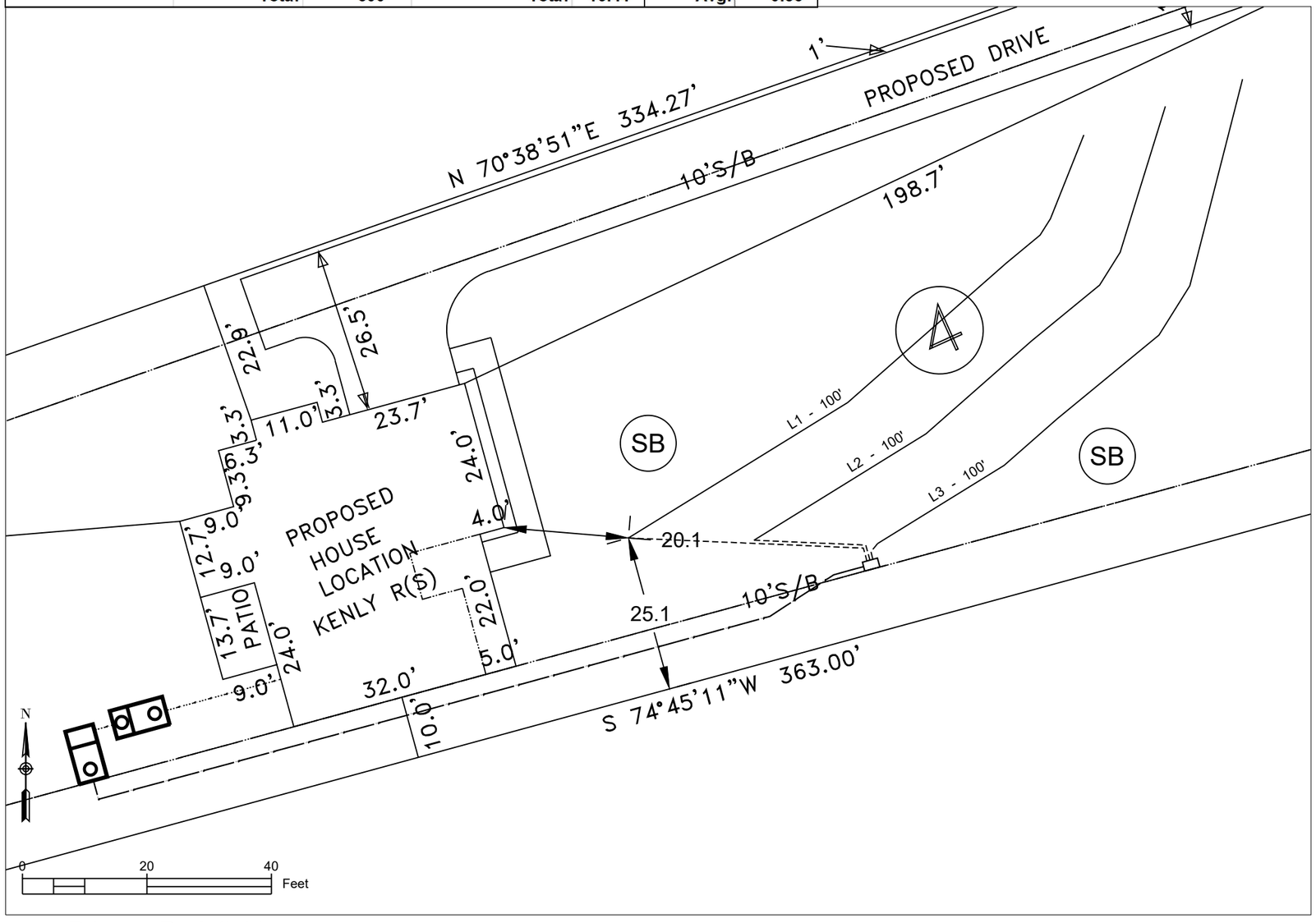
WW-2

General Drainfield Notes:

1. Clear all trees less than 8" in diameter (measured at a height 3' from soil surface) from the drainfield.
2. Vegetation that will re-grow from a cut stump shall be stumped or pulled from the ground. Stumps shall not be pushed over.
3. Drainfield area shall be cleared of all leaves, pine straw, debris, etc. The accumulated material shall be removed from the drainfield.
4. In clayey soils, sides of trenches shall be raked and limed per manufacturer's instructions.
5. Supply lines shall be installed with a minimum of 18" cover.
6. The trenches shall be backfilled appropriately so that no low areas are present.
7. Apply lime over the drainfield area as needed. Seed fine fescue over the drainfield at the rate recommended by the seed manufacturer. Hand rake the seed into the soil surface. Straw the seeded area at the rate of 1.5-2 bales per 1000 sq. ft.

DRAINFIELD INFO. - **Primary**						
Proposed Type of System/Distribution:		***Pump to Pressure Manifold using EZflow***				
Line No.	Flag Color	Line Length (ft)	Tap	Flow (gpm)	Flow/Foot (gpm/ft)	Line L.T.A.R.
1	red	100	1/2in SCH 80	5.48	0.055	0.533
2	white	100	1/2in SCH 80	5.48	0.055	0.533
3	blue	100	1/2in SCH 80	5.48	0.055	0.533
	Total	**300**	**Total**	**16.44**	**Avg.**	**0.53**

Note:
Primary distribution is pressure manifold utilizing accepted trench product.



1 WW-3 Primary Drainfield

SOURCE: Agri-Waste Technology, Inc.

AWT
Engineers and Soil Scientists
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919-859-0669
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RiverWILD Homes
Stewart Farms Lot 4

Project Location:
3943 Baileys XRDS Rd
Benson, NC 27504
Harnett County
PIN: 1610-58-8499

Project Owner:
RiverWILD Homes
114 W Main St
Clayton, NC 27520
919-766-8782
brittany@staywild.com

NC ONSITE WASTEWATER EVALUATOR SEAL

NC ONSITE WASTEWATER EVALUATOR
Certification Number
100565
Tom Bostic

REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE
Primary Drainfield

DRAWN BY:	CREATED ON:
T. Bostic	06/24/2024
REVISED BY:	REVISED ON:
####	####
RELEASED BY:	RELEASED ON:
####	####

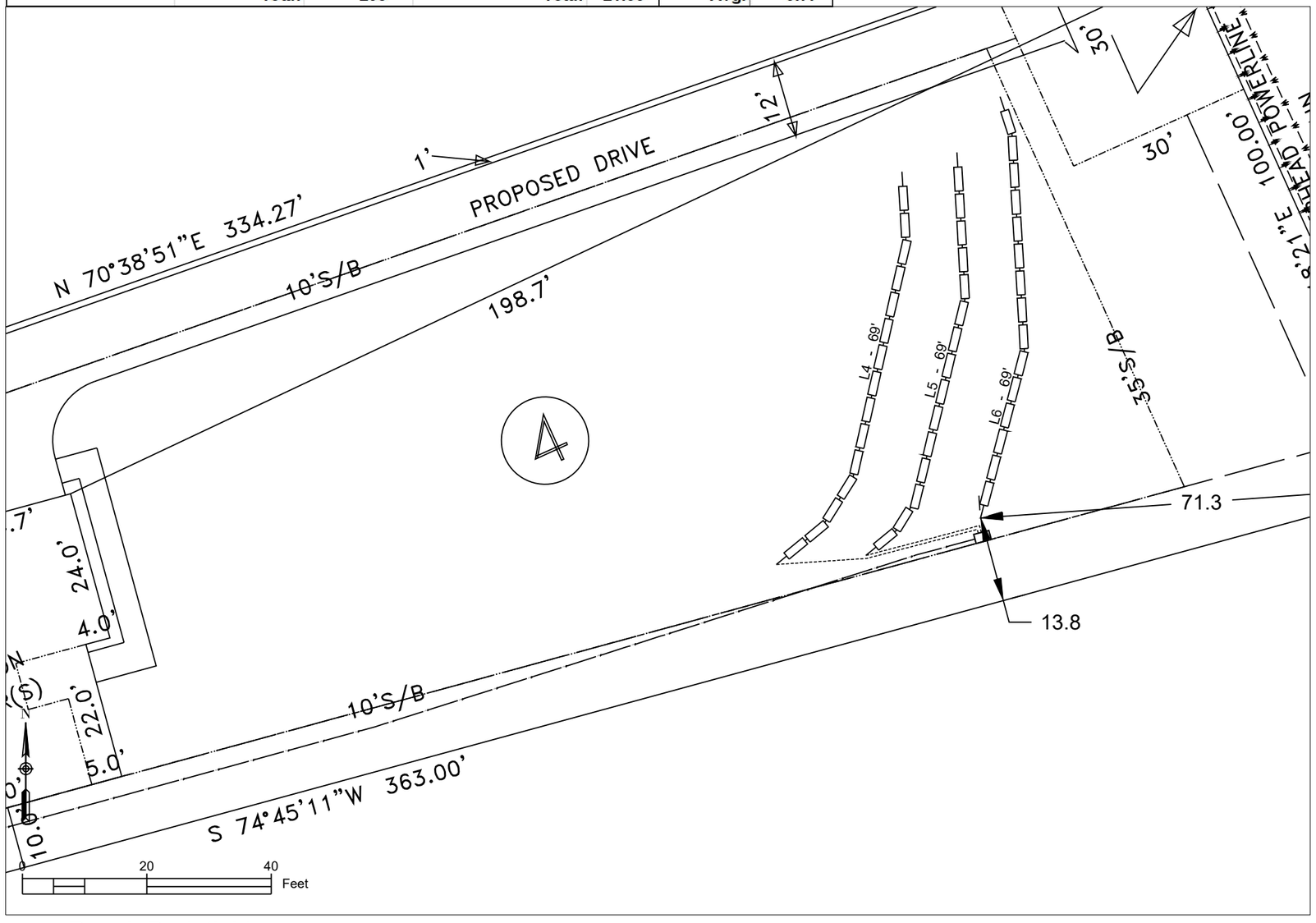
DRAWING NUMBER
WW-3

General Drainfield Notes:

1. Clear all trees less than 8" in diameter (measured at a height 3' from soil surface) from the drainfield.
2. Vegetation that will re-grow from a cut stump shall be stumped or pulled from the ground. Stumps shall not be pushed over.
3. Drainfield area shall be cleared of all leaves, pine straw, debris, etc. The accumulated material shall be removed from the drainfield.
4. In clayey soils, sides of trenches shall be raked and limed per manufacturer's instructions.
5. Supply lines shall be installed with a minimum of 18" cover.
6. The trenches shall be backfilled appropriately so that no low areas are present.
7. Apply lime over the drainfield area as needed. Seed fine fescue over the drainfield at the rate recommended by the seed manufacturer. Hand rake the seed into the soil surface. Straw the seeded area at the rate of 1.5-2 bales per 1000 sq. ft.

DRAINFIELD INFO. - **Repair**						
Proposed Type of System/Distribution:		***Pump to Pressure Manifold***				
		using PPBPS, Horizontal				
Line No.	Flag Color	Line Length (ft.)		Flow (gpm)	Flow/Foot (gpm/ft)	Line L.T.A.R.
4	yellow	69.3	1/2in SCH 40	7.11	0.103	0.770
5	purple	69.3	1/2in SCH 40	7.11	0.103	0.770
6	red	69.3	1/2in SCH 40	7.11	0.103	0.770
	Total	**208**	**Total**	**21.33**	**Avg.**	**0.77**

Note:
Repair distribution is pressure manifold utilizing horizontal panel block.



1 WW-4 Repair Drainfield

SOURCE: Agri-Waste Technology, Inc.

AWT
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RiverWILD Homes
Stewart Farms Lot 4

Project Location:
3943 Baileys XRDS Rd
Benson, NC 27504
Harnett County
PIN: 1610-58-8499

Project Owner:
RiverWILD Homes
114 W Main St
Clayton, NC 27520
919-766-8782
brittany@staywild.com

NC ONSITE WASTEWATER EVALUATOR SEAL

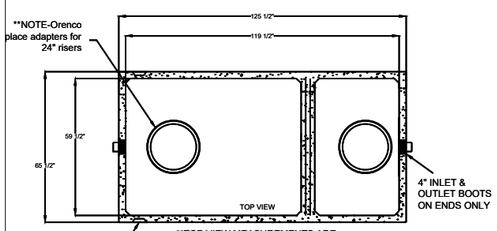
NC ONSITE WASTEWATER EVALUATOR
Certification Number 10056
Trent Bostic

REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE
Repair Drainfield

DRAWN BY:	CREATED ON:
T. Bostic	06/24/2024
REVISED BY:	REVISED ON:
####	####
RELEASED BY:	RELEASED ON:
####	####

DRAWING NUMBER
WW-4

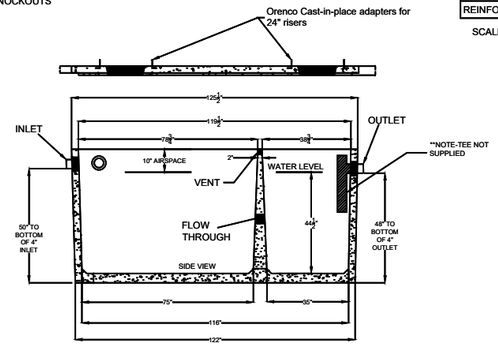


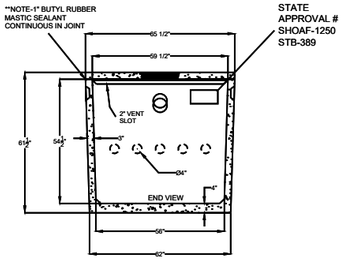
SHOAF PRECAST SEPTIC INC.
4130 WEST US HWY 64
LEXINGTON, NC 27295
PHONE (336) 787-5826
FAX (336) 787-2826

MODEL: TS 1250 STB
NON TRAFFIC
1250 Gallon Septic Tank

WWW.SHOAFPRECAST.COM
SHOAF-1,250 SEPTIC TANK
STB-389
LIQUID CAPACITY-1,252 GALLONS/10" AIRSPACE
TANK HEIGHT-61 ½"
BOTTOM OF TANK TO CENTER OF INLET-52"
BOTTOM OF TANK TO CENTER OF OUTLET-50"
LENGTH TO WIDTH RATIO-2 TO 1
SIZE OF INLET & OUTLET-3" OR 4" PIPE
TYPE OF INLET & OUTLET-POLYLOCK OR EQUAL (MEETS ASTM C-923)
CONCRETE PSI-4000; TANK WEIGHT- 11,000 LBS.
REINFORCEMENT PER STATE CODE

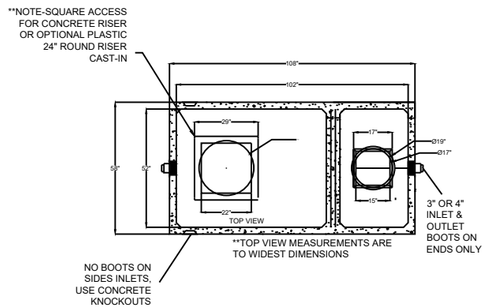
SCALE - N.T.S.





1 WW-5 **Septic Tank**

SOURCE: Shoaf Precast Septic, Inc.

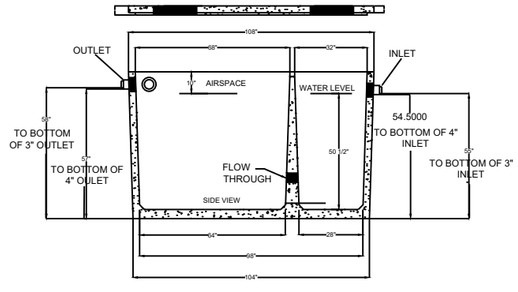


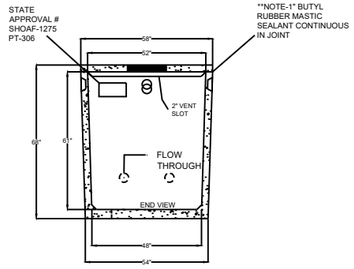
SHOAF PRECAST SEPTIC INC.
4130 WEST US HWY 64
LEXINGTON, NC 27295
PHONE (336) 787-5826
FAX (336) 787-2826

MODEL: TS 1275 PT
NON TRAFFIC
1275 Gallon Pump Tank

WWW.SHOAFPRECAST.COM
SHOAF-1,275 PUMP TANK
PT-306 NON TRAFFIC
LIQUID CAPACITY-1,287 GALLONS INCLUDING 10" AIRSPACE
GALLONS PER INCH-21.07 (AVERAGE)
TANK HEIGHT-67 ¾"
BOTTOM OF TANK TO CENTER OF INLET-56 1/2"
BOTTOM OF TANK TO CENTER OF OUTLET-59"
LENGTH TO WIDTH RATIO-2 TO 1
SIZE OF INLET & OUTLET-3" OR 4" PIPE
TYPE OF INLET & OUTLET-POLYLOCK OR EQUAL (MEETS ASTM C-923)
CONCRETE PSI-4000; TANK WEIGHT- 10,500 LBS.
REINFORCEMENT PER STATE CODE

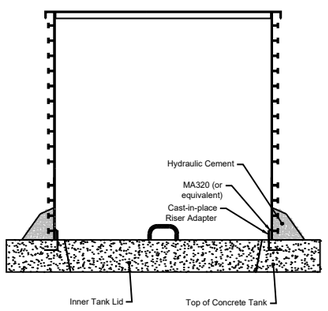
SCALE - N.T.S.





2 WW-5 **Pump Tank (or equiv. tank with 1-day storage)**

SOURCE: Shoaf Precast Septic, Inc.



RISER INSTALLATION INSTRUCTIONS:

1. Prep Adapter Channel & Riser
   - 1.1. Roughen the bonding surfaces of the adapter and riser with sandpaper.
   - 1.2. Use a clean cloth and acetone or alcohol to clean the bonding surfaces of the adapter and riser. The bonding surfaces must be clean and dry for a good fit and watertight joint. Let the acetone or alcohol dry completely.
2. Apply Adhesive
   - 2.1. Apply a bead of methacrylate adhesive to the outside of the adapter. One 7-oz packet of MA320 adhesive is typical for one 24" riser.
3. Install Riser
   - 3.1. If the riser has penetrations, align the riser correctly.
   - 3.2. Firmly press the riser onto the adapter until the bottom of the riser is resting on the concrete (cast-in-adapters) or the adapter flange (bolted-down adapters). Twist the riser back and forth slightly to fully seat it on to create a good bond.
   - 3.3. Apply a bead of methacrylate adhesive to the inside of the access riser-adapter joint.
   - 3.4. Use a tongue depressor, putty knife, or clean cloth to make a continuous fillet on the inside of the access riser-adapter joint.
   - 3.5. Apply hydraulic cement to bond outer riser wall and top of tank.
4. Ensure inner lid is in place and secured.

FOR RISER WALL PENETRATIONS	
Grommet Size, Inches (Nominal IPS Pipe Size)	Hole Saw Size, Inches
1/2	1
3/4	1 1/4
1	1 9/16
1 1/4	1 3/4
1 1/2	2 1/8
2	2 3/4
3	3 7/8
4	5

3 WW-5 **Riser Installation**

NOTES

1. Installation to follow all NC DHHS and Harnett County applicable rules and regulations.
2. AWT to perform construction inspections and final system certification.
3. Septic Tank to have approved effluent filter.
4. Contractor to abide by all safety regulations during system installation.
5. Contractor shall backfill around all access areas such that storm water is shed away from potential entry points.
6. Invert elevations of all components to be verified in field by contractor to insure proper operation.
7. All system piping to be SCH40 PVC (except where noted).
8. All gravity elbows to be long radius or long sweeping type elbows.
9. Actual installation and placement of treatment system to be overseen by Contractor.
10. Tanks to be set on 6" minimum gravel base. Use #5 or #57 stone for base.
11. Contractor to seed and/or mulch disturbed areas to coincide with existing landscape. Area shall not be left with uncovered soil.
12. Mount Control Panel a minimum of 24" above grade.
13. Power to panel to be installed by licensed electrician per code. One 15-amp circuit and one 20-amp circuit with individual neutrals to be run from house to control panel.
14. All risers to have cast-in-place tank adapters and be single-piece riser. Risers to extend 6" above soil surface and be designed to prevent surface water inflow.
15. Backfill around tank(s) shall be gravel or tank hole shall be over-excavated a minimum of 2' in all directions to allow for mechanical tamping of backfill.
16. All penetrations to be sealed.
17. All pressure lines to maintain 18" min. cover.
18. Contractor to adjust tank placement to meet site constraints.

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NC ONSITE WASTEWATER EVALUATOR SEAL

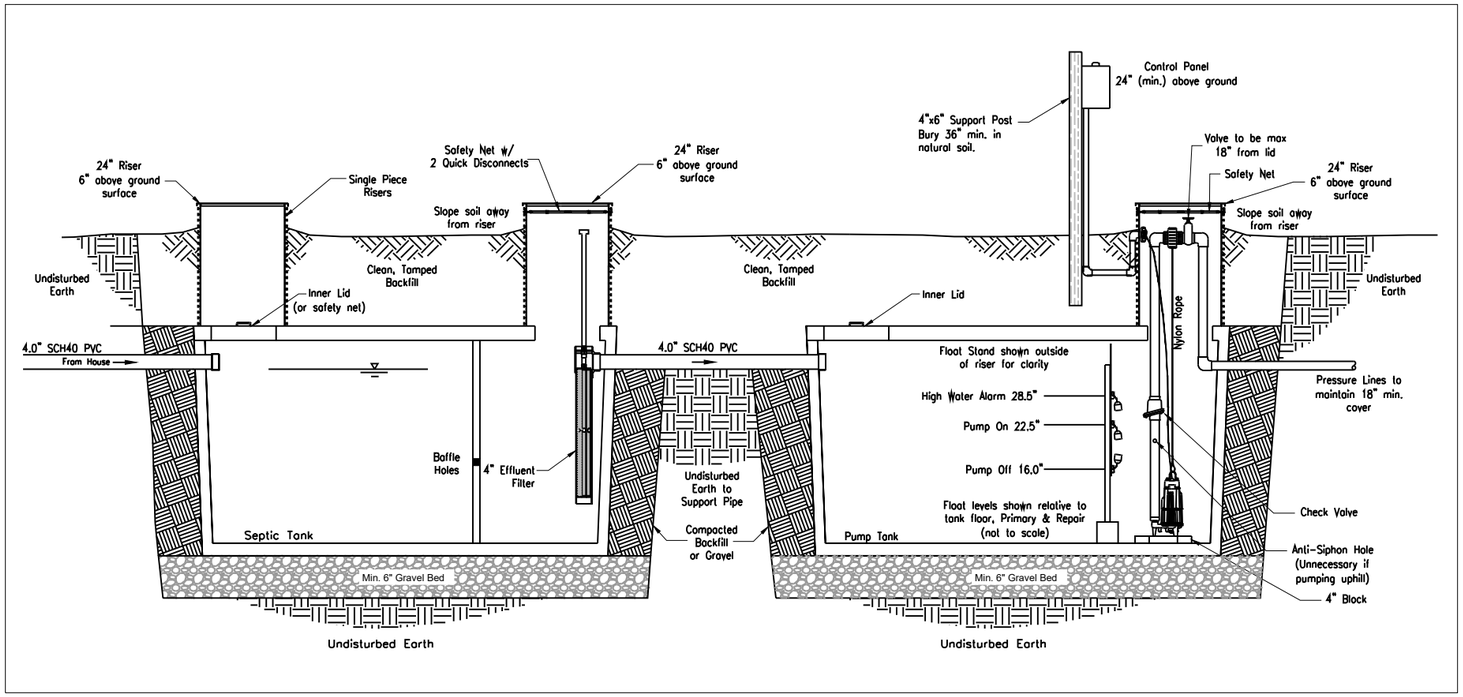
NC ONSITE WASTEWATER EVALUATOR
Certification Number 10056
T. Bostic

REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE
Detail Sheet 1

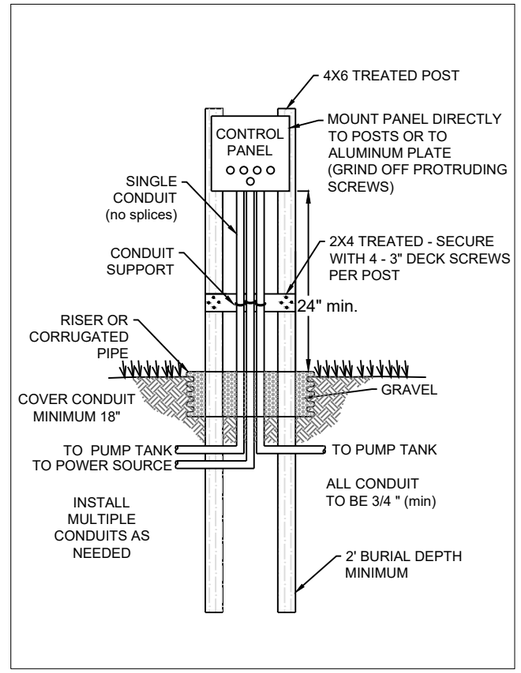
DRAWN BY: T. Bostic	CREATED ON: 06/24/2024
REVISED BY: ####	REVISED ON: ####
RELEASED BY: ####	RELEASED ON: ####

DRAWING NUMBER
WW-5



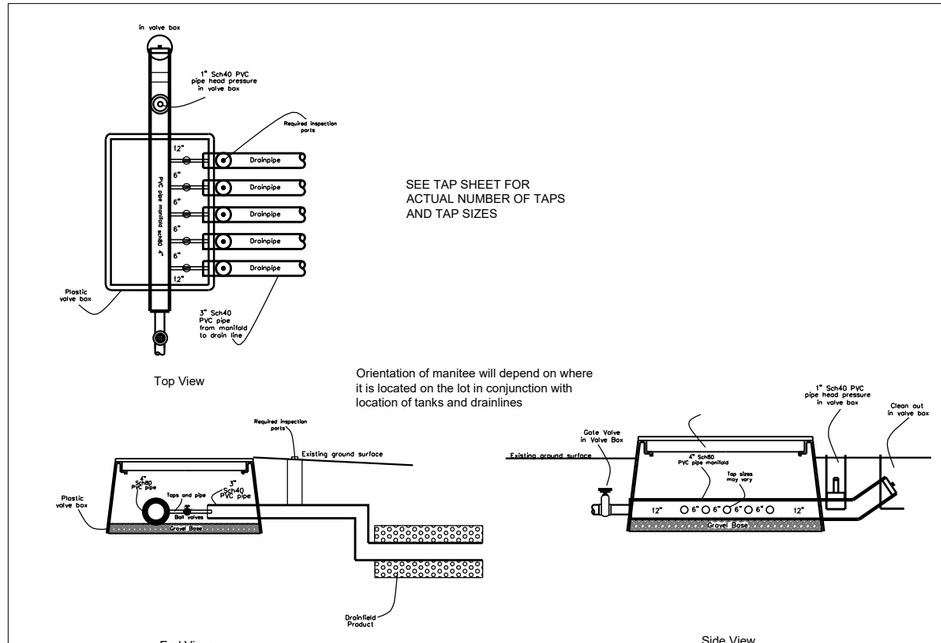
1 SYSTEM PROFILE VIEW

WW-6 N.T.S.



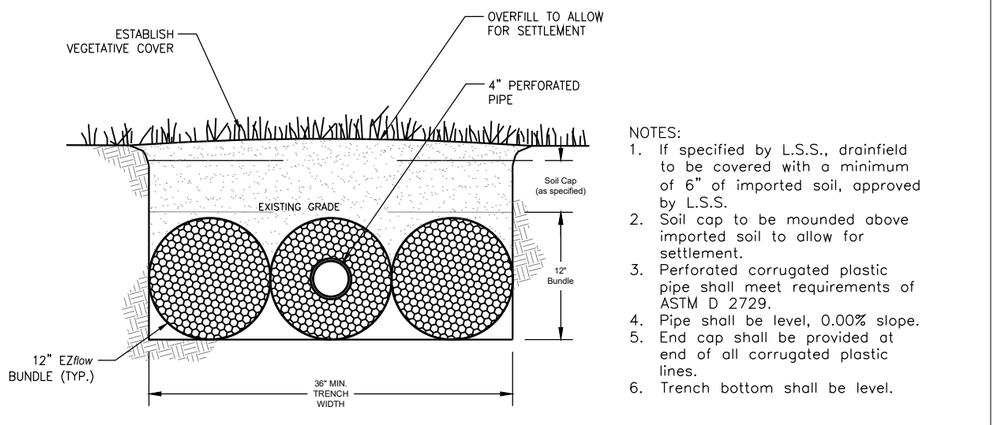
6 CONTROL PANEL SUPPORT

WW-6 N.T.S. SOURCE: AWT



4 PRESSURE MANIFOLD INSTALLATION (Manitee) - For Illustration Only

WW-6 N.T.S. SOURCE: AWT



EZflow 1203H - GEO

NOTES:

1. If specified by L.S.S., drainfield to be covered with a minimum of 6" of imported soil, approved by L.S.S.
2. Soil cap to be mounded above imported soil to allow for settlement.
3. Perforated corrugated plastic pipe shall meet requirements of ASTM D 2729.
4. Pipe shall be level, 0.00% slope.
5. End cap shall be provided at end of all corrugated plastic lines.
6. Trench bottom shall be level.

2 TRENCH X-SECTION (Typical)

WW-6 N.T.S. Source: AWT

AWT
Engineers and Soil Scientists
Agri-Waste Technology, Inc.
501 N. Salem Street, Suite 203
Apex, North Carolina 27502
919-859-0669
www.agriwaste.com

RiverWILD Homes
Stewart Farms Lot 4

Project Location:
3943 Baileys XRDS Rd
Benson, NC 27504
Harnett County
PIN: 1610-58-8499

Project Owner:
RiverWILD Homes
114 W Main St
Clayton, NC 27520
919-766-8782
brittany@staywild.com

NC ONSITE WASTEWATER EVALUATOR SEAL

NC ONSITE WASTEWATER EVALUATOR
Certification Number
100566

REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE

Detail Sheet 2

DRAWN BY:	CREATED ON:
T. Bostic	06/24/2024
REVISED BY:	REVISED ON:
####	####
RELEASED BY:	RELEASED ON:
####	####

DRAWING NUMBER

WW-6

Septic System Design - Summary Page

Engineers and Soil Scientists

Agri-Waste Technology, Inc.
501 N Salem Street, Suite 203, Apex, NC 27502
agriwaste.com | 919.859.0669

Project: Stewart Farms
Property: 3943 Baileys XRDS Rd
Benson, NC 27504
Subdiv.: Stewart Farms
Lot #: 4

Date: 6/24/2024
County: Harnett
Permit #:

Project Manager:
Trent Bostic, AOWE
tbostic@agriwaste.com
919-367-6322

Designer:
Trent Bostic, AOWE
tbostic@agriwaste.com

Owner: RiverWILD Homes
Address: 114 W Main St
Clayton, NC 27520
Phone: 919-766-8782
Email: brittany@staywild.com

EHS:

Type of System: III bg

PIN: 1640-58-8499

Soil Parameters

Soil Evaluation By:
-

Special Conditions/Notes:

LTAR: 0.40 gpd/ft^2

Design Parameters

Type of Establishment: Residence, 5 or fewer bedrooms
Unit: Bedroom
# of Units: 4

Septic Tank Specifications

Min. Tank Capacity: 1,000 gal
Actual Tank Volume: 1,250 gal
Tank Manufacturer: Shoaf
Tank Model: TS 1250 STB

	Exterior	Interior	
Length:	125.5	119.5	in.
Width:	65.5	59.5	in.
Depth:	62.0	54.5	in.

Primary Drainfield Specifications

Type of Distribution: Parallel Distribution Box
Trench Media: EZflow
Trench Width: 3 ft
Trench Depth: 18 in.
(or as specified on permit)

Trench Bottom Area: 1200 ft^2
Minimum Drain Line: 300 ft
Actual Drain Line: 300 ft
Number of Lines: 3
Minimum Line Spacing: 9 ft O.C.

Wastewater Treatment System Design Calculations

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Septic Tank Sizing

Daily Flow Estimate:

Unit	# of Units	Flow/Unit	Flow/Day
Bedroom	4	120	480

Q= 480 gpd

Septic Tank Minimum Capacity: Per NCAC T15A:18A .1952(b)(1):

For individual residences with 4 bedrooms,

Minimum Liquid Capacity (V)= 1,000 gal

Septic Tank Specs:

Manufacturer: Shoaf
Model: TS 1250 STB
Volume: 1,250 gal
Weight: 11,000 lbs

	Exterior	Interior	
Length:	125.5	119.5	in.
Width:	65.5	59.5	in.
Depth:	62.0	54.5	in.

Shape of Risers: Circular
Diameter: 2.00 ft

Pump Tank Storage & Float Settings

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Tank Manufacturer	Shoaf
Tank Model	TS 1275 PT

Interior Height (in.)	**60.5**	in.
Avg. Storage	**21.07**	gal/in.

Primary System

Elevations, measured from bottom towards top (0 = Interior Bottom of Tank):

Top of pump (including 4" block)	14.1	in.	(Pump height = 10 1/16")
Pump Off	16.0	in.	
Pump On	22.5	in.	(set for dose volume)
Alarm On	28.5	in.	(6 in. above On Float)

Emergency Storage Available

Pump Tank	674	gal
Days of Storage	1.40	days

(determined from "interior top of tank" - "High Water Alarm")

Repair System

Elevations, measured from bottom towards top (0 = Interior Bottom of Tank):

Top of pump (including 4" block)	15.7	in.	(Pump height = 11 11/16")
Pump Off	17.5	in.	
Pump On	31.5	in.	(set for dose volume)
Alarm On	37.5	in.	(6 in. above On Float)

Emergency Storage Available

Pump Tank	485	gal
Days of Storage	1.01	days

(determined from "interior top of tank" - "High Water Alarm")

ELEVATIONS

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Benchmark	0		
BM Elev	0	ft	
Septic Tank	1,250	gal	
Ground Surface			304.00 ft
Depth of Soil Cover	14	in.	1.17 ft
Overall Ht of Tank	61.5	in.	5.13 ft
Elev, Base of Tank			297.71 ft
Ht to 4" Inlet Invert	50	in.	4.17 ft
Elev, 4" Inlet Invert			301.88 ft
Ht to 4" Outlet Invert	48	in.	4.00 ft
Elev, 4" Outlet Invert			301.71 ft
Gravel Base	6	in.	0.50 ft
Elev, Bot of Excavation			297.21 ft
Pump Tank	1275	gal	
Ground Surface			304.00 ft
Depth of Soil Cover	16	in.	1.33 ft
Overall Ht of Tank	67.5	in.	5.63 ft
Elev, Base of Tank			297.04 ft
Ht to 4" Inlet Invert	55	in.	4.58 ft
Elev, 4" Inlet Invert			301.63 ft
Ht to 2" Outlet Invert	57	in.	4.75 ft
Elev, 2" Outlet Invert			301.79 ft
Gravel Base	6	in.	0.50 ft
Elev, Bot of Excavation			296.54 ft

ST Inlet Pipe			
Grade @ Stub-out			304 ft
Depth of Stub-out, top			1.5 ft
Elev, Stub-out Invert			302.15 ft
Elev @ ST Inlet Invert			301.88 ft
Length			10 ft
Slope			2.7 %
Pipe, ST to PT			
ID	4	in.	0.33 ft
OD	4.5	in.	0.38 ft
Elev, ST Outlet Invert			301.71 ft
Elev, PT Inlet Invert			301.63 ft
Length			5 ft
Slope			1.7 %
Cover over inlet pipe			1.77 ft
Pump Reqmt.			
Floor Thickness	4	in.	0.33 ft
Elev, Pump Tank Floor			297.38 ft
Pump Block Ht.	4	in.	0.33 ft
Elev, Pump Intake			297.71 ft
Grade @ Primary D-box			305.00 ft
Grade @ Repair Manifold			306.00 ft
Min. Cover	18	in.	1.50 ft
Max Elev, Primary			303.50 ft
Max Elev, Repair			304.50 ft
Elev Diff, Primary			5.79 ft
Elev Diff, Repair			6.79 ft

Drainfield Design

Project	Stewart Farms
Location	3943 Baileys XRDS Rd
	Benson, NC 27504
County	Harnett

Drainfield Sizing

Primary

LTAR	0.4	gpd/ft^2		
Daily Design Flow	480	gpd	**Type of Drainfield Media**	EZflow
Req. Drainfield Area	1,200	ft^2	**Required Drainline**	
Trench Width, Eff.	3	ft	**After 25% Reduction**	300 ft
Required Drainline	400	ft	**Minimum Line Spacing**	9 ft (O.C.)

Repair

LTAR	0.4	gpd/ft^2		
Daily Design Flow	480	gpd	**Type of Drainfield Media**	PPBPS, Horizontal
Req. Drainfield Area	1,200	ft^2	**Required Drainline**	
Trench Width, Eff.	3	ft	**After 50% Reduction**	200 ft
Required Drainline	400	ft	**Minimum Line Spacing**	8 ft (O.C.)

Drainfield Layout

Line	Use	Flag Color	Elevation (ft)	Line Length (ft)	Used as Primary (ft)	Used as Repair (ft)
1	Layout Line	red		100	100.0	
2	Layout Line	white		100	100.0	
3	Layout Line	blue		100	100.0	
4	Layout Line	yellow		100		69.3
5	Layout Line	purple		100		69.3
6	Layout Line	red		100		69.3
7	Layout Line					
8	Layout Line					
9	Layout Line					
10	Layout Line					
11	Layout Line					
12	Layout Line					
13	Layout Line					
14	Layout Line					
15	Layout Line					
16	Layout Line					
17	Layout Line					
18	Layout Line					
19	Layout Line					
20	Layout Line					
			Total	600	300	208
			Count	6	3	3

Note: Line length totals are shown to the nearest foot.

PRESSURE MANIFOLD DESIGN (Primary)

Site Information

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Design Information

Estimated Daily Flow	480	gal/day
L.T.A.R. (from Harnett Co.)	0.4	gal/day/ft^2
L.T.A.R. + 5%	0.420	gal/day/ft^2
Trench Width	3	ft.
Line Length Required	400	ft.
Length after 25% Reduction	300	ft
L.T.A.R. Reduced	0.533	gal/day/ft^2
L.T.A.R. Reduced + 5%	0.560	gal/day/ft^2

DRAINFIELD INFO. - **Primary**

Proposed Type of System/Distribution: ***Pump to Pressure Manifold using EZflow***

Line No.	Flag Color	Line Length (ft)	Tap	Flow (gpm)	Flow/Foot (gpm/ft)	Line L.T.A.R.
1	red	100	1/2in SCH 80	5.48	0.055	0.533
2	white	100	1/2in SCH 80	5.48	0.055	0.533
3	blue	100	1/2in SCH 80	5.48	0.055	0.533
	Total	**300**	**Total**	**16.44**	**Avg.**	**0.53**

Note: Line lengths are calculated in 5' increments to reflect use of EZflow product.

Total Run Time	29.20	min.			
Drainfield Capacity	195.9	gal			
% of Drainfield Cap	69.9%		(Req. Range 66-75%)		
Dose Volume	136.9	gal/dose			
Run Time/Dose	**8.3**	**minutes**	Range 5-7 minutes unless uphill, checked		
Volume/depth	21.07	gal/in.	(Per tank manufacturer's specifications)		
Estimated Drawdown	6.50	in.			

Manifold Box

Number of Taps	3	with		0	Split(s)
Manifold Length	3.0	ft.	(approximate)		

PRESSURE MANIFOLD SYSTEM DESIGN (Repair)

Site Information

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Design Information

Estimated Daily Flow	480	gal/day
L.T.A.R. (from Harnett Co.)	0.4	gal/day/ft^2
L.T.A.R. + 5%	0.420	gal/day/ft^2
Trench Width	3	ft.
Line Length Required	400	ft.
Length after 50% Reduction	200	ft
L.T.A.R. Reduced	0.800	gal/day/ft^2
L.T.A.R. Reduced + 5%	0.840	gal/day/ft^2

DRAINFIELD INFO. - **Repair**

Proposed Type of System/Distribution: ***Pump to Pressure Manifold using PPBPS, Horizontal***

Line No.	Flag Color	Line Length (ft.)		Flow (gpm)	Flow/Foot (gpm/ft)	Line L.T.A.R.
4	yellow	69.3	1/2in SCH 40	7.11	0.103	0.770
5	purple	69.3	1/2in SCH 40	7.11	0.103	0.770
6	red	69.3	1/2in SCH 40	7.11	0.103	0.770
	Total	**208**	**Total**	**21.33**	**Avg.**	**0.77**

Note: Line lengths are calculated in 4'4" increments to reflect use of PPBPS product.

Total Run Time	22.50	min.	
Drainfield Capacity	496.8	gal	
% of Drainfield Cap	59.4%		(Max. 104.0% to not exceed 7.2 gal/panel)
Dose Volume	295.0	gal/dose	
Run Time/Dose	**13.8**	**minutes**	Time to deliver max. 7.2 gal/panel
Volume/depth	21.07	gal/in.	(Per tank manufacturer's specifications)
Estimated Drawdown	14.00	in.	

Manifold Box

Number of Taps	3	with	0	Split(s)	
Manifold Length	3.0	ft.	(approximate)		

PUMP DESIGN

System (initial/repair): **Primary**

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Friction Losses

Suction Head	0	ft	*(submersible 0)*
Elev. Difference (highest point from pump)	5.79	ft	
Design Pressure At Outlet	2	ft	

Supply Line - 1.5" Schedule 40 PVC

Pipe Diameter, Nominal	1.5	in.			
Pipe Diameter (ID)	1.59	in.	Flow	16.44	gpm
Pipe Length	140	ft	Velocity	2.66	ft/sec
Pipe Length for Fittings	14	ft	Meets requirement that 2 ft/s < v < 5 ft/s.		
Equivalent Length	154	ft			
Estimated Friction Loss in Supply Line			2.82	ft	
Friction Loss - Taps/Special Fittings			3.5	ft	
TOTAL			**14.12**	**ft.**	

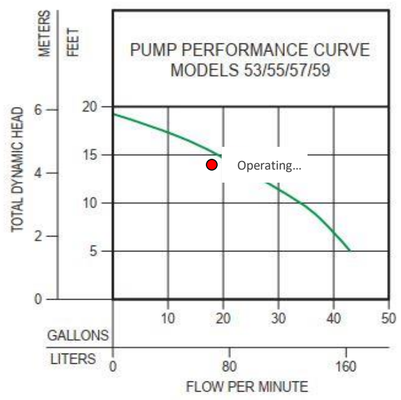
Flow for Anti-Siphon Hole

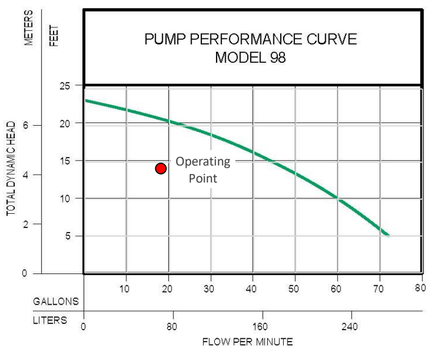
Hole Diameter	3/16	in.
Hole Flowrate	1.56	gpm

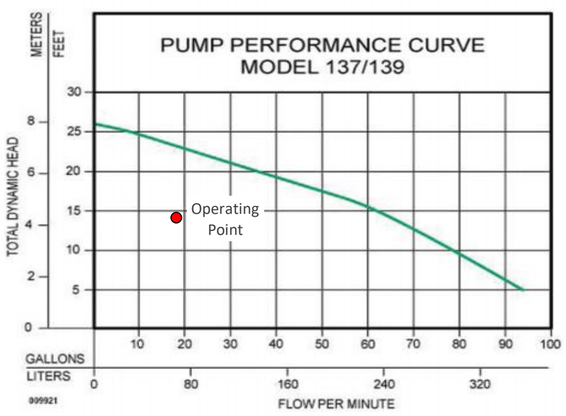
Pump Efficiency	0.7	*(assumed, typical)*
Motor Efficiency	0.9	*(assumed for electric pumps)*
Flow	**18.00**	**gpm**
Required Horsepower	0.10	hp
TDH	**14.12**	**ft**

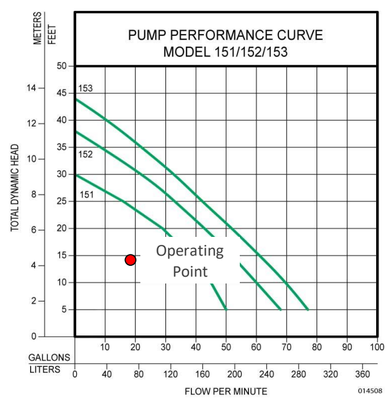
Pump Selection

Manufacturer:	Zoeller
Model:	N53
Horsepower:	**0.3**









PUMP DESIGN

System (initial/repair): **Repair**

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Friction Losses

Suction Head	0	ft	*(submersible 0)*
Elev. Difference (highest point from pump)	6.79	ft	
Design Pressure At Outlet	2	ft	

Supply Line - 1.5" Schedule 40 PVC

Pipe Diameter, Nominal	1.5	in.			
Pipe Diameter (ID)	1.59	in.	Flow	21.33	gpm
Pipe Length	215	ft	Velocity	3.45	ft/s
Pipe Length for Fittings	21.5	ft		Meets requirement that 2 ft/s < v < 5 ft/s.	
Equivalent Length	236.5	ft			
Estimated Friction Loss in Supply Line			7.02	ft	
Friction Loss - Taps/Special Fittings			3.5	ft	
TOTAL			**19.32**	**ft.**	

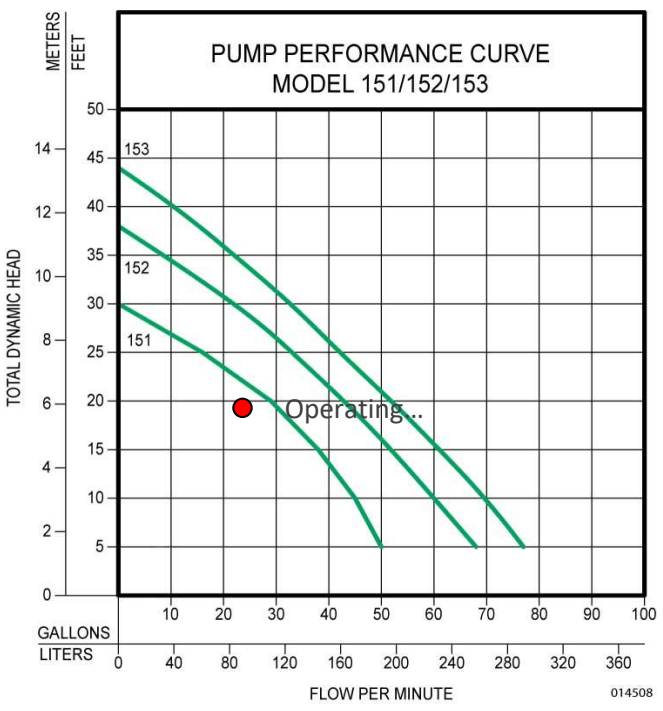
Flow for Anti-Siphon Hole

Hole Diameter	3/16	in.
Hole Flowrate	1.82	gpm

Pump Efficiency	0.7	*(assumed, typical)*
Motor Efficiency	0.9	*(assumed for electric pumps)*
Flow	**23.15**	**gpm**
Required Horsepower	0.18	hp
TDH	**19.32**	**ft.**

Pump Selection

Manufacturer:	Zoeller
Model:	N151
Horsepower:	**0.33**



Septic Tank Buoyancy Calculation

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Tank Size (nominal) 1250 gal

Properties/Assumptions:

Min. liquid level to be maintained in tank at all times after initial installation.

Min. depth to water table	12.0	in.	from ground surface
Effluent Density	62.4	lb/ft^3	(Specific Weight of Water)
Concrete Density	142.6	lb/ft^3	
Soil App. Sp. Grav.	1.3		*(typical value)*
Soil Cover Over Tank	12	in.	(minimum)
Additional Cover	2	in.	for pipe grade
Unsubmerged wt of soil	81.1	lb/ft^3	
Submerged wt of soil	49.9	lb/ft^3	50% Porosity Assumed

Tank Dimensions (from supplier):

		Exterior		*Interior*		
		Top	Bottom	Top	Bottom	
Tank	Length	125.5	122.0	119.5	116.0	in.
	Width	65.5	62.0	59.5	56.0	in.
	Height	58.5	(w/o lid)	54.5		in.
Lid	Length	125.5	in.			
	Width	65.5	in.			
	Height	3.0	in.			

Area of Riser Openings 6.28 ft^2

Permanent Liquid Depth in Tank 0.0 in. 0.00 ft

Tank Weight 11,000 lb (per manufacturer)

Buoyancy Force Calculation:

Buoyancy Force Specific Weight of Water x Displaced Volume

Displaced Volume	282.4	ft^3 *
Buoyancy Force	**17,624**	**lb.**

Weight Calculation:

Tank Weight	11000	lb		
Water Weight in Tank	0	lb	Volume	0.0 ft^3 *
Soil Weight Over Tank	4544	lb		
Soil Friction Force	4037	lb		
Total Weight	**19,581**	**lb**		

Factor of Safety = 1.11

Note: Total weight must be greater than buoyancy force so that tank will not float during high water table conditions.
** Volume calculated by the prismoidal formula.*

Pump Tank Buoyancy Calculation

Project: Stewart Farms
Location: 3943 Baileys XRDS Rd
Benson, NC 27504
County: Harnett

Tank Size (nominal) 1275 gal

Properties/Assumptions:

Min. liquid level to be maintained in tank at all times after initial installation.

Min. depth to water table	12	in.	from ground surface
Effluent Density	62.4	lb/ft^3	(Specific Weight of Water)
Concrete Density	142.6	lb/ft^3	
Soil App. Sp. Grav.	1.3		*(typical value)*
Soil Cover Over Tank	12	in.	(minimum)
Additional Cover	4	in.	for pipe grade
Unsubmerged wt of soil	81.1	lb/ft^3	
Submerged wt of soil	49.9	lb/ft^3	50% porosity assumed

Tank Dimensions (from supplier):

		Exterior		*Interior*		
		Top	Bottom	Top	Bottom	
Tank	Length	108.0	104.0	102.0	98.0	in.
	Width	58.0	54.0	52.0	48.0	in.
	Height	64.5	(w/o lid)	60.5		in.
Lid	Length	108.0	in.			
	Width	58.0	in.			
	Height	3.0	in.			

Area of Riser Openings 3.14 ft^2

Permanent Liquid Depth in Tank 0.0 in. 0.00 ft

Tank Weight 10500 lb (per manufacturer)

Buoyancy Force Calculation:

Buoyancy Force Specific Weight of Water x Displaced Volume

Displaced Volume	233.5	ft^3 *
Buoyancy Force	**14,573**	**lb**

Weight Calculation:

Tank Weight	10500	lb		
Water Weight in Tank	0	lb	Volume	0.0 ft^3 *
Soil Weight Over Tank	3945	lb		
Soil Friction Force	4227	lb		
Total Weight	**18,672**	**lb**		

Factor of Safety = 1.28

Note: Total weight must be greater than buoyancy force so that tank will not float during high water table conditions.
** Volume calculated by the prismoidal formula.*

AGRITEC-01 CGARKALNS

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 1/12/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Hartsfield & Nash Agency, Inc.
10405 Ligon Mill Rd., Ste H
Wake Forest, NC 27587

CONTACT NAME: Connie Garkalns
PHONE (A/C, No, Ext): (919) 556-3698 FAX (A/C, No): (919) 556-8758
E-MAIL ADDRESS: Connie@hartsfield-nash.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Selective Insurance Company of the Southeast	39926
INSURER B : ACCIDENT FUND INSURANCE COMPANY OF AMERICA	10166
INSURER C : Evanston Insurance Company	35378
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Agri-Waste Technology Inc
501 N. Salem St Ste 203
Apex, NC 27502

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			S 2253659	1/18/2024	1/18/2025	EACH OCCURRENCE	$ 2,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 300,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 4,000,000
	POLICY X PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 4,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY			S 2253659	1/18/2024	1/18/2025	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
A	UMBRELLA LIAB X OCCUR			S 2253659	1/18/2024	1/18/2025	EACH OCCURRENCE	$ 2,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$ 2,000,000
	DED RETENTION $							$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	N / A		100003072	1/18/2024	1/18/2025	X PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N: N						E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
C	Prof & Pollution			MKLV3ENV104078	8/22/2023	8/22/2024	Each Claim	5,000,000
A	Leased / Rented			S 2253659	1/18/2024	1/18/2025	Equipment	25,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

***This is ONLY For Informational Purposes
Contact Agency for Specific Holder info to be added
****

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Connie Garkalns