



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: Ashley Becker
 Mailing address: 817 Cokesbury Park Ln City: Fuquay Varina State: NC Zip: 27526
 Phone: 919-818-6735 Email: abecker8818@gmail.com

Authorized Onsite Wastewater Evaluator Information:
 Name: Jeff Vaughan Certification #: 10003E
 Mailing address: 501 N Salem St, Ste 203 City: Apex State: NC Zip: 27502
 Phone: 919-859-0669 Email: jvaughan@agriwaste.com

Site Location Information:
 Site address: 145 Stonemason Dr, Holly Springs, NC 27540
 Tax parcel identification number or subdivision lot, block number of property: 0626-80-0039
 County: Harnett

System Information:
 Wastewater System Type: IIIb
 Daily Design Flow: 360
 Saprolite System: Yes No Subsurface Operator Required: Yes No
 Water Supply Type: Private Well Public Water Supply Spring Other: _____

Facility Type:
 Residential 3 # Bedrooms 6 Maximum # of Occupants _____
 Business Type of Business and Basis for Flow: _____
 Public Assembly Type of Public Assembly and Basis for Flow: _____



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

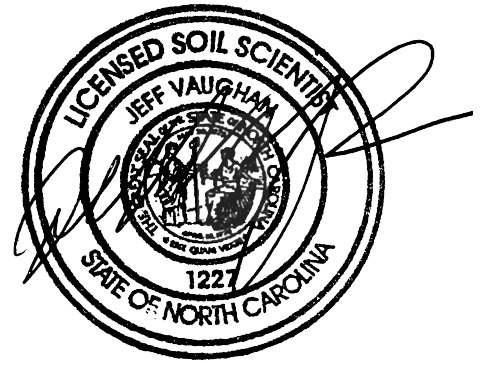
Attest: On this the 1 day of DEC, 2023 by signature below I hereby attest that the information required to be included with this NOI to Construct is accurate and complete to the best of my knowledge. Furthermore, I hereby attest that I have adhered to the laws and rules governing onsite wastewater systems in the state of North Carolina.
 This NOI shall expire on 1 day of DEC, 2028.
 Signature of Authorized Onsite Wastewater Evaluator: Jeff Vaughan
 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: _____



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



**Soil Suitability for Domestic Sewage Treatment and Disposal Systems
145 Stonemason Drive, Holly Springs, NC 27540
(PIN: 0626-80-0039; Harnett County)**

PREPARED FOR: Ashley Becker, Owner

PREPARED BY: Jeff Vaughan, Senior Agronomist & Soil Scientist
Trent Bostic, Senior Associate Soil Scientist

DATE: December 1, 2023

Soil suitability for domestic sewage treatment and disposal systems was evaluated on November 15, 2023, for the property located at 145 Stonemason Drive in Holly Springs, NC. A layout was performed on November 15, 2023. Jeff Vaughan and Trent Bostic 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 1.14 acres. The property contains an existing house that will be connected to this permitted septic system. The drawing in Attachment 1 details the property boundaries, house location, boring locations, and layout of drain field trenches (Completed by AWT and Surveyed by Krause Surveying Associates).

Soil Suitability for Domestic Sewage Treatment and Disposal Systems

Multiple soil borings were assessed on the property. Soil borings were examined to determine soil suitability for on-site sewage disposal systems in accordance with 15A 18A .1900 Rules for Sewage Treatment and Disposal Systems. These borings were advanced with a hand auger. All soil borings shown are provisionally suitable for a conventional style trench. The proposed LTAR (Long Term Acceptance Rate) by AWT is 0.3 GPD/ft². The soils on this property are group IV 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 (.1945). The layout in Attachment 1 indicates there is available space for a three-bedroom primary (accepted status) and repair system (T&J Panel). With an LTAR of 0.3 GPD/ft², 300 linear feet of trench is necessary to support a three-bedroom home initial and 200 linear feet of trench is required for the repair system. The attached drawing proves that 400+ linear feet of trench can be installed with the proposed home location on the property. The proposed initial septic system is a pressure manifold innovative/accepted status product with a 25% reduction.

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.

Eastern ends of trenches are not on contour. Installer to set western trench bottoms at 14" and dig trench on grade.

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

Sincerely,

Jeff Vaughan, AOWE

A handwritten signature in black ink, appearing to read "Jeff Vaughan". The signature is stylized and cursive, with a long horizontal stroke at the end.

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
 (Complete all fields in full)

CLIENT: Ashley Becker APPLICATION DATE 12/01/2023
 ADDRESS: 817 Cokesbury Park Ln, Fuquay Varina, NC 27526 DATES EVALUATED: 11/15/2023
 PROPOSED FACILITY: Single Family Residence PROPOSED DESIGN FLOW (.1949): 360GPD PROPERTY SIZE: 1.14ac
 LOCATION OF SITE: 145 Stonemason Drive, Holly Springs, NC 27540 PROPERTY RECORDED: Yes
 WATER SUPPLY: Private Public Well Spring Other _____
 EVALUATION METHOD: Auger Boring Pit Cut TYPE OF WASTEWATER: Sewage Industrial Process Mixed

P R O F I L E #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
1, 2,	8-10%	A 0-10"	SL; Gr	NS; NP; VFr	10YR 3/3	32"			Provisionally Suitable 0.3GPD/ft2
		Bt1 10-32"	C; SBK	S; P; Fi	2.5YR 4/8				
		Bt2 32-32"+	C; SBK	SS; P; Fi	2.5YR 4/8, 10YR 5/8 10R 4/8				
3 4	8-10%	A 0-10"	SL; Gr	NS; NP; VFr	10YR 3/3	36"			Provisionally Suitable 0.3GPD/ft2
		E 10-17"	SL; Gr	NS; NP; VFr	10YR 7/4				
		Bt1 17-32"	CL-C; SBK	S; P; Fi	7.5YR 6/8				
		Bt2 32-36"+	C; SBK	SS; P; Fi	7.5YR 6/8 2.5YR 4/8				

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM	OTHER FACTORS (.1946): _____ SITE CLASSIFICATION (.1948): <u>Provisionally Suitable</u> EVALUATED BY: <u>Jeff Vaughan, Trent Bostic,</u>
Available Space (.1945)	Provisionally Suitable	Provisionally Suitable	
System Type(s)	Accepted	T&J Panel	
Site LTAR	0.3GPD/Ft ²	0.3GPD/Ft ²	

COMMENTS

LEGEND

use the following standard abbreviations

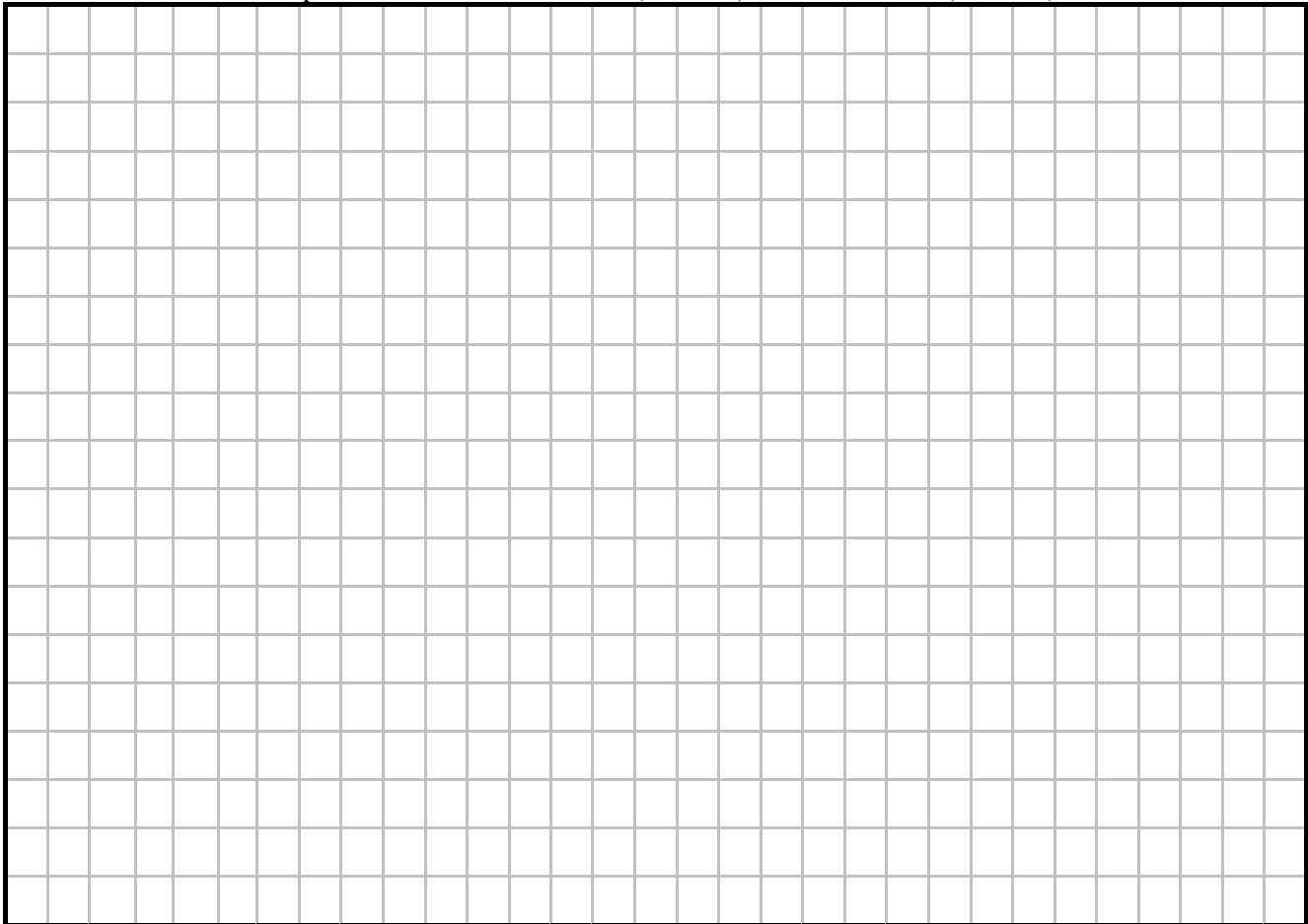
<u>LANDSCAPE POSITION</u>	<u>GROUP</u>	<u>SOIL TEXTURE</u>	<u>CONVENTIONAL 1955 LTAR*</u>	<u>LPP 1957 LTAR*</u>	<u>MINERALOGY/ CONSISTENCE</u>	<u>STRUCTURE</u>
CC (Concave Slope) CV (Convex Slope) D (Drainage Way) DS (Debris Slump) FP (Flood Plain) FS (Foot Slope) H (Head Slope) L (Linear Slope) N (Nose Slope) R (Ridge) S (Shoulder Slope) T (Terrace)	I	S (Sand) LS (Loamy Sand)	1.2 - 0.8	0.6 - 0.4	SEXP (Slightly Expansive) EXP (Expansive)	G (Single Grain) M (Massive) CR (Crumb) GR (Granular) SBK (Subangular Blocky) ABK (Angular Blocky) PL (Platy) PR (Prismatic)
	II	SL (Sandy Loam) L (Loam)	0.8 - 0.6	0.4 - 0.3		
	III	Si (Silt) SiCL (Silty Clay Loam) CL (Clay Loam) SCL (Sandy Clay Loam) SiL (Silt Loam)	0.6 - 0.3	0.3 - 0.15		
	IV	SC (Sandy Clay) SiC (Silty Clay) C (Clay) O (Organic)	0.4 - 0.1 None	0.2 - 0.05 None	<u>MOIST</u> VFR (Very Friable) FR (Friable) FI (Firm) VFI (Very Firm v. Very Sticky) EFI (Extremely Firm)	<u>WET</u> NS (Non-sticky) SS (Slightly Sticky) S (Sticky) VS (Very Sticky) NP (Non-plastic) SP (Slightly Plastic) P (Plastic) VP (Very Plastic)

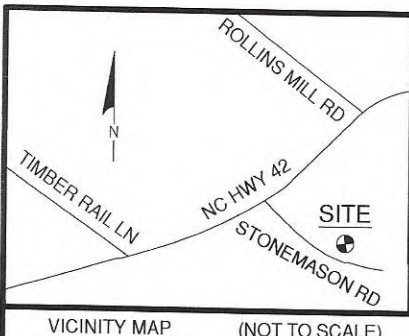
*Adjust LTAR due to depth, consistence, structure, soil wetness, landscape, position, wastewater flow and quality.

NOTES

- HORIZON DEPTH** In inches below natural soil surface
 - DEPTH OF FILL** In inches from land surface
 - RESTRICTIVE HORIZON** Thickness and depth from land surface
 - SAPROLITE** S(suitable) or U(unsuitable)
 - SOIL WETNESS** Inches from land surface to free water or inches from land surface to soil colors with chroma 2 or less - record Munsell color chip designation
 - CLASSIFICATION** S (Suitable), PS (Provisionally Suitable), or U (Unsuitable)
- Evaluation of saprolite shall be by pits.
 Long-term Acceptance Rate (LTAR): gal/day/ft²

Show profile locations and other site features (dimensions, reference or benchmark, and North).





NOTES

1. LOT IS SUBJECT TO THE HARNETT COUNTY ZONING REQUIREMENTS
2. LOT IS SUBJECT TO ALL EASEMENTS, BUFFERS, SETBACKS AND RESTRICTIONS OF RECORD.
3. LOT IS INDEXED AS HARNETT COUNTY PIN# 0626-80-0039.000.
4. LOT IS ADDRESSED AS 145 STONEMASON DRIVE IN HOLLY SPRINGS, NORTH CAROLINA.
5. NO TITLE SEARCH RECEIVED AT TIME OF SURVEY. SUBJECT TO REVIEW IF ONE IS PERFORMED.
6. INFORMATION SHOWN BASED ON FIELD LOCATED ABOVE GROUND STRUCTURES AND REFERENCES LISTED.
7. PRIOR TO LAND DISTURBING ACTIVITIES HAVE UNDERGROUND LINES DETERMINED BY PROFESSIONALS.
8. AREA COMPUTED BY COORDINATE METHOD. NO MONUMENT REPORTED WITHIN 2000' OF SITE.
9. DISTANCES SHOWN ARE HORIZONTAL GROUND MEASURED IN FEET UNLESS OTHERWISE NOTED.
10. THE SOLE PURPOSE OF THIS DRAWING IS TO DEPICT THE EXISTING IMPROVEMENTS WITH IMPERVIOUS AREA LABELS SHOWN ONLY. FIELD VERIFY ALL DIMENSIONS PRIOR TO LAND DISTURBING ACTIVITIES.
11. THIS IS NOT A FLOOD STUDY AND RIPARIAN OR OTHER BUFFERS MAY EXIST.
12. BUILDING SETBACKS ARE TO FOUNDATION/WALL LINE OF STRUCTURE OVERHANGS WILL BE CLOSER.
13. CONTACT KRAUSE SURVEYING ASSOCIATES FOR ANY DESIRED ON OR OFFSITE LOCATIONS, REVISIONS OR COPIES IN THE FUTURE. ALL COPYRIGHTS RESERVED. TEE POST AND CHAIN LINK FENCE AT REAR MEANDERS PLAT LINE.
14. PORTIONS OF THIS LOT WERE COVERED WITH BUSHES, LEAVES AND OTHER DEBRIS ETC. AT TIME OF SURVEY THEREFORE ITEMS MAY EXIST OTHER THAN THOSE SHOWN.
15. THIS PROPERTY LIES WITHIN ZONE X (MINIMAL RISK) PER FEMA MAP# 3720062600L EFFECTIVE DATE: JULY 19, 2022.
16. IRON PIPES OR EXISTING REBARS FOUND AT OR NEAR GROUND SURFACE UNLESS OTHERWISE NOTED.
17. CONTACT AN ATTORNEY WITH QUESTIONS OF OWNERSHIP, EASEMENTS, RIGHTS OF WAY OF EXISTING AND POSSIBLE PROPOSED ROADS, SETBACKS, POSSIBLE OVERLAP/GAP, IMPERVIOUS AREAS AND OTHER RIGHTS.
18. CONTACT HOME OWNER'S ASSOCIATION AND/OR TOWN OR HARNETT COUNTY PLANNING, INSPECTIONS, ETC. DEPARTMENTS WITH PROPOSED PLANS PRIOR TO LAND DISTURBING ACTIVITIES.
19. THERE HAS BEEN RECENT CONSTRUCTION AND GRADING ON THIS SITE. CONTACT A SOIL SCIENTIST FOR REVIEW.
20. THIS SURVEY IS OF AN EXISTING PARCEL AND DOES NOT CREATE ANY NEW LOT LINES, EASEMENTS, ETC.

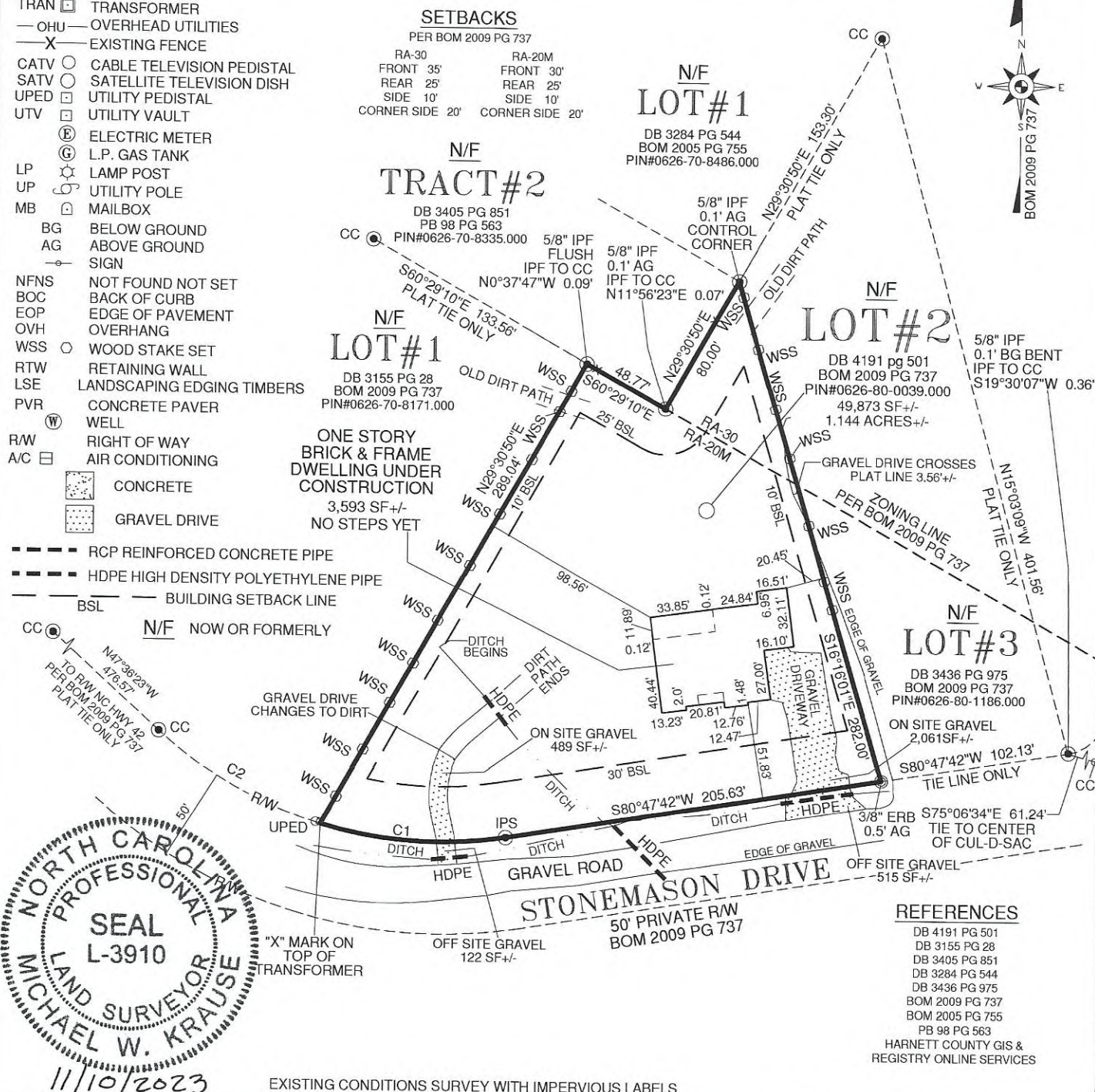
LEGEND

- IPS IRON PIPE SET
- IPF IRON PIPE FOUND
- ERB EXISTING REBAR
- RRS RAIL ROAD SPIKE FOUND
- PKF PK NAIL FOUND
- DHF DRILL HOLE FOUND
- CC COMPUTED CORNER
- WM WATER METER
- WFH WATER HYDRANT
- WV WATER VALVE
- MHSS MANHOLE SANITARY SEWER
- CO SANITARY SEWER CLEANOUT
- SV SEPTIC VAULT
- TRAN TRANSFORMER
- OHU OVERHEAD UTILITIES
- X EXISTING FENCE
- CATV CABLE TELEVISION PEDISTAL
- SATV SATELLITE TELEVISION DISH
- UPED UTILITY PEDISTAL
- UTV UTILITY VAULT
- ELECTRIC METER
- L.P. GAS TANK
- LP LAMP POST
- UP UTILITY POLE
- MB MAILBOX
- BG BELOW GROUND
- AG ABOVE GROUND
- SIGN SIGN
- NFNS NOT FOUND NOT SET
- BOC BACK OF CURB
- EOP EDGE OF PAVEMENT
- OVH OVERHANG
- WSS WOOD STAKE SET
- RTW RETAINING WALL
- LSE LANDSCAPING EDGING TIMBERS
- PVR CONCRETE PAVER WELL
- R/W RIGHT OF WAY
- A/C AIR CONDITIONING
- CONCRETE
- GRAVEL DRIVE
- RCP REINFORCED CONCRETE PIPE
- HDPE HIGH DENSITY POLYETHYLENE PIPE
- BSL BUILDING SETBACK LINE
- N/F NOW OR FORMERLY

Curve Table					
Curve #	Length	Radius	Delta	CHD BRG	CHD DIST
C1	101.31	225.00	25°48'02"	N86°18'17"W	100.46'
C2	101.31	225.00	25°47'54"	N60°30'19"W	100.46'

SETBACKS

PER BOM 2009 PG 737
 RA-30 FRONT 35' REAR 25' SIDE 10' CORNER SIDE 20'
 RA-20M FRONT 30' REAR 25' SIDE 10' CORNER SIDE 20'



REFERENCES

- DB 4191 PG 501
- DB 3155 PG 28
- DB 3405 PG 851
- DB 3284 PG 544
- DB 3436 PG 975
- BOM 2009 PG 737
- BOM 2005 PG 755
- PB 98 PG 563
- HARNETT COUNTY GIS & REGISTRY ONLINE SERVICES

I, MICHAEL W. KRAUSE CERTIFY THAT THIS PLAT AND THE FIELD SURVEY ON WHICH IT IS BASED WERE PERFORMED UNDER MY DIRECT SUPERVISION, THAT THE BOUNDARIES NOT SURVEYED ARE INDICATED BY DASHED LINES DRAWN FROM INFORMATION RECORDED AT REFERENCES SHOWN, THAT THE RATIO OF PRECISION AS CALCULATED IS 1:20,000±; AND THAT THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56.1600). THIS 10TH DAY OF NOVEMBER, A.D., 2023.

 Krause Surveying Associates, Inc. 5533 HWY 42 WEST SUITE A-4 UNIT 6(MAIL) SUITE B-34(UNDER CONSTRUCTION) Garner, N.C. 27529 (919)-661-4090 LICENSE # C-2066	DRAWN BY: MWK	CHECKED BY: MWK	PROPERTY OF: JOHNSUA D. BECKER & ASHLEY LAUREN BECKER
	SURVEY DATE: 11/08 & 09/2023		LOT# 2 KEITH M. BROWN, JOHNNY M CARROLL & DAWN H CARROLL
GRAPHIC SCALE 1 inch = 80 ft.		Address: 145 STONEMASON DRIVE, HOLLY SPRINGS	
		BUCKHORN TWP HARNETT COUNTY NORTH CAROLINA	
		DATE: NOVEMBER 10, 2023 SCALE: 1"=80'	

BECKER AOWE

Project Location	145 Stonemason Dr Holly Springs, NC 27540 Harnett County PIN: 0626-80-0039
Project Owner	Ashley Becker 817 Cokesbury Park Ln Fuquay Varina, NC 27526 919-818-6735 abecker8818@gmail.com
Project Consultant	Jeff Vaughan, L.S.S (919) 367-6313 Trent Bostic (919) 367-6322 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 Three (3) Bedroom, 360 gpd Pressure Manifold Accepted/Innovative Trench Product



VICINITY MAP

Sheet Index

Sheet 1	Cover Sheet
Sheet 2	Property Layout
Sheet 3	Primary Layout
Sheet 4	Tank Sheet
Sheet 5	Detail Sheet

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

Ashley Becker
Becker AOWE

Project Location:
145 Stonemason Dr
Holly Springs, NC 27540
Harnett County
PIN: 0626-80-0039

Project Owner:
Ashley Becker
817 Cokesbury Park Ln
Fuquay Varina, NC 27526
919-818-6735
abecker8818@gmail.com

NC ONSITE WASTEWATER
EVALUATOR SEAL



REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE
Cover Sheet

DRAWN BY: T. Bostic	CREATED ON: 12/1/2023
REVISED BY: ####	REVISED ON: ####
RELEASED BY: ####	RELEASED ON: ####

DRAWING NUMBER
WW-1



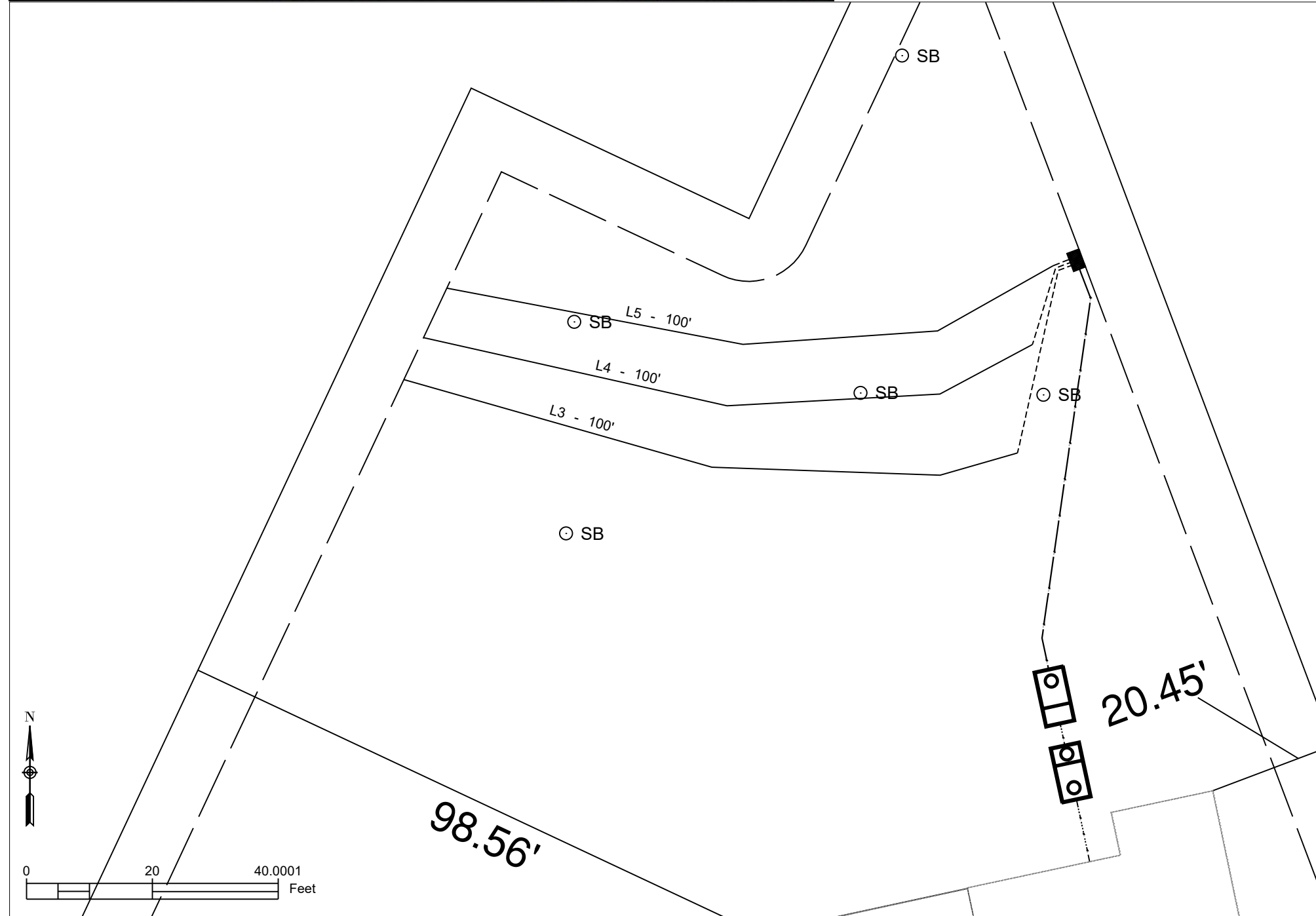
General Drainfield Notes:

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.

Note:

Primary distribution is pressure manifold utilizing accepted trench product.

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.
3	yellow	100	1/2in SCH 80	5.48	0.055	0.400
4	pink	100	1/2in SCH 80	5.48	0.055	0.400
5	blue	100	1/2in SCH 80	5.48	0.055	0.400
Total		300	Total	16.44	Avg.	0.400



1 Primary Drainfield
SOURCE: Agri-Waste Technology, Inc.

Ashley Becker
Becker AOWE
Project Location:
145 Stonemason Dr
Holly Springs, NC 27540
Harnett County
PIN: 0626-80-0039
Project Owner:
Ashley Becker
817 Cokesbury Park Ln
Fuquay Varina, NC 27526
919-818-6735
abecker8818@gmail.com

NC ONSITE WASTEWATER
EVALUATOR SEAL



REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE
Primary Drainfield

DRAWN BY: T. Bostic	CREATED ON: 12/1/2023
REVISED BY: ####	REVISED ON: ####
RELEASED BY: ####	RELEASED ON: ####

DRAWING NUMBER
WW-3

Ashley Becker
Becker AOWE

Project Location:
145 Stonemason Dr
Holly Springs, NC 27540
Harnett County
PIN: 0626-80-0039

Project Owner:
Ashley Becker
817 Cokesbury Park Ln
Fuquay Varina, NC 27526
919-818-6735
abecker8818@gmail.com

NC ONSITE WASTEWATER
EVALUATOR SEAL



REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE

Detail Sheet 1

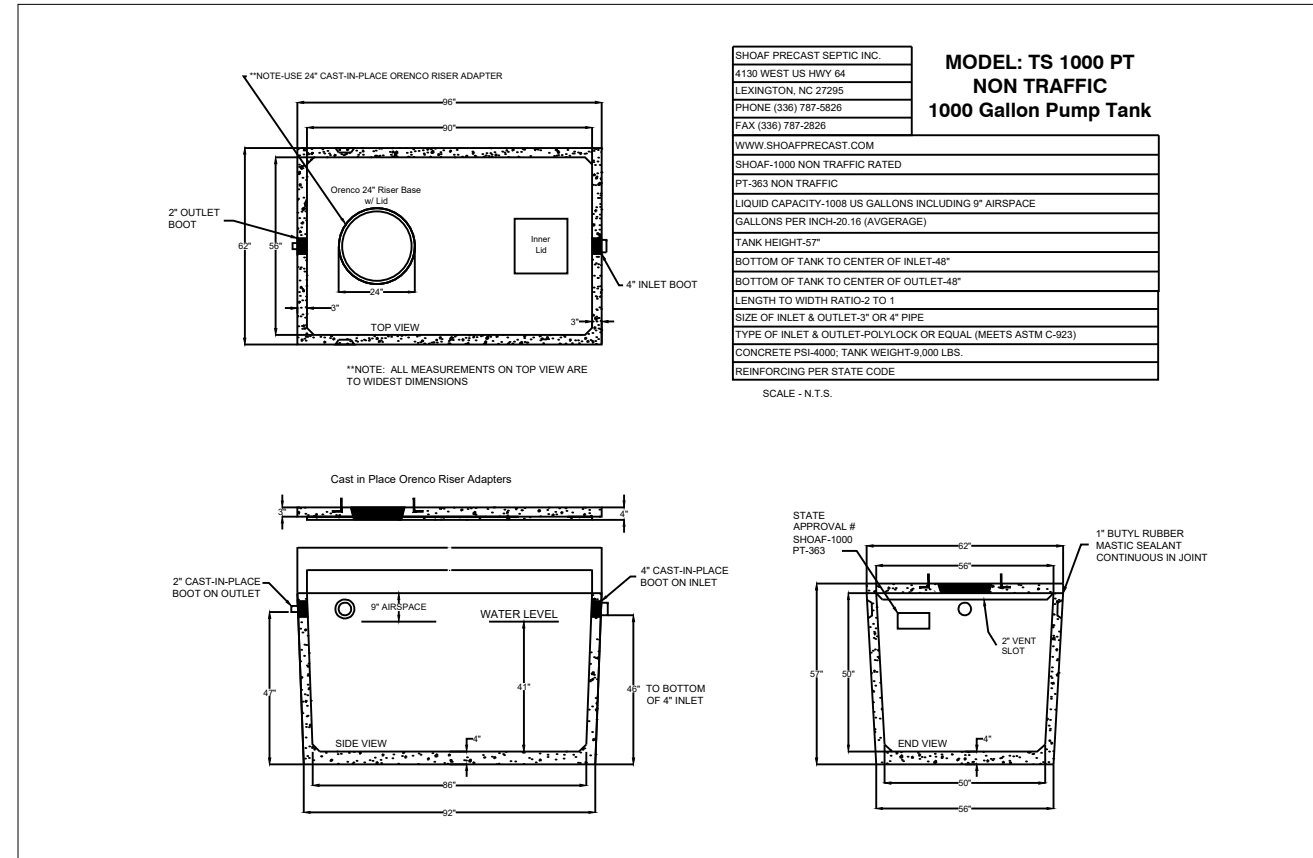
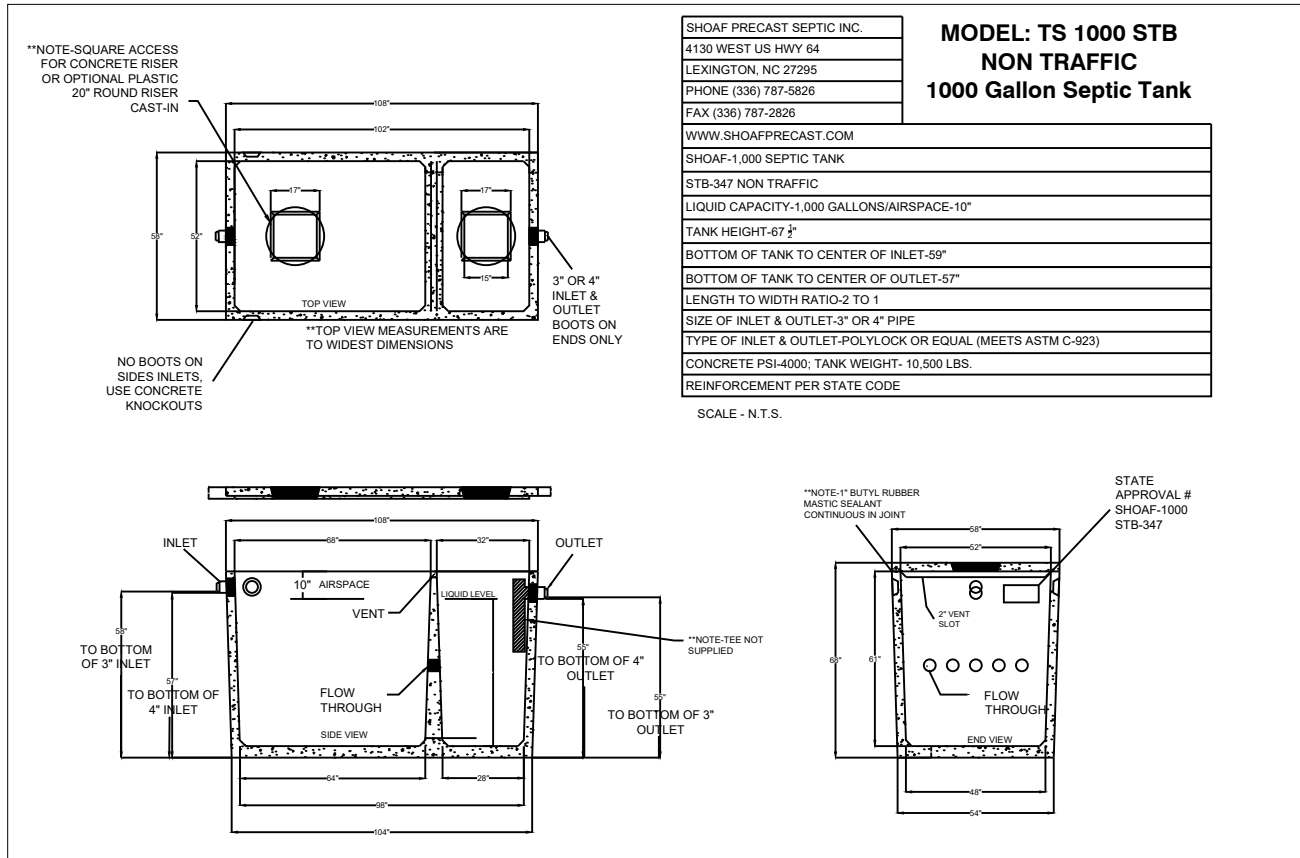
DRAWN BY: T. Bostic	CREATED ON: 12/1/2023
------------------------	--------------------------

REVISED BY: ####	REVISED ON: ####
---------------------	---------------------

RELEASED BY: ####	RELEASED ON: ####
----------------------	----------------------

DRAWING NUMBER

WW-4

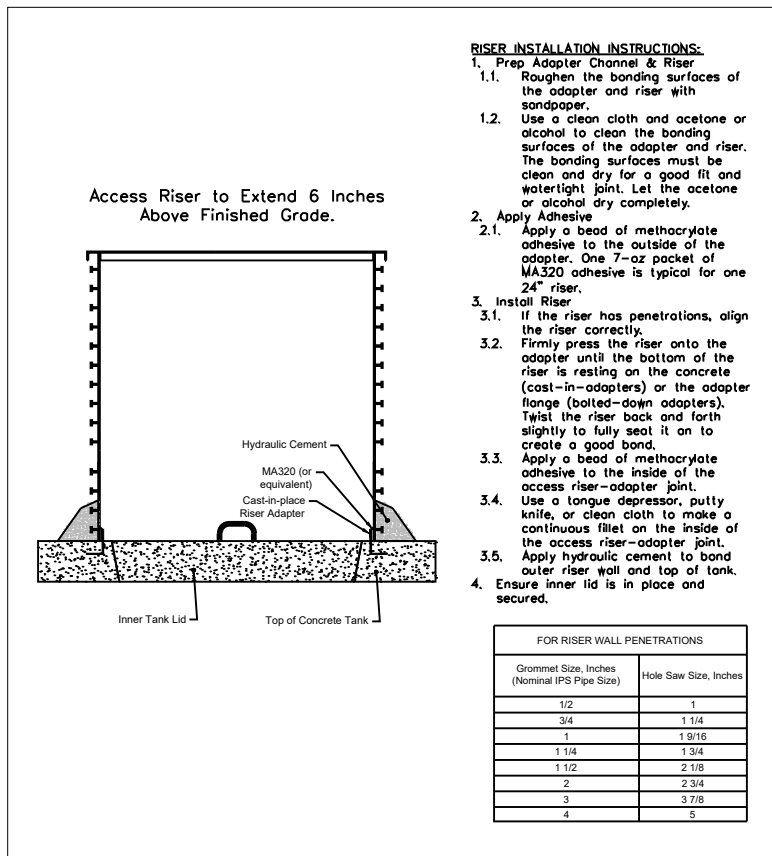


1 WW-4
Septic Tank

SOURCE: Shoaf Precast Septic, Inc.

2 WW-4
Pump Tank (or equiv. tank with 1-day storage)

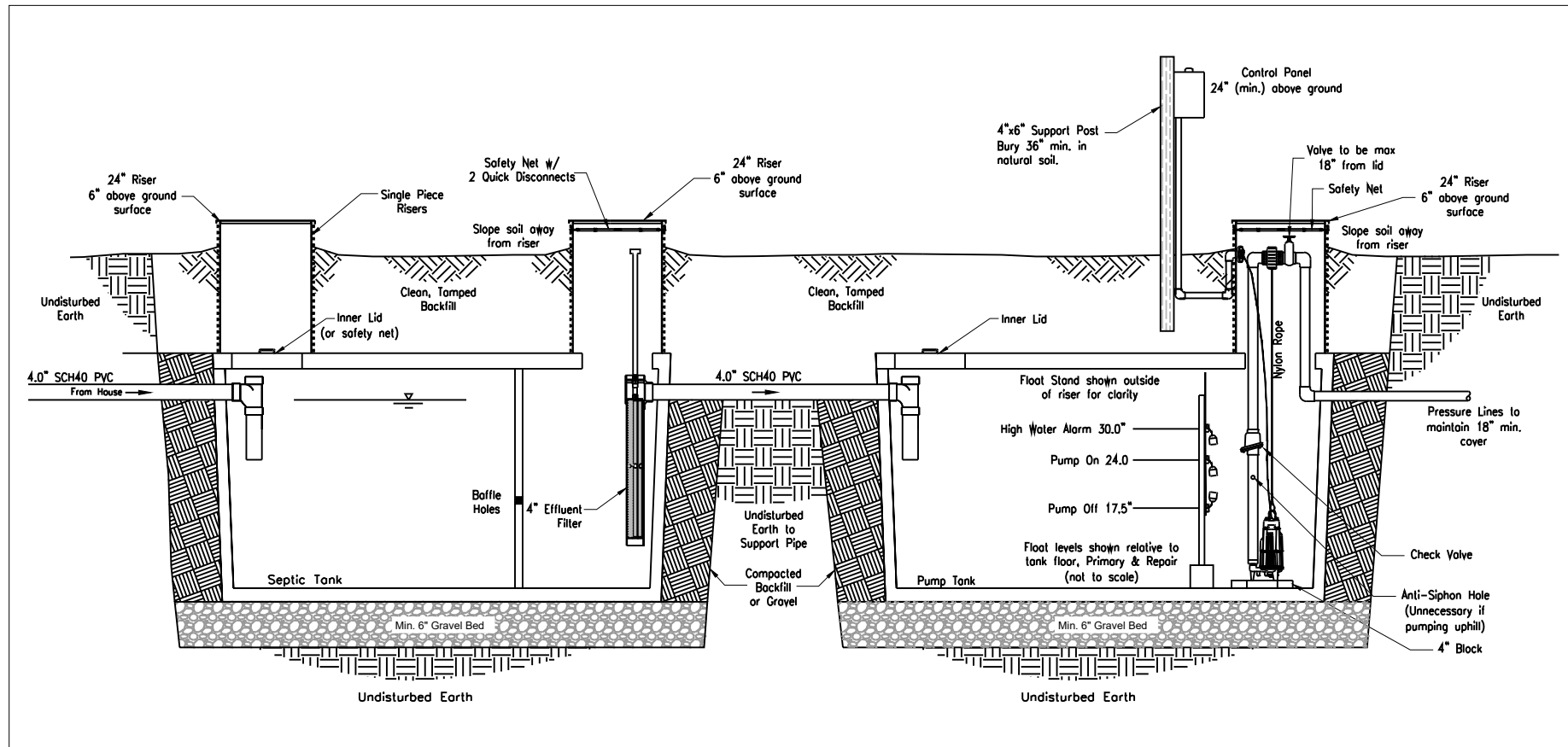
SOURCE: Shoaf Precast Septic, Inc.



3 WW-4
Riser Installation

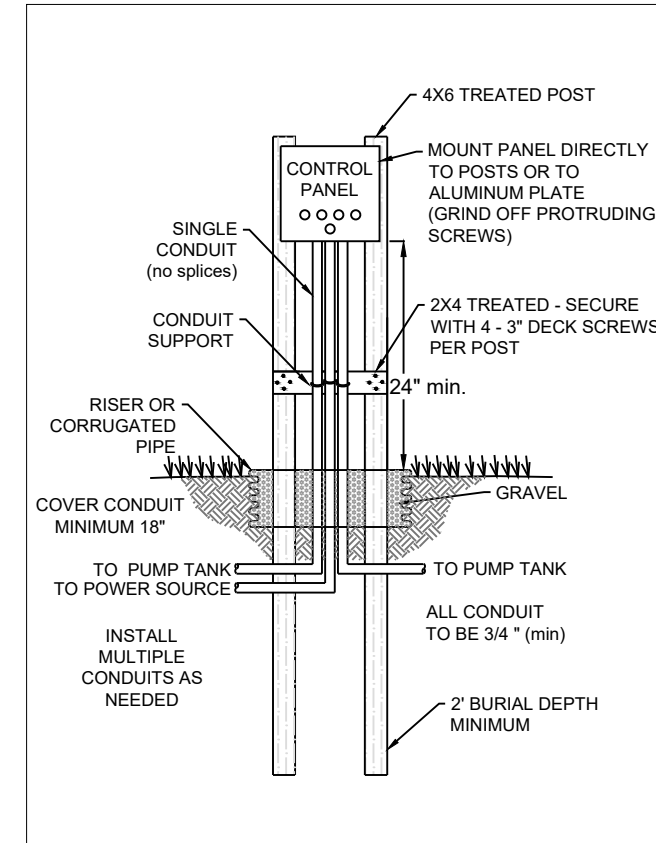
NOTES

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.



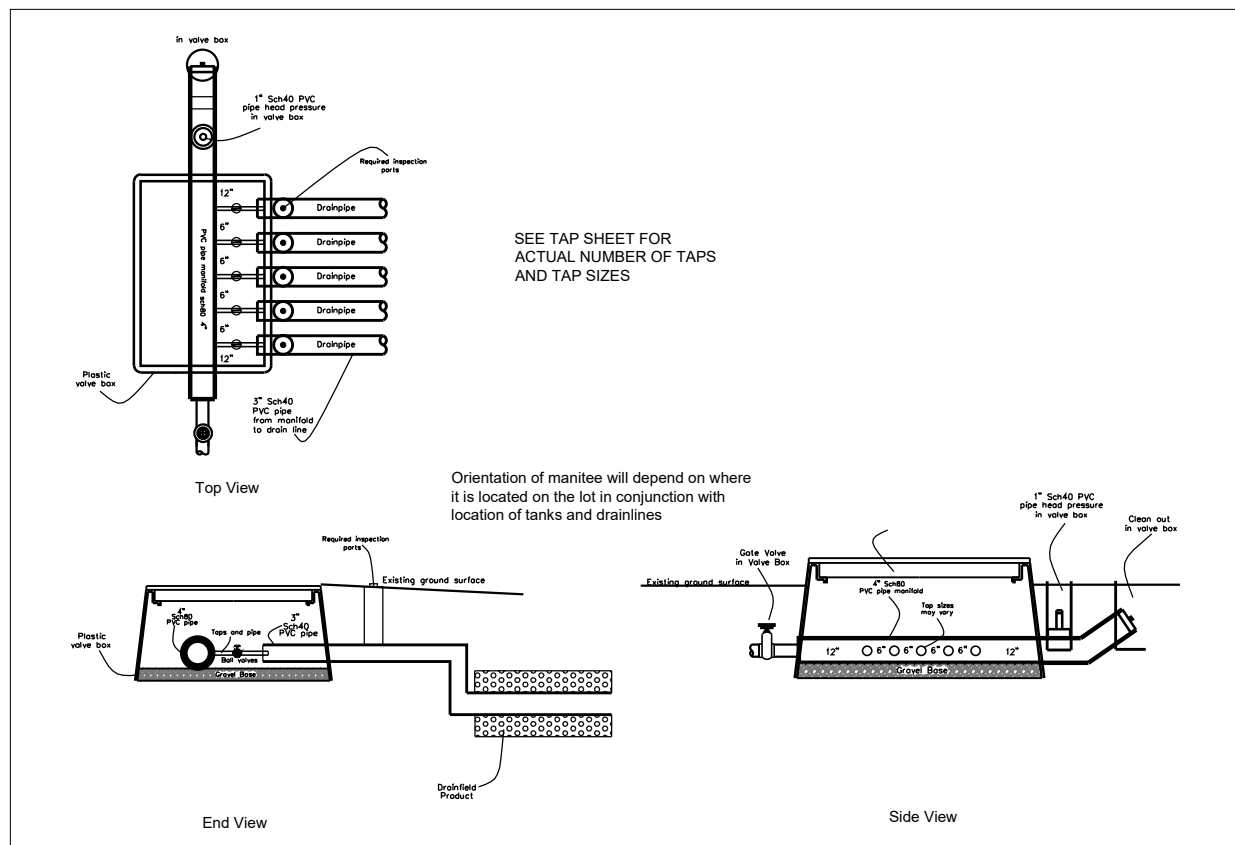
1 SYSTEM PROFILE VIEW

WW-5 N.T.S.



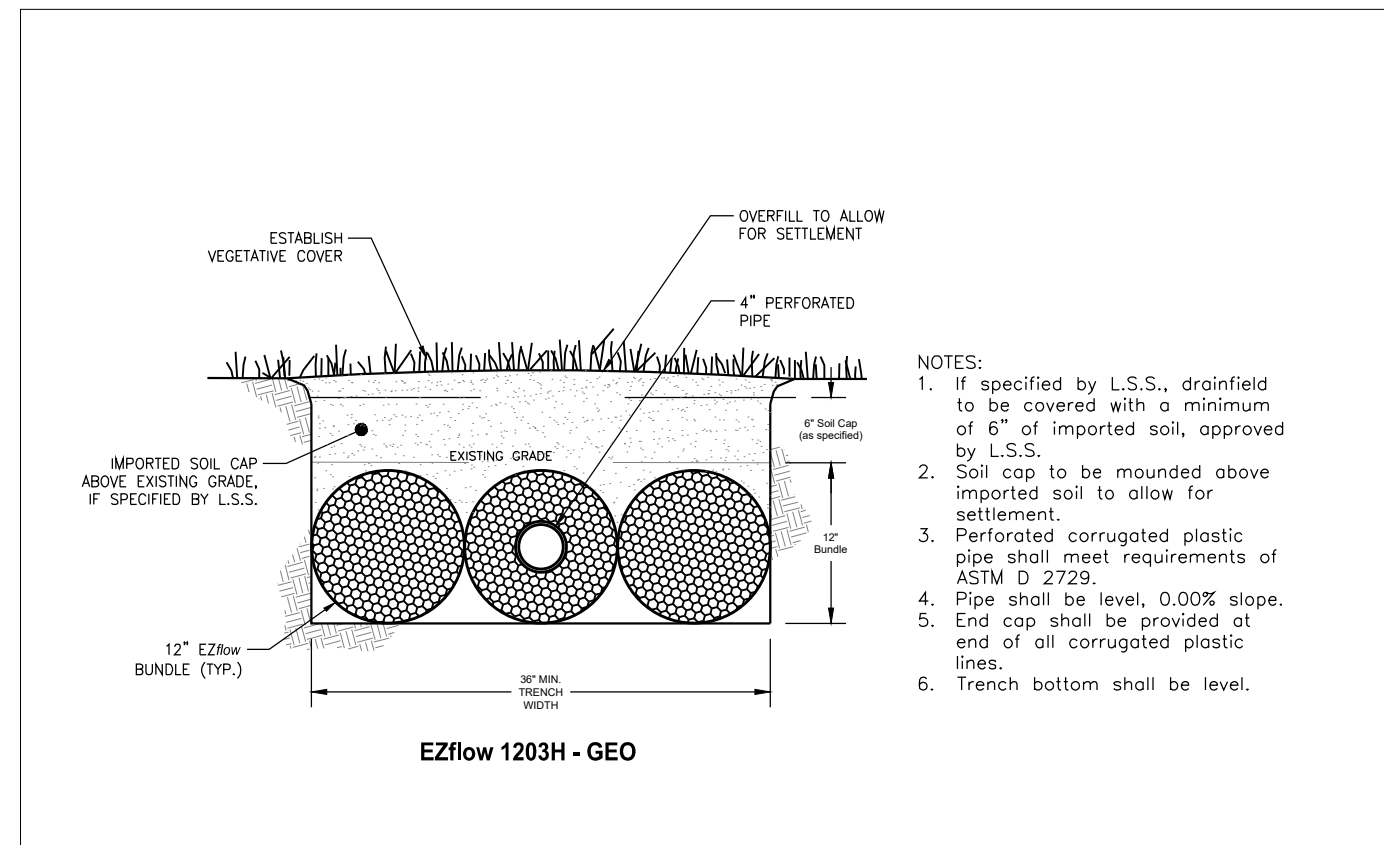
6 CONTROL PANEL SUPPORT

WW-5 N.T.S. SOURCE: AWT



4 PRESSURE MANIFOLD INSTALLATION (Manitee) - For Illustration Only

WW-5 N.T.S. SOURCE: AWT



2 TRENCH X-SECTION (Typical)

WW-5 N.T.S. Source: AWT



REV.	ISSUED DATE	DESCRIPTION

SHEET TITLE

Detail Sheet 2

DRAWN BY: T. Bostic
CREATED ON: 12/1/2023

REVISED BY: #####
REVISED ON: #####

RELEASED BY: #####
RELEASED ON: #####

DRAWING NUMBER

WW-5

Septic System Design - Summary Page



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

Project Manager:

Jeff Vaughan, PhD, LSS
jvaughan@agriwaste.com
919-859-0669

Engineer:

Trent Bostic
tbostic@agriwaste.com

Project: Becker AOWE
Property: 145 Stonemason Dr
Holly Springs, NC 27540

Date: 12/1/2023

County: Harnett

Subdiv.:

Lot #:

Permit #:

Owner: Ashley Becker

Address: 817 Cokesbury Park Ln
Fuquay Varina, NC 27526

Type of System: III b

Phone: 919-818-6735

Email: abecker8818@gmail.com

PIN: 0626-80-0039

EHS:

Soil Parameters

Soil Evaluation By:

-

Special Conditions/Notes:

LTAR: 0.30 gpd/ft²

Design Parameters

Type of Establishment: Residence, 5 or fewer bedrooms

Unit: Bedroom

of Units: 3

Septic Tank Specifications

Min. Tank Capacity:	900 gal	Exterior	Interior
Actual Tank Volume:	1,000 gal	Length:	108.0 102.0 in.
Tank Manufacturer:	Shoaf	Width:	58.0 52.0 in.
Tank Model:	TS 1000 STB	Depth:	67.5 60.5 in.

Primary Drainfield Specifications

Type of Distribution:	Parallel Pressure Manifold	Trench Bottom Area:	1200 ft ²
Trench Media:	EZflow	Minimum Drain Line:	300 ft
Trench Width:	3 ft	Actual Drain Line:	300 ft
Trench Depth:	18 in.	Number of Lines:	3
<i>(or as specified on permit)</i>		Minimum Line Spacing:	9 ft O.C.

Wastewater Treatment System Design Calculations

Project: Becker AOWE
Location: 145 Stonemason Dr
 Holly Springs, NC 27540
County: Harnett

Septic Tank Sizing

Daily Flow Estimate:

Unit	# of Units	Flow/Unit	Flow/Day
Bedroom	3	120	360
			0
			0
Q=			360

gpd

Septic Tank Minimum Capacity:

Per NCAC T15A:18A .1952(b)(1):

For individual residences with 3 or fewer bedrooms,

Minimum Liquid Capacity (V)= 900 gal

Septic Tank Specs:

Manufacturer:	Shoaf	
Model:	TS 1000 STB	
Volume:	1,000	gal
Weight:	9,500	lbs
	<u>Exterior</u>	<u>Interior</u>
Length:	108.0	102.0 in.
Width:	58.0	52.0 in.
Depth:	67.5	60.5 in.

Shape of Risers: Circular

Diameter: 2.00 ft

Pump Tank Storage & Float Settings

Project: Becker AOWE
Location: 145 Stonemason Dr
 Holly Springs, NC 27540
County: Harnett

Tank Manufacturer	Shoaf
Tank Model	TS 1000 PT

Interior Height (in.)	50.0 in.
Avg. Storage	20.16 gal/in.
<u>Primary System</u>	
<u>Elevations, measured from bottom towards top (0 = Interior Bottom of Tank):</u>	
Top of pump (including 4" block)	15.7 in. (Pump height = 11 11/16")
Pump Off	17.5 in.
Pump On	24.0 in. (set for dose volume)
Alarm On	30.0 in. (6 in. above On Float)
Emergency Storage Available	
Pump Tank	403 gal
Days of Storage	1.12 days
(determined from "interior top of tank" - "High Water Alarm")	
<u>Repair System</u>	
<u>Elevations, measured from bottom towards top (0 = Interior Bottom of Tank):</u>	
Top of pump (including 4" block)	14.1 in. (Pump height = 10 1/16")
Pump Off	16.0 in.
Pump On	16.0 in. (set for dose volume)
Alarm On	22.0 in. (6 in. above On Float)
Emergency Storage Available	
Pump Tank	564 gal
Days of Storage	1.57 days
(determined from "interior top of tank" - "High Water Alarm")	

ELEVATIONS

Project: Becker AOWE
Location: 145 Stonemason Dr
 Holly Springs, NC 27540
County: Harnett

Benchmark SE Property Corner
BM Elev 383.99 ft

Septic Tank 1,000 gal		
Ground Surface		395.46 ft
Depth of Soil Cover	16 in.	1.33 ft
Overall Ht of Tank	67.5 in.	5.63 ft
Elev, Base of Tank		388.50 ft
Ht to 4" Inlet Invert	57 in.	4.75 ft
Elev, 4" Inlet Invert		393.25 ft
Ht to 4" Outlet Invert	55 in.	4.58 ft
Elev, 4" Outlet Invert		393.09 ft
Gravel Base	6 in.	0.50 ft
Elev, Bot of Excavation		388.00 ft

Pump Tank 1000 gal		
Ground Surface		395.46 ft
Depth of Soil Cover	18 in.	1.50 ft
Overall Ht of Tank	57 in.	4.75 ft
Elev, Base of Tank		389.21 ft
Ht to 4" Inlet Invert	46 in.	3.83 ft
Elev, 4" Inlet Invert		393.04 ft
Ht to 2" Outlet Invert	58 in.	4.83 ft
Elev, 2" Outlet Invert		394.04 ft
Gravel Base	6 in.	0.50 ft
Elev, Bot of Excavation		388.71 ft

ST Inlet Pipe		
Grade @ Stub-out		395.46 ft
Depth of Stub-out, top		1.5 ft
Elev, Stub-out Invert		393.61 ft
Elev @ ST Inlet Invert		393.25 ft
Length		10 ft
Slope		3.5 %

Pipe, ST to PT		
ID	4 in.	0.33 ft
OD	4.5 in.	0.38 ft
Elev, ST Outlet Invert		393.09 ft
Elev, PT Inlet Invert		393.04 ft
Length		4 ft
Slope		1.0 %
Cover over inlet pipe		1.85 ft

Pump Reqmt.		
Floor Thickness	4 in.	0.33 ft
Elev, Pump Tank Floor		389.54 ft
Pump Block Ht.	4 in.	0.33 ft
Elev, Pump Intake		389.88 ft

Grade @ Primary Manifold		401.00 ft
Min. Cover	18 in.	1.50 ft
Max Elev, Primary		399.50 ft
Elev Diff, Primary		9.62 ft

Drainfield Design

Project Becker AOWE
Location 145 Stonemason Dr
 Holly Springs, NC 27540
County Harnett

Drainfield Sizing

Primary

LTAR	0.3 gpd/ft ²	Type of Drainfield Media	EZflow
Daily Design Flow	360 gpd	Required Drainline	
Req. Drainfield Area	1,200 ft ²	After 25% Reduction	300 ft
Trench Width, Eff.	3 ft	Minimum Line Spacing	9 ft (O.C.)
Required Drainline	400 ft		

Repair

LTAR	0.3 gpd/ft ²	Type of Drainfield Media	PPBPS, Horizontal
Daily Design Flow	360 gpd	Required Drainline	
Req. Drainfield Area	1,200 ft ²	After 50% Reduction	200 ft
Trench Width, Eff.	3 ft	Minimum Line Spacing	8 ft (O.C.)
Required Drainline	400 ft		

Drainfield Layout

Line	Use	Flag Color	Elevation (ft)	Line Length (ft)	Used as Primary (ft)	Used as Repair (ft)
1	Layout Line	blue		60		60.0
2	Layout Line	purple		60		60.0
3	Layout Line	yellow		100	100.0	
4	Layout Line	pink		100	100.0	
5	Layout Line	blue		100	100.0	
6	Layout Line	purple		97		97.0
7	Layout Line	yellow		37		
8	Layout Line	pink		28		
9	Layout Line					
10	Layout Line					
Total				582	300	217
Count				8	3	3

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

PRESSURE MANIFOLD DESIGN (Primary)

Site Information

Project: Becker AOWE
Location: 145 Stonemason Dr
 Holly Springs, NC 27540
County: Harnett

Design Information

Estimated Daily Flow	360 gal/day
L.T.A.R. (from Harnett Co.)	0.3 gal/day/ft ²
L.T.A.R. + 5%	0.315 gal/day/ft ²
Trench Width	3 ft.
Line Length Required	400 ft.
Length after 25% Reduction	300 ft
L.T.A.R. Reduced	0.400 gal/day/ft ²
L.T.A.R. Reduced + 5%	0.420 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.
3	yellow	100	1/2in SCH 80	5.48	0.055	0.400
4	pink	100	1/2in SCH 80	5.48	0.055	0.400
5	blue	100	1/2in SCH 80	5.48	0.055	0.400
Total		300	Total	16.44	Avg.	0.400

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

Total Run Time	21.90 min.	
Drainfield Capacity	195.9 gal	
% of Drainfield Cap	66.9%	(Req. Range 66-75%)
Dose Volume	131.1 gal/dose	
Run Time/Dose	8.0 minutes	Range 5-7 minutes unless uphill, checked
Volume/depth	20.16 gal/in.	(Per tank manufacturer's specifications)
Estimated Drawdown	6.50 in.	

Manifold Box

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

PUMP DESIGN

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

Project: Becker AOWE
Location: 145 Stonemason Dr
 Holly Springs, NC 27540
County: Harnett

Friction Losses

Suction Head	0 ft	(submersible 0)
Elev. Difference (highest point from pump)	9.62 ft	
Design Pressure At Outlet	2 ft	
Supply Line - 1.25" Schedule 40 PVC		
Pipe Diameter, Nominal	1.25 in.	
Pipe Diameter (ID)	1.36 in.	Flow 16.44 gpm
Pipe Length	65 ft	Velocity 3.63 ft/sec
Pipe Length for Fittings	6.5 ft	Meets requirement that 2 ft/s < v < 5 ft/s.
Equivalent Length	71.5 ft	
Estimated Friction Loss in Supply Line	2.81 ft	
Friction Loss - Taps/Special Fittings	3.5 ft	
TOTAL	17.93 ft.	

Flow for Anti-Siphon Hole

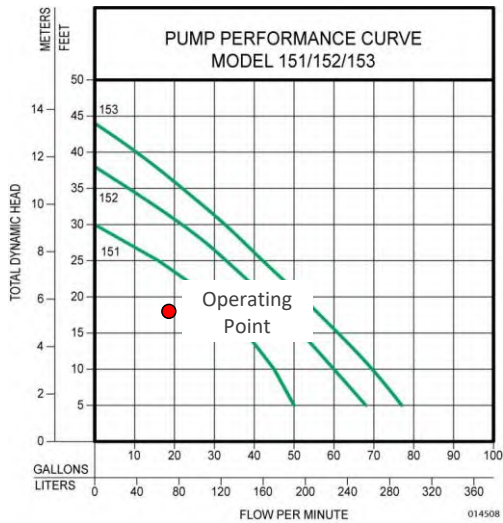
Hole Diameter 3/16 in.
 Hole Flowrate 1.76 gpm

Pump Efficiency 0.7 (assumed, typical)
 Motor Efficiency 0.9 (assumed for electric pumps)
Flow 18.20 gpm

Required Horsepower 0.13 hp
TDH 17.93 ft

Pump Selection

Manufacturer:	Zoeller
Model:	N151
Horsepower:	0.33



Septic Tank Buoyancy Calculation

Project: Becker AOWE
Location: 145 Stonemason Dr
 Holly Springs, NC 27540
County: Harnett

Tank Size (nominal) 1000 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	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):

		<u>Exterior</u>		<u>Interior</u>	
		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		6.28 ft ²			
Permanent Liquid Depth in Tank		0.0 in.		0.00 ft	
Tank Weight		9,500 lb		(per manufacturer)	

Buoyancy Force Calculation:

Buoyancy Force Specific Weight of Water x Displaced Volume	
Displaced Volume	234.6 ft ³ *
Buoyancy Force	14,638 lb.

Weight Calculation:

Tank Weight	9500 lb	Volume	0.0 ft ³ *
Water Weight in Tank	0 lb		
Soil Weight Over Tank	3638 lb		
Soil Friction Force	4227 lb		
Total Weight	17,365 lb		

Factor of Safety = 1.19

Note: Total weight must be greater than buoyancy force so that tank will not float during high water table conditions.

* Volume calculated by the prismatic formula.

Pump Tank Buoyancy Calculation

Project: Becker AOWE
Location: 145 Stonemason Dr
 Holly Springs, NC 27540
County: Harnett

Tank Size (nominal) 1000 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	6 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):

		<i>Exterior</i>		<i>Interior</i>	
		Top	Bottom	Top	Bottom
Tank	Length	96.0	92.0	90.0	86.0 in.
	Width	62.0	56.0	56.0	50.0 in.
	Height	54.0	(w/o lid)	50.0	in.
Lid	Length	96.0 in.			
	Width	62.0 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		8000 lb		(per manufacturer)	

Buoyancy Force Calculation:

Buoyancy Force Specific Weight of Water x Displaced Volume	
Displaced Volume	185.3 ft ³ *
Buoyancy Force	11,561 lb

Weight Calculation:

Tank Weight	8000 lb	Volume	0.0 ft ³ *
Water Weight in Tank	0 lb		
Soil Weight Over Tank	4051 lb		
Soil Friction Force	2869 lb		
Total Weight	14,920 lb		

Factor of Safety = 1.29

Note: Total weight must be greater than buoyancy force so that tank will not float during high water table conditions.

* Volume calculated by the prismatic formula.

