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

x New ____ Expansion ____Repair ____ Relocation ____Relocation of Repair Area

Owner or Legal Representative Information:
Name: Steve Thomas
Mailing address: PO Box 825 City: Broadway State: NC Zip: 27505
Phone: 919-906-4069 Email: southernconcrete@windstream.net

Authorized Onsite Wastewater Evaluator Information:
Name: Hal Owen Certification #: 10036E
Mailing address: PO Box 400 City: Lillington State: NC Zip: 27546
Phone: 910-893-8743 Email: hal@halowensoil.com

Site Location Information:
Site address: 4722 McNeill Hobbs Rd
Tax parcel identification number or subdivision lot, block number of property:
Lot 2, 0566-49-1418.000 County: Harnett

System Information:
Wastewater System Type: IIIbg
Daily Design Flow: 360 gpd
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 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 6 day of June, 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 6 day of June, 2029.

Signature of Authorized Onsite Wastewater Evaluator: Hal Owen

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: ____

HALOWE1 OP ID: TOW

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 06/03/2024

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 INSURANCE SERVICE CTR -LILLING LILLINGTON BRANCH OFFICE PO Box 1565 LILLINGTON, NC 27546 DANIEL L. BABB 910-893-5707	CONTACT NAME: SHARON WOODY PHONE (A/C, No, Ext): 910-893-5707 FAX (A/C, No): 910-893-2077 E-MAIL ADDRESS: SWOODY@ISCFAY.COM
INSURED HAL OWEN & ASSOCIATES, INC. PO BOX 400 LILLINGTON, NC 27546	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : STARSTONE NATIONAL INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

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	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ 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)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ (Mandatory in NH)	N / A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	PROFESSIONAL LIAB.			42ESP00143901	01/27/2024	01/27/2025	PER OCC.	1,000,000
							AGGREGATE	2,000,000

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

CERTIFICATE HOLDER

STEVE THOMAS
PO BOX 85
BROADWAY, NC 27505

CANCELLATION

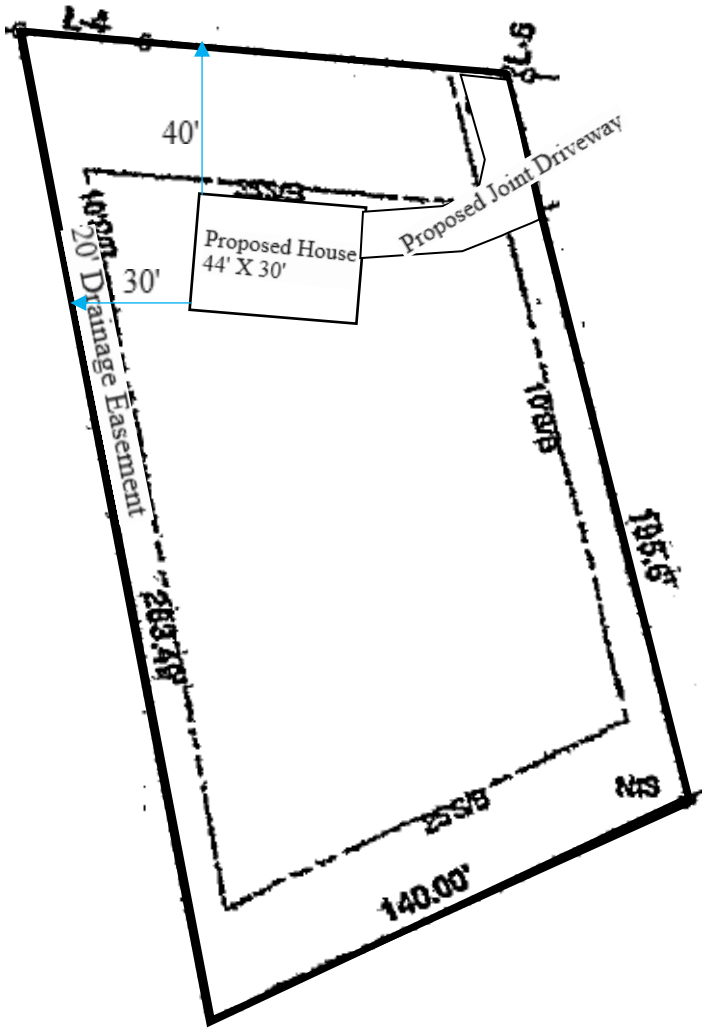
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Taylor Wallace

© 1988-2015 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

Site Plan
4722 McNeill Hobbs Rd, Harnett Co., NC
Lot 2; PIN 0566-49-1418.000



HAL OWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS
P.O. Box 400, Lillington NC 27546-0400
Phone (910) 893-8743 / Fax (910) 893-3594
www.halowensoil.com

4 December 2023

Steve Thomas
PO Box 825
Broadway, NC 27505

Reference: AOWE Evaluation
4722 McNeill Hobbs Rd, Harnett Co., NC
Lot 2; PIN 0566-49-1418.000

Dear Mr. Thomas,

A soil and site evaluation has been conducted for the above referenced property for the purpose of permitting a subsurface sewage waste disposal system. **This LSS Evaluation is being submitted pursuant to and meets the requirements of G.S.130A-336.2.** This evaluation of soil conditions and site features is provided in accordance with G.S. 130A-335(e), the "Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A .1900", and local septic regulations (if any). This report represents my professional opinion as a Licensed Soil Scientist and Authorized Onsite Wastewater Evaluator. This report shall be used to file a Notice of Intent to Construction a wastewater system with the Local Health Department before December 31, 2023. Failure to file an NOI before then shall result in the AOWE Evaluation to become void.

Sincerely,

Britt Wilson
Licensed Soil Scientist

Hal Owen
Senior Licensed Soil Scientist
Authorized Onsite Wastewater Evaluator

SPECIAL TERMS AND CONDITIONS

This evaluation includes a signed and sealed soil and site evaluation, specifications, plans, and reports for the site layout and construction of a proposed onsite wastewater system by an Authorized On-Site Wastewater Evaluator (AOWE) in accordance with G.S. § 130A-336.2. This evaluation was prepared based on information provided by the owner of the proposed system; to include the basis for design flow, proposed structure location(s), and property boundaries. Any false, inaccurate, or incomplete information provided by the owner may result in denial or revocation of applications, approvals, or permits.

This evaluation is not a permit to develop. The owner and subcontractors will need to abide by all state and local rules and regulations pertaining to planning, zoning, and land use development.

Notice of Intent to Construct – The proposed wastewater system is not "permitted" until the owner files an application with the Local Health Department (LHD) and provides a complete Notice of Intent (NOI) to Construct a wastewater system using an AOWE. The owner may apply for a building permit for the project upon submitting a complete NOI and the required fee.

On-Site Wastewater System Contractor – The AOWE shall assist the owner in the selection of an on-site wastewater system contractor who shall be under contractual obligation to the owner and have sufficient errors and omissions, liability, or other insurance for the system constructed.

Inspections, Construction Observations, and Reports – The AOWE shall make periodic visits to the site to observe the progress and quality of the construction. Upon determining that the system is properly installed and capable of being operated in accordance with the conditions of the permit, the AOWE will issue an Authorization to Operate (ATO) and include an inspection report and a written operation and management program. The owner shall provide a complete ATO package and fee to the LHD, who will issue the certificate of occupancy for the facility.

Operation and Management – The owner shall be responsible for continued adherence to the operations and management program established by the AOWE. This permit shall in no way be taken as a guarantee or implied warranty that the septic system will function satisfactorily for any given period of time.

Change in System Ownership. – An authorized wastewater system shall be transferrable to a new owner with the consent of the AOWE. The new owner and the AOWE shall enter a contract for the wastewater system.

Revocation – The AOWE permit is subject to revocation if the site plan, plat, or the intended use changes. This permit is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit.

Repair of Malfunctioning Systems. – The owner may apply for an Improvement Permit and a Construction Authorization from the LHD or obtain a NOI from an AOWE to repair a malfunctioning wastewater system.

PROPOSED USE

A new single-family residence will be built at the site. The home will not have a basement. The proposed single-family residence will contain three bedrooms and have a design wastewater flow of 360 gallons per day. The maximum occupancy of the home is 6 people.

WATER SUPPLY

Public water supplies will be utilized.

EXISTING SITE CONDITIONS

At the time of the investigation, the site had not been cleared, lot corners were staked, and the new building footprint was marked. No existing wells, streams, or wetlands were observed within 50 feet of the proposed septic system and repair area. There is a 20 foot drainage easement along the western property line.

SOIL AND SITE INVESTIGATION

The soils were evaluated under moist soil conditions through the advancing of auger borings. This evaluation included observations of topography and landscape position, soil morphology (texture, structure, clay mineralogy, organics), soil wetness, soil depth, and restrictive horizons. Descriptions of the soil borings located within the investigated portions of the site are provided in the attached Soil/Site Evaluation form.

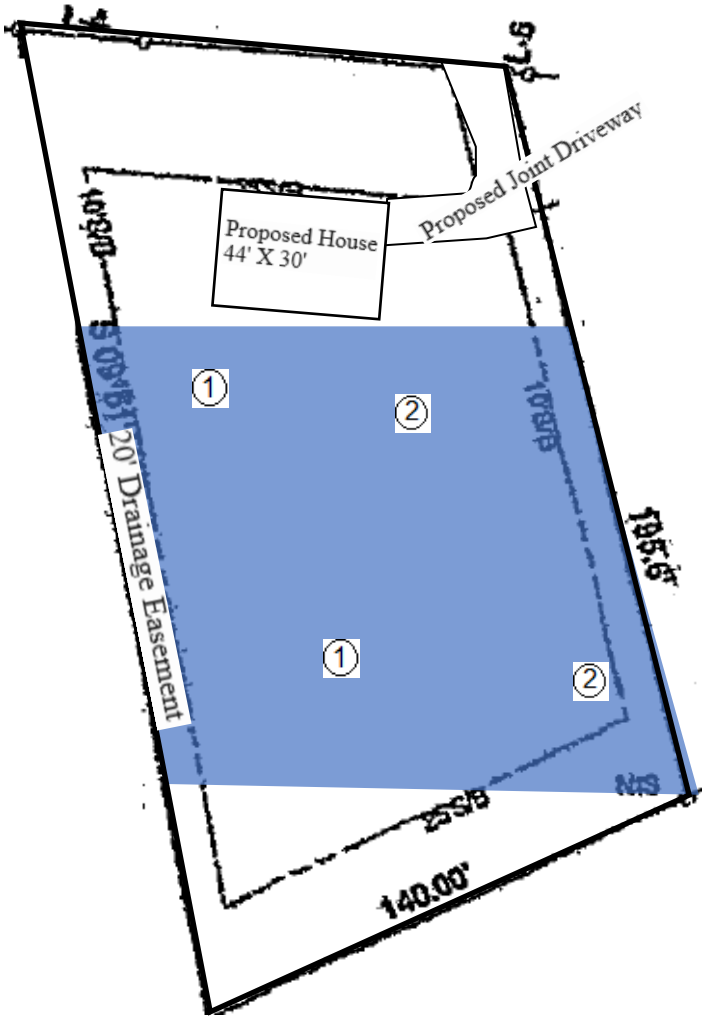
Soils in the proposed system area were observed to rate as provisionally suitable for modified or alternative subsurface sewage waste disposal systems. (Figure 1). The subsoils were observed to be firm sandy clay loams and extended to greater than 48 inches below ground surface. Evidence of a soil wetness condition was observed at 26 inches below surface or deeper. These soils appear adequate to support long-term acceptance rates of 0.4 gal/day/ft^2 for Accepted Status drainlines.

Figure 1. Soil Map showing Septic Suitability

Soil Map Legend

Provisionally Suitable for Modified or Alternative Systems

Soil Auger Borings



LICENSED SOIL SCIENTIST
JOSEPH BRITT WILSON
1351
STATE OF NORTH CAROLINA

N
W
E
S

Scale 1 in = 50 ft

Map for reference only.
Not a survey.

SOIL/SITE EVALUATION FORM FOR ON-SITE WASTEWATER SYSTEM

APPLICANT: Steve Thomas — **X** OWNER ☐ AGENT
ADDRESS: PO Box 825, Broadway, NC 27505
PROPOSED FACILITY: Single Family Residence — COUNTY: Harnett
LOCATION OF SITE: 4722 McNeill Hobbs Rd — PROPERTY ID #: 0566-49-1418.000
PROPOSED DESIGN FLOW (.1941): 360 gal — WASTEWATER TYPE: Domestic Sewage
WATER SUPPLY: ☐ On-Site Well ☐ Community Well **X** Public ☐ Other
EVALUATION METHOD: **X** Auger Boring ☐ Pit — DATE EVALUATED: 11/01/2023
EVALUATED BY: Britt Wilson, LSS 1351

	INITIAL SYSTEM	REPAIR SYSTEM
.1945 AVAILABLE SPACE	675 ft^2 trench bottom (25% reduction sys)	771 ft^2 trench bottom (25% reduction sys)
SYSTEM TYPE	Accepted Status (25% reduction)	Accepted Status (25% reduction)
SITE LTAR (gpd/ft^2)	0.4	0.35

.1946 OTHER FACTORS:
.1948 SITE CLASSIFICATION: Provisionally Suitable for modified or alternative systems
COMMENTS:

PROFILE 1

HORIZON DEPTH (IN)	COLOR	.1941 SOIL MORPHOLOGY				OTHER PROFILE FACTORS	
		MOIST CONSISTENCE	.1941(a)(1) TEXTURE	.1941(a)(2) STRUCTURE	.1941(a)(3) MINERALOGY		
0-11	10YR 4/2	VFR	SL	GR	NEXP	.1940 LANDSCAPE POS & SLOPE%	T/ 3%
11-16	10YR 6/4	FR	SCL	SBK	SEXP	.1942 SOIL WETNESS CONDITION	26”
16-48	10YR 6/6	FI	SCL	SBK	SEXP	.1943 SOIL DEPTH	48”
						.1956 SAPROLITE CLASS	NA
						.1944 RESTRICTIVE HORIZON	NA
						PROFILE CLASSIFICATION	PS for mod
						LTAR	0.35 gpd/ft^2
COMMENTS							

PROFILE 2

HORIZON DEPTH (IN)	COLOR	.1941 SOIL MORPHOLOGY				OTHER PROFILE FACTORS	
		MOIST CONSISTENCE	.1941(a)(1) TEXTURE	.1941(a)(2) STRUCTURE	.1941(a)(3) MINERALOGY		
0-3	10YR 4/2	VFR	SL	GR	NEXP	.1940 LANDSCAPE POS & SLOPE%	T/ 3%
3-7	10YR 5/3	VFR	SL	GR	NEXP	.1942 SOIL WETNESS CONDITION	28”
7-12	10YR 6/4	FR	SL	SBK	NEXP	.1943 SOIL DEPTH	48”
12-36	10YR 6/6	FI	SCL	SBK	SEXP	.1956 SAPROLITE CLASS	NA
36-48	10YR 6/8	FR	SCL	SBK	SEXP	.1944 RESTRICTIVE HORIZON	NA
						PROFILE CLASSIFICATION	PS for mod
						LTAR	0.4 gpd/ft^2
COMMENTS							

LEGEND OF ABBREVIATIONS FOR SITE EVALUATION FORM

LANDSCAPE POSITION	**TEXTURE GROUP**	**TEXTURE CLASS**	**.1955 LTAR (gal/day/sqft)**
CC - Concave Slope	I	S - Sand	1.2-0.8
CV - Convex Slope		LS - Loamy Sand	
DS - Debris Slump			
D - Depression	II	SL - Sandy Loam	0.8 – 0.6
DW - Drainage Way		L - Loam	
FP - Flood Plain			
FS - Foot Slope	III	SCL - Sandy Clay Loam	0.6 – 0.3
H - Head Slope		CL - Clay Loam	
L - Linear Slope		SiL - Silt Loam	
N - Nose Slope		Si - Silt	
R - Ridge		SiCL - Silt Clay Loam	
S - Shoulder Slope			
T - Terrace	IV	SC - Sandy Clay	0.4 – 0.1
		C - Clay	
		SiC - Silty Clay	
		O - Organic	none

STRUCTURE	**MOIST CONSISTENCE**	**WET CONSISTENCE**
G - Single Grain	VFR - Very Friable	NS - Non Stick
M - Massive	FR - Friable	SS - Slightly Sticky
CR - Crumb	FI - Firm	MS - Moderately Stick
GR - Granular	VFI - Very Firm	VS - Very Sticky
SBK - Subangular Blocky	EFI - Extremely Firm	
ABK - Angular Blocky		NP - Non Plastic
PL - Platy	**MINERALOGY**	SP - Slightly Plastic
PR - Prismatic	NEXP - Non Expansive	MP - Moderately Plastic
	SEXP - Slightly Expansive	VP - Very Plastic
	EXP - Expansive	

MOTTLES		
f – few	1 - fine	F - Faint
c – common	2 - medium	D - Distinct
m – many	3 - coarse	P - Prominent

Give Horizon Depth in inches below natural soil surface and Fill Depth in inches above land surface.
Depth to Soil Wetness: inches below land surface to free water or to soil colors with chroma 2 or less.
Classification: S – Suitable PS – Provisionally Suitable U – Unsuitable
D – drip Mod – modified or alternative systems

SEPTIC SYSTEM DESIGN

See section *Wastewater Treatment System Plans* and Figure 2 for a diagram of the septic system layout and design specifications.

A 1000-gallon (at minimum) septic tank and an approved septic effluent filter is required. A pump tank (1000 gallon at minimum) is required to lift effluent to the nitrification field. The pump tank may be eliminated if gravity distribution can be demonstrated.

The initial septic system is proposed as a pump driven system to 228 linear feet of Accepted Status drainlines utilizing a 25% reduction in total drainline length (Figure 2). A long-term application rate (LTAR) of 0.4 gal/day/ft^2 was used to design the nitrification field. A pressure manifold will be used to deliver effluent to two unequal length drainlines. The drainlines shall be installed on contour with maximum trench depths at 15 inches below surface (low side). Due to the ultra-shallow trench depth, it will be necessary to add approved soil material over the nitrification field to provide at least six inches of cover over the drainlines.

The repair septic system is proposed as a pump driven system to 256 linear feet of Accepted Status drainlines utilizing a 25% reduction in total drainline length (Figure 2). A long-term application rate (LTAR) of 0.35 gal/day/ft^2 was used to design the nitrification field. A pressure manifold will be used to deliver effluent to three unequal length drainlines. The drainlines shall be installed on contour with maximum trench depths at 13 inches below surface (low side). Due to the ultra-shallow trench depth, it will be necessary to add approved soil material over the nitrification field to provide at least six inches of cover over the drainlines.

SEPTIC AREA PREPARATION

It is important that you do not disturb the septic areas during site construction. A staked line or protective fence should be placed around the system areas prior to construction to eliminate any potential damage to the soil or the layout of the system. Septic areas should not be used for staging construction materials or subjected to vehicular traffic. Do not cut, grade, fill, install utilities, or otherwise alter the designated septic areas.

Care should be taken when clearing vegetation from the septic area. Work should only occur when the soil is at the appropriate moisture content to limit the impact to the soil structure in the soil treatment area. It is recommended that all trees and stumps be removed for 20 feet around the soil absorption system to reduce the potential of root intrusion into the drainlines. Carefully remove the trees with as little disturbance as possible. Fill in the holes with sandy or loamy soil from off site. Do not scrape the ground inside the drainfield. Any clearing or preparation of the septic areas shall be done without removal, disturbance, or compaction of the soil.

PERMIT CONDITIONS

Standard Conditions

The construction and installation requirements of Rules .1950, .1952, .1954, .1955, .1956, .1957, .1958, and .1959 are incorporated by reference into this permit and shall be met.

System shall be installed in accordance with the attached *Wastewater Treatment System Plans*.

Any changes to the site plan or intended use must be approved by Hal Owen & Associates. Permit modification and resubmittal to the LHD may be necessary to ensure regulatory compliance.

Conformance to all regulatory setbacks shall be maintained. Local regulations (such as well or riparian buffer ordinances) may require more stringent setbacks.

Minimum soil cover of six inches shall be established over nitrification field. Soil cover above the original grade shall be placed at a uniform depth over the entire nitrification and shall extend laterally five feet beyond the nitrification trench. Site shall be graded to shed water away from field and a vegetative cover established to prevent erosion.

The nitrification field and repair area shall not be subject to vehicular traffic. Vehicular traffic can damage soils, pipes, and valve boxes. Do not use septic areas for parking.

Do not allow underground utilities, water lines, or sprinkler systems to be installed in the septic areas. Damage to the septic areas could result in the septic permit being revoked.

The wastewater system shall not be covered until inspected by Hal Owen & Associates and shall not be placed into use until an Authorization to Operate is issued.

Specific Conditions:

- To ensure a watertight joint, the inlet and outlet of all tanks shall be equipped with an approved pipe penetration boot.

- No foundation drain.

WASTEWATER TREATMENT SYSTEM PLANS

for 4722 McNeill Hobbs Rd

PROJECT INFORMATION

Facility Type	Residential			
Basement	No		Fixtures in basement?	No
Wastewater Type	Domestic		New/Expansion/Repair?	New
Water Supply	Public Water			
Design Wastewater Flow	360	gpd	120 gal/bedroom	
Basis for Flow	3	bedrooms	max occupancy	6

PROPERTY INFORMATION

County	Harnett
Site Address	4722 McNeill Hobbs Rd
S/D Name and Lot#	Lot 2
PIN	0566-49-1418.000
County PID	
Size (Acre)	0.69

APPLICANT INFORMATION

Name	Steve Thomas
Mailing Address	PO Box 825
	Broadway, NC 27505
Telephone Number	919-906-4069
E-mail Address	southernconcrete@windstream.net

CONSULTANT INFORMATION

Company Name	Hal Owen & Associates, Inc.
Mailing Address	PO Box 400, Lillington, NC 27546
Telephone Number	910-893-8743 Fax: 910-893-3594
E-mail Address	hal@halowensoil.com
Licensed Soil Scientist	Hal Owen, LSS #1102 and AOWE# 10036E
System Designer	Jocelyn Proulx

Septic System Design Specifications

Design Wastewater Flow 360 gpd
Septic Tank Size (minimum) 1000 gallons
Pump Tank Size (minimum) 1000 gallons

Initial System *See Detailed Design Parameters

System Type: Type IIIbg Design LTAR 0.40 gal/day/ft^2
Trenches: Accepted (25% reduction) System
Total Trench Length (ft): 228 Trench Spacing 9 ft on center
Maximum Trench Depth of 15 inches (measured on low side)
Soil Cover 6 inches
Pump Requirements 8.7 ft TDH at 22.6 GPM

Repair System

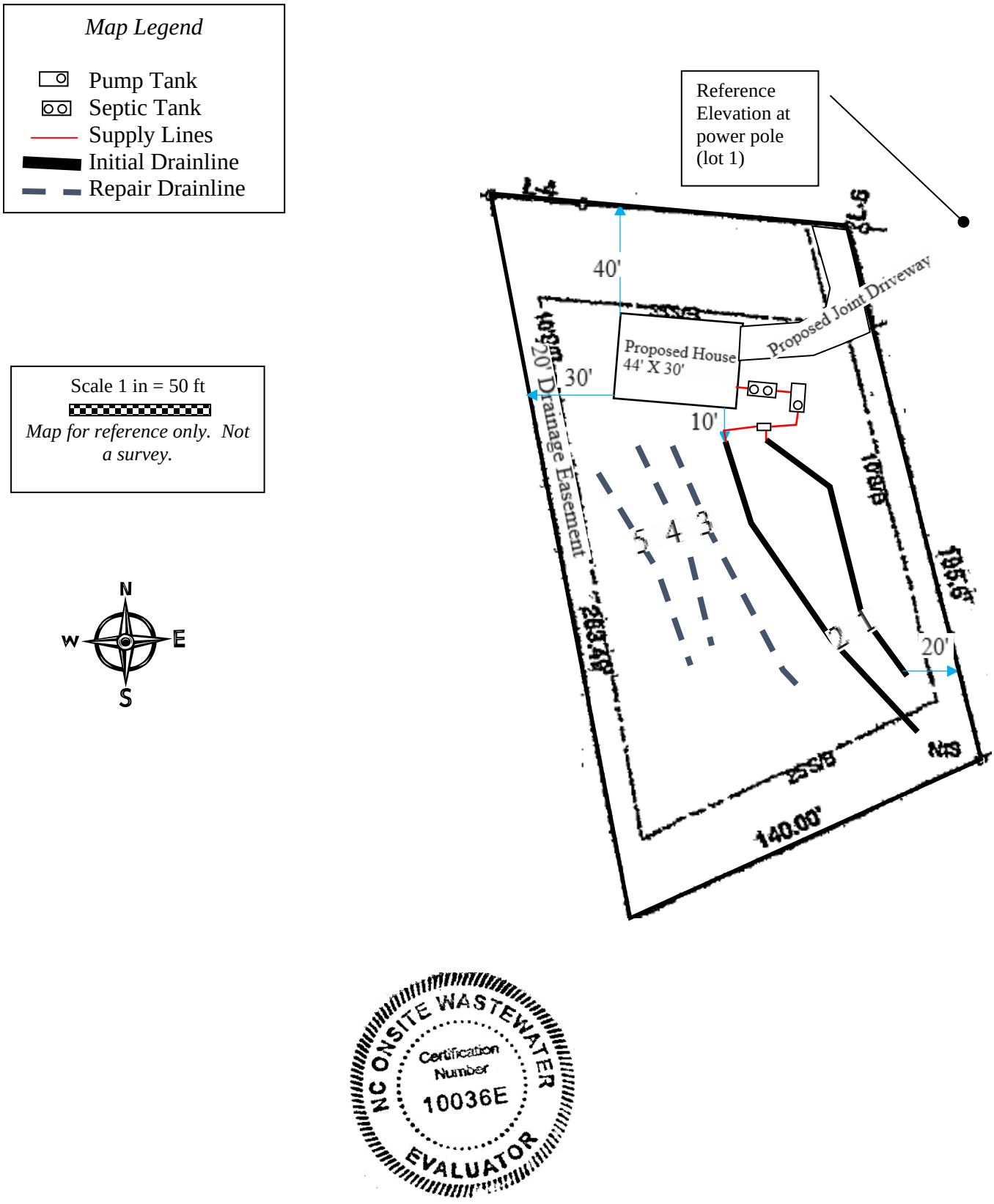
System Type: Type IIIbg Design LTAR 0.35 gal/day/ft^2
Trenches: Accepted (25% reduction) System
Total Trench Length (ft): 256 Trench Spacing 9 ft on center
Maximum Trench Depth of 13 inches (measured on low side)
Soil Cover 6 inches

Potential Drainlines flagged at site on 9-ft centers.

Line #	Color	Relative Elevation (ft)	Drainline Length(ft)	Field Length(ft)
1	Y	98.05	100	102
2	B	97.62	128	128
3	R	97.67	104	130
4	W	97.56	76	86
5	Y	96.98	76	156
Septic Tank:		98.05		
Pump Tank:		98.24		
Reference Elev		**100.00**		

Notes:
*No grading or removal of soil in initial or repair areas
*Property lines per owner
*Trench bottoms shall be level to +/- 1/4" in 10ft
*All parts of septic system must meet minimum setbacks
10' from property line
5' from foundation (15' from basement)
10' from water line and/or 50' from well
3ft from sidewalks and driveway
*D-box must meet minimum 5' setback from property line

Figure 2. Septic system design and layout



NC ONSITE WASTEWATER EVALUATOR
Certification Number
10036E

Initial System Specifications

DESIGN DAILY FLOW 360 gallons **SOIL LTAR:** 0.40 gpd/ft^2

TANKS (minimum) Septic Tank (gal): 1000 Pump Tank (gal): 1000

SUPPLY LINE Length: 10 ft Diameter: 2 " SCH 40 PVC

Minimum flow (gpm) to maintain 2fps scour velocity: 20.9 gpm

TRENCHES Drainline Type: Accepted (25% reduction) System

Maximum Trench Depth of 15 inches (measured on low side)

Trench width: 3 feet Trench Length Factor: 75

Absorption Area: 675 ft^2 Min Linear Length: 225 ft

MANIFOLD Length (ft): 2.5 Diameter: 4" sch 80 pvc Elevation: 99.05

Taps 2 Tap Configuration: 6in. spacing, 1 side of manifold

TAP CHART

Line	Color	Relative Elevation	Length(ft)	Tap Size/ Schedule	flow/tap gpm	gpd/ft	LTAR gpd/sf
1	Y	98.05	100	3/4"sch 80	10.10	1.609	0.536
2	B	97.62	128	3/4"sch 40	12.50	1.556	0.519
	Total Drainline:		228	Total Flow:	22.60		

Target LTAR:* 0.53

LTAR + 5%: 0.560

PUMP CALCULATIONS

Dose Volume: 111.66 gallons, with Pipe Volume at 75 % *65.3gal/100ft pipe

Dose Pump Run Time (min): 4.94 Daily Pump Run Time (min): 15.93

Drawdown (in.): 112 gallons ÷ 20.25 gal/ inch = 5.51 inches

Pump Tank Elevation (ft): 98.24 Pump Elevation (ft): 93.24

Friction Head: 0.84 *Hazen Williams Formula (use supply line length+70' for fittings in pump tank)

Elevation Head: 5.8 Design Head: 2.0 Total Head: 8.65 ft

Pump to Deliver: **22.6** gpm @ **8.7** ft head

NEMA 4X Simplex Control Panel with elapsed time meter, cycle counter, audible and visible alarm, hand-off-automatic (HOA) switch, and pump on separate circuits is required. A septic tank filter is required. Floats to be determined by type of pump tank used.

Possible Septic Tank: Brantley 1000 STB-499 *Possible Septic Filter:* Polylock PL-122

Possible Pump Tank: Brantley 1000_PT-237 *Vol(gal):* 1000 *GPI:* 20.25

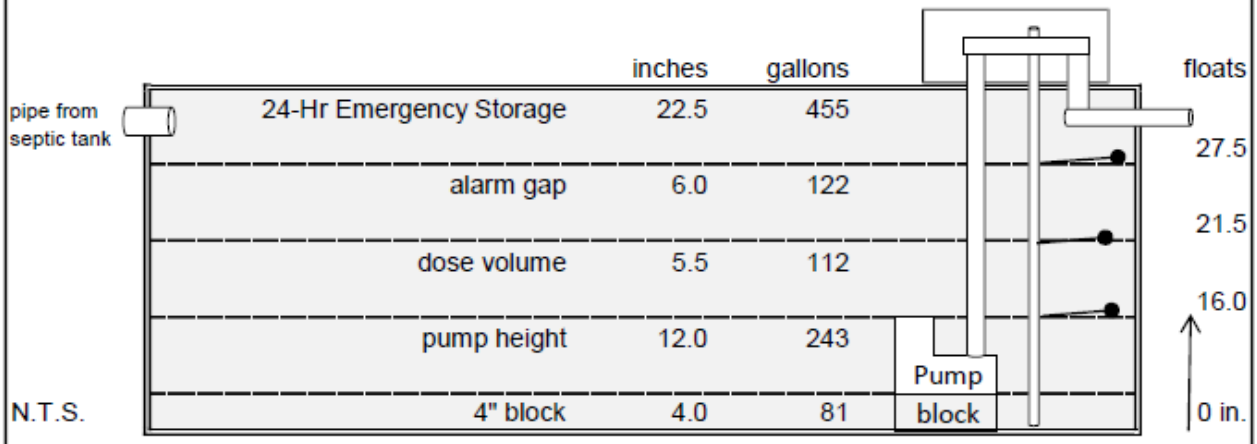
Possible Pump: Zoeller 150 Series *pump height (in) =* 12

Possible Control Panel:

Pump Tank Calculations:

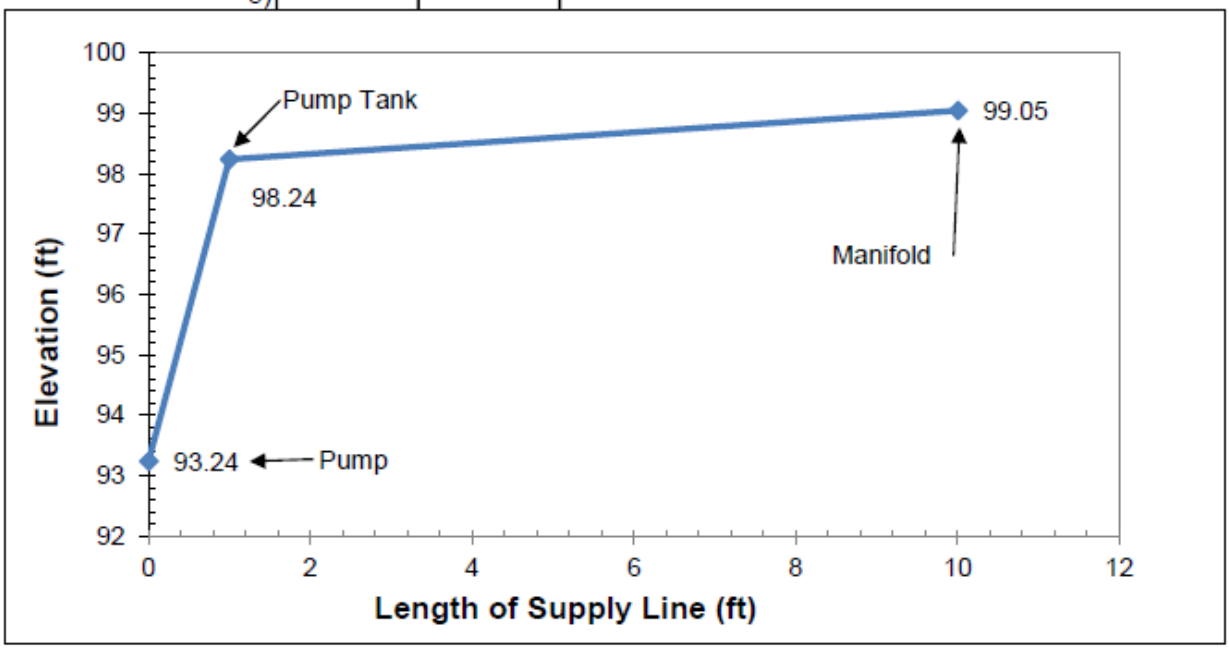
Possible pump tank: Brantley 1000_PT-237
tank GPI (gal/in): 20.25 calculated
tank volume (gal): 1000 per manufacturer
tank height (in): 50.0 *per manufacturer*

Possible Pump: Zoeller 150 Series
height: 12 in
minimum emergency storage: 360 gal



Supply Line Profile:

	Distance	Elevation
Pump	0	93.24
pump tank	1	98.24
Pressure manifold	10	99.05
4)		
5)		



Repair System Specifications

DESIGN FLOW 360 gal/day **SOIL LTAR:** 0.35 gpd/ft^2

TANKS (minimum) Septic Tank: 1000 gallons Pump Tank: 1000 gallons

TRENCHES Drainline Type: Accepted (25% reduction) System

Max trench depth: 13 inches Trench width: 3 ft

Trench Length Factor: 75 % Effective Trench Width: 4 ft

Absorption Area: 771 ft^2 Minimum Linear Length: 257 ft

PRESSURE MANIFOLD DESIGN CRITERIA

MANIFOLD # Taps 3 Tap Configuration: 6in. spacing, 1 side of manifold

Length (ft): 3 Diameter: 4" sch 80 pvc Elevation: 98.67

TAP CHART

Line Number	Color	Relative Elevation	Drainline Length(ft)	Tap Size/ Schedule	Flow/tap (gpm)	gpd/ft	LTAR (gpd/ft^2)
3	R	97.67	104	3/4"sch 80	10.10	1.438	0.479
4	W	97.56	76	1/2"sch 40	7.11	1.385	0.462
5	Y	96.98	76	1/2"sch 40	7.11	1.385	0.462

Total Drainline: 256 Total Flow: 24.32

Target LTAR*: 0.47

LTAR + 5%: 0.490

PUMP CALCULATIONS

Total Flow: 24.32 gpm Design Head (ft): 2.0

Daily Pump Run Time: 14.80 min (Daily Flow/Total Flow)

Dose Volume: 125.38 gallons with Pipe Volume at 75 % (65.3gal/100ft pipe)

Dose Pump Run Time: 5.16 minutes (Dose Vol/Total Flow)

* Target LTAR: Convert LTAR for non-conventional drainline types by dividing by trench length factor

MANIFOLD DIAGRAM: