

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: Steve Thomas Mailing address: PO Box 825 Phone: 919-906-4069 Email: southernconcrete@windstream.net |
| Authorized Onsite Wastewater Evaluator Information: Name: Hal Owen Mailing address: PO Box 400 City: Lillington State: NC Zip: 27546 Phone: 910-893-8743 Email: hal@halowensoil.com |
| Site Location Information: Site address: 4694 McNeill Hobbs Rd, Bunnlevel, NC Tax parcel identification number or subdivision lot, block number of property: Lot 3, 0566-39-8395.000 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: |
| 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: |



OP ID: TOW

ACORD

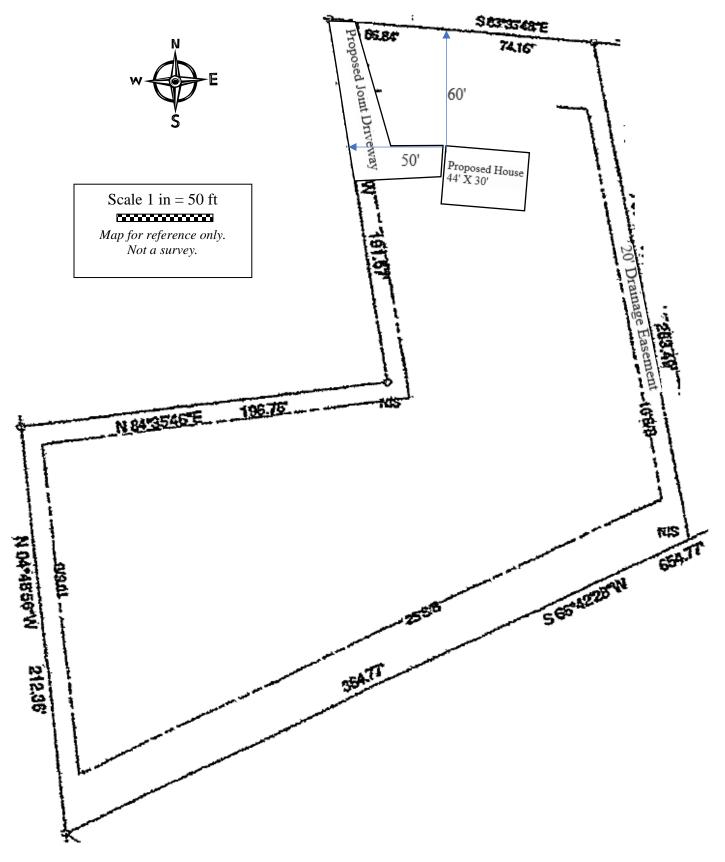
CERTIFICATE OF LIABILITY INSURANCE

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.

| lf | SUBROGATION IS WAIVED, subject sis certificate does not confer rights to | to th | ne te | rms and conditions of th | e polic | y, certain p | olicies may | | | | |
|---|--|--------------|--------------------------------|--|----------------------|---|------------------------------------|---|----------------------|--------|------------|
| | DUCER | Juile | | 0-893-5707 | CONTACT SHARON WOODY | | | | | | |
| INS | URANCE SERVICE CTR -LILLING LINGTON BRANCH OFFICE | | | | PHONE | o, Ext): 910-89 | 93-5707 | | FAX (A/C, No): | 910-89 | 93-2077 |
| PO | Box 1565 | | | | E-MAIL | SS. SWOOD | Y@ISCFAY | .COM | (20, 110). | | |
| | LINGTON, NC 27546 NIEL L. BABB | | | | ADDICE | | | DING COVERAGE | | | NAIC # |
| | 1. 5/135 | | | | INSURF | | TONE NAT | | | | 10.10.2 |
| INSL | JRED | | | | INSURE | | | _ | | | |
| HAL PO | IRED . OWEN & ASSOCIATES, INC. BOX 400 | | | | INSURE | | | | | | |
| | INGTON, NC 27546 | | | | INSURE | | | | | | |
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| | | | | | INSURE | | | | | | |
| CO | VERAGES CER | TIFIC | CΔTF | E NUMBER: | | | | REVISION NUI | MRFR: | | |
| TI IN C | HIS IS TO CERTIFY THAT THE POLICIES IDICATED. NOTWITHSTANDING ANY RE ERTIFICATE MAY BE ISSUED OR MAY I XCLUSIONS AND CONDITIONS OF SUCH | OF I | INSUF REME AIN, CIES. | RANCE LISTED BELOW HAY ENT, TERM OR CONDITION THE INSURANCE AFFORDI LIMITS SHOWN MAY HAVE | OF AN' ED BY | Y CONTRACT THE POLICIE REDUCED BY | OR OTHER IS DESCRIBED PAID CLAIMS. | ED NAMED ABON DOCUMENT WIT D HEREIN IS SU | /E FOR TI H RESPE | CT TO | WHICH THIS |
| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | | LIMITS | 3 | |
| | COMMERCIAL GENERAL LIABILITY | | | | | | | EACH OCCURREN | | \$ | |
| | CLAIMS-MADE OCCUR | | | | | | | DAMAGE TO RENT PREMISES (Ea occ | ED urrence) | \$ | |
| | | | | | | | | MED EXP (Any one | person) | \$ | |
| | | | | | | | | PERSONAL & ADV | INJURY | \$ | |
| | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | | | | GENERAL AGGRE | GATE | \$ | |
| | POLICY PRO- JECT LOC | | | | | | | PRODUCTS - COM | P/OP AGG | \$ | |
| | OTHER: | | | | | | | | | \$ | |
| | AUTOMOBILE LIABILITY | | | | | | | COMBINED SINGLI (Ea accident) | ELIMIT | \$ | |
| | ANY AUTO | | | | | | | BODILY INJURY (P | er person) | \$ | |
| | OWNED SCHEDULED AUTOS | | | | | | | BODILY INJURY (P | er accident) | \$ | |
| | HIRED AUTOS ONLY NON-OWNED AUTOS ONLY | | | | | | | PROPERTY DAMA (Per accident) | | \$ | |
| | 70.00 0.12. | | | | | | | | | \$ | |
| | UMBRELLA LIAB OCCUR | | | | | | | EACH OCCURREN | CE | \$ | |
| | EXCESS LIAB CLAIMS-MADE | | | | | | | AGGREGATE | | \$ | |
| | DED RETENTION\$ | | | | | | | | | \$ | |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY | | | | | | | PER STATUTE | OTH- ER | | |
| | ANY PROPRIETOR/PARTNER/EXECUTIVE | N/A | | | | | | E.L. EACH ACCIDE | NT | \$ | |
| | (Mandatory in NH) | N/A | | | | | | E.L. DISEASE - EA | EMPLOYEE | \$ | |
| | If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | | E.L. DISEASE - PO | LICY LIMIT | \$ | |
| Α | PROFESSIONAL LIAB. | | | 42ESP00143901 | | 01/27/2024 | 01/27/2025 | PER OCC. | | | 1,000,000 |
| | | | | | | | | AGGREGATE | | | 2,000,000 |
| | | | | | | | | | | | |
| DES | CRIPTION OF OPERATIONS / LOCATIONS / VEHICI | LES (A | ACORI | D 101, Additional Remarks Schedu | le, may b | e attached if moi | re space is requi | ed) | | | |
| CF | RTIFICATE HOLDER | | | | CANO | ELL ATION | | | | | |
| STEVE THOMAS PO BOX 85 BROADWAY, NC 27505 | | | | | | 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 | | | | | |

4694 McNeill Hobbs Rd, Bunnlevel, Harnett Co., NC Lot 3; PIN 0566-39-8395.000



Soil Science Investigations • Wetland Delineations, Permitting, and Consulting

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

4694 McNeill Hobbs Rd, Bunnlevel, Harnett Co., NC

Lot 3; PIN 0566-39-8395.000

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

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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.

<u>Notice of Intent to Construct</u> – 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.

<u>On-Site Wastewater System Contractor</u> – 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.

<u>Inspections, Construction Observations, and Reports</u> – 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.

<u>Operation and Management</u> – 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.

<u>Change in System Ownership</u>. – 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.

<u>Revocation</u> – 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.

<u>Repair of Malfunctioning Systems.</u> – 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.

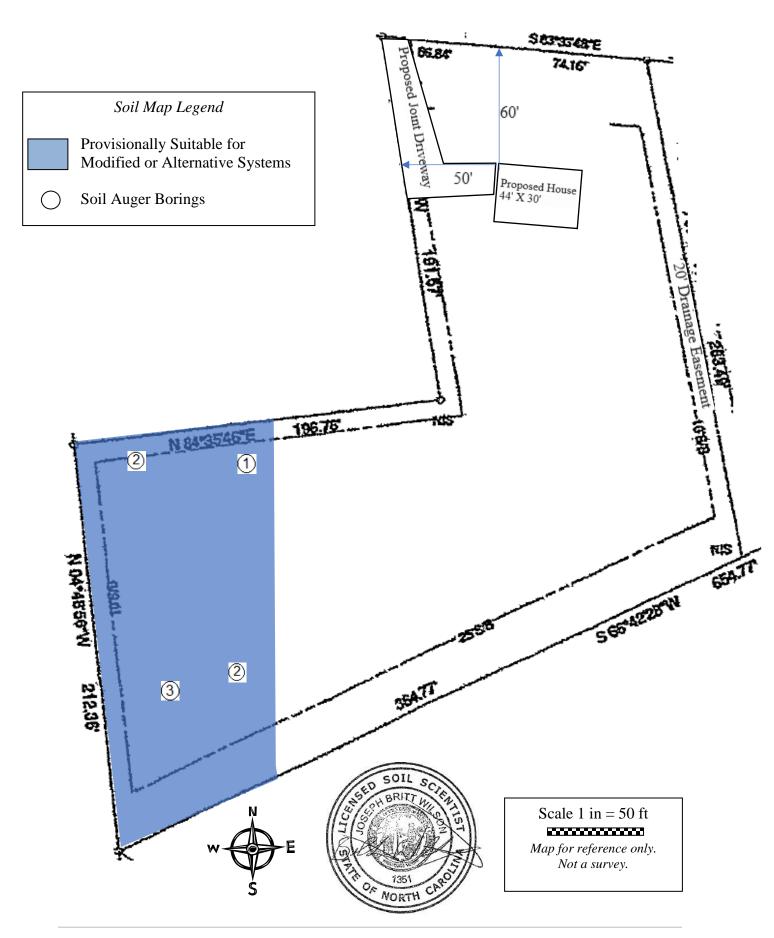
EXISTING SITE CONDITIONS

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 eastern 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 28 inches below surface or deeper. These soils appear adequate to support long-term acceptance rates of 0.35 gal/day/ft² for conventional drainlines.



SOIL/SITE EVALUATION FORM FOR ON-SITE WASTEWATER SYSTEM

| APPLICANT <u>:</u> | Steve Thomas | X OWNER | \square AGENT | | | |
|---|---|-----------------------------------|-----------------------|--|--|--|
| | PO Box 825 | | | | | |
| ADDRESS: | Broadway, NC 27505 | | | | | |
| PROPOSED FACILITY: | Single Family Residence | COUNTY: | <u>Harnett</u> | | | |
| LOCATION OF SITE: | 4694 McNeill Hobbs Rd | PROPERTY ID #: | 0566-39-8395.000 | | | |
| PROPOSED DESIGN FLOW | W (.1941): 360 gal | WASTEWATER TYPE: | Domestic Sewage | | | |
| WATER SUPPLY: | ☐ On-Site Well ☐ Community Well | X Public □ Oth | er | | | |
| EVALUATION METHOD: | X Auger Boring ☐ Pit D | ATE EVALUATED: | 11/2/2023 | | | |
| EVALUATED BY: | Britt Wilson, LSS 1351 | | | | | |
| | INITIAL SYSTEM | REPAIR SYSTEM | | | | |
| .1945 AVAILABLE | 771 ft ² trench bottom (25% reduction sys) | 771 ft ² trench bottom | n (25% reduction sys) | | | |
| SPACE | | | | | | |
| SYSTEM TYPE | Accepted Status (25% reduction) | Accepted Status (25 | % reduction) | | | |
| SITE LTAR (gpd/ft ²) | 0.35 | 0.35 | | | | |
| 1946 OTHER FACTORS: | | | | | | |
| .1948 SITE CLASSIFICATION: Provisionally Suitable for modified or alternative systems | | | | | | |
| COMMENTS: | | | | | | |

PROFILE 1

| HORIZON | | | .1941 SOIL 1 | MORPHOLOGY | | | |
|---------------|----------|--------------------------|--|------------|-------------------------------|------------------------------|-------------------------|
| DEPTH (IN) | COLOR | MOIST CONSIS TENCE | .1941(a)(1) .1941(a)(2) TEXTURE STRUCTURE | | .1941(a)(3) MINERAL OGY | OTHER PROFILE FACTORS | |
| 0-3 | 10YR 5/2 | VFR | SL | GR | NEXP | .1940 LANDSCAPE POS & SLOPE% | L/ 7% |
| 3-14 | 10YR 6/4 | VFR | SL | GR | NEXP | .1942 SOIL WETNESS CONDITION | 33" |
| 14-23 | 10YR 7/3 | VFR | SL | GR | NEXP | .1943 SOIL DEPTH | 48" |
| 23-33 | 10YR 6/8 | FI | SCL | SBK | SEXP | .1956 SAPROLITE CLASS | NA |
| 33-48 | 10YR 6/8 | FI | SCL | SBK | SEXP | .1944 RESTRICTIVE HORIZON | NA |
| | | | | | | PROFILE CLASSIFICATION | PS |
| | | | | | | LTAR | 0.4 gpd/ft ² |
| COMMENT | TS | | | | | · | |

PROFILE 2

| | to the grown Archanology | | | | | | | |
|---------------|--------------------------|--------------------------|------------------------|--------------------------|-------------------------------|------------------------------|--------------------------|--|
| HORIZON | COLOR | | .1941 SOIL I | MORPHOLOGY | | | | |
| DEPTH (IN) | | MOIST CONSIS TENCE | .1941(a)(1) TEXTURE | .1941(a)(2) STRUCTURE | .1941(a)(3) MINERAL OGY | OTHER PROFILE FACTORS | | |
| 0-3 | 10YR 5/2 | VFR | SL | GR | NEXP | .1940 LANDSCAPE POS & SLOPE% | L/ 7% | |
| 3-9 | 10YR 6/4 | VFR | SL | GR | NEXP | .1942 SOIL WETNESS CONDITION | 28" | |
| 9-28 | 10YR 6/6 | FI | SCL | SBK | SEXP | .1943 SOIL DEPTH | 48" | |
| 28-48 | 10YR 6/8 | FI | SCL | SBK | SEXP | .1956 SAPROLITE CLASS | NA | |
| | | | | | | .1944 RESTRICTIVE HORIZON | NA | |
| | | | | | | PROFILE CLASSIFICATION | PS for mod | |
| | | | | | | LTAR | 0.35 gpd/ft ² | |
| COMMENT | COMMENTS | | | | | | | |

HAL OWEN & ASSOCIATES, INC.

PROFILE 3

| TROTTLES | | | | | | | |
|---------------|----------|--------------------------|------------------------|--------------------------|-------------------------------|------------------------------|--------------------------|
| HORIZON | | | .1941 SOIL 1 | MORPHOLOGY | | | |
| DEPTH (IN) | COLOR | MOIST CONSIS TENCE | .1941(a)(1) TEXTURE | .1941(a)(2) STRUCTURE | .1941(a)(3) MINERAL OGY | OTHER PROFILE FACTORS | |
| 0-3 | 10YR 5/2 | VFR | SL | GR | NEXP | .1940 LANDSCAPE POS & SLOPE% | L/7% |
| 3-11 | 10YR 6/4 | VFR | SL | GR | NEXP | .1942 SOIL WETNESS CONDITION | 32" |
| 11-30 | 10YR 6/6 | FI | SCL | SBK | SEXP | .1943 SOIL DEPTH | 48" |
| 30-48 | 10YR 6/8 | FI | SCL | SBK | SEXP | .1956 SAPROLITE CLASS | NA |
| | | | | | | .1944 RESTRICTIVE HORIZON | NA |
| | | | | | | PROFILE CLASSIFICATION | PS for mod |
| | | | | | | LTAR | 0.35 gpd/ft ² |
| COMMENT | COMMENTS | | | | | | |

LEGEND OF ABBREVIATIONS FOR SITE EVALUATION FORM

| | TEXTURE | TEXTURE | | .1955 LTAR |
|-------------------------|-----------------|----------------------|----------|-------------------|
| LANDSCAPE POSITION | GROUP | <u>CLASS</u> | | (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 L | oam | 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 Loa | m | |
| S - Shoulder Slope | | | | |
| T - Terrace | IV | SC - Sandy Clay | | 0.4 - 0.1 |
| | | C - Clay | | |
| | | SiC - Silty Clay | | |
| | | | | |
| | | O - Organic | | none |
| | | | | |
| <u>STRUCTURE</u> | MOIST CONSIST | <u> TENCE</u> | WET CON | SISTENCE |
| G - Single Grain | VFR - Very Fria | ıble | NS - No | n Stick |
| M - Massive | FR - Friable | | SS - Sli | ghtly Sticky |
| CR - Crumb | FI - Firm | | MS - Mo | oderately Stick |
| GR - Granular | VFI - Very Firi | n | VS - Ve | ry Sticky |
| SBK - Subangular Blocky | EFI - Extremel | y Firm | | |
| ABK - Angular Blocky | | | NP - No | n Plastic |
| PL - Platy | MINERALOGY | | SP - Sli | ghtly Plastic |
| PR - Prismatic | NEXP - Non 1 | Expansive | MP - Mo | oderately Plastic |
| | SEXP - Sligh | tly Expansive | VP - Ve | ry Plastic |
| | EXP - Expa | * * | | - |
| MOTTLES | 1 | | | |
| f - few 1 - fine | | F - Faint | | |
| c – common 2 – medi | um | D - Distinct | | |
| m – many 3 – coars | e | 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 initial septic system is proposed as a pump driven system to 264 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/ft² was used to design the nitrification field. A pressure manifold will be used to deliver effluent to two 132-ft long 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.

The repair septic system is proposed as a pump driven system to 264 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/ft² was used to design the nitrification field. A pressure manifold will be used to deliver effluent to two 132-ft long 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.

WASTEWATER TREATMENT SYSTEM PLANS

for 4694 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 | 4694 McNeill Hobbs Rd, Bunnlevel, NC |
| S/D Name and Lot# | Lot 3 |
| PIN | 0566-39-8395.000 |
| County PID | |
| Size (Acre) | 1.79 |

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

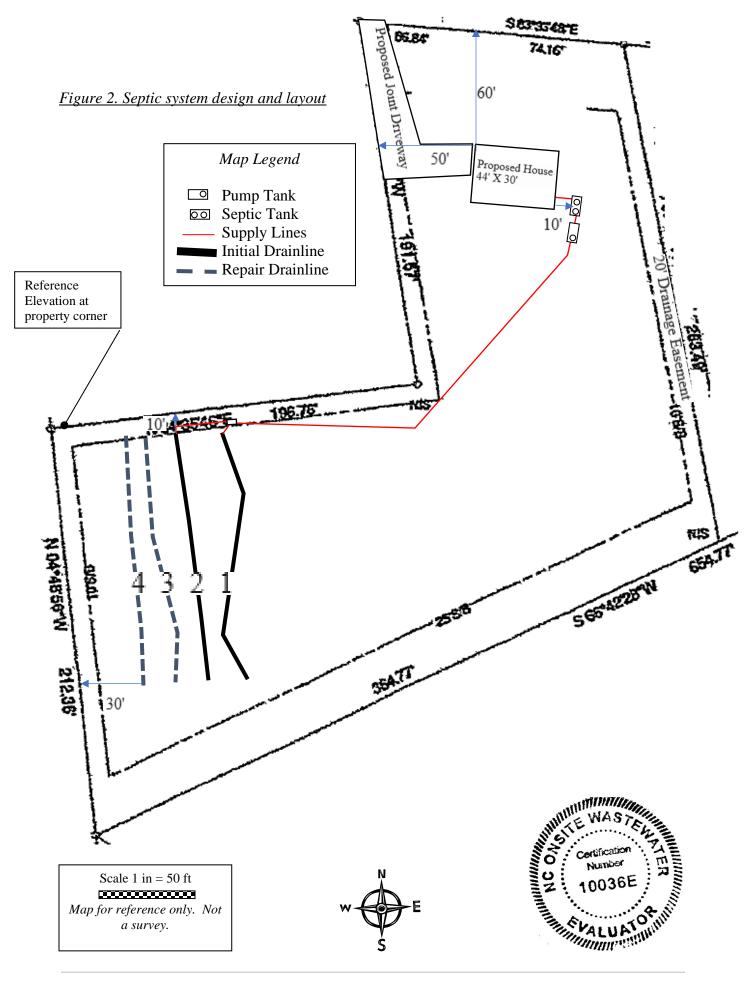
Design LTAR 0.35 gal/day/ft² System Type: Type IIIbg Trenches: Accepted (25% reduction) System Total Trench Length (ft): 264 Trench Spacing ft on center Maximum Trench Depth of 13 inches (measured on low side) Soil Cover 6 inches Pump Requirements 17.9 ft TDH at 25 GPM

Repair System

gal/day/ft2 0.35 System Type: Type IIIbg Design LTAR Trenches: Accepted (25% reduction) System Total Trench Length (ft): 264 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. Notes:

| | | Relative | Drainline | Field | *No grading or removal of soil in initial or repair areas |
|----------------|-------|----------------|------------|------------|---|
| Line# | Color | Elevation (ft) | Length(ft) | Length(ft) | *Property lines per owner |
| 1 | Υ | 97.36 | 132 | 140 | *Trench bottoms shall be level to +/- 1/4" in 10ft |
| 2 | R | 96.74 | 132 | 141 | *All parts of septic system must meet minimum setbacks |
| 3 | W | 96.17 | 132 | 136 | 10' from property line |
| 4 | В | 95.60 | 132 | 138 | 5' from foundation (15' from basement) |
| Septic ' | Tank: | 91.04 | | | 10' from water line and/or 50' from well |
| Pump Tank: | | 91.16 | | | 3ft from sidewalks and driveway |
| Reference Elev | | 100.00 | | | *D-box must meet minimum 5' setback from property line |



Initial System Specifications Pressure Manifold Design Criteria SOIL LTAR: 0.35 gpd/ft² **DESIGN DAILY FLOW** 360 gallons Pump Tank (gal): 1000 TANKS (minimum) Septic Tank (gal): 1000 SUPPLY LINE Length: 220 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 inches (measured on low side) Trench width: _____3 Trench Length Factor: feet Min Linear Length: 257 Absorption Area: 771 MANIFOLD 2.5 Diameter: 4" sch 80 pvc Elevation: 98.36 Length (ft): Tap Configuration: 6in. spacing, 1 side of manifold # Taps TAP CHART Tap Size/ flow/tap Relative LTAR Line Color Elevation Length(ft) Schedule gpm gpd/sf gpd/ft 1 Υ 97.36 132 3/4"sch 40 12.50 1.364 0.455 2 96.74 132 3/4"sch 40 12.50 1.364 R 0.455 Total Drainline: 264 Total Flow: 25.00 Target LTAR*: **PUMP CALCULATIONS** LTAR + 5%: 0.490 129.29 gallons, with Pipe Volume at Dose Volume: 75 *65.3gal/100ft pipe Dose Pump Run Time (min): 5.17 Daily Pump Run Time (min): 14.40 gallons ÷ Drawdown (in.): 129 20.25 gal/ inch = 6.38 inches Pump Elevation (ft): 86.16 Pump Tank Elevation (ft): 91.16 Friction Head: 3.68 *Hazen Williams Formula (use supply line length+70' for fittings in pump tank) Elevation Head: 12.2 Design Head: 2.0 Total Head: 17.88 ft 25.0 Pump to Deliver: 17.9 ft head gpm @ 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

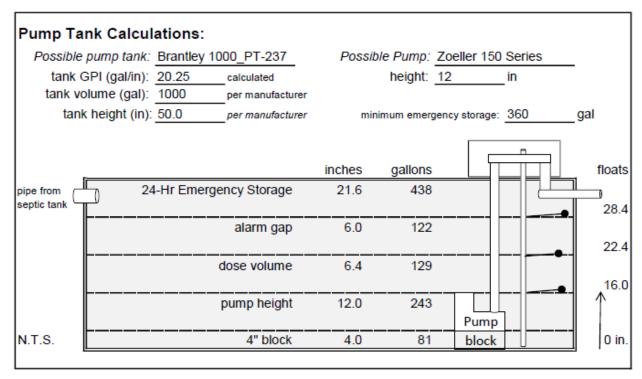
Possible Control Panel:

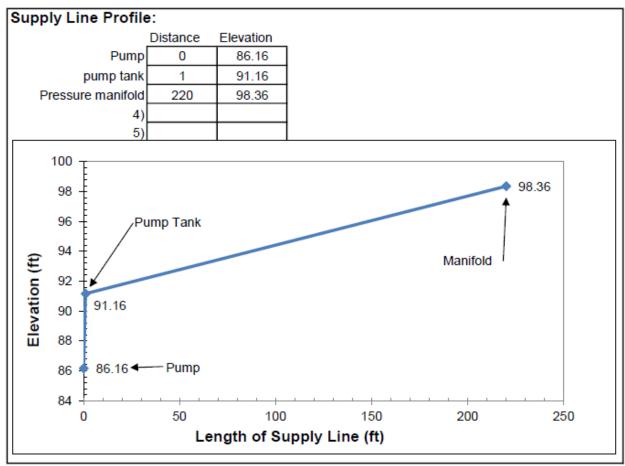
Possible Pump: Zoeller 150 Series

GPI: 20.25

Vol(gal): 1000

pump height (in) = 12





Repair System Specifications

DESIGN FLOW 360 gal/day SOIL LTAR: 0.35 gpd/ft²

TANKS (minimum) Septic Tank: 1000 gallons Jump 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 ____ 2 ___ Tap Configuration: 6in. spacing, 1 side of manifold Length (ft): ___ 2.5 ___ Diameter: 4" sch 80 pvc ____ Elevation: ___ 97.17

TAP CHART

| Line | | Relative | Drainline | Tap Size/ | Flow/tap | | LTAR |
|--------|-------|-----------|------------|------------|----------|--------|------------------------|
| Number | Color | Elevation | Length(ft) | Schedule | (gpm) | gpd/ft | (gpd/ft ²) |
| 3 | W | 96.17 | 132 | 3/4"sch 40 | 12.50 | 1.364 | 0.455 |
| 4 | В | 95.6 | 132 | 3/4"sch 40 | 12.50 | 1.364 | 0.455 |

Total Drainline: 264 Total Flow: 25.00

Target LTAR*: 0.47

 PUMP CALCULATIONS
 LTAR + 5%: 0.490

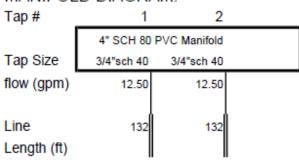
 Total Flow: 25.00 gpm
 Design Head (ft): 2.0

Daily Pump Run Time: 14.40 min (Daily Flow/Total Flow)

Dose Volume: 129.29 gallons with Pipe Volume at 75 % (65.3gal/100ft pipe)

Dose Pump Run Time: 5.17 minutes (Dose Vol/Total Flow)

MANIFOLD DIAGRAM:



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