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: Reese Construction
Mailing address: 3720 Lucky Drive City: Apex State: NC Zip: 27539
Phone: 919-329-5501 Email: reeseconstruction@hotmail.com

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: 90 Cotton Fields Lane, Fuquay Varina, Harnett Co., NC
Tax parcel identification number or subdivision lot, block number of property:
0643-26-6822.000 County: Harnett

System Information:
Wastewater System Type: IIIg
Daily Design Flow: 360
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 8 day of September 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 31 day of December, 2023.

Signature of Authorized Onsite Wastewater Evaluator: Hal Owen

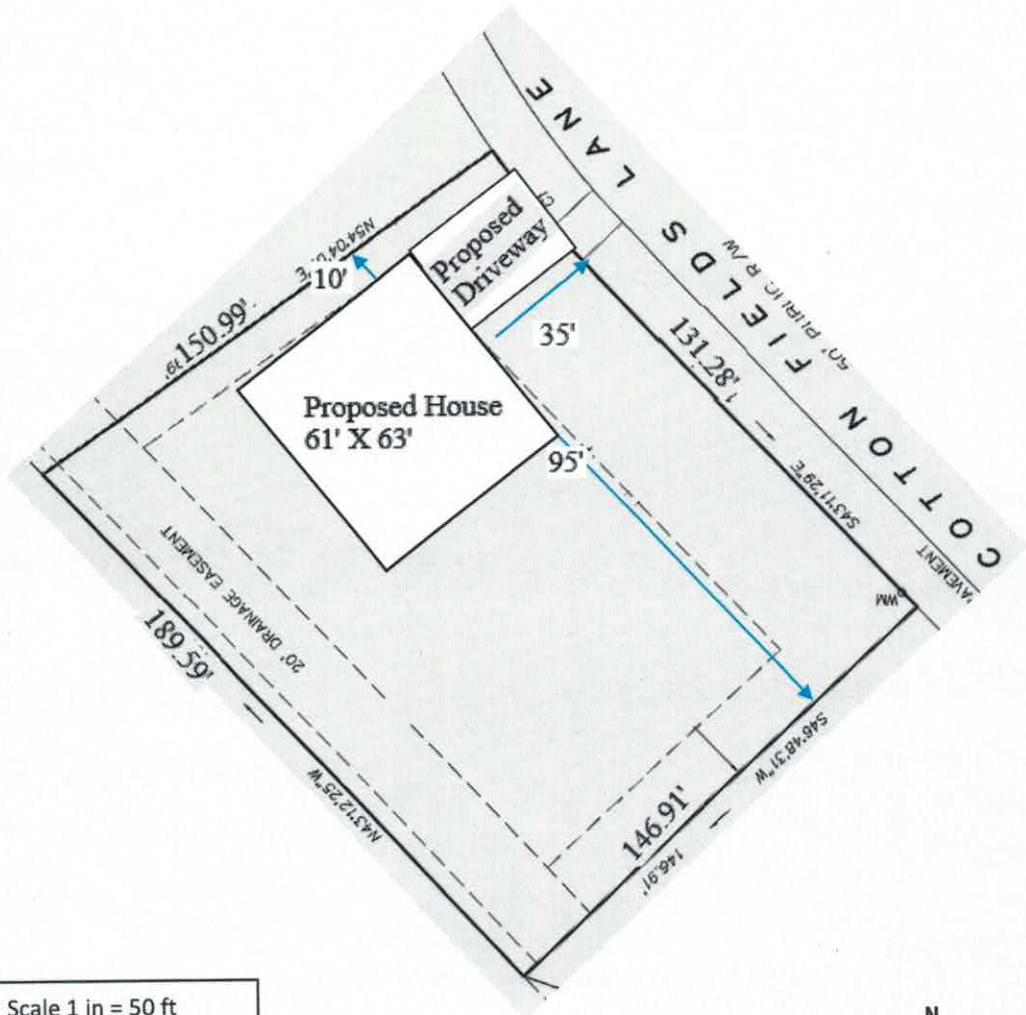
Signature of Owner or Legal Representative:

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: ____

Site Plan for 90 Cotton Fields Lane, Fuquay Varina, Harnett Co., NC

Lot 5 Cotton Farms SD



Scale 1 in = 50 ft

Map for reference only. Distances are paced and approximate. Not a survey.

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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

8 September 2023

Reese Construction
3720 Lucky Drive
Apex, NC 27539

Reference: AOWE Evaluation
90 Cotton Fields Lane, Fuquay Varina, Harnett Co., NC
PIN 0643-26-6822.000 Lot 5 Cotton Farms SD

Dear Reese Construction,

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.

NC ONSITE WASTEWATER EVALUATOR
Certification Number
10036E

LICENSED SOIL SCIENTIST
HAL OWEN
1102
STATE OF NORTH CAROLINA

Sincerely,

Hal Owen
Senior Licensed Soil Scientist
Authorized Onsite Wastewater Evaluator

Britt Wilson
Licensed Soil Scientist

LICENSED SOIL SCIENTIST
JOSEPH BRITT WILSON
1351
STATE OF NORTH CAROLINA

SPECIAL TERMS AND CONDITIONS

This report was prepared based on information provided by the client; to include the basis for design flow, proposed structure location(s), and property boundaries. Any false, inaccurate, or incomplete information provided by the client may result in denial or revocation of applications, approvals, or permits.

This report 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. Once the LHD deems that the NOI is complete, the owner may apply to the local permitting agency for building permits.

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. 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. Hal Owen & Associates Inc. does not assume liability for related damages, consequential or direct, which are caused or may be caused by a malfunctioning septic system.

PROPOSED USE

A new single-family residence will be built at the site. 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. The home will not have a basement. Public water supplies will be utilized.

EXISTING SITE CONDITIONS

At the time of the investigation, the site had been cleared, lot corners were staked, and the new building footprint was marked by Hal Owen & Associates. No existing wells, streams, or wetlands were observed within 50 feet of the proposed septic system and repair area. There is 20-foot drainage easement running along the rear property line.

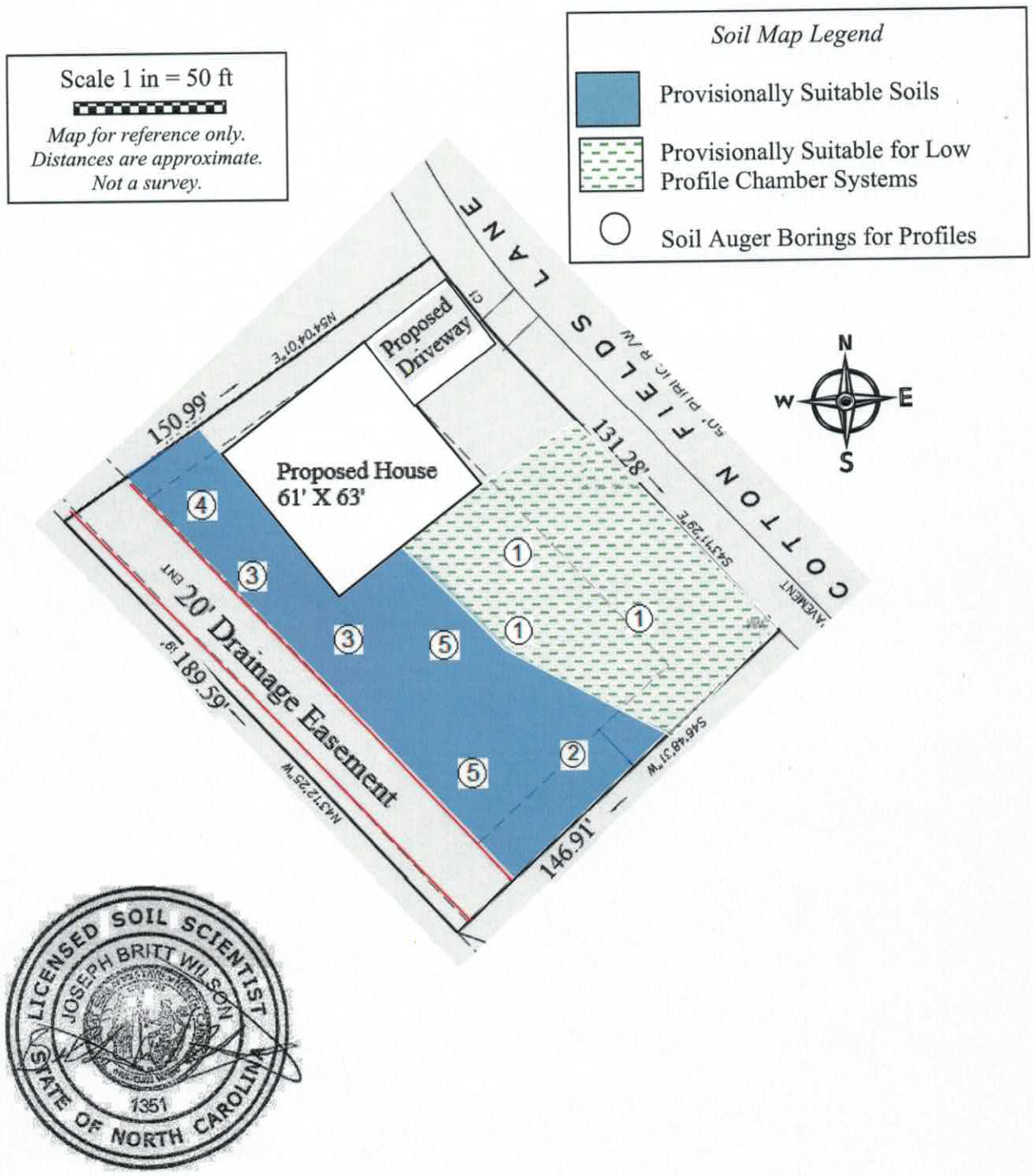
SOIL AND SITE INVESTIGATION

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 initial system area were observed to rate as provisionally suitable for low profile chambers for subsurface sewage waste disposal systems. (Figure 1). The subsoils were observed to be firm clays and extended to greater than 25 inches below ground surface. Evidence of a restrictive horizon was observed at 25 inches below surface or deeper. These soils appear adequate to support long-term acceptance rates of 0.3 gal/day/ft^2 for low profile chamber drainlines.

Soils in the proposed repair area were observed to rate as provisionally suitable for subsurface sewage waste disposal systems. The subsoils were observed to be firm clays and extended to 37 inches below ground surface. A loam saprolite was observed at 37 inches or deeper.

Figure 1. Soil Map showing Septic Suitability



SOIL/SITE EVALUATION FORM
FOR ON-SITE WASTEWATER SYSTEM

APPLICANT: Reese Construction — X OWNER ☐ AGENT
ADDRESS: 3720 Lucky Drive, Apex, NC 27593
PROPOSED FACILITY: Single Family Residence — COUNTY: Harnett
LOCATION OF SITE: 90 Cotton Fields Lane, Fuquay Varina — PROPERTY ID #: 0643-26-6822.000
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: 18 August 2023
EVALUATED BY: Britt Wilson LSS 1351

	INITIAL SYSTEM	REPAIR SYSTEM
.1945 AVAILABLE SPACE	1200 sf trench bottom	600 sf trench bottom (50% reduction sys)
SYSTEM TYPE	Low Profile Chamber	Horizontal Permeable Panel Block
SITE LTAR (gpd/ft^2)	0.3	0.3

.1946 OTHER FACTORS:
.1948 SITE CLASSIFICATION: Provisionally Suitable
COMMENTS:

PROFILE 1

HORIZON DEPTH (IN)	COLOR	.1941 SOIL MORPHOLOGY				OTHER PROFILE FACTORS	
		MOIST CONSIS TENCE	.1941(a)(1) TEXTURE	.1941(a)(2) STRUCTURE	.1941(a)(3) MINERAL OGY		
0-5	10YR 5/3	VFR	SL	GR	NEXP	.1940 LANDSCAPE POS & SLOPE%	L/ 11%
5-17	10YR 6/6	VFR	LS	GR	NEXP	.1942 SOIL WETNESS CONDITION	>25"
17-25	10YR 6/8	FR	SCL	SBK	SEXP	.1943 SOIL DEPTH	25"
						.1956 SAPROLITE CLASS	NA
						.1944 RESTRICTIVE HORIZON	25"
						PROFILE CLASSIFICATION	PS for LPC
						LTAR	0.4 gpd/ft^2
COMMENTS							

PROFILE 2

HORIZON DEPTH (IN)	COLOR	.1941 SOIL MORPHOLOGY				OTHER PROFILE FACTORS	
		MOIST CONSIS TENCE	.1941(a)(1) TEXTURE	.1941(a)(2) STRUCTURE	.1941(a)(3) MINERAL OGY		
0-7	10YR 5/3	VFR	SL	GR	NEXP	.1940 LANDSCAPE POS & SLOPE%	L/ 11%
7-19	7.5YR 6/8	FI	C	SBK	SEXP	.1942 SOIL WETNESS CONDITION	>48"
19-38	10YR 6/8	FI	C	SBK	SEXP	.1943 SOIL DEPTH	48"
38-48	10YR 6/6	FI	CL	SBK	SEXP	.1956 SAPROLITE CLASS	NA
						.1944 RESTRICTIVE HORIZON	NA
						PROFILE CLASSIFICATION	PS
						LTAR	0.3 gpd/ft^2
COMMENTS							

PROFILE 3

HORIZON DEPTH (IN)	COLOR	.1941 SOIL MORPHOLOGY				OTHER PROFILE FACTORS	
		MOIST CONSIS TENCE	.1941(a)(1) TEXTURE	.1941(a)(2) STRUCTURE	.1941(a)(3) MINERAL OGY		
0-9	10YR 5/3	VFR	SL	GR	NEXP	.1940 LANDSCAPE POS & SLOPE%	L/ 11%
9-20	10YR 6/6	FI	C	SBK	SEXP	.1942 SOIL WETNESS CONDITION	>48"
20-33	10YR 6/8	FI	C	SBK	SEXP	.1943 SOIL DEPTH	48"
33-48	10YR 6/6	FI	C	SBK	SEXP	.1956 SAPROLITE CLASS	NA
						.1944 RESTRICTIVE HORIZON	NA
						PROFILE CLASSIFICATION	PS
						LTAR	0.3 gpd/ft^2
COMMENTS							

PROFILE 4

HORIZON DEPTH (IN)	COLOR	.1941 SOIL MORPHOLOGY				OTHER PROFILE FACTORS	
		MOIST CONSIS TENCE	.1941(a)(1) TEXTURE	.1941(a)(2) STRUCTURE	.1941(a)(3) MINERAL OGY		
0-22	10YR 5/4	VFR	SL	GR	NEXP	.1940 LANDSCAPE POS & SLOPE%	L/ 11%
22-34	10YR 6/4	FI	LS	GR	NEXP	.1942 SOIL WETNESS CONDITION	>48"
34-43	10YR 6/6	FI	SC	SBK	SEXP	.1943 SOIL DEPTH	48"
43-48	10YR 6/8	FI	SCL	SBK	SEXP	.1956 SAPROLITE CLASS	NA
						.1944 RESTRICTIVE HORIZON	NA
						PROFILE CLASSIFICATION	PS
						LTAR	0.3 gpd/ft^2
COMMENTS							

PROFILE 5

HORIZON DEPTH (IN)	COLOR	.1941 SOIL MORPHOLOGY				OTHER PROFILE FACTORS	
		MOIST CONSIS TENCE	.1941(a)(1) TEXTURE	.1941(a)(2) STRUCTURE	.1941(a)(3) MINERAL OGY		
0-4	10YR 5/3	VFR	SL	GR	NEXP	.1940 LANDSCAPE POS & SLOPE%	L/ 11%
4-13	10YR 6/6	VFI	C	SBK	SEXP	.1942 SOIL WETNESS CONDITION	>48"
13-26	10YR 6/8	FI	C	SBK	SEXP	.1943 SOIL DEPTH	37"
26-37	10YR 6/8	FI	CL	SBK	SEXP	.1956 SAPROLITE CLASS	NA
37-48	10YR 7/6	FR	L	M	NEXP	.1944 RESTRICTIVE HORIZON	NA
						PROFILE CLASSIFICATION	PS
						LTAR	0.3 gpd/ft^2
COMMENTS	Saprolite starts at 37"						

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. There appears to be adequate fall from the house to the initial drainfield for a gravity driven system; however, a pump tank (1000 gallon at minimum) should be added if gravity distribution cannot be demonstrated.

The initial septic system is proposed as a gravity driven system to 400 linear feet of low-profile chamber (LPC) drainlines. The long-term application rate (LTAR) used to design the drainfield was 0.3 gal/day/ft^2. Effluent will be serially distributed to six unequal length drainlines connected by overflow pipes. The drainlines shall be installed on contour at 8 inches below surface (low side). The maximum trench bottom depth on the high side should not exceed 13 inches. Due to the ultra-shallow trench depth, it will be necessary to add approved soil over the nitrification field to provide at least six inches of cover over the drainlines.

The repair septic system is proposed as gravity to 200 linear feet of horizontal Prefabricated Permeable Block Panel System (PPBPS) drainlines. The long-term application rate (LTAR) used to design the drainfield was 0.3 gal/day/ft^2. Effluent will be serially distributed to three unequal length drainlines installed on contour at 18 inches below surface (low side). The maximum trench bottom depth on the high side should not exceed 25 inches.

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 or placed into use until inspected by Hal Owen & Associates and an Authorization to Operate issued.

Specific Conditions:

___ An interceptor drain and swale shall accompany drainfield (see attached diagram).

___ The septic and pump tanks must be water tight. The installer shall either provide documentation that the tank has been tested for water tightness by the manufacturer or be prepared to run water tightness testing (hydrostatic or vacuum testing in the ready- to-use-state) at the site.

___ Access risers shall be installed on the tanks and extend above finished grade.

___ No foundation drain.

___ The supply line from the septic tank to the drainfield will be conveyed under a driveway. Ductile iron or its equivalent pipe shall be used under traffic areas. However, pipe specified in Rule .1955 (e) may be used if a minimum of 30 inches of compacted cover is provided over the pipe.

___ This parcel was recorded prior to 1982 and is exempt from the repair area requirement of the referenced regulations. However, any partial repair area that may be available should be reserved.

___ Other. Specify:_____.

WASTEWATER TREATMENT SYSTEM PLANS

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	90 Cotton Fields Lane, Fuquay Varina, NC
S/D Name and Lot#	Cotton Farms, Lot 5
PIN	0643-26-6822.000
County PID	
Size (Acre)	0.609

APPLICANT INFORMATION

Name	Reese Construction
Mailing Address	3720 Lucky Drive
	Apex, NC 27539
Telephone Number	919-329-5501
E-mail Address	reeseconstruction@hotmail.com

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

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

Initial System *See Detailed Design Parameters
System Type Type IIIg — Saprolite System No
Design LTAR 0.30 gal/day/ft² — Fill System No
Trenches: Low Profile Chamber (LPC)
Total Trench Length (ft): 400 feet — configuration: 1 X 400ft (X 3ft)
Trench Spacing 9 ft on center
Usable soil depth (inches) 25 — Soil Cover 6 inches
Install trenches on contour at 8 inches, measured on downhill side of trench
Maximum Trench Depth 13 inches, measured on high side
Pump Required No — ft TDH at GPM

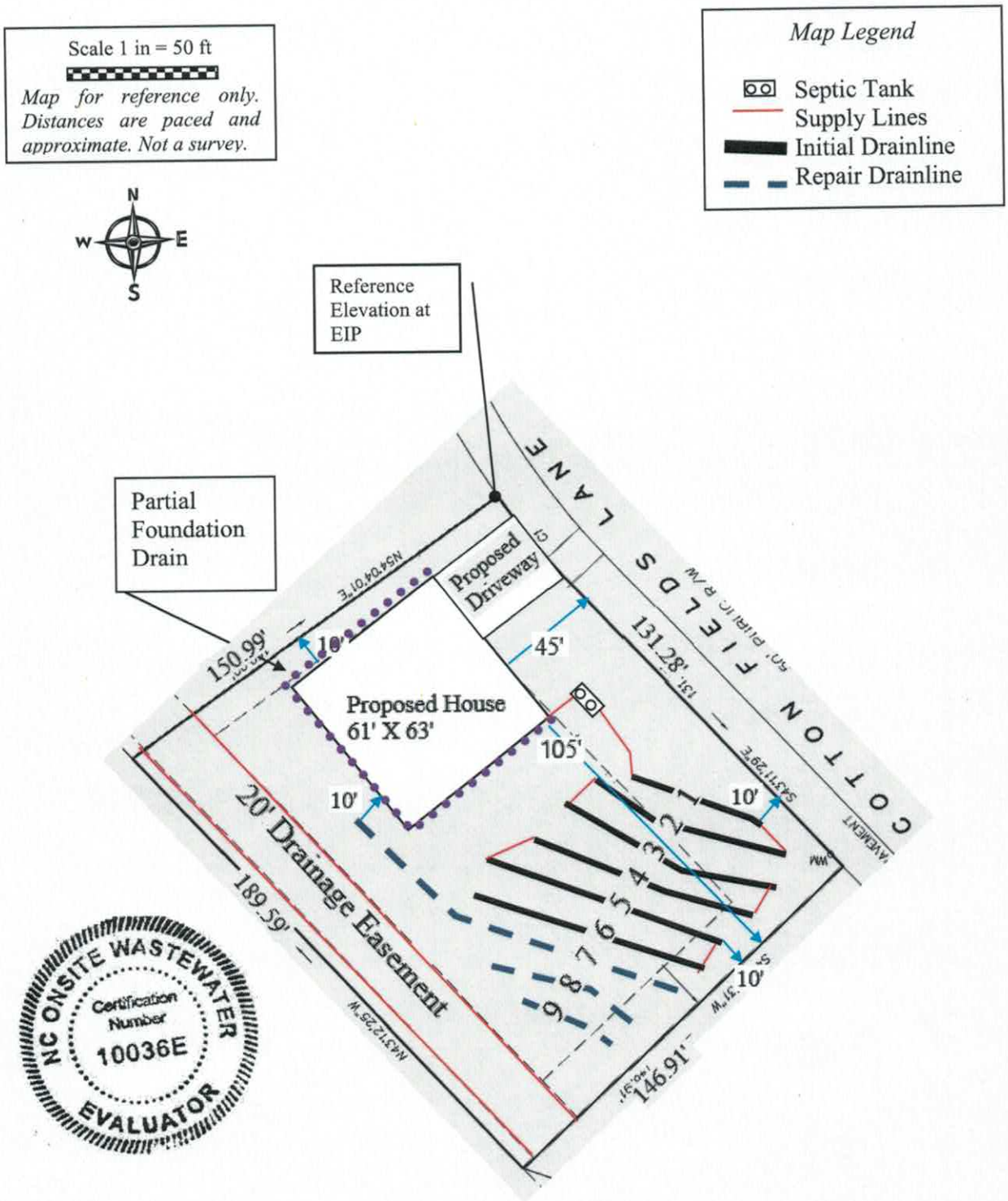
Repair System
System Type: Type IIIg — Saprolite System No
Design LTAR 0.30 gal/day/ft² — Fill System No
Trenches: PPBS, horizontal
Total Trench Length (ft): 200 — configuration: 1 X 200ft (X 3ft)
Trench Spacing 9 ft on center
Usable soil depth (inches) 37 — Soil Cover 6 inches
Install trenches on contour at 18 inches, measured on downhill side of trench
Maximum Trench Depth of 25 inches, measured on high side
Pump Required No

Potential Drainlines flagged at site on 9-ft centers.

Line #	Color	Relative Elevation (ft)	Drainline Length(ft)	Field Length(ft)
1	B	101.28	30	44
2	Y	99.68	50	48
3	R	98.07	120	68
4	W	97.04	72	78
5	B	96.11	72	75
6	Y	95.04	76	74
7	R	93.92	70	106
8	W	92.98	70	80
9	B	92.20	60	64
Septic Tank:		104.83		
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

Figure 2. Septic system design and layout



Initial System Specifications

Gravity System Design Criteria

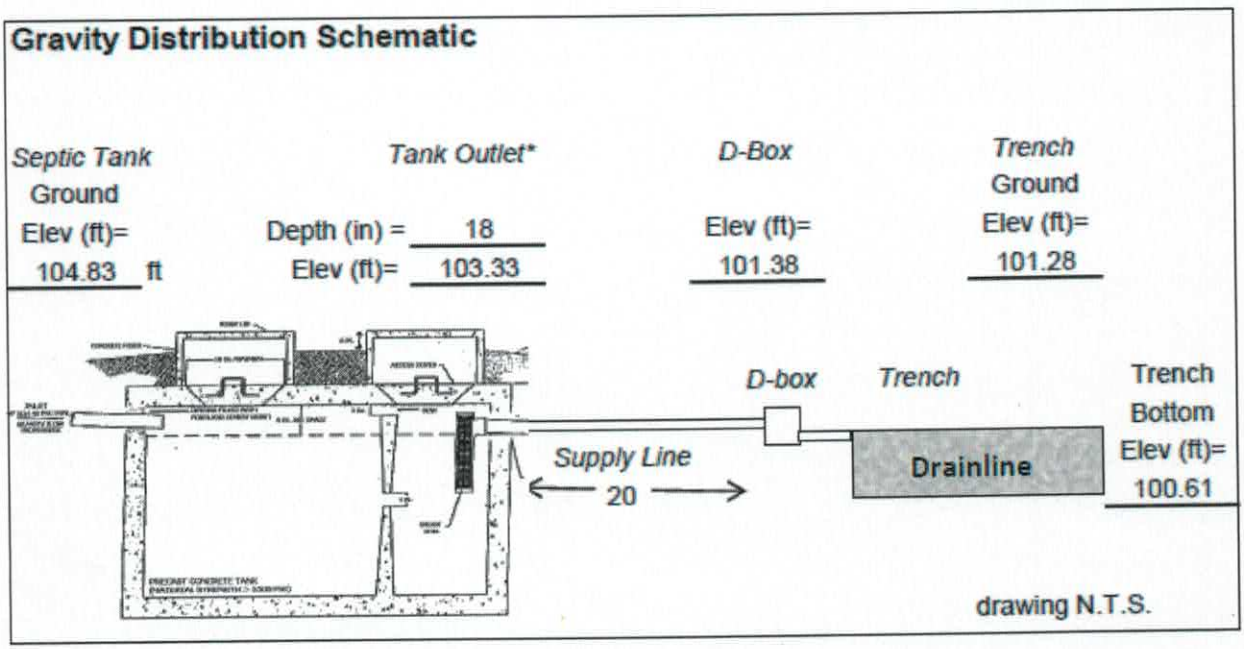
DESIGN DAILY FLOW 360 gallons **SOIL LTAR:** 0.30 gpd/ft^2

TANK (min) Septic Tank: 1000 gallons

SUPPLY LINE Length (ft): 20 Diameter: 3 " sch 40 pvc
slope = 9.75% *minimum slope of supply line is 1/8" per foot (%1.04)

TRENCHES Drainline Type: Low Profile Chamber (LPC)
Trenches installed on contour at 8 inches, measured on low side
Maximum Trench Depth of 13 inches, measured on high side
Trench heighth: 8 inches Trench width: 3 ft
Trench Length Factor: 100 % Effective Trench Width: 3 ft
Absorption Area: 1200 ft^2 Minimum Linear Length: 400 ft
Actual Trench Length: 1 X 400 ft = **400 ft**

Gravity Distribution Schematic



*Outlet depth of septic tank is dependant upon the depth of the plumbing stub out from the home.
A pump tank should be added if gravity distribution cannot be demonstrated.

Repair System Specifications

Gravity System Design Criteria

DESIGN DAILY FLOW 360 gallons **SOIL LTAR:** 0.30 gpd/ft²

TANK (min) Septic Tank: 1000 gallons

SUPPLY LINE Length (ft): 95 Diameter: 3 " sch 40 pvc
slope = 10.15% *minimum slope of supply line is 1/8" per foot (%1.04)

TRENCHES Drainline Type: PPBS, horizontal
Trenches installed on contour at 18 inches, measured on low side
Maximum Trench Depth of 25 inches, measured on high side
Trench heighth: 14 inches Trench width: 3 ft
Trench Length Factor: 50 % Effective Trench Width: 6 ft
Absorption Area: 600 ft² Minimum Linear Length: 200 ft
Actual Trench Length: 1 X 200 ft = **200 ft**

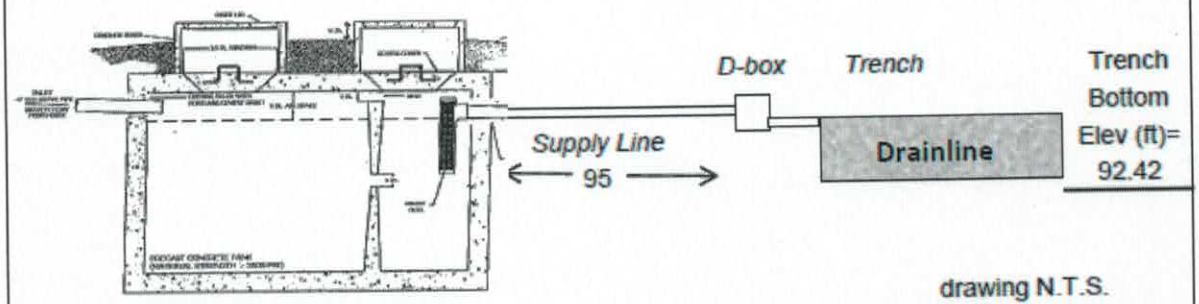
Gravity Distribution Schematic

Septic Tank Ground Elev (ft)= 104.83 ft

*Tank Outlet** Depth (in) = 18 Elev (ft)= 103.33

D-Box Elev (ft)= 93.69

Trench Ground Elev (ft)= 93.92



*Outlet depth of septic tank is dependant upon the depth of the plumbing stub out from the home.
A pump tank should be added if gravity distribution cannot be demonstrated.