Central Carolina Soil Consulting, PLLC
1900 South Main Street, Suite 110, Wake Forest, NC 27587
Office Number: 919-569-6704

Acknowledgment of Subsurface wastewater evaluation and septic design by Central Carolina Soil Consulting, PLLC. for Cotton Farms, Lot 9, for issuance of an IP and CA.

For Improvement Permit (IP) issuance:
"The LSS/LG evaluation(s) attached to this application is to be used to issue an Improvement Permit in accordance with G.S. 130A-335(a2) and (a3)."

For Construction Authorization (CA) issuance:
"The plans or evaluations attached to this application are to be used to issue a Construction Authorization in accordance with G.S. 130A-335(a2), (a5) and (a6)."

The LSS evaluation attached to this application was used to produce and design a subsurface wastewater septic system for permitting to obtain an IP and CA in accordance G.S. 130A-335(a2), (a3), (a5) and (a6).

Owner or Owner's Representative (print): Jacob Bogaosen

Owner or Owner's Representative (signature): _____

Date: 6/10/24

Permit/File #: _____

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

ROY COOPER • Governor
KODY H. KINSLEY • Secretary
MARK BENTON • Chief Deputy Secretary for Health
SUSAN KANSAGRA • Assistant Secretary for Public Health
Division of Public Health

Submittal Includes: ☑ **(a2) Improvement Permit** ☑ **(a2) Construction Authorization** ☐ **Fee $**_____

IMPROVEMENT PERMIT FOR G.S. 130A-335(a2)

County: Harnett

PIN/Lot Identifier: 0643-36-4021

Issued To: Ken Harvey Homes, LLC

Property Location: 196 Hook Drive, Fuquay-Varina, NC 27526

Subdivision (if applicable) Cotton Farms Lot #: 9 Block: _____ Section: _____

LSS Report Provided: Yes ☑ No ☐

If yes, name and license number of LSS: Jason Hall, NC LSS #1248

New ☑ Expansion ☐ System Relocation ☐ Change of Use ☐

Facility Type: Single-Family Dwelling, 4-Bedroom

Number of bedrooms: 4 Number of Occupants: ≤8 Other: _____

Design Wastewater Strength: ☑ Domestic ☐ High Strength ☐ Industrial Process Wastewater

Proposed Design Daily Flow: 360 GPD Proposed LTAR (Initial): 0.3 Proposed LTAR (Repair): 0.3

Proposed Wastewater System Type*: IIIbg, accepted (25% reduction) (Initial) Pump Required: ☑ Yes ☐ No ☐ May be required

Proposed Wastewater System Type*: IIIbe, PPBPS (horizontal) (Repair) Pump Required: ☑ Yes ☐ No ☐ May be required

**Please include system classification for proposed wastewater system types in accordance with Rule .1301 Table XXXII*

Effluent Standard: ☑ DSE ☐ HSE ☐ NSF/ANSI 40 ☐ TS-I ☐ TS-II ☐ RCW

Saprolite System (Initial): ☐ Yes ☑ No Saprolite System (Repair): ☐ Yes ☑ No

Fill System (Initial): ☐ Yes ☑ No If yes, specify: ☐ New ☐ Existing (when adding more than 6 inches of fill to system area provide a fill plan)

Fill System (Repair): ☐ Yes ☑ No If yes, specify: ☐ New ☐ Existing (when adding more than 6 inches of fill to system area provide a fill plan)

Usable Depth to LC (Initial)[x]: 36" Usable Depth to LC (Repair)[x]: 36" ***[x] Limiting Condition***

Max. Trench Depth (Initial)[‡]: 20" Max. Trench Depth (Repair)[‡]: 20" ***[‡] Measured on the downhill side of the trench***

Artificial Drainage Required: ☐ Yes ☑ No If yes, please specify details: _____

Type of Water Supply: ☐ Private well ☐ Public well ☐ Shared well ☑ Municipal Supply ☐ Spring ☐ Other:_____

Drainfield location meets requirements of Rule .0508: Yes ☑ No ☐ Drainfield location meets requirements of Rule .0601: Yes ☑ No ☐

Permit valid for: ☑ Five years [site plan submitted pursuant to GS 130A-334(13a)] ☐ No expiration [plat submitted pursuant to GS 130A-334(7a)]

Permit conditions:

_____

_____

_____

_____

_____

LICENSED SOIL SCIENTIST
JASON M. HALL
STATE OF NORTH CAROLINA

Licensed Soil Scientist Print Name: Jason Hall

Licensed Soil Scientist Signature: _____ Date: 06/19/2024

The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2).

See attached site sketch

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES
Division of Public Health

Permit/File #: _____

This Section for Local Health Department Use Only

Initial submittal received: _____ by _____
Date *Initials*

G.S. 130A-335(a3) states the following:

When an applicant for an Improvement Permit submits to a local health department an Improvement Permit application, the permit fee charged by the local health department, the common form developed by the Department, and a soil evaluation pursuant to subsection (a2) of this section, the local health department shall, within five business days of receiving the application, conduct a completeness review of the submittal. A determination of completeness means that the Improvement Permit includes all of the required components. If the local health department determines that the Improvement Permit is incomplete, the local health department shall notify the applicant of the components needed to complete the Improvement Permit. The applicant may submit additional information to the local health department to cure the deficiencies in the Improvement Permit. The local health department shall make a final determination as to whether the Improvement Permit is complete within five business days after the local health department receives the additional information from the applicant. If the local health department fails to act within any period set out in this subsection, the applicant may treat the failure to act as a determination of completeness. The Department shall develop a common form for use as the Improvement Permit.

The review for completeness of this Improvement Permit was conducted in accordance with G.S. 130A-335(a3). This Improvement Permit is determined to be:

☐ Incomplete (If box is checked, information in this section is required.)

The following items are missing:

_____

_____

Copies of this were sent to the LSS and the Applicant on _____
Date

State Authorized Agent: _____ Date: _____

☐ Complete

State Authorized Agent: _____ Date: _____

This Improvement Permit is issued pursuant to G.S. 130A-335 (a2) and (a3) using the signed and sealed LSS/LG evaluation(s) attached here. The issuance of this permit in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. *This permit is subject to revocation if the site plan, plat, or the intended use changes.* The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of 15A NCAC 18E and to the conditions of this permit.

The Department, the Department's authorized agents, and the local health departments shall be discharged and released from any liabilities, duties, and responsibilities imposed by statute or in common law from any claim arising out of or attributed to evaluations, submittals, or actions from a licensed soil scientist or licensed geologist pursuant to GS 130A-335(a2).

Improvement Permit Expiration Date: _____

See attached site sketch

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES
Division of Public Health

Permit/File #: _____

Re-submittal of Improvement Permit

LHD USE ONLY: This IP resubmittal received: _____ by _____
Date *Initials*

The following items are being resubmitted pursuant to G.S. 130A-335(a3) for issuance of the Improvement Permit:

_____

_____

_____

_____

I, _____hereby attest that the information required to be included with this re-submittal
Licensed Soil Scientist (Print Name)
is accurate and complete to the best of my knowledge and that the proposed Improvement Permit meets all applicable federal, State, and local laws, regulations, rules, and ordinances.

_____ _____
Signature of Licensed Soil Scientist *Date*

The section below is for Local Health Department use after submittal of items noted as missing above.

LHD Follow-up Completeness Review of Improvement Permit

The review for completeness of this Improvement Permit re-submittal was conducted in accordance with G.S. 130A-335(a3). This Improvement Permit is determined to be:

☐ Incomplete (If box is checked, information in this section is required.)

The following items are missing:

_____

_____

Copies of this were sent to the LSS and the Applicant on _____
Date

State Authorized Agent: _____ Date: _____

☐ Complete

State Authorized Agent: _____ Date: _____

Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110, Wake Forest, NC 27587
Office Number: 919-569-6704

June 19, 2024
Job #4943

Ken Harvey Homes, LLC
Attention: Andy Beaird

RE: Preliminary soil/site evaluation for single family wastewater approval at Cotton Farms Subdivision, Lot 9 (4-bedroom per an engineered flow-reduction) in Harnett County pursuant to and meets the requirements of G.S. 130A-335(a2)."

Dear Mr. Beaird:

Central Carolina Soil Consulting, PLLC conducted a preliminary soil evaluation on the aforementioned lot to determine the areas of suitable soils that are suitable for subsurface wastewater disposal systems (conventional, Accepted & Innovative). **"The LSS evaluation is being submitted pursuant to and meets the requirements of G.S. 130A-335(a2)."** The soil/site evaluation was performed using auger borings in May 2024, under moist soil conditions, based on the criteria found in the State Subsurface Rules, 15A NCAC 18E "Wastewater Treatment and Dispersal Systems". From this evaluation, CCSC laid out and located the septic layout and gps'd for site plan drawing purposes. **Please note that the lot lines must be clearly marked by your surveyor prior to system installation by your installer to verify all setbacks before digging.**

Based on the findings during the field evaluation, the area on the attached map has at least 36 inches (initial) and 36 inches (repair) of suitable soils for a modified conventional septic system. The assigned LTAR for the site is 0.3 gpd/ft^2 with a maximum depth of 20 inches on the downhill side of the trench for the initial system installation of the drain lines due to slope correction. The assigned LTAR for the site is 0.3 gpd/ft^2 with a maximum depth of 20 inches on the downhill side of the trench for the repair system installation of the drain lines due to slope correction.

The lot is proposed to have a 4-bedroom system (per an engineered flow-reduction) for the house. A septic system field layout was completed based on the house location and property lines surveyed in the field.

The proposed Initial system for the house is a Pressure Manifold distribution using lines 5-7 totaling 325 feet of accepted status product (25% reduction). The repair system for the house is a Pressure Manifold distribution using lines 1-4 totaling 237 feet of T&J Panel Block product (horizontal).

Tanks: (All tanks must meet requirements set forth in 15A NCAC 18E .0801)
The tanks for the house should be minimum 1,000 gallons with risers. The tanks should also have pressed in rubber boots on both the inlets and the outlets of the tank, along with having secondary safety lids or devices on all the openings.

Septic Installation:
The septic system for the lot should be installed during dry soil conditions (no rain events within 72 hours). The septic system should be installed on contour while maintaining all required setbacks. **Lot lines must be clearly marked by your surveyor prior to system installation so your installer can verify all setbacks before digging.**

Setbacks: (see septic design page for locations)

- **Septic and Pump Tanks** (see septic design)
  - 10' minimum from property lines
  - 5' minimum from house
- **Septic Lines** (see septic design)
  - 10' minimum from property lines
  - 5' minimum from house
- **Manifold's and D-Box's** (see septic design)
  - 5' minimum from property lines
- **Supply Lines** (see septic design)
  - 5' minimum from property lines
- **Utilities**
  - Water (10' minimum for all septic components)
  - Power, cable, internet, etc. (5' minimum setback)

Grading:
No grading should be completed within the initial and repair septic areas that change the natural grade of the area. There should be no cutting or filling within the septic areas as well. When grading the lot, no cuts of 2' or greater should be within 15' of the septic areas. If a cut is required near the septic area, keep the cut around 6-8 inches in depth.

HOUSE:

- Initial System: Pressure Manifold Distribution, lines 5-7 totaling 325' (see layout)
- Repair System: Pressure Manifold Distribution, lines 1-4 totaling 237' (see layout)
- 360 gal/day flow rate (4-bedroom per engineered flow-reduction)
- 1,000 gallon tanks with risers and pressed in rubber boots on both the inlet and outlet ends and a secondary lid in each tank opening
- 20" max trench depth on the downhill side for the Initial System
- 20" max trench depth on the downhill side for the Repair System
- 0.3 LTAR for Initial
- 0.3 LTAR for Repair
- No grading/filling septic areas
- No cuts >2' within 15' of septic areas
- Keep tanks and drain lines 10' from property lines
- Keep supply line >5' property lines
- Install in dry soil conditions (No rain events within 72 hours)
- Maintain natural contours when clearing the lot

This letter discusses the location of provisionally suitable soils for subsurface wastewater disposal systems and does not guarantee the future function of any wastewater system on sites. Central Carolina Soil Consulting, PLLC is a professional consulting firm specializing in soil delineations and designs for on-site wastewater disposal systems.

If you have any questions regarding the findings on the attached map or in this report, please feel free to contact me at any time. Thank you for allowing Central Carolina Soil Consulting to perform this site evaluation for you.

Sincerely,

Jason Hall
NC Licensed Soil Scientist #1248
AOWE certification number 10004E

Encl: Soil Map & septic layout

Central Carolina Soil Consulting, PLLC

1900 South Main Street, Suite 110, Wake Forest, NC 27587

PROPERTY ID #: 0643-36-4021
COUNTY: Harnett

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

OWNER: Ken Harvey Homes, LLC DATE EVALUATED: May 2024
ADDRESS:
PROPOSED FACILITY: single-family dwelling PROPOSED DESIGN FLOW (.0400): 360 gal/day PROPERTY SIZE: 0.57 acres
LOCATION OF SITE: 196 Hook Drive, Fuquay-Varina, NC 27526 (Cotton Farms, Lot 9) PROPERTY RECORDED: yes
WATER SUPPLY: ☑Public ☐Single Family Well ☐Shared Well ☐Spring ☐Other ______ WATER SUPPLY SETBACK: ______
EVALUATION METHOD: ☑ Auger Boring ☐ Pit ☐ Cut TYPE OF WASTEWATER: ☑ Domestic ☐ High Strength ☐ IPWW

PROFILE #	.0502 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY		OTHER PROFILE FACTORS				.0509 PROFILE CLASS & LTAR*	.0502(d) SLOPE CORRECTION
			.0503 TEXTURE/ STRUCTURE	.0503 CONSISTENCE/ MINERALOGY	.0504 SOIL WETNESS/ COLOR	.0505 SOIL DEPTH	.0506 SAPRO CLASS	.0507 RESTR HORIZON		
1	L, ~9%	A, 0-4	SL, GR	VFR, NS, NP						4"
		Bt1, 4-20	SCL, SBK	FR, SS, SP, SEXP		S			S, 0.4	
		Bt2, 20-30	CL, SBK	FR, SS, SP, SEXP		S			S, 0.35	
		BC, 30-36	CL, SBK	FR, SS, SP, SEXP		S			S, 0.35	
		C, 36-42	L, GR	FR, NS, NP		S			S, 0.35	
		AR @ 42								
2	L, ~9%	AE, 0-16	SL, GR	VFR, NS, NP						4"
		B, 16-26	SL, GR	VFR, NS, NP		S			S, 0.6	
		Bt, 26-36	CL, SBK	FR, SS, SP, SEXP		S			S, 0.35	
		AR @ 36								
3	L, ~9%	A, 0-3	SL, GR	VFR, NS, NP						4"
		Bt, 3-36	CL, SBK	FR, SS, SP, SEXP		S			S, 0.325	
		C, 36-39	L, GR	FR, NS, NP		U			U	
4	L, ~8%	AE, 0-15	SL, GR	VFR, NS, NP						3"
		B, 15-26	SL, GR	VFR, NS, NP		S			S, 0.6	
		Bt1, 26-37	C, SBK	FI, SS, SP, SEXP		S			S, 0.3	
		Bt2, 37-42	C, SBK	FI, SS, SP, SEXP	10YR 7/2	U			U	

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.0508)	yes	yes
System Type(s)	IIIbg, accepted	IIIbe, PPBPS
Site LTAR	0.3	0.3
Maximum Trench Depth	20" on downhill side	20" on downhill side

SITE CLASSIFICATION (.0509): suitable
EVALUATED BY: Jason Hall
OTHER(S) PRESENT: James Rice

Comments:

LEGEND

LANDSCAPE POSITION	SOIL GROUP	SOIL TEXTURE	CONVENTIONAL LTAR (gpd/ft²)	SAPROLITE LTAR (gpd/ft²)	LPP LTAR (gpd/ft²)	MINERALOGY/ CONSISTENCE		STRUCTURE
CC (Concave slope)	I	S (Sand)	0.8 - 1.2	0.6 - 0.8	0.4 -0.6	MOIST	WET	SG (Single grain)
CV (Convex Slope)		LS (Loamy sand)		0.5 -0.7		Lo (Loose)	NS (Non-sticky)	M (Massive)
D (Drainage way)	II	SL (Sandy loam)	0.6 - 0.8	0.4 -0.6	0.3 - 0.4	VFR (Very friable)	SS (Slightly sticky)	GR (Granular)
FP (Flood plain)		L (Loam)		0.2 - 0.4		FR (Friable)	S (Sticky)	SBK (Subangular blocky)
FS (Foot slope)	III	SiL (Silt loam)	0.3 - 0.6	0.1 - 0.3	0.15 - 0.3	FI (Firm)	VS (Very sticky)	ABK (Angular blocky)
H (Head slope)		SCL (Sandy clay loam)		0.05 - 0.15**		VFI (Very firm)	NP (Non-plastic)	PR (Prismatic)
L (Linear Slope)		CL (Clay loam)		None		EFI (Extremely firm)	SP (Slightly plastic)	PL (Platy)
N (Nose slope)		SiCL (Silty clay loam)					P (Plastic)	
R (Ridge/summit)		Si (Silt)					VP (Very plastic)	
S (Shoulder slope)	IV	SC (Sandy clay)	0.1 - 0.4		0.05 - 0.2	SEXP (Slightly expansive)		
T (Terrace)		SiC (Silty clay)				EXP (Expansive)		
TS (Toe Slope)		C (Clay)						
		O (Organic)	None					

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

**Sandy clay loam saprolite can only be used with advanced pretreatment in accordance with 15A NCAC 18E .1200.

HORIZON DEPTH In inches below natural soil surface

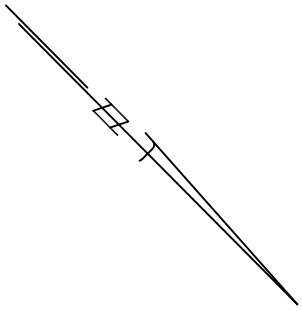
DEPTH OF FILL In inches from land surface

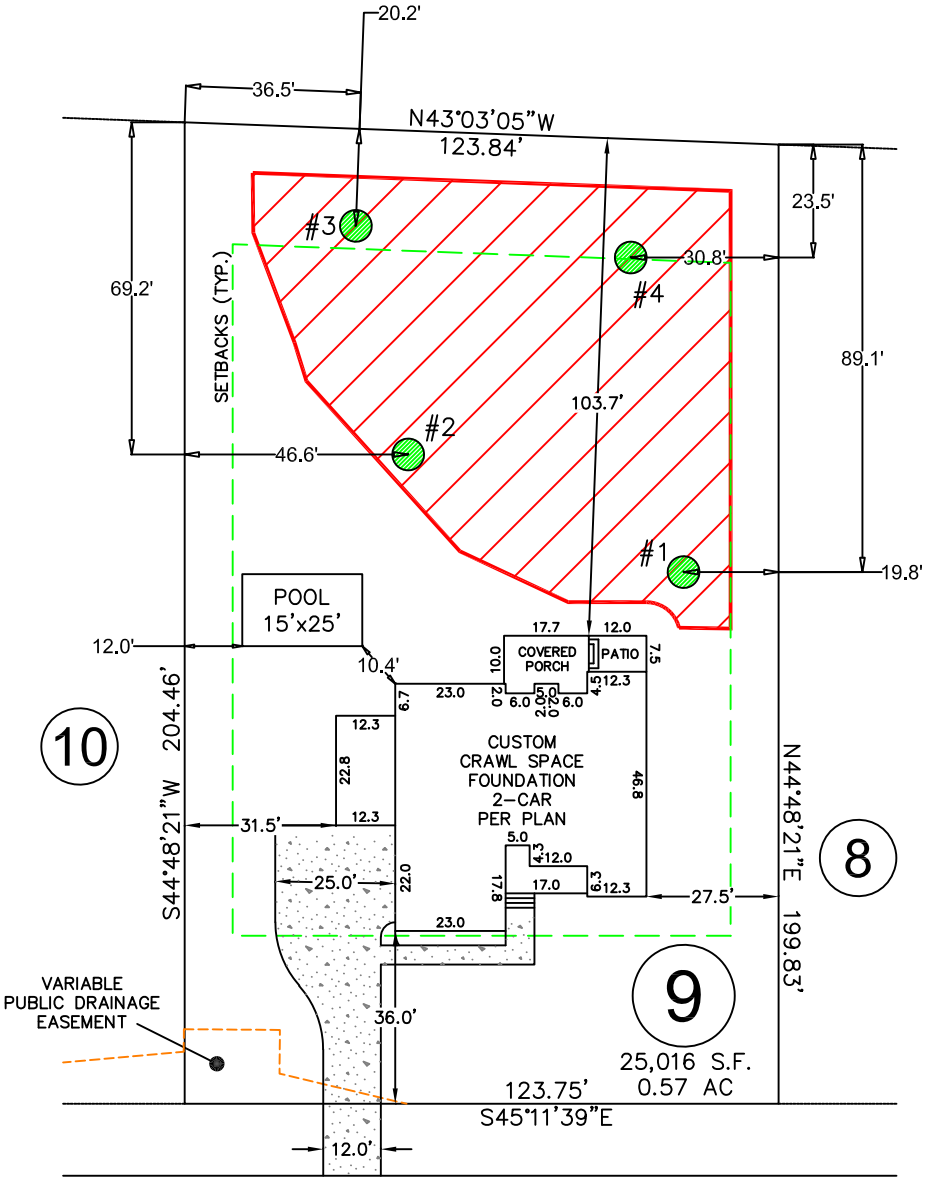
RESTRICTIVE HORIZON Thickness and depth from land surface

SAPROLITE S(suitable) or U(unsuitable); Evaluation of saprolite shall be by pits or auger borings.

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) or U (Unsuitable)





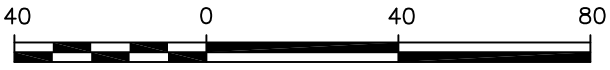
#1 = profile description locations

System and Repair Area:
- ~7,060ft²
- 0.3 soil LTAR
- 4-bedroom per Engineered Flow-Reduction: Accepted Product Primary and PPBPS Repair

HOOK DRIVE
50' PUBLIC R/W & UTILITY

*Keep tanks and drain lines 10' from property lines.
*Not a survey.
*Not a guarantee of a septic permit.
*Keep supply lines >5' from property lines.
*Some lines are flagged longer in the field than lengths indicate.
*No grading septic area.
*No adding soil within septic area
*No rutting-up septic area
*No cuts of >2' within 15' of septic areas

GRAPHIC SCALE
1" = 40'



Central Carolina Soil Consulting, PLLC
1900 South Main Street, Suite 110
Wake Forest, North Carolina 27587
Phone (919)569-6704 Fax (919)569-6703

Soils Map
Lot 9, Cotton Farms Subdivision
Harnett County, North Carolina

Job#:	4943
Drawn By:	JR
Date:	05/09/2024
Revision:	08/19/2024