

**Adams Soil Consulting, PLLC**  
**1676 Mitchell Road**  
**Angier, NC 27501**  
**919-414-6761**  
**alexadams@bcsoil.com**

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June 12, 2023  
Project #479

*“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).”*

*“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)”*

*“This AOWE/PE submittal is pursuant to and meets the requirements of G.S. 130A-335(a2) and (a5).”*

RE: 85 Noble Heart Place – Fuquay-Varina. NC (Harnett County) -Lot #52 – Prince Place Subdivision for Davidson Homes

To whom it may concern:

Adams Soil Consulting (ASC) conducted a preliminary soil evaluation on the above referenced parcel to determine the areas of soils which are suitable for subsurface wastewater disposal systems (conventional & LPP). The soil/site evaluation was performed using hand auger borings during moist soil conditions based on the criteria found in the State Subsurface Rules, 15ANCAC 18A .1900 “Laws and Rules for Sewage Treatment and Disposal Systems”. From this evaluation, ASC is providing the attached 5-bedroom septic design with engineered flow reduction.

The suitable soils found on the subject property were relatively consistent in the initial and repair areas. The area designated for the initial/primary septic system (see attached septic plan) was found to contain soils with greater than 24 inches in depth before a restrictive horizon was encountered.

Please find the attached wastewater soil/site evaluation forms for specific soil properties found in the initial and repair areas as well as assigned soil long term acceptance rate (LTAR). Numerous soil borings were made throughout the property and representative soil profile descriptions for the primary septic field and repair area are provided. A location sketch for profile descriptions is also attached. The initial and primary septic fields were sized based on a flow rate of 480 gallons/day and utilizing Accepted Status. Any unauthorized site disturbance, filling, soil removal, or layout changes may result in the permit being revoked.

The septic installer contractor shall install the primary and repair (if needed) system on contour, see attached site plan for the primary system and repair locations. No underground utilities, water lines, or sprinkler systems shall be placed into the initial or repair septic areas. Installation must meet all state and local county regulations for septic system installation. The trenches must be installed in the same location as the site plan. If the installation is in question at the time of installation call me (Alex Adams) at 919-414-6761.

This report discusses the location of provisionally suitable soils identified on the property and does not guarantee the future function of any waste water disposal system installed.

If you have any questions regarding the findings on the attached map or in this report, please feel free to contact me anytime.

Sincerely,



Alex Adams  
NC Licensed Soil Scientist #1247  
AOWE Certification: 10021E



County: \_\_\_\_\_

**IMPROVEMENT PERMIT FOR G.S. 130A-335(a2)/SL2022-11**

PIN/Lot Identifier: \_\_\_\_\_

Issued To: \_\_\_\_\_

Property Location: \_\_\_\_\_

Subdivision: \_\_\_\_\_ Lot #: \_\_\_\_\_ Block: \_\_\_\_\_ Section: \_\_\_\_\_

LSS Report Provided: Yes  No

If yes, name and license number of LSS: \_\_\_\_\_

New  Repair  Expansion  System Relocation

Proposed Structure: \_\_\_\_\_

Proposed Wastewater System Type: \_\_\_\_\_ (Initial) \_\_\_\_\_ (Repair)

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

Proposed Design Daily Flow: \_\_\_\_\_ GPD Proposed LTAR (Initial): \_\_\_\_\_ Proposed LTAR (Repair): \_\_\_\_\_

Design Wastewater Strength:  domestic  high strength  industrial process

Number of bedrooms: \_\_\_\_\_ Number of Occupants: \_\_\_\_\_ Other: \_\_\_\_\_

Pump Required:  Yes  No  May be required based upon final location and elevations of facilities

Artificial Drainage Required:  Yes  No If yes, please specify details: \_\_\_\_\_

Type of Water Supply:  Private well  Public well  Municipal Supply  Spring  Other: \_\_\_\_\_

Drainfield location meets requirements of Rule .1945: Yes  No

Drainfield location meets requirements of Rule .1950: 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 Print Name: \_\_\_\_\_

Licensed Soil Scientist Signature: Alex Adams Date: \_\_\_\_\_

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

**\*See attached site sketch\***

\_\_\_\_\_

County: \_\_\_\_\_

***This Section for Local Health Department Use Only***

Initial submittal received: \_\_\_\_\_ by \_\_\_\_\_  
Date Initials

Permit Number: \_\_\_\_\_

G.S. 130A-335(a4) states the following: *'If a local health department fails to act on an application for an improvement permit submitted pursuant to subsection (a3) of the section within 10 business days of receipt of a complete application, the local health department shall issue the improvement permit.'*

In accordance with G.S. 130A-335(a3) the improvement permit application is:

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 Owner on \_\_\_\_\_  
Date

State Authorized Agent: \_\_\_\_\_ Date: \_\_\_\_\_

Denied (See attached report.)

Copies of this were sent to the LSS and the Owner on \_\_\_\_\_  
Date

State Authorized Agent: \_\_\_\_\_ Date: \_\_\_\_\_

Complete

State Authorized Agent: \_\_\_\_\_ Date of Issuance: \_\_\_\_\_

**This Improvement Permit is issued pursuant to G.S. 130A-335 (a2), (a3), and (a4) using the signed and sealed LSS/LG evaluation(s) attached here. The issuance of this permit by the Health Department 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 site is subject to revocation if the site plan, plat, or the intended use changes, or if information submitted in the application was falsified, inaccurate or misleading. 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 the Laws and Rules for Sewage Treatment and Disposal and to conditions of this permit. The location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner.**

**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\***

CONSTRUCTION AUTHORIZATION FOR G.S. 130A-335(a2)/SL2022-11

PIN/Lot Identifier: 0633-75-6724

Issued To: Davidson Homes

Property Location: 85 Noble Heart Place - Fuquay-Varina, NC

AOWE/PE Plans/Evaluations Provided: Yes  No  If yes, name and license number of AOWE/PE: Alex Adams - AOWE#10021E

Facility Type: SFH

New  Expansion  Repair  System Relocation

Basement?  Yes  No Basement Fixtures?  Yes  No

Type of Wastewater System\*\* Type III (g) (Initial) Type III (b) (Repair)

Design Daily Flow: 480 GPD Wastewater Strength:  domestic  high strength  industrial process

Session Law 2014-120 Section 53, Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies?  Yes  No

**Installation Requirements/Conditions**

Septic Tank Size: 1250 gallons Total Trench/Bed Length: 390 feet Trench/Bed Spacing: 9 feet on center

Drainfield square footage: 1170 Trench/Bed Width: 36 inches LTAR: 0.35 gpd/ft<sup>2</sup>

Soil Cover: 6 inches Slope Adjusted Maximum Trench/Bed Depth: 18 inches

Aggregate Depth: 6 inches above pipe 6 inches below pipe 12 inches total

Pump Tank Size (if applicable): 1250 gallons Requires more than 1 pump?  Yes  No

Pump Requirements: 17.8 ft. TDH vs. 24.3 GPM Grease Trap Size (if applicable): \_\_\_\_\_ gallons

Distribution Method:  Serial  D-Box or Parallel  Pressure Manifold(s)  LPP  Other: \_\_\_\_\_

Artificial Drainage Required: Yes  No  If yes, please specify details: \_\_\_\_\_

**Legal Agreements** (If the answer is "Yes" to any type of legal agreements, please attach a copy of the agreement.)

Multi-party Agreement Required [.1937(h)]:  Yes  No

Easement, Right-of-Way, or Encroachment Agreement Required [.1938(j)]:  Yes  No

Declaration of Restrictive Covenants:  Yes  No

**\*\*If applicable:**  
*I understand the system type specified is different from the type specified on the application. I accept the specifications of this permit.*

DAVIDSON HOMES RALEIGH DIVISION  
PERMITTING COORDINATOR

Owner/Legal Representative Print Name: Celinda Howell

Owner/Legal Representative Signature: Celinda Howell Date: 06/14/23

Pre-Construction Conference Required: Yes  No

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. Systems shall be installed in accordance with the attached system layout.

AOWE/PE Print Name: Alex Adams

AOWE/PE Signature: Alex Adams Date: 6-5-23

This AOWE/PE submittal is pursuant to and meets the requirements of G.S. 130A-335(a2) and (a5).

\*See attached site sketch\*

County: \_\_\_\_\_

***This Section for Local Health Department Use Only***

Initial submittal received: \_\_\_\_\_ by \_\_\_\_\_  
Date Initials

Permit Number: \_\_\_\_\_

G.S. 130A-335(a6) states the following: *'If a local health department fails to act on an application for a construction authorization submitted pursuant to subsection (a5) of the section within 10 business days of receipt of a complete application, the local health department shall issue the construction authorization.'*

In accordance with G.S. 130A-335(a5) the construction authorization application is:

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

The following items are missing: \_\_\_\_\_  
\_\_\_\_\_

Copies of this were sent to the AOWE/PE and the Owner on \_\_\_\_\_  
Date

State Authorized Agent: \_\_\_\_\_ Date: \_\_\_\_\_

Denied (See attached report.)

Copies of this were sent to the AOWE/PE and the Owner on \_\_\_\_\_  
Date

State Authorized Agent: \_\_\_\_\_ Date: \_\_\_\_\_

Complete

State Authorized Agent: \_\_\_\_\_ Date of Issuance: \_\_\_\_\_

**This Construction Authorization is issued pursuant to G.S. 130A-335(a2), (a5), and (a6) using the signed and sealed plans or evaluations attached here. This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes, or if information submitted in the application was falsified, inaccurate or misleading. The Construction Authorization shall not be affected by a change in ownership of the site. This Construction Authorization is subject to compliance with the provisions of the Laws and Rules for Sewage Treatment and Disposal and to the conditions of this permit. The location and identification of all property lines, easements, water lines, and other appropriate utilities shall be the responsibility of the owner. Final landscaping shall be constructed to divert water and establish vegetative cover.**

**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 plans, evaluations, preconstruction conference findings, submittals, or actions from a person licensed pursuant to Chapter 89C of the General Statutes as a licensed engineer or a person certified pursuant to Article 5 of Chapter 90A of the General Statutes as an Authorized On-Site Wastewater Evaluator in GS 130A-335(a2), (a5), and (a7). The Department, the Department's authorized agents, and the local health departments shall be responsible and bear liability for their actions and evaluations and other obligations under State law or rule, including the issuance of the operations permit pursuant to GS 130A-337.**

Construction Authorization Expiration Date: \_\_\_\_\_

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**\*See attached site sketch\***

Prince Place - Phase II  
 480 gallon/day Septic Design  
 Lot # 52  
 Harnett County

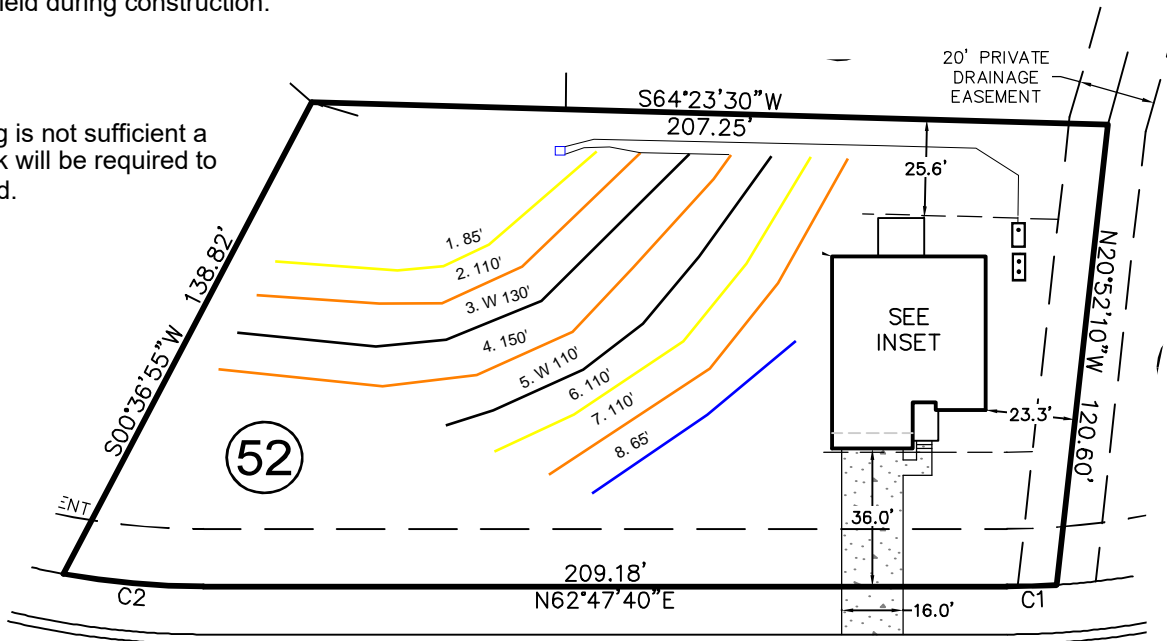
\*House footprint to be field staked by surveyor and system verified prior to any construction

\*\*Septic area must not be altered by construction activities.

\*\*\*No cuts of 2' or greater within 15' of septic area

\*\*\*\* Recommend protective barrier around septic field during construction.

\*If plumbing is not sufficient a pump tank will be required to septic field.



# CASTLE POND WAY

50' PUBLIC R/W & UTILITY EASEMENT

**INITIAL:**

Lines 2-4 (390')  
 Accepted Status  
 Pressure Manifold

**REPAIR:**

Lines 1,5-7 (415')  
 Accepted Status  
 Pressure Manifold

Adams  
 Soil Consulting  
 919-414-6761  
 Job #479

GRAPHIC SCALE  
 1" = 50'



Prince Place - Phase II  
 4-Bedroom Septic Design  
 Lot #  
 Harnett County

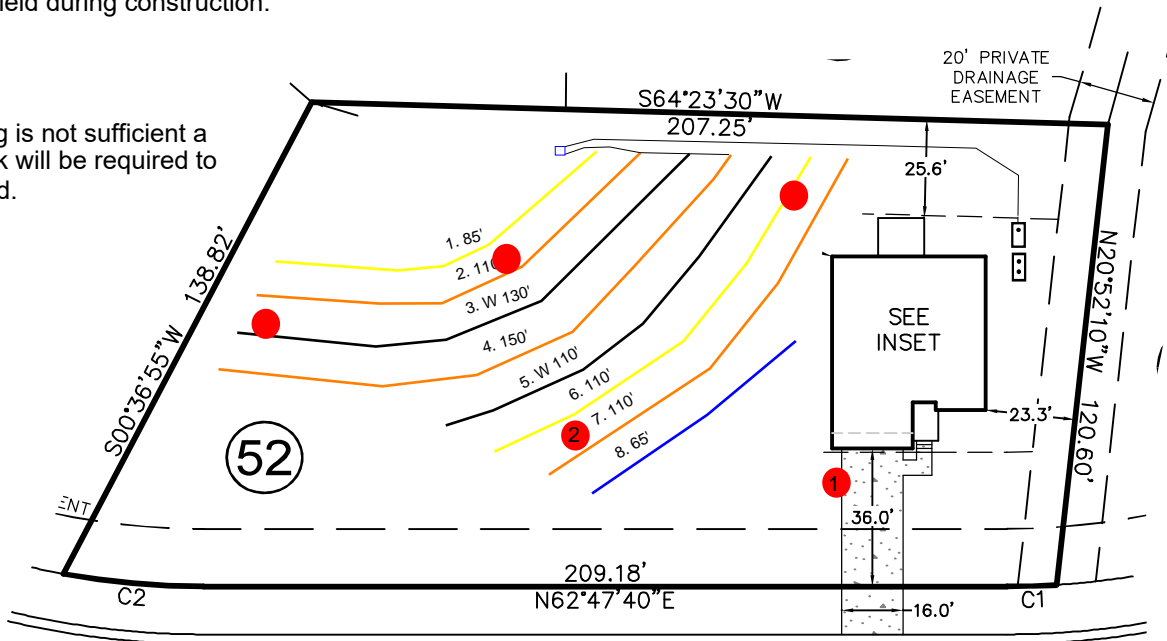
\*House footprint to be field staked by surveyor and system verified prior to any construction

\*\*Septic area must not be altered by construction activities.

\*\*\*No cuts of 2' or greater within 15' of septic area

\*\*\*\* Recommend protective barrier around septic field during construction.

\*If plumbing is not sufficient a pump tank will be required to septic field.



# CASTLE POND WAY

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 Pressure Manifold  
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GRAPHIC SCALE  
 1" = 50'





## RESIDENTIAL PRESSURE MANIFOLD DESIGN

Lot 52 - Prince Place Phase II

# of BDR: 5 Daily Flow: 480 gal/day L.T.A.R.: 0.3250 gal/day/sq.ft

Septic Tank: 1250 gals Pump Tank: 1250 gals Sq. Foot: 1170 System Type: Accepted

Number of Taps: 3 Length of Trenches: 390 ft(See Tap Chart for Details)

Depth of Trenches: 18 in Manifold Length: 36 in

Manifold Diameter: 4in sch 80pvc Tap Configuration: 6 in spacing 1 side(s) of manifold

Supply Line: length: 125 ft Diameter: 2 in sch 40pvc

Friction Loss + Fitting Loss: 2.76 ft(supply line length + 70' for fittings in pump tank)

Design Head: 2 ft Elevation Head: 13.00 ft

Total Head: 17.76 ft Pump to Deliver: 24.32 gals/min at 17.76 ft head

Dosing Volume: 177 gals,

Drawdown: 177 gals divided by 21.4 gals/in = 8.3 inches

Simplex Control Panel required; elapsed time meter and cycle counter required; Floats to be determined by type of pump tank used. A septic tank filter is required.

### TAP CHART

Benchmark	0	is = 100.00	set at				Design Head:	2				
Pump tank elev.	12	88.00	Pump elev.	83.00	Manifold elev.	96.00						
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR	# of Panels (PPBPS)	Spacing of Panels (in)	
2	Pink	5.00	95.00	110	1/2in SCH 40	7.11	140.33	330	0.4252			
3	Blue	5.70	94.30	130	1/2in SCH 40	7.11	140.33	390	0.3598			
4	White	6.50	93.50	150	1/2in SCH 40	10.10	199.34	450	0.4430			
Total Feet =				390	gal/min =	24.32	LTAR =		0.3250			
Feet Required =				369	Velocity =	2.33	(ltar + 5%)		0.3413			
Total # of Panels (PPBPS)				Des. Flow		480	(ltar w/25% red)		0.4333			
% of Dose Vol.				70	Pump Run=		19.74	(ltar + 5%)		0.4550		
Dose Volume				177	Tank Gal/IN		21.4					
Dose Pump Time				7.30	Elev. Head		13.00					
Drawdown in Inches				8.3								
Comments:												

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

OWNER: Davidson Homes

ADDRESS:

PROPOSED FACILITY: Single Family, 4-bedroom PROPOSED DESIGN FLOW (.1949): 480gpd

LOCATION OF SITE: 85 Noble Heart Way, Fuquay Varina, 27526

WATER SUPPLY: Public Water

EVALUATION METHOD: Auger Boring

APPLICATION DATE:

DATE EVALUATED: 4-27-23

PROPERTY SIZE: .66 Acres

TYPE OF WASTEWATER: Sewage

P R O F I L E  #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
1	Linear SS 4%	0-12	GR/SL	FR/SEXP/NS	N.O	30"	N/A	N/A	P.S/.325
		12-20	SBK/SC	FI/SEXP/SS					
		20-37	WKS BK/C	FI/SEXP/SS					
2	Linear SS 4%	0-20	GR/SL	FR/SEXP/NS	7.5 YR 7/2 @ 34"	36"	N/A	N/A	P.S/.325
		20-36	SBK/C	FI/SEXP/SS					
3	Linear SS 4%	0-18	GR/SL	FR/SEXP/NS	N.O	30"	N/A	N/A	P.S/.325
		18-36	SBK/C	FI/SEXP/SS					
4	Linear SS 4%	0-21	GR/SL	FR/SEXP/NS	N.O	30"	N/A	N/A	P.S/.325
		21-36	SBK/C	FI/SEXP/SS					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM	OTHER FACTORS (.1946): _____ SITE CLASSIFICATION (.1948) /P.S  EVALUATED BY: A. Adams OTHER(S) PRESENT:
Available Space (.1945)	S	S	
System Type(s)	Type III B	Type III B	
Site LTAR	0.325	0.325	

COMMENTS: