HAL OWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS

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8 January 2020

Mr. Jamie Godwin
A & G Residential LLC

Reference: Soil Investigation and Septic System Design
Rolling Springs Section 8, Lot 2

Dear Mr. Godwin,

A site investigation was conducted on 1 January 2020 for the above referenced property, which is located at 20 Tupelo Road in the Anderson Creek Township of Harnett County, North Carolina. The purpose of the investigation was to determine the ability of this lot to support a subsurface sewage waste disposal system and 100% repair area for a typical four-bedroom home. At the time of the investigation, the home was built and the septic tank installed. The nitrification field had been improperly graded by cutting the proposed initial system area behind the home and filling the repair area left of the home.

All ratings and determinations were made in accordance with "Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A .1900. This report represents my professional opinion but does not guarantee or represent permit approval for any lot by the local Health Department. The permit you receive from the Health Department may contain some modifications or amendments to our submitted design. Please carefully review your permit and adhere to all prescribed requirements.

SOIL INVESTIGATION

The soils were evaluated under moist soil conditions through the advancing of auger borings. A portion of this lot was observed to be underlain by soils rated as provisionally suitable for subsurface sewage waste disposal (Figure 1). These provisionally suitable soils were observed to be friable sandy loams to greater than 42 inches and will support long term acceptance rates of 0.5 to 0.6 gal/day/sqft. Some observations of friable sandy clay loams were noted but appeared to be located high in the soil profile and would be above the side walls of the proposed septic system. A conservative LTAR was utilized due to the potential of these heaver soils to form part of the side walls of the trenches.

SEPTIC SYSTEM DESIGN

Hal Owen & Associates reviewed the improvement permit issued by the Harnett County Department of Public Health (App# SFD 1908-0019 Hidden Lakes Lot 2). The home does not have a foundation drain and it utilizes the community water supply. The proposed septic system utilized a 1000 gallon septic tank and effluent was distributed by gravity to one 210-foot long nitrification line (25% reduction type). The trenches were to be installed on contour at 18 inches below surface.

A new nitrification field configuration (Figure 2) has been designed for the initial septic system and repair area based on criteria gathered from the improvement permit and current site conditions.

The initial septic system is proposed as a gravity driven system to 212 feet of 25% reduction status drainlines (chamber). Serial distribution will be used to distribute effluent to three variable length drainlines. The lines should be installed off contour with maximum trench bottom depths at 36 inches below surface. The first segment (blue pin flags) will be 60 feet long, with the trench bottom depth starting at about 28 inches (or as shallow as allowed by the invert elevation of the septic tank). The remaining two segments will have the same relative trench elevation as the first segment. A soil investigation was conducted to verify that the soils are adequately drained to allow the proposed deeper drainline depths.

The repair septic system is proposed as a gravity driven system to 268 feet of 25% reduction status drainlines (chamber). Serial distribution will be used to distribute effluent to three variable length drainlines, with step-downs or drop boxes installed at the connections between the lines. The drainlines should be installed off contour with maximum trench bottom depths at 36 inches below surface.

This report and the attached septic system design information have been submitted to the Harnett County Health Department for review and the permitting process. I appreciate the opportunity to provide this service and hope to be allowed to assist you again in the future. If you have any questions or need additional information, please contact me at your convenience.

Sincerely,

Krissina B. Newcomb

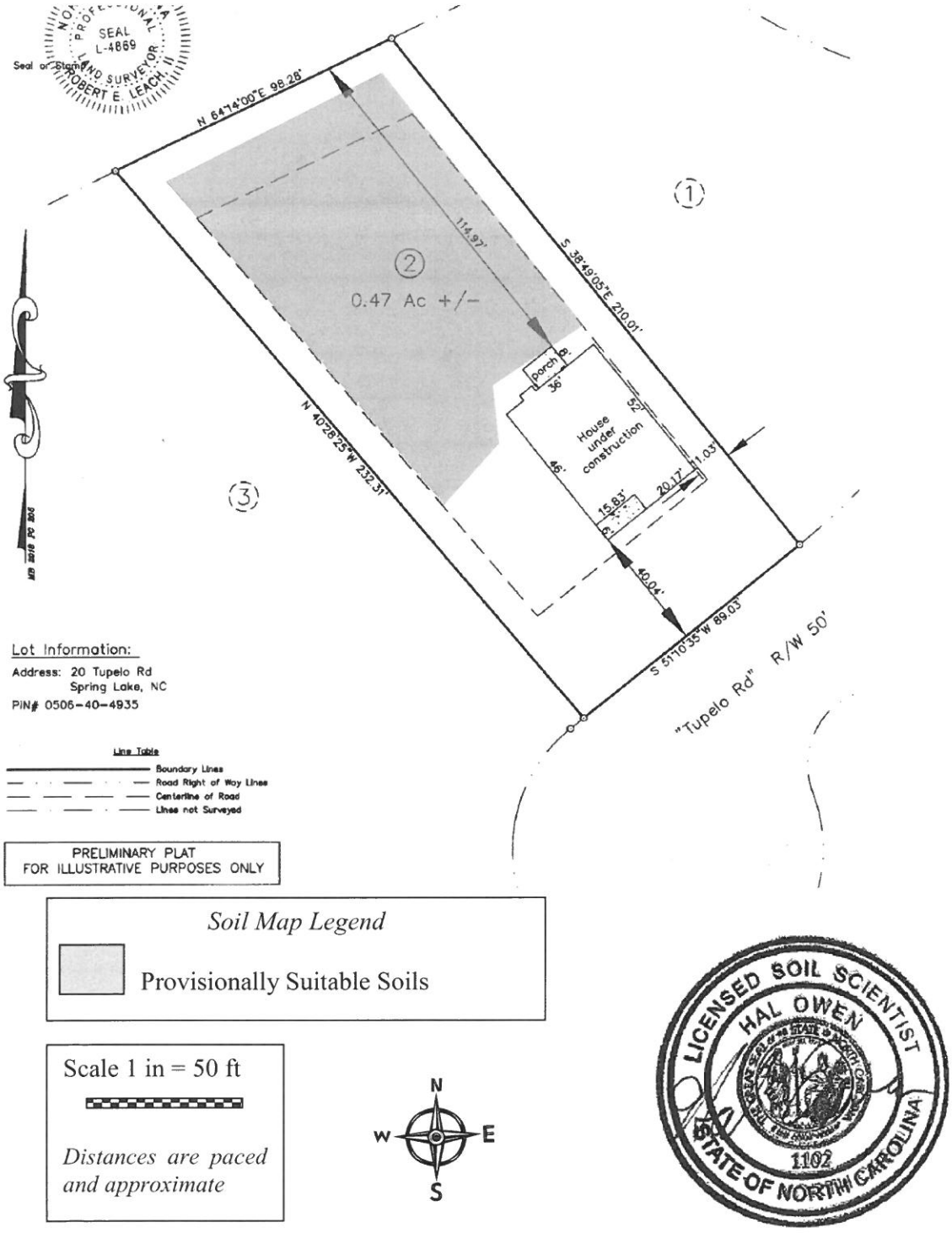
Krissina B. Newcomb

Hal Owen

Hal Owen
Licensed Soil Scientist

Soil Investigation and Septic System Design
Rolling Springs Section 8, Lot 2
8 January 2020

Figure 1. Soil Map showing Septic Suitability



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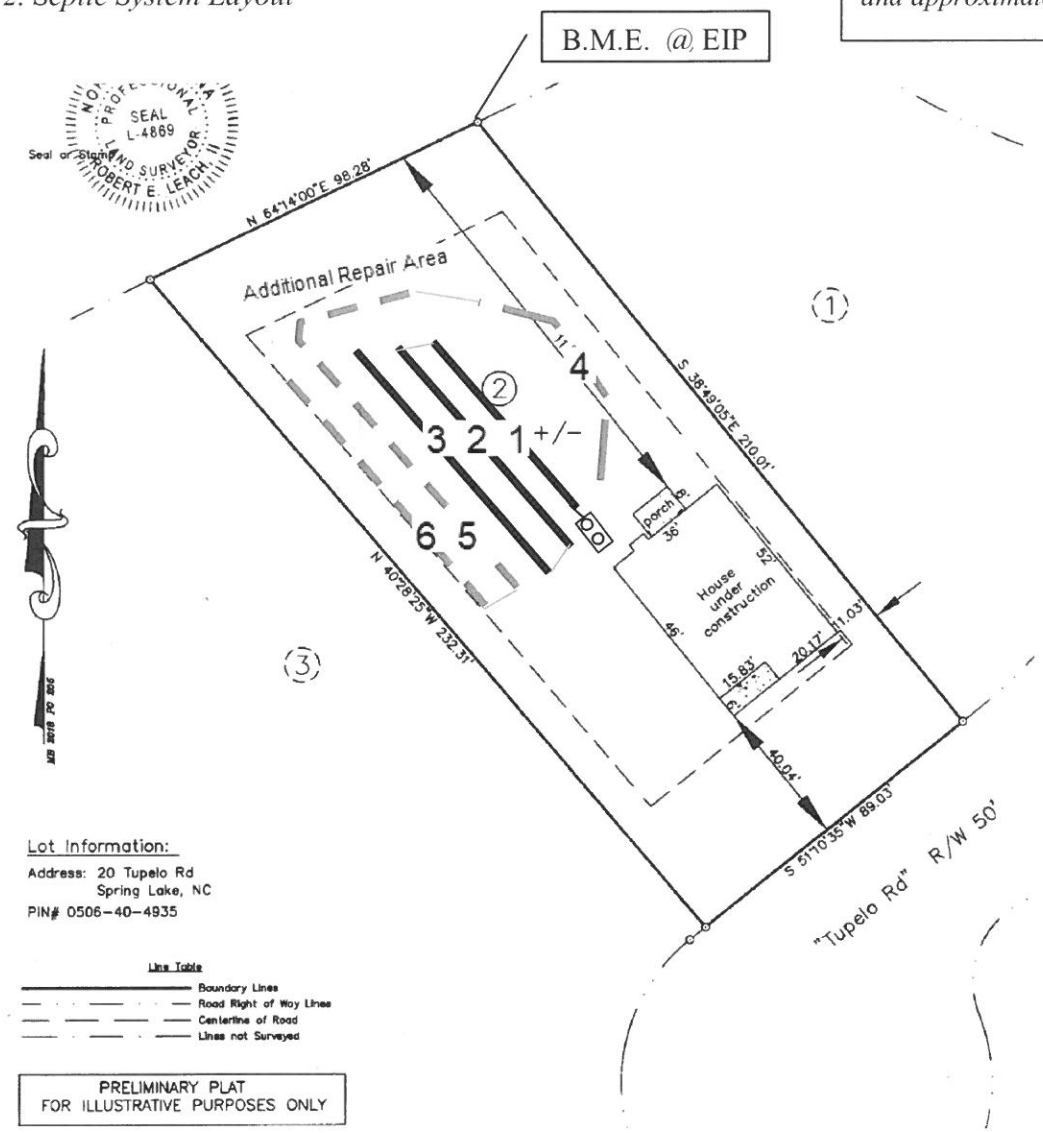
Scale 1 in = 50 ft

Distances are paced and approximate

Figure 2. Septic System Layout



ground elevations

Line #	Color	Drainline Length(ft)	Relative Elev start (ft)	Relative Elev middle (ft)	Relative Elev end (ft)
1	B	60	99.45	99.76	99.64
2	Y	72	99.53	99.52	99.65
3	R	80	99.21	99.34	99.49
4	R	72	99.58	100.22	99.75
5	B	120	98.75	99.1	99.01
6	Y	76	98.25		98.72
Septic Tank					99.64
	Total:	**480**			**EIP=100**