

HAL OWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS

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26 March 2019

Charles and Larry Baker
115 N Mclean Street
Coats, NC 27521

Reference: Preliminary Soil Investigation And Wetland Delineation
New Beginnings Love Fellowship Church Property

Dear Mr. Baker and Mr. Baker,

A site investigation has been conducted for the above referenced property, located on the western side of Ashe Avenue (SR 1725), Dunn Township, Harnett County, North Carolina. The purpose of this investigation was to determine the site's ability to support subsurface sewage waste disposal systems, and to determine the existence and extent of wetland areas on the property. All sewage disposal 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 as a Licensed Soil Scientist but does not guarantee or represent permit approval by the local Health Department. An improvement permit will need to be obtained from the Health Department that specifies the proposed building size and location and the design and location of the septic system to be installed. All wetland determinations were made in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic Gulf Coastal Plain.

This property is composed of a mixture of soils that range from provisionally suitable to unsuitable for subsurface sewage waste disposal (see *Figure 1*). The soils shown as provisionally suitable will adequately function as sewage waste disposal sites but will require additional drainline due to clayey textured subsoil characteristics. These provisionally suitable soils were observed to be firm clays to greater than 31 inches and appear adequate to support long term acceptance rates of 0.3 gal/day/sqft. The soils indicated as provisionally suitable for modified or alternative systems are limited in soil depth to the extent that systems that can be installed ultra shallow will be required. This requirement will likely cause the need for about six inches of sandy fill material be brought in and added to the site to provide adequate cover over the drainlines. The unsuitable soil area is so rated due to excessive soil wetness, inadequate soil depth, and/or unsuitable landscape position. The ability to utilize alternative systems or make modifications to the unsuitable soil area to allow for septic systems is minimal

It is our understanding that you wish to build a 200-seat sanctuary with a kitchen facility. The above referenced rules indicate that a church generates 3 gallons of effluent for each seat in the sanctuary or 5 gallons per seat if the church contains a kitchen. Therefore, the design daily flow for your proposed church is calculated as 1000 gallons per day. A method called Flow Equalization can be used to distribute the effluent collected from the church in one week over several days, thereby reducing the required drainfield area by about half. It is required that an area equal in size to the initial septic system be reserved to repair the system should it ever fail. This format requires the purchase of extra tank volume to hold the accumulated weekly effluent but allows for a smaller drainfield. This is the format taken by most churches.

The area of provisionally suitable soils in the southwestern corner of the property appears adequate to support the septic disposal needs of a church with up to 200 seats in the sanctuary and a kitchen facility utilizing flow equalization (Figure 2). The septic disposal field cannot be used for any other purpose (parking, buildings, cemetery, etc.). Significant grading and clearing will need to be done on this property for construction of a sanctuary and a parking lot. Orange pin flags were placed around the proposed septic drainfield to demonstrate the area to leave out when grading. This area will be used for the initial and repair system for the church and mechanical disturbance could render this area useless for sewage waste disposal. A second area of provisionally suitable soil was observed along Ashe Avenue at the front of the property. It is recommended that you preserve as much of this area as possible to allow for additional repair area and potential future growth. The existing well is located at the edge of this area and you may continue to use it for non-human consumption purposes. If septic drainlines are ever needed to be installed in this area in the future, the well will need to be properly abandoned.

A wetland delineation was flagged along the northern portion of the area to be developed for the church. Pink wetland delineation flags were placed along the wetland perimeter and consecutively numbered from the back property line to the front. These flags need to be surveyed located so that the site plan can be developed showing the proposed building(s), driveways, parking and other items required by the reviewing government agency. It is recommended that the surveyor also locate the orange pin flags placed around the proposed septic drainfield and that you make every effort to protect this area from impacts of any sort.

It appears that the subject property is adequately suited to support the needs of the proposed church. I appreciate the opportunity to provide this service and trust that you will feel free to call on me again in the future. If you have any questions or need additional information, please contact me at your convenience.



Sincerely,

A handwritten signature in black ink that reads "Hal Owen". The signature is written in a cursive, flowing style.


Hal Owen
Licensed Soil Scientist

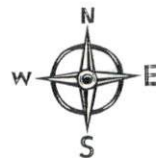
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Figure 2. Septic Disposal Area




Soil Map Legend

 Proposed Septic Disposal Field and Repair Area



Scale 1 in = 100 ft



Distances are paced and approximate

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Figure 1






Scale 1 in = 100 ft



*Distances are paced
and approximate*

Soil Map Legend

-  Provisionally Suitable Soils
-  Provisionally Suitable for Modified or Alternative Systems
-  Unsuitable Soils