

NOV-05-2004 09:45 AM HAL OWEN & ASSOC INC 910 893 3594 P.02

**HAL OWEN & ASSOCIATES, P.C.**

SOIL & ENVIRONMENTAL SCIENTISTS

P. O. Box 400, 266 Old Coats Road  
Lillington, NC 27546  
Phone (910) 893-8743 / Fax (910) 893-3594  
E-mail: halowen@intrstar.net

20 October, 2004

David and Kelly Sears  
487 Dycus Road  
Sanford, NC 27330

Reference: Preliminary Soil Investigation  
Tract 2 - 2.42 Acres

Dear Mr. and Mrs. Sears,

A preliminary soil investigation has been conducted at the above referenced property, located on the western side of Cameron Hill Road, Johnsonville Township, Harnett County, North Carolina. The purpose of the investigation was to determine the property's ability to support a subsurface sewage waste disposal system and repair area for a typical three-bedroom home. All ratings and determinations were made in accordance with "Laws and Rules for Sanitary Sewage Collection, Treatment and Disposal, 15A NCAC 18A .1900." It is our understanding that individual septic systems and public water supplies will be utilized at this site.

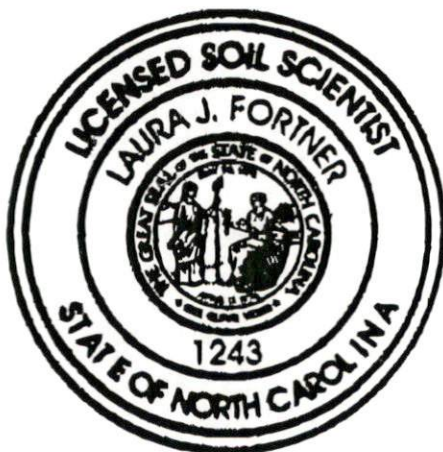
The soil patterns on this lot were observed to be very complex and the soil character changed greatly over short distances. Most of the rear and left side of the lot is too wet to support septic systems. The front and front center of the lot is underlain by unsuitable clay layers with perched water too close to the surface to support septic systems. Red flags indicate unsuitable soils. This lot was observed to contain an area of provisionally suitable soils for subsurface sewage waste disposal, as indicated on the attached map. The soils within this area are very complex and change significantly within the area. Some borings exhibited deep sandy surfaces with light friable sandy clay loam subsoils to greater than 36 inches and appear adequate to support a long term acceptance rate of 0.5 gpd/sqft (blue flags). Other soil borings exhibited less friable and heavier sandy clay loams to greater than 30 inches and appear adequate to support a long term acceptance rate of 0.4 gpd/sqft (also blue flags). Also included in this area are borings that exhibited heavy sandy clays with wetness conditions in the 24 to 30 inch zone below surface. These soils appear adequate to support a long term acceptance rate of 0.3 gpd/sqft. It appears that the soils in this area are adequate to support a septic system and repair area for one residence.

The amount of usable soil at the site is very limited and the proposed house site occupies a portion of the usable soil area. It may be necessary to site the house and all other entities (driveway, storage building, etc.) outside of the usable soils in order to provide the septic needs of the lot. In addition the usable soils are dominantly located at higher elevations than the proposed house site and a pump will be required. It is recommended that you relocate the house to the right central portion of the lot in the unsuitable soil area at the top of the hill. This will allow the potential to obtain a permit for a gravity driven system and free up the usable soils that are under the presently proposed house site. The soil investigation noted evidence of lateral water movement throughout much of the usable soil area, which can adversely affect the

function of a septic system. It will likely be required, and is highly recommended, that a curtain drain be installed above the septic system to address this problem. This curtain drain can likely function as a foundation drain if the house is moved to the top of the hill.

Design work was not conducted at the site, but based on the limited amount of space available, it appears likely that innovative type drainlines (chamber or EZ-Flow) will be required for the initial system of the proposed home. The repair system may require significantly more complicated designs and techniques. It is likely that the health department will designate low-pressure pipe repair, but could require the use of a pretreatment filter.

This soil investigation report and map, when provided to the Harnett County Health Department, should allow them to sign the maps for recordation. We 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 us at your convenience.



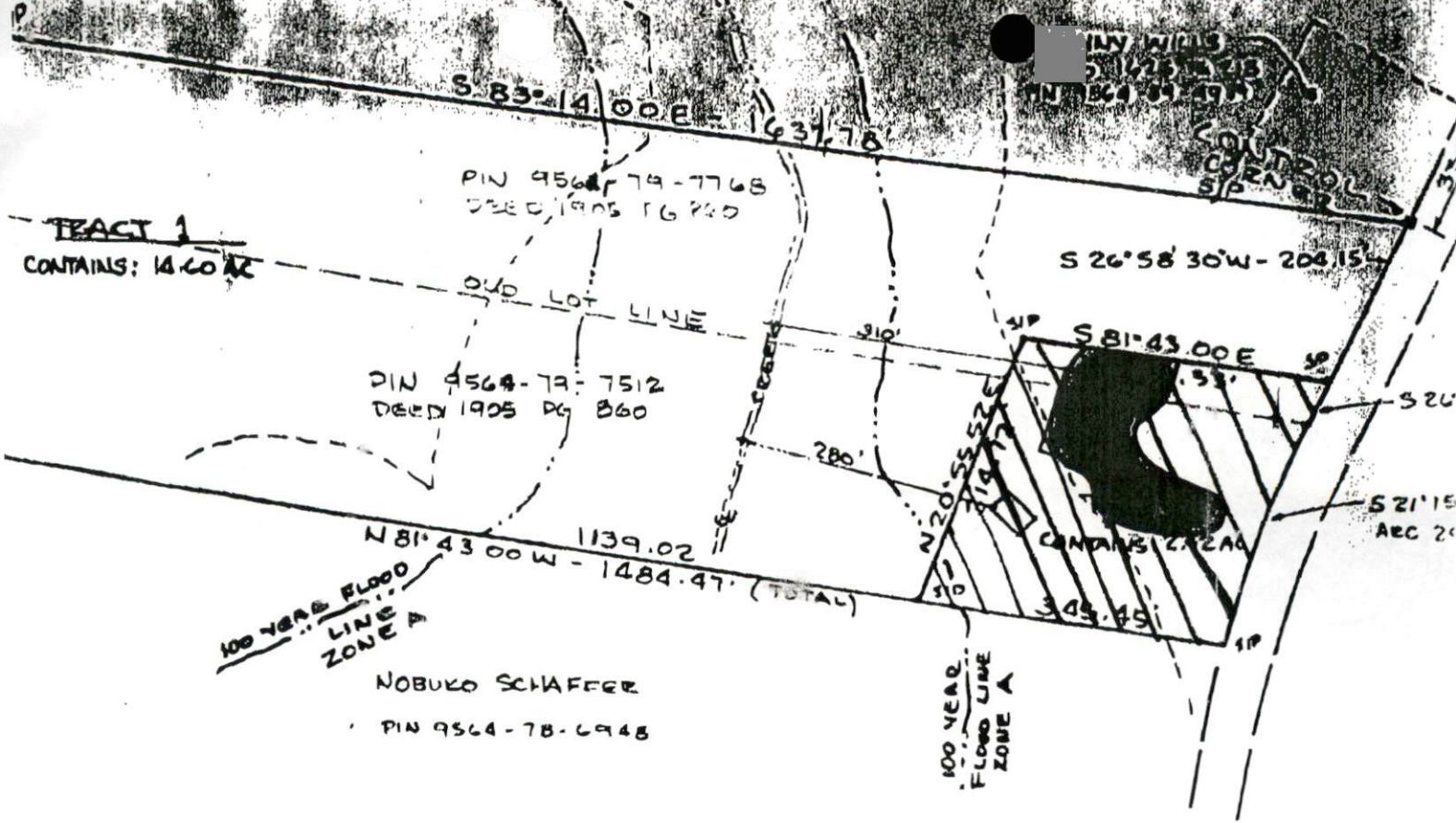
Sincerely,

Laura J. Fortner  
Licensed Soil Scientist

Hal Owen  
Senior Consultant



CC: Bob Bracken, Bracken & Associates, PO Box 532, Sanford, NC 27330





**NOTE ?**

SINGLE FAMILY DWELLINGS OR STRUCTURES IN THE CONSERVATION DISTRICT SHALL BE LOCATED 200 FT FROM CENTER OF MAIN CHANNEL.

-  Provisionally Suitable Soils
-  Unsuitable Soils

**OWNER:**  
 DAVID & KELLY SEARS  
 487 DYCUS RD  
 SANFORD, NC 27330  
 919-777-8656

**NOTE:**  
 BEING A COMBINATION OF THE FOLLOWING TRACTS:  
 DEED 1905 PG 860 TRACT 1  
 PIN 9564-79-7768  
 DEED 1905 PG 860 TRACT 2  
 PIN 9564-79-7512

METHOD OF COMPUTATION - COMPUTER.  
 NO U.S.G.S. WITHIN 2000'.  
 ZONING - C & RA-20R

I FURTHER CERTIFY THAT THIS PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA DESIGNATED BY FIRM FLOOD INSURANCE POLICY.

**PLAT AND MINOR SURVEY FOR DAVID AND KELLY SEARS**

I, ROBERT J. BRACKEN, CERTIFY THAT THIS SURVEY WAS DRAWN UNDER MY SUPERVISION FROM AN ACCURATE FIELD SURVEY MADE UNDER MY SUPERVISION; THAT THE BOUNDARIES AND AREAS SURVEYED ARE CLEARLY INDICATED; THAT THE PRECISION AS CALCULATED IS 1:10,000; THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH G.S. 42-17.1, AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, NUMBER AND SEAL THIS 5th DAY OF OCTOBER, 2004.

COUNTY:	STATE:	DATE:	SEAL OF SURVEYOR ROBERT J. BRACKEN NORTH CAROLINA
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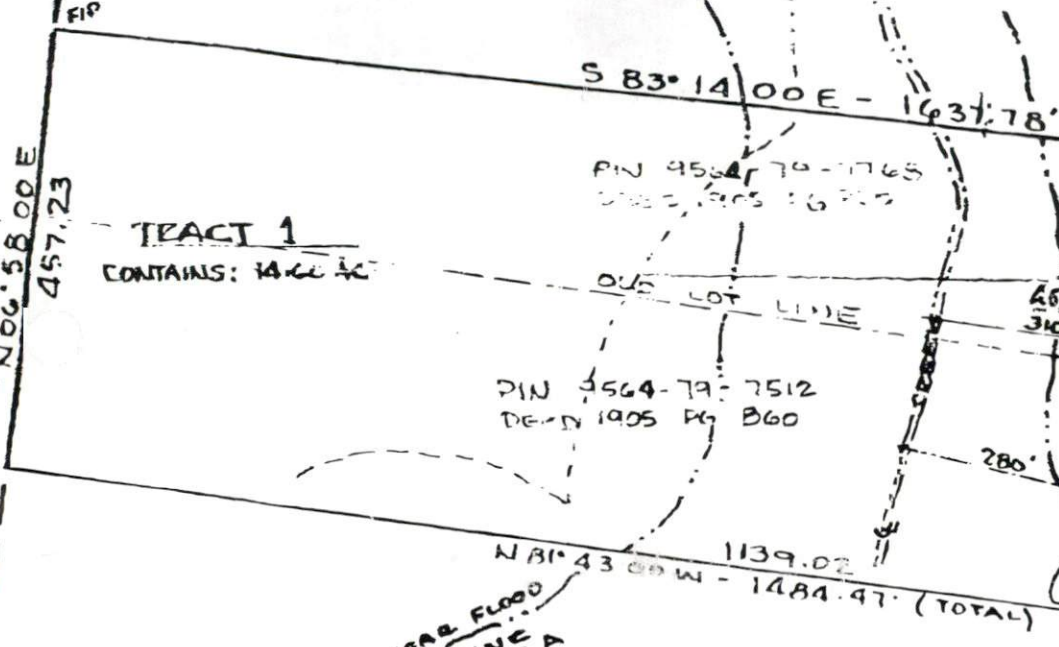


ZONING CODE RA-202  
PIN 9565-70-7189

ZONING CODE RA-202

JOHANN WILLS  
DEED 1625 PG 218  
PIN 9564-89-99M

CONTROL  
CORNER  
SIP



NOBUKO SCHAEFER  
PIN 9564-78-6948

w/ proposed house site - assume 3BR  
permits construction w/ HPP or filter repair  
possible in the area - complex bend  
NOTE: *in other reports to usable area*

NOTE: SINGLE FAMILY DWELLINGS OR  
STRUCTURES IN THE CONSERVATION  
DISTRICT SHALL BE LOCATED 200 FT  
FROM CENTER OF MAIN CHANNEL.

OWNER:  
DAVID & KELLY SEARS  
487 DYCUS RD  
SANFORD, NC 27330  
910-777-8156

INVOICE  
TO:

Please Evaluate  
for Septic Tank

*complex soils - much best  
water movement common in usable area  
certain drain recommended - likely requires  
needs to relocate house out of usable area*

NOTE: *Can site on hill at middle right to  
waste growth can be done.*  
BEING A COMBINATION OF  
THE FOLLOWING TRACTS:  
DEED 1905 PG 860 TRACT 1  
PIN 9564-79-7768

P.05  
910 893 3594  
HAL OWEN & ASSOC INC  
NOV-05-2004 09:46 AM



12/06/04

David,

Attached is the original and copy of the proposed agreement and easement re the Harnett County property. You and Kelly need to sign them and they need to be notarized. I spoke with Jimmy and he advised he had talked with Hal Owen and he advised that 8-9 o'clock tomorrow morning would be a good time to bring the document to him for review. The document is recordable so if Hal requires that then it can just be taken to the Harnett County Register of Deeds for recording.

If any questions or if anything else is needed, please contact me.

A handwritten signature in black ink, appearing to be 'JLH', is located in the lower right quadrant of the page.