

# HAL JWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS

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20 April 2009

Mr. T. J. Sota  
Chapman-Wilson Pools  
606 Hope Mills Road  
Fayetteville, NC 28304

Reference: Septic System Design  
For The Summit, Section 3, Lot 100

Dear Mr. Sota,

A site investigation was conducted for the lot owned by Richard Gary located at 14 Boulder Drive, Harnett County, North Carolina. It is our understanding that a swimming pool is proposed behind the existing four-bedroom home and will interfere with the existing septic system. The purpose of this investigation was to modify the design of the initial septic system to allow the pool to be installed and to design a repair septic system. Public water supplies are in use at this lot.

The operation permit issued for this lot by the Harnett County Health Department on 18 November 2008 describes the septic system that was installed. The existing septic system utilizes gravity distribution to a single nitrification trench 240 feet long (EZ-Flow). The trench was installed off-contour at 18 to 24 inches below surface and has been located and marked with pin flags at the site.

It is proposed that the existing system be modified by removing sections of the existing drainline from use in the proposed pool location and replacing them with new drainline added at the end. From the existing 1000-gallon septic tank, 75 feet of existing drainline would be used. A length of solid pipe would be installed at the end of this drainline section to connect it to the next useable drainline section, which is 60 feet long. From the end of that section, 25 feet of new drainline would be added, then a step-down, followed by an additional 80 feet of new nitrification drainline. One-hundred thirty-five feet of existing drainline would remain in use, and 105 feet of new drainline would be installed for a total drainline length of 240 feet.

The repair septic system has been designed below the initial septic system in the woods. It is designed as a gravity driven system, either with serial distribution to 200 feet of drainline or parallel distribution from a distribution box to four drainlines each 50 feet long. The trenches should be installed on-contour with depths 18 to 30 inches below surface. An additional 115 feet of drainline has been flagged below the repair system and some additional repair area is also available in the front yard.

The proposed drainlines have been demonstrated with various colored pin flags that are located on the lot and will need to be installed prior to installation of the pool. It is important that you do not disturb the septic system area. It is recommended that a staked line or protective fence be placed around the system prior to construction to eliminate any potential damage to the system.

It is recommended that care be taken to preserve the life of your septic system. The septic tank and distribution boxes should be kept accessible for pumping and adjustment. The septic system should be inspected periodically and the septic tank pumped out every 2 to 5 years by a professional contractor. Practicing water conservation in the home, such as promptly repairing leaky fixtures and running washing machines and dishwashers only when full, will help to avoid overloading the septic system. Also, disposal of oils, fats, and grease into the septic system should be avoided because they could clog drainlines and conveyance pipes. A list of other useful suggestions is attached for your use.

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 Newcomb*

Krissina Newcomb  
Project Environmental Scientist I

*Hal Owen*

Hal Owen  
Licensed Soil Scientist



**SEPTIC SYSTEM DESIGN SPECIFICATIONS**

Applicant: Richard & Evelyn Gary Phone #: \_\_\_\_\_  
 mailing address: 14 Boulder Drive, Sanford, NC 27332

Site Address: 14 Boulder Drive, Sanford, NC 27332  
 P.I.N.: 9586-98-5808 Subdivision: The Summit, Section 3 Lot #: 100

# Bedrooms: 4 Daily Flow: 480 gallons/day County Permit #: 24887

**PROPOSED SYSTEM:**

Lines flagged at site on 9 ft centers.

	Line #	Line color	Drainline Length(ft)	Contour Length (ft)
Existing	E1	-	75	
Existing	E2	-	60	
Initial	I1	-	25	
Initial	I2	R	80	83
<i>Total</i>			240	

Initial System

Modify Existing System  
 Gravity (serial) distribution to  
 240 ft of EZ-Flow drainline  
 installed off-contour at 18-24 inches

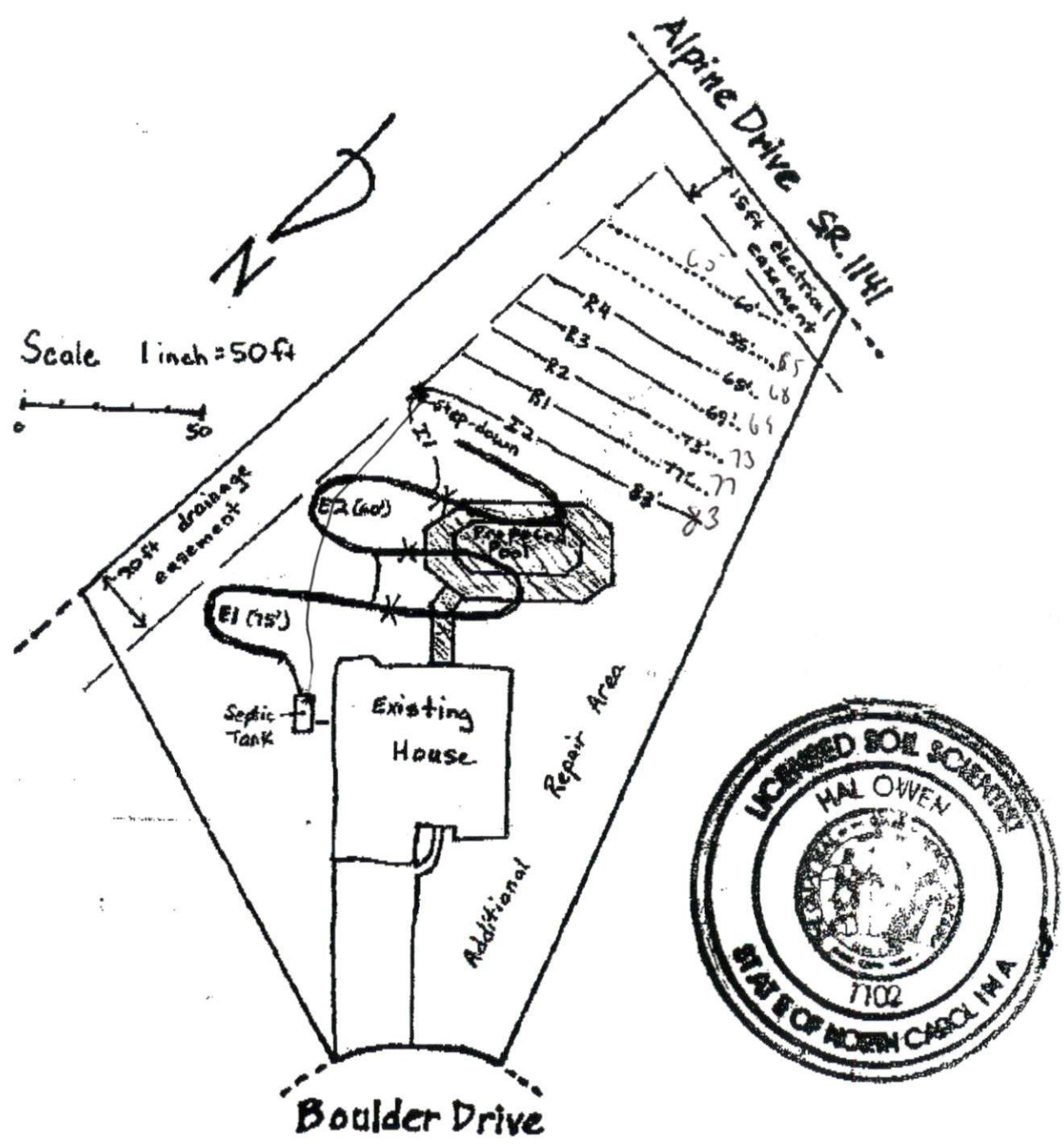
	Line #	Line color	Drainline Length(ft)	Contour Length (ft)
Repair	R1	B	50	77
Repair	R2	W	50	73
Repair	R3	Y	50	69
Repair	R4	R	50	65
<i>Total</i>			240	
Extra		B	60	60
Extra		W	55	55

Repair System

Gravity distribution to  
 200 ft of EZ-Flow drainline  
 installed on contour at 18 to 30 inches  
 LTAR 0.6 gal/day/sqft

### SEPTIC SYSTEM DESIGN SPECIFICATIONS

#### Septic System Layout



### Day-to-Day Management Don't use too much water.

- ◆ The drainfield does not have unlimited capacity.
- ◆ Typical daily water use is 50 gallons per person.
- ◆ The soil drainfield usually has a maximum daily design capacity of 120 gallons per bedroom, even for short periods of time.
- ◆ Overloads can occur seasonally, daily, or on the weekend.
- ◆ Water conservation will extend the life of your system.
- ◆ Repair dripping faucets and toilets.

### Limit disposal to sewage.

- ◆ Don't use your septic tank as a trash can for cigarette butts, tissues, sanitary napkins, cotton swabs, cat box litter, coffee grounds, or disposable diapers.
- ◆ Restrict the use of your garbage disposal. These add quite a lot of extra solids.
- ◆ Don't pour grease or cooking oil down the drain.
- ◆ Don't poison your system with harmful chemicals such as solvents, oils, paints, thinners, discarded medications, disinfectants, pesticides, poisons, and other substances.
- ◆ Save money. Commercial septic tank additives are usually not necessary.

### Protect the system from physical damage (site maintenance).

- ◆ Keep the soil over the drainfield covered with vegetation to prevent soil erosion.
- ◆ Don't drive vehicles over the system.
- ◆ Avoid construction over the system and repair area.
- ◆ Maintain the natural shape of the land immediately downslope of the system, and protect this area from excavation (cutting and filling).

- ◆ Don't cover the tank or drainfield with asphalt or concrete.

### Dispose of all wastewater in an approved system.

- ◆ Don't put in a separate pipe to carry wash waters to a side ditch or the woods. This is illegal.

### Periodic Maintenance and Repair

#### Home and yard (site maintenance):

- ◆ Protect and maintain the site of your septic tank and drainfield.
- ◆ Cut down and remove trees that like wet conditions. This includes willows, elms, sweetgums, and some maples.
- ◆ Landscape the yard to divert surface waters away from the tank and drainfield.
- ◆ Be sure that the water from the roof, gutters, and foundation drains does not flow over the system.
- ◆ If your system is at the base of a slope, then consider installing a french drain to divert underground waters.
- ◆ Maintain drainage ditches, subsurface tiles, and drainage outlets so that water can flow freely from them.

#### Septic tank:

- ◆ Install risers over the tank if it is buried 6 inches or deeper. They provide easy access for measuring and pumping solids as well as cleaning the effluent filter.
- ◆ Measure how quickly sludge and scum accumulate in the tank. Have your professional pumper record this information.
- ◆ Have solids pumped out of the tank as needed. Most septic tanks have two compartments; get both pumped.
- ◆ Cooperative Extension Service publication AG-439-13, *Septic Systems and Their Maintenance*, contains more information on pumping frequency.

- ◆ Don't wait until your drainfield fails to have your tank pumped. By then, the drainfield may be ruined. With septic systems, an ounce of prevention is worth a ton of cure!

#### Regulations and precautions:

- ◆ Hire a state-certified subsurface system operator for any system with a pump. One will be required by law for low pressure pipe (LPP) systems installed or repaired after July 1, 1992, any subsurface drip irrigation systems, aerobic treatment units (ATUs), peat biofilters, sand biofilters, textile biofilters, and other complex systems.
- ◆ A list of state-certified subsurface system operators can be obtained from the N.C. Water Pollution Control System Certification Commission at (919) 733-0026.
- ◆ Be sure the pump and electrical components continue working properly between scheduled maintenance visits.
- ◆ Sewage contains germs that can cause diseases. Never enter a septic tank. Toxic and explosive gases in the tank present a hazard. Old tanks may collapse. Electrical controls present a shock and spark hazard. Secure the septic tank lid so that children cannot open it.
- ◆ Don't attempt to repair a failing system yourself. Get a repair permit and hire an experienced contractor.

For more information about septic systems, contact your county Extension agent or local health department.

#### Prepared by

**Michael T. Hoover**, Extension Soil Science Specialist,  
Department of Soil Science,  
North Carolina State University

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### FAX TRANSMITTAL FORM

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To: *Joe West*  
Attention:  
Re:  
Phone:  
Fax:

From: *TN. Soto*  
Date sent: *10/26/09*  
Number of Pages: *2*  
(includes cover)

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Message: *We are opting to use option 1 from your  
letter sent May 12th. Regarding Application #  
09-5-21877.*

Thank you!

*Thomas Soto*