HAL OWEN & ASSOCIATES, INC.

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

30 January, 2003

Mr. Bob Cieri
100 Ridge View Road
Cameron, NC 28326

Reference: Detailed Soil Investigation And Septic System Designs
Lots 34 and 35 of The Highlands at Sherwood Forest, Phase Two
And Pool Site for Sherwood Forest Subdivision

Dear Mr. Cieri,

A site investigation has been conducted for the above referenced properties to determine each lot's ability to support subsurface sewage waste disposal systems for its' intended use. All sewage disposal ratings and determinations were made in accordance with "Laws and Rules for Sanitary Sewage Collection, Treatment and Disposal, 15A NCAC 18A .1900." This report represents our professional opinion as Licensed Soil Scientists but does not guarantee or represent permit approval for any lot by the local Health Department. An improvement permit for all residences and the pool will need to be obtained from the Health Department that provides system specifications and locations.

We met with Mr. Joe West of the Harnett County Health Department at the site and pointed out that Lot 35 contains a significant amount of usable soil. It is our understanding that a permit has been issued for that lot and that additional work is not required. If the attached map modifies the lots size from the map used by Mr. West to issue the permit he may need to issue a revision. The lot shown on the attached map appears adequate to support a conventional septic system and repair area for one home.

Lot 34 was redesigned with the new lot line located along the existing ditch because additional area was needed to accommodate the septic system for the swimming pool. Lot 34 contained extra amounts of usable area, which made this revision possible and provided an adequate site for the swimming pools' waste disposal system. The soils at the rear of Lot 34 were observed to be deep well drained friable sandy clay loams and appear adequate to support a long-term acceptance rate of 0.5 gal/day/sqft. Pin flags representing potential drainlines were placed on the ground at the rear of lot in adequate amounts to provide a conventional initial septic system and repair area for a three-bedroom home or an innovative septic system for the initial and repair for a four-bedroom home (see attached design sheet). The home will need to be located on the front of the lot and a pump utilized to move effluent to the rear of the lot. You will need to coordinate with the Health Department and the Department of Public Utilities relative to this supply line crossing the public water line that exists at the site.

A septic system design was also provided for the pool utilizing the following parameters. The daily flow rate for the pool is determined by multiplying the bather load by a factor of ten gallons per person. Since the pool is less than five feet deep throughout, the appropriate number of bathers is one person per 15 square feet of pool area. Measurements made at the pool site indicate the pool to be approximately 1,108 square feet providing a bather load of 74 persons and a daily flow of 740 gallons. The soils in the disposal area for the pool were observed to be deep well-drained sandy clay loams and appear adequate to support a long-term acceptance rate of 0.5 gal/day/sqft. This equates to approximately 370 feet of innovative drainlines for each system, which you could dose by gravity. A total of 787 feet of potential drainline (9 foot centers) was demonstrated at the site, which is adequate for the initial septic system and the repair system for the pool.

We appreciate the opportunity to provide this service and trust that you will feel free to call on us 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 Licensed Soil Scientist

The Highlands at Sherwood Forest, Lot 34 and Pool

Lot 34

Lines flagged at site on 9-ft centers.

Initial/ Repair	Line #	Color	Drainline Length(ft)	Measured Field Line Length (ft)
Repair	1	B	50	50
Repair	2	W	70	72
Repair	3	R	65	85
Repair	4	Y	55	58+
Initial	5	B	60	58+
Initial	6	W	60	65+
Initial	7	R	60	65+
Initial	8	Y	60	60+
		Total:	**480**	**513**

Bedrooms: 3 w/ conventional
4 w/ Innovative

Initial System: Pump to 4 x 60-ft (L5-L8) conventional drainlines
on contour at: 18 to 24 inches
LTAR: 0.5 gpd/sqft

Repair System: Pump to 2 x 120-ft (L1-L4) conventional drainlines
on contour at: 18 to 24 inches
LTAR: 0.5 gpd/sqft

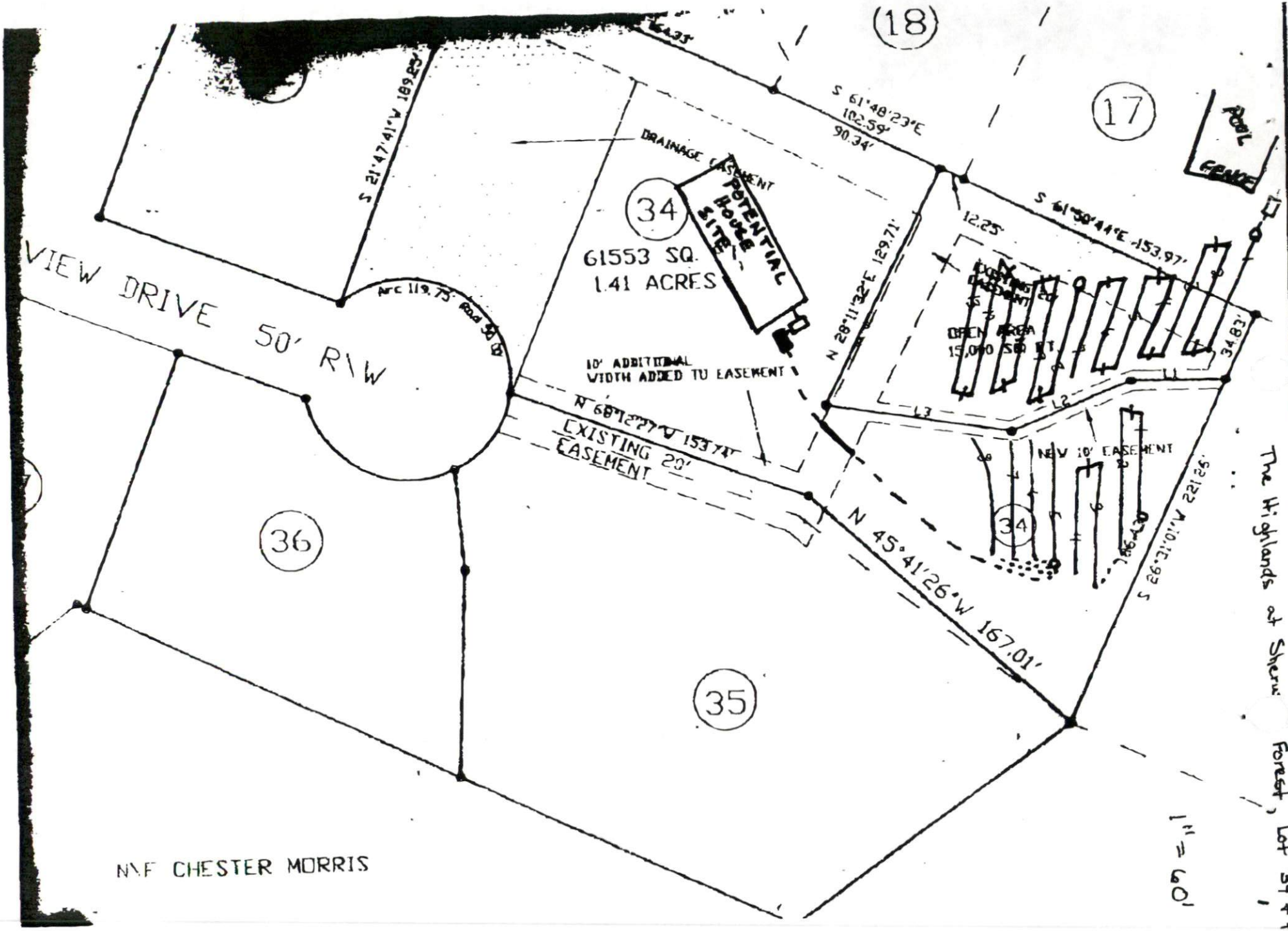
Pool

Lines flagged at site on 9-ft centers.

Initial/ Repair	Line #	Color	Drainline Length(ft)	Measured Field Line Length (ft)
Initial	1	Y	60	62
Initial	2	R	60	67
Initial	3	B	60	79
Initial	4	W	40	43
Initial	5	Y	50	53
Initial	6	R	50	50
Initial	7	B	50	55
	Subtotal:		**370**	**409**
Repair	8	W	55	58
Repair	9	Y	65	65
Repair	10	R	50	52
Repair	11	B	60	60
Repair	12	W	70	70
Repair	13	Y	70	73
	Subtotal:		**370**	**378**
		Total:	**740**	**787**

Initial System: Gravity Serial Distribution
370-ft of Innov. Drainlines
on contour at: 18 inches
LTAR: 0.5 gpd/sqft

Repair System: Gravity Serial Distribution
370-ft of Innov. Drainlines
on contour at: 18 inches
LTAR: 0.5 gpd/sqft



The Highlands at Sherw Forest, Lot 34 + Pool

1" = 60'