

HALOWEN & ASSOCIATES INC.

SOIL & ENVIRONMENTAL SCIENTISTS

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30 November 2005

Mr. Oliver Tolksdorf
Harnett County Environmental Health
307 West Cornelius Harnett Blvd.
Lillington, NC 27546

Reference: Septic System Design Layout
Lot 77, Ballard Woods Subdivision- Phase 2

Dear Mr. Tolksdorf,

A site investigation was conducted for the above referenced property. The site is located at the terminal end of Mary Grey Court in Ballard Woods Subdivision, Hector's Creek Township, Harnett County, North Carolina. The purpose of this investigation was to determine this lots' ability to support a subsurface sewage waste disposal system and 100% repair area for a typical three-bedroom home. All ratings and determinations were made in accordance with "Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A .1900". It is our understanding that individual septic systems and public water supplies will be utilized at this site. A foundation drain will be possible. An easement has been established in the open space at the rear of Lot 77 for the septic system and repair area. A stream crossing will be required when the effluent is pumped to three 100-ft innovative drainlines for the initial system. This stream crossing should be conducted perpendicular to the channel and may consist of an aerial crossing that is made of materials that are ductile iron pipe with mechanical joints or steel pipe. The pipe shall be anchored for at least ten feet on either side of the crossing. The repair area is proposed to utilize 600-ft of large diameter pipe that is distributed via a pressure manifold box. The initial septic system is proposed with an 18-inch trench bottom depth. However, the repair is located in slightly marginal soils and is proposed at a trench bottom depth of 12 inches below grade. Therefore approximately six inches of cover will be required to completely cover the system.

Attached is the septic system layout and supporting information for this lot. I trust that this report provides all the information that you require at this time. If you have any questions or need additional information, please contact me at your convenience.

Sincerely,



Laura J. Fortner
Licensed Soil Scientist

Lot 77, Ballard Woods Subdivision- Phase 2

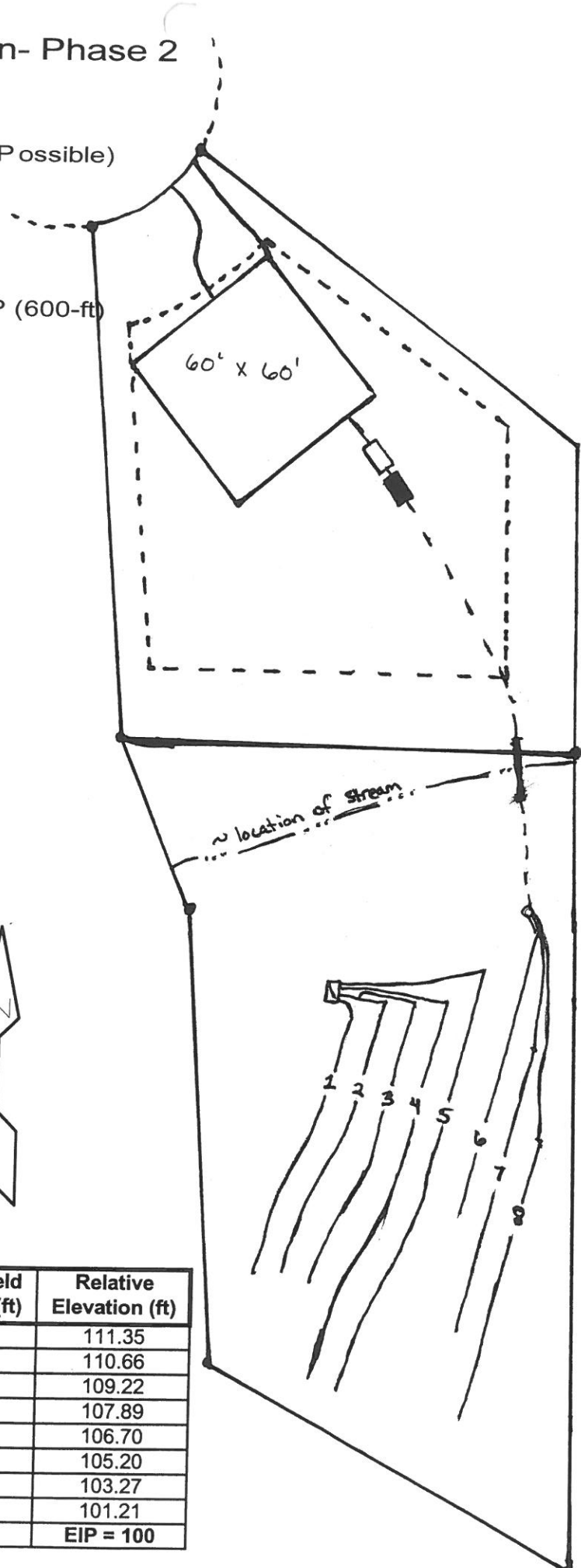
On-Site Wastewater Design Specifications

House Footprint: 60' x 60' (Foundation Drain Possible)
 Bedrooms: 3 (Daily Flow 360 gallons)

Initial System: Pump Innovative (3 x 100-ft)
 on contour at: 18 inches
 Soil LTAR: 0.3 gpd/sqft
 Repair System: Pressure-Manifold 8 inch LDP (600-ft)
 on contour at: 12 inches
 Soil LTAR: 0.3 gpd/sqft

LEGEND	
☆	EIP
□	Septic Tank
⊥	Step-down
■	Pump Tank
⊙	Proposed Well
⊘	D-Box
⊗	Existing Well
⊞	Pressure Manifold

Prepared By: LJJ
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Lines 1-5 flagged at site on 6-ft centers.
 Lines 5-8 flagged at site on 9-ft centers.

Initial/Repair	Line #	Color	Drainline Length(ft)	Measured Field Line Length (ft)	Relative Elevation (ft)
Repair	1	R	90	92	111.35
Repair	2	Y	105	105	110.66
Repair	3	W	110	113	109.22
Repair	4	B	140	142	107.89
Repair	5	R	155	155	106.70
Initial	6	Y	100	172	105.20
Initial	7	B	100	125	103.27
Initial	8	R	100	117	101.21
		Total:	900	1021	EIP = 100

Pressure Manifold Design Criteria

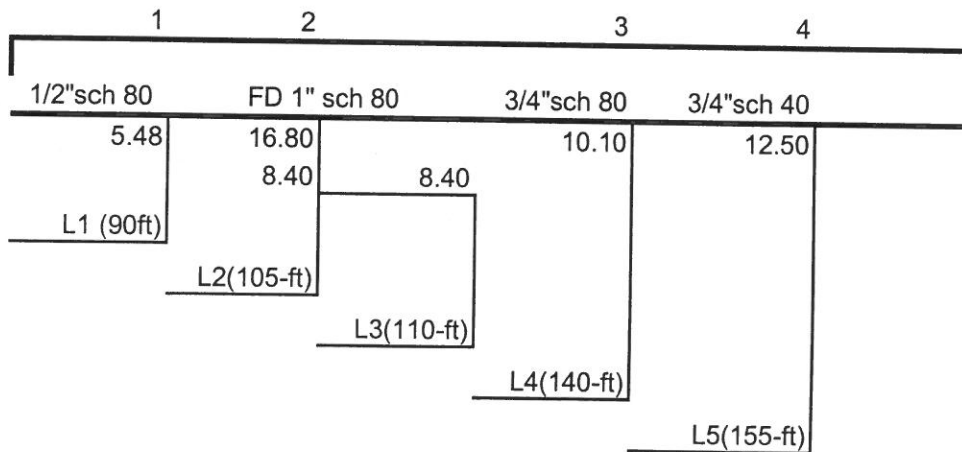
Repair System

Line Number	Line Color	Elevation	Drainline Length(ft)	Tap Size/Schedule	Flow/tap (gpm)	gpd/ft	LTAR (gpd/sqft)
1	R	111.35	90	1/2"sch 80	7.11	0.611	0.306
2	Y	110.66	105	FD 1"sch 80	8.40	0.619	0.310
3	W	109.22	110		8.40	0.591	0.296
4	B	107.89	140	3/4"sch 80	10.10	0.558	0.279
5	R	106.70	155	3/4"sch 40	12.50	0.624	0.312

Total Drainline= 600 Total Flow= 46.51

Pressure Head (ft)= 2 Target LTAR= 0.3 gpd/sqft LTAR + 5% 0.32
 Daily Flow= 360 Total Flow (gpm)= 46.51 Daily PRT(min)= 7.74
 Dose Vol= 293.85 gallons w/ Pipe Vol @% 75 Dose PRT (min)= 6.32

MANIFOLD DIAGRAM:



Lot 77, Ballard Woods Subdivision- Phase 2

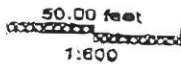
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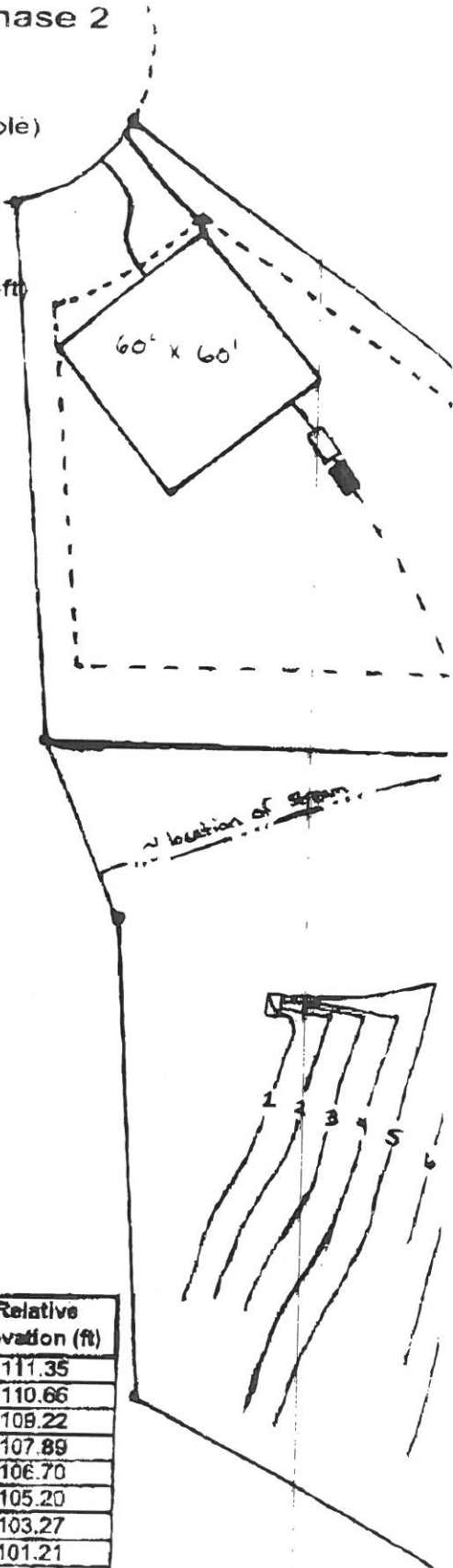
Prepared By: L.J.F.
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50.00 feet

 1:600



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Lot 77, Ballard Woods

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