ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 4 bedroom single family residence on Lot #1 ⇔ Westmoreland Acres, Iredell County, North Carolina.

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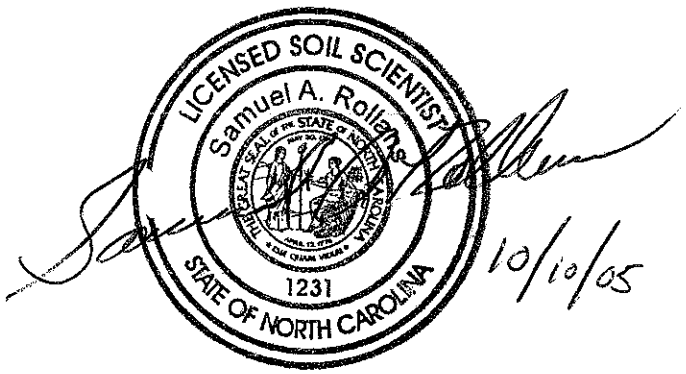
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October 7, 2005
Design By: Rollans Soil and Environmental Services



PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: TERESA NEWTON

Address: 525 SHEPHERD RD
TROUTMAN, NC 28166

Phone: 704-363-6464

County: Iredell

Location: Westmoreland Acres lot 1

Source of Wastewater Flow: 4 Bedroom Single Family Residence

Estimated Daily Wastewater Production: 480 gpd

System Flow: 28.44

Design Specifications

Drainfield Size:	480
Loading Rate:	.25 gpd/ft²
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	110
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	19.14
Dosing Volume:	219.41
Supply Manifold:	4 in. SCH 80 PVC
Supply Manifold Length:	4 ft. (minimum)
Supply Manifold Volume:	N/A
Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	1.96
Elevation Head:	15.70
Total Dynamic Head:	22.61
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

WESTMORELAND ACRES LOT 1 &~~2~~
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	480	
SOIL APPLICATION RATE:	.25 gpd/ft²	
TOTAL AREA TRENCH BOTTOM:	1440	
TOTAL LATERAL LENGTH:	480	
NUMBER OF FIELDS:	1	
LATERAL LENGTH REQUIRED PER FIELD:	480	
SUPPLY LINE LENGTH:	110	
TOTAL DYNAMIC HEAD:	22.61	
MANIFOLD SIZE:	4 in.SCH 80 PVC	
DOSING VOLUME:	219.41	
PUMP TANK DRAW DOWN*:	10.4	
SEPTIC TANK SIZE:		1000
PUMP TANK SIZE:		1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

WESTMORELAND ACRES LOT 1 A[redacted]

LAYOUT FOR 4 BEDROOM HOME

October 7, 2005

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		0.8			100.00		
TANK		11.50	89.30				
HOUSE		8.90	91.90				
INSTR. 1			100.80				
1	***ORANGE***			***2.80***	***98.00***	***120***	***120***
2	***RED***			***3.50***	***97.30***	***120***	***120***
3	***PINK***			***4.40***	***96.40***	***120***	***120***
4	***BLUE***			***5.10***	***95.70***	***120***	***120***
5	ORANGE			5.70	95.10	120	120
6	RED			6.30	94.50	120	120
7	PINK			7.30	93.50	120	120
					Total	**840**	**840**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*480*	*0.25*	*ACCEPT.*	*0.25*	*25% RED.*	**PRESSURE**
Repair	360	0.25	MOD.	0.25	PPBPS	**MANIFOLD LOW PRESSURE**

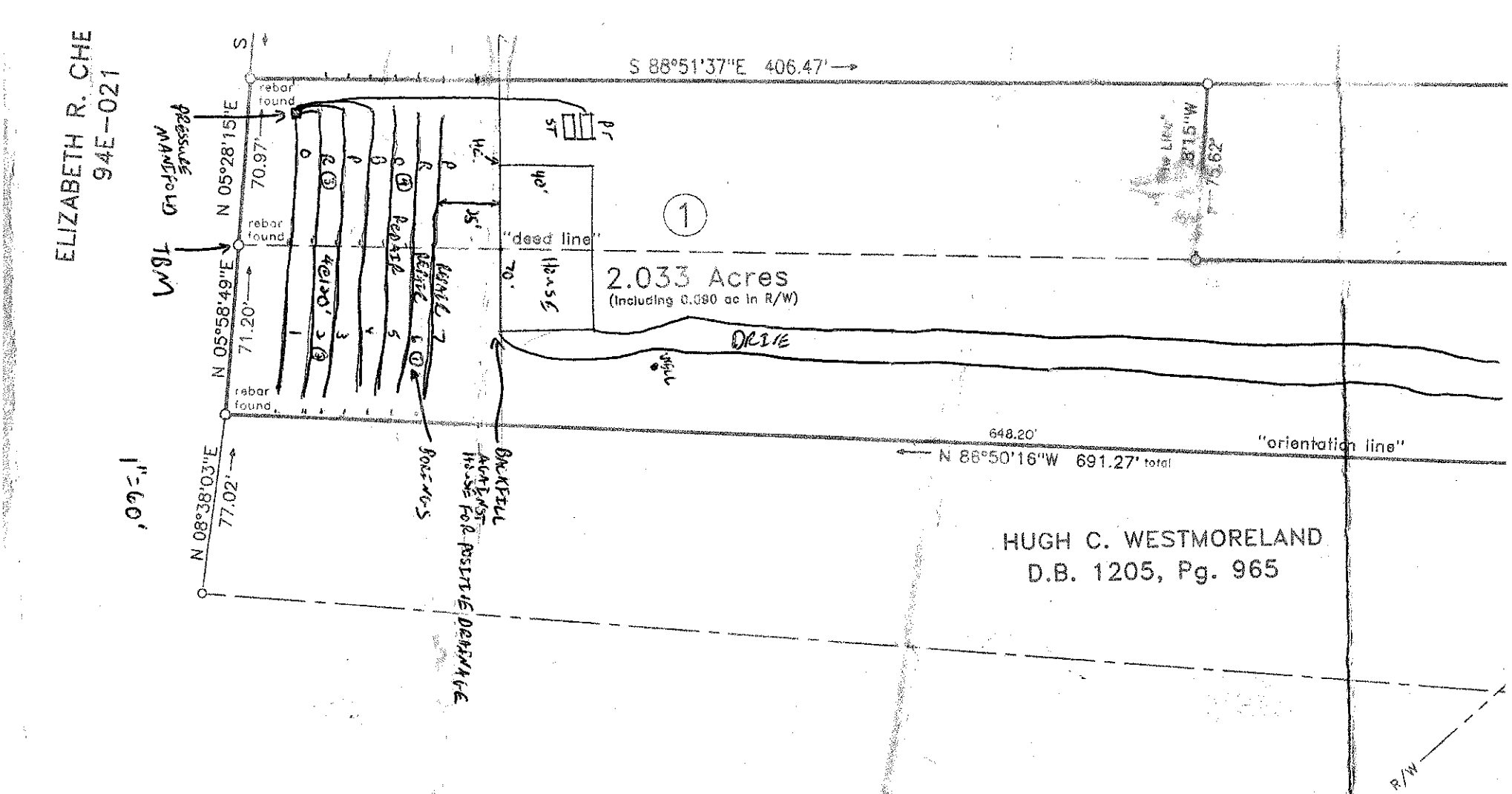
Notes:

** TBM located on corner of lot in back (see site plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

PRESSURE MANIFOLD TAPSHEET - WESTMORELAND ACRES LOT 1

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
1	ORANGE	98	120	SCH 40 1/2	7.11	360
2	RED	97.3	120	SCH 40 1/2	7.11	360
3	PINK	96.4	120	SCH 40 1/2	7.11	360
4	BLUE	95.7	120	SCH 40 1/2	7.11	360
	total	feet =	480	gal/min =	28.44	
			Des. Flow	480		
			Pump Run=	7.71		
			soil LTAR	0.25		
			LTAR +5%	0.2625		
			LTAR with ACCEPTED	0.333333333		
			LTAR with ACCEPTED + 5%	0.35		



I, David B. Jordan, Professional Land Surveyor certify that this plat was drawn under my supervision from an actual survey made under my supervision (Deed description recorded in Book 1543 Page 402, 472; that boundaries not surveyed are clearly indicated as drawn from information found in Book —, Page — ; that the ratio of precision as calculated is 1:10,000+; that this plat was prepared in accordance with G.S. 47-30 as amended.

Witness my original signature, registration number and seal this 2 day of Aug., A.D., 2004

David B. Jordan, P.L.S. License-3940

NORTH CAROLINA PROFESSIONAL SEAL L-3940 LAND SURVEYOR DAVID B. JORDAN

I, David B. Jordan, hereby certify that this survey creates a subdivision of land within the area of a county or municipality that has an ordinance that regulates parcels of land.

David B. Jordan License-3940

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Sheet 1 *of* ___
PROPERTY ID #: _____
COUNTY: Iredell

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: _____ APPLICATION DATE 10/05
ADDRESS: _____ DATE EVALUATED: 10/05
PROPOSED FACILITY: _____ PROPOSED DESIGN FLOW (.1949): _____ PROPERTY SIZE: 2.75ac
LOCATION OF SITE: Westmoreland Acres lot 1 PROPERTY RECORDED: y

WATER SUPPLY: ☐ Private ☐ Public ☐ Well ☐ Spring ☐ Other _____

EVALUATION METHOD: ☐ Auger Boring ☐ Pit ☐ Cut TYPE OF WASTEWATER: ☐ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
1	Linear 5%	0-6	BSCL GR	FRI SSSP SEXP	YELLOW BROWNS FROM 6-24	48"	N/A	N/A	PS .25 GPD/FTSQ
		6-24	RC MFABK	FRI SSSP SEXP					
		24-48	RCL MFSBK	FRI SSSP SEXP					
2	Linear 5%	0-8	BSCL GR	FRI SSSP SEXP	YELLOW BROWNS FROM 8-26	48"	N/A	N/A	PS .25 GPD/FTSQ
		8-26	RC MFABK	FRI SSSP SEXP					
		26-48	RCL MFSBK	FRI SSSP SEXP					
3	Linear 5%	0-4	BSCL GR	FRI SSSP SEXP	YELLOW BROWNS FROM 4-24	48"	N/A	N/A	PS .25 GPD/FTSQ
		4-25	RC MFABK	FRI SSSP SEXP					
		25-48	RCL MFSBK	FRI SSSP SEXP					
4	Linear 5%	0-10	BSCL GR	FRI SSSP SEXP	YELLOW BROWNS FROM 10-28	48"	N/A	N/A	PS .25 GPD/FTSQ
		10-28	RC MFABK	FRI SSSP SEXP					
		28-48	RCL MFSBK	FRI SSSP SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	1440 SQFT	720 SQFT
System Type(s)	ACCEPT.	MOD.
Site LTAR	.25 GPD/FTSQ	.25 GPD/FTSQ

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: ROLLANS SOIL & ENVIRONMENTAL
OTHER(S) PRESENT: _____

COMMENTS: _____