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

Sheet 1 of 1
PROPERTY ID #: 4648134564
COUNTY: IREDELL

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: MARK FORESTER — APPLICATION DATE 11/18/13
ADDRESS: 108 ARTISAN CT MOORESVILLE, NC 28117 — DATE EVALUATED: 7/2013 12/2013
PROPOSED FACILITY: RES 4 BR — PROPOSED DESIGN FLOW (.1949): 480 — PROPERTY SIZE: 1 AC
LOCATION OF SITE: 510 BIG INDIAN LOOP, MOORESVILLE NC 28117 — PROPERTY RECORDED: YES
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) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
B 7	L/12%	0-4	BR CL WMSBK	FR SS SP SEXP	N/A	48	N/A	N/A	.3 GPD/FT²
		4-48	RB C WMSBK	FR SS SP SEXP					
B 8	L/10%	0-12	B CL WFSBK	FR SS SP SEXP	F-C [MN]	48	N/A	N/A	.25-.275 GPD/FT²
		12-36	R C WMSBK	FR SS SP SEXP					
		36-48	BR C WMSBK	FR SS SP SEXP					
B 9	L/	0-7	RB SCL GR	FR SS SP SEXP	F [MN]	48	N/A	N/A	.25-.275 GPD/FT²
		7-48	BR C WMSBK	FR SS SP SEXP					
B 10	L/	0-8	RB SCL GR	FR SS SP SEXP	N/A	48	N/A	N/A	.3 GPD/FT²
		8-48	R C WMSBK	FR SS SP SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	480 LF	535LF
System Type(s)	INNOV 25%	PPBPS
Site LTAR	.25 GPD/FT²	.25GPD/FT²

OTHER FACTORS (.1946): PS
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: OVERBY
OTHER(S) PRESENT:

Approved by ICHD
ALP 12-6-13

LICENSED SOIL SCIENTIST — STATE OF NORTH CAROLINA — 1213

COMMENTS:

Gravity 25% Reduction
FOR WASTEWATER TREATMENT

Owner:	Mark Forester
Address:	108 Artisan Court Mooresville, NC 28117
Phone:	704.663.7723
County:	Iredell
Location:	Big Indian Loop - Indian Forest Lot 13
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	480
System Flow:	NA

Design Specifications

Drainfield Size:	440
Loading Rate (gpd/ft.^{2}):	0.275
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	24 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	N/A
Estimated Supply Line Length:	15
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	5.40
Dosing Volume:	NA
Supply Manifold:	DROP-BOX or END CAP
Supply Manifold Length:	NA
Supply Manifold Volume:	N/A
Recommended Float Controls:	NA
Recommended Control Panel:	NA
Pressure Head:	NA
Friction Head:	NA
Elevation Head:	NA
Total Dynamic Head:	NA
Threaded Union:	NA
Gate Valves:	NA NA
Check Valves:	NA
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

Big Indian Loop - Indian Forest Lot 13

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.275
TOTAL AREA TRENCH BOTTOM:	1320
TOTAL LATERAL LENGTH:	440
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	436.3636364
SUPPLY LINE LENGTH:	15
TOTAL DYNAMIC HEAD:	NA
MANIFOLD SIZE:	NA
DOSING VOLUME:	NA
PUMP TANK DRAW DOWN*:	NA
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	NA

Big Indian Loop - Indian Forest Lot 13

Project #: 01-1629

LAYOUT FOR 4 BEDROOM HOME

August 1, 2013

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		NA		NA	NA		
INSTR. 1							
HOUSE CRN			NA	NA	NA		
P. TANK			NA	NA	NA		
1	***RED***			***NA***	***NA***	***25***	***25***
2	***DARK PINK***			***NA***	***NA***	***45***	***45***
3	***YELLOW***			***NA***	***NA***	***65***	***65***
4	***RED***			***NA***	***NA***	***115***	***115***
5	***DARK PINK***			***NA***	***NA***	***110***	***110***
6	***YELLOW***			***NA***	***NA***	***80***	***80***
7	RED			NA	NA	105	105
8	DARK PINK			NA	NA	107	107
9	YELLOW			NA	NA	67	67
10	RED			NA	NA	58	58
					Total	777	777

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	***440***	***0.275***	***ACCEPT.***	***0.275***	***25% RED.***	**GRAVITY**
Repair	337	0.275	*MOD.*	0.275	PPBPS	**DISTRIBUTION** LOW PRESSURE

Notes:

** TBM Is Not Required.

**All measures in feet

**Nitrification lines are demonstrated on contour via colored pin flags

**BS, HI, and FS indicate rod readings

CALCULATIONS

Location Big Indian Loop

Project Number 01-1629

Lot No: Lot 13

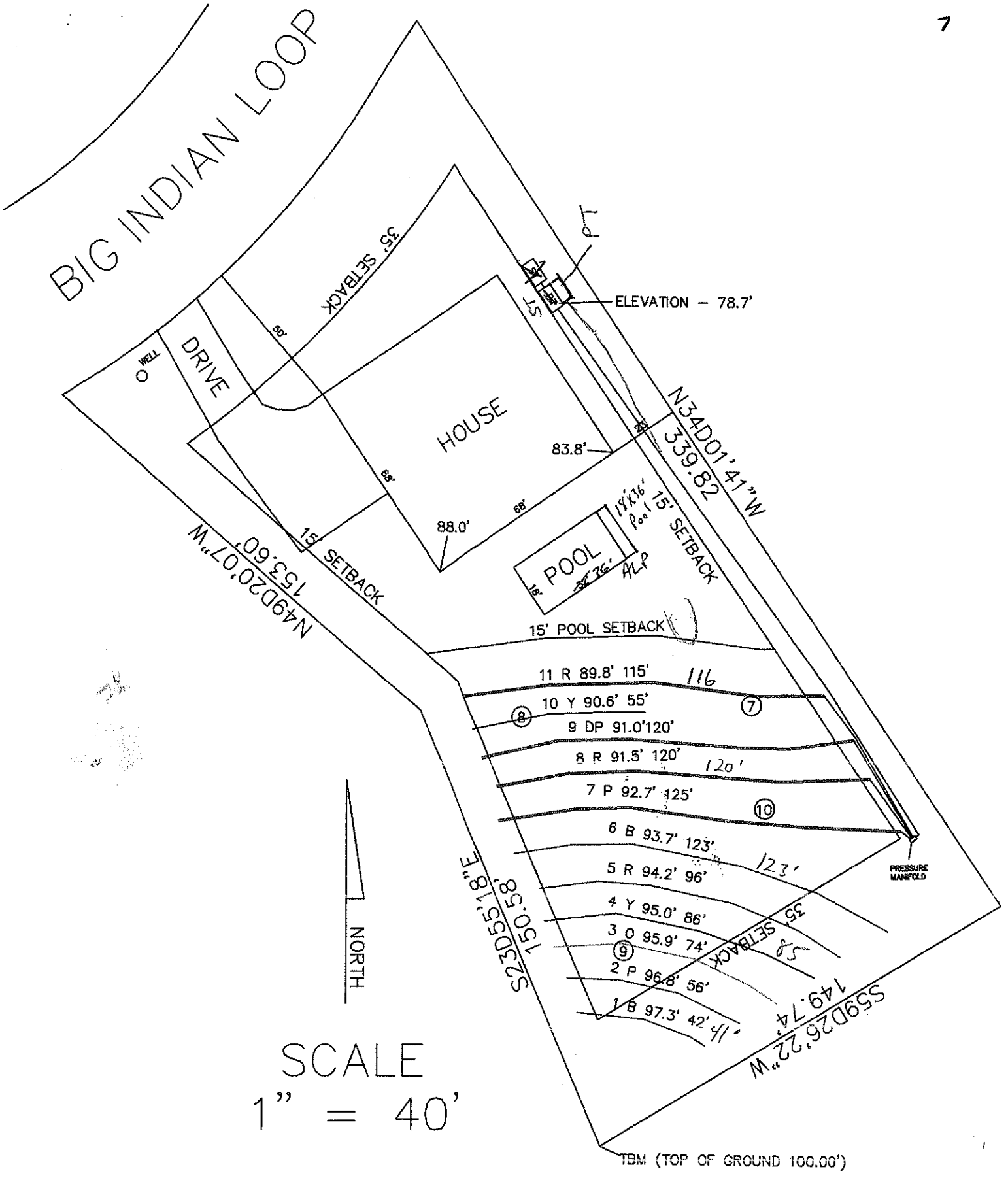
No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.275	$^{gal}/_{ft^2\,day}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	15	ft.
Supply Line Volume	5.4	gal.
Required Feet of Line	436.3636	ft.
Amount of Line from Layout	440	ft.
Gallons per Minute	NA	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	287.32	gal.
Dosing Volume	NA	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	NA	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	NA	minutes
Elevation Head	NA	ft.
Pressure Head	NA	ft.
Friction Factor	NA	ft./100 ft. *(From the interpolater.)*
Friction Head	NA	ft.
Total Dynamic Head (+15%)	NA	ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42



Approved by
ICHD
ALP 12-6-13

CALCULATIONS

Location INDIAN FOREST (BIG INDIAN LOOP)

Lot No:	13	
No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.25	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	205	ft.
Supply Line Volume	35.67	gal.
Required Feet of Line	480	ft.
Amount of Line from Layout	480	ft.
Gallons per Minute	28.44	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	313.44	gal.
Dosing Volume	219.41	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	10.4	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	7.71	minutes
Elevation Head	20	ft.
Pressure Head	2	ft.
Friction Factor	1.62	ft./100 ft. *(From the interpolater.)*
Friction Head	3.32	ft.
Total Dynamic Head (+15%)	29.12	ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
28.44	1.62
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42