Soil & Forestry Services of the Carolinas, PA
PO Box 832
Mooresville, NC 28115

OK
7/3/14

A design for a 3 Bedroom PPBPS Septic System using LPP distribution for Lot 119 Woodland Hills (Canvasback Road) Iredell County

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July 2, 2014
Design By: W. Overby

PPBPS PRESSURE DOSED SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Doug Dupler
	123 Fantasy Lane, Mooresville 28117
Phone:	980 275-9630
County:	Iredell
Location:	Lot 119 Woodland Hills

Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	360 gpd
System Flow:	18.04 gpm

Design Specifications

Drainfield Size:	200 lf
Loading Rate:	0.3 gpd/ft.^{2}
Depth of Gravel in Trench:	n/a
Gravel Size:	n/a
Trench Depth:	30 in
Trench Width:	24 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	150 lf
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	26.10 gal
Dosing Volume:	158.40 gal

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:	1.26 ft
Elevation Head:	8.00 ft
Total Dynamic Head:	11.45 ft
Threaded Union:	In Tank
Gate Valves:	1 in Tank 5 in valve box
Check Valves:	In Tank
Anti-Siphon Hole:	n/a
Recommended Pump:	County Approved Effluent Pump Rated Capable of Delivering 12 ft.of Head at 18 gpm Total Flow

Lot 119 Woodland Hills

PPBPS Design

DESIGN FLOW:	360	gpd
SOIL APPLICATION RATE:	0.3 gpd/ft.^{2}	
TOTAL AREA TRENCH BOTTOM:	400	sf
TOTAL LATERAL LENGTH:	200	lf
NUMBER OF FIELDS:	1	
LATERAL LENGTH REQUIRED PER FIELD:	200	lf
SUPPLY LINE LENGTH:	150	lf
TOTAL DYNAMIC HEAD:	11.45	gpm
DOSING VOLUME:	158.40	gal
PUMP TANK DRAW DOWN*:	7.5	in
SEPTIC TANK SIZE:	1000	
PUMP TANK SIZE:	1000	
RECOMMENDED PUMP:	County Approved Effluent Rated Pump Capable of Delivering 12 ft.of Head at 18 gpm Total Flow	

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

Lot 119 Woodland Hills

Layout for a 3 bedroom home — July 2014

LINE #	FLAG COLOR	BS	HI	FS	ELEV	FLAGGED LINE LENGTH	DESIGN LENGTH
TBM		9.6			100.0		
INSTR. 1			109.6				
PTANK					104.2		
HOUSE CRNR					103.2		
			SYSTEM				
1	Yellow			2.70	106.9	23	23
2	Blue			3.00	106.6	41	40
3	Pink			3.10	106.5	53	48
4	Red			3.20	106.4	50	47
5	Orange			3.60	106.0	45	42
			REPAIR				
6	Pink			3.80	105.8	45	45
7	Yellow			3.90	105.7	40	40
8	Blue			3.90	105.7	31	31
9	Pink			6.70	102.9	41	41
10	Red			6.90	102.7	43	43

	LINE LENGTH	LTAR GPD/FT	SYSTEM TYPE	REDUCTION TYPE	DISTRIBUTION
SYSTEM	200	0.300	MOD	50%	LPP
REPAIR*	200	0.300	MOD	50%	LPP
exempt					

Notes:

TBM orange pin flag at staked house corner

**TBM is assumed to be 100'

**All measures in feet

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

**BS and FS indicate rod readings

Lot 119 Woodland Hills

System (PPBPS)

DESIGN SPECIFICATIONS

Line #	Color	#Panels	#Holes Panel	ft Line Length	Hole Size	ft Line Head	gpm Line Flow
1	Yellow	5	1	23	5/32"	2	2.05
2	Blue	9	1	40	5/32"	2	3.69
3	Pink	11	1	48	5/32"	2	4.51
4	Red	10	1	47	5/32"	2	4.10
5	Orange	9	1	42	5/32"	2	3.69
		44		200			18.04

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

Sheet, of
PROPERTY ID #: 1163684 7846
COUNTY: Iredell

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Doug Dupler
ADDRESS: 3419 Canvasback
APPLICANT:
APPLICATION DATE:
DATE EVALUATED: 6/28/14
PROPOSED FACILITY:
PROPOSED DESIGN FLOW (.1949): 360 gpd
LOCATION OF SITE: Woodland Hills #119
PROPERTY SIZE:
PROPERTY RECORDED:
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	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	L 4%0	0-3"	Brn SCL GR FR SS, SP						.3
		3"-42"	R/Brn C/G	m-w SBK FR, SS, SP, SE					
		42-48"	Brn-to-Yel/Brn C	w SBK FR, SS, SP, SE		48"			
2									
3									
4									

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)		
System Type(s)		
Site LTAR		

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

NOTES:

* PROPERTY MAY BE SUBJECT TO RECORDED OR UNRECORDED RIGHTS OF WAYS OR EASEMENTS NOT OBSERVED
* OWNER TO VERIFY ALL SETBACKS AND ZONING REGULATIONS PRIOR TO ANY PLANNING OR CONSTRUCTION.
* DIMENSIONS OF ALL IMPROVEMENTS SHOWN ON THIS PLAT SHOULD NOT BE SCALED OR RELIED UPON FOR DESIGN OR CONSTRUCTION WITHOUT A FIELD VERIFICATION OF ALL DIMENSIONS.
* DIGITAL COPIES OF THIS FILE ARE FOR REFERENCE ONLY AND MAY NOT BE USED FOR DESIGN WORK.
* 10' DRAIN. & UTILITY EASEMENT MAY EXIST ALONG EACH LOT LINE.
* NO USGS MONUMENT FOUND WITHIN 2000' OF SUBJECT PROPERTY.
* THIS PROPERTY IS NOT LOCATED IN A 100 YEAR FLOOD PLAIN.

Curve	Radius	Length	Chord	Chord Bear.
C1	3709.84'	99.10'	99.10'	N 14°06'35" E

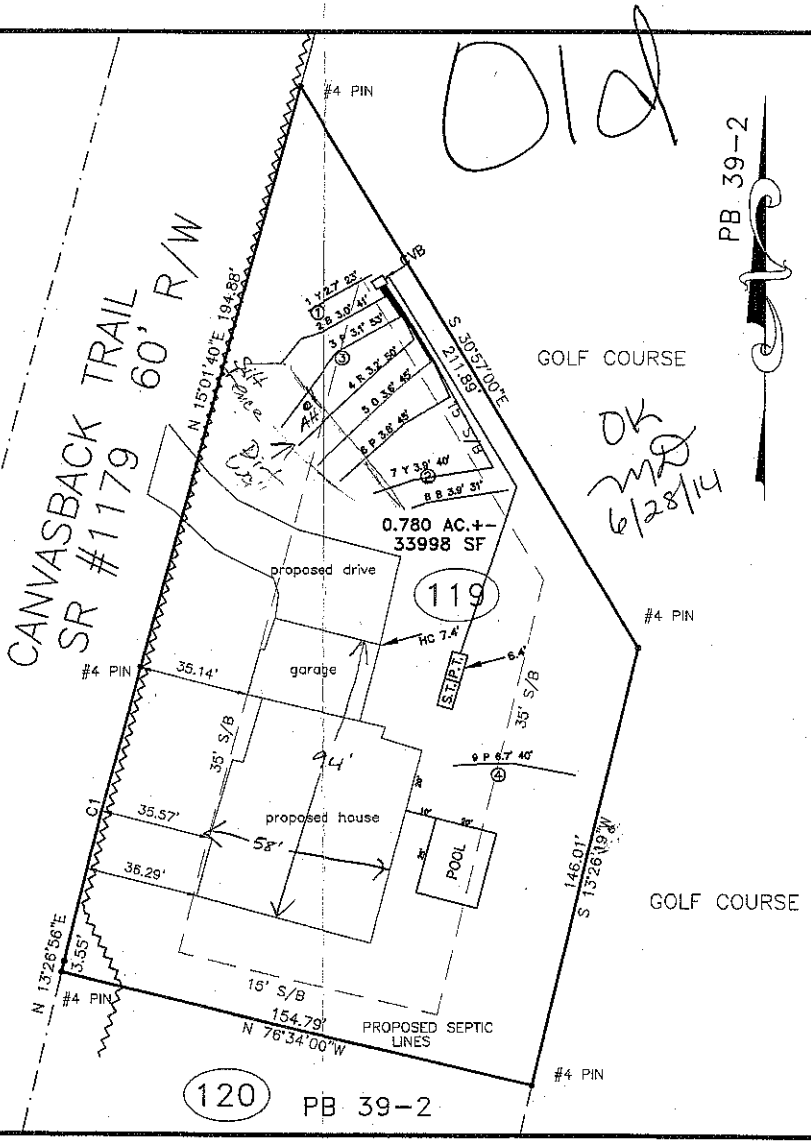
LEGEND:

- BOUNDARY LINE
- SANITARY SEWER LINE
- NATURAL GAS LINE
- UNDERGROUND POWER
- OVERHEAD UTILITIES
- UNDERGROUND TELEPHONE
- WATER LINE
- FENCE (TYPE NOTED)

CP = COMPUTED POINT (UNMARKED)
R/W = RIGHT-OF-WAY
E/P = EDGE OF PAVEMENT
C/L = CENTERLINE
p = UTILITY POLE

DEDMON SURVEYS

40 0 40 80 120
GRAPHIC SCALE – FEET



PHYSICAL SURVEY
FOR

DOUG DUPLER

LOT #119 WOODLAND HILLS

DATE: 5-23-14	DB: 1960	PG: 699
	DB:	PG:
40'	PB: 39	PG: 2

DAVIDSON TOWNSHIP
IREDELL COUNTY, NC

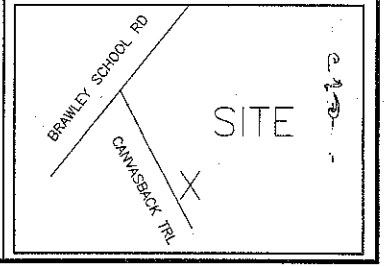
DEDMON SURVEYS

CHUCK POOVEY, PLS #3762
ROBERT DEDMON, PLS #3899

3704 NC HIGHWAY #16 BUSINESS NORTH
P.O. BOX 494 – DENVER, NC 28037
PHONE: 704/483/4908
FAX: 704/483/2170

NORTH CAROLINA PROFESSIONAL SEAL L-3762 LAND SURVEYOR CHARLES E. POOVEY JR.

VICINITY MAP



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

Sheet 1 of 1
PROPERTY ID #: 4636847842
COUNTY: IREDELL

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: DOUG DUPLER
ADDRESS: 123 FANTASY LANE MOORESVILLE NC 28117
PROPOSED FACILITY: 3 BR
PROPOSED DESIGN FLOW (.1949): 360
LOCATION OF SITE: 341 CANVASBACK (LOT 119 WOODLAND HILLS)
WATER SUPPLY: ☐ Private ☑ Public ☑ Well ☐ Spring Other
EVALUATION METHOD: ☑ Auger Boring ☐ Pit ☐ Cut

APPLICATION DATE: 6/6/14
DATE EVALUATED: 5/8/14
PROPERTY SIZE: .78
PROPERTY RECORDED: YES
TYPE OF WASTEWATER: ☑ Sewage ☐ Industrial Process ☐ Mixed

OK MH 6/11/14

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	L/4%	0-3	BSL WFGR	FR SS SP	–	48	–	–	PS .3
		3-24	RB CL WMSBK	FR SS SP					
		24-48	BR C WFSBK	FR SS SP					
2	L/0	0-3	R C FILL		–	48	–	–	PS .3
		3-22	RB CL WMSBK	FR SS SP					
		22-48	BR C WFSBK	FR SS SP					
3	L/1%	0-3	RB SL GR	FR SS SP	–	48	–	–	PS .3
		3-24	BR CL WMSBK	FR SS SP					
		24-43	BR C WFSBK	FR SS SP					
		43-48	YB C WMSBK	FR SS SP					
4	L/4%	0-12	R CL WFABK	FR SS SP	–	48	–	–	PS .3
		12-22	RB CL WFSBK	FR SS SP					
		22-36	RB C WMSBK	FR SS SP					
		36-48	YB C WMSBK	FR SS SP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	274 LF	
System Type(s)	PPBP3	EXEmp1
Site LTAR	.3	

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

COMMENTS:

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

Sheet ___ of ___
PROPERTY ID #: _____
COUNTY: _____

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Kathy Slaughter
ADDRESS: _____
PROPOSED FACILITY: _____ PROPOSED DESIGN FLOW (.1949): _____
LOCATION OF SITE: Woodland Hills Lot 119

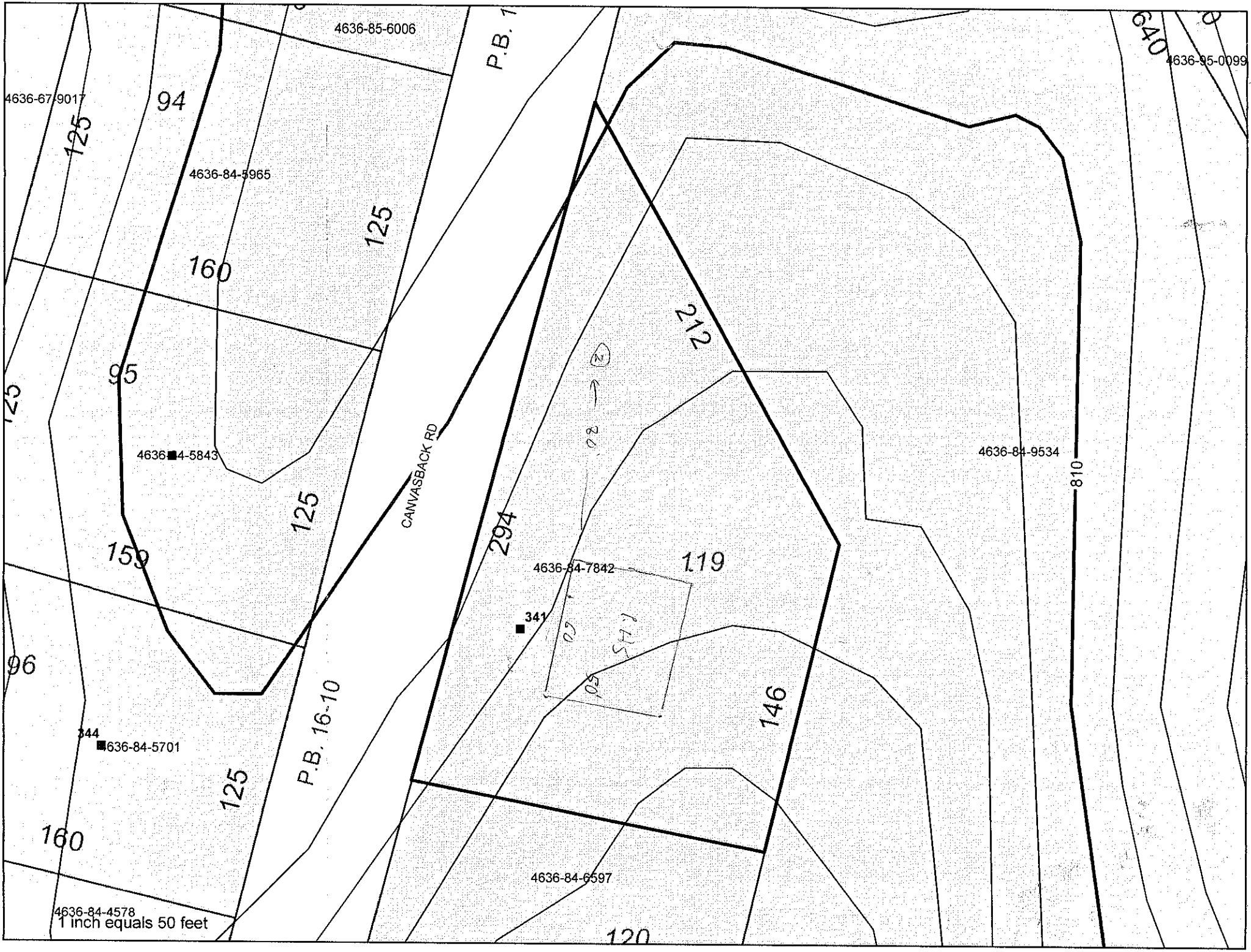
APPLICATION DATE _____
DATE EVALUATED: 12/20/07
PROPERTY SIZE: _____
PROPERTY RECORDED: _____

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	OTHER PROFILE FACTORS .1943 SOIL DEPTH	OTHER PROFILE FACTORS .1956 SAPRO CLASS	OTHER PROFILE FACTORS .1944 RESTR HORIZ	PROFILE CLASS & LTAR
1		0 - 42	msbk C SL81	Pr 55 Sp Exp					P5 .25 >30" .3 at 30" max
		42 - 48	cbk C D48	Pr 55 Sp Exp	few reds	LOB mottles			
2		See Existing Permit (Expired)		106362# Kathy Slaughter 2002					
3									
4									

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)		
System Type(s)		
Site LTAR		

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____
EVALUATED BY: Anthony Cotten
OTHER(S) PRESENT: _____


4636-85-6006
P.B. 1
640
4636-95-0099
4636-67-9017
94
125
4636-84-5965
125
160
95
212
125
4636-84-5843
CANVASBACK RD
4636-84-9534
810
294
159
4636-84-7842
119
341
96
P.B. 16-10
146
344
4636-84-5701
125
160
4636-84-6597
4636-84-4578
1 inch equals 50 feet
120

DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

PROPERTY I.D.#:
COUNTY: 37 Lot 3 Lot 1

OWNER: Kathy Slaughter APPLICANT:
ADDRESS: APPLICATION DATE: DATE EVALUATED: 5/28/02
PROPOSED FACILITY: PROPOSED DESIGN FLOW (.1949): PROPERTY SIZE:
LOCATION OF SITE: Woodland Hills Lot 119 PROPERTY RECORDED:
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	.1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	L 4-5%	0-48"	Rd/Brn C/Cr m-w SBK	SS, SP, SE, FR					PS .3
2	L 5%	0-4"	Brn SCL	GR FR					PS .3
		4-48"	Brn to Rd/Brn C/Cr	FRSS, SP, SE					
3									
4									

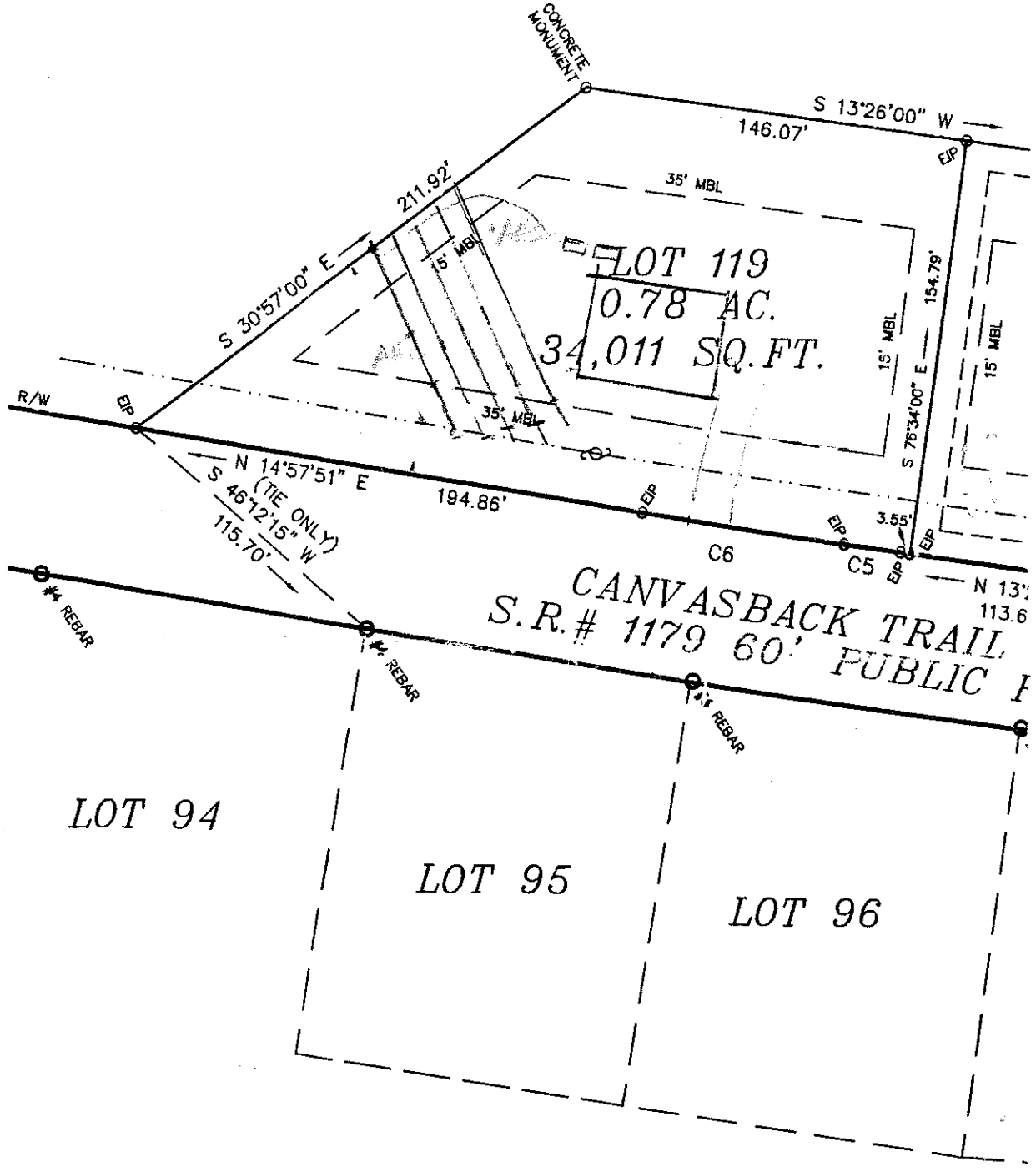
DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Pump-25% Red	Pump-25% Red
%/LTAR	.3	.3

OTHER FACTORS (.1946): None
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: M. Dotson
OTHER(S) PRESENT:

I, William M. Allen, REVIEW OFFICER OF IREDELL COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

8-30-01
DATE

William M. Allen
REVIEW OFFICER



CURVE	RADIUS	LENGTH	CHORD	BEARING
C1	1922.84'	98.44'	98.43'	N 07°36'04" W
C2	468.00'	93.66'	93.50'	N 00°24'04" W
C3	676.17'			

CALCULATIONS

Location Woodland Hills
Project Number 14-1026
Lot No: 119

No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.3	$^{gal}/_{ft^2\ day}$
Innovative? (YES OR NO)	NO	
Supply Line Length	150	ft.
Supply Line Volume	26.1	gal.
Required Feet of Line	200	ft.
Amount of Line from Layout	200	ft.
Gallons per Minute	18.04	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	130.6	gal.
Dosing Volume	158.40	gal.

Note: Dosing Volume=44 panels x 3.6g

Tank Draw Down	7.5	in.

Generic Draw Down of 21 gal.per in.

Pump Run Time	8.78	minutes
Elevation Head	8	ft.
Pressure Head	2	ft.
Friction Factor	0.84	ft./100 ft. *(From the interpolater.)*
Friction Head	1.26	ft.
Friction Head + 15%	1.449	
Total Dynamic Head	11.45	ft.

FRICTION FACTOR
INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
26	1.37
30	1.78
	-1.76
35	2.37
37	2.63
40	3.03
42.4	3.39
45	3.77
46.51	4.01
50	4.58
57.11	5.89
60	6.42