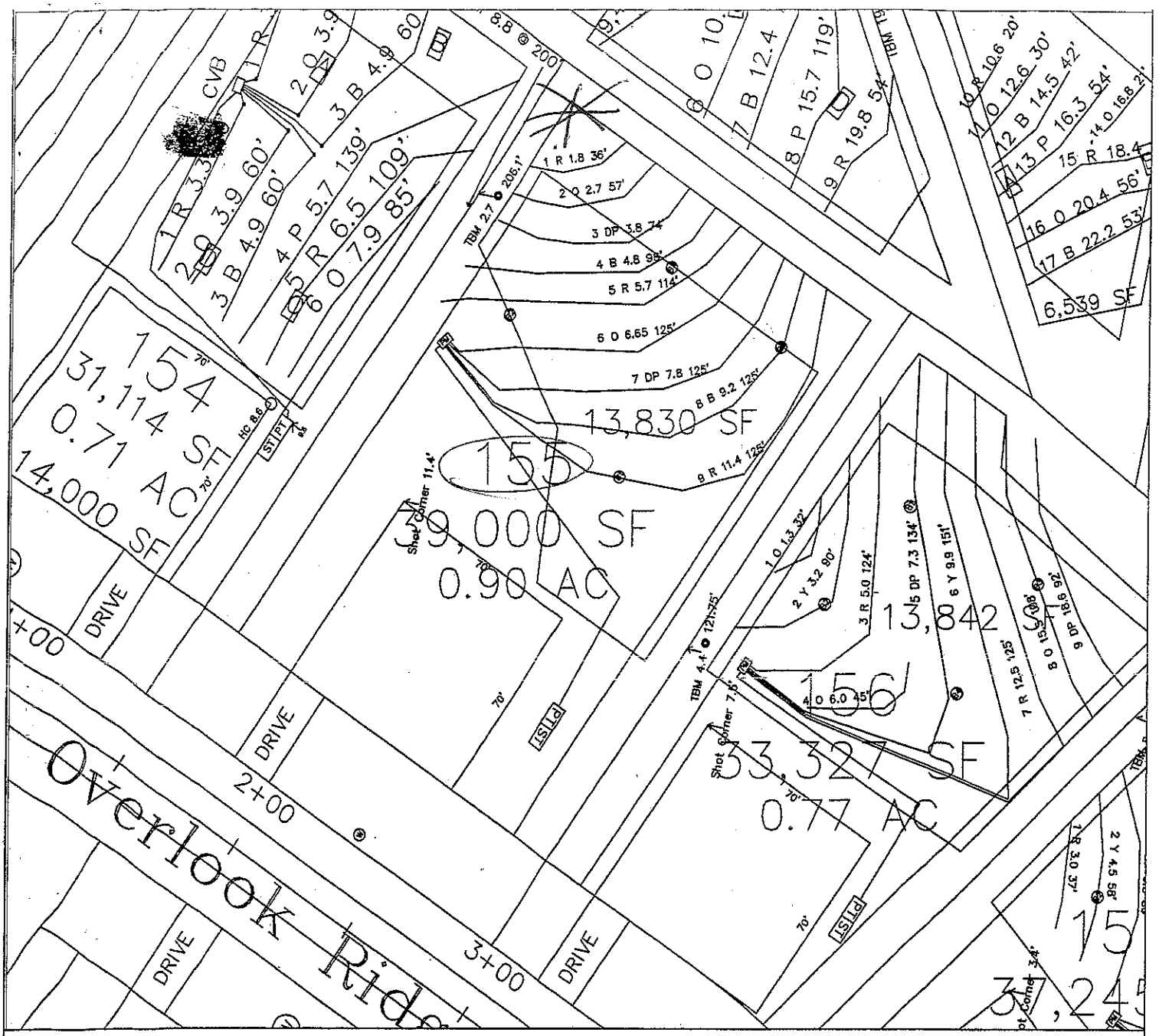


LEGEND

Areas contain soils with 24 inches or more of useable material and have potential for conventional, modified conventional and low-pressure pipe (lpp) septic systems.

House Footprint

System lines.

Repair lines.

Temporary Bench Mark (TBM)

Well Location. (25) Pit Location.

GRAPHIC SCALE
1" = 50'

50 0 50 100

FOR PRELIMINARY PLANNING PURPOSES ONLY. ALL LOTS WILL REQUIRE FINAL APPROVAL BY THE COUNTY HEALTH DEPARTMENT ON A LOT BY LOT BASIS. THIS MAP SHOULD BY USED AS A GENERAL GUIDE. SOME ADJUSTMENTS WILL BE NECESSARY IN THE FIELD DUE TO SOIL VARIABILITY AND COMPLEX TOPOGRAPHIC FEATURES. THIS MAP ONLY REFLECTS EXISTING SOIL SUITABILITY FOR ON-SITE SEPTIC TANK SYSTEMS.

PLEASE REFER TO ATTACHED SOIL REPORT FOR ADDITIONAL SITE SPECIFIC INFORMATION

ROLLANS SOIL & ENVIRONMENTAL SERVICES, PA
P.O. BOX 832
MOORESVILLE, NC 28115
PHONE/FAX: (704) 278-0989
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 746-5046
EMAIL: rollans.ashley@yahoo.com

MAP TITLE: SITE PLAN & DRAINFIELD AREAS

PROJECT NAME: ANNISTON II, LLC / ANNISTON SUBDIVISION

LOCATION/DATE: SHEARER CHAPEL ROAD, IREDELL COUNTY, NORTH CAROLINA, SEPTEMBER 2013

JOB # : 01-1005
FILE: C:\JOBS\01-1005
PROJECT MGR.: S.A.R.
FIELD WORK: S.A.R.
DRAWN BY: S.A.R.

ROLLANS *Soil & Environmental Services, PA.*

P.O. Box 832, Mooresville, NC 28115 Phone: (704) 746-5046 Fax: (704) 278-0989

Ashley Rollans, NC Licensed Soil Scientist
Mobile: (704) 746-5046
Email: rollans.ashley@yahoo.com

NC Certified Septic Installer
NC Certified Subsurface Operator
NC Certified Septic Inspector

Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 5 bedroom single family residence on Lot # 155 Anniston Subdivision, Iredell County, North Carolina.

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Design Information
- Design Specifications---------- 2-3
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- System Tapsheet---------- 5
- Pressure Manifold Diagram---------- 6

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Profile Descriptions---------- 9

September 10, 2013
Project No. 01-1005
Design By: Rollans Soil and Environmental Services, PA

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Anniston II, LLC
Address:	P.O. Box 39 Cornelius, NC 28031
Phone:	704.622.3569
County:	Iredell
Location:	ANNISTON Lot # 155
Source of Wastewater Flow:	5 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	600 gpd
System Flow:	28.44

Design Specifications

Drainfield Size:	500
Loading Rate:	0.3
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	22 in.
Trench Width:	36 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	152
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	26.45
Dosing Volume:	228.55
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:	2.71
Elevation Head:	20.00
Total Dynamic Head:	28.41
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.

ANNISTON Lot # 155
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	600
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	1500
TOTAL LATERAL LENGTH:	500
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	500
SUPPLY LINE LENGTH:	152
TOTAL DYNAMIC HEAD:	28.41
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	228.55
PUMP TANK DRAW DOWN*:	7.4
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.

**Pump tank draw down based on a volume basis of 31 gallons per inch. Draw down may vary among pump tank manufacturers.*

ANNISTON LOT # 155

Project #: 01-1005

LAYOUT FOR 5 BEDROOM HOME

September 10, 2013

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		2.7			100.00		
INSTR. 1			102.70				
HOUSE CNR				11.40	91.30		
P. TANK				21.40	81.30		
1	RED			1.80	100.90	36	36
2	ORANGE			2.70	100.00	57	57
3	DARK PINK			3.80	98.90	74	74
4	BLUE			4.80	97.90	98	98
5	RED			5.70	97.00	114	114
6	***ORANGE***			***6.65***	***96.05***	***125***	***125***
7	***DARK PINK***			***7.80***	***94.90***	***125***	***125***
8	***BLUE***			***9.20***	***93.50***	***125***	***125***
9	***RED***			***11.40***	***91.30***	***125***	***125***
					Total	**879**	**879**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***500***	***0.300***	***ACCEPT.***	***0.300***	***25% RED.***	**PRESSURE MANIFOLD**
Repair	379	0.300	*MOD.*	0.300	PPBPS	LOW PRESSURE

Notes:

** TBM located on top of ground at stake 206.10' from R/W on left hand line
**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 - ANNISTON LOT# 155

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area	Line LTAR
6	***ORANGE***	96.05	*125*	SCH 40 1/2	**7.11**	375	0.15
7	***DARK PINK***	94.9	*125*	SCH 40 1/2	**7.11**	375	0.15
8	***BLUE***	93.5	*125*	SCH 40 1/2	**7.11**	375	0.15
9	***RED***	91.3	*125*	SCH 40 1/2	**7.11**	375	0.15
	total	**feet =**	**500**	**gal/min =**	**28.44**		
			Des. Flow	**600**			
			Pump Run=	**8.04**			
			soil LTAR	**0.3**			
			LTAR +5%	**0.315**			
			LTAR with ACCEPTED	**0.4**			
			LTAR with ACCEPTED + 5%	**0.42**			

CALCULATIONS

Location ANNISTON PH4

Project Number 01-1005

Lot No: 155

No. of Bedrooms	5	
Design Flow	600	$^{gal}/_{day}$
LTAR	0.30	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	152	ft.
Supply Line Volume	26.448	gal.
Required Feet of Line	500	ft.
Amount of Line from Layout	500	ft.
Gallons per Minute	28.44	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Lateral Line Volume	326.5	gal.
Dosing Volume	228.55	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	7.4	*Generic Draw Down of 31 gal.per in.*
Pump Run Time	8.04	minutes
Elevation Head	20	ft.
Pressure Head	2	ft.
Friction Factor	1.78	ft./100 ft. *(From the interpolater.)*
Friction Head	2.71	ft.
Total Dynamic Head (+15%)	28.41	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

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

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

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Anniston, LLC
ADDRESS: Lot 155
PROPOSED FACILITY: SFR
PROPOSED DESIGN FLOW (.1949): 600gpd
LOCATION OF SITE: ___
APPLICATION DATE ___
DATE EVALUATED: 8/25/13
PROPERTY SIZE: ±10.90ac
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	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
B 1	L/15%	0-5	BRCl gr-msbk	FrSSSPSExP	f.-c.sap	40	PS	–	PS 0.3
		5-26	Rc mmsbk	Fr SSSPSExP					
		26-40	RYcl wfsbk	FrSSSPSExP					
		40-48	VAR. l-sl mass	v v v v					
B 2	L/12%	0-8	Bl sr	FrSSSPSExP		48	–	–	PS 0.3
		8-22	RBcl wsbk	" " " "					
		22-40	Rc mmsbk	" " " "	f-sap				
		40-48	Rcl wfsbk	" " " "	f-c sap				
B 3	L/12%	0-5	Bl sr	FrSSSPSExP		48	–	–	PS 0.3
		5-22	Rc wmsbk	" " " "					
		22-48	Rcl wfsbk	" " " "	f-c sap				
B 4	L/10%	0-4	Bl sr	FrSSSPSExP		48	–	–	PS 0.3
		4-12	RYcl wsbk	" " " "					
		12-40	Rc mmsbk	" " " "	f-sap				
		40-48	RYcl wfsbk	" " " "	f-c sap				

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Accepted	PP BPS
Site LTAR	0.3	0.3

OTHER FACTORS (.1946): ___
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: S. Ashley Rollins
OTHER(S) PRESENT: ___

COMMENTS: ___