Approved 11-10-19
AZP



MICHAEL ATHANAS & ASSOCIATES
LICENSED SOIL SCIENTIST
1999 CANDLEWICK DRIVE
FORT MILL, S.C. 29715
803-802-4403 (office)
803-802-4402 (fax)

Reference: Data Sheet for Anniston SD, Lot 132
House Footprint: 70' x 80'
Building Setbacks: 35' front/rear, 15' side
Water Source: Private well
Number of Bedrooms: 4/480 GPD
Pre-determined LTAR: 0.3 GPD/FT2 (ICHD) ← Approved by Anthony Coker
Proposed System Type: 25% Reduction
Proposed Repair System Type: LP PBPS
Distribution: Gravity-Drop boxes/end cap
Septic Tank Size: 1000 gallons
Proposed Trench Bottom: 36"

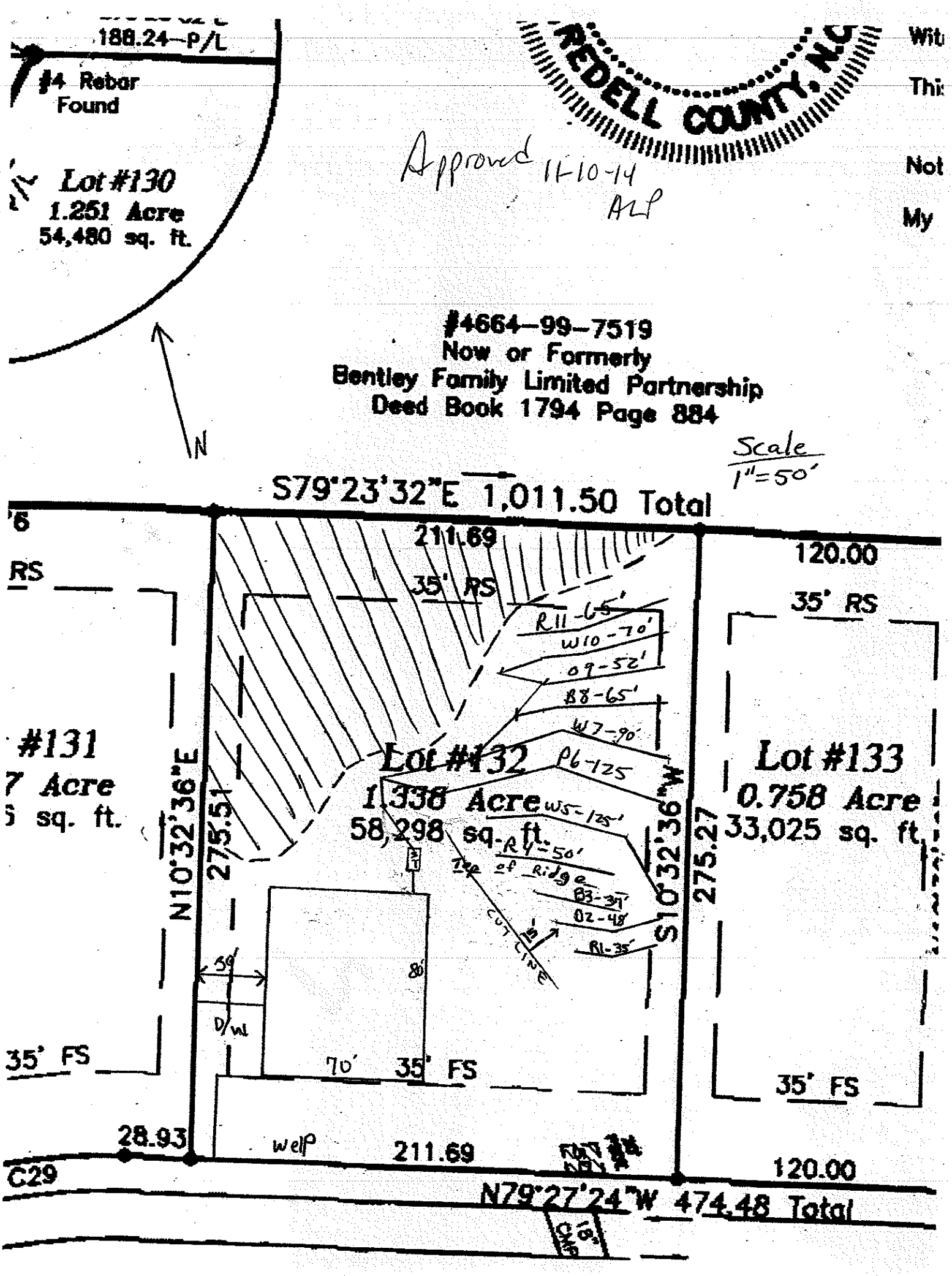
Line	Design Length	Actual Length
Red 1		35'
Orange 2		48'
Blue 3		37'
Red 4		50'
White 5		88'
Pink 6	**125'**	**130'**
White 7	**90'**	**90'**
Blue 8	**65'**	**65'**
Orange 9	**50'**	**52'**
White 10	**70'**	**70'**
Red 11		65'

Initial System: 400' (P6-W10) **Repair System:** 323' (R1-W5, R11)

Comments: Currently this lot is permitted as 5 bedroom septic system, due to recent grading activity, we were contacted by Shea Homes to assess the situation. After a field evaluation, there was extensive grading that took place, approximately 2-3 feet was graded off. MA&A has determined the location of the top of the cut, measured 15 feet off and re-measured lines. We have determined that reducing the bedroom count from 5 to 4 that we could still achieve a gravity 25% reduction system with a panel repair. Please note upon our inspection it appeared

Approved 11-10-14 ALP

the house was outside of the pre-determined house box, therefore we enlarged the house depth by 10 feet on our site plan to accommodate any issues (was 70x70 changed to 70x80). If there are any questions please feel free to contact us. Any changes to this design by ICHD are welcome.


188.24–P/L
#4 Rebar Found
Lot #130
1.251 Acre
54,480 sq. ft.
REDELL COUNTY, N.C.
Approved 11-10-14 ALP
#4664–99–7519
Now or Formerly
Bentley Family Limited Partnership
Deed Book 1794 Page 884
N
Scale 1"=50'
S79°23'32"E 1,011.50 Total
211.69
120.00
35' RS
R11-65'
W10-70'
09-52'
88-65'
W7-90'
P6-125'
W5-125'
R4-50'
Top of Ridge
83-35'
02-48'
R1-35'
CUT LINE
#131
7 Acre
sq. ft.
N10°32'36"E
275.51
Lot #132
1.338 Acre
58,298 sq. ft.
S10°32'36"W
275.27
Lot #133
0.758 Acre
33,025 sq. ft.
50'
80'
D/WL
35' FS
70'
35' FS
35' FS
28.93
wclf
211.69
120.00
C29
N79°27'24"W 474.48 Total
18" CMP

needs OP

~~New Hanover~~ County Environmental Health

Checklist for Conventional Septic System Installation

Site Location: 243 Walding Horse Trl Anniston 6t 32 File #_____

System Location

Initials RF ; Date 1/7/15

Required Setbacks Met:

Public Water Supply: 100'
Private Well : 100' (50) >50
Water Line: 10'

SA Waters: 100' MHWL
Surface Waters: 50'
Drainage Feature:10',15',25'

Property Lines:5' or 10' >10
House Foundation: 5' Y
Other Septic System: 20' Y

Located in Permitted Area Y ; Not in Driveway Area N ; Repair Area Reserved

Tank Information

Initials _____ ; Date _____

Tank Size: 1000 gallons ; Tank Date: 11/24/14 Tank Manufacturer # : RST STD825 ; Baffle

Sanitary Tee ; Filter Tuf-Tite Gas Vent Clear ✓ ; Visible Defects NO Risers if Needed NA 6" deep

System Information

Initials _____ ; Date _____

PVC Plumbing with Sufficient Grade (Tank- D-box ; D-box – drainlines)

Piping Materials Approved ; Equal Distribution to All Drainlines

No. Drainlines:_____ ; Length Each:_____Ft ; Width Each:_____Ft ; Proper Grade in Drainline

Proper Trench Separation ; Trench Bottom Depth Met ; Rock Type Approved

Rock Depth of 12 inches ; Filter Fabric Used ; 6 Inch Soil Cover Available

Other Information

Special Conditions Required on Permit Met: Y/ N / Not Applicable

Comments: Kevin (Rowan Septic)

IREDELL COUNTY HEALTH DEPARTMENT

Statesville Office (704) 878-5305 Mooresville Office (704) 660-3625 PERMIT # 203867

IMPROVEMENT PERMIT / AUTHORIZATION TO CONSTRUCT / OPERATION PERMIT / EXISTING SYSTEM

PIN # 4664984279

APPLICANT: Shea Homes APPLICANT ADDRESS: 8088 Corporate Center Ste 300 Charlotte, NC

SITE ADDRESS: 243 Walking Horse PHONE: ALT. PHONE:

SITE DIRECTIONS: Shearers Rd TL Anniston TR Burnell TL Walking Horse on left

SUBDIVISION: Anniston SECTION: 4 LOT # 132 LOT AREA: 1.338 DESIGN FLOW: 600gpd L.T.A.R.: .3

Septic Tank 1500 (gal) STB Date
Pump Tank (gal) PT Date
Pump Make Model Serial #
Nitrification Fields 1 # Lines 5 Linear Ft: 500
Trench Width 36" Max. Trench Bottom Depth 36" Gravel Depth N/A

☒ New System ☐ Repair ☐ Expansion System Type: I II III IV V VI
System Description: Gravity-25% Reduction
Repair System Description: LPP PBPS
Maintenance Agreement Required: ☐ YES ☒ NO
☒ GRAVITY ☐ PRESSURE

☒ Residence ☐ Business ☐ Other ☐ Slab ☐ Basement w/plumbing
No. Bedrooms 5 No. Persons 10 No. Employees
☒ Crawl Space ☐ Basement w/o plumbing

Water Supply: ☒ Private ☐ Public ☐ Community

Comments / Conditions: 7/28/14 Renewed Floor plans, in Compliance with Septic plan & Improvement permit.

* This permit replaces previous permit dated 5/28/08.

INITIAL SITE SKETCH

See attached, approved plan by Michael Athanas & Associates (dated 6-5-14)

AS BUILT SKETCH

REVOKED

Permit can be suspended or revoked if any false information is supplied toward securing the permit / any unauthorized changes are made to the site / any unauthorized changes are made in the installation of the system. **CONTACT A LOCATOR SERVICE PRIOR TO ANY EXCAVATION**

☐ **IMPROVEMENT PERMIT** *with plat valid without expiration.* ☐ **IMPROVEMENT PERMIT** *with site plan valid for 60 mos.* ☐ **AUTHORIZATION TO CONSTRUCT** *valid for period equal to IMPROVEMENT PERMIT--not to exceed 60 mo.*

Owner / Applicant Signature: Date: 7/24/14 Installed by:

IMPROVEMENT PERMIT by: Date: 6/16/14 OPERATION PERMIT by: Date:

AUTHORIZATION TO CONSTRUCT by: Date: 7/27/14 Existing System Inspected by: Date:

Health Dept. Copy - WHITE Applicant (Final Approval) - YELLOW Applicant (Conditional Approval) - PINK

OLD



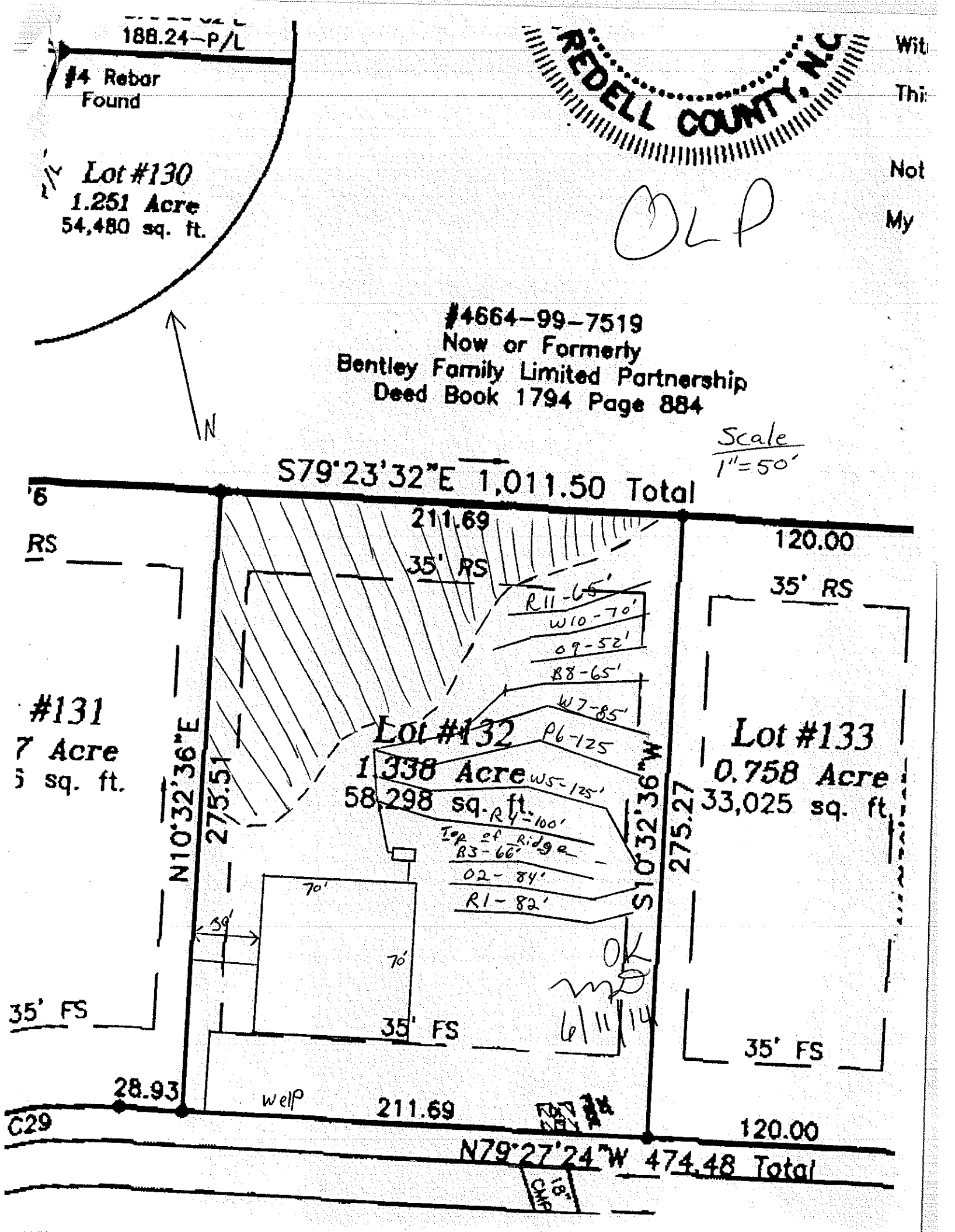
MICHAEL ATHANAS & ASSOCIATES
LICENSED SOIL SCIENTIST
561 Ennis Rd.
Weddington, NC 28173
(704) 576-3887

Reference: Data Sheet for Anniston SD, Lot 132
House Footprint: 70' x 70'
Building Setbacks: 35' front/rear, 15' side
Water Source: Private well
Number of Bedrooms: ~~5/600 GPD~~
Predetermined LTAR: 0.3 GPD/FT2 approved by Anthony Coker
Proposed System Type: 25% Reduction
Proposed Repair System Type: PPBPS
Distribution: Gravity-Drop boxes/end cap
Septic Tank Size: 1500 gallons
Proposed Trench Bottom: 24-36"

Line	Design Length	Actual Length
Red 1		82'
Orange 2		84'
Blue 3		66'
Red 4	**100'**	**102'**
White 5	**125'**	**133'**
Pink 6	**125'**	**130'**
White 7	**85'**	**90'**
Blue 8	**65'**	**65'**
Orange 9		52'
White 10		70'
Red 11		65'

Initial System: 500' **Repair System:** 419'

Comments:


188.24–P/L
#4 Rebar Found
Lot #130
1.251 Acre
54,480 sq. ft.
REDELL COUNTY, N.C.
OLP
#4664–99–7519
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B8-65'
W7-85'
P6-125
W5-125'
R4-100'
Top of Ridge
R3-66'
02-84'
R1-82'
#131
7 Acre
5 sq. ft.
Lot #132
1.338 Acre
58,298 sq. ft.
Lot #133
0.758 Acre
33,025 sq. ft.
N10°32'36"E
275.51
S10°32'36"W
275.27
70'
70'
59'
35' FS
35' FS
35' FS
OK
6/11/14
28.93
well
211.69
120.00
C29
N79°27'24"W 474.48 Total
18" CMP

Owe = 515.00

IREDELL COUNTY HEALTH DEPARTMENT

STATESVILLE 704-878-5305 MOORESVILLE 704-664-5281

IMPROVEMENT PERMIT / AUTHORIZATION TO CONSTRUCT / OPERATION PERMIT / EXISTING SYSTEM INSPECTION

PERMIT# 150543 PIN# 4664984110.132 4664984279 DATE 5/28/08

OWNER OR APPLICANT Niblock Development Co.

ADDRESS 300 McGill Ave NW Concord NC 28027 PHONE: Business _____ Home _____

LOCATION Shearers Rd TL Anniston TR Burnell TL Walking Horse Lob on Left

SUBDIVISION Anniston BLOCK / SECTION ph4 LOT 132 LOT AREA 1.398 SITE CLASS. PS DESIGN FLOW 500 L.T.A.R. .3

Septic Tank: 1500 * Gallons; STB _____ Date _____

Pump Tank: 1500 * Gallons; PT _____ Date _____

Pump Make: _____ Model _____ Serial No. _____

Nitrification Field: No Fields 1 Square Feet 1035 Linear Feet 345'

No Lines 5 Trench Width 36" Max Trench Bottom Depth 36"

☑ New System ☐ Repair ☐ Expansion System Type: I II III (IV) V VI

System Description: LPPPBPS

Repair System Description: same

Maintenance Agreement Required: ☑ Yes ☐ No

☑ House/Mod. Home No. Bedrooms 5

☐ Mobile Home No. Persons ____

☐ Business No. Employees ____

☐ Other ____

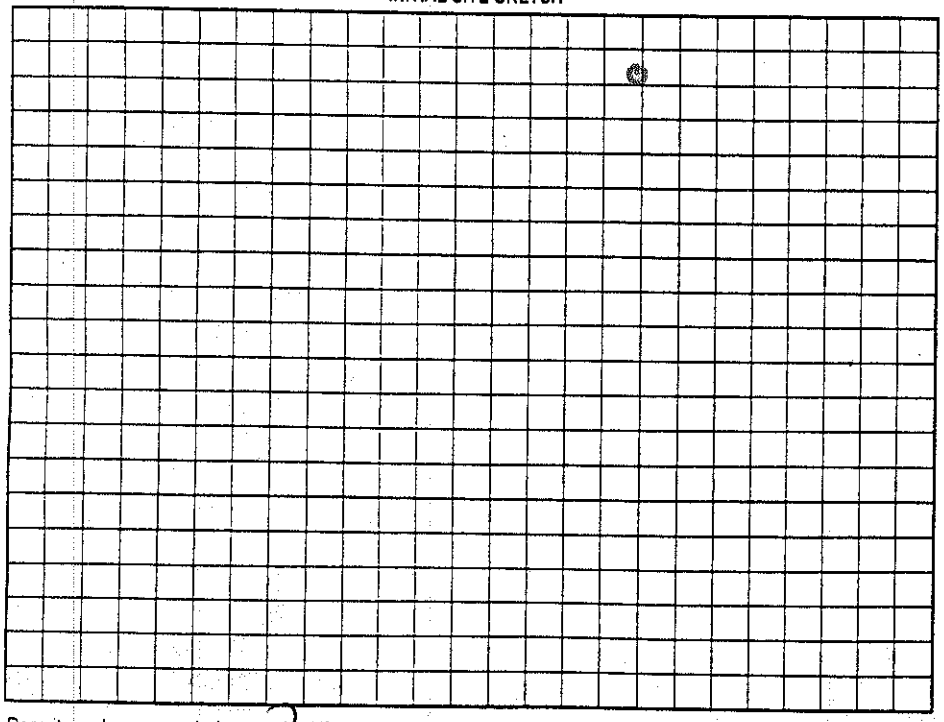
Water Supply: ☑ Individual ☐ Public ☐ Community

Gravel Depth N/A ☐ Gravity ☑ Pressure ☐ Slab ☑ Crawl Space ☐ Basement w/plumbing ☐ Basement wo/plumbing

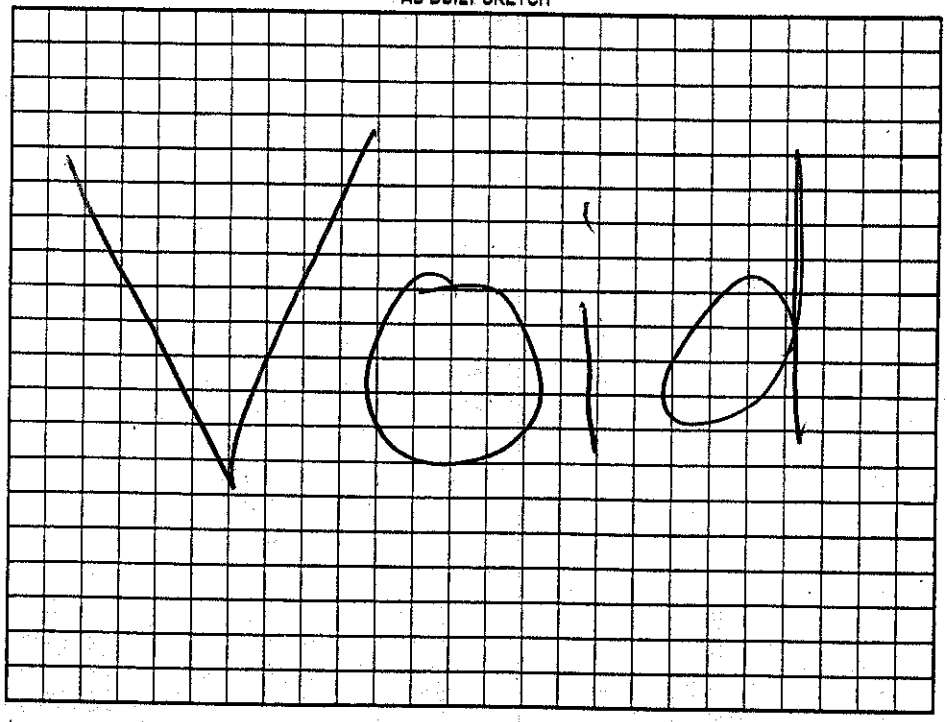
Comments:/Conditions: * Pr plan specs
Hold AC till property recorded + plat submitted

Comments:/Conditions:

INITIAL SITE SKETCH



AS BUILT SKETCH



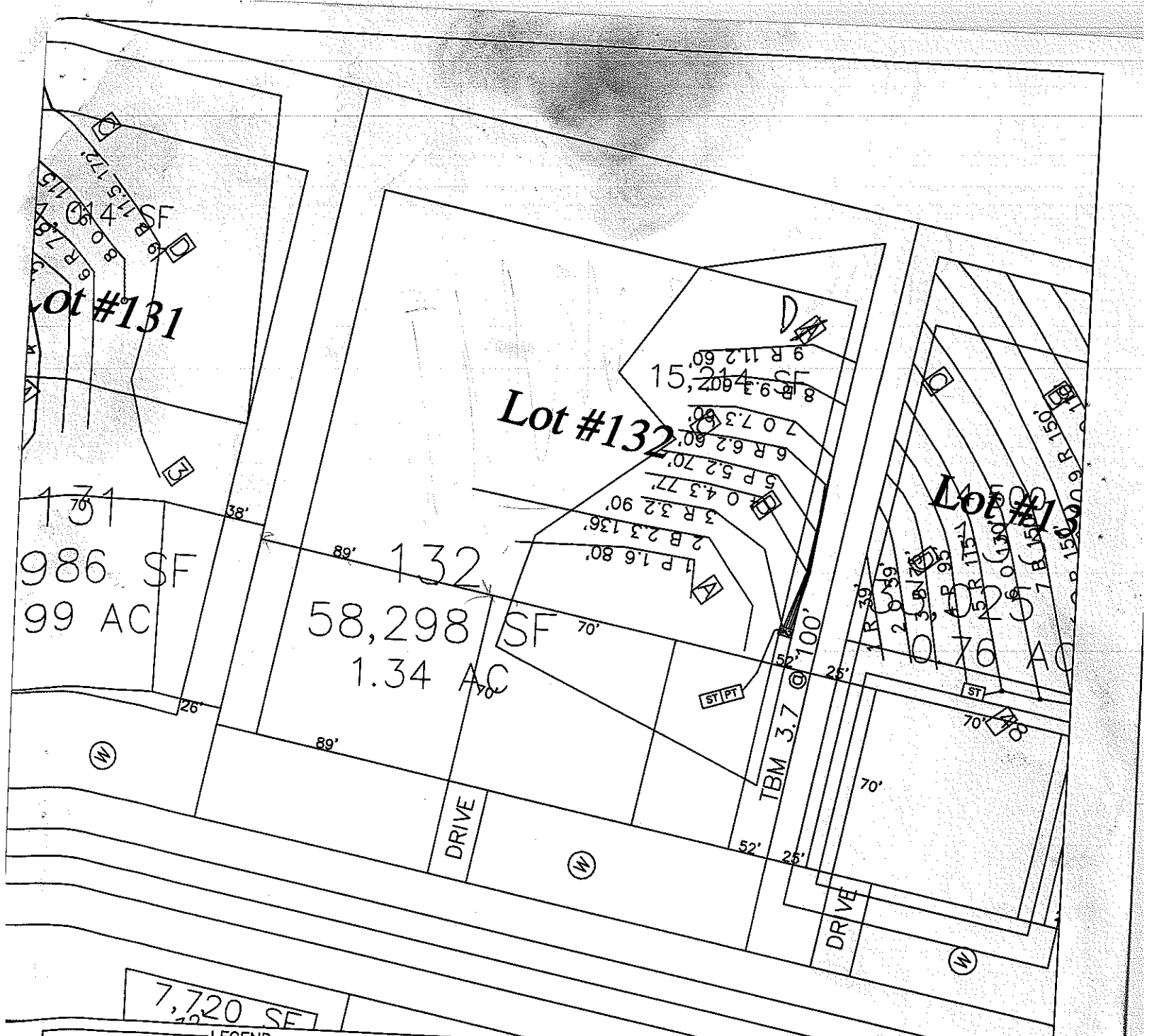
Permit can be suspended or revoked if any false information is supplied toward securing the permit/any unauthorized changes are made to the site/any unauthorized changes are made in the installation of the system. Improvement Permit with plat valid without expiration ☐ Improvement Permit with site plan valid for sixty months ☐ Authorization to Construct is valid for a period equal to that of Improvement Permit – not to exceed sixty months.

Signed: Jamie Dalton date 6-11-08 Installed by: _____

Improvement Permit by: Maiwa H. Dotson RS for Anthony Coker date 6/11/08 Operation Permit by: _____ date _____

Authorization to Construct by: _____ date _____ Existing System Inspection by: _____ date _____

HEALTH DEPT. COPY: WHITE OWNER COPY (FINAL): YELLOW OWNER COPY (INITIAL): PINK



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 (All 70' x 70')
- System lines.
- Repair lines.
- TBM.
- Well Location.
- A — RS&ES Pit Location.
- 25 — RS&ES Boring Location.
- 28 — Health Dept. 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
470 NORTH BROAD ST., SUITE D
MOORESVILLE, NC 28115
PHONE: 704.658.1723 FAX: 704.658.1724
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 746 - 5046
EMAIL: ROLLANS@WINDSTREAM.NET

MAP TITLE: SITE PLAN & DRAINFIELD AREAS

LOCATION/DATE: SHEARER CHAPEL ROAD, IREDELL COUNTY, NORTH CAROLINA, APRIL 2008

PROJECT NAME: NIBLOCK DEVEOPMENT CORP. / ANNISTON PHASE IV

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

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: _____
ADDRESS: _____
PROPOSED FACILITY: _____ PROPOSED DESIGN FLOW (.1949): _____ APPLICATION DATE _____
LOCATION OF SITE: Anderson ph 4 Lot 132 DATE EVALUATED: 5/27/08
WATER SUPPLY: ☐ Private ☐ Public ☐ Well ☐ Spring ☐ Other PROPERTY SIZE: _____ PROPERTY RECORDED: _____
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 A	L 3%	0-26	msbkC	Pr sso so exp					P5 .3
		26-54	wsbkCL	Pr ss so exp					
C 2	L 6-7%	0-18	msbkC	Pr sso so exp					P5 .35
		18-32	wsbkCL	Pr ss so so exp					
		32-55	M ss sl sap vfr ns np		few Clay				
3									
4									

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

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): _____
EVALUATED BY: Anthony C & Chris M.
OTHER(S) PRESENT: _____

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: Niblock Development Corp
ADDRESS: 320 McGill Ave NW Lenoir, NC 28645
PROPOSED FACILITY: SFR
LOCATION OF SITE: Shannon Rd S, Lt on Amoss on Lick Rd on Burnett Pt Upon walking Horse
PROPOSED DESIGN FLOW (.1949): 6 bdrm
APPLICATION DATE: 4/3/08
DATE EVALUATED: 3/08
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	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
1	P132A L/0-5%	0-27	Rc mfsbk/Mk	FrSSSPSExP	fsap	57	-	-	PS 0.3
		27-57	Rc/mafsbk	" " " "					
2	P132B L/5-10%	0-33	Rc mfsbk/fsbk	FrSSSPSExP	fsap	52	-	-	PS 0.3
		33-52	Rc/mfsbk	" " " "					
3	P132C L/10-15%	0-18	Rc wmsbk/Mk	FrSSSPSExP	csap	33	PS	-	PS 0.35
		18-33	Rc/wsbk	" " " "					
		33-50	very f mass	" " " "					
4	P132D L/15-20%	0-21	Rc wfsbk	FrSSSPSExP	csap	49	-	-	PS 0.3-0.35
		21-49	Rc/wfsbk	" " " "					

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

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

010

ROLLANS *Soil & Environmental Services, Inc.*

470 N Broad Street, Suite D, Mooresville, NC 28115 Phone: (704) 658-1723 Fax: (704) 658-1724

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

Brady Freeman, Registered Sanitarian
Mobile: (704) 746-6497
Email: bfree209@yahoo.com

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 5 bedroom single family residence on Lot # 132 in Anniston Subdivision, Iredell County, North Carolina.

Contents:

	Page
Information for the Installer	1
Design Information	
Design Specifications	2-3
Layout Specifications	4
System Tapsheet	5
Site Plan/System Plan	6-7
Calculations	8
Profile Descriptions	9

April 28, 2008
Project #: 01-1005
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Niblock Development Corp.

Address: 300 McGill Ave. NW
Concord, NC 28027

Phone: 704 361 1201

County: Iredell

Location: ANNISTON LOT 132

Source of Wastewater Flow: 5 Bedroom Single Family Residence

Estimated Gallons Per Day Flow: 600

System Flow: 32.39

Design Specifications

Drainfield Size: 345

Loading Rate (gpd/ft.^{2}): 0.3

Depth of Gravel in Trench: NA (PPBPS)

Gravel Size: NA (PPBPS)

Trench Depth: 36 in.

Trench Width: 36 in.

Septic Tank Size: 1500

Pump Tank Size: 1500

Estimated Supply Line Length: 28

Supply Line Diameter: 2 in. SCH 40 PVC

Supply Line Volume: 4.87

Dosing Volume: 154.37

Supply Manifold: N/A

Supply Manifold Length: N/A

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: 0.66

Elevation Head: 3.30

Total Dynamic Head: 6.86

Threaded Union: In Tank

Gate Valves: 1 in Tank
1 per lateral

Check Valves: In Tank

Anti-Siphon Hole: NA

Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services

ANNISTON LOT 132
LP PPBPS

DESIGN FLOW (gpd):	600
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1035
TOTAL LATERAL LENGTH:	345
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	333.3333333
SUPPLY LINE LENGTH:	28
TOTAL DYNAMIC HEAD:	6.86
MANIFOLD SIZE:	N/A
DOSING VOLUME:	154.37
PUMP TANK DRAW DOWN*:	5.3
SEPTIC TANK SIZE:	1500
PUMP TANK SIZE:	1500

**Pump tank draw down based on a volume basis of 29 gallons per inch. Draw down may vary among pump tank manufacturers.*

ANNISTON LOT 132

Project #: 01-1005

LAYOUT FOR 5 BEDROOM HOME

April 28, 2008

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		3.7			100.00		
INSTR. 1			103.70				
HOUSE CNR							
P. TANK				0.90	102.80		
1	PINK			0.20	103.50		
2	BLUE			1.30	102.40	80	80
3	***RED***			3.20	100.50	136	136
4	***ORANGE***			***5.40***	***98.30***	***90***	***80***
5	***PINK***			***8.20***	***95.50***	*77*	*75*
6	***RED***			***10.10***	***93.60***	*70*	*70*
7	***ORANGE***			***12.50***	***91.20***	*60*	*60*
8	BLUE			***14.90***	***88.80***	*60*	*60*
9	RED			18.30	85.40	60	60
				20.30	83.40	60	60
					Total	**693**	**681**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
* *System*	*345*	*0.300*	*MOD.*	*0.300*	***PPBPS***	***LOW PRESSURE***
Repair	336	0.300	MOD.	0.300	PPBPS	LOW PRESSURE

Notes:

** TBM located top of ground at EIP at corner of lot (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

LP PPBPS TAPSHEET -ANNISTON LOT# 132

Line #	Color	Elevation	Length	SYSTEM Hole Size	Flow/hole	Trench Area	Number of Panels
3							
4	RED	98.3	80	0.156	0.41	240	18
5	ORANGE	95.5	75	0.156	0.41	225	17
6	PINK	93.6	70	0.156	0.41	210	16
7	RED	91.2	60	0.156	0.41	180	14
	ORANGE	88.8	60	0.156	0.41	180	14
	total	feet =	345	gal/min =	32.39		79
			Des. Flow	600			
			Pump Run=	5.88			
			soil LTAR	0.3			
			LTAR +5%	0.315			
			LTAR with mod.	0.6			
			LTAR with mod.. + 5%	0.63			

.156 equals 5/32 inch hole

CALCULATIONS

Location ANNISTON PH IV

Project Number 01-1005

Lot No: Lot 132

No. of Bedrooms	5
Design Flow	600 $^{gal}/_{day}$
LTAR	0.300 $^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES
Supply Line Length	28 ft.
Supply Line Volume	4.872 gal.
Required Feet of Line	333.3333 ft.
Amount of Line from Layout	345 ft.
Gallons per Minute	32.39 $^{gal}/_{min}$
Required Septic Tank Capacity	1500 gal.
	1500 gal.
Panel Volume	3.6 gal.
# of Panels	64
Dosing Volume	154.37 gal.

Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel

Tank Draw Down	5.3 *Generic Draw Down of 29 gal.per in.*
Pump Run Time	4.77 minutes
Elevation Head	3.3 ft.
Pressure Head	2 ft.
Friction Factor	2.37 ft./100 ft. *(From the interpolater.)*
Friction Head	0.66 ft.
Total Dynamic Head (+15%)	6.86 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