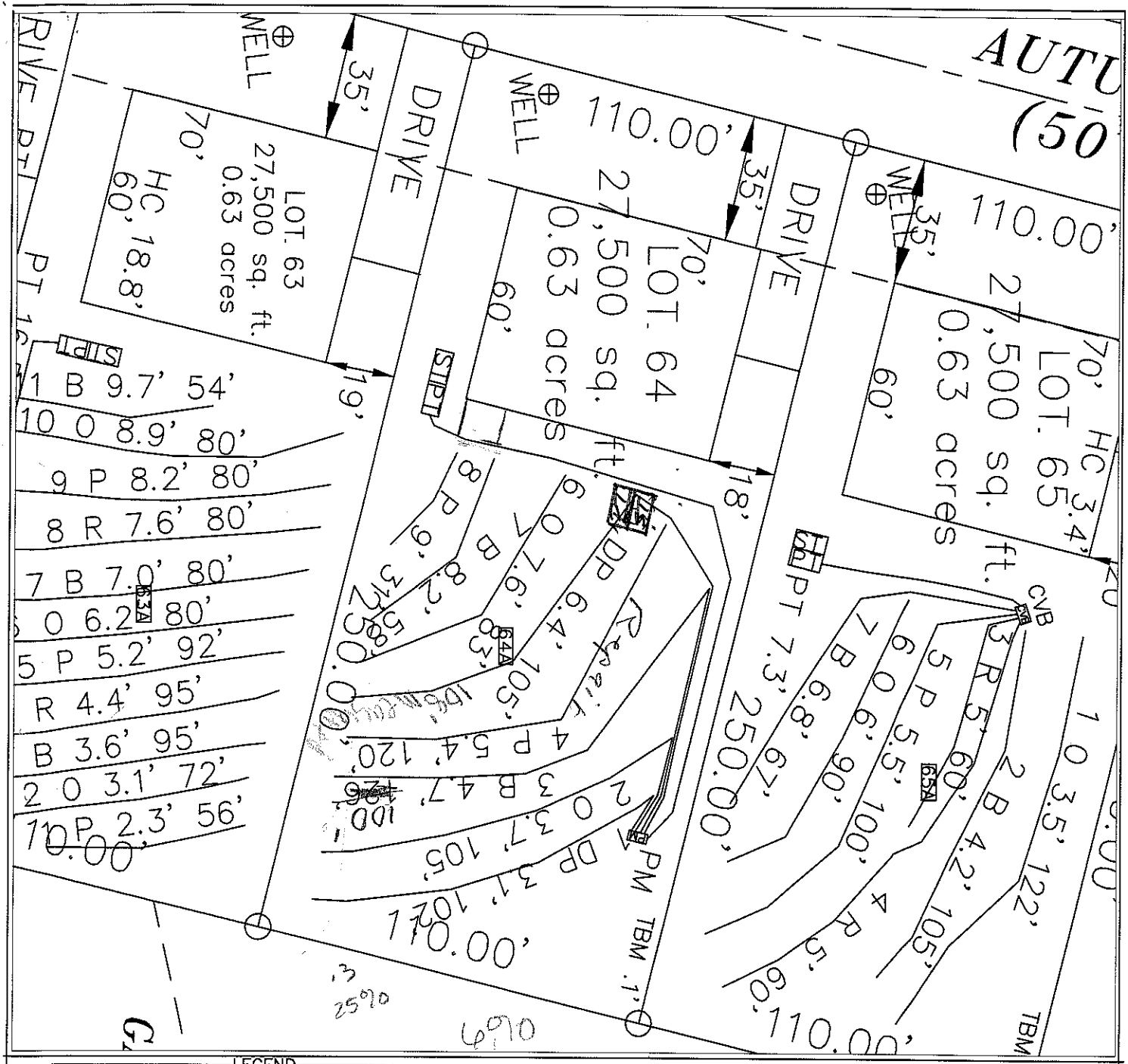


LEGEND

House Box.

System lines.

Repair lines.

OK 11-8-07

GRAPHIC SCALE
1" = 40'

40 0 40 80

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 STREET SUITE D
MOORESVILLE, NC 28115
PHONE: (704) 658-1723
FAX: (704) 658-1724
BRADY FREEMAN, RS.
MOBILE: (704) 746 - 6297
EMAIL: BFREE2944@YAHOO.COM
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 746 - 5046
EMAIL: ROLLANS@WINDSTREAM.NET

MAP TITLE: SITE PLAN & DRAINFIELD AREAS

PROJECT NAME: E&J DEVELOPMENT/AUTUMN GROVE SUBDIVISION

LOCATION/DATE: HWY 21/115 IREDELL COUNTY, NORTH CAROLINA AUGUST 2007

JOB # : 01-1043
FILE: C:\JOBS\01-1043
PROJECT MGR.: C.B.F.
FIELD WORK: C.B.F., A.L.P. & M.D.B.
DRAWN BY: C.B.F. & M.D.B.

SOIL/SITE EVALUATION

(Continuation Sheet)

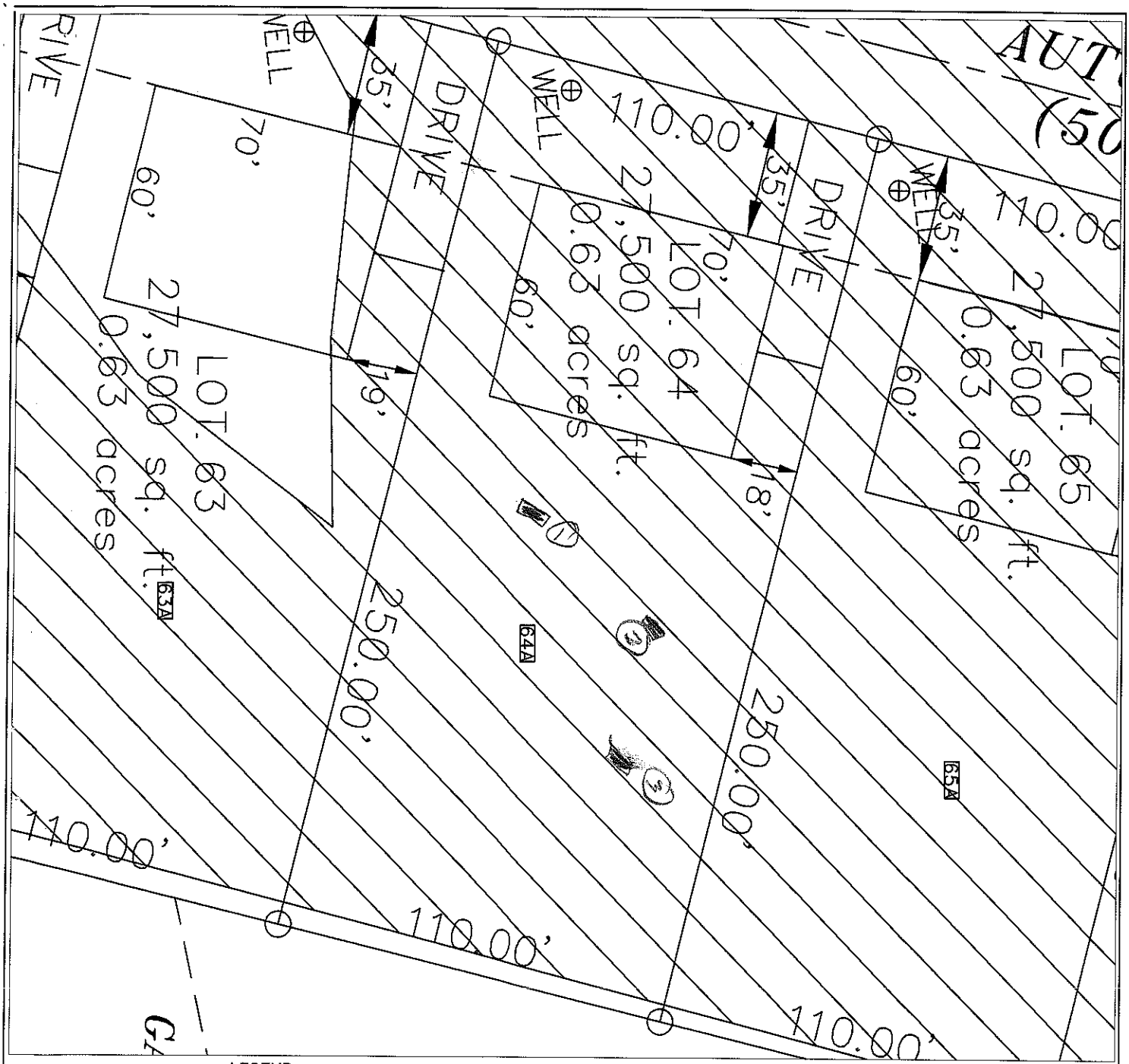
Sheet ___ of ___

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

PROPERTY ID #: _____
DATE OF EVALUATION: _____
COUNTY: _____

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
P	SS	0-5	BSCL Gr	SS, SP, Fr SE-P	—	50"	PS	—	PS
		5-16	R-C MF SBK	SS, SP, Fr SE-P					
64A	0-5%	16-37	R CL MF SBK	SS, SP, Fr SE-P					
		37-50	R CL MF SBK	SS, SP, Fr SE-P	common sap				.3
	6%	50-67	Ver. L Sap Mass	SS, SP, Fr SE-P	common RCL inc.				
		0-6	wk gr scl	fr sssp					
		6-28	mo sbk c	fr sssp					.3
		28-50	wk sbk cl	fr sssp	f-c sap				
		0-9	BSCL wk	fri sssp Sap					
		9-28	RC MF SBK	fri sssp Sap					
		28-53	RCL WSBK	fri sssp Sap	many SAP Inc	53	—	—	.3
		0-5	Br sbk (br) CL	Cr sssp					
		5-24	mo sbk (Red) C	Cr sssp					
		24-48	wk sbk (Red) CL	fr sssp	m-sap	48			.3

COMMENTS: _____



LEGEND

House Box.

System lines.

Repair lines.

GRAPHIC SCALE
1" = 40'

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FIELD WORK: C.B.F., A.L.P. & M.D.B.
DRAWN BY: C.B.F. & M.D.B.

ROLLANS *Soil & Environmental Services, Inc.*

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
E-mail: Rollansfortcj@aol.com

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

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 #64 Autumn Grove Subdivision, Iredell County, North Carolina.

Contents: **Page**

Information for the Installer---------- 1

Design Information
- Design Specifications---------- 2-3
- Layout Specifications---------- 4
- System Tapsheet---------- 5
- Pressure Manifold Diagram---------- 6

Site Plan/System Plan---------- 7

Calculations---------- 8

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

August 30, 2007
Project #: 01-1043
Design By: Rollans Soil and Environmental Services

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Orchard Farms LLC
Address:	227 Hideaway Lane Mooresville, NC 28117
Phone:	704-201-6465
County:	Iredell
Location:	Autumn Grove LOT 64
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	480
System Flow:	28.44

Design Specifications

Drainfield Size:	400
Loading Rate (gpd/ft.^{2}):	0.3
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:	182
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	31.67
Dosing Volume:	195.90
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:	3.24
Elevation Head:	12.00
Total Dynamic Head:	19.83
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.

Autumn Grove LOT 64
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	182
TOTAL DYNAMIC HEAD:	19.83
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	195.90
PUMP TANK DRAW DOWN*:	9.3
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.*

Autumn Grove LOT 64

Project #: 01-1043

LAYOUT FOR 4 BEDROOM HOME

August 30, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		0.1			100.00		
INSTR. 1			100.10				
HOUSE			90.40	9.70			
TANK			90.00	10.10			
1	***DARK PINK***			***3.10***	***97.00***	***102***	***100***
2	***ORANGE***			***3.70***	***96.40***	***105***	***100***
3	***BLUE***			***4.70***	***95.40***	***126***	***100***
4	PINK			5.40	94.70	120	120
5	***DARK PINK***			***6.40***	***93.70***	***105***	***100***
6	ORANGE			7.60	92.50	83	83
7	BLUE			8.20	91.90	58	58
8	PINK			9.00	91.10	31	31
					Total	**730**	**692**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	***400***	***0.3***	***ACCEPT.***	***0.3***	***25% RED.***	**PRESSURE MANIFOLD**
Repair	292	0.3	MOD.	0.3	PPBPS	LOW PRESSURE

Notes:

** TBM located on left front corner lot 47 (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 - Autumn Grove LOT#64

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
1	***DARK PINK***	97	**100**	SCH 40 1/2	**7.11**	300
2	***ORANGE***	96.4	**100**	SCH 40 1/2	**7.11**	300
3	***BLUE***	95.4	**100**	SCH 40 1/2	**7.11**	300
5	***DARK PINK***	93.7	**100**	SCH 40 1/2	**7.11**	300
	total	**feet =**	**400**	**gal/min =**	**28.44**	
			Des. Flow	**480**		
			Pump Run=	**6.89**		
			soil LTAR	**0.30**		
			LTAR +5%	**0.315**		
			LTAR with ACCEPTED	**0.33075**		
			LTAR with ACCEPTED + 5%	**0.3472875**		