25% REDUCTION SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Bells Crossing, LLC
Address:	127B Promenade Dr. Mooresville, NC 28117
Phone:	704 361 1084
County:	Iredell
Location:	BELLS CROSSING LOT 83
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	480 gpd
System Flow:	N/A

Design Specifications

Drainfield Size:	415
Loading Rate:	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:	N/A
Estimated Supply Line Length:	26
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	4.52
Dosing Volume:	N/A
Supply Manifold:	DROP BOX
Supply Manifold Length:	N/A
Supply Manifold Volume:	N/A
Recommended Float Controls:	N/A
	N/A
Recommended Control Panel:	N/A
	N/A
Pressure Head:	N/A
Friction Head:	N/A
Elevation Head:	N/A
Total Dynamic Head:	N/A
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.

BELLS CROSSING LOT 83

GRAVITY DISTRIBUTION DESIGN

DESIGN FLOW:	480	
SOIL APPLICATION RATE:	0.3	
TOTAL AREA TRENCH BOTTOM:	1245	
TOTAL LATERAL LENGTH:	415	
NUMBER OF FIELDS:	1	
LATERAL LENGTH REQUIRED PER FIELD:	400	
SUPPLY LINE LENGTH:	26	
TOTAL DYNAMIC HEAD:	N/A	
MANIFOLD SIZE:	N/A	
DOSING VOLUME:	N/A	
PUMP TANK DRAW DOWN*:	N/A	
SEPTIC TANK SIZE:		1000
PUMP TANK SIZE:	N/A	

BELLS CROSSING LOT # 83

Project #: 01-1429

LAYOUT FOR 4 BEDROOM HOME

September 10, 2008

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		N/A			N/A		
INSTR. 1			N/A				
HOUSE CNR				N/A	N/A		
P. TANK				N/A	N/A		
1	PINK			N/A	N/A	38	38
2	ORANGE			N/A	N/A	43	43
3	DARK PINK			N/A	N/A	48	48
4	BLUE			N/A	N/A	54	54
5	PINK			N/A	N/A	60	60
6	ORANGE			N/A	N/A	64	64
7	DARK PINK			N/A	N/A	70	70
8	RED			N/A	N/A	44	40
9	***BLUE***			***N/A***	***N/A***	***117***	***115***
10	***ORANGE***			***N/A***	***N/A***	***121***	***120***
11	***PINK***			***N/A***	***N/A***	***104***	***100***
12	***RED***			***N/A***	***N/A***	***83***	***80***
13	BLUE			N/A	N/A	82	82
14	ORANGE			N/A	N/A	43	43
					Total	**971**	**957**

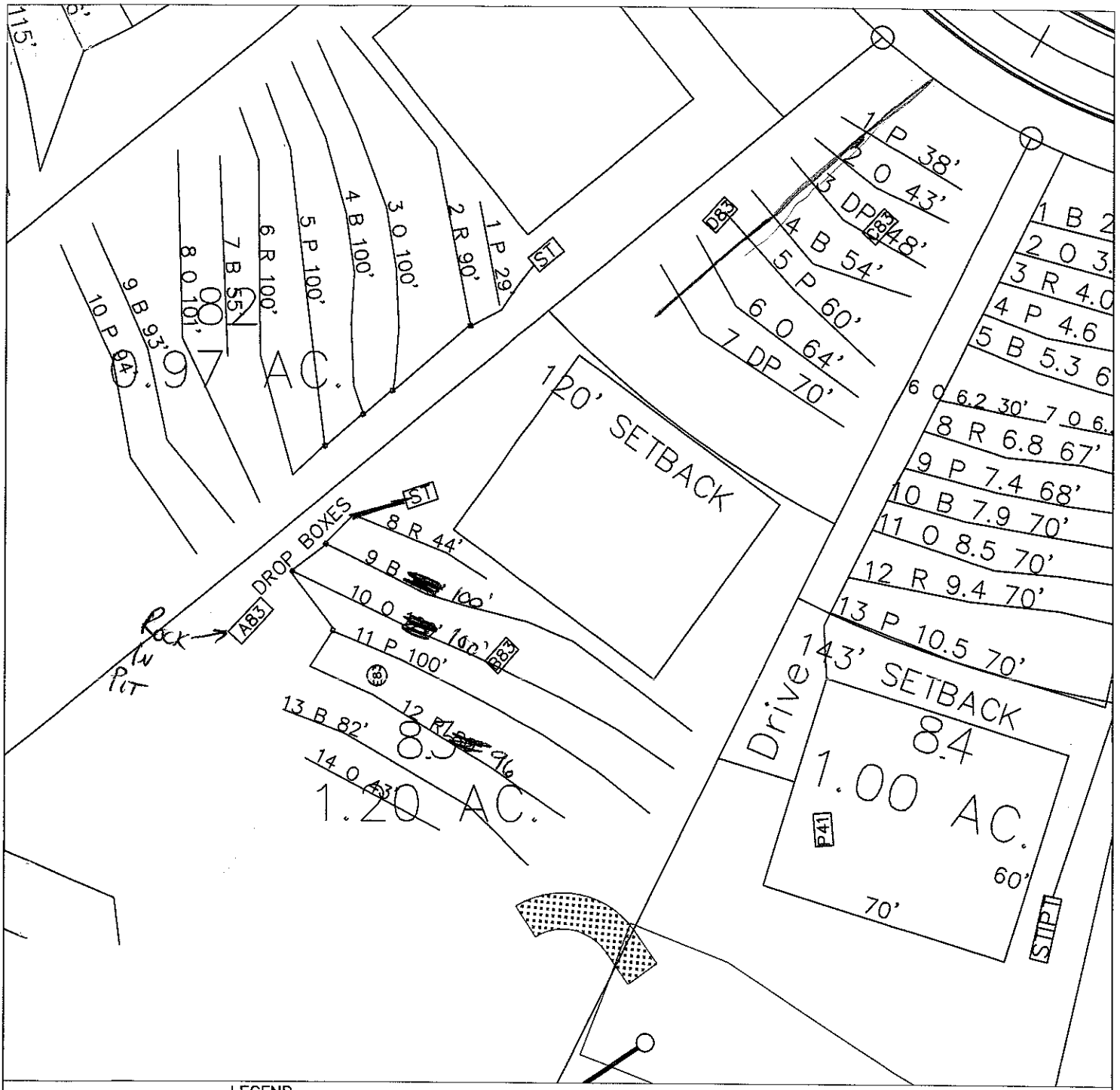
	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
****System***	***415***	***0.300***	***ACCEPT.***	***0.300***	***25% RED.***	**GRAVITY**
Repair	460	0.275	MOD.	0.275	PPBPS	**DISTRIBUTION** LOW PRESSURE

Notes:

**All measures in feet

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

**BS, HI, and FS indicate rod readings



LEGEND

House Box.

System lines.

Repair lines.

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, R.S.
MOBILE: (704) 746 - 6197
EMAIL: BFREE2987@YAHOO.COM

ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 746 - 5044
EMAIL: ROLLANSBWIN@STREAM.NET

MAP TITLE: SITE PLAN & DRAINFIELD AREAS

PROJECT NAME: BELLS CROSSING, LLC / BELLS CROSSING

LOCATION/DATE: PERTH RD
IREDELL COUNTY, NORTH CAROLINA
SEP 2008

JOB # : 01-1429
FILE: C:\JOBS\01-1429
PROJECT MGR.: C.B.F.
FIELD WORK: C.B.F., A.L.P. & M.D.B.
DRAWN BY: C.B.F. & M.D.B.

CALCULATIONS

Location BELLS CROSSING

Project Number 01-1429

Lot No: Lot 83

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.3	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	26	ft.
Supply Line Volume	4.524	gal.
Required Feet of Line	400	ft.
Amount of Line from Layout	415	ft.
Gallons per Minute	N/A	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	270.995	gal.
Dosing Volume	N/A	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	N/A	*Generic Draw Down of 31 gal.per in.*
Pump Run Time	N/A	minutes
Elevation Head	N/A	ft.
Pressure Head	N/A	ft.
Friction Factor	N/A	ft./100 ft. *(From the interpolater.)*
Friction Head	N/A	ft.
Total Dynamic Head (+15%)	N/A	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