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: Rollans@windstream.net

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

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 8 bedroom single family residence for Bruce Cassidy, Iredell County, North Carolina.

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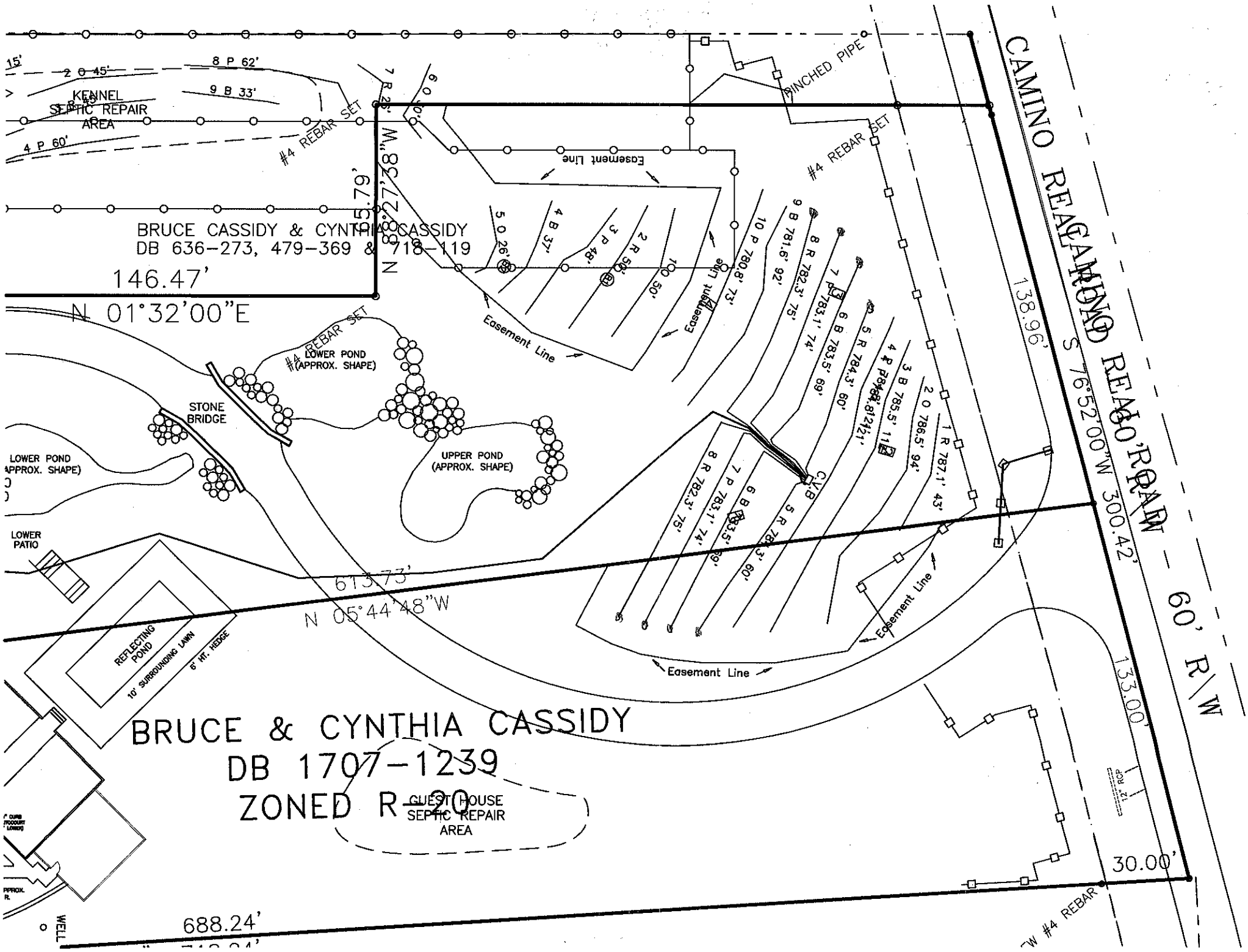
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March 18, 2008
Project #: 01-1446
Design By: Rollans Soil & Environmental Services


CAMINO REAL ROAD - 60' R\W
PINCHED PIPE
#4 REBAR SET
#4 REBAR SET
#4 REBAR SET
KENNEL
SEPTIC REPAIR AREA
Easement Line
BRUCE CASSIDY & CYNTHIA CASSIDY
DB 636-273, 479-369 & 718-119
146.47'
N 01°32'00"E
N 88°27'38"W
575.79'
LOWER POND (APPROX. SHAPE)
STONE BRIDGE
UPPER POND (APPROX. SHAPE)
LOWER POND (APPROX. SHAPE)
LOWER PATIO
REFLECTING POND
10' SURROUNDING LAWN
6' HT. HEDGE
613.73'
N 05°44'48"W
Easement Line
Easement Line
Easement Line
138.96'
S 76°52'00"W 300.42'
133.00'
30.00'
BRUCE & CYNTHIA CASSIDY
DB 1707-1239
ZONED R-20
GUEST HOUSE
SEPTIC REPAIR AREA
688.24'
WELL
#4 REBAR

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Tappen Real Estate Investors
Address:	435 Sixth Avenuee Pittsburgh PA 152190000
Phone:	
County:	Iredell
Location:	238 Camino Real
Source of Wastewater Flow:	8 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	960
System Flow:	52.48

Design Specifications

Drainfield Size:	556
Loading Rate (gpd/ft.^{2}):	0.3
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	24 in.
Septic Tank Size:	2000 gal.
Pump Tank Size:	2000 gal.
Estimated Supply Line Length:	626
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	108.92
Dosing Volume:	308.74
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:	36.87
Elevation Head:	22.30
Total Dynamic Head:	70.35
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

238 Camino Real
LP PPBPS

DESIGN FLOW (gpd):	960
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1668
TOTAL LATERAL LENGTH:	556
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	533.3333333
SUPPLY LINE LENGTH:	626
TOTAL DYNAMIC HEAD:	70.35
MANIFOLD SIZE:	N/A
DOSING VOLUME:	308.74
PUMP TANK DRAW DOWN*:	7.5
SEPTIC TANK SIZE:	2000 gal.
PUMP TANK SIZE:	2000 gal.

**Pump tank draw down based on a volume basis of 41 gallons per inch. Draw down may vary among pump tank manufacturers.*

238 Camino Real

Project #: 01-1446

LAYOUT FOR 8 BEDROOM HOME

March 18, 2008

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM							
INSTR. 1							
HOUSE CNR					0.00		
P. TANK					767.00		
1	RED				787.10	43	43
2	ORANGE				786.50	94	94
3	BLUE				785.50	112	112
4	PINK				784.80	121	121
5	***RED***				***784.30***	***60***	***60***
5	***RED***				***784.30***	***60***	***60***
6	***BLUE***				***783.50***	***69***	***69***
6	***BLUE***				***783.50***	***69***	***69***
7	***PINK***				***783.10***	***74***	***74***
7	***PINK***				***783.10***	***74***	***74***
8	***RED***				***782.30***	***75***	***75***
8	***RED***				***782.30***	***75***	***75***
9	BLUE				781.60	92	92
10	PINK				780.80	73	73
					Total	1091	1091

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***556***	***0.3***	***MOD.***	***0.30***	***PPBPS***	***LOW PRESSURE***
Repair	535	0.3	MOD.	0.30	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 -238 Camino Real

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
5	*RED*	*784.30*	*60*	0.156	**0.41**	180	14
5	*RED*	*784.30*	*60*	0.156	**0.41**	180	14
6	*BLUE*	*783.50*	*69*	0.156	**0.41**	207	16
6	*BLUE*	*783.50*	*69*	0.156	**0.41**	207	16
7	*PINK*	*783.10*	*74*	0.156	**0.41**	222	17
7	*PINK*	*783.10*	*74*	0.156	**0.41**	222	17
8	*RED*	*782.30*	*75*	0.156	**0.41**	225	17
8	*RED*	*782.30*	*75*	0.156	**0.41**	225	17
							128
	total	**feet =**	**556**	**gal/min =**	**52.48**		

Des. Flow	**960**
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