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

Attached is a proposed design for a modification to an Accepted Septic System with Gravity distribution to accommodate a pool for an existing 4 bedroom single family residence on Lot #64 Walden Ridge Subdivision, Iredell County, NC.

Contents:

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

September 11, 2015
Project No. 01-3048
Design By: Rollans Soil and Environmental Services

INFORMATION FOR THE INSTALLER:

- The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by DENR, and certification supplied by the manufacturer.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom is within 2" from the highest to . the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pinflag locations should be checked by the installer prior to beginning trenches.
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as an Accepted 25% reduction installation.
- Repair is specified a PPBPS installation.
- Rake trench walls, lime sidewalls, install trenches 36" wide level but have no more than 1/4" fall in 10 feet.
- **Earthen Dams are required on the existing 4 lines to be shortened.**
- **Review the Site Plan carefully to see which lines are to be installed or extended.**
- **4 Existing septic lines will be shortened and removed for the placement of a pool.**

Gravity 25% Reduction
FOR WASTEWATER TREATMENT

Owner: Bob Krausz

Address: 119 Walden Drive
Mooresville, NC 28115
Phone: 704.230.1793
County: Iredell
Location: Walden Ridge Subdivision Lot #64

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 480 gpd
System Flow: NA

Design Specifications

Drainfield Size: 480
Loading Rate: 0.25
Depth of Gravel in Trench: NA (25% reduction)
Gravel Size: NA (25% reduction)
Trench Depth: max.36 in. or equivalent depth of existing trench
Trench Width: 36 in.
Septic Tank Size: 1000
Pump Tank Size: NA

Estimated Supply Line Length: 23
Supply Line Diameter: 3 in. SCH 40 PVC
Supply Line Volume: 4.00
Dosing Volume: NA
Supply Manifold: END CAP/ CHAMBER UNION
Supply Manifold Length: NA
Supply Manifold Volume: N/A

Recommended Float Controls: NA

Recommended Control Panel: NA

OK Iredell
APPROVED SEP 22, 2015

Pressure Head: NA
Friction Head: NA
Elevation Head: NA
Total Dynamic Head: NA

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.

WALDEN RIDGE SUBDIVISION LOT 64

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.25
TOTAL AREA TRENCH BOTTOM:	1440
TOTAL LATERAL LENGTH:	480
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	480
SUPPLY LINE LENGTH:	23
TOTAL DYNAMIC HEAD:	NA
MANIFOLD SIZE:	NA
DOSING VOLUME:	NA
PUMP TANK DRAW DOWN*:	NA
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	NA

WALDEN RIDGE LOT #64

Project #: 01-3048

LAYOUT FOR 4 BEDROOM HOME

9/11/2015

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		N/A			100.00		
TANK		N/A	N/A				
HOUSE		N/A	N/A				
INSTR. 1			N/A				
1	RED			N/A	N/A	48	48
2	YELLOW			N/A	N/A	76	76
3	RED			N/A	N/A	68	68
4	YELLOW			N/A	N/A	47	47
5	RED			N/A	N/A	38	38
6	YELLOW			N/A	N/A	80	80
7A	RED			N/A	N/A	54	0
7B	***RED***			***N/A***	***N/A***	***92***	***92***
8A	YELLOW			N/A	N/A	62	0
8B	***YELLOW***			***N/A***	***N/A***	***84***	***84***
9A	RED			N/A	N/A	46	0
9B	***RED***			***N/A***	***N/A***	***80***	***80***
10A	YELLOW			N/A	N/A	54	0
10B	***YELLOW***			***N/A***	***N/A***	***68***	***68***
11	***RED***			***N/A***	***N/A***	***72***	***72***
12	***YELLOW***			***N/A***	***N/A***	***84***	***84***
13	RED			N/A	N/A	76	76
					Total	**1129**	**913**

	LINE LENGTH	LTAR GPD/FT²	SYSTEM TYPE	SOIL LTAR GPD/FT²	TRENCH SYSTEM	DISTRIBUTION
**** System***	***480***	***0.25***	***ACCEPT.***	***0.25***	***25% RED.***	**GRAVITY DISTRIBUTION**
	ADDING 212'					
Repair	433	0.25	*MOD.*	0.25	PPBPS	LOW PRESSURE

Notes:

** TBM NOT REQUIRED

**All measures in feet

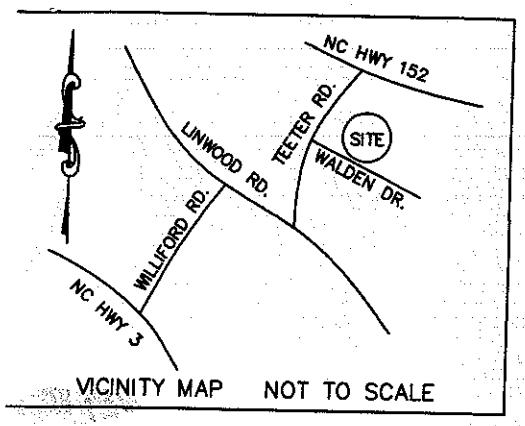
**Nitrification lines are demonstrated on contour via colored pin flags

**All septic lines surveyed by Licensed Surveyor.

****LINES 7B, 8B & 9B ARE TO BE EXTENDED (SEE SITE PLAN)**

****LINES 11 & 12 ARE TO BE ADDED (SEE SITE PLAN)**

****LINES 7A, 8A, 9A & 10A ARE TO BE ABANDONED (SEE SITE PLAN)**



VICINITY MAP NOT TO SCALE

LOT 1
MARTY K. STUTTS
BARBARA H. STUTTS
1232/804

WIRE FENCE ON PROPERTY LINE

EIP

S 30°41'20" E
172.97

EIP

(TIE-ONLY)
S30°46'47"E
45.42

EIP

PB 48 PG 85

LOT 64
1.00 AC.

35' SETBACK

15' SETBACK

N 50°43'46" E

274.87

89.5'

121.5'

POOL

FRAME BLDG.

22.8'

PATIO

SCREEN PORCH

2 STORY BRICK COMP. ROOF

CONC. DRIVE

15' SETBACK

S 52°44'35" W
240.16
(BASE BEARING)

LOT 65
WILLIAM F. ERVIN
LIUDMILA KOCHESHKOVA
1923/1774

LOT 63
MARC P. BEZEK
JENNIFER N. BEZEK
1926/2081

APPROVED SEP 22 2015

PK NAIL FOUND IN INTERSECTION OF MARSTON COURT AND WALDEN DRIVE

(TIE-ONLY)
S 63°53'36" E
319.22

50' SETBACK

80.0

13.4

55.0

R/W

R/W

EIP

CP

BENT EIP

R=525.00 L=129.46
(S43°49'28"E 129.13)

N37°13'38"W
33.90

50'

WALDEN DRIVE
(PAVED)

R/W

R/W

0' 25' 50' 100'

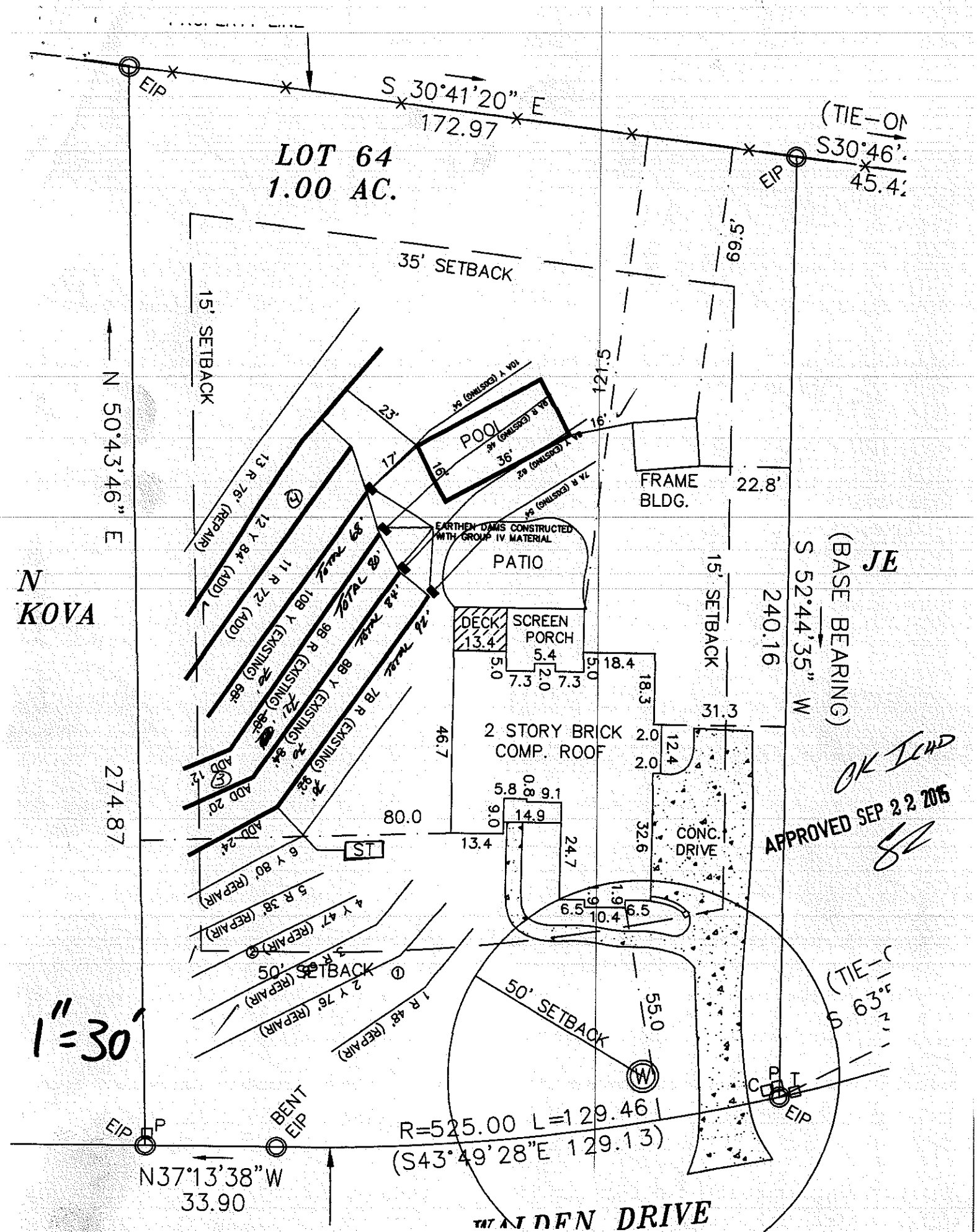
SCALE IN FEET

NOTES

1) THIS PROPERTY MAY BE SUBJECT TO ANY EASEMENTS AND/OR

LEGEND

EIP = #4 REBAR FOUND
CP = COMPUTED POINT
R/W = RIGHT-OF-WAY


LOT 64
1.00 AC.
S 30°41'20" E
172.97
EIP
(TIE-ON
S30°46'
45.4
35' SETBACK
15' SETBACK
N 50°43'46" E
274.87
N
KOVA
POOL
36'
16'
17'
23'
FRAME
BLDG.
22.8'
121.5'
69.5'
EARTHEN DAMS CONSTRUCTED
WITH GROUP IV MATERIAL
PATIO
DECK
13.4
SCREEN
PORCH
5.4
2 STORY BRICK
COMP. ROOF
46.7
80.0
ST
CONC.
DRIVE
32.6
31.3
240.16
15' SETBACK
S 52°44'35" W
(BASE BEARING)
JE
50' SETBACK
55.0
50' SETBACK
R=525.00 L=129.46
(S43°49'28"E 129.13)
N37°13'38"W
33.90
BENT
EIP
EIP
P
W
1"=30'
OK I.C.H.D.
APPROVED SEP 22 2015

CALCULATIONS

Location WALDEN RIDGE SUBDIVISION

Project Number 01-3048

Lot No: Lot 64

No. of Bedrooms 4

Design Flow 480 $^{gal}/_{day}$

LTAR 0.25 $^{gal}/_{ft^2\,day}$

25% RED.? (YES OR NO) YES

Supply Line Length 23 ft.

Supply Line Volume 4.002 gal.

Required Feet of Line 480 ft.
Amount of Line from Layout 480 ft.

Gallons per Minute NA $^{gal}/_{min}$

Required Septic Tank Capacity 1000 gal.
Minimum Standard Tank Size 1000

Lateral Line Volume 313.44 gal.

Dosing Volume NA gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down NA *Generic Draw Down of 21 gal.per in.*

Pump Run Time NA minutes

Elevation Head NA ft.
Pressure Head NA ft.
Friction Factor NA ft./100 ft. *(From the interpolater.)*
Friction Head NA ft.

Total Dynamic Head (+15%) NA 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 1 of 1
PROPERTY ID #: 4674663054
COUNTY: Iredell

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: Robert + Linda Krauss
ADDRESS: 119 Walden Dr. Mooresville, NC 28115
PROPOSED FACILITY: Pool Install
LOCATION OF SITE: 119 Walden Dr. Mooresville, NC 28115
WATER SUPPLY: ☐ Private ☐ Public ☑ Well ☐ Spring ☐ Other
EVALUATION METHOD: ☑ Auger Boring ☐ Pit ☐ Cut

APPLICATION DATE 6/29/15
DATE EVALUATED: 6/2015
PROPERTY SIZE: 1AC
PROPERTY RECORDED:
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	L/4%	0-10	BL Gr	Fr SS SP					PS .3
		10-24	BRCL wfsbk	Fr SS SP					
		24-48	RBC mmsbk	Fr SS SP					
2	L/4%	0-9	BL Gr	Fr SS SP					PS, 3
		9-24	BRCL wfsbk	Fr SS SP					
		24-48	RBC mmsbk/Abk	Fr SS SP					
B 3	4/7%	0-5	BSL Gr	Fr SSP					PS .275-.3
		5-23	BRCL wmsbk	Fr SSSP					
		23-36	RBC mmAbk/sbk	Fr SS SP	Few Black Minerals				
		36-49	RC mmsbk/Abk	Fr SS SP					
B 4	L/5%	0-4	BSL Gr	Fr SS SP					PS .275-.3 .25 END SL
		4-9	BRCL wfsbk	Fr SS SP					
		9-32	RBC wmAbk/sbk	Fr SS SP					
		32-49	RC wmsbk/Abk	Fr SS SPSExP	Few SAP 4/8's Mottles 4L				

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Accepted	PPBPS
Site LTAR	.25	.25

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948): PS
APPROVED SEP 22 2015
EVALUATED BY: S. Ashley Rollins
OTHER(S) PRESENT:

COMMENTS: