Carolina Soil & Septic Consulting, PLLC

P.O. Box 1703, Mooresville, NC 28115

Phone: (704) 202-5791 Email: adrianpruett@yahoo.com

NC Licensed Soil Scientist, SC Professional Soil Classifier,
Certified Septic System Operator, Licensed Septic Installer,
Certified Septic Inspector

Proposed Design for a 25% Reduction Septic System using Gravity distribution for a 3 bedroom single family residence on Lot 15 of J.R. Brown Farms Subdivision Phase 2, 131 Brown Farms Dr. in Cleveland, Iredell County, North Carolina.

Contents:

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

August 14, 2016
Design By: Adrian L. Pruett



INFORMATION FOR INSTALLER:

- The permit should be read very carefully prior to submitting bid. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by NC DHHS, and certification supplied by the manufacturer.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- The installer is responsible for final grades and returning that grade to original, with exception of added structural features.
- The supply trench shall be compacted to eliminate any 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 has no more than 1/4"fall in 10 feet with no high or low areas within. If high or low areas do exist after trench excavation, high areas should be removed rather than filling in low areas. Do not over excavate trenches! Any fine grading should be completed by hand with a rake and shovel, leaving no loose material.
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral to prevent unwanted lateral water movement.
- 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 pin flag locations should be checked by the installer prior to beginning trenches to insure accuracy.
- If septic tank risers are used they should be a minimum of 6" above finished grade or within 6" of final grade if buried.
- Design precludes use of foundation drains on the residence.
- System is specified as an Accepted 25% Reduction Gravity installation.
- Repair is specified as Pressure Manifold 25% reduction installation.
- Trench width is specified as 36" wide, rake and lime all trench sidewalls
- **If grading for slab foundation is utilized do not grade/create greater than 2 ft of elevation difference within 15 ft of any component of the septic or repair. If back filling do not backfill over any initial or repair septic line.**

APPROVED AUG 3 1 2016

OWNER INFORMATION

Owner:	Jerry C. Brown
Address:	310 Triplett Rd. Cleveland, NC 27013
Client:	Freedom Homes of Troutman
Address:	1124 Charlotte Hwy. Troutman, NC 28166
Contact:	Billy Faine
Phone:	704-528-7960
County:	Iredell
Location:	J.R. BROWN FARMS, PHASE 2 LOT 15, 131 BROWN FARMS DR
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	360
System Flow:	NA

25% GRAVITY DESIGN INFORMATION

Drainfield Design Flow (gpd):	328
Loading/Soil Application Rate (gpd/ft.^{2}):	0.275
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Total Lateral Length From Layout:	328
Total Lateral Length Required:	327.27
Trench Depth:	24-33 in. Lowside
Trench Width:	36 in.
TOTAL AREA TRENCH BOTTOM:	984
Trench Spacing on Center:	9 ft.
Septic Tank Size:	1000 gal.
Estimated Supply Line Length:	2.5
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	0.90
Dosing Volume:	NA
Supply Manifold:	SERIAL DISTRIBUTION
Additional Comments:	Soil suitability was performed by Adrian L. Pruett LSS

J.R. BROWN FARMS, PHASE 2 LOT 15, 131 BROWN FARMS DR
FIELD LAYOUT SPECIFICATIONS

LAYOUT FOR 3 BEDROOM RESIDENCE

August 14, 2016

LINE #	FLAG COLOR	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM			NA		
HOUSE CRN		NA	NA		
P. TANK		NA	NA		
1	PINK	NA	NA	74	74
2	YELLOW	NA	NA	71	71
3	ORANGE	NA	NA	111	111
4	BLUE	NA	NA	105	105
5	***RED***	*NA*	*NA*	*118*	*116*
6	***PINK***	*NA*	*NA*	*108*	*98*
7	***YELLOW***	*NA*	*NA*	*85*	*72*
8	***ORANGE***	*NA*	*NA*	*47*	*42*
			Total	**719**	**689**

	LINE LENGTH	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
System	*328*	*ACCEPT.*	*0.275*	*25% RED.*	*GRAVITY*
Repair	361	*ACCEPT.*	0.250	25% RED.	PRESSURE MANIFOLD

APPROVED AUG 3 1 2016

Notes: ** TBM Is Not Required.
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags

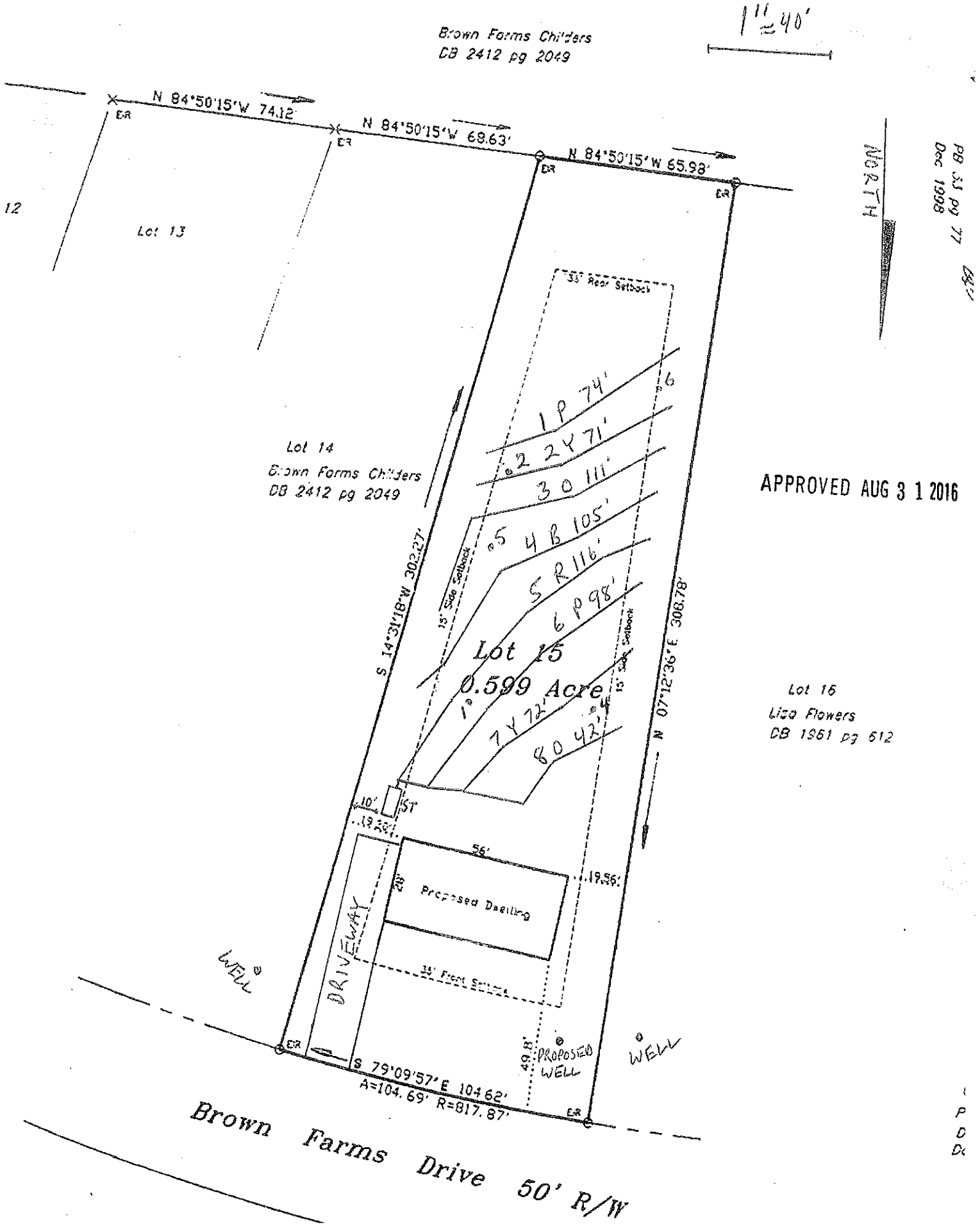
Comments: **Iredell County has CS&SC's permission to change septic tank location and distribution type as needed.**

DOSING CALCULATIONS

Location J.R BROWN FARMS, PHASE 2
Lot No: 15
Address: 131 BROWN FARMS DR

No. of Bedrooms	3
Design Flow	360 $^{gal}/_{day}$
LTAR	0.275 $^{gal}/_{ft^2 day}$
25% RED. Expansion? (YES OR NO)	YES
Supply Line Length	2.5 ft.
Supply Line Volume	0.9 gal.
Required Feet of 25% RED. Line	327.27273 ft.
Amount of Line from Layout	328 ft.
Gallons per Minute	NA $^{gal}/_{min}$
Septic Tank Capacity	1000 gal.
Minimum Septic Tank Capacity	1000 gal.
Lateral Line Volume	214.184 gal.

APPROVED AUG 3 1 2016


1" = 40'
Brown Farms Childers
DB 2412 pg 2049
N 84°50'15"W 74.12'
N 84°50'15"W 68.63'
N 84°50'15"W 65.98'
EIR
12
Lot 13
NORTH
PB 55 pg 77
Dec 1998
35' Rear Setback
1 P 74'
2 2 Y 71'
3 O 111'
4 R 105'
5 R 116'
6 P 98'
7 Y 72'
8 O 42'
Lot 14
Brown Farms Childers
DB 2412 pg 2049
APPROVED AUG 3 1 2016
15' Side Setback
S 14°31'18"W 302.27'
Lot 15
0.599 Acre
N 07°12'36"E 308.78'
Lot 16
Liza Flowers
DB 1961 pg 612
10'
ST
19.56'
56'
Proposed Dwelling
28'
DRIVEWAY
35' Front Setback
WELL
49.8'
PROPOSED WELL
WELL
S 79°09'57"E 104.62'
A=104.69' R=817.87'
Brown Farms Drive 50' R/W

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH, ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

PROPERTY ID #: 4773503012
COUNTY: Iredell

SOIL/SITE EVALUATION
***for* ON-SITE WASTEWATER SYSTEM**
(Complete all fields in full)

OWNER: Jerry C. Brown
ADDRESS: 310 Triplett Rd., Cleveland, NC 27013
PROPOSED FACILITY: 3 Bedroom Res. PROPOSED DESIGN FLOW (.1949): 360 gpd
LOCATION OF SITE: Lot 15 of JR Brown Farms, Phase 2 131 Brown Farms Dr.
APPLICATION DATE 8/15/16
DATE EVALUATED: 8/12/16
PROPERTY SIZE: 0.599 ac
PROPERTY RECORDED: Yes
WATER SUPPLY: X Private ☐ Public ☐ Well ☐ Spring ☐ Other
EVALUATION METHOD: X Auger Boring ☐ Pit ☐ Cut
TYPE OF WASTEWATER: X Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
B 1	LSS/HS 6%	0-8	BR CL WFSBK	FR, SS, SP, SEXP	N/A -COM. MN, FEW SAP	48"	N/A	N/A	PS 0.275 GPD/SQFT
		8-48	DR C WFABK/SBK	FI, S, P, SEXP					
B 2	LSS 6%	0-24	R C MFABK	FI, S, P, SEXP	-FEW MN -FEW SAP -COM. SAP N/A	48"	N/A	N/A	PS 0.275 GPD/SQFT
		24-42	YR C WFSBK	FR, SS, SP, SEXP					
		42-48	YR CL WFSBK	FR, SS, SP, SEXP					
B 3	LSS/HS 7-6%	0-28	BR C WFSBK	FR, SS, SP SEXP	FEW/COM MN -COM MN N/A	48"	N/A	N/A	PS 0.275 GPD/SQFT
		28-48	DR C MFABK	FI, S, P, SEXP					
B 4	LSS 5%	0-12	RB CL WFSBK	FR, SS, SP, SEXP	N/A -FEW MN -COM MN -COM MN	48"	N/A	N/A	PS 0.275 GPD/SQFT
		12-24	B CL WFSBK	FR, SS, SP, SEXP					
		24-30	BR C WFSBK	FR, SS, SP, SEXP					
		30-48	R C MFSBK	FR, SS, SP,SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	GRAVITY 25%	PM 25%
Site LTAR	0.275	0.275

OTHER FACTORS (.1946): NONE
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: ADRIAN L. PRUETT
OTHER(S) PRESENT: NONE

COMMENTS:

SOIL/SITE EVALUATION

(Continuation Sheet-Complete all field in full)

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

PROPERTY ID #: _4773503012_
DATE OF EVALUATION: _8/12/16_
COUNTY: _IREDELL_

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
B 5	LSS 6%	0-18	BR C WFABK	FR, SS, SP, SEXP	-FEW/COM. MN	48"	N/A	N/A	PS
		18-28	DR C MFSBK	FI, S, P, SEXP	-COM MN				
		28-40	R C WFSBK	FR, SS, SP, SEXP	-COM MICA				0.275 GPD/SQFT
		40-48	R CL WFSBK	FR, SS, SP, SEXP	-COM SAP & MICA				
					N/A				
B 6	LSS 8%	0-8	B CL WFSBK	FR, SS, SP, SEXP	N/A	48"	N/A	N/A	PS
		8-39	BR C WFSBK	FI, S, P, SEXP	-COM MN, FEW YB				
		39-48	R C WFSBK	FR, SS, SP, SEXP	-FEW MN, FEW SAP				0.25 GPD/SQFT

COMMENTS: ______________________________