ROLLANS ***Soil & Environmental Services, PA.***
P.O. Box 832 Mooresville, NC 28115 Phone: (704) 658-1723 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 an Accepted Septic System with gravity dist. for a 4 bedroom single family residence on Lot 3, Stonemarker Development at 279 Stonemarker Road (PIN 4624097469), Iredell County, North Carolina.

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5/19/16

May 19, 2016
Project #: 01-3168
Design By: Rollans Soil & Environmental Services, PA

APPROVED JUN X 3 2016

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 NC DENR, and certification supplied by the manufacturer.
- Tanks shall be water tested prior to installation.
- 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.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a gravity 25% reduction (Accepted) installation.
- Repair is specified as a pump to 25% reduction (Accepted) installation.

GRAVITY ACCEPTED SYSTEM FOR WASTEWATER TREATMENT

Applicant: Rollans Soil

Address: P.O. Box 832
Mooresville, NC 28115

Phone: 704.746.5046

County: Iredell

Location: Stonemarker Development Lot 3
PIN (4624097469)

Source of Wastewater Flow: 4 Bedroom Single Family Residence

Estimated Gallons Per Day Flow: 480

System Flow: N/A

Design Specifications

Drainfield Size: 400

Loading Rate (gpd/ft.^{2}): 0.3

Depth of Gravel in Trench: N/A

Gravel Size: N/A

Trench Depth: 30 in. Repair Trench Bottom 30 in.

Trench Width: 36 in.

Septic Tank Size: 1000

Estimated Supply Line Length: 5

Supply Line Diameter: 4 in. SCH 40 PVC

Supply Line Volume: 3.27

Dosing Volume: N/A

Supply Manifold: N/A

Supply Manifold Length: N/A

Supply Manifold Volume: N/A

Recommended Float Controls: N/A

Recommended Control Panel: N/A

APPROVED JUN X 3 2016

Pressure Head: N/A

Friction Head: N/A

Elevation Head: N/A

Total Dynamic Head: N/A

Threaded Union: N/A

Gate Valves: N/A

Check Valves: N/A

Anti-Siphon Hole: N/A

Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services

Stonemarker Development Lot 3

ACCEPTED SYSTEM

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:	5
TOTAL DYNAMIC HEAD:	N/A
MANIFOLD SIZE:	N/A
DOSING VOLUME:	N/A
PUMP TANK DRAW DOWN*:	N/A
SEPTIC TANK SIZE:	1000

APPROVED JUN X 3 2016

Layout Specifications - Stonemarker Development Lot 3

Project #: 01-3168

LAYOUT FOR 4 BEDROOM HOME

May 19, 2016

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM							
INSTR. 1							
1	ORANGE					48	48
2	RED					67	64
3	PINK					75 ✓	72
4	BLUE					82	80
5	ORANGE					90	88
6	RED					82 ✓	80
7	***PINK***					*84*	*84*
8	***BLUE***					*96* ✓	*96*
9	***ORANGE***					*76*	*76*
10	***RED***					*80*	*80*
11	***BLUE***					*64*	*64*
					Total	**844**	**832**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
** System*	*400*	*0.300*	*ACCEPT.*	*0.300*	*25% RED*	*GRAVITY*
Repair	432	0.300	ACCEPT.	0.300	25% RED	GRAVITY

Notes: **All measures in feet

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

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CALCULATIONS

Location 279 Stonemarker Road (Stonemarker Development)

Project Number 01-3168

Lot No: 3

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No. of Bedrooms 4

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

LTAR 0.300 $^{gal}/_{ft^2\ day}$

PPBPS? (YES OR NO) NO

Supply Line Length 5 ft.

Supply Line Volume 3.265 gal.

Required Feet of Line 400 ft.
Amount of Line from Layout 400 ft.

Gallons per Minute N/A $^{gal}/_{min}$

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

Panel Volume N/A gal.
# of Panels N/A
Dosing Volume N/A gal.

Tank Draw Down N/A

Pump Run Time

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

NOT OBSERVED AND/OR RESTRICTIVE COVENANTS.
2) OWNER TO VERIFY ALL SETBACKS AND ZONING REGULATIONS PRIOR TO ANY PLANNING OR CONSTRUCTION.
3) ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
4) ALL AREAS SHOWN HEREON WERE DETERMINED BY COORDINATE COMPUTATION.
5) SETBACKS AS SHOWN ARE PER PB: 21–37
6) THIS PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

OVERHEAD UTILITIES
FENCE (TYPE NOTED)
CP = COMPUTED POINT (UNMARKED)
R/W = RIGHT–OF–WAY
EOP = EDGE OF PAVEMENT
C/L = CENTERLINE
= UTILITY POLE

STONE MARKER SR #1236 ROAD 60' R/W

LOT 4
JAMES F. KALENIECKI
DB: 2335–2433
PB: 21–37

N 06°33'22"E 79.66'

15' SIDE SETBACK

C1

N 89°43'36"E 202.20'

35' FRONT SETBACK

56.0'

45.3'

DRIVE

92.8'

LOT 3
1.30 ACRES +–

PORCH
GARAGE
PROPOSED HOUSE
PORCH

1.0 48'
½ R 67'
3 P 75'
4 B 82'
5 0 90'
6 R 82'
7 P 84'
8 B 96'
9 0 76'
10 R 80'
11 B 64'

15' SIDE SETBACK

S 04°15'00"W 217.46'

C2

35' REAR SETBACK

43.1'

65.8'

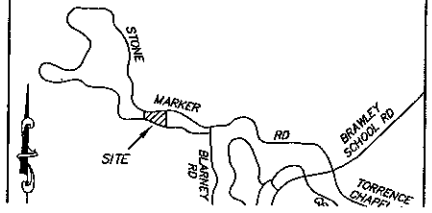
N 67°50'39"W 318.09'

STONE MARKER SR #1236 ROAD 60' R/W

NORTH BASED ON PB: 21–37

LOT 2
GREGORY L. FORESTER
DB: 2352–2189
PB: 21–37

VICINITY MAP
(NOT TO SCALE)



0 40' 80'

CURVE TABLE

CURVE	LENGTH	RADIUS	BEARING	CHORD

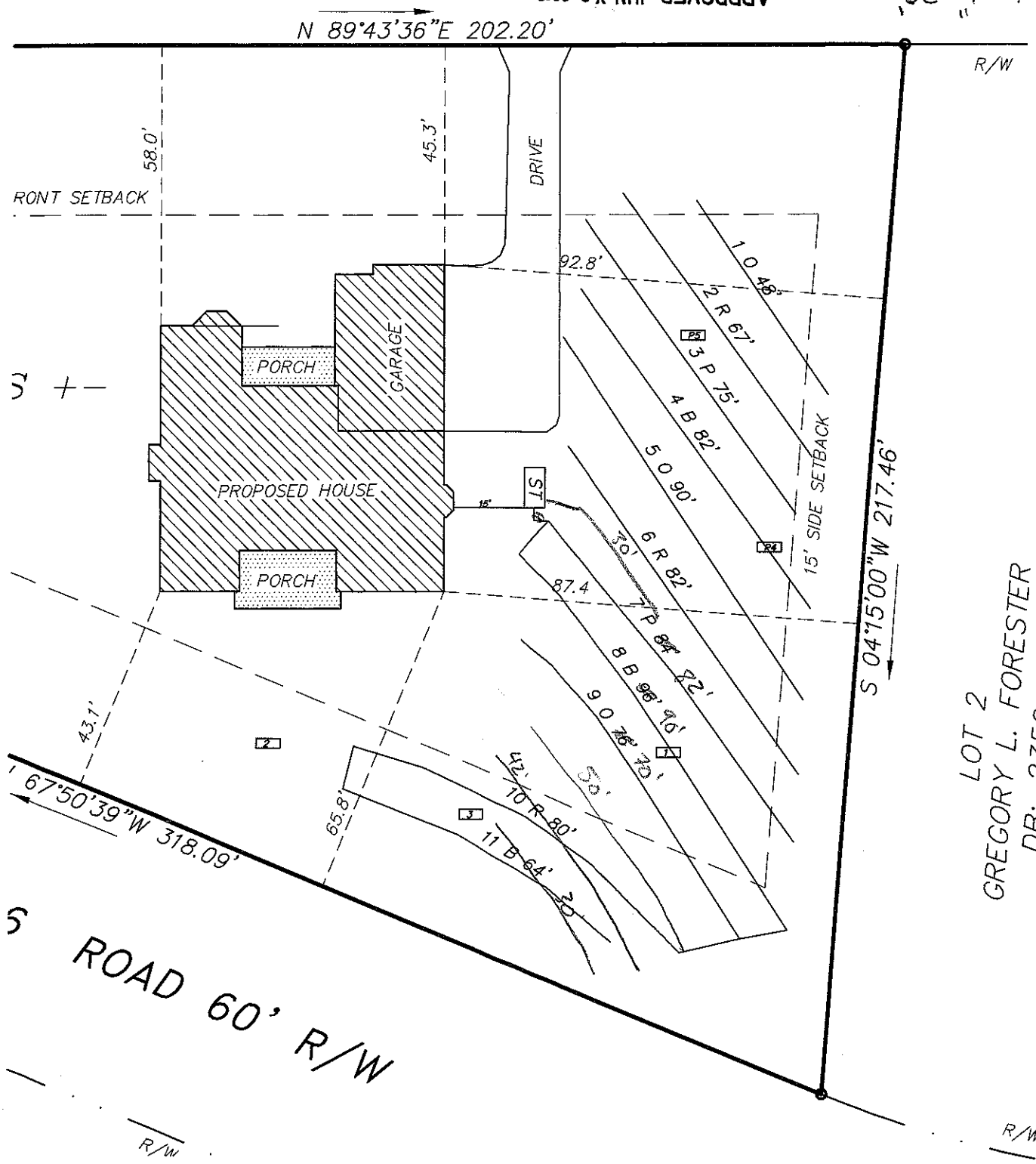
APPROVED JUN X3 2016

Not To Scale!

RKER SR #1236 ROAD 60' R/W

APPROVED JUN X3 2016

Scale: 1" = 30'



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

Sheet 1 of 2
PROPERTY ID #: 46246974
COUNTY: Iredell

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

OWNER: JONESTOWN PARTNERS
ADDRESS: C/O David Neil Winston Salem NC 27106
PROPOSED FACILITY: 4BR
PROPOSED DESIGN FLOW (.1949): 400 GPD
LOCATION OF SITE: 279 Stonemarker Rd, Mooresville NC 28117
APPLICATION DATE: 3/2016
DATE EVALUATED: 4/28/16
PROPERTY SIZE: 1.30 ac
PROPERTY RECORDED: Yes

WATER SUPPLY: ☑ Private ☐ Public ☑ Well ☐ Spring ☐ Other
EVALUATION METHOD: ☐ Auger Boring ☑ Pit ☐ Cut
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
P 1	4/19%	0-3	BL Gr			48	-	-	PS .3
		3-20	RBC wmsbk	FSSSP					
		20-35	RBC wlsbk	FrSSSP	few SAP				
		35-48	RBCL wmsbk	FrSSSP	few SAP Incr				
P 2	4/9%	0-11	BSL Gr	FrSSSP		52	-	-	PS .25-.275
		11-15	BRCL wmsbk	FrSSSP					
		15-30	RBC mmsbk	FrSSSP					
		30-40	RBC wlsbk	FSSSP	few Fe Depl				
	8/19% (Band)	40-52	RBL wmsbk	FSSSP	few to C. Fe Depl CB K25@40"				
P 3	4/8%	0-6	BSL Gr	FrSSSP		48	-	-	PS .3
		6-34	RBC mmsbk	FrSSSP					
		34-48	RC wmsbk	FrSSSP	few Satp				
P 4	4/6%	0-4	BSL Gr	FrSSSP		50	-	-	PS .3
		4-33	RBC wmsbk	FrSSSP					
		33-50	RBCL wmsbk	FrSSSP	few to C. SAP few Rock Incr				

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	Accepted	Accepted (1112)
Site LTAR	0.3	0.3

OTHER FACTORS (.1946):
SITE CLASSIFICATION (.1948): PS
APPROVED JUN X 8 2016
EVALUATED BY: S. Ashley Rollins
OTHER(S) PRESENT: Chad Palmer

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 #: 4624097469
DATE OF EVALUATION: 4/28/16
COUNTY: Iredell

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
P5	4/8%	0-6	BSL C-	Fr SS SP					P5 :3
		6-24	RBC wmsbk/ABK	Fr SS SP					
		24-42	RBC wmsbk	Fr SS SP	- Few SAP				
		42-53	RBCL wfsbk	Fr SS SP	- Few SAP 3 incl.				
						APPROVED JUN X3 2016			

COMMENTS:

DHHS

ON-SITE WASTEWATER SECTION

Sheet ____ of ____
PROPERTY ID #: ____
COUNTY: Iredell

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

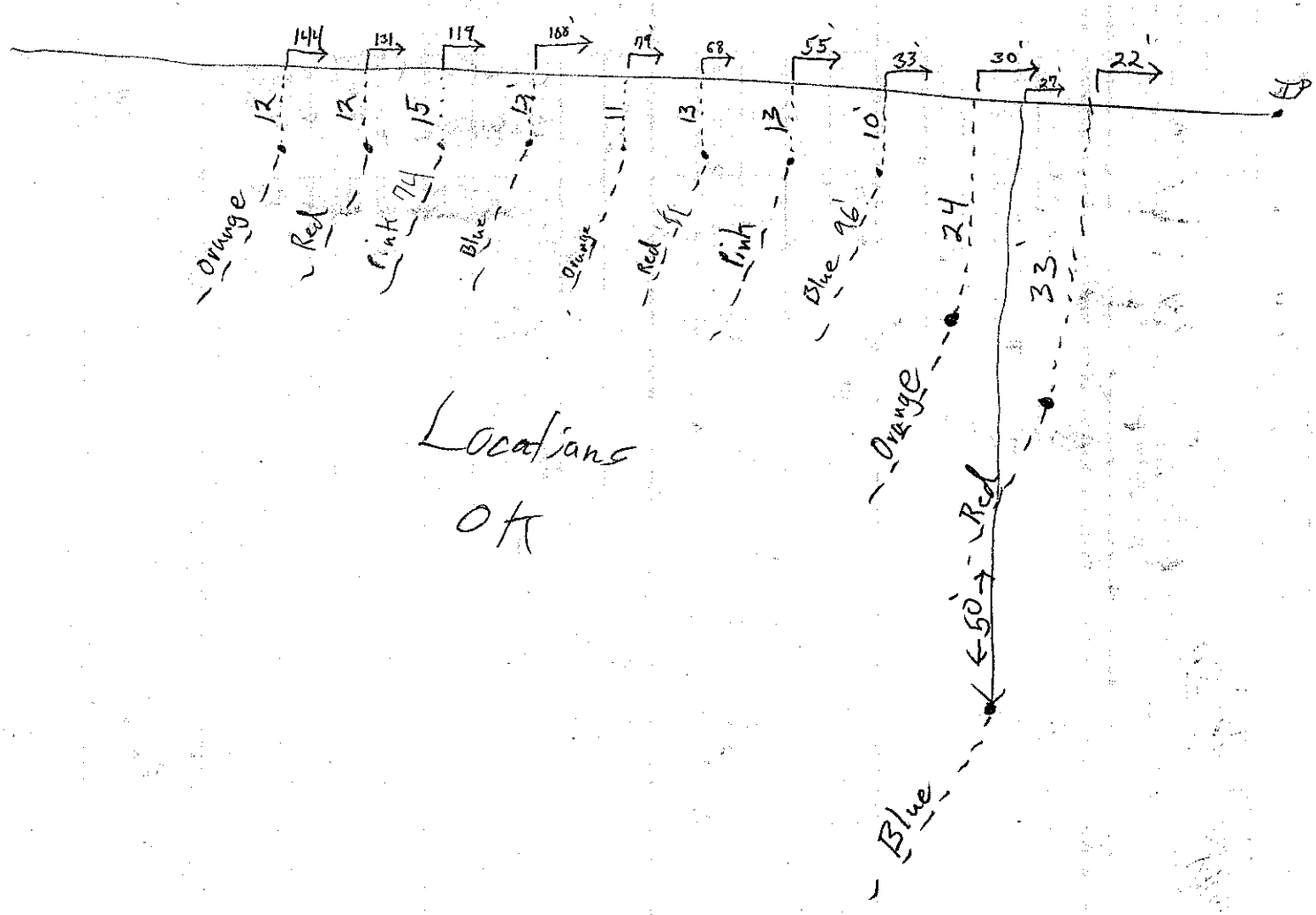
OWNER: Jonestown Partners — APPLICATION DATE 5-25-16
ADDRESS: 316 Iredell County NC 28625 — DATE EVALUATED: 6-2-16
PROPOSED FACILITY: 4 BR house — PROPOSED DESIGN FLOW (.1949): 480 gal/day — PROPERTY SIZE: 1.30
LOCATION OF SITE: 279 stone marker Rd. — PROPERTY RECORDED: Yes
WATER SUPPLY: ☐ Private ☐ Public ☒ Well ☐ Spring ☐ Other ____
EVALUATION METHOD: ☐ Auger Boring ☒ Pit ☐ Cut — TYPE OF WASTEWATER: ☒ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
Repair Pit 1 [Pit #3 per LSS]	LS 7%	0-8	Br. SCL w. SBK	sl. Firm, SS, SP, Soap, crumbly	—	52"	—	—	0.3 PS
		8-41	R. clay SBK/ v. weak ABK	sl Firm, SS, Sp, Soap					
		41-52	R. Clay Loam w. SBK (Rock)	sl Friable, SS, Sp, Soap					
2 [Cp.4 #1 per LSS]	LS ≈7%	0-7	Br. SCL w. SBK (Gravels)	sl Firm, SS, SP, Soap	—	49"	—	—	0.3 PS
		7-32	R Clay Strong SBK, mod ABK	Slightly Firm, SS, SP, Soap					
		32-49"	R Clay Loam w. SBK	Friable, SS, Sp, Soap					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	Yes	Yes
System Type(s)	25%	
Site LTAR	0.3	0.3

OTHER FACTORS (.1946): ____
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: Tom Shuck
OTHER(S) PRESENT: Ashley Rollins

COMMENTS: ____



Locations
of