Site Address: 1595 Buffalo Shoals Rd - Stat.

IREDELL COUNTY HEALTH DEPARTMENT

STATESVILLE 704-878-5305 MOORESVILLE 704-664-5281

IMPROVEMENT PERMIT / AUTHORIZATION TO CONSTRUCT / OPERATION PERMIT / EXISTING SYSTEM INSPECTION

PERMIT# 139877 PIN# 4722387333 7227 DATE 4-18-07

OWNER OR APPLICANT Gross Biffle, Inc PHONE: Business 704-663-5860 Home

ADDRESS 319 DOOLIE RD MOORESVILLE, NC 28117

LOCATION 40 WEST ON OLD NC RD ON BUFFALO SHOALS 2ND LOT ON RT

SUBDIVISION N/A BLOCK / SECTION N/A LOT N/A LOT AREA .64 Ac SITE CLASS. PS DESIGN FLOW 425 L.T.A.R. .3

Septic Tank: 1000 Gallons; STB 3/2 Date 1-25-08

Pump Tank: 1000 Gallons; PT 27 Date 1-20-08

Pump Make: Goulds Model WE0512HO Serial No.

Nitrification Field: No Fields 1 Square Feet 1416 Linear Feet 240' 11"

No Lines 3 Trench Width 24" Max Trench Bottom Depth 36" Gravel Depth N/A

☒ New System ☐ Repair ☐ Expansion System Type: I II III IV V VI

System Description: Low Pressure 50% REDUCT

Repair System Description: SAME

Maintenance Agreement Required: ☒ Yes ☐ No

☐ House/Mod. Home No. Bedrooms

☐ Mobile Home No. Persons

☒ Business No. Employees

☐ Other BL06A 300 GAL / BL06B 125 EXISTING

Water Supply: ☒ Individual ☐ Public ☐ Community

☐ Gravity ☒ Pressure ☒ Slab ☐ Crawl Space ☐ Basement w/plumbing ☐ Basement wo/plumbing

Comments:/Conditions:

① Install Lines on Contours & Maintain Setbacks

② SEE ATTACHED SYSTEM DESIGN BY ROLLINS SOIL & ENV.

Comments:/Conditions:

POLYLUX Fill

BL06 A = 300 gallons / 3-100 gall units

BL06 B = 125 gallons / 5-Employees

INITIAL SITE SKETCH

SEE ATTACHED SYSTEM DESIGN BY ROLLINS SOIL & ENVIRONMENTAL

AS BUILT SKETCH

1130

	Date	Initials
Drain Lines Checked	3-15-08	TCH
Tanks Checked	3-4-08	ALC
Pressure Manifold or Valve Box Checked	3-15-08	TCH
Pressure Head Set	11-5-08	ALC
Electrical Checked		
Floats Set	11-5-08	ALC
Alarm Checked		
Maintenance Contract Y / N	11-5-08	ALC

✓ SUPPLY Line ALSO 3-15-08 - TCH

Permit can be suspended or revoked if any false information is supplied toward securing the permit/any unauthorized changes are made to the site/any unauthorized changes are made in the installation of the system. Improvement Permit with plat valid without expiration ☐ Improvement Permit with site plan valid for sixty months ☒ Authorization to Construct is valid for a period equal to that of Improvement Permit – not to exceed sixty months.

Signed: date 4/19/07

Improvement Permit by: date 4-18-07

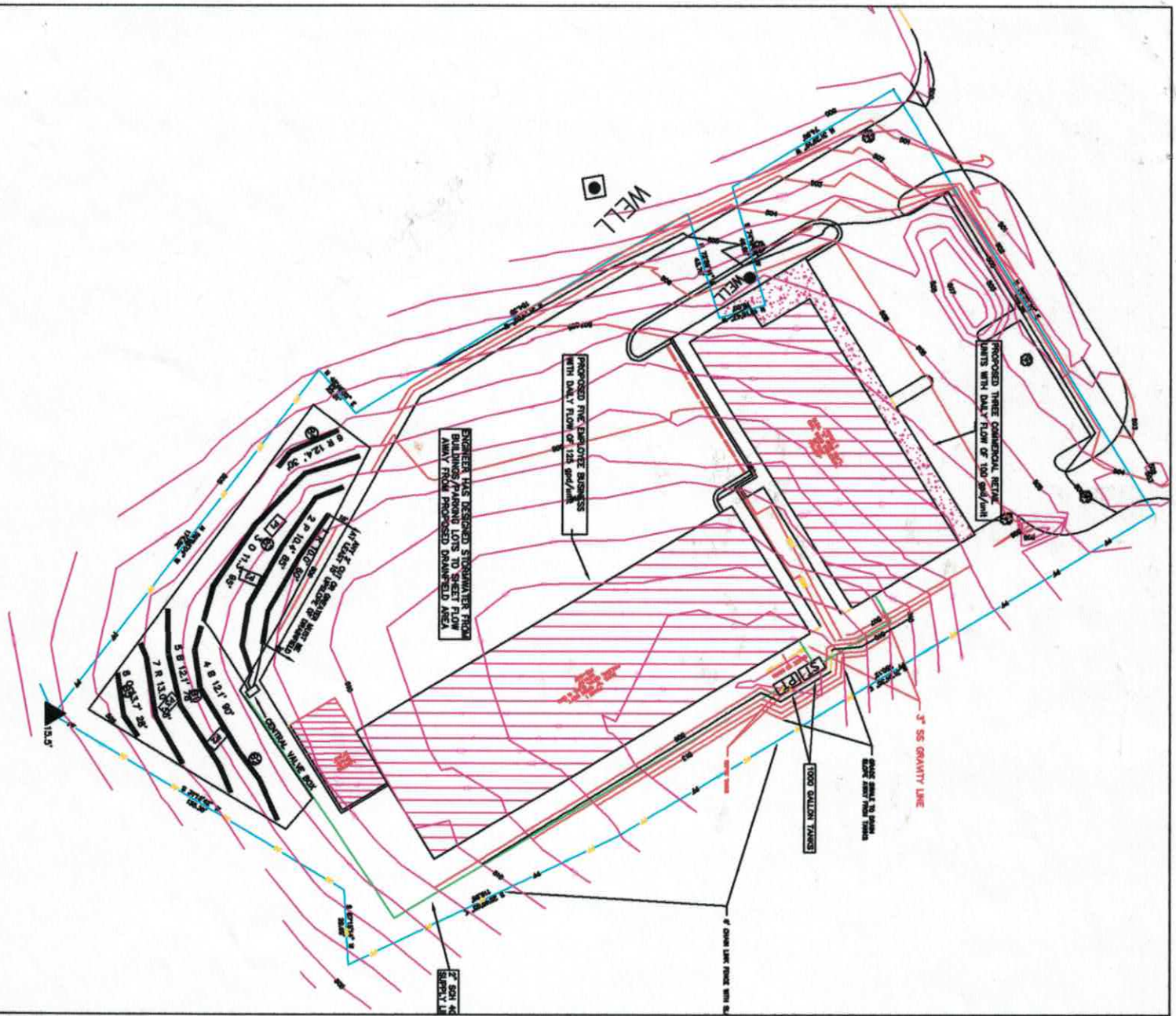
Authorization to Construct by: date 4-18-07

Installed by: R+H OF LAKE NORMAN

Operation Permit by: Approval by A Layne Cook date 11/5/08

Existing System Inspection by: date

HEALTH DEPT. COPY: WHITE OWNER COPY (FINAL): YELLOW OWNER COPY (INITIAL): PINK



LEGEND

- Areas contain soils with 24 inches or more of useable material and have potential for conventional, modified conventional and low-pressure pipe (lpp) septic systems.
- Building Envelopes.
- System lines.
- Repair lines.
- TBM.
- Well Location.
- P1 Pit Locations.

GRAPHIC SCALE
1" = 60'

60 0 60 120

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.

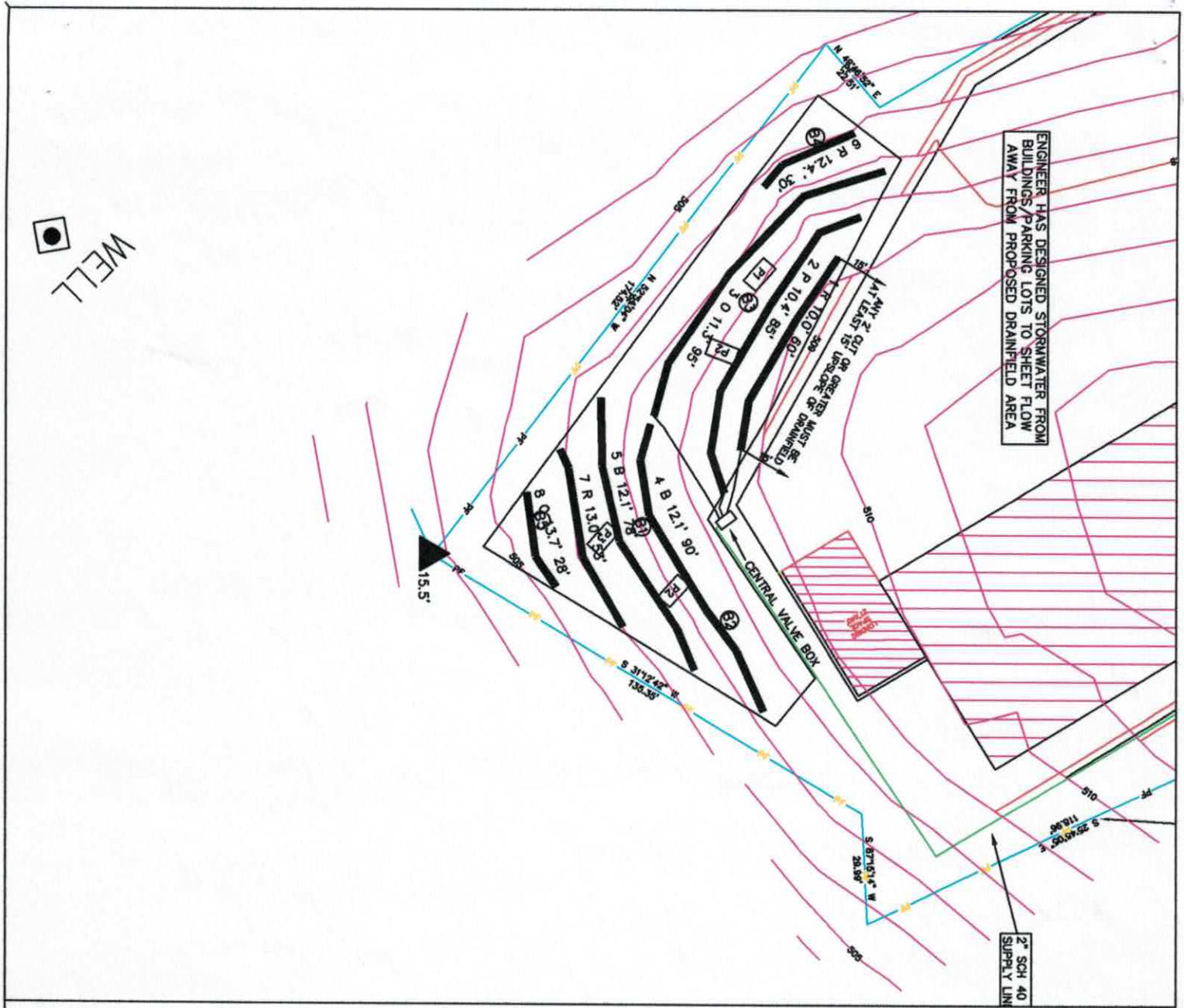
ROLLANS SOIL & ENVIRONMENTAL SERVICES
2120 GRAHAM ROAD
MOUNT ULLA, NC 28125
PHONE/FAX: (704) 278 - 0989
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 746 - 5046
EMAIL: ROLLANSFORTC@AOL.COM

MAP TITLE: SITE [illegible] DESIGN FOR COMMERCIAL FACILITIES

PROJECT NAME: GRED BIFFLE, INC. / BUFFALO SHOALS ROAD

LOCATION/DATE: BUFFALO SHOALS ROAD, IREDELL COUNTY, NORTH CAROLINA, APRIL 2007

JOB # : 01-1332
FILE: C:\JOBS\01-1332
PROJECT MGR.: S.A.R.
FIELD WORK: S.A.R.
DRAWN BY: S.A.R.



LEGEND

- Areas contain soils with 24 inches or more of useable material and have potential for conventional, modified conventional and low-pressure pipe (lpp) septic systems.
- Building Envelopes.
- System lines.
- Repair lines.
- TBM.
- Well Location.
- P1 Pit Locations.

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.

ROLLANS SOIL & ENVIRONMENTAL SERVICES
2120 GRAHAM ROAD
MOUNT ULLA, NC 28125
PHONE/FAX: (704) 278-0989
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 746-5046
EMAIL: ROLLANSFORTC@AOL.COM

MAP TITLE: SITE SEPTIC DESIGN FOR COMMERCIAL FACILITIES

PROJECT NAME: GRED BIFFLE, INC. / BUFFALO SHOALS ROAD

LOCATION/DATE: BUFFALO SHOALS ROAD IREDELL COUNTY, NORTH CAROLINA APRIL 2007

JOB # : 01-1332
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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: Rollansfortcj@aol.com

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 commercial building and warehouse on Buffalo Shoals Road, Iredell County, North Carolina.

Contents:

	Page
Information for the Installer	1
Design Information	
Design Specifications	2-3
Layout Specifications	4
System Tapsheet	5
Site Plan/System Plan	6-7
Calculations	8
Profile Descriptions	9

April 11, 2007
Project #: 01-1332
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Greg Biffle Inc.
Address:	319 Doolie Road Mooresville, NC 28117
Phone:	
County:	Iredell
Location:	Buffalo Shoals Road
Source of Wastewater Flow:	Commercial Building Site
Estimated Gallons Per Day Flow:	n/a
System Flow:	22.96

Design Specifications

Drainfield Size:	240
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:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	290
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	50.46
Dosing Volume:	135.07
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:	3.68
Elevation Head:	5.70
Total Dynamic Head:	13.09
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

Buffalo Shoals Road
LP PPBPS

DESIGN FLOW (gpd):	425
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	720
TOTAL LATERAL LENGTH:	240
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	236
SUPPLY LINE LENGTH:	290
TOTAL DYNAMIC HEAD:	13.09
MANIFOLD SIZE:	N/A
DOSING VOLUME:	135.07
PUMP TANK DRAW DOWN*:	6.4
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

GREG BIFFLE/BUFFALO SHOALS

Project #: 01-1332

LAYOUT FOR A COMMERCIAL BUILDING

April 11, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		15.5			100.00		
INSTR. 1			115.50				
HOUSE CNR				n/a	n/a		
P. TANK				10.70	104.80		
1	***RED***			***10.00***	***105.50***	***60***	***60***
2	***PINK***			***10.40***	***105.10***	***85***	***85***
3	***ORANGE***			***11.30***	***104.20***	***95***	***95***
4	ORANGE			11.30	104.20	90	90
5	BLUE			12.10	103.40	30	30
6	RED			12.40	103.10	78	78
7	RED			13.00	102.50	53	53
8	ORANGE			13.70	101.80	28	28
					Total	519	519

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***240***	***0.3***	***MOD.***	***0.30***	***PPBPS***	***LOW PRESSURE***
Repair	279	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

GREG BIFFLE/BUFFALO SHOALS

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	*RED*	105.5	*60*	0.156	**0.41**	180	14
2	*PINK*	105.1	*85*	0.156	**0.41**	255	20
3	*ORANGE*	104.2	*95*	0.156	**0.41**	285	22
							56
	total	**feet =**	**240**	**gal/min =**	**22.96**		

Des. Flow	**425**
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

CALCULATIONS

Location GREG BIFFLE/BUFFALO SHOALS

Project Number 01-1332

Lot No: N/A

	BLDG. "A"	BLDG. "B"	
Flow per facility	300	125	
Number of Employees	n/a	5	
Total Flow	425		gal/day
LTAR	0.30		gal/ft² day

Note: Flow specifications by Iredell County Health Dept.

* Bldg A
3 office units @ 100gal/day/unit
- Maximum 4 employees/unit.

* Bldg B
1 unit w/maximum 5 employees
25gal/employee = 125gpd

PPBPS? (YES OR NO)	YES	
Supply Line Length	290	ft.
Supply Line Volume	50.46	gal.
Required Feet of Line	236	ft.
Amount of Line from Layout	240	ft.
Gallons per Minute	22.96	gal/min
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	56	
Dosing Volume	135.07	gal.

Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel

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

Tank Draw Down	6.4	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.88	minutes
Elevation Head	5.7	ft.
Pressure Head	2	ft.
Friction Factor	1.27	ft./100 ft. *(From the interpolater.)*
Friction Head	3.68	ft.
Total Dynamic Head (+15%)	13.09	ft.

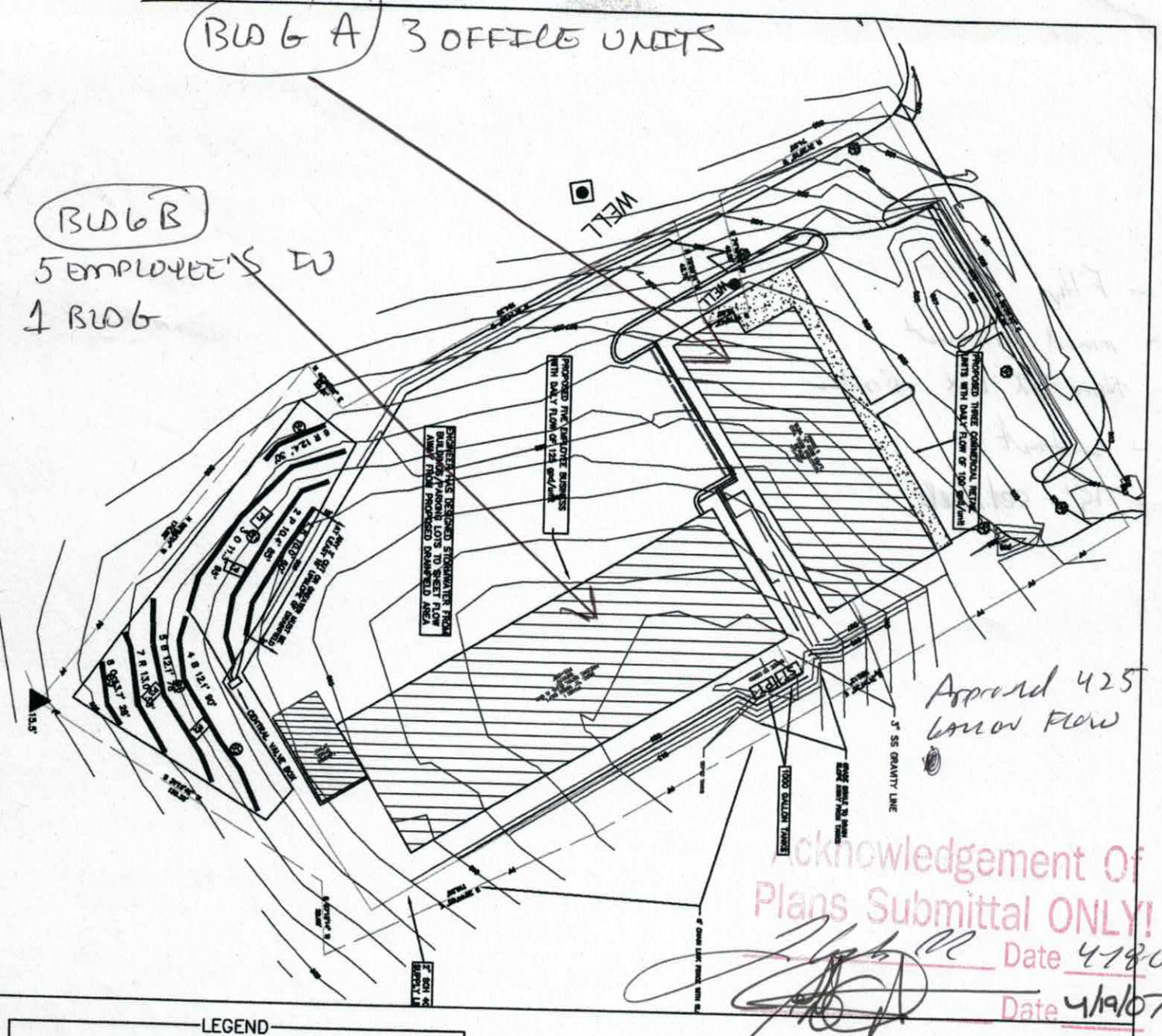
INFORMATION FOR THE INSTALLER:

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 DEHNR, 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.
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Design precludes foundation drains.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as a PPBPS installation.
- Repair is specified as a PPBPS installation.
- Backfill 4 - 6" of material (County Approved) over panels, rake trench walls, lime side-walls, install trenches 36" wide and have no more than 1/4" fall in 10 feet.

BLD G A 3 OFFICE UNITS

BLD G B
5 EMPLOYEE'S DU
1 BLD G



Approved 425 Low Flow

Acknowledgement Of Plans Submittal ONLY!

Date 4/18/07

Date 4/19/07

LEGEND

- Areas contain soils with 24 inches or more of useable material and have potential for conventional, modified conventional and low-pressure pipe (lpp) septic systems.
- Building Envelopes.
- System lines.
- Repair lines.
- TBM.
- Well Location. P1 Pit Locations.

GRAPHIC SCALE
1" = 60'

60 0 60 120

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.

OLLANS SOIL & ENVIRONMENTAL SERVICES
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E/FAX: (704) 278-0989
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MOBILE: (704) 746-5046
EMAIL: ROLLANSFORTC@AOL.COM

MAP TITLE: SITE SEPTIC DESIGN FOR COMMERCIAL FACILITIES

PROJECT NAME: GREG BIFFLE, INC. / BUFFALO SHOALS ROAD

LOCATION/DATE: BUFFALO SHOALS ROAD, IREDELL COUNTY, NORTH CAROLINA, APRIL 2007

JOB # :	01-1332
FILE:	C:\JOBS\01-1332
PROJECT MGR.:	S.A.R.
FIELD WORK:	S.A.R.
DRAWN BY:	S.A.R.

IREDELL COUNTY HEALTH DEPARTMENT

Application For Improvement Permit and/or Authorization To Construct, Existing System Inspection

(THE ABOVE PERMIT DOCUMENTS WILL BECOME INVALID IF INFORMATION PROVIDED ON THIS APPLICATION IS FALSIFIED OR CHANGED, OR IF THE SITE IS ALTERED. THE IMPROVEMENT PERMIT IS VALID FOR EITHER 60 MONTHS OR WITHOUT EXPIRATION DEPENDING UPON DOCUMENTATION SUBMITTED - APPLICATION WITH SITE PLAN 60 MONTHS, APPLICATION WITH COMPLETE, SCALED PLAT WITHOUT EXPIRATION. SEE 15A NCAC 18A .1937(f) FOR DETAILS)

1. APPLICATION FOR: X Improvement Permit X Authorization To Construct X BOTH ___ Existing System Inspection

2. Page 2: *Site Plan Worksheet* Form MUST Accompany This Application
   The following optional attachments may also be submitted:
   Place check ( ) beside whichever is submitted if applicable
   ___ Survey Plat, Scaled no more than 1 Inch = 60 Feet
   ___ Custom Site Plan, Scaled no more than 1 Inch = 60 Feet

3. **Applicant Information:**

Samuel A Rollans (Applicant Name)	2120 Graham Rd Mt Ulla NC 28125 (Mailing Address)	704 ~~278~~ 0981 (Home Phone)	704 746 5046 (Work Phone)
Eco Biffle Inc. (Owner Name)	319 Doolie Rd Mooresville NC 28117 (Mailing Address)	704 663 5860 (Home Phone)	(Work Phone)

4. **Property Information:**

Buffalo Shoals Rd Statesville NC 28677 (Street Address)	N/A (Subdivision Name)	N/A (Section/Phase and Lot Number)

Driving Directions: Old Mtn. Rd; Rt Buffalo Shoals Rd, Lot on Rt. in 2004 05

****

5. **RESIDENTIAL Site Development Information:** *(Check or Complete ALL that apply)*

( ) New, Single Family Residence
( ) New, Multi-Family Residence
( ) Expansion of Existing Septic System
( ) Repair To Failing Septic System

Maximum Number of Bedrooms ___
Maximum Number of Occupants ___
If Expansion, Current Number of Bedrooms ___

( ) Crawl Space Foundation?
( ) Concrete Slab Foundation?
( ) Basement w/Plumbing?
( ) Basement w/out Plumbing?

IF Non-Residential Site Development:

	Building A	Buildings 1 unit:
Type of Business	3 office units	
Square Footage of Building(s)	100 gal/day	25 gal per employee = 125 gal/day
Maximum Number of Employees	4 employees	5 employees
Maximum Number of Seats		

****

6. **Proposed Water Supply:**

(X) New Well ( ) Existing Well ( ) Community Well ( ) City Water ( ) Other Public Water

****

7. **Desired Septic System Type:** *(You may rank in order of preference, if any)*

( ) Alternative ( ) Conventional ( ) Innovative ( ) Modified Conventional ( ) Other_____ (X) No Preference

****

8. **Please Answer The Following To The Best of Your Ability:**

( ) Yes (X) No Does the site contain any jurisdictional wetlands?
( ) Yes (X) No Is any non-domestic sewage (i.e. industry) to be generated?
( ) Yes (X) No Is the site subject to approval by any other public agency?

****

I have read this application and certify that the information provided herein is true, complete, and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed.

9. Signature: Samuel A Rollans
Property owner or owner's legal representative signature (SIGNATURE REQUIRED)

12/18/06
DATE

IREDELL COUNTY HEATLH DEPARTMENT

PAGE 2: *SITE PLAN WORKSHEET*

SEE THE SAMPLE SITE PLAN BELOW. INCOMPLETE SITE PLANS WILL BE RETURNED TO YOU FOR COMPLETION AND MAY RESULT IN A DELAY IN THE ISSUANCE OF YOUR SEPTIC SYSTEM PERMIT!!!

Place an (X) beside each item as you complete the site plan:

- X — **Property Line measurements are clearly identified...**
- X — **All proposed structures are indicated...**
  ***SHOW:** proposed house or business footprint, wells, water lines, patios, pools and decks, and any other item that will occupy space on the site*
- X — **Front and side setbacks from property line...**
- X — **Preferred driveway location and configuration, preferred well location...**
- X — **Area you prefer your septic system to be placed...**
- X — **North arrow, or other sufficient indicator of direction...**

Circle N/A on the following if appropriate:

- X — **Location of septic systems and wells within 100' of your property...** **N/A**
- X — **Location of easements and rights of ways on your property...** **N/A**
- ___ — **Location of any designated wetlands on the property...** **N/A**

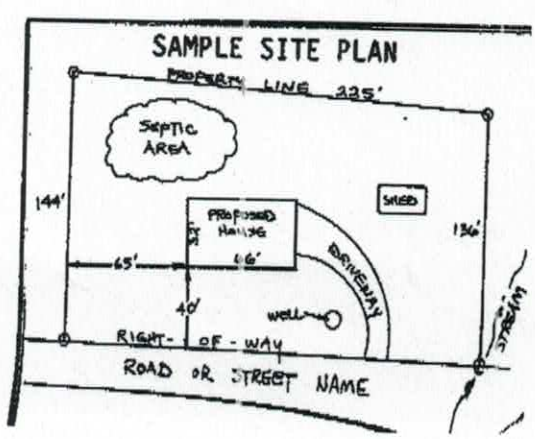
Signature: Samuel A Hall Jr

Property owner or owner's legal representative signature (SIGNATURE REQUIRED)

12/18/06
DATE

USE THIS SPACE TO DRAW YOUR SITE PLAN

Samuel A Hall Jr



10: LORNE COOK

Iredell County
Planning & Enforcement
227 S. Center St. PO Box 788
Statesville, NC 28687
704-878-3113

Zoning Permit
Permit Number: 139877ZO

Printed: 12/18/2006

Master #: 139877

Associated Permits:
139877ZO Zoning

Applicant
Name: Samuel Rollans
Address: 2120 Graham Road
Mt. Ulla, NC 28125
Phone: 704-278-0989

Parcel
Parcel Number: 4722387333.000
Address: 000 Buffalo Shoals Rd.
Statesville, NC 28677
Subdivision:
Zoning: GB
Township: 0200
Area:
Lot(s):
Directions to Parcel: Old Mountain Road; right Buffalo Shoals Road, on the right

Owners
Name: Greg Biffle
Address: 319 Doolie Rd.
Mooresville, NC 28117
Phone: 704-663-5860

Contractors

Fees and Receipts:

Number	Description	Amount
FEE-141636-06	Zoning - Permit / Inspection	$45.00
FEE-141637-06	Environmental Health - Type I or II System	$350.00
	Total Fees:	**$395.00**
REC-76712-06		$395.00
	Total Receipts:	**$395.00**

Conditions