IREDELL COUNTY HEALTH DEPARTMENT

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

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

PERMIT# 140106 PIN# ~~4722695036~~ 4722-68-3878 DATE 9-8-08

OWNER OR APPLICANT Mountain Creek Investments LLC PHONE: Business 704-202-4964 Home

ADDRESS 125 Whaling Drive Mooresville NC 28117

LOCATION Old Mtn Rd Northwest @ Buffalo Shoals @ Davidson @ Winding Cedar on LEFT

SUBDIVISION DAVIDSON WOODS BLOCK SECTION 3 LOT 5B LOT AREA 1.54 SITE CLASS PS DESIGN FLOW 360 L.T.A.R. .8

Septic Tank: 1000 Gallons: STB 312 Date 7-18-08

Pump Tank: 1000 Gallons: PT 282 Date 7-3-08

Pump Make: Liberty Model 1½Hp 282 Serial No.

Nitrification Field: No Fields 1 Square Feet 1200 Linear Feet 305

No Lines 3x105' Trench Width 36" Max Trench Bottom Depth 36"

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

System Description: PUMP 25'± PRODUCTION

Repair System Description: 1P 50'± PRODUCTION

Maintenance Agreement Required: ☐ Yes ☒ No

☒ House/Mod. Home ☐ Mobile Home ☐ Business ☐ Other

No. Bedrooms 3 No. Persons 6 No. Employees

Water Supply: ☒ Individual ☐ Public ☐ Community

Gravel Depth N/A ☐ Gravity ☒ Pressure ☒ Slab ☐ Crawl Space ☐ Basement w/plumbing ☐ Basement wo/plumbing

Comments:/Conditions: ① Well is 93'± to tanks & 100'± to drainlines ② This system was installed for a 3 Bedroom old permit on a 4 Bedroom Valid Permit. House was built as a 3 Bedroom & Permit was redrawn

Comments:/Conditions: as 3 Bedroom after system was installed ③ Installer used sub 80 1½ tops

INITIAL SITE SKETCH

See PLAT from Rollins Soil & Environmental Services

AS BUILT SKETCH

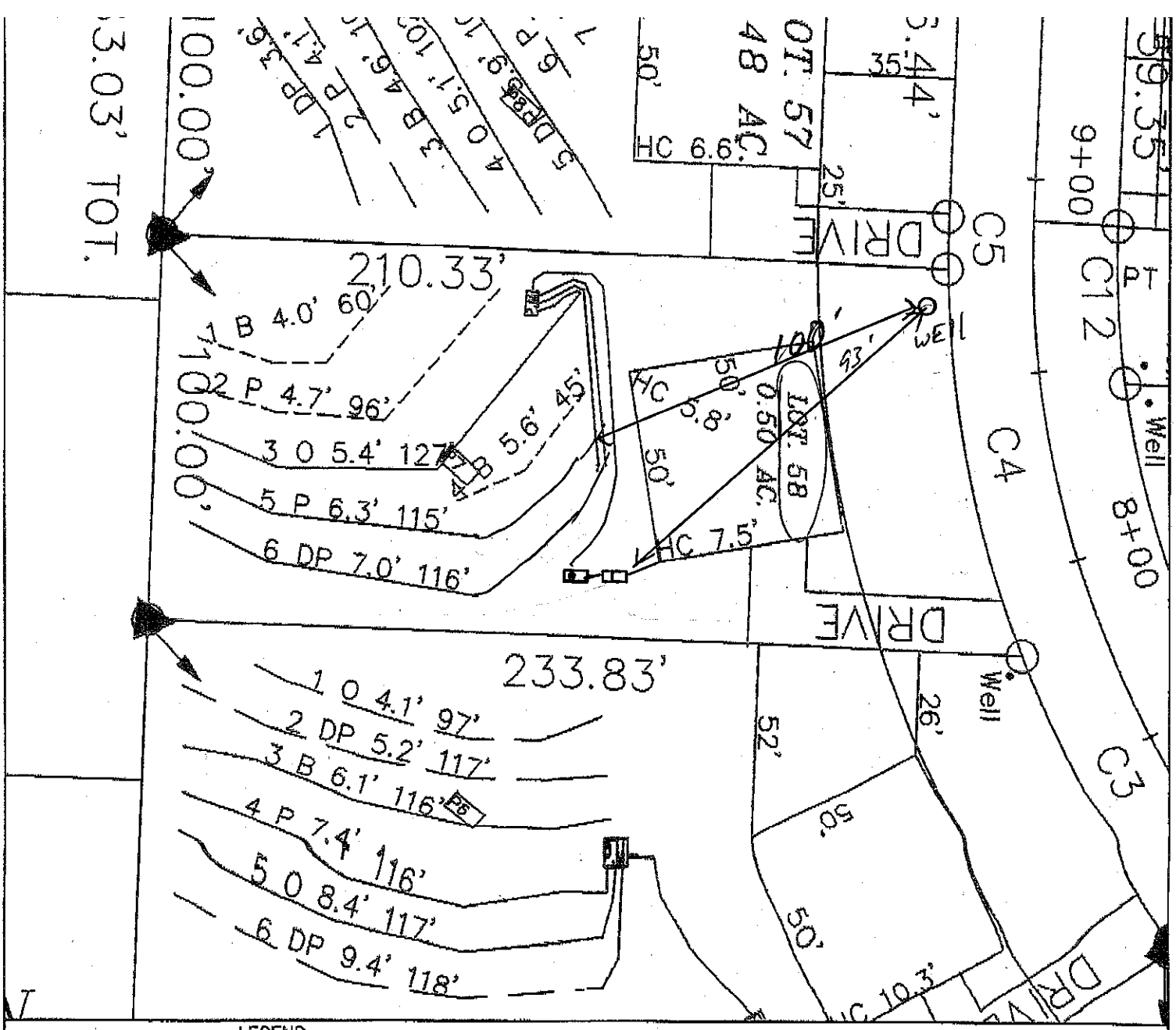
Permit can be suspended or revoked if any false information is supplied toward securing the permit/any unauthorized changes are made to the site/any unauthorized changes are made in the installation of the system. Improvement Permit with plat valid without expiration ☐ Improvement Permit with site plan 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 9/8/08 Installed by: I AM WILL GRADING

Improvement Permit by: date 9-8-08 Operation Permit by: date 9-8-08

Authorization to Construct by: date 9-8-08 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. .
- House Footprint (All 70' x 70')
- System lines.
- Repair lines.
- TBM.
- Well Location.
- 28 Pit Location.

NOT TO SCALE

~~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.

PLEASE REFER TO ATTACHED SOIL REPORT FOR ADDITIONAL SITE SPECIFIC INFORMATION

ROLLANS SOIL & ENVIRONMENTAL SERVICES
2120 GRAHAM ROAD
MOUNT ULLA, NC 28125
PHONE/FAX: (704) 279 - 0989
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 746 - 5046
EMAIL: ROLLANSFORTQ@AOL.COM

MAP TITLE: SITE PLAN & DRAINFIELD AREAS

PROJECT NAME: Hex Spur / Davidson Woods Phase II

LOCATION/DATE: RUSSELL COUNTY, NORTH CAROLINA

JOB # : 01-1306
FILE: C:\JOBS\01-1306
PROJECT MGR.: S.A.R.
FIELD WORK: S.A.R.
DRAWN BY: S.A.R.

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 an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 3 bedroom single family residence on Lot #58 Davidson Woods Subdivision, Iredell County, North Carolina.

Contents: **Page**

Information for the Installer---------- 1

Design Information
- Design Specifications---------- 2-3
- Layout Specifications---------- 4
- System Tapsheet---------- 5
- Pressure Manifold Diagram---------- 6

Site Plan/System Plan---------- 7

Calculations---------- 8

Profile Descriptions---------- 9

January 18, 2007
Project #: 01-1308
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 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.
- Septic tank riser shall be a minimum of 6" above finished grade.
- System is specified as an innovative 25% reduction installation.
- Repair is specified as a PPBPS with low pressure distribution installation.
- Rake trench walls, lime sidewalls, install trenches 36" wide and have no more than 1/4" fall in 10 feet.

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	Spear Builders, Inc.
Address:	172 Allendale Cr Troutman 28166
Phone:	704-202-4964
County:	Iredell
Location:	DavidsonWoods LOT #58
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	360
System Flow:	21.33

Design Specifications

Drainfield Size:	315
Loading Rate (gpd/ft.^{2}):	0.3
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	110
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	19.14
Dosing Volume:	143.99
Supply Manifold:	4 in. SCH 80 PVC
Supply Manifold Length:	4 ft. (minimum)
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:	1.40
Elevation Head:	7.50
Total Dynamic Head:	12.53
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

DavidsonWoods LOT #58
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	360
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	945
TOTAL LATERAL LENGTH:	315
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	300
SUPPLY LINE LENGTH:	110
TOTAL DYNAMIC HEAD:	12.53
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	143.99
PUMP TANK DRAW DOWN*:	6.9
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.*

DavidsonWoods LOT #58

Project #: 01-1308

LAYOUT FOR 3 BEDROOM HOME — January 18, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		3.4			100.00		
INSTR. I			103.40				
HOUSE CNR				7.50	95.90		
P. TANK				7.90	95.50		
1	BLUE			4.00	99.40	60	60
2	PINK			4.70	98.70	96	96
3	*ORANGE*			*5.40*	*98.00*	*127*	*105*
4	BLUE			5.60	97.80	45	45
5	*PINK*			*6.30*	*97.10*	*115*	*105*
6	*DARK PINK*			*7.00*	*96.40*	*116*	*105*
					Total	559	516

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*315*	*0.30*	*ACCEPT.*	*0.30*	*25% RED.*	PRESSURE MANIFOLD
Repair	201	0.30	*MOD.*	0.30	PPBPS	LOW PRESSURE

Notes:

** TBM located on angle point 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

PRESSURE MANIFOLD TAPSHEET - Davidson Woods LOT#58

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
3	ORANGE	98	*105*	SCH 40 1/2	7.11	315
5	PINK	97.1	*105*	SCH 40 1/2	7.11	315
6	DARK PINK	96.4	*105*	SCH 40 1/2	7.11	315
	total	**feet =**	**315**	**gal/min =**	**21.33**	
			Des. Flow	**480**		
			Pump Run=	**6.75**		
			soil LTAR	**0.3**		
			LTAR +5%	**0.315**		
			LTAR with ACCEPTED	**0.4**		
			LTAR with ACCEPTED + 5%	**0.42**		

CALCULATIONS

Location Davidson Woods

Project Number 01-1308

Lot No: Lot 58

No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.3	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	110	ft.
Supply Line Volume	19.14	gal.
Required Feet of Line	300	ft.
Amount of Line from Layout	315	ft.
Gallons per Minute	21.33	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	205.695	gal.
Dosing Volume	143.99	gal.

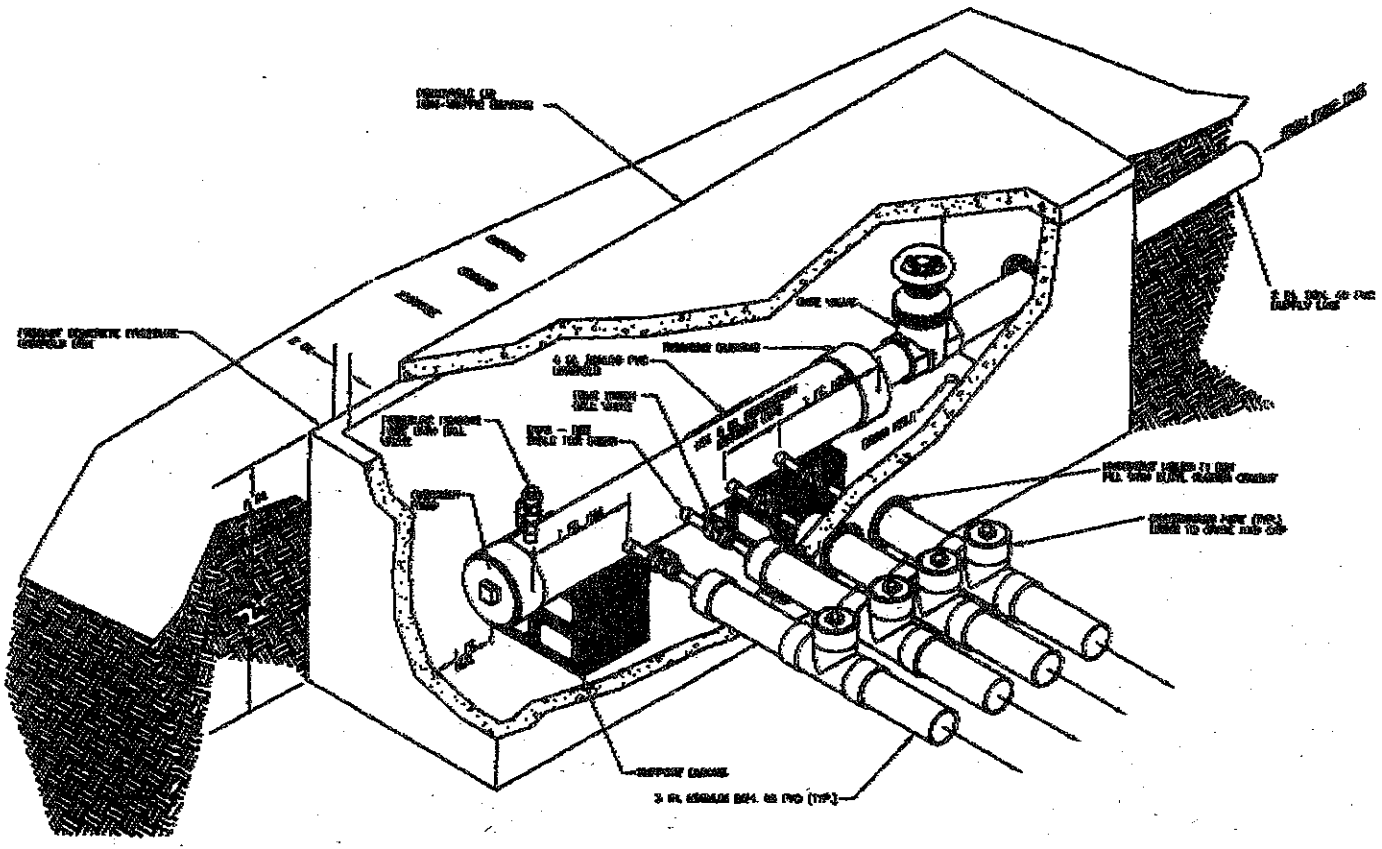
Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	6.9	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	6.75	minutes
Elevation Head	7.5	ft.
Pressure Head	2	ft.
Friction Factor	1.27	ft./100 ft. *(From the Interpolater.)*
Friction Head	1.40	ft.
Total Dynamic Head (+15%)	12.53	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	4.26
50	4.58
57.11	5.89
60	6.42

TYPICAL PRESSURE MANIFOLD DETAIL



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: ✓ Improvement Permit ___Authorization To Construct ___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:**

Applicant Name	Mailing Address	Home Phone	Work Phone
Mountain Creek Investments, LLC	125 Whaling Dr Mooresville, NC 28117		(704) 202-4964
Owner Name: Same	Mailing Address	Home Phone	Work Phone

4. **Property Information:**

Street Address: _____ Subdivision Name: Davidson Woods Section/Phase and Lot Number: Lot 58

Driving Directions: Same as Zoning Permit

****

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 ~~4~~ 3
Maximum Number of Occupants 8
If Expansion, Current Number of Bedrooms ___

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

IF Non- Residential Site Development:
Type of Business _____
Square Footage of Building _____
Maximum Number of Employees _____
Maximum Number of Seats _____

****

6. **Proposed Water Supply:**

(✓) 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_____ (✓) No Preference

****

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

( ) Yes (✓) No Does the site contain any jurisdictional wetlands?
( ) Yes (✓) No Is any non-domestic sewage (i.e. industry) to be generated?
( ) Yes (✓) 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: Robin L. Pruett
Property owner or owner's legal representative signature (SIGNATURE REQUIRED)

9/14/07
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:

- ✓ Property Line measurements are clearly identified...
- ✓ 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*
- ✓ Front and side setbacks from property line...
- ✓ Preferred driveway location and configuration, preferred well location...
- ✓ Area you prefer your septic system to be placed...
- ✓ North arrow, or other sufficient indicator of direction...

Circle N/A on the following if appropriate:

- ____ Location of septic systems and wells within 100' of your property... (N/A)
- ____ Location of easements and rights of ways on your property... (N/A)
- ____ Location of any designated wetlands on the property... (N/A)

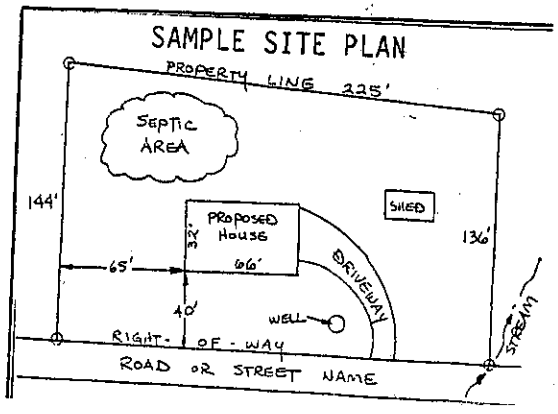
Signature: Calvin L. Pruitt

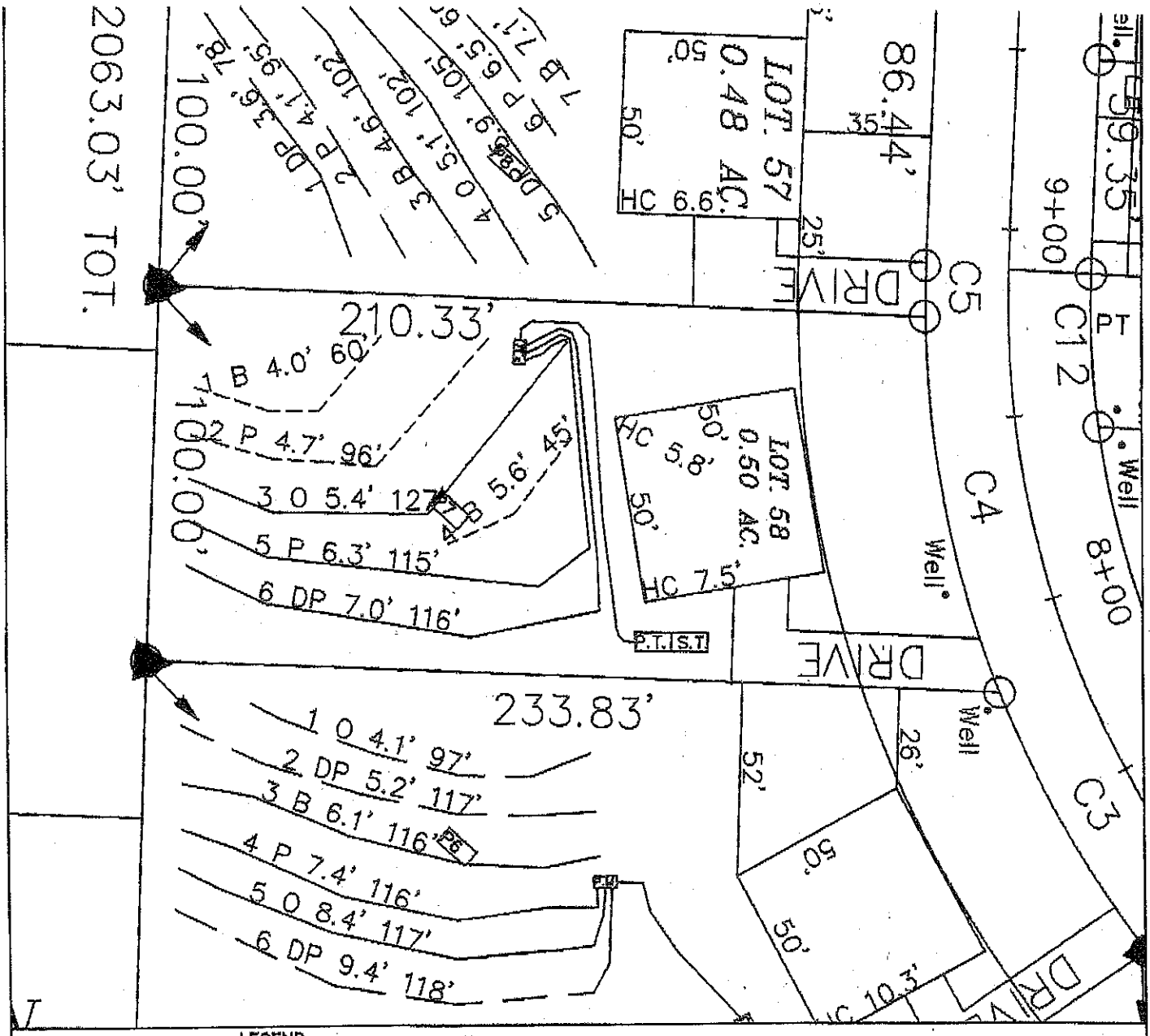
Property owner or owner's legal representative signature (SIGNATURE REQUIRED)

9/14/07
DATE

USE THIS SPACE TO DRAW YOUR SITE PLAN

See Attached Site Plan.





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.

House Footprint (All 70' x 70')

System lines.

Repair lines.

TBM.

Well Location.

28 Pit Location.

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.

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MOUNT ULLA, NC 28125
PHONE/FAX: (704) 278-0989
ASHLEY ROLLANS, NC LICENSED SOIL SCIENTIST
MOBILE: (704) 755-5066
EMAIL: ROLLANSAOUT@AOL.COM

MAP TITLE: SITE PLAN & DRAINFIELD AREAS

PROJECT NAME: Iron Spur / Bethlehem Woods Phase II

LOCATION/DATE: Iredell County, North Carolina, February 2007

JOB #: 01-1308
FILE: C:\JOBS\01-1308
PROJECT MGR.: S.A.R.
FIELD WORK: S.A.R.
DRAWN BY: S.A.R.

Acknowledgement Of Plans Submittal ONLY!

Date 6-4-08

Date 6-4-08

