IREDELL COUNTY HEALTH DEPARTMENT

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

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

PERMIT # 139783 PIN # 4776615906 DATE 12-16-08

OWNER or APPLICANT Spears Builders PHONE: Business Home: 702-202-4964

OWNER or APPLICANT ADDRESS 172 Allendale Circle Statman NC 28166

LOCATION / DIRECTIONS 64 E to Swan Cr. Lot on Right

SUBDIVISION Swan Crossing BLOCK / SECTION 3 LOT # 21 LOT AREA 1.652 DESIGN FLOW 360 L.T.A.R. 3 Exist

Septic Tank 1000 Gallons: STB 794 Date 12-8-08

Pump Tank 1000 Gallons: PT 283 Date 3-24-08

Pump Make ____ Model ____ Serial # ____

Nitrification Field No Fields ____ No Lines 3 Linear Feet 200

Trench Width 24" Max. Trench Bottom Depth 34" Gravel Depth N/A

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

System Description: 50% Lav Plus

Repair System Description: 50% Lav Plus

Maintenance Agreement Required ☑ YES ☐ NO

☐ GRAVITY ☑ PRESSURE

☑ Residence No. Bedrooms 3

☐ Business No. Persons ____

☐ Other No. Employees ____

☐ Slab ☐ Crawl Space

☐ Basement w/plumbing ☐ Basement w/o plumbing

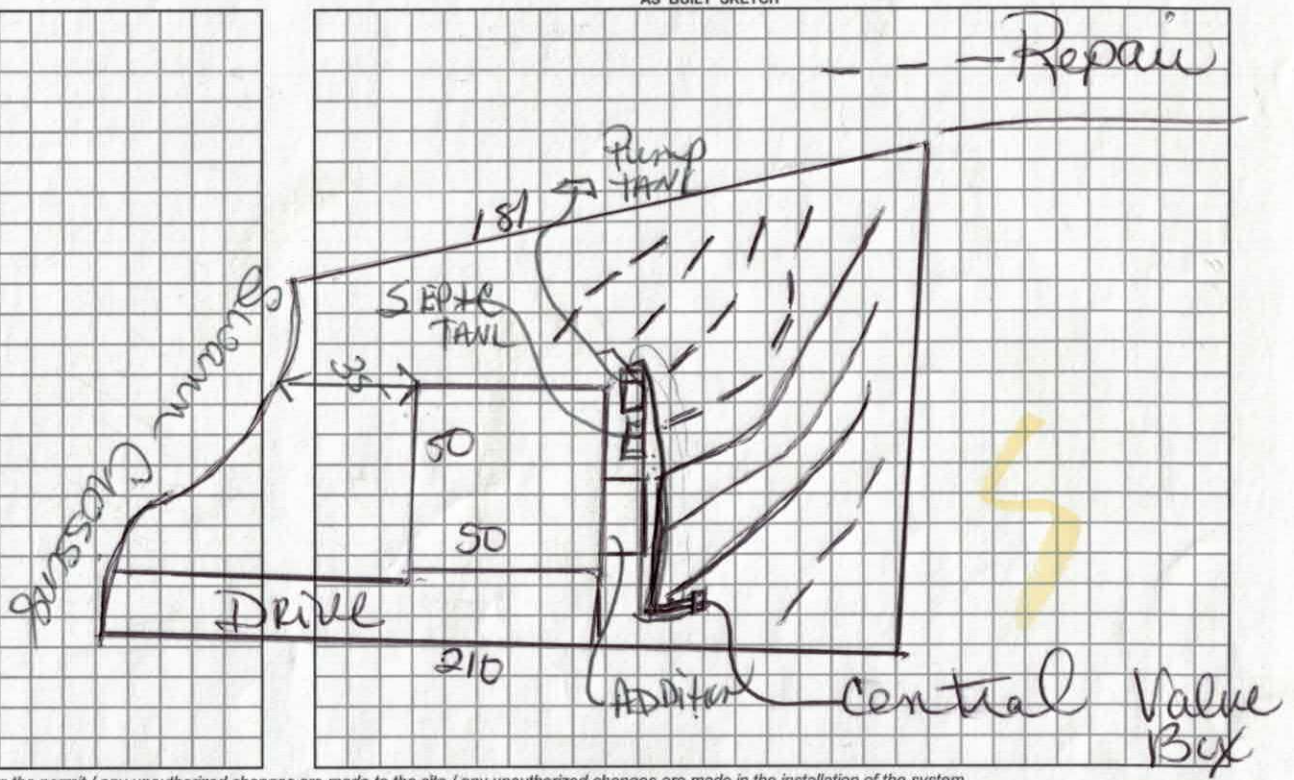
Water Supply: ☐ Private ☑ Public ☐ Community

Comments / Conditions

Comments / Conditions

INITIAL SITE SKETCH

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 w / plat valid without expiration.* ☐ *IMPROVEMENT PERMIT w / site plan valid for 60 mos.* ☑ *AUTHORIZATION TO CONSTRUCT valid for period equal to IMPROVEMENT PERMIT-not to exceed 60 mo.*

Owner / Applicant Signature: _____ Date _____

Improvement Permit by: _____ Date _____

Authorzation to Construct by: _____ Date _____

YOU SHOULD CONTACT A LOCATOR SERVICE PRIOR TO ANY EXCAVATION.

Installed by: TD Lawing Grading

Operation Permit by: _____ Date: _____

Existing System Inspected by: Keith Cook Date: 12-16-08

WHITE COPY Environmental Health YELLOW COPY (Final) Owner / Applicant PINK COPY (Initial) Owner / Applicant

Site Address: 176 Avena Crossing Ln. Stat.

IREDELL COUNTY HEALTH DEPARTMENT

STATESVILLE 704-878-5305 (ad) MOORESVILLE 704-664-5281

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

PERMIT# 139783 PIN# 4776161596 ✓ DATE 7-27-07

OWNER OR APPLICANT Sears Builders

ADDRESS 12 Allendale Circle Frontman NC 28164 PHONE: Business _____ Home 704-202-4944

LOCATION 64E (R) Swan (R) Swan Crossing Cul-de-sac Right

SUBDIVISION Swann Crossing BLOCK / SECTION 3 LOT 21 LOT AREA _____ SITE CLASS RS DESIGN FLOW 360 L.T.A.R. .3

Septic Tank: 1000 Gallons; STB 714 Date 12-8-06

Pump Tank: 1000 Gallons; PT 253 Date 3-24-06

Pump Make: Liberty ½ Model 240 Serial No. _____

Nitrification Field: No Fields ___ Square Feet 120 Linear Feet 200'

No Lines 3 Trench Width 24" Max Trench Bottom Depth 36" Gravel Depth NA ☐ Gravity ☑ Pressure

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

System Description: 500 lpd pressure

Repair System Description: 500 lpd pressure

Maintenance Agreement Required: ☑ Yes ☐ No

☑ House/Mod. Home No. Bedrooms 3

☐ Mobile Home No. Persons ___

☐ Business No. Employees ___

☐ Other _____

Water Supply: ☐ Individual ☑ Public ☐ Community

☐ Slab ☐ Crawl Space ☐ Basement w/plumbing ☐ Basement wo/plumbing

Comments:/Conditions:

Elevated on contours
Maintain all setbacks

INITIAL SITE SKETCH

See attached drawing for layout

Comments:/Conditions:

After final grade call Health Department for consult on system for final piping

AS BUILT SKETCH

Red Fiber

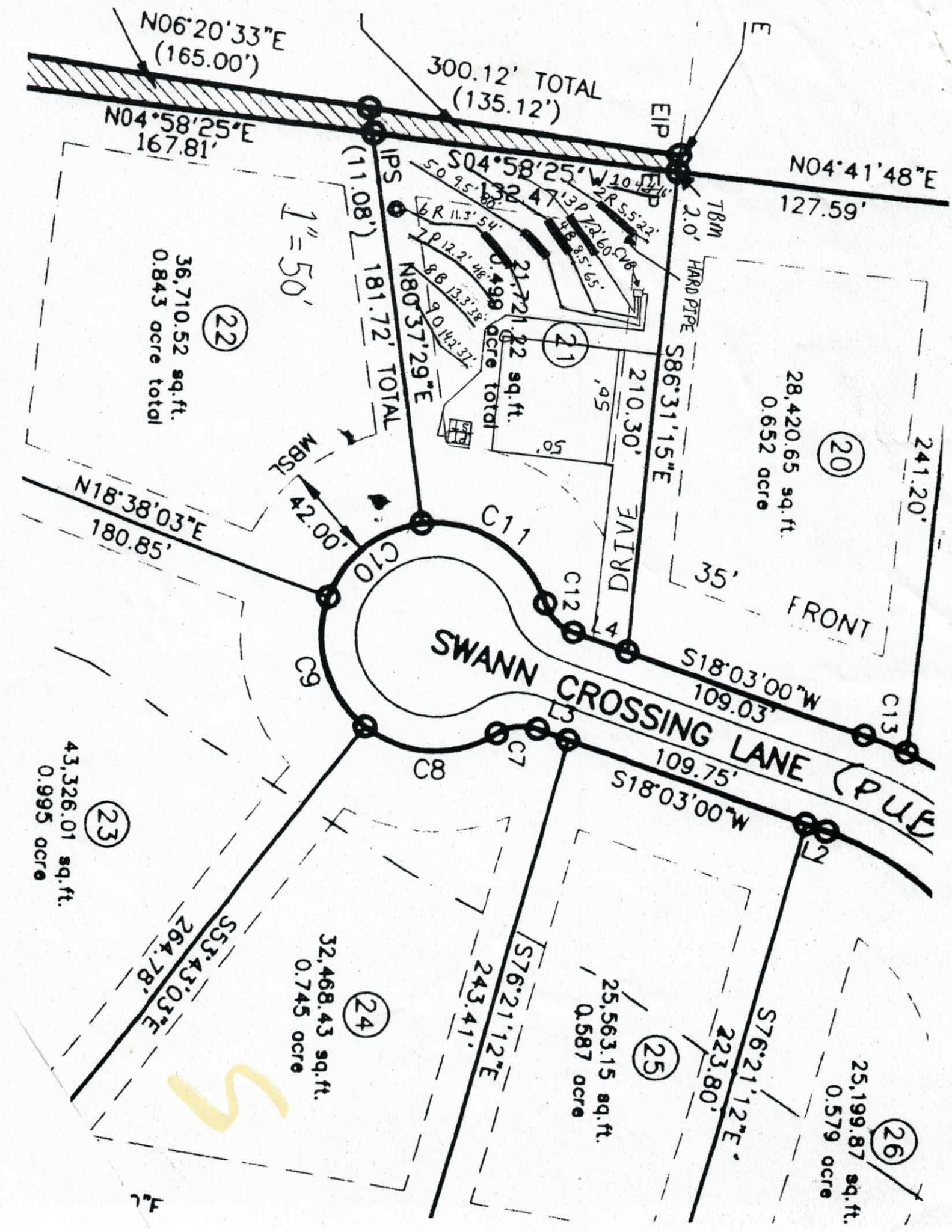
Permit can be suspended or revoked if any false information is supplied toward securing the permit/any unauthorized changes are made to the site/any unauthorized changes are made in the installation of the system. Improvement Permit with plat valid without expiration ☐ Improvement Permit with site plan 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 10-24-2007 Installed by: TD Lawing Grading

Improvement Permit by: _____ date 7-27-07 Operation Permit by: _____ date 12-15-08

Authorization to Construct by: _____ date 10-26-07 Existing System Inspection by: _____ date _____

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


N06°20'33"E
(165.00')
300.12' TOTAL
(135.12')
N04°58'25"E
167.81'
IPS
(11.08')
181.72' TOTAL
N80°37'29"E
S04°58'25"W 132.47'
N04°41'48"E
127.59'
EIP
TBM
2.0'
HARD PIPE
S86°31'15"E
210.30'
1" = 50'
36,710.52 sq.ft.
0.843 acre total
22
21,721.22 sq.ft.
0.499 acre total
21
28,420.65 sq.ft.
0.652 acre
20
241.20'
35'
FRONT
DRIVE
N18°38'03"E
180.85'
N85°42.00'W
C11
C10
C12
C9
C8
C7
C13
SWANN CROSSING LANE (PUE)
S18°03'00"W
109.03'
109.75'
S18°03'00"W
43,326.01 sq.ft.
0.995 acre
23
S53°43'03"E
264.78'
32,468.43 sq.ft.
0.745 acre
24
S76°21'12"E
243.41'
25,563.15 sq.ft.
0.587 acre
25
S76°21'12"E
223.80'
25,199.87 sq.ft.
0.579 acre
26

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 3 bedroom single family residence on Lot #21 in Swann Crossing Subdivision, 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

July 17, 2007
Project #:
Design By: Rollans Soil & 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.
- 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.
- Lines 2,3,4,5, and 6 must be hard piped across gulley as shown on site plan.

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Spear Builders, Inc.
Address:	172 Allendale Cr Troutman 28166
Phone:	704-202-4964
County:	Iredell
Location:	SWANN CROSSING LOT 21
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	360
System Flow:	19.27

Design Specifications

Drainfield Size:	205
Loading Rate (gpd/ft.^{2}):	0.3
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	~~36~~ in. 24"
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	142'
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	24.71
Dosing Volume:	113.36
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:	1.19
Elevation Head:	17.10
Total Dynamic Head:	23.34
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

SWANN CROSSING LOT 21
LP PPBPS

DESIGN FLOW (gpd):	360
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	615
TOTAL LATERAL LENGTH:	205
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	200
SUPPLY LINE LENGTH:	142
TOTAL DYNAMIC HEAD:	23.34
MANIFOLD SIZE:	N/A
DOSING VOLUME:	113.36
PUMP TANK DRAW DOWN*:	5.4
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.*

SWANN CROSSING LOT 21

Project #:

LAYOUT FOR 3 BEDROOM HOME

July 17, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		2.0			100.00		
INSTR. 1			102.00				
HOUSE CNR				12.50	89.50		
P. TANK				19.30	82.70		
1	ORANGE			4.40	97.60	16	16
2	RED			5.50	96.50	22	22
3	***PINK***			***7.20***	***94.80***	***63***	***60***
4	***BLUE***			***8.50***	***93.50***	***68***	***65***
5	***ORANGE***			***9.50***	***92.50***	***81***	***80***
6	RED			11.30	90.70	54	54
7	PINK			12.20	89.80	48	48
8	BLUE			13.30	88.70	38	38
9	ORANGE			14.20	87.80	37	37
					Total	427	420

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***205***	***0.3***	***MOD.***	***0.30***	***PPBPS***	***LOW PRESSURE***
Repair	215	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

LP PPBPS TAPSHEET -SWANN CROSSING LOT 21

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
3	***PINK***	94.8	*60*	0.156	**0.41**	180	14
4	***BLUE***	93.5	*65*	0.156	**0.41**	195	15
5	***ORANGE***	92.5	*80*	0.156	**0.41**	240	18
							47
	total	**feet =**	**205**	**gal/min =**	**19.27**		
			Des. Flow	**360**			
			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 SWANN CROSSING

Project Number

Lot No: Lot 21

No. of Bedrooms	3	
Design Flow	360	$^{gal}/_{day}$
LTAR	0.30	$^{gal}/_{ft^2\,day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	142	ft.
Supply Line Volume	24.708	gal.
Required Feet of Line	200	ft.
Amount of Line from Layout	205	ft.
Gallons per Minute	19.27	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Panel Volume	3.6	gal.
# of Panels	47	
Dosing Volume	113.36	gal.

Note: Dosing Volume based on 33% of # of panels times 3.6 gal/panel

Tank Draw Down	5.4	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.88	minutes
Elevation Head	17.1	ft.
Pressure Head	2	ft.
Friction Factor	0.84	ft./100 ft. *(From the interpolater.)*
Friction Head	1.19	ft.
Total Dynamic Head (+15%)	23.34	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

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: ___ Survey Plat, Scaled no more than 1 Inch = 60 Feet
   Place check ( ) beside whichever is submitted if applicable ___ Custom Site Plan, Scaled no more than 1 Inch = 60 Feet

3. Applicant Information:

Applicant Name	Mailing Address	Home Phone	Work Phone
Nat Spears	172 allen DRIVE		902-4964
Owner Name	**Mailing Address**	**Home Phone**	**Work Phone**

4. Property Information:

Street Address	Subdivision Name	Section/Phase and Lot Number
	Swan Crossing	

Driving Directions: _____

****

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 3
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:
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: _____ _____
Property owner or owner's legal representative signature (SIGNATURE REQUIRED) 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…**

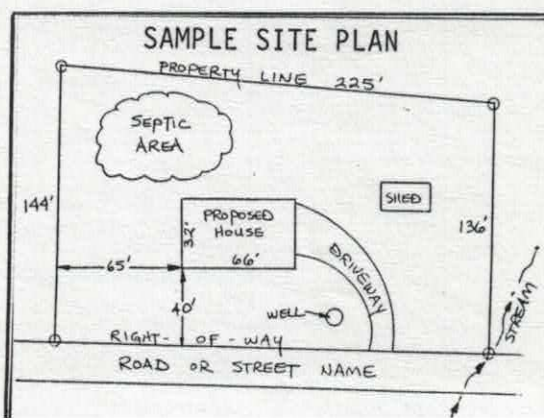
Circle N/A on the following if appropriate:

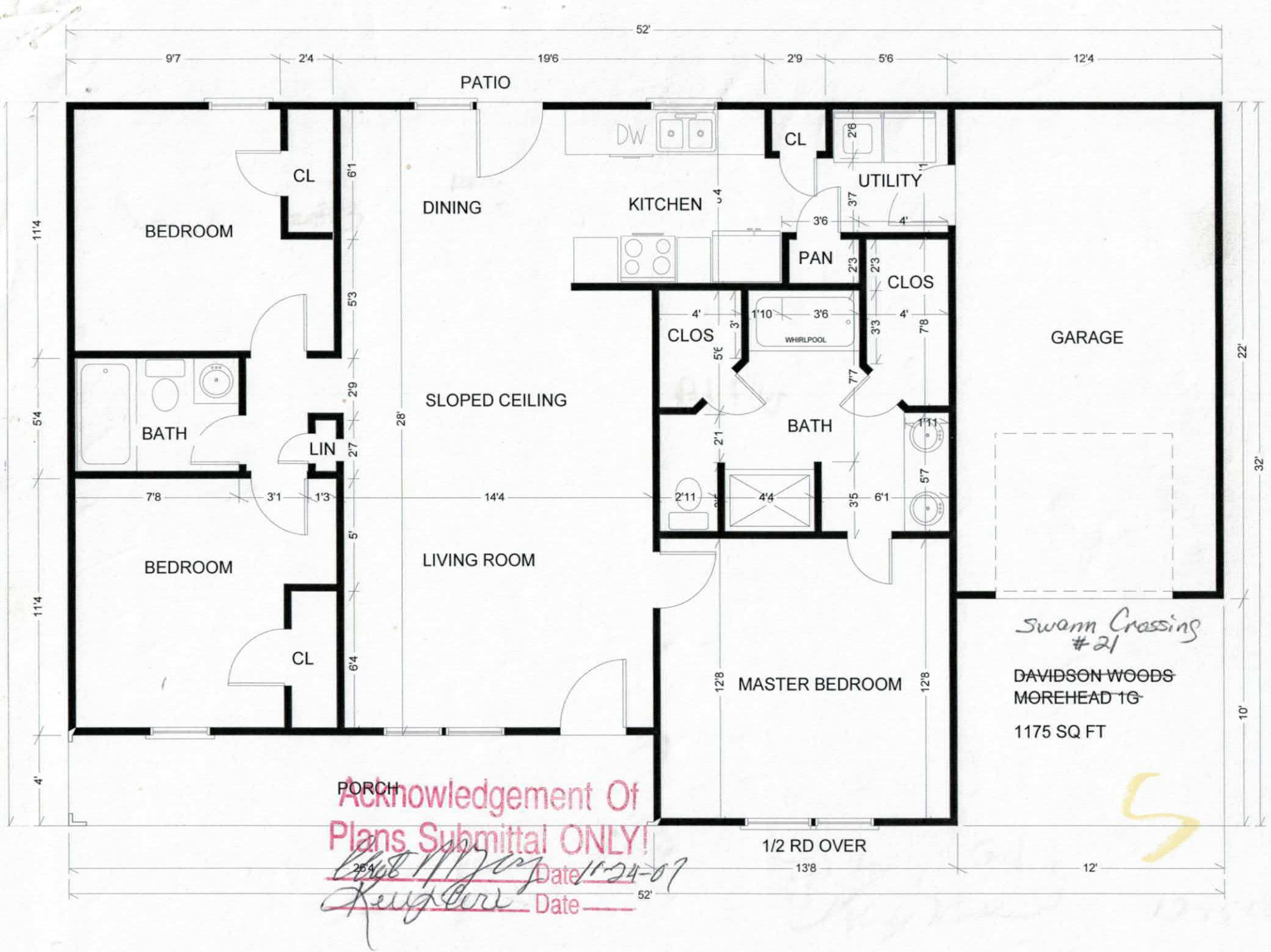
____ **Location of septic systems and wells within 100' of your property…** **N/A**
____ **Location of easements and rights of ways on your property…** **N/A**
____ **Location of any designated wetlands on the property…** **N/A**

Signature: _____ _____

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

USE THIS SPACE TO DRAW YOUR SITE PLAN




52'
9'7
2'4
19'6
2'9
5'6
12'4
PATIO
DW
CL
UTILITY
2'6
CL
BEDROOM
DINING
KITCHEN
3'6
4'
PAN
CLOS
CLOS
WHIRLPOOL
GARAGE
BATH
LIN
SLOPED CEILING
BATH
7'8
3'1
1'3
14'4
2'11
4'4
3'5
6'1
BEDROOM
LIVING ROOM
CL
MASTER BEDROOM
PORCH
1/2 RD OVER
13'8
12'
11'4
5'4
11'4
4'
28'
22'
32'
10'
Swann Crossing
#21
DAVIDSON WOODS
MOREHEAD 1G
1175 SQ FT
Acknowledgement Of
Plans Submittal ONLY!
Date 1-24-07
Date

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

Zoning Permit

Printed: 8/2/2007

Permit Number: 139783ZO

Master #: 139783

Associated Permits:
139783ZO Zoning

Applicant

Name: Spear Builders, Inc
Address: 172 Allendale Circle
Troutman, NC 28166
Phone: 704-202-4964

Parcel

Parcel Number: 4776615906.000
Address: 176 Swann Crossing Ln.
Statesville, NC 28625
Subdivision: Swann Crossing
Zoning: RA
Township: 1200
Area: .652
Lot(s): 21
Directions to Parcel: 64 east, left Swann Rd, left Swann Crossing

Owners

Name: Meredith Homes
Address: 143 Burtons Barn Lane
Mooresville, NC 28115
Phone: 704-264-5081

Contractors

Contractor Type: Building
Name: Spear Builders, Inc
Address: 172 Allendale Circle
Troutman, NC 28166
Phone: 704-202-4964

Fees and Receipts:

Number	Description	Amount
FEE-141226-06	Zoning - Permit / Inspection	$45.00
FEE-141227-06	Environmental Health - Type I or II System	$350.00
	Total Fees:	**$395.00**

Total Receipts: **$0.00**

Conditions

Date: **Status:** **Code:**

Condition Description:

Condition Comments:

Permit Information:

Max Built Upon Area:	
Watershed:	None
Flood Zone:	No
Set Backs:	F35 R35 LS15 RS15
Minimum Lot Size:	20000
Minimum Lot Width:	100
Min # Parking Spaces:	
Land Use Permitted:	Yes
Community Sewer:	No
Site Plan Reviewed:	
Staff:	
Zoning Permit:	Yes
Septic Typet:	New System
Proposed Use:	Single Family
Property Recorded:	Yes
Community Water:	No
Provider:	
Provider:	
Date:	
# of Stories:	0
# of Bedrooms:	0
# of Units in Building	0

Site Plan Conditions:
Zoning Permit Comments: