Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

OPERATION PERMIT for an ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 8148B Permit #: 5242 Tax Parcel #: 017 21107

Property Owner: SB Land, LLC

Job Location Address: 11101 Hambright Rd

City: Huntersville State: NC Zip Code:

Operation Permit Issuance Date: 12/15/11 Contractor Name: Larry Hinkle

Permitted Design Flow: 250 GPD

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: 1500 gallons

Effluent Pump Model: Gould

Drainfield Installation ☐ N/A

Trench Depth: 36 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 250 feet

# of Lines: see plans @ feet

Depth of Media: 12 inches (Type) Chambers

Depth of Cover: 24 inches

Distribution Device: pressure manifold

Bed Installation *(For Repair Installations ONLY.)* ☒ N/A

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Depth of Cover: _____ inches

Distribution Device: _____

Water Supply Source

☒ Municipal ☐ Private Well ☐ Community Well

☐ Other _____

System Installation Setbacks

Distance from Building Foundation: 5 feet

Distance from Property Line: 10 feet

Distance from Water Supply Source: >100 feet

Inspection Dates

Tank(s) Inspected: 12/15/11

Excavation Inspected: 12/15/11

Pump & Controls Inspected: 12/15/11

SKETCH OF SYSTEM INSTALLATION
(As-Built Drawing)

see approved plot plan on file

The undersigned has inspected the Septic Tank System described above, and certifies it has been ☒ installed ☐ altered ☐ repaired ☐ as detailed in the plot above ☒ in accordance with the permit issued and meets the provisions of 15A NCAC 18A. 1900, "Laws and Rules for Sewage Treatment and Disposal Systems" in effect on the date of issuance of the permit. The issuance of this Operation Permit does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 15A NCAC 18A. 1900 in addition to those listed below under "Comments." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

Notice: Disturbance of the designated repair area may result in the Suspension or Revocation of this permit.

Comments: System Classification & Type: IIIb Pump to Chambers

DENR Authorized Agent: Philo Walker REHS Signature: Philo Walker REHS

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OPERATION PERMIT for an ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 8148B Permit #: 5242 Tax Parcel #: 017 21107

Property Owner: S B Land, LLC

Job Location Address: 11101 Hambright Rd

City: Huntersville State: NC Zip Code: _____

OPERATION PERMIT CONDITIONS:

I. Performance: System shall perform in accordance with 15A NCAC 18A .1961.

II. Monitoring: System shall be monitored as required by 15A NCAC 18A .1961.

III. Maintenance: Ground absorption sewage treatment and disposal systems shall be checked, and the contents of the septic tank removed, periodically from all compartments, to ensure proper operation of the system. The contents shall be pumped whenever the solids level is found to be more than 1/3 of the liquid depth in any compartment.

IV. Operation: System shall be operated in accordance with 15A NCAC 18A .1961.

System Classification: IIIb

*Operation Permits for Type V and VI systems expire five (5) years from the date of issuance (in accordance with Table V(a)). The system owner must contact GWS six (6) months prior to expiration for permit renewal.

Subsurface system operator required: Yes ☐ No ☒

☐ This type of system requires the system owner to maintain a contract with a certified operator to perform system inspection, maintenance, and reporting as required in 15A NCAC 18A .1961. and Table V(a). The system owner is responsible for all fees associated with these services.

☐ System does not require inspection by GWS on a routine frequency.

☒ System requires inspection by GWS once every five (5) years. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every three (3) years. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every twelve (12) months. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every six (6) months. The system owner is responsible for all fees associated with the inspection.

V. Other: Pump to chambers

DENR Authorized Agent: Philo Walker REHS Date: 12/15/11

Signature: Philo Walker REHS

Mecklenburg County Groundwater & Wastewater Services
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NC DENR
Division of Environmental Health
On-Site Wastewater Section

INSTALLATION APPROVAL for an
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 8148B Permit #: 5242 Tax Parcel #: 017 211 07

Property Owner: S B Land, LLC

Job Location Address: 11101 Hambright Rd

City: Huntersville State: NC Zip Code: ?

Installation Approval Issuance Date: 12/15/11

Permission is hereby given to ☒ install ☐ alter ☐ repair an on-site wastewater treatment & and disposal system, with subsurface soil absorption and effluent discharge, as specified herein at the described location. This approval is granted based upon the application information submitted to our office. All work shall be completed on or before 12/15/12, after which date this approval shall be null and void. The system shall meet all of the construction requirements of 15A NCAC 18A. 1900 which are in effect on the date of granting this approval. An **Operation Permit** must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now of hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.

***NOTICE: This system shall not be installed while soils are in a wet condition.**

Permitted Design Flow: 250 GPD
Liquid Capacity of Septic Tank: 1500 gallons
Site LTAR: .25 GPD/ft² (For new installations only.)
Liquid Capacity of Dosing Tank: 1500 gallons

Drainfield Design ☐ N/A
Trench Depth: 36 inches
Trench Width: 3 feet
Line Spacing: 9 feet (O.C.)
Total line length: 250 feet
# of Lines: 3 @ lengths vary feet
Depth of Media: 12 inches (Type) 25% Reduction
Distribution Device: pressure manifold

Bed Design *(For Repair Installations ONLY.)* ☒ N/A
Bed Depth: _____ inches
Bed Width: _____ feet
Total line length: _____ feet
# of Lines: _____ @ _____ feet
Depth of Media: _____ *inches* (Type) _____
Distribution Device: _____

Water Supply Source
☒ Municipal ☐ Private Well ☐ Community Well
☐ Other _____

Minimum System Setbacks
Distance from Building Foundation: 5 feet
Distance from Property Line: 10 feet
Distance from Water Supply Source: 10 feet

SKETCH OF SYSTEM LAYOUT
(Proposed Layout)

see plot plan on file

Comments: System Classification & Type: Type IIIb Pump to pressure manifold with 25% Reduction Drainfield

DENR Authorized Agent: Philo Walker REHS Signature: Philo Walker REHS

MECKLENBURG COUNTY

Health Department

E. Winters Mabry, MD
Director

September 21, 2011

Tom Lagano
SB Land, LLC
86887 Harbor Oaks Circle
Concord, NC 28027

Re: Permit Application for New Water Supply Well Installation
11101 Hambright Road
Tax Parcel # 01721107
File # 8148B

Dear Mr. Lagano:

Mecklenburg County Groundwater & Wastewater Services has reviewed the referenced application. Based on the criteria set forth in the Mecklenburg County Groundwater Well Regulations, Chapter VII, Section III (A) 1, your application for a permit to install a new water supply well is denied because of the following:

- The desired location of the proposed water supply well is within 1,000 feet of known groundwater contamination and an alternative secure water source is available.

Disapproval of a permit application entitles you to a public hearing before the Groundwater Advisory Committee. In order to secure this right you must submit the demand for a hearing together with the appropriate fee to the Clerk of the Committee within 30 Days of receipt of this written notice.

Linda Sader, Clerk
Groundwater Advisory Committee
700 N. Tryon Street, Suite 211
Charlotte, NC 28202

Failure to timely file such demand and fee shall constitute a waiver of any rights to appeal. Please let us know if you do not plan to appeal so that we may begin processing the refund a portion of your application fee. You may contact me at 704-336-5454 if you have any questions.

Sincerely,

Dennis F. Tyndall, P.G.
Hydrogeologist
Groundwater & Wastewater Services

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a COMMERCIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30004550** GWS File #: **8148B** Tax Parcel #: **017-211-07**

- This IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be **NO** grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is **NOT** transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

I. This Improvement Permit Shall: Expire in Five (5) Years **Expiration Date (If Applicable):** 5/3/2016

Intallation Type: Commercail/Industrial - New System Business Type: Commercial

Facility Size (ft^2): 10000 # Employees/Shift: 10 # Shifts: 1

Wastewater Type: Sewage Water Supply: Municipal

II. Initial System Type: Pump to Approved **System Classification:** IIIb

Initial System Specifications:

Design Flow (gpd):	250	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	750	Total Trench Length (ft):	250
Maximum Trench Depth (in):	36	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

III. Repair System Type: Pump to Approved **System Classification:** IIIb

Repair System Specifications:

Design Flow (gpd):	250	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	750	Total Trench Length (ft):	250
Maximum Trench Depth (in):	36	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment, and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Jeremy Michelone Owner/Legal Agent: _____
Print Name

Signature: Jeremy Michelone, REHS Signature: _____

Date Issued: 5/3/2011

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a COMMERCIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30004550** GWS File #: **8148B**

IV. Permit Conditions/Comments:

- Easement agreement forms shall be on file and the property shall be deeded and recorded prior to issuance of Construction Authorization.
- This type of septic system requires an inspection once every 5 years by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- Upon completion of the project the system designer shall provide Groundwater & Wastewater Services with a letter certifying that the system was installed in accordance with the approved design.
- The permitted system design requires a pressure manifold with varying tap diameters and/or pipe schedules. The contractor should review the specification detail provided by the system designer prior to bidding the project.

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Jeremy Michelone

Signature: Jeremy Michelone

Date Issued: 5/3/2011

Owner/Legal Agent: _____
Print Name

Signature: _____

8148B

environmental DESIGN

KNOX COMMERCIAL PROPERTY

SKETCH PLAN

DEVELOPER/OWNER

Graphic Scale 1" = 100 ft.

Sheet 1 of 1

Project Number

PROPOSED LOT LINE

PROPOSED LOT LINE

PROPOSED LOT LINE

PROPOSED DRIVE

Lot #2
5.66 acres

Lot #1
1.43 acres

HAMBRIGHT RD.

MT. HOLLY-HUNTERSVILLE RD.

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Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 1 of 5
Property ID: 1721107
Lot #:
File #: 8148B
AppID: 4550

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: North South Association LLC% Melvin Graham
Applicant Steve Knox
Address: 6100 Fairview rd Charlotte nc 28210
Date Evaluated: 3/24/10
Proposed Facility: Business
Design Flow (.1949): 10 employees
Property Size: 27a
Location of Site: Hambright rd huntersville NC 28078
Property Recorded:
Water Supply: [x] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [ ] Auger Boring [x] Pit [ ] Cut
Type of Wastewater: [x] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY 1941 Structure/ Texture	SOIL MORPHOLOGY 1941 Consistence Mineralogy	b PROFILE FACTORS 1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1956 Sapro Class	1944 Restr Horiz	Profile Class & LTAR
1	4%	0-8	GR-SBK/SL	FR,SS,SP,SXP	>50" TO SOIL WETNESS	50	N/A	NONE	P.S IV
	L.S	8-35	SBK/C	FI,S,P,SXP					.275GPD/FT2
		35-50	SBK/CL	FI,S,P,SXP					
2	"	0-12	GR/SCL	FR,SS,SP,SXP	>55" TO SOIL WETNESS	55	"	"	P.S IV
		12-55	ABK/C	FI,S,P,SXP					.25GPD/FT2
		30"	PL/C	PLATY AT 30" DOWN					
3	"	0-15	GR/SCL	FR,SS,SP,SXP	>58" TO SOIL WETNESS	58	"	"	P.S IV
		15-41	ABK/C	FI,S,P,SXP					.275GPD/FT2
		41-58	SBK/C-CL	"					
4	"	0-10	GR/SCL	FR,SS,SP,SXP	>57" TO SOIL WETNESS	57	"	"	"
		10-27	ABK/C	FI,S,P,SXP					
		27-38	SBK/SCL	FI-FR,S,P,SXP					
		38-57	M/SCL	SAP W/SBK MIXED					
5	"	0-4	GR/L	VFR,SS,SP,SXP	>44" TO WETNESS	44	"	"	P.S IV
		4-18	GR/SL	"					.25GPD/FT2
		18-23	GR-SBK/SCL	FR-FI,SS,SP,SXP					
		23-44	SBK/C	FI,S,P,SXP					
					SITE LTAR .25GPD/FT2				

Description	Initial System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	IIIb	IIIb
Site LTAR	0.25	0.25

Other Factors (.1946):
Soil Evaluation By: Jason Jackson
Others Present: Bill Marlin
Site Classification (.1948): Provisionally Suitable
Site Evaluation By: Jeremy Michelone, R.S.
Others Present: Ashley Rollins, LSS,

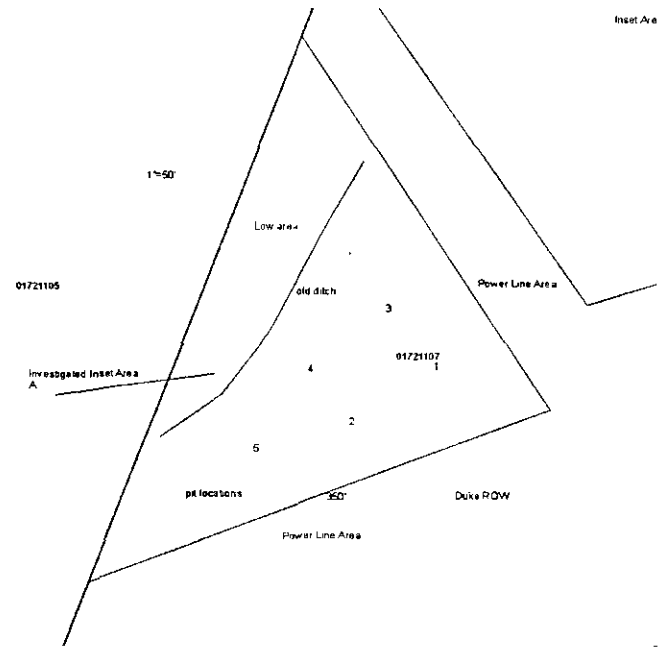
COMMENTS:
100% repair area required
Area is located adjacent to property line and 2 Duke Power ROW

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Foot Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace				
FP-Flood Plain		CL-Clay Loam		
		SCL-Sandy Clay Loam		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SIC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	NS-Non-Sticky	SEXP-Slightly Expansive
FR-Friable	SS-Slightly Sticky	EXP-Expansive
FI-Firm	S-Sticky	
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations

Inset Area A

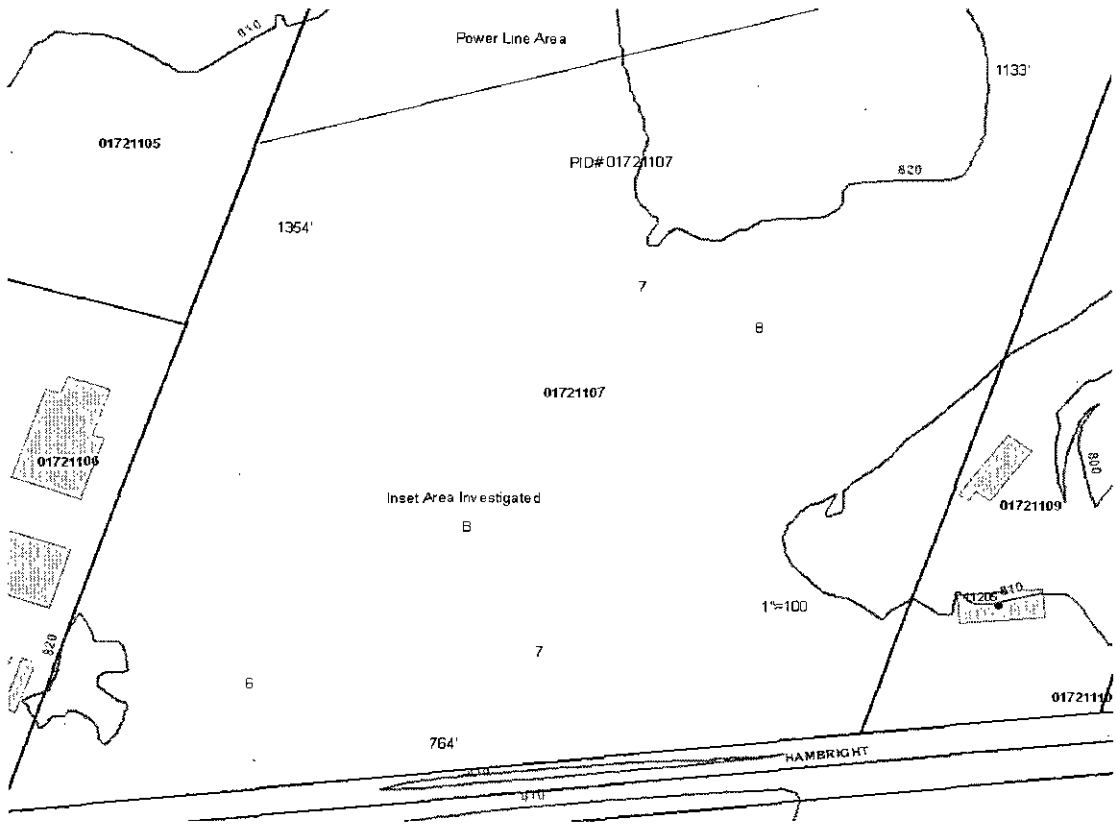


COMMENTS:
Diagram of Soil Investigation Area
Investigated Area Inset B

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Food Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
FP-Flood Plain		SCL-Sandy Clay Loam		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SIC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	NS-Non-Sticky	SEXP-Slightly Expansive
FR-Friable	SS-Slightly Sticky	EXP-Expansive
FI-Firm	S-Sticky	
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations



Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

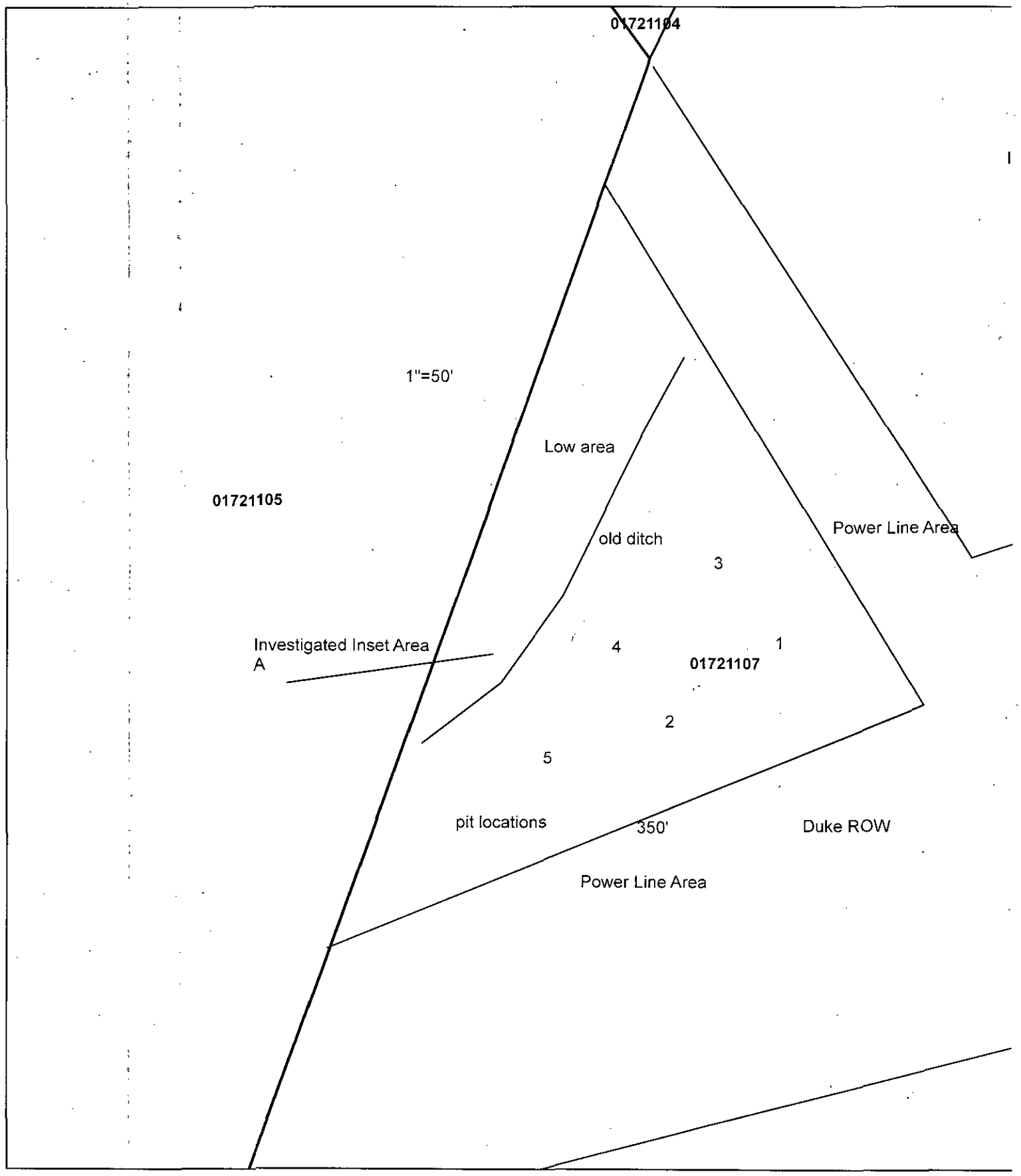
Sheet: 4 of 5
File #: 8148B

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
CONTINUED

PROFILE #	1940 Landscape Position/ Slope%	Horizon Depth (IN:)	SOIL MORPHOLOGY 1941		OTHER PROFILE FACTORS				
			1941 Structure/ Texture	1941 Consistence Mineralogy	1942 Soil Wetness/ Color	1943 Soil Depth (IN:)	1956 Sapro Class	1944 Restr Horiz	Profile Class & LTAR
10	L.S	0-10	GR/SL	FR,SS,SP,SXP	> 45" TO WETNESS	45	N/A	NONE	U IV
	7	10-27	SBK/C	FI,S,P,SXP					
		27-45	PL/ABK/C	"					
		45-59	M/CL	SAP "					
11	"	0-10	GR/SL	FR,SS,SP,SXP	>53" TO SOIL WETNESS	53	"	"	"
		10-17	GR/SCL	"					
		17-27	ABK/C	FI,S,P,EXP	MIXED MINEROLGY				
		27-53	PL/C	FI,S,P,SXP					
12	"	0-15	GR/SL	FR,SS,SP,SXP					
		15-26	ABK/C	FI,S,P,EXP	EXPANSIVE	36	"	"	"
		26-36	PL/C	FI,S,P,SXP					
		36-56	M/C	SAPROLITE					
13	"	0-10	GR/SL	FR,SS,SP,SXP		43	"	"	"
		10-22	ABK/C	FI,S,P,EXP	MIXED MINEROLOGY				
		22-43	PL-ABK/C	"	"				
		43-60	M/C	SAPROLITE					
					INVESTIGATED AREA C				

Hambright Rd
FILE# 8148B

A



Map Created By: J. Jackson
Map Created On: 3/25/10

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0 50 100

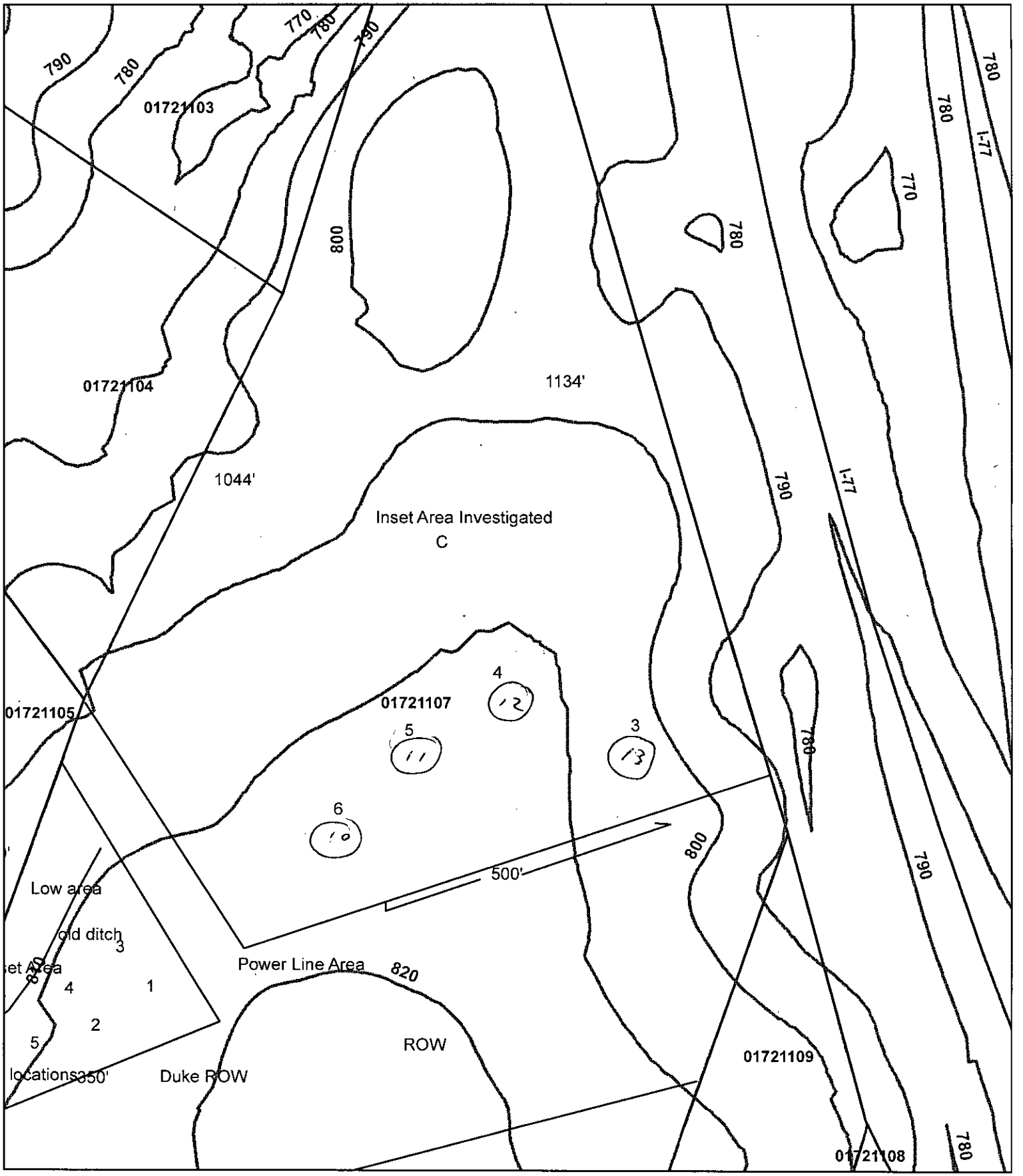
Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 2 of 5 B
File #: 8148 B

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
CONTINUED

PROFILE #	SOIL MORPHOLOGY 1941				OTHER PROFILE FACTORS				
	1940 Landscape Position/ Slope%	Horizon Depth (IN.)	1941 Structure/ Texture	1941 Consistence Mineralogy	1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1956 Sapro Class	1944 Restr. Horiz	Profile Class & LTAR
6	L.S	0-15	GR/SL	FR,SS,SP,SXP	>52" TO SOIL WETNESS	52	N/A	NONE	U IV
	1%	15-52	ABK/C	VFI,S,P,EXP	MIXED MINEROLOGY				
				PLATY AT 26" DOWN					
7	"	0-10	GR/SCL	FR,SS,SP,SXP	MOTTLES AT 19" DOWN	40	"	"	"
		10-40	ABK/C	FI,S,P,SXP	2.5Y 7/2				
8	L.S	0-6	ABK/C	FI,S,P,SXP	>55" TO SOIL WETNESS	55	"	"	"
	2	6-25	PL/C	"					
		25-55	M/LC	SAPROLITE					
9	"	0-17	GR/SL	FR,SS,SP,SXP	>48" TO SOIL WETNESS	48	"	"	"
		17-30	PL/C	FI,S,P,SXP					
		30-48	M/CL	SAPROLITE					
					Investigated area B				

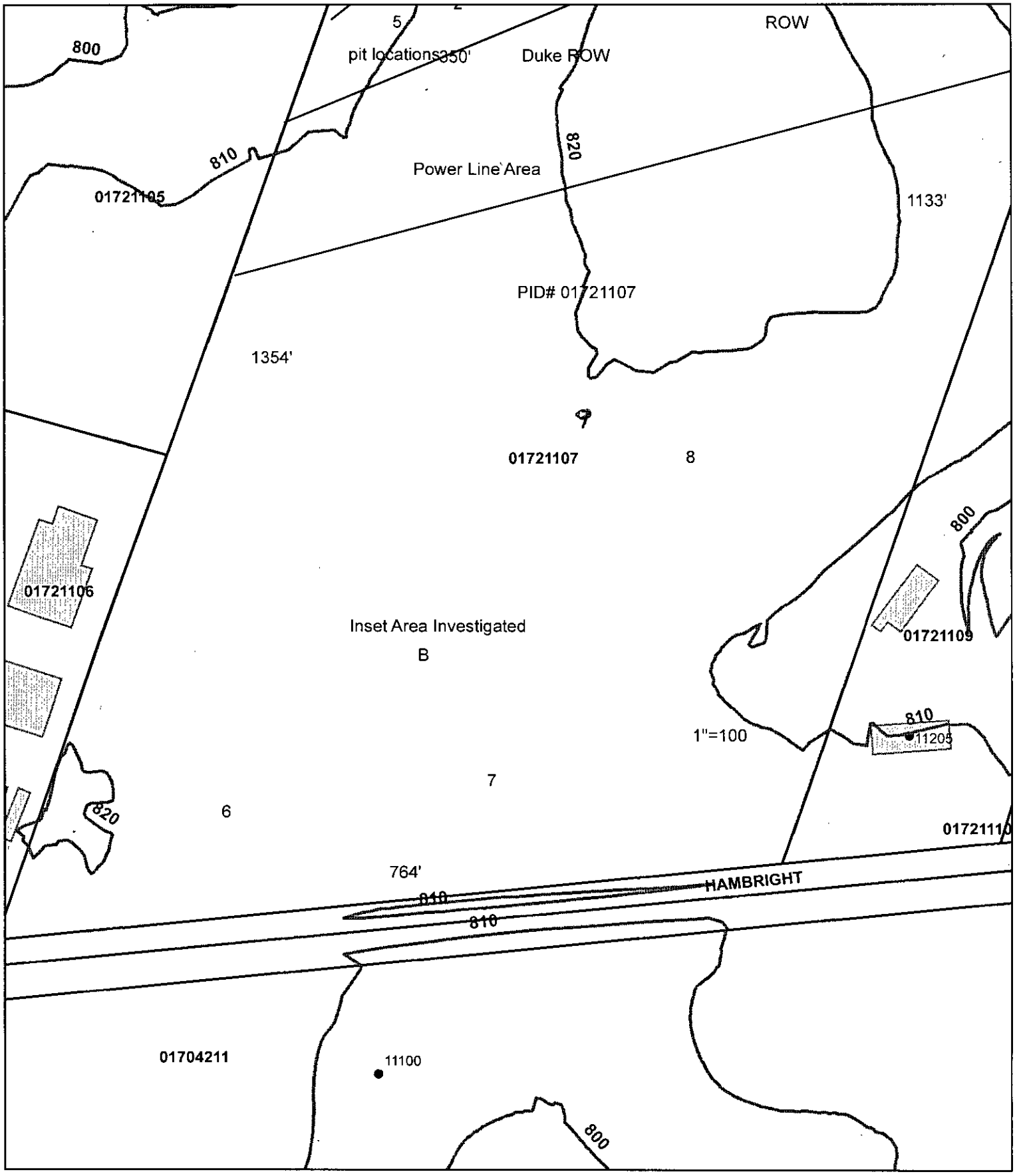
Hampright Rd
FILE# 8148B



Map Created By: J. Jackson
Map Created On: 3/25/10

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Hambright Rd
FILE# 8148B



Map Created By: J. Jackson
Map Created On: 3/25/10

0 100 200

ROLLANS *Soil & Environmental Services, Inc.*

PO Box 832, Mooresville, NC 28115 Phone: (704) 278-0989 Fax: (704) 278-0989

Ashley Rollans, NC Licensed Soil Scientist
Mobile: (704) 746-5046
Email: rollans.ashley@yahoo.com

Adrian Pruett, NC Licensed Soil Scientist
Mobile: (704) 202-5791
Email: adrianpruett@yahoo.com

Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 10 Employee Office/Warehouse on Hambright Road, Mecklenburg 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

April 6, 2011
Project #: 01-1657
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 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.
- 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 accepted 25% reduction installation.
- Repair is specified as an accepted 25% reduction 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:	SB Properties
	Attn: Tom Logano
Address:	8687 Arbor Oaks Cr
	Concord, NC 28027
Phone:	678-592-3140
County:	Mecklenburg
Location:	SB Properties / Hambright Rd
Source of Wastewater Flow:	10 Employee Office/Warehouse
Estimated Gallons Per Day Flow:	250
System Flow:	19.7

Design Specifications

Drainfield Size:	250
Loading Rate (gpd/ft.^{2}):	0.25
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	597
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	103.88
Dosing Volume:	114.28
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:	5.01
Elevation Head:	6.95
Total Dynamic Head:	16.76
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.

SB Properties / Hambright Rd
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	250
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.25
TOTAL AREA TRENCH BOTTOM:	750
TOTAL LATERAL LENGTH:	250
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	250
SUPPLY LINE LENGTH:	597
TOTAL DYNAMIC HEAD:	16.76
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	114.28
PUMP TANK DRAW DOWN*:	5.4
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.

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

SB Properties / Hambright Rd

Project #: 01-1657

LAYOUT FOR 10 EMPLOYEE OFFICE/WAREHOUSE

April 6, 2011

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM					817.50		
INSTR. 1							
SHOP					814.00		
TANK					814.50		
1	***ORANGE***				***816.45***	***44***	***70***
2	***BLUE***				***815.71***	***70***	***90***
3	***PINK***				***815.02***	***98***	***90***
4	RED				814.79	115	115
5	ORANGE				813.82	145	145
6	BLUE				813.28	165	165
7	PINK				812.71	185	185
8	RED				812.21	170	170
9	ORANGE				811.56	140	140
10	BLUE				811.14	136	136
11	PINK				810.57	103	103
					Total	**1371**	**1409**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***250***	***0.250***	***ACCEPT.***	***0.250***	***25% RED.***	**PRESSURE MANIFOLD**
Repair	1159	0.250	ACCEPT.	0.250	25% RED.	PRESSURE MANIFOLD

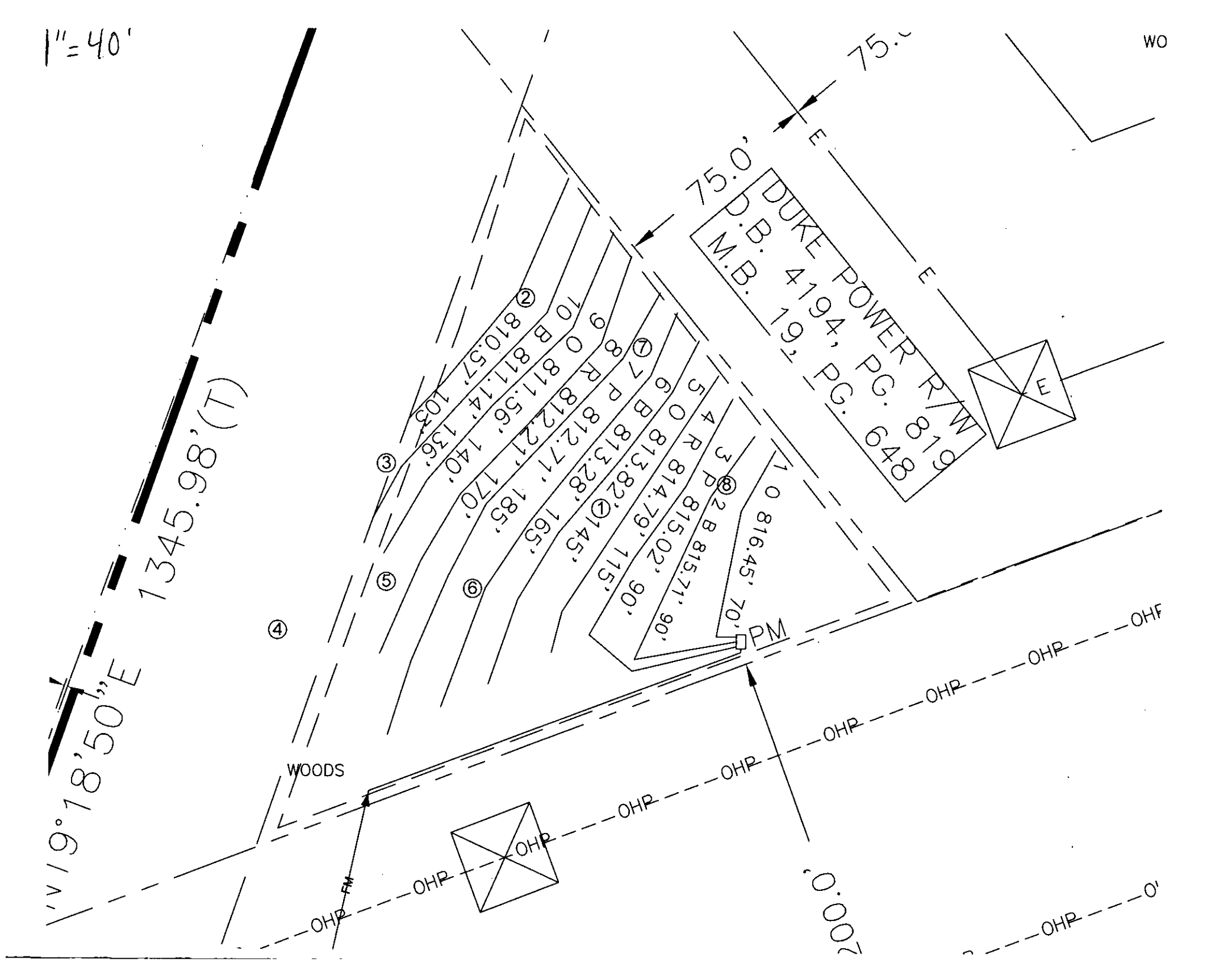
Notes:

** TBM located on left front corner lot (see site plan)

**All measures in feet

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

**BS, HI, and FS indicate rod readings


1"=40'
N 19°18'50"E 1345.98'(T)
75.0'
E
DUKE POWER R/W
D.B. 4194, PG. 819
M.B. 19, PG. 648
E
WO
③
⑤
⑥
④
10 B 810.57, 103'
9 O 811.14, 136'
8 R 811.56, 140'
7 P 812.21, 170'
6 B 812.71, 185'
5 O 813.28, 165'
4 R 813.82, 0145'
3 P 814.79, 115'
2 B 815.02, 90'
1 O 815.71, 90'
⑦
⑧
816.45, 70'
PM
WOODS
OHP
FM
S 00°00'00" E

SB Properties / Hambright Rd

SYSTEM

Line #	Color	Elev	Length	Hole Size	Flow/Tap	gpd	Trench Area	Line LTAR
1	*ORANGE*	*816.45*	*70*	SCH 80 1/2	**5.48**	31.79	210	0.15
2	*BLUE*	*815.71*	*90*	SCH 40 1/2	**7.11**	41.24	270	0.15
3	*PINK*	*815.02*	*90*	SCH 40 1/2	**7.11**	41.24	270	0.15
	total	**feet =**	**250**	**gal/min =**	**19.7**			
			Des. Flow	**250**				
			Pump Run=	**5.80**				
			LTAR	**0.25**				
			LTAR + 5%	**0.2625**				
			LTAR w / INNOV	**0.333333333**				
			LTAR w / INNOV + 5%	**0.35**				

Some lines flagged longer in the field, shorten to lengths shown here.

CALCULATIONS

Location Hambright Rd

Project Number 01-1657

Lot No:

No. of Employees	10	
Design Flow	250	$^{gal}/_{day}$
LTAR	0.25	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	597	ft.
Supply Line Volume	103.878	gal.
Required Feet of Line	250	ft.
Amount of Line from Layout	250	ft.
Gallons per Minute	19.7	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Lateral Line Volume	163.25	gal.
Dosing Volume	114.28	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	5.4	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.80	minutes
Elevation Head	6.95	ft.
Pressure Head	2	ft.
Friction Factor	0.84	ft./100 ft. *(From the interpolater.)*
Friction Head	5.01	ft.
Total Dynamic Head (+20%)	16.76	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

MECKLENBURG COUNTY
HEALTH DEPARTMENT

8148B 5242

APPLICATION FOR A COMMERCIAL SITE IMPROVEMENT PERMIT/ CONSTRUCTION AUTHORIZATION FOR AN ON-SITE WASTEWATER SYSTEM, NEW WELL INSTALLATION, OR REPAIR OF EXISTING WELL

1. **SEPTIC / TYPE APPLICATION:** ○ N/A ● NEW SYSTEM ○ ALTERATION ○ REPAIR ○ MODIFIED PLOT PLAN

2. **WELL / TYPE APPLICATION:** ○ N/A ● NEW WELL ○ MAJOR REPAIR ○ ABANDONMENT

3. **JOB LOCATION INFORMATION:**
TAX PARCEL NUMBER: 01721107
STREET ADDRESS: 11101 Hambright Rd.
CITY: Huntersville NC.
STATE: NC ZIP:
TOWNSHIP:
● MECKLENBURG ○ CORNELIUS ○ HUNTERSVILLE
○ DAVIDSON ○ CHARLOTTE ○ PINEVILLE
○ MATTHEWS ○ MINT HILL

4. **BUILDING INFORMATION:**
DESCRIBE TYPE OF BUSINESS: Shop-warehouse
○ COMMERCIAL ● INDUSTRIAL
SQUARE FOOTAGE OF FACILITY: 16,000 sq ft
NUMBER OF EMPLOYEES PER SHIFT: 4
NUMBER OF SHIFTS: 1 NUMBER OF SEATS: _____
TYPE OF WASTEWATER GENERATED:
● DOMESTIC SEWAGE ○ INDUSTRIAL WASTEWATER
○ OTHER _____

5. ***IF PLANNING TO EXPAND OR ALTER THE EXISTING SEPTIC SYSTEM, INFORMATION DOCUMENTING THE INCREASED WASTEWATER FLOW AND/OR A JUSTIFICATION FOR SYSTEM ALTERATION IS REQUIRED.*** ☒ N/A

6. **WATER SUPPLY:** ● MUNICIPAL ○ PRIVATE WELL ○ PUBLIC WELL ○ SHARED WELL ○ OTHER _____

7. **PROPOSED USE OF WELL:** ○ N/A ● IRRIGATION ○ POTABLE (DRINKING WATER) ○ OTHER _____

8. **PLEASE INDICATE AND RANK DESIRED SEPTIC SYSTEM TYPE(S) IN ORDER OF PREFERENCE** *(1-MOST DESIRED 5-LEAST DESIRED):*
☐ N/A ☐ ANY TYPE ☐ CONVENTIONAL ☐ ACCEPTED ☐ INNOVATIVE ☐ ALTERNATIVE ☐ OTHER _____
RANK: ____ ____ ____ ____ ____

9. **DO ANY OF THE FOLLOWING APPLY TO THE PROPERTY IN QUESTION? IF "YES" PLEASE ATTACH SUPPORTING DOCUMENTATION:**

BURIED CABLES, LANDFILLS, STUMPHOLES	○ YES ● NO	GRADING/SOIL REMOVAL PERFORMED	● YES ○ NO
EXISTING WASTEWATER (SEPTIC) SYSTEMS	● YES ○ NO	JURISDICTIONAL WETLANDS	○ YES ● NO
WELLS, SPRINGS, OR WATER LINES	● YES ○ NO	APPROVAL REQUIRED BY ANY OTHER PUBLIC AGENCY	○ YES ● NO
EASEMENTS OR RIGHT-OF-WAYS	● YES ○ NO	WASTEWATER OTHER THAN DOMESTIC SEWAGE	○ YES ● NO
CHEMICAL/PETROLEUM STORAGE TANKS	○ YES ● NO	KNOWN UNDERGROUND CONTAMINATION	○ YES ● NO
WASTE STORAGE	○ YES ● NO	GROUNDWATER USE RESTRICTIONS/VARIANCES	○ YES ● NO

10. **WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED?** 24 yrs ago ☒ UNKNOWN

11. **WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY?** Closed ☐ N/A

12. **PROPERTY OWNER:**
NAME: SB LAND, LLC
ADDRESS: 06887 Harbor oaks Circle
CITY: Concord
STATE: NC ZIP: 28027
WORK PHONE: 678-592-3140
MOBILE PHONE: 678-592-3140
FAX: _____
E-MAIL: TomL@XLcenter.com

13. **OWNER'S LEGAL REPRESENTATIVE, IF APPLICABLE:**
NAME: _____
ADDRESS: _____
CITY: _____
STATE: _____ ZIP: _____
WORK PHONE: _____
MOBILE PHONE: _____
FAX: _____
E-MAIL: _____

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

Revised on: 12/15/10

14. SEPTIC SYSTEM PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Improvement Permit and Authorization to Construct shall become invalid. 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. The permit is valid for either sixty (60) months or is non-expiring depending upon the documentation submitted: complete site plan = 60 months, complete plat = non-expiring.

_____ (Initial here for septic system applications)

15. WELL PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Well Permit shall become invalid. 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. The permit is valid for a period of twelve (12) months from the date of issuance.

_____ (Initial here for well applications)

16. APPLICATION SIGNATURE SECTION:

ONLY COMPLETE APPLICATIONS WILL BE PROCESSED. A proper signature is required in order to process your application. Please review the application carefully and sign in the space provided below. A PROPOSED PLOT PLAN is required to be submitted with each application.

_____ Property Owner's or Owner's Legal Representative Signature

9/19/11 Date

OFFICE USE ONLY

○ SURVEY PLAT TO SCALE SUBMITTED ○ SCALED SITE PLAN SUBMITTED ○ UN-SCALED SITE PLAN SUBMITTED

SEPTIC APPLICATION FEE RECEIVED: $ _____ DATE FEE RECEIVED: _____

WELL APPLICATION FEE RECEIVED: $ 550.00 DATE FEE RECEIVED: 9/16/11

APPLICATION PROCESSED BY: lws

GWS FILE NUMBER ASSIGNED: 8148 B

APPLICATION ID NUMBER ASSIGNED: 5242

COMMENTS:

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

P# 313531
5/16/11
As Noted

Groundwater & Wastewater Services
Septic Project File & Data Review Worksheet

GWS File #: 8148 B WASPS App #: 4550

Primary ES assigned to project: OJ

Secondary ES assigned to project: _____

Project Type: New System ☑ Alteration ☐ Repair ☐ Modified Plot Plan ☐

I. File Review:

Rule or Law	Permit Application			
.1937(d)	Is the Application complete	Yes ☑	No ☐	N/A ☐
.1937(d)	Is there a Site plan/Plat with application	Yes ☑	No ☐	N/A ☐
.1937(d)	Is the Facility shown?	Yes ☑	No ☐	N/A ☐
.1937(d)	Are appurtenances shown	Yes ☑	No ☐	N/A ☐
	Site Evaluation Information			
.1939 (a)(1)	Topography and Landscape Position Recorded?	Yes ☑	No ☐	N/A ☐
.1940 (a-g)	Slope % Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Texture Class Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Structure type Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Consistence Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Mineralogy Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(3)	Soil Wetness Condition Recorded?	Yes ☐	No ☐	N/A ☑
.1939 (a)(4)	Soil Depth to Rock or Parent Material Recorded When Encountered	Yes ☐	No ☐	N/A ☑
.1939 (a)(5)	Depth to Restrictive Horizons Recorded When Encountered?	Yes ☐	No ☐	N/A ☑
.1939 (a)(6)	Sufficient Available Space Recorded?	Yes ☑	No ☐	N/A ☐
.1937(m)	Are the Profile Locations Shown?			
.1939(a)	Are the S/PS Profiles in system & in repair area?	Yes ☑	No ☐	N/A ☐
& .1945(b)	Number of auger borings made: Numerous			
	Were sufficient auger borings made?	Yes ☑	No ☐	N/A ☐
.1939(d), .1955, .1956, .1957	LTAR .25	Yes ☑	No ☐	N/A ☐
	Improvement Permit/Construction Authorization			
.1937(g) 130A-336(a)	Proposed System Type stated-Initial	Yes ☑	No ☐	N/A ☐
.1945(b)	Proposed System Type stated-Repair	Yes ☑	No ☐	N/A ☐
130A-336 (a)(3)	System location identifiable by setbacks - Initial	Yes ☑	No ☐	N/A ☐
.1937(g) .1945(b)	System components shown – Initial	Yes ☑	No ☐	N/A ☐
.1945(b)	Repair area shown	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Does System design match facility, flow & WWcharacteristics?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is System design consistent with soil/site conditions?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is the System located in the approved area?	Yes ☑	No ☐	N/A ☐
130A-336(a)	Is the Design flow (gpd) indicated?	Yes ☑	No ☐	N/A ☐

130A-336(a)	Number of Bedrooms, employees, seats, etc. indicated?	Yes ☑	No ☐	N/A ☐
.1937(g)	Trench depth indicated?	Yes ☑	No ☐	N/A ☐
.1937(g)	Trench width indicated?	Yes ☑	No ☐	N/A ☐
.1937(g)	Trench length indicated?	Yes ☑	No ☐	N/A ☐
130A-336(a)(1)	Proposed/existing well shown?	Yes ☑	No ☐	N/A ☑
130A-336(a)(1)	Property line lengths shown?	Yes ☑	No ☐	N/A ☐
130A-336(a)	Facility/appurtenance setbacks shown from fixed points?	Yes ☑	No ☐	N/A ☐
	Operation Permit			
.1937(i)	System type as described in table V(a) of rule .1961	Yes ☑	No ☐	N/A ☐
.1937(i)	Conditions for system performance, operation, maintenance, monitoring and reporting.	Yes ☑	No ☐	N/A ☐

II. WASPS Review:

Construction authorization issued	Yes ☑	No ☐	N/A ☐
Installation approval issued	Yes ☐	No ☑	N/A ☐
Operation permit issued	Yes ☐	No ☑	N/A ☐
Other related documentation	Yes ☐	No ☑	N/A ☐

Items requiring correction/modification: _____

Comments:

scan install approval along w/ OP

IA issued date: _____

OP issued date: _____

Review performed by: JR Date performed: 5 6 11

2-29-12 JM

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	05/16/11	**Amount:**	200.00
Receipt #:	72808	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	CRAIGGY		

Account Information

Account #: X35140
Contractor: CUMMINGS CONSTRUCTION CORP
Attn:
Address: P O BOX 692
Address:
City/State/Zip: MATTHEWS, NC 28106

Item	Description	Permit#	Quantity	Unit Price	Total Price
0734	Auth for Waste Wtr Sys Constr 11101 HAMBRIGHT RD/FILE 8148B		1	200.00	200.00

----------Outstanding Balances----------

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
1,681.57	6,120.91				

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	05/16/11	**Amount:**	200.00
Receipt #:	72809	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	CRAIGGY		

Account Information

Account #: X35140
Contractor: CUMMINGS CONSTRUCTION CORP
Attn:
Address: P O BOX 692
Address:
City/State/Zip: MATTHEWS, NC 28106

Item	Description	Permit#	Quantity	Unit Price	Total Price
0703	Installation/Final Approval 11101 HAMBRIGHT RD/FILE 8148B		1	200.00	200.00

----------**Outstanding Balances**----------

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
1,881.57	6,120.91				
