All Septic Fees Paid for 132B by Kent 4295 PW

MECKLENBURG COUNTY
GROUNDWATER & WASTEWATER SERVICES

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: 01124104
STREET ADDRESS: 13145 McCord Rd
CITY: Huntersville, NC
STATE: NC ZIP: 28078
LOT #: LOT SIZE (acres): 33.44
TOWNSHIP:
☐ 0-MECKLENBURG ☐ 3-CORNELIUS ☑ 6-HUNTERSVILLE
☐ 1-CHARLOTTE ☐ 4-PINEVILLE ☐ 7-MINT HILL
☐ 2-DAVIDSON ☐ 5-MATTHEWS

4. **BUILDING INFORMATION:**
DESCRIBE TYPE OF BUSINESS: Country Inn - Bed & Breakfast
☑ COMMERCIAL ☐ INDUSTRIAL
SQUARE FOOTAGE OF FACILITY: 22,000 SF
NUMBER OF EMPLOYEES PER SHIFT: 8
NUMBER OF SHIFTS: 1 NUMBER OF SEATS:
TYPE OF WASTEWATER GENERATED:
☑ DOMESTIC SEWAGE ☐ INDUSTRIAL WASTEWATER
☐ OTHER Dining room for residents

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.***

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

8A. **RANK:** 1 2 3 4 5

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?** 8-25-08 ☐ UNKNOWN 24069.862

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

12. **PROPERTY OWNER:**
NAME: Salisbury Land Holding, LLC
ADDRESS: 1600 South Hickory Ridge Tr.
CITY: Milford
STATE: MI ZIP: 48380
HOME PHONE: See owner's rep info.
WORK PHONE:
MOBILE PHONE:
FAX:

13. **OWNER'S LEGAL REPRESENTATIVE, IF APPLICABLE:**
NAME: John Choate
ADDRESS: 6320 Angus Dr. Ste D
CITY: Raleigh
STATE: NC ZIP: 27617
HOME PHONE:
WORK PHONE 800-728-7866
MOBILE PHONE: 919.333.2663
FAX: 919.791.1922

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

Revised on: 7/1/08

Phil Walker 336-5570 $850.00

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.

DLM (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.

Donald L Munday
Property Owner's or Owner's Legal Representative Signature

7/9/09
Date

OFFICE USE ONLY

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

SEPTIC APPLICATION FEES RECEIVED: $ 850 00 DATE FEE RECEIVED: _____

WELL APPLICATION FEES RECEIVED: $ _____ DATE FEE RECEIVED: _____

APPLICATION PROCESSED BY: SC

GWS FILE NUMBER ASSIGNED: 1328

APPLICATION ID NUMBER ASSIGNED: 4295

COMMENTS:

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

Revised on: 7/1/08

Town of Huntersville Planning Department
101 Huntersville-Concord Rd, Huntersville, NC 28078
Phone: (704) 875-7000 Fax: (704) 875-6546

Fee: $400.00

Date: July 28, 2009

Town of Huntersville Planning Department

APPLICATION FOR A TEXT CHANGE TO THE ZONING OR SUBDIVISION ORDINANCE

Applicant Information
Name: John R. Choate, Choate Custom Homes, LLC
Address: 6320 Angus Drive, Suite D.
Raleigh, NC 27617
Phone No. (800)728-7866

Type of Change:
New Addition: _____
Revision: X

Ordinance: ***Zoning Ordinance:*** Town of Huntersville North Carolina, **Article** 9.53 Country Inn Development in the Transitional Residential Zoning District, **Section:** 12.2.1 General Definitions.

Current Text:

Article 9.53 Country Inn Development in the Transitional Residential Zoning District.

3. That the owner/operator shall reside in one of the residential buildings; and
7. That there will be a separation of no less than:
   a. Parking areas shall be located two-hundred (200) feet from arterial roads and thoroughfares and three hundred (300) feet from adjacent property. Parking areas will be visually buffered from the arterial roads and thoroughfares.
   b. Special event areas shall be located one hundred (100) feet from any property boundary located in a residential district or developed for residential or mixed use purposes. A thirty (30) foot vegetated buffer along the property line is required for special event areas. Additional buffers may be required as part of d) of this section.

Proposed Text:

Statement of Purpose:

The Country Inn Development classification is reminiscent of the unique rural characteristics of Huntersville. By definition, it is intended to enable distinctly rural settings without the regimented urban image mandated in other Articles of this code, and is meant to encourage low density, non urban oriented commercial rental opportunities within the TR District.

3. That there shall be on-site management/owner quarters not to exceed two non-rental cottage units in addition to the 6 residential rental cottages noted in paragraph 2.

7. That there will be a separation of no less than:
   a. Parking areas shall be located one-hundred (100) feet from arterial roads and thoroughfares and one hundred (100) feet from adjacent property. Parking areas will be visually buffered from the arterial roads and thoroughfares.
   b. Special event areas shall be located one hundred (100) feet from any property boundary located in a residential district or developed for residential or mixed use

purposes. A thirty (30) foot vegetated buffer along the property line is required for special event areas. Additional buffers may be required as part of d) of this section.

8. The design layout of the site shall be rural in nature. Urban design criteria iterated in other Articles of this code shall not apply; emergency accessibility issues not withstanding.

9. The Country Inn Development shall be rural in nature and considered a single lot development and shall not be required to provide connector roads to or through other residential developments.

Current Text:

Article 12.2.1

Country Inn Development. A rural development with up to two main inn houses and up to six residential cottages accessed by private drive located on parcels of land 20 acres and larger that consists of renting from one to 20 dwelling rooms on a daily basis, where breakfast, lunch and dinner is provided and is available only to overnight guests and special events guests. The owner/operator shall reside on site.

Proposed Text:

Country Inn:

Country Inn Development. A rural development with up to two main inn houses and up to six residential **rental cottages and up to two on-site management cottages** accessed by private drive located on parcels of land 20 acres and larger that consists of renting from one to 20 dwelling rooms on a daily basis, where breakfast, lunch and dinner is provided and is available only to overnight guests and special events guests. The owner/operator shall reside on site.

Reason for requested change (attach additional sheets if necessary): The applicant is requesting a text amendment for a Country Inn Development in the Transitional Residential Zoning District in order to allow for the possibility of creative and unique Country Inn concepts that are still faithful to the original planning objectives and further to make viable the use of Country Inns within a rural development framework. This change, combined with the growing popularity of Bed and Breakfast styled Inns offers wonderful opportunities for the Town of Huntersville to play a major role in promoting tourism and a chance for local residents to reconnect with the rural, historical and agricultural legacy of the region.

At its essence, this proposed text amendment encourages visitors to linger in the Town of Huntersville for a more rural and relaxed travel experience as compared to traditional hotels, which serve a more rapidly transient customer base. It also makes Huntersville Country Inns into viable tourist attractions in and of themselves. The Town of Huntersville could experience all of the benefits of added tourism without many of the traffic and congestion related drawbacks.

I hereby certify that the information presented by me in this application is accurate to the best of my knowledge, information and belief.

Signature of Applicant

07/28/09

Date

Town of Huntersville NORTH CAROLINA

Application

$200 ea Acc

Incomplete submissions will not be accepted. Please check all items carefully.

1. Application Type

Please indicate the type of application you are submitting. If you are applying for two (2) actions, provide a separate application for each action.

- ☐ CHANGE OF USE
- ☐ COMMERCIAL SITE PLAN
- ☐ CONDITIONAL REZONING
- ☐ GENERAL REZONING
- ☐ MASTER SIGNAGE PROGRAM
- ☑ SPECIAL USE PERMIT
- ☐ REVISION to _____

SUBDIVISION CATEGORIES: *Per the Huntersville Subdivision Ordinance*

- ☐ SKETCH PLAN
- ☐ PRELIMINARY PLAN
- ☐ FINAL PLAT(includes minor and exempt plats)
- ☐ FINAL PLAT REVISION
- ☐ FARMHOUSE CLUSTER

2. Project Data

Date of Application 7.30.07

Name of Project Yellow Hill Inn Phase (if subdivision) #: _____

Location McCord Rd

8-Digit Tax Parcel Number(s) (PIN) 011.24.104 (Portion: See Yellow Hill Subdiv)

Current Zoning District TR Proposed District (for rezonings only): TR-SPU

Property Size (acres) 21.11 acres Street Frontage (feet) 848' (30' to RW)

Current Land Use Vacant. Small Farm.

Proposed Land Use(s) Country Inn

3. Description of Request

Briefly explain the nature of this request. If a separate sheet is necessary, please attach it to this application.

Create a Country Inn with 1 Main Bldg, ~~and~~ 6 cottages for rent and one staff cottage.

4. Site Plan Submittals

Consult the particular type of *Review Process* for the application type selected above. These can be found at http://www.huntersville.org/planning_reviewpackets.asp .

5. Outside Agency Information

Other agencies may have applications and fees associated with the land development process. The *Review Process* list includes copies of plans needed for most town and county reviewing agencies.

For major subdivisions, commercial site plans and rezoning petitions please enclose a copy of the Charlotte-Mecklenburg Utility *Willingness to Serve* letter for the subject property.

6. Signatures

*Applicant's Signature _____ Printed Name John Choate (agent for Salisbury Land Holding, LLC)

Address of Applicant 6320 Angus Dr. Ste D, Raleigh, NC 27617

Email johnc@chaatecustomhomes.com

Property Owner's Signature (if applicable) _____

Printed Name _____

Property Owner's Address (if applicable) _____ Email _____

* Applicant hereby grants permission to the Town of Huntersville personnel to enter the subject property for any purpose required in processing this application.

Development Firm	Name of contact	Phone	Email
Choate Custom Homes, LLC	John R. Choate	800-728-7866	johnc@choatecustomhomes.com

Design Firm	Name of contact	Phone	Email

If Applying for a General Rezoning:
Please provide the name and Address of owner(s) of fee simple title of **each** parcel that is included in this rezoning petition. If additional space is needed for signatures, attach an addendum to this application.

If Applying for a Conditional Rezoning:
Every owner of each parcel included in this rezoning petition, or the owner (s) duly authorized agent, must sign this petition. If signed by an agent, this petition MUST be accompanied by a statement signed by the property owner (s) and notarized, specifically authorizing the agent to act on the owner (s) behalf in filing this petition. Failure of each owner, or their duly authorized agent, to sign, or failure to include the authority of the agent signed by the property owner, will result in an INVALID PETITION. **If additional space is needed for signatures, attach an addendum to this application.**

Signature, name, firm, address, phone number and email of Duly Authorized Agent by owner needed below:

John R. Choate, Choate Custom Homes, LLC, 800-728-7866

6320 Angus Dr. Ste D, Raleigh, NC 27617

johnc@choatecustomhomes.com

If Applying for a Subdivision:
By signature below, I hereby acknowledge my understanding that the Major Subdivision Sketch Plan Process is a quasi-judicial procedure and contact with the Board of Commissioners shall **only** occur under sworn testimony at the public hearing.

_____

Contact Information

Town of Huntersville	Phone:	704-875-7000
Planning Department	Fax:	704-875-6546
PO Box 664	Physical Address:	101 Huntersville-Concord Road
Huntersville, NC 28078	Website:	http://www.huntersville.org/planning_0.asp

Letter of Authorization

To Whom It May Concern:

Please let this letter serve as notice that we, Janice and Scott Salisbury of Salisbury Land Holdings, LLC, located at 1600 S. Hickory Ridge Trail, Milford, MI 48380 do hereby authorize Choate Custom Homes, LLC to act as our agent with signature rights for all maters pertaining to zoning, text amendments, sketch plan submission and for all aspects of the Yellow Hill Sketch Plan, the Yellow Hill Inn Special Use Plan and the Yellow Hill Farm House Cluster. We also authorize you to act on our behalf to apply for all permits related to the construction of the Yellow Hill Inn and The Yellow Hill Farm House Cluster located at 13229 McCord Road, Huntersville, NC 28078, Tax ID# 01124105, located in the Town of Huntersville in County of Mecklenburg.

If you should have any questions or concerns, please feel free to call us at (248) 685-7403.

Sincerely,

Managing Member — Date 7/14/09

Managing Member — Date 7/14/09

20 09

NOTARY PUBLIC:

Name Sheila A. Miller — Signature

Subscribed, sworn to and acknowledged before me this 14th day of July

My commission expires: December 18, 2013. Livingston, County, Michigan

SHEILA A. MILLER
Notary Public, State of Michigan
County of Livingston
My Commission Expires Dec. 18, 2013
Acting in the County of

SHEILA A. MILLER NOTARY PUBLIC LIVINGSTON COUNTY, MI

Thomason, Trevor

From: Thomason, Trevor
Sent: Wednesday, August 05, 2009 10:39 AM
To: Randall, Kelly
Cc: Michelone, Jeremy; Walker, Philo
Subject: Yellow Hill County Inn

Per our discussion this morning the following items need to be discussed with the engineer & the state:

1. Daily design flow

2. System types that can be used w/ domestic & restaurant waste (PPBPS?)

3. Barn intended use w/ upstairs floor plan

4. Permitting responsibilities (state/local)

Based on our initial calculations the DDF for the inn can be based on the 175gpd/room (1949 (b) Table No. 1 Motels/Hotels w/ cooking facilities). 12 interior suites x 175gpd = 2100gpd. 7 single suite cottages x 175gpd = 1225gpd. (3325gpd for inn)

Since the owner must occupy a residence on the premises an additional 240gpd (1949 (a)) is required for the owner's residence.

3325 + 240 = 3565gpd

The applicant has also indicated that special events (weddings, parties, etc.) will be held at the site. In order to adequately size the system we need a maximum number of event guests that can be served at the facility. It may be possible to equalize this portion of the system flow since these events will generally be held <2 times per week.

At this time, I recommend that the engineer provide a minimum of 12 months of water usage data for 2 similar facilities (size & function) for our review. We have to determine the DDF before any further septic system design work can occur.

It is my understanding that we will only be issuing one permit for the facility, not a permit for each "system" proposed. Based on this logic if the total design flow for the facility exceeds 3000 gpd the state will need to be involved with reviewing & permitting the project.

Once the water use data is available I suggest we have a group meeting w/ the engineer & DENR to discuss.

Sincerely,
Trevor Thomason, RS
Environmental Analyst
Mecklenburg County - LUESA
Groundwater & Wastewater Services
Office: (704) 336-5568
Cell: (704) 363-5447
Fax: (704) 336-6894
Trevor.Thomason@MecklenburgCountyNC.gov
http://groundwater.charmeck.org

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

Sheet: 1 of 2
Property ID: 1124104
Lot #:
File #: 132B
AppID: 4295

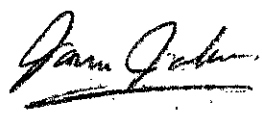
SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: Sailsbury Land Holding LLC
Applicant: John Choate
Address: 1600 South Hickory Ridge Tr Milford MI 48380
Date Evaluated: 07/28/2009
Proposed Facility: Design Flow (.1949):
Property Size: 33.44a
Location of Site: 13145 McCord Rd Charlotte NC 28078
Property Recorded: 08/25/2008
Water Supply: [ ] Public [ ] Individual [x] 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		b 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
1	LS	0-5	GR/SCL	FR,SS,SP,SXP	>48" TO SOIL WETNESS	48	N/A	NONE	P.S IV
	5	5-32	SBK,wABK/C	FI,S,P,SXP					.275GPD/FT2
		32-60	SBK/CL	FI,S,P,SXP					
2	L.S	0-5	GR/SCL	FR,SS,SP,SXP	"	"	"	"	"
		5-23	SBK,wABK/C	FI,S,P,SXP					
		23-55	SBK/CL	FI,S,P,SXP					
3	L.S	0-10	GR/SCL	FR,SS,SP,SXP	"	"	"	"	"
		10-31	SBK,wABK/C	FI,S,P,SXP					
		31-60	SBK/CL	FI,S,P,SXP					
4	L.S	0-8	GR/SCL	FR,SS,SP,SXP	"	"	"	"	"
	4	8-20	ABK/C	FI,S,P,SXP					
		20-57	SBK/CL	FI,S,P,SXP					
5	L.S	0-8	GR/SCL	FR,SS,SP,SXP	"	42	"	"	"
	5	8-42	SBK,ABK/C	FI,S,P,SXP					
		42-48	M/CL	SAPROLITE					
6	L.S	0-18	GR/SCL	FR,SS,SP,SXP	"	48	"	"	"
		18-35	SBK/SC	FI,S,P,SXP					
		35-48	SBK/SCL	FI,S,P,SXP					

Description	Initial System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	Vb	Vb
Site LTAR	.2	.2

Other Factors (.1946):
Soil Evaluation By: Jason Jackson
Others Present: Bill Marlin
Site Classification (.1948):
Site Evaluation By:
Others Present:



COMMENTS: FILE #: 132b

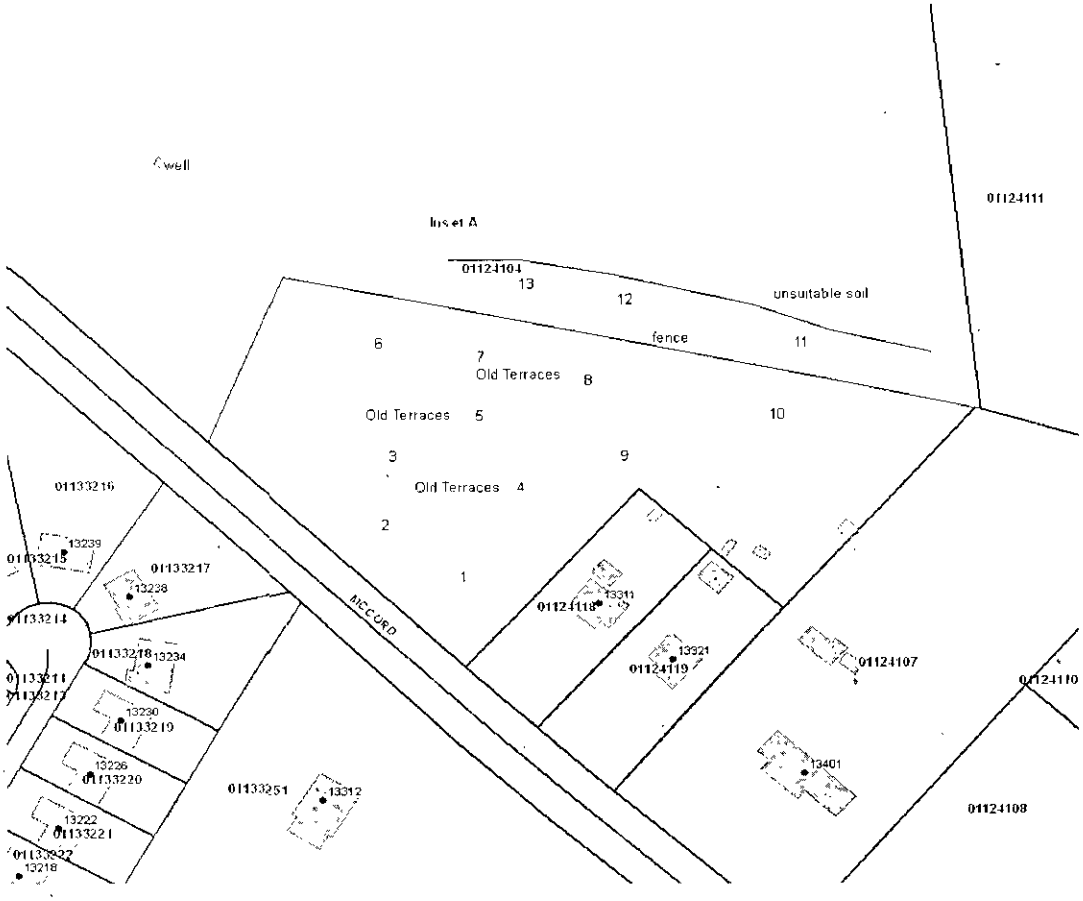
100% repair area required

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	

Inset A

Sketch of Soil Evaluation Locations



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

Sheet: 3 of 5
File #:

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
7	L.S	0-18	GR/SCL	FR,SS,SP,SXP	>48" TO SOIL WETNESS	48	N/A	NONE	P.S IV
		18-48	ABK/C	FI,S,P,SXP					.275GPD/FT2
		48-57	SBK/CL	"					
8	L.S	0-11	GR/SCL	FR,SS,SP,SXP	"	52	"	"	"
		11-28	ABK/C	FI,S,P,SXP					
		28-52	SBK/CL	"					
9	L.S	0-2	GR/SCL	FR,SS,SP,SXP	"	40	"	"	"
	5	2-17	ABK/C	FI,S,P,SXP					
		17-40	SBK/CL	"					
		40-50	M/CL	SAPROLITE					
10	L.S	0-26	GR/SCL	FR,SS,SP,SXP	"	48	"	"	.3GPD/FT2
		26-48	SBK/C	FI,S,P,SXP					
11	L.S	0-12	GR/SCL	FR,SS,SP,SXP	"	48	"	"	"
	6	12-33	SBK,ABK/C	FI,S,P,SXP					
		33-48	SBK/CL	"					
12	L S	0-6	GR/SCL	FR,SS,SP,SXP	"	"	"	"	"
		6-30	SBK,ABK/C	FI,S,P,SXP					
		30-48	SBK/C	"					

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
CONTINUED

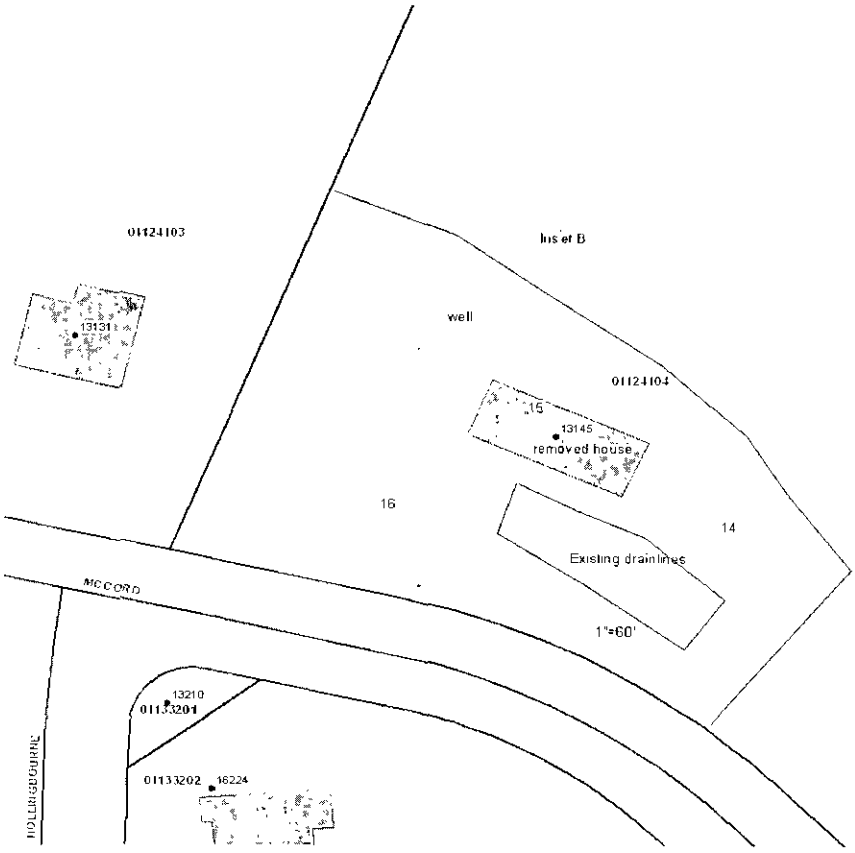
PROFILE #	1940 Landscape Position/ Slope%	Horizon Depth (IN:)	SOIL MORPHOLOGY 1941 1941.1 Structure/ Texture	SOIL MORPHOLOGY 1941 .1941 Consistence Mineralogy	OTHER PROFILE FACTORS .1942 Soil Wetness/ Color	OTHER PROFILE FACTORS 1943 Soil Depth (IN.)	OTHER PROFILE FACTORS 1956 Sapro Class	OTHER PROFILE FACTORS 1944 Restr Horiz	Profile Class &LTAR
13	L.S	0-4	GR/SCL	FR,SS,SP,SXP	>48" TO SOIL WETNESS	48	"	"	P.S IV
		4-27	ABK/C	FI,S,P,SXP					.275GPD.FT2
		27-48	M/CL	SAPROLITE					
14	L.S	0-11	GR/SCL	FR,SS,SP,SXP	"	"	"	"	P.S IV
		11-44	SBK,ABK/C	FI,S,P,SXP					.3GPD/FT2
		44-48	SBK/CL	"					
15	L.S	0-20	DISTURBED	FILL MATERIAL	"	56	"	"	P.S IV
		20-56	SBK/C	FI,S,P,SXP					.2GPD
16	L.S	0-16	ABK,SBK/C	FI,S,P,SXP	"	16	"	"	"
		16-48	M/CL	SAPROLITE					

COMMENTS:
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



COMMENTS: FILE #: 132b

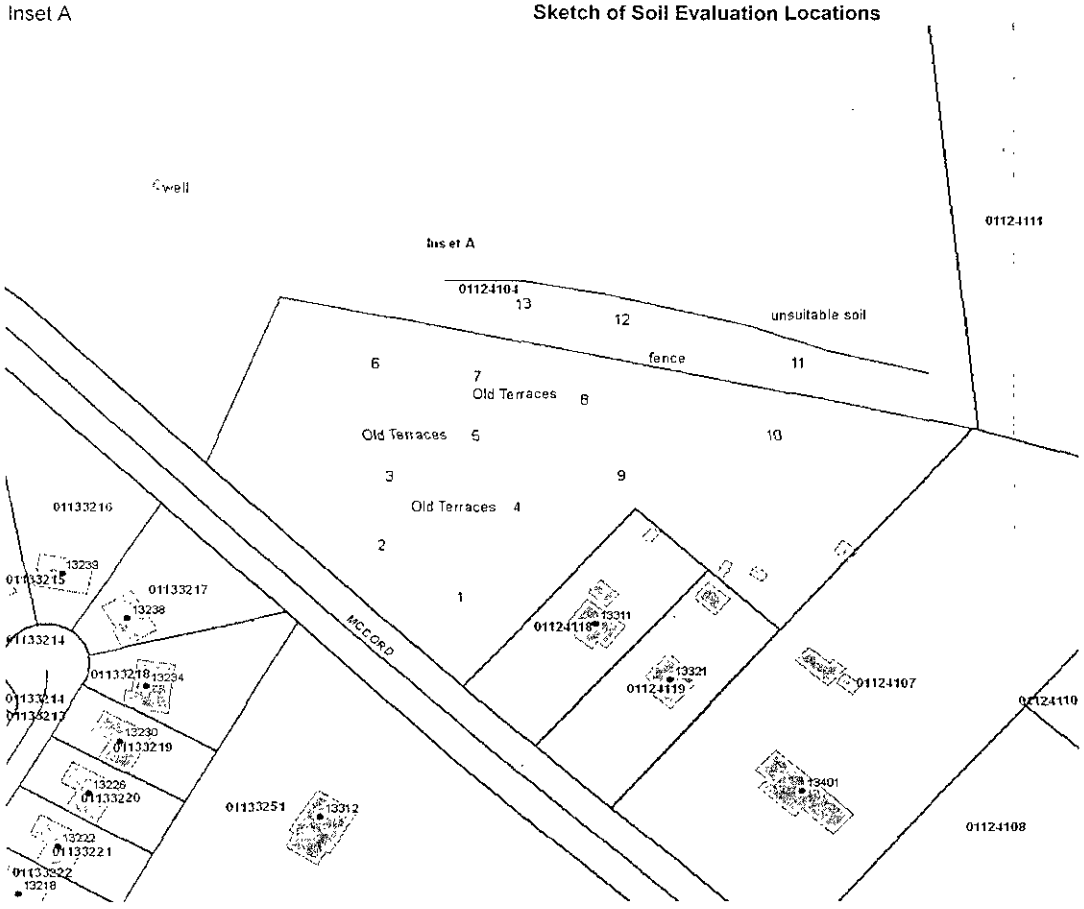
100% repair area required

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

Inset A

Sketch of Soil Evaluation Locations



North Carolina Department of Environment and Natural Resources
Division of Environmental Health

Beverly Eaves Perdue
Governor

Terry L. Pierce
Director

Dee Freeman
Secretary

March 18, 2010

Trevor Thomason, RS
Mecklenburg County Environmental Health
700 North Tryon St Suite 208
Charlotte NC 28202-2236

Subject: Approval of Subsurface Wastewater Collection, Treatment and Disposal System
Yellowhill Inn – 13229 McCord Road
Huntersville, North Carolina – Mecklenburg County
Project Number: 2009-65

Dear Mr. Thomason:

On February 15, 2010, I received an email with an attachment from Donald L. Munday PE (Piedmont Design Associates, PA) in response to some of the comments outlined in the OSWP review letter dated December 30, 2009. The email contained the information not addressed by the revised plans sheets (U-1, U-2 and U-3) received on January 19, 2010 for the Yellowhill Inn. The Yellowhill Inn is a proposed "farmhouse cluster" bed & breakfast to be located in Huntersville, North Carolina. In the email, Mr. Munday specifically addressed wastewater discharge from the barn as well as loading on the piping under the retaining wall. The attachment was a sketch of the barn's floor plan indicating the location and types of water use fixtures.

After reviewing the revised plans sheets and email it appears that most of our comments have been addressed. We concur with the proposed design daily flow of 3,915 gallons per day.

Facilities: New - seven (7) stand-alone single bedroom cottages; fourteen (14) rental suites located in the inn's main building; one (1) owner's suite located in the inn's main building; one (1) kitchen and dining room for guests only in the inn's main building and one barn for employee use only.

System: New – two (2) 1,000-gallon grease traps [the 2nd in series w/ a Zabel A-300 8x18 effluent filter]; one (1) 1,500-gallon septic tank w/ a Zabel A-100 8x18 effluent filter; one (1) 1,500-gallon pump tank w/ a Zoeller Model 142 effluent pump; one (1) 1,500-gallon flow equalization tank w/ duplex Barnes Model SE411 effluent pumps; one (1) 1,500-gallon settling tank w/ a Zabel A-100 8x18 effluent filter; one (1) 5,000-gallon septic tank; one (1) 5,000-gallon pump tank w/ triplex Goulds Model 3888 WS5012D4 effleunt pumps; two (2) BioClere 24/20 trickling filter units with 950 clarifiers; duplex timed dosing with elapsed time meter, event counter, manual reset, audible/visible high water alarm system and battery backup control panel pumping system; on/off timer controls, and audible/visible high water alarm system; three pressurized prefabricated,

permeable block panel system (PPBPS) disposal fields [2,610 linear feet, 3 manifolds with 12 taps each, 36-73.61 feet pressurized PPBPS lines]; LTAR = 0.25 gallons per day/square feet

Design Flow: 3,915 gallons per day
System Classification: The system is classified as VIa, requiring weekly inspection by the ORC and quarterly inspection reports submitted to Mecklenburg County Environmental Health, and at least semi-annual inspection by your department. It is strongly recommended that the ORC and your department conduct inspections of this facility more frequently, especially during the first year of operation.

It is critical that Mecklenburg County Environmental Health require a preconstruction meeting be held prior to system installation. Representatives of Mecklenburg County Environmental Health, the owner, the installer and the engineer certifying the installation shall attend this meeting. During this meeting, the sequencing of project construction, inspection, and testing activities shall be discussed and clearly understood by all parties. Holding such a preconstruction meeting shall be listed as a condition in the Authorization to Construct, with attendance required by all key parties prior to the onset of the system installation. It is noted that this meeting has been included in the project specifications.

As you are aware, there are a number of times during the installation of this system when direct supervision by Mecklenburg County Environmental Health shall be provided to ensure that this system is installed properly. For this project, make certain that:

1. Facilities Served: Facilities served remain as specified, with no new sources of wastewater to be added to the system. The barn shall be only utilized by employees of the facility and shall not be used to host special events (weddings, receptions, parties, dinners, etc.). Water conserving measures are to be practiced, including low-flow fixtures (toilets which use no more than 1.6 gallons per flush, urinals which use no more than 1.0 gallons per flush, spigots which use no more than 1.0 gallons per minute. No garbage grinders are permitted to be connected to the sanitary sewage system. HVAC and refrigeration/freezer unit condensate lines are plumbed into the storm water (not sanitary) system.

2. Water Lines: Water lines are installed as specified in relation to sewers and disposal areas, located in strict accordance with approved plans, including specified crossing provisions (assure water lines at least 18-inch above collection sewers and supply lines at all points of crossing). Water supply to any yard hydrants in the vicinity of wastewater system components shall be RPZ-protected.

3. Tankage, General: Grease traps, septic tanks, flow equalization, BioClere® secondary settling and pump tanks shall be installed in strict accordance with the approved plans and specifications including use of properly constructed state-approved tanks, and paying strict attention to specified invert elevations, water-tightness provisions including specified pipe penetrations, additional waterproofing, and drainage provisions to divert surface water from the tanks and their access openings. Ensure that access openings and risers are provided as shown and determined to be fully accessible and functional from the ground surface without requiring entrance into any basins. Ensure that all tanks are determined to be fully watertight and infiltration-resistant per the water-tightness tests specified. Do not accept any tanks that have had holes cast into them below the working liquid level, whether patched or not. Manhole rings or hatches are to be bolted and sealed onto their risers as shown to be provided.

4. Wash-Down Water: Wash-down water supplies in tankage vicinity shall be provided.

5. Tankage Installation, General: Tanks and access openings, risers/manholes, outlet tees and effluent filters shall be installed in strict accordance with approved plans and specifications, as well as being in accordance with manufacturer's specifications. Filters shall be demonstrated to be readily accessible from the tops of the tank without requiring entrance into the tank (access handle should extend to within 18-inches of riser top.
6. Riser Accesses: All access riser hatches shall be secured by tamper-resistant stainless steel bolts, and inaccessible with flathead screwdrivers, Phillips screwdrivers, or standard wrenches.

7. Collection System: The collection system is completed per approved plans and specifications, proper materials, grade, and with all required horizontal and vertical separations maintained between sewers, storm water drains/chambers and water lines. All sewer lines, cleanouts and manholes shall be tested for water-tightness, as specified.

8. Sanitary Tees: Grease traps and septic tanks shall include specified sanitary tees installed at their outlets. Septic tanks are to include BioClere unit returns located and installed in strict accordance with manufacturer's specifications.

9. Pump Tanks: Pump tanks shall include all specified pumps and components, with all hardware of stainless steel or comparable corrosion resistance material. Ensure that all appurtenances, (e.g., floats and float support mechanisms, valves, etc.) are provided as shown and specified, including the use of corrosion-resistant stainless steel and PVC/Schedule 40 where indicated. Level control floats shall be readily accessible from above grade and installed at specified activation elevations. Control panel is to be installed directly adjacent to the tank in NEMA 4X enclosure with wires conveyed from pumps and controls directly to the panel through conduit installed in the riser. Wire conduits shall be watertight and gastight, yet still enable floats or pumps to be changed without requiring entrance into the tanks.

10. Pump Rates: Pump delivery rates shall all be measured (for each pump) and determined to be comparable to design specifications. Controls shall be adjusted after pump delivery rate to advanced pretreatment units are determined to give specified dosing cycles and volumes, per approved specifications/calculations.

11. BioClere Units: BioClere advanced treatment units shall be installed in strict accordance with design and specifications indicated in the approved plans and specifications. The units shall be specifically designed to meet NC design requirements, as follows:

    a. The junction box for the BioClere fan unit shall be located outside of the fan box in a NEMA 4X enclosure.
    b. Individual pump run timers for each Bioclere pump shall be installed in the BioClere Control Panel.
    c. The BioClere struts shall either be made from or encapsulated in a non-biodegradable material.
    d. The BioClere fan units shall be certified by the manufacturer to provide 240 cfm. The unit shall be tested at start-up and flow quantity measured using a flow velocity method.

e. Exhaust fan vent shall include a screen. The manufacturer shall certify that the presence of the screen will not limit airflow less than 230 cfm.
f. The BioClere units shall be leaked tested for zero percent 24-hour leakage in accordance with the plan notes.
g. The main control panel shall be NEMA 4X.
h. The clarifier seam shall be factory-glassed.
i. The BioClere alarm circuit shall be supplied ahead of any pump overload and short circuit protective devices.
j. Flange connection between BioClere filter and sump sections shall be specified to be factory sealed with FRP to form permanent watertight seal.

As part of start-up, the return rates from the BioClere® units to the septic tanks shall be accurately measured (by draw-up test into each tank with inlet/outlet blocked) so that the return rates can be accurately set by the BioClere® representative and the engineer.

12. Secondary Settling Tank: Secondary settling tank and access openings, risers/manholes, outlet tees and effluent filters shall be installed in strict accordance with approved plans and specifications, as well as being in accordance with manufacturer's specifications. Filter shall be readily accessible from the tops of the tank without requiring entrance into the tank (access handle should extend to within 18-inches of riser top.

13. Final Dosing Tank: The final dosing tank shall include all specified pumps and components, with all hardware for float supports, access hatches and pump removal chains of stainless steel. Ensure that all appurtenances, (e.g., floats and float support mechanisms, valves, etc.) are provided as shown and specified. Level control floats shall be readily accessible from above grade and installed at specified activation elevations. Control panel is to be installed at specified location adjacent to lift station in NEMA 4X enclosure with wires conveyed from pumps and controls through wire conduit installed in the riser. Wire conduit(s) shall be watertight and gastight, yet still enable floats or pumps to be changed without requiring entrance into the tanks. Dosing system appurtenances shall be manually checked and controls shall be tested for proper automatic operation. The high water alarm should also be tested and ensured to be properly functioning.

14. Control Systems: Dosing/timer control systems are provided in strict accordance with the approved plans and specifications, including pumps, controls, float support systems, float settings, valves, and the audible and visible alarm systems. All dosing system appurtenances shall be manually checked and controls shall be tested for proper automatic operation. Level control floats shall also be set to activate at levels indicated on approved plans. The high water alarm should also be tested and ensured to be properly functioning. As part of system startup, LPP laterals and manifold pressure taps shall be demonstrated to all be open and the minimum design pressure head demonstrated to be delivered per design. The pump delivery rate for each pump shall be measured and determined to be in accordance with design specifications, with timer settings adjusted accordingly.

15. Control Panels: Control panels controlling disposal area dosing pumps shall have pump cycle and run timer recording capability and shall meet the requirements of .1952.

16. Supply Lines: Supply lines are provided in strict accordance with approved plans and specifications, including pipe sizes, materials, including specified air release valves, separation distances/crossing details and installation depths. Ensure that the hydrostatic pressure tests for water-tightness are executed in accordance with specifications and approved plans.

17. Disposal Area Preparation: Site preparation shall be completed in strict accordance with approved plans, rules, the applicant's design engineer and Mecklenburg County Environmental Health specifications as well as conducted in a manner that results in negligible damage to the disposal area areas. **Site preparation steps, including clearing procedures, shall be completed under the direct supervision of the applicant's soils consultant and concurred with by Mecklenburg County Environmental Health prior to the installation of any trenches.** Field line locations shall be flagged prior to installation and the engineer and health department shall ensure that the final disposal area layouts are located as shown and the required setback distances maintained prior to trench installation. Ensure that surface water diversions are provided in accordance with the plans and that measures for establishing an adequate vegetative cover are implemented, as specified.

18. PPBPS Installation: The installer shall be certified by T&J Panel Block to install disposal area. During installation, confirm the disposal areas are being completed in strict accordance with approved plans and specifications (i.e., properly constructed, including specified trench locations, depth, width, orifice size, spacing and specific locations, supply line sizes, manifold sizes, interconnection connections, lateral-to manifold connections, lateral turn-ups and turn-up protectors, field adjustment gate valves and backfill).

19. Wastewater System Start-Up: Start-up provisions are completed including flushing of supply lines, testing of system performance, BioClere® start-up per manufacturers' specifications, and final landscaping provisions, which should adequately divert water away from the disposal areas and tanks and begin to establish a suitable vegetative cover over the disposal areas. Dosing system testing and adjustments shall be completed including required measurements of pump delivery rates and pressures in each field.
20. Disposal Field Testing: Start-up and testing procedures to ensure proper system operation shall be conducted including all specified testing, measurement setting of the pressure head delivered to each of the manifolds and measurement of pumping rate at stabilized pressure head, as per design. Disposal area areas shall be finally landscaped to shed surface water, seeded and mulched to establish permanent vegetative cover.

21. Repair Areas: The repair areas identified for this project and access thereto shall be maintained and kept available for future repair. No construction on or utilization of these areas is permitted.

22. Operation and Maintenance (O&M): The operation permit shall include, as conditions, any O&M procedures included in the O&M manual to be provided by the design engineer, necessary information regarding the proposed management entity and certified operator and system performance monitoring requirements. The permits shall include the O&M procedures within our innovative wastewater system approval IWWS-2002-1, and any additional concerns deemed appropriate by Mecklenburg County Environmental Health for the O&M of this system.

23. Operator: A certified subsurface system operator (who shall also have a Grade II wastewater certificate) shall be contracted to operate the subsurface system. The operator shall inspect the system and report findings to Mecklenburg County Environmental Health. The system is classified as a Type VIa and requires weekly monitoring with quarterly reporting by a certified subsurface operator (who shall authorized by AWT Environmental, Inc. to operate the system). O&M procedures listed in the operation permit shall include that during each operator visit, flow at the facility shall be monitored and recorded, and the pump elapsed time and cycle counter readings shall be recorded at all pump tanks. At least semiannually, the ORC shall re-measure and set the pressure head and pump delivery rates to the disposal areas, as needed.

24. Monitoring and Sampling: The effluent shall be sampled at the dosing tank tri-annually (in May, July and September for $CBOD_5$, TSS, and Total Nitrogen at a NC certified wastewater laboratory. The samples shall be obtained, preserved and analyzed in accordance with 40 CFR 136 procedures, and chain-of-custody documentation shall be provided with all monitoring reports. The treated effluent shall meet "TS-I Effluent Quality Standards for Advanced Pretreatment Systems" as specified in 15A NCAC 18A .1970 to ensure disposal area longevity. If the analyses indicate these limits are not being met, then the operator shall contact your office within 24 hours. Every three months, a written report documenting the sampling data shall be included in the operator report. After one year of compliant sampling is completed, consideration may be given to the monitoring frequency being modified with the approval of this office.

25. Record Drawings: As-built plans with Professional Engineer certification are to be completed after the installation is complete. **Copies of the as-builts are to be forwarded to our office for review and for the archives no later than ninety (90) days after the final inspection has been conducted of the installation and approval given by Mecklenburg County Health Department.**

Note that a registered professional engineer shall certify that the system has been installed in accordance with the approved plans and specifications. This certification is based upon periodic observations of construction and a final inspection for design compliance by the certifying engineer or his representative. **Please also note that Bioclere's representatives shall approve the system, and Mecklenburg County Environmental Health prior to the issuance of an operation permit shall approve the installation.**

Sincerely,

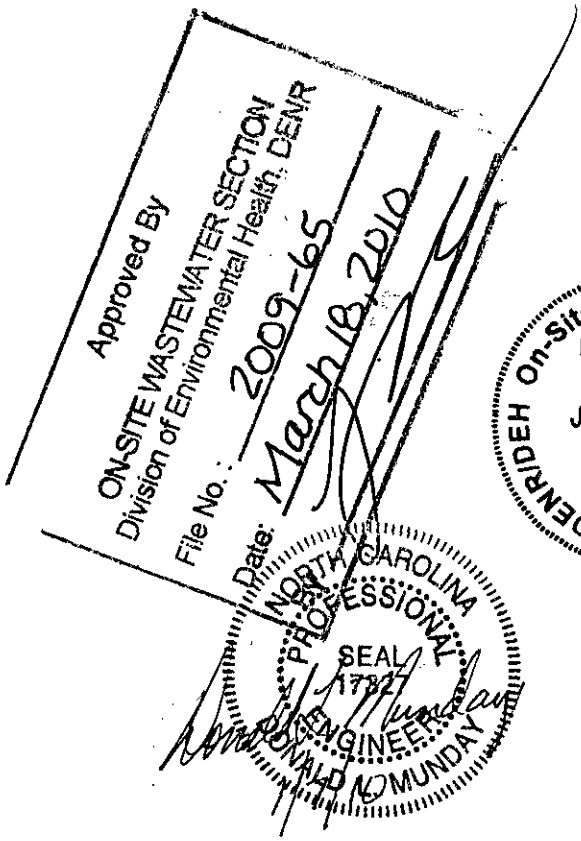
Lorna C Withrow

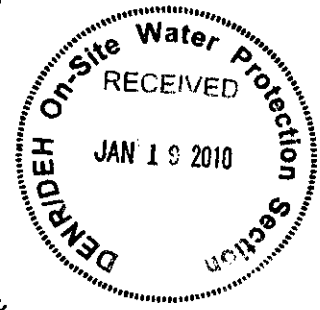
Lorna Withrow, PE
On-Site Water Protection

cc: Gene Young, LSS – OSWP Regional Soil Specialist
Donald L. Munday, PE – Piedmont Design Associates, PA

SPECIFICATIONS, CALCULATIONS, SOILS REPORT & MANUFACTURER'S CUT SHEETS FOR A SANITARY SEWAGE COLLECTION, TREATMENT & DISPOSAL SYSTEM TO SERVE YELLOW HILL COUNTRY INN 13229 MCCORD ROAD HUNTERSVILLE, MECKLENBURG COUNTY, NC

September 21, 2009
Revised January 6, 2010





PREPARED FOR:
Choate Custom Homes, Inc.
6320 Angus Drive, Suite D
Raleigh, NC 287617
Phone: (800) 728-7866

PREPARED BY:
Piedmont Design Associates, P.A.
Suite 101 Westfield Center
125 East Plaza Drive
Mooresville, NC 28115
Phone: (704) 664-7888
Fax: (704) 664-1778

EQUALIZATION TANK CONTROLS

Shall be mounted 36" or more above finished grade and readily accessible. The time dosing capable duplex unit shall model NCD230TD be as manufactured by CSI Control Systems (1-845-278-7367) or approved equal. The control panel shall be provided factory pre-wired and tested in a NEMA 4X lockable fiberglass enclosure which shall contain the following: Components shall include motor contactors and circuit breakers for use with 230V AC 1 Ph current using a max 2 HP motor. Programmable logic unit shall include time dosing functions, motor function, valve controls and float input function. Unit shall include fused transformer for valves. An alarm condition light shall be mounted on the top of the control housing. The unit shall have a hand-off-auto (HOA) switch located on the exterior of the control panel housing and shall be clearly labeled.

The controller shall be able to perform the following functions:
Receive input and provide operator set timer controlled pump operation, timer controlled contacts for pumps. The controller shall have an event counter. The controller shall have an elapsed pump run clock and pump cycle counter for each pump.

The activation of any alarm shall result in the activation of a dry and a 120 V powered alarm contacts. These contacts may be used to activate externally mounted alarm devices and telemetry systems. The alarm contacts will automatically reset when the R/O-N Switch for the activated alarm is placed in the reset / off position.

FLOW E.Q. DUPLEX PUMP PANEL OPERATION

The control shall have the following features:

- 7 day - 24 hour timers, programmable for on off cycles
- NEMA 4X fiberglass enclosure with locking hasp
- Full size hinged inner door assembly for lights, switches, gauges, non-conductive, etc.
- NEMA Type 1 Size 00 contactor-Motor Starter each pump
- 110-volt control circuit with breaker
- Auto reset high water alarm test-normal-silence switch and inner door mounted indicator light
- HOA switch each pump
- Red flashing external top mounted alarm light & 90 DB alarm horn with silence switch (On Separate Circuit)
- Terminal block for power supply, control switches & pump power wiring w/ individual terminals provided for each wire
- Cycle counters each pump
- Pump run time (0-15 minutes, 1 minute increments)
- Elapsed time meter
- Pump run light
- Lightning arrestor
- Surge protection
- Redundant low level off, timer enable, timer override, alarm (four floats).
- Utility receptacle with GFI breaker
- Color-coded wiring with numbered terminal blocks
- All components (switches, lights, etc.) labeled.

FLOAT SWITCHES

Water level float control switches shall be equal to S.J. Electro System, Inc., mercury activated switches, with cable of adequate length to terminate in the pump control panel. No splicing of wire allowed between switches and control box. Use mercury switched on control circuits and properly rated mechanical switches on power circuits. Conduit between the pump tank and the control panel shall be sealed to prevent sewer gas from entering the control panel. The dosing and recirculation tanks shall have 4 float switches, a low-level "pump off" switch, a "pump enabling" float "timer override" and at "high water alarm" float. Fasten float switch to a stainless steel float bracket mounted inside

riser within 12-inches of access hatch. The lower level control or "pump-off" must be positioned above the pumps, so that the pumps remains submerged at all times. The upper level control "pump-enabling" is positioned to pump a specified volume of effluent or assures that a full dose is available for timer controlled dosing. The "high water alarm" control float is mounted about 3" above the timer override float control. (Note: Care must be taken to insure that floats do not become fouled by other components in the tank such as the electric power cord or the lifting rope.)
Four control float switches are located in the tank and govern the following functions:

REDUNDANT OFF/ALARM FLOAT The low level alarm float will act as a redundant pump shut off and will activate an audio/visual alarm signal when the float switch is in the extended position (open circuit).

PUMP ENABLE FLOAT: In the extended position this float switch shall create an open circuit and prevent operation of the pumps. When the circuit is closed the float switch shall allow activation of the fully adjustable timer and the pumps shall alternate between cycles, transferring wastewater to the downstream treatment reactor(s).

TIMER OVERRIDE FLOAT: Upon closure the mid level float switch shall activate the lag pump and the two pumps shall draw down the liquid in the equalization tank until the Pump Enable float is an open. Upon this occurrence, a counter shall be triggered to alert the operator that a high level condition has occurred and that the timer "on" setting may need adjusting.

HIGH LEVEL ALARM FLOAT: The High Level Alarm float switch shall activate the audio/visual alarm when the circuit is closed.

The FET pumps will alternate between dosing cycles. However, if one pump fails the remaining pump will take over the failed pump's cycle and an audio/visual alarm will be activated.
The effects of recirculation from the Bioclere units must be taken into consideration when determining the timing for the EQ pumps.
All Bioclere units contain a float switch to terminate the recycle pump operation. This will prevent excessive recycling and always maintain the Bioclere dosing pumps below water.

BIOCLERE TREATMENT SYSTEM CONTROLS AND PUMPS:
See Section Secondary Treatment System for Electrical Component Specifications

FINAL DOSING SYSTEM CONTROLS AND PUMPS
Pressure Manifold Dosing Pumps:
The submerged pump shall be Gould's 3888D4 Effluent Pump Model WS5012D4, .5 HP / 230 V/ 1 PH as manufactured by ITT Industries, or equal, capable of pumping 102 G/M at 39.74' TDH. The Contractor shall verify available current voltage and phase before ordering the pump. If any variation in pumps as described herein, the Contractor shall contact the Engineer.
Triplex Field Dosing Controls:
Shall be a triplex panel mounted 36" or more above grade and readily accessible. The unit shall be as manufactured by CSI Control Systems (1-845-278-7367) or Engineer approved equal. The control panel shall be provided factory pre-wired and tested in a NEMA 4X lockable fiberglass enclosure which shall contain the following: Components shall include motor contactors and circuit breakers for use with 230V AC 1 Ph current using a max 5 HP motor. Programmable logic unit shall include time functions, motor function, valve controls and float input function. Unit shall include fused transformer for valves. An alarm condition light shall be mounted on the cover door. The unit shall have a hand-off-auto (HOA) switch.

	Zone C: 500 LF 4" Dia. SCH 40 PVC
Number & Length of Laterals:	2,652.12 LF Total, 73.67 LF per Line (17 Panels/Lateral)
Total Panels per Zone	204 Panels
Total Panels for System	612 Panels
Hole Size:	5/32"
Hole Spacing:	1 Hole per Panel
Total Number of Holes per Zone:	204 (612 Total)
Flow Per Hole At 3' Head:	0.50 G/M
Flow Rate (Each Zone):	102 G/M
Static Head:	32.50 Ft. (Worst Case)
Operation Head:	3.0 Ft. (Worst Case)
Friction Head:	4.24 Ft. (Worst Case)
Total Head:	39.74 Ft. (Worst Case)
Pump Requirements:	102 G/M @ 39.74 Ft TDH (Worst Case) Goulds 3888D4 Series Model WS5012D4 5 HP - 230 V – 1PH
Dosing Volume:	734.40 Gallons
Depth of Water Pumped Per Dose:	11.78 Inches
Pump Run per Dose:	7.2 Min.
Check Valve:	Yes
Siphon Break Hole:	Yes

XX. SEEDING SPECIFICATIONS

SLOPES 3:1 or FLATTER

1.Apply agricultural lime at the rate of 90 Lb/1000 SF.
2.Apply 10-10-10 commercial fertilizers at the rate of 20 Lb/1000 SF.
3.Seed in accordance with the following schedule and application rate:

DATE	TYPE	PLANTING RATE
Aug 15 - Nov 1	Tall Fescue	200 Lb/Ac or 7 Lb/1000 SF
Nov 1 - Mar 1*	Tall Fescue and	200 Lb/Ac or 7 Lb/1000 SF
	Abruzzi Rye	25 Lb/Ac or 1/2 Lb/1000 SF
Mar 1 - Apr 15	Tall Fescue	200 Lb /Ac or 7 Lb/1000 SF
Apr 15 - Jul 30	Hulled Common or Bermuda	30 Lb /Ac or 1 Lb/1000 SF
Jul 15 - Aug 15	Tall Fescue and	200 Lb /Ac or 7 Lb/1000 SF
	Brown Millet or	35 Lb /Ac or 7/8 Lb/1000 SF
	Sorghum-Sudan Hybrids	30 Lb /Ac or 3/4 Lb/1000 SF

4.Mulch with straw applied at the rate of 75-100 Lb/1000 SF.

* Heavily mulched during January - March period.

SLOPES GREATER THAN 3:1 TO 2:1

1.Apply agricultural lime at the rate of 90 Lb/1000 SF.
2.Apply 10-10-10 commercial fertilizers at the rate of 20 Lb/1000 SF.
3.Seed in accordance with the following schedule and application rate.

DATE	TYPE	PLANTING RATE
Mar 1 - Jun 1	Sericea Lespediza (scarified) &	50 Lb /Ac or 11 Lb/1000 SF
Mar - Apr	Add Tall Fescue or	150 Lb /Ac or 3-1/2 Lb/1000 SF
Mar - Jun	Add Weeping Lovegrass	5 Lb /Ac or 1/8 Lb/1000 SF
Jun - Sep 1**	Tall Fescue and	60 Lb /Ac or 1-1/2 Lb/1000 SF
	Brown Top Millet	35 Lb /Ac or 7/8 Lb/1000 SF
	Sorghum Sudan Hybrids	30 Lb /Ac or 3/4 Lb/1000 SF
Sep - Mar 1	Sericea Lespediza (unhulled-unscarified)	70 Lb /Ac or 1-3/4 Lb/1000 SF
	Tall Fescue	150 Lb/Ac or 3-1/2 Lb/1000 SF
	Millet or Sudan	20 Lb/Ac or 1/2 Lb/1000 SF

**Temporary - Reseed September 1 at recommended rates.

4.Mulch with 3" straw applied at the rate of 50-90 Lb/1000 SF and anchor with asphalt emulsion tack coat applied at the rate of 3-5 gal/1000 SF or 200-300 Gal/Ac.

CALCULATIONS
FOR A
SANITARY SEWAGE TREATMENT & DISPOSAL SYSTEM
TO SERVE
YELLOW HILL COUNTRY INN
HUNTERSVILLE, MECKLENBURG COUNTY, NC

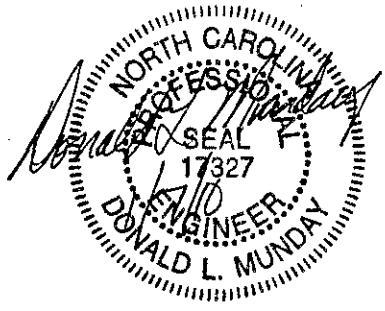
September 25, 2009
Revised January 6, 2010

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Engineering
Surveying
Planning

Job No.:	***08-07-07***	*Date:*	*10/05/2009*
Project:	***Yellow Hill Inn Septic System***	*Revision:*	*1/6/2010*
	13229 McCord Road		
	Huntersville, Mecklenburg County, NC		

Wastewater Design Flow Rationale

Design Flows		
Cottages	*7*	*Single Room Units*
D.D.F. per Unit	*175*	*G/D*
Total	*1,225*	*G/D*
Country Inn Suites	*14*	*Suites*
D.D.F. per Suite	*175*	*G/D*
Total	*2,450*	*G/D*
Owner's Suite	*1*	*Suite*
D.D.F. per Suite	*240*	*G/D*
Total	*240*	*G/D*
Total Suite Flow for Country Inn	*3,915*	*G/D*

Flow Determination		
Daily Dosing Volume:	*3,915.00*	*G/D*
LTAR:	*0.25*	*G/D/SF (LTAR)*
Area:	*15,660.00*	*Sq. Ft. Trench Bottom*
Lateral Lengths:	*5,220.00*	*LF (Conventional)*
25% Reduction:	*3,915.00*	*LF (Chambers)*
50% Reduction:	*2,610.00*	*LF (T&J Panels)*
Average Lateral Length:	*73.61*	*LF per Lateral*
No. of Laterals:	*36.00*	*Laterals*
Total Lateral Length:	*2,649.96*	*LF*

*Use Three Fields with 12 Laterals per Field

Tank Sizing Calculations	
600 G/D to 1,500 G/D	
V = 1.17Q + 500	V = Tank Volume
1,500 G/D to 4,500 G/D	Q = Design Flow
V = 0.75Q + 1,125	
4,500 G/D and up	
V = Q	

Grease Trap Sizing		
Grease Trap Design Flow:	*5*	*Gallon/Day/Meal Served*
Dining Room Seats:	*120*	*Seats*
Min. Grease Trap Size:	*600*	*Gallons*
Use	*(2) 1,000*	*Gallon Grease Traps in Series*

Septic Tank Sizing		
Daily Design Flow:	*3,915*	*G/D*
Min. Septic Tank Size:	*4,061*	*Gallons*
Min. Pump Tank Size:	*4,061*	*Gallons*

*Use 5,000 Gallon Septic Tank & Pump Tank

Nitrification Field Sizing						
Number of Zones:	*3.00*	*Zones*				
Laterals per Zone:	*12.00*	*Laterals*				
Length of Laterals:	*73.61*	*LF Ea.*				
LP Panel Design:						
No. of Panels per Lateral:	*17.00*	*Panels*				
Orifices per Panel:	*1.00*	*Taps*				
Flow per Orifice:	*0.50*	*G/M (5/32" Dia. Orifice/Panel)*				
Flow per Zone:	*102.00*	*G/M*				
Operation Head:	*3.00*	*Ft.*				
Static Head:	*32.50*	*Ft.*				
Friction Head:	*4.24*	*Ft.*				
Pump Rqmts:	*102.00*	*G/M @*	*39.74*	*Ft. TDH*		
Use Goulds 3888 Series WS5012D4 Sewage Pump						
5 HP - 230 V - 1 PH						
Dosing Volumes						
Number of Laterals /Zone:	*12.00*	*Laterals*				
Number of Panels/Lateral:	*17.00*	*Panels*				
Number of Panels/Zone:	*204.00*	*Panels*				
Dose Volume/Panel:	*3.60*	*Gallons*				
Therefore, Dose:	*734.40*	*Gallons*				
Pump Run Time:	*7.20*	*Minutes per Dose*				
Drawdown:	*11.78*	*Inches/Dose*				
STEP Tank Sizing						
Daily Design Flow:	*600*	*G/D*				
Min. Septic Tank Size:	*1,202*	*Gallons*				
Min. Pump Tank Size:	*1,202*	*Gallons*				
Use 1,500 Gallon Septic Tank & Pump Tank						
STEP Pump Sizing						
Min. Flow Required:	*15.00*	*G/M*				
Forcemain Length:	*500.00*	*LF*				
Static Head:	*15.00*	*Ft*				
Operation Head:	*2.00*	*Ft*				
Friction Head:	*0.30*	*Ft*				
Pump Rqmts:	*15.00*	*G/M @*	*17.30*	*Ft. TDH*		
Use Zoeller Model 142 Effluent Pump in Zoeller 5040 STEP Assembly						
1 HP - 115 V - 1 PH						

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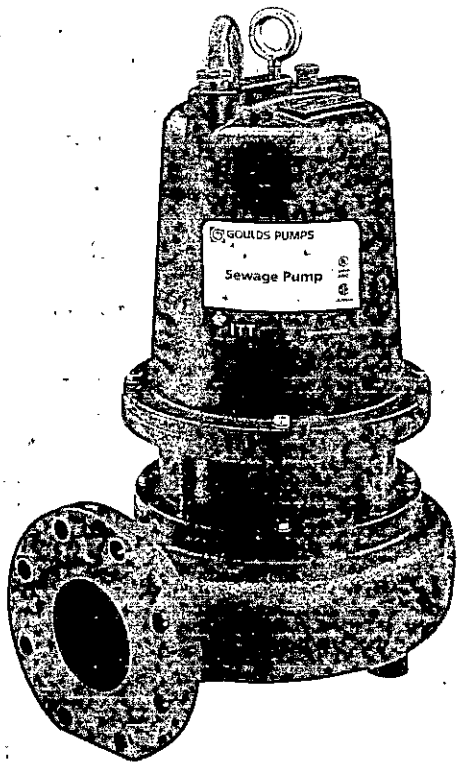
Wastewater

Goulds Pumps

WS_D4 Series Model 3888D4

5012

Submersible Sewage Pump



FEATURES

- **Impeller:** Cast iron, two vane semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.
- **Casing:** Heavy duty gray cast iron, ASTM A48, Class 30. Volute type casing with 4", 125#, ANSI flanged, horizontal discharge. Compatible with A10-40 cast iron or A10-40B cast iron and brass (non-sparking) guide rail assembly.
- **Dual Mechanical Seals:** Silicon carbide vs. silicon carbide outer seal and ceramic vs. carbon inner seal, stainless steel metal parts, BUNA-N elastomers. Upper and lower shaft seals are positioned independently and are separated by an oil-filled chamber.
- **Shaft:** 300 series stainless steel keyed design.
- **Fasteners:** 300 series stainless steel.
- Capable of running dry temporarily without damage to seals or motor.

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PPBPS LP FIELD DOSING PUMPS (3 REQD)

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GOULDS PUMPS
Wastewater

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:

- Sewage systems, Flood and Pollution Control, Dewatering/Effluent, Farms, Hospitals, Trailer Courts, Motels

SPECIFICATIONS

Pump:

- Maximum solid size: 3"
- Discharge size: 4", 125 # ANSI flange
- Maximum capacity: 620 GPM
- Maximum total head: 60 feet
- 300 Series stainless steel fasteners
- 20' Power cord
- Standard silicon carbide/silicon carbide outer seal

Motor:

- Maximum ambient temperature: 104° F (40° C) continuous duty, 140° F (60° C) intermittent duty
- Rated for continuous duty when fully submerged
- Insulation: Class F
- 60 Hertz
- Single row ball bearings
- 300 Series stainless steel keyed shaft

Single Phase:

- 1.5 - 5 HP; 208 and 230 volts
- Built-in thermal overloads with automatic reset
- Built-in capacitors

Three Phase:

- 1.5 - 7.5 HP; 200, 230, 460 and 575 volts
- Class 10 overload protection must be provided in control panel

MOTORS

- Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal for complete protection against outside environment.
- **Class F insulation.**
- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- **Bearings:** Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- **O-ring:** Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association File #LR38549

Goulds Pumps is ISO 9001 Registered.

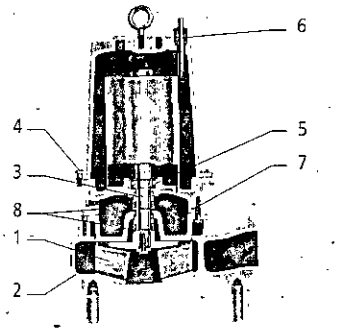
MODEL AND MOTOR INFORMATION

Order No.	HP	Phase	Volts	RPM	Impeller Dia. (in.)	Maximum Amps	L.R. Amps	KVA Code	Power Cable	F.L. Motor Efficiency %	Resistance		Wt. (lbs.)
											Start	Line-Line	
WS1518D4M	1.5	1	208	1750	5.63	17.2	50.8	B	14/3	80	1.1	0.9	195
WS1512D4M			230			14.7	29.5	E		70	1.4	1.8	
WS1538D4M		3	200			11.5	40.9	H	14/4	81	NA	1.7	
WS1532D4M			230			10.0	40.0	F		83		2.3	
WS1534D4M			460			5.0	20.0	F		83		9.3	
WS1537D4M			575			4.0	14.4	H		74		14.8	
WS1518D4	1.5	1	208	1750	6.25	17.2	50.8	B	14/3	80	1.1	0.9	195
WS1512D4			230			14.7	29.5	E		70	1.4	1.8	
WS1538D4		3	200			11.5	40.9	H	14/4	81	NA	1.7	
WS1532D4			230			10.0	40.0	F		83		2.3	
WS1534D4			460			5.0	20.0	F		83		9.3	
WS1537D4			575			4.0	14.4	H		74		14.8	
WS2018D4	2	1	208	1750	6.63	20.3	50.8	B	14/3	80	1.1	0.9	200
WS2012D4			230			17.3	36.9	D		75	1.4	1.5	
WS2038D4		3	200			13.3	40.9	H	14/4	81	NA	1.7	
WS2032D4			230			11.6	40.0	F		83		2.3	
WS2034D4			460			5.8	20.0	F		83		9.3	
WS2037D4			575			4.6	14.4	H		74		14.8	
WS3018D4	3	1	208	1750	7.00	25.5	50.8	B	10/3	80	1.1	0.9	208
WS3012D4			230			21.5	46.4	C		79	1.0	1.0	
WS3038D4		3	200			16.6	53.8	G	10/4	85	NA	1.3	205
WS3032D4			230			14.4	49.5	H	14/4	83		1.9	
WS3034D4			460			7.2	24.8	H		83		7.5	
WS3037D4			575			5.8	17.3	G		78		11.6	
→ WS5012D4	5	1	230	1750	7.25	26.5	57.7	A	10/3	80	1.0	0.8	213
WS5038D4		3	200			19.1	73.9	F	10/4	84	NA	0.9	210
WS5032D4			230			16.6	63.6	E		85		1.2	
WS5034D4			460			8.3	31.8	E	14/4	85		4.8	
WS5037D4			575			6.6	22.8	E		80		7.4	
WS7532D4	7.5	3	230	1750	7.69	23.0	105.0	G	10/4	83	NA	0.7	225
WS7534D4			460			11.5	52.5	G		83		2.8	
WS7537D4			575			9.2	42.0	E		84		4.4	

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GOULDS PUMPS
Wastewater

MATERIALS OF CONSTRUCTION

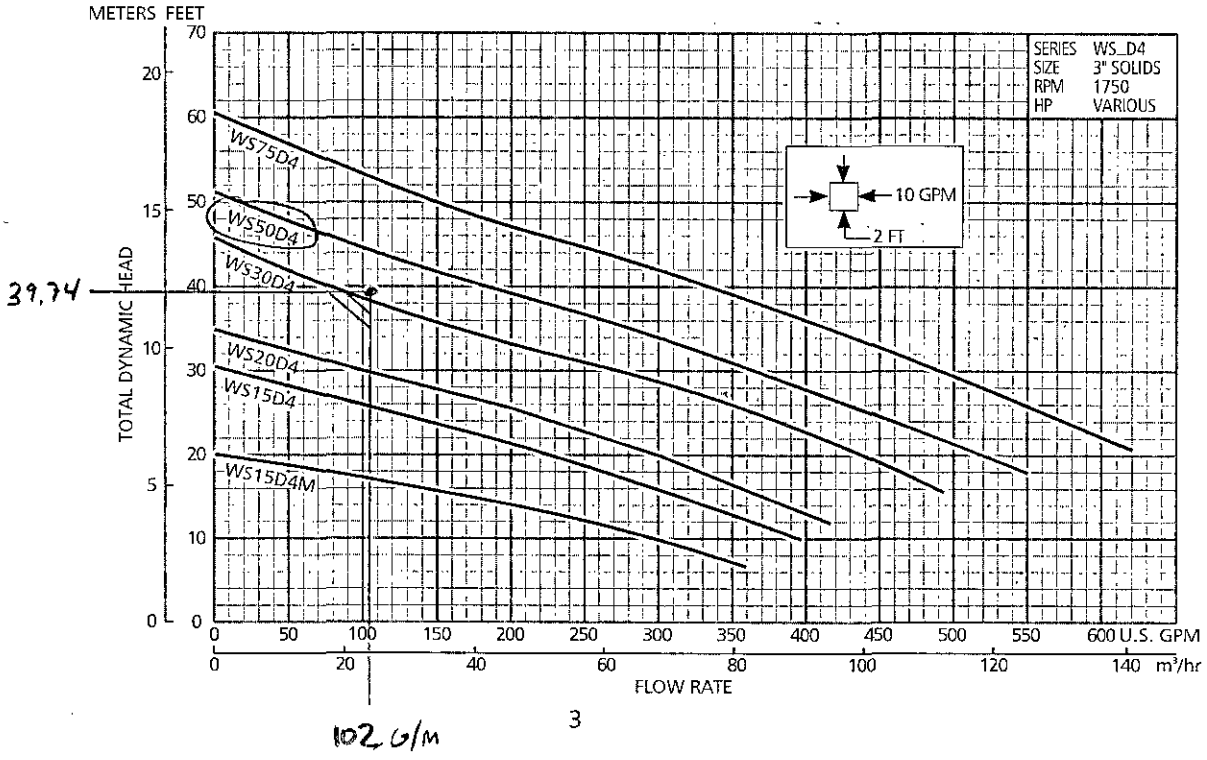


Item No.	Part Name		Material			
			Standard		Optional	
1	Impeller, non-clog		1003		1179	
2	Casing		1003			
3	Shaft–keyed		300 Series SS			
4	Fasteners		300 Series SS			
5	Ball bearings		Steel			
6	Power cable		STOW, 20 feet		Additional lengths	
7	O-ring		BUNA-N			
8	Outer Mech. Seal	Service	Rotary	Stationary	Elastomers	Metal Parts
	OPT	Heavy duty	Silicon Carbide	Tungsten Carbide	BUNA-N	300 Series SS
	STD	Mild abrasives	Silicon carbide		BUNA-N	300 Series SS

Material Code	Engineering Standard
1003	Cast iron — ASTM A48 Class 30
1179	Silicon bronze — ASTM C87600

PERFORMANCE RATINGS (Gallons Per Minute)

Series No. ▶		WS15D4M	WS15D4	WS20D4	WS30D4	WS50D4	WS75D4
HP ▶		1½	1½	2	3	5	7½
RPM ▶		1750					
Total Head Feet of Water	10	300	395				
	15	170	320	370			
	20		230	300	440	520	
	25		120	205	365	440	
	30			100	270	360	510
	35				160	275	440
	40				80	175	355
	45					85	260
	50						155
	55						80



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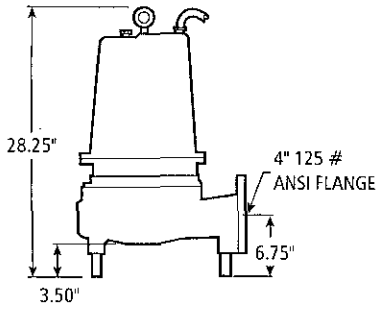
Wastewater

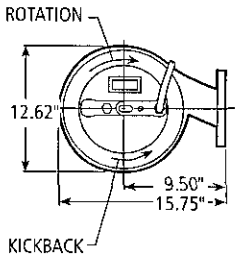
APPLICATION DATA AND CONSTRUCTION DETAILS

Maximum Solid Size		3"
Minimum Casing Thickness		5/16"
Casing Corrosion Allowance		1/8"
Maximum Working Pressure		30 PSI
Maximum Submergence		50 feet
Minimum Submergence		Fully submerged for continuous operation
		6" below top of motor for intermittent operation
Maximum Environmental Temperature		40° C (104° F) continuous operation, 60° C (140° F) intermittent operation
Power Cable – Type (See Motor Information for AWG data/size.)		Type SJTOW: single phase, 1½ and 2 HP
		Type STOW: single phase, 1½ – 3 HP and 5 HP, 460 V
		Type STOW: single phase, 3 and 5 HP, three phase 5 HP, 230 V and 7½ HP
Motor Cover, Bearing Housing, Seal Housing, Casing		Gray Cast Iron – ASTM A48, Class 30
Impeller – Standard, Optional		Gray Cast Iron – ASTM A48 or Cast Bronze – ASTM B584 C87600
Motor Shaft		AISI 300 Series Stainless Steel
Motor Design		NEMA 56 Frame, oil filled with Class F Insulation
Motor Overload Protection		Single phase: on winding thermal overload protection auto reset
		Three phase: requires Class 10 overloads in control panel
External Hardware		300 Series Stainless Steel
Impeller Type		Semi-open with pump out vanes on back shroud
Oil Capacity – Seal Chamber		1.5 quarts
Oil Capacity – Motor Chamber		1½-5 HP single and three phase: 7 quarts
		7½ HP three phase: 6.5 quarts
Mechanical Seals – Standard	Upper	Carbon/Ceramic; Type 21
	Lower	Silicon Carbide/Silicon Carbide; Type 31
Mechanical Seals – Optional Lower		Silicon Carbide/Tungsten Carbide; Type 31

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





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SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

B3888D4 March, 2006

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AquaPoint™
Performance Based Wastewater Treatment Solutions

NORTH CAROLINA PROFESSIONAL SEAL 34548 ENGINEER PETER G. ANNUNZIATO

BIOCLERE WASTEWATER TREATMENT SYSTEM DESIGN CALCULATIONS

SITE: ***Yellow Hill Country Inn – Huntersville, NC***

An AquaPoint supplied onsite treatment system is proposed to treat the wastewater generated from the Yellow Hill Country Inn. The treatment system shall require the following equipment in series: grease trap and primary septic tank sized to NC Code, a flow equalization tank and assembly, (2) Bioclere model 24/20's. The system shall be capable of treating the daily design wastewater flow with the following maximum influent characteristics.

	Raw Influent	**Effluent**
Design flow (gpd)	3915	3915
pH	6.5-8.5	6.5-8.5
BOD5 (mg/L)	450	<15
TSS (mg/L)	250	<15
Ammonia-N (mg/L)	40	<10
Total Nitrogen (mg/L)	45	NA

PRIMARY TREATMENT

Please refer to the site plan drafted by Piedmont Design Associates for the primary treatment details and plant location.

FLOW EQUALIZATION

Primary settled wastewater shall flow by gravity to the flow equalization tank (FET) prior processing in the Bioclere units. The purpose of the FET is to transfer the wastewater to the Bioclere units at a steady flow rate over the entire day. The FET system shall consist of an 1500 gallon tank located ahead of the Bioclere units. The following equipment is included in this tank: 2 submersible Barnes SE 411 pumps, associated piping, valving, controls and appurtenances. The solids handling sewage pumps shall be Barnes SE 411 submersible pumps with 4.25" diameter impellers.

Four control float switches shall be located in the tank and govern the following functions:

1) Low level Alarm float: The low level alarm float shall act as a redundant pump shut off and will activate an audio/visual alarm signal when the float switch is in the extended position (open circuit).

2) Low level float: In the extended position this float switch shall create an open circuit and prevent operation of the pumps. When the circuit is closed, the float switch shall allow activation of the timer and the pumps shall alternate between cycles, transferring wastewater to the Bioclere units.

3) Mid level float: Upon closure, the mid level float switch shall activate the lag pump and the two pumps shall draw down the liquid level in the equalization tank until the mid level float is extended (open circuit). Upon this occurrence, a counter shall be triggered to alert the operator that a high level condition has occurred and that the timer "on" setting may need adjusting.

4) High level float: The high level float switch shall activate the audio/visual alarm when the circuit is closed.

Timer Settings:
The equalization pump cycle time shall be set using a fully adjustable timer in the Aquapoint supplied control panel.

BIOCLERE UNITS

The Bioclere consists of a trickling filter that is situated over a final settling tank. The Bioclere is manufactured with fiberglass inner and outer skins with the cavity between filled with polyurethane foam insulation.

As wastewater is generated from the facility it will flow through the septic tank(s), into the FET and subsequently pumped to a baffled chamber in the Bioclere clarifier. Wastewater is supplied to the filter by means of two alternating stainless steel submersible pumps that are situated in the center baffle. In case of one pump failure, the operational pump automatically takes over both dosing cycles. Dosing is controlled using a fully adjustable timer, and the wastewater is uniformly distributed over the entire surface area of the filter by means of fixed nozzles that are constructed of nylon. Each Bioclere contains a PVC dosing array with nozzles centered above the filter media to ensure uniform dosing.

Recirculation of sludge and wastewater is accomplished in each unit using a submersible stainless steel pump controlled by a fully adjustable timer. The pump is located on the bottom of the cone shaped clarifier. The diameter of each settling tank is 8.0 feet with 60-degree sloping sides. Internal baffling is provided in each secondary settling tank to prevent short-circuiting of wastewater and biological solids. The biological solids generated in the filter are returned to the sludge storage tank every hour. Therefore, the sludge will not collect in the secondary settling tank and a sludge blanket will not form. The efficiency of the Bioclere secondary settling tank has been proven by the numerous installations and successful operating experience.

The benefits or recirculation are numerous and include: 1) removing biological sludge from the Bioclere so that only the primary tank(s) need periodic pumping, 2) diluting the influent pollutant concentrations which results in a thinner and more effective biofilm on the media bed, 3) odors

are reduced in the primary tanks and the treatment components, 4) diluting biological inhibitors (cleaning agent, sanitizers, etc.) that may exist in the wastewater, 5) achieving nitrogen removal through denitrification due to the recirculation of nitrate to the primary tank, and 6) eliminating anaerobic conditions and byproducts in the primary tank that may adversely affect biological treatment.

Forced air ventilation is provided continuously in the Bioclere since it is a covered trickling filter. The Bioclere contains an axial fan with a manufactured rated airflow capacity of 240 cfm. The fan is exposed to the atmosphere due to its enclosure location on top of the Bioclere. Air flows subsequently through the filter, underdrain, and is discharged through the effluent pipe. A PVC vent is installed after each Bioclere.

Filter and clarifier sizing calculations

Filter Sizing

The media loading rates are based on over 10,000 municipal, commercial and industrial installations throughout the world and approximately 750 in the United States. The loading rates conform to those that are accepted by the United States Environmental Protection Agency (*Nitrogen Control* 1993 and *Assessment of Single Stage Trickling Filter Nitrification* 1991), Water Environment Federation (Aerobic Fixed Film Reactors 2000) and Metcalf & Eddy, (Wastewater Engineering 1991).

The filter media organic loading rates are based on the design criteria outlined on page 1 of this document. The media in the first and second stage Bioclere units shall have a specific surface area of 140 m^2/m^3 and 230 m^2/m^3 respectively.

Organic Loading:

Assuming a maximum influent BOD5 concentration of 350 mg/L (due to a 20-25% BOD5 removal in the septic tank) and approximate 75% recirculation rate, the system shall receive 12.2 lbs. BOD_5/day based on the design flow of 3915 gpd.

BOD5 (lbs./day) = Influent from primary tank + Recirculation

$$= \frac{(3915 \text{ gpd} \times 8.34 \text{ (lbs./gal)} \times 360 \text{ (mg/l)})}{1\text{x}10^6} + \frac{(2936 \text{ (gpd)}) * 8.34 \text{ (lbs./gal.)} * 15 \text{ (mg/l)}}{1\text{x}10^6}$$

= 12.2 lbs. of BOD_5/day

The Bioclere model 24/20 contains 7.5 m^3 (265 ft^3) of PVC media respectively. The media in the first and second stage Bioclere shall have a specific surface area of 140 m^2/m^3 and 230 m^2/m^3 respectively. Therefore, the media organic loading rates in the Bioclere units shall be:

= 12.2 lbs. $CBOD_5$/day / (265 ft^3 media) = **0.046 lbs. $CBOD_5/ft^3$-day (1.6 lbs. BOD_5/m^3-day)**

This loading rate shall reduce the soluble $CBOD_5$ to <15 mg/L and the loading rate is consistent with all of the above listed references for trickling filters (USEPA - Nitrogen Removal 1993 and Assessment of Single Stage Trickling Filter Nitrification 1991, Metcalf & Eddy 1991 and WEF Aerobic Fixed-Growth Reactors 2000).

The second stage model 24/20 Bioclere unit shall contain 7.5 m^3 of media having a specific surface area of 230 m^2/m^3 (66 m^2/m^3). An ammonia loading rate <0.25 lbs. NH_3/m^3-media shall be realized in the second stage Bioclere unit to oxidize the ammonia to <10 mg/L. This loading rate is consistent with all of the above listed references for trickling filters that are used for nitrification.

Hydraulic loading
The Bioclere settling tanks have the following characteristics:

	Model 24/20
Tank Diameter	8.0 feet
Surface Area	50.2 ft^2
Tank Volume	950 gallons

Surface overflow rate (SOR):
SOR = Flow to clarifier (gpd) / Surface area of clarifier (ft^2)

SOR at average daily flow:
SOR at design flow:
= (3915 (gpd)) / 50.2 (ft^2) = **78 gal/day/ ft^2**

SOR at peak hourly flow (assumes 2X due to the use of equalization):
= **156 gal/day/ft^2**

The recommended SOR for design average flow and peak flow is between 400-800 gal/day/ft^2 and 1000-1200 gal/day/ft^2 respectively (EPA and Metcalf & Eddy). Therefore, the SOR for the Bioclere settling tank is far below the recommended ranges for design and peak flow rates.

CONTROLS

A control panel shall be furnished with an audio and visual alarm, exterior alarm silence button, and an on/off/test switch. The alarm will sound during low and high amperage events. Within the NEMA 4X fiberglass enclosed panel, individual pump timers, elapsed time meters for each pump, on/off/test switches, run lights, current sensors, relays, circuit breakers, terminal strips and pump alternators shall be provided. An internal high temperature shut off switch shall protect each pump.

The fan will be housed in a separate module from the junction box on top of the Bioclere

filter.

ELECTRICAL COMPONENTS

Each unit shall have a ventilation fan, two alternating dosing pumps, a sludge return pump, and a low level shut off switch with the following characteristics.

The ventilation fan shall be a 115v/1ph/60hz, painted metal/plastic, ball bearing fan factory rated at 240 cfm.

The three stainless steel submersible dosing pumps shall be capable of 40 gpm at 15 ft. of head.

The low level 115v/1ph/60hz float switch shall be installed to prevent the recycle pump from operating when water levels are abnormally low in the Bioclere (i.e. during primary tank pumping).

OPERATION AND MAINTENANCE

The Bioclere units are shipped with (3) Technical Manuals that cover in detail all installation, and operation and maintenance procedures for the Bioclere unit. A service report detailing the maintenance procedures is also included in the Manual. Onsite operator training may be provided at the day of installation and/or commissioning.

All service and maintenance is accomplished by removing the cover of the Bioclere unit

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 #: **30004295** GWS File #: **132B** Tax Parcel #: **011-241-04**

- 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):** 4/1/2015

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

Facility Size (ft^2): 0 # Employees/Shift: 8 # Shifts: 1

Wastewater Type: Sewage Water Supply: Private Well

II. Initial System Type: PPBPS (pressurized) **System Classification:** Vb

Initial System Specifications:

Design Flow (gpd):	3915	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	5000	Pump Tank Size (gal):	5000
Trench Width (ft):	2	Trench Spacing (ft):	8	Absorption Area (ft^2):	5220	Total Trench Length (ft):	2610
Maximum Trench Depth (in):	30	Depth of Media (in):	N/A	Distribution Device:	Manifold (LPP Distri		

III. Repair System Type: PPBPS (pressurized) **System Classification:** Vb

Repair System Specifications:

Design Flow (gpd):	3915	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	5000	Pump Tank Size (gal):	5000
Trench Width (ft):	2	Trench Spacing (ft):	8	Absorption Area (ft^2):	7830	Total Trench Length (ft):	3915
Maximum Trench Depth (in):	30	Depth of Media (in):	N/A	Distribution Device:	Manifold (LPP Distri		

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, R.S. Signature: _____

Date Issued: 4/1/2010

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 #: **30004295** GWS File #: **132B**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every year by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- This type of septic system requires a Certified Operator to maintain the system. A system maintenance contract with a Certified Operator must be on file prior to issuance of an Operation Permit.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- This septic system design requires pretreatment equipment to be installed. This equipment shall be installed as specified by the wastewater system design consultant.
- All components of the septic system must be installed in accordance with the required setbacks listed on the corresponding plot plan.
- All components of the septic system must be located at least 100 ft. (50 ft. minimum) from all private wells.
- All waterlines must be located a minimum of 10 ft. from any part of the septic system.
- 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 system must be water tested during the final inspection to verify proper operation and set system pressure.
- All tanks (septic and/or dosing) must be water tested for 24 hours during the final inspection.
- DENR approval given on 3/18/10 for plans submitted by Piedmont Design Associates, P.A. (dated 9/21/09). System shall be installed in accordance with the approved plans and specifications on file. Engineer certification letter and as-built drawings will be required prior to Operation Permit issuance. GWS must be present at the preconstruction meeting to issue the Installation Approval for 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, R.S.

Date Issued: 4/1/2010

Owner/Legal Agent: _____
Print Name

Signature: _____

3/13/92 cc# 1345 $200.00

400 ✓

8022A/132B

INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM
APPLICATION FOR SERVICES

[] CRT

Mecklenburg County Health Dept.
Environmental Health Division
c/o Hal Marshall Ctr., Suite 211
700 N. Tryon St.
Charlotte, NC 28202

(704)336-5102

PERSON FILING APPLICATION:

NAME: LAYMAN (last) MARY (first) Sue (mi)

ADDRESS: 7040 Cheyenne Dr PHONE: 704 596-3533

CITY: Charlotte STATE: NC ZIPCODE: 28262

Date: March 13, 1992

PROPERTY OWNER:

NAME: SAME (last) (first) (mi) (357-0509 Bus.(?))

ADDRESS: _____ PHONE: (__) _____

CITY: STATE: ZIPCODE:

PROPERTY INFORMATION (FROM ENGINEERING FORM):

TAX/PARCEL NUMBER: 011-052-05

STREET ADDRESS: 13145 McCord Rd. Huntersville NC 28078

ZONING:

Township (check one):
[X] 0 Mecklenburg County [] 2 Davidson [] 4 Pineville [] 6 Huntersville
[] 1 Charlotte [] 3 Cornelius [] 5 Matthews [] 7 Mint Hill

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER: LOT SIZE (in acres):

TYPE APPLICATION (check one):

[] SOIL TEST - INDIVIDUAL LOT (D)
[X] NEW CONSTRUCTION ON VACANT LOT - 4 BEDROOMS OR LESS (N)
[] EXCHANGE MOBILE HOME - SAME # BEDROOMS (Y)
[] ADDITION - INCREASE ROOMS/OCCUPANCY/MOBILE HOME SIZE (A or M)
[] COMMERCIAL OR INDUSTRIAL (N)
[] SOIL TEST DEVELOPMENT (P)
[] ADDITION - GARAGE OR RENOVATION/NO MAJOR CHANGES (X)
[] MODIFIED /ALTERNATIVE/ OR RESIDENCE > 4 BEDROOMS (Z)
[] REPAIR TO SYSTEM (R)

RESIDENTIAL PROPERTY (Type Building, check one):
[] SINGLE MOBILE HOME (S) [X] HOUSE (H) [] MULTIPLE FAMILY (U)
[] DOUBLE WIDE (D) [] MODULAR HOME (M) [] OTHER _____ (O)

NUMBER BEDROOMS: 3 NUMBER OCCUPANTS: 4

SYSTEM CLASSIFICATION:

COMMERCIAL/INDUSTRIAL PROPERTY:
Type Business _____ # Employees ___ Per Shift ___ ___ ___
Industrial Wastes (Y/N) ___
Underground Storage Tanks On Property (Y/N) ___ Type _____

WATER SUPPLY (check one):
[] Community (C) [] Shared Well (S)
[] Municipal (M) [] Other 'spring' (O)
[X] Private Well (P)

FUTURE ADDITIONS - ALL PLANNED ADDITIONS MUST BE ENTERED (check all that apply):
[] Swimming Pool [] Jacuzzi [X] Stable/Barn [] Workshop [] None
[X] Garage [X] Storage Building [X] Deck/Patio [] Bedrooms [X] Other Enclose carport

The undersigned, owner, or legal agent for the owner, of the property described above as the "JOB LOCATION" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the MECKLENBURG COUNTY HEALTH DEPARTMENT to enter onto the property for the purpose of processing this request.

Signed: Mary Sue Layman Date: 3/13/92

NOTICE:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws And Rules For Sanitary Sewage Collection, Treatment And Disposal in effect at the time of issuance of the permit and is subject to the following provisions:

...No work shall be conducted on the septic tank system until an installation, Construction, Alteration and/or Repair approval is granted by this Department.

...This permit is not transferable.

...

[] IMPROVEMENT PERMIT - VALID 60 MONTHS FROM ISSUANCE
[] MOBILE HOME EXCHANGE APPROVAL - VALID 6 MONTHS FROM ISSUANCE
[] ADDITION/RENOVATION APPROVAL - VALID 1 YEAR FROM ISSUANCE

_____ Environmentalist Date

_____ Director or Authorized Section Head Date

WWATER : 122791

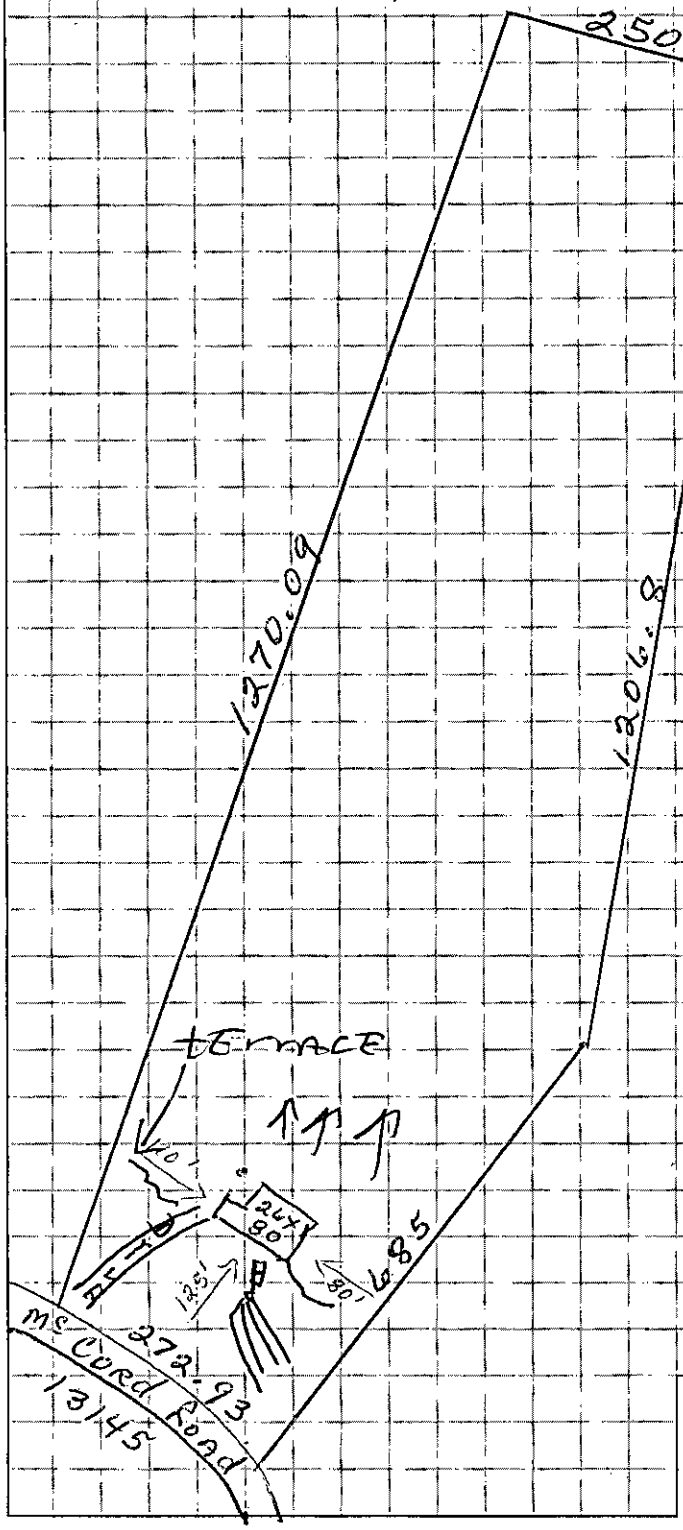
PROPOSED PLOT PLAN

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON STREET
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: 8022A/1323

TC: 011-052-05

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries, proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.



* WELL 50'+ from ANY SOURCE of CONTAMINATION.

* 1,500 SF
(4) 3' X 100' X 12" LG
or
COMPARABLE DNI EHS
APPROVAL ONLY.

APPROVAL DATE 4/14/92

may require lift station.

White - Health Department's Copy Canary - Environmentalist's Copy Pink - Owner's Copy

INSTALLATION, CONSTRUCTION, ALTERATION, AND/OR REPAIR PERMIT

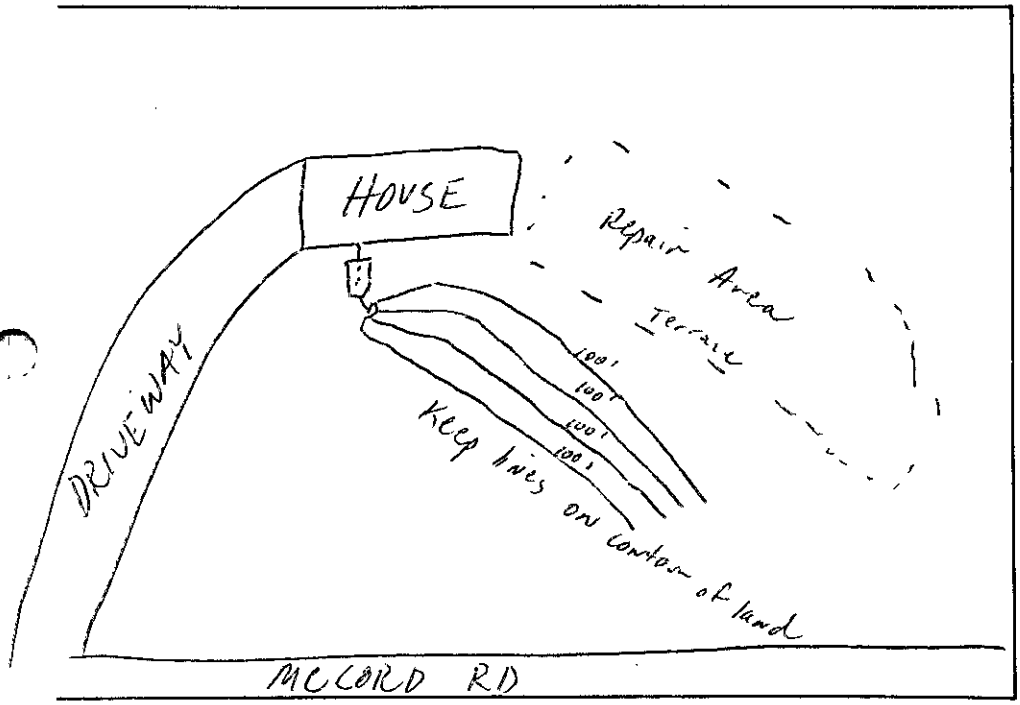
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

FILE: 8022A / 132B DATE: 5/19/92

TC: 011-052-05 ☐ L

SERIAL Nº 15269

Permission is hereby given to ✓ Install or Construct, _____ Alter or Repair the individual septic tank wastewater treatment system with subsurface, soil absorption, effluent discharge as specified herein at the described location. This permit is granted based upon the information supplied in the application dated 3/13/92. All work shall be completed on or before 6/19/92, after which date this permit shall be null and void. The system shall meet all of the construction requirements of 10 NCAC 10A .1900 which are in effect on the date of the granting of this permit. A Certificate of Completion or 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 or hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.



PLOT OF SYSTEM

Liquid Capacity of Septic Tank 1500 gallons

Liquid Capacity of Dosing Tank – gallons

Tank Construction PCC

Absorption and/or Nitrification Lines:

Trench Width 3 feet

Total Line Length 400 feet

Number of Lines 4 (100')

Depth of Stone 12 inches

Distance from House 5 feet

Distance from Property Line 10 feet

Distance from Well 750 feet

NAME OF OWNER Mary Sue Layman

LOCATION OF PROPERTY 13145 McCord Rd

Comments: 4 lines x 100' long x 3' wd x 12" stone | keep lines on contour of land, keep lines as shallow as possiable (Building permit on site)

Division or Section Head

Philo A. Walker R.S.
Environmentalist

* If this permit is for the installation or construction of a new system, it must be signed by the division or a section head of the Mecklenburg County Health Department in order to be valid. Only the signature of the Environmentalist is required where an existing system is being altered or repaired.

WHITE - HEALTH DEPARTMENT'S COPY • CANARY - ENVIRONMENTALIST'S COPY • PINK - OWNER OR AGENT'S COPY

CERTIFICATE OF COMPLETION/OPERATION PERMIT

MECKLENBURG COUNTY · ENVIRONMENTAL HEALTH ·

1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

FILE: 8022A/132B DATE: 6/3/92

TC: 011-052-05 ☐ IL ☒ CRT

SERIAL № 12909

400 ☒

Name of Owner Mary Sue Layman Juris.:

Address of Property 13145 McCord Rd.

Inspection Data:

Tank Material PCC

Total Length of Drainfield 400

Number of Lines 4 @ 100

Cover Depth 18"

Water Supply Source well

Distance to Water Source 750

Excavation Inspected 6/3/92

Tank(s) Inspected 6/3/92

Wash Line Inspected NA

High Water Alarm Inspected NA

PLOT

Design: 1992, 1500ST, CON, 1200SFT, 12"Stone Cecil CTR# Darryl Scoolfey

The undersigned has inspected the Septic Tank System described above, and certifies it has been

☐ installed or constructed ☐ altered or repaired

☐ in accordance with the permit issued ☐ as detailed in the plot above

and meets the provisions of 10 NCAC 10A .1900, "Laws And Rules For Sanitary Sewage Collection, Treatment, And Disposal" in effect on the date of issuance of the permit. The issuance of this

☐ Certificate of Completion ☐ 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 10 NCAC 10A .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.

COMMENTS: System designed for 3 bedroom house

ST II

Philo S. Walker R.S.
Environmentalist

Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

400 [illegible]

Pd 50.00
CK# 1289 HB
1-27-92

INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM
APPLICATION FOR SERVICES

8022A/132B PC [X] [ ] CRT

Mecklenburg County Health Dept.
Environmental Health Division
c/o Hal Marshall Ctr., Suite 211
700 N. Tryon St.
Charlotte, NC 28202

(704)336-5102

Date: JAN 24, 1992

PERSON FILING APPLICATION:

NAME: LAYMAN (last) MARY (first) Sue (mi)

ADDRESS: 7040 Cheyenne Dr PHONE: work 357-0504 704 596-3533

CITY: Charlotte STATE: NC ZIPCODE: 28262

PROPERTY INFORMATION (FROM ENGINEERING FORM):

TAX/PARCEL NUMBER: 011-052-05

STREET ADDRESS: 13145 McCord Rd Huntersville NC 28078

ZONING:

PROPERTY OWNER:

NAME: SAme (last) (first) (mi)

ADDRESS: PHONE: ( )

CITY: STATE: ZIPCODE:

SUBDIVISION OR MOBILE HOME PARK NAME:

Township (check one):
[X] 0 Mecklenburg County [ ] 2 Davidson [ ] 4 Pineville [ ] 6 Huntersville
[ ] 1 Charlotte [ ] 3 Cornelius [ ] 5 Matthews [ ] 7 Mint Hill

TYPE APPLICATION (check one):

LOT NUMBER: LOT SIZE (in acres):

[X] SOIL TEST - INDIVIDUAL LOT (D)
[ ] NEW CONSTRUCTION ON VACANT LOT - 4 BEDROOMS OR LESS (N)
[ ] EXCHANGE MOBILE HOME - SAME # BEDROOMS (Y)
[ ] ADDITION - INCREASE ROOMS/OCCUPANCY/MOBILE HOME SIZE (A or M)
[ ] COMMERCIAL OR INDUSTRIAL (N)
[ ] SOIL TEST DEVELOPMENT (P)
[ ] ADDITION - GARAGE OR RENOVATION/NO MAJOR CHANGES (X)
[ ] MODIFIED /ALTERNATIVE/ OR RESIDENCE > 4 BEDROOMS (Z)
[ ] REPAIR TO SYSTEM (R)

RESIDENTIAL PROPERTY (Type Building, check one):
[ ] SINGLE MOBILE HOME (S) [X] HOUSE (H) [ ] MULTIPLE FAMILY (U)
[ ] DOUBLE WIDE (D) [ ] MODULAR HOME (M) [ ] OTHER _____ (O)

NUMBER BEDROOMS: 3 NUMBER OCCUPANTS: 4

SYSTEM CLASSIFICATION:

COMMERCIAL/INDUSTRIAL PROPERTY:
Type Business _____ # Employees ___ Per Shift ___ ___ ___
Industrial Wastes (Y/N) ___
Underground Storage Tanks On Property (Y/N) ___ Type _____

WATER SUPPLY (check one):
[ ] Community (C) [ ] Shared Well (S)
[ ] Municipal (M) [ ] Other 'spring' (O)
[ ] Private Well (P)

FUTURE ADDITIONS - ALL PLANNED ADDITIONS MUST BE ENTERED (check all that apply):
[ ] Swimming Pool [ ] Jacuzzi [X] Stable/Barn [ ] Workshop [X] None This year
[X] Garage [X] Storage Building [X] Deck/Patio [ ] Bedrooms [ ] Other

The undersigned, owner, or legal agent for the owner, of the property described above as the "JOB LOCATION" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the MECKLENBURG COUNTY HEALTH DEPARTMENT to enter onto the property for the purpose of processing this request.

Signed: Mary Sue Layman Date: JAN 24 1992

NOTICE:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws And Rules For Sanitary Sewage Collection, Treatment And Disposal in effect at the time of issuance of the permit and is subject to the following provisions:

...No work shall be conducted on the septic tank system until an installation, Construction, Alteration and/or Repair approval is granted by this Department.

...This permit is not transferable.

...

[ ] IMPROVEMENT PERMIT - VALID 60 MONTHS FROM ISSUANCE
[ ] MOBILE HOME EXCHANGE APPROVAL - VALID 6 MONTHS FROM ISSUANCE
[ ] ADDITION/RENOVATION APPROVAL - VALID 1 YEAR FROM ISSUANCE

Environmentalist Date

Director or Authorized Section Head Date

WWATER : 122791

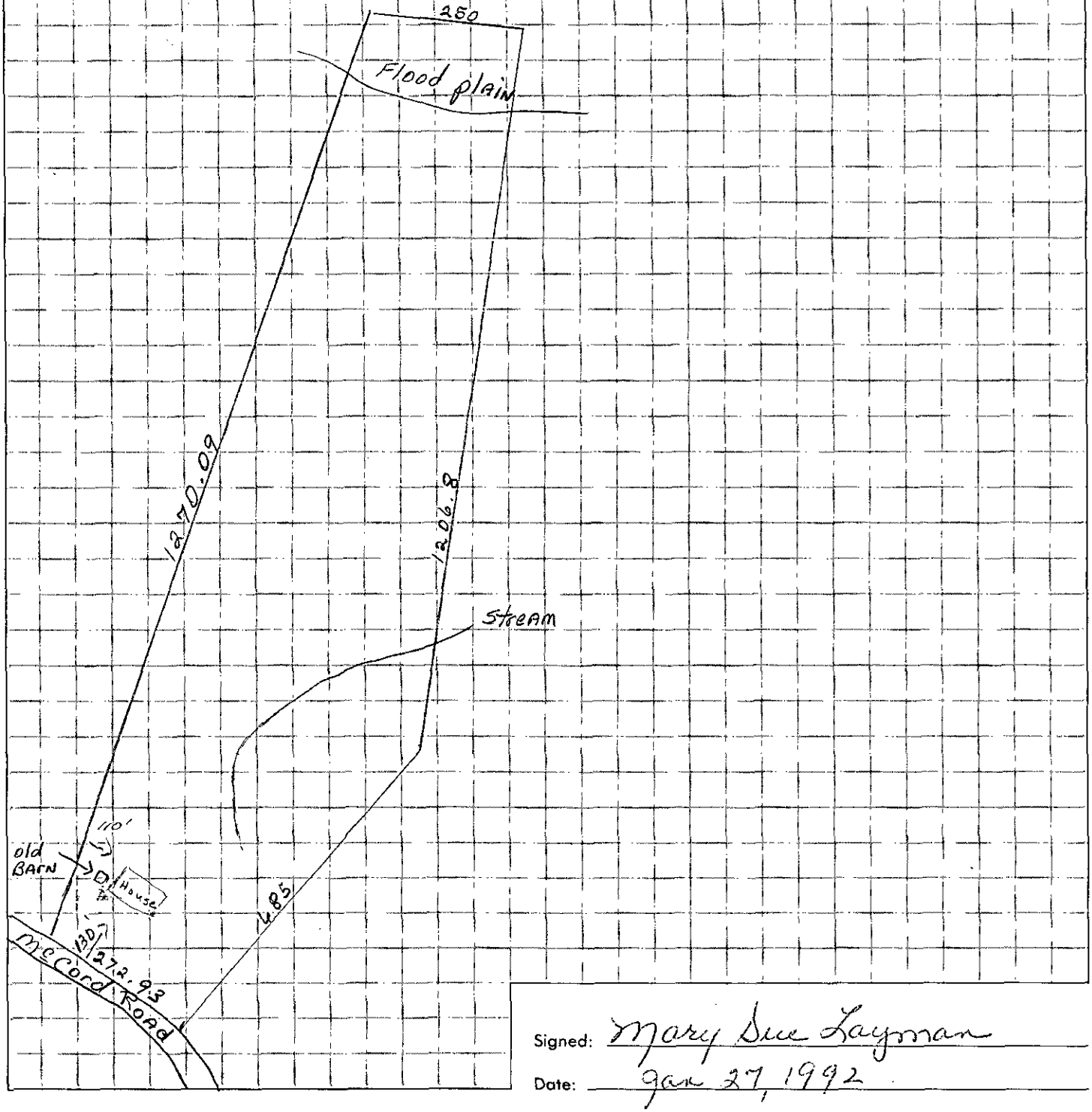
PROPOSED PLOT PLAN

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

FILE: 8022A / 132B

TC: 011-052-05

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries, proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.



Signed: Mary Sue Layman

Date: Jan 27, 1992

File # 8022 A / 132 B

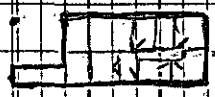
MARY Sue Cadieu LAYMAN

TC: 011-052-05

FRONT of Acerage Only

Each Dot represents
10'.

House Location:
125' Road To Front of House
110' Left boundry To House
80' Right boundry To House



House size: 26 X 80 (outside)
plus eaves

13145 McCord Road

3 Bedrooms
2 Full baths
Living Room
Dining Room
Kitchen
Family Room
Carport (Room)

AUDIT NO. _____

INIT. _____ DATE _____

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 12445

File: 8022-A 132B Action 1

Parcel: 011-052-05 ☐ PC

Location: 13145 McCORD ROAD

Subdivision:

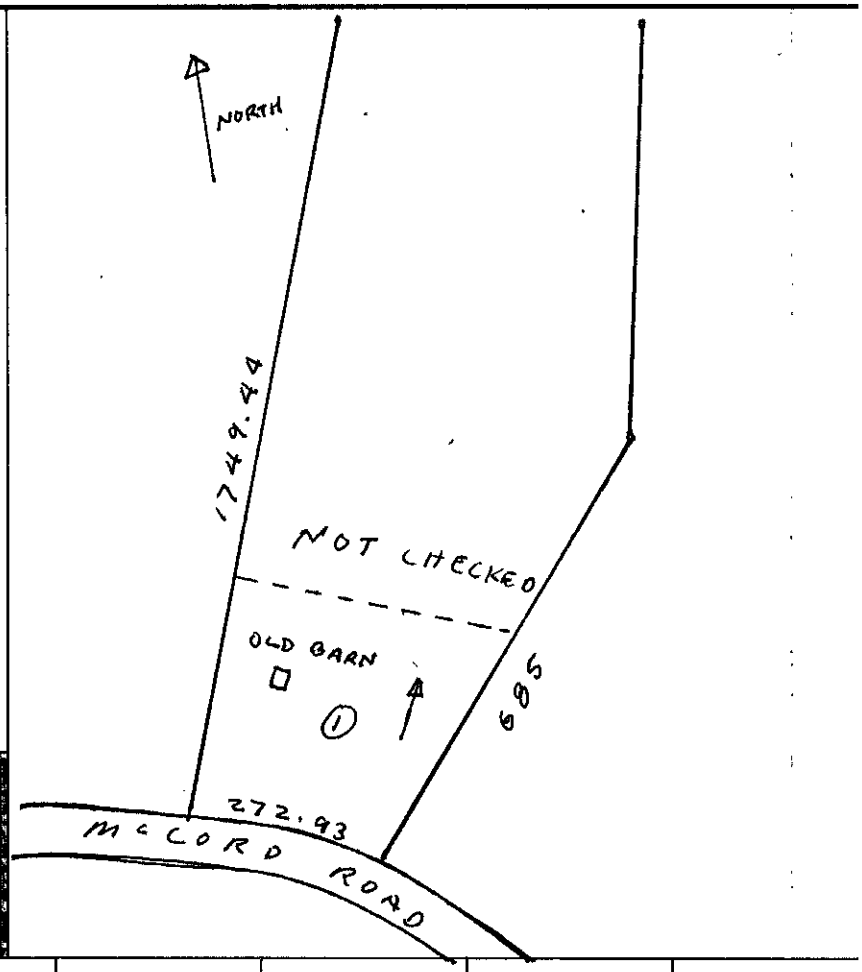
Lot: Block: Acres: 1.0

Owner: MARY LAYMAN
Address: 7040 CHEYENNE DRIVE
CHARLOTTE NC 28262

Comments: 10070 REPAIR

Described by: Kelly Randall

Date: 2-10-92



***** EVALUATION KEY *****

S = Suitable U = Unsuitable
PS = Provisionally Suitable
The "Area Classification" below indicates the suitability of areas in the diagram.

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	(S) PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Texture	S (PS) U SLIGHTLY EXPANSIVE CLAY	S PS U	S PS U	S PS U	S PS U	S PS U
Structure	S (PS) U ANGULAR BLOCKY	S PS U	S PS U	S PS U	S PS U	S PS U
Drainage	S (PS) U > 36"	S PS U	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U > 36"	S PS U	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S PS U none	S PS U	S PS U	S PS U	S PS U	S PS U
Available Space	(S) PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Other (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Soil Group/Series	CECIL LIKE					
Area Classification	S (PS) U	S PS U	S PS U	S PS U	S PS U	S PS U

Mecklenburg County
Health Department

February 11, 1992

Mary Layman
7040 Cheyenne Drive
Charlotte, NC 28262

RE: Property located on 13145 McCord Road
FILE: 8022A (132B)
PARCEL: 011-052-05

Dear Ms. Layman:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. The property was found to contain a limited area of soils which were classified as PROVISIONALLY SUITABLE for such an installation. A copy of the Site Evaluation Report (Serial Number 12445) is enclosed for your information.

While this classification indicates the site is acceptable for the installation of a septic tank system, no specific system or plans have been approved. The area available for such an installation may impose limitations on the size and/or type construction permitted on the lot. Specific plan approval will be provided upon submission of an Application for an Improvement Permit with an **ACCURATELY** dimensioned plot plan detailing the location of current and/or proposed buildings, wells and sewage disposal systems and determination that the area is adequate to accommodate the proposed construction.

Please note that this classification may be revoked if any filling, grading or construction (including the drilling of a well) is performed on the lot which in the opinion of this department renders any area previously designated suitable for system installation, unsuitable. Furthermore, this approval may be revoked should any changes occur in the regulations under which it was granted, if such changes would have prevented its approval had they been in effect on the date of issuance.

If there are any questions concerning this matter, please contact me 336-5573.

Sincerely,

Kelly Randall, R.S., Soil Scientist
Individual Water and Wastewater Systems

KR:lw
Enclosure