~~083020~~
5723B

704-361-7741
X46329

Supervisor/Administrative Professional Checklist

New Septic ☑ **New Well** ☐ **Use Existing** ☐ **Alteration** ☐ **Modified Plot Plan** ☐

New Septic Fees Paid:

IP ($250.00) Rus 4/16/14 Initials/Date

CA ($200.00) LE 1/19/17 Initials/Date

OP ($200.00) LE 1/19/17 Initials/Date

(CA and OP fees need to be paid before a building permit can be issued)

New Well Fee Paid: $550.00 _____ Initials/Date

Use Existing Fee Paid: $100.00 _____ Initials/Date

Alteration Fee Paid: $300.00 (Total) $200 (If use existing was paid)_____ Initials/Date

Modified Plot Plan Fee Paid: $100.00 _____ Initials/Date

Floor plans need to be submitted and reviewed before CA can be issued. ☑ Reviewed ☑ JAM 1-20-17
OK to Generate CA

This site is served by septic and well. Verify each is complete before final hold is released. ☑

Septic file completed. ☑ JAM 1-24-18 Well file completed. ☐ _____

Send permit for signature. ☑ Signature received. ☐ _____

This septic system requires a certified operator contract before final hold is released. ☐

Certified operator contract is on file. ☐ _____

Groundwater & Wastewater Services
Septic Project File & Data Review Worksheet

GWS File #: 5723B WASPS App #: 6786

Primary ES assigned to project: Phil Walker

Secondary ES assigned to project: _____

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

I. File Review:

Rule or Law	Permit Application			
.1937(d)	Is the Application complete	Yes ☑	No ☐	N/A ☐
.1937(d)	Is there a Site plan/Plat with application	Yes ☑	No ☐	N/A ☐
.1937(d)	Is the Facility shown?	Yes ☑	No ☐	N/A ☐
.1937(d)	Are appurtenances shown	Yes ☐	No ☑	N/A ☐
	Site Evaluation Information			
.1939 (a)(1)	Topography and Landscape Position Recorded?	Yes ☑	No ☐	N/A ☐
.1940 (a-g)	Slope % Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Texture Class Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Structure type Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Consistence Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Mineralogy Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(3)	Soil Wetness Condition Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(4)	Soil Depth to Rock or Parent Material Recorded When Encountered	Yes ☑	No ☐	N/A ☐
.1939 (a)(5)	Depth to Restrictive Horizons Recorded When Encountered?	Yes ☑	No ☐	N/A ☐
.1939 (a)(6)	Sufficient Available Space Recorded?	Yes ☑	No ☐	N/A ☐
.1937(m)	Are the Profile Locations Shown?			
.1939(a)	Are the S/PS Profiles in system & in repair area?	Yes ☑	No ☐	N/A ☐
& .1945(b)	Number of auger borings made: 5			
	Were sufficient auger borings made?	Yes ☑	No ☐	N/A ☐
.1939(d), .1955, .1956, .1957	LTAR 0.275	Yes ☑	No ☐	N/A ☐
	Improvement Permit/Construction Authorization			
.1937(g) 130A-336(a)	Proposed System Type stated-Initial	Yes ☑	No ☐	N/A ☐
.1945(b) 130A-336 (a)(3)	Proposed System Type stated-Repair	Yes ☑	No ☐	N/A ☐
	System location identifiable by setbacks - Initial	Yes ☑	No ☐	N/A ☐
.1937(g) .1945(b)	System components shown – Initial	Yes ☑	No ☐	N/A ☐
.1945(b)	Repair area shown	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Does System design match facility, flow & WWcharacteristics?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is System design consistent with soil/site conditions?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is the System located in the approved area?	Yes ☑	No ☐	N/A ☐
130A-336(a)	Is the Design flow (gpd) indicated?	Yes ☑	No ☐	N/A ☐

130A-336(a)	Number of Bedrooms, employees, seats, etc. indicated?	Yes ☑	No ☐	N/A ☐
.1937(g)	Trench depth indicated?	Yes ☑	No ☐	N/A ☐
.1937(g)	Trench width indicated?	Yes ☑	No ☐	N/A ☐
.1937(g)	Trench length indicated?	Yes ☑	No ☐	N/A ☐
130A-336(a)(1)	Proposed/existing well shown?	Yes ☐	No ☑	N/A ☐
130A-336(a)(1)	Property line lengths shown?	Yes ☐	No ☐	N/A ☐
130A-336(a)	Facility/appurtenance setbacks shown from fixed points?	Yes ☐	No ☑	N/A ☐

Far away from septic Area

Operation Permit

.1937(i)	System type as described in table V(a) of rule .1961	Yes ☐	No ☐	N/A ☐
.1937(i)	Conditions for system performance, operation, maintenance, monitoring and reporting.	Yes ☐	No ☐	N/A ☐

II. WASPS Review:

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

Items requiring correction/modification: _____

Comments:

_____

_____

_____

_____

_____

IA issued date: _____

OP issued date: 1-9-19

Review performed by: JAM Date performed: _____

5723B

Appl #6786

MECKLENBURG COUNTY
HEALTH DEPARTMENT

APPLICATION FOR A RESIDENTIAL 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: 191-085-90
STREET ADDRESS: 13325 Windy Point Rd
CITY: Charlotte
STATE: NC ZIP: 28278
SUBDIVISION NAME: N/A
LOT #: _____ LOT SIZE (acres): 4.24
TOWNSHIP:
☑ MECKLENBURG ○ CORNELIUS ○ HUNTERSVILLE
○ DAVIDSON ○ CHARLOTTE ○ PINEVILLE
○ MATTHEWS ○ MINT HILL

4. **BUILDING INFORMATION:**
BUILDING TYPE:
○ SINGLE MOBILE HOME ○ MODULAR HOME
○ DOUBLE WIDE ○ MULTIPLE FAMILY
☑ HOUSE ○ OTHER _____
HEATED SQUARE FOOTAGE: 2642 3220
NUMBER OF BEDROOMS: 4
NUMBER OF OCCUPANTS: 2
FOUNDATION TYPE:
○ CONCRETE SLAB ○ BASEMENT WITH PLUMBING
☑ CRAWL SPACE ○ BASEMENT WITH NO PLUMBING

5. **IF PLANNING TO EXPAND OR ALTER THE EXISTING SEPTIC SYSTEM PLEASE COMPLETE THE FOLLOWING SECTION:** ☐ N/A

NUMBER OF BEDROOMS TO BE ADDED: _____ NUMBER OF ADDITIONAL OCCUPANTS IN THE RESIDENCE: _____

6. **WATER SUPPLY:** ○ MUNICIPAL ☑ PRIVATE WELL ○ PUBLIC WELL ○ SHARED WELL ○ OTHER DAVID will fill out Eidlitz app @ later date

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:** ____ ____ ____ ____ ____

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?** _____ ☑ UNKNOWN

11. **WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY?** Mid June 14 ☐ N/A

12. **PROPERTY OWNER:**
NAME: DAVID L. MENDENHALL
ADDRESS: 10526 HADLOW CT
CITY: CHARLOTTE
STATE: NC ZIP: 28278
WORK PHONE: _____
MOBILE PHONE: 704-451-4442
FAX: 704-469-5641
E-MAIL: DAVE@CHARLOTTEBOWPOC.COM

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

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

Revised on: 12/15/10

14. SEPTIC SYSTEM PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Improvement Permit and Authorization to Construct shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for either sixty (60) months or is non-expiring depending upon the documentation submitted: complete site plan = 60 months, complete plat = non-expiring.

_____ (Initial here for septic system applications)

15. WELL PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Well Permit shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for a period of twelve (12) months from the date of issuance.

_____ (Initial here for well applications)

16. APPLICATION SIGNATURE SECTION:

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

_____ 4/14/14
Property Owner's or Owner's Legal Representative Signature — Date

---

OFFICE USE ONLY

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

SEPTIC APPLICATION FEE RECEIVED $ 250 DATE FEE RECEIVED: 4/16/14

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

APPLICATION PROCESSED BY: lws

GWS FILE NUMBER ASSIGNED: 5723B

APPLICATION ID NUMBER ASSIGNED: 6786

COMMENTS:

please perform soil eval for parcel 199-085-90

please contact us (Jennifer) @ 704-516-7904, we would like to be there during the test. Thanks Jacob!

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

Revised on: 12/15/10

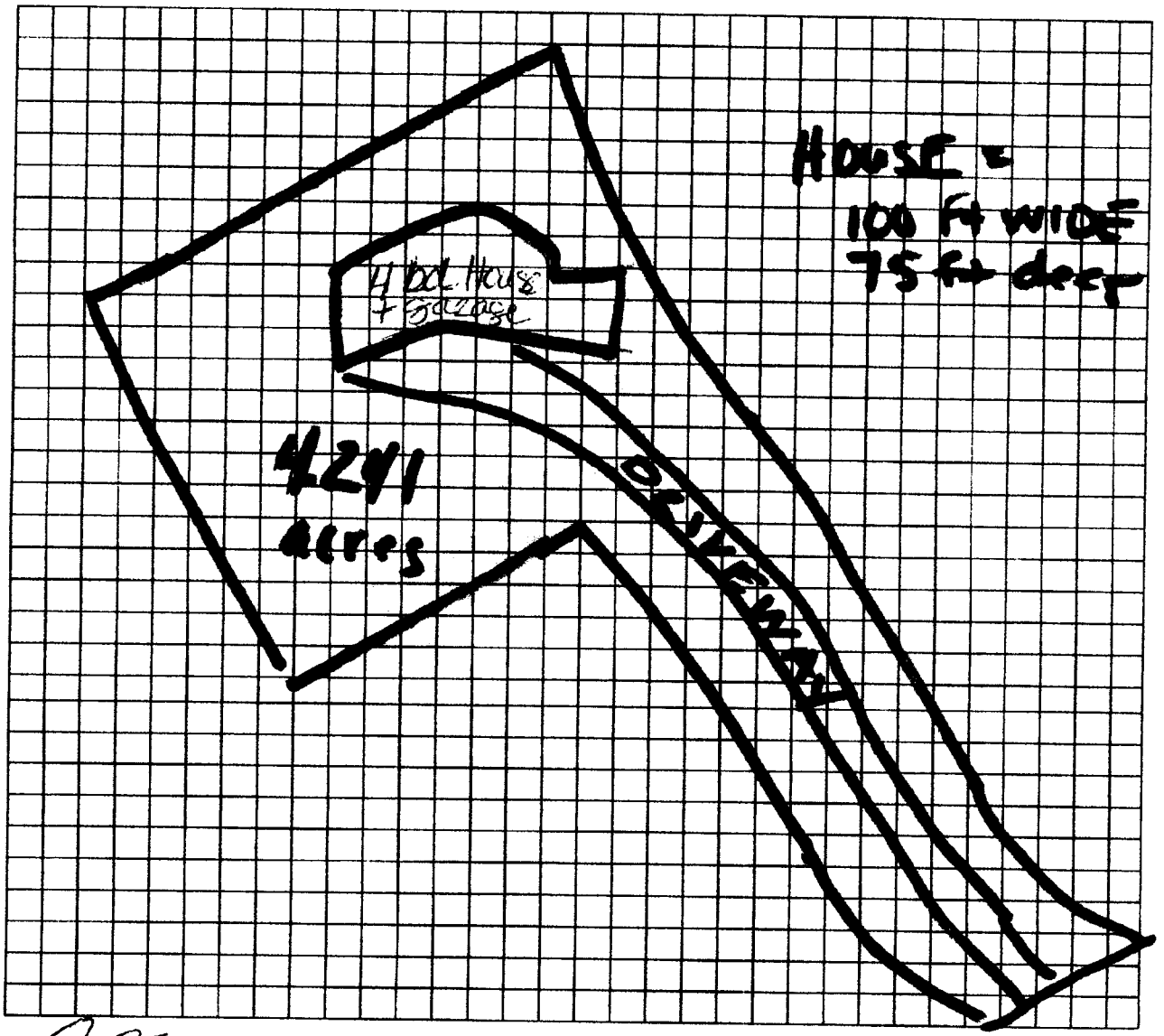
File #: _____

PROPOSED PLOT PLAN

A drawing showing the locations of the following items is required: existing and proposed property lines with dimensions, easements or right-of-ways, proposed building pad(s) or existing building footprint(s), all appurtenances (garage, driveway, deck, pool, etc.), location of existing or proposed well(s), location of existing or proposed sewer lines and sewage disposal systems, surface water bodies, and any aboveground or underground storage tanks. Provide names for all roads that adjoin the property.

Street Address: 13325 Woody Point Rd Tax Parcel #: 199-095-90

Subdivision Name: NA Lot #: _____



Property Owner's or Owner's Legal Representative Signature

4/14/14
Date

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

Revised on: 12/15/10

IP only

will apply for well permit at a later date as indicated on application.

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date: 01/19/17
Receipt #: 103349
Check / Auth #: CHARGE
Received By: ELLISLW

Amount: 200.00
Tendered: 200.00
Returned: 0.00

Account Information

Account #: X46329
Contractor: PARAGON HOMES OF CLT INC
Attn:
Address: 600 TOWNE CENTRE BLVD
Address: STE 201
City/State/Zip: PINEVILLE, NC 28134

Item	Description	Permit#	Quantity	Unit Price	Total Price
0734	Septic Construction Authorizat 13325 WOODY POINT RD		1	200.00	200.00

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

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
2,923.67	117.10				

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date: 01/19/17
Receipt #: 103348
Check / Auth #: CHARGE
Received By: ELLISLW

Amount: 200.00
Tendered: 200.00
Returned: 0.00

Account Information

Account #: X46329
Contractor: PARAGON HOMES OF CLT INC
Attn:
Address: 600 TOWNE CENTRE BLVD
Address: STE 201
City/State/Zip: PINEVILLE, NC 28134

Item	Description	Permit#	Quantity	Unit Price	Total Price
0703	Septic Operational Permit 13325 WOODY POINT RD		1	200.00	200.00

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

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
2,723.67	117.10				

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

Sheet: 1 of 2
Property ID: 199-085-90
Lot #: NA
File #: 5723B
AppID: 6786

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: David L. Mendenhall
Address: 10526 Hadlow Ct, Charlotte, NC 28278
Proposed Facility: 4 Bedroom Residence
Design Flow (.1949): 480 GPD
Location of Site: 13325 Windy Point Rd, Charlotte, NC 28278
Water Supply: [ ] Public [X] Individual [X] Well
Evaluation Method: [X] Auger Boring [ ] Pit
Type of Wastewater: [X] Sewage [ ] Industrial Process

Applicant: owner
Date Evaluated: 4/24/2014
Property Size: 4.24 ac
Property Recorded: Unknown
[ ] Spring [ ] Other
[ ] Cut
[ ] Mixed

PROFILE / LOG #	(.940) Landscape Position / Slope%	(.941) Horizon Depth (IN)	SOIL MORPHOLOGY (.941) (.941) Structure / Texture	(.941) Consistence / Mineralogy	PROFILE FACTORS (.942) Soil Wetness / Color	(.943) Soil Depth (IN)	(.956) Saprist Class	(.944) Restr Horiz	General Comments	Profile Class & LTAR	Maximum Trench Bottom Depth for 3' Wide Conventional Trench
Boring #1	SS 6%	0 - 2	gr CL	FR SEXP	>50"	50	NA	NA	yellow brown mottles from 30 - 50"	PS IV 0.275	36"
		2 - 50	sbk/abk C	FI SEXP							
Boring #2	R 4%	0 - 5	Disturbed		>50"	50	NA	NA	yellow brown mottles from 28 - 50"	PS IV 0.275	36"
		5 - 50	sbk/abk C	FI SEXP							
Boring #3	LS 7%	0 - 12	mass CL Sap		>16"	0	NA	NA		US	NA
		12 - 16	mass SL Sap								
Boring #4	LS 9%	0 - 3	gr CL	FR SEXP	>15"	3	NA	NA		US	NA
		3 - 15	mass C	VFI SEXP							
Boring #5	LS 16%	0 - 4	gr CL	FR SEXP	>50"	50	NA	NA		PS IV 0.3	34"
		4 - 25	sbk/abk C	FI SEXP							
		25 - 52	sbk CL	FR SEXP							

Description	Initial System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	IIIb	IVc
Site LTAR (gpd/sq ft)	0.275	0.275

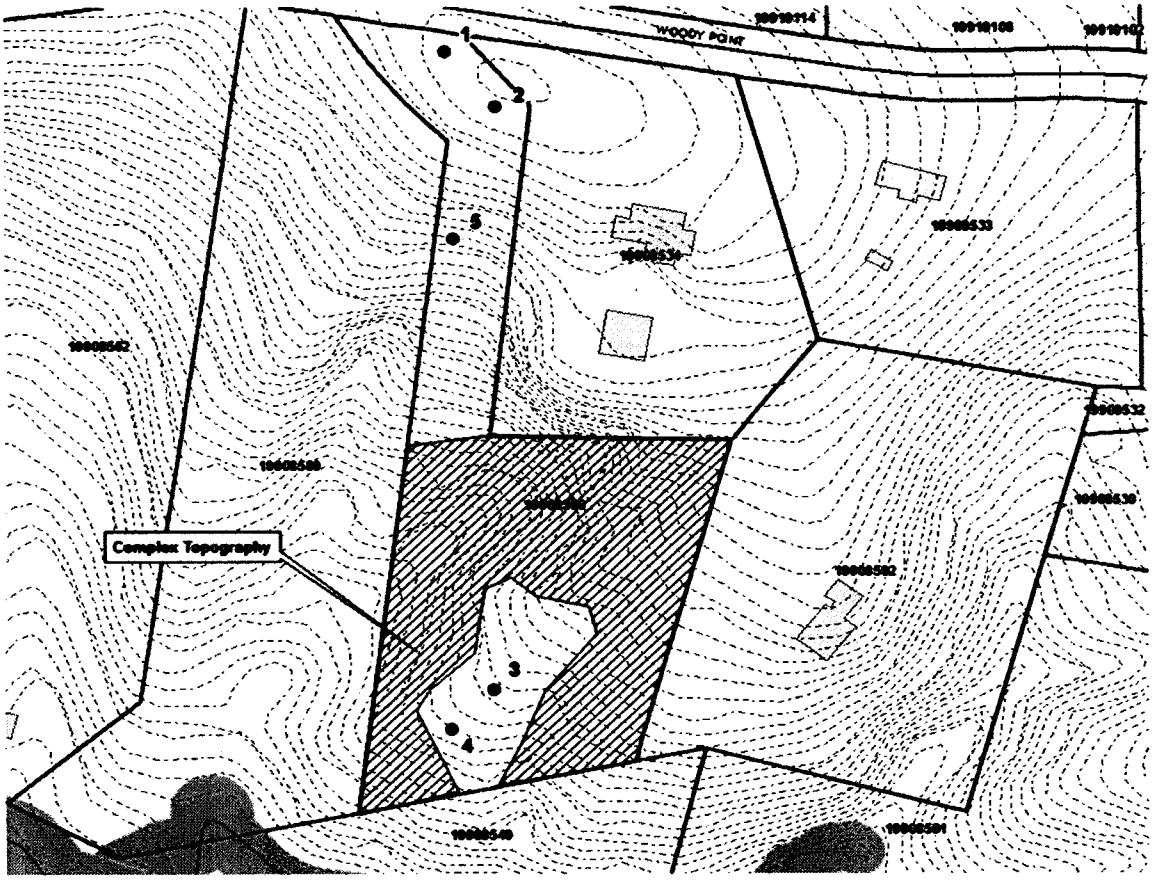
Other Factors (.1946):
Soil Evaluation By: Jacob Presley, LSS
Others Present:
Site Classification (.1948): PS
Site Evaluation By: Phil. Walker, Phil Walker REHS
Others Present:

COMMENTS:

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		mass-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				Sap-Saprolite
FP-Flood Plain		CL-Clay Loam		**Structure Prefixes**
D-Drainage Way		SCL-Sandy Clay Loam		w-weak
		SiL-Silt Loam		m-moderate
				s-strong
				f-fine
	IV	SC-Sandy Clay	0.4 - 0.1	m-medium
		SiC-Silty Clay		c-coarse
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	SS-Slightly Sticky	SEXP-Slightly Expansive
FR-Friable	S-Sticky	EXP-Expansive
FI-Firm	VS-Very Sticky	
VFI-Very Firm	NP-Non-Plastic	**Classification**
EFI-Extremely Firm	SP-Slightly Plastic	US-Unsuitable
	P-Plastic	PS-Provisionally Suitable
	VP-Very Plastic	S-Suitable
		NA-Not Applicable

Sketch of Soil Evaluation Locations



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 RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30006786** GWS File #: **5723B** Tax Parcel #: **199-085-90**

- 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):** 6/13/2019

Type of Installation: Residential - New System Lot Number: 0

Structure Type: HOUSE Size (ft^2): 2600 # Bedrooms: 4 # Occupants: 2

Building Foundation: Crawl Space Water Supply: Private Well

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

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.275	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1309	Total Trench Length (ft):	436
Maximum Trench Depth (in):	36	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

III. Repair System Type: Drip Irrigation **System Classification:** IVa

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.150	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500
Trench Width (ft):	1	Trench Spacing (ft):	2	Absorption Area (ft^2):	3200	Total Trench Length (ft):	3200
Maximum Trench Depth (in):	18	Depth of Media (in):	N/A	Distribution Device:	Headworks (Drip Irr.		

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: Philo Walker

Signature: Philo Walker REHS

Date Issued: 6/13/2014

Owner/Legal Agent: DAVID L. MENDENHALL
Print Name

Signature: David L Mendenhall

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 RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

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Structure Type: HOUSE Size (ft^2): 2600 # Bedrooms: 4 # Occupants: 2

Building Foundation: Crawl Space Water Supply: Private Well

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Initial System Specifications:

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Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1309	Total Trench Length (ft):	436
Maximum Trench Depth (in):	36	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

III. Repair System Type: Drip Irrigation **System Classification:** IVa

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.150	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1500
Trench Width (ft):	1	Trench Spacing (ft):	2	Absorption Area (ft^2):	3200	Total Trench Length (ft):	3200
Maximum Trench Depth (in):	18	Depth of Media (in):	N/A	Distribution Device:	Headworks (Drip Irr.		

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:

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- 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: Philo Walker

Signature: Philo Walker REHS

Date Issued: 6/13/2014

Owner/Legal Agent: _____
Print Name

Signature: _____

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 RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30006786** GWS File #: **5723B**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every 5 years by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- 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.
- 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 supply pipe shall be installed with a minimum of 30" of compacted cover over the pipe or properly sleeved under areas that are subject to vehicular traffic.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
- Foundation drains shall be constructed not to discharge water onto or across any part of the septic system.
- The septic system shall be located at least 15 feet from any foundation drain.

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: Philo Walker
Signature: Philo Walker REHS
Date Issued: 6/13/2014

Owner/Legal Agent: DAVID L. MENDENHALL
Print Name
Signature: David L Mendenhall

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 RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30006786** GWS File #: **5723B**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every 5 years by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- 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.
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- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Philo Walker

Signature: Philo Walker REHS

Date Issued: 6/13/2014

Owner/Legal Agent: _____
Print Name

Signature: _____

SOIL & FORESTRY SERVICES
OF THE CAROLINAS, PA

www.soilandforestryservices.com

January 17, 2018

Mecklenburg County Groundwater and Wastewater Services
Attn: Brad Hallman
700 N. Tryon Street, Suite 211
Charlotte, NC 28202

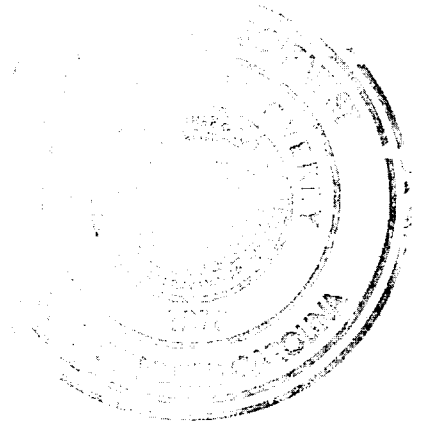
Re: 13325 Woody Point Road

Dear Mr. Davenport,

Autry Septic Tank Service recently installed a 4-bedroom accepted system (25% reduction) septic system for 13325 Woody Point Road. The system requires an effluent pump with pressure manifold distribution of the wastewater. S&FS flagged the proposed septic trenches for the installer. Based on our layout and inspection by Mecklenburg GWS we are satisfied with the system installation.

Sincerely,

Wendell Overby
NC Licensed Soil Scientist
NC Registered Forester



SOIL & FORESTRY SERVICES

PO Box 832
Mooresville, NC 28115

A proposed design for a 4 Bedroom Innovative Septic System using pressure manifold distribution at 13325 Woody Point Road, Charlotte
PIN# 19908590

GWS Septic System Design Review
GWS File #: 5723B **Approved** ☐ **Disapproved** ☐
Design Review: ☑
Field Review: ☑
*Projects are not considered "APPROVED" until both sections above are completed and indicate an APPROVED status.

Contents: **Page**

Information for the Installer ---- 1

Design Information
- Design Specifications ---- 2-3
- Layout Specifications ---- 4
- System Flow ---- 5

Site Plan ---- 6

Septic Tank Diagram ---- 7

Pump Tank Diagram ---- 8

Control Panel Specifications ---- 9-12

Pump Specifications ---- 13-14

Calculations ---- 15

Pressure Manifold Specifications ---- 16

6/2014
Design By: W. Overby

NORTH CAROLINA PROFESSIONAL SEAL 10051 ENGINEER RILEY DEE BURGESS, JR.
4/2/2014

INFORMATION FOR THE INSTALLER:

- The permit should be read very carefully prior to bidding. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by DEHNR
- Tanks shall be water tested prior to installation.
- The installer shall be responsible to the owner for placement of the tanks and to insure that final grades are returned to the original natural grade, with exception of added structural features.
- The supply trench shall be compacted to eliminate cavities left during initial fill
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom is within 2" from the highest to . the lowest points of elevation within the trench. If the bottom elevation needs adjusting after it has been trenched, it will be done by removing high points rather than filling low points. It is extremely important to insure that trenches are not over excavated during initial trenching. All fine grading within the trench will be hand done with a shovel. No loose material will be left in the trench
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used.
- Elevations at pinflag locations should be checked by the installer prior to beginning
- Pumptank riser should be 6" above grade, control panel should be 12" above grade.
- Septic tank riser shall be a minimum of 6" above finished grade.
- **System is specified as innovative type with pressure manifold distribution**
- Repair is specified as subsurface drip irrigation
- **Max system trench depth specified at 36 inches.**
- **Supply line to be installed adjacent to existing drive as shown. Where supply line crosses under drive; supply to be sleeved in ductile iron or installed 30 inches deep.**
- **See Figure 1. Septic System Layout and House Plan**

INNOV SYSTEM
FOR WASTEWATER TREATMENT

Applicant:	Christy Knight
Phone:	704 516-7906
County:	Mecklenburg
Location:	13325 WOODY POINT ROAD

Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	480 gpd
System Flow:	26.81 gpm

Design Specifications

Drainfield Size:	450 lf
Loading Rate:	0.275 gpd/ft.^{2}
Depth of Gravel in Trench:	n/a
Gravel Size:	n/a
Trench Depth:	36 in
Trench Width:	36 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	675 lf
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	117.45 gal
Dosing Volume:	205.70 gal

Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	9.92 ft
Elevation Head:	75.00 ft
Total Dynamic Head:	88.41 ft
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 in manifold box
Check Valves:	In Tank
Anti-Siphon Hole:	n/a
Recommended Pump:	Zoeller model 189-Effluent Rated Pump Capable of Delivering 90 ft.of Head at 27 gpm Total Flow

13325 WOODY POINT ROAD

INNOV DESIGN

DESIGN FLOW:	480	gpd
SOIL APPLICATION RATE:	0.275	gpd/ft.^{2}
TOTAL AREA TRENCH BOTTOM:	1350	sf
TOTAL LATERAL LENGTH:	450	lf
NUMBER OF FIELDS:	1	
LATERAL LENGTH REQUIRED PER FIELD:	436	lf
SUPPLY LINE LENGTH:	675	lf
TOTAL DYNAMIC HEAD:	88.41	gpm
DOSING VOLUME:	205.70	gal
PUMP TANK DRAW DOWN*:	7.1	in
SEPTIC TANK SIZE:	1500 gal.	
PUMP TANK SIZE:	1500 gal.	
RECOMMENDED PUMP:	Zoeller Model 189-Effluent Rated Pump Capable of Delivering 90 ft.of Head at 27 gpm Total Flow	

**Pump tank draw down based on a volume basis of 29 gallons per inch. Draw down may vary among pump tank manufacturers.*

13325 WOODY POINT ROAD

Layout for a 4 bedroom home

June 2014

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LENGTH
TBM		3.2			100.0		
INSTR. 1			103.2				
			SYSTEM				
1	Pink			3.50	99.7	90	90
2	Red			3.90	99.3	120	120
3	Orange			4.50	98.7	140	120
4	Yellow			5.00	98.2	145	120
			REPAIR				
			~4900 sf				
			usable soil				

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	REDUCTION TYPE	MAX TRENCH	DISTRIBUTION
SYSTEM	450	0.275	INNOV	25%	36	MANIFOLD
REPAIR	4900SF	0.150	ALT.	N/A	18	DRIP

Notes:

** TBM located at EIP

**TBM is assumed to be 100'

**All measures in feet

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

**BS and FS indicate rod readings

13325 WOODY POINT

SYSTEM FLOW

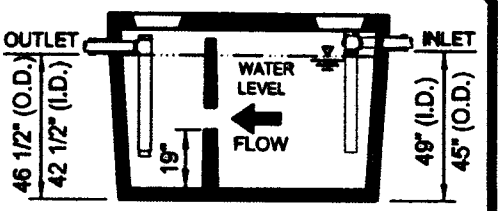
DESIGN SPECIFICATIONS

Line #	Color	Elev	Length	Hole Size	Flow/Tap	Line gpd	Line Trench Area	Flow/Line	Line LTAR
1	Pink	99.7	90	SCH 80 1/2	5.48	42.03	270	0.06	0.0203
2	Red	99.3	120	SCH 40 1/2	7.11	54.53	360	0.06	0.0198
3	Orange	98.7	120	SCH 40 1/2	7.11	54.53	360	0.06	0.0198
4	Yellow	98.2	120	SCH 40 1/2	7.11	54.53	360	0.06	0.0198
	total	feet =	450	gal/min =	26.81				

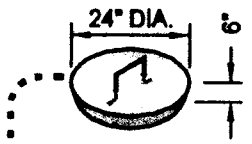
Des. Flow	480
Pump Run	7.67
soil LTAR	0.275
Innov LTAR	0.367

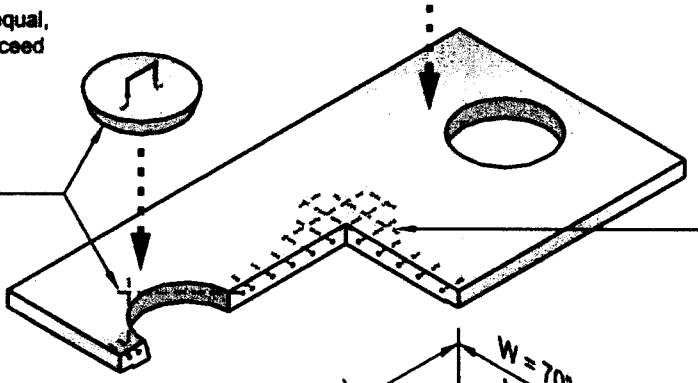
GENERAL NOTES:

1. Design specifications conform to latest ASTM C1227 specifications "Precast Concrete Water and Wastewater Structures"
2. Concrete compressive strength 4,000 psi minimum.
3. Steel reinforcing design to conform to the requirements of ASTM C890 specifications for "Structural Design Loading for Water and Wastewater Structures" and shall utilize grade 60 re-bars conforming to the requirements of ASTM A615 or WWF conforming to the requirements of ASTM A185 or both. Place Additional reinforcing at all openings.
4. Optional EZ set lid cast in place. Supplied by Dellinger Precast. To be field adjusted using approved methods by contractor.
5. Pipe penetration locations as per job requirements. Pipe inlet and outlet locations to have PSX Direct Drive boots or equal. Pipe Inlet locaions (typical 3 sides) to be knock out pannels. Effluent Filter supplied by Dellinger. Inlet Tee & Pipe supplied by contractor.
6. Joints to be sealed with ConSeal CS102. butyl rubber joint sealant or equal. Sealant meets or exceeds the requirements of latest federal specification SS-S-0021(210-A), AASHTO M-198B, and ASTM C-990-91.
7. Lift Insert / Lift Eye Pin by M.A Industries or equal, Cast-in by Dellinger Precast. Lifts meet or exceed OSHA requirements.
8. Method of namufacture is Wet Cast.
9. Sections are monolithic. Weights:
   Top Slab 3,134 ± lbs.
   Base Section 9,751 ± lbs.
10. I.D. = Inside dimension
    O.D. = Outside dimension
    L = Length
    W = Width
    H = Height



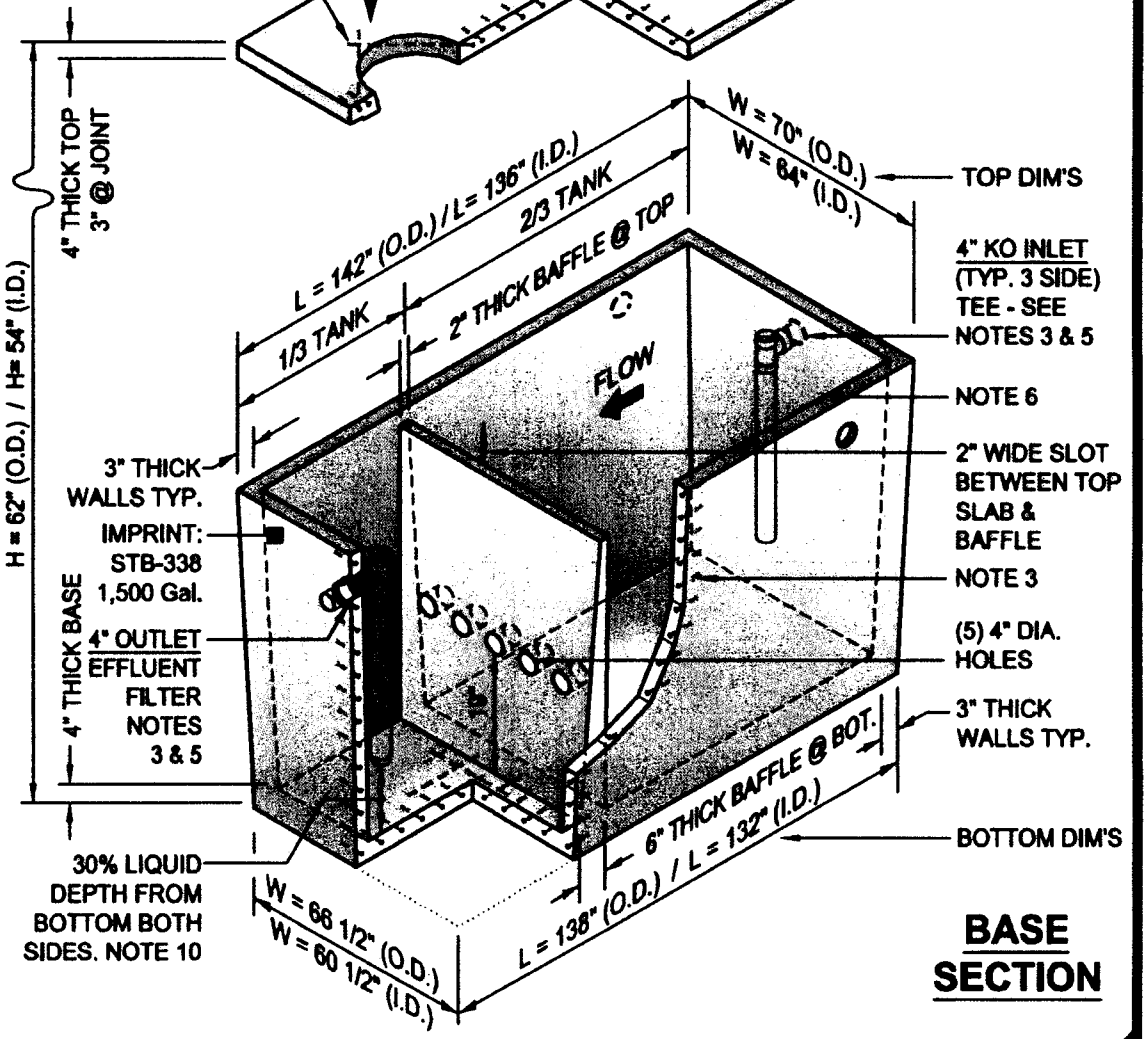
ELEVATION





TOP SLAB





BASE SECTION

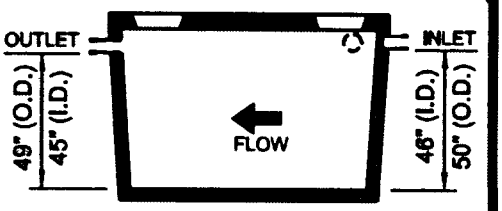
DELLINGER PRECAST
4531 North Hwy 16 • Denver, N.C. 28037 • Phone: 800-948-1666 • 704-483-2868 • Fax: 704-483-2363

1,500 Gallon (Top Slab) SEPTIC TANK

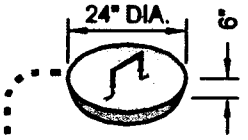
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Revision Date: February 2008
Detail # ST-1.500-TS

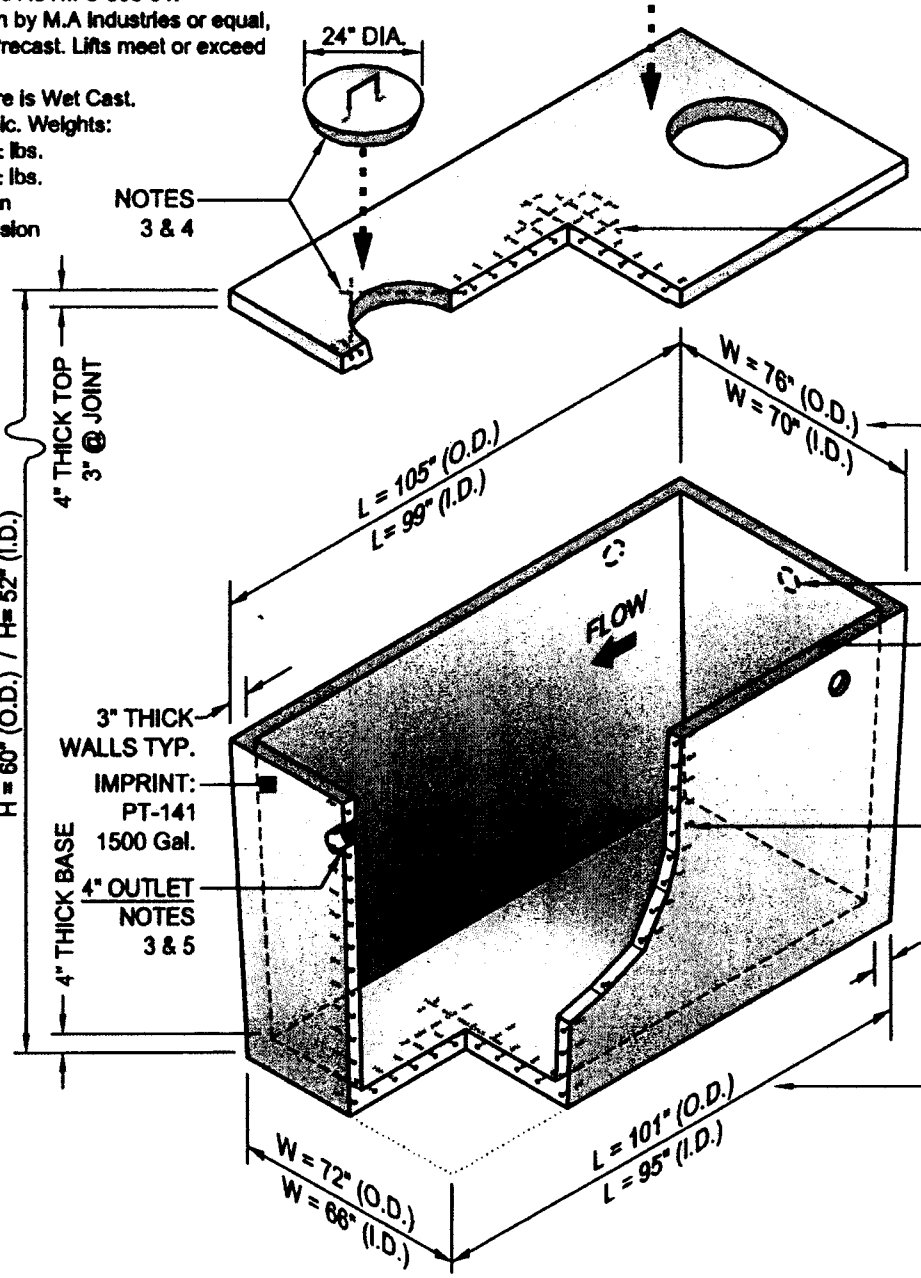
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6. Joints to be sealed with ConSeal CS102. butyl rubber joint sealant or equal. Sealant meets or exceeds the requirements of latest federal specification SS-S-0021(210-A), AASHTO M-198B, and ASTM C-990-91.
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8. Method of namufacture is Wet Cast.
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   Top Slab 2,636 ± lbs.
   Base Section 7,453 ± lbs.
10. I.D. = Inside dimension
    O.D. = Outside dimension
    L = Length
    W = Width
    H = Height



ELEVATION





OPTIONAL ROUND LID



1,500 Gallon (Top Slab) PUMP TANK

Scale: Not To Scale

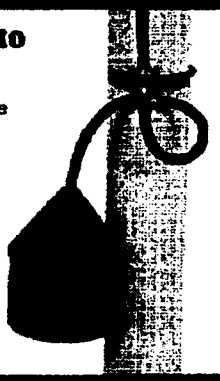
Revision Date: February 2008

Detail # PT-1.500-TS

DELLINGER PRECAST
4531 North Hwy 16 • Denver, N.C. 28037 • Phone: 800-948-1666 • 704-483-2868 • Fax: 704-483-2363

SENSOR FLOAT® control switch

Mercury-activated, narrow-angle float switch designed to activate pump control panels and alarms.



This narrow-angle sensing device is used to accurately monitor liquid levels in sewage and non-potable water applications. The Sensor Float® control switch is not sensitive to rotation and is suitable for use with intrinsically safe circuits. Contact SJE-Rhombus regarding specific intrinsically safe applications.

Normally Open Model (high level)
The control switch turns on (closes) when the float tips slightly above horizontal signaling a high level, and turns off (opens) when the float drops slightly below horizontal.

Normally Closed Model (low level)
The control switch turns on (closes) when the float drops slightly below horizontal signaling a low level, and turns off (opens) when the float tips slightly above horizontal.

FEATURES

- Suitable for use with intrinsically safe circuits.
- Not sensitive to rotation.
- Control differential of .5 inches (1 cm) above or below horizontal.
- UL Listed for use in non-potable water and sewage.
- CSA Certified.
- Three-year limited warranty.

OPTIONS

This switch is available:

- for normally open (high level) applications or normally closed (low level) applications.
- in standard cable lengths of 10, 15, 20, or 30 feet and 3, 5, 6, or 10 meters.
- with three mounting options that allow for flexibility in installation:

  Mounting Clamp: for applications where the switch can be attached to a discharge pipe or similar mounting device.

  Internally Weighted: for applications where the switch can be suspended from above.

  Externally Weighted: for applications where the switch can be suspended from above.

SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL,CSA) SJOW, water-resistant (CPE) jacket

FLOAT: 3.38 inch diameter x 4.55 inch long (8.58 cm x 11.56 cm), high-impact, corrosion resistant, PVC housing for use in sewage and non-potable water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 psi

MERCURY TILT SWITCH: single pole, single throw, mercury-to-mercury contacts, hermetically sealed in a steel capsule and epoxy sealed in the float housing

ELECTRICAL: 5 amp, 120/230 VAC, 50/60 Hz

SJE Rhombus
SJ Electro Systems, Inc.
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE / 1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com

Sensor Float® control switch installation instructions

⚠WARNING **ELECTRICAL SHOCK HAZARD**
Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

⚠WARNING **EXPLOSION OR FIRE HAZARD**
Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

MOUNTING THE SWITCH

1. Place the cord into the clamp as shown in Figure B
2. Locate clamp at desired activation level and secure the clamp to the discharge pipe as shown in Figures A and B. **Note:** Do not install cord under hose clamp.
3. Tighten the hose clamp using a screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.
4. Bring cable leads back to control device and wire according to Figure C.
5. Check installation. Allow system to cycle to insure proper operation.

Note: All hose clamp components are made of 18-8 stainless steel material. See your SJE-Rhombus supplier for replacements

Figure A

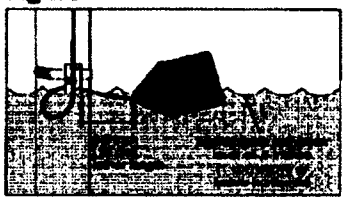
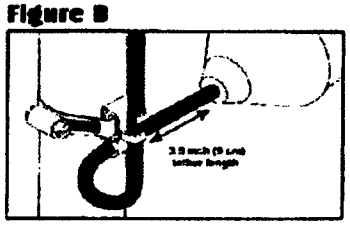


Figure B



INTERNAL WEIGHT

1. Determine desired activation level.
2. Suspend switch 7 inches (18 cm) below desired activation level as shown in Figure D. Switch remains partially submerged during the "on" tipping action. Switch can be totally submerged and still continue to operate properly.
3. Wire cable leads directly into control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Figure C - Wiring Diagram

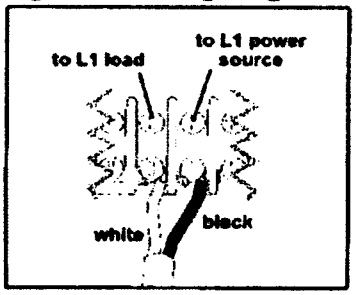
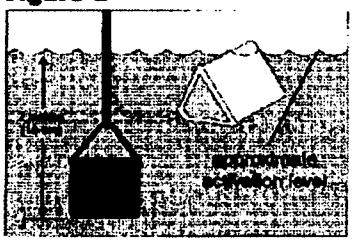


Figure D



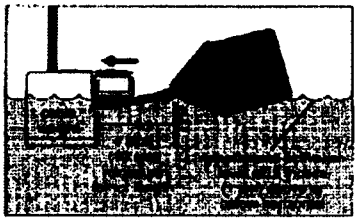
CABLE WEIGHT

1. Determine desired activation level.
2. Suspend switch and cable weight at desired activation level as shown in Figure E.
3. Wire cable leads directly into control device as shown in Figure C.
4. Check installation. Allow system to cycle to insure proper operation.

Cable weight is attached to switch cable at the factory. To adjust:

1. Release clip.
2. Adjust cable weight to desired position.
3. Lay switch cable in weight channel.
4. Align clip with weight channel and slide towards switch cable as shown in Figure E.
5. Snap clip snugly up to cable, moving clip to tightest possible position.

Figure E



SJE Rhombus CONTROLS
SJ ELECTRO SYSTEMS, INC.
22650 County Highway 6 ■ P.O. Box 1708 ■ Detroit Lakes, Minnesota 56502 USA
1-888-DIAL-SJE (1-888-342-5753) ■ Phone: 218-847-1317 ■ Fax: 218-847-4617
E-mail: sjc@sjcrhombus.com

Instl. Instr. PN 1009640A
Cat. Page PN 1009650A

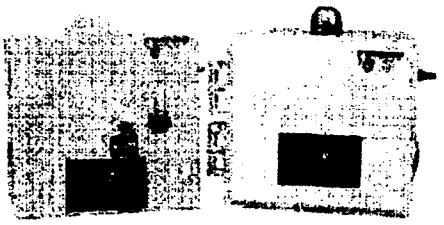
©SJE-Rhombus

Printed in USA 03/00

MODEL 112 Control Panel

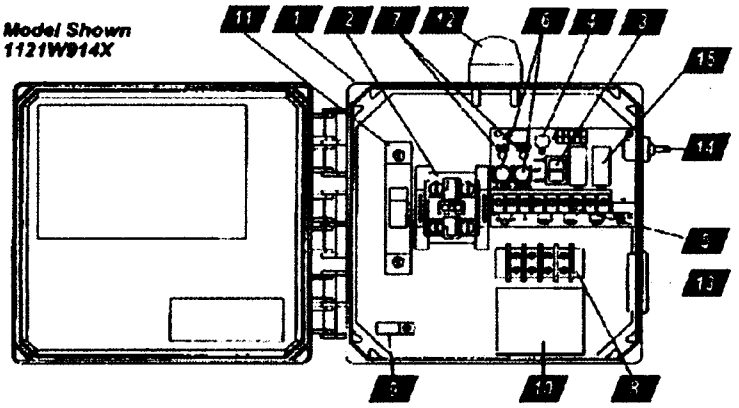
Single phase, simplex motor contactor control.

The Model 112 control panel provides a reliable means of controlling one 120, 208, or 240 VAC single-phase pump in pump chambers, sump pump basins, irrigation systems and lift stations. Two control switches activate a magnetic motor contactor to turn the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system.



Indoor *Indoor/outdoor*

Model Shown
1121W914X



1. **Enclosure** measures 8 x 8 x 4 inches (20.32 X 20.32 X 10.16 cm). Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).

   * Options selected may increase enclosure size and change component layout.

2. **Magnetic Motor Contactor** controls pump by switching hot electrical lines.
3. **HOA Switch** for manual pump control (mounted on circuit board).
4. **Green Pump Run Indicator Light** (mounted on circuit board).
5. **Float Switch Terminal Block** (mounted on circuit board).
6. **Alarm and Control Fuses** (mounted on circuit board).
7. **Alarm and Control Power Indicators** (mounted on circuit board).
8. **Pump Input Power and Pump Connection Terminal Block**
9. **Ground Lug**
10. **Terminal Block Installation Label**
11. **Circuit Breaker** (optional) provides pump disconnect and branch circuit protection.

STANDARD ALARM PACKAGE (other options available)

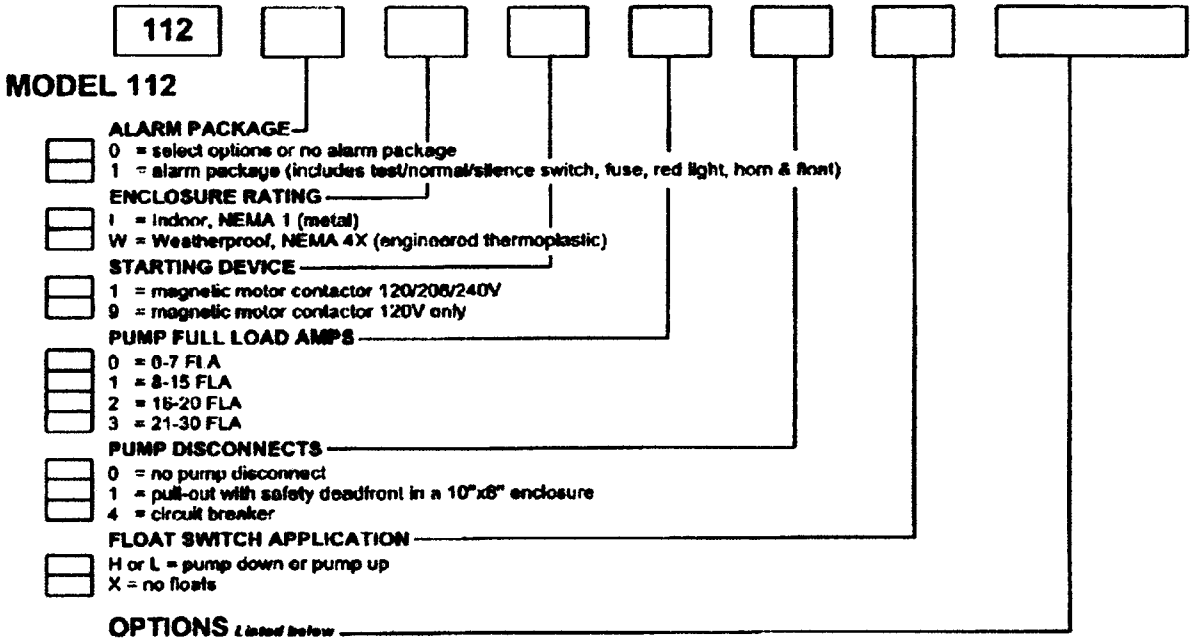
12. **Red Alarm Beacon** provides 360° visual check of alarm condition. **Note:** NEMA 1 style utilizes a door mounted indicator in lieu of a beacon.
13. **Alarm Horn** provides audio warning of alarm condition (83 to 85 decibel rating). **Note:** NEMA 1 style utilizes an internally mounted buzzer (83 to 85 decibel) in lieu of horn.
14. **Exterior Horn Test/Normal/Silence Switch** allows alarm horn to be silenced and testing of horn and light to ensure proper operation of alarm system.
15. **Horn Silence Relay** automatically resets alarm after alarm condition has been resolved (mounted on circuit board).

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes three 20' Sensor Float® control switches
- Complete with step-by-step installation instructions
- Three-year limited warranty

c UL us
LISTED

SJE Rhombus Controls
SJ ELECTRO SYSTEMS, INC.
PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE 11-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com



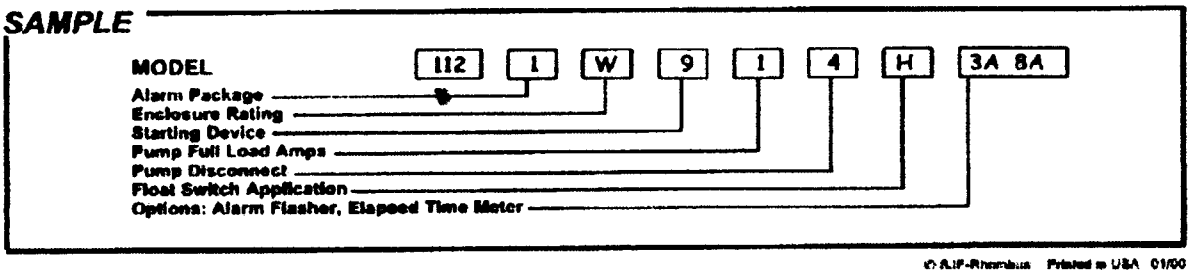
If additional features are required, call the factory for a quote on either a Pre-Line or Engineered Custom control panel system.

	CODE	DESCRIPTION
☐	1A	Rod beacon only / no audio *must select 1E if floats included*
☐	1C	Horn only / no visual *must select 1E if floats included*
☐	1E	Alarm float
☐	3A	Alarm flasher
☐ ★	4A	Low level cutout *select option 4D if floats included*
☐ ★	4B	Rod low-level indicator & alarm *must select 4A also*
☐	4D	Low-level float
☐	6A	Auxiliary alarm contact, form C type
☐ ★	8A	Elapsed time meter
☐ ★	8C	Event (cycle) counter
☐	10E	Lockable latch - NEMA 4X
☐	10E	Lockable latch - NEMA 1
☐ ★	10F	Lightning arrester
☐ ★	10K	Anti-condensation heater

	CODE	DESCRIPTION
☐	11C	NEMA 1 alarm panel *must select option 6A*
☐	11D	NEMA 4X alarm panel *must select option 6A*
☐	15A	Control / alarm circuit breaker *Does not include the circuit board as in standard.*
☐	16A	10' cord in lieu of 20'
☐	16B	15' cord in lieu of 20'
☐	16C	30' cord in lieu of 20'
☐	16D	40' cord in lieu of 20'
☐	17A	SJE SignalMaster® / mounting strap ●
☐	17B	SJE SignalMaster® / externally weighted ●
☐	17C	Sensor Float® / internally weighted ▲
☐	17D	Sensor Float® / externally weighted ▲
☐	17E	Sensor Float® Mini / pipe clamp ▲
☐	17F	Sensor Float® Mini / externally weighted ▲
☐	19X	Door mounted pump run indicator
☐	21A	Pumpmaster® in lieu of on/off switches ●
☐	21B	PumpMaster® Plus in lieu of on/off switches ●
☐	21C	Super Single® in lieu of on/off switches ▲
☐	21D	Double Float™ in lieu of on/off switches ▲

● Mechanically-activated ▲ Mercury-activated

SAMPLE



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ZOELLER®
PUMP COMPANY
Zoeller Family of Water Solutions

MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961
(502) 778-2731 • 1 (800) 928-PUMP • FAX (502) 774-3624

visit our web site:
www.zoeller.com

SECTION: 2.20.060
FM0659
1113
Supersedes
1212

COMPARE THESE FEATURES

- Non-clogging vortex impeller design bronze class 88-8-0-4 (180 Series)
- Enclosed impeller design (191 Series)
- Float-operated, submersible (NEMA 6) 2-pole mechanical switch
- Durable cast construction. Cast iron switch case, base, motor and pump housing. No sheet metal parts to rust or corrode.
- Stainless steel screws, bolts, float rod, handle, guard, arm and seal assembly
- 20 ft. UL Listed 3-wire neoprene cord and plug. Extra cord lengths available in 25-35-50 foot length only.
- Motor - 60 Hz, 3450 RPM, oil-filled, hermetically sealed, automatic reset, thermal overload protected (1 Ph only)
- Maximum temperature for effluent or dewatering 130°F (54°C), WD189 120°F (49°C)
- Variable level control systems available
- Square ring & gasket - neoprene
- Shaft seal - carbon & ceramic rotary face seal with stainless steel wetted parts
- Upper & lower ball bearings running in bath of oil
- All 180/4180 series pass 3/4" spherical solids
  Model 191 pump passes 5/8" spherical solids
- On point 15-3/4" • Off point 5 1/4" (automatic units)
- Major width 12-3/4" • Height 19-5/16" (single seal pumps)
- 1-1/2" NPT discharge with 2" or 3" flange available (model 191 is not available with 3" flange)
- Corrosion-resistant powder coated epoxy finish

MODELS 4185-4186-4188-4189 DOUBLE SEAL PUMPS (Nonauto only)

- Protects motor from seal leaks
- Improved bearing lubrication.
- Helps eliminate seal and bearing damage from dry runs.
- Major width 12-3/4" • Height 21-3/16"

Note: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.

AUTOMATIC UNITS NOT RECOMMENDED FOR USE IN EFFLUENT SYSTEMS

*NOTE: No UL Listing for 200/208 1 Phase Pumps, Model 186 & 191, or Double Seal Series.

Nonautomatic Model for variable level systems

See Back Page for UL & CSA Listings

185 - 186 - 188 - 189 Single-Seal Series
4185 - 4186 - 4188 - 4189 Double-Seal Series
191 Single-Seal Drip Pump

(For Pump Prefix Identification see News & Views 0052)

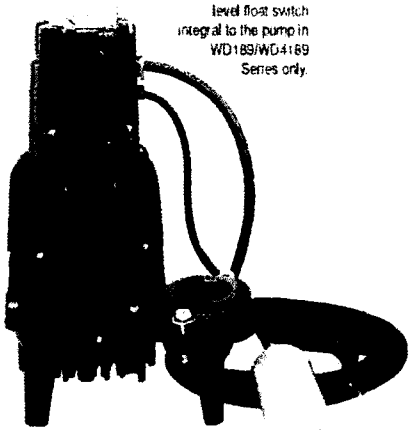
Tested to UL Standard UL778 & Certified to CSA Standard C22.2 No. 108

HIGH HEAD
FLOW-MATE

FOR SEPTIC TANK • LOW PRESSURE PIPE (LPP) AND ENHANCED FLOW STEP SYSTEMS

EFFLUENT

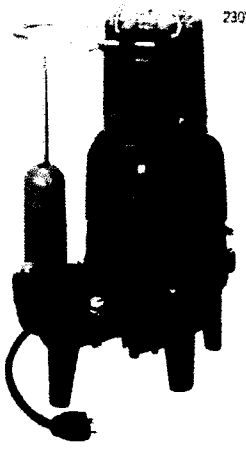
OR DEWATERING PUMP • SUBMERSIBLE
1-1/2" NPT DISCHARGE STANDARD • 2" or 3" FLANGE AVAILABLE



230V Automatic Controlled by variable level float switch integral to the pump in WD189/WD4189 Series only.



Double Seal Pump



230V/1 Ph Automatic Available in 185, 186, 188, 189 Series

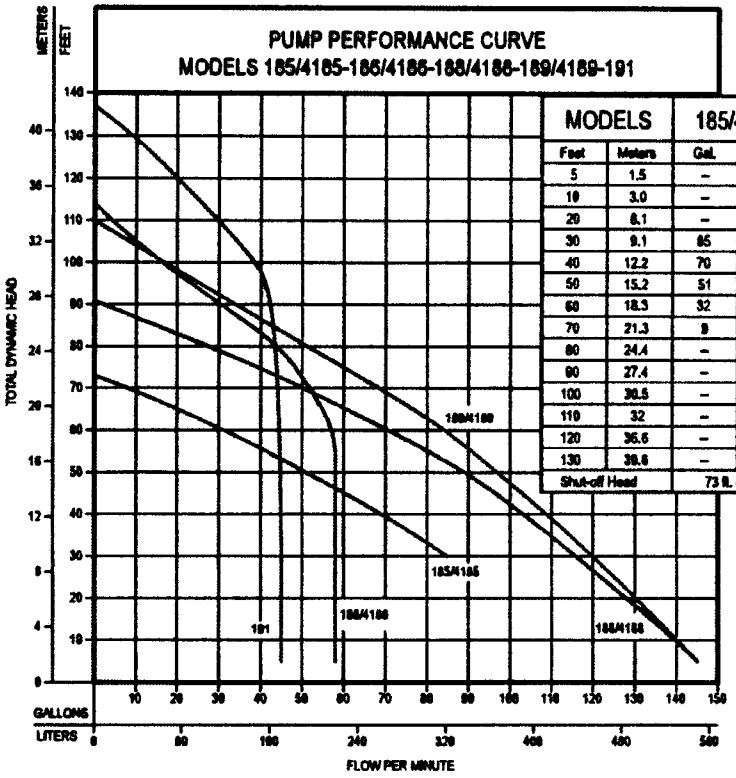


230V/1 Ph Nonautomatic Available in 185/4185 186/4186 188/4188 189/4189 Series

POWDER COATED TOUGH™

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PUMP PERFORMANCE CURVE
MODELS 185/4185-186/4186-188/4188-189/4189-191

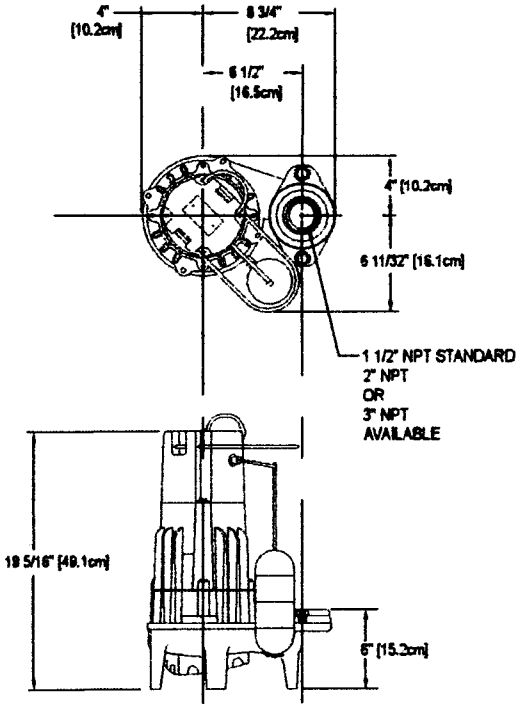


MODELS		185/4185		186/4186		188/4188		189/4189		191	
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters
5	1.5	–	–	58	220	145	549	145	549	45	170
10	3.0	–	–	58	220	140	530	140	530	45	170
20	6.1	–	–	58	220	128	484	130.5	494	45	170
30	9.1	85	322	58	220	116	439	120	454	45	170
40	12.2	70	265	58	220	103.5	392	109	413	45	170
50	15.2	51	193	58	220	90	341	97	367	45	170
60	18.3	32	121	58	220	71	269	85	322	45	170
70	21.3	9	34	52	197	51	193	69	261	45	170
80	24.4	–	–	45	170	28	106	51	193	45	170
90	27.4	–	–	38.5	115	2	8	34	129	45	170
100	30.5	–	–	15	60	–	–	17	64	40	151
110	32	–	–	4	15	–	–	–	–	30	114
120	36.6	–	–	–	–	–	–	–	–	20	76
130	39.6	–	–	–	–	–	–	–	–	10	38
Shut-off Head		73 ft. (22m)		114 ft. (35m)		91 ft. (28m)		110 ft. (34m)		137 ft. (42m)	

009903

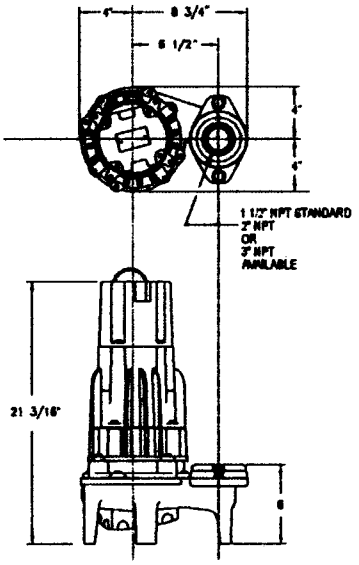
WARNING: Model 185 should not be subjected to heads less than 30 feet TDH.

Single Seal-180 Series
Automatic Design
Weight 82-89 lbs.



SK374

Double Seal-4180 Series /
Weight 89-94 lbs.



SK1413

RESERVE POWERED DESIGN

For unusual conditions a reserve safety factor is engineered into the design of every Zoeller pump.

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PUMP COMPANY

MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347
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CALCULATIONS

Location 13325 Woody Point Road
Charlotte, NC
Project Number 14-1024

Lot No:

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.275	$^{gal}/_{ft^2\,day}$
Innovative? (YES OR NO)	yes	
Supply Line Length	675	ft.
Supply Line Volume	117.45	gal.
Required Feet of Line	436	ft.
Amount of Line from Layout	450	ft.
Gallons per Minute	26.81	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Lateral Line Volume	293.85	gal.
Dosing Volume	205.70	gal.
	Note: Dosing Volume at 70% line volume	
Tank Draw Down	7.1	in.
	Generic Draw Down of 29 gal.per in.	
Pump Run Time	7.67	minutes
Elevation Head	75	ft.
Pressure Head	2	ft.
Friction Factor	1.47	ft./100 ft. *(From the interpolater.)*
Friction Head	9.92	ft.
Friction Head + 15%	11.41	
Total Dynamic Head	88.41	ft.

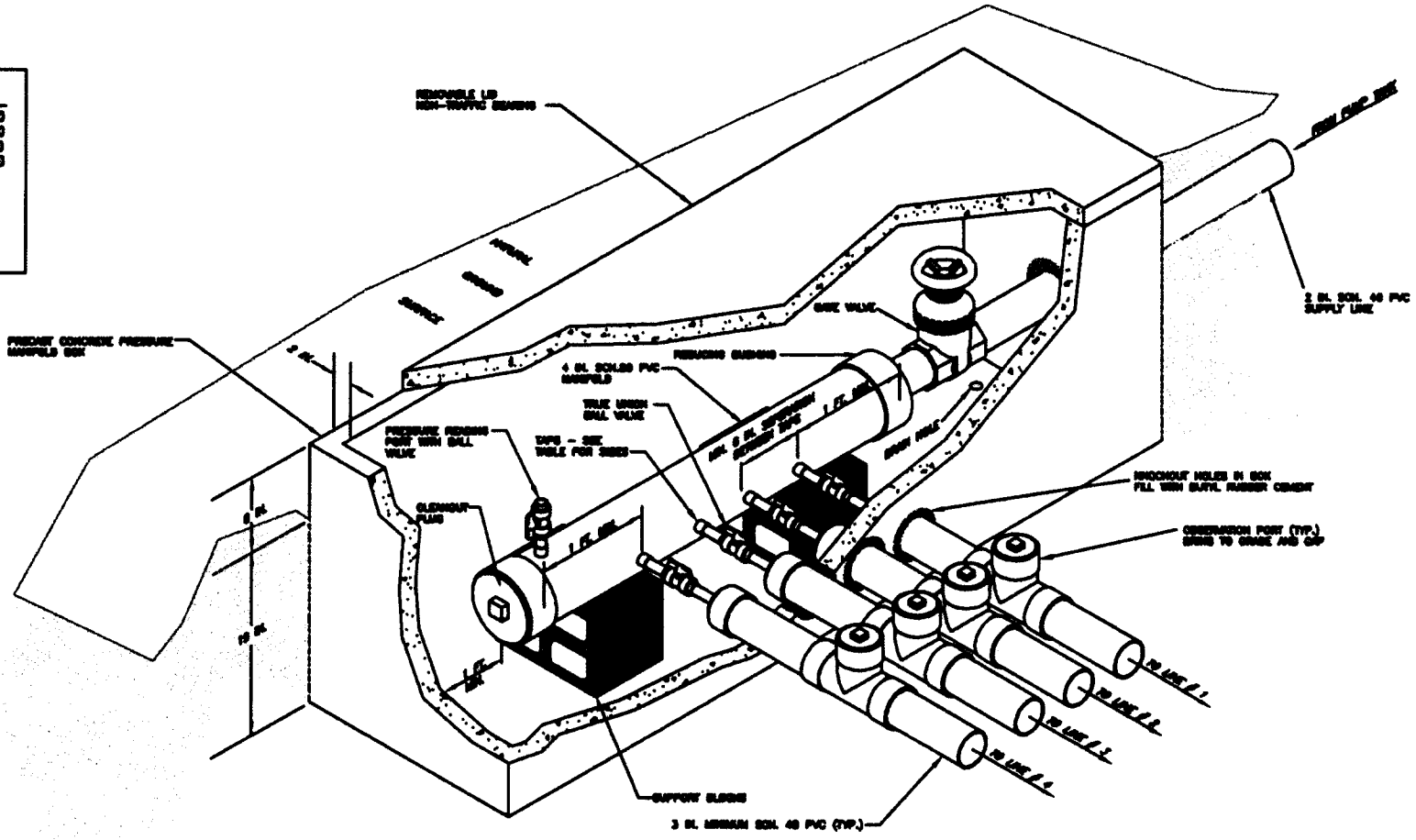
FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
27	1.47
30	1.78
	-1.76
35	2.37
37	2.63
40	3.03
42.4	3.39
45	3.77
46.51	4.01
50	4.58
57.11	5.89
60	6.42

PRESSURE MANIFOLD DETAILS
FOR
13325 WOODY POINT ROAD

TAP SIZES

LINE No.	TAP SIZE
1	1/2" SCH. 80
2	1/2" SCH. 40
3	1/2" SCH. 40
4	1/2" SCH. 40



Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (980) 314-1680 Fax: (704) 336-6894

NC DHHS
Division of Environmental Health
On-Site Wastewater Section

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

File #: 5723B Permit #: 6786 Tax Parcel #: 199 08590

Property Owner: David L. Mendenhall

Job Location Address: 13325 Woody Point Rd

City: Charlotte State: NC Zip Code: 28278

Operation Permit Issuance Date: 1-9-18 Contractor Name: Steve Autry

Permitted Design Flow: 480 GPD Liquid Capacity of Dosing Tank: 1000 gallons

Liquid Capacity of Septic Tank: 1000 gallons Manufacture Dellinger Effluent Pump Model: 1.5hp

Drainfield Installation ☐ N/A

Trench Depth: 36 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 436 feet

# of Lines: 4 @ various feet lengths

Depth of Media: 12 inches (Type) Chambers

Depth of Cover: 24 inches

Distribution Device: pressure manifold

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

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Depth of Cover: _____ inches

Distribution Device: _____

Water Supply Source

☐ Municipal ☒ Private Well ☐ Community Well

☐ Other _____

System Installation Setbacks

Distance from Building Foundation: 10+ feet

Distance from Property Line: 10+ feet

Distance from Water Supply Source: 50+ feet

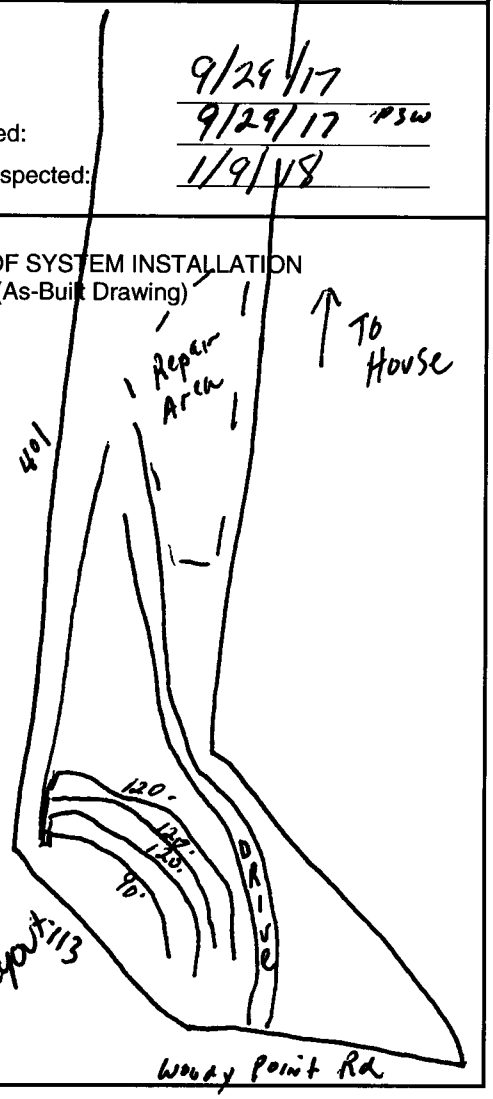
Inspection Dates

Tank(s) Inspected: 9/29/17

Excavation Inspected: 9/29/17 PSW

Pump & Controls Inspected: 1/9/18

SKETCH OF SYSTEM INSTALLATION
(As-Built Drawing)



Refer to consultants Plan. Installed according to design report 113

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

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

Comments: System Classification & Type: III b @ IQ 480 / P / NA / NA

DHHS Authorized Agent: Bradley W. Hallman Signature: _____

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (980) 314-1680 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

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

File #: 5723B Permit #: 6786 Tax Parcel #: 199-085-90

Property Owner: David L. Mendenhall

Job Location Address: 13325 Woody Point Rd.

City: Charlotte State: NC Zip Code: 28278

OPERATION PERMIT CONDITIONS:

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

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

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

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

System Classification: IIIb

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

Subsurface system operator required: Yes ☐ No ☒

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

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

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

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

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

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

V. Other:

DENR Authorized Agent: Bradley W. Hallman Date: 1-9-18

Signature:

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

Septic System Pre-Construction Meeting Checklist

File # 5723 B App # 6786 Tax Parcel # 199 085 90

Property Owner: David L. Mendenhall

Job Location Address: 13325 Woody Point Rd

City: Charlotte State: NC Zip Code: 28278

1. **Does System design match facility, flow & wastewater characteristics?**

   ☑ YES ☐ NO

   Comments: _____

2. **Is there sufficient available space for the septic systems initial and repair areas?**

   ☑ YES ☐ NO

   Comments: _____

   _____

3. **Can the septic system be installed per the permit conditions and drawing on file?**

   ☑ YES ☐ NO

   Comments: _____

   _____

* If "NO" is checked for any of the above the existing permit may need to be revoked.

Permission is hereby given to ☐ install ☐ alter ☐ repair an on-site wastewater treatment & and disposal system, with subsurface soil absorption and effluent discharge meeting all of the construction requirements of 15A NCAC 18A .1900 which are in effect on the date of granting this approval. System shall not be installed while soils are in wet condition.

Phil Walker, Phil Walker REHS — 9/8/17

Authorized Agent — Date

Steve Autry

Others Present

S

FEE: 200.00

DATE:1/20/2017

MECKLENBURG COUNTY
GROUNDWATER & WASTEWATER SERVICES

FILE NUMBER: 5723B

PERMIT NUMBER: 30006786

PARCEL NUMBER: 19908590

JOB LOCATION INFORMATION

ADDRESS: 13325 WOODY POINT RD

CITY: CHARLOTTE **STATE: NC** **ZIP:** 28278

ISSUED TO: David L Mendenhall

CONSTRUCTION AUTHORIZATION ISSUANCE DATE: 1/19/2017

CONSTRUCTION AUTHORIZATION CONDITIONS

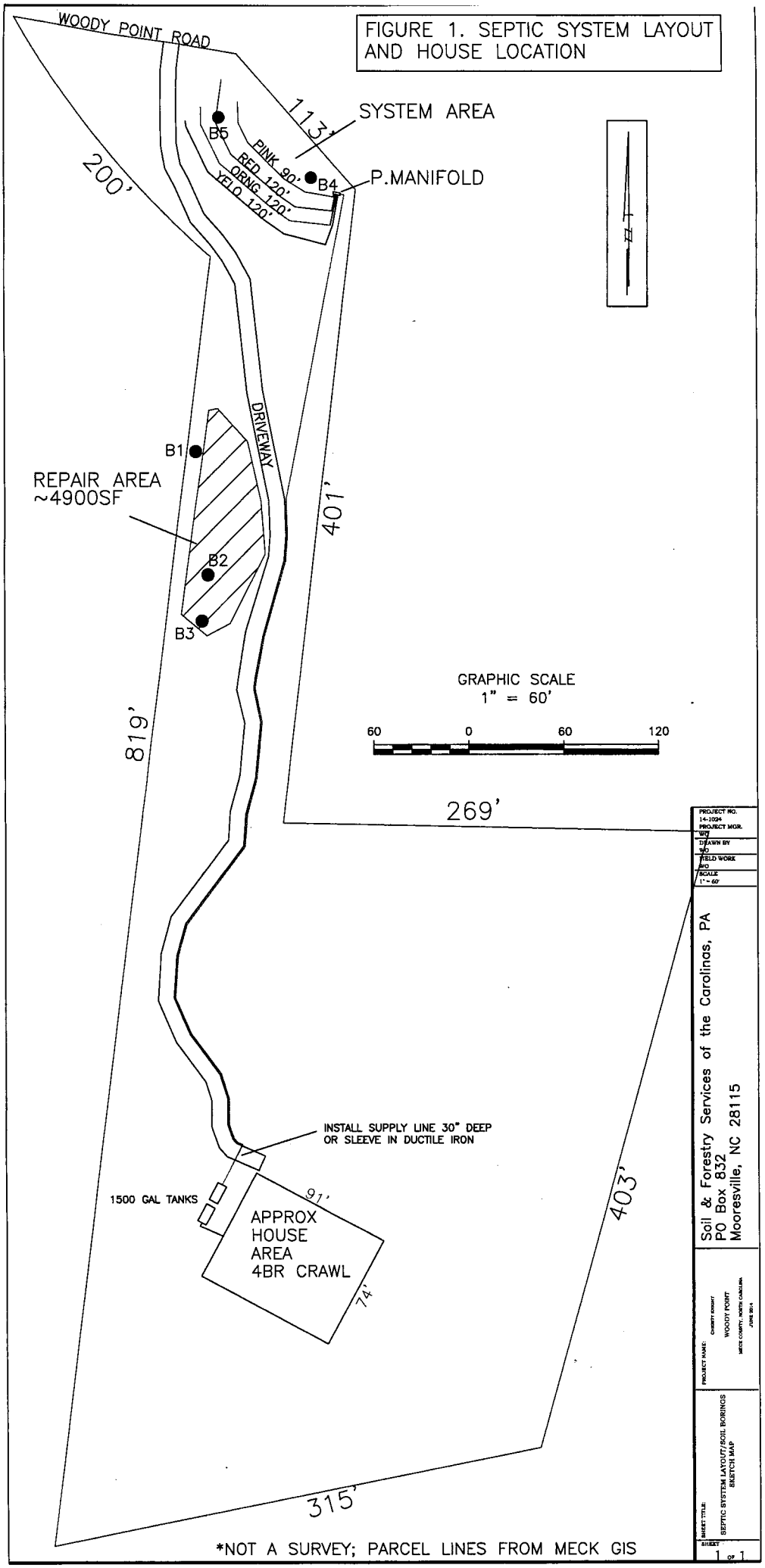
1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NUMBER 30006786, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

2. A PRE-CONSTRUCTION MEETING MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A LICENSED SEPTIC TANK CONTRACTOR WITH THE NORTH CAROLINA ONSITE WASTEWATER CONTRACTOR INSPECTOR CERTIFICATION BOARD.

3. ANY ALTERATION IN SITE OR SOIL CONDITIONS (INCLUDING LOCATION OF STRUCTURES AND APPURTENANCES) OR MODIFICATION IN USE, DESIGN WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS AS SPECIFIED IN THE ASSOCIATED IMPROVEMENT PERMIT AND APPLICATION, MAY SUBJECT THIS CONSTRUCTION AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. THIS CONSTRUCTION AUTHORIZATION AS PROVIDED IN G.S. 130A-335(f) AND G.S. 130A-336(b) SHALL BE VALID FOR A PERIOD EQUAL TO THE VALIDITY OF THE IMPROVEMENT PERMIT, NOT TO EXCEED 60 MONTHS.

FIGURE 1. SEPTIC SYSTEM LAYOUT AND HOUSE LOCATION



*NOT A SURVEY; PARCEL LINES FROM MECK GIS

PROJECT NO. 14-1024
PROJECT MGR. WD
DRAWN BY WD
FIELD WORK WD
SCALE 1" = 60'

Soil & Forestry Services of the Carolinas, PA
PO Box 832
Mooresville, NC 28115

PROJECT NAME: CHERRY CONCEPT
WOODY POINT
MECK COUNTY, NORTH CAROLINA
JUNE 2014

SHEET TITLE: SEPTIC SYSTEM LAYOUT/SOIL BORINGS SKETCH MAP

SHEET 1 OF 1

Sader, Linda

From: Sader, Linda
Sent: Tuesday, June 17, 2014 8:27 AM
To: 'dave@charlottebound.com'
Subject: 13325 Woody Point Rd Improvement Permit
Attachments: 13325 Woody Point Rd IP.pdf

Good morning,

The Improvement Permit for 13325 Woody Point Rd is attached. Please sign and return a signed copy to me - email or fax is fine.

Thank you.

Linda Sader
Environmental Management and Support Services
Clerk to the Groundwater Advisory Committee
700 N. Tryon St., Suite 211
Charlotte, NC 28202-2222
704-336-7291 (phone) 704-336-6894 (fax)
linda.sader@mecklenburgcountync.gov

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date: 04/16/14
Receipt #: 89146
Check / Auth #: CHECK 4032
Received By: SADERLW

Amount: 250.00
Tendered: 250.00
Returned: 0.00

Account Information

Account #: 200000
Contractor: KNIGHT JENNIFER C
Attn:
Address: 14126 MONTECASTILLO PL
Address:
City/State/Zip: CHARLOTTE, NC 28278

Item	Description	Permit#	Quantity	Unit Price	Total Price
0701	Improvment Permit App-Residen 13325 WOODY POINT RD		1	250.00	250.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
50.00	265.00	2,019.65			