Groundwater & Wastewater Services
Septic Project File & Data Review Worksheet

GWS File #: 8063B WASPS App #: 7741

Primary ES assigned to project: Brad Hallman

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 ☑ Drawn by consultant	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: 4			
	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)	Proposed System Type stated-Repair	Yes ☑	No ☐	N/A ☐
130A-336 (a)(3)	System location identifiable by setbacks - Initial	Yes ☑	No ☐	N/A ☐
.1937(g) .1945(b)	System components shown – Initial	Yes ☑	No ☐	N/A ☐
.1945(b)	Repair area shown	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Does System design match facility, flow & WWcharacteristics?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is System design consistent with soil/site conditions?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is the System located in the approved area?	Yes ☑	No ☐	N/A ☐
130A-336(a)	Is the Design flow (gpd) indicated?	Yes ☑	No ☐	N/A ☐

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

II. WASPS Review:

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

Items requiring correction/modification: _____

Comments:

_____

_____

_____

_____

_____

IA issued date: 2-10-16

OP issued date: 2-24-16

Review performed by: JAM Date performed: 3-1-16

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 # 8063B App # 4315 Tax Parcel # 137-123-09

Property Owner: Livewell Homes LLC

Job Location Address: 9504 Surface Hill Rd

City: Mint Hill State: NC Zip Code: 28227

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.**

April Burnsgarner, REHS — Authorized Agent

2-10-16 — Date

_____
Others Present

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
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NC DHHS
Division of Environmental Health
On-Site Wastewater Section

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

File #: 8063B Permit #: 4315 Tax Parcel #: 137-123-12 (8)

Property Owner: Live Well Homes

Job Location Address: 9504 Surface Hill Rd

City: Mint Hill State: NC Zip Code: 28227

Operation Permit Issuance Date: 2-29-16 Contractor Name: RCS

Permitted Design Flow: 480 GPD Liquid Capacity of Dosing Tank: N/A gallons

Liquid Capacity of Septic Tank: 1000 gallons Manufacture JNS STB97NG 10-2-15 Effluent Pump Model: N/A

Drainfield Installation ☐ N/A

Trench Depth: 22 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 432 feet

# of Lines: 4 @ 108 feet

Depth of Media: 12" inches (Type) Quick 4 wide

Depth of Cover: 10 inches

Distribution Device: end caps

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: 24' feet

Distance from Property Line: 12' feet

Distance from Water Supply Source: 10'+ feet

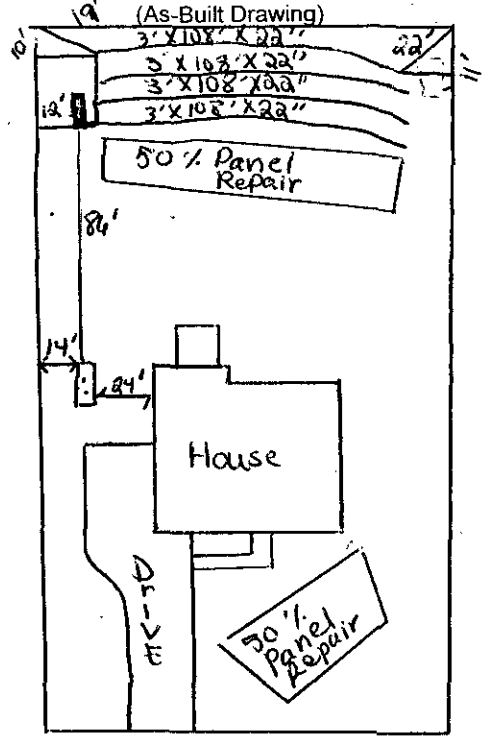
Inspection Dates

Tank(s) Inspected: 2-22-16

Excavation Inspected: 2-22-16

Pump & Controls Inspected: N/A

SKETCH OF SYSTEM INSTALLATION (As-Built Drawing)



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: IIIg/IQ4/g/NA/NA

DENR Authorized Agent: April Bumgarner Signature: April Bumgarner, REHS

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

NC DENR
Division of Environmental Health
On-Site Wastewater Section

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

File #: 8063 B Permit #: 4315 Tax Parcel #: 137-123-09 12

Property Owner: Live Well Homes

Job Location Address: 9504 Surface Hill Rd

City: Mint Hill State: NC Zip Code: 28227

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: IIIg

*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: April Bumgarner Date: 2-22-16

Signature: April Bumgarner

MECKLENBURG COUNTY
HEALTH DEPARTMENT

X 44709 8063B Application # 7741

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: 137-023-12
STREET ADDRESS: 9504 Surface Hill Road
CITY: Mint Hill
STATE: NC **ZIP:** 28227
SUBDIVISION NAME: The Woods of Bainbridge
LOT #: 2 **LOT SIZE (acres):** 1.56

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: 2,920
NUMBER OF BEDROOMS: 4
NUMBER OF OCCUPANTS: 3

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 _____

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 ____

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?** _____ ☑ N/A

12. **PROPERTY OWNER:**

NAME: Livewell Homes, LLC
ADDRESS: 501 Springcrest Drive
CITY: Fort Mill
STATE: SC ZIP: 29715
WORK PHONE: (704) 777-8266
MOBILE PHONE: _____
FAX: _____
E-MAIL: dbowden@livewellhomes.net

13. **OWNER'S LEGAL REPRESENTATIVE, IF APPLICABLE:**

NAME: N/A
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.

DB (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.

Donnie Bowden _____ 9/9/15

Property Owner's or Owner's Legal Representative Signature — Date

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OFFICE USE ONLY

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

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

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

APPLICATION PROCESSED BY: _____

GWS FILE NUMBER ASSIGNED: _____

APPLICATION ID NUMBER ASSIGNED: _____

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: 12/15/10

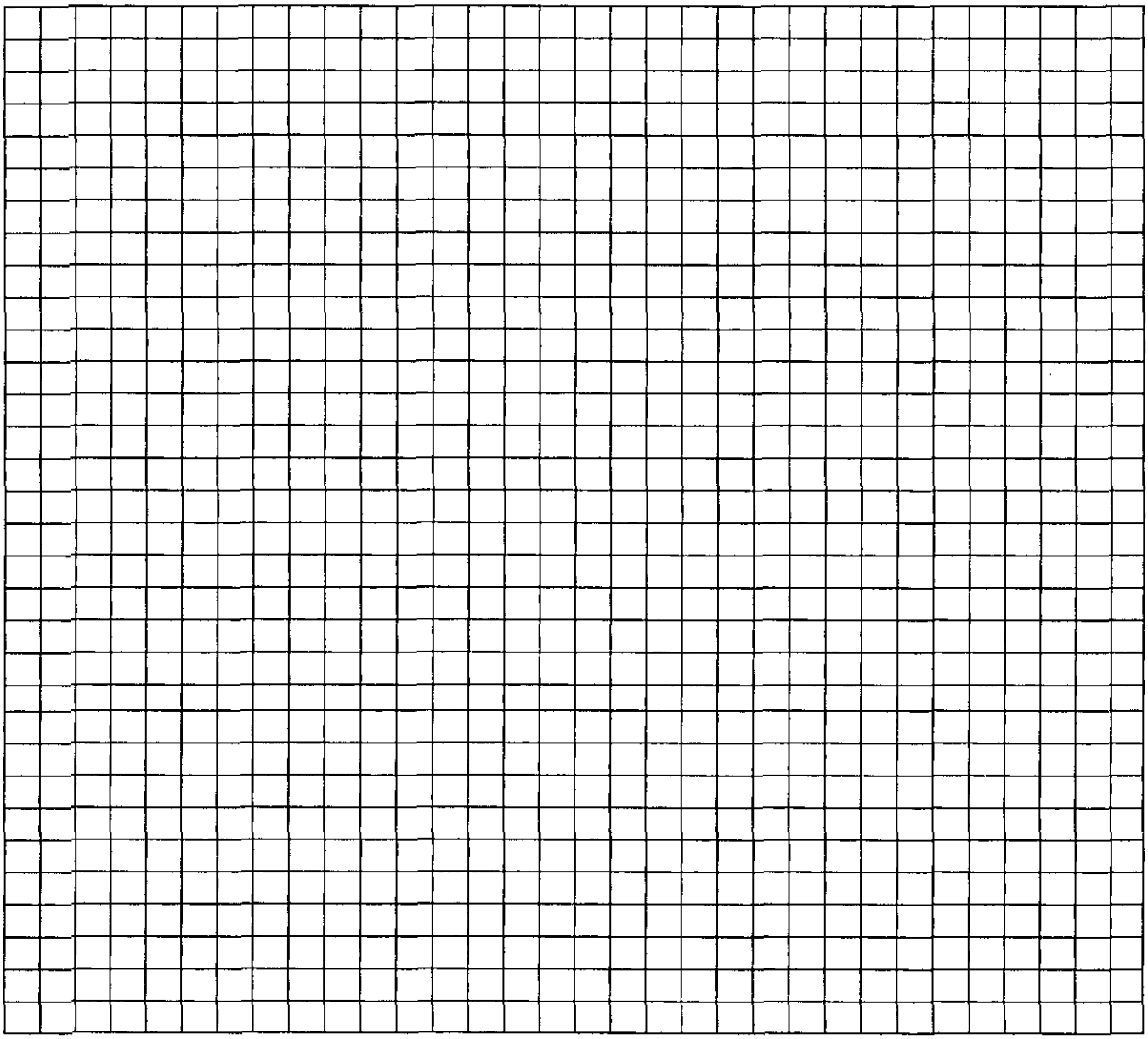
File #: _____

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: _____ Tax Parcel #: _____

Subdivision Name: _____ Lot #: _____



_____ _____

Property Owner's or Owner's Legal Representative Signature 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

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

Sheet: 1 of 2
Property ID: 137-123-12
Lot #: 2
File #: 8063B
AppID: 7678

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Property Owner: Livewell Homes
Address: 501 Springcrest Dr, Fort Mill, NC 29715
Proposed Facility: 4 Bedroom House
Design Flow (.1949): 480 GPD
Location: 9504 Surface Hill Rd, Mint Hill, NC 28227
Water Supply: [ ] Public [ ] Individual [ ] Well [ ] Spring [X] Municipal
Evaluation Method: [X] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

Applicant: owner
Date Evaluated: 8/12/15
Property Size: 1.56 ac
Property Recorded: Unknown

PROFILE #	1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY 1941 Structure/ Texture	SOIL MORPHOLOGY 1941 Consistence Mineralogy	b PROFILE FACTORS 1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1956 Sapro Class	1944 Restr Horiz	General Comments	Profile Class & LTAR	Maximum Trench Bottom Depth for 3' Wide Conventional Trench
Boring #1	LS 4%	0 - 12	wfsbk CL	SS SP FR SEXP	>49"	49	NA	NA	saprolite inclusions 28 - 49"	PS IV 0.3	36"
		12 - 28	mfsbk C	S P FI SEXP							
		28 - 49	mfsbk CL	SS SP FR SEXP							
Boring #2	LS 4%	0 - 4	wfsbk CL	SS SP FR SEXP	>49"	49	NA	NA	saprolite inclusions 31 - 49"	PS IV 0.3	36"
		4 - 31	mfsbk C	S P FI SEXP							
		31 - 49	mfsbk SCL	SS SP FR SEXP							
Boring #3	R 2%	0 - 6	wfsbk CL	SS SP FR SEXP	few 2 chroma @ 36"	48	NA	NA	yellow brown and a few 3 chroma mottles 17 - 38" lithochromic mottles 30 - 48"	PS IV 0.275	24"
		6 - 48	mfsbk C	S P FI SEXP							
Boring #4	R 4%	0 - 12	gr SL	SS SP FR SEXP	>48"	48	NA	NA	yellow brown mottles 20 - 30" saprolite inclusions 37 - 48"	PS IV 0.275	36"
		12 - 37	mfsbk C	S P FI SEXP							
		37 - 48	mfsbk SCL	SS SP FR SEXP							

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

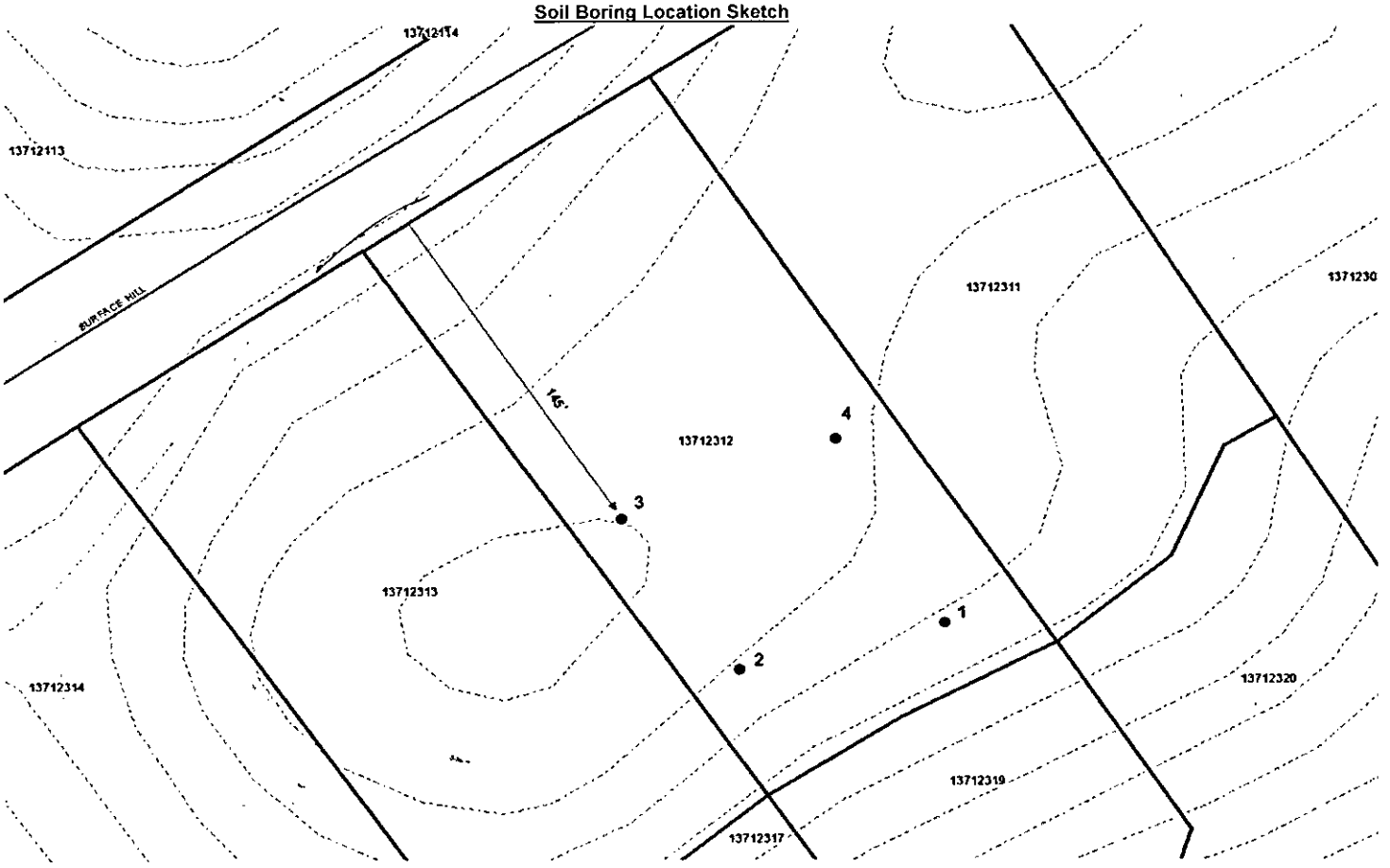
Other Factors (.1946): NA
Soil Evaluation By: Jacob Presley, REHS, LSS
Others Present:
Site Classification (.1948): Provisionally Suitable
Site Evaluation By: Brad Hallman
Others Present:

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
				m-moderate
		SiL-Silt Loam		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

Soil Boring Location Sketch



Mecklenburg County Groundwater & Wastewater Services
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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 #: 30007678 GWS File #: 8063B Tax Parcel #: 137-123-12

- 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):** 8/26/2020

Type of Installation: Residential - New System Lot Number: 2

Structure Type: HOUSE Size (ft^2): 2920 # Bedrooms: 4 # Occupants: 3

Building Foundation: Crawl Space Water Supply: Municipal

II. Initial System Type: Accepted **System Classification:** IIIg

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.275	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	N/A
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1309	Total Trench Length (ft):	436
Maximum Trench Depth (in):	22	Depth of Media (in):	12	Distribution Device:	Drop Boxes		

III. Repair System Type: Accepted **System Classification:** IIIg

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.275	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	N/A
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1309	Total Trench Length (ft):	436
Maximum Trench Depth (in):	22	Depth of Media (in):	12	Distribution Device:	Drop Boxes		

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the STATE OF NORTH CAROLINA, 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 a Pre-Construction meeting has been completed by the Department.
- The septic system installer shall be a licensed septic contractor with the North Carolina Wastewater Contractor Inspector Certification Board.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

Authorized Agent: Brad Hallman Owner/Legal Agent: Donnie Bowden
Print Name

Signature: Signature:

Date Issued: 8/26/2015

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 #: 30007678 GWS File #: 8063B

IV. Permit Conditions/Comments:

- Additional soil cover, as specified on the plot plan, required over the drain field must be inspected and approved 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.
- 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 invert of the sewer pipe exiting the structrue should be kept as high as possible in order to achieve gravity flow to the drain field. A dosing tank will be required if gravity flow to the drain field can not be achieved.
- 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 undersigned, an authorized agent of the STATE OF NORTH CAROLINA, 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 a Pre-Construction meeting has been completed by the Department.
- The septic system installer shall be a licensed septic contractor with the North Carolina Wastewater Contractor Inspector Certification Board.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

Authorized Agent: Brad Hallman

Signature: _____

Date Issued: 8/26/2015

Owner/Legal Agent: Dennis Bowden
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 #: **30007741** GWS File #: **8063B** Tax Parcel #: **137-123-12**

- 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):** 9/15/2020

Type of Installation: Residential - Modified Plot Plan Lot Number: 2

Structure Type: HOUSE Size (ft^2): 2920 # Bedrooms: 4 # Occupants: 3

Building Foundation: Crawl Space Water Supply: Municipal

II. Initial System Type: Accepted **System Classification:** IIIg

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.275	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	N/A
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1309	Total Trench Length (ft):	436
Maximum Trench Depth (in):	22	Depth of Media (in):	12	Distribution Device:	Drop Boxes		

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

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.275	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	1000
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	873	Total Trench Length (ft):	291
Maximum Trench Depth (in):	22	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 STATE OF NORTH CAROLINA, 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 permitted system shall be installed in accordance with the included PLOT PLAN.
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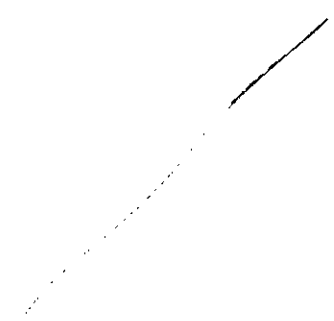
Authorized Agent: Brad Hallman

Signature: _____

Date Issued: 9/15/2015

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 #: **30007741** *GWS File #:* **8063B**

IV. Permit Conditions/Comments:

- This type of repair system requires the installation of a pump tank and all associated components. This type of system will require routine inspections by our office. The system owner is responsible for all fees associated with these inspections.
- This type of repair system requires the property owner to obtain a contract with a Certified Operator to perform routine inspections and maintenance on the system.
- This type of repair system requires periodic inspections by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All components of the septic system must be installed in accordance with the required setbacks listed on the corresponding plot plan.
- All waterlines must be located a minimum of 10 ft. from any part of the septic system.
- All components of the septic system must be located a minimum distance from the normal pool elevation or mean high water mark for the nearby body of water. See plot plan for minimum setback requirements.
- 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 invert of the sewer pipe exiting the structrue should be kept as high as possible in order to achieve gravity flow to the drain field. A dosing tank will be required if gravity flow to the drain field can not be achieved.
- 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.

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- The septic system installer shall be a licensed septic contractor with the North Carolina Wastewater Contractor Inspector Certification Board.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

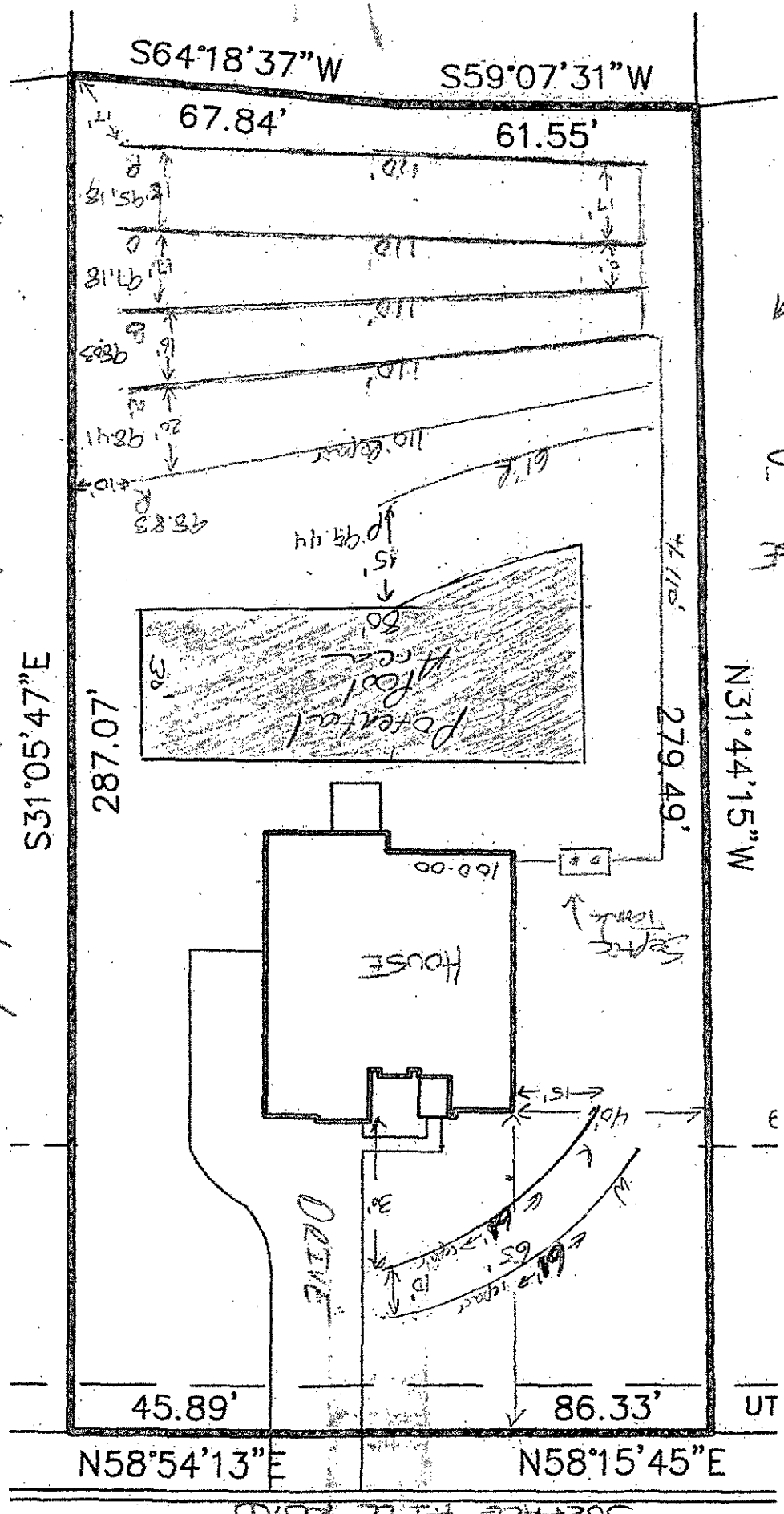
Authorized Agent: Brad Hallman

Signature: _____

Date Issued: 9/15/2015

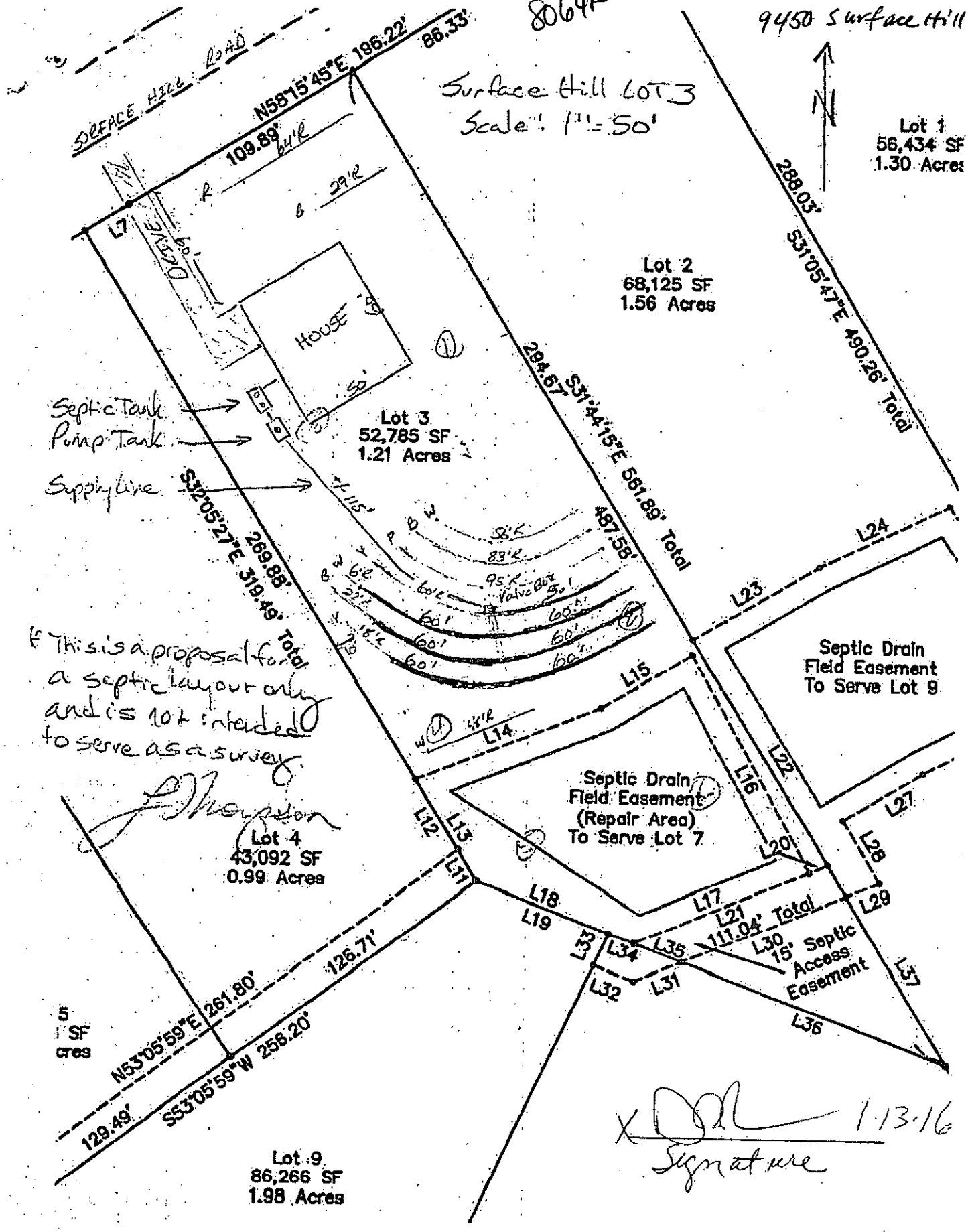
Owner/Legal Agent: _____
Print Name

Signature: _____


S64°18'37"W
S59°07'31"W
67.84'
61.55'
S31°05'47"E
287.07'
N31°44'15"W
279.49'
House
45.89'
86.33'
N58°54'13"E
N58°15'45"E

8064B

9450 Surface Hill Rd



If This is a proposal for a septic layout only and is not intended to serve as a survey.

1.13.16

Signature

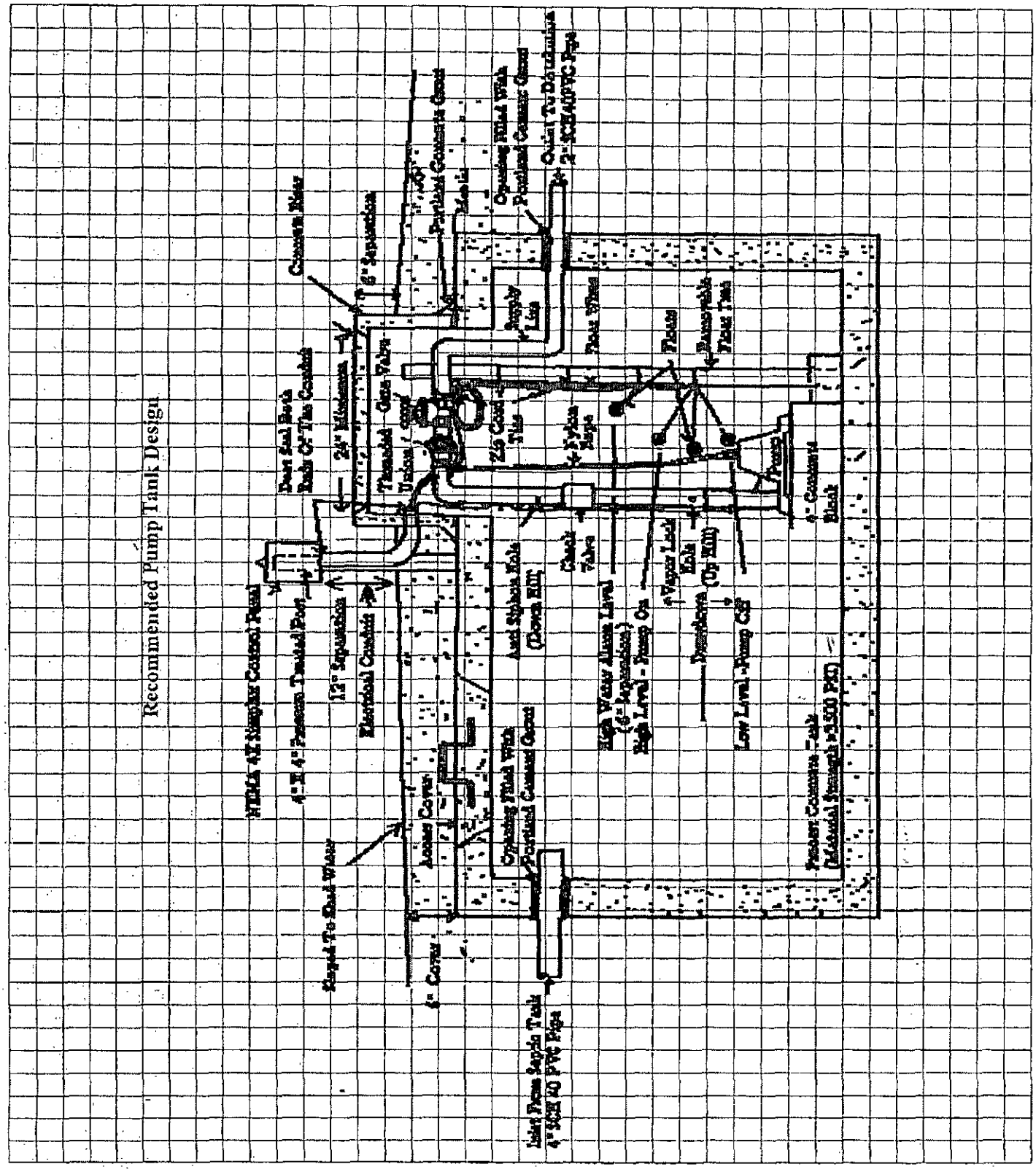
Thompson Environmental Consulting
PO Box 541
Midland, NC 28107-0541

Tax ID Number: 137-123-09 PO

Location: Surface Hill Road – Lot 3

Date: April 18, 2014

Recommended Pump Tank Design



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 #: 30007741 GWS File #: 8063B Tax Parcel #: 137-123-12

- 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):** 9/15/2020

Type of Installation: Residential - Modified Plot Plan Lot Number: 2

Structure Type: HOUSE Size (ft^2): 2920 # Bedrooms: 4 # Occupants: 3

Building Foundation: Crawl Space Water Supply: Municipal

II. Initial System Type: Accepted **System Classification:** IIIg

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.275	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	N/A
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1309	Total Trench Length (ft):	436
Maximum Trench Depth (in):	22	Depth of Media (in):	12	Distribution Device:	Drop Boxes		

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

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.275	Septic Tank Size (gal):	1000	Pump Tank Size (gal):	1000
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	873	Total Trench Length (ft):	291
Maximum Trench Depth (in):	22	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 STATE OF NORTH CAROLINA, 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 a Pre-Construction meeting has been completed by the Department.
- The septic system installer shall be a licensed septic contractor with the North Carolina Wastewater Contractor Inspector Certification Board.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

Authorized Agent: Brad Hallman

Signature:

Date Issued: 9/15/2015

Owner/Legal Agent: Donna Brad

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 #: 30007741 GWS File #: 8063B

IV. Permit Conditions/Comments:

- This type of repair system requires the installation of a pump tank and all associated components. This type of system will require routine inspections by our office. The system owner is responsible for all fees associated with these inspections.
- This type of repair system requires the property owner to obtain a contract with a Certified Operator to perform routine inspections and maintenance on the system.
- This type of repair system requires periodic inspections by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All components of the septic system must be installed in accordance with the required setbacks listed on the corresponding plot plan.
- All waterlines must be located a minimum of 10 ft. from any part of the septic system.
- All components of the septic system must be located a minimum distance from the normal pool elevation or mean high water mark for the nearby body of water. See plot plan for minimum setback requirements.
- 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 invert of the sewer pipe exiting the structrue should be kept as high as possible in order to achieve gravity flow to the drain field. A dosing tank will be required if gravity flow to the drain field can not be achieved.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
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- No work shall be conducted on the septic system until a Pre-Construction meeting has been completed by the Department.
- The septic system installer shall be a licensed septic contractor with the North Carolina Wastewater Contractor Inspector Certification Board.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

Authorized Agent: Brad Hallman
Signature:
Date Issued: 9/15/2015

Owner/Legal Agent: Donna Baker
Print Name
Signature:

Residential Subsurface Wastewater Treatment and Disposal System Proposal

for

The Woods at Bainbridge – Lot 2
9504 Surface Hill Road
Mint Hill, North Carolina

Tax Parcel # 137-123-12
MCGWS File # 8063B
September 4, 2015

GWS Septic System Design Review

GWS File #: 8063B **Approved** ☐ **Disapproved** ☐

Design Review: ☐

Field Review: ☐

*Projects are not considered "APPROVED" until both sections above are completed and indicate an APPROVED status.

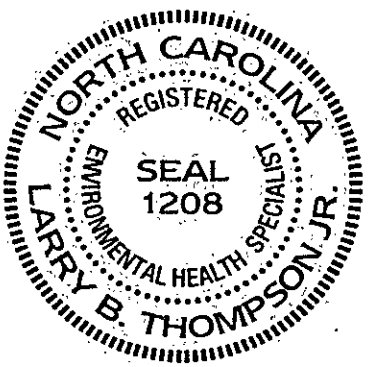
Prepared for:

LiveWell Homes
310 Springcrest Drive
Fort Mill, SC 29715
704-200-4237



Prepared by:

Larry Thompson, REHS, PWS, LSS
Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107-0541
Phone: 704-301-4881
Fax: 206-350-8895
larry@thompsonenv.com



cc: Mr. Bradley Hallman, REHS
Mecklenburg County Environmental Health

CVS Public System Design Review

CVS File #: _____ ☐ Approved ☐ Disapproved

Design Reviewer: _____ ☐ ☐

Date: _____ ☐ ☐

If not approved, please attach "APPROVED" mail port section above

LiveWell Homes must assure that the driveway and all utlities are routed around the proposed septic drainfield/septic drainfield repair area. These areas must be protected from traffic and any form of encroachment.

Details

LiveWell Homes has contracted with Thompson Environmental Consulting, Inc. (TEC) to develop a proposal for an on-site wastewater treatment and disposal system that would allow for the construction of a 4-bedroom single family residence (with a pool) served by a municipal water supply to be located at The Woods at Bainbridge – Lot 2 in Mint Hill, North Carolina.

Based upon an investigation performed by TEC it was determined that a sufficient amount of "Suitable" Group IV soils are available on this property for the installation of a system with a state approved 25% reduction in the required drainline length. The proposed repair system would be a pressure-dosed Prefabricated Porous Block Panel System.

LiveWell Homes requests that Mecklenburg County Groundwater and Wastewater Services (MCGWS) consider issuing an Improvement Permit and Construction Authorization for a 4-bedroom residence to be located on Lot 2 based upon the following revised proposal.

Location

The subject property is located on Surface Hill Road in Mint Hill, North Carolina. From Mint Hill, travel northwest on Wilgrove-Mint Hill for approximately 1.1 miles. Turn right onto Truelight Church Road and bear right onto Surface Hill Road (approximately 0.5 mile). Lot 2 is located on the right after passing the intersection of Woodhollow Road.

References

Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, October 2011.

Innovative Wastewater System No. IWWS-1993-2-R13; North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, May 1, 2015.

Primary Investigator's Credentials

NC Registered Sanitarian No. 1208
NC Licensed Soil Scientist No. 1287
SC Certified Professional Soil Classifier No. 111
NC Subsurface Septic System Operator No. 22199
NC Grade IV Wastewater System Installer No. 1762
NC Certified Wastewater System Inspector No. 17621

Plans and Specifications

A. Septic Tank

1. The septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 1500 gallons in capacity.
2. The septic tank will be fitted with an approved effluent filter and riser for easy access and periodic maintenance.
3. It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery to assure that the tank has had time to properly cure and is free of cracks or other structural deficiencies.

B. Pipes and Fittings

1. All discharge piping, connectors and supply lines should be made of SCH 40 PVC.
2. All joints must be properly "welded" utilizing the appropriate PVC cement for each application.
3. The supply line from the septic tank to the first drainline will be approximately 120 feet in length.

C. Distribution Method

1. The drainlines will be fed by serial distribution.

D. Drain Field Installation

1. The drainfield has been previously laid out on-site utilizing metal stemmed flags. Once this area has been approved by the MCGWS, the property owner/builder should mark this area and isolate it as much as possible from construction traffic. Prior to the system installation, the septic contractor shall contact the MCGWS and the system designer for a preconstruction conference at which time the drain field area will be re-verified.
2. Under no circumstances shall any construction take place within the drain field area while the soil is in a wet condition. If the installer has doubts as to whether or not the drain field area is dry enough to begin construction, the MCGWS should be contacted for permission to proceed with the installation.
3. The specified system the shallow placed innovative wastewater system "Biodiffuser" ARC 36 or other systems with a 25% reduction approval granted by the state.
4. The drain field consists of four (4) lateral trenches to be constructed 3 foot wide by 110 feet in length.
5. The maximum trench depth for this system shall be **22 inches**.
6. The drainlines are to be fed by serial distribution.
7. The laterals are to be installed on contour with the land, keeping the individual trench bottoms level from beginning to end.
8. The trenches should be left open for the final inspection by the MCGWS.

E. Final Landscaping

1. Final cover over the drainfield shall be at least 6 inches deep (additional soil cover may be required to achieve the 6 inch requirement).
2. The drainfield shall be shaped to shed rainwater and be free from low spots.
3. The drainfield area should be planted with grass as soon as possible to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

F. Utility Conflicts

1. The builder and property owner must take special care in planning for water, power, gas, telephone and cable lines. These utilities shall be kept clear of all parts of the septic system and its proposed repair area. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable damage and permit revocation. If there are any questions regarding preferred routes, contact the MCGWS as soon as possible.
2. Lawn irrigation should not be placed over the drain field area.

Maintenance

G. In General

1. The homeowner must maintain the drainfield area through periodic mowing. The drainfield must not be allowed to become overgrown.
2. The septic tank should be pumped every 3-5 years or when the solids within the septic tank reach an elevation that is equivalent to 25 percent of the volume of the tank. In some situations, the tanks may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner has the septic and pump tanks cleaned out annually.
3. When it becomes necessary to clean the effluent filter, the filter should be removed and the accumulated debris washed back into the septic tank – not onto the lawn.
4. Any damp areas, leakages or malfunctions in the drainfield area should be addressed immediately.
5. Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

H. Suggestions to the Homeowner

1. As previously mentioned, if you plan to use a garbage disposal in your home you should plan to have your septic and pump tanks cleaned out annually. The ground up garbage adds large amounts of solids into a septic tank that tend to degrade at a very slow rate.



2. Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never be put into a septic tank.
3. Used motor oil or any oily liquids should not be disposed of in a septic tank.
4. Be aware of the amount of water that you are using in your home. Water saving fixtures and devices can be installed on sinks, toilets and showers to reduce the volume of wastewater that you are sending to your drain field.
5. Run dishwashers and washing machines only when you have a full load.
6. Use liquid detergents. Powdered detergents have binding agents in them that tend to solidify in the wastewater disposal system.
7. Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drain field.
8. Do not use chemical additives in your system. Studies have indicated that they do not increase the biological activity that naturally occurs in the septic system and in some cases certain additives have been found to be detrimental to the life of a system.

Design Specifics

Daily Design Flow:	480 GPD – 4 bedroom house
Septic Tank Size:	1500 gallons (minimum)
Effluent Loading Rate:	0.275 GPD per sq. ft.
Drain Field Type:	Accepted 25% Reduction
Distribution Method:	Serial Distribution
Number of Drainlines:	4
Drain Lines:	(4) 3' Wide x 110 Feet Long
Total Trench Length:	440 Linear Feet
Maximum Trench Depth:	22 inches
Trench Spacing:	Minimum of 9 Feet on Centers
Final Cover Requirement:	6 inches (minimum)

Repair Specifics

Pump Tank Size:	1000 Gallons
Effluent Loading Rate:	Design = 0.275 GPD per sq. ft.
Number and Size of Drainlines:	5 ~~(6)~~ 3' Wide x Various Lenths 3 at 61 linear feet

	2 at 55 linear feet
Total Length of Drainline:	293 Feet
Total Panels Required:	66
Maximum Trench Depth:	~~28~~ 22 need cover 12"-36" Inches Deep
Trench Spacing:	9 Foot on Centers
Pump Requirement:	27.06 GPM @ 15 Feet TDH
Dosing Volume:	237.60 Gallons
Pump Run Time:	8.78 Minutes
Pump Tank Drawdown:	8.19 Inches

*See septic layout for site locations and additional details.

PPBPS Design Worksheet (REPAIR SYSTEM)							File #:	8063B
							Tax #:	137-123-12
System Requirements							Address:	The Woods - Lot 2
Design Flow	480	gpd						Mint Hill, NC
LTAR	0.275	gpd/ft.^2					Consultant:	Larry Thompson
Linear footage	582	ft. (conventional)					Phone:	704-301-4881
Linear footage	291	ft. (50% Reduction)						
							Reviewed By:	
Design Layout							Date:	
Laterals	Length (ft)	# Panels						
Line # 1	61	14						
Line # 2	61	14						
Line # 3	61	14						
Line # 4	55	12						
Line # 5	55	12						
Totals	**293**	**66**						
Absorption Area								
Length (ft)	Width (ft)	Area (ft^2)						
293	3	879						
System Pressure Head	2	ft.	Value selected by system designer (must be between 2-5 ft.)					
Orifice Diameter	5/32	in.	Size selected by system designer (1/8 in. minimum)					
Flow Rate per Orifice	0.41	gpm	Determined from orifice flow design table (value dependent on pressure head & orifice diameter)					
Total System Flow Rate	27.06	gpm	Total number of panels required multiplied by the orifice flow rate					
System Dose Volume	237.60	gal.	Total number of panels required multipled by 3 6 gal./panel					
Pump Run Time	8.78	min.	System dose volume divided by the total system flow rate					
Pump Tank Drawdown	8.19	in.						
Comments:								
1. Install system using 3 ft. wide trenches.								
2. Install drainlines on 9 ft. centers, level, and on contour.								
3. System design requires effluent pump for distribution.								

T & J Panels	
Linear Feet	# Panels
50	11
60	14
70	16
80	18
90	21
100	23

Thompson Environmental Consulting, Inc.
114 Orchard Ridge Road
Locust, NC 28097-8748
704-301-4881

SHEET 1 OF 1

COUNTY: Mecklenburg
TAX ID: 137-123-09 PO

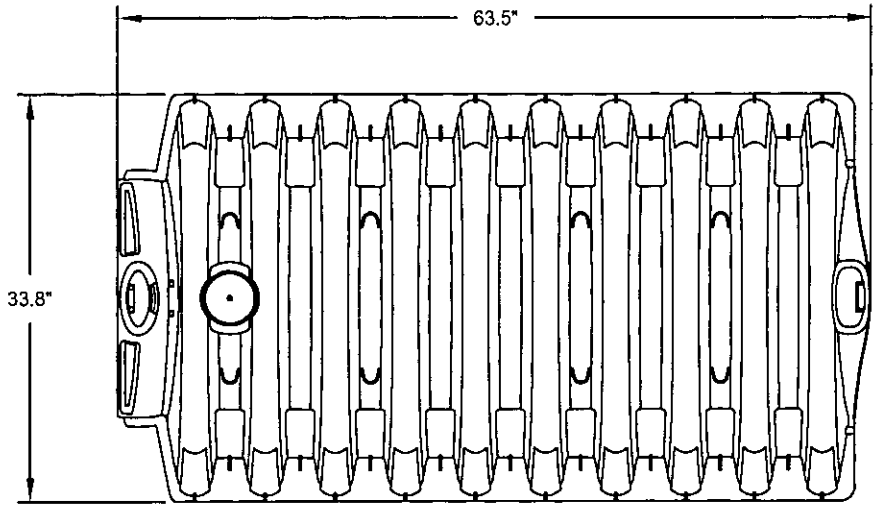
OWNER: Jason R. Bartell
LOCATION: Surface Hill Road - Lot 2

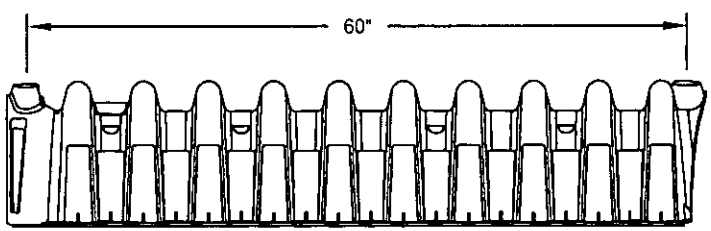
DATE: August 27, 2009

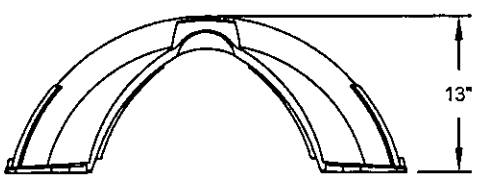
PROFILES		Pit 1	Pit 2	Pit 3	Pit 4	Pit 5	Pit 6	Pit 7	Pit 8		
LANDSCAPE POSITION	.1940	ls	ls	ls	ls	ls	ls	ls	ls		
SLOPE (%)	.1940	5%	5%	5%	5%	5%	5%	5%	5%		
HORIZON 1 DEPTH	.1943	0-10	0-8	0-8	0-10	0-10	0-6	0-9	0-10		
TEXTURE	.1941 (a)(1)	scl	scl	scl	scl	scl	scl	scl	scl		
CONSISTENCE	.1941	fr	fr	fr	fr	fr	fr	fr	fr		
STRUCTURE	.1941 (a)(2)	gr	gr	gr	gr	gr	gr	gr	gr		
CLAY MINERALOGY	.1941 (a)(3)	se	se	se	se	se	se	se	se		
HORIZON 2 DEPTH	.1943	10-48+	8-48+	8-48+	10-48+	10-48+	6-34	9-44	10-46		
TEXTURE	.1941 (a)(1)	c	c	c	c	c	c	c	c		
CONSISTENCE	.1941	fi	fi	fi	fi	fi	fi	fi	fi		
STRUCTURE	.1941 (a)(2)	sbk	sbk	sbk	sbk	sbk	sbk	sbk	sbk		
CLAY MINERALOGY	.1941 (a)(3)	se	se	se	se	se	se	se	se		
HORIZON 3 DEPTH	.1943						34-40+	44-48+	46-48+		
TEXTURE	.1941 (a)(1)						cl	cl	cl		
CONSISTENCE	.1941						fi	fi	fi		
STRUCTURE	.1941 (a)(2)						m	m	m		
CLAY MINERALOGY	.1941 (a)(3)						se	se	se		
HORIZON 4 DEPTH	.1943										
TEXTURE	.1941 (a)(1)										
CONSISTENCE	.1941										
STRUCTURE	.1941 (a)(2)										
CLAY MINERALOGY	.1941 (a)(3)										
SOIL WETNESS	.1942										
RESTRICTIVE HORIZON	.1944										
SAPROLITE	.1943/.1956										
CLASSIFICATION	.1948	s	s	s	s	s	ps	ps	ps		
L.T.A.R. (gpd/ft^2)	.1955	0.275	0.275	0.275	0.275	0.275	0.275	0.275	0.275		

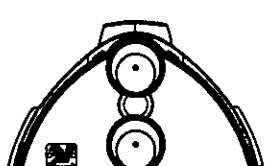
OTHER FACTORS (.1946):		**SITE LTAR (gpd/ft^2):**	**0.275**
AVAILABLE SPACE (.1945):	provisionally suitable		
SITE CLASSIFICATION (.1948):	provisionally suitable	SYSTEM TYPE:	
EVALUATED BY:	Larry Thompson	OTHERS PRESENT:	

COMMENTS:





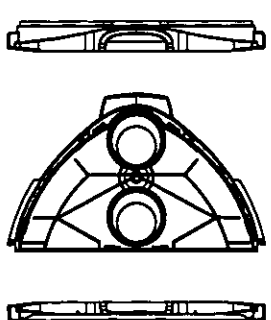




END CAP
FRONT VIEW



END CAP
SIDE VIEW



END CAP
REAR/TOP VIEW

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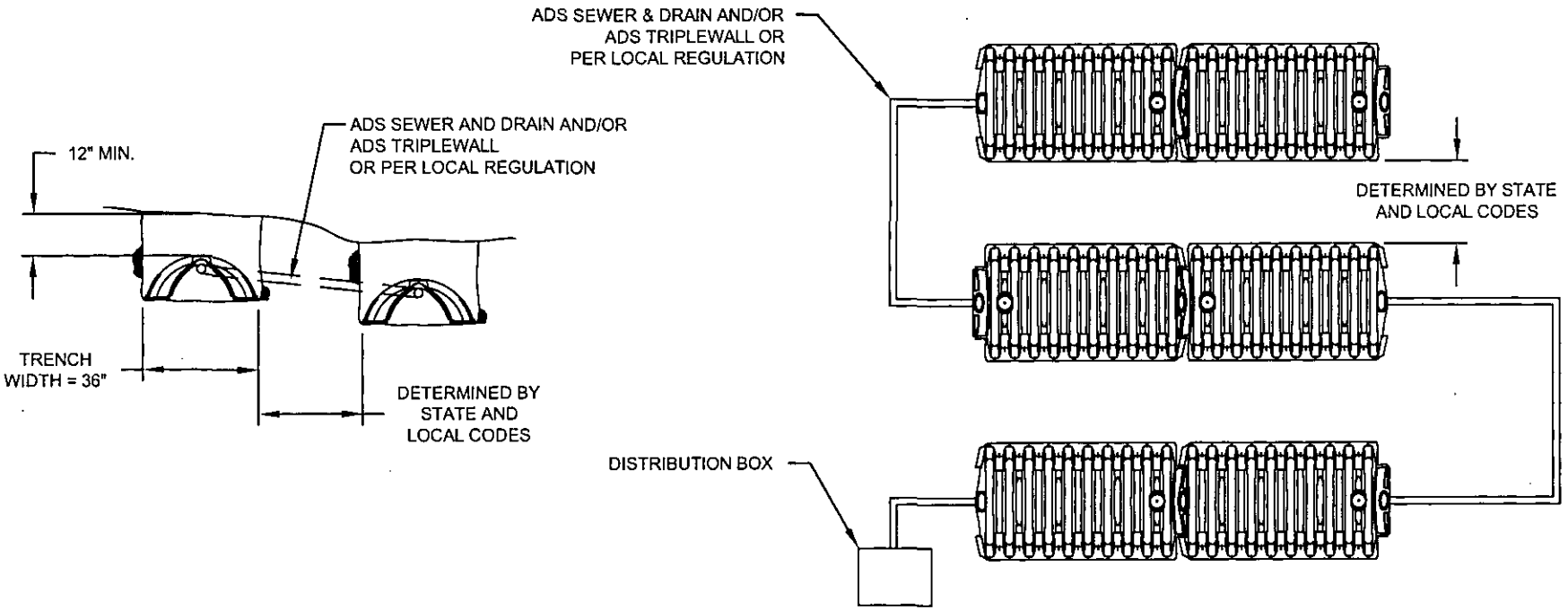
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D

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ARC 36 CHAMBER & END PLATES

DRAWING NUMBER: STD-903

DRAWN BY	ETC
DATE	5.15.07
DATE BY	
SCALE	NTS
SHEET	1 OF 1



NOTES:

1. EXCAVATE TRENCHES TO PROPER WIDTH, AND PROPER DEPTH AS REQUIRED BY STATE AND LOCAL CODES.
2. SMOOTH IRREGULARITIES IN THE EXCAVATION. A LEVEL, FLAT SURFACE IS REQUIRED.
3. ASSEMBLE ARC LEACHING CHAMBERS AND UNIVERAL ENDPLATES TOGETHER IN TRENCH(ES).
4. INSTALL UNIVERSAL END CAPS AND SECURE IN PLACE WITH BACKFILL.
5. PUNCH OUT PIPE HOLE OPENINGS IN THE END PLATES AS NEEDED AND CONNECT INLET PIPES.
6. FILL SIDEWALL AREA TO TOP CHAMBERS WITH NATIVE SOIL (COARSE SAND OR FINE GRAVEL MAY ALSO BE USED; NO HEAVY CLAY, SILT OR DEBRIS SHALL BE INCLUDED).
7. "WALK IN" FILL TO COMPACT SOIL ALONG SIDES OF ARC CHAMBER. THIS IS VERY IMPORTANT TO ACHIEVE LOAD RATING.
8. COVER ARC LEACHING CHAMBERS TO A MINIMUM OF 12" OF GRANULAR COVER AFTER CONSOLIDATION FOR H-10 APPLICATIONS. AVOID LARGE ROCKS OR DEBRIS IN COVER MATERIAL. COVER HEIGHTS AND LIVE LOADING LIMITS ARE IMPACTED BY BOTH SOIL TYPE AND COMPACTION REQUIREMENTS. CONTACT ADS WHEN POOR SOILS ARE ENCOUNTERED AND FOR MAXIMUM FILL HEIGHTS.

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REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D

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ARC 36 CHAMBER STANDARD SERIAL MODE INSTALLATION

DRAWING NUMBER: STD-906C

DRAWN BY:	TJR
DATE:	09/05/07
DATE BY:	CKS
SCALE:	NTS
SHEET	OF