

8228 CASTLESTONE DR

13903423

1/11/2008

duponbj

Groundwater and Wastewater Services File Imaging Project
May 2007
Barcode Font = IDAutomationHC39M

EHS DC

Reviewer LG

~~60728~~ County Permit Review Worksheet

Rule or Law		1	2	3	4	5	6	7	8	9	10
	Permit Application										
.1937(d)	Is the Application complete	✓									
.1937(d)	Is there a Site plan/Plat with application	✓									
.1937(d)	Is the Facilityshown?	✓									
.1937(d)	Are appurtenances shown	✓									
	Site Evaluation Information										
.1939 (a)(1)	Topography and Landscape Position Recorded?	✓									
.1940 (a-g)	Slope % Recorded?	✓									
.1939 (a)(2)	Texture Class Recorded?	✓									
.1939 (a)(2)	Structure type Recorded?	✓									
.1939 (a)(2)	Consistence Recorded?	✓									
.1939 (a)(3)	Mineralogy Recorded?	✓									
.1939 (a)(4)	Soil Wetness Condition Recorded?	✓									
.1939 (a)(5)	Soil Depth to Rock or Parent Material Recorded When Encountered?	✓									
.1939 (a)(6)	Depth to Restrictive Horizons Recorded When Encountered?	✓									
.1937(m)	Sufficient Available Space Recorded?	✓									
.1939(a) & .1945(b)	Are the Profile Locations Shown?	✓									
	Are the S/PS Profiles in system & in repair area?	✓									
	Number of auger borings made:	✓									
.1939(d), .1955, .1956, .1957	Were sufficient auger borings made?	✓									
	LTAR	2									
	IP/CA										
G.S. 130A-336(a) & .1937(g)	Proposed System Type stated-Initial	✓									
.1945(b)	Proposed System Type stated-Repair	✓									
G.S. 130A-336(a)(3)	System location identifiable by setbacks - Initial	✓									
.1937(g) & .1945(b)	System components shown - Initial	✓									
.1945(b)	Repair area shown										
.1937 (f)(g)	Does System design match facility, flow & WW characteristics?	✓									
.1937 (f)(g)	Is System design consistent with soil/site conditions?	✓									
.1937 (f)(g)	Is the System located in the approved area?	✓									
G.S. 130A-336(a)	Is the Design flow (gpd) indicated?	✓									
G.S. 130A-336(a)	Number of Bedrooms, employees, seats, etc. indicated?	✓									
.1937(g)	Trench depth indicated?	✓									
.1937(g)	Trench width indicated?	✓									
.1937(g)	Trench length indicated?	✓									
G.S. 130A-336(a)(1)	Proposed/existing well shown?	✓									
G.S. 130A-336(a)(1)	Property line lengths shown?	✓									
G.S. 130A-336(a)	Facility/appurtenance setbacks shown from fixed points?	✓									
	OP										
.1937(i)	System type as described in table V(a) of rule .1961	✓									
.1937(i)	Conditions for system performance, operation, maintenance, monitoring and reporting.	✓									

If system design is incorrect or inconsistent with site conditions, indicate why for each below

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

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

File #: 6872B Permit #: _____ Tax Parcel #: 139-031-23

Property Owner: NURJINY

Job Location Address: 8288 CASTLESTONE DR. LOT 104

City: CHARLOTTE State: NC Zip Code: 28227

Installation Approval Issuance Date: 6/22/07

Permission is hereby given to ☒ install ☐ alter ☐ repair an on-site wastewater treatment & and disposal system, with subsurface soil absorption and effluent discharge, as specified herein at the described location. This approval is granted based upon the application information submitted to our office. All work shall be completed on or before 7/22/07, after which date this approval shall be null and void. The system shall meet all of the construction requirements of 15A NCAC 18A. 1900 which are in effect on the date of granting this approval. An **Operation Permit** must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now of hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.

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

Permitted Design Flow: 480 GPD

Liquid Capacity of Septic Tank: 1500 gallons

Site LTAR: 0.2 GPD/ft² (For new installations only.)

Liquid Capacity of Dosing Tank: 1000 gallons

Drainfield Design ☐ N/A 50% REDUCTION

Trench Depth: 24 inches PPBPS

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 420 feet

# of Lines: 6 @ 70 feet

Depth of Media: N/A inches (Type) IIa

Distribution Device: Valve Box

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

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Distribution Device: _____

Water Supply Source

☒ Municipal ☐ Private Well ☐ Community Well

☐ Other _____

Minimum System Setbacks

Distance from Building Foundation: 5 feet

Distance from Property Line: 10 feet

Distance from Water Supply Source: 7100 feet

SKETCH OF SYSTEM LAYOUT
(Proposed Layout)

INSTALL ACCORDING TO PLANS ON FILE SUBMITTED BY LARRY THOMPSON & THE CATENA GROUP, 3/3/07

Comments: System Classification & Type: IIa, 50% REDUCTION, PPBPS. INSTALL ACCORDING TO PLANS ON FILE. MAINTENANCE CONTRACT REQ. BEFORE CO RELEASE. 6" ⇒ 12" SOIL COVER REQ'D.

DENR Authorized Agent: DAVID CORNELIUS, RS Signature: _____

6872B

Water
Management

INSPECTION AND MAINTENANCE AGREEMENT

STATE OF NORTH CAROLINA

This agreement is made and entered into this 26th day of June, 2007, by and between _____ (hereinafter referred to as the "Owner") and **Water Management** (hereinafter referred to as the "Contractor").

WITNESSETH

WHEREAS, the Owner owns or controls the property upon which a ground absorption sewage treatment system (hereinafter "system") is installed, such system being designated a Type IV(a) system under the Rules for Sanitary Sewage Collection, Treatment and Disposal found at 15A N.C. Administrative Code 18A.1900 et seq.; and

WHEREAS, 15A N.C. Administrative Code 18A.1961 requires a contract to be executed between the system owner and a management entity prior to the issuance of an Operation Permit for said system; and

WHEREAS, 15A N.C. Administrative Code 18A.1961 requires that a condition of the Operation Permit for said system be that a properly executed contract between the system owner and a management entity, shall be in effect for as long as the system is in use; and

WHEREAS, the Contractor is a management entity, of a type authorized by 15A N.C. Administrative Code 18A.1961 to manage the system.

NOW THEREFORE, in consideration of the premises and of the mutual covenants and promises contained in this Agreement, it is hereby agreed by and between the Owner and the Contractor as stipulated below.

1. The Contractor's Obligations. The Contractor shall perform the following services on the Owner's system located at:
Stonebridge Subdivision, Lot 104, Mecklenburg County, NC.

a) The contractor shall inspect, document, and report the system at least at the frequency required in Table V(b) of 15A N.C. Admin. Code 18A.1961(b), to satisfy conditions of the Operation Permit and to comply with manufacturers' operation requirements.

b) If an inspection indicates the need for system repairs, the Contractor shall notify the local health department within 48 hours of the inspection.

c) The Contractor shall notify the Owner of needed repairs, which are outside of the scope of routine maintenance described in this contract. The Contractor shall

perform necessary repairs to the system at the request of the Owner and shall be entitled to payment therefor at the Contractor's normal charge for services and materials.

d) The Contractor shall respond to a request for a nonscheduled service or maintenance call within 48 hours after receipt of such request.

2. The Owner's Obligations.

a) The Owner shall pay to the Contractor:

- **$300 per year, billed at $150.00 twice per year;**
- **Any charges for necessary replacement parts.**
- **Any charges for pumping/removal of solids from tanks.**
- **Any fees charged by the Mecklenburg County Health Department.**

The annual fee may be amended upon sixty (60) days advance notice to the Owner. The Owner shall pay to the Contractor his normal and customary fees for any work performed on the system as a result of nonscheduled service or maintenance calls. All fees are due and payable within thirty (30) days of billing. Payments due to the Contractor and unpaid by the Owner after thirty (30) days shall accrue interest from the due date until paid at a rate of 1.5% per month.

b) Within 30 days of receipt of notice of needed repairs, the Owner shall request the Contractor to complete needed repairs or shall provide to the Contractor evidence that the needed repairs were satisfactorily completed by another entity.

c) The Owner shall provide the Contractor with such access to the system as is reasonably necessary for the Contractor to comply with the terms of this Agreement.

3. Term. This Agreement shall remain in effect until terminated.

a) Automatic Termination.
This agreement shall automatically terminate if the Operation Permit for the system is revoked and all appeals of the revocation are exhausted or the time for taking an appeal has passed.

b) Termination by Mutual Consent.
The Parties may mutually agree to terminate this Agreement by giving written notice of termination by mutual consent to the local health department thirty (30) days in advance of the date of termination.

c) Termination by the Owner.
The Owner may terminate this Agreement by giving notice to the Contractor and to the local health department thirty (30) days in advance of the date of

termination.

d) Termination by the Contractor.

1) The Contractor may terminate this Agreement for cause by giving written notice of intent to terminate this Agreement to the Owner and to the local health department thirty (30) days in advance of the date of termination. Cause shall be defined as:

a) failure to remit payment for any bill for services performed under and in accordance with this Agreement if said bill is not paid within thirty (30) days of receipt by the Owner of the bill. If said bill is paid after notice of termination of this Agreement, but prior to the date of termination of this Agreement, this Agreement shall continue in effect; or

b) failure of the Owner to provide to the Contractor authorization to complete needed repairs or satisfactory evidence that needed repairs to the system were completed by another entity. If said authorization to complete needed repairs or evidence of completion of said repairs is provided after notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in effect; or

c) failure of the Owner to allow the Contractor such access to the system as is reasonably necessary in order for the Contractor to comply with the terms of this Agreement.

2) The Contractor may terminate this Agreement without cause, by notification to the Owner no less than ninety (90) days in advance of the termination date. The Contractor may also assign its rights and duties under this Agreement as provided in paragraph 4, below.

4. Assignment.

a) Assignment by the Owner.
The Owner shall notify the Contractor of the name and address of any purchaser of the property on which the system is located. The Owner shall also notify any purchaser of the property on which the system is located of the existence of this Agreement and shall assign all rights and duties under this Agreement to said purchaser.

b) Assignment by the Contractor.
The Contractor may assign its rights and duties under this Agreement to another management entity, which is qualified pursuant to 15A N.C. Admin. Code

18A.1961 to manage the system upon thirty (30) days written notice to the Owner and to the local health department.

5. Use of Subcontractors. The Contractor may subcontract with such manufacturers, suppliers and contractors as it deems desirable to perform any of the Contractor's duties under this Agreement. The Contractor shall at all times remain responsible for the performance of and payment for all work performed by all subcontractors.

6. Representations. The Parties represent to each other that each has the power, authority and legal right to enter into and perform its obligations as set forth in this Agreement.

7. Regulatory Amendments. References in this Agreement to sections of the Administrative Code shall include such rules as they may be amended in the future.

8. No Implied Waiver. The waiver by either Party, of the default or a breach by the other Party of any provision of this Agreement shall not operate or be construed to operate as a waiver of any subsequent default or breach. The failure at any time of either Party to enforce any provision of this Agreement (a) shall not be construed to be a waiver of such provisions, or of any other provision; and (b) shall not in any way affect the validity of this Agreement, or any part of this Agreement, or the right of either Party thereafter to enforce each and every provision of this Agreement.

9. Notice. Every notice required under this Agreement shall be in writing and shall be deemed sufficiently given if delivered in person or sent by certified or registered mail, return receipt requested, postage prepaid to the Party to be notified and addressed as follows:

To the Owner: _____

_____

_____

To the Contractor: **Water Management**
4744 Celia Creek Road
Lenoir, NC 28645

To the Local Health Department: **Mecklenburg County Environmental Health**
700 N. Tryon Street
Suite 211
Charlotte, NC 28202

The date of any Notice shall be the date of personal delivery or the date shown on the return receipt as the date of delivery or attempted deliver, as the case may be. Changes in the respective addresses to which notice may be directed may be made from time to time by either Party by notice to the other party.

10. Place of Agreement. This Agreement and any questions concerning its validity, the system construction or performance shall be governed by the laws of the State of North Carolina. notwithstanding the place of execution, or the order in which the signatures of the Parties are affixed.

11. Entire Agreement and Amendment. This Agreement supersedes all prior negotiations, agreements and understandings between the Parties with respect to the subject matter hereof and constitutes the entire Agreement between the Parties with respect to the subject matter hereof. To be effective, any amendment or modification to this Agreement must be in writing and must be signed by the Parties.

12. Severability. In the event that any provision of this Agreement shall, for any reason, be determined to be invalid, illegal or unenforceable in any respect, the Parties shall negotiate in good faith and agree to such amendments, modifications or supplements of or to this Agreement or such other appropriate actions as shall, to the maximum practicable in light of such determination, implement and give effect to the intentions of the Parties as reflected in this Agreement, and the other provisions of this Agreement shall, as so amended, modified, supplemented or otherwise affected by such actions, remain in full force and effect.

IN TESTIMONY WHEREOF, the Parties hereto have executed this Agreement in duplicate originals, one of which is retained by each of the Parties, the day and year first above written.

(Owner)

6/26/07
(Date)

Water Management

(Contractor)

Sidney L. Gaskins, Jr. 6/18/07
(Sidney L. Gaskins, Jr.) (Date)

104

or act 1693

GWS - RES. APP 07/05

SEPTIC FEE: 200
DATE: 12/5/06
CRT [ ]

PERMIT APPLICATION FOR A RESIDENTIAL SITE
IMPROVEMENT PERMIT / CONSTRUCTION AUTHORIZATION
FOR ON-SITE WASTEWATER SYSTEM
NEW WELL INSTALLATION OR REPAIR OF EXISTING WELL
MECKLENBURG COUNTY GROUNDWATER & WASTE WATER SERVICES

WELL FEE: _____
DATE: _____
CRT [ ]

FILE # 6872B

SEPTIC / TYPE APPLICATION: ☐ NONE ☒ NEW SYSTEM ☐ ALTERATION ☐ REPAIR ☐ MODIFY PLOT PLAN

WELL / TYPE APPLICATION: ☒ NONE ☐ NEW WELL ☐ MAJOR REPAIR ☐ ABANDONMENT

JOB LOCATION INFORMATION:

TAX/PARCEL #: ~~[illegible]~~ 139-034-23
STREET ADDRESS: 8228 Castlestone Dr
CITY: Mint Hill
STATE: NC ZIP: 28227
SUBDIVISION OR MOBILE HOME PARK NAME:
LOT #: 104
TOWNSHIP:

☐ 0-MECKLENBURG ☐ 4-PINEVILLE
☐ 1-CHARLOTTE ☐ 5-MATTHEWS
☐ 2-DAVIDSON ☐ 6-HUNTERSVILLE
☐ 3-CORNELIUS ☒ 7-MINT HILL

BUILDING INFORMATION:

TYPE OF BUILDING:

☐ SINGLE MOBILE HOME (S) ☐ MODULAR HOME (M)
☐ DOUBLE WIDE (D) ☐ MULTIPLE FAMILY (U)
☒ HOUSE (H) ☐ OTHER

HEATED SQUARE FOOTAGE: 3500
NUMBER OF BEDROOMS: 5
NUMBER OF OCCUPANTS: 7

FOUNDATION FOR RESIDENCE:

☐ CONCRETE SLAB ☐ BASEMENT WITH PLUMBING
☒ CRAWLSPACE ☐ BASEMENT WITH NO PLUMBING

IF PLANNING TO EXPAND/ALTER THE EXISTING SYSTEM INDICATE THE FOLLOWING CHANGES:

NUMBER OF BEDROOMS TO BE ADDED: NUMBER OF ADDITIONAL OCCUPANTS IN THE RESIDENCE:
WILL THERE BE A HOME BUSINESS IN THE RESIDENCE? ☐ YES ☐ NO TYPE:

WATER SUPPLY:

☒ MUNICIPAL (M) ☐ PUBLIC (C) ☐ PRIVATE WELL (P) ☐ SHARED WELL (6) ☐ OTHER "SPRINGS" (O)

PROPOSED USE OF WELL: ☒ N/A ☐ IRRIGATION ☐ POTABLE ☐ CLOTHERMAL ☐ OTHER

ARE ANY OF THE FOLLOWING LOCATED ON THE PROPERTY? IF SO, PLEASE SHOW LOCATION ON SITE PLAN/PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES	☐ YES	☒ NO	WELLS, SPRINGS OR WATER LINES	☐ YES	☒ NO
EXISTING WASTEWATER SYSTEMS	☐ YES	☒ NO	DESIGNATED WETLANDS	☐ YES	☒ NO
EASEMENTS OR RIGHT-OF-WAYS	☒ YES	☐ NO	GRADING/SOIL REMOVAL PERFORMED	☐ YES	☒ NO

PROPERTY OWNER:

NAME: Ryan Homes
ADDRESS: 10815 David Taylor Dr Suite 100
CITY: Charlotte
STATE: NC ZIP: 28262
HOME PHONE: WORK PHONE: 704 548 3534
MOBILE PHONE: FAX:

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: Kevin Stanley
ADDRESS:
CITY
STATE: ZIP:
HOME PHONE: WORK PHONE:
MOBILE PHONE: 704 791 8852 FAX:

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? Aug 2006
WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY? May 2007

"An Improvement Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

Kevin Stanley 11-22-06
Owner's/Agent's Signature Date

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT & NATURAL RESOURCES DIVISION
OF ENVIRONMENTAL HEALTH ON-SITE
WASTEWATER SECTION

"A Well Permit is subject to suspension or revocation if site plans or the intended use change or if information submitted in this application is falsified or changed. The undersigned, owner, or legal agent for the owner, of the property described above as the "Job Location" has read the foregoing application, acknowledges that the contents of same are true, and authorizes the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

Owner's/Agent's Signature Date

MECKLENBURG COUNTY HEALTH DEPARTMENT
GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST., SUITE 211
CHARLOTTE, NC 28202 704-336-5133 / FAX: 704-336-6694

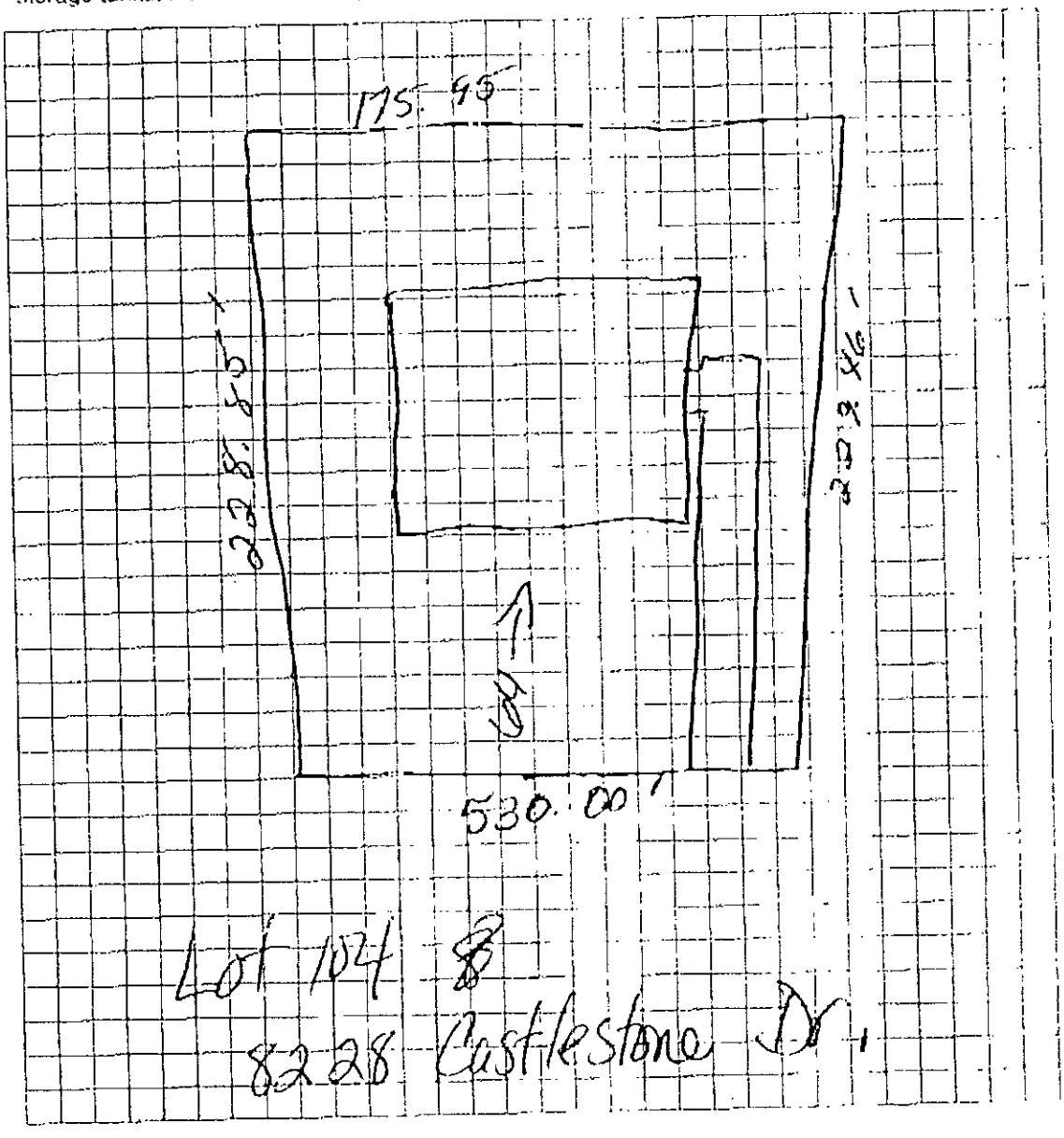
104

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

File #____
Date____

PROPOSED PLOT PLAN

A map showing existing and proposed property lines and easements with dimensions, the location of the single family residence, non-single family residence, or other facility, and appurtenances, the site for the proposed well, and the location of existing or proposed sewer lines and/or sewage disposal systems, surface water bodies, aboveground or underground storage tanks. Name all roads adjoining the property. If this a repair indicate the type of repair



Owner/Agent Signature Kevin Standley
Date 11-29-06

LBC 12/15/04

WD 223585

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 # 30001693 GWS File # 6872B Tax Parcel #: 139-034-23

- 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): 3/29/2012

Type of Installation: Residential - New System Lot Number: 104

Structure Type: HOUSE Size (ft^2): 3500 # Bedrooms: 5 # Occupants: 4

Building Foundation: Crawl Space Water Supply: Municipal

II. Initial System Type: PPBPS (pressurized) System Classification: IVa

Initial System Specifications:

Design Flow (gpd): 480 LTAR (gpd/ft^2): 0.2 Septic Tank Size (gal): 1500 Pump Tank Size (gal): 1000

Trench Width (ft): 3 Trench Spacing (ft): 9 Absorption Area (ft^2): 1500 Total Trench Length (ft): 400

Maximum Trench Depth (in): 24 Depth of Media (in): N/A Distribution Device: Pressure Manifold

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

Repair System Specifications:

Design Flow (gpd): 480 LTAR (gpd/ft^2): 0.2 Septic Tank Size (gal): 1500 Pump Tank Size (gal): 1000

Trench Width (ft): 3 Trench Spacing (ft): 9 Absorption Area (ft^2): 1500 Total Trench Length (ft): 100

Maximum Trench Depth (in): 24 Depth of Media (in): N/A Distribution Device: Pressure Manifold

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

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

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

DENR Authorized Agent: David Cornelius Owner/Legal Agent: Patricia Garner
Print Name

Signature: David Cornelius, RS Signature: Patricia Garner

Date Issued: 3/29/2007

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 #: 30001693 GWS File #: 6872B

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.
- This type of septic system requires a Certified Operator to maintain the system. A system maintenance contract with a Certified Operator must be on file prior to issuance of an Operation Permit.
- 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.
- This Improvement Permit is being issued based on a supplemental soil investigation performed by staff from our office.
- 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.
- The system must be water tested during the final inspection to verify proper operation and set system pressure.
- An effluent filter is required on the pump discharge pipe exiting the pump tank.
- All tanks (septic and/or dosing) must be water tested for 24 hours during the final inspection.
- 24" maximum trench depth. 6"-12" additional cover required over finished installation. Maintenance contract with certified operator required before CO release.

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: David Cornelius

Signature: David Cornelius, RS

Date Issued: 3/29/2007

Owner/Legal Agent: Patrice A. Garner
Print Name

Signature: Patrice A. Garner

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 #: **30001693** GWS File #: **6872B** Tax Parcel #: **139-034-23**

- 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):** 3/29/2012

Type of Installation: Residential - New System Lot Number: 104

Structure Type: *HOUSE* Size (ft^2): *3500* # Bedrooms: 5 # Occupants: 4

Building Foundation: Crawl Space Water Supply: Municipal

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

Initial System Specifications:

Design Flow (gpd): 480 LTAR (gpd/ft^2): 0.2 Septic Tank Size (gal): 1500 Pump Tank Size (gal): 1000

Trench Width (ft): 3 Trench Spacing (ft): 9 Absorption Area (ft^2): 1500 Total Trench Length (ft): 400

Maximum Trench Depth (in): 24 Depth of Media (in): N/A Distribution Device: Pressure Manifold

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

Repair System Specifications:

Design Flow (gpd): 480 LTAR (gpd/ft^2): 0.2 Septic Tank Size (gal): 1500 Pump Tank Size (gal): 1000

Trench Width (ft): 3 Trench Spacing (ft): 9 Absorption Area (ft^2): 1500 Total Trench Length (ft): 400

Maximum Trench Depth (in): 24 Depth of Media (in): N/A Distribution Device: Pressure Manifold

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

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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: David Cornelius Owner/Legal Agent: _____

Print Name

Signature: _____, RS Signature: _____

Date Issued: 3/29/2007

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

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

Permit #: **30001693** GWS File #: **6872B**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every 3 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.
- This type of septic system requires a Certified Operator to maintain the system. A system maintenance contract with a Certified Operator must be on file prior to issuance of an Operation Permit.
- 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.
- This Improvement Permit is being issued based on a supplemental soil investigation performed by staff from our office.
- 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.
- The system must be water tested during the final inspection to verify proper operation and set system pressure.
- An effluent filter is required on the pump discharge pipe exiting the pump tank.
- All tanks (septic and/or dosing) must be water tested for 24 hours during the final inspection.
- 24" maximum trench depth. 6"-12" additional cover required over finished installation. Maintenance contract with certified operator required before CO release.

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: David Cornelius

Signature: _____ RS

Date Issued: 3/29/2007

Owner/Legal Agent: _____
Print Name

Signature: _____

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	03/30/07	**Amount:**	150.00
Receipt #:	49938	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	AIDOOJK		

Account Information

Account #:	X33575
Contractor:	NVR INC (EAST)
Attn:	
Address:	10815 DAVID TAYLOR DR 100
Address:	
City/State/Zip:	CHARLOTTE, NC 28262

Item	Description	Permit#	Quantity	Unit Price	Total Price
0734	Auth for Waste Wtr Sys Constr 8228 CASTLESTON DRIVE		1	150.00	150.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
28,615.29	11,096.79				

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	03/30/07	**Amount:**	150.00
Receipt #:	49939	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	AIDOOJK		

Account Information

Account #:	X33575
Contractor:	NVR INC (EAST)
Attn:	
Address:	10815 DAVID TAYLOR DR 100
Address:	
City/State/Zip:	CHARLOTTE, NC 28262

Item	Description	Permit#	Quantity	Unit Price	Total Price
0703	Installation/Final Approval 8228 CASTLESTONE DRIVE		1	150.00	150.00

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

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
28,765.29	11,096.79				

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

Sheet: 1 of 2
Property ID: 139-034-23
Lot #: 104
File #: 6872B
AppID: 1693

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: NVR, Inc.
Applicant: Kim Stanley
Address: 10815 David Taylor Drive, Suite 100, Charlotte, NC 28262
Date Evaluated: 2/6/2007
Proposed Facility: Residence
Design Flow (.1949): 600 gpd
Property Size:
Location of Site: 8228 Castlestone Drive
Property Recorded:
Water Supply: [x] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [x] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [x] *Sewage* [ ] *Industrial Process* [ ] *Mixed*

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	b PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
1	LS,8	0-10	GR/SCL	FR/SS/SP/SEXP	28"	31	NA	NONE	US,IV
		10-31	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.1 GPD/FT^2
2	"	0-3	GR/SCL	FR/SS/SP/SEXP	39"	42	"	"	PS,IV
		3-42	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.2 GPD/FT^2
3	"	0-6	GR/SCL	FR/SS/SP/SEXP	39"	43	"	"	PS,IV
		6-43	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.2 GPD/FT^2
4	"	0-12	GR/SCL	FR/SS/SP/SEXP	>49" TO SOIL WETNESS	49	"	"	PS,IV
		12-49	ABK/SBK/C	FI/S/P/SEXP					.2 GPD/FT^2
5	"	0-12	GR/SCL	FR/SS/SP/SEXP	32"	38	"	"	PS,IV
		12-38	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.2 GPD/FT^2
					SITE LTAR				.2 GPD/FT^2

Description	Initial System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	IVa	IVa
Site LTAR	0.2	0.2

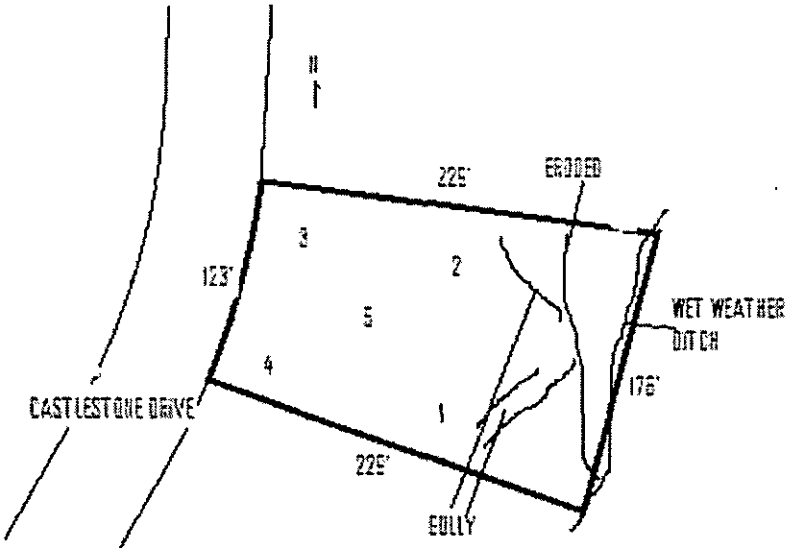
Other Factors (.1946): None
Soil Evaluation By: Chris Sherrill, RS, LSS 2/6/07
Others Present: None
Site Classification (.1948):
Site Evaluation By:
Others Present: DAVID CORNELIUS, RS

COMMENTS: 100% Repair Area Required

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

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

Sketch of Soil Evaluation Locations



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

Sheet: 1 of 2
Property ID: 139-034-23
Lot #: 104
File #: 6872B
AppID: 1693

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: NVR, Inc.
Applicant: Kim Stanley
Address: 10815 David Taylor Drive, Suite 100, Charlotte, NC 28262
Date Evaluated: 3/23/2007
Proposed Facility: Residence
Design Flow (.1949): 600 gpd
Property Size:
Location of Site: 8228 Castlestone Drive
Property Recorded:
Water Supply: [x] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [x] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [x] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	b PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
1	LS,8	0-7	GR/SCL	FR/SS/SP/SEXP	>40" TO SOIL WETNESS	40 .	NA	NONE	PS,IV
		7-40	ABK/SBK/C	FI/S/P/SEXP					.2 GPD/FT^2
2	"	0-8	GR/SCL	FR/SS/SP/SEXP	>45" TO SOIL WETNESS	45	"	"	"
		8-45	ABK/SBK/C	FI/S/P/SEXP					
					SITE LTAR				.2 GPD/FT^2

Description	Initial System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	Wa	Wa
Site LTAR	0.2	0.2

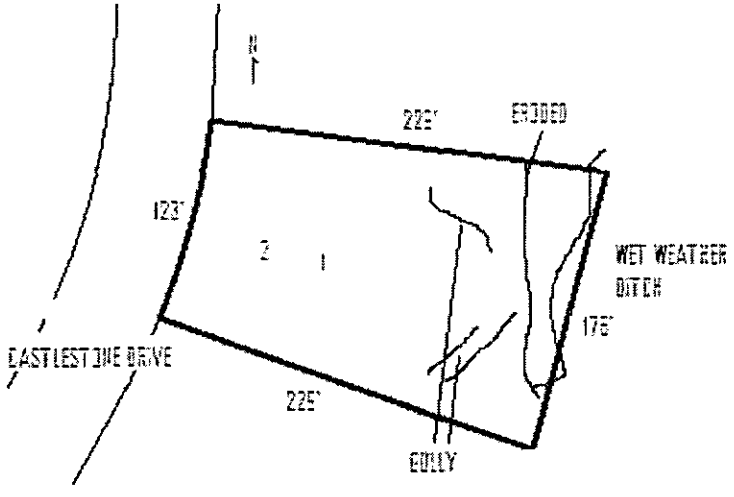
Other Factors (.1946): None
Soil Evaluation By: Chris Sherrill, RS, LSS 2/6/07
Others Present: B.Martin, K. Randall, M.Wood, L.Thompson, K.Stanley
Site Classification (.1948): Christopher M Stanley
Site Evaluation By:
Others Present: DAVID GONELLOS, RS

COMMENTS: 100% Repair Area Required

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
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EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations



SEPTIC SYSTEM DESIGN REVIEW WORKSHEET

File: 6872B

Address: 8288 CASTLESTONE DRIVE

PID #: 139-034-23

Subdivision: STONEBRIDGE

Lot #: 104

Comments:

(1) APPLICATION & SOIL REPORT FOR 5 BEDROOMS. DESIGN FOR 4 BEDROOMS.

(2) DRAINFIELD LOCATED IN SOIL PROFILE AREAS 4 & 5. PROFILE AREA 5 HAS CHROMA 2 @ 32". DESIGN CALLS FOR TRENCH DEPTH OF 24". NEED VERIFICATION FROM L.S.S. THAT CHROMA 2 EXISTS AT 32". OK

*SEE NEW SOIL REPORT 3-23-07

(3) 12" MAX - 6" MIN. SOIL COVER WILL BE REQUIRED OVER DRAIN FIELD.

Reviewed By: TREVOR **Date:** 3-9-07

Status: [X] Approved [ ] Disapproved [X] Pending

3-28-07

Residential Subsurface Wastewater Treatment and Disposal System Design

for

Lot 104 – Stonebridge at Mint Hill
8288 Castlestone Drive
Mint Hill, North Carolina

Tax Parcel # 139-034-23
Mecklenburg County File # 6872B
March 3, 2007

GWS Septic System Design Review

GWS File #: 6872 B Approved ☐ Disapproved ☐

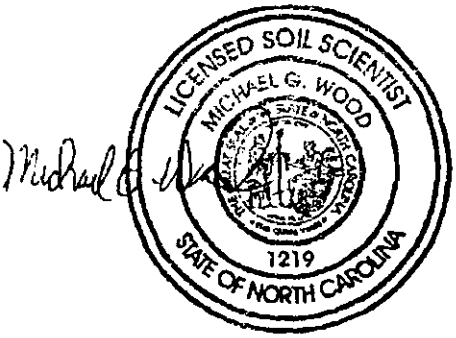
Design Review: TCT 3-28-07 ☒

Field Review: 3/27/07 ☒

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

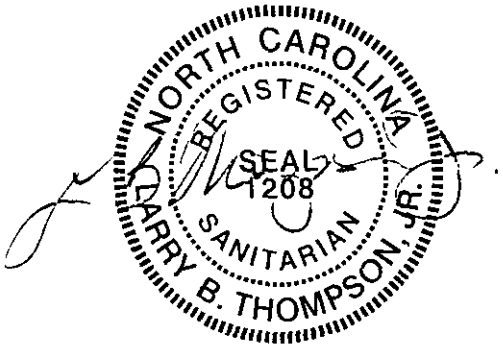
Prepared for:

NVR, Inc.
10815 David Taylor Drive, Ste. 100
Charlotte, NC 28262



Prepared by:

Larry Thompson, RS, PWS, SSIT
Michael Wood, LSS
Gary Kreiser, LSS
The Catena Group, Inc.
410-B Millstone Drive
Hillsborough, NC 27278
Phone: 704-301-4881
Fax: 704-888-1496



CC: Mr. David Cornelius, RS
Mecklenburg County Environmental Health

Details

The following proposal is submitted to the Mecklenburg County Health Department (MCHD), Ground Water Section, to help assist the county in the issuance of an Improvement Permit for a 4-bedroom residence served by a municipal water supply on Lot 104 of the Stonebridge at Mint Hill Subdivision.

Based upon an investigation by The Catena Group, Inc. (TCG), it was determined that Lot 104 would be considered "Unsuitable" under the *Laws and Rules for Sewage Treatment, and Disposal Systems* 15A NCAC 18A .1900 (North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section). There is, however, a sufficient amount of "Suitable" Group IV soils located on the property which would allow for the installation of a shallow placed Type IV pressure dosed prefabricated porous block panel system (PPBPS) for a 4-bedroom residence (initial and repair – may require additional soil cover). It is the desire of the owner that the MCHD consider issuing an Improvement Permit, based upon the following proposal.

Location

The subject property is located in Stonebridge Subdivision (Lot 104 – 8288 Castlestone Drive) in the town of Mint Hill, North Carolina. From NC 51, travel south on NC 218 approximately 0.9 mile, turn left onto SR 3109 (Bartlett Road). Stonebridge is the first subdivision on the right after crossing the I-485 overpass. Turn right onto Stonebridge Way and right onto Castlestone Way. Lot 104 is the second lot on the left.

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, June 2006.

Onsite Wastewater Treatment and Disposal Systems; EPA 625/R-00/008 Design Manual, February 2002.

Design, Installation and Maintenance of the T & J Panel Wastewater Treatment System; Sixth Edition, published by T & J Panel.

Design and Installation of Low Pressure Pipe Wastewater Treatment Systems; by Craig Cogger, Bobby Carlisle; Dennis Osborne and Ed Holland. Published by UNC Sea Grant College Pub. UNC-SC-82-03, May 1982.

Plans and Specifications

Septic Tank

- The septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 1500 gallons in capacity.
- The septic tank will be fitted with an approved effluent filter and riser for easy access and periodic maintenance.
- 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.

Pump Tank

- The pump tank shall be State approved, of one-piece construction, watertight, structurally sound and 1000 gallons in capacity. Again, it is the responsibility of the septic tank contractor to thoroughly inspect each pump tank prior to accepting delivery.
- The pump tank shall have access risers that extend, at a minimum, 6 inches above finished grade and must have less than 36 inches of fill over its top once finished grade has been established (a reinforced concrete tank will be required if finished soil cover is 36 inches or greater in depth).
- The pump and alarm controls shall be provided with manual circuit disconnects within a watertight, corrosion resistant, Nema 4X rated control panel. The control panel must be securely mounted outside, adjacent to the pump tank riser and at a minimum of 12 inches above finished grade. Pump and float control wiring should be long enough to reach from the tank to the control panel without splicing, routed through wire conduit, and sealed at the openings within the pump tank as well as the control panel enclosure. It is paramount that the conduit is properly sealed to prevent the escape of flammable gases from the pump tank. Furthermore, there must be two electrical circuits for the pump tank controls: one for the pump and one for the alarm controls.
- The pump tank shall have a properly functioning high water alarm incorporated into the control panel. The alarm circuit shall be supplied separate from any pump overload and short circuit devices. The alarm shall be both audible and visible by the system users.
- The float switch for the high water alarm should be mounted at a location slightly above the "pump on" elevation for the pump float control switch. The high water alarm float switch shall not be set more than 3 inches above this elevation.
- Pump float(s) shall be mounted so that the effluent at the end of a pump cycle is above the top of the effluent pump. The septic contractor must determine pump draw down and set the float switch accordingly.
- Float switch tie downs must be made of a corrosion resistant material (do not use electrical tape or metal hose clamps to secure these switches). Floats should be mounted on a separate "float tree" rather than the pump supply line (see pump tank detail).

- The pump must be placed on two 4-inch concrete blocks to allow for some settling of solid particulates within the pump tank.

Pump Tank Effluent

- The pump discharge piping shall be fitted with a pressure effluent filter. The filter must be equivalent to the GAG Sim Tech Filter, Boyne City, Michigan, 49712, telephone: 1-888-999-3290. This device provides a very high degree of filtration and is highly recommended.

Pipe and Fittings

- All discharge piping, supply lines, valves and disconnects should be made of PVC and pressure rated.
- All joints must be properly "welded" utilizing the appropriate PVC cement for each application.
- The supply line from the pump tank to the pressure manifold shall be 2 inch Schedule 40 PVC (approximate length of supply line is 78 feet).
- The lateral distribution lines shall be 1¼ inch Schedule 40 PVC. Holes in the laterals should be drilled on site and at the 12 o'clock position (one hole per panel). Lateral hole size is 5/32 of an inch.
- There shall be a threaded PVC union above each pump to facilitate easy removal of the pumps for maintenance or replacement.
- The end of each lateral is to be provided with a "turn up", contained within a turf/gate valve box, that provides above ground access for periodic clean out and pressure head adjustment.

Valve Box

- The control valves (gate valves) for each lateral distribution line shall be contained within one manifold box/vault of adequate size. The box should be placed upon a gravel base.
- The supply manifold conveys effluent from the pump to the lateral distribution lines.
- The supply manifold should be constructed by connecting a series of (6) 2" x 2" x 1 ¼" tees to the 2 inch supply line.

Backfill

- Backfill sand shall be a clean, washed, medium sand that is naturally occurring and falls within the gradation of ASTM C-33 specification (used in the ready mix industry and is readily available).

Drain Field Installation

- The drain field has been previously laid out on-site utilizing metal stemmed flags. Once this area has been approved by the MCHD, 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 MCHD and the system designer for a preconstruction conference at which time the drain field area will be re-verified.
- 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 Mecklenburg County Health Department should be contacted for permission to proceed with the installation.
- The specified system is a Type IVa, pressure dosed, pre-fabricated permeable block panel system – specifically the 16 inch high panel system manufactured by T&J Panel Wastewater Treatment System, Patent No. 4013559; telephone: 1-800-222-2577. The installer must follow the manufacturer's guidelines for installing the T&J Panel System and should request an installation manual from the manufacturer prior to beginning construction.
- The initial drain field consists of (6) six lateral trenches 3 feet wide by 70 feet in length. It is essential that the lateral trenches be constructed on contour with the land, with each trench being excavated level from beginning to end. The use of a tripod mounted engineer's level is essential to assure that each trench is constructed as level as possible.
- The maximum trench depth for this system shall be 24 inches. Each trench shall be placed on a minimum of 9 foot on centers. Additional soil cover may be required.
- Once trenches are dug, the side walls shall be raked and a light dusting of lime applied.
- Backfill the trench with 6 inches of sand and level to grade. Once leveled, place 1 x 4 or 6 inch boards on top of the sand the entire length of each trench. Once the grade boards have been set, the panels may be set into the trench. The panels should be placed 6 inches apart.
- Once the panels have been set, line the top chamber of each panel with 10 – 12 pounds of clean particle sand (medium sand blasting sand). Coverage depth should be approximately 1 inch thick. *Please note that this sand is not the same material specified for backfill.*
- Tar seal rope, or approved foam, should be placed in the "U" outs of each end of the panel to form seals. Once the tar rope is in place, the 1 ¼ inch Schedule 40 PVC laterals can be added and the seal completed by the addition of more tar rope on the top and sides of the pipe. Now that the connection and seals are complete, a block cap is placed on each end of the panel so that all openings are covered.
- The end of each lateral should be fitted with a short turn up topped by a threaded female coupling with cap. Each turn up must be fitted with a turf/gate valve box with lid fitted flush to finished grade.
- Once the lateral has been installed and the panels closed, the trench is ready to be backfilled to the top with the sand used in the trench bottom. At this point, the trenches should be left open for the final inspection by the MCHD.

Proper Operation Check

- After all components of the waste water disposal system have been installed and connected, the system shall be checked for proper operation.
- With the electrical power turned off, fill the pump tank with water until the liquid rises to a level high enough to activate the high water alarm float. Turn on the electrical power. The alarm, alarm light and pump should activate at this time. Turn off the electrical power once these checks have been performed and prepare to set the head pressure at the valve box.

Pressure Head Adjustment

- The pressure head must be adjusted to match the design specifications. The pressure head is measured by the height of the liquid coming from the turn ups at the end of each lateral when the pump is running (utilizing stand pipes).
- Prepare a length of pipe (stand pipe), cut to the desired head pressure height and fitted with a threaded adapter that will screw into the turn up couplings at the end of each lateral. Thread the stand pipes into each lateral and then turn the power on to the pump, allowing the water to rise within the stand pipes. Adjust the gate valves within the supply manifold box to achieve the specified head pressure (liquid height in the stand pipes should equal the design head pressure).
- Once the pressure head has been adjusted, allow the pump to run through the remainder of the cycle. The pump float switch will automatically turn the pump off if it is operating properly. Make sure that the effluent pump is completely submerged in the remaining water, making adjustments to the float switch(es) as needed. This completes the checks for proper operation of the pump, alarm and float switches.
- At this point, the standpipes may be removed and replaced with the threaded turn up caps.

Final Landscaping

- The drainfield shall be shaped to shed rainwater and be free from low spots.
- The entire area of the drainfield 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.

Utility Conflicts

- 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. If there are any questions regarding preferred routes, contact the MCHD as soon as possible. Irrigation systems should not be placed in the drain field area.

Maintenance

Operation and Maintenance

The designed system is classified as a Type IVa wastewater treatment and disposal system and will require ongoing maintenance. State regulations require that a system of this type be managed by a person certified (Certified Subsurface System Operator) by the North Carolina Department of Environment and Natural Resources to operate subsurface wastewater systems (Section .1961 Maintenance of Sewage Systems). A "Maintenance Contract" between the system owner and a Certified Operator will be required by the MCHD prior to the issuance of a final system approval or Operation Permit.

- The minimum inspection/maintenance and reporting frequency for a Type IVa system is twice a year by the Certified Operator. The local health department is required to inspect the system once every three years.
- The septic and pump tanks shall be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 1/3 of the volume of the tank. In some situations, the tanks may need to be pumped more frequently; for example, if you are using a garbage disposal, it is recommended that the septic and pump tanks be cleaned out annually. Regardless, the Certified Operator will be able to advise when it is necessary to pump out tank solids.
- Pressure head for laterals should be checked and adjusted semi-annually, flushing with clean water as necessary to remove any accumulated solids.
- The effluent filters should be inspected semi-annually. When it becomes necessary to clean the effluent filters, the filters should be removed and the accumulated debris washed back into the septic or pump tank – not onto the lawn.
- All piping and valves should be inspected semi-annually for damage and corrections/repairs made immediately.
- The pump and float controls/switches should be inspected semi-annually to assure proper operation
- The drain field area should be maintained to prevent over growth of vegetation. Any damp areas, leakages or malfunctions should be addressed immediately.
- Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

Suggestions to the Homeowner

- 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.
- Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never be put into a septic tank.
- Used motor oil or any oily liquids should not be disposed of in a septic tank.

- 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.
- Run dishwashers and washing machines only when you have a full load.
- Use liquid detergents. Powdered detergents have binding agents in them that tend to solidify in the wastewater disposal system.
- Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drain field.
- 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.
- Finally, taking good care of your septic system will help to assure that you experience years of trouble free service at a relatively low cost. On-site wastewater treatment and disposal is still the most environmentally friendly method of treating residential/commercial waste and you should keep your system in use for as long as it is properly functioning! If you have additional questions, please feel free to contact your system designer or the MCHD.

Design Specifics

Daily Design Flow:	480 GPD – 4 bedroom house
Septic Tank Size:	1500 gallons (2 compartments)
Pump Tank Size:	1000 gallons (one piece)
Effluent Loading Rate:	Design = 0.2 GPD per sq. ft. (50 % reduction for the PPBPS)
Supply Length and Diameter:	Approx. 78 ft. of 2 in. SCH 40
Number and Size of Laterals:	(6) 1 ¼ inch x 70 feet in length
Hole Size:	5/32 inch
Hole Spacing:	1 per panel = 96 total
Number of Panels:	96
Dosing Volume:	345.60 gallons per dose
Flow Rate Through System:	39.36 gallons per minute
Elevation Head:	13 feet (may vary, please see note at the bottom of this page)
Pressure Head:	2 feet
Pump Requirements:	41.36 GPM at 15 Feet TDH (2 GPM added for vapor lock)
Depth of Water Pumped:	16.46" check with individual tank manufacturer (1 cu. Ft. of water equals 7.5 gal.)
Pump Run:	8.78 minutes
Check Valve:	Yes
Vapor Lock Hole:	Yes (A vapor lock hole can reduce vibrations in the discharge pipe upon start up and shut down)

* Please note that supply line and elevation head measurements are approximate. It is the contractor's responsibility to confirm these values based upon the actual house and plumbing location. If there is a discrepancy, contact the system designer prior to beginning construction.

PPBPS Design Worksheet										
								File #:	6872-B	
								Tax #:	139-034-23	
System Requirements								Address:	8288 Castlestone Drive	
Design Flow	*480*	*gpd*							*Charlotte, NC 28227*	
LTAR	0.200	gpd/ft.^2						Consultant:	Larry Thompson	
Linear footage	800	ft. (conventional)						Phone:	704-301-4881	
Linear footage	400	ft. (50% Reduction)								
								Reviewed By:	T. THOMASON ✓	
Design Layout								Date:	3-9-07	
Laterals	Length (ft)	# Panels								
Line # 1	70	16								
Line # 2	70	16								
Line # 3	70	16								
Line # 4	70	16								
Line # 5	70	16								
Line # 6	70	16								
Totals	**420**	**96**								
Absorption Area										
Length (ft)	Width (ft)	Area (ft^2)								
420	3	1,260								
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	39.36	gpm	Total number of panels required multiplied by the orifice flow rate							
System Dose Volume	345.60	gal.	Total number of panels required multiplied by 3.6 gal./panel							
Pump Run Time	8.78	min.	System dose volume divided by the total system flow rate							
Pump Tank Drawdown	16.46	in.	1,000 gal. Pump tank, volume is approximately 21 gallons per inch							
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.										
4. 100% repair area (PPBPS) required for property.										

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

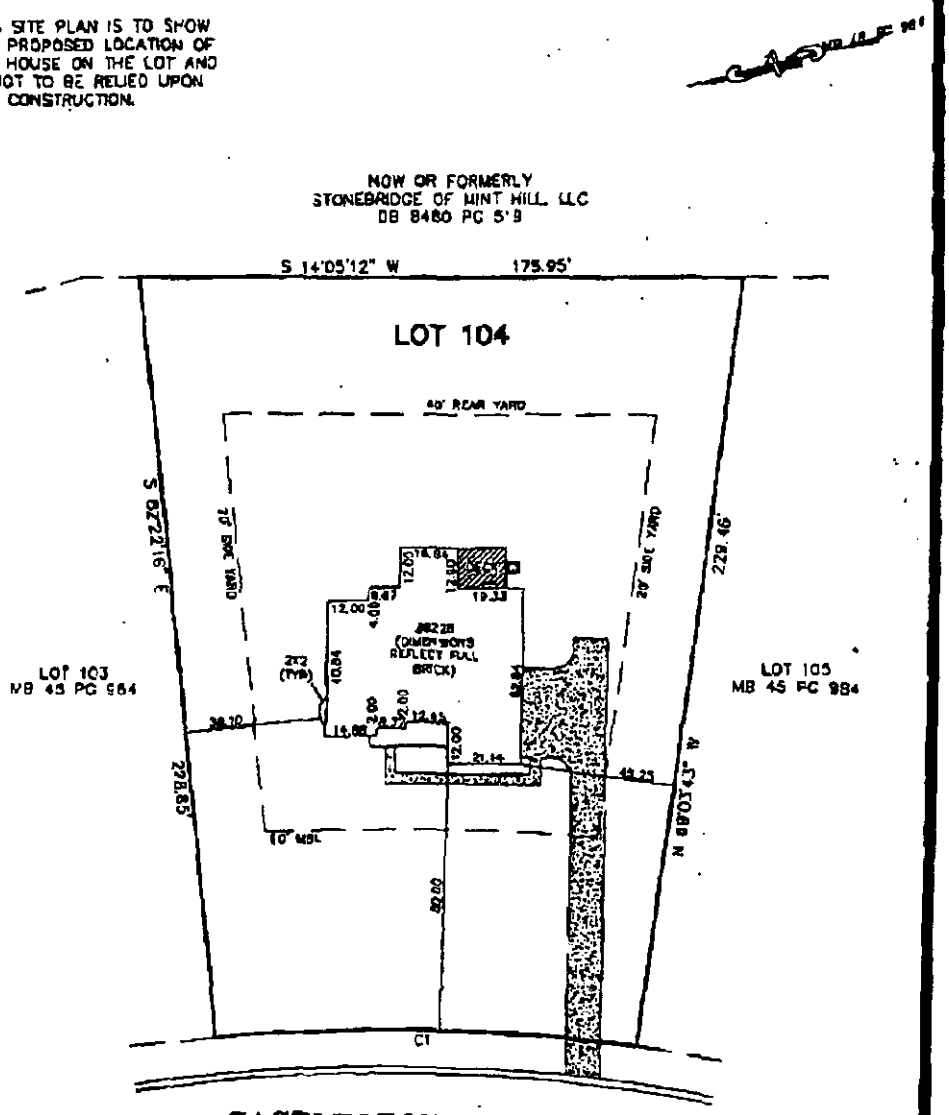
SITE DEVELOPMENT PLAN

PREPARED BY:

DELTA LAND SERVICES, INC.
6033 FLORENCE AVENUE, SUITE 100
CHARLOTTE, NORTH CAROLINA 28212
(704) 536-6190

SCALE: 1" = 40'

THIS SITE PLAN IS TO SHOW THE PROPOSED LOCATION OF THE HOUSE ON THE LOT AND IS NOT TO BE RELIED UPON FOR CONSTRUCTION.



ESTIMATED SIDEWALK AREA = 175.1 SQ.FT.±
ESTIMATED DRIVEWAY AREA = 1724.6 SQ.FT.±

STAKEOUT

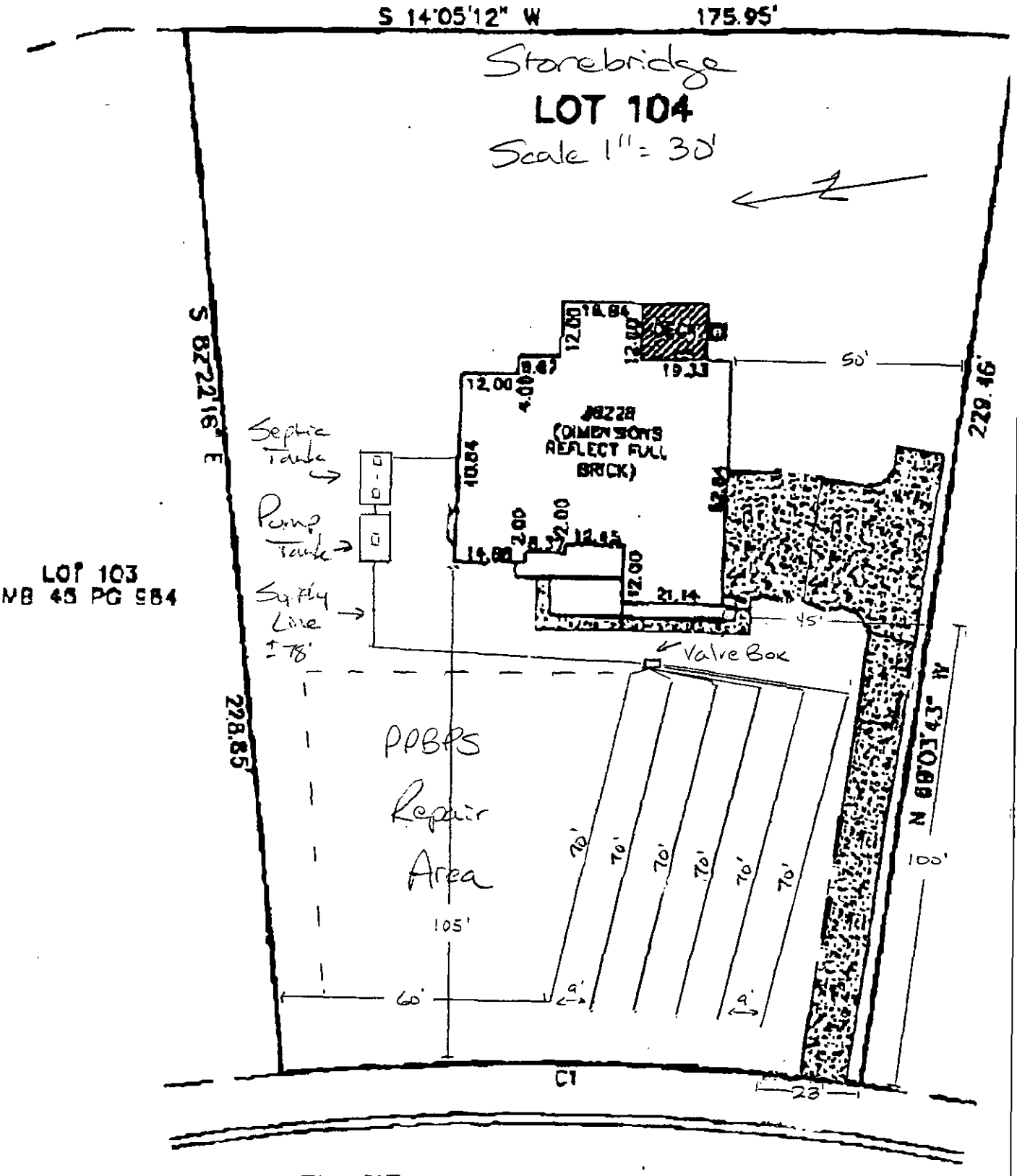
CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1	530.00	122.11	121.84	N11°37'00"E	13°12'24"

NOT FOR RECORDATION, CONVEYANCES OR SALES

Subdivision STONEBRIDGE SUBDIVISION, PHASE 2, MAP 1 (REVISED) County MECKLENBURG
Address 8228 CASTLESTONE DRIVE Owner RYAN
Lot 104 Block ___ Plan BROOKMERE Elevation 9 Drive (Left) ___ (Right) SIDE (Courtyard) ___ Deck X
Patio ___ Fireplace REAR Garage (1 Car) ___ (2 Car) ___ (3 Car) X Brick FULL Basement ___ Curtain Wall X
Crawl ___ Slab ___ Other MORNING ROOM, BAY @ LR SIDE, PARTIAL FRONT PORCH

REVISED: MODEL CHANGE DWN: JDA CKD: DATE: 2/19/07

J:\STONEBR\dwg\SB-0104.DWG - JDA



CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1	930.00	122.11	122.02	N18°37'00"E	7°31'34"

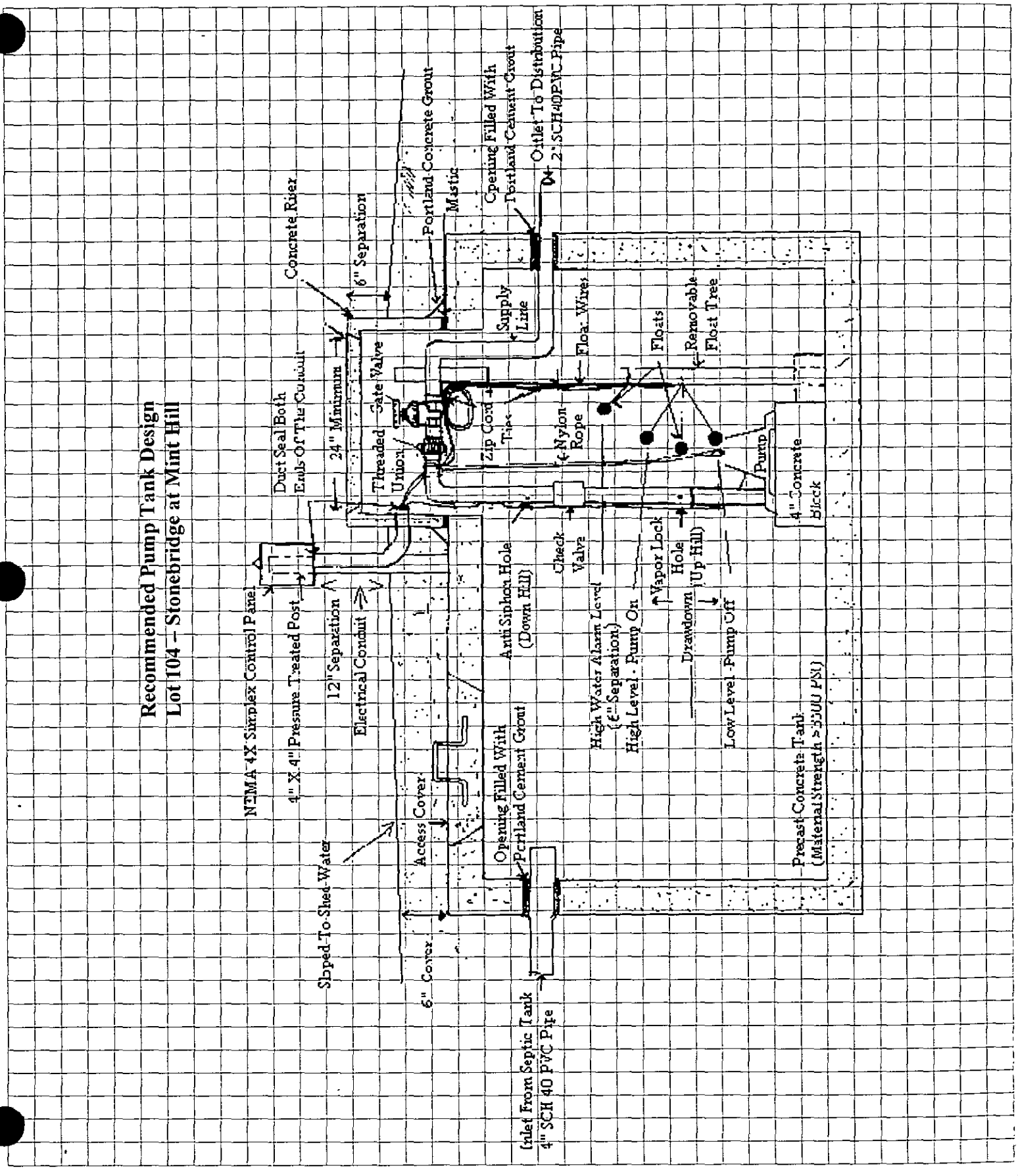
The Catena Group
410-B Millstone Drive
Hillsborough, NC 27278

File Number: 6872B

Location: Lot 104 – Stonebridge

Date: March 3, 2007

Recommended Pump Tank Design
Lot 104 – Stonebridge at Mint Hill



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

Sheet: 1 of 2
Property ID: 139-034-23
Lot #: 104
File #: 6872B
AppID: 1693

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: NVR, Inc
Address: 10815 David Taylor Drive, Suite 100, Charlotte, NC 28262
Proposed Facility: Residence Design Flow (.1949): 600 gpd
Location of Site: 8228 Castlestone Drive
Water Supply: [x] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [x] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [x] Sewage [ ] Industrial Process [ ] Mixed

Applicant: Kim Stanley
Date Evaluated: 2/6/2007
Property Size:
Property Recorded:

PROFILE #	SOIL MORPHOLOGY (1941) 1940 Landscape Position/ Slope%	Horizon Depth (IN.)	1941 Structure/ Texture	1941 Consistence/ Mineralogy	PROFILE FACTORS b 1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1956 Sapro Class	1944 Restr. Horiz	Profile Class & LTAR
1	LS,B	0-10	GR/SCL	FR/SS/SP/SEXP	28"	31	NA	NONE	US,IV
		10-31	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.1 GPD/FT²
2	"	0-3	GR/SCL	FR/SS/SP/SEXP	39"	42	"	"	PS,IV
		3-42	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.2 GPD/FT²
3	"	0-6	GR/SCL	FR/SS/SP/SEXP	39"	43	"	"	PS,IV
		6-43	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.2 GPD/FT²
4	"	0-12	GR/SCL	FR/SS/SP/SEXP	>49" TO SOIL WETNESS	49	"	"	PS,IV
		12-49	ABK/SBK/C	FI/S/P/SEXP					.2 GPD/FT²
5	"	0-12	GR/SCL	FR/SS/SP/SEXP	* 32"	38			PS,IV
		12-38	ABK/SBK/C	FI/S/P/SEXP	7.5YR 6/2				.2 GPD/FT²
					SITE LTAR				.2 GPD/FT²

* - Did not note Soil wetness at this depth

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

Other Factors (.1946): None
Soil Evaluation By: Chris Sherrill, RS, LSS 2/6/07
Others Present: None
Site Classification (.1946):
Site Evaluation By:
Others Present:

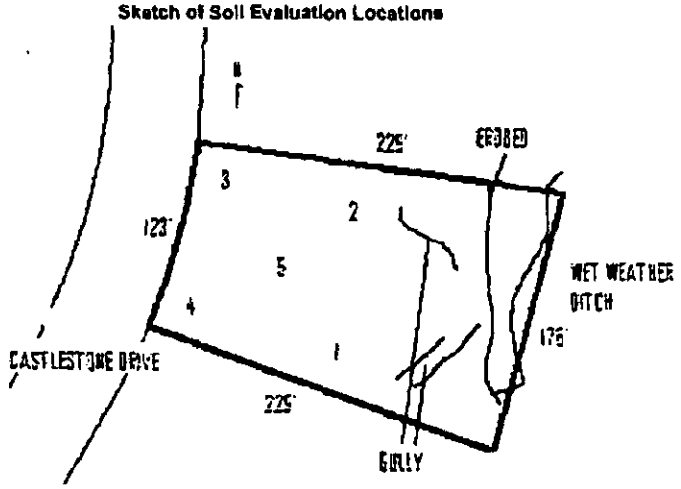
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COMMENTS: 100% Repair Area Required

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

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

Sketch of Soil Evaluation Locations



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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 #: 6872B Permit #: _____ Tax Parcel #: 139-034-23

Property Owner: NVR, INC

Job Location Address: ~~8288~~ 8228 Castlestone Dr. Lot 104

City: Charlotte State: NC Zip Code: 28227

Operation Permit Issuance Date: _____ Contractor Name: _____

Permitted Design Flow: 480 GPD

Liquid Capacity of Dosing Tank: 1000 gallons Dellinger P.T 5-6-07

Liquid Capacity of Septic Tank: 1500 gallons Dellinger STB-338 5-20-07

Effluent Pump Model: _____

Drainfield Installation ☐ N/A

Trench Depth: 24 inches

Trench Width: 30 feet

Line Spacing: 9 feet (O.C.)

Total line length: 420 feet

# of Lines: 36 @ 70 feet

Depth of Media: N/A inches (Type) T&J Panel

Depth of Cover: ~~6~~ 12 inches

Distribution Device: Gate Valve Box

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

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Depth of Cover: _____ inches

Distribution Device: _____

Water Supply Source

☒ Municipal ☐ Private Well ☐ Community Well

☐ Other _____

System Installation Setbacks

Distance from Building Foundation: 5 feet

Distance from Property Line: 10 feet

Distance from Water Supply Source: 10 feet

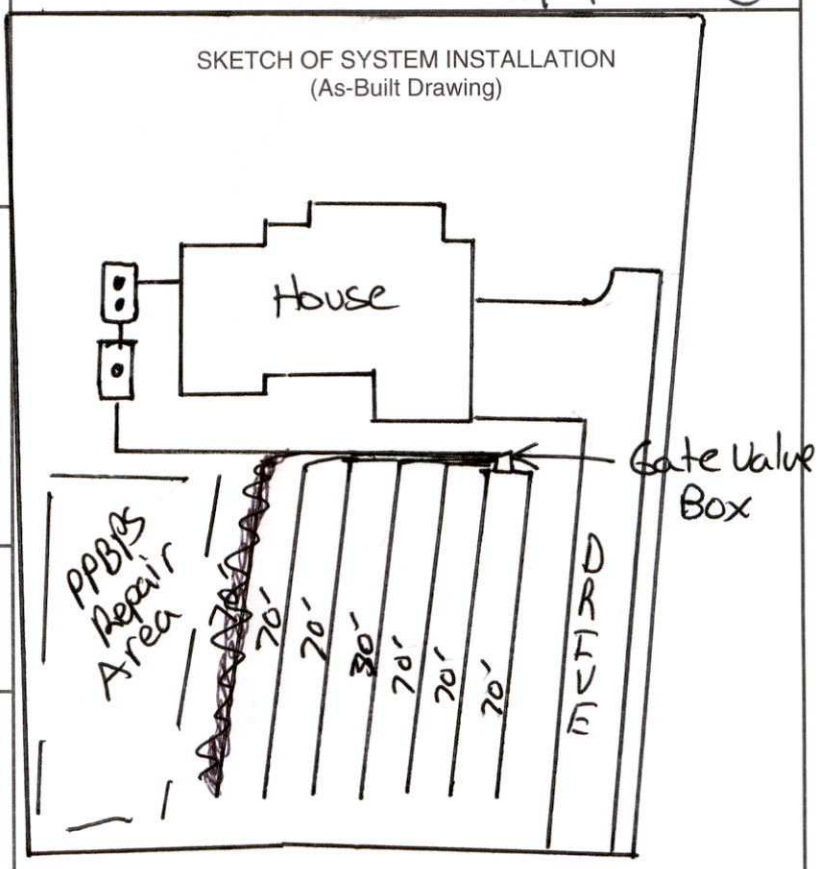
Inspection Dates

Tank(s) Inspected: 06-29-2007 J.M

Excavation Inspected: 06-29-2007 J.M

Pump & Controls Inspected: 8/2/07 DD

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: IIIa, PPBPS, 50% REDUCTION. INSTALLED ACCORDING TO PLANS ON FILE

DENR Authorized Agent: DAVID CARMICHAEL, RS 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

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

File #: 6872B Permit #: _____ Tax Parcel #: 139-034-23

Property Owner: NUR, INC

Job Location Address: ~~8288~~ 7228 Castlestone Dr.

City: Charlotte 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: IVa

*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: Jeremy Michael Date: 06-29-2007

Signature: Jeremy Michael