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

SERVICE REQUEST

Service Request Information

Request Number: **16134**
Request Type: **Resid Pool Approval**
Associated WO Number:
Date Initiated: 7/16/09 2:39:38 PM
Submitted To: MICHAEL, JEREMY

Priority: 3
Status: IP
Initiated By: CRAIG, GWENDOLYN
Dispatched To: MICHAEL, JEREMY

Incident Location

Problem Address: **12000 JUMPER DRIVE, CHARLOTTE, 28227**

Requesting Party Information

First Name	Last Name	Address		
JAMES	FABIAN	12000 JUMPER DRIVE	CHARLOTTE	28227

Home Phone	Work Phone	Other Phone
(704) 545-1156	(704) 806-9746	

Question	Answer

Problem Details

Caller Details	File # 6116B, lft msg on vm 8069746# to call JAM once pool site is marked
Details (cont.)	File # 6116B, lft msg on vm 8069746# to call JAM once pool site is marked

Activity Details

Comments	

f 298421

SERVICE REQUEST/WORK ORDER

Log No.: 16134 Section: PHPM & ES Hazard? ( )Yes ( )No

Date: 7/15/09 Parcel: 197-241-74 <60 Days? ( )Yes ( )No

REQUESTING PERSON: Melinda Beacham PHONE NUMBER(S): 65545

PROPERTY CONCERNED: Name James Fabian (704) 545-1156

ADDRESS: 2000 Jumper Dr CITY Charlotte ZIP 28227

SERVICE REQUESTED: Please check location of septic to the proposed location of pool

ASSIGNED TO/ AREA: JAM COMPLETED BY: _____

DATE	ACTIVITY REPORT
7/16/09	Lot 21 2006 File # 6116B CM on w VM to notify JAM when pool site is marked
7/17/09	Pool located 15ft from drainlines. Site visit made on 7-17-2009 while home owner was present.
7/20/09	CWS not on LD tree for release
7/21/09	I# 298421 CWS added to project, LD approved JC

NOTIFICATION TO REQUESTING PERSON: ( ) WRITTEN ( ) VERBAL ( ) NOT APPLICABLE

COMPLETED BY: Jeremy Mabe DATE 7-17-2009

REVIEWED BY: Kelly Rich DATE 7-17-09

Mecklenburg County Health Department

APPLICATION FOR RESIDENTIAL POOL CONSTRUCTION

(All Sections of this Application Must Be Completed AND Signed for Processing)

Physical street address of installation: 12000 Jumper

Subdivision Name: Meadows of Mint Hill City: Charlotte Zip Code: 28227

Owner: Mr. & Mrs. Fabian Home Phone: 704-545-1156

Mailing Address: 12000 Jumper Work Phone: 704-8069746 MS.

City: Charlotte State: NC Zip Code: 28227

Contractor: Midwest Pools Phone: 704-398-8708

Mailing Address: 4035 Queen City City: Charlotte State/Zip: NC - 28208

1. Type of Water Supply(check one): ☒ City (Municipal) ☐ Private utility (Community) ☐ Private Well
2. Type of Sewage Disposal (check one): ☐ City (Municipal) ☐ Private utility (Community) ☒ Septic system

3. **All outdoor residential swimming pools and spas in Mecklenburg County are required to be completely fenced or protected once the pool is holding water. The minimum fence/barrier required by APPENDIX G of the NC Residential Code is 48"(inches) with no opening greater than four(4) inches through the barrier or more than 2"(inches under the barrier. Gates, when provided, must be self-closing, self-latching, and, where applicable lockable. Other requirements may apply. NOTE-driveway gates, when installed as part of the fence above, must be installed w/ automatic self-closers.**

4. **Attach a scale drawing showing the proposed location of the pool and any buildings, wells, or septic tank systems within 100 feet of the proposed pool.**

MUST BE COMPLETED BY HOMEOWNER OR LEGAL(POWER OF ATTORNEY) REPRESENTATIVE

I James Fabian, owner of the property, agree to the following requirements: *(initials are required beside each item listed.)*

- I certify that the application and site drawing being submitted are accurate and complete. JF
- I hereby authorize agents of the Health Dept. to enter onto the above property to process this request and to conduct a fence and gate inspection of the pool, when requested or needed. JF
- I understand that the pool must be protected by a fence and gate(s) (or equivalent, if above ground) as specified in the NC Residential Code, APPENDIX G and the *Mecklenburg County Health Ordinance Rules Governing Residential Swimming Pools* and must be installed and **completed once the pool is capable of holding water** JF

Signed: [signature] 7/14/09

Property Owner's Signature Date

By signing in this block, the contractor authorizes the processing fee for this request to be charged to their LUESA Contractor Account.

Greg Hoover - Midwest Pools [signature] 7-14-09

NAME(PRINT) Signature Date

This area for MCHD use only:

Amount Paid: $ 75.00 ☐ Cash ☐ Check ☒ Contractor Account

Check Number: _____ Date: 7/16/09 By: [signature]

Contractor Charge Account: X42877

Request #: 3397 Parcel ID#: _____ EHS: _____

Approved By: Jeremy Michael Date: 7-17-09 CRT: _____

Disapproved By: _____ Date: _____ Notify Date: _____

Final/Fencing Inspection By: _____ Date: _____

Signature on the "Approved By" line above by an employee of the MCHD indicates Health Department approval of this application and the accompanying site plan. All approvals are contingent upon the pool being operated in a manner that does not create a public health nuisance or hazard, and completion of the required pool barrier at the time the pool is capable of holding water.

Revised FEB 2008

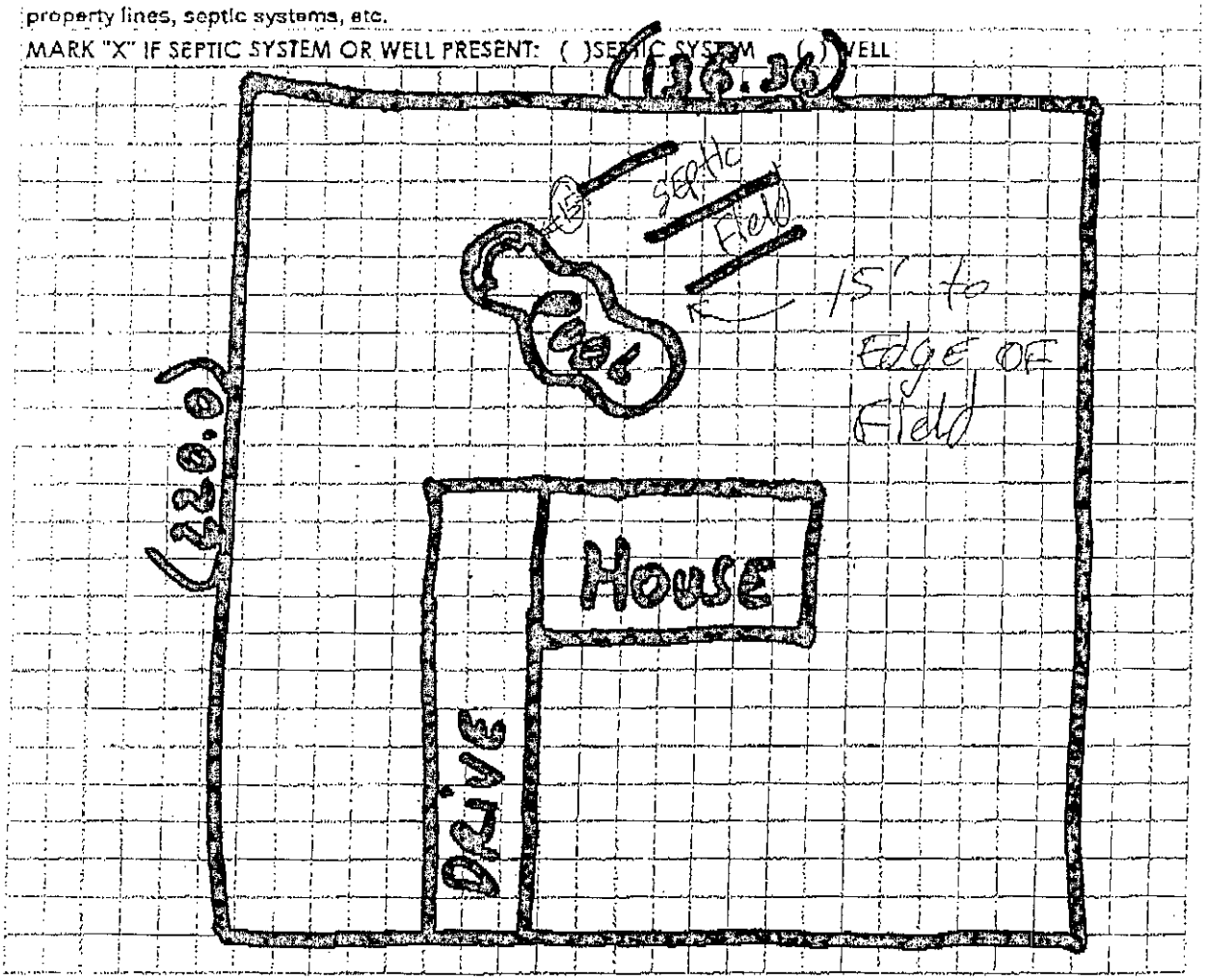
Mecklenburg County Health Department
700 N. Tryon Street, Suite 208
Charlotte, NC 28202
PHONE (704) 336-5101 FAX(704) 336-5306

PLOT PLAN FOR SWIMMING POOL INSTALLATION

ADDRESS: 12000 JUMPER

Draw in all proposed pool, property lines, address road, proposed or existing structures or driveways, underground storage tanks, wells (whether on same lot or not, if within 100 feet), and septic system drainfields. Plot/draw all dimensions, distances, etc. as needed to accurately detail pool layout in relation to structures, property lines, septic systems, etc.

MARK "X" IF SEPTIC SYSTEM OR WELL PRESENT: ( )SEPTIC SYSTEM (X) WELL



I, _____(homeowner) hereby affirm that the drawing above is accurate and understand that any deviation in construction from the pool layout, as approved, may result in removal of the pool or revocation of this approval.

HOMEOWNER SIGNATURE

7-15-09
DATE

OFFICE USE ONLY:
HEALTH DEPT APPROVAL BY: _____ DATE: _____

100% X33575 JHM 2nd Site Evaluation 12/5/05

GWS – RES. APP 12/04

SEPTIC FEE: $300.00
DATE: 8/31/05
CRT [X33575 V.W.

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 & WASTEWATER SERVICES

FILE # 61168

WELL FEE: _____
DATE: _____
CRT [ ]

SEPTIC / TYPE APPLICATION: ☐ NONE ☒ NEW SYSTEM EXISTING SYSTEM: ☐ EXPANSION/ALTERATION ☐ REPAIR

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

JOB LOCATION INFORMATION:

TAX/PARCEL #: 19724116
STREET ADDRESS: Jumper Dr.
CITY: Mint Hill
STATE: NC ZIP: 28027
SUBDIVISION OR MOBILE HOME PARK NAME: Meadows of Mint Hill
LOT #: 21
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: 3,500
NUMBER OF BEDROOMS: 5
NUMBER OF OCCUPANTS: 4

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 (S) ☐ OTHER 'SPRINGS' (O)

PROPOSED USE OF WELL: ☐ N/A ☐ IRRIGATION ☐ POTABLE ☐ GECTHERMAL ☐ 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: NVR, INC
ADDRESS: 10815 David Taylor Dr., Ste 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: Kim Stanley
ADDRESS: PO Box 176
CITY: Stanfield
STATE: NC ZIP: 28163
HOME PHONE: WORK PHONE: 704-792-9639
MOBILE PHONE: FAX: 704-785-8721

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

"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.

Kim Stanley 8/29/05
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

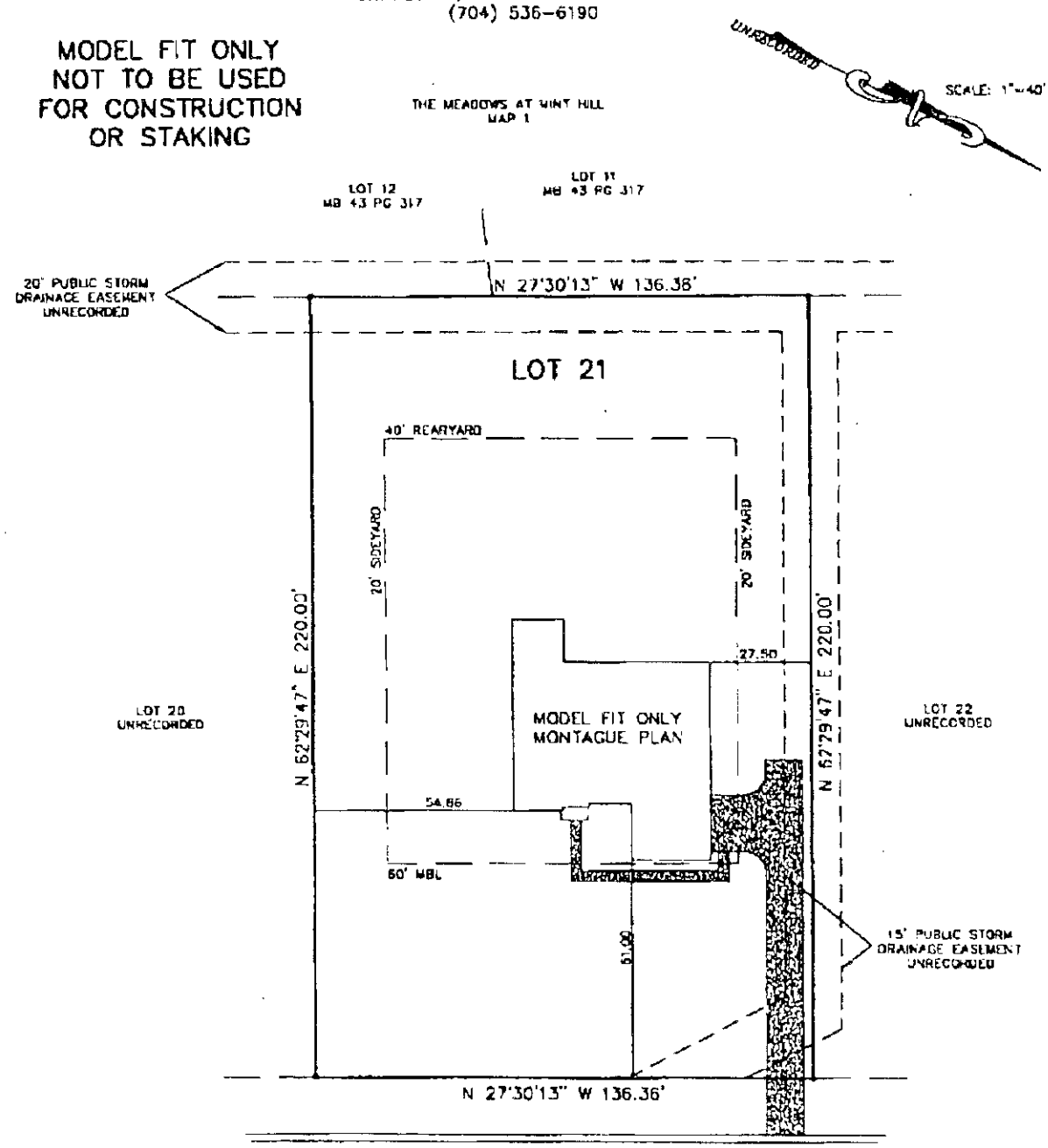
MECKLENBURG COUNTY HEALTH DEPARTMENT
GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST., SUITE 211
CHARLOTTE, NC 28202
704-336-5103 / FAX: 704-336-6894

PROPOSED MODEL FIT

PREPARED BY:

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

MODEL FIT ONLY
NOT TO BE USED
FOR CONSTRUCTION
OR STAKING



JUMPER DRIVE

60' PUBLIC R/W
UNRECORDED

ESTIMATED DRIVEWAY
AREA = 1152.7 SQ.FT.±

NOTE: DELTA LAND SERVICES IS NOT RESPONSIBLE FOR ANY CHANGES DUE TO UNRECORDED COVENANTS AND RESTRICTIONS

STAKEOUT ☐

NOT FOR RECORDATION, CONVEYANCES OR SALES

Subdivision MEADOWS @ MINT HILL, MAP 2 UNRECORDED County MECKLENBURG
Address JUMPER DRIVE Owner RYAN HOMES
Lot 21 Block Plan MONTAGUE Elevation B Drive (Left) (Right) X (Courtyard) Deck

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

Sheet: 1 OF 2
Property ID: PO 197-241-16
Lot #: 21
File #: 6116B
Code: 2

AGS

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: NVR, INC
Applicant: KIM STANLEY
Address: 10815 DAVID TAYLOR DRIVE, CHARLOTTE, NC 28262
Date Evaluated: 11/18/05
Proposed Facility: 5 BR
Design Flow (.1949): 600 GPD
Property Size: 1
Location of Site: JUMPER DRIVE,MINT HILL, NC 28227
Property Recorded: YES
Water Supply: [X] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [ ] Auger Boring [X] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY 1941 1941 Structure/ Texture	1941 Consistence Mineralogy	OTHER PROFILE FACTORS 1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1956 Sapro Class	1944 Restr Horiz	Profile Class & LTAR
	LS, 8	0-18	SBK SCL	VFR SS SP SEXP	>48"	>48"	NA	NA	PS, IV
		18-48	ABK/SBK SC	FI S P SEXP					.25
	LS, 6	0-12	FILL	MASSIVE	"	36"	"	"	PS, IV
		12-21	SBK SCL	VFR SS SP SEXP					.25
		21-48	ABK/SBK SC	FI S P SEXP					
	LS, 5	0-30	FILL	MASSIVE	"	18"	"	"	U, NA
		30-48	ABK C	FI S P SEXP					
	LS, 5	0-12	FILL	MASSIVE	"	36"	"	"	PS, IV
		12-48	ABK C	FI S P SEXP					.25

Description	Initial System	Repair System
Available Space (.1945)	PS	U
System Type(s)		
Site LTAR	.25	.25

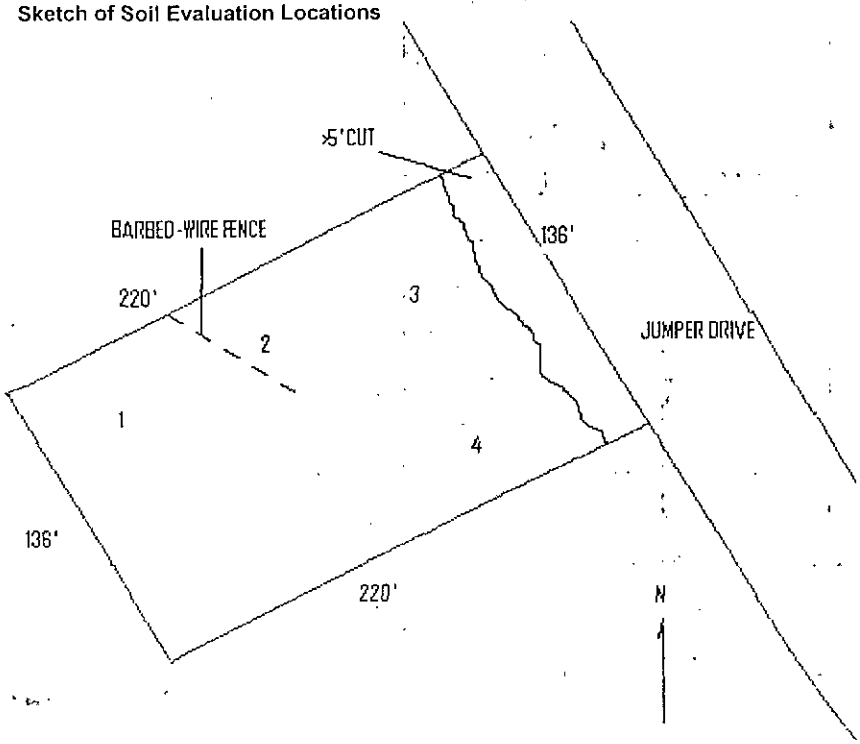
Other Factors (.1946): RECOMMEND FRENCH DRAIN TO DIVERT LATERAL
Site Classification (.1948): UNSUITABLE
Evaluated By: CHRIS SHERRILL, RS, LSS
Others Present: BILL MARLIN, LSS, RICK PRICE, RYAN HOMES

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		M-Massive
LS-Linear Slope				CR-Crumb
FS-Food Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
FP-Flood Plain		SCL-Sandy Clay Loam		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SIC-Silty Clay		
		C-Clay		

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

Sketch of Soil Evaluation Locations



MECKLENBURG COUNTY
Health Department

December 16, 2005

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

Re: Application for improvement permit for
Property Site: Lot 21, Meadows of Mint Hill
Health Department file number: **6116B**

Dear Property Owner or Owner's Agent:

The Mecklenburg County Health Department, Environmental Health Division on **November 18, 2005** evaluated the above-referenced property at the site designated on the site plan that accompanied your improvement permit application. According to your application the site is to serve a 5-bedroom residence, with a design wastewater flow of 600 gallons per day. The evaluation was done in accordance with the laws and rules governing wastewater systems in North Carolina General Statute 130A-333 and related statutes and Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rule .1900 and related rules.

Based on the criteria set out in Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rules .1940 through .1948, the evaluation indicated that the site is **UNSUITABLE for** a ground absorption sewage system. Therefore, your request for an improvement permit is **DENIED.** A copy of the site evaluation is enclosed. The site is unsuitable based on the following:

- ☐ Unsuitable soil topography and/or landscape position (Rule .1940)
- ☒ Unsuitable soil characteristics (structure or clay mineralogy) (Rule .1941)
- ☐ Unsuitable soil wetness condition (Rule .1942)
- ☒ Unsuitable soil depth (Rule .1943)
- ☐ Presence of restrictive horizon (Rule .1944)
- ☒ Insufficient space for septic system and repair area (Rule .1945)
- ☐ Unsuitable for meeting required setbacks (Rule .1950)
- ☒ Other (Rule .1946) Fill

These severe soil or site limitations could cause premature system failure, leading to the discharge of untreated sewage on the ground surface, into surface waters, directly to ground water or inside your structure.

The site evaluation included consideration of possible site modifications, and modified, innovative or alternative systems. However, the Health Department has determined that none of the above options will overcome the severe conditions on this site. A possible option might be a system designed to dispose of

sewage to another area of suitable soil or off-site to additional property.

For the reasons set out above, the property is currently classified **UNSUITABLE,** and an improvement permit shall not be issued for this site in accordance with Rule .1948 (c).

However, the site classified as **UNSUITABLE** may be classified as **PROVISIONALLY SUITABLE** if written documentation is provided that meets the requirements of Rule .1948(d). A copy of this rule is enclosed. You may hire a consultant to assist you if you wish to try to develop a plan under which your site could be reclassified as **PROVISIONALLY SUITABLE.**

You have a right to an informal review of this decision. You may request an informal review by the soil scientist or environmental health supervisor at the local health department. You may also request an informal review by the
N. C. Department of Environment and Natural Resources regional soil specialist. A request for informal review must be made in writing to the local health department.

You also have a right to a formal appeal of this decision. To pursue a formal appeal, you must file a petition for a contested case hearing with the Office of Administrative Hearings, 6714 Mail Center, Raleigh, NC 27699-6714. To get a copy of a petition form, you may write the Office of Administrative Hearings or call the office at (919) 733-0926 or from the OAH web site at www.oah.state.nc.us/form.htm. The petition for a contested case hearing must be filed in accordance with the provision of North Carolina General Statutes 130A-24 and 150B-23 and all other applicable provisions of Chapter 150B. N. C. General Statue 130A-335(g) provides that your hearing would be held in the county where your property is located.

Please note: If you wish to pursue a formal appeal, you must file the petition form with the Office of Administrative Hearings **WITHIN 30 DAYS OF THE DATE OF THIS LETTER.** The date of this letter is **December 16, 2005**. Meeting the 30-day deadline is critical to your right to a formal appeal. Beginning a formal appeal within 30 days will not interfere with any informal review that you might request. Do not wait for the outcome of any informal review if you wish to file a formal appeal.

If you file a petition for a contested case hearing with the Office of Administrative Hearings, you are required by law (N.C. General Statute 150B-23) to send a copy of your petition to the North Carolina Department of Environment and Natural Resources. Send the copy to: Office of General Counsel, N. C. Department of Environment and Natural Resources, 1601 Mail Service Center, Raleigh, NC. 27699-1601. Do **NOT** send the copy of the petition to your local health department. Sending a copy of your petition to the local health department will **NOT** satisfy the legal requirement in N.C. General Statute 150B-23 that you send a copy to the Office of General Counsel, NCDENR.

You may call or write the local health department if you need any additional information or assistance.

Sincerely,

Chris Sherrill, R.S, L.S.S.
Authorized Agent - DENR

Encl: (2)

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

Sheet: 1 OF 2
Property ID: PO 197-241-16
Lot #: 21
File #: 6116B
Code: 2

ACS

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: 10/19/05
Proposed Facility: 5 BR
Design Flow (.1949): 600 GPD
Property Size: 1
Location of Site: JUMPER DRIVE, MINT HILL, NC 28277
Property Recorded: Y
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	OTHER PROFILE FACTORS 1942 Soil Wetness/ Color	1943 Soil Depth (IN:)	1956 Sapro Class	1944 Restr Horiz	Profile Class & LTAR
	LS	0-27	FILL	MASSIVE	>44"	44"	N/A	N/A	U
	5%	27-33	SBK CL	FR SS SP SEXP					N/A
		33-44	ABK/SBK C	FI S P SEXP					
	"	0-11	FILL	MASSIVE	>48"	>48"	"	"	PS, IV
		11-48	ABK/SBK C	FI S P SEXP					.25
	LS	0-6	FILL	MASSIVE	"	"	"	"	PS, IV
	8%	6-33	SBK CL	FR SS SP SEXP					.3
		33-48	ABK/SBK C	FI S P SEXP					
	LS	0-17	SBK CL	FR SS SP SEXP	27"	"	"	"	PS, IV
	10%	17-48	ABK/SBK C	FI S P SEXP	FAINT MOTTLES				.1
	LS	0-28	SBK SCL	FR SS SP SEXP	>33"	33"	"	"	PS, IV
	8%	28-33	ABK/SBK SC	FI S P SEXP					0.3
	LS	0-14	SBK CL	FR SS SP SEXP	>48"	>48"	"	"	PS, IV
	8%	14-48	ABK/SBK C	FI S P SEXP					.3

Description	Initial System	Repair System
Available Space (.1945)	U	U
System Type(s)		
Site LTAR	.3	.1

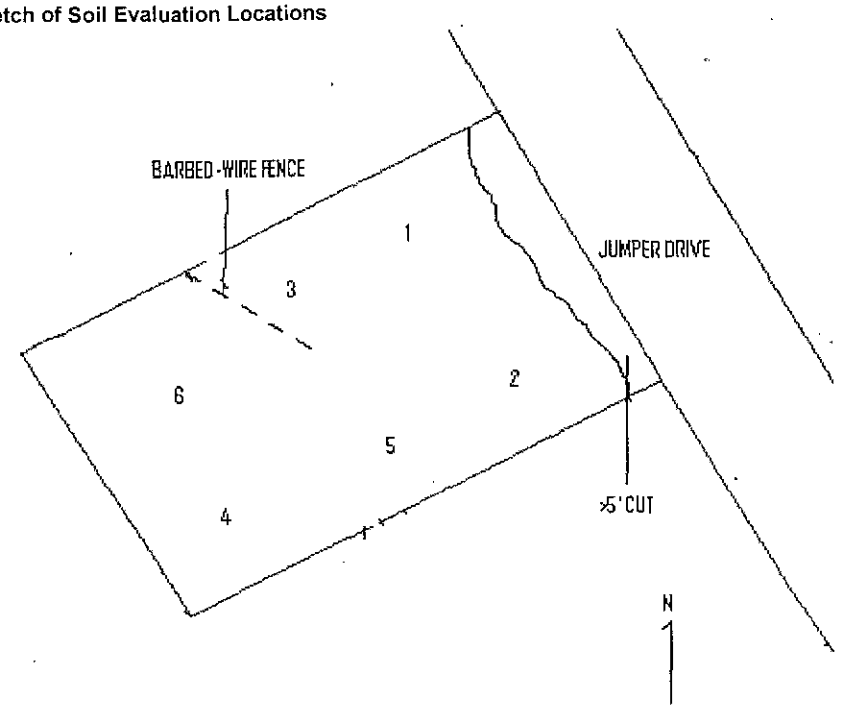
Other Factors (.1946): BACKHOE PITS REQUIRED TO COMPLETE EVALUA
Site Classification (.1948): UNSUITABLE
Evaluated By: CHRIS SHERRILL, RS, LSS
Others Present: NONE

COMMENTS:

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
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CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
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Consistence Moist	Consistence Wet	Mineralogy
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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



Residential Subsurface Wastewater Treatment and Disposal System Design

for

Lot 21 – The Meadows of Mint Hill
12000 Jumper Drive
Mint Hill, North Carolina

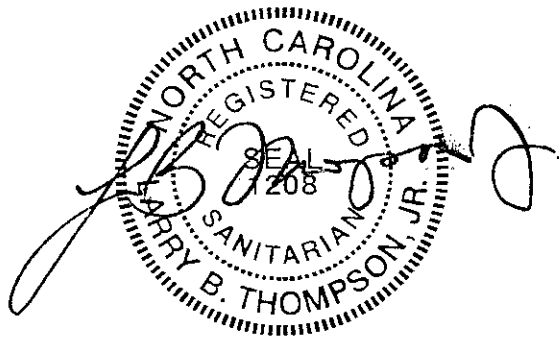
Tax Parcel # 197-24-116 PO
Mecklenburg County File # 6116B
December 5, 2005

Prepared for:

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

Prepared by:

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



CC: Mr. Philo Walker, RS
Mecklenburg County Environmental Health

Details

In an application for an Improvement Permit filed with the Mecklenburg County Health Department (MCHD) by NVR, Inc., the subject property was proposed to be developed with a single family 5-bedroom residence served by a municipal water supply. Based upon this information, a soil and site evaluation was conducted by the MCHD where the lot was determined to be "Unsuitable" for the installation of a subsurface wastewater treatment and disposal system in accordance with 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).

Upon further investigation by Thompson Environmental Consulting, Inc. (TEC), it was determined that a sufficient amount of "Suitable" Group IV soils are located on the property which would allow for the installation of a Type IV pressure dosed prefabricated porous block panel system (PPBPS) for a 5-bedroom residence. It is the desire of the owner that the MCHD consider reclassifying this lot as "Suitable", allowing for the issuance of a Construction Authorization, based upon the following proposal.

Location

The subject property is located in The Meadows of Mint Hill (Lot 21 – 12000 Jumper Drive) in the town of Mint Hill, North Carolina. From NC 51, travel south on SR 1004 (Bain School Road) approximately 0.8 mile, turn left onto Gait Drive and right onto Canter Lane, left onto Filly Road, and left onto Jumper Drive. Lot 21 is located 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, February 1, 2005.

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.
- 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 150 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.

Supply Manifold

- 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 (5) 2" x 2" x 1 ¼" tees to the 2 inch supply line (see pressure manifold detail).

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).

Drainfield Installation

- The drainfield 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 drainfield area will be re-verified.

- Under no circumstances shall any construction take place within the drainfield area while the soil is in a wet condition. If the installer has doubts as to whether or not the drainfield 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 drainfield consists of (4) lateral trenches to be constructed 3 feet wide by 74, 70, 65, and 61 feet in length (highest to lowest). 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 28 inches and each trench shall be placed on a minimum of 9 foot on centers.
- 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 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 consisting of (2) 45-degree elbows 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 manifold 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.

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 drainfield 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 drainfield.
- 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 drainfield.
- 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

Lot 21 – The Meadows of Mint Hill

Daily Design Flow:	600 GPD – 5 bedroom house
Septic Tank Size:	1500 gallons (2 compartments)
Pump Tank Size:	1000 gallons (one piece)
Effluent Loading Rate:	Design = 0.3 GPD per sq. ft. (50 % reduction for the PPBPS)
Supply Length and Diameter:	Approx. 150 feet of 2 inch Sch. 40 PVC (please see note at the bottom of this page.)
Number and Size of Laterals:	(5) 1 1/4 inch x 65 feet
Hole Size:	5/32 inch
Hole Spacing:	1 per panel = 75 total
Dosing Volume:	270 gallons per dose
Flow Rate Through System:	30.53 gallons per minute
Elevation Head:	14.0 feet (may vary, please see note at the bottom of this page)
Pressure Head:	2 feet
Pump Requirements:	30.53 GPM at 13.0 feet of head
Depth of Water Pumped:	12.85" (J&S STB-97-1000 used) check with individual tank manufacturer (1 cu. Ft. of water equals 7.5 gal.)
Pump Run:	8.84 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.

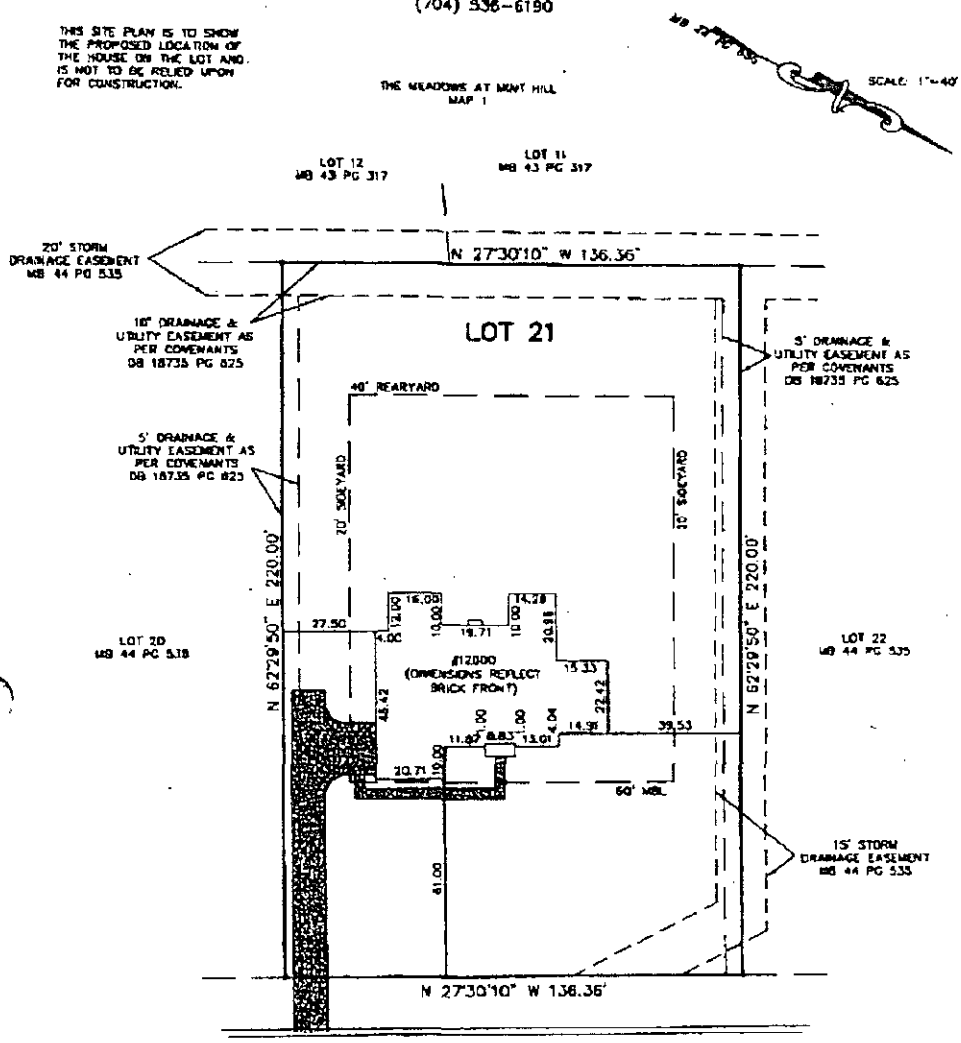
SITE DEVELOPMENT PLAN

PREPARED BY:

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

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

SCALE: 1"=40'



JUMPER DRIVE
60' PUBLIC R/W

ESTIMATED DRIVEWAY AREA = 1310.1 SQ.FT.±

STAKEOUT ☐

NOT FOR RECORDATION, CONVEYANCES OR SALES

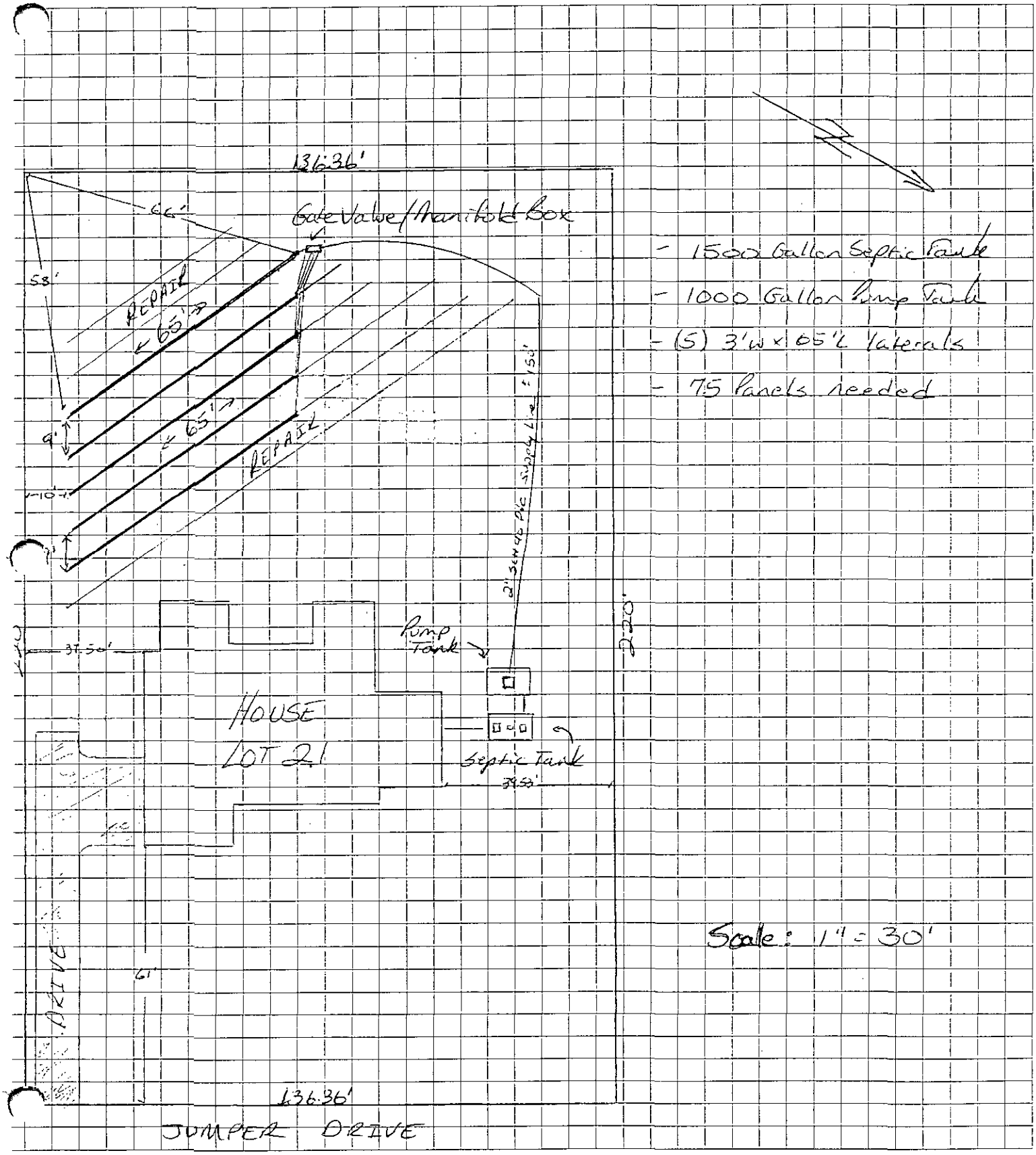
Subdivision MEADOWS @ MINT HILL, MAP 3 County MECKLENBURG
Address 12000 JUMPER DRIVE Owner RYAN HOMES
Lot 21 Block ___ Plan AVALON Elevation C Drive (Left) SIDE (Right) ___ (Courtyard) ___ Deck ___
Patio ___ Fireplace ___ Garage (1 Car) ___ (2 Car) X (3 Car) ___ Brick FRONT Basement ___ Curtain Wall ___
Crawl ___ Slab X Other MORNING ROOM, SUNROOM, CONSERVATORY

REVISED: MODEL CHANGE DWN: TMG CKD: MB DATE: 11/29/05

MEADOWS \MM-D021.DWG - MEC

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

Permit Number: 61168
Location: Lot 21 – The Meadows
Date: December 5, 2005



- 1500 Gallon Septic Tank
- 1000 Gallon Pump Tank
- (5) 3'w x 65'L Laterals
- 75 Panels needed

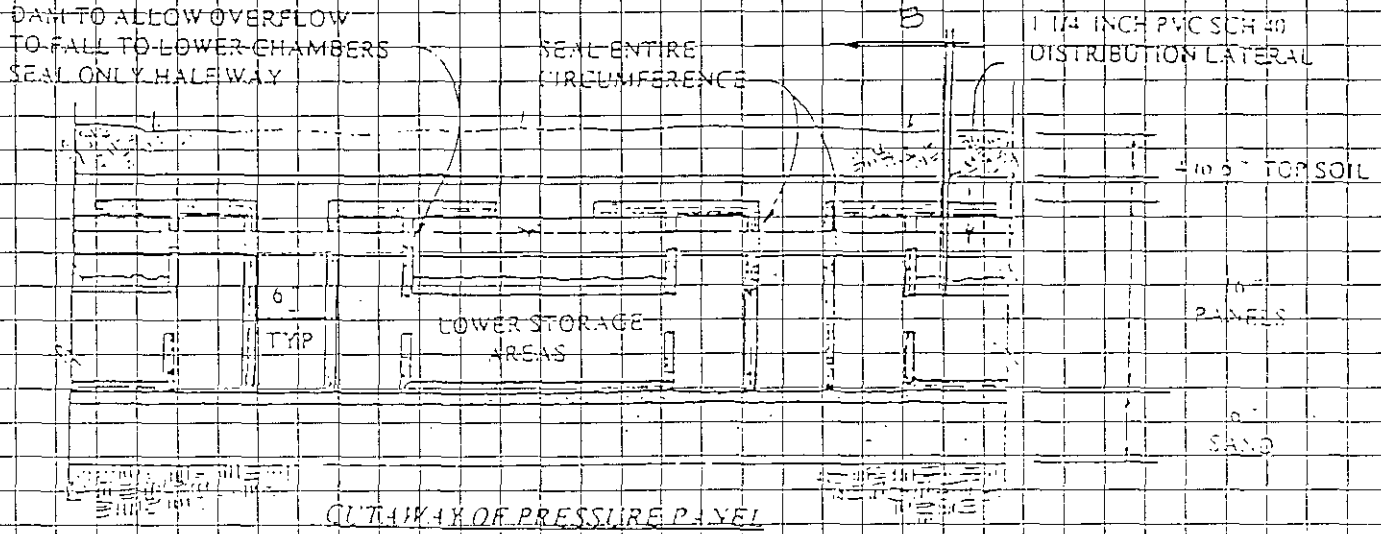
Scale: 1" = 30'

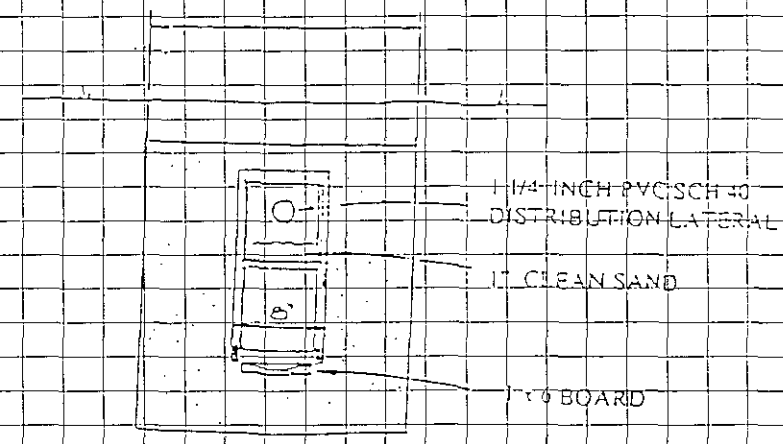
The Catena Group
410-B Millstone Drive
Hillsborough, NC 27278

Permit Number: 61166

Location: LOT 21 - The Meadows

Date: December 5, 2005



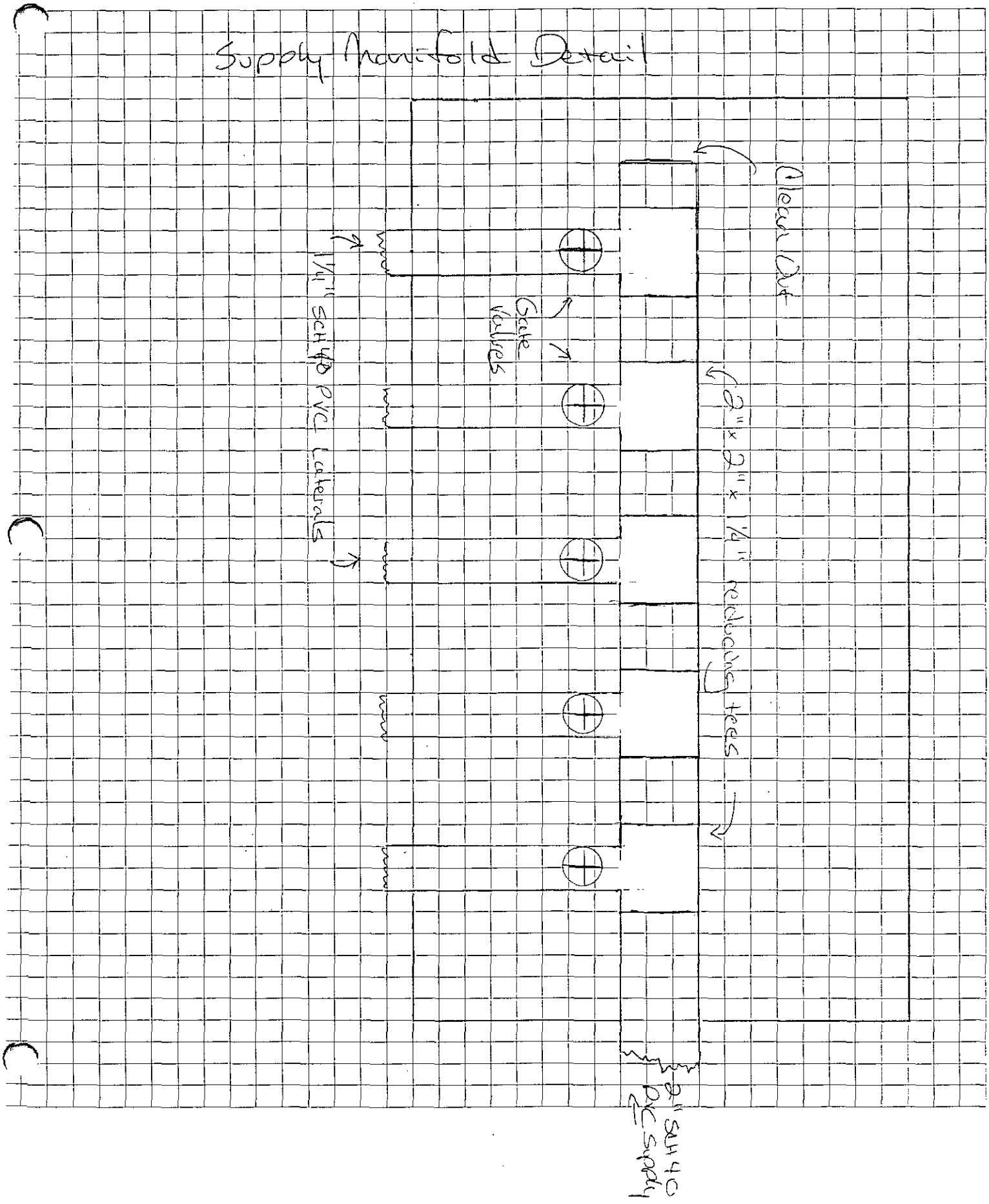


The Catena Group
410-B Millstone Drive
Hillsborough, NC 27278

Permit Number: 6116B

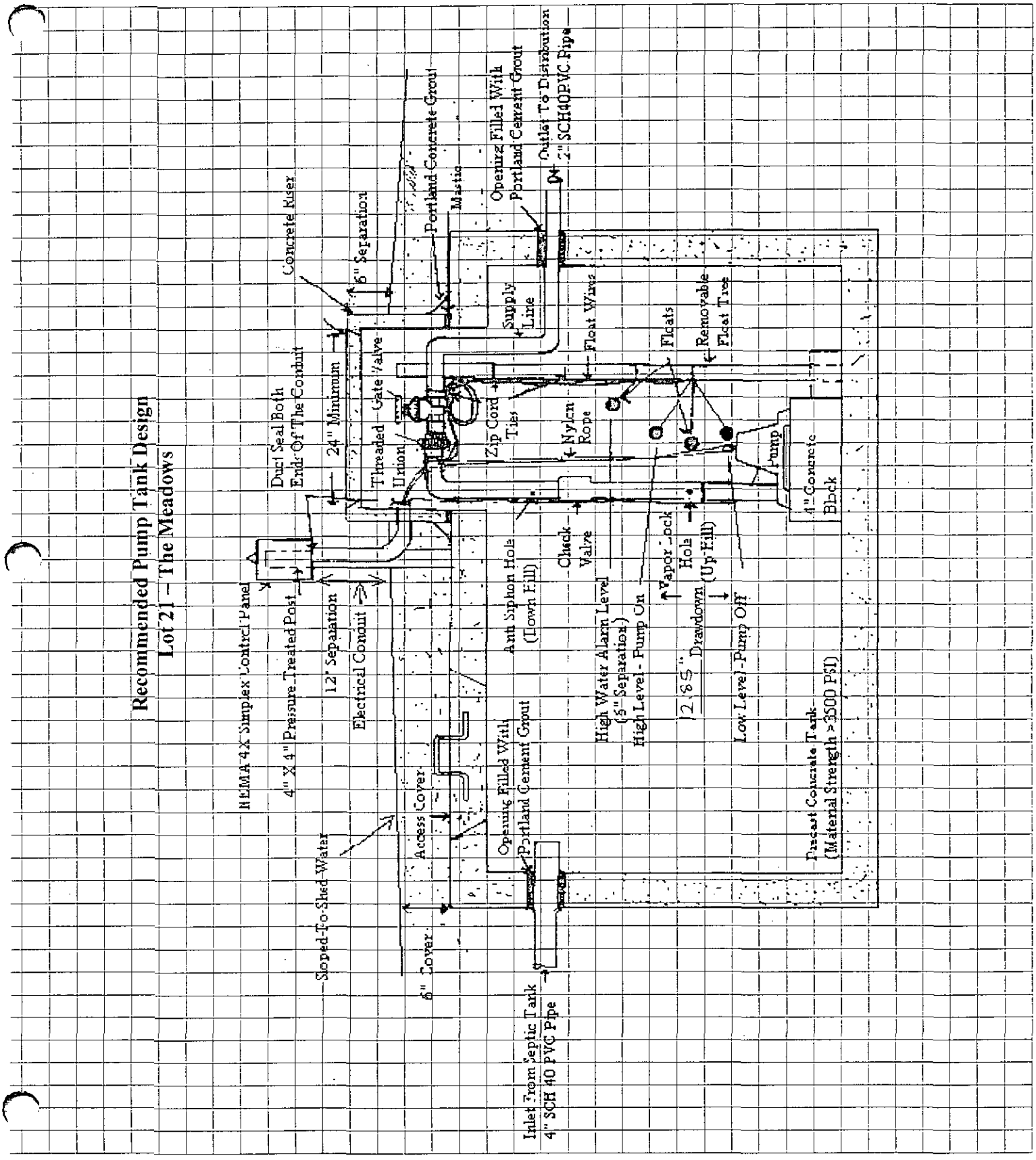
Location: Lot 21- The Meadows

Date: December 5, 2005



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

Permit Number: 6116B
Location: Lot 21 – The Meadows
Date: December 5, 2005



GWS – RES. APP 12/04

SEPTIC FEE: $700.00
DATE: 8/31/05
CRT: X33575 V.W.

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 & WASTEWATER SERVICES

FILE # 6116 B

WELL FEE: _____
DATE: _____
CRT ( )

SEPTIC / TYPE APPLICATION: ☐ NONE ☒ NEW SYSTEM EXISTING SYSTEM: ☐ EXPANSION/ALTERATION ☐ REPAIR

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

JOB LOCATION INFORMATION:

TAX/PARCEL #: 19724116
STREET ADDRESS: Jumper Dr.
CITY: Mint Hill
STATE: NC ZIP: 28027
SUBDIVISION OR MOBILE HOME PARK NAME: Meadows of Mint Hill
LOT #: 21
TOWNSHIP:

☐ 0-MECKLENBURG ☐ 4-FINEVILLE
☐ 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: 3,560
NUMBER OF BEDROOMS: 5
NUMBER OF OCCUPANTS: 4

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 (S) ☐ OTHER 'SPRINGS' (O)

PROPOSED USE OF WELL: ☐ N/A ☐ IRRIGATION ☐ POTABLE ☐ GEOTHERMAL ☐ 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: NVR, INC
ADDRESS: 10815 David Taylor Dr., Ste 150
CITY: Charlotte
STATE: NC ZIP: 28262
HOME PHONE: WORK PHONE: 704-548-3534
MOBILE PHONE: FAX:

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: Kim Stanley
ADDRESS: Po Box 176
CITY: Stanfield
STATE: NC ZIP: 28163
HOME PHONE: WORK PHONE: 704-792-9639
MOBILE PHONE: FAX: 704-785-8721

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

"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.

Kim Stanley 8/29/05
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

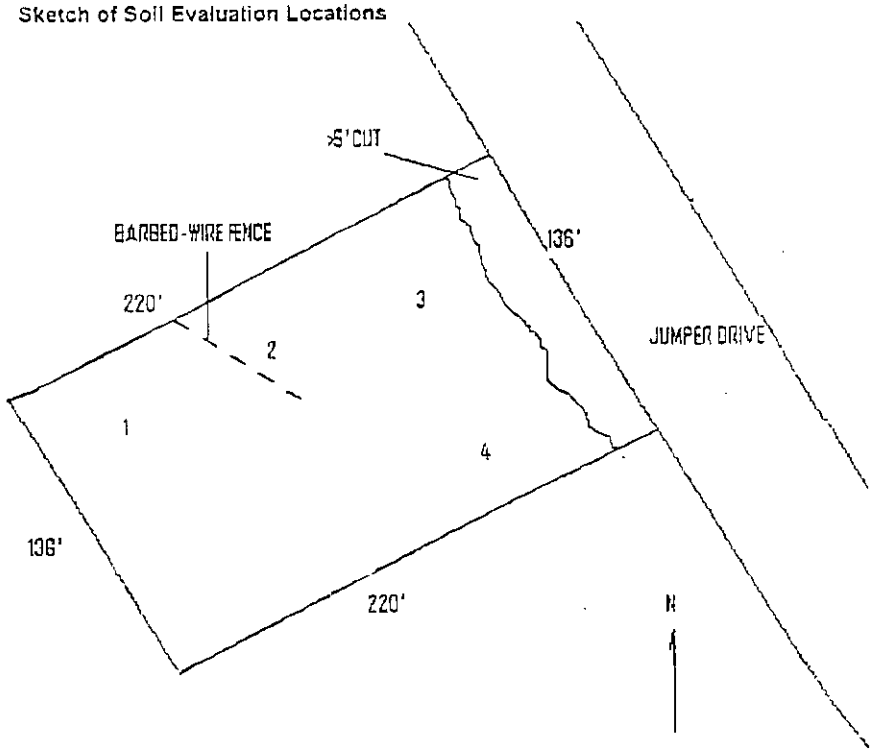
MECKLENBURG COUNTY HEALTH DEPARTMENT
GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST., SUITE 211
CHARLOTTE, NC 28202
704-336-5103 / FAX: 704-336-5694

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		M-Massive
LS-Linear Slope				CR-Crumb
FS-Food Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
FP-Flood Plain		SCL-Sandy Clay Loam		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SIC-Silty Clay		
		C-Clay		

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

Sketch of Soil Evaluation Locations



The Catena Group

410-B Millstone Drive
Hillsborough, NC 27278
(919) 732-1300

Onsite Wastewater Evaluation

Lot 21- The Meadows of Mint Hill

Mecklenburg County, NC

Prepared for:

Ryan Homes

Prepared by:

The Catena Group
410-B Millstone Drive
Hillsborough, North Carolina 27278

LICENSED SOIL SCIENTIST
STEVEN J. MELIN
1264
STATE OF NORTH CAROLINA

Steven J. Melin #1254

Steven J. Melin, LSS

December 2005

INTRODUCTION

Previously the Mecklenburg County Health Department investigated Lot 21 in The Meadows of Mint Hill Subdivision to determine the potential for an on-site subsurface septic system. The site was given a 0.25 loading rate. As a follow-up to this investigation, The Catena Group's services were retained to conduct saturated hydraulic conductivity tests (Ksat's) and to determine appropriate loading rates. Accordingly, this report is submitted to report the findings of the additional tests and to provide hydraulic loading recommendations for system layout.

PRIMARY INVESTIGATOR'S CREDENTIALS

Steven J. Melin: N.C. Licensed Soil Scientist (Certification # 1254)

Education: M.S. Natural Resource Administration - Soil Science Emphasis, North Carolina State University; Raleigh, NC

B.S. Watershed Management, Soil Science Minor, University of Wisconsin-Stevens Point, Stevens Point, WI

INVESTIGATION

Lot 21 in The Meadows of Mint Hill was investigated on December 10, 2005. This lot is located on Jumper Road, and the Subdivision is located off of Bain School Road, just inside of I-485 in Mecklenburg County, North Carolina. Mecklenburg County is located in the located in the center of the Piedmont physiographic region of North Carolina and the soils derived from felsic and mafic igneous rocks. The upland soils on the site can be classified as well drained and shallow to saprolite that formed in material weathered from mafic or intermediate crystalline rocks. These soils are representative of Cecil or Pacolet sandy loam. The site is predominately cleared of vegetation.

The Catena Group personnel made its determinations of the site through observations of the landscape (slope, drainage patterns, past use, etc.) as well as soil properties (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) with hand auger borings within the parent material (BC / C horizons). Soil series found on-site in forested areas were similar to soils mapped as Cecil or Pacolet sandy loam on the NRCS Soil Survey map for Mecklenburg County (1995). According to the Mecklenburg County Soil Survey, these soils are moderately deep, well drained, and moderately permeability.

In order to utilize the lot, further investigations such as hydraulic conductivity were necessary to determine the permeability of the most restrictive horizon. Saturated hydraulic conductivity is a quantitative measure of a saturated soil's ability to transmit water. It can be thought of as the ease with which pores of a saturated soil permit water movement. These K_{SAT} tests take into account soil morphologic factors other than texture, because soil structure and clay mineralogy

have been found to have a significant impact on the rate of water movement through soils (Bouma et al., 1983; Schoeneberger et al, 1995, Vepraskas et al, 1996). Based upon this information, representative loading rates were determined.

Tests were conducted in the Bt horizon. The results of these tests are in the table below.

Table 1. Summary of Hydraulic Conductivity (Ksat) Measurements in Bt horizons

		Results			
Location	**Depth**	**in/hr**	**gal/sq ft/day**	**4% Ksat g/ft^2/d**	**10% Ksat g/ft^2/d**
1 (Bt1)	16.0 - 21.0"	0.386	5.8	0.23	0.58
1 (Bt2)	24.0 - 29.0"	0.206	3.1	0.12	0.31
2 (Bt2)	21.5 - 27.0"	0.227	3.4	0.14	0.34
3 (Bt2)	18.5 - 24.0"	0.214	3.2	0.13	0.32
	Avg	**0.216**	**3.2**	**0.13**	**0.32**

Typically, between 4 – 10% of the final measured K_{SAT} value of the most restrictive layer is used in the water budget calculations. This range is recommended for a new system based on the potential accumulation of organic matter and migration of soil fine particles with the addition of irrigation water. These results in the Bt horizon indicate a 0.3 LTAR is within this range.

Tests could not be run in the BC horizon or C (saprolite) due to water standing in the boring holes between 30-32 inches. However, the USGS rain gauge at Bain Elementary School indicated the area received 2.7 inches of rain in the past 6 days, and 0.5 inches of rain within 30 hours of the site visit. Furthermore, the BC horizon did not show signs of reduced (chroma 2) colors within 50 inches of the soil surface. The structure of the soil in the BC horizon was good. In addition, 2 out of 3 of my borings indicate the texture is clay loam, a group 3 soil (0.3 – 0.6 LTAR range).

The largest limitation of the site is the concave / linear landscape position, which can be overcome by placing a large interceptor drain to divert lateral and surface water flow. It is recommended to place at least a 4' deep drain surrounding the system if a panel block system is used. Gravel can be used in the bottom of the water conveyance drain, and this drain could be routed to a stormwater drain at the bottom of the property.

CONCLUSION

The findings presented herein represent The Catena Group's professional opinion based on our site and soils evaluation and knowledge of the current laws and regulations governing on-site

wastewater systems in North Carolina (Section .1900 of the North Carolina Administrative Code). The largest limitation of the site is the concave / linear landscape position. The tests run in the Bt horizon indicate a loading rate of 0.3 is possible. Although no tests were conducted in the BC horizon, the morphology is good, and will be able to accept a 0.3 loading rate as well. However, a large inceptor drain will have to be constructed to convey water away from drainlines. Overall, this report details the work completed for determining that **an LTAR of 0.30 is recommended for the site**. The final determination and subsequent issuance of an Improvement Permit must be made by the Mecklenburg County Health Department. Any concurrence with the findings of this report would be made at that time.

Table 1. Summary of Hydraulic Conductivity (Ksat) Measurments in Bt horizons

Location	Depth	Results			
		in/hr	gal/sq ft/day	4% Ksat g/ft^2/d	10% Ksat g/ft^2/d
1 (Bt1)	16.0 - 21.0"	0.386	5.8	0.23	0.58
1 (Bt2)	24.0 - 29.0"	0.206	3.1	0.12	0.31
2 (Bt2)	21.5 - 27.0"	0.227	3.4	0.14	0.34
3 (Bt2)	18.5 - 24.0"	0.214	3.2	0.13	0.32
Avg		**0.216**	**3.2**	**0.13**	**0.32**

PROJECT Meadows of Mint Hill DATE 12/10/05 COUNTY Mk.

PROPOSAL/LOT# Lot # 21

Parent material (~~res~~/ coll/ all)_____ clay mineralogy: (~~sl.exp.~~/ exp.?)_____

	Boring # 1	Boring # 2	Boring # 3	Boring #
DEPTH HORIZON I	0 - 7 Ap	0 - 6 Ap	0 - 6 Ap	
COLOR	5 YR 4/4	5 YR 4/3	5 YR 4/4	
TEXTURE	L	sl	SL	
STRUCTURE	1 f sbk	1 f sbk	GR to sbk	
CONSISTENCE	FR / SS	FR / SS	FR / SS	
DEPTH HORIZON II	7 - 21 Bt1	6 - 21 Bt1	6 - 16 Bt1	
COLOR	2.5 YR 4/6	5 YR 4/6	5 YR 4/6	
TEXTURE	CL	CL	CL	
STRUCTURE	2 m sbk	1|2 m sbk	2 m sbk	
CONSISTENCE	FI / Sticky / Pl.	FI / Sticky / Pl.	Sticky / FI / Pl.	
%CLAY	35% / 0.35	35% / 0.3	37% / 0.3	
DEPTH HORIZON III	21 - 36 Bt2	21 - 36 Bt2	16 - 32 Bt2	
COLOR	2.5 YR 4/6	2.5 YR 5/6	2.5 YR 4/6	
TEXTURE	C	C / SC	C	
STRUCTURE	2 m sbk / abk	2 m sbk	2 m sbk	
CONSISTENCE	FI / VPl. / Sticky	FI / VPl. / Sticky	FI / VPl. / Sticky	
%CLAY	40% / 0.3	40% / 0.30	40% / 0.3	
		- Quartz fragm	- Quartz fragm	
			Faint ma	
DEPTH HORIZON IV	38 - 55+ BC	36 - 54+	32 - 58" BC	
COLOR	2.5 YR 5/6	2.5 YR 5/6	2.5 YR 4/6	
TEXTURE	CL	CL	SC	
STRUCTURE	1|2 m sbk	2 m sbk	2 m sbk	
CONSISTENCE	FI / Mod. Pl. / Sticky	FI / Pl. / Sticky	FI / VPl. / Sticky	
	→ 40+ 0.3	40+ - 0.3	No ma	
Soil Depth ? Restrict. Hor?	> 55" 52"	> 54" 54"	58" 55"	
Ld. pos.? Wet? % slope	Cc/LS 0-4%	Cc/LS 0-4%	Cc/LS 0-4%	
LTAR/soil group/ CLASSIFICATION (PS/U)	0.3 / 4	0.3 / 4	0.3 / 4	
Notes:	k.d.c.d colors @ 42"	Fe Mn conc 50-54	Gradual color @ 55	

Described by: SJM @ 1254

→ H_2O standing in boring @ 30-35" (consistent with rain in past week) → Kaolinite in Bt

CONDITIONS OF IMPROVEMENT PERMIT / CONSTRUCTION AUTHORIZATON

Permit Number: **6116B** Tax Number: **197-241-16**

- The 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.

Basement: ☐ Yes ☒ No ☐ Partial Basement

Primary Wastewater System

Type: ☐ I ☐ II ☐ III ☒ IV ☐ V ☐ VI

☐ Conventional
☒ Prefabricated, permeable block panel system
☐ Shallow Placed Conventional

☒ Low Pressure Pipe
☐ Large Diameter Pipe
☐ Fill
☐ Other

☐ Innovative or Experimental:

0.3 Long-term acceptance rate (GPD/ft^2)	**600** Max gallons/day wastewater flow	**1000** Absorption Area (ft^2)	**9** Trench spacing (min. on centers) (ft)
Serviced by private well: ☐ Yes ☒ No	**1500** Gallon septic tank	**333** Total trench length (ft)	**28** Maximum trench depth (in) (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions.)
5 Bedrooms in residence	**1000** Gallon pump tank	**na** Depth of stone (in)	

Any surface water present: **No** Type: Minimum separation distance (ft):

Additional conditions: **Install according to plans on file submitted by Larry Thompson for NVR, INC.**
Maintenance agreement with a certified operator required to be on file before CO release.
Agreement forms required before CO release.

Repair Area System

Type: ☐ I ☐ II ☐ III ☒ IV ☐ V ☐ VI

☐ Conventional
☒ Prefabricated, permeable block panel system
☐ Shallow Placed Conventional

☒ Low Pressure Pipe
☐ Large Diameter Pipe
☐ Fill
☐ Other

☐ Innovative or Experimental:

1000 Absorption Area (ft^2) **333** Total trench length (ft)	**na** Depth of stone (in)	**9** Trench spacing (min. on centers) (ft)	**28** Maximum trench depth (in)

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

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

*** This Improvement permit is transferable.

DENR Authorized Agent Date 1/12/06

Owner/Agent Signature Date

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
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

CONDITIONS OF IMPROVEMENT PERMIT / CONSTRUCTION AUTHORIZATON

Permit Number: 1168 Tax Number: 197-241-16

- The 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.

Basement: ☐ Yes ☒ No ☐ Partial Basement

Primary Wastewater System

Type: ☐ I ☐ II ☐ III ☒ IV ☐ V ☐ VI

☐ Conventional
☒ Prefabricated, permeable block panel system
☐ Shallow Placed Conventional
☒ Low Pressure Pipe
☐ Large Diameter Pipe
☐ Fill
☐ Other
☐ Innovative or Experimental:

0.3 Long-term acceptance rate (GPD/ft^2)	500 Max gallons/day wastewater flow	1000 Absorption Area (ft^2)	9 Trench spacing (min. on centers) (ft)
Serviced by private well: ☐ Yes ☒ No	1600 Gallon septic tank	333 Total trench length (ft)	28 Maximum trench depth (in) (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil condition.)
5 Bedrooms in residence	1000 Gallon pump tank	08 Depth of stone (in)	

Any surface water present: No Type: Minimum separation distance (ft):

Additional conditions: **Install according to plans on file submitted by Larry Thompson for NVR, INC. Maintenance agreement with a certified operator required to be on file before CO release. Agreement forms required before CO release.**

Repair Area System

Type: ☐ I ☐ II ☐ III ☒ IV ☐ V ☐ VI

☐ Conventional
☒ Prefabricated, permeable block panel system
☐ Shallow Placed Conventional
☒ Low Pressure Pipe
☐ Large Diameter Pipe
☐ Fill
☐ Other
☐ Innovative or Experimental:

1000 Absorption Area (ft^2) 333 Total trench length (ft)	ne Depth of stone (in)	9 Trench spacing (min. on centers) (ft)	28 Maximum trench depth (in)

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

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

*** This Improvement Permit is transferable.

DENR Authorized Agent — Date 1/12/06

Owner/Agent Signature — Date 1-12-06

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
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

IWWS-100195

X33575

FEE: 300.00
DATE: 1/12/06
N.KA

AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION

LD 15982 9
ACO

PERMIT NUMBER: 6116B
PARCEL NUMBER: 197-241-~~16~~ 74

JOB LOCATION ADDRESS: 12007 Jumper Drive Lot #21
PROPERTY OWNER: NVR, Inc.
BUILDING CONTRACTOR: Ryan Homes
SUBDIVISION NAME: The Meadows of Mint Hill
AUTHORIZATION ISSUED BY: David Cornelius, RS DATE: 01/12/06

DENR/DEH AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NUMBER 6116B, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

2. AN *INSTALLATION, CONSTRUCTION, ALTERATION AND/OR REPAIR APPROVAL* MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A REGISTERED SEPTIC TANK CONTRACTOR WITH THE MECKLENBURG COUNTY HEALTH DEPARTMENT.

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

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

5. OTHER CONDITIONS:
   Install according to plans on file submitted by Larry Thompson @ The Catena Group, 12/5/05.
   Maintenance agreement with a certified operator required before CO release.
   Agreement forms required before CO release.

INSTALLATION, CONSTRUCTION, ALTERATION, AND/OR REPAIR APPROVAL

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON ST., SUITE 211
CHARLOTTE, NC 28202
PHONE (704) 336-5103

FILE: 6116B DATE: 3/17/06

TC: 197-241-16 ☐ L

SERIAL Nº 20645

Permission is hereby given to _____ (Install) or Construct, _____ Alter or Repair the individual septic tank wastewater treatment system with subsurface, soil absorption, effluent discharge as specified herein at the described location. This permit is granted based upon the information supplied in the application dated 1/12/06. All work shall be completed on or before 4/17/06, after which date this permit 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 the granting of this permit. A Certificate of Completion or an Operation Permit must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now or hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.

INSTALL IN ACCORDANCE WITH PLAN ON FILE

PLOT OF SYSTEM

Liquid Capacity of Septic Tank 1500 gallons

Liquid Capacity of Dosing Tank 1500 gallons

Tank Construction PCC

Trench Depth 28" MAX

Absorption and/or Nitrification Lines:

Trench Width 3 feet

Trench Walls Scored and Porous ✓

Total Line Length 333 feet

Number of Lines 5 @ 3'x65'

Depth of Stone 24" SAND ~~inches~~

Distance from House >5 feet

Distance from Property Line >10 feet

Distance from Well >50 feet

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

NAME OF OWNER NVR, INC.

LOCATION OF PROPERTY 12000 JUMPER DR., LOT 21

Comments: _____

Christy M Shen RS, LSS
Environmental Health Specialist

WHITE - HEALTH DEPARTMENT's COPY • CANARY - E.H.S. COPY • PINK - OWNER OR AGENT's COPY

THE CATENA GROUP, INC.

March 31, 2006

Mr. Chris Sherrill, RS, LSS
Mecklenburg County Environmental Health
700 N. Tryon Street, Suite 211
Charlotte, North Carolina 28202

RE: Lot 21 – The Meadows at Mint Hill

Dear Mr. Sherrill,

The purpose of this letter is to authorize a change in the valve box location as well as the septic and pump tank locations from those shown in our plan for Lot 21 of The Meadows at Mint Hill.

By way of this letter, we will allow the septic tank contractor to install the system valve box in the area of the lowest drain line as opposed to the uppermost drain line as depicted in our plan. We also approve the reversal of the septic and pump tank locations on our plan.

If you have any further questions regarding this authorization, please feel free to contact me at 704-301-4881.

Sincerely,

Larry B. Thompson, Jr., RS, PWS

LBT

410-B MILLSTONE DRIVE • HILLSBOROUGH, NC • 28371
PHONE: 704-301-4881 • FAX: 704-888-1496
WEB: WWW.THECATENAGROUP.COM

Project No. 159829

FILE COPY	
FILED FOR REGISTRATION	DOC. # 910539
DATE 12/16/05	TIME 9:55 am
BOOK 19766	PAGE 978
STAMPS	REC FEE 20.00
JUDITH A. GIBSON, REGISTER OF DEEDS MECKLENBURG COUNTY, NC	

STATE OF NORTH CAROLINA

COUNTY OF MECKLENBURG

WASTEWATER TREATMENT AND DISPOSAL SYSTEM DESIGN AGREEMENT: 15A NCAC 18A .1948 AND ANY OF THE FOLLOWING RULES: .1956; .1957(a); .1957(b); or .1957(c); OR .1969
MA 1021

FILE # 6116B
PARCEL # 197-241-74

The undersigned, NVR INC DBA Ryan Homes, owner of property located at 12000 Jumper Dr, (the "site") and described in an instrument recorded in Book 44 at Page 535, Mecklenburg Public Registry, hereby acknowledges that the undersigned applied to the Mecklenburg County Health Department (the 'Department") for a permit to install a septic tank sewage disposal system on the site; that the Department evaluated the site for suitability for such a system in accordance with the regulations promulgated by the North Carolina Commission for Health Services as 15A NCAC 18A .1900 et seq.; that the Department originally classified the site as "unsuitable" pursuant to the standards set forth in the regulations; that the undersigned requested that the Department reclassify the site as "provisionally suitable" in light of the particular septic tank system proposed by the undersigned; that the Department considered various studies, data, and other information which indicate to the Department that the septic tank system proposed by the undersigned is allowed by the rules; and that the Department therefore reclassified the site as "provisionally suitable" and issued an appropriate permit for such proposed septic tank system.

The undersigned further acknowledges that the proper design, construction, operation and maintenance of such septic tank system is the responsibility of the designer, owner, developer, installer, or user of the system, as applicable, and that neither the Department nor its officials, employees, or agents warrant or guarantee that the said system installed pursuant to the permit issued by the Department will function in a satisfactory manner for any given period of time or that the Department, its officials, employees or agents assume any liability for any damages of any kind which are caused, or which may be caused, by a malfunction of such system.

The undersigned further acknowledges that the following conditions will apply to the site:

This instrument was prepared by: NVR, Inc DBA Ryan Homes
Mail after recording to: 10815 David Taylor Dr
Charlotte, NC 28262

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

6116B

Panel bb dc-lpp

THIS AGREEMENT is made and entered into this 24 day of April, 2006 by and between Ryan Homes (hereinafter the "Owner") and R.C.S., Inc. , Joe R. Hudson (hereinafter the "Contractor").

WITNESSETH

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

WHEREAS, 15A N.C. Admin.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. Admin. 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. Admin. Code 18A.1961 to manage a Type lpp 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 12000 Juniper Dr. Lot 21 Meadows of Mint Hill

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

a. The Contractor shall inspect the system at least at the frequency required in Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type Ipp system.

b: The Contractor shall perform th following routine maintenance procedures in accordance with the conditions of the Operation Permit:

(1) (from the operation permit)
(2)
(3)

c. The Contractor shall report the results of its inspections to the local health department at the frequency specified in Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type Ipp system.

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

e. The Contractor shall notify the Owner of needed repairs which are outside of the scope of routine maintenance described in subparagraph (b) above. 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.

f. The Contractor shall employ of shall contract with a certified operator(s) if required by Table V(b) of 15A N.C. Admin. Code 18A.1961(b) for a Type Ipp System.

g. The Contractor shall respond to a request for a nonscheduled service or maintenance call within 24-48 hours after receipt of such request depending on the urgency of the request.

2. The Owner's Obligations.

a. The Owner shall pay to the Contractor the sum of $ 200.00 per year for periodic inspections, routine maintenance procedures and periodic reports. The annual fee may be amended upon sixty(60) days advance notice to the Owner but may not be increased more than 20 percent per year. 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 shall accrue interest

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

from the due date until paid at a rate of 15 percent per month.

b. Within 10 days of receipt of notice of needed repairs pursuant to paragraph 1.e. above, 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 tor 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 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 to 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 is 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 is not paid within thirty (30) days of receipt by the Owner of the bill. If said bill is paid after notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

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 within 10 days of receipt of notice of needed repairs pursuant ot paragraph I.e. above. If said authorization to comlete needed repairs or evidence of completion of said repairs is provided afler notice of termination is given but prior to the date of termination of this Agreement, this Agreement shall continue in effect;

(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 not terminate this Agreement without cause, but may 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 tights 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 NC Admin. Code 18A.1961 to manage a Type lpp 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, auhority and legal right to enter into and perform its obligations as set forth in this

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

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 a 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: Ryan Homes
10815 David Taylor Drive
Charlotte, N.C. 28262

To the Contractor:
R.C.S. ,Inc.
Joe R. Hudson
PO Box 708
Monroe, NC 28111

To the Local Health Department:
Mecklenburg County Environmental Health
700 North 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 of attempted delivery, as the case may be. Changes in the respective addresses to which notice may be directed may be made form time to time by either Party by notice to the other party/

10. Place of Agreement. This Agreement and any questions concerning its validity, construction or performance shall be governed by the laws of the State of

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

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. 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 of such other appropriate actions as shall to the maximum extent 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 action, 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)

Attest:

(Contractor)

Attest:

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 #: 6116 B Permit #: 6116 B Tax Parcel #: 197-241-16

Property Owner: NVR, INC.

Job Location Address: 12000 JUMPER DRIVE, LOT 21

City: MINT HILL State: NC Zip Code: 28227

Operation Permit Issuance Date: _____ Contractor Name: RCS

Permitted Design Flow: ~~450~~ 600 GPD

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: 1500 gallons

Effluent Pump Model: GOULDS 311-L (1/3 hp)

Drainfield Installation ☐ N/A

Trench Depth: 28 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 325 feet

# of Lines: 5 @ 65 feet

Depth of Media: 24 inches (Type) SAND

Depth of Cover: 6 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: 50 feet

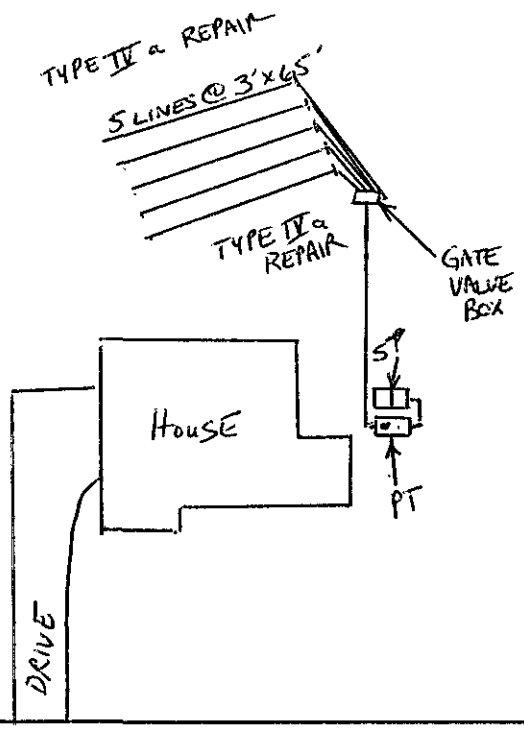
Inspection Dates

Tank(s) Inspected: 3-31-06

Excavation Inspected: 3-31-06

Pump & Controls Inspected: 4-26-06

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: PPBPS (50% REDUCTION) TYPE IV a + REPAIR (SAME)

DENR Authorized Agent: Chris Sherrill, RS, LSS Signature: Christopher M. Sherrill



12000 JUMPER DR

19724174

1/9/2008

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Groundwater and Wastewater Services File Imaging Project
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