

11908 CANTER LN

19724159

1/9/2008

duponbj

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

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 #: 5964B Permit #: _____ Tax Parcel #: 197-241-59

Property Owner: NUR INC.

Job Location Address: 11908 CANTER LN. (LOT #6)

City: MINT HILL State: NC Zip Code: 28227

Operation Permit Issuance Date: 9/19/07 Contractor Name: RCS

Permitted Design Flow: 480 GPD

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: — gallons

Effluent Pump Model: —

Drainfield Installation ☐ N/A

Trench Depth: 36 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 270 feet

# of Lines: 6 @ VAR feet

Depth of Media: 24 inches (Type) SAND

Depth of Cover: 12 inches

Distribution Device: D-BOX; FLOW DIVIDER

Inspection Dates

Tank(s) Inspected: 9/19/07

Excavation Inspected: 9/19/07

Pump & Controls Inspected: —

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 _____

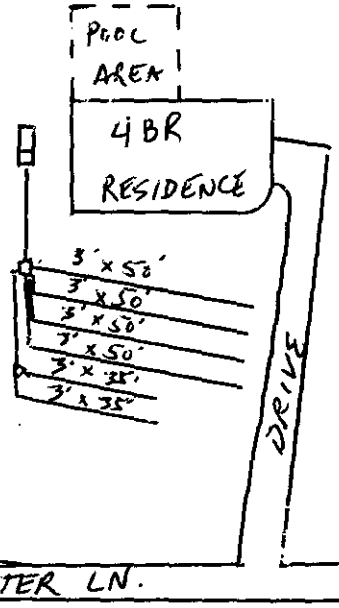
System Installation Setbacks

Distance from Building Foundation: 5 feet

Distance from Property Line: 10 feet

Distance from Water Supply Source: 10 feet

SKETCH OF SYSTEM INSTALLATION
(As-Built Drawing)



INSTALLED PER PLANS ON FILE CMS 9/19/07

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

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

Comments: System Classification & Type: III e PPBPS GRAVITY; INSTALLED / 1961

DENR Authorized Agent: Chris Sherrill, RS, CSS Signature: _____

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

File #: 5964B Permit #: _____ Tax Parcel #: 197-241-59

Property Owner: NVR, INC.

Job Location Address: 11908 CANTER LN. (LOT #6)

City: MINT HILL State: NC Zip Code: 28227

OPERATION PERMIT CONDITIONS:

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

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

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

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

System Classification: IIIe

*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: Chris Sherrill, RS, LSS Date: 9/19/07

Signature: Chris M Sherrill

Groundwater & Wastewater Services
Septic Project File & Data Review Worksheet

GWS File #: 5964B WASPS App #: _____

Primary ES assigned to project: PETE WALKER

Secondary ES assigned to project: CHRIS SHERRILL

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

I. File Review:

Rule or Law	Permit Application			
.1937(d)	*Is the Application complete*	Yes ☒	No ☐	N/A ☐
.1937(d)	Is there a Site plan/Plat with application	Yes ☒	No ☐	N/A ☐
.1937(d)	Is the Facility shown?	Yes ☒	No ☐	N/A ☐
.1937(d)	Are appurtenances shown	Yes ☒	No ☐	N/A ☐
	Site Evaluation Information			
.1939 (a)(1)	Topography and Landscape Position Recorded?	Yes ☑	No ☐	N/A ☐
.1940 (a-g)	Slope % Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Texture Class Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	*Structure type Recorded?*	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Consistence Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(2)	Mineralogy Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(3)	Soil Wetness Condition Recorded?	Yes ☑	No ☐	N/A ☐
.1939 (a)(4)	Soil Depth to Rock or Parent Material Recorded When Encountered	Yes ☒	No ☐	N/A ☑
.1939 (a)(5)	Depth to Restrictive Horizons Recorded When Encountered?	Yes ☐	No ☐	N/A ☑
.1939 (a)(6)	Sufficient Available Space Recorded?	Yes ☑	No ☐	N/A ☐
.1937(m)	Are the Profile Locations Shown?	✓		
.1939(a)	Are the S/PS Profiles in system & in repair area?	Yes ☑	No ☐	N/A ☐
& .1945(b)	Number of auger borings made: 4 Were sufficient auger borings made?	Yes ☑	No ☐	N/A ☐
.1939(d), .1955, .1956, .1957	LTAR 0.3	Yes ☑	No ☐	N/A ☐
	Improvement Permit/Construction Authorization			
.1937(g) 130A-336(a)	Proposed System Type stated-Initial	Yes ☑	No ☐	N/A ☐
.1945(b)	Proposed System Type stated-Repair	Yes ☑	No ☐	N/A ☐
130A-336 (a)(3)	System location identifiable by setbacks - Initial	Yes ☑	No ☐	N/A ☐
.1937(g) .1945(b)	System components shown – Initial	Yes ☑	No ☐	N/A ☐
.1945(b)	Repair area shown	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Does System design match facility, flow & WWcharacteristics?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is System design consistent with soil/site conditions?	Yes ☑	No ☐	N/A ☐
.1937 (f)(g)	Is the System located in the approved area?	Yes ☑	No ☐	N/A ☐
130A-336(a)	Is the Design flow (gpd) indicated?	Yes ☑	No ☐	N/A ☐

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

II. WASPS Review:

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

Items requiring correction/modification: _____

Comments:

_____

_____

_____

_____

_____

IA issued date: 9-17-07

OP issued date: 9-19-07

Review performed by: _____ Date performed: 9/25/07

200.00 4/20/05 433575

2723# BM

GWS – RES. APP 12/04

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 # 5964B

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 / 197-241-59
STREET ADDRESS: 11908 Canter Lane
CITY: Mint Hill
STATE: NC ZIP: 28227
SUBDIVISION OR MOBILE HOME PARK NAME: The Meadows
LOT #: 60
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: 4 PB 7/1/05
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 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 1176
CITY: Stanfield
STATE: NC ZIP: 28163
HOME PHONE: 792-9639 WORK PHONE:
MOBILE PHONE: 791-6852 FAX: 792-9639

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? April 2005
WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY? ~~June~~ 2005 July

*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 4/18/05
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

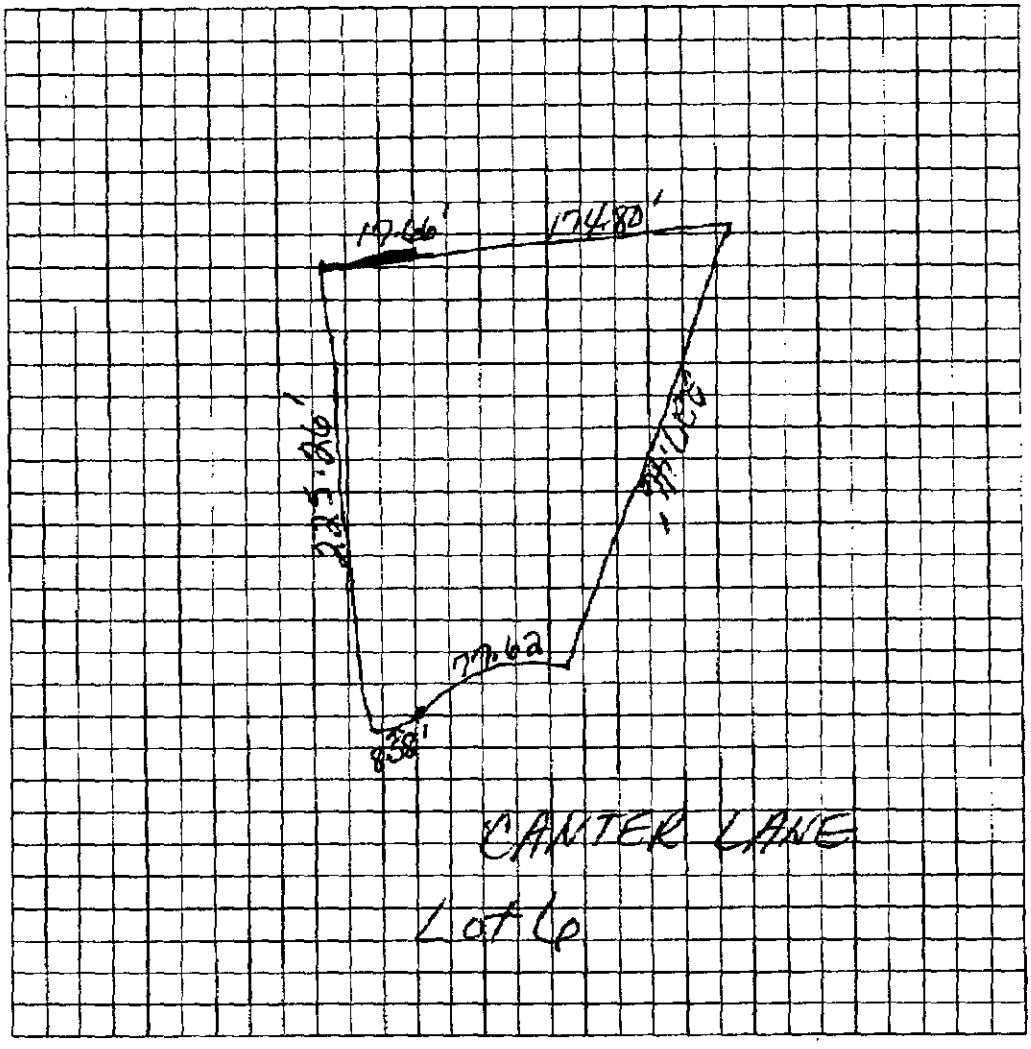
MECKLENBURG COUNTY HEALTH DEPARTMENT
GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST., SUITE 211
CHARLOTTE, NC 28202
704-336-5103 / FAX: 704-336-6894

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 # 5964B
Date 19724/16

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	Kim Stanley
Date	4/18/05

LBC 12/15/04

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~~ 59
Lot #: 6
File #: 5964B
Code: 2

AG

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: NVR, Inc.
Applicant: Kim Stanley
Address: 10815 David Taylor Drive, charlotte, N. C., 28262
Date Evaluated: 5/23/2005
Proposed Facility: Residence Design Flow (.' 600gpd
Property Size: .69a
Location of Site: Canter Lane
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	OTHER PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
1	LS, 8	0-6	GR/CL	FR/SEXP/SS/SP	>49" TO SOIL WETNESS	49	N/A	NONE	PS, IV
		6-49	SBK/C	FI/SEXP/S/P					.25GPD/FT^2
2	"	0-9	GR/CL	FR/SEXP/SS/SP	>48" TO SOIL WETNESS	48	"	"	PS, IV
		9-48	SBK/C	FI/SEXP/S/P					.3GPD/FT^2
3	"	0-8	GR/CL	FR/SEXP/SS/SP	"	"	"	"	"
		8-48	SBK/C	FI/SEXP/S/P					
4	"	0-6	COMPACTED	CLAY	"	"	"	"	PS, IV
		6-14	GR/SL	FR/SEXP/NS/NP					.25GPD/FT^2
		14-48	SBK/C	FI/SEXP/S/P					

Description	Initial System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	IV e	IV a
Site LTAR	.3 GPD/FT^2	.3GPD/FT^2

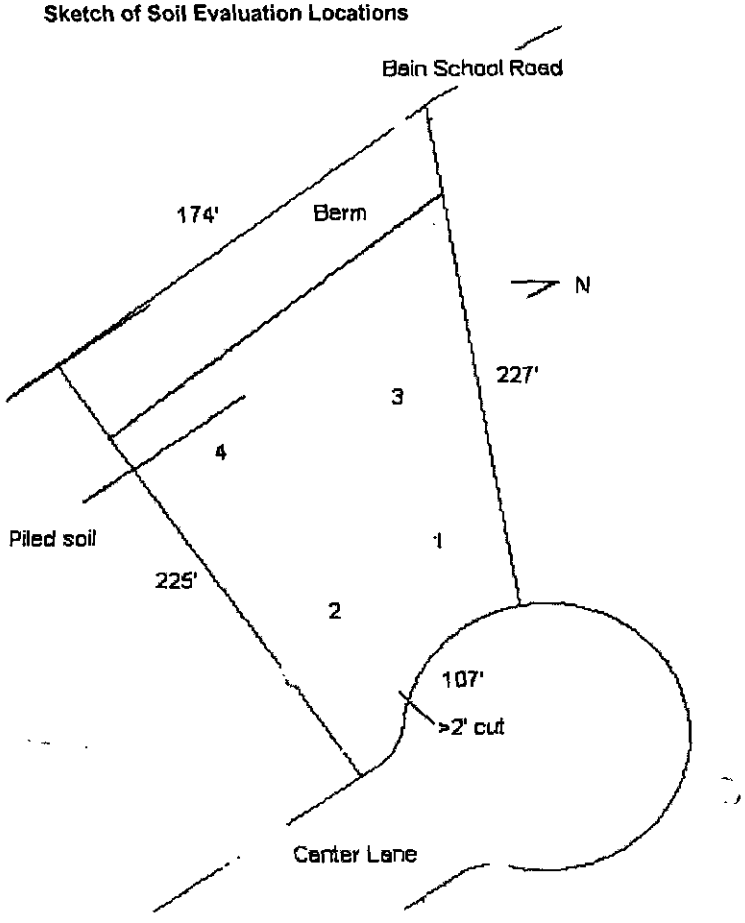
Other Factors (.1946):
Site Classification (.1948): [redacted] PRO V SU I TAB, C2
Evaluated By: W. R. Marlin, LSS, 5/24/2005, W. R. Marlin
Others Present:

COMMENTS:
100% repair

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



CONDITIONS OF IMPROVEMENT PERMIT / CONSTRUCTION AUTHORIZATON

Permit Number: **5964B** Tax Number: **197-241-59**

- 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:

.3 Long-term acceptance rate (GPD/ft^2)	480 Max gallons/day wastewater flow	1140 Absorption Area (ft^2)	9 Trench spacing (min. on centers) (ft)
Serviced by private well: ☐ Yes ☒ No	1500 Gallon septic tank	380 Total trench length (ft)	36 Maximum trench depth (in) (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions.)
4 Bedrooms in residence	NA Gallon pump tank	12 Depth of stone (in)	

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

Additional conditions: **PPBPS SEPTIC DRAINFIELD W/ SEPARATE WASHER BOX AND CONVENTIONAL 180' OF WASHER DRAINFIELD AGREEMENT FORMS REQUIRED,3' WIDE PPBPS DRAINFIELD DESIGNED**

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:

400 Absorption Area (ft^2) 200 Total trench length (ft)	NA Depth of stone (in)	9 Trench spacing (min. on centers) (ft)	36 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.

Robert J. Wolke II 9/13/05
DENR Authorized Agent Date

Patricia Garner 9/16/05
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

FEE: $300.00 **AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION**
DATE: 9/16/05 X33575 V.W. LD 241743

PERMIT NUMBER: 5964B
PARCEL NUMBER: 197-241-59

11908

JOB LOCATION ADDRESS: CANTER LANE LOT 6
PROPERTY OWNER: NVR, INC.
BUILDING CONTRACTOR: RYAN HOMES
SUBDIVISION NAME: MEADOWS OF MINT HILL
AUTHORIZATION ISSUED BY: PHILO WALKER DATE: 09/13/05

Philo A-Walker RS 9/13/05
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 5964B, 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:
   AGREEMENT FORMS REQUIRED
   SEPTIC SYSTEM DESIGN ALTERED TO ADD POOL ADDITION

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 #: 5964B Permit #: _____ Tax Parcel #: 197-241-59

Property Owner: NVR INC.

Job Location Address: 11908 CANTER LN. (LOT #6)

City: MINT HILL State: NC Zip Code: 28227

Installation Approval Issuance Date: 9/17/07

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 10/17/07, 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

Site LTAR: .3 GPD/ft² (For new installations only.)

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: 1000 gallons

Drainfield Design ☐ N/A

Trench Depth: 36 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 270 feet

# of Lines: 6 @ VAR feet

Depth of Media: 24 inches (Type) SAND

Distribution Device: D-BOX ; FLOW DIVIDER

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 _____

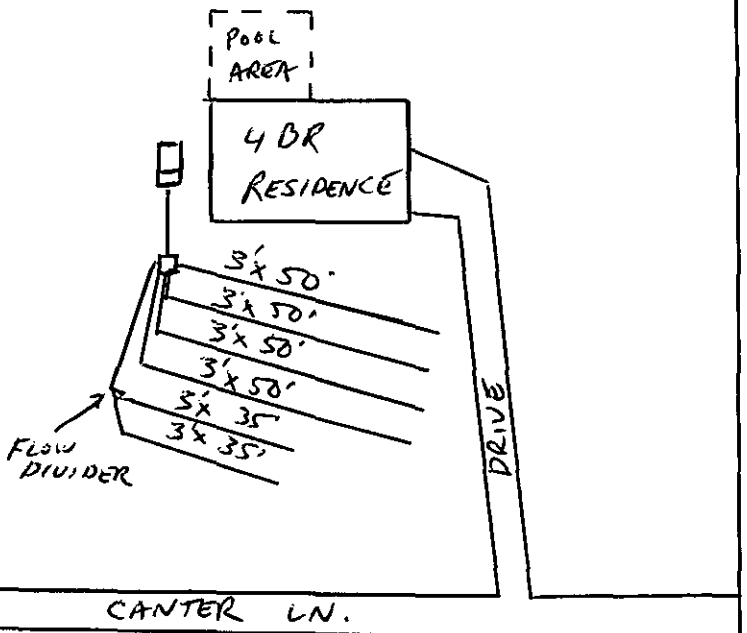
Minimum System Setbacks

Distance from Building Foundation: 5 feet

Distance from Property Line: 10 feet

Distance from Water Supply Source: 10 feet

SKETCH OF SYSTEM LAYOUT
(Proposed Layout)



INSTALL PER PLANS ON FILE
CMS 9/17/07

Comments: System Classification & Type: IIIe ; GRAVITY PPBPS 50% RED; INSTALL/.1961

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

Residential Subsurface Wastewater Treatment and Disposal System Design

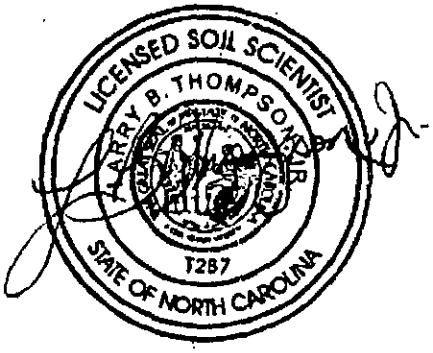
for

Lot 6 – The Meadows of Mint Hill
11908 Canter Lane
Mint Hill, North Carolina

Tax Parcel # 197-241-59
Mecklenburg County File # 5964B
September 15, 2007

Prepared for:

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



Prepared by:

Larry Thompson, RS, LSS
Thompson Environmental Consulting, Inc.
114 Orchard Ridge Road
Locust, NC 28097-8748
Phone: 704-301-4881
Fax: 704-888-1496



CC: Mr. Chris Sherrill, RS, LSS
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 approved to be developed with a single family 4-bedroom residence served by a municipal water supply. Since that time, the perspective property owners requested that the builder pursue the addition of an 18 by 36-foot pool behind the proposed house site that would avoid the Improvement Permit previously issued by the MCHD. A proposal was submitted by Thompson Environmental Consulting, Inc. (TEC) in September of 2005 that would allow for the pool addition.

The current house and driveway layout prohibit the 2005 proposal from being installed as drawn, necessitating a revision. Based upon a revised site plan and further investigation by 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 III(e) pre-fabricated porous block panel system (PPBPS) for a 4-bedroom residence provided that a Type IV pressure-dosed PPBPS system be designated as the proposed repair. 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 revised proposal.

Location

The subject property is located in The Meadows of Mint Hill (Lot 6 – 11908 Canter Lane) 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. Lot 6 is located on the left in the cul-de-sac.

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.

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.

Distribution Method

- Wastewater from both the septic tank will be directed to a distribution box.
- The distribution box shall be level, watertight, and the flow adjusted at the time of the final inspection.
- It will be necessary to install (1) one flow divider to feed the two lowest drain lines.

Pipe and Fittings

- All discharge piping and supply lines should be made of PVC.
- All joints must be properly "welded" utilizing the appropriate PVC cement for each application.

PPBS Details

- The septic system drain field shall consist of a 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 drain field consists of four (4) lateral trenches to be constructed 3-feet wide by 50-feet in length and two (2) lateral trenches, fed equally by a flow divider, constructed 3 feet wide by 35 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 36 inches and each trench shall be placed on 9 foot 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, 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 PVC connections 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.

Final Landscaping

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

In General

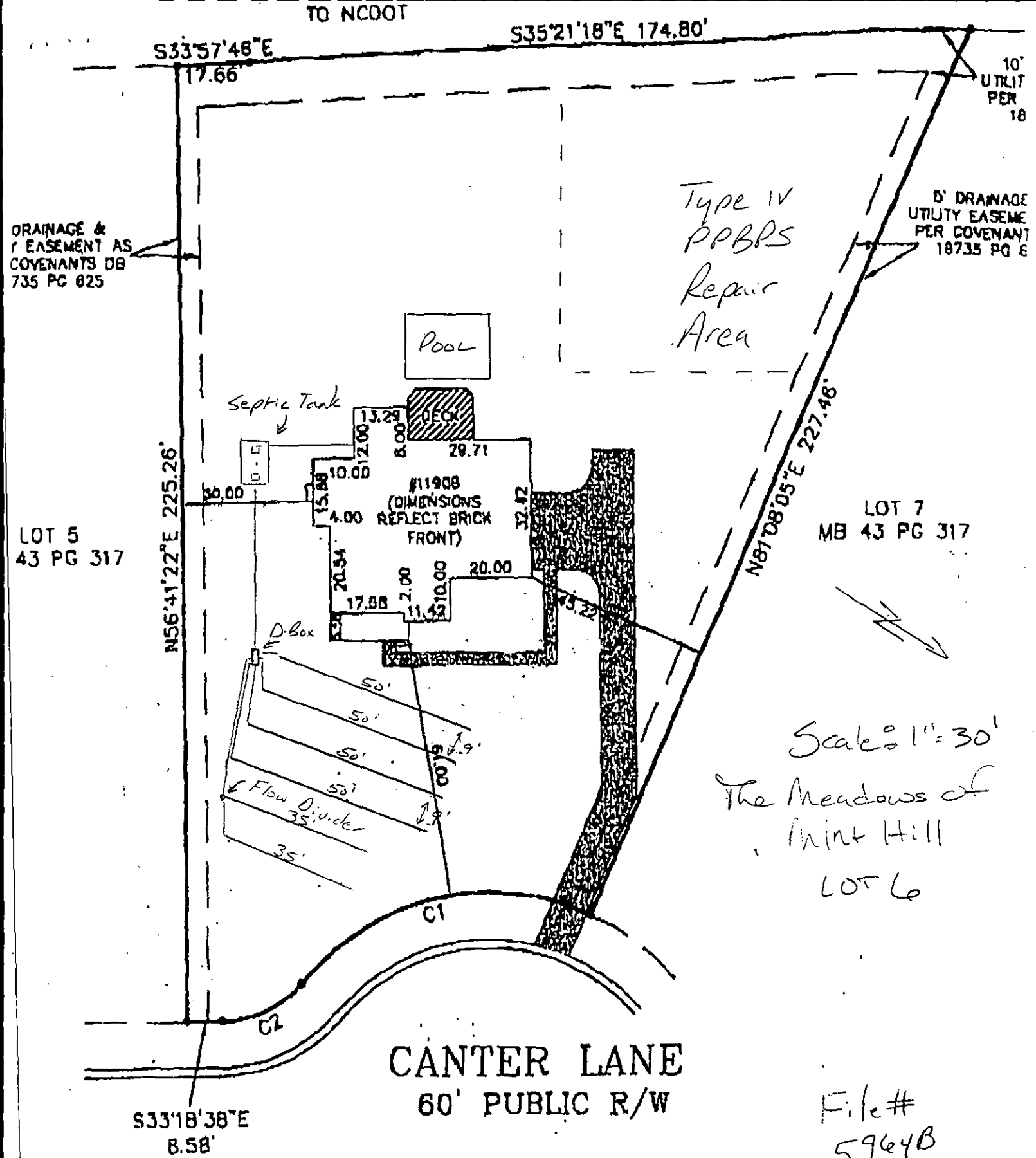
- The septic tank shall be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 1/3 of the volume of the tank. In some situations, the tank may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner have the septic tank cleaned out annually.
- The washer box should be cleaned out at the same intervals that the septic tank is being pumped.
- When it becomes necessary to clean the effluent filters, the filters should be removed and the accumulated debris washed back into the septic tank/washer box – not onto the lawn.
- The drain field areas 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.

Specifications

Daily Design Flow:	480 Gallons per Day
Septic Tank Capacity:	1500 Gallons
Distribution Method:	Distribution Box (1) Flow Divider
Drain Line Specifications:	(4) 3' W x 50' L (2) 3' W x 35' L
Trench Depth:	Maximum Depth 36"



File #
5964B
9/16/07

ESTIMATED DR AREA = 195

ESTIMATED DR AREA = 1357

Curve Table					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1 (CALCULATED)	60.00'	77.62'	72.32'	S45°58'40"E	74°07'30"
C1 (PLAT)	78.32	96.74	90.85	N16°03'18"W	74°07'30"
C2	25.00'	21.88'	21.00'	N58°09'01"W	49°40'48"

PPBPS Design Worksheet							File #:	5964B
							Tax #:	197-241-59
System Requirements							Address:	11908 Canter Lane
Design Flow	480	gpd						Lot 6 - The Meadows
LTAR	0.300	gpd/ft.^2					Consultant:	Larry Thompson
Linear footage	533	ft. (conventional)					Phone:	704-301-4881
Linear footage	267	ft. (50% Reduction)						
							Reviewed By:	
Design Layout							Date:	
Laterals	Length (ft)	# Panels						
Line # 1	50	11						
Line # 2	50	11						
Line # 3	50	11						
Line # 4	50	11						
Line # 5	35	8						
Line # 6	35	8						
Totals	**270**	**60**						
Absorption Area								
Length (ft)	Width (ft)	Area (ft^2)						
270	3	810						
Comments:								
1. Install system using 3 ft. wide trenches.								
2. Install drainlines on 9 ft. centers, level, and on contour.								
4. 100% repair area (PPBPS) required for property.								

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	09/16/05	**Amount:**	100.00
Receipt #:	36994	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	WALKEVA		

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
0704	Change in Plot Plan 11908 CANTER LANE LOT 6		1	100.00	100.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
12,745.88	16,387.09				

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	09/16/05	**Amount:**	150.00
Receipt #:	36995	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	WALKEVA		

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 11908 CANTER LANE LOT 6		1	150.00	150.00

Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
12,895.88	16,387.09				

MECKLENBURG COUNTY
LAND USE AND ENVIRONMENTAL SERVICES
Payment Receipt

Receipt Information

Date:	09/16/05	**Amount:**	150.00
Receipt #:	36997	**Tendered:**	0.00
Check / Auth #:	CHARGE	**Returned:**	0.00
Received By:	WALKEVA		

Account Information

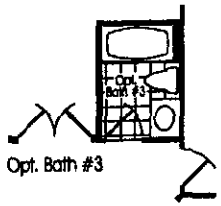
Account #: X33575
Contractor: NVR INC (EAST)
Attn:
Address: 10815 DAVID TAYLOR DR 100
Address:
City/State/Zip: CHARLOTTE, NC 28262

Item	Description	Permit#	Quantity	Unit Price	Total Price
0734	Auth for Waste Wtr Sys Constr 11908 CANTER LANE LOT 6		1	150.00	150.00

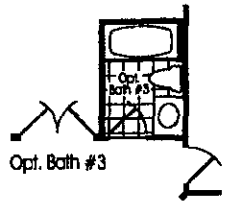
Outstanding Balances

Month-To-Date	Prior Month	30 Days	60 Days	90 Days	Balance
13,045.88	16,387.09				

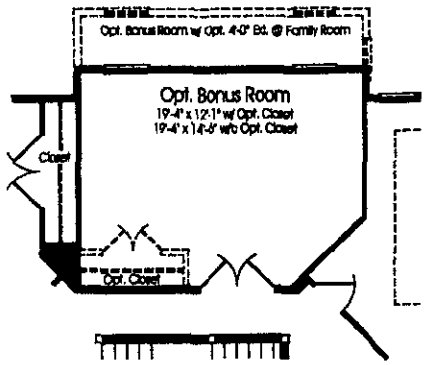
THE AVALON



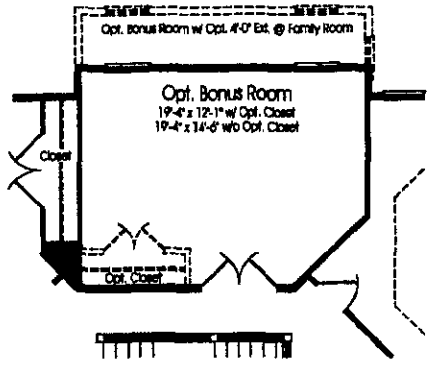
Opt. Bath #3



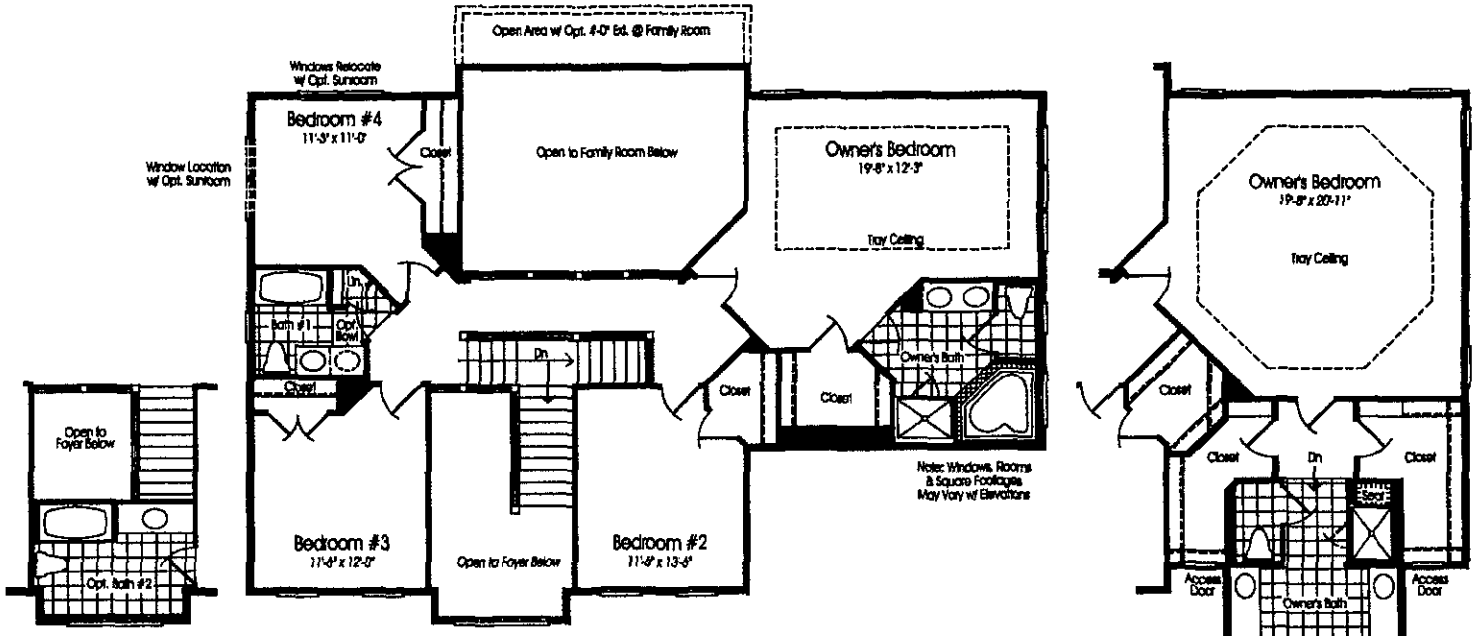
Opt. Bath #3



Opt. Bonus Room



Opt. Bonus Room w/ Opt. Luxury Owner's Bath

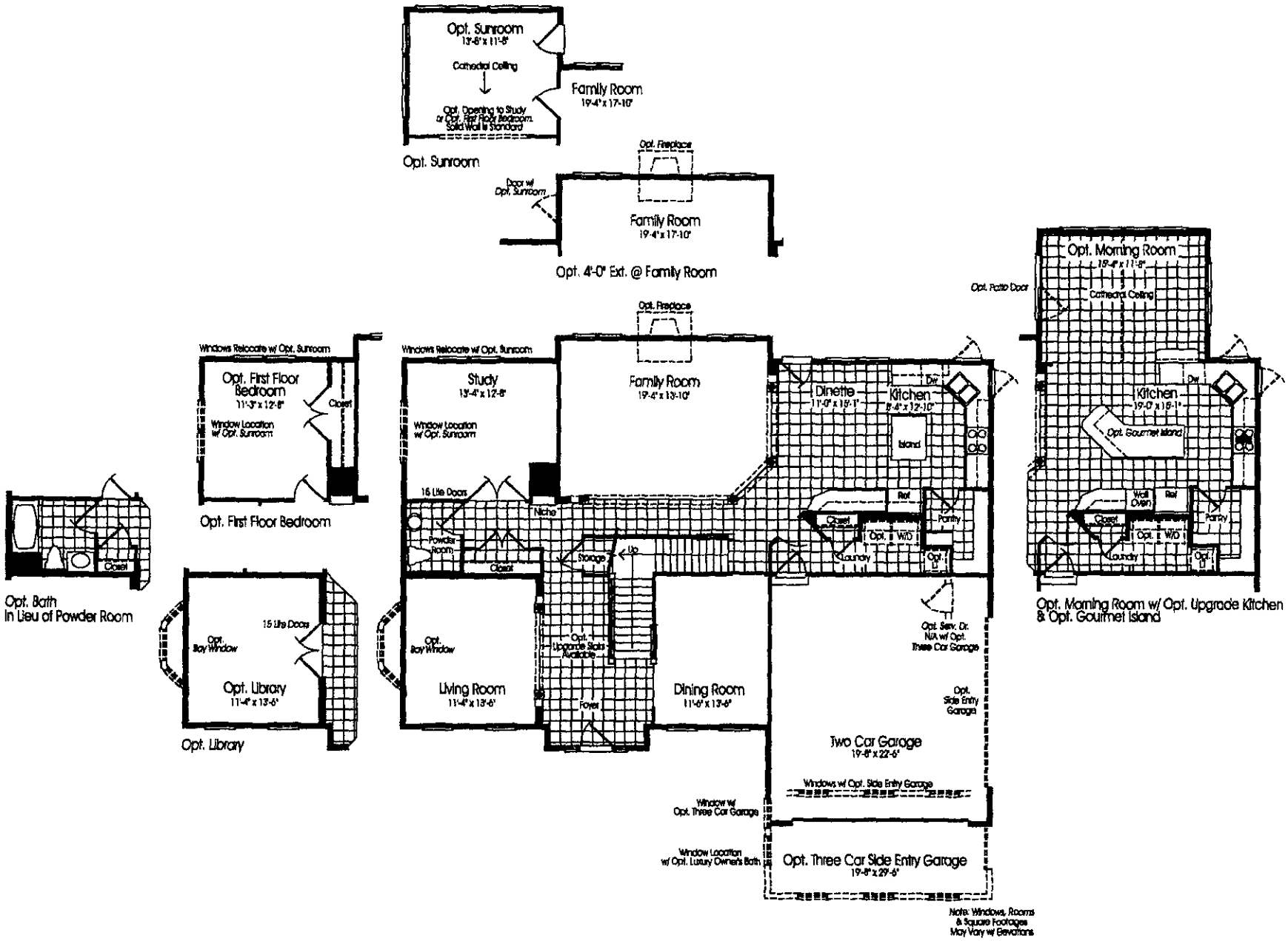


Opt. Bath #2

Opt. Luxury Owner's Bedroom/Bath Layout
(Similar Layout w/ Opt. Three Car Garage)

UPPER LEVEL

ELEVATION B



MAIN LEVEL

ELEVATION B

Although all illustrations and specifications are believed correct at the time of publication, the right is reserved to make changes, without notice or obligation. Windows, doors, ceilings, and room sizes may vary depending on the options and elevations selected. Optional items indicated are available at additional cost. This brochure is for illustrative purposes only and not part of a legal contract.
It is recommended that the architectural blueprints be reviewed for further clarification of features. Not all features are shown. Please ask our Sales and Marketing Representative for complete information.

CLT 01/04 AVAL VER.06

Project No. 146671

FILE COPY	
FILED FOR REGISTRATION	DOC. # 2005122653
DATE 7/1/05	TIME 9:36 am
BOOK 655	PAGE 18969
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 1006

FILE # 5964B

PARCEL # 197-24159

The undersigned, NVR, INC DBA Ryan Homes, owner of property located at 11908 Canter Lane, (the "site") and described in an instrument recorded in Book 43 at Page 317, 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 Davis Taylor Dr

Charlotte, NC 28262

FEE: _____
DATE: _____

AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION

PCS

PERMIT NUMBER: 5964B 5/
PARCEL NUMBER: 197-241-~~16 PO~~

11908
JOB LOCATION ADDRESS: CANTER LANE
PROPERTY OWNER: NVR,INC.
BUILDING CONTRACTOR: RYAN HOMES
SUBDIVISION NAME: MEADOWS OF MINT HILL
AUTHORIZATION ISSUED BY: PHILO WALKER DATE: 05/10/05

Philo S. Walker RS 5/10/05
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 5964B, 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:
   AGREEMENT FORMS REQUIRED

CONDITIONS OF IMPROVEMENT PERMIT / CONSTRUCTION AUTHORIZATON

59

Permit Number: **5964B**

Tax Number: **197-241-~~16PO~~**

- 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:

.275 Long-term acceptance rate (GPD/ft^2)	480 Max gallons/day wastewater flow	1309 Absorption Area (ft^2)	9 Trench spacing (min. on centers) (ft)
Serviced by private well: ☐ Yes ☒ No	1500 Gallon septic tank	436 Total trench length (ft)	24 Maximum trench depth (in) (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions.)
4 Bedrooms in residence	NA Gallon pump tank	NA Depth of stone (in)	

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

Additional conditions: **Keep the septic system > 15' from 2' cut area in front property area, Agreement forms required con. autho. 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:

1309 Absorption Area (ft^2) 436 Total trench length (ft)	na Depth of stone (in)	9 Trench spacing (min. on centers) (ft)	24 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.

Phila A. Walker RS 5/10/05
DENR Authorized Agent Date

Patrice Garner 7/1/05
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

PROPOSED MODEL FIT

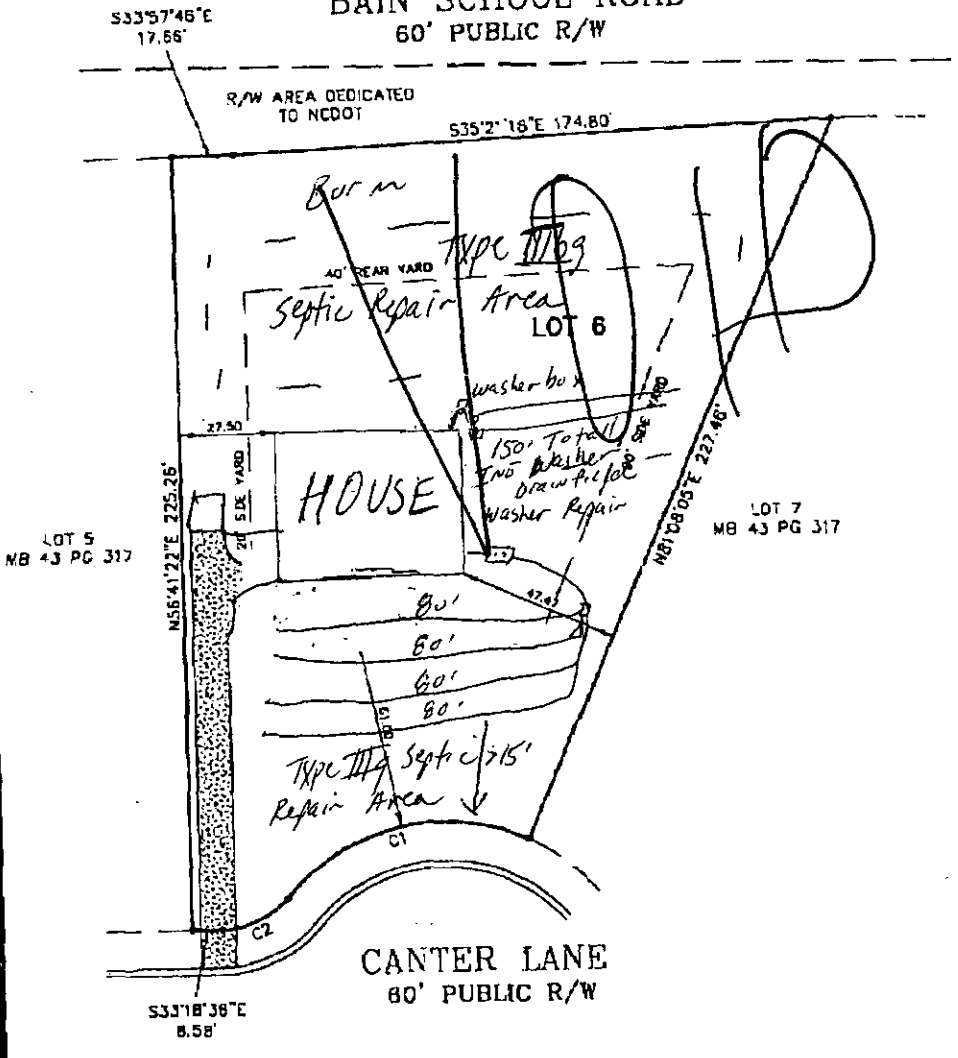
PREPARED BY:

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

MB 43 PG 317

SCALE: 1"=40'

MODEL FIT ONLY NOT TO BE USED FOR CONSTRUCTION OR STAKING



Curve Table

CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1 (CALCULATED)	80.60'	77.82'	72.32'	S45°55'40"E	74°07'30"
C1 (PLAT)	79.32	98.74	80.85	N16°53'18"W	74°07'30"
C2	25.00'	21.58'	21.00'	N58°09'01"W	49°40'48"

NOT FOR RECORDATION, CONVEYANCES OR SALES

Subdivision THE MEADOWS OF MINT HILL MAP 1 County Mecklenburg
Address #11908 Canter Lane Owner Ryan Homes
Lot 6 Block ___ Plan Montague Elevation B Drive (Left) ___ (Right) Side (Courtyard) ___ Deck ___
Patio ___ Fireplace ___ Garage (1 Car) ___ (2 Car) X (3 Car) ___ Brick Front Basement ___ Curtain Wall X
Crawl ___ Slab ___ Other Morning Room

REVISED: DWN: TLM CKD: MB DATE: 5 / 5 / 05

C:\MEADOWS\MM-0606.DWG - TLM

COMMENTS

4 Bedroom House
Innovative septic System Approval. Agreement forms shall be recorded and on file prior to construction authorization release.
Municipal water
septic 1500 ST
4 lines x 80'long x 3'wd 320'
washer washer box drop box distribution
Install 150' Innovative Drainfield, Line lengths to vary.
150' + 320' = 470LF
Type IIIbg
Repair Area
Keep drainfield >15' from 2' cut in front

Patrice Garner
7/1/05

Residential Subsurface Wastewater Treatment and Disposal System Design

for

Lot 6 – The Meadows of Mint Hill
11908 Canter Lane
Mint Hill, North Carolina

Tax Parcel # 197-24-159
Mecklenburg County File # 5964B
September 7, 2005

VOID

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

NORTH CAROLINA REGISTERED 208 SANITARIAN LARRY B. THOMPSON, JR.

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 approved to be developed with a single family 4-bedroom residence served by a municipal water supply. Since that time, the perspective property owners have requested that the builder pursue the addition of an 18 by 36-foot pool behind the proposed house site that would avoid the Improvement Permit previously issued by the MCHD.

Based upon a revised site plan and 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 II drain field for the washing machine wastewater and a Type III(e) pre-fabricated porous block panel system (PPBPS) for the septic tank wastewater for a 4-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 6 – 11908 Canter Lane) 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. Lot 6 is located on the left in the cul-de-sac.

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.

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.

Washer Box

- An approved washer box with effluent filter is to receive the wastewater from the washing machine only.

Distribution Box

- Wastewater from both the septic tank and the washer box will be directed to a distribution box.
- The distribution boxes (2) shall be level, watertight, and the flow adjusted at the time of the final inspection.

Pipe and Fittings

- All discharge piping and supply lines should be made of PVC.

All joints must be properly "welded" utilizing the appropriate PVC cement for each application.

Drain Field Installation

- The drain fields have been previously laid out on-site utilizing metal stemmed flags. Once these areas have been approved by the MCHD, the property owner/builder should mark these areas and isolate them much as possible from construction traffic. Prior to the installation of these systems, the septic contractor shall contact the MCHD 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 washing machine drain filed is a Type II conventional system, whereas the septic system drain field is a Type III(e) PPBPS drain field.
- The washing machine drain field consists of (4) lateral trenches to be constructed 3 foot wide by 45 feet in length at a maximum depth of 30 inches. As with most conventional systems, the washing machine laterals shall consist of 12 inches of No. 5 or No. 57 washed stone (7-inch base, 4-inch stone backfill around a perforated corrugated pipe, and 1 inch of stone cover over the corrugated pipe). NOTE: An innovative drain field may be substituted for the proposed conventional drain field but a reduction in lateral length may not be granted.
- The septic system drain field will consist of (4) lateral trenches to be constructed 3 feet wide by 50 feet in length at a maximum trench depth of 36 inches (see PPBPS details).
- All laterals are to be installed on contour with the land, keeping the individual trench bottoms level from beginning to end.
- The trenches should be left open for the final inspection by the MCHD.

PPBS Details

- The septic system drain field shall consist of a 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 drain field consists of four (4) lateral trenches to be constructed 3-feet wide by 50-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 36 inches and each trench shall be placed on 9 foot 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 PVC connections 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.

Final Landscaping

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

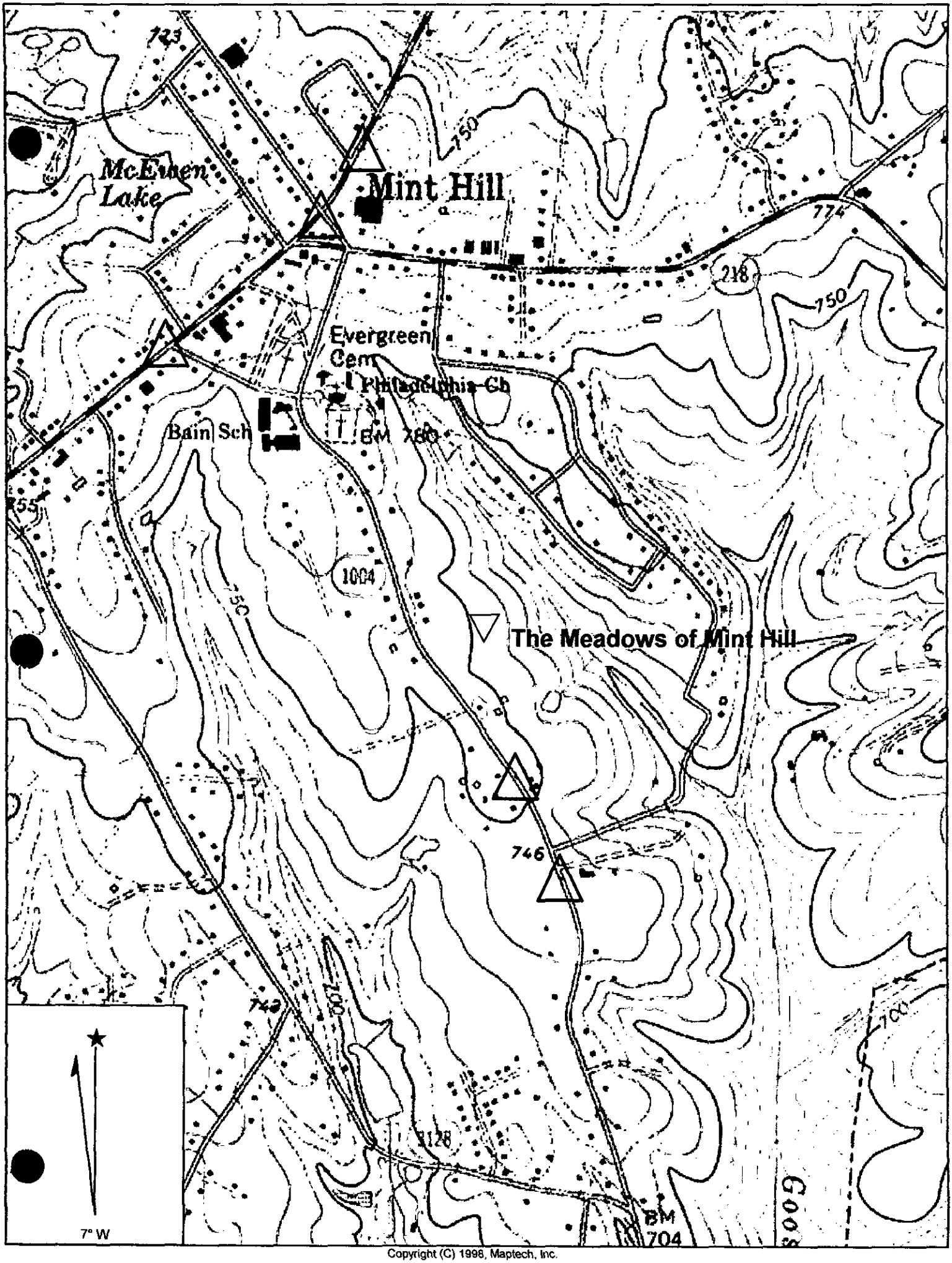
Maintenance

In General

- The septic tank 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 tank may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner have the septic tank cleaned out annually.
- The washer box should be cleaned out at the same intervals that the septic tank is being pumped.
- When it becomes necessary to clean the effluent filters, the filters should be removed and the accumulated debris washed back into the septic tank/washer box – not onto the lawn.
- The drain field areas 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.



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SITE DEVELOPMENT PLAN

PREPARED BY:

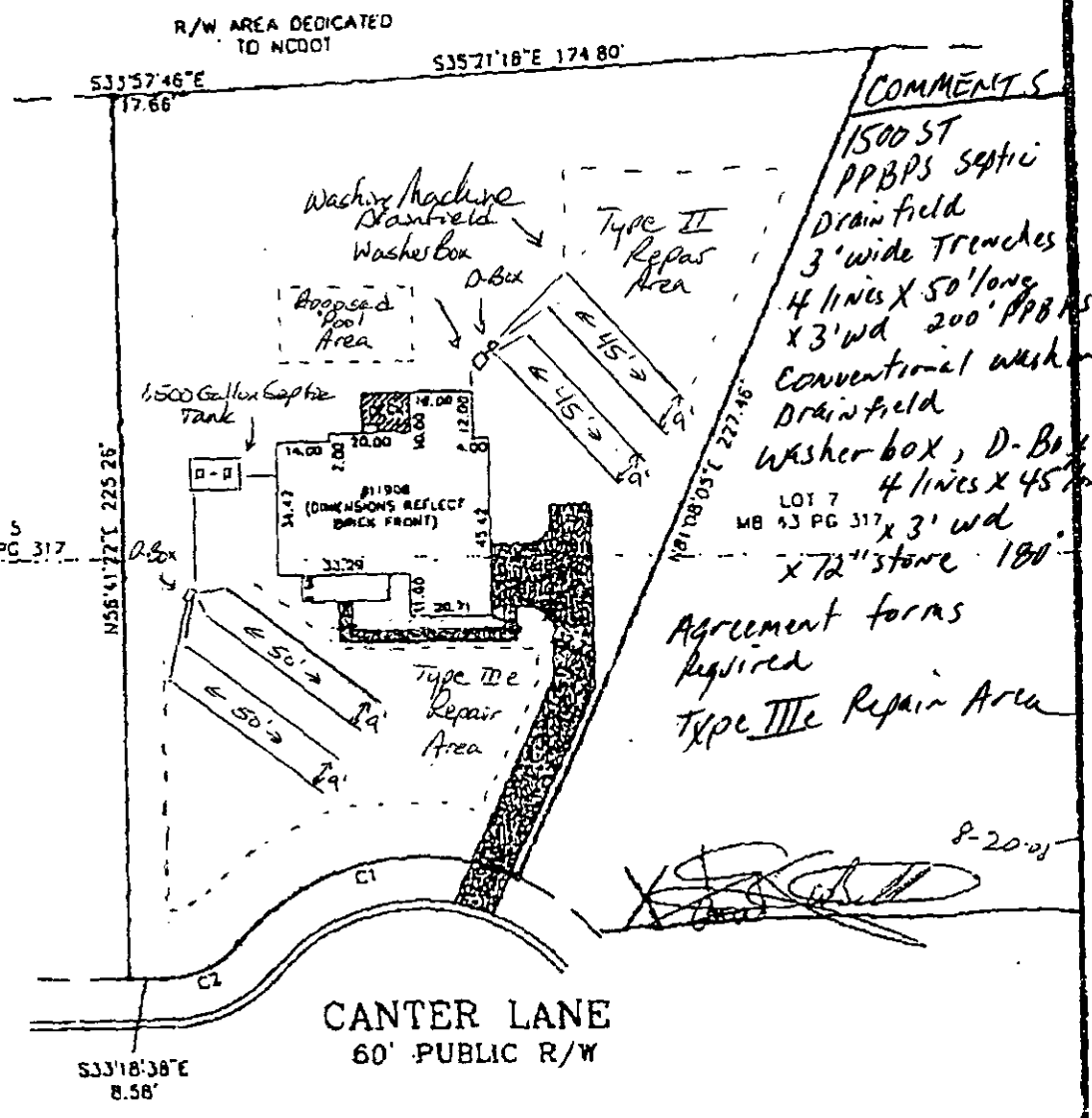
DELTA LAND SERVICES, INC.

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.

Meck Co. File # 59648

SCALE: 1"=50'



COMMENTS

1500 ST PPBPS septic Drainfield 3' wide Trenches 4 lines X 50'/one x 3'wd 200' PPBPS Conventional washer Drainfield washer box, D-Box 4 lines X 45' long x 3' wd x 12" stone 180' Agreement forms required Type IIIe Repair Area

8-20-05

Curve Table					
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
C1 (CALCULATED)	60.00'	77.62'	72.32'	S45°55'40"E	74°07'30"
C1 (PLAT)	79.32	88.74	90.65	N18°55'18"W	74°07'30"
C2	15.00'	21.68'	21.00'	N58°08'01"W	82°48'48"

ESTIMATED DRIVEWAY AREA = 1337.6 SQ.FT ±

NOT FOR RECORDATION, CONVEYANCES OR SALES

Subdivision THE MEADOWS OF MINT HILL, MAP 1 County Mecklenburg
Address 11908 Canter Lane Owner Ryan Homes
Lot 6 Block ___ Plan AVALON Elevation A Drive (Left) ___ (Right) Side (Courtyard) ___ Deck X
Patio ___ Fireplace X Corage (1 Car) ___ (2 Car) X (3 Car) ___ Brick Front Basement ___ Curtain Wall X
Crawl ___ Slab ___ Other MORNING ROOM, PARTIAL FRONT PORCH

REVISED: ROTATED HOUSE PER REQUEST DWN: GHL CKD: [illegible] DATE: 08/03/05

ENVIRONMENTAL HEALTH SPECIALISTS

System Design

In the early days of the T & J Panel system when it was still considered an experimental system the primary reason for permitting the Panel System was because of insufficient space for a conventional system. Now with inclusion in the Sewage Regulations, the Panel System should be considered when a quality effluent may be needed, space is limited, usable soil is limited, or there are indications that at some future time space may be needed for other development. When there is a trend for added development such as additions to homes, pools, or other special landscaping development the T & J Panel System may prevent insufficient space later. As the environmental health specialist who is designing a system, and you can foresee such a trend of continued development, the Panel System may be an option the homeowner would like to utilize.

As noted in the regulations a PPBPS is only permitted where soils are suitable, provision ability suitable, or reclassified provision ability suitable, however only one half of the area needed for a conventional system is required. This is one reason that the Panel System can help you use the best soils available on the lot. The system can be gravity fed, pumped to pressure manifold and gravity fed into the lines, or pumped to Low Pressure Panel lines. Most of the concepts for a Panel System layout are the same as for a conventional system. The biggest difference being the areal area needed and the quality of effluent being introduced into the ground.

The T & J Panel system can be installed as either gravity, pump to gravity, pump to pressure manifold, or low-pressure pipe distribution system. When designing a pressure system the principles of low-pressure distribution are as described in the LPP manual. There is further discussion on pressure systems in the installer section of this manual.

Conversion

A three-bedroom house with a 0.4 gpd application rate.
(The first three steps are the same as for the conventional system.)

1. 120 gallons per bedroom x 3 bedrooms = 360 gallons per day design flow rate.

2. 360 gallons flow rate / 0.4 application rate = 900 sq. ft. of conventional trench bottom.

3. 900 sq. ft. / 3 ft. wide trench = 300 lineal feet of conventional system.

This conventional layout requires 2700 sq. ft. of area on the lot with another equal area of repair space for a total of 5400 sq. ft. of suitable usable area. To calculate the size of the T & J Panel system , the above calculations must be made with an additional fourth step as described in (the T & J panel system).

4. 300 lineal feet of conventional system x 0.5 for a 16 inch high Pane System = 150 lineal feet of T & J Panel System.

A Panel System requires only a 1200 sq. ft. area on the lot for the system with an equal area for repair, for a total of 2400 sq. ft. . With the panel system the installation and repair can go into the same area as the initial area required for a conventional gravel trench system.

Trench Preparation

Trench grade should be established so that backfill cover will be four to six inches over the tops of the panels. (Note on several slopes system depth should be adjusted to protect against brakeout of effluent) In clay type soils the trench sidewalls should be raked to bring slicked over areas back as near to original structure as possible. A light dusting of lime on the sidewalls will help the system to continue the brake down of solids.

Final Inspection

The following lists of points are things that an inspector should look for when issuing a completion permit.

1) Is depth of the panels within guidelines?

2) Are drain lines level or less than 1/4-inch fall in ten feet?

3) Have seals been properly constructed?

4) Was the proper sand used in the trench backfill?

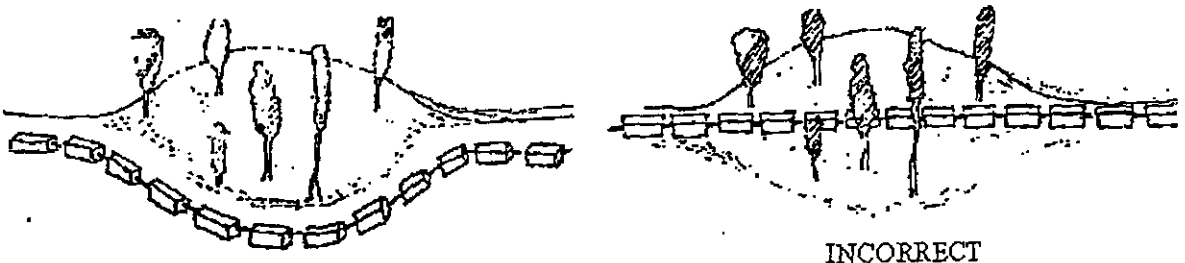
5) If in clay type soils were the sidewalls raked and limed?

(For Pumped Systems)

6) Have pump size, head pressure, and dose cycle been properly sized and set?

7) Record field data on operations permit.

(Set dose cycle for 3.6 gallons per 16-inch high panel.)



CORRECT INCORRECT

Digging The Trench

Start by shooting the grade and marking the contour. Then for a 16-inch panel add 28 inches to the shallowest or lowest grade that the trench must cross to obtain the trench bottom grade. Now dig the trench at the elevation derived, checking the grade frequently. The trench should be a minimum of two feet wide. With the trench open all sidewalls shall be raked to bring smeared areas back to their original structure before a light dusting of lime is applied. Now place a 6-inch layer of backfill sand in the trench and level to grade, then place a 1 x 4 or 6 inch board flat on its side on top of the 6 inch layer of sand. Once more check the grade of the trench by shooting the top of the board.

Once the grade boards have been set, the panels may be set into the ditch by hand or using the backhoe. Each panel weighs about 155 pounds and placement by hand goes quickly. The panels should be placed about 6 inches apart in the trench to obtain equal spacing. Now place 10 to 12 pounds of clean particle sand (medium sand blasting sand) in the top chamber of each panel to form a bed of sand about one inch thick. Tar seal rope should be placed in the U outs to form seals as shown in earlier drawings. Once the tar rope is in place, a 24-inch section of two inch PR160 pipe is cut to span from the upper middle top chamber of the first panel to the upper middle chamber of the next panel. The tar seal rope that is used should be of tar or butyl that is soft and pliable to obtain a watertight seal. Now that the connection and sealing is complete a block cap is placed on each end of the panel covering all openings. (These will be delivered with the panels.) The cap block may well serve as an inspection port at some future date. The trench is ready to be backfilled to the top so the panel with the same backfill sand used in the trench bottom. With the sand to the top of the panel, trenches should be left for the sanitarian to inspect. Soil cover should be added after the final inspection.

Most Panel Systems are currently used due to space considerations and caution should be taken to preserve suitable soil structure and site conditions.

Materials Chart For 16-Inch Panels

Materials needed per panel:

- Three feet of half-inch tar seal rope per panel
- Two feet of two-inch PR160 pipe per panel or same linear feet as line layout of pressure system of one and a quarter inch pipe. Add pipe for tie in of lines to tank and house.
- One hundred pounds of particle sand (sand blasting sand fine texture) per eight panels.
- Same linear feet of one by six boards as line length.
- Bag powder lime when in clay soils.

Panel and C-33 Sand fill

50LF - 11 panels 8 1/4 tons sand
60LF- 14 panels 10 tons sand
70LF- 16 panels 11 1/2 tons sand
80LF- 18 panels 13 1/4 tons sand
90LF- 21 panels 15 tons sand
100LF- 23 panels 16 1/2 tons sand
110LF- 25 panels 18 1/4 tons sand
120LF- 27 panels 20 tons sand
130LF- 30 panels 21 1/2 tons sand
140LF- 32 panels 23 tons sand
150LF- 34 panels 25 tons sand
160LF- 37 panels 26 1/2 tons sand
170LF- 39 panels 28 tons sand
180LF- 41 panels 30 tons sand
190LF- 43 panels 31 1/2 tons sand
200LF- 46 panels 33 tons sand

T & J Panel Material Worksheet:

Homeowner_____County_____

Address_____

_____

Description of System _____

_____

_____

_____ T & J Panels _____ Inch (caps N/C) _____

_____ 2" Pipe _____

_____ 1 1/4" Pipe _____

_____ Fittings for Pipe _____

_____ Tar Seal Rope (3' per Panel)

_____ Bag Partial Sand (100 lbs per 8 panels) _____

_____ Pallets (Returnable) _____

_____ Screened Creek Sand (FM 2.3 to 3.0) _____

_____ 1x4 or 1x6 Boards _____

_____ Power Lime _____

_____ Sep. Tank _____ Gallon _____

_____ Tar Seal for Tank _____

_____ 4" PVC Pipe Schedule 40 _____

_____ Distribution Box _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

Sub-total _____

Delivery Charge _____

Tax _____

Total _____