

1/2/2008

duponbj

Groundwater and Wastewater Services File Imaging Project

May 2007

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CERTIFICATE OF COMPLETION/OPERATION PERMIT

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON ST., SUITE 211
CHARLOTTE, NC 28202
PHONE (704) 336-5102

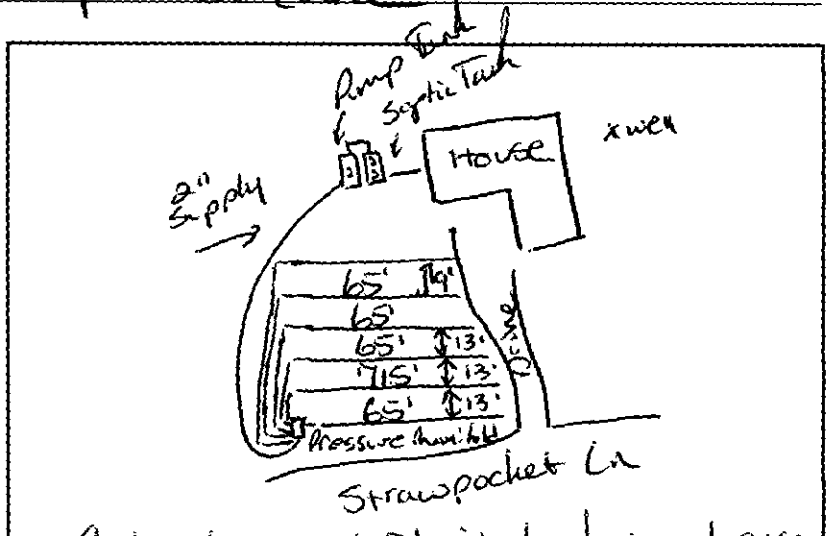
FILE: 3272B DATE: 12-1-99
TC: 001-391-27 X L X CRT
SERIAL Nº 18216

Name of Owner Dale Gillis Juris.:

Address of Property 21105 Strawpocket Lane

Inspection Data:

Tank Material PCC
Total Length of Drainfield 396.5
Number of Lines 5 @ 65' + 1 @ 71.5'
Cover Depth MAX 24"
Water Supply Source priv well
Distance to Water Source >50'
Excavation Inspected 11-16-99
Tank(s) Inspected 11-16-99
Wash Line Inspected N/A
High Water Alarm Inspected 12-1-99



- Contractor used 2' wide bucket and excavated trenches wider than the 3' requirement. Contractor was warned that this could present a problem when backfilling trenches. Trenches not installed at 9' centers which compromised ~~any future repair area~~ PLOT John Bish

Design 1999, 1500ST, 1000DT, 21, MDA, 1189.5SF, T, 6 in PJJ CTR#

The undersigned has inspected the Septic Tank System described above, and certifies it has been
X installed or constructed ☐ altered or repaired
☐ in accordance with the permit issued X as detailed in the plot above
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. This issuance of this
☐ Certificate of Completion X 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. 1990 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/revocation of this permit.

COMMENTS: Type IIIb 4 bedrooms "Infiltrator" brand chambers used.
- Contractor and property owner advised that system should have no more than 24" of finished cover over drainfield.

Goulds WE0511
Rhombus control panel

L B Thompson Jr. R.S.
Environmental Health Specialist

Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

Permit Number: 3272B

CONDITIONS OF IMPROVEMENT PERMIT

Tax Number: 001-391-27

- 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	
Type Primary Wastewater System Type (circle one): 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: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
.3 Long-term acceptance rate	480 Max gallons/day wastewater flow	1233 Absorption Area (sq ft)	9" Trench spacing (min. on centers)	
Yes Serviced by private well	1500 Gallon septic tank	411 Total trench length (ft)	30" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)	
4 Bedrooms in residence	1000 Gallon pump tank	N/A Depth of stone Group I, II or III back fill		
Any surface waters present:	Type:	Minimum separation distance:		
Site modifications required:				
Additional Conditions: - Lot recorded prior to 100% repair requirement. - Designer recommends utilizing drop boxes for effluent distribution - Nema 4x Simplex Control Panel required (alarm and pump controls in one unit)				
Repair Area System Type Type (circle one): 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: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
___ Absorption Area (Sq ft) ___ Total Trench Length (Ft)	___ Depth of Stone Trench	___ Trench spacing (min. on centers)	___ Maximum Trench Depth	
For existing system, enter the year originally installed:				

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. This approval is granted in accordance with the provisions of Laws and Rules For Sewage, Treatment and Disposal 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.

Larry B. Thompson L.S. 9-23-99

DEHNR Authorized Agent Date

Owner/Agent Signature Date

MECKLENBURG COUNTY
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR.
SUITE 211
700 N. TRYON ST.
CHARLOTTE, N.C. 28202.
(704) 336-5102

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL, HEALTH,
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

IWWS 100105

INSTALLATION, CONSTRUCTION, ALTERATION, AND/OR REPAIR APPROVAL

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON ST., SUITE 211
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: 3272B DATE: 10-18-99

TC: 001-391-27 X/L

SERIAL Nº 18278

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 6-18-99. All work shall be completed on or before 11-18-99, 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 according to approved plans,

11-4-99
Met again with property owner and contractor. There has been approx. 1.5 feet of soil added over the drainfield area - we discussed a 3 foot installation depth with the understanding that the trenches are to be no deeper than 30" in naturally occuring soil. LT

PLOT OF SYSTEM

Liquid Capacity of Septic Tank 1500 gallons

Liquid Capacity of Dosing Tank 1000 gallons

Tank Construction PCC

Trench Depth 30"

Absorption and/or Nitrification Lines:

Trench Width 3 feet

Trench Walls Scored and Porous Yes

Total Line Length 411 feet

Number of Lines 6

Depth of Stone N/A inches

Distance from House 15 feet

Distance from Property Line 5 feet

Distance from Well 750 feet

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

NAME OF OWNER Nale Gillis

LOCATION OF PROPERTY 2105 Strawpocket Lane

Comments: Type IIIb 480gpd
Varying line lengths fed by drop boxes
line lengths 83', 80', 74', 70', 64', 40'
Group I, II or III backfill

Tony B. Thompson, L.E.S.
Environmental Health Specialist

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

FEE: _____ **AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION**
DATE: _____ **VOID SIXTY (60) MONTHS FROM DATE OF ISSUANCE**

DATE: 9-23-99 PERMIT NO: 3272B

PARCEL NO: 001-391-27B

JOB LOCATION ADDRESS: 21105 Strawpocket Lane

PROPERTY OWNER: Dale Gillis

BUILDING CONTRACTOR: _____

SUBDIVISION NAME: _____

AUTHORIZATION ISSUED BY: Larry B. Thompson Jr. DATE: 9-23-99
DEHNR AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NO. 3272B, 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 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 AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. OTHER CONDITIONS: See Conditions Of Improvement Permit

OWNER CERTIFICATION

I CERTIFY THAT THERE HAVE BEEN NO ALTERATIONS IN SITE OR SOIL CONDITIONS OR MODIFICATIONS TO FACILITY, WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS FROM THOSE SPECIFIED IN THE ORIGINAL APPLICATION OR ASSOCIATED IMPROVEMENT PERMIT UNLESS AUTHORIZED IN WRITING BY THE MECKLENBURG COUNTY HEALTH DEPARTMENT. I ALSO UNDERSTAND THAT ANY SUCH ALTERATIONS, MODIFICATIONS, OR FALSE INFORMATION ARE GROUNDS FOR REVOCATION OF PERMITS AND AUTHORIZATION TO CONSTRUCT.

SIGNATURE OF OWNER/OWNER'S REPRESENTATIVE DATE

Co#0088179 Rec'd DWQ DERT

FEE: 100 **AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION**
DATE: 7-16-97 **VOID SIXTY (60) MONTHS FROM DATE OF ISSUANCE**

DATE: 7-10-97 PERMIT NO: 3272 B
21105 PARCEL NO: 001-391-27 00
JOB LOCATION ADDRESS: ~~15910~~ Strawpocket Lane
PROPERTY OWNER: Dale Gillis
BUILDING CONTRACTOR: _____
SUBDIVISION NAME: _____
AUTHORIZATION ISSUED BY: Larry B. Thompson DATE: 7-10-97
DEHNR AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NO. 3272B, 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 MECKLENBURG COUNTY HEALTH DEPARTMENT.

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4. OTHER CONDITIONS: See Conditions Of Improvement Permit

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Robert Davis July 16, 1997
SIGNATURE OF OWNER/OWNER'S REPRESENTATIVE DATE

Mecklenburg County
Health Department

Conditions of Improvement Permit

File Number: 3272 B
Site Address: 21105 Strawpocket Lane

1. The wastewater treatment and disposal system permitted is a pump-to-innovative system designed by GEO Environmental Consultants, Inc.. The septic system must be installed as designed and approved.
2. The system will require a single phase, simplex control panel with alarm. The control panel must have a Nema 4x weather proof rating.
3. Drop boxes shall be used to distribute effluent to the innovative drain field trenches due to the unequal length drain lines.
4. Septic and pump tanks must be installed in an area not subject to vehicular traffic. System installer must ensure that finished soil cover over the tanks will not be greater than 36 inches in depth. Soil cover greater than 36 inches will require reinforced tanks.
5. Nitrification trenches shall be constructed as level as possible but in no case shall the fall in a single trench bottom exceed one-fourth inch in 10 feet as determined by an engineer's level or equivalent.
6. Any changes in the site must be pre-approved by the Mecklenburg County Environmental Health Department.
7. The wastewater treatment and disposal drain field area, including the designated repair areas, shall not be used for any of the following:

    - Grading or filling
    - Parking or driving heavy equipment in the area or subjecting the site to possible soil compaction
    - Construction staging area
    - Installation of lawn irrigation components
    - Installation of underground utilities or cables of any type
    - Burial of any debris or material
    - Utilizing the area for gravesites
    - Diversion of storm water runoff into this area

8. Septic system installer must be registered with Mecklenburg County prior to meeting for the required pre-construction conference.
9. System installer will be required to operate the system at the time of the final inspection. Arrangements must be made to have the pump tank filled with water prior to the requested final inspection.
10. The system owner shall have the contents of the septic tank checked, and the contents of the tank removed, periodically from all compartments, to ensure proper operation of the system. The contents of the septic tank shall be pumped whenever the solids level is found to be more than 1/3 of the liquid depth in any compartment.
11. All septic tank riser and effluent filter rules will apply to this system. It is strongly recommended that access risers be added to both ends of the septic tank, extending to at least finish grade. This will allow periodic inspection of the solids level in the tank as well as help facilitate the periodic cleaning of the effluent bio-filter.
12. The local Health Department is required, by the State, to perform system reviews of Type IIIb systems at a minimum of every 5 years. The owner of the system is responsible for paying any inspection fees, as determined by the Board of County Commissioners, at the time of the required inspection.

Signature Owner/Agent _____ **Date** _____

GEO-ENVIRONMENTAL CONSULTANTS, INC.
11704 Reames Road
Charlotte, NC 28269
Telephone: (704)596-8788
Fax: (704)596-8770

FACSIMILE TRANSMISSION

TO: LARRY THOMPSON DATE: 9-21-99

COMPANY: FAX NO: 336-6894

FROM: KEITH A. ANTHONY TOTAL PAGES: 3

PROJECT: (Including Cover Sheet)

RE: DALE GILLIS PROPERTY "NECK NECK"

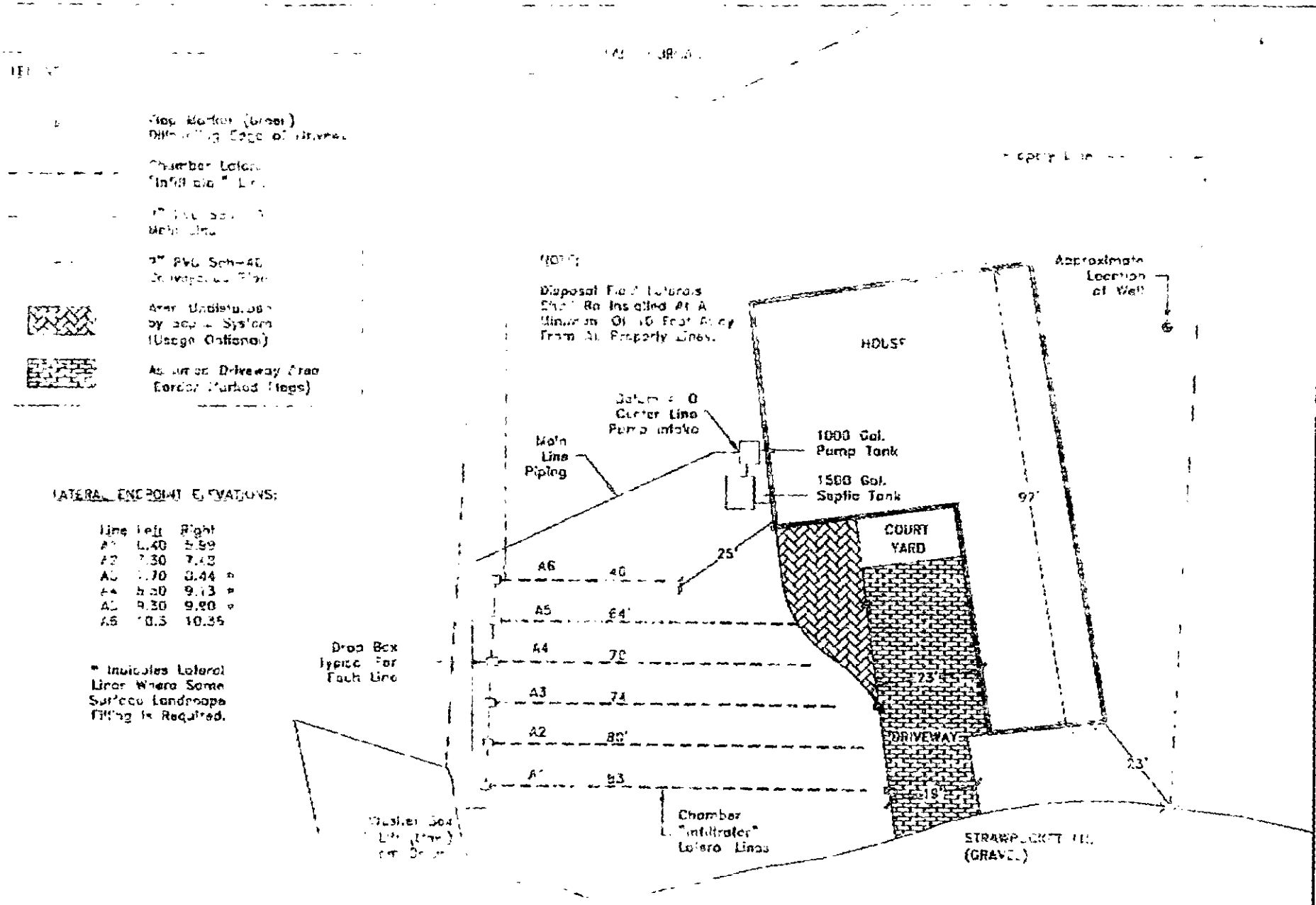
LARRY,

I REVISED THE FIGURES TO SHOW FLOW TO A WASHER BOX AND THEN TO DROP BOXES. PLEASE CALL ME IF THERE IS ANYTHING ELSE.

THANK YOU

PRINCIPAL'S INITIALS ___

THE INFORMATION CONTAINED IN THIS FACSIMILE IS PRIVILEGED AND CONFIDENTIAL, INTENDED FOR THE SOLE USE OF THE ADDRESSEE. IF THE READER OF THIS FACSIMILE IS NOT THE INTENDED RECIPIENT, OR THE EMPLOYEE OR AGENT RESPONSIBLE FOR DELIVERING IT TO THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION, DISTRIBUTION, OR COPYING OF THIS COMMUNICATION IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE NOTIFY THE PERSON LISTED ABOVE, IMMEDIATELY, AND RETURN THE ORIGINAL BY MAIL TO THE SENDER AT THE ADDRESS LISTED ABOVE.



Stop Marker (Typical)
Chamber Lateral "Infiltrator" Line
Main Line
3" PVC Sch-40 Solid Pipe
Area Undisturbed by Septic System (Usage Optional)
Asphalt or Driveway Area Border Marked (Typical)

NOTE:
Disposal Field Laterals Shall Be Installed At A Minimum Of 10 Feet Away From All Property Lines.

LATERAL ENDPOINT ELEVATIONS:

Line	Left	Right
A1	6.40	5.59
A2	7.30	7.43
A3	7.70	8.44 *
A4	8.20	9.13 *
A5	9.30	9.90 *
A6	10.5	10.35

* Invisible Lateral Liner Where Some Surface Landscape Filling Is Required.

GEO ENVIRONMENTAL CONSULTANTS, INC.
GEOTECHNICAL/ENVIRONMENTAL ENGINEERS & SCIENTISTS
11704 REAMES ROAD (704)588-6177 NC 28269 (704)596-0778

PROJECT #:	99147
DATE:	9/99
PROJECT MGR.	R.A.A.
DESIGN BY:	R.A.A.
DRAWN BY:	J.A.M.
SCALE:	1"=30'

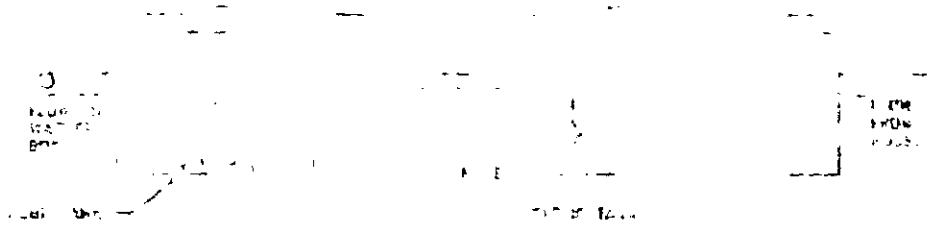
DALE GILLIS - LOT 291
SEPTIC DESIGN (CHAMBER)
IREDELL/MECKLENBURG CO.

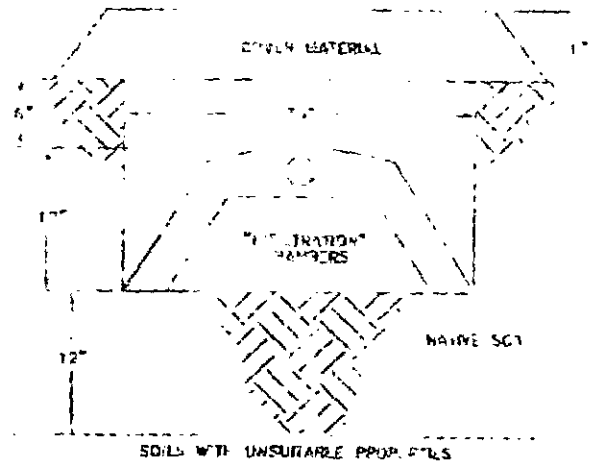
SITE PLAN

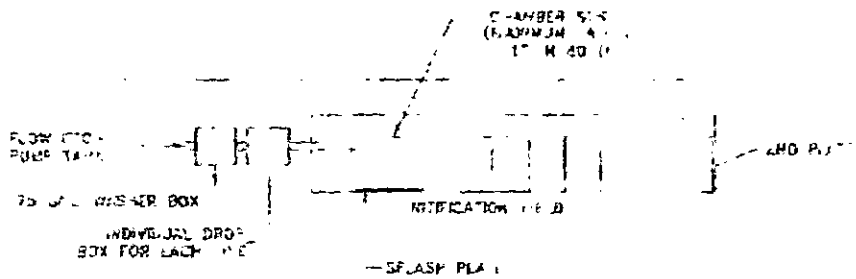
FIGURE 1

P:\PROJ\99147\NEW-BASE

SEP.21.1999 1:53PM 7045966770 NO.859 P.2







GCI

GEOTECHNICAL ENVIRONMENTAL CONSULTANTS, INC.

GEOTECHNICAL ENGINEERS, ENVIRONMENTAL SCIENTISTS & SOIL SCIENTISTS

11704 REAMES ROAD, CHARLOTTE, NC 28269 (704) 597-8837
PRINCETON, NJ (609) 924-3646 FAX (704) 596-8870

PROJECT #	9914
DATE	3/99
PROJECT MGR.	B.A.A.
DESIGN BY	K.A.A.
DRAWN BY	J.A.M.
SCALE	1" = 10' SCALE

DALE GILLIS

STRAWROCKET LANE - LOT #291
CHARLOTTE, NORTH CAROLINA

CHAMBERED SYSTEM

FIGURE 2

P:\PROJ\99.A\FIG2.DWG

SEP. 21. 1999 1:54PM 7045968870 NO. 959 P. 3

PROPOSED PLOT PLAN

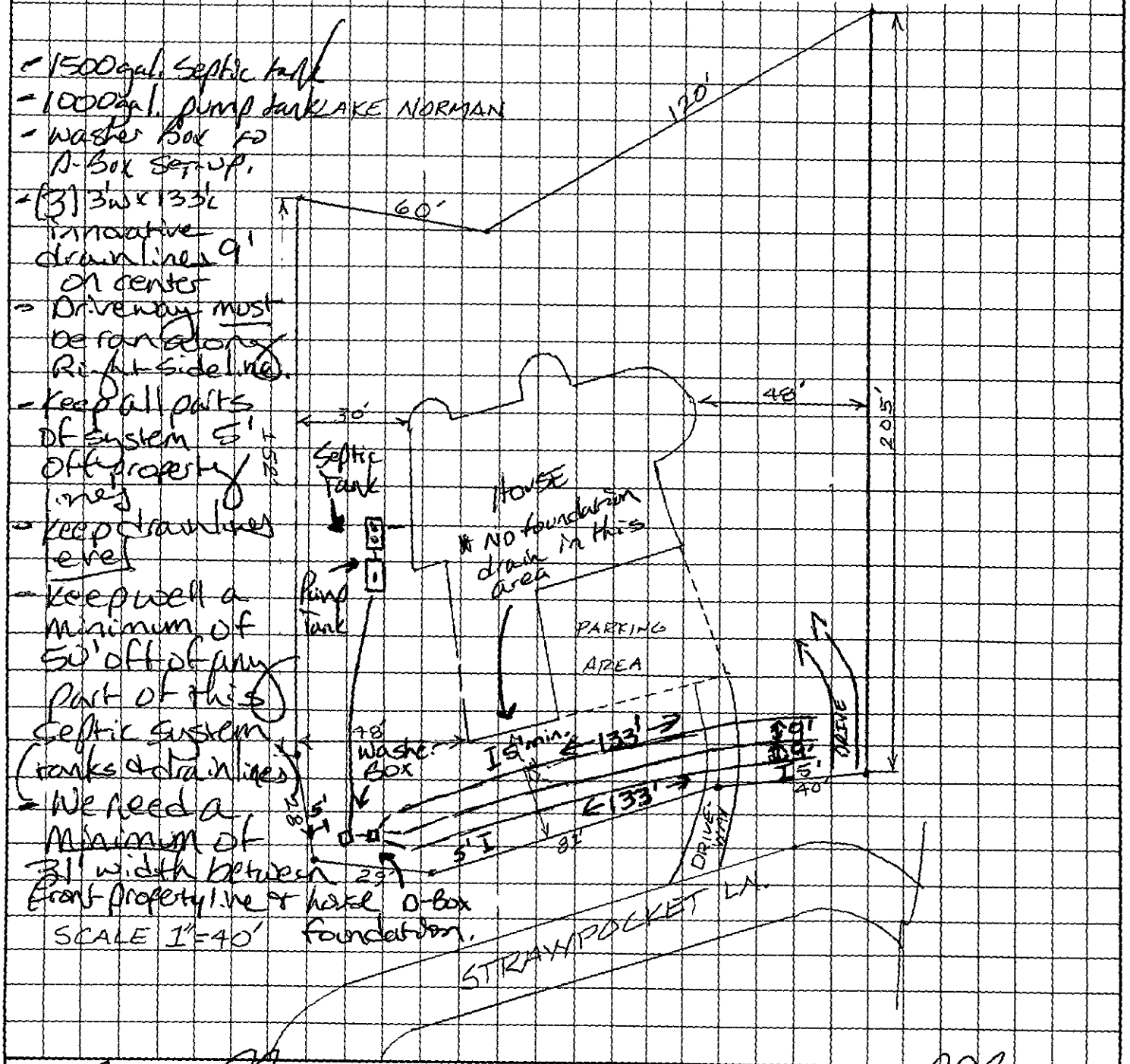
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON STREET
CHARLOTTE, NC 28202
PHONE (704) 336-5102

3272B

FILE: ~~1994B~~

TC: 001-391-21PO

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.



OWNER/AGENT SIGNATURE

DATE 6-17-97

APPROVAL DATE 7-10-97 L. Thompson R.S.

White - Health Department's Copy Canary - E.H.S. Copy Pink - Owner's Copy

Permit Number 3272B

CONDITIONS OF IMPROVEMENT PERMIT

Tax Number 001-391-27B

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	
Type Primary Wastewater System Type (circle one): 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: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
.3 Long-term acceptance rate	480 Max gallons/day wastewater flow	1200 Absorption Area (sq ft)	9' Trench spacing (min. on centers)	
Yes Serviced by private well	1500 Gallon septic tank	400' Total trench length (ft)	30" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)	
4 Bedrooms in residence	1000 Gallon pump tank	N/A Depth of stone Group I, II, III backfill required		
Any surface waters present:	Type:	Minimum separation distance:		
Site modifications required: Foundation drain must not be installed in front of gravel area				
Additional Conditions: Lot does not ~~need~~ require 100% repair area — Suitable backfill required if using a chambered system this is Group I, II, or III backfill				
Repair Area System Type Type (circle one): 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: ___ IWWS-93-1 ___ IWWS-93-2 ___ IWWS-94-1	
___ Absorption Area (Sq ft) ___ Total Trench Length (Ft)	___ Depth of Stone Trench	___ Trench spacing (min. on centers)	___ Maximum Trench Depth	
For existing system, enter the year originally installed:				

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. This approval is granted in accordance with the provisions of Laws and Rules For Sewage, Treatment and Disposal in effect at the time of issuance of the permit and is subject to the following provisions:

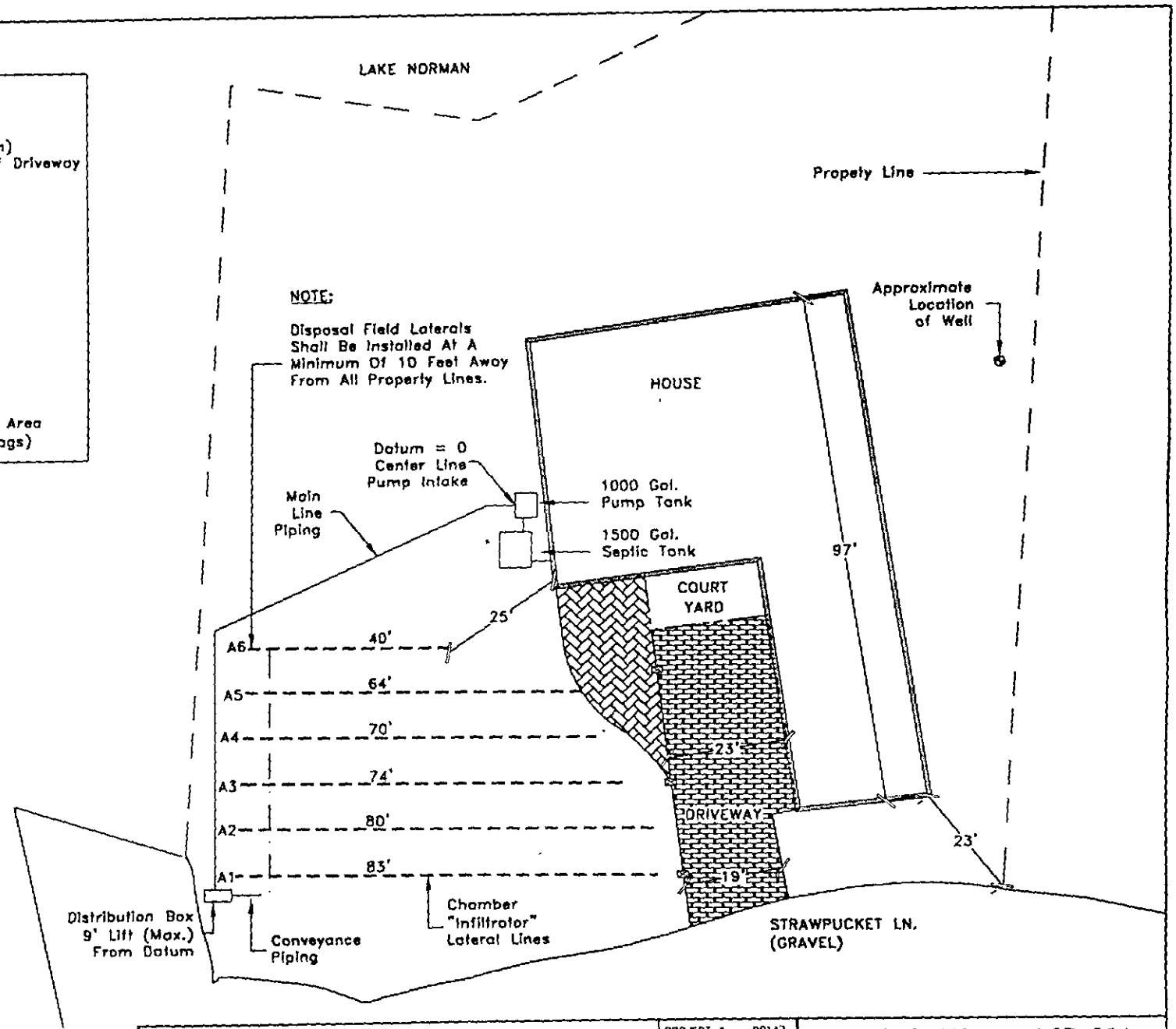
- No work shall be conducted on the septic tank system until an Installation, Construction, Alteration and/or Repair Approval is granted by this Department.
- This Improvement permit is transferable.

Larry B. Thompson J.R.S. 7-10-97
DEHNR Authorized Agent Date

Owner/Agent Signature Date July 16, 1997

MECKLENBURG COUNTY
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR.
SUITE 211
700 N. TRYON ST.
CHARLOTTE, N.C. 28202.
(704) 336-5102

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL, HEALTH,
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION



LEGEND:

- Flag Marker (Green) Dilineating Edge of Driveway
- Chamber Lateral "Infiltrator" Line
- 2" PVC Sch-40 Main Line
- 2" PVC Sch-40 Conveyance Pipe
- Area Undisturbed by Septic System (Usage Optional)
- Assumed Driveway Area (Border Marked Flags)

LATERAL ENDPOINT ELEVATIONS:

Line	Left	Right	
A1	6.40	5.99	
A2	7.30	7.48	
A3	7.70	8.44	*
A4	8.50	9.13	*
A5	9.30	9.90	*
A6	10.5	10.36	

* Indicates Lateral Lines Where Some Surface Landscape Filling Is Required.

GEO-ENVIRONMENTAL CONSULTANTS, INC.
GEOTECHNICAL/ENVIRONMENTAL ENGINEERS & SCIENTISTS
11704 REAMES ROAD, CHARLOTTE, NC 28269-7637
PHONE (704)596-8788 FAX (704)596-8770

PROJECT #:	99147
DATE:	9/99
PROJECT MGR:	K.A.A.
DESIGN BY:	K.A.A.
DRAWN BY:	J.A.M.
SCALE:	1"=30'

DALE GILLIS - LOT 291 SEPTIC DESIGN (CHAMBER) IREDELL/MECKLENBURG CO.

SITE PLAN

FIGURE 1

P:\PROJ\99147\NEW-BASE

FEE: 100.00
DATE: 6/18/97
CK # 8838

APPLICATION FOR IMPROVEMENT PERMIT FOR RESIDENTIAL SITE INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM

I ICRT

TYPE APPLICATION: X NEW SYSTEM __ EXPANSION/ ALTERATION OF EXISTING SYSTEM __ REPAIR OF EXISTING SYSTEM

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

FILE #: 1994B-3272B

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 001-391-27 PO

STREET ADDRESS: 7105 STRAWBERRY LANE

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER: #29

TYPE OF BUILDING (CHECK ONE):

__ SINGLE MOBILE HOME(S)
__ DOUBLE WIDE (D)
X HOUSE (H)
__ MODULAR HOME (M)
__ MULTIPLE FAMILY (U)
__ OTHER (O)

TOWNSHIP (CHECK ONE):

X 0 MECKLENBURG
__ 1 CHARLOTTE
__ 2 DAVIDSON
__ 3 CORNELIUS
__ 4 PINEVILLE
__ 5 MATTHEWS
__ 6 HUNTERSVILLE
__ 7 MINT HILL

HEATED SQUARE FOOTAGE: 5380

NUMBER OF BEDROOMS: 4 | NUMBER OF OCCUPANTS: 3

CLOSING DATE_____

FOUNDATION FOR RESIDENCE:

__ WITHOUT BASEMENT
X ON SLAB
__ CRAWL SPACE
X WITH BASEMENT /PLUMBING
__ WITH BASEMENT /NO PLUMBING

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:
Not Applicable

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE: __ YES X NO TYPE: _____

WATER SUPPLY (CHECK ONE):
__ COMMUNITY (C)
__ MUNICIPAL (M)
X PRIVATE WELL (P)
__ SHARED WELL (S)
__ OTHER 'SPRINGS' (O)

IF ANY OF THE FOLLOWING ARE LOCATED ON THE PROPERTY, PLEASE SHOW LOCATION ON PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES __ YES X NO
EXISTING WASTEWATER SYSTEMS __ YES X NO
EASTMENTS OR RIGHT-OF-WAYS __ YES X NO
WELL, SPRINGS OR WATERLINES __ YES X NO
DESIGNATED WETLANDS __ YES X NO

PROPERTY OWNER:	LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:
NAME: Gillis, Dale I. II (LAST) (FIRST) (MI)	NAME: N/A (LAST) (FIRST) (MI)
ADDRESS: 5422 Londonderry Rd.	DAYTIME PHONE: ( ) —
CITY: Charlotte STATE: NC ZIP:28210	
DAYTIME PHONE: (704) 343-0016	

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 8/31/94 → Purchased prior to 1978 but Lot recorded after 1978 per plat

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 agents of the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

SIGNED: [signature] DATE: 6/18/97

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR., SUITE 211, 700 N. TRYON ST., CHARLOTTE, N.C. 28202., (704) 336-5102

BK: 09153 PG: 0214/0217 #:0204 15.40
JUDITH A GIBSON REG OF DEEDS MECK NC
FILED FOR REGISTRATION 07/15/97 11:47

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

FILE # 3272 B
PARCEL # 001-391-27

FILE COPY

The undersigned, Dale I. Gillis, II, owner of property located at 21105 Strawpocket Lane, (the "site") and described in an instrument recorded in Book 17 at Page 628, 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; t itability for such a system in accordance with th olina Commission for Health Services as 15A N nt originally classified the site as "unsuita ie regulations; that the undersigned requested th visionally suitable" in light of the particular sept ; that the Department considered various studies, d the Department that the septic tank system propo es; and that the Department therefore reclass issued an appropriate permit for such

We need signatures on I.P. & C.A. Please give Mr. Gillis Copies of Plot Plan I.P. & C.A.

The undersigned further ack on, operation and maintenance of such septic t ier, owner, developer, installer, or user r the Department nor its officials, employees, or a em 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.

Hold for Assessment Form

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

- Any changes on the property may make the Improvement Permit Null and void and may make the Improvement Permit subject to revocation.

This instrument was prepared by: _____

Mail after recording to: Dale Gillis II, 3501 Asbury Ave., Charlotte, N.C. 28206

- Do not grade, cut, fill, pave, construct a building or deck, dig a well, install a swimming pool or otherwise cover or disturb the soil (except for planting and maintaining grass or other ground covers) in a manner which will adversely affect the repair area or area where the septic tank system is located.

- When a private certified operator is required, no improvement permit for the designated repair shall be issued unless there is a private certified operator to carry out this management program in the service area where the proposed system is to be located. (Refer to Rule .1961, "Maintenance of Sewage Systems," for further information.)

- Additional fees will be required according to the Mecklenburg County user fee schedule applicable at the time for the issuance of a repair permit for any subsequent repairs to the sewage treatment and disposal system or for installation of a replacement system.

- At the time repairs to the sewage treatment and disposal system are to be made or a replacement system installed, the regulations in effect at that time will govern the repairs or installation of a replacement system.

The undersigned further agrees for himself, his heirs and assigns that he shall indemnify and hold harmless the Department, its employees, and officials, as well as Mecklenburg County and its employees and officials, for any damages or other claims of any person or persons whatsoever arising out of the installation, operation, or failure of said septic tank system.

Use of the singular masculine pronoun forms herein shall be deemed to also include the plural and feminine forms as the context may require.

This document shall be placed on the public records of the Register of Deeds of Mecklenburg County and indexed therein under the Grantor Index in the name or names of the undersigned, and the foregoing acknowledgements shall henceforth be binding on all persons claiming any right, title, or interest in the site.

IN WITNESS WHEREOF, the undersigned has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, this _____ day of _____, 199__.

_____ (SEAL)
(Corporate Name)

_____ (SEAL)

By: _____ _____ (SEAL)

_____ President _____ (SEAL)

ATTEST:

_____

_____ Secretary

(Corporate Seal)

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

I, Robert J. Fritsch, Jr., a Notary Public for said County and State, do hereby certify that Dale I. Gillis, II personally appeared before me this date and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and notarial seal, this 14th day of July, 1997.

Notary Public

My Commission Expires:
Nov. 14, 2001

NOTARY PUBLIC MECKLENBURG COUNTY, N.C. ROBERT J. FRITSCH, JR.

RBCWM:24751_1/8-30-95

STATE OF NORTH CAROLINA
COUNTY OF _____

I, _____, a Notary Public for said County and State, do hereby certify that _____ personally came before me this day and acknowledged that _he is _____ Secretary of _____ _____, a North Carolina corporation, and that by authority duly given and as the act and deed of said corporation, the foregoing instrument was signed in its name by its _____ President, sealed with its corporate seal and attested by _____ as its _____ Secretary.

WITNESS my hand and notarial seal, this _____ day of _____, 199__.

_____
Notary Public

My Commission Expires:

_____

3272B

DATE June 18, 1997

TO: CHARLOTTE-MECKLENBURG BUILDING STANDARDS
PERMIT ISSUING SECTION

FROM: MECKLENBURG COUNTY ENGINEERING

JURISDICTION Meck

001-391-27 PO
PARCEL NUMBER

21105 Strawpocket Ln
ASSIGNED STREET ADDRESS (ADDRESS OF RECORD)

Lot # 29
EXISTING STREET ADDRESS (IF DIFFERENT FROM ASSIGNED)

N/A
PROJECT NAME (IF APPLICABLE)

THE ABOVE DESCRIBED LOCATION HAS BEEN CHECKED CONCERNING:

1. SUBDIVISION REGULATIONS	**____APPROVED**	**____NOT APPROVED**
2. FLOODWAY REGULATIONS	**____APPROVED**	**____NOT APPROVED**
3. WATERSHED PROTECTION	**____APPROVED**	**____NOT APPROVED**
4. COMMERCIAL DRAINAGE PLAN	**____APPROVED**	**____NOT APPROVED**
5. PUBLIC UTILITY EASEMENT	**____PRESENT**	**____NOT PRESENT**
6. PROPERTY FRONTS ON THOROUGHFARE	**____YES**	**____NO**
7. DRIVEWAY PERMIT REQUIRED	**____YES**	**____NO**
8. DOES PROJECT CONFLICT WITH ROAD PROJECT?	**____YES**	**____NO**

REMARKS: Single Family Residence

NOTE: THIS FORM MUST BE TURNED IN AT THE CASHIERS OFFICE WHEN PAYING PERMIT FEE. CERTIFICATE OF OCCUPANCY WILL NOT BE GRANTED UNTIL TRANSPORTATION DIVISION GRANTS FINAL APPROVAL ON DRIVEWAY(S).

ALL OTHER FORMS OBSOLETE

☐ NEW ADDRESS

SIGNED: Doug A. Huss

REVISED 1/91

08-16-94 03:20PM FROM MECK CO HLTH HAL MAR P01

3292B

INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM
APPLICATION FOR SERVICES

Mecklenburg County Health Dept.
Environmental Health Division
c/o Hal Marshall Ctr., Suite 211
700 N. Tryon St.
Charlotte, NC 28202

(704)336-5102

PERSON FILING APPLICATION:
NAME: Gillis II (last) DALE (first) I. (mi)
ADDRESS: 3501 Asbury Av PHONE: 704 343-0016
CITY: CHARlotte STATE: N.C. ZIPCODE: 28206

PROPERTY OWNER:
NAME: Linda West/agent for Whittington (last) (first) (mi)
ADDRESS: 18128 Hwy 73W PHONE: (704 896-9624
CITY: HUNTERSVILLE STATE: N.C ZIPCODE: 28078

PROPERTY INFORMATION (FROM ENGINEERING FORM):
TAX/PARCEL NUMBER: 001-391-27B001
STREET ADDRESS: 15910 STRAWBERRY LN
21105 DAVIDSON N.C.
ZIPCODE: 28036

SUBDIVISION OR MOBILE HOME PARK NAME:

Township (check one):
[X] 0 Mecklenburg County [ ] 2 Davidson [ ] 4 Pineville [ ] 6 Huntersville
[ ] 1 Charlotte [ ] 3 Cornelius [ ] 5 Matthews [ ] 7 Mint Hill

LOT NUMBER: 29 SEC: 6 LOT SIZE (in acres): .64

TYPE APPLICATION (check one):
[X] SOIL TEST - INDIVIDUAL LOT (S)
[ ] NEW CONSTRUCTION ON VACANT LOT - 4 BEDROOMS OR LESS (N)
[ ] EXCHANGE MOBILE HOME - SAME # BEDROOMS (Y)
[ ] ADDITION - INCREASE ROOMS/OCCUPANCY/MOBILE HOME SIZE (A or M)
[ ] COMMERCIAL OR INDUSTRIAL (N)
[ ] SOIL TEST DEVELOPMENT (P)
[ ] ADDITION - GARAGE OR RENOVATION/NO MAJOR CHANGES (V)
[ ] MODIFIED /ALTERNATIVE/ OR RESIDENCE > 4 BEDROOMS (Z)
[ ] REPAIR TO SYSTEM (R)

RESIDENTIAL PROPERTY (Type Building, check one):
[ ] SINGLE MOBILE HOME (S) [X] HOUSE (H) [ ] MULTIPLE FAMILY (U)
[ ] DOUBLE WIDE (D) [ ] MODULAR HOME (M) [ ] OTHER _____ (O)

NUMBER BEDROOMS: 4 NUMBER OCCUPANTS:

SYSTEM CL

COMMERCIAL/INDUSTRIAL PROPERTY:
Type Business _____ # Employees ___ Per Shift ___ ___ ___
Industrial Waste (Y/N) ___
Underground Storage Tanks On Property (Y/N) ___ Type _____

WATER SUPP
[ ] Co
[ ] Mu
[ ] Pr

FUTURE ADDITIONS - ALL PLANNED ADDITIONS MUST BE ENTERED (check all that apply):
[ ] Swimming Pool [ ] Jacuzzi [ ] Stable/Barn [ ] Workshop
[ ] Garage [ ] Storage Building [ ] Deck/Patio [ ] Bedrooms

The undersigned, owner, or legal agent for the owner, of the property described abo
ongoing application, acknowledges that the contents of same are true, and authorizes
PARTMENT to enter onto the property for the purpose of processing this request.

Signed: Linda West/agent Date: 8/16/94

OFFICE:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certi
to Request for the Job Location contained in this document. This approval is granted
Rules for Sanitary Sewage Collection, Treatment And Disposal in effect at the tim
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 permit is not transferable.

.. ~~Use of~~ Lift pump required (no basement)

[X] IMPROVEMENT PERMIT - VALID 60 MONTHS FROM ISSUANCE
[ ] MOBILE HOME EXCHANGE APPROVAL - VALID 6 MONTHS FROM ISSUANCE
[ ] ADDITION/RENOVATION APPROVAL - VALID 1 YEAR FROM ISSUANCE

Thilo S. Walker R.S. 8/30/94
Environmentalist Date

J Newell for S. Daniel 9/1/94
Director or Authorized Section Head Date

8/2 Received voice mail message from Kent Lund @ 333-5841
8/3 PC w/Mr Lund - stated the Gillis' want to change house plan; wanted to know ST system "setback" requirements. New house plan would have foundation drain. Advised of separation from foun. drain. Must submit new plot plan. Per Lorraine $75 fee. (704-6506) JOM

WATER : 12279

MECKLENBURG COUNTY HEALTH DEPARTMENT
SITE EVALUATION REPORT
SERIAL NUMBER 20473

File: 32728 Action 1

Parcel: 001-391-27B ☐ PC

Location: 21105 ~~15918~~ Strawpocket Lane

Subdivision:

Lot: 29 Block: Acres: .64

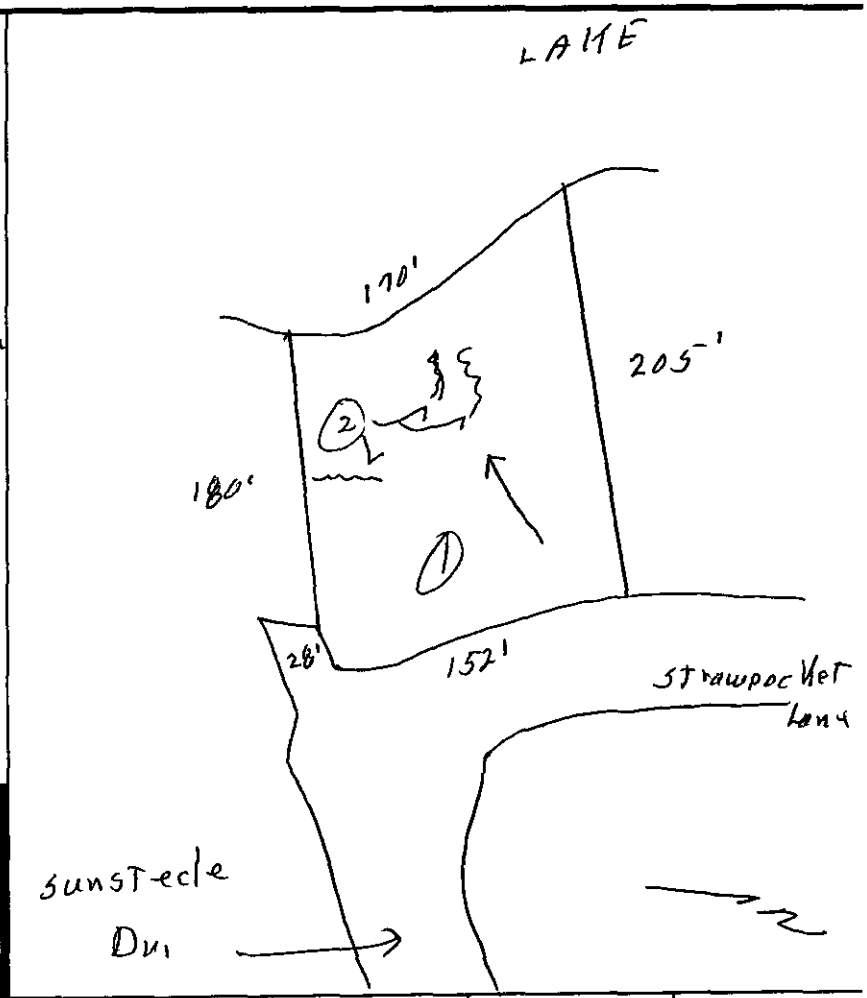
Owner: Linda West, Agent For A.D.

Address: 15208 Highway 73 W. Whitintgon Huntersville N.C. 28078

Comments: .3 gal/ft2/day LTAR system may need pump

Described by: William R. Marli

Date: 8-29-94



***** EVALUATION KEY *****

S = Suitable U = Unsuitable
PS = Provisionally Suitable
The "Area Classification" below indicates the suitability of areas in the diagram.

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	(S) PS U 6-12%	S PS (U) Slight Complex Slope	S PS U	S PS U	S PS U	S PS U
Texture	S (PS) U Slightly Expansive clay	S PS U —	S PS U	S PS U	S PS U	S PS U
Structure	S (PS) U sub + Blocky	S PS U —	S PS U	S PS U	S PS U	S PS U
Drainage	S (PS) U > 42" soil wetness To	S PS U —	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U > 42"	S PS U	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U > 42"	S PS U —	S PS U	S PS U	S PS U	S PS U
Available Space	S (PS) U limited	S PS U	S PS U	S PS U	S PS U	S PS U
Other (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Soil Group/Series	IV Cecil-Like	Slight Complex Slope				
Area Classification	S (PS) U	S PS (U)	S PS U	S PS U	S PS U	S PS U

FEE: 100.00
DATE: 6/18/97
ck # 8838

APPLICATION FOR IMPROVEMENT PERMIT FOR RESIDENTIAL SITE INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM

1 1 CRT

TYPE APPLICATION: X NEW SYSTEM __ EXPANSION/ ALTERATION OF EXISTING SYSTEM __ REPAIR OF EXISTING SYSTEM

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

FILE #: ~~9914B~~ 32128

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 001-391-27 RA

STREET ADDRESS: 7105 STRAWBERRY LANE

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER: #29

TYPE OF BUILDING (CHECK ONE):

__ SINGLE MOBILE HOME(S) __ MODULAR HOME (M)
__ DOUBLE WIDE (D) __ MULTIPLE FAMILY (U)
X HOUSE (H) __ OTHER (O)

TOWNSHIP (CHECK ONE):

X 0 MECKLENBURG __ 4 PINEVILLE
__ 1 CHARLOTTE __ 5 MATTHEWS
__ 2 DAVIDSON __ 6 HUNTERSVILLE
__ 3 CORNELIUS __ 7 MINT HILL

HEATED SQUARE FOOTAGE: 5380

NUMBER OF BEDROOMS: 4 NUMBER OF OCCUPANTS: 3

FOUNDATION FOR RESIDENCE:

__ WITHOUT BASEMENT X WITH BASEMENT /PLUMBING
X ON SLAB __ WITH BASEMENT /NO PLUMBING
__ CRAWL SPACE

CLOSING DATE

32128

Jo Tiebeckie 7-1-97 Mecklenburg

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION: soil-repair W.M. 7-2-97

Not Applicable

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE: __ YES X NO TYPE:

WATER SUPPLY (CHECK ONE): __ COMMUNITY (C) __ MUNICIPAL (M) X PRIVATE WELL (P)
__ SHARED WELL (S) __ OTHER 'SPRINGS' (O)

IF ANY OF THE FOLLOWING ARE LOCATED ON THE PROPERTY, PLEASE SHOW LOCATION ON PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES __ YES X NO
EXISTING WASTEWATER SYSTEMS __ YES X NO
EASTMENTS OR RIGHT-OF-WAYS __ YES X NO
WELL, SPRINGS OR WATERLINES __ YES X NO
DESIGNATED WETLANDS __ YES X NO

PROPERTY OWNER:

NAME: Gillis, Dale I. II
(LAST) (FIRST) (MI)

ADDRESS: 5422 Londonderry Rd.

CITY: Charlotte STATE: NC ZIP:28210

DAYTIME PHONE: (704) 343-0016

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: N/A
(LAST) (FIRST) (MI)

DAYTIME PHONE: ( ) -

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 8/31/94

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 agents of the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

SIGNED: DATE: 6/18/97

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR., SUITE 211, 700 N. TRYON ST., CHARLOTTE, N.C. 28202., (704) 336-5102

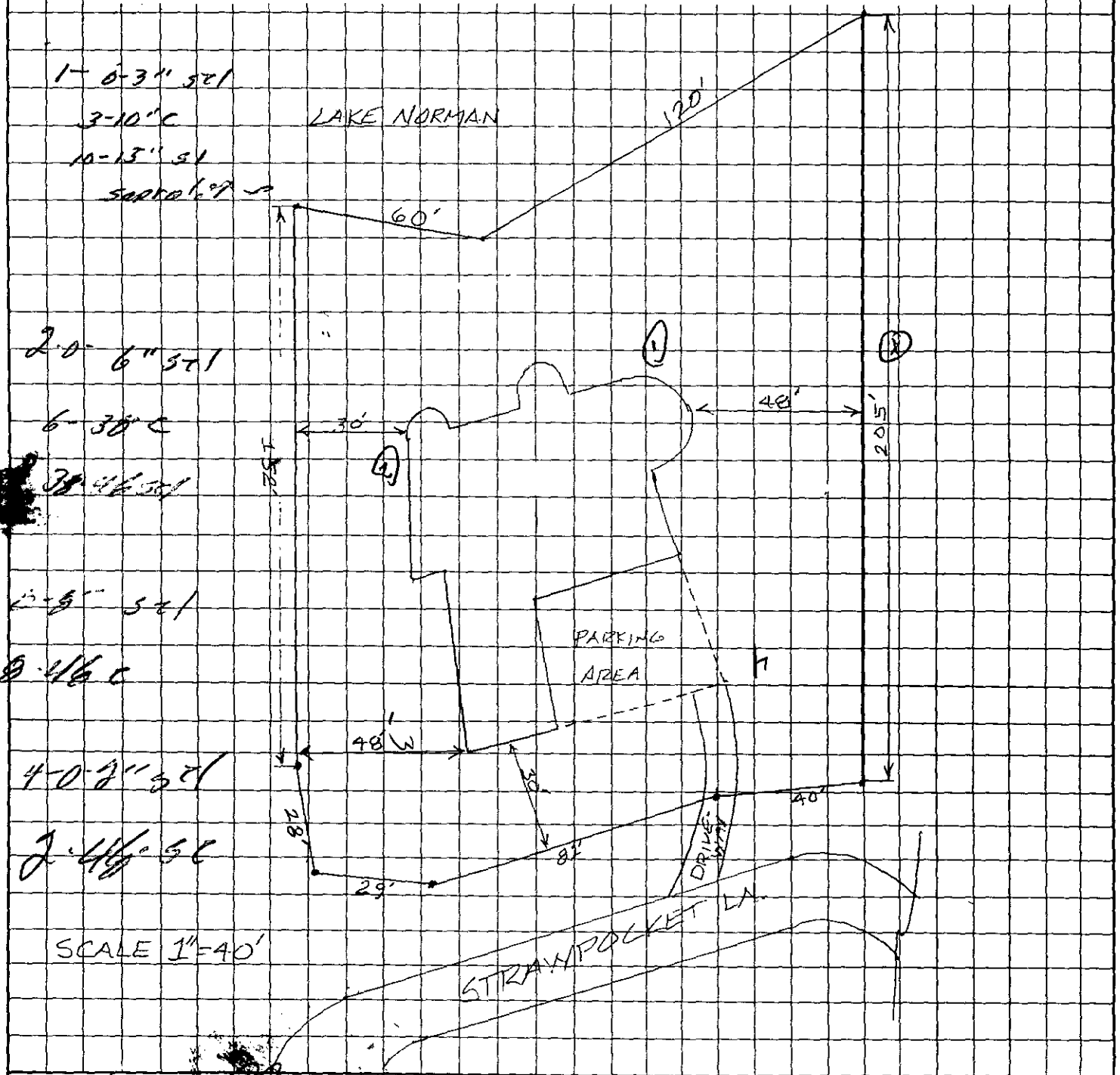
PROPOSED PLOT PLAN

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON STREET
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: 1994B

TC: 001-391-29PO

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.



APPROVAL DATE _____

OWNER/AGENT SIGNATURE

DATE 6-17-93

White - Health Department's Copy Canary - E.H.S. Copy Pink - Owner's Copy

LENBURG COUNTY HEALTH DEPARTMENT File: 327
E EVALUATION REPORT
RIAL NUMBER 20473 Parcel: 001-391-2

Location: 2105 Crawpocket Lane

Subdivision:

Lot: 21 Block: Acres: .14

Owner: Linda West Agent For A.D.
Address: 18206 Highway 43 W. Whitmington
Hunterswille W.V. 26076

Comments: 3 gal/ft/day LTAR system may need pump

Described by: William R. Mayle
Date: 5-29-96



***** EVALUATION KEY *****
S = Suitable U = Unsuitable
PS = Provisionally Suitable
The "Area Classification" below indicates the suitability of areas in the diagram.

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4
Topography	(S) PS U 6-12%	S PS (U) slight complex slopes	S PS U	S PS U
Texture slightly Expansive clay	S (PS) U	S PS U —	S PS U	S PS U
Structure sub blocky	S (PS) U	S PS U —	S PS U	S PS U
Drainage	S (PS) U > 42" soil wetness	S PS U —	S PS U	S PS U
Depth	S (PS) U 74"	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U 74"	S PS U —	S PS U	S PS U
Available Space	S (PS) U limited	S PS U	S PS U	S PS U
Other (specify)	S PS U	S PS U	S PS U	S PS U
Soil Group/Series	IV cecil/Lloyd	slight complex slope		
Area Classification	S (PS) U	S PS (U)	S PS U	S PS U

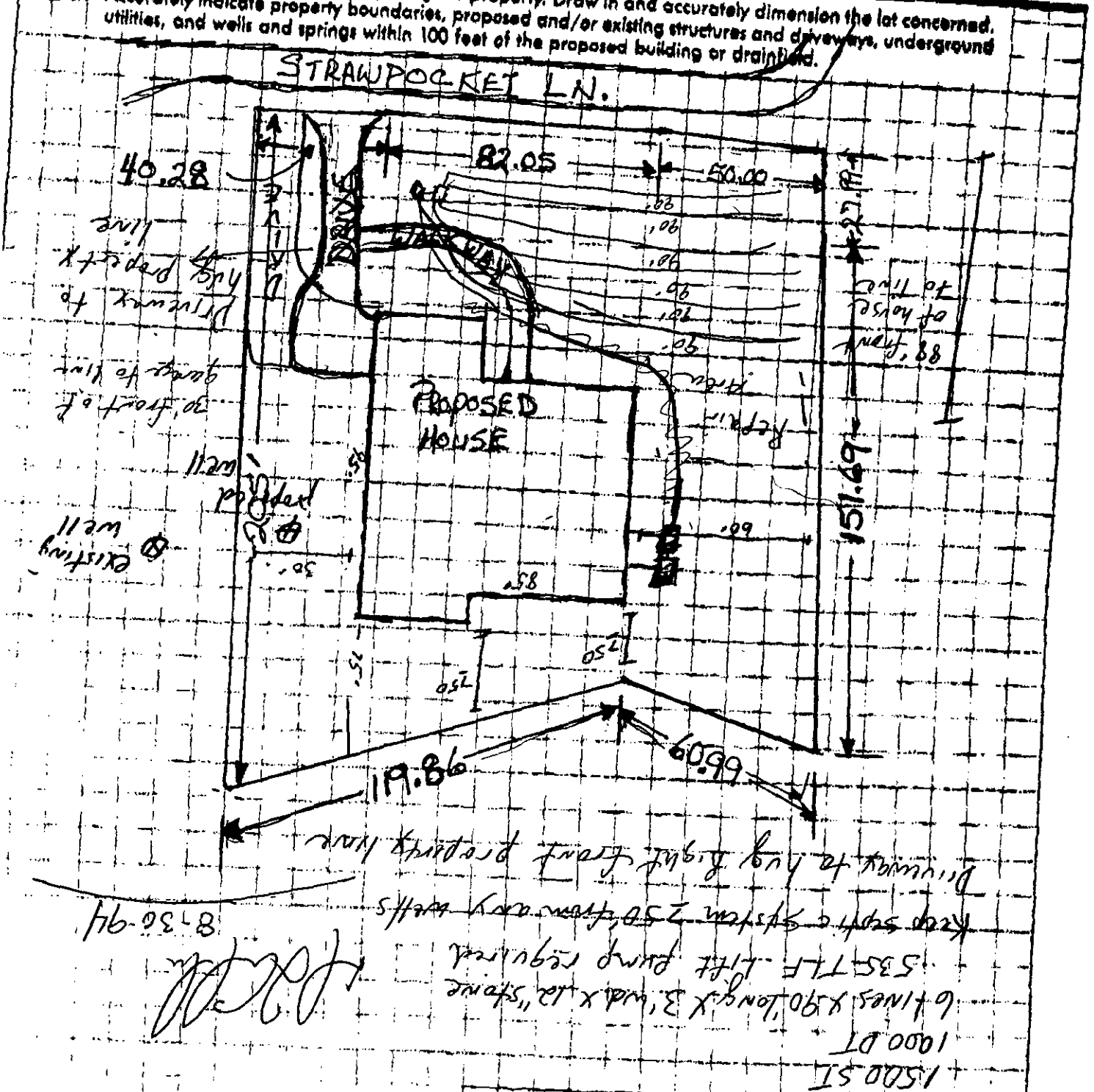
PROPOSED PLOT PLAN

HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON STREET
CHARLOTTE, NC 28202
PHONE (704) 336-5102

FILE: 3272B

TC: _____

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries, proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.


STRAWPOCKET LN.
40.28
82.05
50.00
PROPOSED HOUSE
151.49
19.86
60.99
Existing well
Driveway to Proposed House
Setback Line
Repair
.08
.06
.06
.06
.02
.05
.09
.58
.50
.50
.50

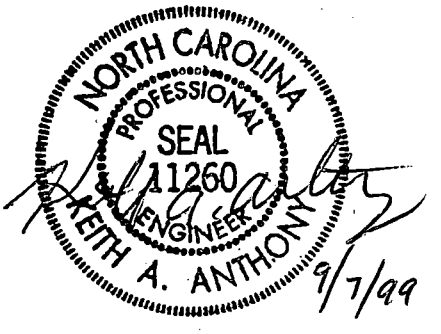
RESIDENTIAL CHAMBERED SYSTEM
FOR
SUBSURFACE WASTEWATER DISPOSAL
LOT #291 - STRAWPOCKET LANE
NORTH CAROLINA

Prepared For
Mr. Dale Gillis
3501 Asbury Avenue
Charlotte, North Carolina 28206

Prepared by
Geo-Environmental Consultants, Inc.
11704 Reames Road
Charlotte, North Carolina 28269

GCI Project No. 99147

September 1999



GEO-ENVIRONMENTAL
CONSULTANTS, INC.

September 7, 1999

Mr. Larry Thompson
Environmental Health Division
700 North Tryon Street, Suite 211
Charlotte, North Carolina 28202

RE: **Residential Chambered System**
Lot 291 - Strawpocket Lane
Charlotte, North Carolina
GCI Project No. 99147

Dear Mr. Thompson:

On behalf of Mr.Dale Gillis, Geo-Environmental Consultants, Inc. (GCI) is pleased to present the attached application and design package for the above project. If you have any questions concerning this submittal, please contact us at 596-8788.

Sincerely,

GEO-ENVIRONMENTAL CONSULTANTS, INC.

Keith A. Anthony, P.E.
Principal Engineer

Jennifer Martin
Staff Engineer

Attachment

cc: Mr. Dale Gillis

W:\REPORTS\1999\99147\SD-CHMB.WPD

BACKGROUND

The property is planned for single family 4-bedroom residence.

Mr. Larry Thompson, of the Mecklenberg County Health Department, performed a site investigation on July 10, 1997. He classified the site with a LTAR of 0.3 gpd/ft^2. See attached Soil/Site Evaluation report.

The residence will be served by a private well which is located approximately 100 feet away.

The location of the nitrification field has a slight slope (<10%) but the laterals shall be installed on even contours. Some locations will require surface landscape filling. The area is partially wooded. Trees will need to be cut and removed, however, no stumps shall be removed. Care shall be taken to ensure minimum land disturbance. This parcel does not require a repair area.

APPLICATION INFORMATION

1) Application for Improvement Permit has been submitted to Mecklenburg County Health Department by the property owner, Mr. Dale Gillis.
2) Property is shown on attached portion of development survey. The MCHD file number is 3272B.

3) Owner: Mr. Dale Gillis
3501 Asbury Ave.
Charlotte, NC 28206
(704) 597-7744 (Home)

Engineer: Mr. Keith A. Anthony, P.E.
Geo-Environmental Consultants, Inc.
11704 Reames Road
Charlotte, NC 29269
(704) 596-8788 (Office)
(704) 596-8770 (Fax)

4) Project described herein is a new project.
5) Water supply for development is provided by a private well shown on the attached plat.
6) Facility to be served by the proposed system is a 4-bedroom single family residence.
7) Wastewater system components are described herein.
8) With most systems, MCHD requires that the house and nitrification lines be located and marked prior to their final approval.

LOCATION

The property is located off Strawpocket Lane in the area known as "Meck-Neck" region of Charlotte North Carolina.

REFERENCES

1) Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment Health and Natural Resources, August 1, 1998
2) On-Site Wastewater Management Guidance Manual by: North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, March 1996.

SITE PREPARATION

1) One of the most important concerns for an on-site system is to protect the site from soil disturbance by heavy equipment.
2) As soon as the absorption area has been designed, it should be flagged, roped off and "quarantined" from construction traffic. No site preparation or on-site construction work should occur if the soil is wet.
3) After the location is staked out and the soil is dry enough the site should be cleared of brush and small trees. If larger trees are removed, they should be cut off rather than uprooted in order to avoid creating depressions and damaging the soil-pore network.
4) Provisions must be made for intercepting or diverting surface water away from the absorption area.
5) After the area has been cleared and shaped, the location of the conveyance pipe and distributor box should be accurately staked out according to design specifications. Each disposal trench should be laid out along a level contour using a transit.

SPECIFICATIONS AND INSTALLATION FOR SPECIFIC SYSTEM COMPONENTS

Septic Tank

1) The septic tank receives wastewater directly from the house.
2) A septic tank shall be watertight, structurally sound, and not subject to excessive corrosion or decay.
3) The 1500 gallon septic tank must be of two-compartment design for maximum solids retention. The inlet compartment of a two-compartment tank shall hold between two-thirds and three-fourths of the total tank capacity.
4) Effluent from the two-compartment septic tank flows by gravity drain into the pump tank. The effluent is then pumped to the distribution box through a two-inch solid PVC pipe to be delivered to the chamber laterals via gravity drain.
5) The septic tank must be provided with aboveground concrete or masonry manhole risers to

provide easy access for clean-out and filter service.

6) When prefabricated concrete tanks or tanks of other material are used, they shall be constructed in accordance with the plans which have been approved by the State and shall comply with all requirements of Section .1953 of 15A NCAC 18A.

7) On the outlet tee of the septic tank a filter should be installed. This filter should be equivalent to a Zabel Model A1800. An access port over the filter should be installed. See attached product sheet from Zabel Environmental Technology.

Pumping Tank

1) 1000 gallon pumping tank shall have an access manhole extending at least 6 inches above finished grade.

2) Pump and control circuits shall be provided with manual circuit disconnects within a watertight, corrosion-resistant, outside enclosure (NEMA 4X or equivalent) adjacent to the pump tank, securely mounted at least 12 inches above finished grade. The pump(s) shall be manually operable without requiring the use of special tools or entrance into the tank for testing purposes. Conductors shall be conveyed to the disconnect enclosure through waterproof, gasproof, and corrosion-resistant conduits, with no splices or junction boxes provided inside the tank. Wire grips, duct seal or other suitable material shall be used to seal around wire and wire conduit openings inside the pump tank and disconnect enclosure.

3) The pumping tank shall have a properly functioning high-water alarm. The alarm circuit shall be supplied ahead of any pump overload and short circuit protective devices. The alarm shall be audible and visible by system users and included in the pump and control enclosure (Simplex or Duplex Control Panel).

4) Float switch for the high water alarm shall be set no more than 3 inches above the high water level of pump cycle.

5) Pump floats should be set so that level of water at end of pump cycle is above the top of the pump.

6) Float switch tie downs to be made of corrosion resistant material, no tape or metal hose clamps.

7) Pump discharge piping shall be of Schedule 40 PVC and shall have a check valve.

8) Anti-siphon hole (three-sixteenth inch) is required between the pump and the check valve.

9) Watertight testing will be required on two piece pump tanks.

Pipe and Fittings

1) All pipes and fittings should be made of PVC plastic.

2) All joints must be sealed with an appropriate PVC-solvent cement. The supply manifold from the pumping tank to the distribution ~~box~~ device is two-inch Schedule 40 PVC.

3) There should be a threaded PVC union above the pump to allow easy removal or replacement.

4) A globe valve for final pressure adjustment is installed in the supply manifold inside the pumping tank.

Pump, Float Controls and Alarm System

1) A septic-tank effluent pump or a submersible sump pump that will not be corroded by sewage should be used in the pumping tank. A Little Giant Model #9S-CIM by Tecumseh Products, or equivalent, should be used to pump 24 gpm at 15 feet of head. See attached product sheet from the "USA Blue Book."
2) The controls for the pumping system include a switching control for turning the pump on and off and a high water alarm to signal pump malfunctions.
3) The controls must also be sealed against entry of corrosive and explosive gases from the effluent and should have NEMA (National Electrical Manufacturing Association) approval.
4) Mercury switches are activated by a sealed float which contains a tube of mercury in contact with power leads. Best performance has been obtained using two switches - one to close the pump circuit and the other to open it. See attached product sheet from the "USA Blue Book".
5) In addition to the on and off control floats, there must be a separate float control for the high-water alarm. This may be a sealed, mercury-float switch mounted several inches above the on float. The high-water alarm should be located within the house and consist of a light bulb and/or audible signal mounted over a sign marked "wastewater system alarm". It should be on a separate electrical circuit from the pump power line, and be equipped with a test switch. The alarm is activated if the water level in the pumping tank rises above the "pump-on" float control. The tank provides at least one day or more of excess storage capacity (depending on water use in the home) during which time the system must be repaired.

Conveyance Piping

1) Conveyance pipes must be solid, non-perforated, Schedule 40 pipe at least 3 inches in diameter. The pipe can be made of PVC, PE or ABS and the joints must be made using the correct solvent and fittings for the type of pipe.

2) The pipes should be installed in trenches with bottoms of undisturbed or compacted soil so that the soil will not settle and break the pipes.

3) The conveyance pipes must be installed to meet all required setback distances.

4) All the joints in the conveyance pipe and its connections to the distribution box should be watertight.

* ~~Distribution Box~~

Uneven length drain lines! Designer proposes utilizing drop boxes for distribution.

1) Be certain that the distribution box is installed at the proper location and as marked on the

plans. Check that the location meets all setback distances.

2) The box must be installed so that at least 2 feet of undisturbed earth separates the distribution box from the septic tank and the disposal trenches. This separation by undisturbed earth helps reduce leaking of sewage into unsuitable areas outside the treatment and disposal field.

3) Install distribution box on a base of level, undisturbed earth or a level concrete pad to prevent the soil from settling. If the soil settles, the device can tilt so that the effluent is not evenly distributed, possibly leaking from the device. A good test is to stand on the box and try to rock it - it should not rock or tilt.

4) Check the connections of the conveyance pipes to the distribution box to make sure there are no leaks.

5) Inspect distribution box to be sure that it is watertight and strong enough so it won't collapse in the soil.

6) One way to check for a leaking distribution box is to check the water level early in the inspection and then at the end of the inspection. If the water level has dropped below the outlet, there is a leak in the box.

7) Be sure that the distribution box inlet is higher than the outlet so the effluent will flow out to the treatment and disposal trenches. Often, distribution boxes are installed backwards, so it is important to check orientation.

8) A riser installed over the distribution box allows easy access and adjustment of flow after the system is installed.

9) Adjustments to ensure even flows to all trenches should be made during installation of distribution box. All outlets from a distribution box must be at the same level so that the same amount of effluent flows out of each outlet. A number of devices are available to make rapid adjustments to the outlets of distribution boxes so that all outlets have the same flow. These flow-adjusting devices work well and can speed installation.

10) Distribution boxes can be made of concrete or polyethylene plastic, either material works well if installed properly.

Disposal Trenches

1) The trenches must be installed on the contour so that the entire trench is at the same level. If the trench is level, all parts of the trench will accept effluent, instead of only the low parts in an uneven trench.

2) Trench bottoms should be level, within plus or minus 1/4 inch per 10 feet.

3) The width, spacing and depth of the trenches should be as shown on Figures 1 and 2.

4) Standard chamber unit consisting of a high density polyethylene arch-shaped injection molded chamber with an average inside width of 2.5 ft. (30 inches) and an overall length of 6 ft 2 1/4 inches. The standard unit height is approximately one foot high with 1/4 inch wide slotted sidewalls approximately 6 inches high. The chamber sidewall slope is approximately 20 degrees toward the chamber center or away from the trench sidewall. Note: 16 Infiltrator chamber units are approximately equal to 100 linear feet.

5) Each chamber unit is designed to mechanically interlock with the downstream chamber forming a complete nitrification trench that consists of an inlet plate with a splash plate located below the inlet on the trench bottom and a solid end plate to be located at the distal end of any chamber nitrification line.

6) The Infiltrator chamber system used in nitrification trenches shall be in 3 ft. wide maximum excavation and constructed not less than nine feet on centers.

7) The inlet to the Infiltrator chamber shall be in the uppermost portion of the specially prepared inlet panel with a splash plate below the inlet on the trench bottom.

8) Clean Group I, II, or III soil backfill (soil normally found in the upper 10 inches of the trench excavation) shall be placed along the chamber sidewall area to a minimum compacted (walked in) height of 6 inches above the trench bottom. Additional backfill (Group I, II or IV) shall be placed to a minimum compacted height of 12 inches above the chamber. No excavation equipment shall travel over the chamber system.

   It is critical to note that the nitrification trench bottom shall be at least 24 inches below finished grade, and the inlet invert shall be approximately 8 inches above the trench bottom, and at least 17 inches below finished grade.

9) Individual chamber trenches shall be constructed level in all directions (both across and along the trench bottom) and shall follow the contour of the ground surface elevation (uniform depth) with continuous interlocking chambers, including specially constructed Infiltrator angle chamber units, without any dams, step downs or water stops.

10) Manufacturer's installation instructions for the Infiltrator system used in septic tank systems shall be followed except as required in 15A NCAC 18A.1900.

11) The system shall be installed by a contractor authorized in writing by the manufacturer.

FINAL LANDSCAPING

1) After the system is installed, the following should be checked to ensure that the system will not be overloaded with excess rainwater and runoff:
   - The distribution field is shaped to shed rainwater and is free of low areas
   - Grassy swales or ditches for diverting surface water are properly installed
   - Gutter and downspout drains are directed away from the system.

2) Finally, the entire area should be planted with grass in order to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized before planting. After applying an appropriate grass seed, the area should be heavily mulched with straw or other suitable material.

QUALITY ASSURANCE REQUIREMENTS

The Chambered system must be installed by a qualified, contractor that is on the Mecklenburg County list of competent contractors. GCI also recommends that the construction and installation of the Chambered system be spot checked by an independent design engineer recognized by Mecklenburg County to have experience in the design of Chambered systems. Critical stages of the installation which should be checked are:

1. System layout
2. Septic tank installation prior to backfilling
3. Trench excavation and chamber placement.
4. Final landscaping.

It is important to note that if on-site quality assurance observations are not provided by GCI, then the homeowner and/or installation contractor assumes responsibility and/or liability for proper system installation and operation.

The system design is based on a maximum waste flow of 480 gallons per day. Homeowners should pay particular attention to the section titled Owner Care Requirements for ways to minimize the burden on the system.

MAINTENANCE

1) Any person owning or controlling the property upon which a ground absorption sewage treatment and disposal system is installed shall be responsible for the following items regarding the maintenance of the system:
   - Ground absorption sewage treatment and disposal systems shall be maintained at all times to prevent seepage or discharge of sewage or effluent to the surface of the ground or to surface waters.
   - Ground absorption sewage treatment and disposal systems shall be checked and the contents of the septic tank removed periodically to ensure proper operation of the system.

OPERATION AND MAINTENANCE PROCEDURE

The system is classified as Type III. The Management Entity responsible for operation and maintenance of this type system is the Owner.

Operating, Maintenance and Inspection procedures shall include but not be limited to the following:

- Septic system shall be pumped every 4 years or when solids accumulate to 1/3 the volume of the tank.
- On a two- to five-year basis, clean and inspect the septic tank filter. When washing the filter, debris must be sprayed directly back into the septic tank and not onto the lawn.
- The property should be inspected to insure all surface water is deflected away from the fields and tank. Any ponding of surface water should be corrected.
- Grasses shall be mowed and maintained and any erosion shall be corrected promptly.
- The nitrification field area shall be checked for leakages, blowouts or malfunction, indications of damp or mushy areas compared to surrounding area or evidence of noticeable odor of sewage. Repairs shall be made immediately.
- Check septic tank and distribution box for evidence of damage or leakage. Check the quality of effluent including grease and sludge accumulation.

OWNER CARE REQUIREMENTS

Most chambered systems require adequate effort on the part of the owner to operate and maintain. Even though the effort is small, the system must be maintained properly so that it operates reliably and at a minimum cost. Following are suggestions for the home owner to minimize the burden on a chambered system.

1) Garbage disposals should not be used in on-site systems. The ground garbage adds large amounts of solids to a septic tank, causing sludge to build up very quickly.
2) Grease, cooking oils and coffee grounds should never be put into a septic tank.
3) Items such as disposable diapers, cigarettes, facial tissues and other solid or paper wastes should not be flushed into the on-site system.
4) Used motor oil and other such oily liquids should not be put into a septic tank.
5) Using less water can reduce the amount of water flowing to the treatment and disposal field.
6) Water-saving fixtures and devices can be installed on sinks, toilets and showers to reduce the rate at which the water flows from the fixture.
7) Dishwashers and washing machines should only be run with full loads.
8) Leaky faucets and toilets can add large volumes of water to the daily flow of water into the on-site system. Repair the leaks to save water and give the treatment and disposal field a rest.
9) Roof drains, basement sump pumps, foundation drains, and other such drains should not empty into the on-site system. These drains should be directed to another part of the lot away from the treatment and disposal field.

DESIGN LIMITATIONS

1) The site soil evaluation and design parameters for this project was performed by others. Although we cannot be responsible for the accuracy of the data provided to us by others, we have no reason to suspect that any of the information provided is inaccurate unless it has been otherwise noted.

2) This design does not address potential malfunction due to improper installation, operation and/or maintenance.

3) As indicated above, effective operation of the septic system requires adequate effort on the part of the owner. The system design provides general care requirements but does not provide detailed troubleshooting guidelines. Additional septic system troubleshooting guidelines can be provided by GCI if requested.

4) These services have been performed in accordance with generally accepted engineering practices.

APPENDIX

DESIGN SPECIFICATIONS
Chambered "Infiltrator" System
Dale Gillis - Lot #291

Daily waste flow	480 gal
Septic Tank Size	1500 gal
Pump Tank Size	1000 gal
Effluent loading rate	0.30 gal/ft^2/day
Absorption area	1600 ft^2
Total length of laterals	400 ft
Laterals	Chamber "Infiltrator" Lines
Lateral configuration	Varies (See Figure 1)
Supply line diameter	2 " Sch-40 PVC

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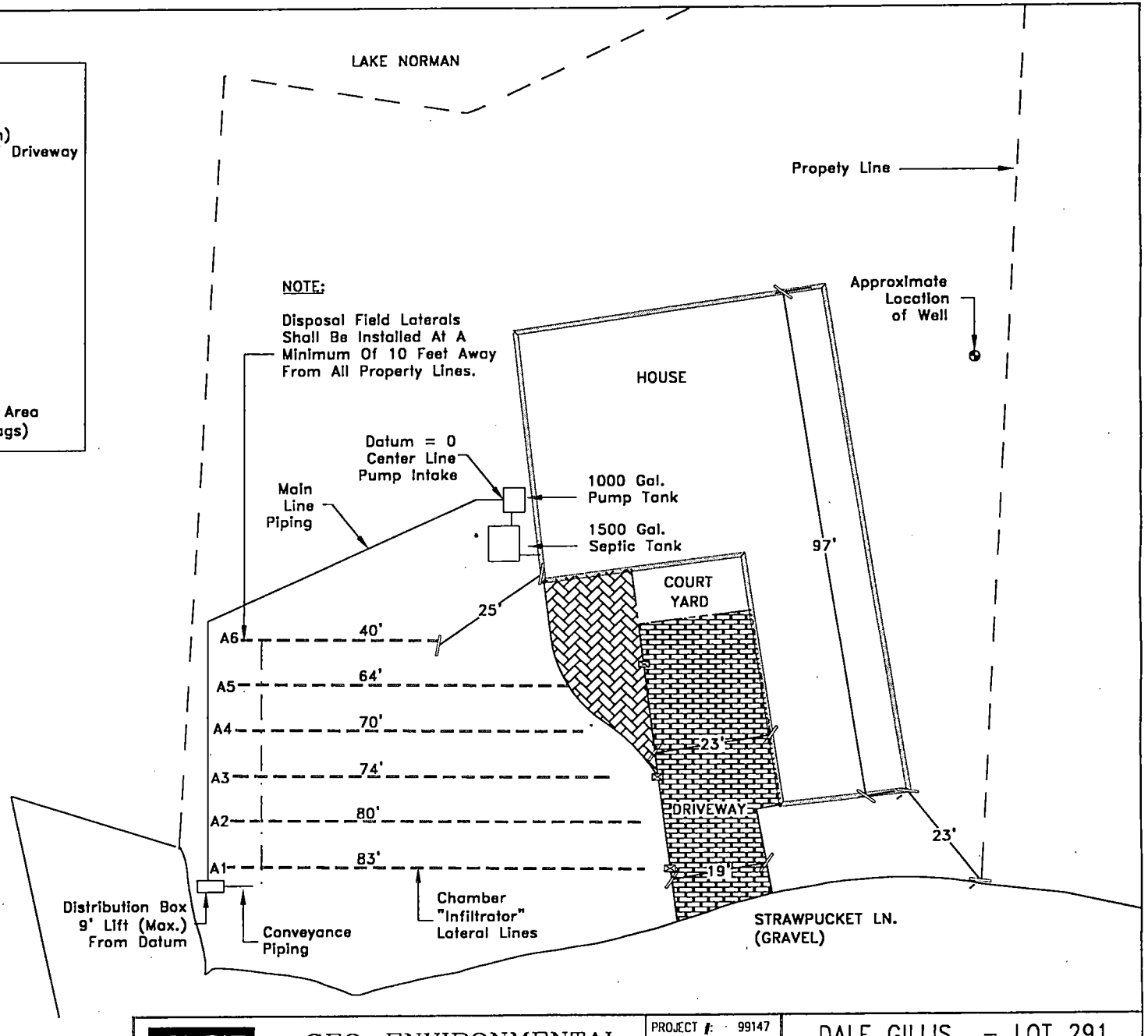
LEGEND:

- Flag Marker (Green) Dilineating Edge of Driveway
- Chamber Lateral "Infiltrator" Line
- 2" PVC Sch-40 Main Line
- 2" PVC Sch-40 Conveyance Pipe
- Area Undisturbed by Septic System (Usage Optional)
- Assumed Driveway Area (Border Marked Flags)

LATERAL ENDPOINT ELEVATIONS:

Line	Left	Right	
A1	6.40	5.99	
A2	7.30	7.48	
A3	7.70	8.44	*
A4	8.50	9.13	*
A5	9.30	9.90	*
A6	10.5	10.36	

* Indicates Lateral Lines Where Some Surface Landscape Filling Is Required.



GCI
GEO-ENVIRONMENTAL CONSULTANTS, INC.
GEOTECHNICAL/ENVIRONMENTAL ENGINEERS & SCIENTISTS
11704 REAMES ROAD, CHARLOTTE, NC 28269-7637
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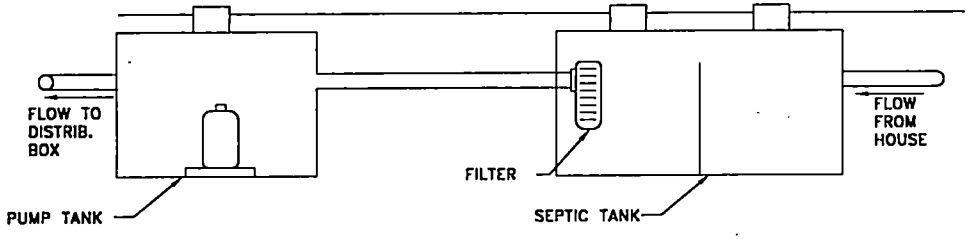
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DESIGN BY:	K.A.A.
DRAWN BY:	J.A.M.
SCALE:	1"=30'

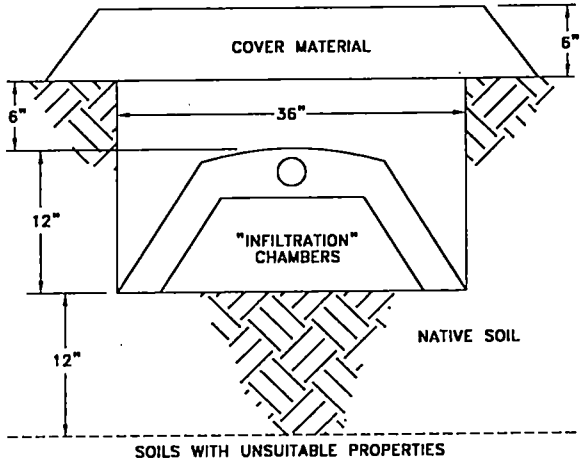
DALE GILLIS - LOT 291 SEPTIC DESIGN (CHAMBER) IREDELL/MECKLENBURG CO.

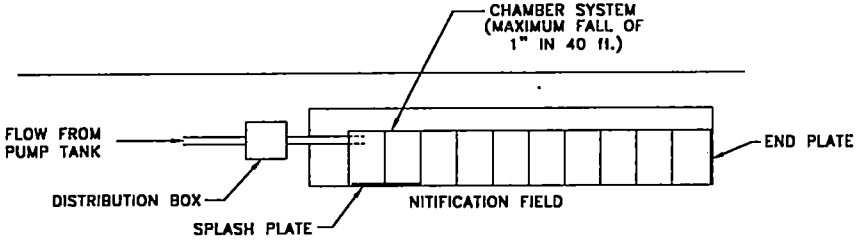
SITE PLAN

FIGURE 1

P:\PROJ\99147\NEW-BASE







P:\PROJ\99147\FIG2.DWG

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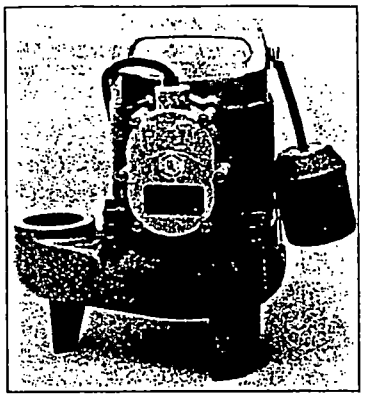
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PROJECT MGR:	K.A.A.
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DRAWN BY:	J.A.M.
SCALE:	NOT TO SCALE

DALE GILLIS
STRAWPOCKET LANE – LOT #291
CHARLOTTE, NORTH CAROLINA

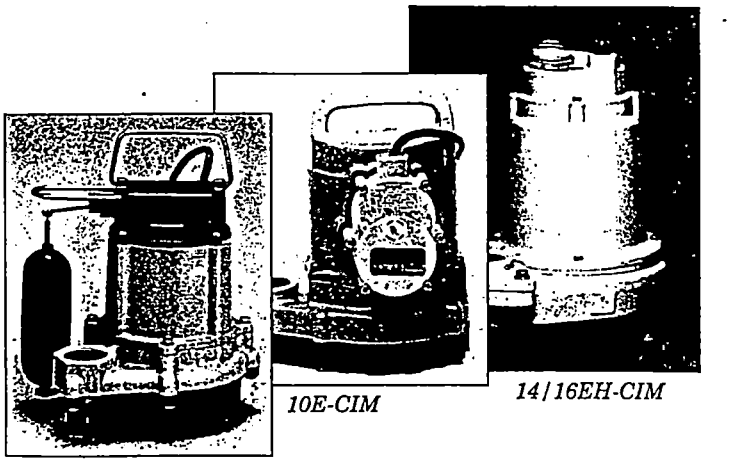
CHAMBERED SYSTEM | FIGURE 2



14S-CIM



10S-CIA-RFS
10SH-CIA-RFS



6E-CIA-SFS

10E-CIM

14/16EH-CIM

Sewage Ejector Pumps

- Continuous Duty - UL Listed, CSA Approved
- 2" NPT discharge

Little Giant PUMP COMPANY SUBSIDIARY TECUMSEH PRODUCTS COMPANY

Submersible sewage pumps for extended or continuous use.
Move large volumes of wastewater and sewage up to 2" in diameter (1¼" on 10SH). For heavy duty residential, commercial, and general industrial applications.

Heavy duty oil-filled cast iron housing provides for cooler running and longer motor life. Epoxy coated for corrosion and rust resistance. Mechanical seal (stainless steel spring, nitrile parts, carbon and ceramic face). Vortex impeller (nylon on 9S/10S/10SH; cast iron on 14S/16S). Thermal overload protection. Maximum fluid temperature: 140°F. Minimum sump is 18" diameter and 24" deep, except for 14S/16S units which require 30" deep sump.

Automatic models have piggy back float switch that allows you to set on/off levels. These pumps can also be used manually. 115V models come with 3-prong plug. **10SH Series Pumps**—*Excellent alternatives to Hydromatic model SP-40.* High head for loading dock sumps, elevator pits, and applications where sump screen normally clogs.

PUMP	PERFORMANCE GPM @ FEET OF HEAD					
	5	10	15	20	30	SHUTOFF
9S SERIES	80.0	50.0	24.0	-	-	18.0'
10S SERIES	110.0	85.0	50.0	-	-	20.0'
10SH SERIES	120.0	100.0	80.0	55.0	-	28.0'
14S SERIES	135.0	100.0	70.0	35.0	-	25.0'
16S SERIES	180.0	160.0	125.0	100.0	40.0	35.0'

MODEL	TYPE	V	PH	HP	CORD	STOCK#	EACH
9S-CIM*	MANUAL	115V	1PH	.40	15'	66140	$19.087
10S-CIM*	MANUAL	115V	1PH	1/2	15'	66142	291.20
10SH-CIM*	MANUAL	115V	1PH	1/2	15'	66163	262.79
14S-CIM*	MANUAL	115V	1PH	1/2	20'	66144	402.12
16S-CIM*	MANUAL	230V	1PH	1	20'	66146	501.59
16S-CIM*	MANUAL	208V**	1PH	1	20'	66145	518.47
9S-CIA-RFS	AUTO	115V	1PH	.40	15'	66148	232.36
10S-CIA-RFS	AUTO	115V	1PH	1/2	15'	66150	331.95
10SH-CIA-RFS	AUTO	115V	1PH	1/2	15'	66165	297.54

3 Phase 16S-CIM pumps available upon request. Call for details.
** Manual Operation Pumps can be converted to automatic operation by using float switches found in the "Electrical" section.*
*** These models rated 200-208V.*

Heavy Duty Dewatering and Effluent Pumps

- Continuous Duty - UL Listed, CSA Approved
- 1½" NPT discharge

Submersible sump/effluent pumps have non-clogging impeller that handles liquids and solid waste up to ¾" in diameter (½" on 6E series). Designed for heavy duty commercial, municipal and general industrial applications. Ideal for areas that accumulate light debris that would clog a standard sump pump. All pumps have epoxy-coated, oil-filled cast iron motor housing for cooler running and longer life. All have mechanical seals (stainless steel spring, nitrile parts, carbon and ceramic face). Thermal overload protection. Maximum fluid temperature: 140°F. Use with nonflammable liquids compatible with pump materials. 115V models have 3-prong plug.

14EH and 16EH units have cast iron impeller. All others have nylon impeller. 8E, 9E, and 10E series have vortex impeller and piggy back remote float switches which allow you to set on/off levels. These pumps can also be used manually. 6E automatic has factory preset snap-action float switch that turns on at 8½" and off at 3½". Minimum sump is 18" diameter and 24" deep. 14EH and 16EH pumps are high head and require 30" sump depth.

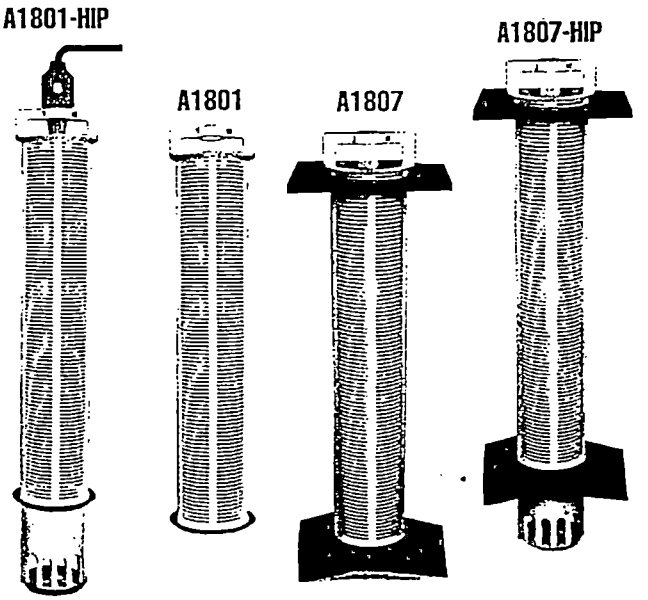
PUMP	PERFORMANCE GPM @ FEET OF HEAD						
	5	10	15	20	40	60	SHUTOFF
6E SERIES	50.0	42.0	27.0	-	-	-	20.0'
8E SERIES	52.0	45.0	34.0	-	-	-	21.0'
9E SERIES	57.0	53.0	40.0	30.0	-	-	23.0'
10E SERIES	80.0	67.0	52.0	33.0	-	-	26.0'
14EH SERIES DON'T USE UNDER 20'				60.0	20.0	-	50.0'
16EH SERIES HIGH HEAD; DON'T USE UNDER 30'					70.0	30.0	81.0'

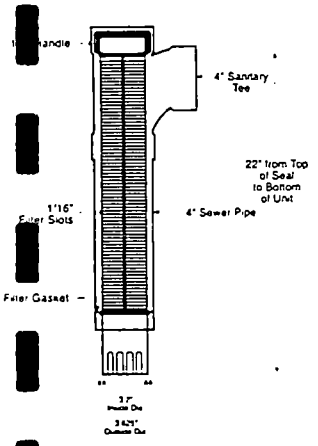
MODEL	TYPE	V	PH	HP	CORD	STOCK#	EACH
6E-CIM-25*	MANUAL	115V	1PH	1/3	25'	66160	$111.63
10E-CIM*	MANUAL	115V	1PH	1/2	15'	66162	249.31
14EH-CIM*	MANUAL	115V	1PH	1/2	20'	66164	416.41
16EH-CIM*	MANUAL	230V	1PH	1	20'	66166	511.73
6E-CIA-SFS	AUTO	115V	1PH	1/3	10'	66168	126.06
8E-CIA-RFS	AUTO	115V	1PH	1/3	10'	66170	161.89
9E-CIA-RFS	AUTO	115V	1PH	.40	15'	66172	194.74
10E-CIA-RFS	AUTO	115V	1PH	1/2	15'	66174	286.00

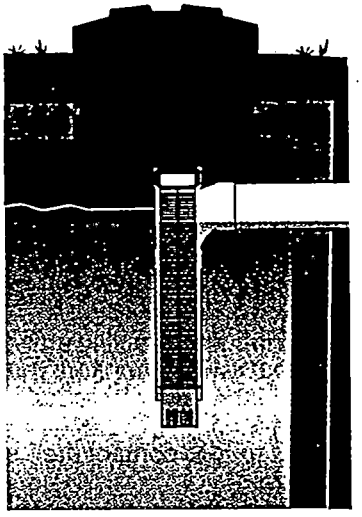
3 Phase 16EH-CIM pumps available upon request. Call for details.
** Manual Operation Pumps can be converted to automatic operation by using float switches found in the "Electrical" section.*

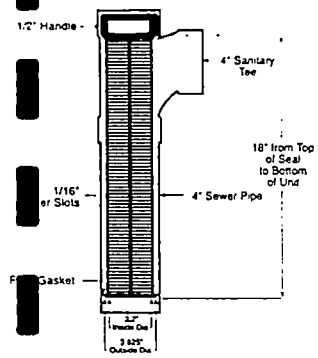
Note: This is a condensed catalog. Some items are not shown. Our 448 page master catalog will be sent to you free of charge with your first order.

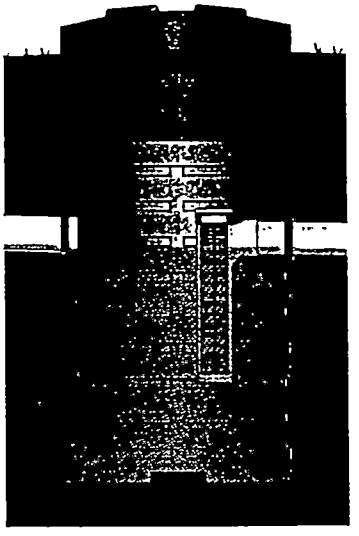
A1800s

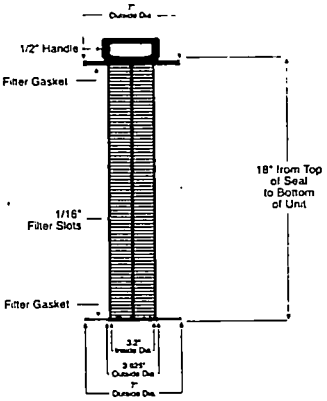


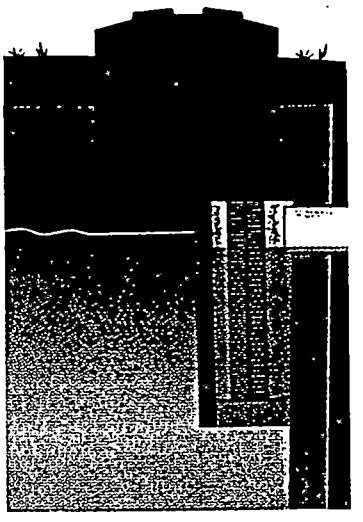












Zabel™ Recommendation: Any configuration of Risers used **should not** exceed 48" in height.

The product(s) shown are covered by one or more of the following patents:
U.S. 5,382,357, 5,482,621, 5,683,577, 5,580,453, 5,582,716, 5,591,331, 4,710,295, 5,593,584,
U.S. Des. 386,241,349067, 4605501,5098568, Des. 309007, Canadian: 2,135,937 New Zealand: 264824,
Other Patents Pending

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GEO-ENVIRONMENTAL CONSULTANTS, INC.

BY JAM DATE

CHKD. BY DATE

CLIENT		SHEET	1 OF
PROJECT		PROJECT NO.	9914
SUBJECT			

for 4 bedroom house:

Size of Absorption Area

4 Bedrooms x 120gpd = 480 gpd

LTAR = 0.30 gpd/ft²

$\therefore \frac{480}{0.30} =$ **1600 ft²**

Total Length of Distribution Lines

$\frac{1600 ft^2}{4 ft} =$ **400 ft (min.)** ∴ Use 4 lines of Varying to keep:

(1) - 130
(1) - 115
(1) 85
(1) 75

(Refer to figure 1)

* Chambered system requires 3 trenches, but allow 4 for calculation purposes due to the efficiency of the system.

Septic Tank Size

Twice the size of Daily load = 2(480gpd) = 960 gal (minimum)

Use 1500gal Septic Tank

Repair Area Not Required.

Pump tank Size

1000gal

FEE: 100.00
DATE: 6/18/97
CK # 8838

APPLICATION FOR IMPROVEMENT PERMIT FOR RESIDENTIAL SITE INDIVIDUAL WATER AND WASTEWATER SYSTEMS PROGRAM

I - JCRT

TYPE APPLICATION: X NEW SYSTEM ___ EXPANSION/ ALTERATION OF EXISTING SYSTEM ___ REPAIR OF EXISTING SYSTEM

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

FILE #: 1994B-3272B

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 001-391-17 PO

STREET ADDRESS: 7105 STRAWBERRY LANE

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER: #29

TOWNSHIP (CHECK ONE):

X 0 MECKLENBURG
___ 1 CHARLOTTE
___ 2 DAVIDSON
___ 3 CORNELIUS
___ 4 PINEVILLE
___ 5 MATTHEWS
___ 6 HUNTERSVILLE
___ 7 MINT HILL

CLOSING DATE _____

TYPE OF BUILDING (CHECK ONE):

___ SINGLE MOBILE HOME(S)
___ DOUBLE WIDE (D)
X HOUSE (H)
___ MODULAR HOME (M)
___ MULTIPLE FAMILY (U)
___ OTHER (O)

HEATED SQUARE FOOTAGE: 5380

NUMBER OF BEDROOMS: 4 NUMBER OF OCCUPANTS: 3

FOUNDATION FOR RESIDENCE:

___ WITHOUT BASEMENT
X ON SLAB
___ CRAWL SPACE
X WITH BASEMENT /PLUMBING
___ WITH BASEMENT /NO PLUMBING

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:
Not Applicable

WILL THERE BE A HOME BUSINESS IN THE RESIDENCE: ___ YES X NO TYPE: _____

WATER SUPPLY (CHECK ONE):
___ COMMUNITY (C) ___ MUNICIPAL (M) X PRIVATE WELL (P)
___ SHARED WELL (S) ___ OTHER 'SPRINGS' (O)

IF ANY OF THE FOLLOWING ARE LOCATED ON THE PROPERTY, PLEASE SHOW LOCATION ON PLAT:

BURIED CABLES, LANDFILLS, STUMPHOLES ___ YES X NO
EXISTING WASTEWATER SYSTEMS ___ YES X NO
EASTMENTS OR RIGHT-OF-WAYS ___ YES X NO
WELL, SPRINGS OR WATERLINES ___ YES X NO
DESIGNATED WETLANDS ___ YES X NO

PROPERTY OWNER:

NAME: Gillis, Dale I. II
(LAST) (FIRST) (MI)

ADDRESS: 5422 Londonderry Rd.

CITY: Charlotte STATE: NC ZIP:28210

DAYTIME PHONE: (704 343-0016

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: N/A
(LAST) (FIRST) (MI)

DAYTIME PHONE: ( ) —

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 8/31/94 → Richard Lot recorded 12-94 to 1994 plat

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 agents of the Mecklenburg County Health Department to enter onto the property for the purpose of processing this request.

SIGNED: _____ DATE: 6/18/97

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR., SUITE 211, 700 N. TRYON ST., CHARLOTTE, N.C. 28202., (704) 336-5102

mit Number 52725

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

Type Primary Wastewater System Type (circle one): 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:
___ IWWS-93-1
___ IWWS-93-2
___ IWWS-94-1

3 Long-term acceptance rate	480 Max gallons/day wastewater flow	1200 Absorption Area (sq ft)	9' Trench spacing (min. on centers)
Yes Serviced by private well	1500 Gallon septic tank	400' Total trench length (ft)	30" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)
4 Bedrooms in residence	1000 Gallon pump tank	N/A Depth of stone Group I, II, III backfill required	

Any surface waters present: Type: Minimum separation distance:

Site modifications required: Foundation drain must not be installed in front of spray area

Additional Conditions: Lot does not ~~need~~ require 100% repair area — Suitable backfill required if using a chamber system this is group I, II, or III backfill

Repair Area System Type Type (circle one) 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:
___ IWWS-93-1
___ IWWS-93-2
___ IWWS-94-1

___ Absorption Area (Sq ft) ___ Total Trench Length (Ft)	___ Depth of Stone Trench	___ Trench spacing (min. on centers)	___ Maximum Trench Depth

For existing system, enter the year originally installed:

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department has approved the Request for I Job Location contained in this document. This approval is granted in accordance with the provisions of Laws and Rules For Sewage, Treatment and Disposal in eff 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 Departm
- This Improvement permit is transferable.

Larry B. Morrison J.R.S. 7-10-97
DEHNR Authorized Agent Date

Owner/Agent Signature Date

MECKLENBURG COUNTY
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
c/o HAL MARSHALL CTR.
SUITE 211
700 N. TRYON ST.
CHARLOTTE, N.C. 28202.
(704) 336-5102

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL, HEALTH,
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

Cor#0008879 Rec.

FEE: 165.00 AUTHORIZATION FOR WASTEWATER SYSTEM CONSTRUCTION
DATE: 7-16-97 VOID SIXTY (60) MONTHS FROM DATE OF ISSUANCE

DATE: 7-10-97 PERMIT NO: 3272B
PARCEL NO: 001-391-27P0

JOB LOCATION ADDRESS: 15910 Strawpocket Lane
PROPERTY OWNER: Dale Gillis
BUILDING CONTRACTOR:
SUBDIVISION NAME:
AUTHORIZATION ISSUED BY: Larry F. Thompson DATE: 7-10-97
DEHNR AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NO. 3272B, 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 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 AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. OTHER CONDITIONS: See Conditions Of Improvement Permit

OWNER CERTIFICATION

I CERTIFY THAT THERE HAVE BEEN NO ALTERATIONS IN SITE OR SOIL CONDITION OR MODIFICATIONS TO FACILITY, WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS FROM THOSE SPECIFIED IN THE ORIGINAL APPLICATION OR ASSOCIATED IMPROVEMENT PERMIT UNLESS AUTHORIZED IN WRITING BY THE MECKLENBURG COUNTY HEALTH DEPARTMENT. I ALSO UNDERSTAND THAT ANY SUCH ALTERATIONS, MODIFICATIONS, OR FALSE INFORMATION ARE GROUNDS FO REVOCATION OF PERMITS AND AUTHORIZATION TO CONSTRUCT.

SIGNATURE OF OWNER/OWNER'S REPRESENTATIVE — DATE July 10, 1997

FEE: 100.00
DATE: 6/18/97
CK # 8838

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( ) 1 CRT

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NAME: N/A
(LAST) (FIRST) (MI)

DAYTIME PHONE: ( ) —

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? 8/31/94 → Check Recorded Plat for Lot

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SIGNED: _____ DATE: 6/18/97

MECKLENBURG COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
(704) 336-5102

PROPOSED PLOT PLAN

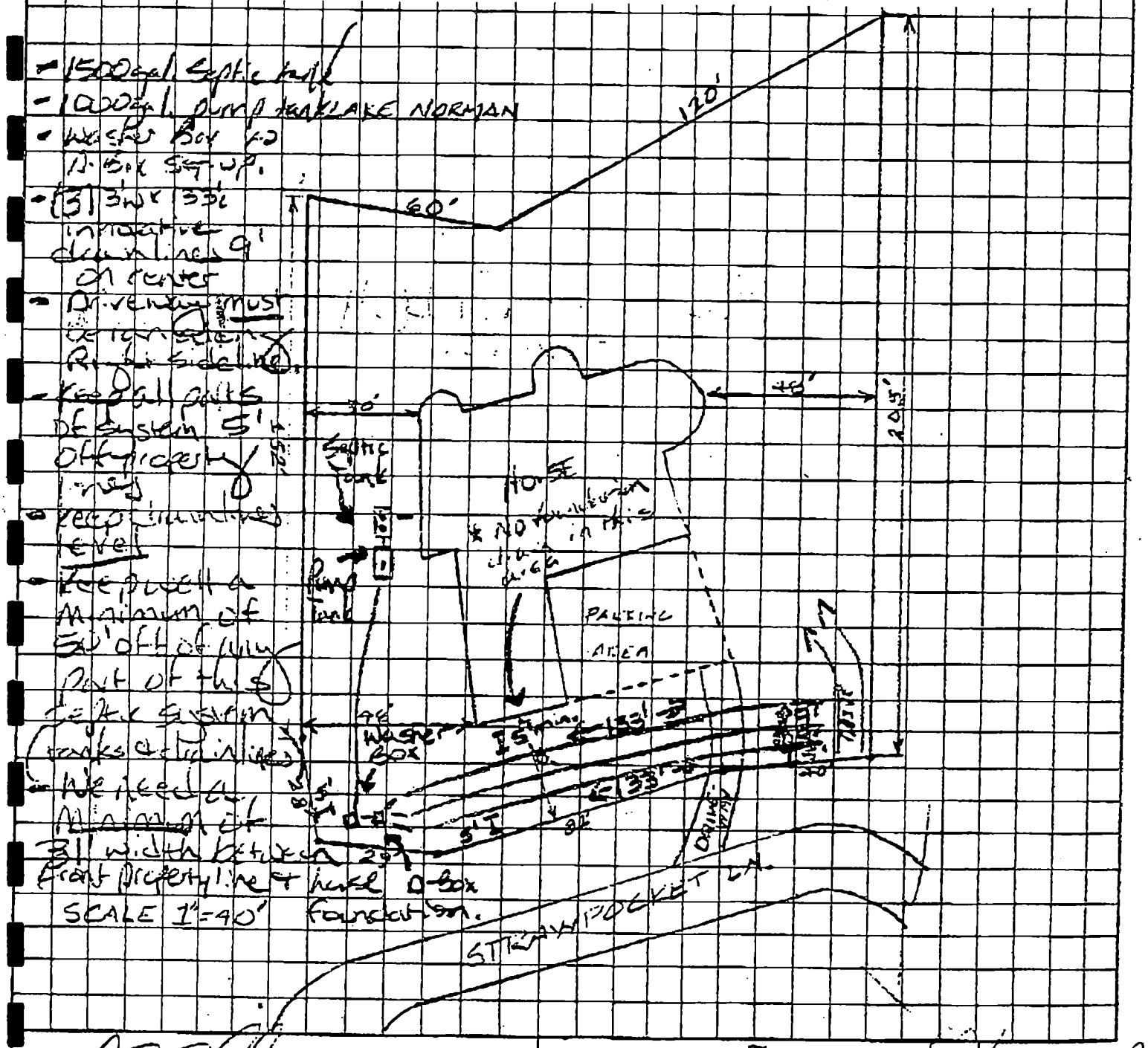
HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
700 NORTH TRYON STREET
CHARLOTTE, NC 28202
PHONE (704) 336-5102

3272B

FILE: ~~1944B~~

TC: 701-391-2190

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.

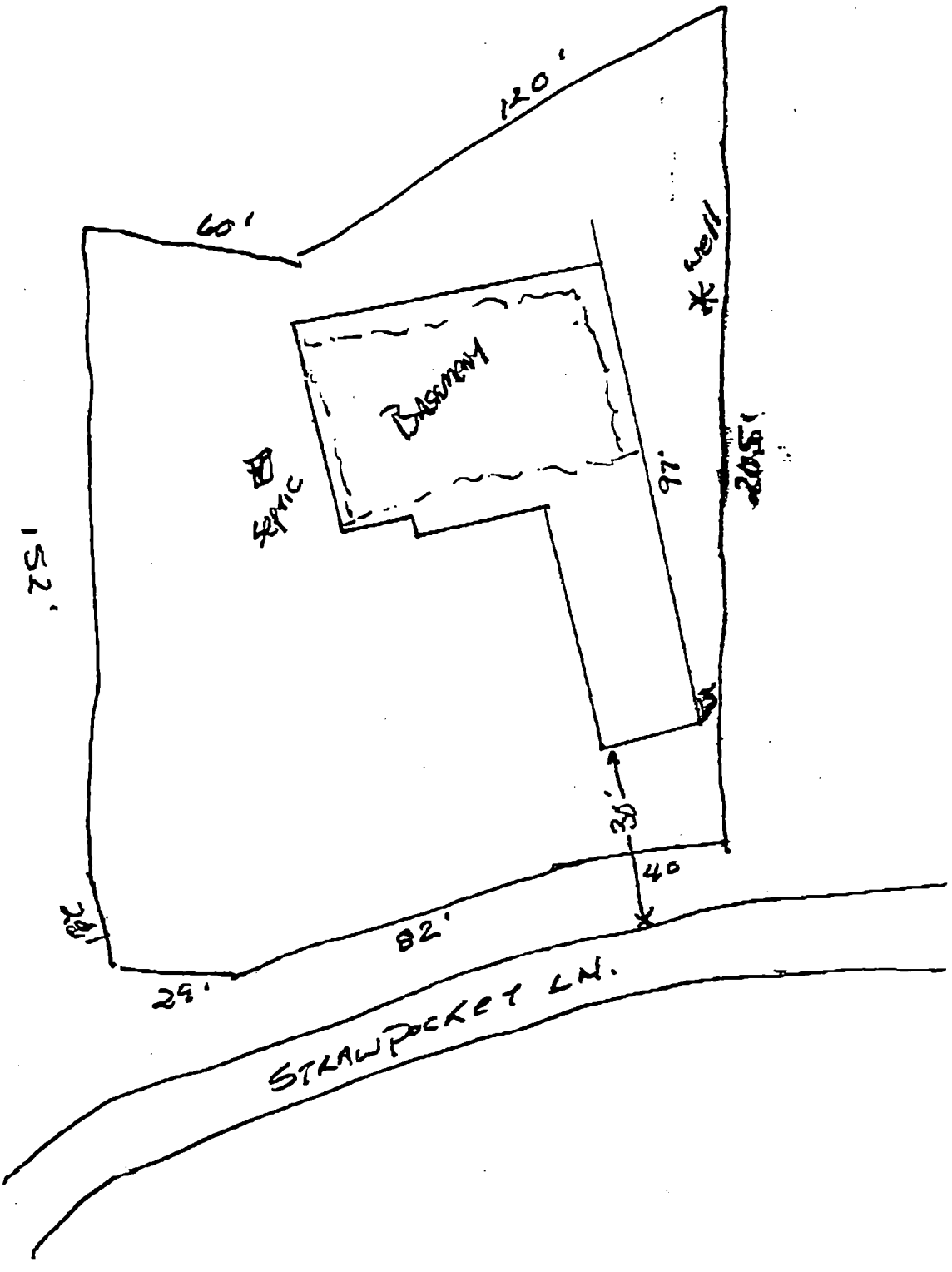


OWNER/AGENT SIGNATURE

DATE 6.17.97

APPROVAL DATE 7.10.97

White - Health Department's Copy Canary - E.H.S. Copy Pink - Owner's Copy


120'
60'
well
BASEMENT
SEPTIC
97'
205'
152'
30'
40
28'
82'
29'
STRAWPOCKET LN.



GEO-ENVIRONMENTAL
CONSULTANTS, INC.

A Common Sense Approach To A Cleaner Environment

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