

4779 BIRCHHOLLOW DR

10515353

1/8/2008

duponbj

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

CONDITIONS OF IMPROVEMENT PERMIT

Tax Number: 105-153-53

Permit Number: 5157B

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
X Innovative or Experimental:
___ IWWS-93-1
___ IWWS-93-2
___ IWWS-94-1

3 Long-term acceptance rate	360 Max gallons/day wastewater flow	1200 Absorption Area (sq ft)	9' Trench spacing (min. on centers)
~~X~~ NO Serviced by private well	1500 Gallon septic tank	320 Total trench length (ft)	36" Maximum trench depth (At least 12" of provisionally suitable soil must remain between trench bottom and unsuitable soil conditions)
3 Bedrooms in residence	1000 Gallon pump tank	NA Depth of stone	

Any surface waters present: Type: Minimum separation distance:

Site modifications required:

Additional Conditions: (1) SEE PLAN.
(2) SCREENING FORMS REQUIRED.

Repair Area System Type
Type (circle one): I II III (IV) V VI

___ Conventional
X Prefabricated, permeable block panel system
___ Shallow Placed Conventional
X Low Pressure Pipe
___ Large Diameter Pipe
___ Fill
___ Other
___ Innovative or Experimental:
___ IWWS-93-1
___ IWWS-93-2
___ IWWS-94-1

1200 Absorption Area (Sq ft) 215 Total Trench Length (Ft)	NA Depth of Stone Trench	8' 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.

DEHNR Authorized Agent — Date 10/29/03

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

of

October 29, 2003

To: Drew Walker

From: Larry Thompson
704-301-4881

2 pages including cover sheet

Page 2 Lot 17 ~~Preston Forest~~

Details

In a recent application for an Improvement Permit submitted to the Mecklenburg County Health Department (MCHD), the subject property was proposed to be developed with a single family 3-bedroom residence served by a municipal water system. Based upon the information provided, a soil and site evaluation was conducted where the 0.6 acre lot was determined to be "Unsuitable" for the installation of a conventional subsurface wastewater treatment and disposal system according to Section 15A NCAC "Available Space".

Upon further investigation a limited area of "Suitable" Group IV soils have been identified along the right rear (north) corner of the property which would allow for the installation of a Type III(b) innovative system, utilizing a Type IV(a) prefabricated porous block panel system repair area, for a 3-bedroom residence. It is the desire of the owners that the MCHD consider reclassifying their lot as "Provisionally Suitable", allowing for the issuance of an Improvement Permit, based upon the following proposal.

Location

The property is located at 4779 Birch Hollow Drive, Charlotte, North Carolina. From NC 49 out of Charlotte, turn right onto East W. T. Harris Boulevard, left onto Rocky River Road east, right onto Coleman Drive and right onto Birch Hollow Drive. Lot 17 is located on your right just inside 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, August 17, 2000.

Onsite Wastewater Treatment and Disposal Systems; EPA 625/1-80-012 Design Manual, October 1980, Chapter 7.

Innovative Wastewater System Approval: IWWS-95-3-R3; North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, April 18, 2002.

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, thereby assuring that the tank has had time to properly cure and is not cracked or "honey combed".

Residential Subsurface Wastewater Treatment and Disposal System Design

For

Lot 17 Preston Forest
4779 Birch Hollow Drive
Mecklenburg County
Charlotte, North Carolina 28215

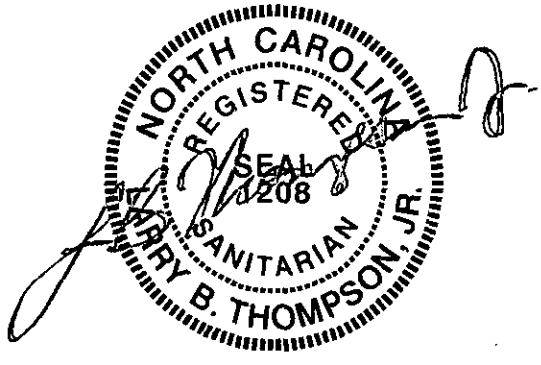
Permit Number # 5157B
Tax Parcel # 105-153-53
October 26, 2003

Prepared for:

Mr. Iftikhar Chaudhary
104 Candlewood Lane
Gaffney, SC 29340

Prepared by:

Thompson Environmental Consulting
114 Orchard Ridge Road
Locust, NC 28097
(704) 301-4881
info@thompsonenv.com



CC: Mecklenburg County Health Department

10/29/03
APPROVED

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- It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery, thereby assuring that the tank has had time to properly cure and is not cracked or "honey combed".

Pump Tank

- The pump tank shall be State approved, of one-piece construction, watertight, structurally sound and 1000 gallons in capacity. Again, it is the responsibility of the septic tank contractor to thoroughly inspect the pump tank prior to accepting delivery.

- The pump tank shall have an access riser that extends at a minimum of 6 inches above finished grade.
- The pump and alarm controls shall be provided with manual circuit disconnects within a watertight, corrosion resistant, Nema 4X rated control panel. The control panel must be securely mounted outside, adjacent to the pump tank riser and at a minimum of 12 inches above finished grade. Pump and float control wiring should be long enough to reach from the tank to the control panel without splicing, routed through wire conduit, and sealed at the openings within the pump tank as well as the control panel enclosure. It is paramount that the conduit is properly sealed to prevent the escape of flammable gases from the pump tank. Furthermore, there must be two electrical circuits for the pump tank controls: one for the pump and one for the alarm controls.
- The pump tank shall have a properly functioning high water alarm incorporated into the control panel. The alarm circuit shall be supplied separate from any pump overload and short circuit devices. The alarm shall be both audible and visible by the system users.
- The float switch for the high water alarm should be mounted at a location slightly above the "pump on" elevation for the pump float control switch. The high water alarm float switch shall not be set more than 3 inches above this elevation.
- Pump float(s) shall be mounted so that the effluent at the end of a pump cycle is above the top of the effluent pump. The septic contractor must determine pump draw down and set the float switch accordingly.
- Float switch tie downs must be made of a corrosion resistant material. Do not use electrical tape or metal hose clamps to secure these switches. Floats should be mounted on a separate "float tree" rather than the pump supply line (see pump tank detail).
- The pump must be placed on two 4-inch concrete blocks to allow for some settling of solid particulates within the pump tank.
- There shall be a threaded PVC union above the pump to facilitate easy removal of the pump for maintenance or replacement.

Pump Tank Effluent

- The pump discharge piping shall be fitted with an effluent filter. The filter must be equivalent to the GAG Sim Tech Filter, Boyne City, Michigan, 49712, and telephone: 1-888-999-3290. The contractor must assure that the filter is equipped with an STF 102 Filter Screen, an STF 103 Wrench, and a STF 104 Sock. This device provides a very high degree of filtration and is available through Confederate Sales Associates, 8025 Brooknell Terrace, Charlotte, NC 28270, telephone: 704-542-7096.

Pipe and Fittings

- All discharge piping, supply lines, valves and disconnects should be made of PVC.
- All joints must be properly "welded" utilizing the appropriate PVC cement for each application.
- The supply line from the pump tank to the pressure manifold shall be 2 inch Schedule 40 PVC.

Distribution Method

- Wastewater will be pumped into a "washer box" equipped with a sanitary tee. From this point, the effluent flows by gravity to a series of drop boxes (one per line) for distribution.

Drainfield Installation

- The drainfield has been previously laid out on-site utilizing metal stemmed flags. Once this area has been approved by the MCHD, the property owner/builder should mark this area and

isolate it as much as possible from construction traffic. Prior to the system installation, the septic contractor shall contact the MCHD for a preconstruction conference at which time the drainfield area will be re-verified and a Construction Authorization issued.

- 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 MCHD should be contacted for permission to proceed with the installation.
- The specified system is a Type III(b) innovative system, specifically the **EZ*flow* 1203H**. 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.
- Laterals shall be constructed 3 feet wide and 9 foot on centers.
- Once trenches are excavated, the **EZ*flow*** bundles are to be placed in rows next to each other and an approved backfill barrier placed over the expanded polystyrene aggregate cylinders to prevent the infiltration of backfill material into the trench void spaces.
- At this point, the trenches should be left open for a final inspection by the MCHD.

Proper Operation Check

- After all components of the waste water disposal system have been installed and connected, the system shall be checked for proper operation.
- With the electrical power turned off, fill the pump tank with water until the liquid rises to a level high enough to activate the high water alarm float. Turn on the electrical power. The alarm, alarm light and pump should activate at this time, allow the pump to run through a normal operating cycle. The pump float switch will automatically turn the pump off if it is operating properly. Make sure that the effluent pump is completely submerged in the remaining water, making adjustments to the float switch(es) as needed. This completes the checks for proper operation of the pump, alarm and float switches.

Final Landscaping

- The drainfield shall be shaped to shed rainwater and be free from low spots.
- Finished soil cover over the system should measure at least 6 inches.
- The entire area of the drainfield should be planted with grass as soon as possible to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

Maintenance

Operation and Maintenance

The designed system is classified as a Type III(b) wastewater treatment and disposal system and will require periodic maintenance by the homeowner. The minimum inspection/maintenance frequency for a Type III(b) system is once every 5 years by the local health department.

- The septic and pump tanks need to be cleaned out when the solids within the septic tank reach an elevation that is equivalent to 1/3 of the volume of the tank. In some situations, the tanks may need to be pumped more frequently; for example, if you are using a garbage disposal, it is recommended that the septic and pump tanks be cleaned out
- The effluent filters should be inspected annually. When it becomes necessary to clean the effluent filters, the filters should be removed and the accumulated debris washed back into the septic or pump tank – not onto the lawn.

- All piping and valves should be inspected annually for damage and corrections/repairs made immediately.
- The pump and float controls/switches should be inspected annually to assure proper operation
- The drainfield area should be maintained to prevent over growth of vegetation. Any damp areas, leakages or malfunctions should be addressed immediately.
- Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

It is a good idea to contract with a Certified Operator to inspect your system once a year. A planned maintenance program can save you money by helping to prevent costly system repairs.

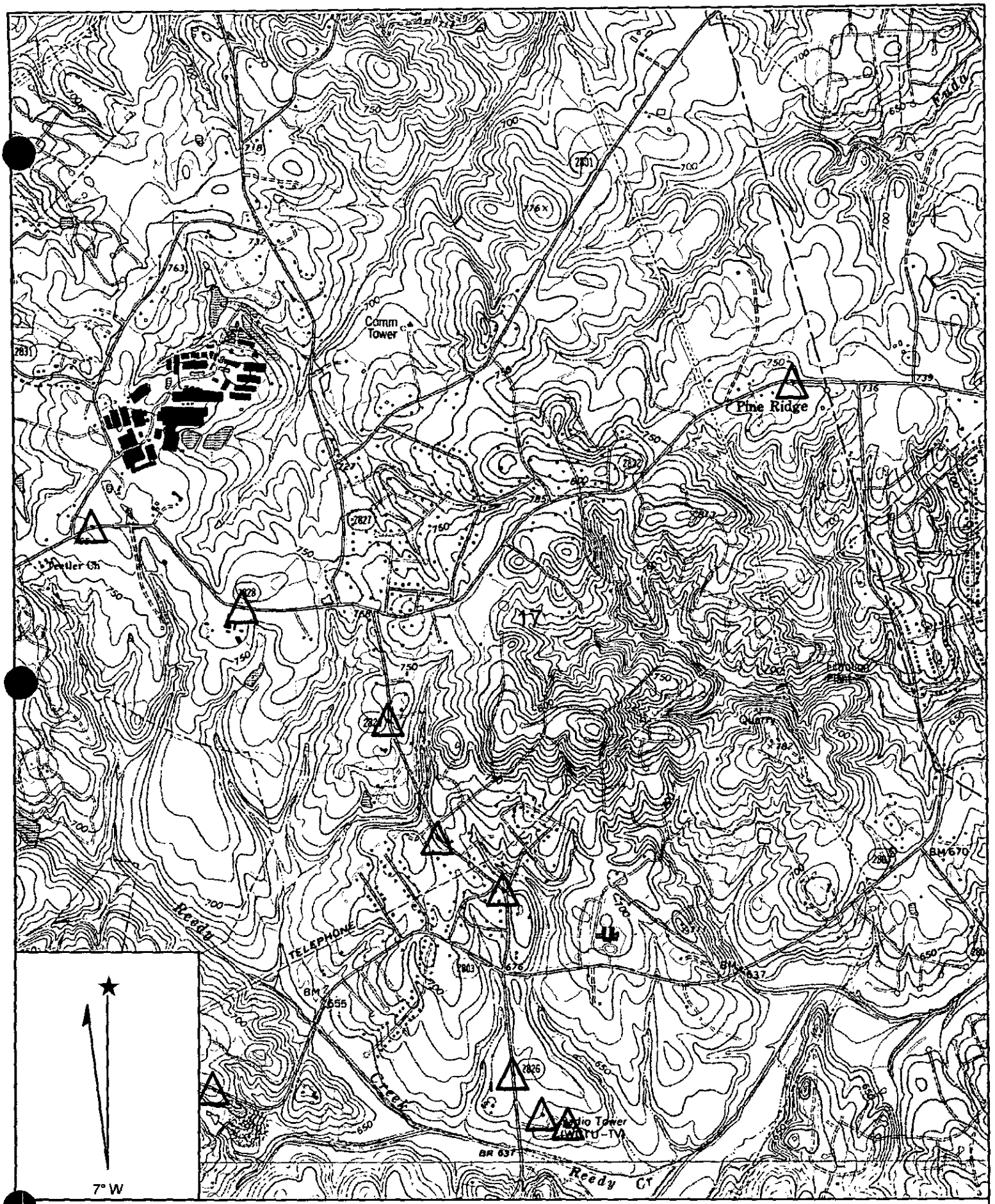
Suggestions to the Homeowner

- As previously mentioned, if you plan to use a garbage disposal in your home you should plan to have your septic and pump tanks cleaned out annually. The ground up garbage adds large amounts of solids into a septic tank that tend to degrade at a very slow rate.
- Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never be put into a septic tank.
- Used motor oil or any oily liquids should not be disposed of in a septic tank.
- Be aware of the amount of water that you are using in your home. Water saving fixtures and devices can be installed on sinks, toilets and showers to reduce the volume of wastewater that you are sending to your drainfield.
- Run dishwashers and washing machines only when you have a full load.
- Use liquid detergents. Powdered detergents have binding agents in them that tend to solidify in the wastewater disposal system.
- Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drainfield.
- Do not use chemical additives in your system. Various studies have indicated that they do not increase the biological activity that naturally occurs in the septic system and, in some cases, certain additives have been found to be detrimental to the life of a system.
- Finally, taking good care of your septic system will help to assure that you experience years of trouble free service at a relatively low cost. On-site wastewater treatment and disposal is still the most environmentally friendly method of treating residential/commercial waste and you should keep your system in use for as long as it is properly functioning. If you have additional questions, please feel free to contact your system designer or the MCHD.

Design Specifics
Lot 17 Preston Forest

Daily Design Flow:	360 GPD – 3 bedroom house
Septic Tank Size:	1500 gallons (2 compartments)
Pump Tank Size:	1000 gallons (one piece)
Effluent Loading Rate:	design = 0.3 GPD/SQ FT
Supply Length and Diameter:	approx. 110' of 2" sch. 40 PVC (please see note at the bottom of this page.)
Number and Size of Taps:	N/A – using a washer box
Flow Rate Through System:	25.0 gallons per minute (min.)
Elevation Head:	11.7 feet (min.)
Pressure Head:	N/A
Pump Requirements:	25.0 GPM at 11.7' of head, min.
Dosing Volume:	180 GAL.
Depth of Water Pumped:	dependant upon individual tank measurements, check with manufacturer. (1 cu. Ft. of water equals 7.5 gal.)
Pump Run:	approx. 7.2 min.
Check Valve:	Yes
Siphon Break Hole:	Yes (it is not mandatory that this design incorporate the siphon break hole, but doing so may prevent excessive vibrations in the discharge pipe upon start up and shut down)

*Please note that supply line and elevation head measurements are approximate. The contractor, based upon the actual house location, prior to purchasing materials should confirm these measurements.



Name: HARRISBURG
Date: 10/27/2003
Scale: 1 inch equals 2000 feet

Location: 035° 16' 28.81" N 080° 41' 25.89" W
Caption: Lot 17 Preston Forest

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Thompson Environmental Consulting
114 Orchard Ridge Road
Locust, NC 28097-8748

Tax ID Number: 5157B

Location: Lot 17 Preston Forest

Date: October 26, 2003

- 1500 Gallon Septic Tank
- 1000 Gallon Pump Tank
- System utilizes a washer box with "tee" and drop boxes for distribution
- Keep trenches level and on contour with the land
- Maximum trench depth of 36".
- 2" Sch 40 PVC supply line = 110'.n length.
- System type is a type IIIb utilizing the EZ flow EZ1203H drainfield
- Scale 1" = 40'
- Drain lines are shown to scale on plan and have been marked on the lot with pin flags

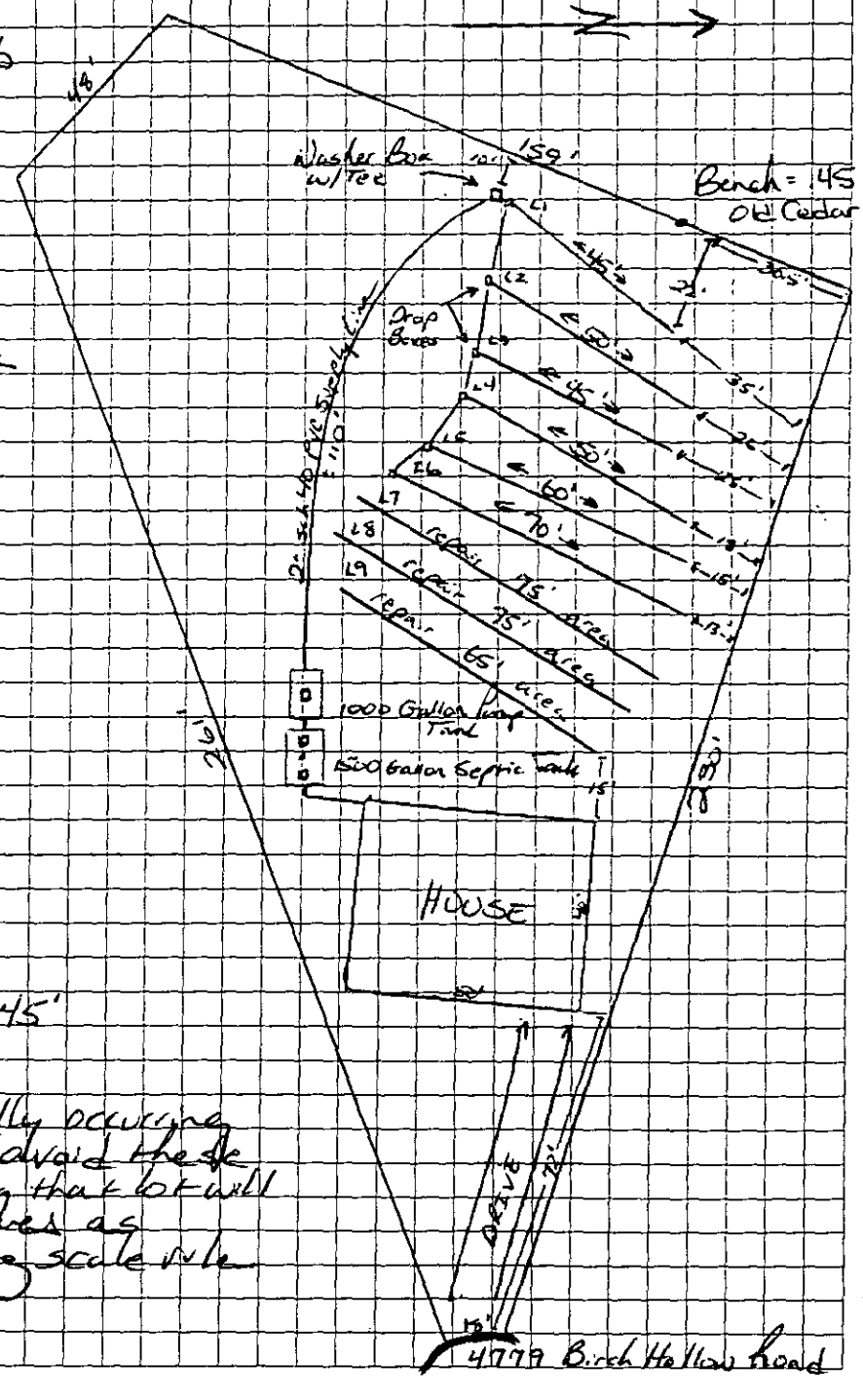
Number	Color	Elev	Length
Line 1	yellow	= 3.24'	45.5'L
Line 2	blue	= 4.58'	51.0'L
Line 3	red	= 5.28'	47.0'L
Line 4	orange	= 5.9'	54.0'L
Line 5	white	= 6.62'	61.0'L
Line 6	yellow	= 7.1'	70.0'L
Line 7	blue	= 8.1'	76.0'L
Line 8	red	= 9.16'	75.0'L
Line 9	orange	= 9.44'	65.0'L
Bench = Cedar Tree w/Nail			0.45'

* This lot has several naturally occurring drainage features on it. To avoid these during installation (assuming that lot will be graded) install drain lines as shown on this plan, using scale rule

Scale 1" = 40'

LOT 17

Preston Forest

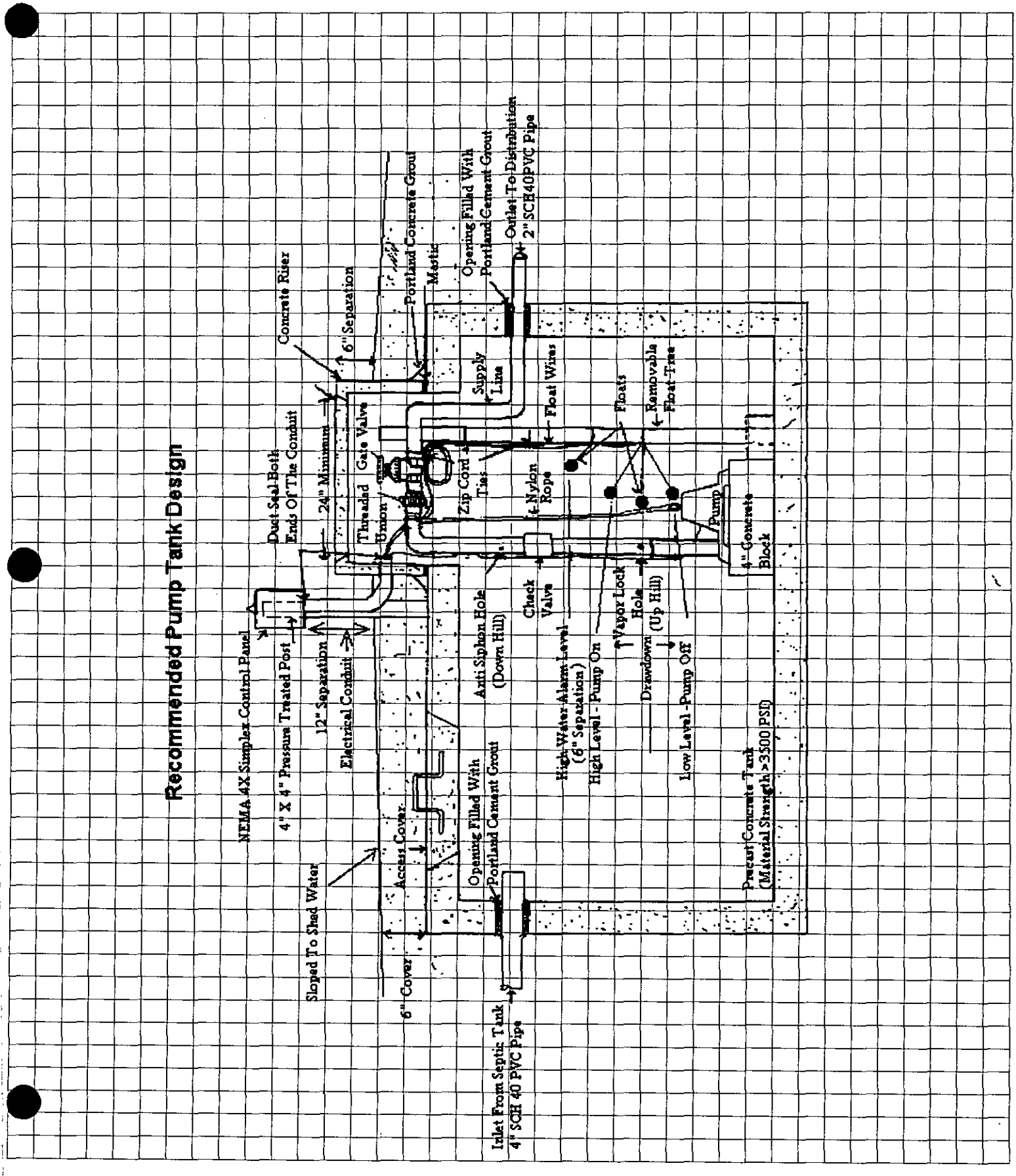


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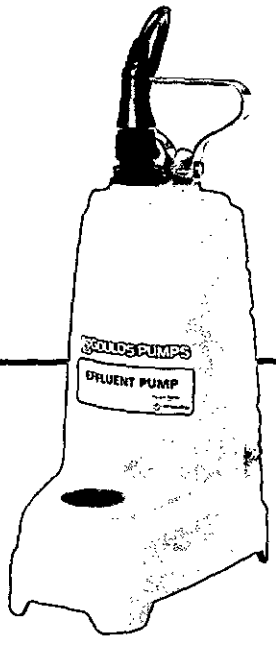


GOULDS PUMPS

Submersible Effluent Pump

MODEL

PE



APPLICATIONS

Specially designed for the following uses:

- Mound Systems
- Effluent/Dosing Systems
- Low Pressure Pipe Systems
- Basement Draining
- Heavy Duty Sump/ Dewatering

SPECIFICATIONS

Pump – General:

- Discharge: 1½" NPT
- Temperature: 104°F (40°C) maximum, *continuous when fully submerged.*
- *Solids handling:* ½" *maximum sphere.*
- *Automatic models include a float switch.*
- *Manual models available.*
- Pumping range: see performance chart or curve.

PE31 Pump:

- *Maximum capacity:* 50 GPM
- *Maximum head:* 25' TDH

PE41 Pump:

- *Maximum capacity:* 60 GPM
- *Maximum head:* 29' TDH

PE51 Pump:

- Maximum capacity: 70 GPM
- Maximum head: 37' TDH

MOTOR

General:

- Single phase
- 60 Hertz
- 115 volts
- Built-in thermal overload protection with automatic reset.
- Class B insulation.
- Oil-filled design.
- High strength carbon steel shaft.

PE31 Motor:

- .33 HP, 3000 RPM
- 12.0 Maximum amps
- Shaded pole design

PE41 Motor:

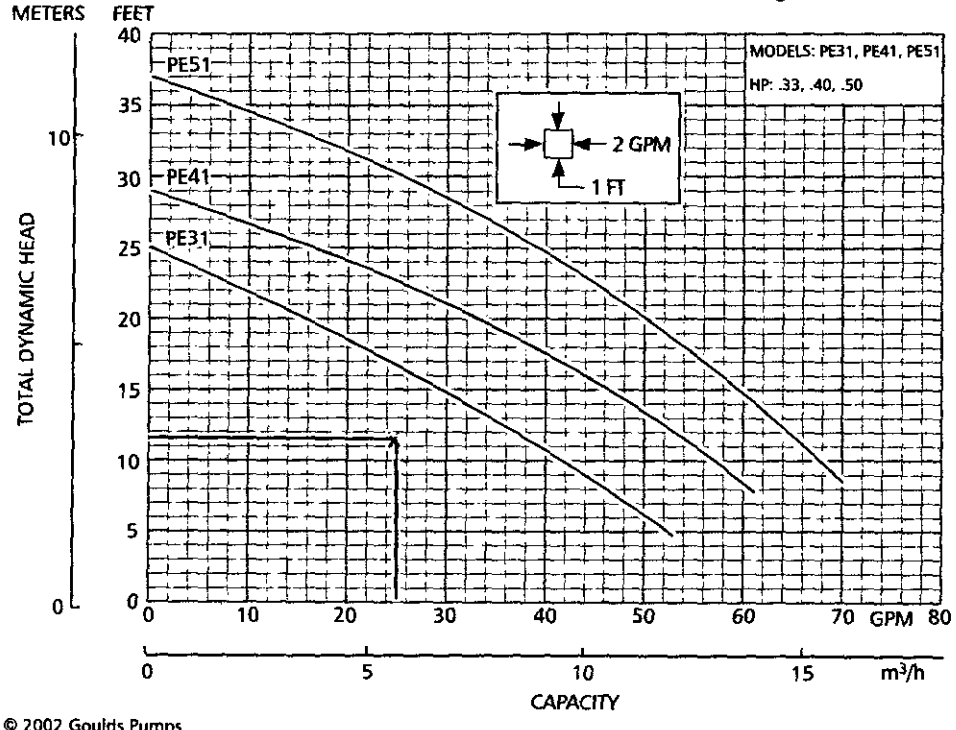
- .40 HP, 3400 RPM
- 7.5 Maximum amps
- PSC design

PE51 Motor:

- .50 HP, 3400 RPM
- 9.5 Maximum amps
- PSC design

FEATURES

- Corrosion resistant construction.
- Cast iron body.
- Thermoplastic impeller and cover.
- Upper sleeve and lower heavy duty ball bearing construction.
- Motor is permanently lubricated for extended service life.
- Powered for continuous operation.
- All ratings are within the working limits of the motor.
- Quick disconnect power cord, 20' standard length, heavy duty 16/3 SJTW with NEMA 5-15P, three prong, 115 volt grounding plug.
- Complete unit is heavy duty, portable and compact.
- Mechanical seal is carbon, ceramic, BUNA and stainless steel.
- Stainless steel fasteners.



AGENCY LISTINGS

C SA US

Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

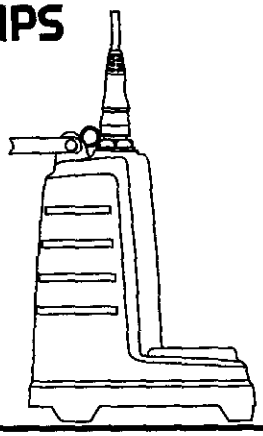
Goulds Pumps is ISO 9001 Registered.

Goulds Pumps

ITT Industries

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BPE31/41

GOULDS PUMPS



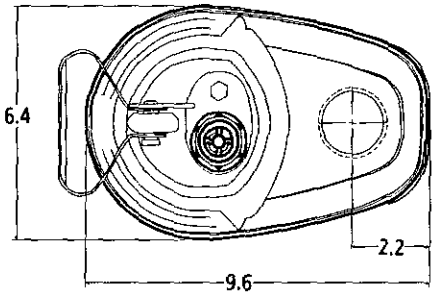
Submersible Effluent Pump

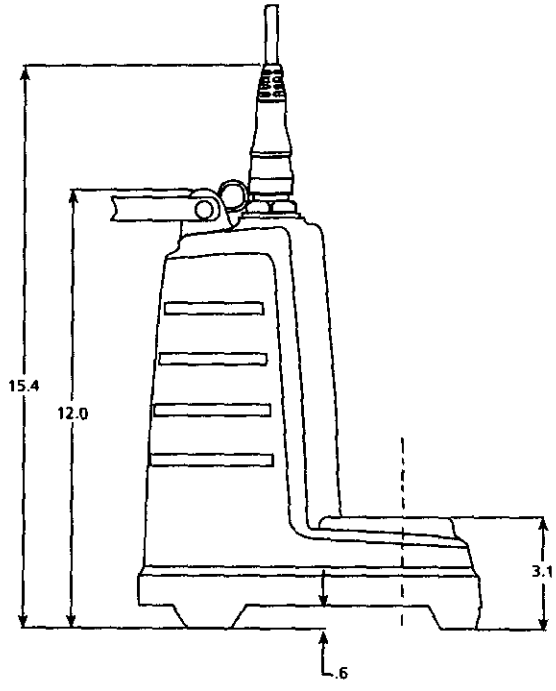
MODEL

PE

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





PERFORMANCE RATINGS

PE31

Total Head (feet of water)	GPM
5	48
10	40
15	28
20	15
25	–

PE41

Total Head (feet of water)	GPM
5	61
10	53
15	43
20	30
25	13

PE51

Total Head (feet of water)	GPM
10	67
15	59
20	50
25	39
30	26
35	8

MODEL INFORMATION

Order No.	HP	Volts	Amps	Minimum Circuit Breaker	Phase	Float Switch Style	Cord Length	Discharge Connection	Minimum Basin Diameter	Maximum Solids Size	Shipping Weight lbs/kg
PE31M	0.33	115	12	20	1	Manual / No Switch	20'	1.5"	18"	.5"	31 / 14.1
PE31P1						Piggyback Wide Angle					
PE41M	0.4		7.5	15		Manual / No Switch					
PE41P1						Piggyback Wide Angle					
PE51M	0.5		9.5			Manual / No Switch					
PE51P1						Piggyback Wide Angle					

Goulds Pumps and the ITT Engineered Blocks Symbol are registered trademarks and tradenames of ITT Industries.

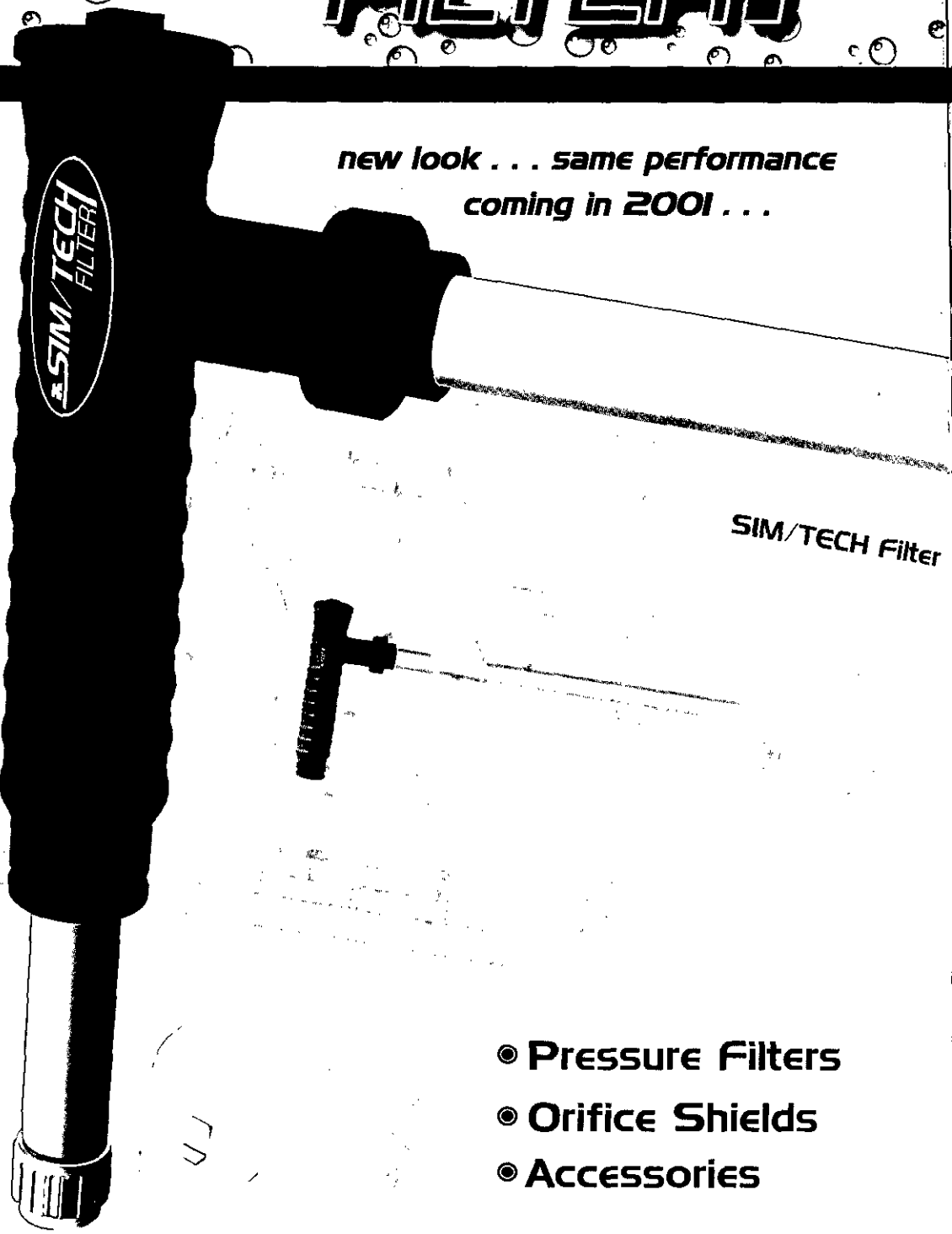
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SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
www.goulds.com

Goulds Pumps
ITT Industries

GAG SIM/TECH FILTER

new look . . . same performance
coming in 2001 . . .



SIM/TECH Filter

- Pressure Filters
- Orifice Shields
- Accessories

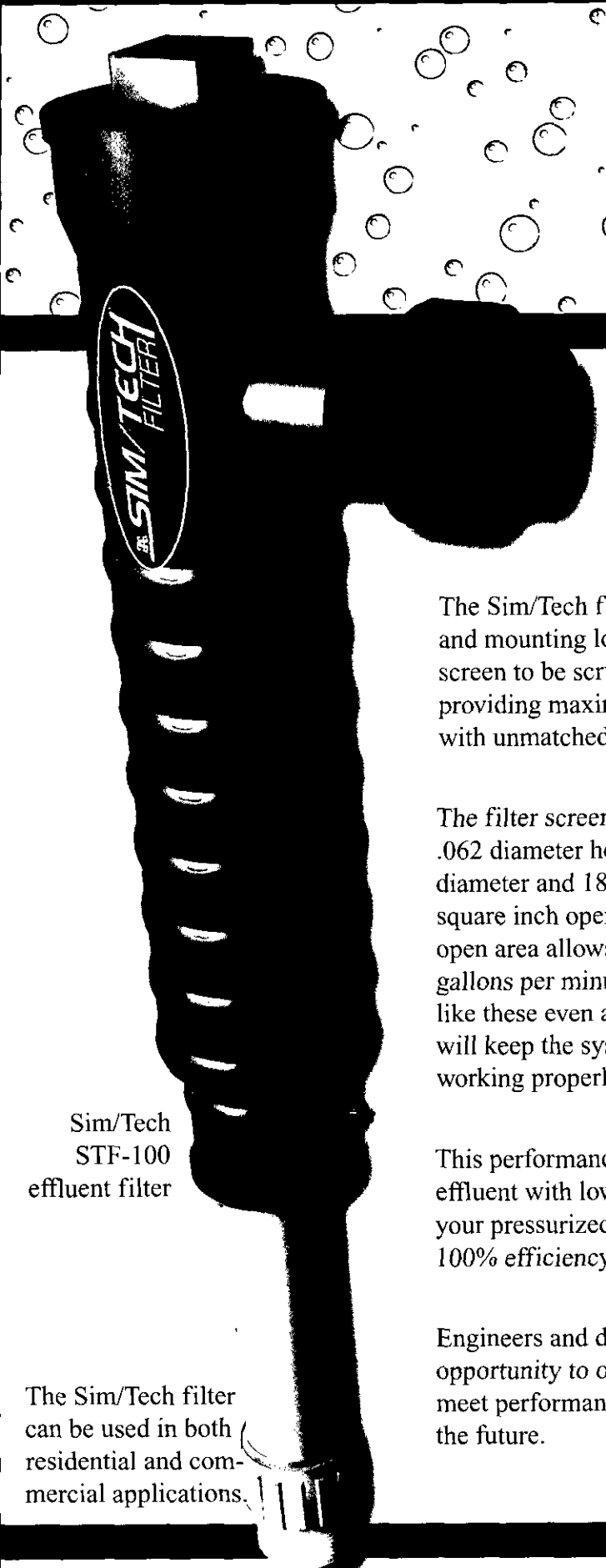
Solutions

for protection and performance of wastewater systems

www.gag-simtech.com

1-888-999-3290

Economical
Low maintenance
Easy installation
Extends life of drainfield
Improves effluent quality



Sim/Tech
STF-100
effluent filter

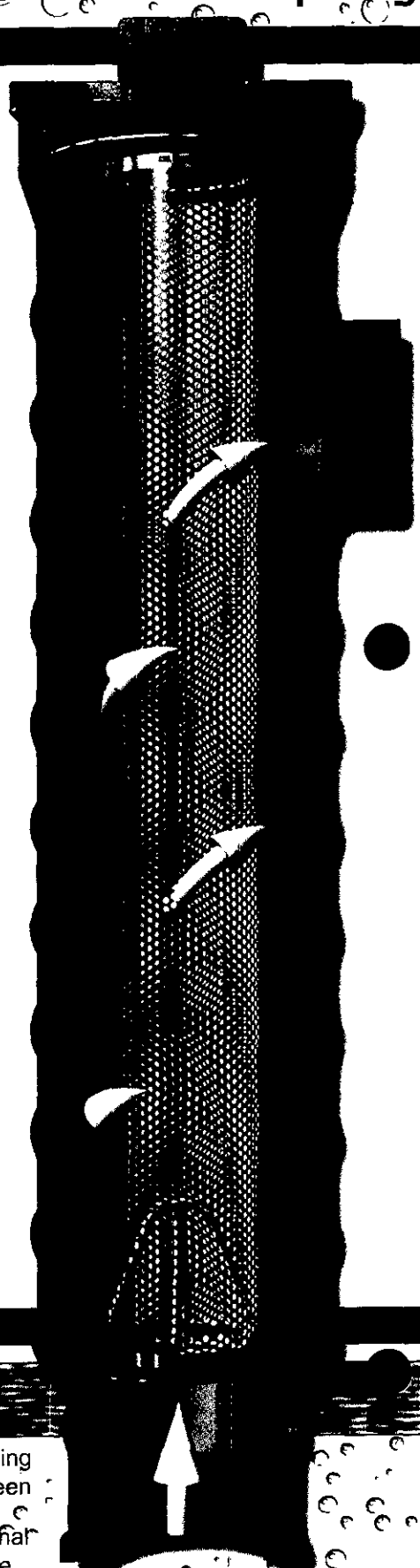
The Sim/Tech filter can be used in both residential and commercial applications.

The Sim/Tech filter, with it's unique design and mounting location, allows the filtering screen to be scrubbed while in operation, providing maximum maintenance intervals with unmatched performance capabilities.

The filter screen is a type 347 S. S. with .062 diameter holes. It is 3 inches in diameter and 18 inches long with a 69.52 square inch open area. This large 41% open area allows the filter to pass 83.8 gallons per minute at 1 psi. With features like these even a partially clogged screen will keep the system well protected and working properly.

This performance product assures quality effluent with lower TSS levels, keeping your pressurized system functioning at 100% efficiency.

Engineers and designers now have the opportunity to offer a simple safeguard to meet performance standards now and in the future.



Cut away view showing filter casing and screen illustrated with optional STF-105 Wire cage

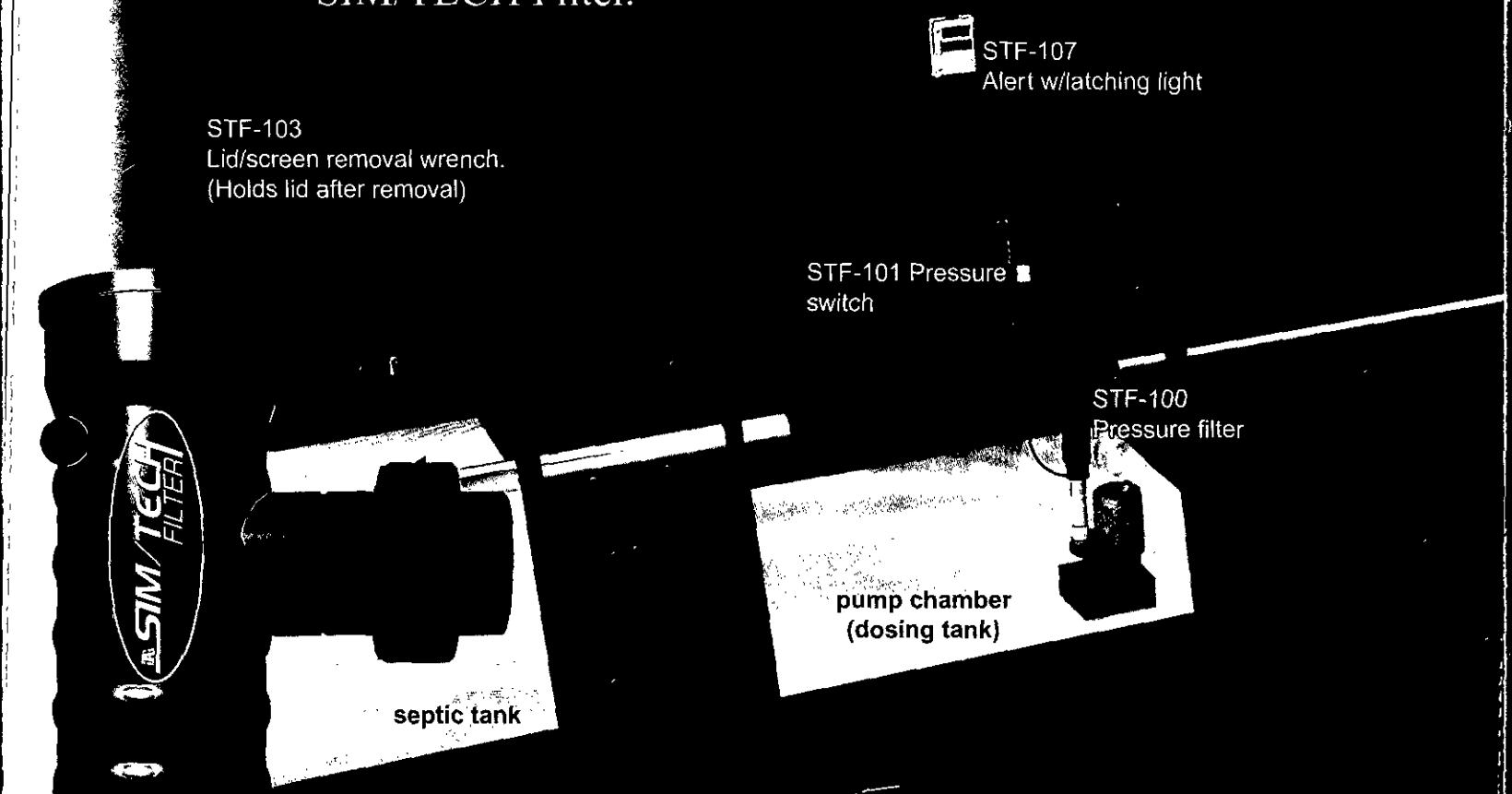
Total head loss .5002 ft. or .21 psi
Flow rate w/clean screen: 120,672 GPD@ 1 psi
Flow rate w/95% plugged screen: 114,912 GPD@ 1.8 psi

Protected under US patent #5,885,452

Essential Components for Pressurized Systems

SIM/TECH offers many performance products engineered to protect effluent treatment systems and prevent costly repairs. From our pressurized filter, to the best orifice shield in the industry, we keep your systems performing at 100% efficiency.

Sometimes the simplest ideas are the best, so depend on a time proven leader.... protecting effluent treatment systems is our business - SIM/TECH Filter.

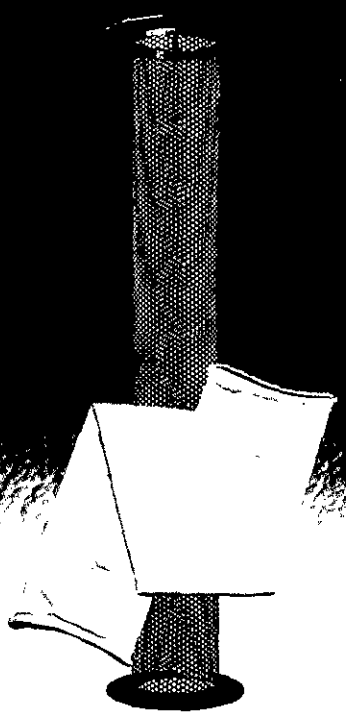




STF-100 Sim/Tech Filter

Installs easily on to effluent pump in holding tank. The vortex scrubbing action helps keep the filter clean.

The last line of defense before the laterals.



STF-102 Filter Screen
STF-104 Filter Sock

Our standard stainless steel screen will filter .062" in diameter. (1/16 of an inch)

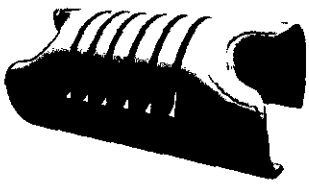
Socks easily install inside stainless steel screen.

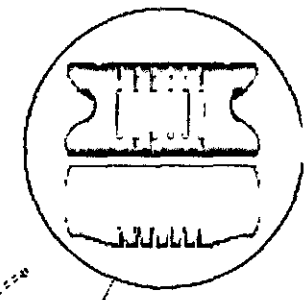
GAG SIM/TECH FILTER

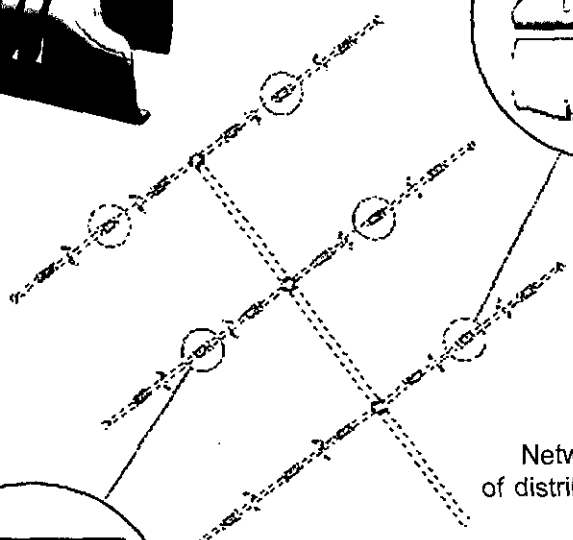
Lateral Field Orifice Shields

An essential part of any pressurized wastewater system

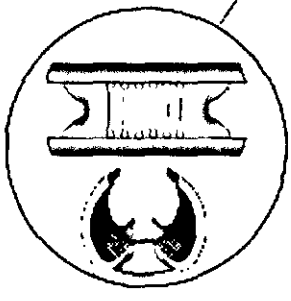
Orifice shields prevent the drain media from blocking the discharge openings on the discharge laterals.







Network layout of distribution system

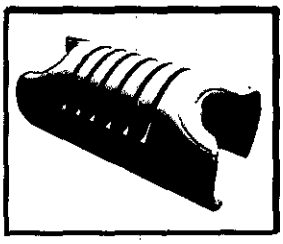


Discharge hole

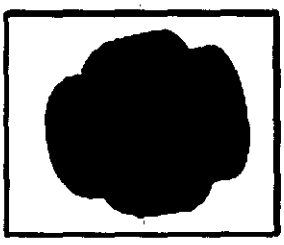


cut away view of installed shield on lateral

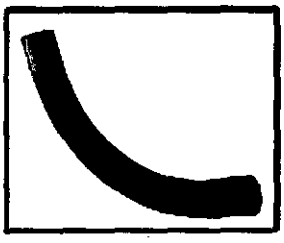
STF-106
Fully enclosed orifice shield - available for 0.75", 1.00", 1.25" and 1.5" pipe
patent #6,167,914



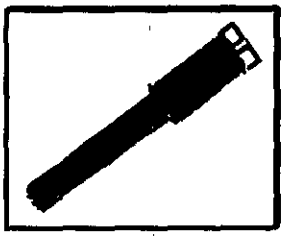
STF-108
Sch. 80 union
2" standard



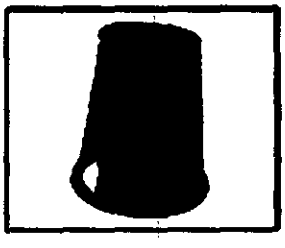
STF-111L
Sch. 40
90° Clean out sweep available for 1.0", 1.25", 1.50" and 2" pipe
plain ends



STF-109
Septic tank filters
fits 4" 'T'



STF-112
Valve Box
with 6" cover



The STF-106 snaps securely into place on the lateral piping with over 9" of gripping surface.

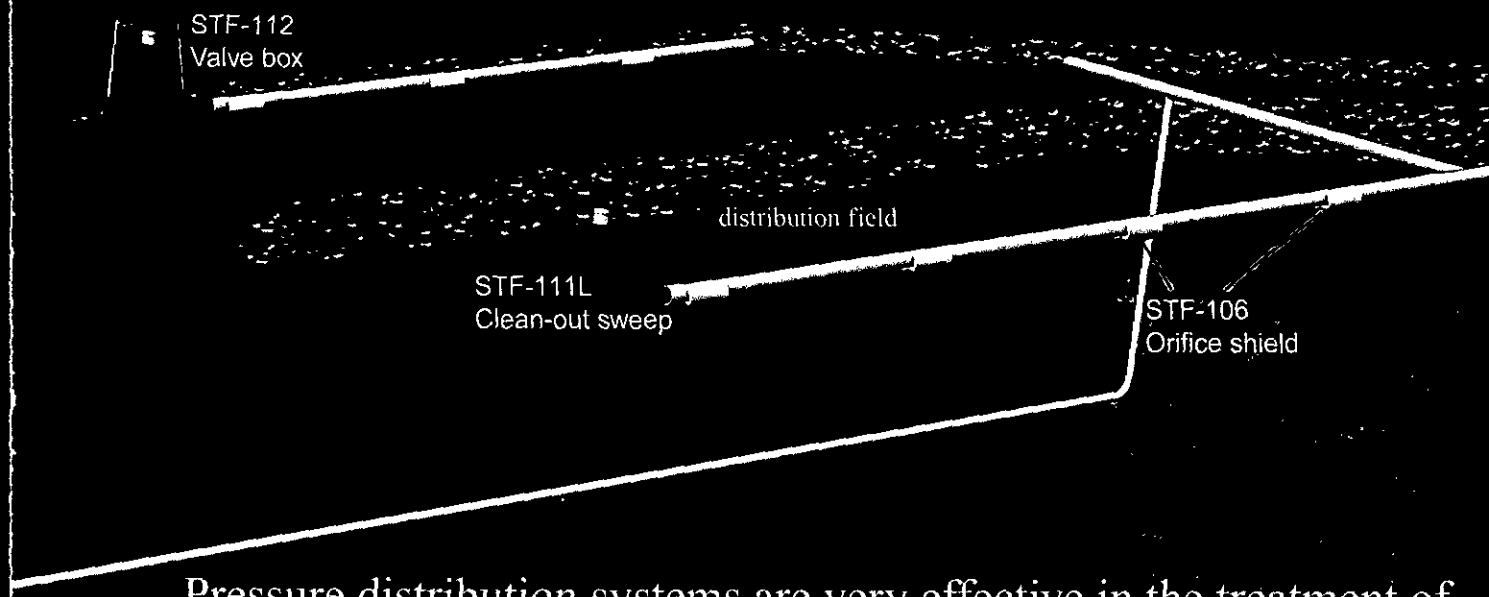
A MUST for all lateral pipes . . .

Solutions

for protecting wastewater distribution systems . . .

06598 Horton Bay Road - Boyne City, MI 49712
888-999-3290 - 231-582-7327 - fax-582-7324
www.gag-simtech.com - simtech@freeway.net

The SIM/TECH filter is the last line of defense for Sand Filters, Mound Systems, Shallow Trench, Peat Systems, Drip Irrigations, and all the new Aerobic Systems. With a SIM/TECH Filter in place, all pressure systems can work at 100% efficiency.



Pressure distribution systems are very effective in the treatment of effluent, but only when all the distribution holes remain open. These systems fail when the small holes in the lateral piping become blocked with debris. Many of these systems only partially fail, causing contamination of ground water long before the system shows any sign of distress.

Our products are unique to the industry. They are designed to ensure that the small holes in the field laterals remain open and unobstructed, providing even distribution of effluent.

STF-111L Clean Out Sweep

Attaches to ends of laterals.

Constructed of sturdy SCH. 40 PVC plastic

Available for 1.0" to 2" PVC pipe.



STF-106 Orifice Shield

Protects lateral pipe openings from becoming blocked with drain media.

Snaps onto lateral pipes and separates discharge holes from the drain media, ensuring even distribution of effluent.

Available for .75" to 1.5" PVC pipe.

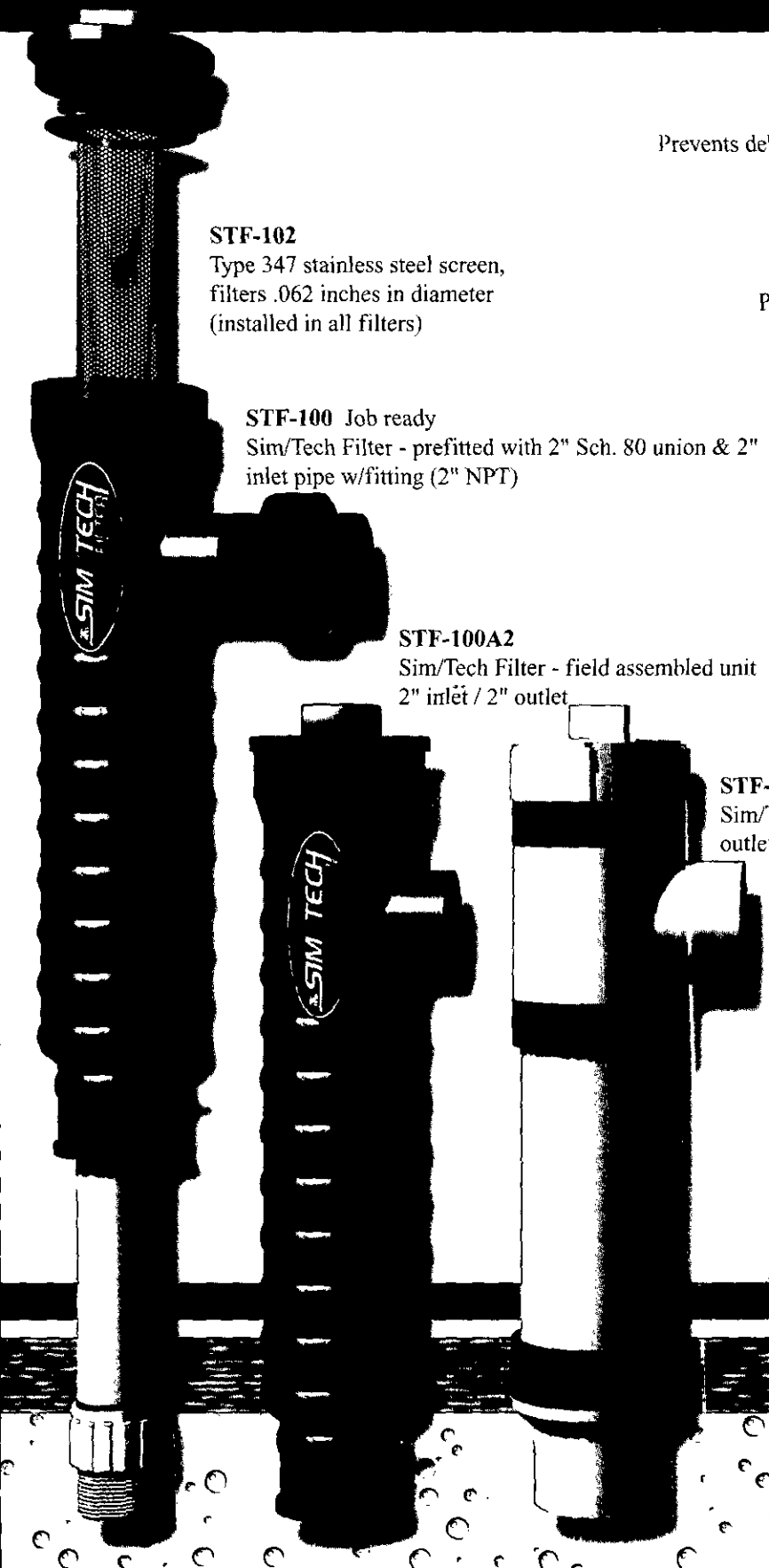
Protected under US patent #6,167,914

Pressure Filters
Commercial filters
System components
Accessories

Detailed drawings and/or CAD files in DXF and DWG formats are available to help with your blueprint and drafting needs.

CAD files can be sent to you on disk, CD or downloaded from our web site.

www.gag-simtech.com
simtech@freeway.net



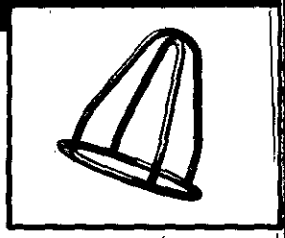
STF-102
Type 347 stainless steel screen,
filters .062 inches in diameter
(installed in all filters)

STF-100 Job ready
Sim/Tech Filter - prefitted with 2" Sch. 80 union & 2" inlet pipe w/fitting (2" NPT)

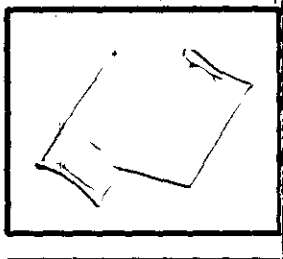
STF-100A2
Sim/Tech Filter - field assembled unit
2" inlet / 2" outlet

STF-100A3
Sim/Tech Filter 3" inlet / 3" outlet (socket weld)

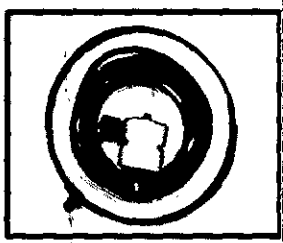
STF-105
Wire cage
Mounts in filter screen.
Prevents debris from re-entering the pump.



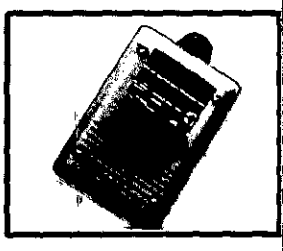
STF-104
Optional filtration socks
Polyester knit 600 micron (.023)
150-190 micron (.006)
Thermal nylon
100 micron (.0039)



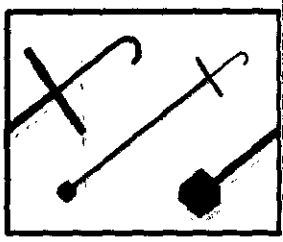
STF-101
Adjustable pressure alarm switch adjusts from 3 to 24 lbs. standard



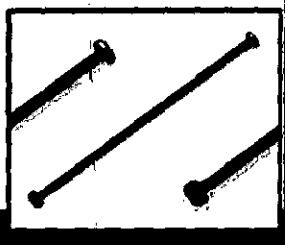
STF-107
Tank alert w/ latching light



STF-103
Filter lid/screen removal wrench
40" long -
holds lid after removal



STF-103A
Filter screen removal tool
for use w/optional socks
34" long



We custom build filter / manifold assemblies to meet most commercial and residential filtration systems.

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

INNOVATIVE WASTEWATER SYSTEM APPROVAL

INNOVATIVE WASTEWATER NO: IWWS-95-3-R3

ISSUED TO:
Ring Industrial Group
EZ*flow* Brand Drain fields
65 Industrial Park Drive
Oakland, TN 38060
901-465-6333; Fax: 901-465-1181; www.ezflowlp.com

FOR:

***EZflow Drainage Systems (formerly Houck Drainage Systems)*:**

EZ1003T (Formerly HDS 2003 Triangular)
EZ1203T (Formerly HDS 2012 Triangular)
EZ1203H (Formerly HDS 2012 Horizontal)

DATE: October 10, 1995 IWWS-95-3R Issued
October 7, 1998 IWWS-95-3-R2 Issued
April 18, 2002 IWWS-95-3-R3 Issued

In accordance with 15A NCAC 18A .1969, the EZflow Drainage Systems EZ1003T, EZ1203T, and EZ1203H have been found to meet the standards for an innovative system when all of the conditions specified herein are met.

I. PERMITTING

Prior to the installation of an approved EZflow Brand **EZ1003T , EZ1203T, or EZ1203H,** System at a site for which application is being made for an Improvement Permit or Construction Authorization or at a site for which an Improvement Permit or Construction Authorization has been previously issued for a system described in 15A NCAC 18A.1955, .1956, or .1957, the owner or authorized agent shall notify the local health department. The local health department shall issue an Improvement Permit or Construction Authorization or amend the previously issued Improvement Permit or Construction Authorization allowing for the use of the proposed innovative system upon a finding that all provisions of this approval and all other applicable rules shall be met. Use of the proposed innovative system and any conditions shall be described in the construction authorization or amended construction authorization, as applicable. Such information shall also be described on the operation permit to be issued upon the acceptable completion of the system installation.

II. SYSTEM DESCRIPTIONS AND DESIGN CRITERIA

The EZflow brand Drainfield Systems replace conventional rock and pipe drainfield systems.

Description:

Aggregate shall consist of: EZflow patented bead is a 3-Dimensional rectangular shaped product with void channels and surface area protuberances. Dubbed the "double E", the Geosynthetic expanded polystyrene (EPS) aggregate size ranges from .75 to 1.75 inches along any axis. The particle density is approximately 1.2 pound per cubic foot or greater.

Product: Cylindrical bundles (also referred to herein as cylinders) are approximately 10 inches or 12 inches in diameter, and approximately 10 feet long. The product nomenclature depicts the diameter, the number of bundles and the orientation. (e.g. EZ1003T: 10 inch bundles with three pieces in a triangular configuration.)

The expanded polystyrene aggregate is held in a cylindrical shape with high strength netting. The physical and chemical properties of the netting shall be durable and resistive enough to retain the shape of the bundles and, to withstand system installation, backfilling, corrosion, and loss of aggregate under intended use.

Alternative configurations are described below:

A. **EZ1003T (formerly HDS 2003 Triangular) Drainfield System** consists of three, 10-inch diameter cylinders placed in a trench 24 inches wide. Two bottom cylinders containing aggregate only, with the netting tied off at both ends to prevent the escape of aggregate, are placed against opposite sides of the trench bottom (retaining a gap of approximately four inches between the bundles when placed in the 24-inch wide trench). A third cylinder containing aggregate and a 4-inch diameter flexible plastic perforated pipe as is typically used in nitrification lines is centered on top of the bottom two bundles in the middle of the trench. The pipe shall be certified as complying with ASTM F 405, Standard Specification for Corrugated Polyethylene (PE) tubing and fittings, and shall be in accordance with 15A NCAC 18A .1955(f). The 4-inch corrugated pipe is surrounded by approximately 2.5 to 3 inches of the EZflow aggregate. The netting for the central cylinder is tied off at both ends to the pipe. The pipe may be connected by an internal coupling device to allow continuous flow from one section to the next.

B. **EZ1203T (formally HDS 2012 Triangular) Drainfield System** consists of three, 12-inch diameter cylinders in a trench 30 inches wide. Two bottom cylinders containing aggregate only, with the netting tied off at both ends to prevent the escape of aggregate, are placed against opposite sides of the trench bottom creating a gap of approximately 5 to 6 inches between the bundles. A third cylinder containing aggregate and a 4-inch diameter perforated flexible plastic pipe as is typically used in nitrification lines is centered on top of the bottom two bundles in the middle of the trench. The pipe shall be certified as complying with ASTM F 405, Standard Specification for Corrugated Polyethylene (PE) tubing and fittings, and shall be in accordance with 15A NCAC 18A .1955(f). The 4-inch pipe is centered or slightly offset from center towards the top of the cylinder whereby 4 to 6 inches of aggregate is located between the bottom of the pipe and the bottom of the cylinder, and 4 to 1-1/2 inches of aggregate is located between the top of the pipe and the top of the cylinder, respectively. The netting for the central cylinder is tied off at both ends to the pipe. The pipe may be

connected by an internal coupling device to allow for continuous flow from one section of pipe to the next.

C. **EZ1203H (formally HDS 2012 Horizontal) Drainfield System** consists of three, 12-inch diameter cylinders across the bottom of a trench 36 inches wide. The outer cylinders contain aggregate only, with the netting tied off at both ends to prevent the escape of aggregate. The central cylinder contains aggregate and a 4-inch diameter perforated flexible plastic pipe as is typically used in nitrification lines. The pipe shall be certified as complying with ASTM F 405, Standard Specification for Corrugated Polyethylene (PE) tubing and fittings, and shall be in accordance with 15A NCAC 18A .1955(f). The 4-inch pipe is offset from center towards the top of the cylinder whereby 6 inches of aggregate is located between the bottom of the pipe and the bottom of the cylinder, and 1-1/2 to 2 inches of aggregate is located between the top of the pipe and the top of the cylinder. The netting for the central cylinder is tied off at both ends of the pipe. The pipe may be connected by an internal coupling device to allow continuous flow from one section to the next.

III. SITING CRITERIA:

The EZflow Drainfield Systems may be utilized on any site that one can use rock aggregate and pipe which meet the following criteria:

A. Sites which are classified Suitable or Provisionally Suitable for a conventional nitrification field system in accordance with 15A NCAC 18A .1948(a) and (b).

B. Sites which have been reclassified as Provisionally Suitable in accordance with 15A NCAC 18A .1956(2), (4), (5), and (6).

C. Sites which may be reclassified as Provisionally Suitable in accordance with 15A NCAC 18A .1956(1), except that for the triangular configurations at least 29 and 31 inches for EZ1003T and EZ1203T, respectively, of naturally occurring soil must be present above saprolite, rock, or soil wetness conditions, and all other factors are Suitable or Provisionally Suitable.

D. Sites which meet the criteria for new or existing fill in accordance with 15A NCAC 18A .1957(b). The provisions of Rule .1957(b) are applicable whenever any portion of the aggregate bundles in an EZflow system extends into fill material. There shall be no reduction in trench length compared to conventional gravel trench. This reference to "fill material" applies to the site fill and not the backfill placed between the trench and the cylinder sidewall.

D. The required vertical separation shall be measured from the trench bottom.

IV. EZFLOW DRAINFIELD SYSTEM SIZING:

A. The maximum long-term acceptance rate (LTAR) shall be as follows:

Table 1

Textural Group		LTAR (GPD/ft^2)	
		Natural	***Saprolite***
Soil/Group I (Sands)	Sand	0.8 - 1.0	0.6-0.8
	Loamy Sand		0.5-0.7
Soil Group II (Coarse Loams)	Sandy Loam	0.6 - 0.8	0.4 - 0.6
	Loam		0.2-0.4
Soil Group III (Fine Loams)	Silt Loam	0.3 - 0.6	0.1-0.3
	Other Fine Loams		N.A.
Soil Group IV	Clays	0.1 - 0.4	N.A.

B. The LTAR shall be based on the most hydraulically limiting naturally occurring soil horizon within three feet of the ground surface or to a depth of one foot below the trench bottom whichever is deeper.

C. To determine the minimum total trench bottom area (ft ^{2}) required, divide the design daily sewage flow by the applicable LTAR shown in Table 1 above. The minimum linear footage for EZflow Drainfield Systems shall be determined by dividing the total trench bottom area by the following equivalency factors:

Table 2

EZflow Product Configuration	**Excavated Trench Width**	**Equivalency Factor (SF/LF)**
EZ1003T (2003 Triangular)	24-inch	3.0
EZ1203T (2012 Triangular)	30-inch	**4.61 (Warranty System)***
		4.0
EZ1203H (2012 Horizontal)	36-inch	**4.61 (Warranty System)***
		4.0

***System sizing approval based on provision of manufacturer's warranty, as required by Section 2.4, Session Law 2001-505 (House Bill 1019), effective December 19, 2001. Requirements specific to Warranty Systems are detailed in Section VIII, below**

Example:
Assume: Three bedroom residence with a design daily sewage flow of 360 gallons on a Group III sandy clay loam soil:

Then: Total computed trench bottom area is:
360 GPD (GPD/BR)/0.5 (GPD/SF) (LTAR) = 720 ft^2/BR

The minimum required linear footage of EZFlow Drainfield Systems are:

Table 3

Product Configuration	Square footage required (equivalent conventional)	Equivalency Factor (SF/LF)	Total Linear Feet
EZ1003T (Warranty System)	720	3.0	240
EZ1003T			
EZ1203T (Warranty System)	720	4.61	156
EZ1203T		4.0	180
EZ1203H (Warranty System)	720	4.61	156
EZ1203H		4.0	180

D. The **EZ1203H** Horizontal Drainfield System may be used in a bed system with the three cylindrical bundles placed in rows next to each other. The minimum area (without reduction or equivalency factor) for a bed system shall be determined as required in 15A NCAC 18A.1955(d).

E. The **central cylinder of the EZ1203H** which contains the off-set four-inch pipe may be used as an alternative to rock aggregate in a low pressure pipe (LPP) system, sized equivalent to LPP systems as required in 15A NCAC 18A .1957(a). The single 12-inch diameter cylinder shall be installed within a 12 to 18-inch wide trench. The LPP small diameter pressure laterals (one to two inches) shall be placed within the four-inch pipe sleeve and otherwise designed in accordance with Rule .1957(a). All orifices shall be drilled in the LPP laterals to face upward, except for a hole placed in the middle and a hole placed 25 percent from the distal end of each line, which shall face downward to allow for drainage. The minimum backfill requirement of six inches, as described below, shall also apply.

F. The available space requirements of Rule .1945 shall be met, and this approved innovative system may be designated as the required replacement system. However, whenever a Warranty System is proposed whereby the initial system has more than a 25% reduction in nitrification trench length as compared to the total nitrification trench length required for a 36-inch wide conventional wastewater system, there shall be sufficient repair area to install either a conventional gravel trench system, or an approved innovative system which has no more than a 25% reduction in nitrification trench length as compared to the total nitrification trench length required for a 36-inch wide conventional system, and both the initial and replacement system areas shall be Suitable or Provisionally Suitable for a conventional system in accordance with Rules .1948(a) and (b), or Rules .1956(1), (2), (4), (5), and (6).

V. INSTALLATION CRITERIA:

A. The EZflow Drainfield Systems shall be configured in accordance with Section II, above, installed in excavated trenches constructed with the following minimum center-to-center spacing, trench widths, and soil cover. Dimensional Minimums are included for installation and inspection guidance:

Table 4

Product Configuration	Minimum Trench Spacing (feet)	Trench Width (Inches)	Min. Soil Cover (inches)	Min. Trench Depth (inches)	♣Min. Pipe Depth below Grade	♣Min. Pipe Ht. Above Trench Bottom
EZ1003T	7.5	24	6	23	11	10 inches
EZ1203T (Including Warranty System)	9.0	30	6	25	12	11 inches
EZ1203H (Including Warranty System)	9.0	36	6	18	12	6 inches

*** Note: that on sloping lots, minimum required trench depths may be greater.**

♣ Measurements for pipe height are to the pipe invert or bottom of pipe.

B. A backfill barrier shall be placed over the EPS aggregate cylinders to prevent the infiltration of backfill material into the trench void spaces. The backfill barrier shall be 60 pound weight untreated building paper provided by the manufacturer or alternate with equal or better performance characteristics. An alternate backfill barrier shall be approved in writing by the manufacturer on a case-by-case basis. The barrier shall not be placed along the trench sidewalls below the pipe invert elevation. The barrier must be protected from becoming wet enough to tear until backfilling is completed.

C. Native Soil removed from the trench excavation may be used as backfill and shall be placed along the sidewalls in the EZflow Triangular Drainfield Systems to a minimum compacted (carefully walked in) height level with the center of the top EPS cylinder. Backfill shall be free of trash or debris. The area adjacent to the cylinders shall be free of large (8" or greater) clods that do not break apart during the walk in procedure. Special attention should be given when backfilling the Triangular Systems so as not to disturb the configuration. Vehicular traffic and excavation equipment should not travel over any uncovered drainfield. The latest version of the manufacturer's installation procedures shall be followed.

D. The EZflow Drainfield Systems shall be installed in a level trench in all directions (both across and along the trench bottom) and shall follow the contour of the ground surface elevation (uniform depth), with all continuous adjoining 10-foot cylindrical bundles placed end to end, with the central bundle distribution pipe interconnected, without any dams, stepdowns or other water stops.

E. EZflow Drainfield Systems installed on sloping sites may use distribution devices or step downs as described in 15A NCAC 18A .1955(j) and (l) when it is necessary to change level nitrification line segments from upper to lower elevations. The minimum step-down height for the EZflow Triangular configurations may be reduced to be only up to the center of the pipe in the upstream trench.

F. Manufacturer's installation instructions for the EZflow Drainfield Systems shall be followed, except as required herein or by 15A NCAC 18A .1900 et. seq.

G. The system shall be installed by a contractor authorized in writing by Ring Industrial Group for EZflow Brand Drainfield Systems.

VI. OPERATION AND MAINTENANCE REQUIREMENTS:

The EZflow Drainfield Systems shall have a minimum classification as a Type IIIg system (other non-conventional trench systems) in accordance with Table V(a) of Rule 15A NCAC 18A .1961(b).

VII. REPAIR OF SYSTEMS:

The provisions of 15A NCAC 18A .1961(c) shall govern the use of the EZflow Drainfield Systems for repairs to existing malfunctioning wastewater systems.

VIII. WARRANTY SYSTEMS (EZ1203T and EZ1203H only when installed with length reductions in excess of 25%)

A. The Manufacturer shall provide the approved Warranty in effect on the date of the Operation Permit issuance to the owner or purchaser of the system. The terms and conditions of the Warranty shall be approved by the Department, pursuant to applicable Laws and Rules. The Warranty shall be valid for a five-year period from the date of first use of the wastewater system, as indicated by the date of issuance of either the Operation Permit or the Certificate of Occupancy for the facility served by the system (whichever is later).

B. The Manufacturer shall issue the Warranty to the property owner through it's authorized installer who shall sign the Warranty indicating the system has been installed in accordance with the Manufacturer's specifications, any conditions of the Approval granted by the DENR, and all conditions of the Authorization to Construct a Wastewater System by the local health department. The installer or contractor shall promptly return a copy of the signed Warranty to the Manufacturer indicating Address and Location of the system, date the system was placed into use, and type and model of system installed.

C. The Warranty shall provide that the manufacturer shall provide all materials and labor that may be necessary to provide a fully functional wastewater system at no cost to the Owner. This section shall not be construed to require that a manufacturer warrant an innovative wastewater system that is not properly sized to meet the design load required for a particular use, that is improperly installed, or that is improperly operated and maintained, in accordance with 15A NCAC 18A .1900 et. seq.

D. Warranty repairs such as full replacement of the nitrification system, extension of the nitrification system or other repairs shall be completed pursuant to a repair Authorization to Construct to be issued by the local health department in accordance with Rule .1961(l).

E. The Warranty shall be attached to the Operation Permit issued by the Health Department for the wastewater system. The Warranty transfers to any subsequent owners of the system up to the end of the five-year applicability period.

IX. APPLICABILITY

This Innovative Wastewater System Approval supersedes previous approvals IWWS-94-1, IWWS-95-3, IWWS-95-3R and IWWS-95-3-R2.

Approved By: _____ **Date:** _____

CK #35

FEE: 200.00
DATE: 1/31/03 JC

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

I. J CRT

TYPE APPLICATION: ✓ 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 #: 5278

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 105-153-53 (LOT 17)

STREET ADDRESS: 4779 Birch Hollow Dr.

SUBDIVISION OR MOBILE HOME PARK NAME: PRESTON FOREST

LOT NUMBER: 17

TYPE OF BUILDING (CHECK ONE):

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

HEATED SQUARE FOOTAGE: 2802

NUMBER OF BEDROOMS: 3

NUMBER OF OCCUPANTS: 2

TOWNSHIP (CHECK ONE):

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

CLOSING DATE 2-28-03
(OR) SOONER

FOUNDATION FOR RESIDENCE:

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

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:

N/A

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

WATER SUPPLY (CHECK ONE):

__ COMMUNITY (C)
__ SHARED WELL (S)
✓ MUNICIPAL (M)
__ OTHER 'SPRINGS' (O)
__ PRIVATE WELL (P)

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

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

PROPERTY OWNER:

NAME: (LAST) STARNES (FIRST) DOUG (MI)
ADDRESS: P.O.Box 560188
CITY: CHARLOTTE STATE: N.C. 28256-0188
DAYTIME PHONE: 704 622-8038

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: (LAST) KHAN (FIRST) AJAZ (MI)
DAYTIME PHONE: ( ) -
(704) 622-8038

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? NOT KNOWN

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: Ajaz Khan (for) Doug Starnes DATE: 1/31/03

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

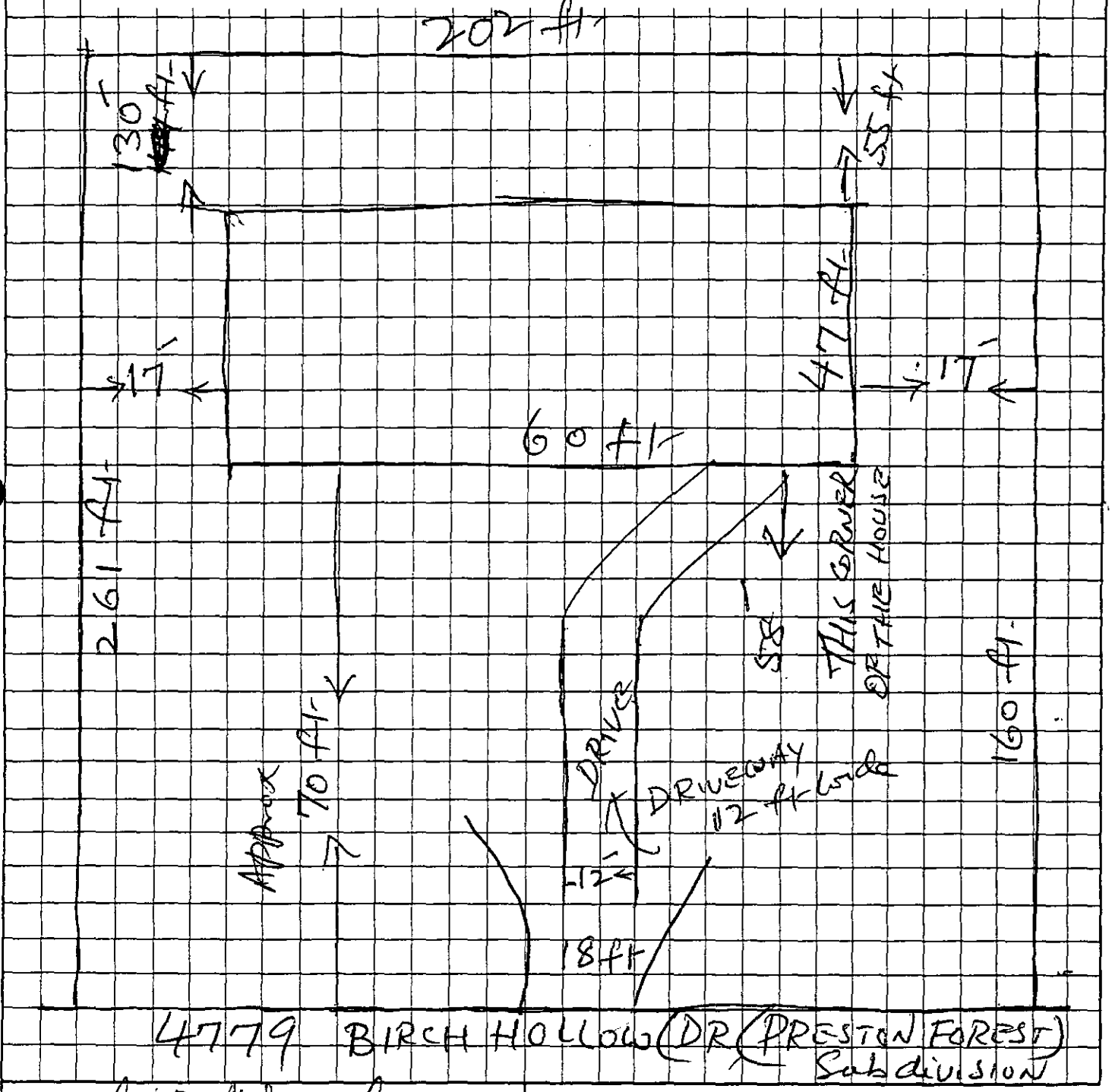
PROPOSED PLOT PLAN

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

FILE: 5157B

TC: 105-153-53

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.



Mike Hampton
OWNER/AGENT SIGNATURE Doug Starnes

DATE 1/31/03

APPROVAL DATE _____

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

MECKLENBURG COUNTY
Health Department

October 9, 2003

Doug Starnes
P O Box 560188
Charlotte, NC 28256

Re: Application for improvement permit for Ajaz Khan
Property Site: 4779 Birch Hollow Drive
Health Department file no. 5157B

Dear Property Owner or Owner's Agent:

The Mecklenburg County Health Department, Environmental Health Division on March 5, 2003 evaluated the above-referenced property at the site designated on the plat/site plan that accompanied your improvement permit application. According to your application the site is to serve a 3-bedroom residence, with a design wastewater flow of ___360____gallons per day. The evaluation was done in accordance with the laws and rules governing wastewater systems in North Carolina General Statute 130A-333 and related statutes and Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rule .1900 and related rules.

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

____X____Unsuitable soil topography and/or landscape position (Rule .1940)
_____Unsuitable soil characteristics (structure or clay mineralogy) (Rule .1941)
____X____Unsuitable soil wetness condition (Rule .1942)
____X____Unsuitable soil depth (Rule .1943)
_____Presence of restrictive horizon (Rule .1944)
____X____Insufficient space for septic system and repair area (Rule .1945)
_____Unsuitable for meeting required setbacks (Rule .1950)
_____Other (Rule .1946)

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

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

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

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

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

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

Please note: If you wish to pursue a formal appeal, you must file the petition form with the Office of Administrative Hearings **WITHIN 30 DAYS OF THE DATE OF THIS LETTER.** The date of this letter is January 29, 2003. Meeting the 30-day deadline is critical to your right to a formal appeal. Beginning a formal appeal within 30 days will not interfere with any informal review that you might request. Do no wait for the outcome of any informal review if you wish to file a formal appeal.

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

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

Sincerely,

J. Andrew Walker, R.S.
Authorized Agent - DENR

Encl: (2)

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

Sheet: 1
Property ID: 105-153-53
Lot #: 17
File #: 5157B
Code: 2

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: Doug Starnes
Applicant: Ajaz Khan
Address: PO Box 560188, Charlotte, N. C. 28256
Date Evaluated: 02/19/2003
Proposed Facility: Residence
Design Flow (.1949): 360gpd
Property Size: .6a
Location of Site: 4779 Birch Hollow Drive
Property Recorded:
Water Supply: [x] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [x] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [ ] 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 Saprolite Class	.1944 Restrictive Horiz	Profile Class & LTAR
1	LS, 15	0-4	GR/SCL	FR/SEXP/SS/SP	2.5Y8/1@43"	44	N/A	NONE	PS, IV .275GPD/FT^2
		4-44	SBK/SC	FI/SEXP/S/P					
2	"	0-5	GR/SCL	FR/SEXP/SS/SP	>20" TO SOIL WETNESS	20+	"	"	US
		5-20	SBK/SC	FI/SEXP/S/P					
		20+	ABK/C	VFI/EXP/VS/VP					
3	LS, 10	0-6	GR/SCL	FR/SEXP/SS/SP	>49" TO SOIL WETNESS	49	"	"	PS, IV .3GPD/FT^2
		6-49	SBK/SC	FI/SEXP/S/P					
4	"	0-6	GR/SCL	FR/SEXP/SS/SP	"	"	"	"	"
		6-18	SBK/SCL	"					
		18-49	SBK/SC	SBK/SEXP/S/P					
5	"	0-6	GR/SCL	FR/SEXP/SS/SP	>48" TO SOIL WETNESS	48	"	"	"
		6-26	SBK/SCL	"					
		26-48	SBK/SC	FI/SEXP/S/P					

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

Other Factors (.1946): _____
Site Classification (.1948): UNSUITABLE
Evaluated By: W. R. Marlin, LSS, 2/20/2003. W. R. Marlin
Others Present:

COMMENTS 100% Repair

LANDSCAPE POSITION	GROUP	TEXTURE	1955 LTAR
R-RIDGE	I	S-SAND	1.2–0.8
S-SHOULDER SLOPE		LS-LOAMY SAND	
L-LINEAR SLOPE			
FS-FOOT SLOPE	II	SL-SANDY LOAM	0.8–0.6
N-NOSE SLOPE		L-LOAM	
H-HEAD SLOPE			
CC-CONCLAVE SLOPE	III	SI-SILT	0.6–0.3
CV-CONVEX SLOPE		SICL-SILTY CLAY LOAM	
T-TERRACE		CL-CLAY LOAM	
FP-FLOOD PLAIN		SCL-SANDY CLAY LOAM	
	IV	SC-SANDY CLAY	0.4–0.1
		SIC-SILTY CLAY	
		O-ORGANIC	

CONSISTENCE	
MOIST	WET
VFR-VERY FRIABLE	NS-NON-STICKY
FR-FRIABLE	SS-SLIGHTLYSTICKY
FI-FIRM	S-STICKY
VFI-VERY FIRM	VS-VERY STICKY
EFI-EXTREMELY FIRM	NP-NON-PLASTIC
	SP-SLIGHTLYSTICKY
	P-PLASTIC
	VP-VERY PLASTIC

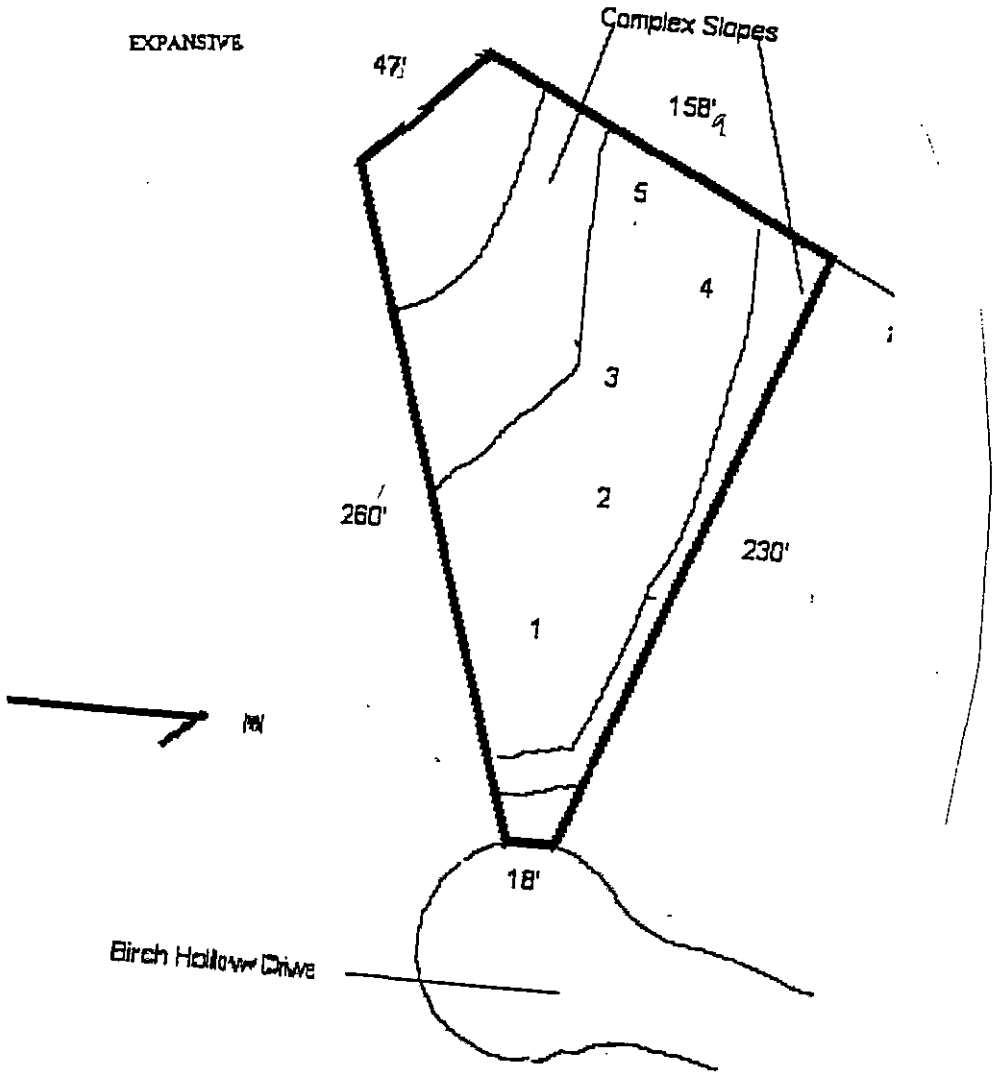
STRUCTURE

SG-SINGLE GRAIN
M-MASSIVE
CR-CRUMB
GR-GRANULAR
SBK-SUBANGULAR BLOCKY
ABK-ANGULAR BLOCKY
PL-PLATY
PR-PRISMATIC

MINERALOGY

SLIGHTLY EXPANSIVE

EXPANSIVE



MECKLENBURG COUNTY
Health Department

October 9, 2003

Doug Starnes
P O Box 560188
Charlotte, NC 28256

Re: Application for improvement permit for Ajaz Khan
Property Site: 4779 Birch Hollow Drive
Health Department file no. 5157B

Dear Property Owner or Owner's Agent:

The Mecklenburg County Health Department, Environmental Health Division on March 5, 2003 evaluated the above-referenced property at the site designated on the plat/site plan that accompanied your improvement permit application. According to your application the site is to serve a 3-bedroom residence, with a design wastewater flow of ___360____gallons per day. The evaluation was done in accordance with the laws and rules governing wastewater systems in North Carolina General Statute 130A-333 and related statutes and Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rule .1900 and related rules.

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_____Unsuitable soil characteristics (structure or clay mineralogy) (Rule .1941)
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____X____Unsuitable soil depth (Rule .1943)
_____Presence of restrictive horizon (Rule .1944)
____X____Insufficient space for septic system and repair area (Rule .1945)
_____Unsuitable for meeting required setbacks (Rule .1950)
_____Other (Rule .1946)

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

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

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

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

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

Sincerely,

J. Andrew Walker, R.S.
Authorized Agent - DENR

Encl: (2)

CK #32

FEE: 200
DATE: 1/31/03 JC

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

1 | CRT

TYPE APPLICATION: ✓ 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 #: 5275B

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 105-153-53 (LOT 17)

STREET ADDRESS: 4779 Birch Hollow Dr.

SUBDIVISION OR MOBILE HOME PARK NAME: PRESTON FOREST

LOT NUMBER: 17

TYPE OF BUILDING (CHECK ONE):

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

HEATED SQUARE FOOTAGE: 2802

NUMBER OF BEDROOMS: 3 | NUMBER OF OCCUPANTS: 2

TOWNSHIP (CHECK ONE):

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

CLOSING DATE 2-28-03
(OR) SOONER

FOUNDATION FOR RESIDENCE:

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

IF EXPANSION/ALTERATION OF EXISTING SYSTEM, DESCRIBE THE PROPOSED BUILDING ADDITION:

N/A

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

WATER SUPPLY (CHECK ONE):

__ COMMUNITY (C)
__ SHARED WELL (S)
✓ MUNICIPAL (M)
__ OTHER 'SPRINGS' (O)
__ PRIVATE WELL (P)

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

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

PROPERTY OWNER:

NAME: (LAST) STARNES (FIRST) DOUG (MI)
ADDRESS: P.O.Box 560188
CITY: CHARLOTTE STATE: N.C ZIP: 28256-0188
DAYTIME PHONE: 704 622-8038

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: (LAST) KHAN (FIRST) AJAZ (MI)
DAYTIME PHONE: ( ) (704) 622-8038

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? NOT KNOWN

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: Aijaz Khan (for) Doug Starnes DATE: 1/31/03

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

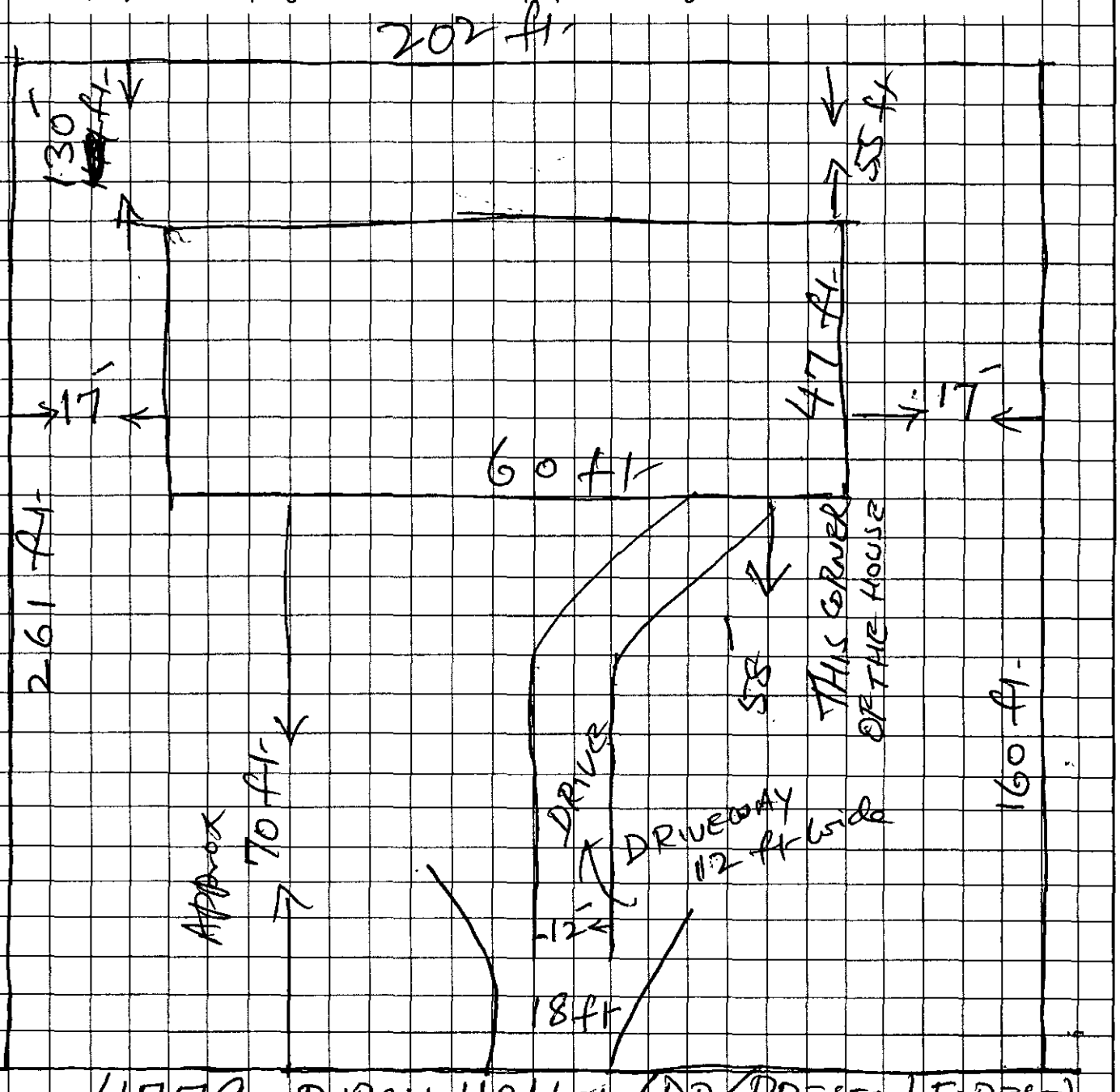
PROPOSED PLOT PLAN

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

FILE: 5157B

TC: 105-153-53

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.



Mike Klumpar
OWNER/AGENT SIGNATURE Doug Starnes

DATE 1/31/003

APPROVAL DATE _____

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

1/24/03

To: Kelly Randall

Fr: Doug Starnes

Kelly,

I live in Dallas TX now but have two (2) lots that I am selling to Mr Aijaz Khan These two lots are Parcels 105-153-53 Lot 17 4779 Birchhollow Dr + 105-153-52 4775 Lot 16 Birchhollow Dr. I have authorized Mr Khan to have both these lots Perk tested. He will pay the fees. Thank you for your help. Any questions please call me A (214) 675 6661.

Doug Starnes

P.S. I am mailing a hard copy of this Request per your office instructions.

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

Sheet: 1
Property ID: 105-153-53
Lot #: 17
File #: 5157B
Code: 2

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: Doug Starnes
Applicant: Ajaz Khan
Address: PO Box 560188, Charlotte, N. C. 28256
Date Evaluated: 02/19/2003
Proposed Facility: Residence
Design Flow (.1949): 360gpd
Property Size: .6a
Location of Site: 4779 Birch Hollow Drive
Property Recorded:
Water Supply: [x] Public [ ] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [x] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [ ] 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, 15	0-4	GR/SCL	FR/SEXP/SS/SP	2.5Y8/1@43"	44	N/A	NONE	PS, IV .275GPD/FT^2
		4-44	SBK/SC	FI/SEXP/S/P					
2	"	0-5	GR/SCL	FR/SEXP/SS/SP	>20" TO SOIL WETNESS	20+	"	"	US
		5-20	SBK/SC	FI/SEXP/S/P					
		20+	ABK/C	VFI/EXP/VS/VP					
3	LS, 10	0-6	GR/SCL	FR/SEXP/SS/SP	>49" TO SOIL WETNESS	49	"	"	PS, IV .3GPD/FT^2
		6-49	SBK/SC	FI/SEXP/S/P					
4	"	0-6	GR/SCL	FR/SEXP/SS/SP	"	"	"	"	"
		6-18	SBK/SCL	"					
		18-49	SBK/SC	SBK/SEXP/S/P					
5	"	0-6	GR/SCL	FR/SEXP/SS/SP	>48" TO SOIL WETNESS	48	"	"	"
		6-26	SBK/SCL	"					
		26-48	SBK/SC	FI/SEXP/S/P					

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

Other Factors (.1946): _____
Site Classification (.1948): UNSUITABLE
Evaluated By: W. R. Marlin, LSS, 2/20/2003, W. R. Marlin
Others Present:

FILE # 51579

COMMENTS 100% Repair

LANDSCAPE POSITION	GROUP	TEXTURE	.1955 LTAR
R-RIDGE	I	S-SAND	0.2–0.8
S-SHOULDER SLOPE		LS-LOAMY SAND	
L-LINEAR SLOPE			
FS-FOOT SLOPE	II	SL-SANDY LOAM	0.3–0.6
N-NOSE SLOPE		L-LOAM	
H-HEAD SLOPE			
CC-CONCLAVE SLOPE	III	SI-SILT	0.6–0.3
CV-CONVEX SLOPE		SICL-SILTY CLAY LOAM	
T-TERRACE		CL-CLAY LOAM	
FP-FLOOD PLAIN		SCL-SANDY CLAY LOAM	
	IV	SC-SANDY CLAY	0.4-0.1
		SIC-SILTY CLAY	
		O-ORGANIC	

CONSISTENCE MOIST	WET
VFR-VERY FRIABLE	NS-NON-STICKY
FR-FRIABLE	SS-SLIGHTLYSTICKY
FI-FIRM	S-STICKY
VFI-VERY FIRM	VS-VERY STICKY
EFI-EXTREMELY FIRM	NP-NON-PLASTIC
	SP-SLIGHTLYSTICKY
	P-PLASTIC
	VP-VERY PLASTIC

STRUCTURE

SG-SINGLE GRAIN
M-MASSIVE
CR-CRUMB
GR-GRANULAR
SBK-SUBANGULAR BLOCKY
ABK-ANGULAR BLOCKY
PL-PLATY
PR-PRISMATIC

MINERALOGY

SLIGHTLY EXPANSIVE

EXPANSIVE

