

9710 WINDYGAP RD

1/8/2008

duponbj

Groundwater and Wastewater Services File Imaging Project
May 2007
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FEE: 200 1454

DATE: 9/3/03 JC

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

[ ] 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 #: 53726

PROPERTY INFORMATION (FROM ENGINEERING FORM) FOR JOB LOCATION:

TAX/PARCEL NUMBER: 199-391-~~15~~20

STREET ADDRESS: Windy Gap Rd just before exit on Rt.

SUBDIVISION OR MOBILE HOME PARK NAME:

LOT NUMBER:

TYPE OF BUILDING (CHECK ONE):

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

TOWNSHIP (CHECK ONE):

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

HEATED SQUARE FOOTAGE:

NUMBER OF BEDROOMS:

NUMBER OF OCCUPANTS:

CLOSING DATE n/a

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:

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: Crescent Resources INC.
(LAST) (FIRST) (MI)

ADDRESS: PO Box 1003

CITY: Charlotte STATE: NC ZIP: 28202-1003

DAYTIME PHONE: (704) 663-6905

LEGAL AGENT FOR PROPERTY OWNER, IF APPLICABLE:

NAME: Jacobs Tonya C
(LAST) (FIRST) (MI)

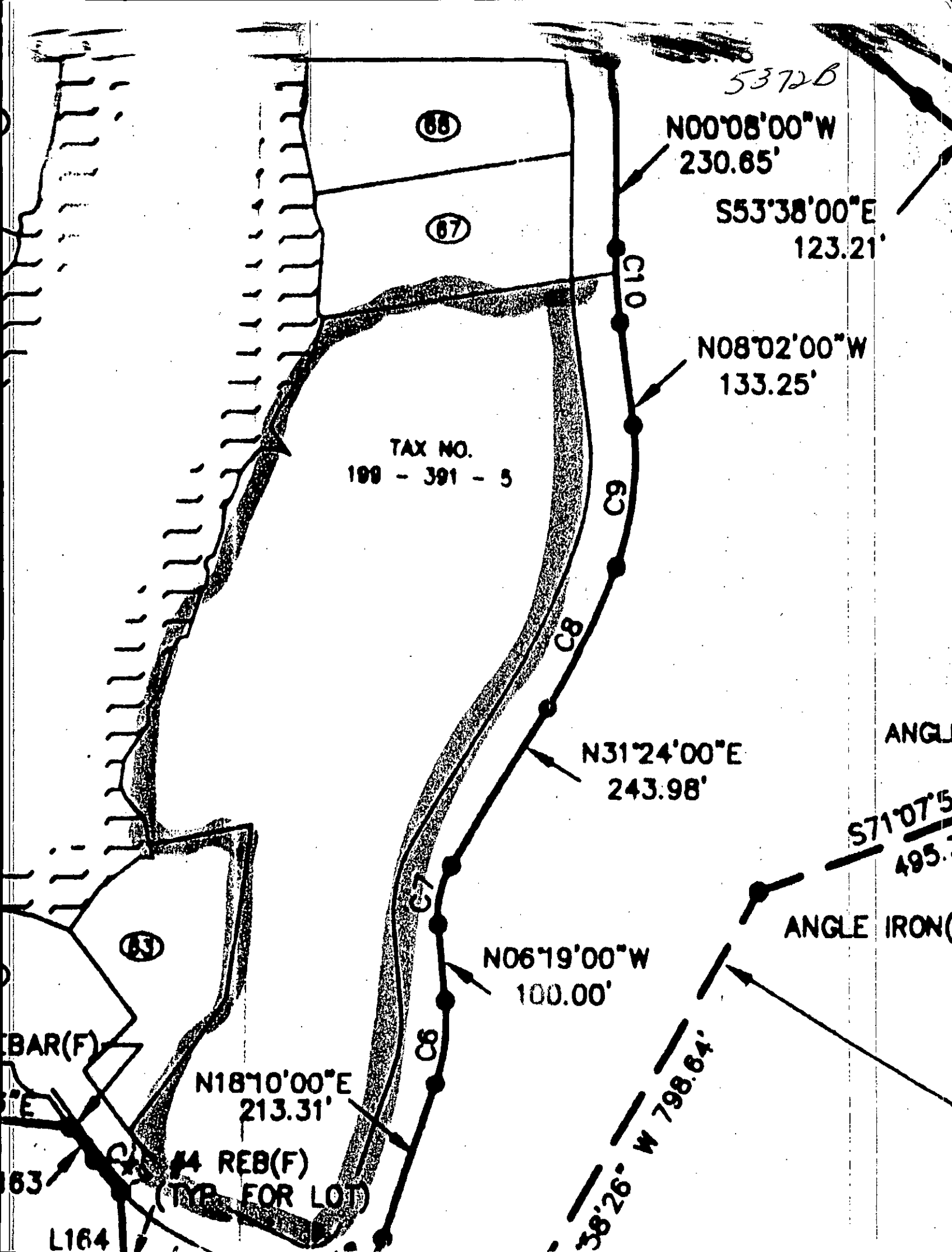
DAYTIME PHONE: (704) 663-6905

WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? _____

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: Tonya C Jacobs, CPM DATE: 9/8/03

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


5372B
88
87
N00°08'00"W
230.65'
S53°38'00"E
123.21'
C10
N08°02'00"W
133.25'
TAX NO.
199 - 391 - 5
C9
C8
N31°24'00"E
243.98'
ANGL
S71°07'5
495.
C7
ANGLE IRON(
83
N06°19'00"W
100.00'
BAR(F)
C6
N18°10'00"E
213.31'
#4 REB(F)
(TYP. FOR LOT)
163
L164
38'26" W 798.64'

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

DATE: 11/11/03 PERMIT NO: 5372B
PARCEL NO: 199-391-20

JOB LOCATION ADDRESS: WINDY GAP RD.
PROPERTY OWNER: CRESCENT RESOURCES, INC
BUILDING CONTRACTOR: _____
SUBDIVISION NAME: _____
AUTHORIZATION ISSUED BY: DAVID CORNELIUS DATE: 11/11/03
DEHNR AUTHORIZED AGENT

AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NO. 5372B, 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: INSTALL ACCORDING TO PLANS SUBMITTED BY TONEY JACOBS & ASSOCIATES

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 11/12/04 DATE

CONDITIONS OF IMPROVEMENT PERMIT

it Number: 53728

Tax Number: 199-391-20

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	X 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	

0.3 Long-term acceptance rate	480 Max gallons/day wastewater flow	1200 Absorption Area (sq ft)	9' Trench spacing (min. on centers)
Y Serviced by private well	1500 Gallon septic tank	400 Total trench length (ft)	24" 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	

Any surface waters present: YES Type: LAKE Minimum separation distance: 50'

Site modifications required:

Additional Conditions: INSTALL ACCORDING TO PLANS SUBMITTED BY TONEY JACOBS & ASSOCIATES.

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

1200 Absorption Area (Sq ft) 400 Total Trench Length (Ft)	N/A Depth of Stone Trench	9' Trench spacing (min. on centers)	24 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.

11/11/03

DEHNR Authorized Agent Date

11/12/04

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

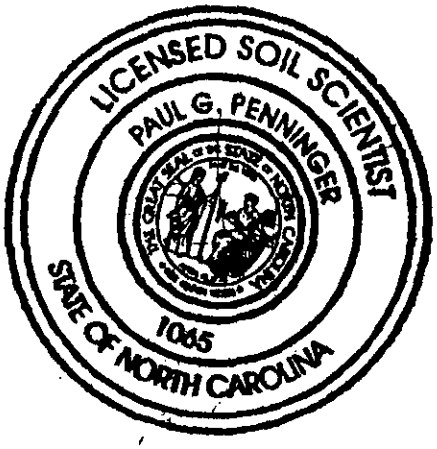
NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL, HEALTH,
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

RESIDENTIAL PRESSURE MANIFOLD 25% REDUCTION SEPTIC SYSTEM FOR SUBSURFACE WASTEWATER DISPOSAL 9.83 ACRE WINDY GAP ROAD TRACT LAKE WYLIE

MCHD FILE 53728

Prepared for:
Mr. Ed Easter
Crescent Resources, Inc.
P.O. Box 1003
Charlotte, North Carolina 28201

Prepared by:
Toney C. Jacobs & Associates, Inc.
168 Broadbill Drive
Mooresville, North Carolina 28117
office (704) 663-6905
fax (704) 662-9845
E-mail jacobs@i-america.net



November 9, 2003

Copy: Mr. David Cornelius, R.S. ✓
MCHD-IWWS
700 N. Tyron Street
Charlotte, NC 28202

Paul G. Penninger, LSS

BACKGROUND

The 9.83 acre tract is located on the north side of Windy Gap Road on Lake Wylie, in Mecklenburg County. The tract is near the end of the road on the right, where the pavement turns into a gravel road. The tract has frontage on Lake Wylie. Toney C. Jacobs and Associates has been working with Crescent to obtain a 4-bedroom septic Improvement Permit for this tract. There are several possible house and system locations, but we are only applying for one Improvement Permit on the 9 acres.

The soils on the lot were evaluated by Mr. Bill Marlin of the Mecklenburg County Health Department (MCHD) and Toney C. Jacobs and Associates on September 19, 2003. Mr. Marlin classified the three auger borings described as provisionally suitable at a 0.3 gpd/ft^2 LTAR.

Toney C. Jacobs and Associates, Inc. flagged the proposed system and house location on October 2, 2003. We are recommending a pressure manifold 25% reduction septic system and repair. The proposed system will require 400 ft. of Infiltrator chamber or other state approved 25% reduction system for the primary system and the required 100% repair. The proposed system will be a Type III and will not require a maintenance contract with a certified operator.

APPLICATION INFORMATION

1. Owner: Crescent Resources, Inc.
   P.O. Box 1003
   Charlotte, NC 28201

   Soil Scientists
   and Designers: Mr. Paul Penninger, LSS
   Toney C. Jacobs & Associates, Inc.
   168 Broadbill Drive
   Mooresville, NC 28117
   (704) 663-6905 (Office)
   (704) 662-9845 (fax)
   E-mail jacobs@i-america.net

2. Water supply is to be provided by a proposed private well.
3. Facility to be served by the proposed system is a 4-bedroom single family residence.

LOCATION

The property is located north of Windy Gap Road, near the end where the pavement changes to a gravel road.

REFERENCES

Law and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment Health and Natural Resources, August 1, 1998.

PLANS AND SPECIFICATIONS 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 septic tank must be of two-compartment design for maximum solids retention. The inlet compartment of 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 through a State approved effluent filter and a four-inch solid PVC pipe to the pumping tank.
5. Both the septic tank and pumping tank must be provided with above ground approved manhole risers to provide easy access for clean-out and pump 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 an effluent filter must be installed. This filter should be equivalent to a Zabel Model A1800 or other State approved unit supplied by the tank manufacturer.

Pumping Tank

1. The pumping tank shall have an access manhole extending at least 6 inches above finished grade.
2. A septic tank effluent pump that will not be corroded by sewage shall be used in the pumping tank.
3. The pump must be placed on two concrete blocks set next to each other on the bottom of the tank. This prevents the pumping of any solid particles that can clog the system.
4. A piece of nylon rope or other non-corrodible material should be attached to the pump and to the outlet pipe for lifting the pump in and out of the chamber.
5. The lower level control or "pump-off" must be positioned above the pump, so that the pump remains submerged at all time.
6. The pump outlet pipe should be connected to the supply manifold with a threaded PVC union to allow quick removal.
7. Pump and Simplex 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. Pump control (Simplex) may be mounted on side of house if long cord pump is used. The pump 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 water proof, gas proof, 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. There shall be two electric circuits for controls: one for pump power, one for the alarm. These will require 2 circuit breakers.
8. The pump 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. It should be on a separate electrical circuit from the pump power line. The alarm shall be audible and visible by system users and included in the pump and control enclosure (Simplex Panel). The alarm is activated if the water level in the pump tank rises above the "pump-on" float control. The tank provides at least one day or more of emergency storage capacity (depending on water use in the home) during which time the system must be repaired.
9. Float switch for the high water alarm shall be set no more than 3 inches above the high water level of pump cycle.

10. Float switch tie downs to be made of corrosion resistant material, no tape or metal hose clamps. For maintenance flexibility, tree must be used to set floats.
11. Watertight testing per .1900 rules shall be required on two piece pump tanks.
12. Wiring between the pumping tank and the house should meet State and local code requirements.

Pipe and Fittings

1. All pipes and fitting should be made of SCH 40 PVC.
2. All joints must be sealed with appropriate PVC-solvent cement.
3. There should be a threaded PVC union above the pump to allow easy removal or replacement.
4. A gate valve for final pressure adjustment is installed in the supply line inside the pumping tank.
5. Manifold and valve as shown in specifications.
6. Lateral drainfield lines will be 25% reduction trench such as Infiltrator chambers or other state approved system that receive a 25% size reduction.

CONSTRUCTION INSTALLATION

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. Now that the septic area has been designed and flagged, it should be roped off and protected from construction traffic. No site preparation or construction work should occur if the soil is wet.
3. Care should be taken during tree, brush, and stump removal to minimize soil and site disturbance. **Do Not Grade!**
4. Provisions must be made for intercepting or diverting surface water away from the absorption area.

Tank Installation

1. The two-compartment septic tank is installed.
2. The pumping tank is installed next to the septic tank.
3. The tanks are connected with an appropriate length of solid, four-inch PVC pipe.

Pressure Manifold

1. The pressure manifold conveys effluent from the pump to the distribution laterals.
2. Design of the manifold is shown on attached diagrams.
3. After the pressure manifold has been placed and lateral lines connected, it should be backfilled with tightly tamped soil.

25% Reduction Lateral Lines

1. Trenches shall be 36" wide, and 9' minimum on center, and can range from 24-36" deep. Trenches shall be "level" from end to end.
2. 25% reduction lines should be installed per manufacturers specifications and the state innovative approvals.

PROPER OPERATION CHECK AND PRESSURE HEAD ADJUSTMENT

1. After all connections have been installed and connected, the system should be checked for proper operation. With electrical power turned off, fill the pump tank with a garden hose until the liquid rises to the level of the high-water alarm float.
2. Turn on the electrical power. The alarm light should go off when the liquid level falls below the high-water float. The pump should turn off when the liquid reaches the lowest float control. Be sure the pump is still completely submerged.
3. The pressure head is measured as the height liquid will rise above the pressure manifold barrel when the pump is running. To set or check the pressure head:

    - Glue a three-foot length of pipe (preferable clear) to a threaded adapter that will screw into the threads of the test hole on the top of the barrel of the pressure manifold.
    - Turn the power on to allow liquid to rise in the pipe.
    - Adjust the gate valve until the effluent reaches the desired height in the pipe.

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 system must be installed by a qualified, contractor that is on the Mecklenburg County list of competent contractors. Critical stages of the installation, which should be checked, are:

1. System layout
2. Septic and pump tank installation prior to backfilling.
3. Pressure Manifold and lateral installation prior to backfilling.
4. Final landscaping, operation and pressure head check.

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

OPERATION AND MAINTENANCE PROCEDURE

The system is classified as **Type III and DOES NOT require a maintenance contract** with a certified operator. Even though the proposed system does not require a certified operator the following Operating, Maintenance and Inspection procedures should be reviewed by the homeowner:

- Septic system shall be pumped every 4 years or when solids accumulate to 1/3 the volume of the tank.
- At 6 month intervals, inspect the effluent filter. When washing the filter, debris must be sprayed directly back into the septic tank and not onto the lawn.
- All laterals shall be checked and if necessary, flushed annually with clean water.
- Pressure head at pressure manifold should be checked and adjusted one month after installation and annually thereafter.
- All piping and fittings shall be checked annually for damage and/or proper operation and corrections made immediately.
- The property should be inspected to insure all surface water is diverted 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.
- The pump electrical should be checked to insure tight, clean connections with no corrosion and proper operation.
- Pump switches shall be checked for free operation and proper level set.

- Pump draw down depth and delivery rate shall be checked each year.
- Check septic tank and pump tank for evidence of damage or leakage. Check the quality of effluent including grease and sludge accumulation.

HOMEOWNER SUGGESTION

Most systems do not require much effort 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 homeowner to minimize the burden on the septic 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 at a quicker rate than without. If disposal is installed, use should be limited.
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 or onto the surface above the on-site system. These drains should be directed to another part of the lot away from the treatment and disposal field.

DESIGN SPECIFICATIONS (9.83 Acre Crescent-Windy Gap Road Tract)

MCHD File

Daily design flow:	480 gpd.
Septic tank size:	1500 gal. (2 compartments)
Pumping tank size:	1000 gal.
Effluent loading rate:	0.3 gpd/ft^2
Total length and diameter of supply pipe:	approx. 350 ft. 2" SCH 40 PVC)
Number and length of laterals:	4@ 100 ft. dosed by a pressure manifold (use 25% reduction trenches such as Infiltrator chambers)
Pressure Manifold:	use 4 taps at 1/2 in. SCH 80 PVC (flow is 5.5 gpm/tap at 2 ft. head pressure)
Flow rate through the system:	22 gpm
Elevation head:	*Approx. 35'
Pressure head:	2.0'
Friction head:	5.4'
20% contingency	8.5'
Total head:	51'
Pump requirements:	22 gpm at 51' of head; use Goulds WE 07H pump or equivalent with compatible electrical
Dosing volume:	240 gal. – 2 doses/day at design flow
Depth of water pumped per dose:	calculated to specific tank by measure or dealer engineering specifications (1 cubic ft. of water equals 7.48 gal.)
Pump run per dose:	approx. 11 min
Check valve:	Yes
Siphon break hole:	No

*must be verified by installer before installing pump

List of Attachments

1. Site Plan
2. Survey Map
3. Septic tank and Pump tank detail
4. Leaching chamber, 25% reduction trench detail
5. Pressure Manifold detail
6. Pump curve
7. Infiltrator Manufacturer Information

TAX NO.
100 - 391 - 5

C6

C8

C7

C8

N31°24'
243.9

N06°19'00"W
100.00'

N18°10'00"E
213.31'

S85°08'56"E
281.64'

5 REBAR(F)

#4 REB(F)
(TYP. FOR LOT)

L163

L164

L165

L166

L167

L168

L55

L50

L45

L40

C48

C47

S82°

130'

82

83

81

ANGLE

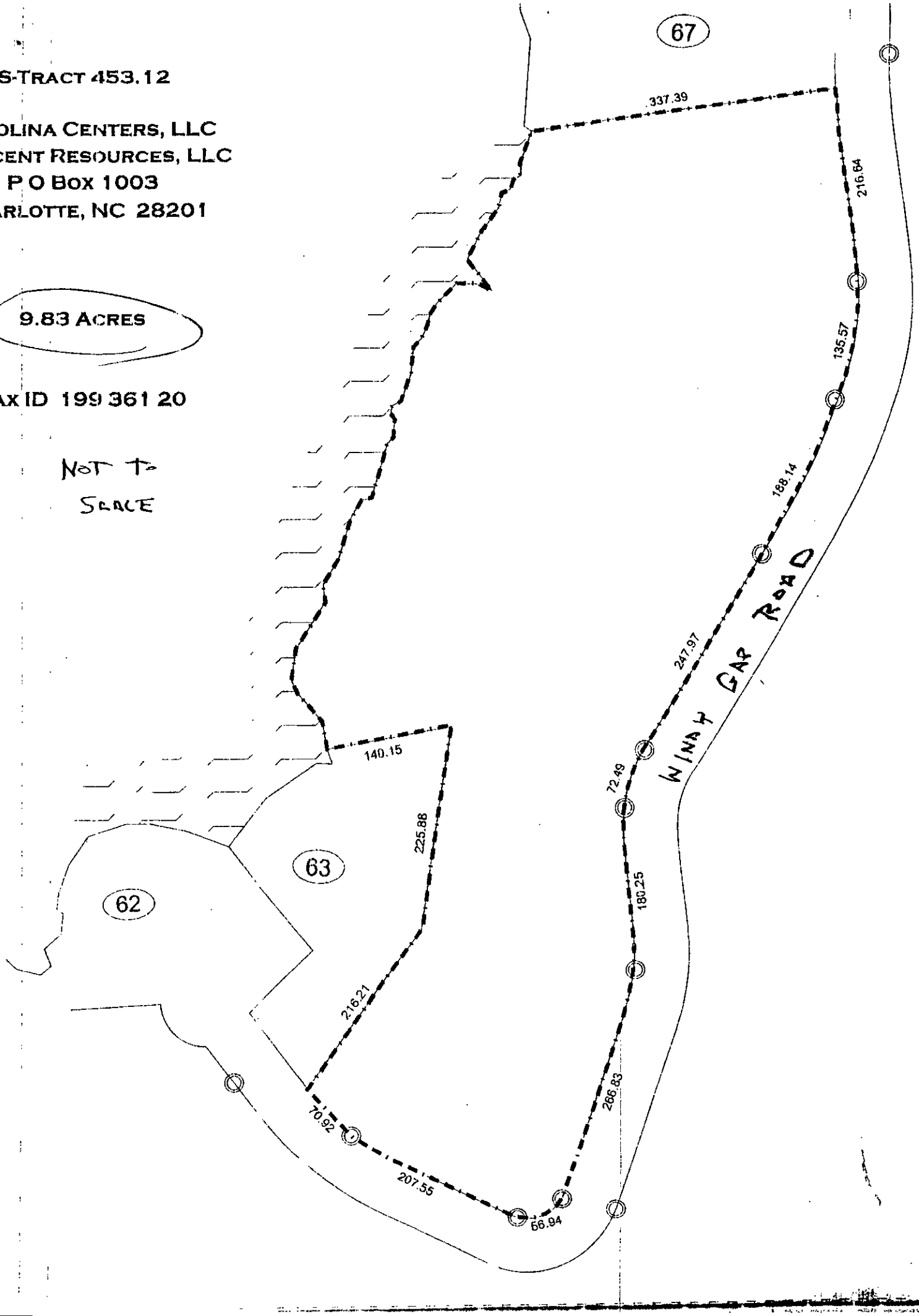
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CAROLINA CENTERS, LLC
CRESCENT RESOURCES, LLC
P O BOX 1003
CHARLOTTE, NC 28201

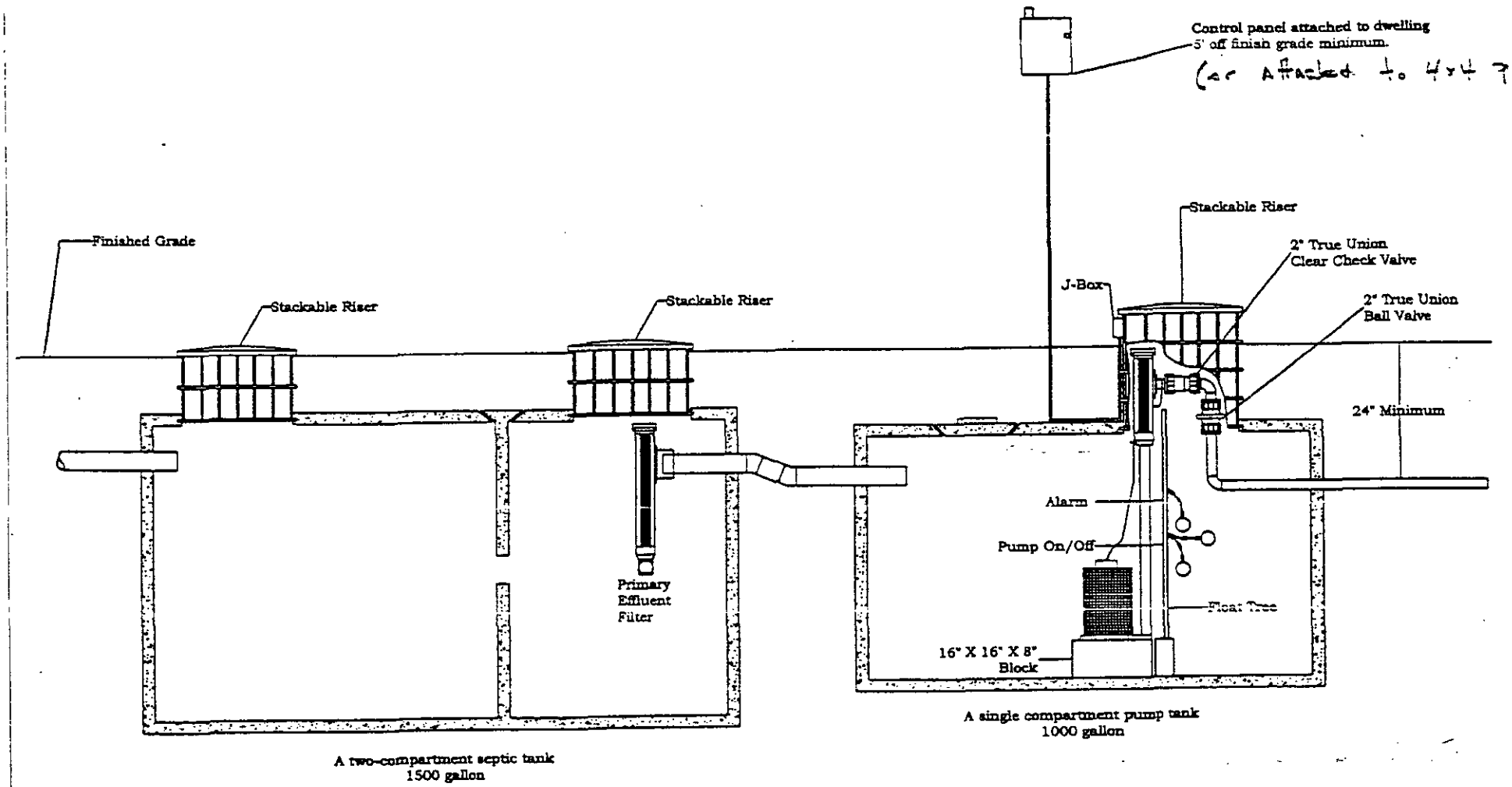
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TAX ID 199 361 20

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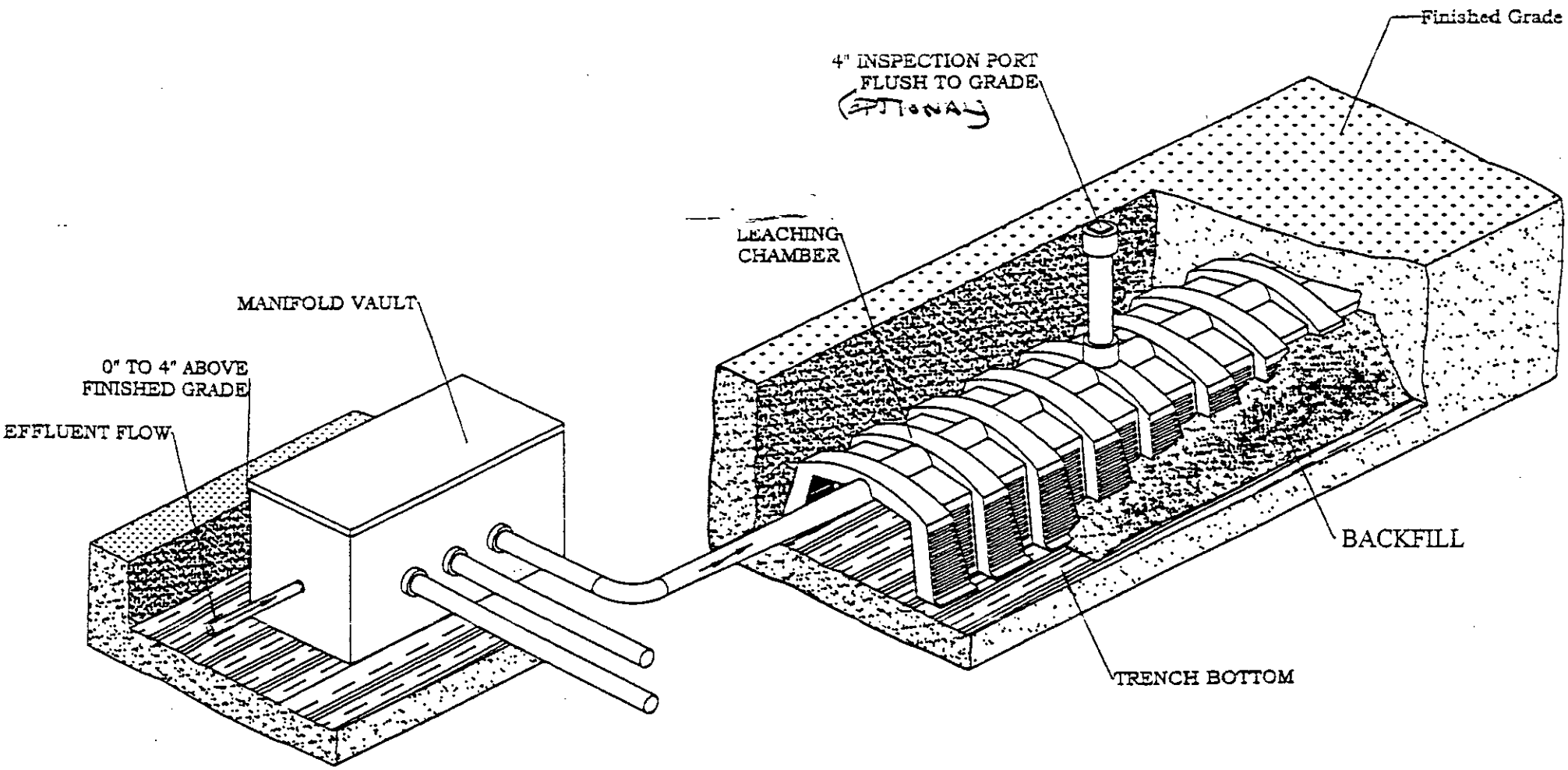


SEPTIC TANK AND PUMP TANK

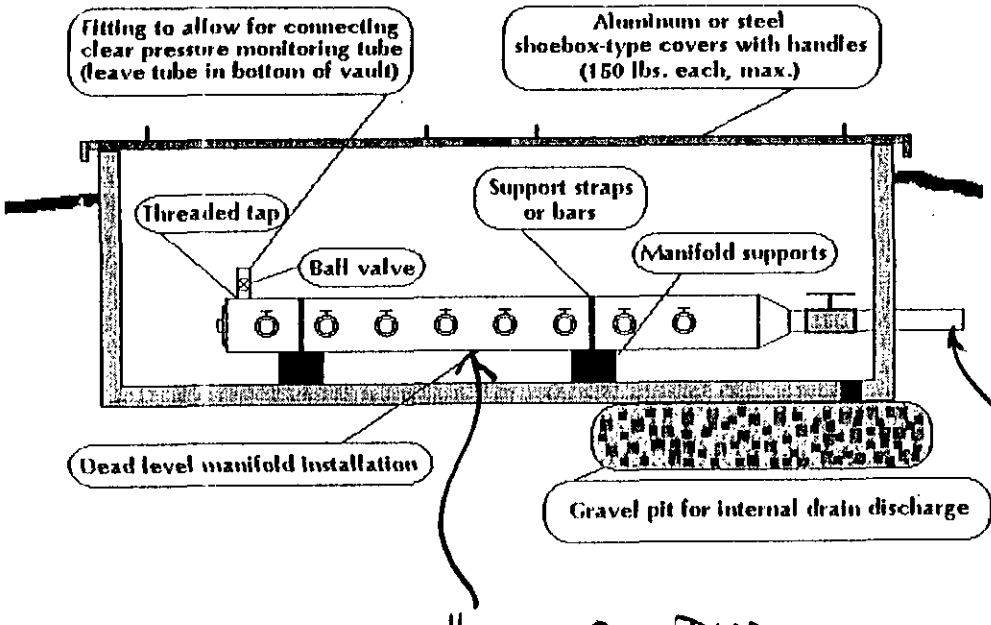


Modified from TCWWM Northview Harbour Septic System and Landscaping/ Drainage Specifications (July 2000)

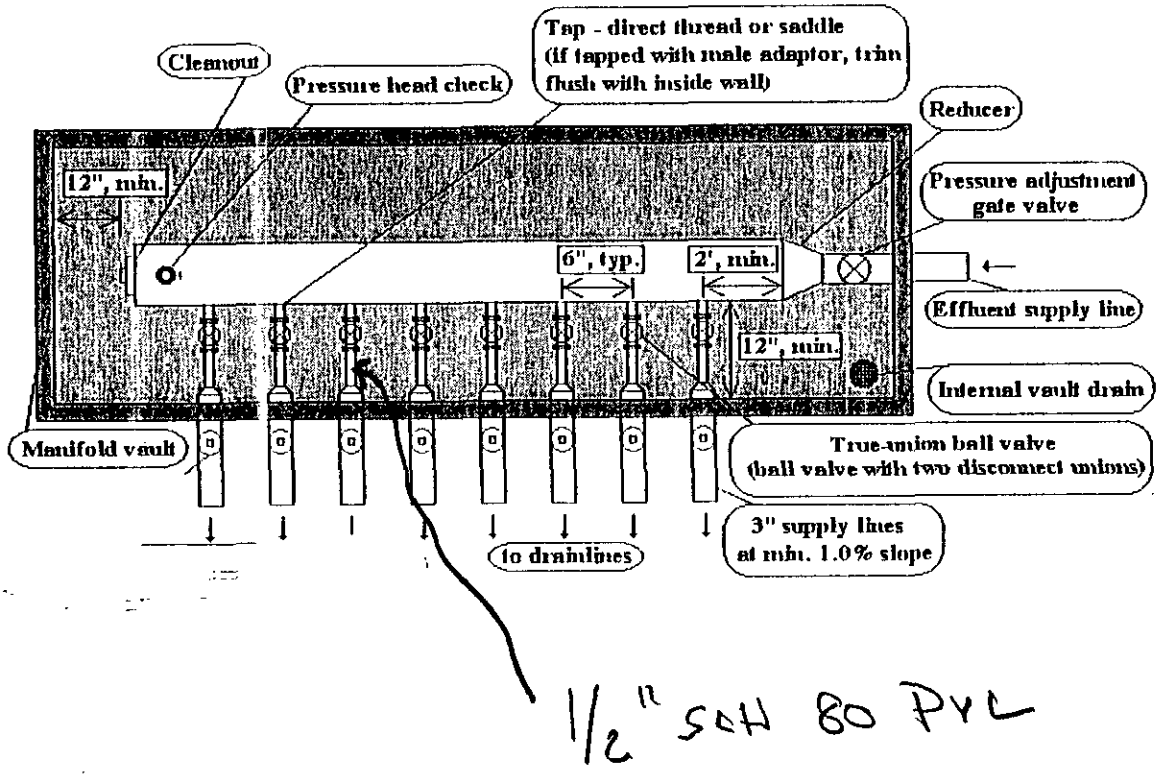
GRAVITY FED LEACHING CHAMBER
FED BY PRESSURE MANIFOLD



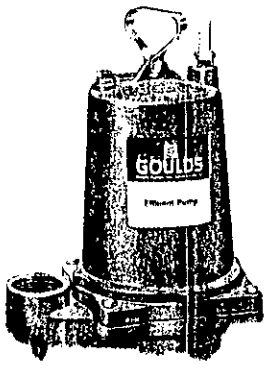
Modified from TCWWM Northview Harbour Septic System and Landscaping/ Drainage Specifications (July 2000)



Profile View of Pressure Manifold for Sloping Site Installation (not to scale)



GOULDS PUMPS



Submersible Effluent Pump

MODEL

3885

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Farms
- Trailer courts
- Motels
- Schools
- Hospitals
- Industry
- Effluent systems

SPECIFICATIONS

Pump

- Solids handling capabilities: ¾" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104°F (40°C) continuous 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

FEATURES

■ **Impeller:** Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

■ **Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge.

■ **Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE** sealing faces. Stainless steel metal parts, BUNA-N elastomers.

■ **Shaft:** Corrosion-resistant, stainless steel. Threaded design. Locknut on three phase models to guard against component damage on accidental reverse rotation.

■ **Fasteners:** 300 series stainless steel.

■ Capable of running dry without damage to components.

■ Designed for continuous operation when fully submerged.

MOTORS

■ Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.

■ **Class B insulation.**

Single phase:

- Built-in overload with automatic reset.
- All single phase models feature capacitor start motors for maximum starting torque.
- ⅓ and ½ HP – 16/3 SJTOW with 115 V or 230 V three prong plug.
- ¾-2 HP – 14/3 STOW with bare leads.

Three phase:

- Overload protection must be provided in starter unit.
- ½-2 HP – 14/4 STOW with bare leads.

■ **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage.

■ **Bearings:** Upper and lower heavy duty ball bearing construction.

■ **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.

■ **O-ring:** Assures positive sealing against contaminants and oil leakage.

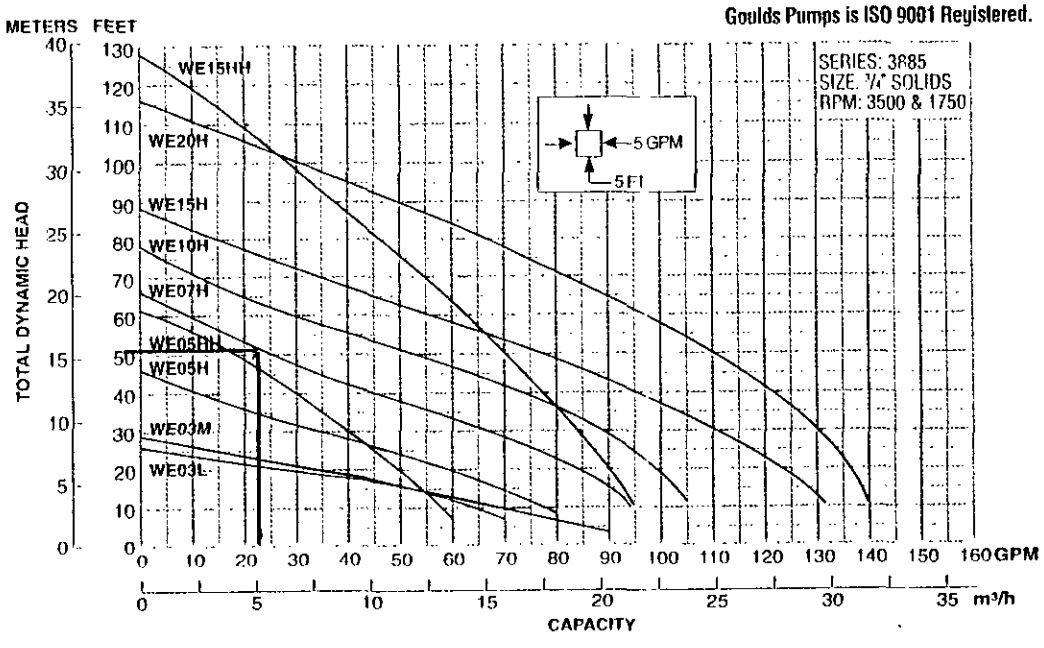
■ Consult factory for information on CSA listed models.

AGENCY LISTINGS

Canadian Standards Association File #LR38549

Underwriters Laboratories File #83318

Goulds Pumps is ISO 9001 Registered.



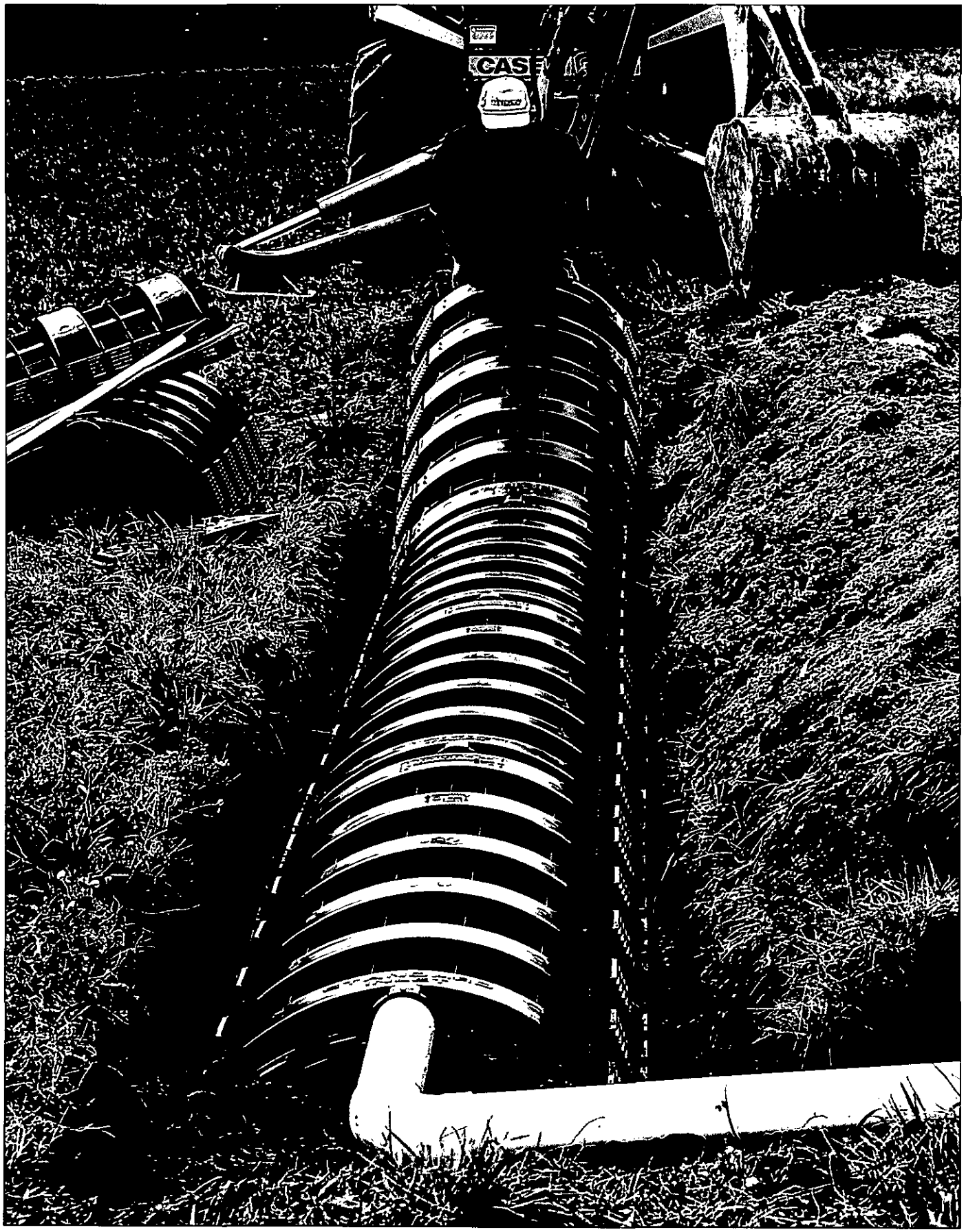
Goulds Pumps

ITT Industries

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Effective January, 1999
B3885

The Infiltrator® Chamber System for Septic Leachfields.

INFILTRATOR® SYSTEMS INC

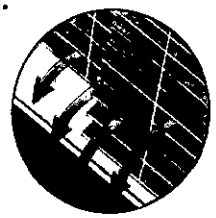


Original Standard and High Capacity Infiltrator chambers provide up to twice the infiltrative capacity of stone and pipe systems.

The Infiltrator Chamber System is a direct replacement for old-fashioned stone and pipe leachfields installed in 3-foot wide trenches. Infiltrator chambers sit directly on the trench bottom. The patented interlocks add strength and latch the chambers together quickly, end to end, so installation takes less than half the time of a labor-intensive stone and pipe job. It's that simple.

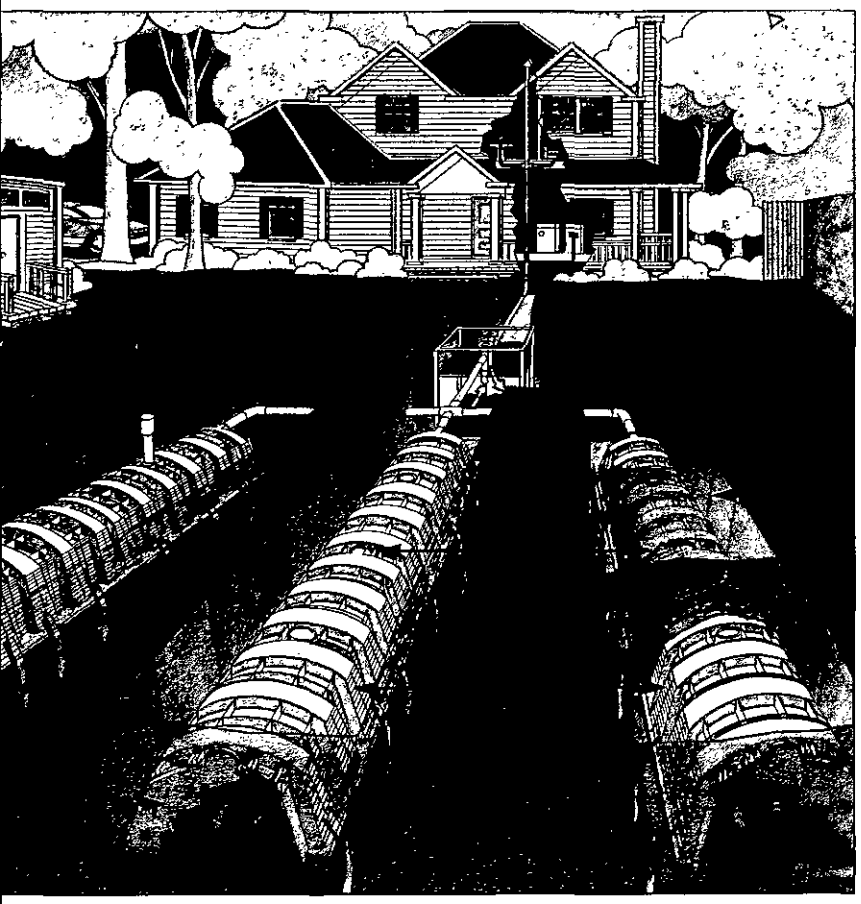
Infiltrator chambers may be used for any application that is suitable for stone and pipe. However, by offering greater infiltrative capacity per linear foot, chamber systems can require as little as half the space as conventional systems.*

Patented MicroLeaching™ sidewall.
The Infiltrator chamber has an engineered, louvered sidewall that allows effluent to pass laterally into the soil. The angled louvers prevent backfill intrusion into the chamber while 1/4" slots allow lateral leaching.



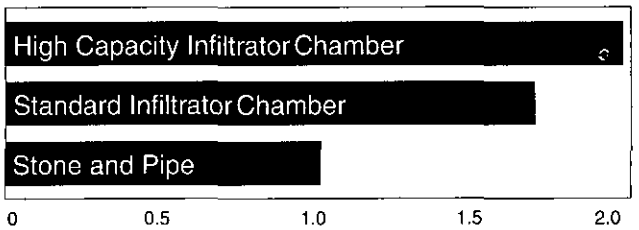
MicroLeaching sidewall

* Subject to state and local regulations.



Open chamber bottom boosts infiltration.
The chamber bottom is completely open, promoting effluent infiltration into the soil with 100% efficiency. The open-bottom area, in combination with the MicroLeaching sidewall, provides maximum infiltrative capacity for long-term, trouble-free service.

LTAR (Long-Term Acceptance Rate).



This graph demonstrates the dramatic efficiency improvement in LTAR of Infiltrator chambers over stone and pipe trenches. The LTAR is a measure of the long-term ability of the system to pass effluent into the soil. For example, the High Capacity Infiltrator chamber infiltrates up to twice the effluent of a same-size stone and pipe trench. This efficiency is recognized by many state and local jurisdictions, who in turn may allow up to 50% shorter trenches.

Polyolefin construction.
Infiltrator chambers are molded of PolyTuff™, a proprietary blend of polyolefin plastic that includes recycled resins and is formulated for optimum strength and chemical resistance. It's impervious to wastewater constituents and is stabilized to resist ultraviolet rays. Infiltrator chambers are manufactured using an exclusive patented process to assure consistent high quality. These combined factors make Infiltrator chambers the toughest, most reliable chambers in the industry.

AASHTO H-10 and H-20 load ratings.
Infiltrator chambers have been structurally tested by a registered professional engineer. Both Standard and High Capacity chambers are available with AASHTO ratings of H-10 (16,000 lb/axle with 12" of compacted cover) or H-20 (32,000 lb/axle with 18" of compacted cover).

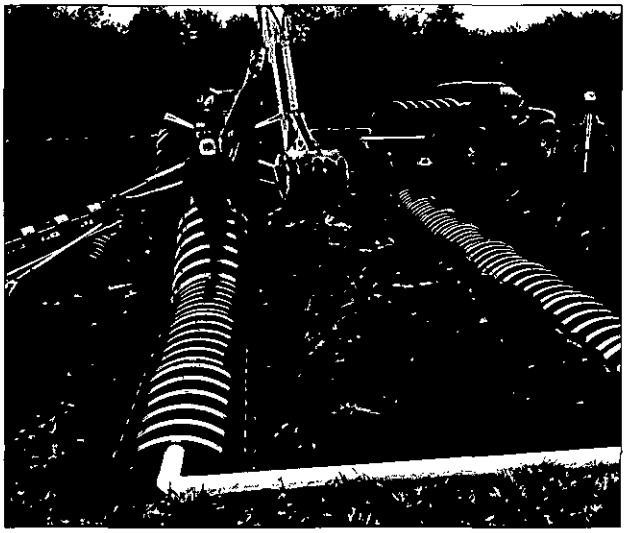
Nominal chamber specifications.

	Standard	High Capacity
Size (W x L x H)	34" x 75" x 12"	34" x 75" x 16"
Weight	25 lb	31 lb
Capacity	77 gal (10.3 ft³)	122 gal (16.3 ft³)

Compare the installation and operating advantages.

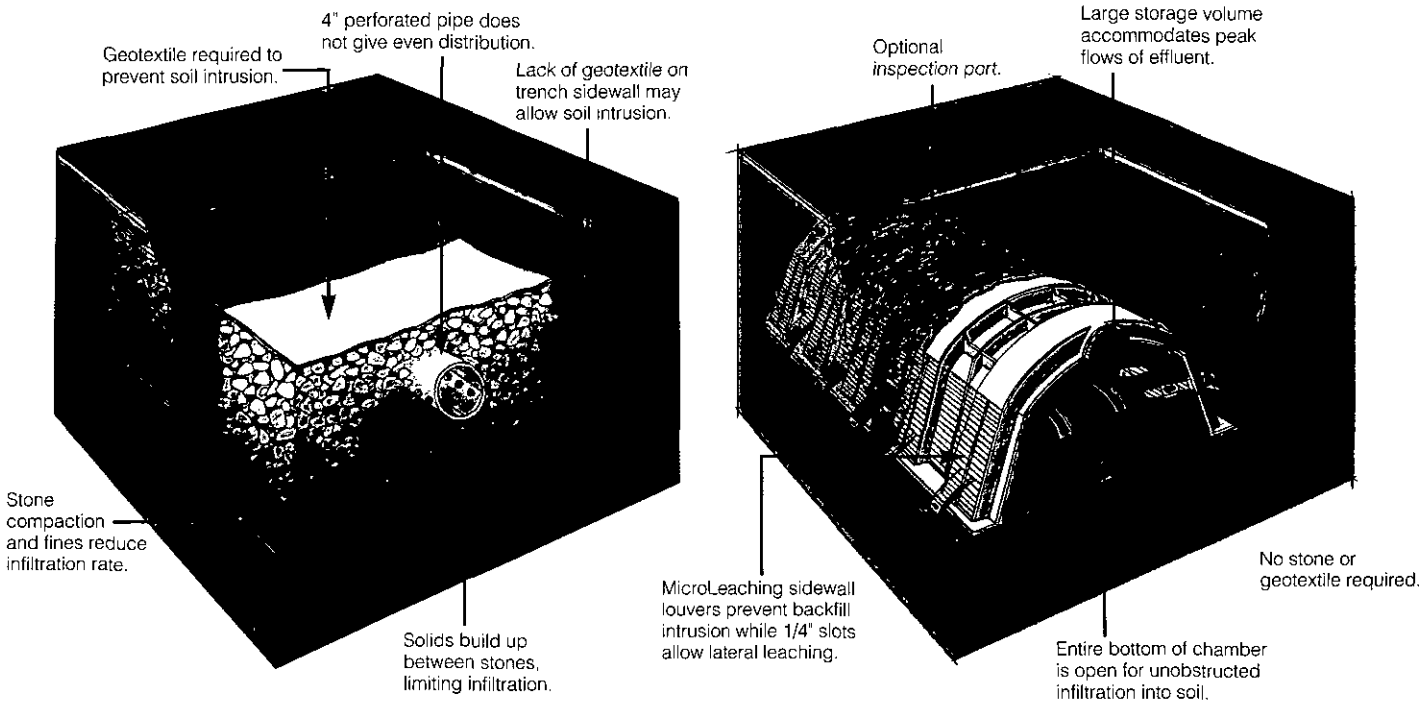


Conventional stone and pipe system.



Infiltrator Chamber System.

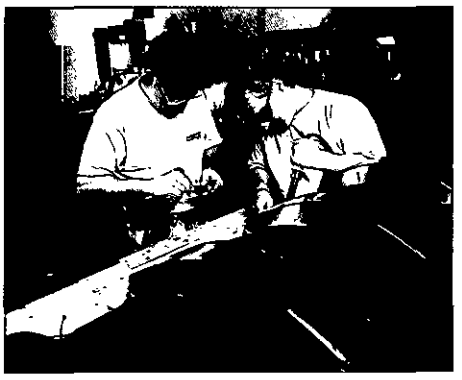
• Labor-intensive, lengthy installation.	• Easy assembly and installation by two people.
• Dump truck needed for stone delivery.	• Only a backhoe and pickup truck are required.
• Stone hauling adds expense and time, increases soil compaction.	• Lightweight chambers can be delivered in one pickup truck load and hand-carried into position.
• Stone in trench reduces Long-Term Acceptance Rate by more than 50%.	• Entire trench bottom is open for effluent infiltration with 100% efficiency.
• Heavy traffic across yard and spilled stone mean there is more site repair needed after installation.	• There is less regrading, tree damage, and landscape repair involved, and no stone cleanup.
• System lacks easy inspection and monitoring of leachfield without digging up the yard.	• Inspection port is available for easy access to leachfield with no site disruption.
• Geotextile required on top of stone.	• Solid-topped chambers need no geotextile.
• Overall increased cost.	• Overall lower cost.



Infiltrator Systems Inc., the world leader in septic and stormwater chamber system technology.

Over 9 million chambers already in service.
In just ten years, the innovative leaching chambers of Infiltrator Systems have drastically changed the technology of on-site septic and stormwater disposal. Already, 9 million chambers have been installed in 49 states, Canada, and throughout the world, forming over 165 million square feet of chamber systems with a success rate of 99.5%. And, we're expanding at the rate of 10,000 new systems a month.





Environmentally concerned company.
Infiltrator Systems devotes over $500,000 a year to research and development, creating new products that operate more and more efficiently and conserve natural resources. Besides using recycled resins, Infiltrator Systems' products take better care of the environment by avoiding the mining, crushing, grading, washing, and hauling of stone, as well as the environmental impact and site disruption that stone causes. That's one of our "greener" ideas for septic and stormwater disposal that just makes sense.

Infiltrator stormwater management.
Besides our septic chambers, Infiltrator Systems' High Capacity H-20 unit is designed to effectively handle stormwater runoff from large paved or roofed areas. This subsurface chamber replaces retention ponds, large diameter pipe and stone, concrete vaults, and other conventional methods, so valuable above-ground land can be used for additional parking, further development, or green space. The High Capacity H-20 chamber stores up to 122 gallons of runoff, can withstand loads of 32,000 lb/axle, and is available in CT, DE, FL, ID, IL, MA, MD, ME, NH, NJ, NY, OR, PA, RI, VT, WA, and British Columbia.

Call 1-800-221-4436 for a free copy of the septic installation instructions and video.

Distributed By:

INFILTRATOR® SYSTEMS INC

The world leader in chamber technology℠

4 Business Park Road, P.O. Box 768 Old Saybrook, CT 06475
800-221-4436 860-388-6639 FAX 860-388-6810
www.infiltratorsystems.com

800-221-4436

U.S. Patents. 4,759,661; 5,017,041; 5,156,488, 5,336,017; 5,401,116, 5,401,459; 5,511,903; 5,588,778; 5,716,163; 1,815,925; 1,974,938; 1,729,383; 448,338
Canadian Patents: 1,329,959; 2,004,564 Other U S , Canadian, and foreign patents pending.

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

Sheet: 1
Property ID: 199-391-20
Lot #: .
File #: 5372B
Code: 1

ACS

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: Crescent Resources, Inc.
Applicant: Toney Jacobs
Address: Po Box 1003, charlotte, N. C. 28202-1003
Date Evaluated: 09/19/2003
Proposed Facility: Residence Design Flow (480gpd
Property Size: .5a inv.
Location of Site: Windygap Road
Property Recorded:
Water Supply: [ ] Public [x] Individual [x] Well [ ] Spring [ ] Other
Evaluation Method: [x] Auger Boring [ ] Pit [ ] Cut
Type of Wastewater: [x] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	OTHER PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
1	LS, 10	0-12	GR/CL	FR/SEXP/SS/SP	>48" TO SOIL WETNESS	48	N/A	NONE	PS, IV .3GPD/FT^2
		12-48	SBK/C	FI/SEXP/S/P					
2	"	0-3	GR/CL	FR/SEXP/SS/SP	"	"	"	"	"
		3-30	SBK/C	FI/SEXP/S/P					
		30-48	SBK/CL	FR/SEXP/SS/SP					
3	"	0-8	GR/CL	"	>49" TO SOIL WETNESS	49	"	"	"
		8-38	SBK/C	FI/SEXP/S/P					
		38-49	SBK/CL	FR/SEXP/SS/SP					

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

Other Factors (.1946): _____
Site Classification (.1948): PROVISIONALLY SUITABLE
Evaluated By: W. R. Marlin, LSS, 9/22/2003. W. R. Marlin
Others Present: P. Penninger

FILE # 5372B

COMMENTS: Not sure if 100% repair is required

LANDSCAPE POSITIONS	GROUP	TEXTURES	.1955 LTAR	CONSISTENCE MOIST	WET
R-RIDGE	I	S-SAND	1.2 - 0.8		
S-SHOULDER SLOPE		LS-LOAMY SAND		VFR-VERY FRIABLE	NS-NON-STICKY
L-LINEAR SLOPE				FR-FRIABLE	SS-SLIGHTLY STICKY
FS-FOOT SLOPE	II	SL-SANDY LOAM	0.8 – 0.6	FI-FIRM	S-STICKY
N-NOSE SLOPE		L-LOAM		VFI-VERY FIRM	VS-VERY STICKY
H-HEAD SLOPE				EFI-EXTREMELY FIRM	NP-NON-PLASTIC
CC-CONCLAVE SLOPE	III	SI-SILT-	0.6 – 0.3		SP-SLIGHTLY STICKY
CV-CONVEX SLOPE		SIL-SILT LOAM			P-PLASTIC
T-TERRACE		CL-CLAY LOAM			VP-VERY PLASTIC
FP-FLOOD PLAN		SCL-SANDY CLAY LOAM			
		SICL-SILTY CLAY LOAM			
	IV	SIC-SILTY CLAY	0.4 – 0.1		
		C-CLAY			
		SC-SANDY CLAY			

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

