



## Hays County Environmental Health

1251 Civic Center Loop  
San Marcos TX 78666-  
(512) 393-2150

### AUTHORIZATION TO CONSTRUCT

**\*\* VALID FOR ONE YEAR FROM DATE OF PURCHASE \*\***

Date: 3/12/04

Permit #: 2003 - 2698

Date purchased: 11/3/03

Expiration date: 11/3/04

Owner's Name: SNOW, MIKE

8222 OZARK DR, SAN MARCOS TX 78666

SUMMER MOUNTAIN RANCH

Block:

Lot: 31

AUTHORIZATION IS HEREBY GIVEN TO CONSTRUCT AN ON-SITE SEWAGE FACILITY ON THE ABOVE DESCRIBED PROPERTY WITH THE FOLLOWING SPECIFICATIONS:

Tank Capacity: gallons

Pump tank reserve capacity: 360 gallons

Design Flow: 300 gpd

Drainfield: Aerobic Surface Irrig.

Drainfield / Sprayfield Size: 5655 sq. ft.

#### ALTERNATIVE SYSTEM REQUIREMENTS:

Designed By: CONNER, JIM

Refer to the designer's plans for system specifications.

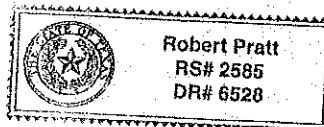
Plan Date: 1/11/04

Date of Revision:

Contact Health Department and designer for required inspections.

**A maintenance contract is required!**

NOTE The on-site sewage facility construction must meet all TNRCC Regulations and this County's Rules for On-Site Sewage Facilities. If unforeseen and/or adverse conditions are encountered (including, but not limited to excessive rock, seepage, or high water table) stop construction and contact the Licensing Authority. A revised construction permit may be issued.



  
Signed

3-12-04  
Date

**\* THIS PERMIT IS NON-TRANSFERABLE.**

3/12/04 02:03 PM R-69



## Hays County Environmental Health

1251 Civic Center Loop  
San Marcos TX 78666-  
(512) 393-2150

### CLASS "A" BUILDING / DEVELOPMENT PERMIT

**\*\* VALID FOR ONE YEAR FROM DATE OF PURCHASE \*\***

Permit #: **2003 - 2698**

Date purchased: **11/3/03**

Owner's Name: **SNOW, MIKE**

**8222 OZARK DR, SAN MARCOS TX 78666**

**SUMMER MOUNTAIN RANCH**

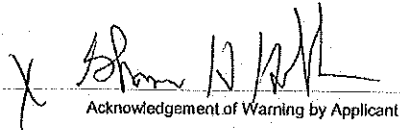
Block:

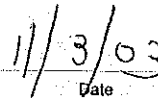
Lot: **31**

The Developmental Application has been reviewed and it has been determined that the development **WILL NOT** be in the 100 year Floodplain.

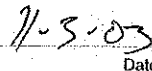
#### Warning:

The flood hazard boundary maps and other flood data used by the County in evaluating flood hazards to proposed developments are considered reasonable and accurate for regulatory purposes. Flood Plain determinations are based solely on the property owner's indication of the proposed home-site. On occasion greater floods can and will occur and flood heights may be increased by man-made and natural causes. The County cannot guarantee the property will not flood. Exempting the property owner from the Flood Plain management Regulations does not create any liability on the part of the county or any officer or employee of the County in the event that flooding and/or flood damage does occur. Ultimate responsibility of locating the home/structure outside of the flood plain rests with the property owner. The County recommends the property owner contact a surveyor prior to construction for precise determination.

  
Acknowledgement of Warning by Applicant

  
Date

  
Environmental Services Official

  
Date

Comments:



4/14/04 02:53 PM

## Hays County Environmental Health NOTICE OF APPROVAL FOR ON-SITE SEWAGE FACILITY

THIS IS TO CERTIFY that the on site sewage facility located at:

OSSF #: **2003 - 2698**

**8222 OZARK DR, SAN MARCOS TX 78666**

Grid:

**SUMMER MOUNTAIN RANCH**

Block: Lot: **31** ☒ Routine Maintenance

meets or exceeds the basic requirements established by the County.

LICENSE TO OPERATE this facility is hereby granted to the owner. This license simply grants permission to operate this facility; it does not guarantee its successful operation. Routine maintenance and proper functioning are the sole responsibility of the owner.

KEEP THIS LICENSE with important papers. You may need it when selling your house or if a malfunction occurs.

Tank Type: Concrete Box

Valve: Sample

Max Flow: 300 gallons/day

Tank Size: gallons

Drainfield Size: 5655 sq. ft.

Installed By: TNT

Engineered By: CONNER, JIM

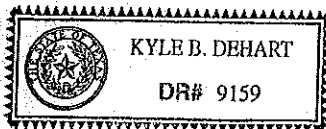
The above referenced private sewage facility has been inspected by the Hays County Health Department for compliance with the Rules of Hays County and, based on information provided in the application, has been found to comply with the requirements of those Rules.

NOTE: This certification does not extend to the materials, workmanship or fabrication of the private sewage facility so as to express or imply to the owner or installer of the facility any warranty by or rights against Hays County or any of its agencies, as to the quality or durability of the facility nor compliance with the owner's individual specifications and requirements, but solely relates to the facility meeting the requirements of Hays County in effect as of this date.

NOTE: This approval simply grants permission to operate this facility; it does not guarantee its successful operation. Routine maintenance and proper functioning are the sole responsibility of the owner.

NOTE: This approval remains in effect until such time as there is evidence that this facility is not operating properly and may constitute a threat to the health of the people of Hays County.

The specified backfill should not be altered or covered in any way except for sodded grass or grass seeded cover to promote evaporation. All plumbing in the house should be kept in good repair to minimize flooding of the drainfield.



Date of Final Inspection: 4/14/04

Issued this date:

*KB Dehart*

Sanitarian

*Allen D. Watson*

Director, Environmental Health

R-10

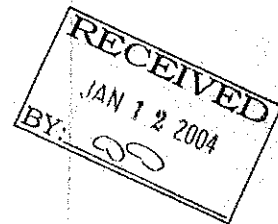
**ON-SITE  
SEWAGE FACILITY  
APPLICATION AND DESIGN**

**Prepared for:**

Mr. Mike H. Snow  
8222 Ozark Drive  
San Marcos, Texas 78666  
Summer Mountain Ranch S. D. - Lot #31 - Sec. 1 - 5.01 Acres

**Prepared by:**

Clifford J. Conner  
**Conner Wastewater Design, Inc.**  
769 Boggy Creek Road  
Lockhart, Texas 78644  
(512) 376-2933

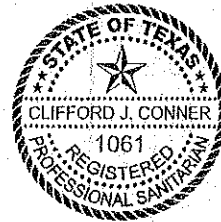


**Date:**

January 11, 2004

*Clifford J. Conner*  
Clifford J. Conner  
Registered Professional Sanitarian

Reg #1061  
OS7431



**CWAD**  
Corner Wastewater Design, Inc.  
Registered Sanitarian #1061  
Site Evaluator #OS7431  
769 Boggy Creek Road  
Lockhart, Texas 78644  
(512) 376-2933

**DESIGN REPORT for  
On-Site Sewage Facility  
Aerobic Wastewater Treatment System  
Utilizing Surface Spray Application**

**Owner / Location:**

Mr. Mike H. Snow  
8222 Ozark Drive  
San Marcos, Texas 78666  
Summer Mountain Ranch S. D. - Lot #31 - Sec. I - 5.01 Acres

**Site Description & Evaluation:** The site is approximately 5.01 acres. A soil evaluation revealed Class IV. An aerobic treatment system utilizing surface irrigation is proposed. The surface irrigation area has a slope of < 1 %. No recharge features are located within 150 feet of the proposed system. There is not a public water well within 150 feet of the system. Water to the property is serviced by a Private water supply. Adequate area is available for a replacement disposal system.

**Wastewater Design Flow:** This system is for a 3 Bedroom Home (2900 sq. ft.) utilizing water saving devices. The projected wastewater flow will be 300 gpd as per Texas Commission on Environmental Quality (TCEQ) On-Site Sewage Facilities (Effective 6/13/01).

**Aerobic Treatment System Description:** The residence will utilize a Hoot Wastewater Systems, Inc. Model H-500 AT, CP or equivalent. The 920 gpd aerobic treatment tank will be preceded by a 400 gallon pretreatment/trash tank. Effluent from the aeration tank will flow through a stack-feed chlorinator to a 1010 gallon pump tank. The pump tank serves as a chlorine contact chamber and a storage tank prior to the treated/chlorinated effluent being discharged to sprinkler heads. The disposal area will consist of 2 - 30 ft. radius 360 deg. patterns. The system is considered a "package system" and will be installed according to manufacturer's instructions.

**Design Specifications & Application:**

**Living Area of Residence:** < 3500 square feet

**Number of Bedrooms:** 3

**Average Daily Flow (Q):** 300 gpd

**Application Rate (Ra):** .064 gal. / sq. ft. / day

**Minimum Application Area Required =  $Q/Ra = 300 / .064 = 4688$**  square feet

**Actual Application Area:** 5655 square feet

### Tank Capacities:

**Pretreatment/Trash Tank (Single Compartment):** 400 gallon

**Aeration Tank:** Hoot Wastewater Systems, Model H-500 AT, CP - 920 gallon

**Pump Tank:** 1010 gallon (Reserve capacity is 359.3 gallon)

**Reserve Capacity:** Combined capacity of the pretreatment and aeration tanks is 1320 gallons. A 1010 gallon single compartment pump tank allows for a one-day flow above the alarm-on level (19.42 gallons/inch with 52.0 inch Useable Depth yields 1010 gallons Useable Volume. Set pump tank so lid is below outlet of aerobic plant).

**Pump Off @** 15.0 in. above tank floor = 291.3 gallons

**Alarm On @** 33.5 in. above tank floor = 650.5 gallons

**Reserve Capacity** = ( 1010 - 650.5 ) = 359.3 gallons

### Pump & Sprinkler Head Requirement:

**Elevation Head** = 5.0 ft.

**Pressure Head** = 40.0 psi x 2.30 = 92.0 ft.

**Friction Head** = 110 ft. of 1 in. Sch. 40 = 110 ft. x 0.0235 = 2.58 ft.

**Total Head (TDH)** = 5.0 + 92.0 + 2.58 = 99.58 ft. TDH (Within Pump performance curve)

**Pump:** Blaster - 12EB0522 - 4" Submersible Pump

**Sprinkler Heads:** K-Rain® Mfg. Corp. Model K2+ Professional series with Low Angle (12 degrees) Nozzle #6, operating at 40.0 psi, 30 ft. radius, and 6.5 gpm flow per sprinkler.

### Chlorinator:

Chlorinator is capable of a 4-month supply under normal conditions.

Chlorine tablets to be used must be approved for use in wastewater treatment application.

**Dosing:** Disposal period for overnight disposal is between midnight and 5:00 A.M.

A Night Pumping system will be used. Upon initial start up of the system, the internal clock assumes daylight just occurred. The system starts the 20 hour clock till pump down. If night comes, and daylight then occurs before the 20 hours has passed, then the pump will automatically pump out at daybreak. Each time water touches the high probe, it will turn on the pump for four (4) minutes once it clears the high water probe. This cycle will repeat until 20 hours after sun up, when the system will pump out the entire pump tank. This is also the same scenario that will occur if there is a power failure during the day. If at any time more than 350 gallons of water enter the system between pump cycles, then the system will come on in a demand configuration mode. Thirty seconds prior to pumping, the system will turn on an audible alarm, two short beeps in a row. After 30 seconds, the alarm will silence and turn the pump on for a maximum of 8 minutes. If the level drops below the high probe, the pump will run an additional 4 minutes. Please note on the attached pages from the HOOT Aerobic Systems manual (pages 6 and 13-16) there is an alarm system that is both audible and visible for both aeration and water level problems. A Spin Filter with a 100 mesh filter will be installed.

Clifford J. Conner R. S. #1061  
Clifford J. Conner OS7431

**Installation Specifications:**

1. All construction methods and materials shall conform to the requirements set forth in the Texas Administrative Code, Chapter 285 - On-Site Sewage Facilities.
2. The installer must have at least an Installer I (Installer II after July 31, 1998) certification.
3. The installer shall be responsible for notifying both the designer and Hays County Environmental Health Department when work begins on the system. The installer shall be responsible for scheduling inspections. Inspections shall be scheduled in order that the designer and Hays County Environmental Health Department officials verify that the system is installed in accordance with the approved plans and specifications.

**Inspections:**

One inspection by the designer will be made after completion of installation and before backfilling operations commence. The installer is responsible for scheduling the inspection a minimum of 48 hours in advance. Other inspections should be scheduled as required by Hays County Environmental Health Department officials.

4. All drainage from structures shall be guttered away from all system components. All surface drainage shall be diverted to avoid the septic tanks and the disposal area. Storm water diversion berms shall be installed to direct all drainage away from system components.
5. The installer shall be responsible for maintaining minimum separations as required by Chapter 285.
6. The installer shall be responsible for contacting and notifying all utility providers of the plans to begin excavation on this property. Location of utilities, avoidance of utilities, and repair of damaged utilities shall be the responsibility of the installer.
7. The installer shall be responsible for protection of significant vegetation; however, the designer and installer shall not be responsible for loss of vegetation that results from installation of this system.
8. All tanks shall be set level on a minimum four (4) inch thick sand, sandy loam, clay loam, or pea gravel pad. All tanks shall be installed according to the manufacturer recommendations.
9. Prior to excavating for the tanks, the installer shall confirm the house sewer(s) outlet location and its elevation. The tanks shall be set low enough to maintain a fall of 1/8 inch per foot from house to tank.
10. PVC piping from house to tank must be Sch. 40 or SDR 26.
11. Sprinkler line shall be 1 inch Sch. 40 PVC a minimum depth of 6 inches below grade. Sleeve pipe with Sch. 40 PVC under all roads and driveways.
12. A sampling port and 100-mesh filter must be installed in pump tank at tank inspection port. The sampling port should not have a threaded spigot, and will serve as the treated effluent sampling port, and anti-siphoning device. A ball-valve will be installed to serve as discharge pressure adjustment.
13. In accordance with the TCEQ regulation adopted on June 13, 2002, all new distribution piping, fittings, valve box covers, and sprinkler tops shall be permanently colored purple (manufactured purple).
14. Outside the Pump Tank, all electrical wiring will be enclosed in conduit or weatherproof boxes.
15. The high-water alarm must be audio and visual.
16. Landscaping can utilize existing vegetation, or seed with a mix of winter rye and Bermuda grasses.
17. Any additions to the site, including sidewalks, driveways, patios, swimming pools or other impervious cover shall be constructed outside of the disposal area.
18. All exposed rock in the disposal area must be covered with 4 to 6 inches of soil in order to establish vegetation.
19. Surface application systems may apply treated and disinfected effluent upon areas with existing vegetation. If any ground within the proposed surface application area does not have vegetation, that bare area shall be seeded or covered with sod before system start-up. The vegetation shall be capable of growth, before system start-up.

### **Maintenance Requirements:**

Permit approval requires the applicant to furnish to the regulatory authority a valid maintenance contract with a certified maintenance company. The maintenance company will verify that the surface irrigation system is operating properly, and that they will provide on-going maintenance of the installation. The initial maintenance contract must be valid for a minimum of two years. A maintenance contract will authorize the maintenance company to maintain and repair the system as needed.

The owner shall continuously maintain a signed written contract with a valid maintenance company and shall submit a copy of the contract to the permitting authority at least 30 days prior to the date service will cease.

### **Affidavit:**

Prior to issuance of a permit, a certified copy of an affidavit, which has been duly recorded at the Hays county clerk's office and filed in reference to the real property deed on which the surface application system is to be installed, must be submitted. Such an affidavit shall state that the property shall not be transferred to a new owner without:

1. The new owner being advised that the property contains a surface application system for wastewater disposal;
2. The permit issued to the previous owner of the property being transferred to the new owner in accordance with §285.20(5) of the TCEQ OSSF Rules, i.e.; the permit will be issued in the name of the owner of the OSSF. Permits shall be transferred to the new owner automatically upon legal sale of the OSSF. The transfer of an OSSF permit under this section shall occur upon actual transfer of the property on which the OSSF is located unless the ownership of the OSSF had been severed from the property.
3. The new owner submitting a valid maintenance contract to the permitting authority.

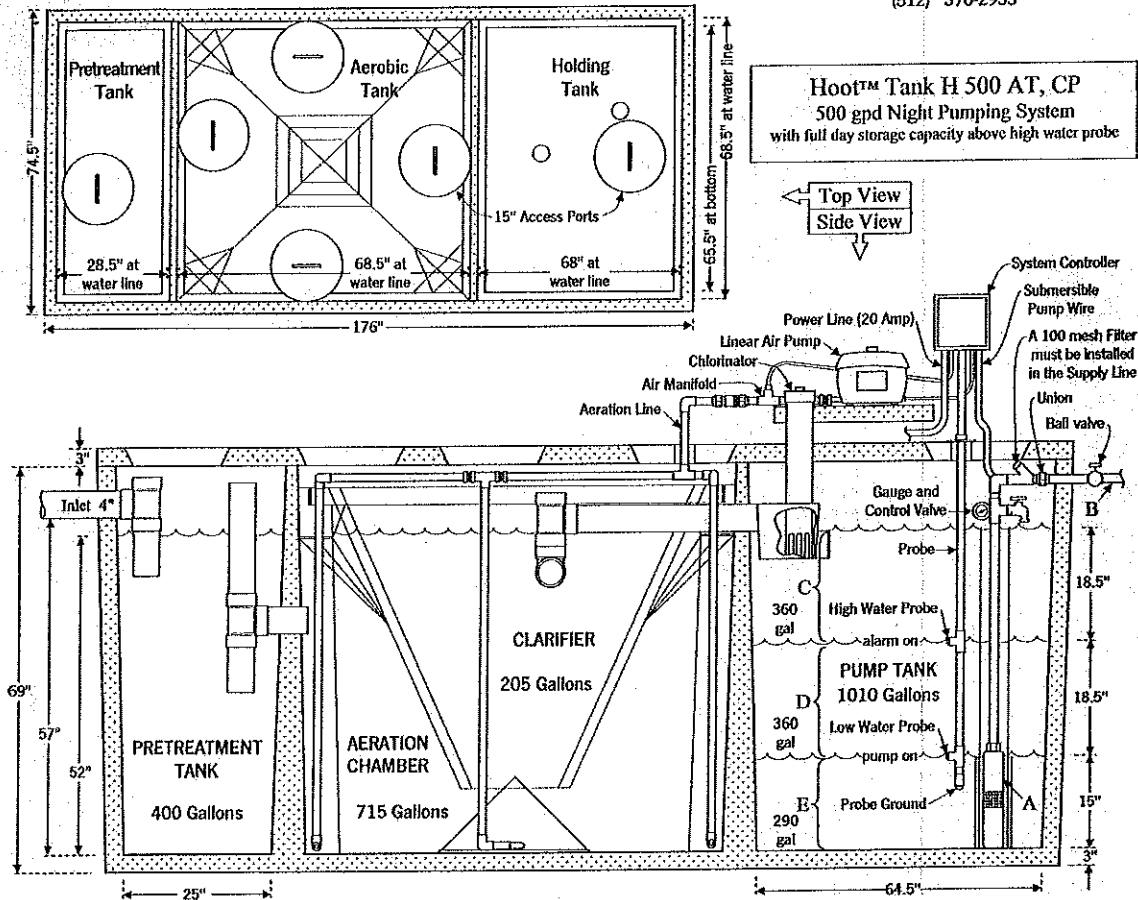
### **Maintenance and Management Practices:**

1. The owner shall perform all necessary maintenance to safeguard against running commodes, leaky faucets, etc., which may overload the disposal area.
2. The installer shall inform the owner of the proper operation and maintenance of the system.
3. Generally accepted water conservation practices should be used at all times.
4. Automatic sprinkler systems utilizing potable water shall not be installed over this system.
5. The owner shall be responsible for having the septic tank cleaned and pumped on a regular basis. It is recommended that this be accomplished every 3 years in order to prevent failure of disposal area.
6. It is recommended that garbage disposals and/or garbage grinders not be used in the facility serviced by this system.
7. Do not use the commode to dispose of cleaning tissues, cigarette butts, feminine hygiene products, or other trash.
8. Do not build driveways, storage buildings, or other structures over tank or disposal area.
9. Chemical additives or the so-called enzymes are not necessary for the operation of a septic tank. Some of these additives may even be harmful to the tank's operation.
10. Soaps, detergents, bleaches, drain cleaners, and other household cleaning materials will very seldom affect the operation of the system. However, moderation should be exercised in the use of such materials.
11. Owners shall not allow water softener and reverse osmosis back flush to enter into any portion of the OSSF.
12. The owner is responsible for keeping perennial grasses on the absorption area, so erosion of the soil will be kept to a minimum.
13. Unacceptable surface application areas. Land that is used for growing food, gardens, orchards, or crops that may be used for human consumption, as well as unseeded bare ground, shall not be used for surface application.



OWNER: Mr. Mike H. Snow  
 8222 Ozark Drive  
 San Marcos, Texas 78666  
 Summer Mountain Ranch S. D. - Lot #31 - Sec. I - 5.01 Acres

**CWAD**  
 Corner Water And Design, Inc.  
 Registered Sanitarian #1061  
 Site Evaluator #OS7431  
 769 Boggy Creek Road  
 Lockhart, Texas 78644  
 (512) 376-2933



NO SCALE

### LEGEND

- A - Submersible Pump -  $\frac{1}{2}$  hp.
- B - Supply Line (to Sprinkler Heads) - PVC - Sch. 40 - 1 in.
- C - Reserve Capacity = 360 gals.

- ♦ Pump on/off at 15 in. above tank floor
- ♦ Alarm on at 33.5 in. above tank floor = 650 gals.
- ♦ Reserve capacity = 360 gallons after alarm level is reached.
- ♦ Pressure adjust valve and pressure gauge may be installed in their own valve box.

*Clifford J. Conner*

R. S. #1061  
 OS7431

**Conner Wastewater Design, Inc.**  
 Registered Sanitarian #1061  
 Site Evaluator #OS7431  
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**OWNER:** Mr. Mike H. Snow  
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 Summer Mountain Ranch S. D. - Lot #31 - Sec. I - 5.01 Acres

**Hoot™ Aerobic Surface Spray OSSF**

SCALE: 1 inch = 50 feet

**LEGEND**

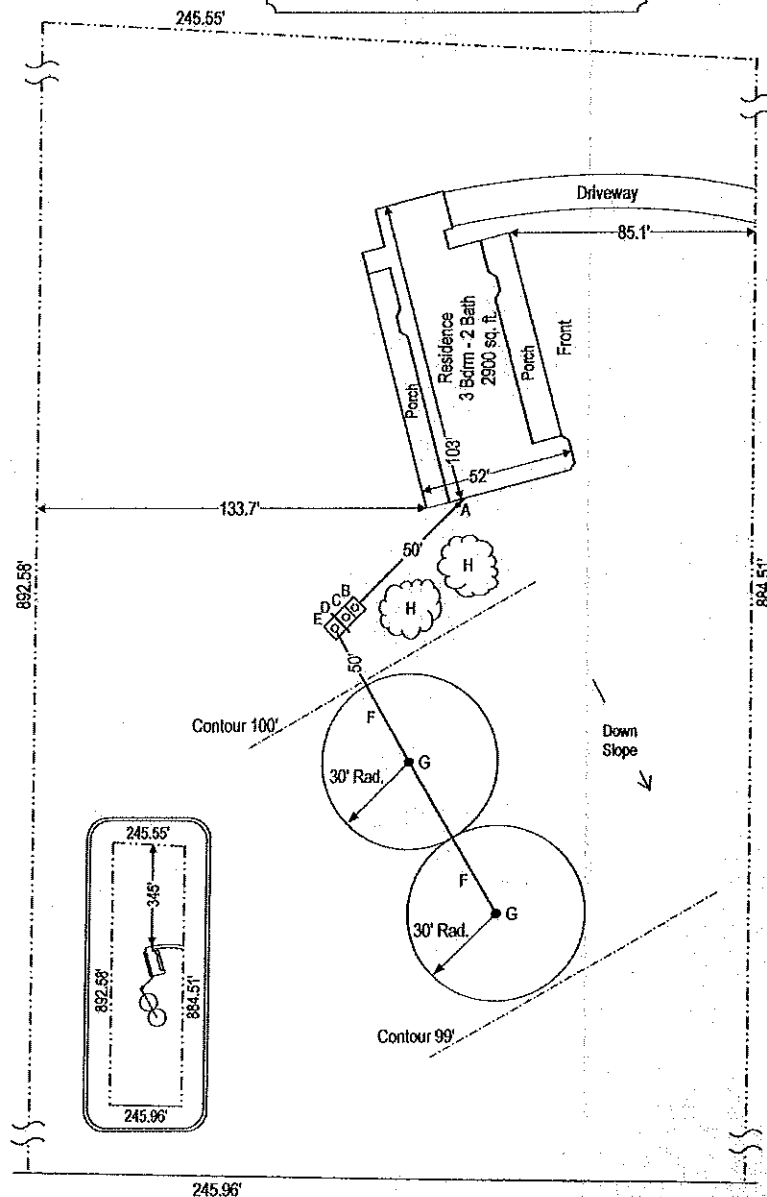
- A - Two-way Cleanout @ Hoot™
- B - Trash Tank
- C - Aerobic Tank
- D - Tablet Chlorinator
- E - Pump Tank
- F - Supply Line
- G - Sprinkler Heads
- H - Oak Trees

- { Well must be at least 100 ft. from sprinkler pattern. }
- { Well is located on Lot #30. See attached Plot. }
- { Slope is less than 1%. }
- { Chlorinator is capable of a 4-month supply under normal conditions. }
- { Installer must comply with all clearance requirements. }



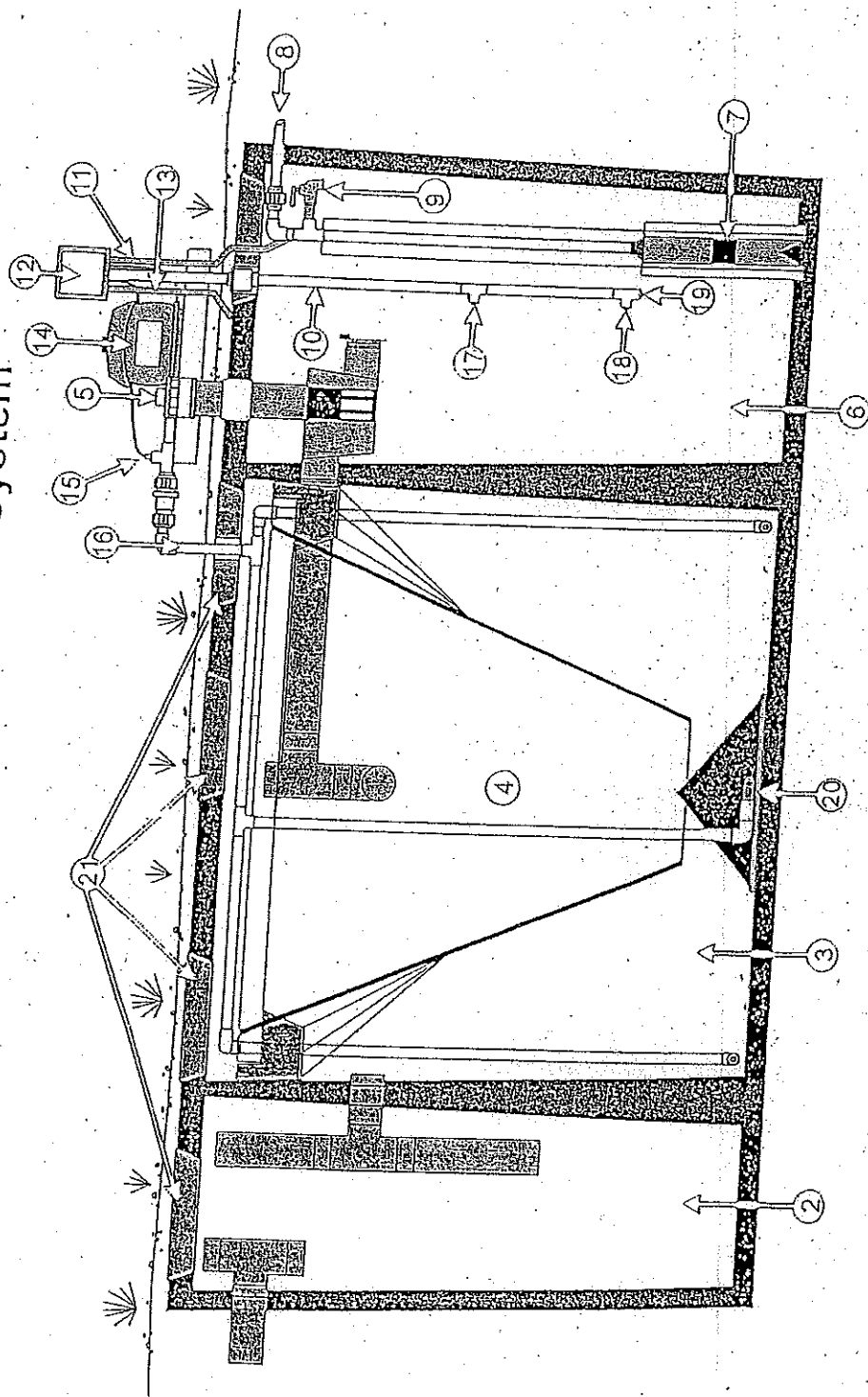
*Clifford J. Conner*

R. S. #1061  
 OS7431



**Ozark Drive**

# HOOT Aerobic Treatment System



## The HOOT Aerobic Treatment System Diagram

- |                      |                         |                      |
|----------------------|-------------------------|----------------------|
| 1. Inlet             | 8. Pump line out        | 15. Air Manifold     |
| 2. Pretreatment Tank | 9. Control valve        | 16. Aeration line    |
| 3. Aeration Chamber  | 10. Probe               | 17. High Water Probe |
| 4. Clarifier         | 11. Pump wire           | 18. Low Water Probe  |
| 5. Chlorinator       | 12. System Controller   | 19. Probe Ground     |
| 6. Pump Tank         | 13. Power Line (20 amp) | 20. Aeration Stone   |
| 7. Hoot Blaster Pump | 14. Linear Air Pump     | 21. 15" Covers       |

## Tank Installation Instructions

1. See Tank dimensions section and dig hole approximately one foot larger than the tank all the way around - proper grade with smooth and level bottom.
2. Fill out Installation and Delivery Tracking Form. Driver will not leave tank at jobsite until this filled out.
3. Delivery driver will place tank in hole - and confirm it is level within 1 inch from center of tank to any corner.
4. Connect Schedule 40 inlet and Tee into one or more openings to the Pre-Treatment Tank, and Schedule 40 1" line out to sprinklers - back-fill with dirt and fill tank with water.
5. Bring required access ports to grade.
6. Follow the instructions for the System Controller Installation.
7. Hook up blower plumbing - including sensor line to the Aeration Tee.
8. Hook up water pump to sprinkler system. Make sure you have a minimum of 3 spray heads and that the orifices add up to a total of 12 Gallons Per Minute. If your plans call for only two heads, then place 2 back to back, with 180° radii to achieve a 360° with two spray heads, for a total of 3 spray heads.
9. Place cover over aerator - be sure not to pinch air line.
10. Power up system - it is ready to accept sewage.
11. Fill in Warranty Registration and Service Policy, and give to homeowner.

## SPECIAL INSTRUCTIONS - PLEASE NOTE!

HOUSE WIRING MUST HAVE 30 AMP INDEPENDENT BREAKER AND MUST MEET NATIONAL - STATE - AND LOCAL REGULATIONS. INSTALLATION AND OPERATION MUST BE IN COMPLIANCE WITH STATE WATER REGULATIONS, COUNTY AND LOCAL PLUMBING AND ELECTRICAL CODES.

FAILURE TO COMPLY TO THE INSTRUCTIONS FOR THE INSTALLATION OF THE TANK AND THE SYSTEM CONTROLLER WILL VOID ANY AND ALL WARRANTIES PROVIDED BY HOOT AEROBIC SYSTEMS, INC., AND WILL PLACE THE BURDEN OF WARRANTY COVERAGE ON THE INSTALLER. FAILURE TO FOLLOW INSTALLATION INSTRUCTIONS PROPERLY MAY CAUSE SERIOUS INJURY, ILLNESS, OR DEATH TO PERSONS AND MAY CAUSE SERIOUS DAMAGE TO THE HOOT SYSTEM AND OTHER PROPERTY.

HOOT System Controller 9

