

ON-SITE WASTEWATER SYSTEM INSPECTION FORM

PERMIT # 0031627

DATE 6/4/2012

APPROVED YES  NO

Environmental Health Specialist: Neil Mayes

Address: 1735 Pine Ln Colorado Springs, CO 80916

Owner Robert Hedden

Legal Description: Lot 4 Blk 1 Dixon Heights

Residence  #Bedrooms 4 Commercial \_\_\_\_\_ System Installer Down to Earth Excavating

SEPTIC TANK: Construction Material Polypropylene Capacity Gallon 1060(new) + 1000(old) = 2060

DISPOSAL FIELD:

Trench: Depth (Range) \_\_\_\_\_ Width \_\_\_\_\_ Total Length \_\_\_\_\_ Sq. Ft. \_\_\_\_\_

Bed: Depth (Range) 48" Width 15' Total Length 22' Sq. Ft. 973.8

Depth of Rock \_\_\_\_\_ Under PVC \_\_\_\_\_ Type of cover on Rock \_\_\_\_\_

DRYWELLS: # of Pits \_\_\_\_\_ Rings(Pit 1) \_\_\_\_\_ Rings(Pit2) \_\_\_\_\_ Working Depth #1 \_\_\_\_\_ #2 \_\_\_\_\_

Size (L x W) #1 \_\_\_\_\_ #2 \_\_\_\_\_ Total Sq. Ft. \_\_\_\_\_

ROCKLESS SYSTEMS:

Standard Chamber: Type \_\_\_\_\_ #Chambers \_\_\_\_\_ Sq. Ft./Chamber \_\_\_\_\_ Bed \_\_\_\_\_ Trench \_\_\_\_\_

High Profile Units: Type \_\_\_\_\_ #Chambers \_\_\_\_\_ Sq. Ft./Chamber \_\_\_\_\_ Bed \_\_\_\_\_ Trench \_\_\_\_\_

Reduction Allowed \_\_\_\_\_ % Sq. Ft. Required \_\_\_\_\_ Depth (Range) \_\_\_\_\_

Sq. Ft. Installed \_\_\_\_\_ Equivalent Sq. Ft. Installed with Reduction \_\_\_\_\_

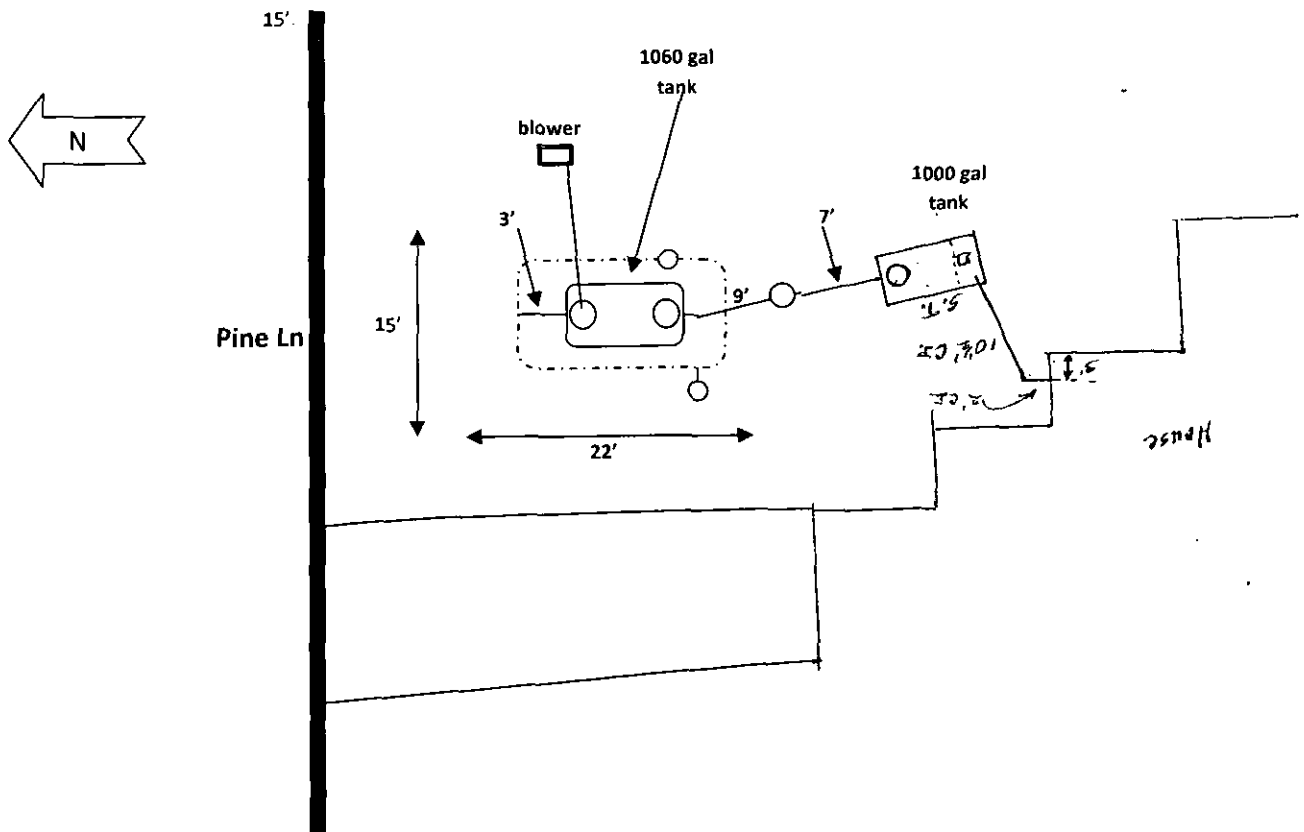
Engineer Design:  N  Engineering Firm Gequest

Approval Letter Provided:  N

Well installed at time of septic inspection:  N  Public Water:  N

\*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the disposal field.

Notes: An effluent filter has been added to second compartment of 1" septic tank. Second compartment of newly installed tank has been retrofitted with "RetroFast" system. All newly installed pipe is: 4" SDR 35 except the 2" SCH 40 pipe connecting the blower to septic tank.



From:

06/07/2012 09:09

#894 P.001/001

#7502204060  
06/04/2012

E



June 7, 2012

6825 Silver Ponds Heights #101  
Colorado Springs, CO 80908  
(719) 481-4560

*Neil*

El Paso County Health Department  
1675 West Garden of the Gods Road  
Colorado Springs, Colorado 80907

Re: Septic System Inspection (GQ #12-0228)  
Lot 4, Block 1, Dixon Heights Subdivision,  
1735 Pine Lane,  
El Paso County, Colorado

Dear Sir,

We inspected the installation of the engineered septic system at the above address at several points during its construction as well as the finished product. It has been installed in accordance with our engineered plans and specification. This includes having the correct size septic tanks, the proper grade on all pipes and sections of the absorption field, the correct depth, size and configuration of the absorption field, and the backfill around and over the field.

The field should be seeded in the future to allow for vegetation growth next spring. Additional grading may be required in the future to repair any minor erosion areas until the grass seed takes hold. You should ensure that no vehicles are allowed to park on any portion of the system.

The system is ready for final certification from the El Paso County Health Department. Please call me if you have any questions.

Sincerely,

*Charles E. Milligan*  
Charles E. Milligan, PE



EL PASO COUNTY PUBLIC HEALTH  
 ENVIRONMENTAL HEALTH DIVISION  
 1675 W. Garden of the Gods Road, Suite 2044, Colorado Springs, Colorado 80907 719-578-7190  
**ONSITE WASTEWATER SYSTEM PERMIT**

COPY

OWNER NAME: ROBERT HEDDEN	PERMIT NUMBER: 0031627
ADDRESS: 1735 PINE LN	
CITY, STATE, ZIP: COLORADO SPRINGS, CO 80916	DATE PERMITTED: 05/02/2012
PHONE NUMBER: (719) 229-4935 (Home Phone)	

This permit is issued in accordance with 25-10-207 Colorado Revised Statutes. The PERMIT EXPIRES upon completion/installation of the Sewage-Disposal System, or at the end of twelve (12) months from date of issue, whichever occurs first, unless work is in progress. If both a Building Permit and an Onsite Wastewater System Permit are issued for the same property and construction has not commenced prior to the expiration date of the Building Permit, the Onsite Wastewater Permit shall expire at the same time as the Building Permit. This permit is revokable if all stated requirements are not met. Sewage-Disposal System to be installed by an El Paso County Licensed System Contractor, or the property owner.

**THIS PERMIT DOES NOT DENOTE APPROVAL OF ZONING AND ACREAGE REQUIREMENTS.**

PERMIT EXPIRATION DATE: 05/02/2013  
 Expires twelve months from date of issue

*Neil May 5/4/12  
 719-237-9194*

WATER SOURCE: Public

MINIMUM SEPTIC TANK SIZE:	1500	GALLONS	MINIMUM ABSORPTION AREA REQUIRED	P.E.	SQ FT
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PLANNING DEPARTMENT	<input type="checkbox"/>	ENUMERATION	<input type="checkbox"/>	FLOOD PLAIN	<input type="checkbox"/>	WASTEWATER	<input type="checkbox"/>
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**COMMENTS:**

\* FOR INSPECTIONS CALL 719-575-8699 BEFORE 8:30 A.M. OF THE DAY TO BE INSPECTED.  
 (WEEKENDS & HOLIDAYS EXCLUDED)  
 LEAVE THE ENTIRE SEWAGE DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION

INSTALL SYSTEM ACCORDING TO ENGINEER DESIGN DATED ON APRIL 24, 2012. A PHYSICAL BARRIER (RETAINING WALL) SHALL BE INSTALLED BETWEEN EXISTING DRIVEWAY AND SOIL TREATMENT AREA. A FINAL APPROVAL LETTER FROM THE ENGINEER IS REQUIRED BEFORE FINAL SYSTEM APPROVAL WILL BE ISSUED BY PUBLIC HEALTH.

The Health Office shall assume no responsibility in case of failure or inadequacy of a sewage-disposal system, beyond consulting in good faith with the property owner or representative. Free access to the property shall be authorized at reasonable time for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.

FOR ADMINISTRATOR USE ONLY

Permit Ready:	Called	Mailed
Final Inspection Requested:	BY:	Date Called In:
	Phone #	Septic Site will be ready:

*5-4-12 - Client called.  
 Client w/ p/u today.*

*June 4, 2012 7:30 AM  
 Final requested - anytime this morning  
 Rick - Dawn to East  
 338-0594 Neil*



El Paso County Public Health

1675 W. Garden of the Gods Rd., Suite 2044 • Colorado Springs, CO • 80907  
(719) 578-3199 • Fax: (719) 578-3188

1972 Split Level

Record I.D. 0031627

5/2/12

\*ALL PAYMENTS ARE DUE AT TIME OF SUBMITTAL IN CASH, CHECK, or MAJOR CREDIT CARD

APPLICATION FOR AN ONSITE WASTEWATER SYSTEM PERMIT

NEW PERMIT  MINOR REPAIR PERMIT  MAJOR REPAIR PERMIT

Owner Robert and Jennifer Hedden Daytime Phone 719-229-4935  
Address of Property 1735 Pine Lane City & Zip Colorado Springs, CO 80906  
Legal Description Lot 4 B1K 1 Dixon Heights  
Owner's MAILING Address Same City, State & Zip \_\_\_\_\_  
Lot Size 8750 sq ft Tax Schedule # 7502204060  
Type of Building:  Frame  Modular  Mobile  Commercial  Manufactured  Other \_\_\_\_\_  
Water Supply:  Well or Spring  Cistern  Public Inside City Limits:  No  Yes-City \_\_\_\_\_  
 MAIL PERMIT - OR -  PICK UP PERMIT  FAX - FAX TO AND # 719-229-4935

MAXIMUM POTENTIAL NUMBER OF BEDROOMS (4) 3 bedroom  
Percolation Test Attached Y (N) Basement Y (N) Garbage Disposal Y (N) ↑ Clothes Washer Y (N)

I have supplied a plot plan as described on the back of this form. I acknowledge the completeness of the application is conditional upon such further mandatory and additional tests and reports as may be required by the Department to be made and furnished by an applicant for purposes of evaluating the application, and issuance of the permit is subject to such terms and conditions as deemed necessary to ensure compliance with rules and regulations adopted pursuant to C.R.S. 25-10-107 et. seq. I hereby certify all represented to be true and correct to the best of my knowledge and belief, and are designed to be relied on by the El Paso County Department of Health and Environment in evaluating the same for purposes of issuing the permit applied for herein. I further understand any falsification or misrepresentation may result in the denial of the application or revocation of any permit granted based upon said application and in legal action for perjury as provided by law.

OWNER'S/CONTRACTOR'S SIGNATURE [Signature] Date 5-1-2012  
You will be notified by telephone when your permit is ready for pick up. Please allow a minimum of 10 days for new septic.

DEPARTMENT OF HEALTH USE ONLY

1500 Minimum Tank Capacity P.E. Minimum Absorption Area 5/4/12 Date of Site Inspection

REMARKS Install system according to P.F. design dated on April 24, 2012. A physical barrier shall be installed between existing driveway and soil treatment area. A final approval letter from the engineer is required before final system approval will be issued by Public Health.

EHS INSPECTOR Nel McFes DATE 5/4/12 APPROVED  DENIED

CURRENT FEES AS APPROVED BY EL PASO COUNTY BOARD OF HEALTH

New Permit: \$440.00 EPCDHE Charge + \$23.00 CDPHE Surcharge + \$147.00 EPC Planning Surcharge = \$610.00  
Major repair permit: \$494.00 EPCDHE Charge + \$23.00 CDPHE Surcharge = \$517.00  
Minor repair permit: \$188.00 EPCDHE Charge + \$23.00 CDPHE Surcharge = \$211.00

DATE TO LAND DEVELOPMENT/WASTEWATER: N/A  
DATE TO FLOODPLAIN/ENUMERATIONS: N/A

Rec: 5/1/12 Non PLEASE COMPLETE THE BACK OF THIS FORM  
5/1/12 10:30AM

↑ according to Assessor (Regional)

W/M  
R/W  
[Handwritten notes]

- 1) We require an original of your **PERCOLATION (PERC) TEST** with an original licensed engineer's (PE) stamp and signature as well as a plot of the percolation test hole locations with measurements from a fixed reference point. (A faxed copy directly from the engineering firm to this office is acceptable.)
- 2) **PROPERTY ADDRESS OR LOT NUMBER MUST BE POSTED AND CLEARLY VISIBLE FROM ROAD. PERC HOLES MUST BE CLEARLY MARKED OR AN ADDITIONAL CHARGE FOR A RETURN TRIP TO THE SITE MAY BE ASSESSED.**
- 3) A PLOT PLAN must be drawn (not to scale) on an 8 1/2 x 11 inch sheet of paper. The plot plan must include:

- |   |   |  |
|---|---|--|
| 1) a north bearing                      | 5) proposed septic system site                                  | 8) Distance of percolation test to two property lines. |
| 2) property lines                       | 6) alternate septic system site                                 |  |
| 3) property dimensions                  | 7) driveway (proposed or existing and name of adjoining street) |  |
| 4) all buildings (proposed or existing) |   |  |

- 4) Initial any of the following features that apply to your property and **INCLUDE** them on your PLOT PLAN.

Well(s)                       Adjacent property well(s)                       Subsoil drain  
 Cistern                       Water line

- 5) Initial any of the following that are within 100 feet of your proposed septic system and **INCLUDE** LOT PLAN.

Spring(s)                       Lake(s)  
 Pond(s)                       Stream(s)  
 Dry Gulch(es)                       Natural drainage course(s)

- 6) GIVE COMPLETE DIRECTIONS TO THE PROPERTY FROM A MAIN HIGHWAY

From Health Department.

- Son I-25 to Cide/Late
- Turn Right heading west.
- Go to Broadmoor Hotel round about and turn left (Go behind Broadmoor Hotel Golf Course)
- Head west on old stage Road till you get to Hill.
- Turn left on Hill (sign says no outlet).
- Go 1/2 Block and turn left on Pine Lane (Goes down very steep)
- Go 1/2 Block and our house is on right hand side (stucco house with many levels and windows).



6825 Silver Ponds Heights #101  
Colorado Springs, CO 80908  
(719) 481-4560

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**SEPTIC DESIGN**

**FOR**

**ROBERT HEDDEN**

**JOB #12-0112**

**Lot 4, Block 1,  
Dixon Heights Subdivision,  
1735 Pine Lane,  
El Paso County,  
Colorado**

**CALCULATIONS:**

4 Bedrooms

Perc Rate 3.3 MIN. / IN. (Testing and Engineering Services Inc.)

$$A = \frac{(1.6)(1.5)(4)(150) \sqrt{3.3}}{5}$$

A = 523.2 SF Required

Existing Tank Size = 1,250 Gallon Precast Concrete Tank

Additional Tank Size = 1,000 Gallon Precast Concrete Two Compartment Tank w/ RetroFAST 0.375 Pre-Treatment Unit (or Approved Equivalent) Installed in the Second Chamber

**For Arrowhead System:**

Use 1,000 GAL Pre-Cast Concrete Septic Tank from Firebaugh Precast Concrete with:

- 60" Rock @ Ends
- 19" Rock @ Sides
- 36" Rock Undemeath
- (See Sheet 2 for Details)

This Provides 541.1 SF of Contact Area

All Bends Limited to 45 Degree Ells or Long Sweep Quarter Bends. Areas Under Driveways Shall Be Protected as Per El Paso County Health Department Regulations.

Building Sewer Clean-Outs Shall Be Installed within 5 FT of the Structure and at Intervals Not to Exceed 100' in Straight Runs and When the Cumulative Change in Direction Exceeds 135 Degrees.

Arrowhead System Shall be Installed a Min. of 20' from the House, 10' from the Property Line, and 50' from any Stream.

Geoquest, LLC. has Provided this Design in Accordance with the Standards of Practice Common to the Area. However, as with All Underground Absorption Fields, Guarantee from Failure is Impossible. Even with Proper Installation, as Outlined for this Proposed Construction, There Can Remain Many Uncertainties, and Difficulties Can Still Arise in the Operation of the System in the Future. Proper Design, Construction, and Maintenance can Assist in Minimizing Uncertainties, but Cannot Entirely Eliminate Them. Homeowners Should be Advised of Maintenance and Special Considerations for Septic Systems. Geoquest, LLC. Provides No Warranty of this Design or Installation.

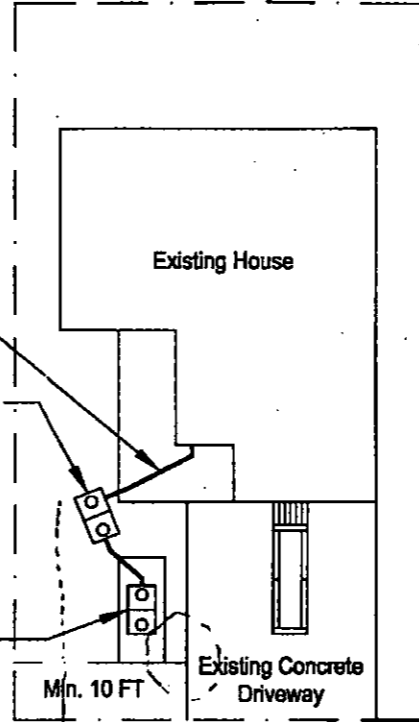
*- Arrowhead + pre-treatment is proposed due to lack of suitable area & an exist. site condition*

Existing Home on Public Water System. Maintain a Minimum Horizontal Distance of 100 FT between any Well and the Soil Treatment Area.

Existing 4" Ø PVC Solid Pipe from House to Septic Tank w/ Clean-Out within 5 FT of the House

Existing 1,000 GAL Precast Concrete Septic Tank

New Min. 1,000 GAL Precast Concrete Two Compartment Septic Tank w/ RetroFAST 0.375 Pre-Treatment Unit in the Second Chamber or Approved Equivalent; Annual O/M Report to be Provided to the El Paso County Health Department



*- Note Loc. & construction proposal for exist. Ring system*

Special Note: Flow Meter to be Installed on the Water Line into The House (if not Existing); Quarterly Readings to be Provided to the El Paso County Health Department to Monitor Water Usage.

*- Show in Loc. of Ret. wall & Loc. of Ring system not shown flowers*

**NOTES:**

All Work per El Paso County Health Department Criteria. *side condition*  
Grade Surrounding Area to Drain Away from Field.

Maintain 2.0% Min. Grade on Pipe Feeding the Septic Tank.  
Maintain 2.0% Min. Grade on Pipe Feeding the Field.

Contractor/Homeowner is Responsible for Permit.  
Contractor/Homeowner Must Obtain Approval of Engineered System from El Paso County Health Department.  
Contractor/Homeowner Must Verify Setbacks and Obtain Utility Clearances Prior to Construction.

Due to the Possibility of Unknown Water Usage Factors, Geoquest, LLC. Does Not Warranty this Septic System Against Failure or Damage of Any Type.

Paving, Planting of Trees/Shrubs, and Vehicular or Hoofed Animal Traffic of Any Kind Over the Leach Field may Cause Premature Failure and is Prohibited.

*- Physical Barriers Recommended.*  
Refer to Sheet 2, 3, & 4 for Details.

**INSPECTIONS REQUIRED ARE AS FOLLOWS:**

- 1.) Engineer to Verify Soil Treatment Area Location at Time of Construction.
- 2.) Engineer Will Inspect the Installation of Pipe, Septic Tank, Etc. Prior to Backfill.
- 3.) Engineer to Inspect the Soil Treatment Area After Backfill to Insure Min. Cover and Proper Drainage Away from Soil Treatment Area.
- 4.) Soil Conditions to be Verified by Soil Engineer at Time of Installation.

**GEOQUEST, LLC.**

6825 SILVER PONDS HEIGHTS  
SUITE 101  
COLORADO SPRINGS, CO  
80908

OFFICE: (719) 481-4560  
FAX: (719) 481-9204

Project: 12-0112

Sheet: 1 of 4

Date: 23 Apr 2012

Geoquest Perc.

Drawn by: gr

Checked by: cern

**Project Name and Address**

**Hedden Residence**

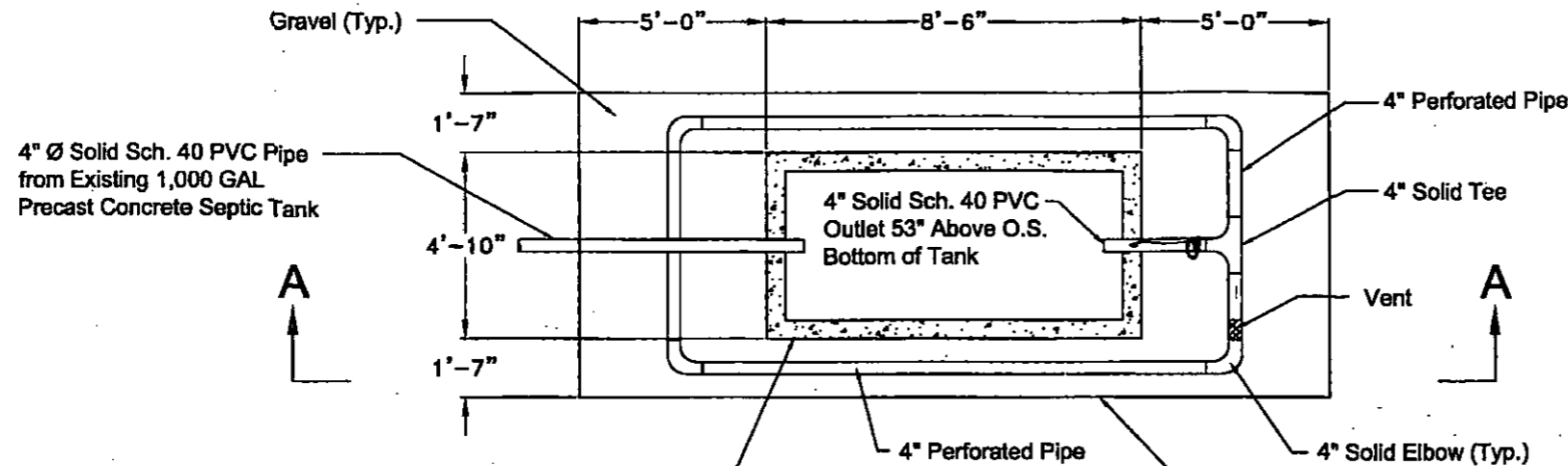
OWTS Replacement

1735 Pine Lane

Lot #4, Block #1, Dixon Heights S/D,

El Paso County, Colorado

*Handwritten signature and date: RW 4-23-12*



1,000 GAL Precast Septic Tank w/ 8'-6" x 4'-10" Base O.S. Dimensions  
 Install Bio-Microbics RetroFast 0.375 or Approved Equivalent in Second Chamber of Septic Tank (Per El Paso County Health Department). Install per Manufacturers Recommendations. See Attached for Additional Detail.

**System Layout - Plan View**  
 Not to Scale

**NOTES:**  
 All Work per El Paso County Health Department Criteria.

Absorption Field Shall Be Crowned and Covered with a Minimum of 6" of Select Topsoil to Provide a Base for Good Vegetative Cover.

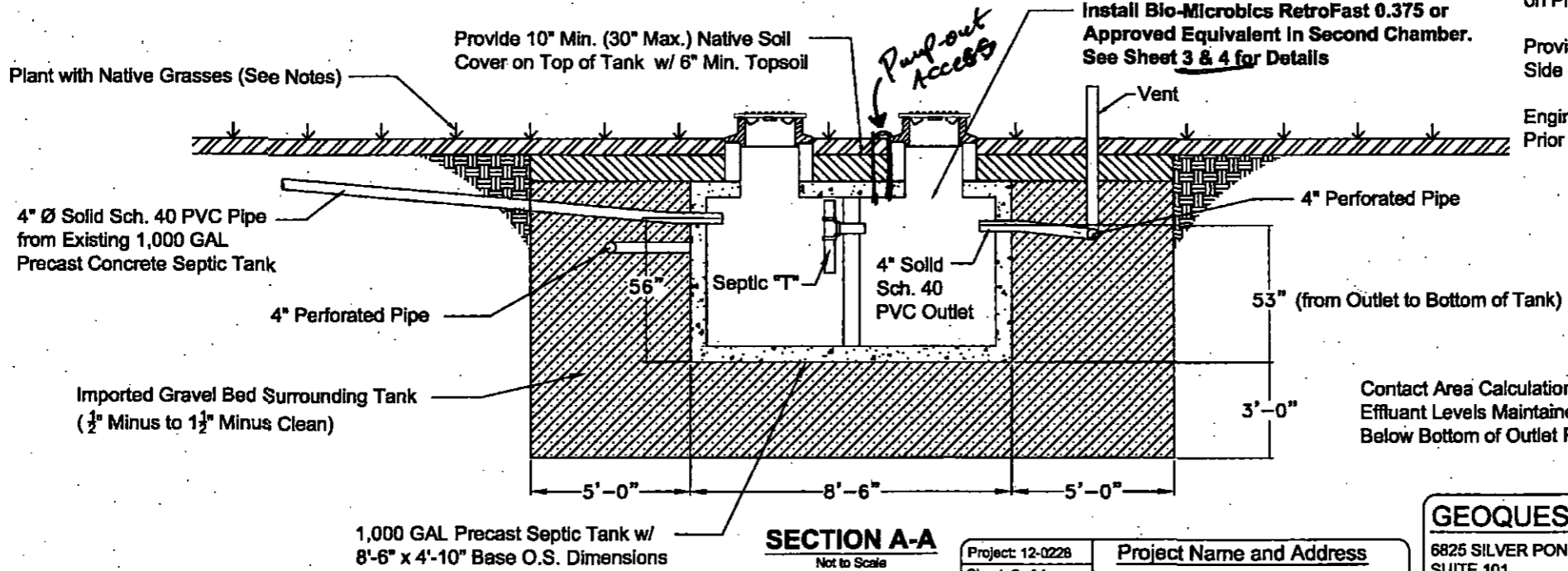
Contact Soil Conservation Service or County Extension Agent for Vegetation Best Suited for the Area. Grasses are Best. Trees and Shrubs May Damage/Block Pipes. Vegetation Shall Be Maintained and Mowed to Prevent Formation of Bio-Matting. Do Not Pave Over Septic Field.

Provide 2.0% Min. Grade on Pipe to Septic Tank. Provide 2.0% Min. Grade on Pipe to Field.

Provide Drainage Swale Around Uphill Side of Field.

Engineer will inspect All Components Prior to Backfill.

Pine Lane



**SECTION A-A**  
 Not to Scale

Contact Area Calculations Assume Effluent Levels Maintained at Least 3" Below Bottom of Outlet Pipes.

- Approved Fill Material to Provide Cover (Min. 10", Max. 30")
- Topsoil (Min. 6")
- Imported Gravel Bed Surrounding Tank (1/2" Minus to 1 1/2" Minus Clean)
- Native Material
- Concrete Precast Septic Tank

Project: 12-0228	<b>Project Name and Address</b>
Sheet: 2 of 4	<b>Hedden Residence</b>
Date: 23 Apr 2012	OWTS Replacement
Geoquest Perc.	1735 Pine Lane
Drawn by: gr	Lot #4, Block #1, Dlxon Heights S/D,
Checked by: cam	El Paso County, Colorado

**GEOQUEST, LLC.**  
 6825 SILVER PONDS HEIGHTS  
 SUITE 101  
 COLORADO SPRINGS, CO  
 80908  
 OFFICE: (719) 481-4560  
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- 60" Rock @ Ends
- 19" Rock @ Sides
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- (See Sheet 2 for Details)

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**Special Note:** Existing Failing Drywell to be Removed and Replaced with Proposed System. Remove All Contaminated Material in Area of Existing Failing Septic System. Arrowhead System to be Utilized at this Site Due to Existing Site Restrictions and Failing Drywell.

Existing Home on Public Water System. Maintain a Minimum Horizontal Distance of 100 FT between any Well and the Soil Treatment Area.

Existing 4" Ø PVC Solid Pipe from House to Septic Tank w/ Clean-Out within 5 FT of the House

Existing 1,000 GAL Precast Concrete Septic Tank; Effluent Filter Recommended on Outlet of Existing Septic Tank

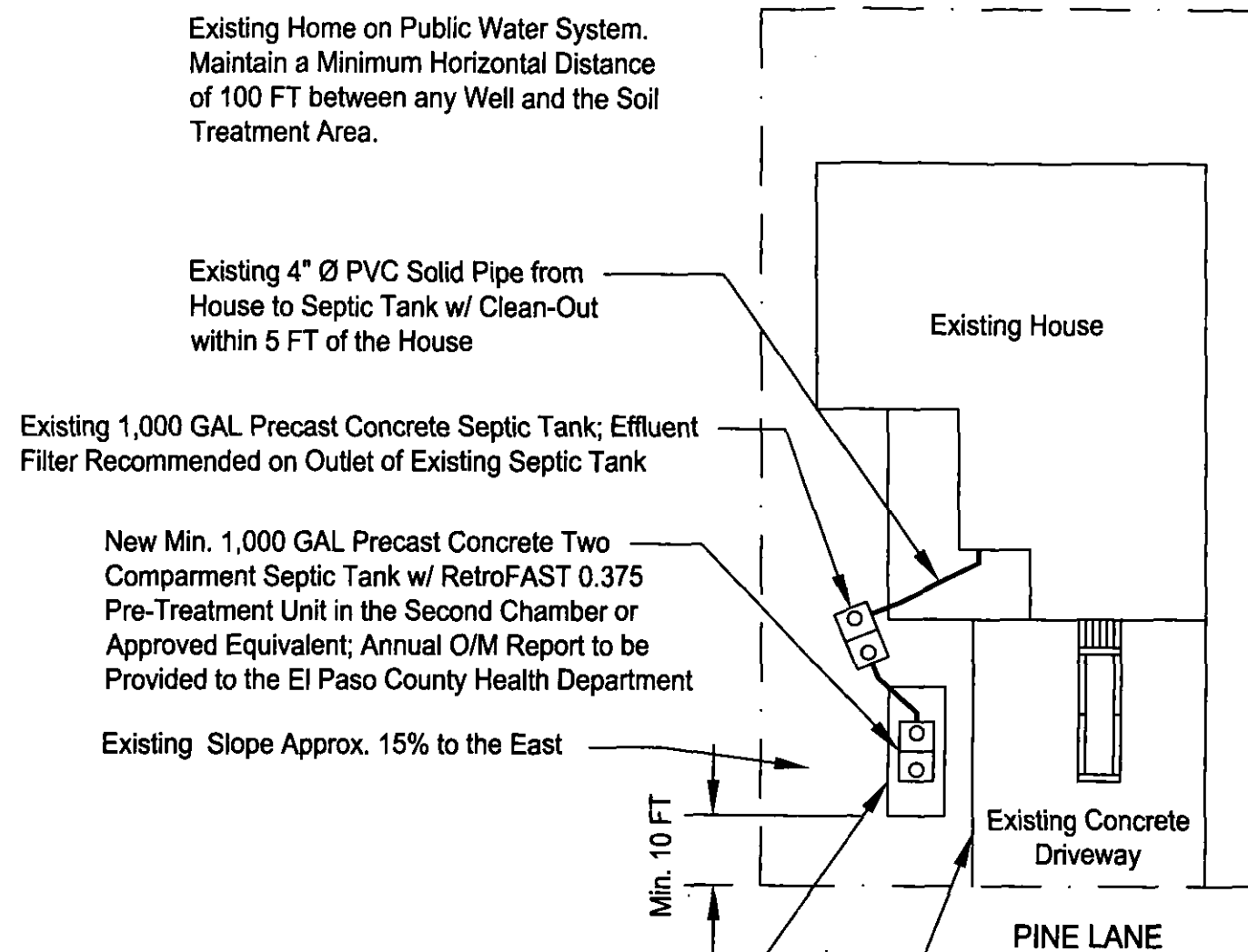
New Min. 1,000 GAL Precast Concrete Two Compartment Septic Tank w/ RetroFAST 0.375 Pre-Treatment Unit in the Second Chamber or Approved Equivalent; Annual O/M Report to be Provided to the El Paso County Health Department

Existing Slope Approx. 15% to the East

6 Mil Continuous Plastic Sheeting (Downhill Side)

Physical Barrier Recommended between Existing Driveway and the Soil Treatment Area

**Special Note:** Flow Meter to be Installed on the Water Line into The House (if not Existing); Quarterly Readings to be Provided to the El Paso County Health Department to Monitor Water Usage.



**NOTES:**

All Work per El Paso County Health Department Criteria.

Grade Surrounding Area to Drain Away from Field.

Maintain 2.0% Min. Grade on Pipe Feeding the Septic Tank.  
Maintain 2.0% Min. Grade on Pipe Feeding the Field.

Contractor/Homeowner is Responsible for Permit.  
Contractor/Homeowner Must Obtain Approval of Engineered System from El Paso County Health Department.  
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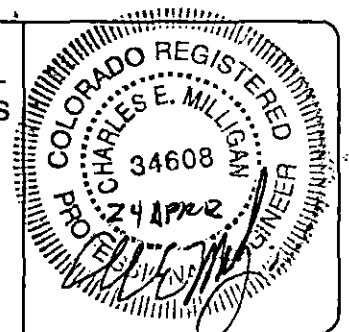
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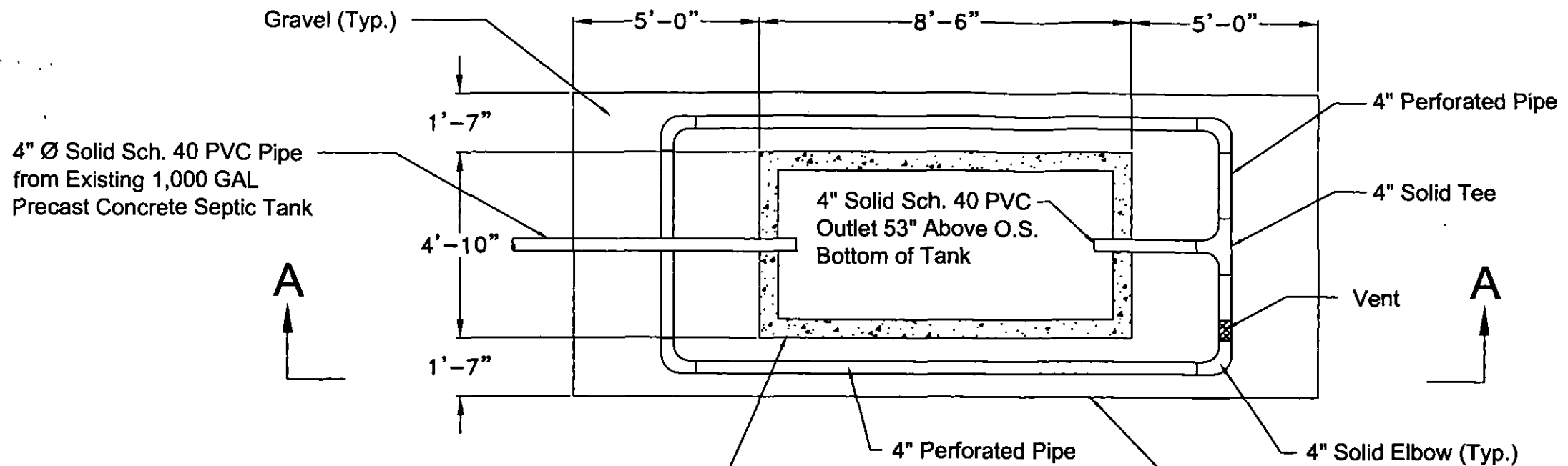
**GEOQUEST, LLC.**

6825 SILVER PONDS HEIGHTS  
SUITE 101  
COLORADO SPRINGS, CO  
80908

OFFICE: (719) 481-4560  
FAX: (719) 481-9204



Project: 12 - 0112	Project Name and Address
Sheet: 1 of 4	<b>Hedden Residence</b>
Date: 24 Apr 2012	OWTS Replacement
Geoquest Perc.	1735 Pine Lane
Drawn by: gtr	Lot #4, Block #1, Dixon Heights S/D,
Checked by: cem	El Paso County, Colorado

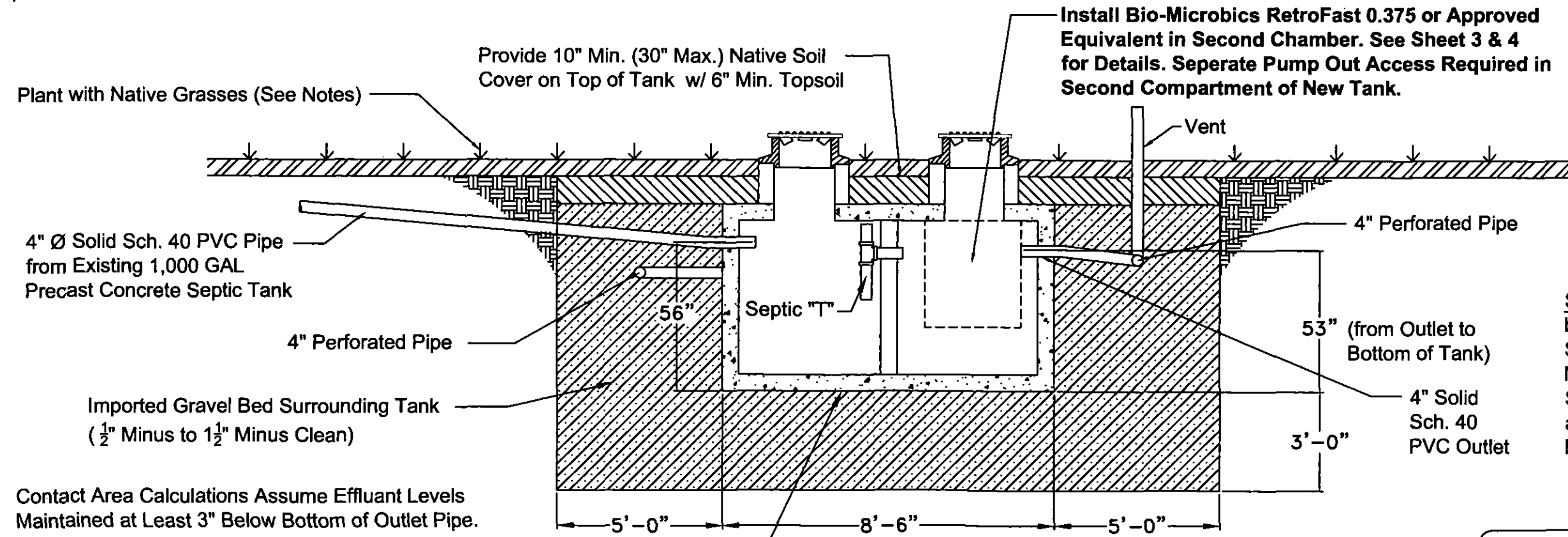


**System Layout - Plan View**  
Not to Scale

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Install Bio-Microbics RetroFast 0.375 or Approved Equivalent in Second Chamber of Septic Tank (Per El Paso County Health Department). Install per Manufacturers Recommendations. See Attached for Additional Detail.

Pine Lane

- NOTES:**
- All Work per El Paso County Health Department Criteria.
  - Absorption Field Shall Be Crowned and Covered with a Minimum of 6" of Select Topsoil to Provide a Base for Good Vegetative Cover.
  - Contact Soil Conservation Service or County Extension Agent for Vegetation Best Suited for the Area. Grasses are Best. Trees and Shrubs May Damage/Block Pipes. Vegetation Shall Be Maintained and Mowed to Prevent Formation of Bio-Matting. Do Not Pave Over Septic Field.
  - Provide 2.0% Min. Grade on Pipe to Septic Tank. Provide 2.0% Min. Grade on Pipe to Field.
  - Provide Drainage Swale Around Uphill Side of Field.
  - Engineer will Inspect All Components Prior to Backfill.



**SECTION A-A**  
Not to Scale

Contact Area Calculations Assume Effluent Levels Maintained at Least 3" Below Bottom of Outlet Pipe.

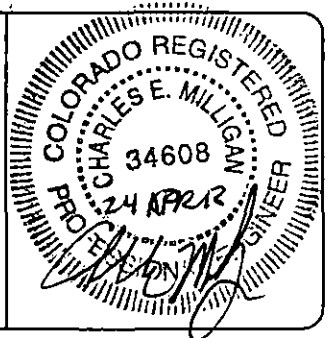
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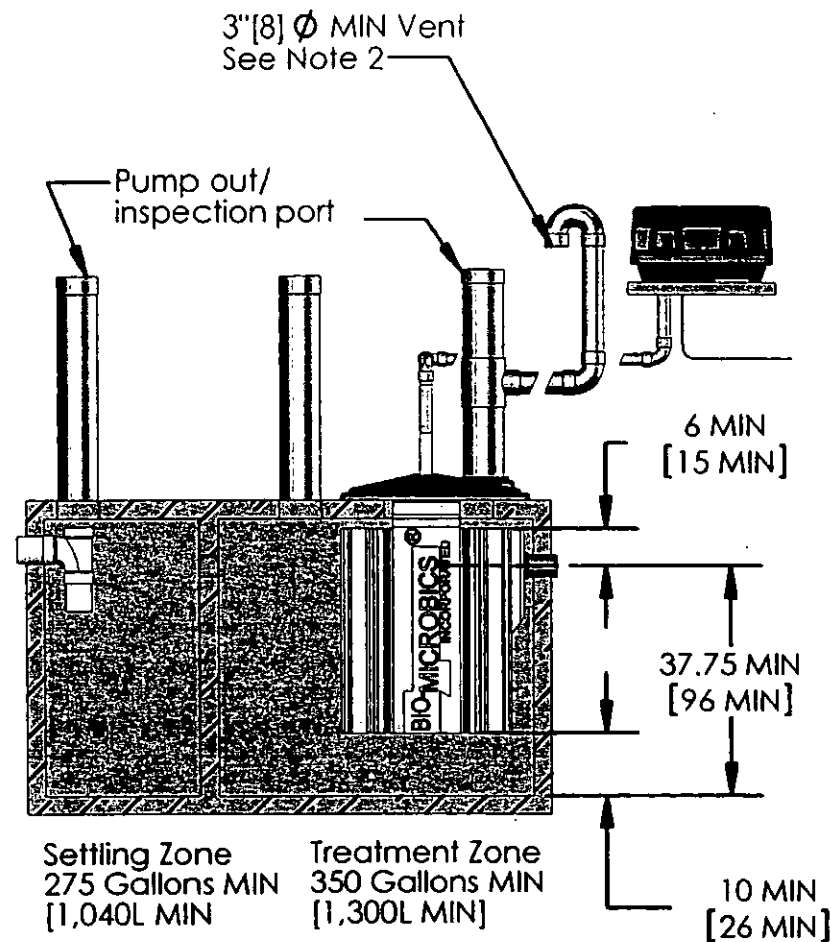
Project: 12-0228  
Sheet: 2 of 4  
Date: 24 Apr 2012  
Geoquest Perc.  
Drawn by: gr  
Checked by: cem

**Project Name and Address**  
**Hedden Residence**  
OWTS Replacement  
1735 Pine Lane  
Lot #4, Block #1, Dixon Heights S/D,  
El Paso County, Colorado

**GEOQUEST, LLC.**  
6825 SILVER PONDS HEIGHTS  
SUITE 101  
COLORADO SPRINGS, CO  
80908  
OFFICE: (719) 481-4560  
FAX: (719) 481-9204

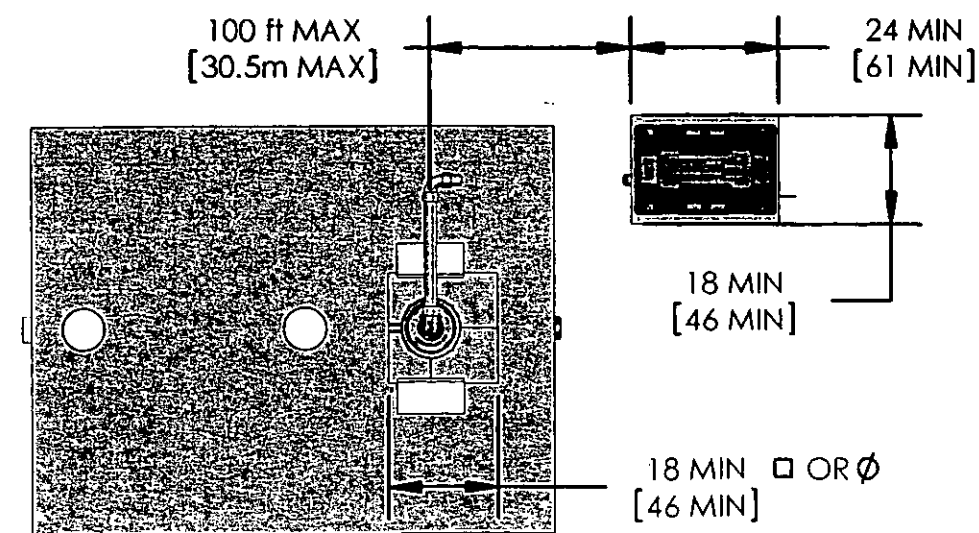


**Special Note:** Existing Failing Drywell to be Removed and Replaced with Proposed System. Remove All Contaminated Material in Area of Existing Failing Septic System. Arrowhead System to be Utilized at this Site Due to Existing Site Restrictions and Failing Drywell.



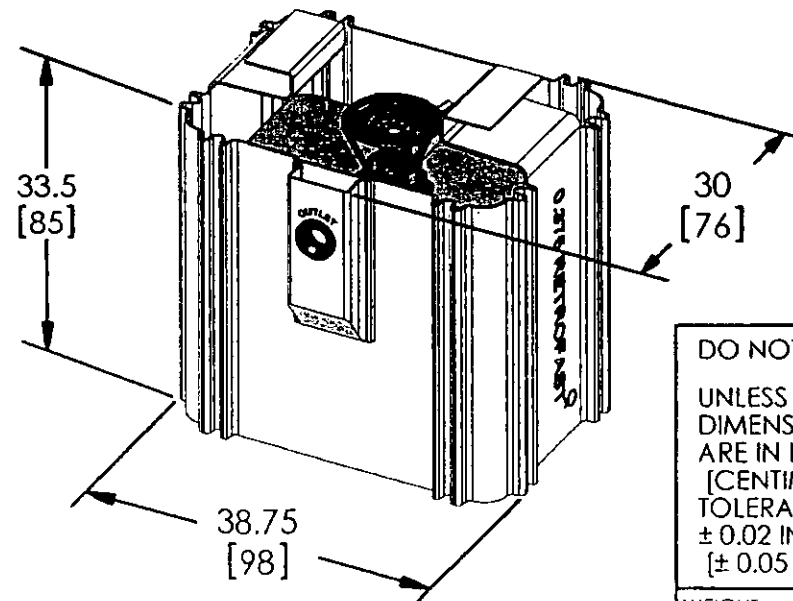
Settling Zone  
275 Gallons MIN  
[1,040L MIN]

Treatment Zone  
350 Gallons MIN  
[1,300L MIN]



NOTES

- Blower piping to FAST@ may not exceed 100 FT [30.5m] total length and use 4 elbows maximum. For distances greater than 100 FT [30.5m] - consult factory. Blower must be located above flood/standing water levels on a solid surface or concrete base 24" X 18" X 2" [61X45.7X5cm] minimum.
- Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate w/at least 7.1 sq in. [45.8 sq. cm] open surface area. Secure with stainless steel screws.  
or  
Run vent to desired location and cover opening with vent grate w/at least 7.1 sq in. [45.8 sq. cm] of open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
- All appurtenances to FAST@ (e.g. tank pump outs, etc.) must conform to all country, state, province, and local plumbing and electrical codes. The blower control system is provided by Bio-Microbics, Inc.
- Optional blower control system by Bio-Microbics, Inc.
- Fast@ module must be secured by bolting through straps, then lid is bolted to the tank.
- No more than 4 FT [1.2 m] of fill may be placed over unit lid.
- All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
- Tank, anchors, piping, conduit, blower housing pad and vents are provided by others.
- All piping and ancillary equipment installed after FAST@ must not impede or restrict free flow of effluent.
- Effluent hole will accept a 3" SCH 40 PVC pipe which can be then inserted into the existing 4" Discharge pipe in the septic tank. The RetroFAST@ provides vigorous aeration in a septic tank which reverses the clogging process in a drain field.



DO NOT SCALE  
UNLESS NOTED  
DIMENSIONS  
ARE IN INCHES  
[CENTIMETERS]  
TOLERANCES  
± 0.02 IN/IN  
[± 0.05 CM/CM]



RetroFAST 0.375

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WEIGHT	lb	SIZE	DRAWING NUMBER	SHEET 3 of 4
NAME	DATE	A	RetroFAST@.375New Construction	
DRAWN	CTC	5/5/2008	REVISED 11/11/2010	REV. INI-01-M
CHECKED	PF	11/11/2010		

Specifications for RetroFAST 0.375 Wastewater Treatment System

1. GENERAL

The contractor shall furnish and install (1) RetroFAST 0.375 treatment system as manufactured by Bio-Microbics, Inc. The treatment system shall be complete with all needed equipment as shown on the drawings and specified herein.

The principal items of equipment shall include FAST System insert, insert lid, blower assembly, and blower housing. The RetroFAST 0.375 unit shall be situated within tank that exceeds the minimum dimensions and a 16" [41cm] tank opening. Tank(s) must conform to local, state, and all other applicable codes. The contractor shall provide coordination between the FAST system and tank supplier with regard to fabrication of the tank, installation of the FAST unit and delivery to the job site.

2. OPERATING CONDITIONS

The RetroFAST 0.375 treatment system shall be capable of treating the wastewater produced by typical family activities (bath, laundry, kitchen, etc.) ranging from (1) one to (5) five persons and not to exceed 375 US Gallons per day (1420 LPD).

3. MEDIA

The FAST media shall be manufactured of rigid PVC, polyethylene, or polypropylene and it shall be supported by the polyethylene insert. The media shall be fixed in position and contain no moving or wearing parts and shall not corrode. The media shall be designed and installed to ensure that sloughed solids descend through the media to the bottom of the septic tank.

4. BLOWER

The RetroFAST 0.375 unit shall come equipped with a regenerative type blower capable of delivering 9-24 CFM [15-41m3/hr]. The blower assembly shall include an inlet filter with metal filter element.

5. REMOTE MOUNTED BLOWER

The blower shall be mounted up to 100 feet [30.5 meters] away from the RetroFAST unit on a contractor supplied concrete base. The blower elevation must be higher than the normal flood level. A two-piece, rectangular housing shall be provided with tamper-proof screws. The discharge air line from the blower to the RetroFAST shall be provided and installed by the contractor.

6. ELECTRICAL

The electrical source should be within 150 feet [45.7 meters] of the blower consult local codes for longer wiring distances. All wiring must conform to all applicable codes(IEC, NEC, etc.). Wiring distances must prevent significant voltage loss. Input power on 60Hz electrical system is 110/220 VAC, single phase, 2.3/1.0 Amps. Input power on 50Hz electrical systems 127/230 VAC, single phase 0.253 kw/hr. All conduit and wiring shall be supplied by contractor.

7. INSTALLATION AND OPERATING INSTRUCTIONS

All work must be done in accordance with local codes and regulations. Installation of the RetroFAST 0.375 shall be done in accordance with the written instructions provided by the manufacturer. An operation and maintenance manual shall be furnished, which will include a description of system installation, operation, and maintenance procedures.

8. OPTIONAL ALARM PANEL

The alarm system shall consist of a visual and audible alarm to indicate loss of power to the blower. A manual silence switch is included.

9. FLOW AND DOSING

Wastewater treatment systems work best when influent flow is delivered as consistently as possible. FAST systems have been successfully designed, tested, and certified receiving gravity, demand-based influent flow. When influent flow is controlled (either by influent pump or other means) to the FAST system to help with highly variable flow conditions, then multiple feeding events should be used to help assure even flow, optimum performance, and reliability.


10. WARRANTY

Bio-Microbics, Inc. warrants all new RetroFAST® models (RetroFAST 0.150, 0.250, and 0.375) against defects in materials and workmanship for a period of two years after installation or three years from date of shipment, whichever ever occurs first, subject to the following terms and conditions:

During the warranty period, if any part is defective or fails to perform as specified when operating at design conditions, and if the equipment has been installed and is being operated and maintained in accordance with the written instructions provided by Bio-Microbics, Inc., Bio-Microbics, Inc. will repair or replace at its discretion such defective parts free of charge. Defective parts must be returned by owner to Bio-Microbics, Inc.'s factory postage paid, if so requested. The cost of labor and all other expenses resulting from replacement of the defective parts and from installation of parts furnished under this warranty and regular maintenance items such as filters or bulbs shall be borne by the owner. This warranty does not cover general system misuse, aerator components which have been damaged by flooding or any components that have been disassembled by unauthorized persons, improperly installed or damaged due to altered or improper wiring or overload protection. This warranty applies only to the treatment plant and does not include any of the structure wiring, plumbing, drainage, septic tank or disposal system. Bio-Microbics, Inc. reserves the right to revise, change or modify the construction and/or design of the FAST system, or any component part or parts thereof, without incurring any obligation to make such changes or modifications in present equipment. Bio-Microbics, Inc. is not responsible for consequential or incidental damages of any nature resulting from such things as, but not limited to, defect in design, material, or workmanship, or delays in delivery, replacements or repairs.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. BIO-MICROBICS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

NO REPRESENTATIVE OR PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY OR TO ASSUME FOR BIO-MICROBICS, INC., ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. Contact your local distributor for parts and service.

DO NOT SCALE UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN [± 0.05 CM/CM]		 RetroFAST 0.375	
WEIGHT	lb	SIZE	DRAWING NUMBER
		A	RetroFAST® 0.375 Specification
DRAWN	5/5/2008	CHECKED	PF
11/11/2010		REVISED Thursday, November 11, 2010	

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SHEET  
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