

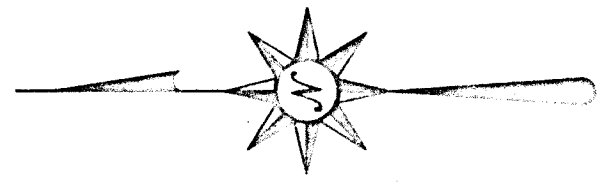
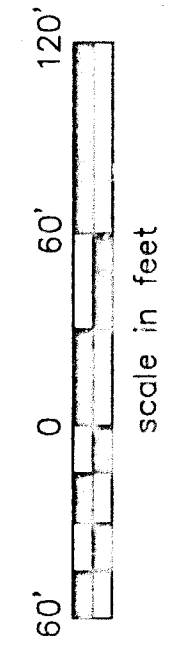
JOHN THIEL

540-533-0671

0671

07-2980

Plat Book 8 Page 59



Shenandoah Retreat  
Land Corporation

Shenandoah Retreat  
Land Corporation

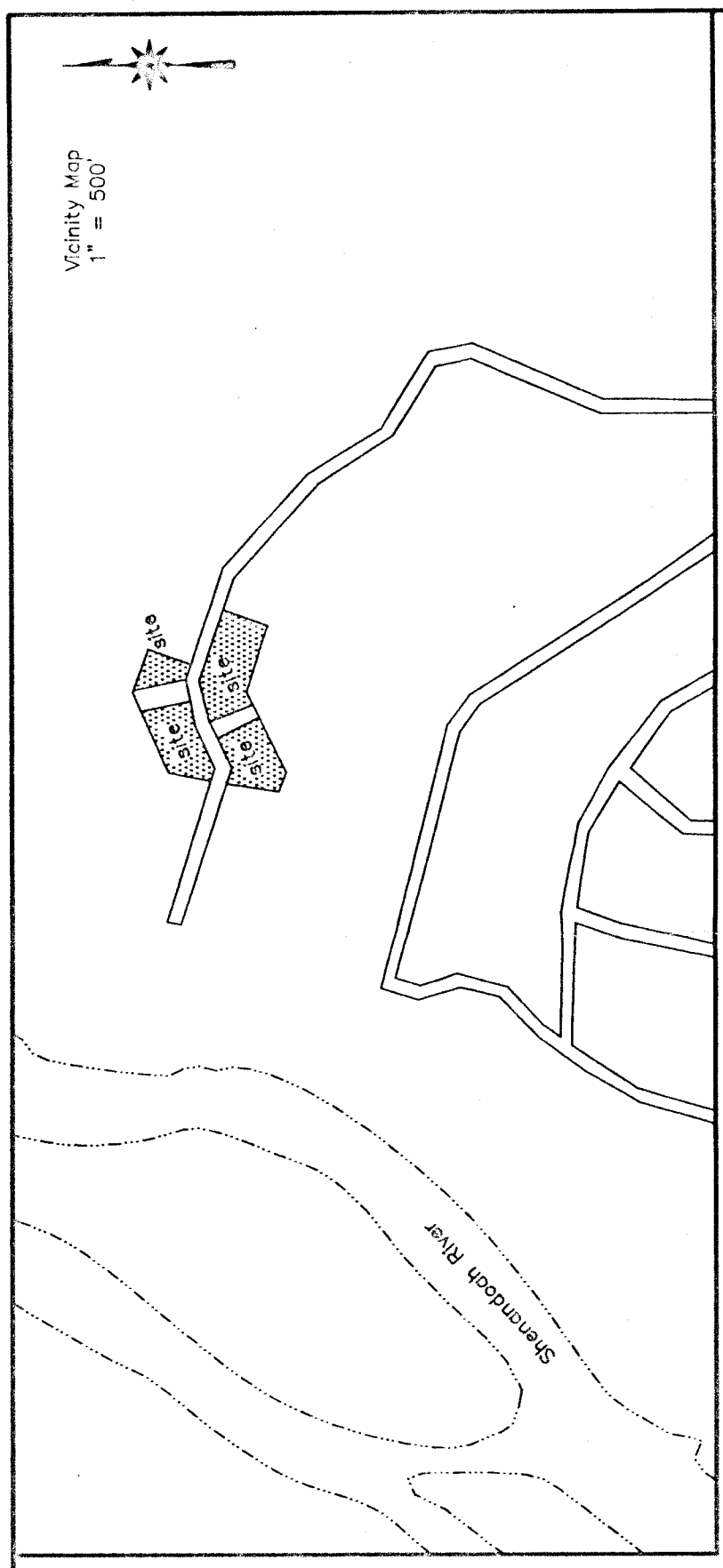
Shenandoah Retreat  
Land Corporation

Shenandoah Retreat  
Land Corporation

Area Tabulation:	
10,833 square feet	Area of Lot 8
9,008 square feet	Area of Lot 9
12,892 square feet	Area of Lot 10
15,120 square feet	Area of Lot 12
9,000 square feet	Area of Lot 31
8,999 square feet	Area of Lot 32
8,998 square feet	Area of Lot 33
11,314 square feet	Area of Lot 34
7,625 square feet	Area of Lot 35
8,998 square feet	Area of Lot 37
18,575 square feet	Area of Lot 38
121,362 square feet	Area of Lot 34 after consolidation (2.7891 acres)

11-9-07

*James Russell*  
Zoning Admin.



Surveyor's Certificate: I, W. Stuart Dunn, a duly authorized Land Surveyor in the State of Virginia, do hereby certify that the lands herein consolidated are in the names of John R. Thiel and Evelyn Joran-Thiel, and were acquired by them as stated in the Owners' Certificate. I further certify that the tracts of land are properly and accurately described and are within the boundaries of the original tracts.

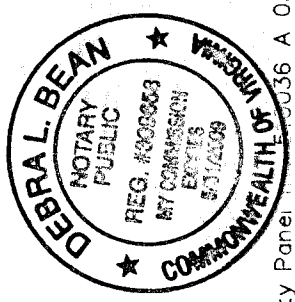
W. Stuart Dunn, CLS #2000  
Berryville, Virginia

Owners' Certificate: The undersigned fee simple owners hereby certify that the foregoing lot consolidation of eleven existing parcels recorded in the names of John R. Thiel and Evelyn Joran-Thiel being Lot 8, TM 17A4-26-2S-8, recorded in Deed Book 421, Page 388; Lot 9, TM 17A4-26-2S-9, recorded in Deed Book 421, Page 394; Lot 10, TM 17A4-26-2S-10, recorded in Deed Book 314, Page 756; Lot 12, TM 17A4-26-2S-12, recorded in Deed Book 246, Page 169; Lot 31, TM 17A3-26-2R-31, recorded in Deed Book 312, Page 291; Lot 32, TM 17A3-26-2R-32, recorded in Deed Book 312, Page 291; Lot 33, TM 17A3-26-2R-33, recorded in Deed Book 312, Page 292; Lot 34, TM 17A4-26-2R-34, recorded in Deed Book 323, Page 730; Lot 35, TM 17A4-26-2R-35, recorded in Deed Book 309, Page 457; Lot 37, TM 17A4-26-2R-37, recorded in Deed Book 346, Page 808 and Lot 38, TM 17A4-26-2R-38, recorded in Deed Book 387, Page 621; with 121,362 square feet being the consolidated total of Lot 34, and no area remaining in the other lots, is made with the free consent and in accordance with the desires of the undersigned owner of said lands and the same is hereby confirmed and submitted for record in the Office of the Clerk of the Circuit Court of Clarke County, Virginia.

*John R. Thiel*  
John R. Thiel

State of Virginia, County of Clarke, to wit:  
Acknowledged before me in my State and County aforesaid this 9th day of November 2007.

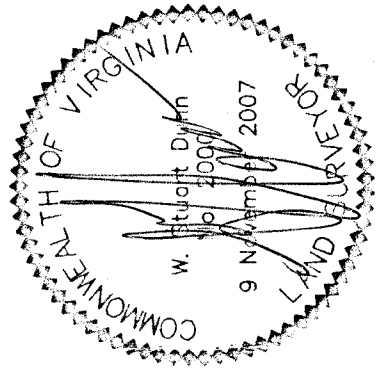
Notary Public: *Delva A. Bean* My commission expires: 5-31-09



- Notes:
- (1) These tracts are not in the 100 year flood plain designated by HUD, established from FIRM Community Panel 136 A 03, dated September 24, 1984.
  - (2) Zoned: RR (rural residential); use: vacant.
  - (3) Building setbacks as follows: 25 feet from edge of Beechwood Drive, a 40 foot R/W, 10 feet from any sideline, and 35 feet from any rear line.
  - (4) Irf = iron rod found; i.r.s. = iron rod set.
  - (5) This boundary is based on plat by Robert K. Wilson recorded in Deed Book 50, Page 47.

Lot Consolidation Survey of the Lands of  
*John R. Thiel and Evelyn Joran-Thiel*  
Shenandoah Retreat - Block 2-S

- Deed Book 50, Page 47
- Lot 8 - Deed Book 421, Page 388 - TM 17A4-26-2S-8
  - Lot 9 - Deed Book 421, Page 394 - TM 17A4-26-2S-9
  - Lot 10 - Deed Book 314, Page 756 - TM 17A4-26-2S-10
  - Lot 12 - Deed Book 246, Page 169 - TM 17A4-26-2S-12
- Shenandoah Retreat - Block 2-R
- Deed Book 50, Page 47
  - Lot 31 - Deed Book 312, Page 291 - TM 17A3-26-2R-31
  - Lot 32 - Deed Book 312, Page 291 - TM 17A3-26-2R-32
  - Lot 33 - Deed Book 312, Page 292 - TM 17A3-26-2R-33
  - Lot 34 - Deed Book 313, Page 730 - TM 17A4-26-2R-34
  - Lot 35 - Deed Book 313, Page 730 - TM 17A4-26-2R-35
  - Lot 37 - Deed Book 313, Page 730 - TM 17A4-26-2R-37
  - Lot 38 - Deed Book 346, Page 808 - TM 17A4-26-2R-38
- Battletown Magisterial District, Clarke County, Virginia



Clarke Co., SCT.  
This instrument of writing was produced to me on the 9th day of November 2007, at the office of the Clerk of the Circuit Court of Clarke County, Virginia, and with certificate of admission to record.

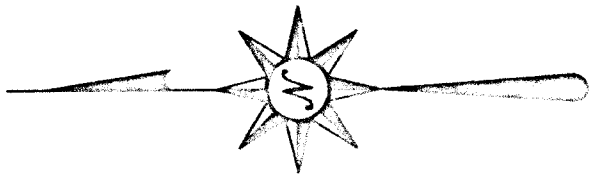
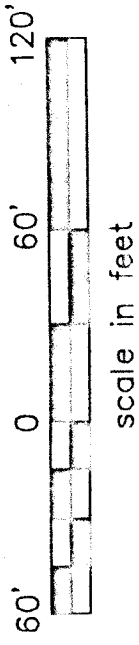
*Allen Butts*  
Clerk

Dunn Land Surveys, Inc.  
101 East Main Street  
Berryville, Virginia 22611  
Tel: 540-955-3388  
April 5, 2007  
Revised April 11, 2007  
Revised April 16, 2007

Survey no. 1590

07-2980

Plat Book 8 Page 59



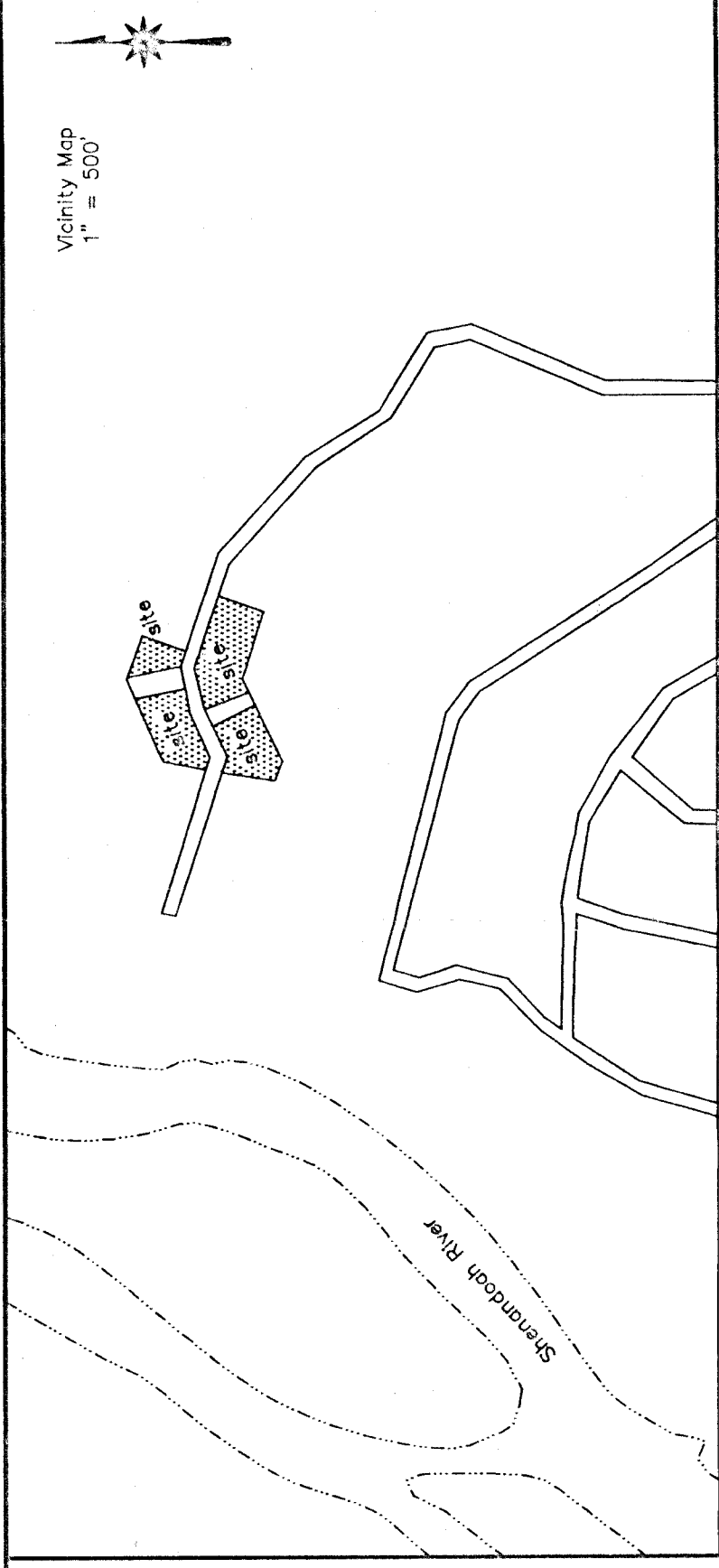
Shenandoah Retreat  
Land Corporation

Shenandoah Retreat  
Land Corporation

Shenandoah Retreat  
Land Corporation

Shenandoah Retreat  
Land Corporation

Area Tabulation:	
10,833 square feet	Area of Lot 8
9,008 square feet	Area of Lot 9
12,892 square feet	Area of Lot 10
15,120 square feet	Area of Lot 12
9,000 square feet	Area of Lot 31
8,999 square feet	Area of Lot 32
8,998 square feet	Area of Lot 33
11,314 square feet	Area of Lot 34
7,625 square feet	Area of Lot 35
8,998 square feet	Area of Lot 37
18,575 square feet	Area of Lot 38
121,362 square feet	Area of Lot 34 after consolidation (2.7991 acres)



Vicinity Map  
1" = 500'

Surveyor's Certificate: I, W. Stuart Dunn, a duly authorized Land Surveyor in the State of Virginia, do hereby certify that the lands herein consolidated are in the names of John R. Thiel and Evelyn Joran-Thiel, and were acquired by them as stated in the Owners' Certificate. I certify that the tracts of land are properly and accurately described and are within the boundaries of the original tracts.

W. Stuart Dunn, CLS #2000  
Berry, Virginia

Owners' Certificate: The undersigned fee simple owners hereby certify that the foregoing lot consolidation of eleven existing parcels recorded in the names of John R. Thiel and Evelyn Joran-Thiel being Lot 8, TM 17A4-26-25-8, recorded in Deed Book 421, Page 388; Lot 12, TM 17A4-26-25-9, recorded in Deed Book 421, Page 394; Lot 10, TM 17A4-26-25-10, recorded in Deed Book 314, Page 756; Lot 12, TM 17A4-26-25-12, recorded in Deed Book 246, Page 169; Lot 31, TM 17A3-26-2R-31, recorded in Deed Book 312, Page 291; Lot 32, TM 17A3-26-2R-32, recorded in Deed Book 312, Page 291; Lot 33, TM 17A3-26-2R-33, recorded in Deed Book 312, Page 292; Lot 34, TM 17A4-26-2R-34, recorded in Deed Book 309, Page 730; Lot 35, TM 17A4-26-2R-35, recorded in Deed Book 309, Page 457; Lot 37, TM 17A4-26-2R-37, recorded in Deed Book 346, Page 808; and Lot 38, TM 17A4-26-2R-38, recorded in Deed Book 387, Page 621; with 121,362 square feet being the consolidated total of Lot 34, and no area remaining in the other lots, is made with the free consent and in accordance with the desires of the undersigned owner of said lands and the same is hereby confirmed and submitted for record in the Office of the Clerk of the Circuit Court of Clarke County, Virginia.

John R. Thiel  
Evelyn Joran-Thiel

State of Virginia, County of Clarke, to wit:  
Acknowledged before me in my State and County aforesaid this 9th day of November, 2007.

Notary Public: *Debra L. Bean* My commission expires: 5-31-09

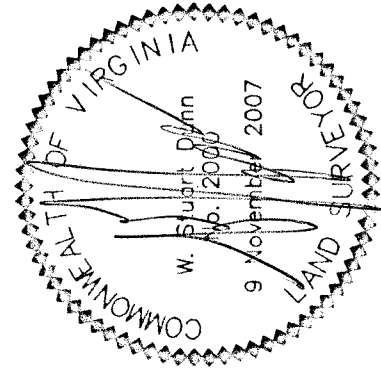
Notes:  
(1) These tracts are not in the 100 year flood plain designated by HUD, established from FIRM Community Panel no. 510036 A 03, dated September 24, 1984.  
(2) Zoned: RR (rural residential); use: vacant.  
(3) Building setbacks as follows: 25 feet from edge of Beechwood Drive, a 40 foot R/W, 10 feet from any sideline, and 35 feet from any rear line.  
(4) I.r.f. = iron rod found; i.r.s. = iron rod set  
(5) This boundary is based on plat by Robert K. Wilson recorded in Deed Book 50, Page 47.

Lot Consolidation Survey of the Lands of  
*John R. Thiel and Evelyn Joran-Thiel*  
Shenandoah Retreat - Block 2-S

- Deed Book 50, Page 47  
Lot 8 - Deed Book 421, Page 388 - TM 17A4-26-25-8  
Lot 9 - Deed Book 421, Page 394 - TM 17A4-26-25-9  
Lot 10 - Deed Book 314, Page 756 - TM 17A4-26-25-10  
Lot 12 - Deed Book 246, Page 169 - TM 17A4-26-25-12  
Shenandoah Retreat - Block 2-R  
Deed Book 50, Page 47  
Lot 31 - Deed Book 312, Page 291 - TM 17A3-26-2R-31  
Lot 32 - Deed Book 312, Page 291 - TM 17A3-26-2R-32  
Lot 33 - Deed Book 312, Page 292 - TM 17A3-26-2R-33  
Lot 34 - Deed Book 323, Page 730 - TM 17A4-26-2R-34  
Lot 35 - Deed Book 309, Page 457 - TM 17A4-26-2R-35  
Lot 37 - Deed Book 346, Page 808 - TM 17A4-26-2R-37  
Lot 38 - Deed Book 387, Page 621 - TM 17A4-26-2R-38  
Battletown Magisterial District, Clarke County, Virginia

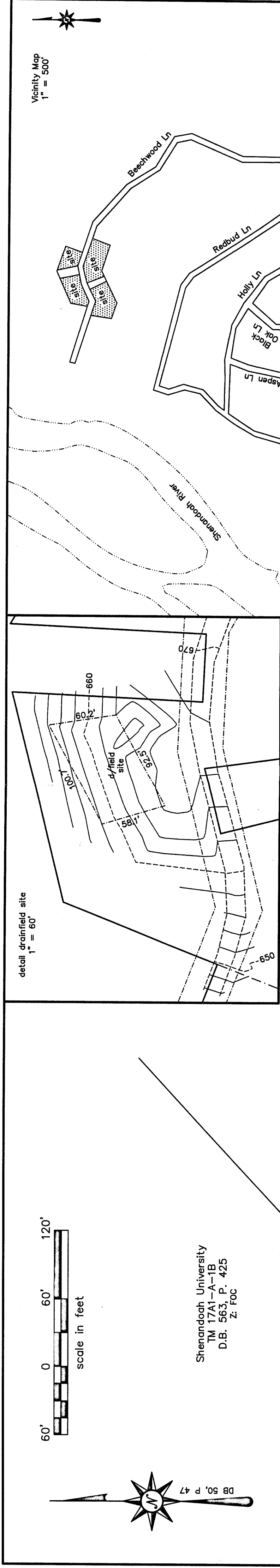
Clarke Co., SC.  
This instrument of writing was produced to me on the 9th day of November, 2007, at 10:25 a.m., and with certificate of acknowledgment thereof attached was admitted to record.

Test:  
*Helen Butler*, Clerk



Dunn Land Surveys, Inc.  
101 East Main Street  
Berryville, Virginia 22611  
Tel: 540-955-3388  
April 5, 2007  
Revised April 11, 2007  
Revised April 16, 2007

Survey no. 1590



Surveyor's Certificate: I, W. Stuart Dunn, a duly authorized Land Surveyor in the Commonwealth of Virginia, do hereby certify that the lands herein merged are in the names of John R. Thiel and Evelyn Joran-Thiel, and were acquired by them as stated in the Owners' Certificate. I certify that the tracts of land are properly and accurately described and are within the boundaries of the original tracts.

W. Stuart Dunn, CLS #2000  
Berryville, Virginia

**Owners' Certificate:** The undersigned fee simple owners hereby certify that the foregoing lot merger of Lot 34, Block 2-R, an existing 121,362 square foot parcel, TM 17A-26-2R-34, Lot 39, Block 2-S, an existing 9,005 square foot parcel, TM 17A-26-2S-13, Block 2-S, an existing 9,005 square foot parcel, TM 17A-26-2S-13, all parcels recorded in the names of John R. Thiel and Evelyn Joan-Thiel (also known as John Thiel and Evelyn Thiel), in the following deeds: Deed Book 421, Page 388; Deed Book 508, Page 694; Deed Book 421, Page 394; Deed Book 508, Page 897; Deed Book 314, Page 756; Deed Book 246, Page 169; Deed Book 367, Page 291; Deed Book 312, Page 292; Deed Book 323, Page 730; Deed Book 309, Page 437; Deed Book 346, Page 808; Deed Book 362, Page 621; (as to Lot 34, Block 2-R), Deed Book 323, Page 730, (as to Lot 39, Block 2-R), and Deed Book 573, Page 199, (as to Lot 13, Block 2-S), with 140,617 square feet being the merged total of Lot 34, Block 2-R and no area remaining in Lot 39, Block 2-R, and Lot 13, Block 2-S, is made with the free consent and in accordance with the desires of the undersigned owners of said lands and the same is hereby confirmed and submitted for record in the Office of the Clerk of the Circuit Court of Clarke County, Virginia.

John R. Thiel

I, John R. Krout, Jr., a Notary Public in and for the Commonwealth of Virginia at large, do certify that John R. Thiel, whose name is signed in the foregoing Owners' Certificate, has acknowledged the same before me in my state.

Given under my hand this 10 day of March, 2018.

**JOHN R. FRIANT, JR.**  
**NOTARY PUBLIC**  
**Commonwealth of Virginia**  
Reg. #116685  
My Commission Expires Nov. 30, 2019

Notary Public:  
My commission expires:

**Evelyn Joran-Thiel**

I, John R. Brantley, a Notary Public in and for the Commonwealth of Virginia at large, do certify that Evelyn Joran-Thiel, whose name is signed in the foregoing Owners' Certificate, has acknowledged the same before me in my state.

Given under my hand this 10<sup>th</sup> day of March 1880

**JOHN R. FRIANT, JR.**  
**NOTARY PUBLIC**  
**Commonwealth of Virginia**  
**Reg. # 116685**  
**My Commission Expires Nov. 30, 2019**

Notary Public: Dee R. Wentz  
My commission expires: \_\_\_\_\_

**Notes:**

- (1) These lands are in Flood Zone X, established from FIRM Community Panel no. 51043C0088D, dated September 28, 2007.
- (2) Zoned: RR (rural residential); use: vacant
- (3) Building setbacks as follows: 25 feet from edge of Beechwood Drive, a 40 foot R/W, 10 feet from any sideline, and 35 feet from any rear line.
- (4) L.r.f. = iron rod found; L.r.s. = iron rod set
- (5) This boundary is based on plat by Robert K. Wilson recorded in Deed Book 50, Page 47. Field work on this site was completed in 2018.

*John R. Thiel and Evelyn Joran-Thiel*  
(also known as John Thiel and Evelyn Thiel)


(also known as John Thiel and Evelyn Thiel)  
*Shenandoah Retreat, Block 2-S*

Lot 13      Deed Book 50, Page 47      Deed Book 573, Page 199      TM 17A3-26-2S-13  
*Shenandoah Retreat, Block 2-R*


Deed Book 50, Page 47  
Lot 34      TM 17A4--26--2R--34

Deed Book 421,	Lot 39	TM 17A4-26-2R-39,	Page 894
Deed Book 421,	Page 388	Deed Book 508,	Page 897
Deed Book 421,	Page 394	Deed Book 508,	Page 897
Deed Book 314,	Page 756	Deed Book 246,	Page 189
Deed Book 312,	Page 291	Deed Book 312,	Page 292
Deed Book 323,	Page 730	Deed Book 303,	Page 457
Deed Book 346,	Page 808	Deed Book 367,	Page 651

Dunn Land Surveys, Inc.  
106 North Church Street  
Berrville, Virginia 22611  
Tel: 540-955-3388  
January 23, 2018  
Survey no. 1590-5

Approval:  This re-arrangement of property lines is excepted from the Clarke County Subdivision Ordinance pursuant to Section 10-E of said ordinance. Date: 9/30/18

Area Tabulation:	
121,362 square feet	Area of Lot 34, Block 2-R
+ 9,005 square feet	Area of Lot 13, Block 2-S
+ 10,250 square feet	Area of Lot 39, Block 2-R
140,617 square feet	Area of Lot 34, Block 2-R after merger (3.2281 acres)

Approval:  date: 3.29.18

Clarke County Health Department



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Clarke County Health Department  
100 N Buckmarsh St.  
Berryville, VA  
22611  
(540) 955-1033 Voice  
(540) 955-4094 Fax

---

March 29, 2018

John Thiel  
1440 Beechwood Ln.  
Bluemont, VA 20135

Subject: **Alternative Onsite Sewage Disposal System, Owner Responsibilities**  
Health Department ID Number: **043180064**  
Tax Map Number/GPIN: **17A4-26-2R-34**  
Physical Address: TBD Beechwood Ln.  
Bluemont, Clarke County, VA 20135

Dear John Thiel:

Records on file at the Clarke County Health Department indicate that you are the owner of an Alternative Onsite Sewage System (AOSS) located at Shenandoah Retreat, Berryville, VA. This letter is to provide you with important information regarding owner responsibilities for the operation and maintenance of your AOSS.

The *Regulations for Alternative Onsite Sewage Systems* (the "AOSS Regulations," 12 VAC 5-613) became effective on December 7, 2011. These regulations can be found online at <http://www.vdh.virginia.gov/EnvironmentalHealth/Onsite/regulations/index.htm>.

The Commonwealth of Virginia State Board of Health *Alternative Onsite Sewage Regulations* outline the owner's responsibilities for alternative onsite sewage systems. Owners are now required to:

1. Have the AOSS **operated and maintained by a licensed operator**. A list of licensed operators can be obtained by visiting the Department of Professional and Occupational Regulation at [www.dpor.virginia.gov](http://www.dpor.virginia.gov). Select "License Lookup" from the menu, type an asterisk (\*) in the name field, check the "Operators" box under "Onsite Sewage Systems Professionals" and click "search."
2. Have a **licensed operator visit** the AOSS at the frequency required by the regulations.
3. Have a licensed operator collect any **samples** required by the regulations (specific laboratory sampling requirements depend on the date your application was filed, the size of the treatment system, the approval status of the treatment unit, whether or not disinfection was required, and whether or not there is direct dispersal to groundwater. Laboratory sampling is not required for any small AOSS with an installed soil treatment area that is sized for septic tank effluent and complies with the requirements of 12VAC5-610 for septic tank effluent. Please consult your Operation and Maintenance Manual, the system designer, an Operator, or the Health Department if you have questions.).

4. Keep a copy of the **maintenance log** provided by the operator on the property where the AOSS is located, make the log available to the health department upon request, and transfer the log to any future owner of the property.
5. Keep a copy of the **Operation and Maintenance (O&M) Manual** for the AOSS on the property where the system is located, make the manual available to the health department upon request, and transfer the O&M Manual to any future owner.
6. Comply with the onsite sewage disposal requirements contained in any local ordinance adopted pursuant to the Chesapeake Bay Preservation Act (§10.1-2100 of the *Code of Virginia*) and the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20) if the AOSS is located within a designated Chesapeake Bay preservation area.

Proper operation and maintenance of an AOSS is required by law and is necessary to ensure continued functioning of the system and may prevent premature failure of the system. Operation and maintenance information for your system may be found by contacting the system designer, the local health department, or by visiting the VDH website at

<http://www.vdh.virginia.gov/EnvironmentalHealth/Onsite/newsofinterest/index.htm>.

If you have any questions regarding this letter or believe that you received this letter in error, please contact me at (540) 955-1033. Your cooperation and timely response will be appreciated.

Sincerely,

Virginia Department of Health



March 29, 2018

John Thiel  
1440 Beechwood Ln.  
Bluemont, VA 20135

Subject: **Recordation of Future Operation Permit**  
Health Department ID Number: 043180064; Tax Map Number/GPIN: 17A4-26-2R-34  
Locality: Beechwood Ln., Bluemont, VA 20135  
Clarke County

Dear John Thiel:

Your application to construct an alternative sewage disposal system to serve a residence at the above location, filed on March 28, 2018 with the Clarke County Health Department, has been evaluated in accordance with the requirements contained in Section 32.1-164.1 of the *Code of Virginia*, 12 VAC 5-610-250 of the *Sewage Handling and Disposal Regulations*, and current agency policies and procedures.

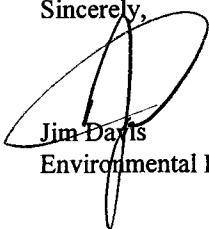
Your application is approved and your construction permit is attached to this letter. After your alternative sewage disposal system is constructed and approved for use, the local health department will issue an Operation Permit. The Operation Permit will be valid as long the sewage disposal system is properly operated and maintained. In accordance with Section 15.2-2157 of the *Code of Virginia*, operation permits for alternative systems serving residential facilities must be conditioned. Before you receive an operation permit for your alternative onsite sewage disposal system, you must record a notice in the land records of the Clerk of the Circuit Court in the locality where the system is located. You must furnish to the local health department a certification from the Clerk of the Circuit showing the deed book number and page number (or instrument number) upon which the notice was recorded. The notice must be indexed in the grantor index under your name.

The notice will state the following:

*This permit is issued in accordance with the provisions of Title 32.1, Chapter 6 of the Code of Virginia as Amended, and § 12VAC5-610-340 of the Sewage Handling and Disposal Regulations of the Virginia Department of Health. The continued validity of this permit is contingent upon compliance with the operation and maintenance requirements contained in the Owner's Operation and Maintenance Manual and Regulations for Alternative Onsite Sewage Systems of the Virginia Department of Health (12VAC5-613-100 et seq.). Owners are advised to be aware of the operation and maintenance instructions for their alternative onsite sewage system and to follow them. Copies of the operation and maintenance instructions can be found by contacting the local health department for the locality where the onsite sewage disposal system is located*

If you have any questions or if this office can be of further service to you, please call us at (540) 955-1033.

Sincerely,



Jim Davis  
Environmental Health Supervisor



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Clarke County Health Department  
100 N Buckmarsh St.  
Berryville, VA 22611  
(540) 955-1033 Voice  
(540) 955-4094 Fax

---

March 29, 2018

**Notice for Recordation: AOSS Operation and Maintenance Required**

TO: John Thiel

FROM: Jim Davis, Environmental Health Supervisor

Property Identification: TM/GPIN#: 17A4-26-2R-34  
HDID #: 043180064  
Address: TBD Beechwood Ln.  
Locality: Bluemont, VA 20135, Clarke

**TO WHOM IT MAY CONCERN:**

The Clarke County Health Department has approved an alternative onsite sewage system (AOSS) for use for the property identified above as long as the system is properly operated and maintained and performs in accordance with the *Sewage Handling and Disposal Regulations* (12 VAC 5-610-10 *et seq.*) and the *Regulations for Alternative On-Site Sewage Systems* (12 VAC 5-613-10 *et seq.*)

This permit is issued in accordance with the provisions of Title 32.1, Chapter 6 of the *Code of Virginia* as Amended, and §12VAC5-610-340 of the *Sewage Handling and Disposal Regulations* of the Virginia Department of Health. The continued validity of this permit is contingent upon compliance with the operation and maintenance requirements contained in the Owner's Operation and Maintenance Manual and the *Regulations for Alternative Onsite Sewage Systems* of the Virginia Department of Health (12VAC5-613-100 *et seq.*). Owners are advised to be aware of the operation and maintenance instructions for their alternative onsite sewage system and to follow them. Copies of the operation and maintenance instructions should have been given to the original owner by the system designer and should be passed on from owner to owner; they can also be found by contacting the local health department for the locality where the onsite sewage disposal system is located.

**This Notice must be recorded** in the owner's name in the grantor's index of the land records of the Clerk of the Circuit Court of the county having jurisdiction over the property. You must furnish the Clarke County Health Department with certification from the Clerk of the Circuit Court showing the deed book and page number or the instrument number upon which the notice was recorded before you can receive your permit to operate the on-site sewage treatment and disposal system.



**As owner of the property, I acknowledge that the sewage disposal system designed to serve the dwelling requires adherence to the Owner's Operation and Maintenance Manual and to Part III, Operation and Maintenance, found in the *Regulations for Alternative Onsite Sewage Systems* of the Virginia Department of Health (12VAC5-613-100 et seq.).**

\_\_\_\_\_  
John Thiel

\_\_\_\_\_  
Date

COMMONWEALTH OF VIRGINIA, COUNTY/CITY OF \_\_\_\_\_, to wit:

Subscribed and acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2018 by John Thiel.

\_\_\_\_\_  
NOTARY PUBLIC for the  
COMMONWEALTH OF VIRGINIA AT LARGE

Registration #: \_\_\_\_\_

My Commission expires \_\_\_\_\_



---

Clarke County Health Department  
100 N Buckmarsh St.  
Berryville, VA 22611  
(540) 955-1033  
(540) 955-4094 Fax

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***PE Sewage Disposal System Construction Permit Letter (COV 32.1-163.6)***

March 29, 2018

John Thiel  
1440 Beechwood Ln.  
Bluemont, VA 20135

RE: TBD Beechwood Ln. Clarke County  
**Tax Map/GPIN:** 17A4-26-2R-34  
**HDID:** 043180064 **Reserve:** 100% reserve area provided  
**System Capacity:** Residential, 3 Bedrooms, 450 gallons per day  
**Occupancy Limit:** 6 persons maximum

Dear John Thiel:

This letter and the attached drawings, specifications and calculations dated March 16, 2018 constitute your **permit** to install a sewage disposal system [and private well if applicable] on the property referenced above. Your application for a permit was submitted pursuant to §32.1-163.6 of the *Code of Virginia*, which requires the Virginia Department of Health (VDH) to accept designs for onsite sewage systems from individuals licensed as Professional Engineers (PEs). This law allows PEs to design onsite sewage systems that do not fully comply with the *Sewage Handling and Disposal Regulations* (12 VAC 5-610-10 *et seq.*) and requires VDH to accept such designs provided they comply with standard engineering practices, performance requirements set by the Board of Health, and certain horizontal setback requirements necessary to protect public health and the environment. VDH hereby recognizes that the design submitted by **Kepler, Randy, P.E.** complies with the requirements of the *Code of Virginia* and the applicable regulations and grants permission to install the system as designed in the area shown on the attached plans and specifications.

If modifications or revisions are necessary between now and when the system is constructed, please contact the PE who designed the system upon which this permit is based. Should revisions be necessary during construction, your contractor should consult with the PE. The PE is authorized to make minor adjustments in the location or design of the system provided that adequate documentation is provided to the Clarke County Health Department.

The PE that submitted the design for this permit is required by the *Sewage Handling and Disposal Regulations* to conduct a final inspection of this sewage system when it is installed and to submit an inspection report and completion statement to the Clarke County Health Department. The health department is not required to inspect the installation, but may do so at its sole discretion. The sewage system may not be placed into operation until you have obtained an Operation Permit from the Clarke County Health Department. If your PE did not submit an Operation and Maintenance Manual for review and approval with the plan package, then (s)he will be required to do so prior to issuance of an Operation Permit.

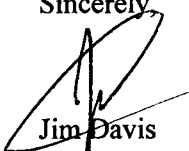
This Construction Permit is null and void if site and soil conditions are changed from those shown on your application or if conditions are changed from those shown on the attached plans and specifications. VDH may revoke or modify any permit if, at a later date, it finds that the system would threaten public health or the environment.

This permit approval has been issued in accordance with applicable regulations based on the information and materials provided at the time of application. There may be other local, state, or federal laws or regulations that apply to the proposed construction of this onsite sewage system. The owner is responsible at all times for complying with all applicable local, state, and federal laws and regulations. This construction permit is transferrable until expired or deemed null and void. A permit transfer form may be found on the VDH website at <http://www.vdh.virginia.gov/environmental-health/gmp-2015-01-forms/>.

If you have any questions, please contact me.

This permit expires **September 28, 2019**.

Sincerely,



Jim Davis

Environmental Health Supervisor

C: Kepler, Randy, P.E.

### **WHAT YOU WILL NEED TO GET YOUR SEPTIC SYSTEM OPERATION PERMIT**

- Your system must have a **satisfactory inspection** at the time of installation. This will be done by the designer of your permitted system, a private OSE or PE. Your OSE or PE must submit a copy of the inspection results, complete with an as-built diagram, to the Health Department.
- Please ensure that your contractor turns in a **Completion Statement** to the local Health Department after installation.
- If your permit is for an alternative system, you must sign, have notarized, and record the attached **Notice of Recordation** in your locality's land records. Please bring proof of this recordation to the local Health Department

### **IF YOUR PERMIT IS FOR BOTH A SEPTIC SYSTEM AND WELL YOU WILL ALSO NEED**

- Your well must have **satisfactory inspection** results after installation. Please give the Health Department several days notice to schedule this inspection before your Operation Permit will be requested.
- The Health Department must receive a copy of your **water sample test result** being negative/satisfactory for coliform bacteria and Nitrate. You are responsible for performing this test and ensuring the results are received at the Health Department
- Please ensure that your Well Driller submits a Uniform **Water Well Completion Statement or GW-2** to the Health Department, including documentation of a proper well abandonment if required by permit

Allow 5 business days after the last piece of documentation is received for the Operation Permit to be issued. To avoid delays, clearly label each piece of documentation with the property Tax Map number and HDID number shown above and on your construction permit. *Please note that due to the individual circumstances of your permit there may be additional required items not covered by this checklist.*

If you have any questions about any of the items on this list, please do not hesitate to contact the Clarke County Health Department at (540) 955-1033.



Clarke County Health Department  
100 N Buckmarsh St.  
Berryville, VA 22611  
(540) 955-1033 Voice  
(540) 955-4094 Fax

**Private Well Construction Permit**

November 20, 2017

Tax Map/ GPIN #: 17A4-26-2R-34

HDID #: 043170160

Property Address: Beechwood Lane Bluemont,  
VA  
20135

Owner Name: John Thiel

Mailing Address: 1440 Beechwood Ln. 20135  
Bluemont, VA 20135

Directions: from Berryville, take Rt. 7 East, cross river, Turn L on Retreat Road, go to end, Turn L on Flint Spring, R on Beechwood, nearly to the end.

Subdivision: Shenandoah Retreat Section 26 Block Lot 11 lots combined: 8, 9, 10, 12, 31, 32, 33, 34, 35, 37, 38.

The attached drawings and below specifications constitute your permit to install a private well on the property referenced above. This permit is null and void if conditions are changed from those shown on your application or if conditions are changed from those shown on the attached construction drawings and specifications. VDH may revoke or modify any permit if, at a later date, it finds that the site conditions, well location, and/or design do not substantially comply with the Private Well Regulations, *12 VAC 5-630-10 et seq*, or if the well would threaten public health or the environment. There may be other local, state, or federal laws or regulations that apply to the proposed construction of this private well. The landowner is responsible at all times for complying with all applicable local, state, and federal laws and regulations, and for ensuring that the water well is properly located on the landowner's property and in the approved area indicated on the attached schematic.

Your private well must be inspected by a representative of the local health department. Your private well may not be placed into operation until you have obtained a Record of this Inspection (ROI) from the Clarke County Health Department.

Before you can obtain your ROI, you must provide the Health Department with a complete Water Well Completion Statement /GW-2 from your well driller and a record of a satisfactory bacteriological sample result.

Well Purpose: Domestic Drinking Water

Minimum Casing Depth: 50 '

Well Class: Class IIIB

Minimum Grout Depth: 50 '

Minimum distance from any current or future soil-poisoned termite treated foundation: 100 '

Other Comments:

**THIS PERMIT EXPIRES: May 21, 2022 and is not transferable to another owner or location.**

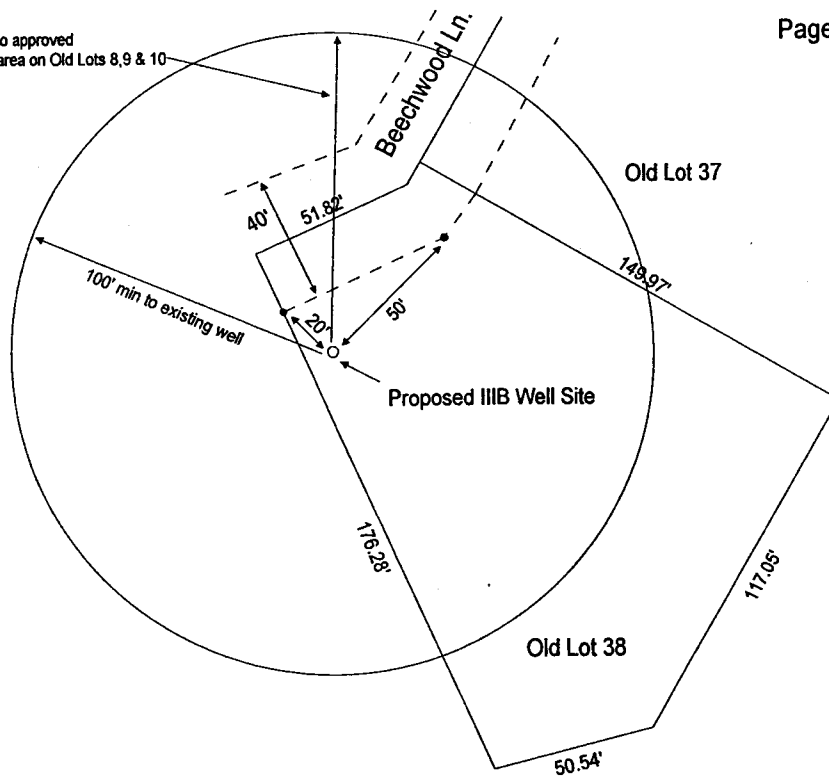
Issued by: 

Jim Davis, Environmental Health Supervisor

Date: 11.20.17

Attachments: Well Permit Drawing

100' min. to approved  
drainfield area on Old Lots 8, 9 & 10



TM# 17A4-26-2R-34

Well Only

Specs:

1. Install Class IIIB well with 50' min. casing and grout.
2. Keep IIIB well 100' min. from existing well & approved drainfield area.
3. Keep IIIB well 50' min. from future non-chemically termite treated house foundation.
4. Keep IIIB well 10' min. from property lines.

Scale 1" = 60'

043180264

802344 #4615

328-18

49500

**Commonwealth of Virginia**Application for: ☒ Sewage System ☐ Water Supply (Existing well)Owner John ThielMailing Address 1440 Beechwood Lane  
Bluemont, Va. 20135Agent Stephen White, Greenway EngineeringMailing Address 151 Windy Hill Lane  
Winchester, Va. 22602Site Address Beechwood Lane

VDH Use only

Health Department ID# \_\_\_\_\_

Due Date \_\_\_\_\_

Phone 540-533-0671

Phone \_\_\_\_\_

Fax \_\_\_\_\_

Phone 540-974-9111

Phone \_\_\_\_\_

Fax 540-722-9528Email sjwhite@greenwayeng.comDirections to Property: Rt. 7 East, left on Shenandoah Retreat Road, left on Flint Spring, right on Beechwood, lots on left towards to the end of BeechwoodSubdivision Shenandoah Retreat Section \_\_\_\_\_ Block 2-R Lot 34Tax Map 17A4-26-2R-34 Other Property Identification \_\_\_\_\_ Dimension/Acreage of Property 1+ acres**Sewage System****Type of Approval:** Applicants for new construction are advised to apply for a certification letter to determine if land is suitable for a sewage system and to apply for a construction permit (valid for 18 months) **only when ready to build.**☐ Certification Letter☒ Construction Permit☐ Voluntary Upgrade☐ Repair Permit**Proposed Use:**Single Family Home (Number of Bedrooms 3)

Multi-Family Dwelling (Total Number of Bedrooms \_\_\_\_\_)

Other (describe) \_\_\_\_\_

Basement? ☒ Yes ☐ NoWalk-out Basement? ☒ Yes ☐ NoFixtures in Basement ☒ Yes ☐ NoConditional permit desired? ☒ Yes ☐ No

If yes, which conditions do you want?

☐ Reduced water flow ☐ Limited Occupancy ☐ Intermittent or seasonal use ☐ Temporary use not to exceed 1 yearDo you wish to apply for a betterment loan eligibility letter? ☐ Yes ☐ No \*There is a \$50 fee for determination of eligibility.**Water Supply**Will the water supply be ☐ Public or ☒ Private?Is the water supply ☒ Existing or ☐ Proposed?If proposed, is this a replacement well? ☐ Yes ☐ NoIf yes, will the old well be abandoned? ☐ Yes ☐ NoWill any buildings within 50' of the proposed well be termite treated? ☐ Yes ☒ No**All Applicants**Is this a private sector OSE/PE application? ☒ Yes ☐ No If yes, is the OSE/PE package attached? ☒ Yes ☐ NoIs this property indeed to serve as your (owners) principal place of residence? ☒ Yes ☐ No

In order for VDH to process your application for a sewage system you must attach a plat of the property and a site sketch. For water supplies, a plat of the property is recommended and a site sketch is required. The site sketch should show your property lines, actual and/or proposed buildings and the desired location of your well and/or sewage system. When the site evaluation is conducted the property lines, building location and the proposed well and sewage sites must be clearly marked and the property sufficiently visible to see the topography.

I give permission to the Virginia Department of Health to enter onto the property described during normal business hours for the purpose of processing this application and to perform quality assurance checks of evaluations and designs certified by a private sector Onsite Soil Evaluator or Professional Engineer as necessary until the sewage disposal system and/or private water supply has been constructed and approved.

Stu Wh  
Signature of Owner/ Agent3/26/2018  
Date



## OSE/PE Report For:

Construction  
PermitRepair  
PermitVoluntary Upgrade  
PermitCertification  
LetterSubdivision  
Approval

## Property Location:

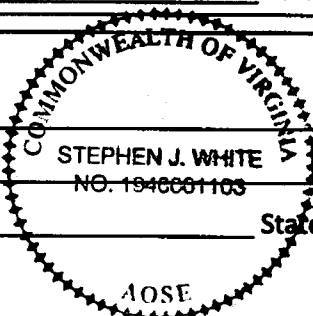
911 Address: Beechwood Lane City: Bluemont  
 Lot 34 Section Block 2-R Subdivision Shenandoah Retreat  
 GPIN or Tax Map # 17A4-26-2R-34 Health Dept ID # \_\_\_\_\_  
 Latitude 39.14578 Longitude -77.89545

## Applicant or Client Mailing Address:

Name: John Thiel  
 Street: 1440 Beechwood Lane  
 City: Bluemont State VA Zip Code 20135

## Prepared by:

OSE Name Stephen White License # 1940001103  
 Address 151 Windy Hill Lane  
 City Winchester State Va Zip Code 22602  
 PE Name \_\_\_\_\_ License # \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_



Date of Report 3/23/2018  
 OSE/PE Job # A305JT

Date of Revision #1 \_\_\_\_\_  
 Date of Revision #2 \_\_\_\_\_

## Contents/Index of this report (e.g., Site Evaluation Summary, Soil Profile Descriptions, Site Sketch, Abbreviated Design, etc.)

Pg. 1 - OSE Certification Statement Pg. 7 - Site Sketch  
 Pg. 2 - System Specifications Pg. 8 - Sanitary Survey  
 Pg. 3 - Construction Drawings P  
 Pg. 4 - Abbreviated Design  
 Pgs. 5-6 - Soils Report

## Certification Statement

This also complies with the Clarke County code.

I hereby certify that the evaluations and/or designs contained herein were conducted in accordance with the *applicable provisions of the Sewage Handling and Disposal Regulations (12 VAC5-610), the Private Well Regulations (12 VAC5-630), the Regulations for Alternative Onsite Sewage Systems (12VAC5-613)* and all other applicable laws, regulations and policies implemented by the Virginia Department of Health. I further certify that I currently possess any professional license required by the laws and regulations of the Commonwealth that have been duly issued by the applicable agency charged with licensure to perform the work contained herein. The potential for both conventional and alternative onsite sewage systems has been discussed with the owner/applicant.

☐ The work attached to this cover page has been conducted under an exemption to the practice of engineering, specifically the exemption in Code of Virginia Section 54.1-402.A.11

I recommend that a (select one): construction permit ☒ certification letter ☐ subdivision approval ☐ be (select one) issued ☒  
 repair permit ☐ voluntary upgrade ☐ Denied ☐

OSE/PE Signature [Signature] Date 3/23/2018

## System Specifications

VDH Use Only

HDIN: \_\_\_\_\_

**Application Information**

Name: John Thiel

Address: 1440 Beechwood Lane

Phone: 540-533-0671

Bluemont, Va. 20135

**Location Information**

Tax Map/GPIN #: 17A4-26-2R-34

Property Address: Beechwood Lane

Subdivision: Shenandoah Retreat

Section: \_\_\_\_\_

Block: 2R

Lot: 34

Directions: Rt. 7 East, left on Shenandoah Retreat Road, left on Flint Spring, right on Beechwood, lots on left towards to the end of Beechwood

**General Information**

Property Type (e.g. residential): residential

Number of Bedrooms: 3

Daily Flow: 450 gpd

Conditions: n/a

Notes: \_\_\_\_\_

**Sewer Line**

Diameter: 4 in. Material: Schedule 40 (or equivalent) Notes: See Engineer Design Plan

**Pretreatment Unit(s)**

Treatment Level: T1.2

Septic Tank Capacity: See Engineer Design Plan gallons

Number of Septic Tanks See Engineer Design Plan

Size of Septic Tank(s) See Engineer Design Plan gallons

Per the Sewage Handling and Disposal Regulations, check which option(s) chosen:

☒ Septic tank with inspection port ☐ Septic tank with effluent filter ☐ Reduced maintenance septic tank

Secondary treatment device(s), if applicable: Advantext (See Engineer Design Plan)

Notes: \_\_\_\_\_

**Conveyance Line**

Conveyance Method: Pump

If pumping, include pump specifications sheet.

Material: \_\_\_\_\_ Diameter: \_\_\_\_\_

Notes: See Engineer Design Plan

**Distribution Method and Header Lines**

Distribution Method: DRIP

No. of boxes: \_\_\_\_\_ No. of outlets: \_\_\_\_\_

Surge or splitter box required: ☐ Yes ☐ No

Header Line Material: \_\_\_\_\_

**Percolation Lines/Absorption Area**

Dispersal Method (e.g. laterals, pad, mound): DRIP (See Engineer Design Plan)

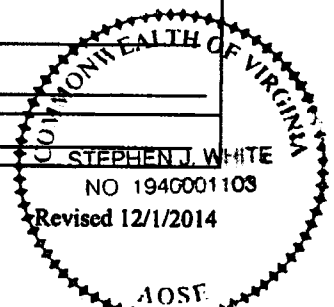
If using pressure dispersal (e.g. drip), include pressure dispersal specifications sheet.

No. of laterals/pads: \_\_\_\_\_ Length of lateral(s)/pad(s): \_\_\_\_\_ ft. Width of lateral(s)/pad(s): \_\_\_\_\_ in.

Center to center spacing: \_\_\_\_\_ ft. Installation depth: \_\_\_\_\_ in. Aggregate depth: \_\_\_\_\_ in.

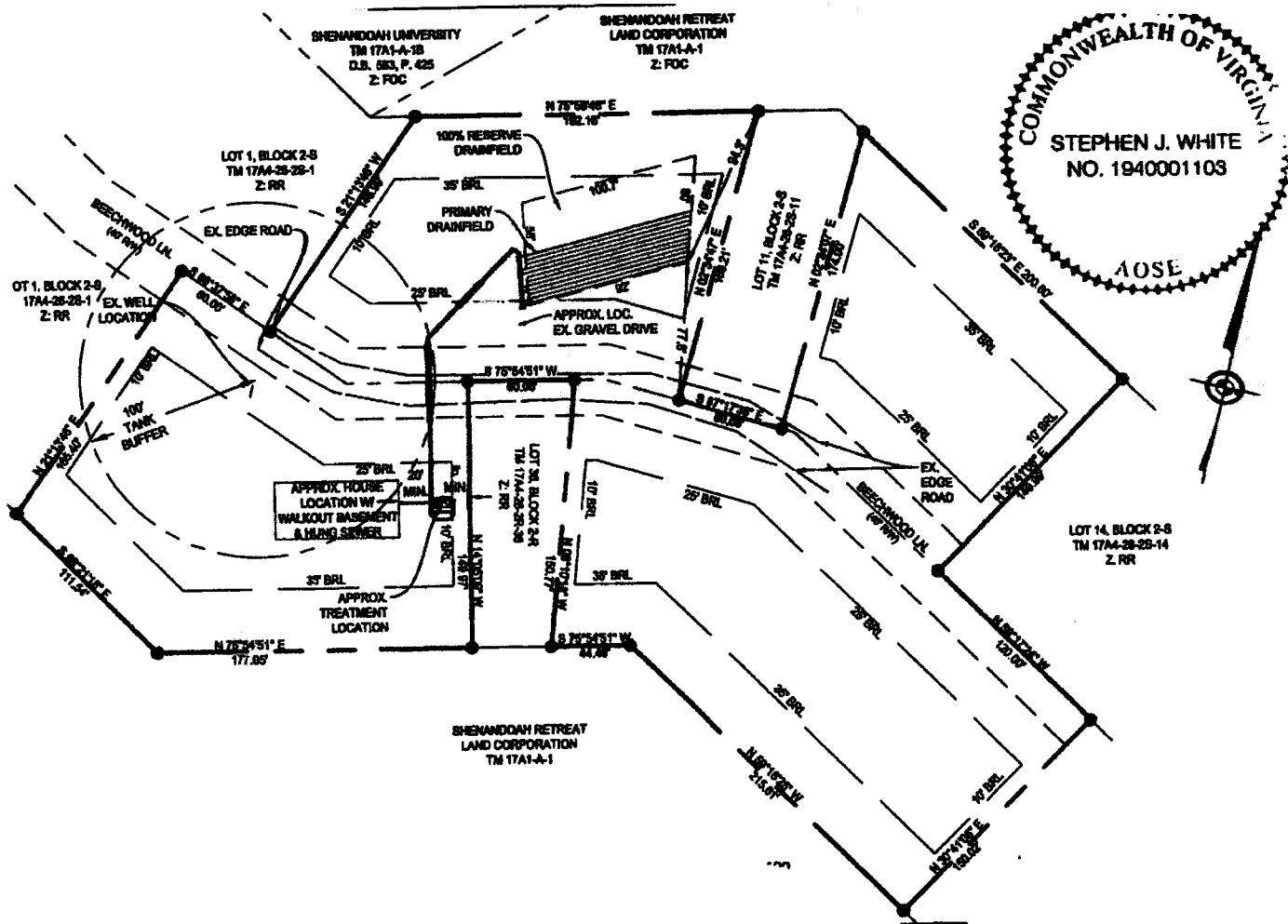
Size/Type of Aggregate: \_\_\_\_\_ Lateral/pad slope: \_\_\_\_\_ in. per \_\_\_\_\_ ft.

Reserve Area Provided: 100 % Notes: Do Not Disturb Reserve

**Please Note:** See Engineer Design Plan

**\*\*See engineer design plan**

Scale 1" = 100'



A certification letter was issued for the property in 2007. The drainfield was shifted approximate 30' to the east and 18' up the hill.

### Abbreviated Design Form

Tax Map or Pin #: 17A4-26-2R-34

Abbreviated Design for: Primary ☐ Reserve ☐ Both ☒

Number of Bedrooms: 3

Design Gallons Per Day: 450

Distribution Method: Gravel Trenches ☐ Gravelless Trenches ☐ Drip Disposal ☒ Other:

LGMI Required: No

Conveyance Method: Pump

Dispersal System Basis: AOSS Table 1

Effluent Quality Required: TL2

Total Length of Available Area: 92'

Total Width of Available Area: 58'

Total Square Footage Required: 2,077

Estimated Percolation Rate: 60

Loading Rate (GPD per Sq. Ft): 0.65

$450/0.65 \times 3 = 2,077$  sq ft required for install. 4,154 sq ft total required for primary and 100% reserve

### Area Calculations

#### If Trenches:

Number of Trenches:

Length of Trenches:

Center to Center Spacing:

Width of Trench:

Total Width Required:

Installation Depth:

Total Square Footage Provided for Primary:

Total Square Footage Provided for Reserve:

Percent Reserve:

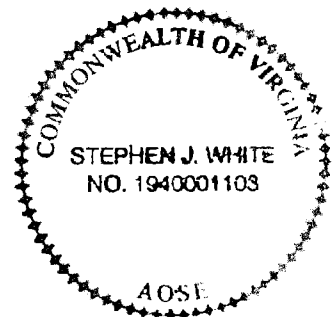
#### If Drip:

Installation Depth: 3"

Total Square Footage Provided for Primary: 2668

Total Square Footage Provided for Reserve: 2668

Percent Reserve: 100%



# Site and Soil Evaluation Report

VDH Use Only

HDIN: \_\_\_\_\_

## General Information

Date: 3/21/2018 Clarke County Health Department  
 Owner: John Thiel Phone: 540-533-0671  
 Owner Address: 1440 Beechwood Lane, Bluemont, Va. 20135  
 Property Address: Beechwood Lane  
 Tax Map/GPIN #: 17A4-26-2R-34  
 Subdivision: Shenandoah Retreat Section: \_\_\_\_\_ Block: 2R Lot: 34

## Soil Information Summary

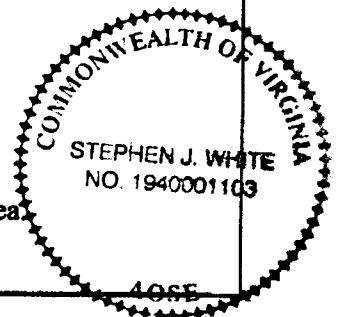
1. Position in landscape satisfactory: ☐ Yes ☐ No Describe landscape position: mountain side slope
2. Slope: 15 %
3. Depth to rock/impervious strata: Max. \_\_\_\_\_ in. Min. 39 in. ☐ Not observed
4. Free Water Present: ☐ Yes ☒ No Range in inches: \_\_\_\_\_
5. Depth to seasonal water table (gray mottling or gray color): 37 inches ☐ Not observed
6. Soil percolation rate estimated: ☒ Yes ☐ No Estimated rate: 60 min/in at 3 inches depth  
 Texture Group: ☐ I ☐ II ☒ III ☐ IV
7. Percolation test performed: ☐ Yes ☒ No If yes, provide additional data on percolation test results.

Name and title of evaluator: Stephen White, AOSESignature: *Stephen White*

☒ Site approved: Drip Dispersal (describe dispersal area, e.g. absorption trenches) dispersing  
TL2 (proposed level of treatment at time of evaluation) to be placed at 3 (inches) depth at  
 site designated on permit. Site provides a total of 5,336 square feet of absorption area for primary and  
 reserve (if applicable).

☐ Site disapproved: Reasons for rejection (check all that apply)

1. ☐ Position in landscape subject to flooding or periodic saturation.
2. ☐ Insufficient depth of suitable soil over hard rock.
3. ☐ Insufficient depth of suitable soil to seasonal water table.
4. ☐ Rates of absorption too slow.
5. ☐ Insufficient area of acceptable soil for required absorption area, and/or reserve area.
6. ☐ Proposed system too close to well.
7. ☐ Other (specify) \_\_\_\_\_



Date of Evaluation: 12/15/2017

# Profile Description

## SOIL EVALUATION REPORT

Property ID: 17A4-28-2R-34

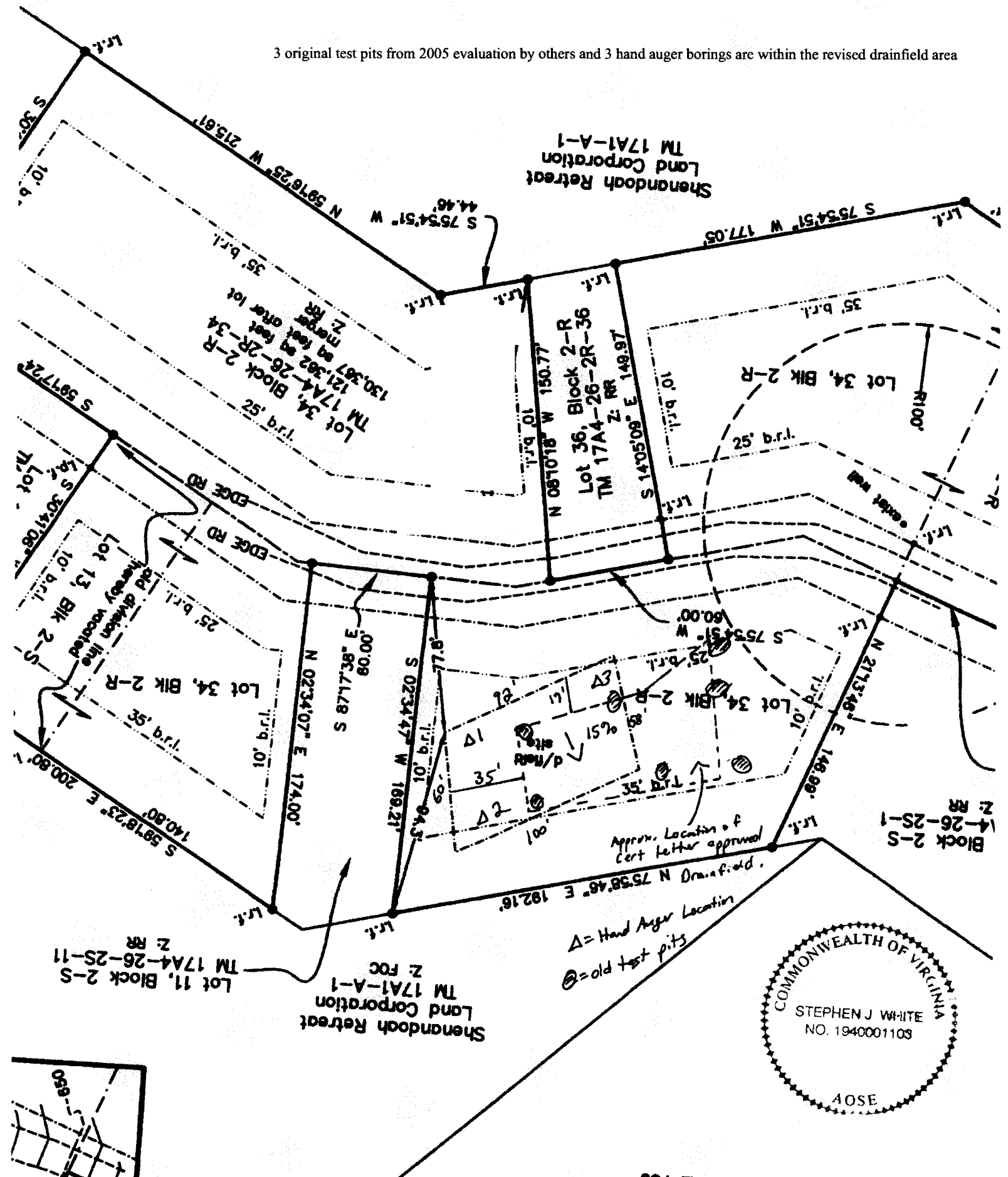
Where the local health department conducts the soil evaluation the location of profile holes may be shown on the schematic drawing on the construction permit or the sketch submitted with the application. If soil evaluations are conducted by a private Onsite Soil Evaluator or Professional Engineer, location of profile holes and sketch of the area investigated including all structural features (i.e. sewage disposal systems, wells, etc.) within 100 feet of the site and reserve site shall be shown on the reverse side of this page or prepared on a separate page and attached to this form.

☐ See application sketch    ☐ See Construction Permit    ☒ See sketch on reverse side or page attached to this form.

[illegible]

**REMARKS:** several test pits were evaluated in the previous approved drainfield in 2005. The drainfield was shifted east to avoid some large trees. 3 hand auger borings were done to confirm the soils.

Shenandoah Retreat  
Land Corporation  
TM 17A1-A-1





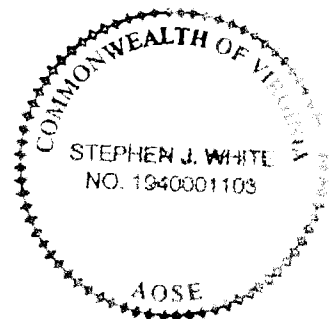
**Sanitary Survey Statement**

**Shenandoah Retreat – Beechwood Lane**

**Tax Map # 17A4-26-2R-34**

The proposed drainfield site is 150+ to the existing 3B well and greater than 200' to any other known wells.

A cert letter was issued for the property in 2007. The drainfield was shifted approximate 30' to the east and 18' up the hill to avoid several large trees and to also avoid an existing gravel driveway. A drip system is proposed as the owner wanted to keep as many trees as they could.



093170160  
Commonwealth of Virginia

Application for: ☒ Sewage System ☒ Water Supply

VDH Use only

Health Department ID# \_\_\_\_\_

Due Date \_\_\_\_\_

Owner JOHN & EVELYN THIEL OCT 27 2017

Mailing Address 1440 BEECHWOOD LANE  
BLUEMONT, VA 20135

Agent SAME

Mailing Address \_\_\_\_\_

Site Address TM 17A4-26-2R-34

Phone 540-533-0671 (JOHN)

Phone 540-539-2418 (EVELYN)

Fax \_\_\_\_\_

Phone \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

Email JOHN.RTHIEL@COMCAST.NET

Directions to Property: JUST BEFORE CURRENT ADDRESS ABOVE, ON LEFT

Subdivision 17A4 Section 26 Block 2R Lot 34

Tax Map 17A4-26-2R-34 Other Property Identification \_\_\_\_\_ Dimension/Acreage of Property 2.7 ACRES

Sewage System

Type of Approval: Applicants for new construction are advised to apply for a certification letter to determine if land is suitable for a sewage system and to apply for a construction permit (valid for 18 months) only when ready to build.

☒ Certification Letter (HAWK) ☒ Construction Permit ☐ Voluntary Upgrade ☐ Repair Permit

Proposed Use:

Single Family Home (Number of Bedrooms 3) Multi-Family Dwelling (Total Number of Bedrooms \_\_\_\_\_)

Other (describe) \_\_\_\_\_

Basement? ☒ Yes ☐ No Walk-out Basement? ☒ Yes ☐ No Fixtures in Basement ☒ Yes ☐ No

Conditional permit desired? ☐ Yes ☐ No If yes, which conditions do you want?

☐ Reduced water flow ☐ Limited Occupancy ☐ Intermittent or seasonal use ☐ Temporary use not to exceed 1 year

Do you wish to apply for a betterment loan eligibility letter? ☐ Yes ☐ No \*There is a \$50 fee for determination of eligibility.

Water Supply

Will the water supply be ☐ Public or ☒ Private? Is the water supply ☐ Existing or ☒ Proposed?

If proposed, is this a replacement well? ☐ Yes ☒ No If yes, will the old well be abandoned? ☐ Yes ☐ No

Will any buildings within 50' of the proposed well be termite treated? ☐ Yes ☒ No

All Applicants

Is this a private sector OSE/PE application? ☐ Yes ☐ No If yes, is the OSE/PE package attached? ☐ Yes ☐ No

Is this property indeed to serve as your (owners) principal place of residence? ☒ Yes ☐ No

In order for VDH to process your application for a sewage system you must attach a plat of the property and a site sketch. For water supplies, a plat of the property is recommended and a site sketch is required. The site sketch should show your property lines, actual and/or proposed buildings and the desired location of your well and/or sewage system. When the site evaluation is conducted the property lines, building location and the proposed well and sewage sites must be clearly marked and the property sufficiently visible to see the topography.

I give permission to the Virginia Department of Health to enter onto the property described during normal business hours for the purpose of processing this application and to perform quality assurance checks of evaluations and designs certified by a private sector Onsite Soil Evaluator or Professional Engineer as necessary until the sewage disposal system and/or private water supply has been constructed and approved.

John Thiel  
Signature of Owner/ Agent

10/26/17  
Date

## HAVE YOU CONSIDERED USING THE PRIVATE SECTOR?

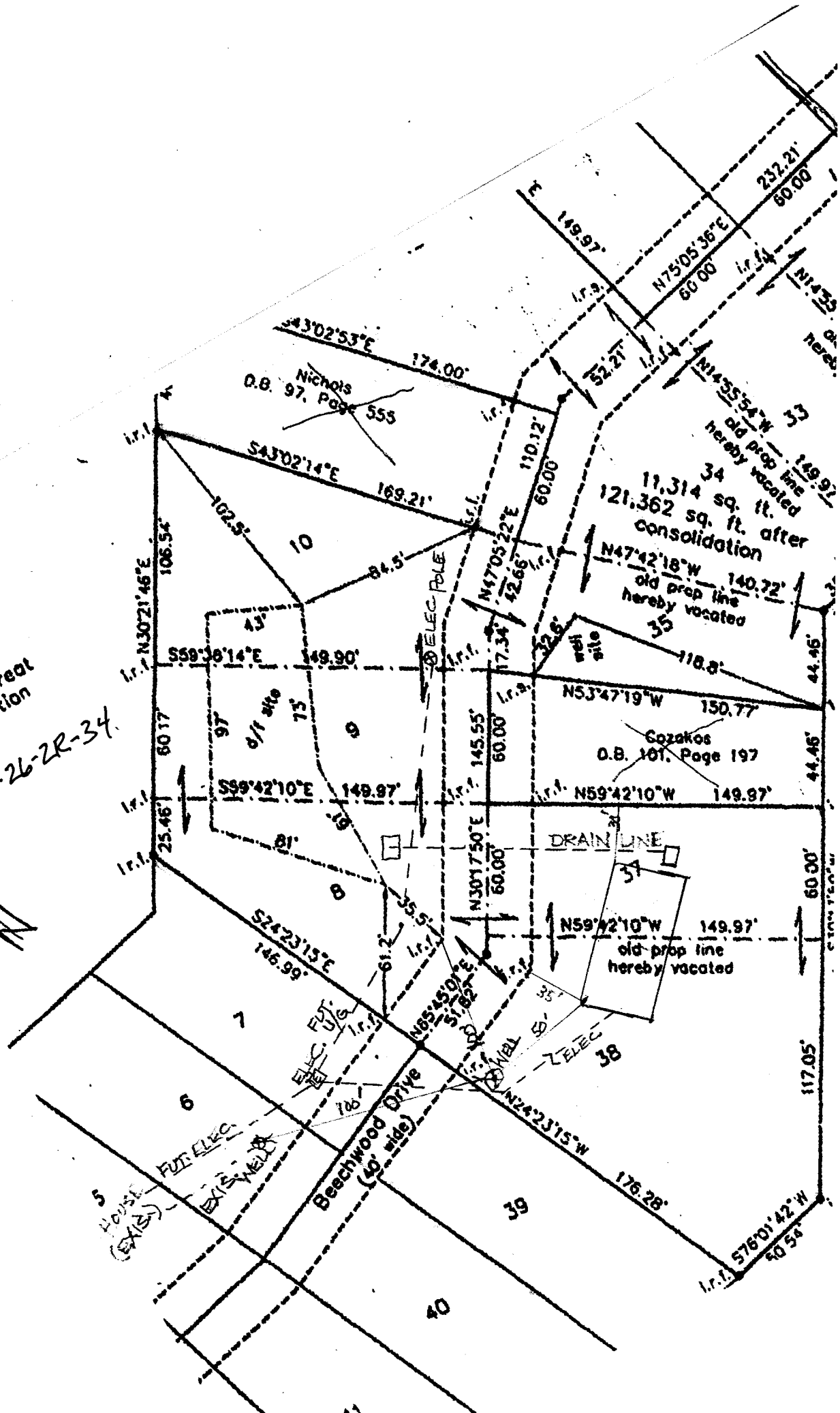
Before you submit an application that requires soil evaluation or septic system design work, please consider the following.

- You will be required to use a private sector designer if you have:
  - A non-residential sewage system.
  - A system that will use over 1,000 gallons per day.
  - ✓○ An alternative system (property has marginal soil, or limited land area).
  - A septic system design that requires a professional engineer.
- Private sector designers can also:
  - Design a wider range of septic systems.
  - Specify name-brand products.
  - Help you find an installer or system operator.
  - Help with other needs, such as shrink-swell soil analysis.
  - Help guide you through the application process.
- VDH needs less time to process an application with private sector work, so you can get a response faster.

**For help finding a private sector designer visit:**  
**[www.vdh.virginia.gov/environmentalhealth/onsite/serviceproviders](http://www.vdh.virginia.gov/environmentalhealth/onsite/serviceproviders)**

T.M.\*

17A4-26-2R-34





## CLARKE COUNTY HEALTH DEPARTMENT

100 NORTH BUCKMARSH STREET  
BERRYVILLE, VIRGINIA 22611  
(540) 955-1033 FAX (540) 955-4094

*November 14, 2007*

RE: **CERTIFICATION LETTER**

Tax Map: **17A4-26-2R-34**

Subdivision: ***Shenandoah Retreat***

Lot consolidation: **2.7891 acres**

***John and Evelyn Thiel, owners  
P.O. Box 642  
Berryville, Virginia 22611***

***Dear Mr. & Mrs. Thiel,***

This letter is issued in lieu of a sewage disposal system construction permit in accordance with Section 32.1-163, et seq., of the Code of Virginia. The Board of Health hereby recognizes that the soil and site conditions acknowledged by this correspondence, and documented by additional records on file at the local health department, are suitable for installation of an onsite sewage disposal system. The plat by ***Dunn Land Surveys, dated April 11, 2007*** is recorded in ***Plat Book 8 Page 59*** located in the Land Records Section of the Clarke County Circuit Court Clerk's Office. This plat shows the approved area for the sewage disposal system. This letter is valid until a permit for construction is issued and the system is installed, inspected and approved. This letter is void if there is any substantial physical change in the soil or site conditions where the sewage disposal system is to be located.

A permit to construct the sewage disposal system must be issued before construction of the system. If the property owner (current or future) applies for a construction permit within 18 months of the date of this letter, the application fee paid for this letter shall be applied to any state fees for a permit to construct a system. After 18 months, the applicant is responsible for paying all state fees for a permit application.

This letter, **MUST** be recorded in the land records by the clerk of the circuit court in the jurisdiction where all or part of the site or proposed site of the system is to be located. This letter and plat must be recorded within 90 calendar days of its issuance and a copy returned to the local health department. After 90 calendar days the letter is null and void. The site shown on the plat is specific and must not be disturbed or encroached upon by any construction. To do so voids this letter. Upon sale or transfer of the land that is subject of this letter, the letter shall be transferred with the title to the property.

**Mr. and Mrs. John Thiel, owners**

Certification Letter TM # 17A4-26-2R-34

Page 2

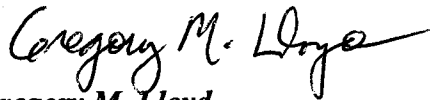
Future owners are advised to review the plat for the location of the onsite sewage disposal area to make sure their building plans do not interfere with the area. If they have any questions regarding the location of the area, they should contact the local health department for assistance.

The area evaluated, and certified by this letter, is suitable to accommodate a **three (3)** bedroom house using a system design of **450** gallons per day. The property will be served by a private well.

This letter is an assurance that a sewage disposal system construction permit will be issued (provided there have been no substantial physical changes in the soil or site conditions where the system would be located); however it is not a guarantee that a permit for a specific type of system will be issued. The design of the sewage system will be determined at the time of application for a building permit and sewage system construction permit. The design will be based on the site and soil conditions certified by this letter, structure size and location, water well location (final determination to be made at time of permit issuance), the regulations in effect at the time, and any off-site impacts that may have occurred since the date of the issuance of this letter. In some cases, engineered plans may be required prior to issuance of the construction permit. In accordance with Section 32.1-164.1:1 of the Code of Virginia, owners are advised to apply for a sewage disposal construction permit only when ready to begin construction.

This certification letter may be subject to and must comply with any applicable local ordinances.

Sincerely,



**Gregory M. Lloyd**

Environmental Health Specialist Senior

Reviewed by,



**Ryan Fincham**

Environmental Health Specialist Senior

**Mr. and Mrs. John Thiel, owners**  
Certification Letter TM # 17A4-26-2R-34  
Page 3

Certificate of Acknowledgment  
**Clarke County**  
Commonwealth of Virginia

I certify the information provided herein is true and accurate to the best of my knowledge and belief.

Gregory M. Lloyd  
Environmental Health Specialist Senior

Subscribed, acknowledged, and sworn to before me this 14<sup>th</sup> day of  
November, 2007.

Joyce E. Meadows  
Notary Public

My commission expires November 30, 2010.

Certificate of Acknowledgment:  
**Clarke County**  
Commonwealth of Virginia

**I was commissioned as a notary public  
as Joyce E. Painter ID# 314763**

I authorize that this certification letter be recorded in the grantee index of the clerk of the Circuit Court of **Clarke County** under my name.

\_\_\_\_\_  
Signature

Subscribed, acknowledged, and sworn to before me this \_\_\_\_\_ day of  
\_\_\_\_\_, 2007.

\_\_\_\_\_  
Notary Public

My commission expires \_\_\_\_\_.



## Soil Summary Report

New TM #

17A4-26-2R-34

Page \_\_\_\_\_ of \_\_\_\_\_

Cloverleaf Environmental Consulting, Inc.  
Post Office Box 446 ■ Berryville, VA 22611

Phone (540) 955-9475 ■ Fax (540) 955-1013  
Email cloverleaf@clarke2000.com

Health Department I.D. # \_\_\_\_\_

## GENERAL INFORMATION

Date 30-Dec-05 Submitted to Clarke County Health Department  
Applicant John & Evelyn Thiel Telephone Number (540) 955-2979  
Address P.O. Box 642 Berryville, VA 22611  
Owner John & Evelyn Thiel Address P.O. Box 642, Berryville, VA 22611  
Location From Berryville (East), VA Route SR-7 [Harry Byrd Hwy] 5.7 mi; LEFT (North) onto Retreat Rd;  
Road changes to Flint Spring Dr; RIGHT (North-East) onto Beechwood Ln 1.2 mi; Arrive lots end of Beechwood Ln  
Tax Map Number 17A4-26 Subdivision Shenandoah Retreat  
Block/Section Block — / Section 26 Lot(s) 7, 8, 37, 38 89, 10, 12, 31, 32, 33, 34, 35,  
37,  
38'

## SOIL INFORMATION SUMMARY

1. Position in landscape satisfactory ☒ Yes ☐ No  
Describe: sloping to strongly sloping  
crest of ridge in woods
2. Slope 16% % [Measured]
3. Depth to rock or impervious strata:  
Maximum \_\_\_\_\_ Minimum 43" None \_\_\_\_\_
4. Depth to seasonal water table (gray mottling or gray color) ☒ No ☐ Yes 39 inches
5. Free water present ☒ No ☐ Yes \_\_\_\_\_ range in inches (depth of water in bottom of holes)
6. Soil percolation rate estimated ☒ Yes ☐ No Texture group 60 I II III IV  
Estimated rate 60 min/inch
7. Percolation test performed ☒ Yes ☐ No
- PROPOSED DRAINFIELD INSTALLATION DEPTH**  
Top/Installed Area @ 18" inches (depth from ground surface)  
Bottom/Reserve Area @ 18" inches (depth from ground surface)

- ☒ Site Approved: Drainfield to be placed at 24" depth at site designated on permit. 3/3/06  
☐ Site Disapproved:

## Reasons for rejection:

1. ☐ Position in landscape subject to flooding or periodic saturation.  
2. ☐ Insufficient depth of suitable soil over hard rock.  
3. ☐ Insufficient depth of suitable soil to seasonal watertable.  
4. ☐ Rates of absorption too slow.  
5. ☐ Insufficient area of acceptable soil for required drainfield, and/or Reserve Area.  
6. ☐ Proposed system too close to well.  
7. ☐ Other Specify \_\_\_\_\_

(attach additional pages, if necessary)

**Tax Map Number**      17A4-26

©Copyright 1999-2005 Cloverleaf Env. Cnslt., Inc.

PROPOSED DRAINFIELD AREA

TITLE : SITE SKETCH

PREPARED BY: R. MARSHALL, C.P.S.S.

POST OFFICE BOX 446, BERRYVILLE VA 22611 PHONE : 540-955-9475

CLOVERLEAF ENVIRONMENTAL CONSULTING, INC.

DATE	REVIEW	DATE
08/23		

PROJECT NAME : SHEN. RETREAT

PROJECT ID OR TAX MAP NO. : TM# 17A4-26

PROJECT VICINITY : BEECHWOOD RD

CLARKE CO.

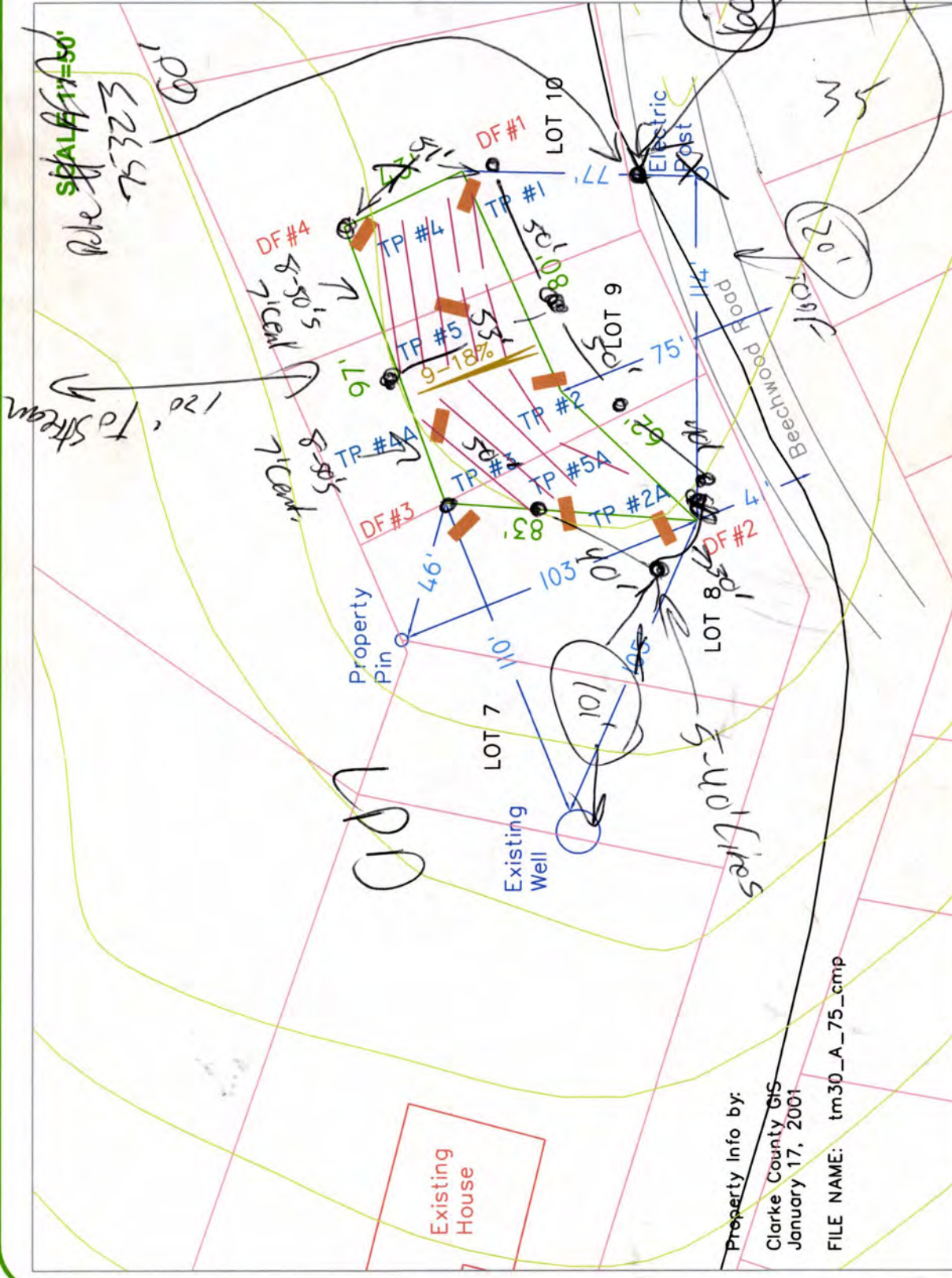
FILE NAME : TM#17A4-26\_20051230

DATE : December 30, 2005

SCALE : 1"=50'

PAGE : of

*Proposed*



NOTES:

- 1) PROPOSED SYSTEM SCHEMATIC, ALL DISTANCES WERE APPROXIMATED.
- 2) CONTRACTORS SHOULD VERIFY ALL LOCATIONS.

KEY TO SYMBOLS:

- = AUGER HOLE # - TP2
- ⊙ = EXISTING WELL
- ⊞ = BACKHOLE PIT # - TP2
- ⊞ = EXISTING HOUSE
- ⊞ = BACKHOLE PIT (UNAPPROVED)
- ↗ = SLOPE DIRECTION

SOIL STUDY AREA SITE SKETCH

Theil Property, Shenandoah Retreat (Site #01)

Tax Map # 17A4-26



Property Info by:

Clarke County GIS

January 17, 2001

FILE NAME: tm30\_A\_75\_cmp

## SOIL PROFILE DESCRIPTION REPORT

27-May-05 Date of Evaluation

- ☐ See application sketch page  
☒ See location of profile holes and a sketch of the area investigated on reverse side or page attached to this form.

Hole #	Horizon	Depth (inches)	Descriptions of, Color, Texture, etc.	Texture Group
1	Ap	0 - 5	dark grayish brown (10YR 4/2) channery silt loam; weak fine granular structure; loose, not sticky, non plastic; common medium roots [20-30 percent fine and medium rock fragments]	III
	B1	5 - 17	very pale brown (10YR 7/4) channery silt loam; weak fine subangular blocky structure; very friable, slightly sticky, non plastic; few coarse roots [20-30 percent fine and medium weathered rock fragments]	III
	B2	17 - 28	light yellowish brown (10YR 6/4) very channery silt loam; weak fine subangular blocky structure; very friable, slightly sticky, non plastic; few fine roots [40-50 percent medium and coarse weathered rock fragments]	III
	C	28 - 42	brownish yellow (10YR 6/6) very channery silty clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots [50-60 percent medium and coarse weathered rock fragments]	III
	Cr/R	42 - 57"	weathered fractured rock;	---
2	Ap	0 - 4	dark grayish brown (10YR 4/2) slightly channery silt loam; weak fine granular structure; loose, not sticky, non plastic; many fine and medium roots [<20 percent fine and medium rock fragments]	III
	B1	4 - 12	very pale brown (10YR 7/4) channery silt loam; weak fine subangular blocky structure; loose, slightly sticky, non plastic; common fine and medium roots [20-30 percent fine and medium weathered rock fragments]	III
	B2	12 - 23	brownish yellow (10YR 6/6) very channery silty clay loam; weak fine to medium subangular blocky structure; very friable, sticky, non plastic; few fine roots [40-60 percent weathered rock fragments]	III
	C	23 - 35	light yellowish brown (10YR 6/4) very channery silt loam; weak fine to medium subangular blocky structure; very friable, not sticky, non plastic; few fine roots black stains @ 28 [50-70 percent coarse weathered rock fragments]	III
	R	35 - 57"	weathered fractured rock;	---
3	Ap	0 - 6	dark grayish brown (10YR 4/2) slightly channery silt loam; weak fine granular structure; loose, not sticky, non plastic; many fine and medium roots [<20 percent fine and medium rock fragments]	III
	B1	6 - 26	very pale brown (10YR 7/4) very channery silt loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; common fine and medium roots [40-60 percent weathered rock fragments]	III
	C	26 - 62"	brownish yellow (10YR 6/6) very channery sandy clay loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few fine roots [50-70 percent coarse weathered rock fragments]	II
4	Ap	0 - 3	dark grayish brown (10YR 4/2) slightly channery silt loam; weak fine granular structure; loose, not sticky, non plastic; many fine and medium roots [<20 percent fine and medium rock fragments]	III
	B1	3 - 22	very pale brown (10YR 7/4) very channery silt loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few coarse roots [40-60 percent weathered rock fragments]	III
	C	22 - 43	light yellowish brown (10YR 6/4) very channery silt loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few fine roots [50-70 percent coarse weathered rock fragments]	III
	R	43 - 58"	weathered fractured rock;	---

## Remarks:

The purpose of this study was to evaluate soil conditions for a drainfield system and not adaptable to other purposes without modification. The interpretation of soil properties in place are only applicable if characteristics of the area of land remain similar to what they were when the soil profiles were described. These profiles were described from backhoe pits.

## SOIL PROFILE DESCRIPTION REPORT

27-May-05 Date of Evaluation

- ☐ See application sketch page  
☐ See construction permit  
☒ See location of profile holes and a sketch of the area investigated on reverse side or page attached to this form.

Hole #	Horizon	Depth (inches)	Descriptions of, Color, Texture, etc.	Texture Group
5	Ap	0 - 5	dark grayish brown (10YR 4/2) slightly channery silt loam; weak fine granular structure; loose, not sticky, non plastic; few coarse roots [<20 percent fine and medium rock fragments]	III
	B1	5 - 24	very pale brown (10YR 7/4) very channery silt loam; weak medium subangular blocky structure; very friable, slightly sticky, non plastic; many medium roots [40-60 percent weathered rock fragments]	III
	C	24 - 56"	brownish yellow (10YR 6/6) very channery silty clay loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few fine roots [50-70 percent coarse weathered rock fragments]	III
2A	Ap	0 - 6	dark grayish brown (10YR 4/2) slightly channery silt loam; weak fine granular structure; loose, not sticky, non plastic; few coarse roots [<20 percent fine and medium rock fragments]	III
	B1	6 - 22	very pale brown (10YR 7/4) very channery silt loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few coarse roots [40-60 percent weathered rock fragments]	III
	C	22 - 52"	yellow (10YR 7/6) very channery silt loam; weak fine subangular blocky structure; very friable, not sticky, non plastic; few fine roots [50-70 percent medium and coarse weathered rock fragments]	III
4A	Ap	0 - 6	dark grayish brown (10YR 4/2) slightly channery silt loam; weak fine granular structure; loose, not sticky, non plastic; few coarse roots [<20 percent fine and medium rock fragments]	III
	B1	6 - 28	very pale brown (10YR 7/4) very channery silt loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few coarse roots [30-40 percent weathered rock fragments]	III
	C	28 - 54"	brownish yellow (10YR 6/6) very channery silty clay loam; light gray (10 YR 7/1) mottle color @ 39" weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few fine and medium roots [50-70 percent coarse weathered rock fragments]	III
5A	Ap	0 - 3	dark grayish brown (10YR 4/2) slightly channery silt loam; weak fine granular structure; loose, not sticky, non plastic; few medium roots [<20 percent fine and medium rock fragments]	III
	B1	3 - 22	very pale brown (10YR 7/4) very channery silt loam; weak fine to medium subangular blocky structure; very friable, slightly sticky, non plastic; few coarse roots [40-60 percent weathered rock fragments]	III
	C	22 - 55"	yellow (10YR 7/6) very channery silt loam; weak fine granular structure; loose, not sticky, non plastic; common fine roots [50-70 percent coarse weathered rock fragments]	III

Remarks: Continuation of study to evaluate soil conditions for a drainfield system.  
 Soil profiles were described from backhoe pits.



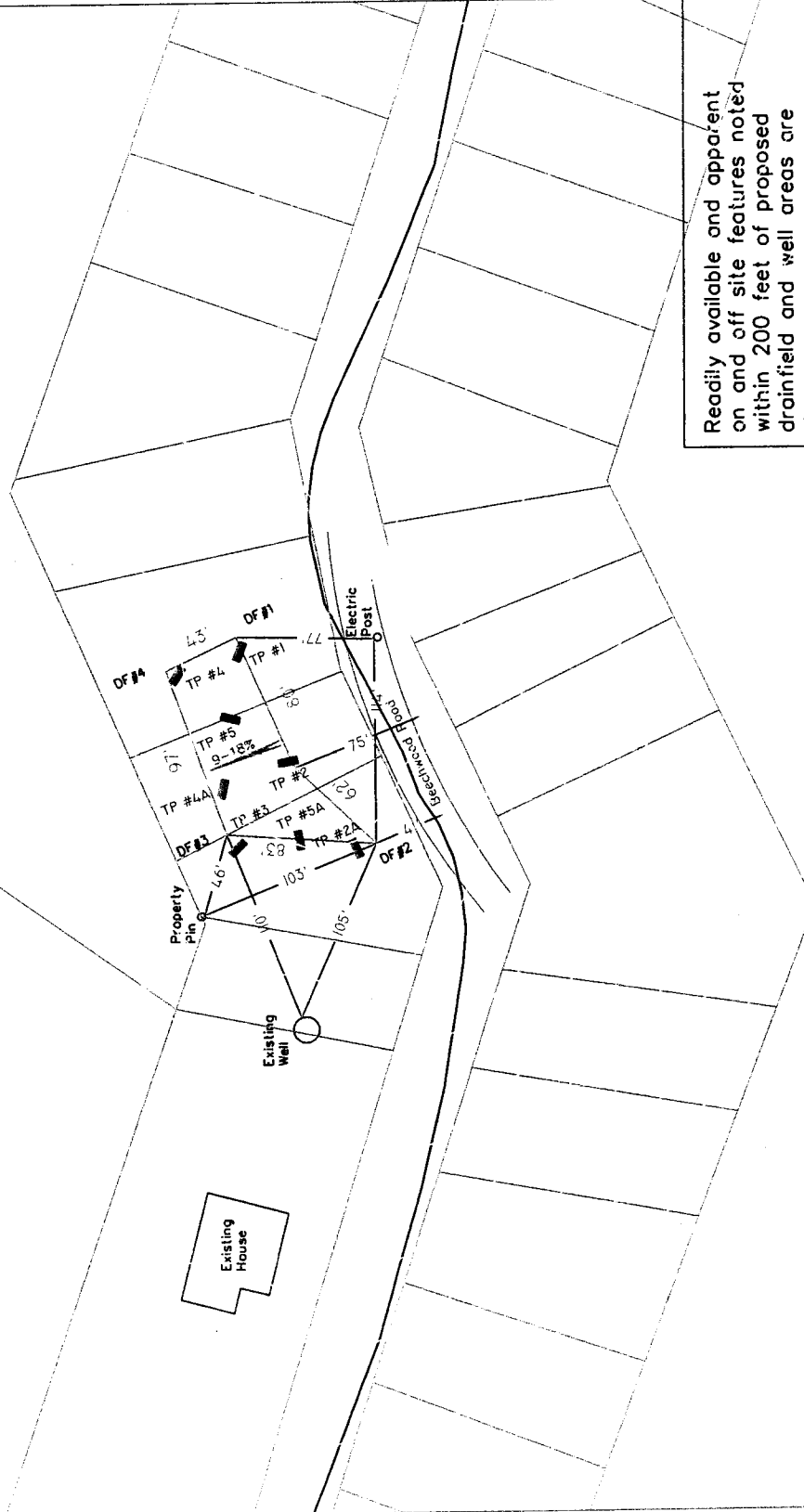


Property Info by:

Clarke County GIS  
January 17, 2001

FILE NAME: tm30\_A\_75\_cmp

SCALE 1"=100'



Readily available and apparent on and off site features noted within 200 feet of proposed drainfield and well areas are shown.

# SANITARY SURVEY AREA SITE SKETCH Theil Property, Shenandoah Retreat (Site #01) Tax Map # 17A4-26

APPROXIMATE  
NORTH

- NOTES:**
- 1) PROPOSED SYSTEM SCHEMATIC. ALL DISTANCES WERE APPROXIMATED.
  - 2) CONTRACTORS SHOULD VERIFY ALL LOCATIONS.
- KEY TO SYMBOLS**
- = AUGER HOLE # - T82
  - ⊗ = PROPOSED WELL
  - ⊠ = BACKWIDE PIT # - TP2
  - ⊡ = PROPOSED HOUSE
  - ⊢ = BACKWIDE PIT (UNPROFILED)
  - / = SLOPE DIRECTION



<p><b>SANITARY SURVEY AREA</b></p>		<p><b>TITLE : SITE SKETCH</b></p>	
<p>PREPARED BY: R. MARSHALL, C.P.S.S.</p>		<p>DATE: 05/27</p>	
<p>POST OFFICE BOX 446, BERRYVILLE VA 22611 PHONE : 540-955-9475</p>		<p>DATE: December 30, 2005</p>	

<p>PROJECT NAME : <b>SHEN. RETREAT</b></p>	<p>PROJECT ID OR TAX MAP NO. : <b>TM# 17A4-26</b></p>
<p>PROJECT VICTORY : <b>BEECHWOOD RD</b></p>	<p>COUNTY : <b>CLARKE CO.</b></p>
<p>FILE: SSE_THEIL_20051230</p>	<p>SCALE: 1"=100'</p>



**Certification Statement**

Cloverleaf Environmental Consulting, Inc.  
Post Office Box 446 ■ Berryville, VA 22611

Phone (540) 955-9475 ■ Fax (540) 955-1013  
Email cloverleaf@clarke2000.com

Submitted to Clarke County Health Department  
Health Department ID# \_\_\_\_\_

Submitted by: Cloverleaf Env. Cnslt., Inc.

**Property Identification**

Date 30-Dec-05 Tax Map Number 17A4-26  
Owner John & Evelyn Thiel Telephone (540) 955-2979  
Address P.O. Box 642 Berryville, VA 22611  
Location From Berryville (East), VA Route SR-7 [Harry Byrd Hwy] 5.7 mi; LEFT (North) onto Retreat Rd;  
Road changes to Flint Spring Dr; RIGHT (North-East) onto Beechwood Ln 1.2 mi; Arrive lots end of Beechwood Ln  
Subdivision Shenandoah Retreat Section 26 Block --- Lot(s) 7, 8, 37, 38

**GMP #100 Interim Policy for AOSEs, PEs, and other Consultants****Certification Statement (AOSEs and Consultants)**

This is to certify according to §32.1-163.5 of the Code of Virginia that work submitted for the referred property is in accordance to and complies with the Sewage Handling and Disposal Regulations of the Virginia Department of Health.

I recommend a certification letter <sup>1</sup> be approved <sup>2</sup>.

Robert Marshall AOSE  
Soil Consultant

Date: \_\_\_\_\_

Date: Fri, December 30, 05

<sup>1</sup> This blank must be filled in with one of the following terms: 'permit', 'certification letter', or 'subdivision approval'.

<sup>2</sup> This blank must be filled in either the term 'approved' or 'denied'.

**Certification Statement (PEs)**

If the submission contains a certification by a professional engineer in consultation with an AOSE, the following statement shall be signed and sealed:

I hereby certify that the evaluations and designs contained herein (refer to subdivision, lot, etc.) were conducted in accordance with the Sewage Handling and Disposal Regulations (12 VAC 5-610-10 et seq., the "Regulations") and the policies of the Virginia Department of Health for implementation of those Regulations. Furthermore, I certify that the evaluations and designs comply with the minimum requirements of the Regulations.

I recommend a \_\_\_\_\_ <sup>1</sup> be \_\_\_\_\_ <sup>2</sup>.

\_\_\_\_\_  
Licensed PE

Date: \_\_\_\_\_

Seal

<sup>1</sup> This blank must be filled in with one of the following terms: 'permit', 'certification letter', or 'subdivision approval'.

<sup>2</sup> This blank must be filled in either the term 'approved' or 'denied'.

**Sanitary Survey**

Cloverleaf Environmental Consulting, Inc.  
Post Office Box 446 ■ Berryville, VA 22611

Phone (540) 955-9475 ■ Fax (540) 955-1013  
Email cloverleaf@clarke2000.com

Submitted to Clarke County Health Department  
Health Department ID# \_\_\_\_\_

Submitted by: Cloverleaf Env. Cnslt., Inc.

**Property Identification**

Date 30-Dec-05 Tax Map Number 17A4-26  
Owner John & Evelyn Thiel Telephone (540) 955-2979  
Address P.O. Box 642 Berryville, VA 22611  
Location From Berryville (East), VA Route SR-7 [Harry Byrd Hwy] 5.7 mi; LEFT (North) onto Retreat Rd;  
Road changes to Flint Spring Dr; RIGHT (North-East) onto Beechwood Ln 1.2 mi; Arrive lots end of Beechwood Ln  
Subdivision Shenandoah Retreat Section 26 Block — Lot(s) 7, 8, 37, 38

**Sanitary Survey Statement****Sanitary Survey Statement**

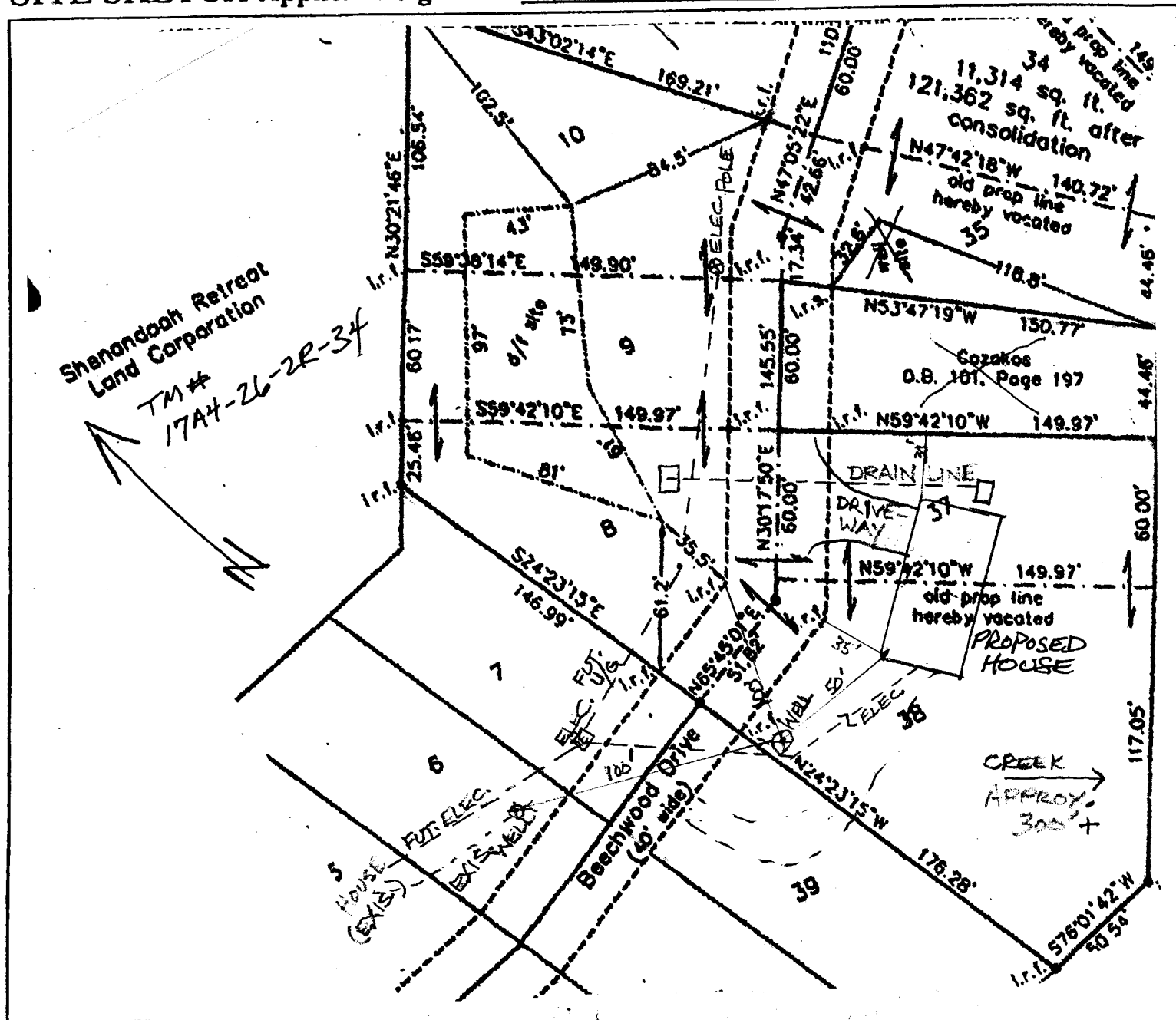
Unless noted on site sketch, no known wells or septic systems were within 200'  
of the proposed well and septic system.

AOSE

Date: \_\_\_\_\_

  
Soil Consultant

Date: Fri, December 30, 05



# **APPLICANT CHECKLIST OF ITEMS TO COMPLETE ON THE SITE SKETCH AND/OR ON THE PROPERTY:**

(Such items listed below are to be provided by the applicant at the time of application, and are to include any of the listed items within a 200' radius of the center of the proposed drain field and well locations. Distances may be paced or estimated. This list is not inclusive, and if there are other distinguishing features or facts about the property that may be of concern, the applicant should note these on the site sketch as well).

- 1.) Dimensions of Property Clearly Shown, Lot lines and Property Corners Clearly Marked in the Field
- 2.) Staked Location and Dimensions of Proposed and/or Existing Structures
- 3.) Existing or Proposed structures with distances to the 2 closest property lines.
- 4.) Location of Proposed and/or Existing Driveways
- 5.) Location of Underground or Above Ground Utilities
- 6.) Location of Easements or Right-of-Ways on the Property
- 7.) Applicants preferred drainfield site with distances to the 2 closest property lines.
- 8.) Applicants preferred well site with distances to the 2 closest property lines.
- 9.) Location of Existing Septic Systems and Wells/Cisterns within 200 feet on This Property AND Neighboring Properties
- 10.) Location of Bodies of Water, Streams, Springs (Drinking Use or Not) within 500 feet of the Property.
- 11.) Location of any Drainage Ways or Swales on the Property; or Sinkholes on or within 200 feet of the Property.
- 12.) The property should be sufficiently, but not always totally, cleared of brush to allow easy access for measurements and work, and visibility of topography. Please consult with the EHS-Sr. prior to clearing your lot extensively.

## INSTRUCTIONS FOR WELL AND SEPTIC PERMIT APPLICATIONS

Our goal is to process your application as quickly and accurately as possible. In order for us to achieve our goal, applicants must provide a complete application (including an accurate site sketch), accurate directions to the property, and property lines and house site clearly and accurately marked on the property. We can not accept an incomplete application.

*The following MUST be attached to your application:*

- ✓ 1. Surveyed plat of your property
- 2. Tax Map Number or GPIN
- 3. Proper fee

For septic repair and well replacement (if old well is abandoned) there is no fee. The following checklist is provided to assist you with the application process. The items below must be completed by the applicant before the application is submitted to the health department. If you have questions, or need assistance with your application, please ask any of the environmental health staff. We will be happy to assist you.

### This Section is to be completed and Signed by the Applicant

#### **A. The Application**

- ✓ Are all items are properly filled in?
- ✓ Have you included a telephone number where you can be reached during the day?
- ✓ Are directions to the property clear?
- ✓ Have you included the tax map number (or GPIN)?
- ✓ Have you signed and dated the application?
- ✓ Do you have the proper fee?

#### **B. Site sketch (These items may be drawn on a copy of the plat)**

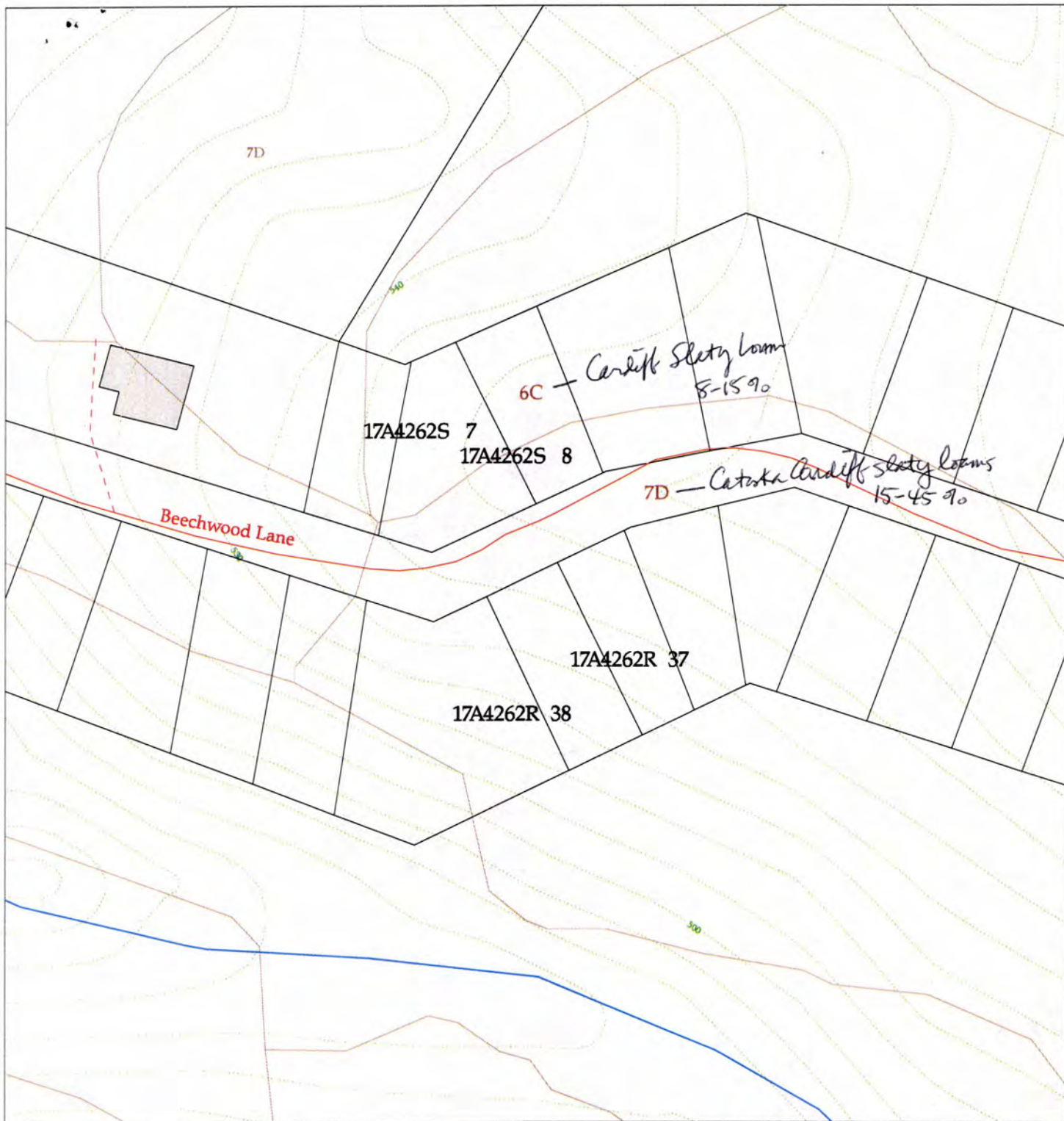
- ✓ Is the shape of property correct?
- ✓ Is the length of each property line indicated?
- ✓ Are the shape and dimensions of house (including any porches & decks) shown?
- ✓ Is the house location shown by measurements to at least two property corners or property lines?
- ✓ Is the location of driveway correct?
- ✓ Are all proposed or existing location of any utilities shown?
- ✓ Does the plat or site sketch show all legal easements located on property?
- ✓ Is the location of any septic systems, wells or buried fuel tanks within 200 feet of property shown?
- ✓ Have you shown the location and dimensions planned accessory items (sheds, pools, etc.)?
- ✓ Have you indicate your preferred location for the well and septic system?

#### **C. The building site for which the application is made**

- ✓ Are the property lines clearly and accurately marked?
  - ✓ Has the house site been clearly and accurately marked?
  - ✓ Is the location of property is easily identified from the road?
  - ✓ Have existing underground utilities been marked?
  - ✓ Is the site sufficiently cleared of vegetation that surface contours can be clearly seen?
  - ✓ Will the foundation of the house be treated for termites?
- Yes      No

I understand that the health department cannot accept incomplete applications and that if the property is not clearly marked and property lines staked, my application will be DENIED.

I intend to begin construction on this property within 18 months.      ✓ Yes      No  
Signature John Stief      Date 10/24/17



0 Inches 1  
0 Feet 100

Clarke County GIS  
January 25, 2006  
v3/maps/tm17a426\_cmp



- |                       |                               |
|-----------------------|-------------------------------|
| River/Lake/Pond       | Parcel Boundary (Approximate) |
| Structures            | Misc. Road                    |
| Soil Type             | State Road                    |
| 10' Elevation Contour | Named Private Road            |
| Perennial Stream      |                               |
| Intermittent Stream   |                               |





0 Inches 1  
0 Feet 100  
Clarke County GIS  
January 25, 2006  
/v3/maps/tm17a426i\_cmp



- River/Lake/Pond
- Perennial Stream
- Intermittent Stream
- Parcel Boundary (Approximate)
- Misc. Road
- State Road
- Named Private Road

1440 Beechwood Lane  
Retreat  
Commonwealth of Virginia 20135

Page

of

2200952  
\$337.50

2200960

227.50

will  
permit  
me

# Application for a Sewage Disposal and/or Water Supply Permit

Health Department ID# \_\_\_\_\_ (VDH Use) \_\_\_\_\_  
 Type of sewage system: ☒ New ☐ Repair ☐ Expanded ☐ Conditional  
 FHA/VA ☒ yes ☐ no Case No. \_\_\_\_\_  
 Owner John & Evelyn Thiel Address P.O. Box 642 Phone (540) 955-2979  
Berryville, VA 22611  
 Agent Cloverleaf Env. Cnslt., Inc. Address P.O. Box 446 Phone (540) 955-9475  
Berryville, VA 22611

Directions: From Berryville (East), VA Route SR-7 [Harry Byrd Hwy] 5.7 mi; LEFT (North) onto Retreat Rd;  
Road changes to Flint Spring Dr; RIGHT (North-East) onto Beechwood Ln 1.2 mi; Arrive lots end of Beechwood Ln

Subdivision Shenandoah Retreat Section 26 Block ---- Lot(s) 7, 8, 37, 38  
 Other Property Identification vacant wooded lots; prior subdv approval Map Reference 17A4-26  
 Dimension / size of Lot / Property (see survey plat for lot dimensions) / approximately 2.15 acres

## Other Application Information

I. Building / facility ☒ New ☐ Existing  
 Intermittent Use ☐ Yes ☒ No If yes, describe N/A  
 II. Residential Use ☒ Yes ☐ No  
 Termite Treatment ☐ Yes ☒ No  
☒ Single Family ☐ Multi-family  
 Number of bedrooms 3 Number of Units N/A  
 Basement ☒ Yes ☐ No  
 Fixtures in Basement ☒ Yes ☐ No  
 III. Commercial Use ☐ Yes ☒ No Describe: N/A  
 Commercial/Wastewater ☐ Yes ☒ No  
 Number of Patrons: N/A  
 Number of Employees: N/A  
 If yes, give volumes and describe N/A

## IV. Proposed Sewage Disposal Method:

Onsite Sewage Disposal System ☐ Septic Tank Drainfield ☒ LPD ☐  
 Mound ☐ Other ☐

## V. Water Supply:

☒ Public ☐ New ☐ Existing  
☒ Private ☒ New ☐ Existing

Describe: New drilled well

The property lines, building location and sewage disposal system site are clearly marked and the property is sufficiently visible to see the topography. I give permission to the Department to enter onto the property described for the purpose of processing this application and to perform quality assurance checks as necessary until the disposal system has been constructed and approved.

Robert Marshall 12/30/2005  
 Signature Owner/Agent for JOHN THIEL Date

Rec. 1/5/06 JP

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## Property Information - Tax Map# 17A4262R 34 - Account# 4609

Property Owner:  
Thiel John R & Evelyn Joran-thiel

Owner's Address:  
1440 Beechwood Lane  
Bluemont, Va 20135

Total Land Area:  
0.00Acres

Physical Location:  
911 Address Not On File

Magisterial District:  
Battle Town

NOTE: Map images are several years out of date, use at your own risk.

[View Map](#)

Legal Description:  
Shenandoah Retreat  
Lot 34 Bl 2r  
Lots 8-10 12 31-35 37  
121362 Sq Ft

Prior Assessment:

85,000

Assessment Values:

[Building 1](#)

0

[Other Impr](#)

0

[Land Value](#)

90,000

Calculated Value:

90,000

Rounded Taxable Value:

90,000

[Sales](#)

[Report](#)

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85,000

[Sales](#)

[Report](#)

*Does  
you  
need to  
go to  
private  
section!*

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07-2980

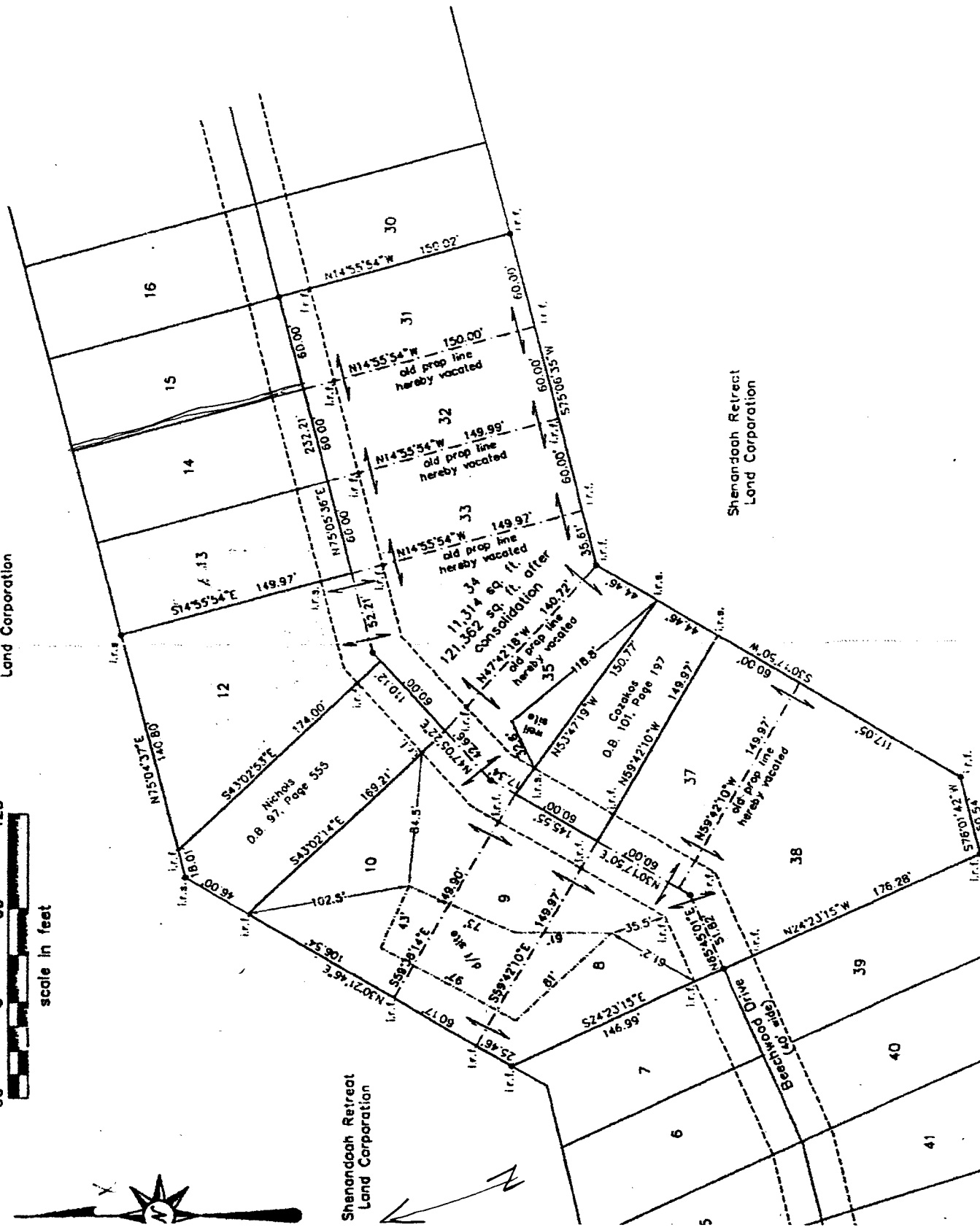
Plat Book 8 Page 59



Shenandoah Retreat  
Land Corporation

Shenandoah Retreat  
Land Corporation

Shenandoah Retreat  
Land Corporation



Surveyor's Certificate: I, W. Stuart Thiel  
herein represented are in the names of the  
Certificate. I certify that the tracts of land

W. Stuart Thiel, CLS #2000  
Berryville, Virginia

Owners' Certificate: The undersigned is  
recorded in the names of John R. Thiel and  
Lot 9, TM 17A4-26-25-9, recorded in the  
Lot 12, TM 17A4-26-25-12, recorded in the  
Lot 32, TM 17A4-26-28-32, recorded in the  
Lot 34, TM 17A4-26-28-34, recorded in the  
Lot 37, TM 17A4-26-28-37, recorded in the  
821; with 121,362 square feet being the  
consent and in accordance with the desires  
recorded in the Office of the Clerk of the

John R. Thiel

State of Virginia, County of Clark, I  
Acknowledged before me in my State and  
Notary Public: *Lebra A. King*

Notes:  
(1) These tracts are not in the 100 year  
September 24, 1984.  
(2) Zoned: RR (rural residential); use: vine  
(3) Building setbacks as follows: 25 feet in  
rear line.  
(4) I.R.F. = Iron rod found; I.R.A. = Iron rod  
(5) This boundary is based on plat by Min

John

ON-SITE SEWAGE DISPOSAL DESIGN

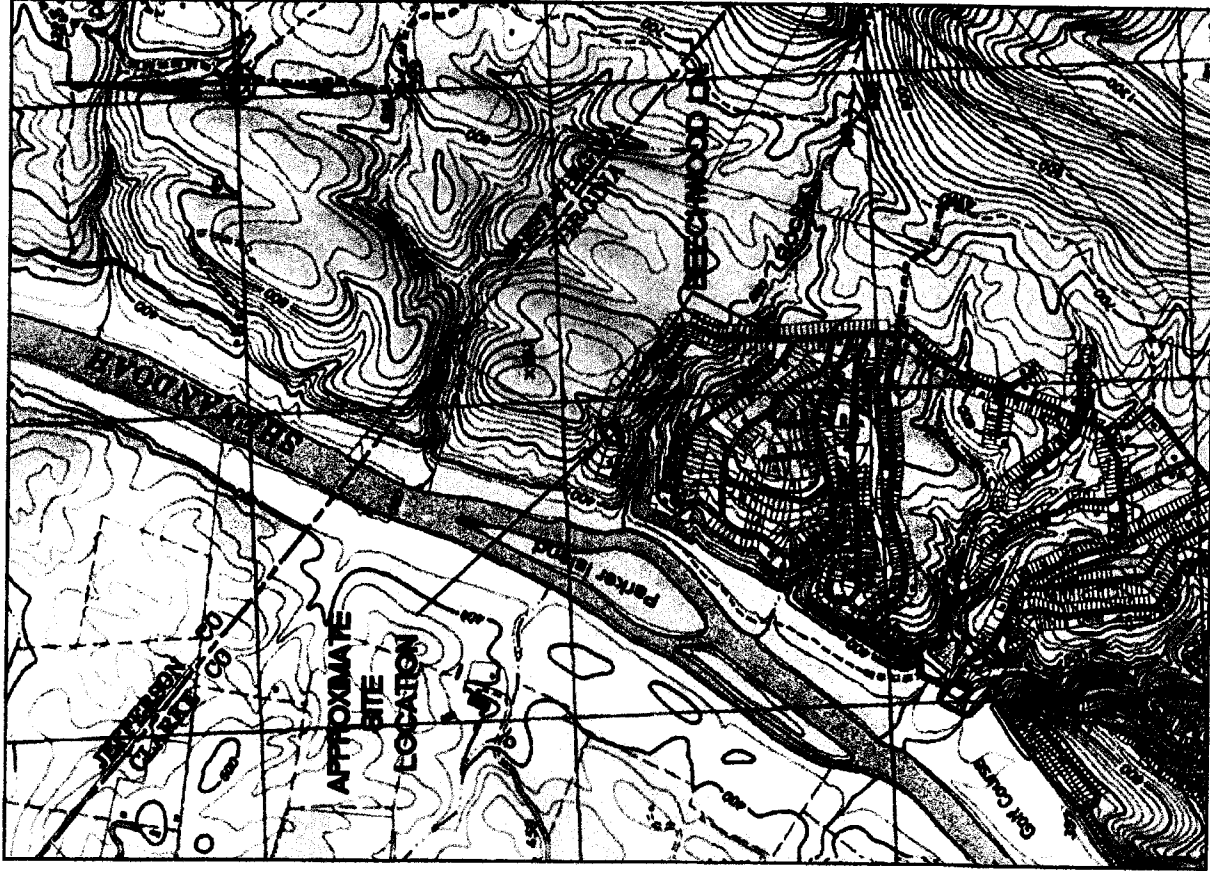
FOR

SHENANDOAH RETREAT - THIEL PROPERTY

PIN # 17A4-26-2R-34  
CLARKE COUNTY, VIRGINIA  
BATTLETOWN MAGISTERIAL DISTRICT

SYSTEM TYPE: 3 BEDROOM  
ADVANTECH TREATMENT SYSTEM  
WITH DISPOSAL BY DRIP IRRIGATION  
(TREATMENT REQUIRED TL2)

PROJECT CLIENT: JOHN THIEL  
1440 BEECHWOOD LN.  
BLUEMONT, VA 20135



1" = 2000'

PROJECT DESIGN INFORMATION:

DRAINFIELD LOCATION PLAT: DUNN LAND SURVEYS, INC., DATED: JANUARY 23, 2018  
SOIL SCIENTIST: STEPHEN WHITE, AOSE #1940001103  
\*REQUESTING THE PLANS TO BE REVIEWED BASED ON VA CODE 32.1-163.6, AND THE SHDR REGULATIONS. DESIGN SPECIFICATIONS ARE BASED ON PREVIOUSLY APPROVED GMPs.

FINAL INSPECTION CHECKLIST:

- ☐ -DESIGN ENGINEER-GREENWAY ENGINEERING
- ☐ -SOIL SCIENTIST \*CALL TO VERIFY
- ☐ -HEALTH DEPARTMENT \*CALL TO VERIFY



SHENANDOAH RETREAT - THIEL PROPERTY  
TM# 17A4-26-2R-34  
CLARKE COUNTY, VA  
BATTLETOWN MAGISTERIAL DISTRICT  
COVER SHEET

DATE MARCH 2018  
SCALE N/A  
DESIGNED BY: JHF/HR  
JOB NO. AS06JT  
SHEET 1 OF 12



GREENWAY ENGINEERING  
161 Windy Hill Lane  
Winchester, Virginia 22602  
Telephone 640-662-4166  
FAX 640-722-9628  
www.greenwayeng.com

GENERAL NOTES:

1. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICE IN THE AREA OF SMALL FLOW, ON-SITE SEWAGE DISPOSAL. NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE. FLUCTUATION IN SEWAGE LOADING AND SOIL CHARACTERISTICS CANNOT BE TAKEN INTO ACCOUNT BECAUSE THIS DESIGN IS BASED ON CRITERIA FROM THE HEALTH DEPARTMENT.
2. NO CHANGE IN THE MAKE, MODEL, TYPE OR CONFIGURATION OF COMPONENTS OR WITH THE DESIGN OF THE SYSTEM SHALL BE MADE WITHOUT THE EXPRESS WRITTEN CONSENT OF THE ENGINEER. CHANGES IN THE DESIGN SHALL BE MADE AT THE EXPENSE OF THE PARTY REQUESTING THEM. WORK CONTINUED WITHOUT WRITTEN CONSENT SHALL BE AT THE RESPONSIBILITY OF THE CONTRACTOR.
3. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE LATEST EDITION OF APPLICABLE STATE AND LOCAL SEWAGE HANDLING AND DISPOSAL REGULATIONS.
4. CONTRACTOR SHALL CONTACT "MISS UTILITY" AND HAVE ALL UTILITIES MARKED IN THE FIELD PRIOR TO CLEARING AND EXCAVATION.
5. CONTRACTOR IS RESPONSIBLE FOR THE REQUIRED AMOUNT OF IMPORTED FILL (IN PLACE).
6. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND MAINTAINING ALL SETBACK DISTANCES FROM PROPERTY LINES, STRUCTURES OR OTHER FEATURES AS REQUIRED BY STATE AND LOCAL SEWAGE HANDLING AND DISPOSAL REGULATIONS. REQUESTED VERIFICATION OF SETBACKS BY THIS FIRM WILL BE INVOICED TO THE CONTRACTOR.
7. SCOPE OF SERVICES FOR THESE ENGINEERING PLANS DO NOT INCLUDE SUBSURFACE SOIL, ROCK OR UTILITY SURVEYS. IF CONFLICTS WITH THESE OR OTHER FEATURES OCCUR, CONTACT THE ENGINEER IMMEDIATELY AT (540) 662-4185.
8. MANUFACTURER CERTIFICATIONS ARE REQUIRED ON ALL COMPONENTS (EITHER AS SHOWN IN THESE PLANS OR PROVIDED DURING CONSTRUCTION) AND SHALL BE SENT TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PLACING ORDERS. FAILURE TO SEND THIS INFORMATION TO THE ENGINEER FOR APPROVAL SHALL WAIVE THE ENGINEER'S RESPONSIBILITY FOR THE SYSTEM'S FUNCTION AND DESIGN. INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND PROCEDURES AS SUPPLIED BY THE MANUFACTURER.
9. ELECTRICAL WIRING SHALL BE INSTALLED IN A CONDUIT AND UNDER THE DIRECT SUPERVISION OF A LICENSED ELECTRICAL CONTRACTOR. ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE AND/OR STATE AND LOCAL CODES, AS APPLICABLE. HARDWIRE ELECTRICAL CONNECTIONS AT NEMA 4 BOX, DO NOT USE PIGGY BACK PLUG OR RECEPTACLE PLUG TYPE CONNECTIONS IN PUMP CHAMBER. ALL ELECTRICAL CONNECTIONS SHALL BE PROTECTED FROM CORROSION WITH USE OF FILLER PUTTY OR CHALK IN THE EMT OR PVC CONDUIT WHERE WIRES ENTER AND EXIT BOXES.
10. ALL PVC FITTINGS AND PIPE SHALL BE PRESSURE TYPE AS REQUIRED BY HEALTH DEPARTMENT REGULATIONS. ALL PIPES AND FITTINGS SHALL BE PRIMED AND GLUED AND INSTALLED WITH LETTERING FACING UP TO FACILITATE INSPECTIONS.
11. ALL COMPONENTS SHALL BE INSTALLED ON UNIFORM GROUND (EITHER COMPACTED FILL TO 98% MAXIMUM DENSITY OR UNDISTURBED EARTH). TANKS AND ALL PIPING SHALL BE INSTALLED ON MINIMUM OF 6 INCHES OF #57 STONE. ALL COMPONENTS SHALL BE PROPERLY BACKFILLED.
12. CONTRACTOR SHALL ENSURE THAT ALL TANKS ARE WATER TIGHT AT JOINTS AND RISER SEAMS. TANKS SHALL CONFORM TO STATE AND LOCAL HEALTH DEPARTMENT REGULATIONS.
13. MACHINERY SHALL AVOID AND NOT TRAVERSE EXCAVATED OR EXPOSED ABSORPTION TRENCHES. DO NOT SMEAR THE BOTTOM OR SIDES OF TRENCHES. ACTIVITY WITHIN THE DISPOSAL AREA SHALL BE MINIMIZED DURING CONSTRUCTION. NO LARGE CONSTRUCTION VEHICLES SHALL BE PERMITTED IN THE DISPOSAL FIELD AREA. NO MATERIAL STORAGE SHALL BE ALLOWED IN THE DISPOSAL AREA.

14. PUMPS AND ALARMS SHALL BE ON SEPARATE CIRCUITS. AN AUDIOVISUAL PANEL SHALL BE INSTALLED ADJACENT TO PUMP TANKS AND INSIDE OF RESIDENCE WHERE ALARM WILL BE HEARD.
15. INSTALL SYSTEM AND COMPONENTS WHEN WEATHER CONDITIONS WILL ALLOW FOR FULL COMPACTION OF SOILS AROUND UNITS.
16. THRUST BLOCKS SHALL BE INCORPORATED ON FORCE MAIN BENDS USING THE FOLLOWING: 1 BAG OF READY MIX CEMENT MIXED PER SUPPLIER'S SPECIFICATIONS. POUR OVER BEND TO A DEPTH OF 4 INCHES BY 12 INCHES SQUARE.
17. AFTER INSTALLATION OR IF INSTALLATION IS CEASED FOR LONG PERIODS OF TIME, THE SITE SHALL BE STABILIZED AND SEEDED AT A RATE OF 25 LBS. OF KENTUCKY 31 FESCUE PER 5,000 SQ. FT. OF DISTURBED AREA. COVER SEED WITH ONE INCH OF STRAW OR MULCH TO PREVENT EROSION PRIOR TO GRASS RECLAMATION.
18. FINAL ENGINEER'S INSPECTION AND ANY INTERMEDIATE INSPECTIONS, IF NEEDED, WILL BE BILLED ON AN HOURLY BASIS TO THE RESPONSIBLE PARTY (TYPICALLY THE CONTRACTOR). PLEASE CALL THE ENGINEER AT (540) 662-4185 TO SCHEDULE INSPECTIONS. ALL ITEMS SHALL BE EXPOSED FOR THE INSPECTION. DO NOT BACKFILL PRIOR TO THE ENGINEER'S INSPECTION.
19. AN OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED BY THE AUTHORIZED SERVICE PROVIDER OF THE SYSTEM TO THE OWNER AT THE COMPLETION OF THE PROJECT.
20. THE ADVANTEX SYSTEM WILL HAVE TO BE COMMISSIONED BY AN AUTHORIZED SERVICE PROVIDER. COMMISSIONING WILL REQUIRE THE INSTALLATION AGREEMENT AND SERVICE CONTRACT TO BE IN PLACE. SERVICE PROVIDERS ARE TO BE GIVEN 10 DAYS NOTICE PRIOR TO SYSTEM INSTALLATION. OPERATION AND MAINTENANCE SHALL BE ON AN ANNUAL BASIS AS LONG AS THE SYSTEM IS IN SERVICE.
21. PRIOR TO INSTALLATION, THE CONTRACTOR SHALL CONTACT THE AOSE TO DETERMINE THE MOISTURE CONTENT AND SUITABILITY OF THE SOILS TO INSTALL THE DRAINFIELD SYSTEM.

NITROGEN REDUCTION CALCULATIONS  
(PER 12VAC 5-613 - AOSS REGULATIONS AND GMP 156)

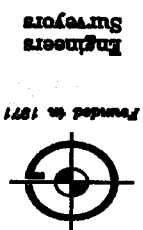
SYSTEM DESIGNED FOR 3 BEDROOM (6 PERSONS MAX)  
INFLUENT TN (PER 156) = 6 PEOPLE x 5 kg TN/PERSON/YR = 30 kg TN/YR  
BASE LINE REDUCTION (AT FIELD): 4 kg TN/PERSON/YR x 6 PEOPLE = 24 kg TN/YR REMAINING

GMP 156 REQUIRES 50% REDUCTION OF BASELINE REDUCTION: 24 kg TN\*0.50 = 12 kg TN/YR REQUIRED  
SYSTEM ACHIEVES 89% REDUCTION OF BASELINE REDUCTION: 24 kg TN\*0.89 = 16.5 kg TN/YR TARGET  
SYSTEM TREATMENT - ADVANTEX AX20RT (TL-3 TREATMENT) - 50% REDUCTION  
SYSTEM DISPOSAL - SHALLOW DRIP IRRIGATION - 50% REDUCTION

TREATMENT REMOVAL (TL-2): 30 kg TN/YR \* 0.50 = 15 kg TN REMOVED: 30 - 15 = 15 kg TN REMAINING  
SYSTEM DISPOSAL REMOVAL: 15 kg TN/YR \* 0.50 = 7.5 kg TN REMOVED: 15 - 7.5 = 7.5 kg TN REMAINING

SYSTEM NET REDUCTION FROM BASELINE: ((24-7.5)/24)\*100 = 69% REDUCTION

GENERAL NOTES  
SHENANDOAH RETREAT - THIEL PROPERTY  
TN 1744-26-25-34  
BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA



**GREENWAY ENGINEERING**  
161 Windy Hill Lane  
Winchester, Virginia 22602  
Telephone 540-662-4185  
FAX 540-722-9628  
www.greenwayeng.com

DATE: MARCH 2018
SCALE: N/A
DESIGNED BY: JHF/BR
JOB NO. AS063T
SHEET 2 OF 12

OPERATING AND MAINTENANCE NOTES:

GENERAL NOTE

A RELATIONSHIP BETWEEN THE HOMEOWNER AND A LICENSED OPERATOR SHALL TAKE PLACE PRIOR TO OBTAINING AN OCCUPANCY PERMIT FROM THE LOCAL HEALTH DEPARTMENT. IN COMPLIANCE WITH HEALTH DEPARTMENT REGULATIONS, AN ANNUAL SYSTEM INSPECTION SHALL BE CONDUCTED BY A LICENSED AOSS OPERATOR. SYSTEM SHALL BE INSPECTED WITHIN 180 DAYS OF OBTAINING PERMIT. AT THE TIME OF THE FIRST REQUIRED INSPECTION A GRAB SAMPLE OF THE EFFLUENT SHALL BE TESTED AT A CERTIFIED LAB. AFTER INITIAL SAMPLING, FURTHER INSPECTIONS SHALL BE REQUIRED ONCE EVERY (5) FIVE YEARS.

SEPTIC AND PUMP TANK

THE SEPTIC TANK AND PUMP TANK SHOULD BE INSPECTED EVERY YEAR, AND PUMPED EVERY 3-5 YEARS, UNLESS INSPECTIONS SHOW OTHERWISE. EFFLUENT FILTER SHOULD BE INSPECTED AND CLEANED EVERY YEAR.

WASTE DISPOSAL

THE FOLLOWING SHOULD NOT BE DISPOSED OF, INTRODUCED, OR CONNECTED TO THE SEPTIC TANK VIA A DRAIN, WASTE DRAIN, DRAIN/GARBAGE DISPOSAL UNIT OR BY OTHER MEANS:

- \* GREASE, OIL, FAT, WAX, OR RESIN
- \* PAINT AND SOLVENTS
- \* CIGARETTES, TEA BAGS OR OTHER SIZABLE ITEMS CAPABLE OF BLOCKING PIPES OR FILTERS
- \* INSECTICIDES, PESTICIDES OR NON-BIODEGRADABLES
- \* PETROLEUM PRODUCTS
- \* STORM WATER
- \* ADDITIVES (SEPTIC TANK ADDITIVES SHOULD NOT BE INTRODUCED INTO THE SEPTIC TANK FOR GREASE REDUCTION, STIMULATION OF BIOLOGICAL ACTIVITY OR OTHER PURPOSE)
- \* WATER SOFTENER FLUSH OR BACKWASH
- \* IRON REMOVAL SYSTEMS
- \* HOME BREWERY
- \* OTHER TYPES OF WATER PURIFICATION UNITS

PUMP ALARM

THE PUMP ALARM SHOULD BE CHECKED ON A MONTHLY BASIS BY BRIEFLY PUSHING THE TEST SWITCH ON THE ALARM. THIS ACTIVATES THE AUDIO ALARM BUZZER AND VISUAL ALARM LIGHT FOR A SHORT PERIOD BEFORE IT REVERTS TO ITS AUTOMATIC POSITION.

ELECTRICAL CIRCUIT PANEL

PLEASE VISIT (<http://www.vdh.state.va.us/EnvironmentalHealth/Onsite/index.htm>) FOR MANUFACTURERS OPERATION AND MAINTENCE REQUIREMENTS.

IN THE EVENT OF AN ELECTRICAL STORM OR POWER FAILURE, THE CIRCUIT-BREAKER SWITCHES ON THE ELECTRICAL LINES FEEDING THE PUMP AND ALARM SHOULD BE CHECKED TO SEE IF THEY HAVE TRIPPED TO THE "OFF" POSITION. IF A CIRCUIT BREAKER SWITCH IS TRIPPED, THE POWER SUPPLY TO THE ALARM/PUMP SHOULD BE RESTORED AS SOON AS POSSIBLE.

MINIMUM SEPARATION DISTANCES . (CLARKE COUNTY STANDARDS)

STRUCTURE OR TOPOGRAPHIC FEATURES	PRETREATMENT UNITS, CONVEYANCE LINES, AND HEADER LINES	DRAIN FIELD/ SUB-SURFACE ABSORPTION AREA
PROPERTY LINES	5	5
BUILDING FOUNDATIONS	10	10
BASEMENTS	20	20
* WATER WELLS (ALL CLASSES) SEPTIC TANKS PROPERTY LINES D-BOX CONVEYANCE LINES	100 10 50 50	100
CISTERNS (BOTTOM ELAVATION LOWER THAN GROUND SURFACE IN AREA OF PRETREATMENT UNIT)	100	100
SHELLFISH WATERS	70	70
NATURAL LAKES & IMPOUNDED WATERS AND STREAMS	50	50
DEVELOPED SPRINGS (WHEN THE SPRING IS DOWN SLOPE)	500	100
DEVELOPED SPRINGS (WHEN THE SPRING IS UP SLOPE)	200	100
LATERAL GROUND WATER MOVEMENT INTERCEPTOR	50	10
*DRAINAGE DITCHES: DITCH BOTTOMS ABOVE SEASONAL WATER TABLE DITCH BOTTOM BELOW SEASONAL WATER TABLE AND DITCH NORMALLY CONTAINS WATER	10 50	10 50
LOW POINT OF SINK HOLES WHEN PLACED WITHIN THE BOWL OF THE SINK HOLE	100	100
UTILITY EASEMENT DRAIN FIELD UPSLOPE FROM LINE DRAIN FIELD DOWNSLOPE FROM LINE	25 10	25 10

\* NOTE:  
THE SET BACK DISTANCE MAY BE REDUCED TO 10 FEET IN GROUP III AND IV SOILS AND 20 FEET IN GROUP I AND II SOILS IF THE SUBSURFACE SOIL ABSORPTION SYSTEM IS DESIGNED TO PRODUCE UNSATURATED FLOW CONDITION IN THE SOIL.



OPERATING AND MAINTENANCE NOTES  
SHENANDOAH RETREAT - THIEL PROPERTY  
TM 17A4-26-21-34  
BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA



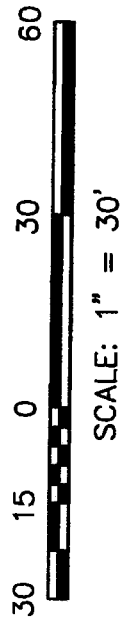
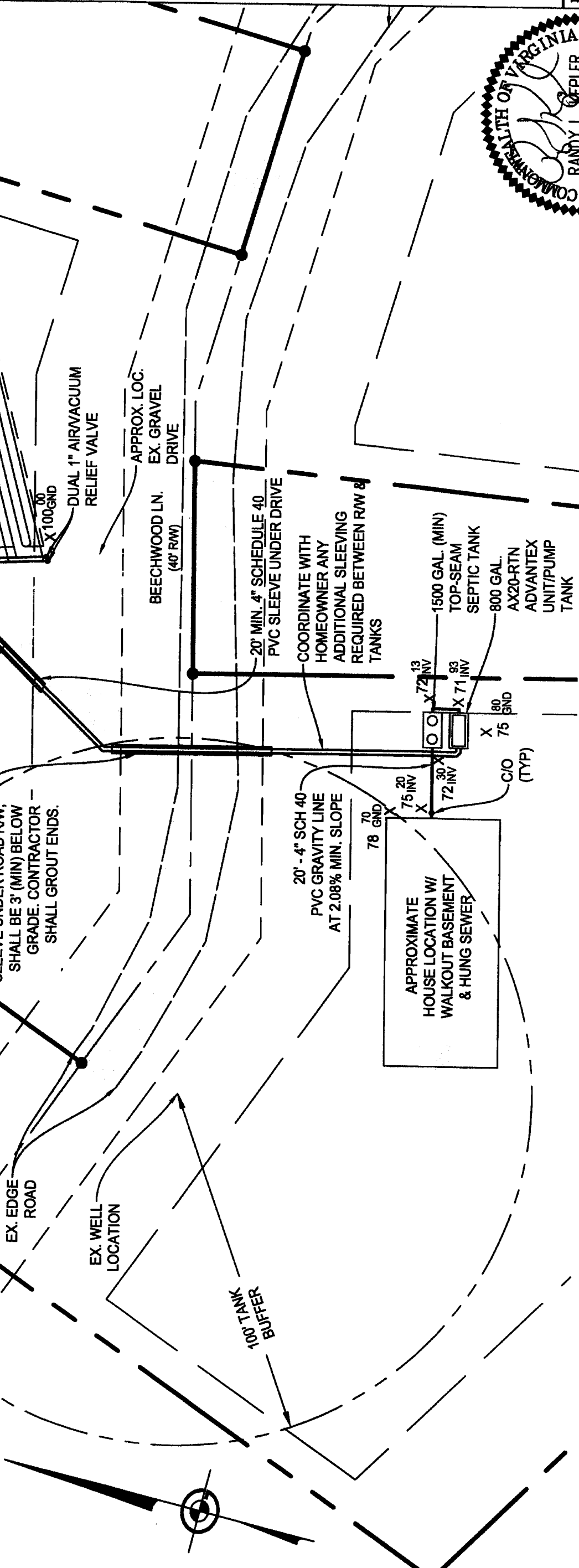
GREENWAY ENGINEERING  
161 Windy Hill Lane  
Winchester, Virginia 22602  
Telephone 640-662-4186  
FAX 640-722-8628  
www.greenwayeng.com

DATE MARCH 2018  
SCALE N/A  
DESIGNED BY: JEF/BR  
JOB NO. A306JT  
SHEET 9 OF 12



NOTES:

1. 3 - 368' RUNS OF GEOFLOW DRIPLINE LOCATED ON 2' CENTERS WITH 1/2 GPH PRESSURE COMPENSATING EMITTERS LOCATED ON 2' CENTERS. INSTALL 3" BELOW SURFACE. CONTRACTOR SHALL BREAK UP EXISTING ORGANIC MATTER PRIOR TO INSTALL WITH 9" OF TOPSOIL COVER. COVER TO OVERLAP EDGES OF DRIPLINE BY 10' ON ALL SIDES.
2. ELEVATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL ADJUST ELEVATIONS AS NEEDED.
3. CONTRACTOR SHALL CONTACT GREENWAY ENGINEERING IF ANY CONCERNS ARISE REGARDING TANK LOCATION, ORIENTATION, AND INSTALLATION.
4. CONTRACTOR SHALL OBTAIN ANY ADDITIONAL PERMITS AND/OR PERMISSION FROM SHENANDOAH RETREAT HOMEOWNER'S ASSOCIATION AND CLARKE COUNTY FOR UTILITY ROAD CROSSING.
5. DRAINFIELD SITE SHALL BE HAND-CLEARED OF ANY VEGETATION 3" DIAM. OR SMALLER TO GROUND LEVEL LEAVING DRAINFIELD SUBGRADE UNDISTURBED. WOODED LOT MAY REMAIN WOODED IF REQUESTED BY OWNER.
6. SEE SHEET 10 FOR DESIGN SPECIFICATIONS AND PUMP / TIMER SETTINGS.



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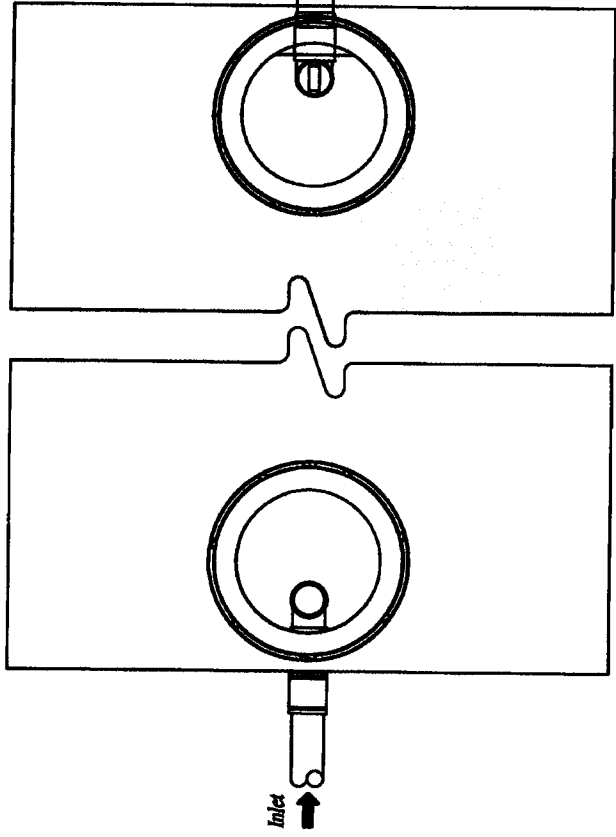


**SHENANDOAH RETREAT - THIEL PROPERTY**  
SITE PLAN  
BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA  
TM 17A4-26-2F-34

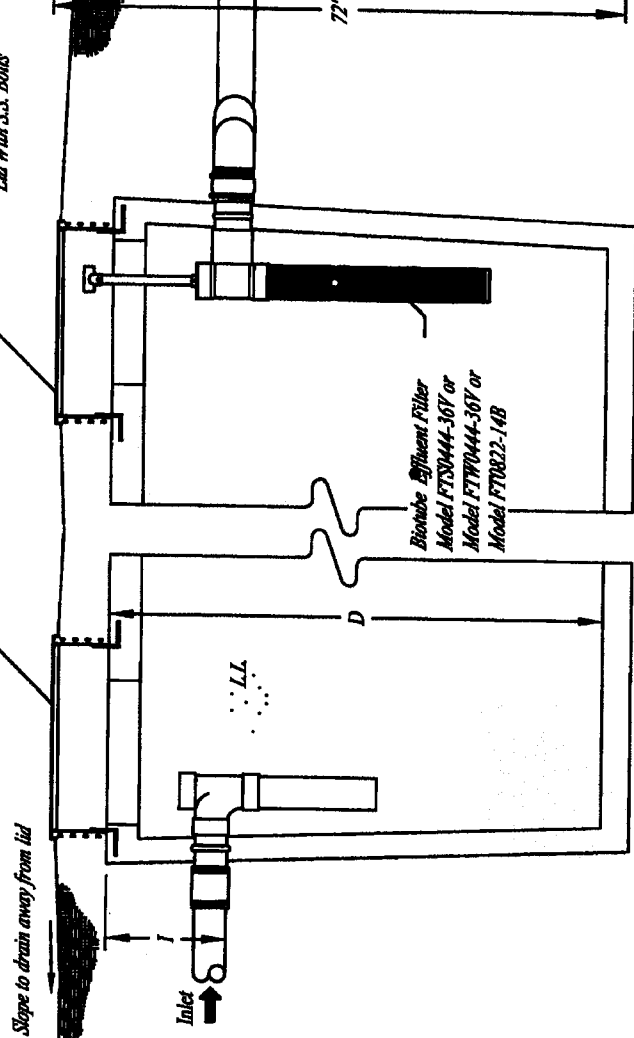
DATE: MARCH 2018  
SCALE: 1" = 30'  
DESIGNED BY: JHF/BR  
JOB NO. A305JT  
SHEET 5 OF 12



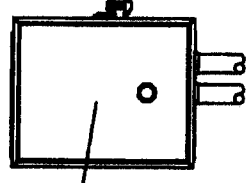
AX20RTN Treatment System - Pump Discharge (VA)



1500 gal. Primary Tank - Top View

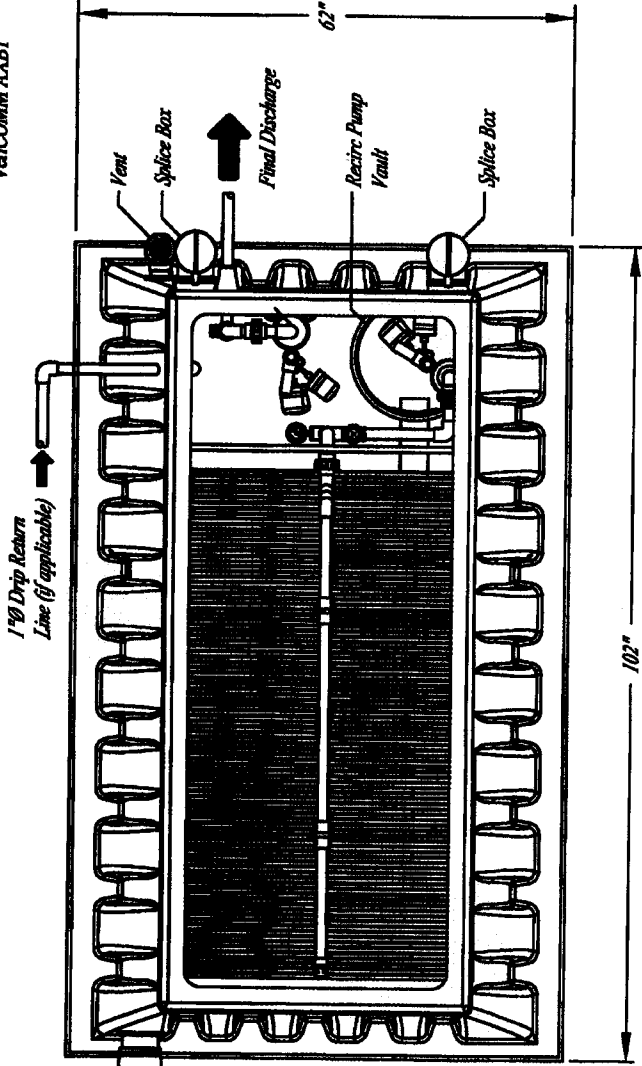


1500 gal. Primary Tank - Side View

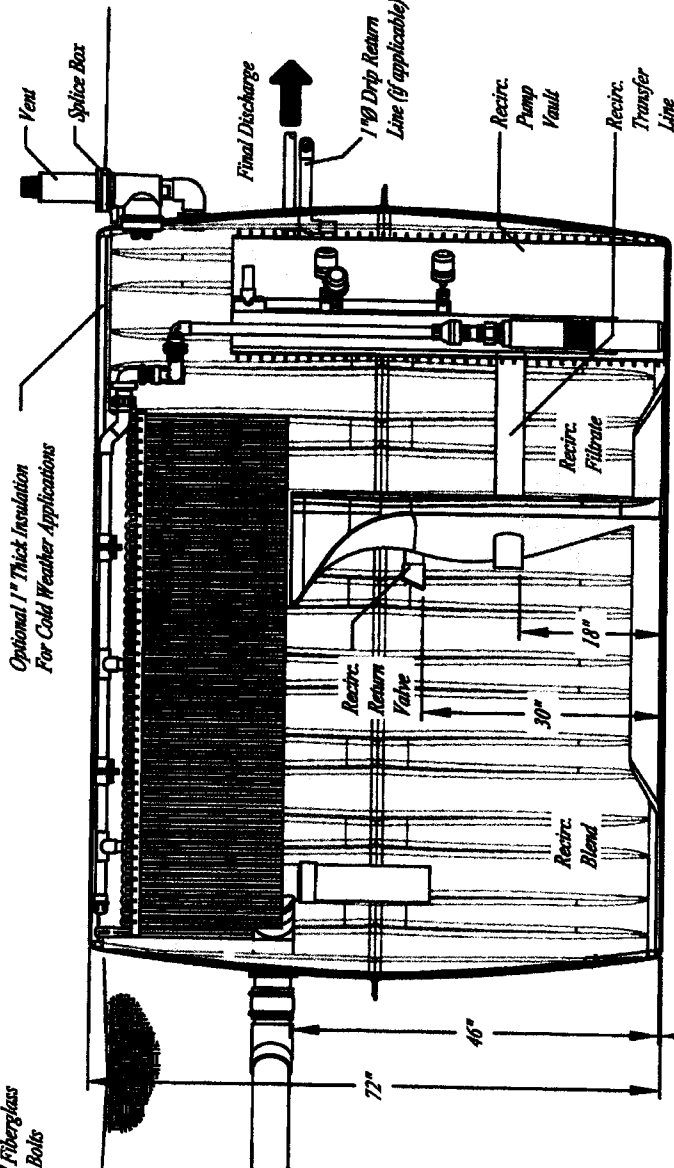


Control Panel  
Model #  
VeriCOMM AXB1

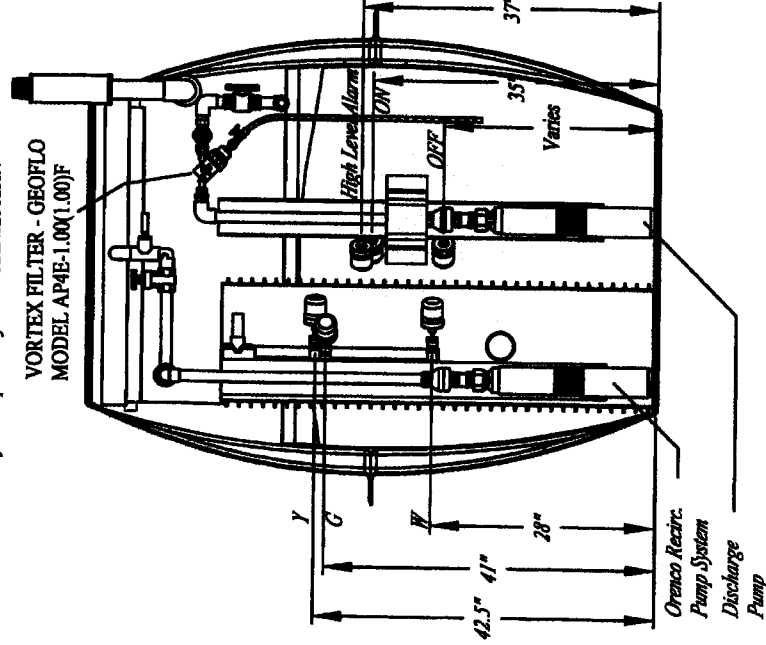
Filter Tank Dry Weight: 940 lbs



AX20 800 gal. Recirc. Tank - Top View



AX20 800 gal. Recirc. Tank - Side View



Discharge Chamber - End View



Flow Functions	
Y	High Level Alarm
G	Override Timer ON/OFF
W	LLARO

ADVANTEX TREATMENT SYSTEM DETAIL  
SHENANDOAH RETREAT - THIEL PROPERTY  
TN# 17A4-26-2F-34  
BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA



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- Design and Installation Notes**
- For Expected Flows 4 Bedrooms or less
  - Installation To Be Performed By An AdvanTex Trained Installer Only
  - Start-up And Service To Be Performed By An AdvanTex Trained Service Provider

Note: Only tanks from the manufacturers listed below shall be used.

Tank Manufacturer	Septic Tank Size
Oreco Fiberglass Tank	1500 Gal.
C.T. Jamison	1500 Gal.
Hammer Precast	1500 Gal.
Rockingham Precast	1500 Gal.
Wright's Ready Mix	1500 Gal.
Bentley Concrete	1500 Gal.
Roth Global Plastics	1500 Gal.

Note: All tanks shall be tested for watertightness. All concrete tanks shall have PPT/24 cast into tank for acceptance of Model RR24XX Riser.

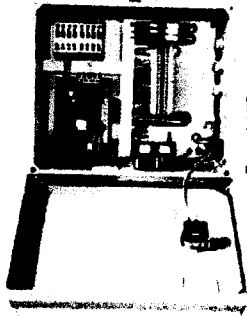


# VeriComm® AXB Control Panels

## For AdvanTex® Treatment Systems

### Applications

VeriComm® AXB1 and AXB2 remote telemetry control panels are used with two pump operations -- recirculation and discharge (on-demand or timed) -- for AdvanTex® Treatment Systems. Interlocked controls prevent the recirculation pump from running if there is a high level alarm on the discharge side. Coupled with the VeriComm Web-based Monitoring System, these affordable control panels give water/wastewater system operators and maintenance organizations the ability to monitor and control each individual system's operation remotely, with real-time efficiency, while remaining invisible to the homeowner. VeriComm AXB panels allow remote operators to change system parameters, including timer settings, from the Web interface.



Typical AXB VeriComm® Control Panel  
Standard Models  
VCOM AXB1, VCOM AXB2

### To Specify...

To specify this panel for your installation, require the following

#### Basic Control Logic: Three Operating Modes

- A "Start-up Mode" for the initial 30 days, during which the system collects trend data to establish operating standards for future reference
- A "Normal Mode" that manages day-to-day functions.
- A "Test Mode" that suspends data collection and alarm reporting during installation and service

#### Data Collection and Utilization

- Data logs of system conditions and events, such as pump run times, pump cycles, and alarm conditions.

#### Troubleshooting and Diagnostic Logic

- Troubleshooting capabilities that can report suspected failed components, which then trigger Alarms

#### Advanced Control Logic

- Advanced control logic that activates during float malfunctions to diagnose the situation and keep the system operating normally until servicing

## Technical Data Sheet

### Communication and Alarm Management

- Remote telemetry capabilities coupled with a Web-based monitoring application (see *VeriComm Monitoring System*, ATD-WEB VCOM-1) for communication and alarm management. Upgrading of point values (including timer settings) and receipt of queued changes during each communication session with host. Communication sessions that occur monthly, at a minimum, and more frequently during alarm conditions
- Multiple methods of communication, as follows

#### Call-In to VeriComm® Host

- Automatic notification to host of "Alarms," which signal fault conditions that need to be addressed immediately (e.g., pump failure)
- Automatic notification to host of "Alerts," which signal less critical fault conditions and which trigger the panel's troubleshooting logic and alternative operating mode (e.g., stuck float switch)

- Automatic notification to host of "Updates," which include alarm updates or all-clear notifications following Alarms/Alerts, as well as normally scheduled monthly panel reports

- Manual, forced communication from panel to host to effect an updating of point values and receipt of queued changes

#### Real-Time Direct Connection to Panel

Manual, direct connection at the site via RS-232 serial port, to allow a local operator real-time access to detailed logged data and the ability to change point values from a laptop

- Manual, forced communication by local operator/homeowner at the site to initiate an auto-answer mode

allowing a remote operator real-time access to detailed logged data and the ability to change point values

During real-time, manual connections, software with open architecture (and password security) is used; no proprietary software is required. VTI00 protocol allows access and control from any computer modem (Mac or PC) with a simple communication program (e.g., "Windows" HyperTerminal). Multilevel password protection in panel ensures that only qualified personnel can access the panel's data

#### Additional Features

- Status light indicators on the board, including

Flashing green LED for normal operation

Yellow LEDs for status of digital inputs

Red LEDs for status of digital outputs and modem activity

- UL recognized and FCC-approved

For more information, try our online demo at [www.veri-comm.net](http://www.veri-comm.net) (no password required)



Change At Any Time  
No Downtime

800-366-0044

ATD-WEB VCOM-1

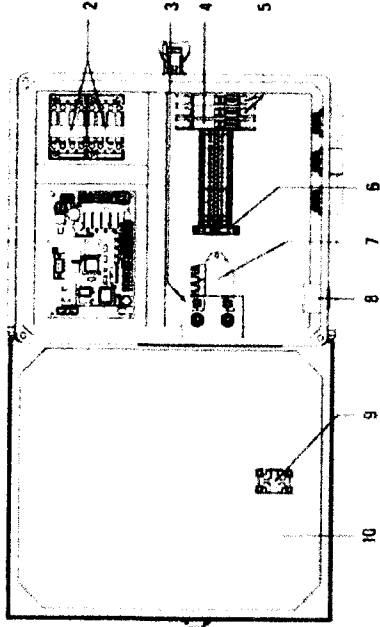
Rev. 2.5 c. 0/01

Page 1 of 2

## VeriComm® AXB Control Panels

### Technical Data Sheet

- 1 VeriComm Remote Telemetry Board
- 2 Motor-Start Contactors
- 3 Toggle Switches
- 4 Control Circuit Breaker
- 5 Pump Circuit Breakers
- 6 Fuse
- 7 Transducer
- 8 Audio Alarm
- 9 Visual Alarm
- 10 Panel Enclosure



### Standard Components

Feature	Specifications
1 VeriComm Remote Telemetry Unit*	ATRTU-100 35/18 VAC (center tap transformer), 8 digital inputs, 4 digital outputs, 0 analog outputs, on-board modem (2400 baud), LED input and output indicators, 1-year battery backup of data and program settings
2 Motor-Start Contactors	120 VAC 16 FLA, 1 hp, 60 Hz, 2.5 million cycles at FLA (10 million at 50% of FLA) 240 VAC, 16 FLA, 3 hp, 60 Hz, 2.5 million cycles at FLA (10 million at 50% of FLA)
3 Toggle Switches	Single-pole switch, automatic On, with spring-loaded, momentary, manual On, 20 A, 1 hp
4 Control Circuit Breaker	10 A, OFF/ON switch, Single-pole 120 VAC, double-pole 240 VAC DIN rail mounting with thermal magnetic tripping characteristics
5 Pump Circuit Breakers	20 A, DIFF/ON switch, Single-pole 120 VAC, double-pole 240 VAC DIN rail mounting with thermal magnetic tripping characteristics
6 Fuse	120 VAC Primary, 35 VCT @ 0.85 A Secondary
7 Transducer	250 VAC, 1 A
8 Audio Alarm	95 dB at 24 in. (610 mm), variable-tone sound
9 Visual Alarm	7/8 in. (22 mm) diameter red lens, "Push-to-silence" NEMA 4, 1 W bulb, 120 VAC Measures 15.5 in. high x 13.3 in. wide x 6.7 in. deep; 384 mm x 338 mm x 170 mm NEMA 4X rated. Constructed of UV-resistant fiberglass, hinges and latch are stainless steel Conduit couplings provided
10 Panel Enclosure	120 VAC, 3/4 hp, 14 A, single-phase, 60 Hz 240 VAC, 2 hp, 14 A, single-phase, 60 Hz

### Optional Components

Feature	Specifications	Predict Code Adder
Pump Run Light	7/8 in. (22 mm) diameter green lens NEMA 4, 1 W bulb, 120 VAC	PRL
Anticondensation Heater	Self-adjusting, radiates additional wattage as temperature drops	HT
Programmable Timer	Discharge side timed dosing	PT
UV Disinfection Compatibility	UV grounded power circuit and alarm contacts. Pump disable upon UV failure	UV

\* See VeriComm Remote Telemetry Unit (ATD-CP VCOM-1) and VeriComm Monitoring System (ATD-WEB VCOM-1) for more details

ATD-CP VCOM-1  
Rev. 1.5 c. 0/01  
Page 2 of 2



CONTROL PANEL DATA SHEET  
SHENANDOAH RETREAT - THIEL PROPERTY  
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BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA



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DATE: MARCH 2018

SCALE: N/A

DESIGNED BY: JHF/JBR

JOB NO. A306JT

SHEET 7 OF 12



## high head multi-stage submersible effluent pump



The new STEP Plus™ 4" submersible effluent pumps in 10 and 20 GPM models offer dependable performance and value for high pressure filtered effluent applications.

These new STEP Plus™ pumps will handle "dry run" conditions where other manufacturers fail. The 10 and 20 GPM are industry standard 3-3/4" in diameter.

### APPLICATIONS

Filtered Effluent... for residential, commercial, and agricultural use.

### FEATURES

Patented staging system - proven Signa-Seal™ staging system is designed with a corrosive resistant stainless steel wear surface, that when incorporated with our floating stack design, greatly reduces problems with abrasives, sand lock-up and running dry.

Shaft - positive drive 300 grade stainless steel 7/16" hexagonal shaft.

Discharge - fiberglass reinforced thermoplastic.

Discharge bearing - Exclusive self-lubricating Nylonon™ bearing resists wear from sand.

Impellers - Precision molded for perfect balance... ultra smooth for highest performance and efficiency. Allows for 1/8" solids.

Shell - Heavy-walled corrosion resistant stainless steel. Threaded for easy servicing.

This product is listed to UL Standards for Safety by Underwriters Laboratories Inc. (UL).



## STEP Plus™ STA-RITE EFFLUENT PUMP

### MATERIALS

Shell - stainless steel

Discharge - fiberglass-reinforced thermoplastic

Discharge bearing - Nylonon®

Impellers - Delrin®

Diffusers - Polycarbonate

Suction caps - Polycarbonate with stainless steel wear ring

Thrust pads - proprietary spec.

Shaft and coupling - stainless steel 300 grade

Intake - fiberglass-reinforced thermoplastic

Intake screen - polypropylene

Franklin Electric motors - proven field operation

Agency Listing - UL SSPMA

Jacketed Cord - 300 volt "SLOW" jacketed 10 ft. leads, 115 volt, 2 wire with ground

Delrin® is a registered trademark of E.I. DuPont de Nemours and Co.

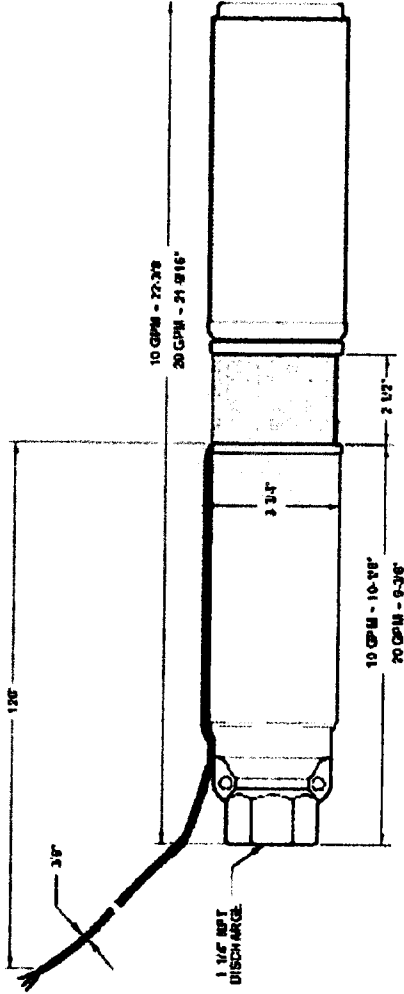
Nylonon™ is a registered trademark of Sta-Rite Industries Inc. Signa-Seal™ and STEP Plus™ are trademarks of Sta Rite Industries, Inc.

Customer Service 488 787-7483 • Fax Orders 800 428-9446 • sta-rite-pumps.com • Sta-Rite Industries Inc. • Delavan WI 53115 USA



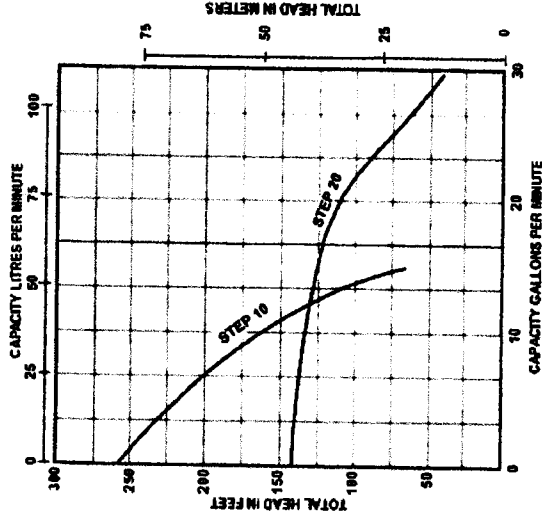
## STEP Plus™ STA-RITE EFFLUENT PUMP

## high head multi-stage submersible effluent pump



Dimensions (in inches) are for estimating purposes only.

### PUMP PERFORMANCE



### ORDERING INFORMATION

Model Number	HP	Max. Load Amps	Volts	Phase/Cycles	Cord Length
STBP10	1/2	12.0	115	1/60	10'
STBP20	1/2	12.0	115	1/60	10'

### PUMP PERFORMANCE

Model Number	GPM	Head PSI
STBP10	0	255
	5	228
	10	170
	12.5	120
	0	145
STBP20	2.5	132
	15	125
	20	112
	25	75
	32	32

Customer Service 488 787-7483 • Fax Orders 800 428-9446 • sta-rite-pumps.com • Sta-Rite Industries Inc. • Delavan WI 53115 USA



DATE: MARCH 2018

SCALE: N/A

DESIGNED BY: JRP/BR

JOB NO. AS05JT

SHEET 6 OF 12

DRAINFIELD PUMP CATALOG SHEETS

## SHENANDOAH RETREAT - THIEL PROPERTY

TN# 17A4-26-2R-34

BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA



Engineers  
Surveyors

Founded in 1971

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Winchester, Virginia 22602  
Telephone 540-662-4185  
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GREENWAY ENGINEERING



XXXXXXXX \* Enter information where locations are blue \*  
 \* calculated locations. no entry required \*  
 Must have the preliminary design of PS system prior to analysis with this spreadsheet

Suction water surface elevation 69.35 feet  
 Discharge water surface elevation 100.00 feet  
 Pressure at discharge 80.85 R  
 Static head 111.5 feet  
 35 psi

Driller Line # Runs 3 lines

Pipe Information	Size	Type	Location
Pipe 1	1.25	PVC	suction lift pipe
Pipe 2	1	PVC	force main
Pipe 3	0.55		Dripper Line
Pipe 4			
Pipe 5			
Pipe 6			

Pipe length (feet)	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5	Pipe 6
Pipe length (feet)	5	222	368			
Pipe diameter (inches)	1.25	1.00	0.55			
Pipe C-factor	120	120	120			
Portion of Flow	1.00	1.00	0.33			
Cross-sectional area (feet)	0.009	0.005	0.002			
Hydraulic radius	0.026	0.021	0.011			

Number of fittings for each pipe

	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5	Pipe 6
Gate Valve	2	1				
Plug Valve (99% open)						
Butterfly Valve						
Swing Check Valve	1					
90° Bend	0					
45° Bend		6				
22.5° Bend						
11.25° Bend						
Tee (through)		3				
Tee (side out)		1				
Cross (through)						
Cross (side out)						
Reducer/increaser		1	1			
Discharge to air						
Sum of losses in fittings	2.88	5.09	1.10			
Other miscellaneous losses						
Sum of minor losses (K)	2.88	5.09	1.10			39.00

Head Loss Calculations

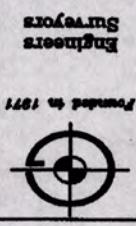
Flow (gpm)	Pipe 1 Loss (feet)	Pipe 2 Loss (feet)	Pipe 3 Loss (feet)	Pipe 4 Loss (feet)	Pipe 5 Loss (feet)	Pipe 6 Loss (feet)	TDH (feet)
0	0	0	0	0	0	0	111.47
2	0.02	1.24	4.73	0	0	0	117.45
4	0.08	4.48	17.07	0	0	0	133.09
6	0.18	9.52	36.17	0	0	0	157.33
8	0.31	16.25	61.63	0	0	0	189.86
10	0.48	24.61	93.18	0	0	0	229.74
12	0.69	34.55	130.61	0	0	0	277.31
14	0.93	46.02	173.78	0	0	0	332.19
16	1.21	59.00	222.55	0	0	0	394.22
18	1.52	73.45	276.81	0	0	0	463.24
20	1.86	89.36	336.47	0	0	0	539.15
22	2.24	106.69	401.45	0	0	0	621.85
24	2.66	125.45	471.66	0	0	0	711.23
26	3.10	145.59	547.05	0	0	0	807.21
28	3.59	167.12	627.55	0	0	0	909.73
30	4.10	190.02	713.11	0	0	0	1018.70
32	4.66	214.27	803.67	0	0	0	1134.06
34	5.24	239.87	899.19	0	0	0	1255.76
36	5.86	266.79	999.63	0	0	0	1383.75

Velocity Calculations

Flow (gpm)	Pipe 1 Velocity (fps)	Pipe 2 Velocity (fps)	Pipe 3 Velocity (fps)	Pipe 4 Velocity (fps)	Pipe 5 Velocity (fps)	Pipe 6 Velocity (fps)
0	0	0	0	0	0	0
2	0.52	0.82	0.90	0	0	0
4	1.05	1.63	1.80	0	0	0
6	1.57	2.45	2.70	0	0	0
8	2.09	3.27	3.60	0	0	0
10	2.61	4.08	4.50	0	0	0
12	3.14	4.90	5.40	0	0	0
14	3.66	5.72	6.30	0	0	0
16	4.18	6.54	7.20	0	0	0
18	4.71	7.35	8.10	0	0	0
20	5.23	8.17	9.00	0	0	0
22	5.75	8.99	9.90	0	0	0
24	6.27	9.80	10.80	0	0	0
26	6.80	10.62	11.70	0	0	0
28	7.32	11.44	12.60	0	0	0
30	7.84	12.25	13.50	0	0	0
32	8.37	13.07	14.40	0	0	0
34	8.89	13.89	15.30	0	0	0
36	9.41	14.71	16.20	0	0	0

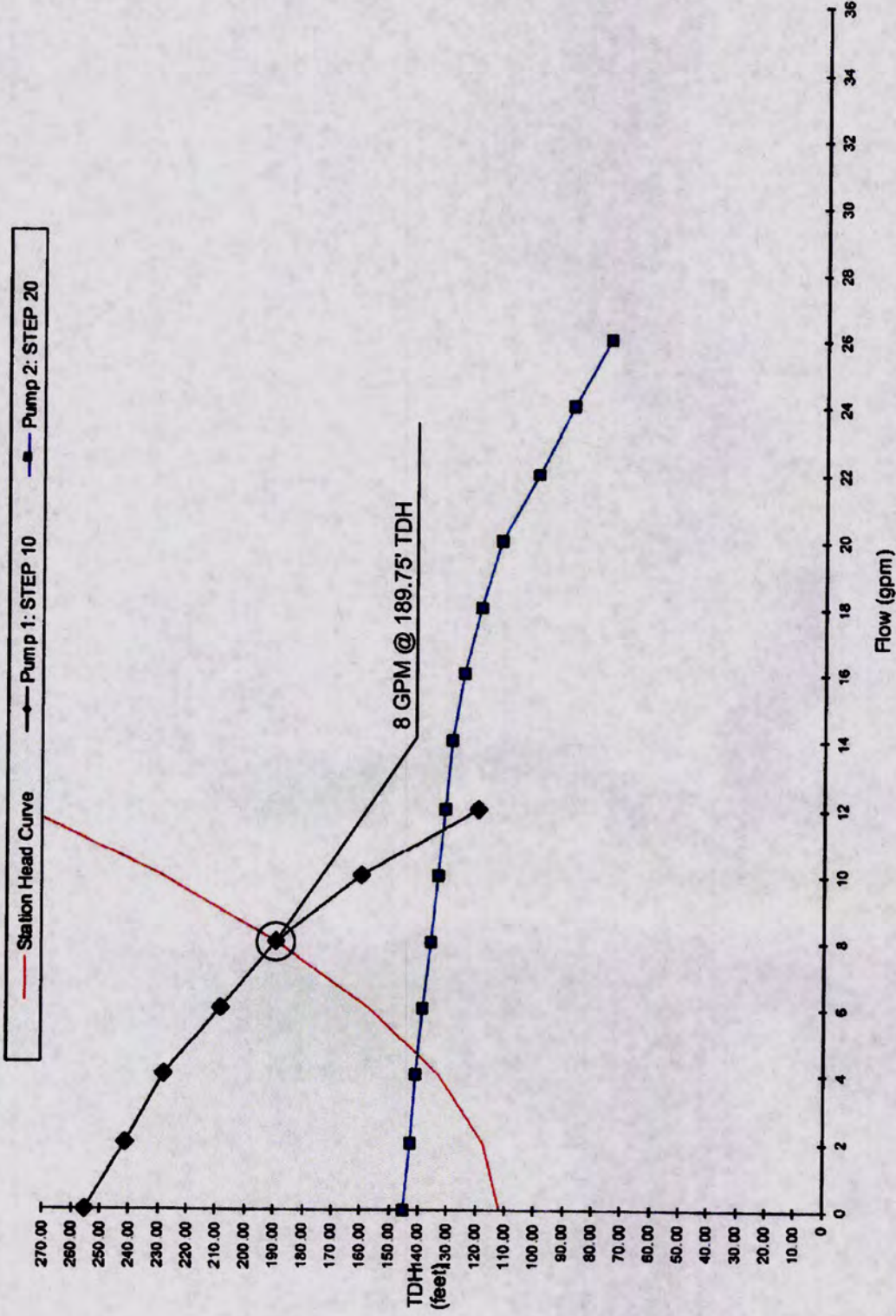


DRAINFIELD PUMP CALCULATIONS  
 SHENANDOAH RETREAT - THIEL PROPERTY  
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 BATTLETOWN MAGISTERIAL DISTRICT  
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Pump Comparison Chart





DESIGN CRITERIA:

3 BEDROOM DESIGN

DESIGN FLOW = 450 GPD

PERC RATE = 60 MIN/IN

DRAINFIELD INFORMATION:

PROJECT DESIGN IS A DRIP IRRIGATION SYSTEM WITH SECONDARY TREATMENT EFFLUENT DISPOSED OF 3" BELOW SURFACE; CONTRACTOR SHALL BREAK UP EXISTING ORGANIC MATTER PRIOR TO INSTALL. 9" OF CLEAN TOPSOIL SHALL BE SPREAD ABOVE ORIGINAL GRADE AFTER INSTALLATION.

PER VA CODE 32.1-163.6, (DESIGN SPECIFICATIONS ARE BASED ON PREVIOUSLY APPROVED GMP'S) THE FOOTPRINT CONVERSION FACTOR IS 0.65: 450 / 0.65 \* 3 = 2,077 SF

DRIPFIELD REQUIRED = 2,077 SF

PROVIDED = 2,208 SF

100% RESERVE REQUIRED = 2,077 SF

100% PROVIDED = 2,077+ SF

TOTAL LINEAR FOOTAGE OF DRIP TUBING REQUIRED = 1,039 FT

TOTAL LINEAR FOOTAGE OF DRIP TUBING PROVIDED = 1,104 FT

TOTAL NUMBER OF EMITTERS REQUIRED = 1,039 / 2 = 519

TOTAL NUMBER OF EMITTERS PROVIDED WITH THIS LAYOUT = 552

0.53 GAL/HR/EMITTER \* 552 EMITTERS = 4.88 GPM

PUMP OPERATES AT 5.32 GPM

PUMP SETTINGS:

(BOTH PUMPS TO BE RUN OFF TIMERS)

PUMP #1:

PUMP SETTINGS ARE PER MANUFACTURER RECOMMENDATIONS. MANUFACTURER REP. WILL FIELD SET PUMP #1 SETTINGS DURING THE FINAL INSPECTION PROCEDURE PRIOR TO OPERATION OF THE SYSTEM. PUMP SETTINGS ARE TYPICALLY WITHIN THE RANGE OF 72 TO 300 CYCLES PER DAY WITH THE INITIAL SETTING AT A 4:1 RECIRCULATION RATIO. MAINTENANCE PROVIDER WILL ADJUST TO OBTAIN OPTIMUM TREATMENT.

PUMP #2:

FLOAT ELEVATIONS WILL BE CONFIRMED DURING INSPECTION.

12 CYCLES / DAY \* 37.5 GAL/CYCLE = 450 GPD DISPOSED OF IN SOIL

37.5 GAL / CYCLE / 5.32 GPM = 7.05 MIN

PIPE FILL TIME = 4.39 MIN

FIELD DOSE TIME = 7.05 MIN

PUMP RUN TIME = 11.44 MIN

SYSTEM SHALL BE SET UP TO TIME DOSE 12 TIMES PER DAY (EVERY 2 HOURS) WITH A PUMP RUN TIME OF 11 MIN, 26 SEC AND SHALL BE VERIFIED WITH A FIELD RUN DRAW DOWN TEST.

PANEL SETTINGS:

PUMP ON TIME = 11 MIN 26 SEC

PUMP OFF TIME = 2 HOURS



Field Flow

Job Description	SHENANDOAH RETREAT - THIEL PROPERTY		
Contact			
Prepared by	BR		
Date	1/25/2018		

Please fill in the shaded areas and drop down menus.

This spreadsheet serves as a guide, and is not a complete hydraulic design.

Worksheet 1- Field Flow

Total field

Design		Provided	
Total volume of effluent to be disposed per day	450 gallons / day	450 gallons / day	450 gallons / day
Hydraulic footprint	0.2 gallons / sq ft / day	0.2 gallons / sq ft / day	0.2 gallons / sq ft / day
Total Disposed Field	2,077 square ft	2,077 square ft	2,208 square ft

Flow per zone

Number of Zones	1 zone(s)	1 zone(s)	1 zone(s)
Dispersion	2,077 square ft	2,077 square ft	2,208 square ft
Choose between WASTEFLOW lines	2 ft	2 ft	2 ft
Choose between WASTEFLOW end	2 ft	2 ft	2 ft
Total per zone (minimum required)	1,039 ft. per zone	1,039 ft. per zone	1,104 ft. per zone
Total number of emitters per zone	519 emitters per zone	519 emitters per zone	552 emitters per zone
Select Wasteflow dripline (1 line)	Wasteflow PC - 1/2"ph dripline	Wasteflow PC - 1/2"ph dripline	Wasteflow PC - 1/2"ph dripline
Pressure at the beginning of the dripfield	35 psi	35 psi	35 psi
Feet of head at the beginning of the dripfield	80.85 ft	80.85 ft	80.85 ft
What is the flow rate per emitter in gph?	0.53 gph	0.53 gph	0.53 gph
Dose flow per zone	4.59 gpm	4.59 gpm	4.88 gpm

If required, choose	0.2 ft. sec	0.2 ft. sec	0.2 ft. sec
Flow many lines of WASTEFLOW per zone?	3 lines	3 lines	3 lines
Fill in the actual length of longest dripline (feet)	368 ft	368 ft	368 ft
Max allowable length of a single WASTEFLOW line	576 ft	576 ft	576 ft
Flush flow required at the end of each dripline	0.15 gpm	0.15 gpm	0.15 gpm
Total flow required to achieve flushing velocity	0.44 gpm	0.44 gpm	0.44 gpm
Total flow per zone, worst case scenario	5.03 gpm	5.03 gpm	5.32 gpm

Select Filters and zone valves

Select pipe diameters for manifolds and submains	1 inch	1 inch	1 inch
Select Filter Type	Vortex Screen Filter	Vortex Screen Filter	Vortex Screen Filter
Recommended (diameter)	APF-75F	APF-75F	APF-75F
Select Zone Valve Type	None	None	None
Recommended (diameter)	0	0	0

Check below to choose quantity and length of duty doses

Dosing

Number of doses per day	12 doses	12 doses	12 doses
Filter ON - Pump run time per dose zone	8.11 mins. secs	8.11 mins. secs	7.41 mins. secs
Filter OFF - Pump off time between doses	1.52 hrs. mins	1.52 hrs. mins	1.52 hrs. mins
Per Zone - Pump run time per day zone	1.38 hrs. mins	1.38 hrs. mins	1.32 hrs. mins
All Zones - Number of doses per day all zones	12 doses / day	12 doses / day	12 doses / day
All Zones - Pump run time per day all zones	1.38 hrs. mins	1.38 hrs. mins	1.38 hrs. mins
Filter flush timer	0.15 mins. secs	0.15 mins. secs	0.15 mins. secs
Drain timer	1 mins. secs	1 mins. secs	1 mins. secs
Field flush timer	1 mins. secs	1 mins. secs	1 mins. secs
Field flush counter	12 cycles	12 cycles	12 cycles
Dose volume per zone	38 gallons per dose	38 gallons per dose	39 gallons per dose

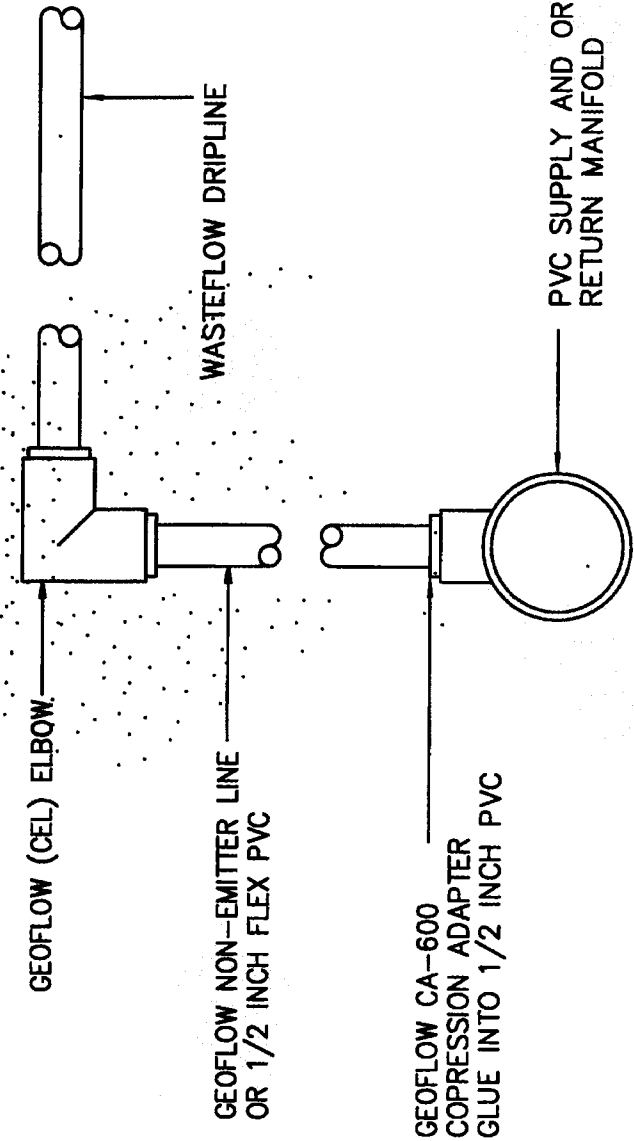


GEOWFLOW CALCULATIONS  
SHENANDOAH RETREAT - THIEL PROPERTY  
1744-26-28-34  
BATTLETOWN MAGISTERIAL DISTRICT  
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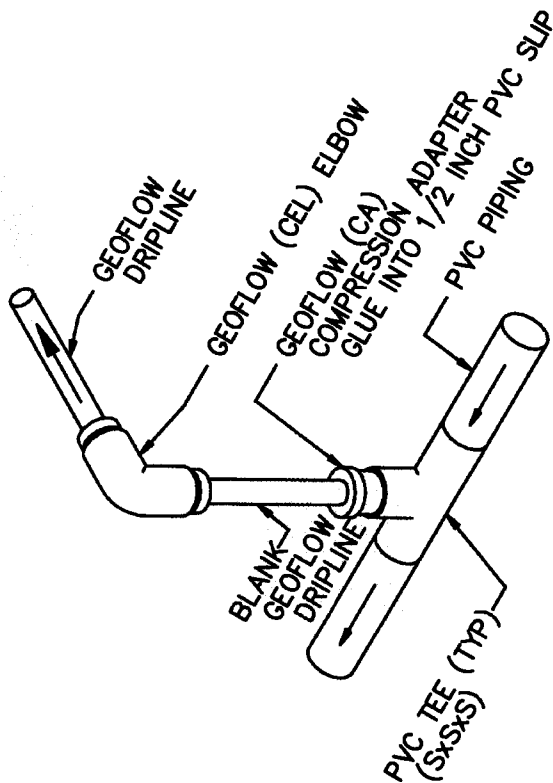
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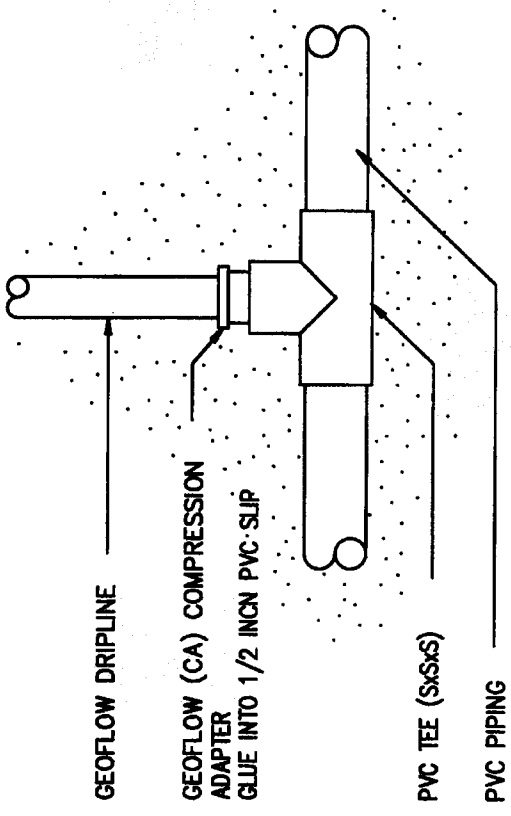
502A  
A  
GEOWFLOW ELBOW (CEL)  
SECTION

Not To Scale  
4-15-99 GF502A



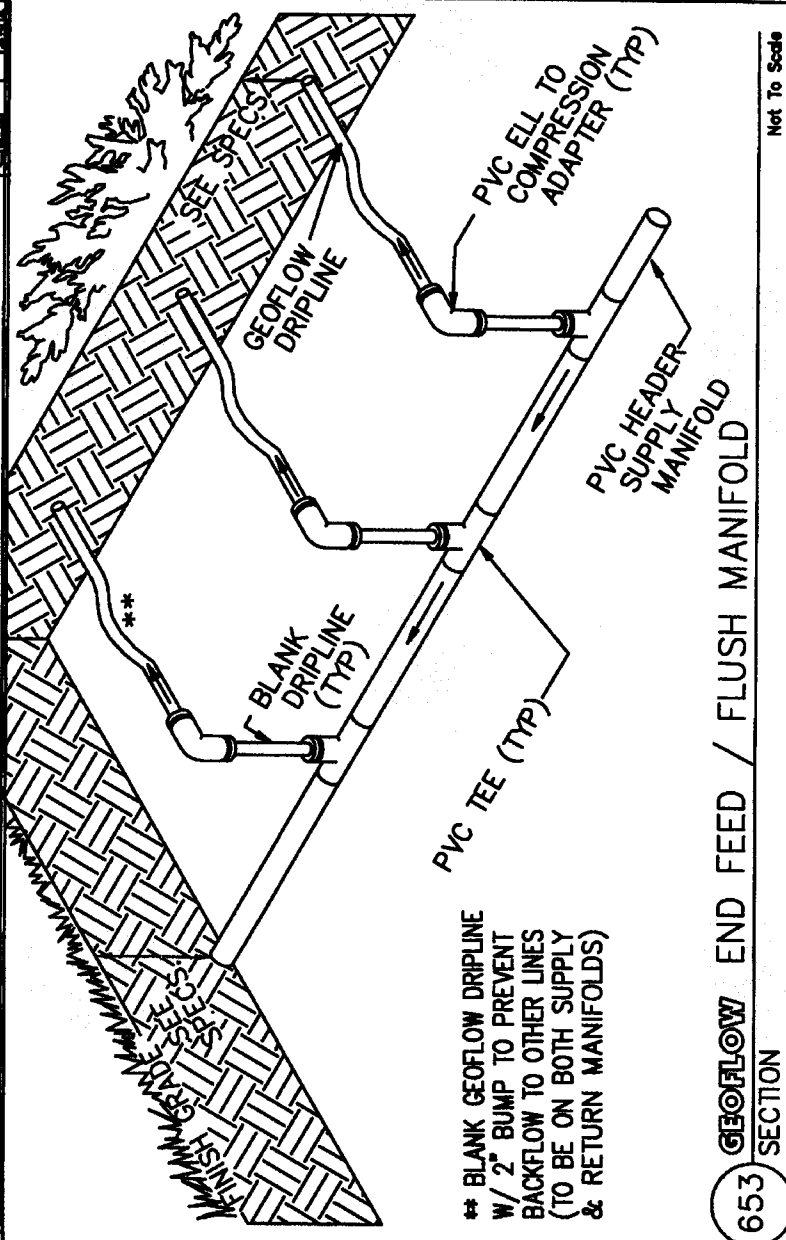
505A  
SECTION  
GEOWFLOW MANIFOLD CONNECTION (PVC TO ELBOW)  
SECTION

Not To Scale  
4-15-99 GF505A



504  
SECTION  
GEOWFLOW MANIFOLD CONNECTION (PVC TO ADAPTER)  
SECTION

Not To Scale  
4-15-99 GF504



653  
SECTION  
GEOWFLOW END FEED / FLUSH MANIFOLD  
SECTION

Not To Scale  
4-15-99 GF653

Drip Irrigation Notes

1. MANUAL FILTER FLUSH VALVE AND FIELD FLUSH VALVE ARE TO BE LOCATED WITHIN THE PUMP #2 CHAMBER. THE VALVES WILL BE FIELD ADJUSTED TO ALLOW FOR CONTINUAL FLUSHING OF THE FILTER AND FIELD WHILE MAINTAINING THE NECESSARY PRESSURES IN THE FIELD.

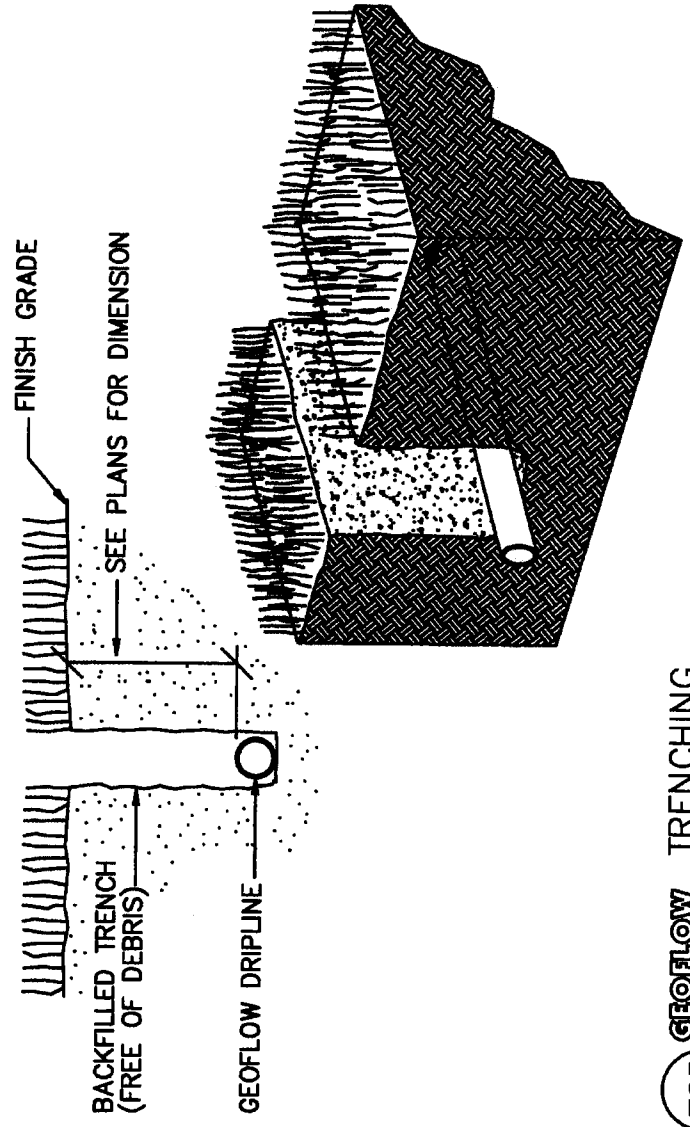


GEOWFLOW DETAILS  
SHENANDOAH RETREAT - THIEL PROPERTY  
BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA  
T# 17A4-26-2R-34



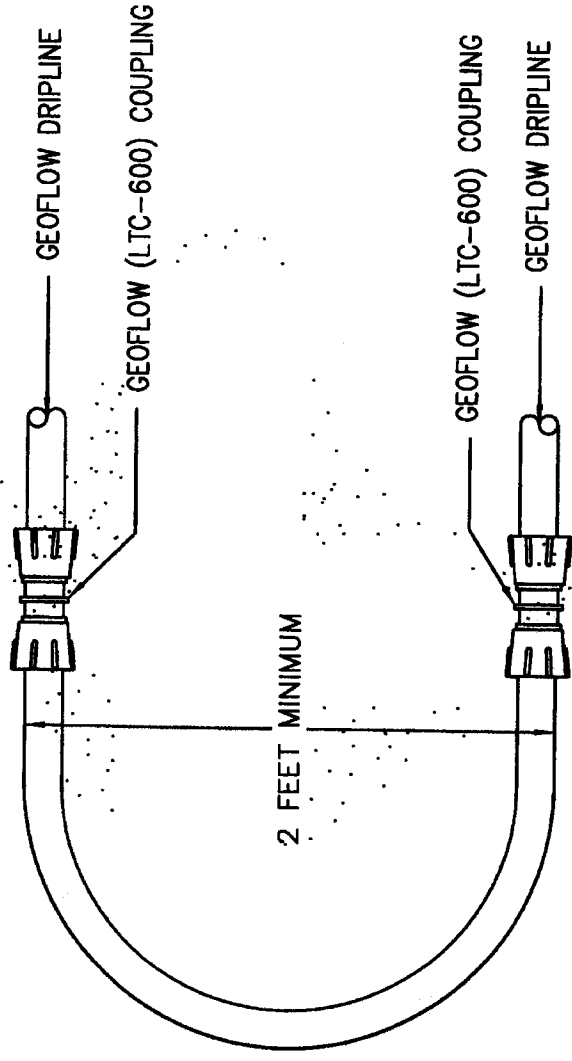
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SCALE: N/A  
DESIGNED BY: JEF/BR  
JOB NO. A306JT  
SHEET 11 OF 12



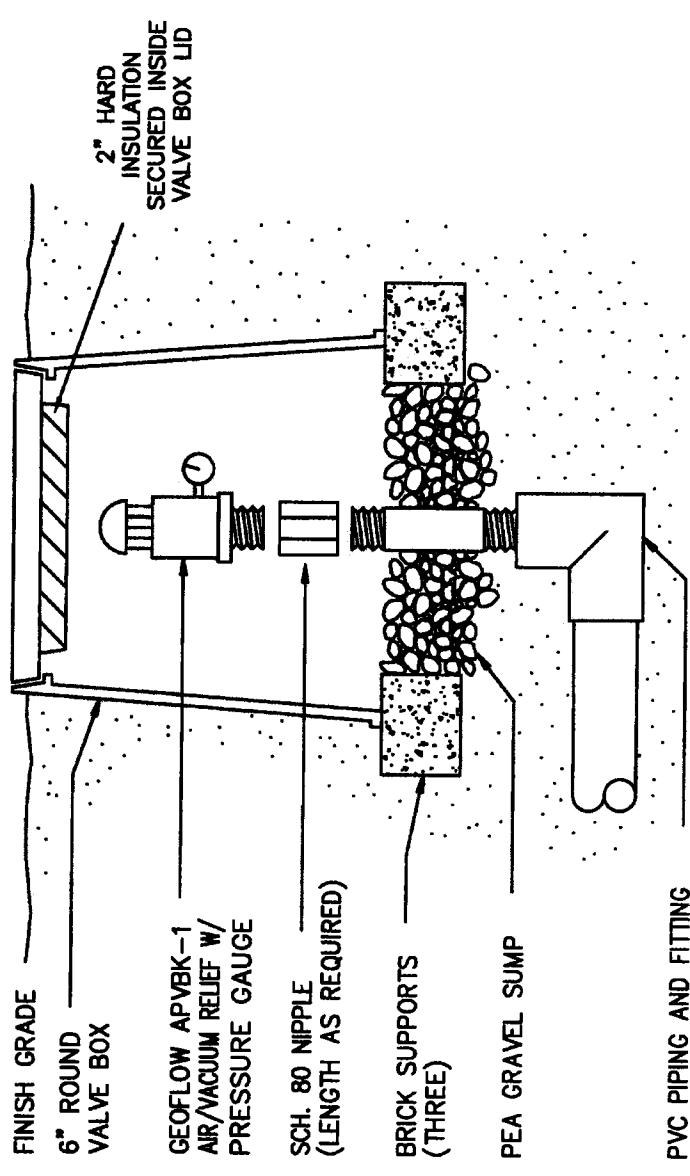
**703** **GEOWFLOW** TRENCHING  
INSTALLATION

Not To Scale  
4-15-89 GF703



**501LS** **GEOWFLOW** LOCKSLIP COUPLING (LTC-600)  
A SECTION

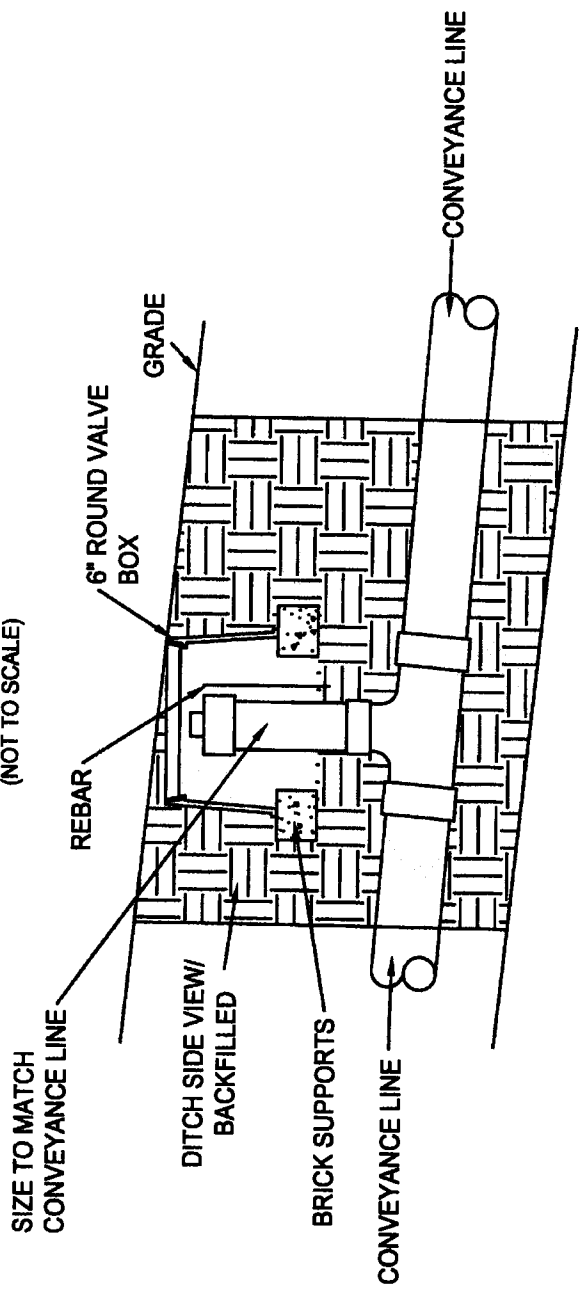
Not To Scale  
4-15-89 GF501LSA



**522** **GEOWFLOW** 1" AIR/VACUUM RELIEF  
SECTION (PLUMBED TO PVC)

Not To Scale

**CLEAN OUT DETAIL**  
(NOT TO SCALE)



**GEOWFLOW DETAILS**  
**SHENANDOAH RETREAT - THIEL PROPERTY**  
TN# 17A4-26-27-34  
BATTLETOWN MAGISTERIAL DISTRICT  
CLARKE COUNTY, VA

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