

# Site and Soil Evaluation Report

**VDH Use Only**  
HDIN: \_\_\_\_\_

## General Information

Date: \_\_\_\_\_ James City County Health Department  
Owner: Matthew Meadows c/o Mojo Custom Homes Phone: 757-218-7144  
Owner Address: 89 Sandy Bay Drive, Poquoson, VA 23662  
Property Address: 8260 Wrenfield Way  
Tax Map/GPIN #: 1540200037  
Subdivision: Wexford Hills Section: \_\_\_\_\_ Block: \_\_\_\_\_ Lot: 37

## Soil Information Summary

1. Position in landscape satisfactory:  Yes  No Describe landscape position: Sideslope
  2. Slope: 5-8 %
  3. Depth to rock/impervious strata: Max. \_\_\_\_\_ in. Min. \_\_\_\_\_ in.  Not observed
  4. Free Water Present:  Yes  No Range in inches: \_\_\_\_\_
  5. Depth to seasonal water table (gray mottling or gray color): \_\_\_\_\_ inches  Not observed
  6. Soil percolation rate estimated:  Yes  No Estimated rate: 35 min/in at 24 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: Larry W. Madison, Jr., AOSE 1940 001076  
Signature: \_\_\_\_\_

Site approved: trenches (describe dispersal area, e.g. absorption trenches) dispersing primary (proposed level of treatment at time of evaluation) to be placed at 24 (inches) depth at site designated on permit. Site provides a total of 1800 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: \_\_\_\_\_

Profile Description

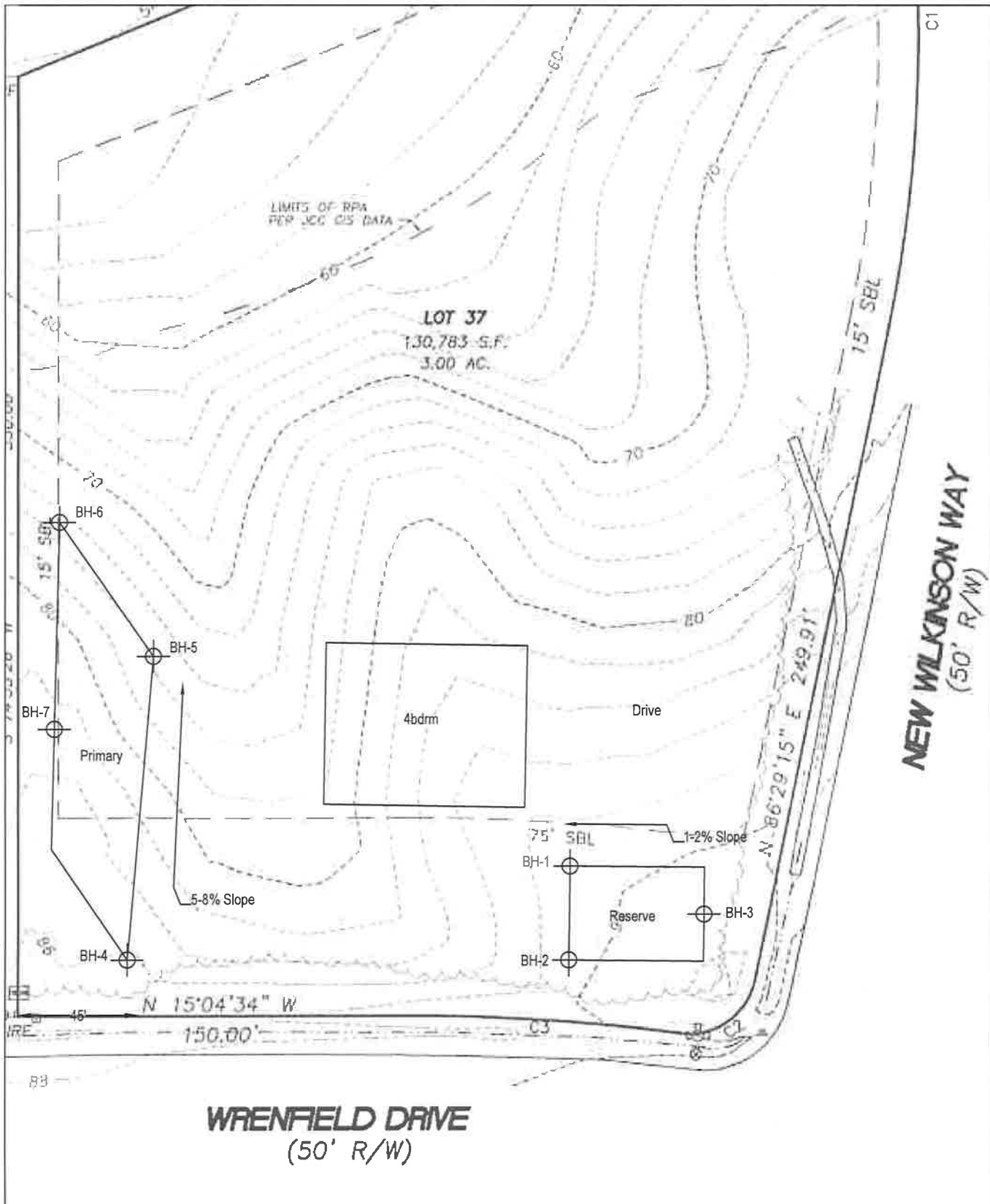
**SOIL EVALUATION REPORT**Property ID: 8260 Wrenfield Way

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.

| Hole # | Horizon | Depth (Inches) | Description of color, texture, etc.   | Texture Group |
|--------|---------|----------------|---|---------------|
| 4      | A       | 0-3            | 2.5 Y 4/1; loose sandy loam.  | II            |
|        | E       | 3-30           | 2.5 Y 7/3; loose sandy loam.  | II            |
|        | B       | 30-60          | 5 YR 5/8 mottled with few fine distinct 10 YR 7/4; loose sandy clay loam.                     | II            |
| 5      | A       | 0-3            | 2.5 Y 4/1; loose sandy loam.  | II            |
|        | E       | 3-24           | 2.5 Y 7/4; loose sandy loam.  | II            |
|        | B       | 24-48          | 5 YR 5/8; loose sandy clay loam.  | II            |
|        | B       | 48-60          | 5 YR 5/8 mottled with common medium distinct 10 YR 7/4 and 7.5 YR 5/8; loose sandy clay loam. | II            |
| 6      | A       | 0-3            | 2.5 Y 4/1; loose sandy loam.  | II            |
|        | E       | 3-20           | 2.5 Y 7/3; loose sandy loam.  | II            |
|        | B       | 20-40          | 7.5 YR 5/8; loose sandy clay loam.  | II            |
|        | B       | 40-60          | 7.5 YR 5/8 mottled with common medium distinct 10 YR 7/4 and 5 YR 5/8; loose sandy clay loam. | II            |
| 7      | A       | 0-3            | 2.5 Y 4/1; loose sandy loam.  | II            |
|        | E       | 3-16           | 2.5 Y 7/4; loose sandy loam.  | II            |
|        | B       | 16-40          | 7.5 YR 5/8; loose sandy clay loam.  | II            |
|        | B       | 40-60          | 7.5 YR 5/8 mottled with common medium distinct 5 YR 5/8 and 10 YR 7/4; loose sandy clay loam. | II            |
| 1      | A       | 0-4            | 2.5 Y 4/1; loose sandy loam.  | II            |
|        | E       | 4-24           | 2.5 Y 7/4; loose sandy loam.  | II            |
|        | B       | 24-38          | 5 YR 5/8; loose sandy clay loam.  | II            |
|        | B       | 38-60          | 5 YR 5/8 mottled with common medium distinct 10 YR 5/8; loose sandy clay loam.                | II            |
| 2      | A       | 0-3            | 2.5 Y 4/1; loose sandy loam.  | II            |
|        | E       | 3-20           | 2.5 Y 7/4; loose sandy loam.  | II            |
|        | B       | 20-36          | 5 YR 5/8; loose sandy clay loam.  | II            |
|        | B       | 36-60          | 5 YR 5/8 mottled with common medium distinct 10 YR 7/4; loose sandy loam.                     | II            |
| 3      | A       | 0-3            | 2.5 Y 7/4; loose sandy loam.  | II            |
|        | E       | 3-20           | 2.5 Y 7/4; loose sandy loam.  | II            |
|        | B       | 20-36          | 5 YR 5/8; loose sandy clay loam.  | II            |
|        | B       | 36-60          | 5 YR 5/8 mottled with common medium distinct 10 YR 7/4; loose sandy loam.                     | II            |

REMARKS: #2129



Septic Site Plan  
 Lot 37, Phase 1 Wrenfield Drive  
 Scale: 1"= 50'

**Madison Environmental LLC**  
 12323 Windsor Road  
 Chester, VA 23831 804 930 1007

# System Specifications

|              |
|--------------|
| VDH Use Only |
| HDIN: _____  |

|  |   |
|--|---|
| <b>Application Information</b>   |   |
| Name: <u>Matthew Meadows c/o Mojo Custom Homes</u>   | Address: <u>89 Sandy Bay Drive</u>  |
| Phone: <u>757-218-7144</u>   | <u>Poquoson, VA 23662</u>   |
| <b>Location Information</b>  |   |
| Tax Map/GPIN #: <u>1540200037</u>  | Property Address: <u>8260 Wrenfield Way</u>   |
| Subdivision: <u>Wexford Hills</u>  | Section: _____ Block: _____ Lot: <u>37</u>  |
| Directions: _____  |   |
| <b>General Information</b>   |   |
| Property Type (e.g. residential): <u>Residential</u>   | Number of Bedrooms: <u>4</u>  |
| Daily Flow: <u>600</u> gpd   | Conditions: _____   |
| Notes: _____   |   |
| <b>Sewer Line</b>  |   |
| Diameter: <u>4</u> in. Material: <u>Sch 40</u> (or equivalent) Notes: _____  |   |
| <b>Pretreatment Unit(s)</b>  |   |
| Treatment Level: <u>primary</u>  | Septic Tank Capacity: <u>1250</u> gallons   |
| Number of Septic Tanks <u>1</u>  | Size of Septic Tank(s) <u>1250</u> gallons  |
| Per the Sewage Handling and Disposal Regulations, check which option(s) chosen:  |   |
| <input type="checkbox"/> Septic tank with inspection port <input type="checkbox"/> Septic tank with effluent filter <input type="checkbox"/> Reduced maintenance septic tank |   |
| Secondary treatment device(s), if applicable: _____  |   |
| Notes: _____   |   |
| <b>Conveyance Line</b>   | <b>Distribution Method and Header Lines</b>   |
| Conveyance Method: <u>Pump</u>   | Distribution Method: <u>gravity</u>   |
| If pumping, include pump specifications sheet.   | No. of boxes: <u>2</u> No. of outlets: <u>9</u>   |
| Material: <u>Sch 40</u> Diameter: <u>2"</u>  | Surge or splitter box required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Notes: <u>See pump specs, 1000 gals. top seam pump tank</u>  | Header Line Material: <u>4" I.D. 1500lb. crush strength plastic or equivalent</u>                   |
| <b>Percolation Lines/Absorption Area</b>   |   |
| Dispersal Method (e.g. laterals, pad, mound): <u>laterals</u>  |   |
| If using pressure dispersal (e.g. drip), include pressure dispersal specifications sheet.  |   |
| No. of laterals/pads: <u>8</u> Length of lateral(s)/pad(s): <u>50</u> ft.      Width of lateral(s)/pad(s): <u>36</u> in.   |   |
| Center to center spacing: <u>9</u> ft.      Installation depth: <u>24</u> in.      Aggregate depth: <u>13</u> in.  |   |
| Size/Type of Aggregate: <u>.5-1.5"</u> Lateral/pad slope: <u>2-4</u> in. per <u>100</u> ft.  |   |
| Reserve Area Provided: <u>100</u> %      Notes: <u>Reserve - pad</u>   |   |
| Please Note: _____   |   |

**PUMP FLOW CALCULATIONS**

PROPERTY ID Lot 37 Wrenfield Drive

GALLONS PER DAY 600

GALLONS PER INCH

21.6

|              |                        |         |                                |
|--------------|------------------------|---------|--------------------------------|
|              | DRAW DOWN<br>IN INCHES | GALLONS | TOTAL LIQUID<br>DEPTH (inches) |
| DOSE VOLUME  | 7                      | 150     | 49                             |
| ADD. STORAGE | 24                     | 520     |                                |

ENTER THE NUMBER OF FITTINGS UNDER EACH FITTING SIZE AND TYPE

| ID    | SIZE<br>INCHES | 45<br>DEGREE<br>BEND | 90<br>DEGREE<br>BEND | GATE<br>VALVE | CHECK<br>VALVE | GLOBE<br>VALVE | UNION | TOTAL<br>EQUAL.<br>LENGTH FT. |
|-------|----------------|----------------------|----------------------|---------------|----------------|----------------|-------|-------------------------------|
| 1.049 | 1              |                      |                      |               |                |                |       | 0                             |
| 1.610 | 1.5            |                      |                      |               |                |                |       | 0                             |
| 2.067 | 2              | 0                    | 1                    | 1             | 1              | 1              | 1     | 19.8                          |
| 3.068 | 3              |                      |                      |               |                |                |       | 0                             |
| 4.026 | 4              |                      |                      |               |                |                |       | 0                             |

CALCULATE FRICTION LOSS

| SIZE<br>INCHES | GALLONS<br>PER<br>MIN | INSIDE<br>PIPE DIA<br>INCHES | PIPE<br>CONSTANT<br>C FACTOR | EQUAL.<br>LENGTH FOR<br>FITTINGS | LENGTH<br>STRAIGHT<br>PIPE | TOTAL<br>PIPE<br>FEET | FRICTION<br>LOSS<br>FEET | SCOURING<br>VELOCITY<br>FPS |
|----------------|-----------------------|------------------------------|------------------------------|----------------------------------|----------------------------|-----------------------|--------------------------|-----------------------------|
| 1              | 25                    | 1.049                        | 150                          | 0                                |                            | 0                     | 0.00                     | 9.30                        |
| 1.5            | 25                    | 1.610                        | 150                          | 0                                |                            | 0                     | 0.00                     | 3.95                        |
| 2              | 25                    | 2.067                        | 150                          | 19.8                             | 75                         | 95                    | 1.06                     | 2.40                        |
| 3              | 25                    | 3.068                        | 150                          | 0                                |                            | 0                     | 0.00                     | 1.09                        |
| 4              | 25                    | 4.026                        | 150                          | 0                                |                            | 0                     | 0.00                     | 0.63                        |

|                      |      |      |                          |
|----------------------|------|------|--------------------------|
| SURFACE ELEV. CHANGE | 8    | FEET |                          |
| FRICTION LOSSES      | 1.06 | FEET |                          |
| ELEVATION HEAD       | 12.3 | FEET | (surface elev. + 4.3 ft) |

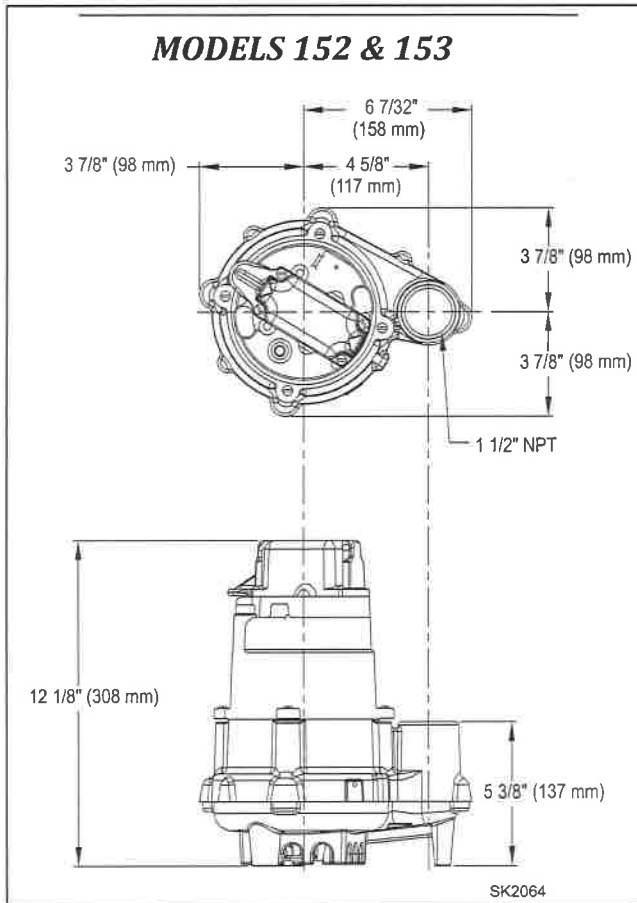
**SYSTEM PUMP CURVE**

|                             |      |
|-----------------------------|------|
| INSIDE PIPE DIA. IN INCHES  | 2    |
| PIPE CONSTANT C FACTOR      | 150  |
| TOTAL PIPE LENGTH FEET      | 94.8 |
| MINIMUM FLOW IN GPM         | 25   |
| ENTER GPM INCREMENT DESIRED | 5    |

| GALLONS<br>PER MIN. | TOTAL<br>DYNAMIC<br>HEAD |
|---------------------|--------------------------|
| 25                  | 14                       |
| 30                  | 14                       |
| 35                  | 15                       |
| 40                  | 15                       |
| 45                  | 16                       |
| 50                  | 17                       |

## PUMP SYSTEM PLANS AND SPECIFICATIONS

### MODELS 152 & 153

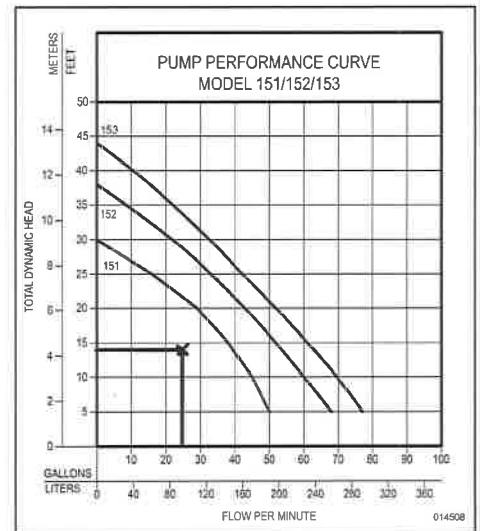
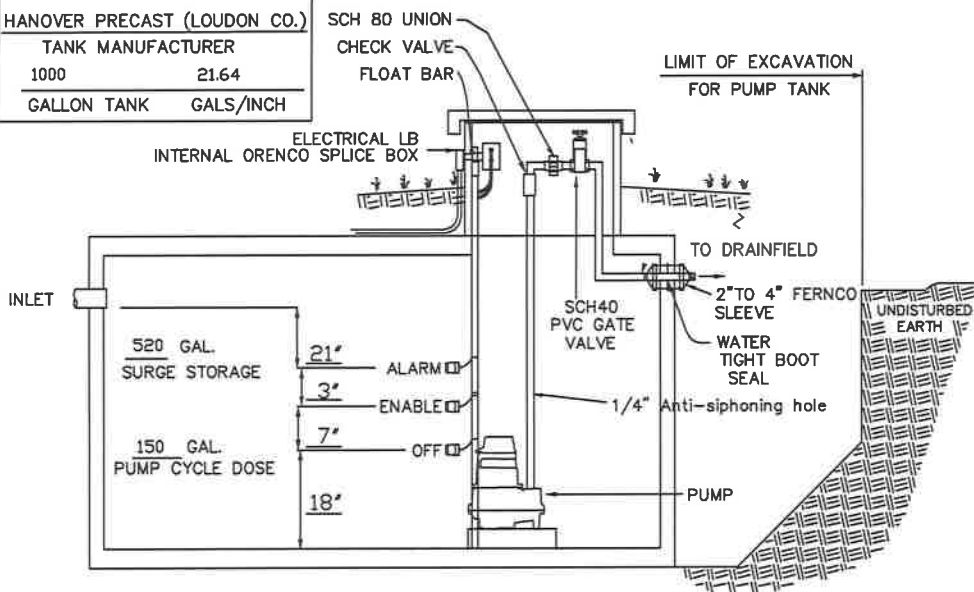


- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Pump:</li> <li>2. Control Panel:</li> <li>3. Control Circuit:</li> <li>4. Pump Circuit:</li> <li>5. Alarms:</li> <li>6. Floats:</li> </ol> | <p>Zoeller 152 .4 HP<br/>                 orenco S1 Simplex Control Panel.<br/>                 10 amp breaker -120 Volt Incoming power supply.<br/>                 20 amp breaker -Double pole 120/240 Volt.<br/>                 Red alarm light and buzzer for HWA.<br/>                 3-float system (alarm, enable and off)</p> |
|--|---|

**Notes:**

1. Pump chamber shall be level and water tight.
2. The pump station must have a water tight control panel for automatically starting and stopping the pump based on water level.
3. The electrical motor control center and master disconnect switch shall be placed in a secure location above grade and remote from pump station.
4. Motor control panel shall provide a manual override switch.
5. A high water alarm with remote sensing and electrical circuitry separate from the motor control must be provided.
6. The alarm shall be audiovisual and shall alarm in an area where it may be easily monitored.
7. All electrical connections shall be **hardwired with color coded, stranded wire**. Do not use compression fittings.
8. **All electrical wiring must be in conduit**. Conduit must be primed and glued for water tightness.
11. Orenco splice box must be used.
12. All holes into risers for any electrical wiring must be sealed using **Polylok rubber grommets**.
13. All electrical splice boxes and check valves must be readily accessible for maintenance and no deeper than 12" below riser

|                              |            |
|------------------------------|------------|
| HANOVER PRECAST (LOUDON CO.) |            |
| TANK MANUFACTURER            |            |
| 1000                         | 21.64      |
| GALLON TANK                  | GALS./INCH |



## **MADISON ENVIRONMENTAL SEPTIC SYSTEM CONSTRUCTION NOTES**

- Installation must be in accordance with the Virginia Board of Health current *Sewage Handling Regulations* and OSHA codes.
- This sewage disposal system and/or water supply is to be constructed as specified by the permit and the attached drawings and specifications.
- Madison Environmental must be notified prior to any suggested changes to the design.
- Failure to install the system in accordance with the permit and state regulations may result in the system not being approved.

### **PRE-CONSTRUCTION**

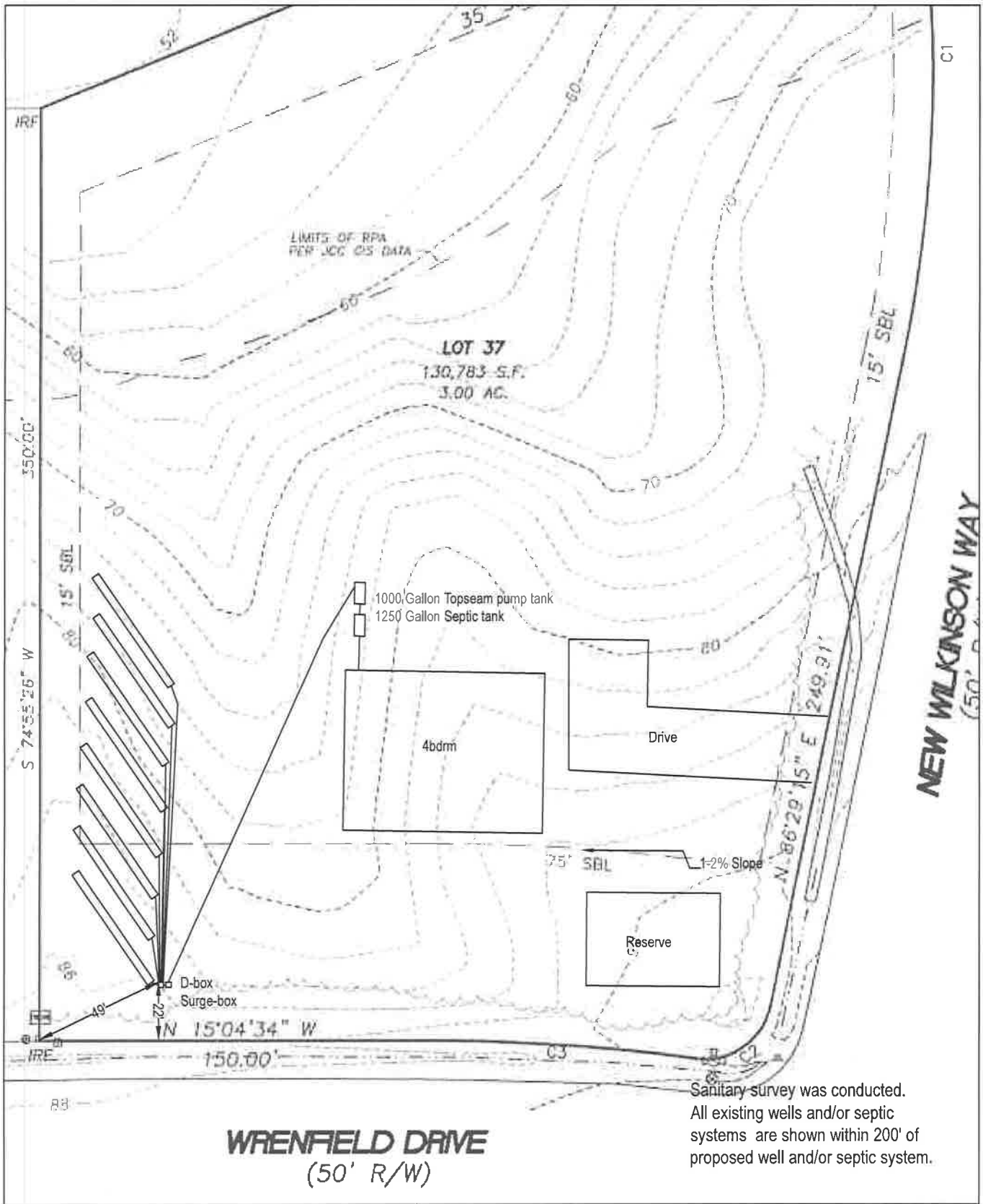
- Read and review construction notes and pump specs prior to installation of system. Any deviation without prior approval may cause additional inspection fees.
- No buried utility service shall be closer than 10 ft. to any part of this system.
- Do not install drainfield system during periods of wet weather or wet soil. This could cause the site to become unsuitable for the drainfield.
- Do not stock pile soil on drainfield area.
- Shallow-placed drainfields (12" or less) must be hand cleared. Shallow-placed drainfield must be protected from heavy excavating equipment. The drainfield permit can be revoked if the site has been damaged by heavy equipment. Stumps may be carefully removed on the day of installation.
- Water loving trees and plants such as weeping willow, maple, gums and others shall be removed if within 25 feet of the drainfield. The roots of these trees may enter distribution lines or drainfield trenches and cause clogging and failure of the drainfield.

### **INSTALLATION AND CONSTRUCTION**

- Concrete septic tanks and d-boxes shall be sealed with hydraulic cement. This includes inlet and outlet ports, seams and any unused ports.
- All risers must extend 6" above final grade.
- Drainfield is to be installed in original, undisturbed soil at location specified on permit.
- The drainfield trenches shall be installed on contour and per VDH Regulations 12VAC 5-610-930, Section E.
- If installing anything other than gravel trenches, it must be preapproved.
- If system calls for a pump or alternative system please read additional notes for electrical wiring.
- Tank must be filled with water prior to start-up.
- Madison Environmental must be notified at least **48 hours prior** to the final inspection.

### **DRAINFIELD SITE CARE**

- Keep structures and driveways off the drainfield and reserve areas.
- Do not drive heavy equipment on drainfield area (before and after installation of system).
- Roof drains, basement sump discharges (non-sewage), floor drains, footing drains, etc. being connected to this system is prohibited.
- Madison Environmental does not recommend the use of garbage disposals with septic systems unless an additional dedicated grease trap is installed.
- Lawn irrigation over drainfield area may cause drainfield failure and is not recommended.



Sanitary survey was conducted.  
 All existing wells and/or septic systems are shown within 200' of proposed well and/or septic system.

Septic Construction Plan  
 Lot 37, Phase 1 Wrenfield Drive  
 Scale: 1" = 50'

**Madison Environmental LLC**  
 12323 Windsor Road  
 Chester, VA 23831 804 930 1007

# Commonwealth of Virginia

Application for:  Sewage System  Water Supply

|                             |
|-----------------------------|
| VDH Use only                |
| Health Department ID# _____ |
| Due Date _____              |

Owner Matthew Meadows c/o Mojo Custom Homes  
Mailing Address 89 Sandy Bay Drive  
Poquoson, VA 23662  
Agent Larry W. Madison, Jr./Madison Environmental  
Mailing Address 12323 Windsor Road  
Chester, VA 23831  
Site Address 8260 Wrenfield Way

Phone 757-218-7144  
Phone \_\_\_\_\_  
Fax \_\_\_\_\_  
Phone 804-930-1007  
Phone \_\_\_\_\_  
Fax 804-930-1008  
Fax \_\_\_\_\_  
Email \_\_\_\_\_

Directions to Property: \_\_\_\_\_  
Subdivision Wexford Hills Section \_\_\_\_\_ Block \_\_\_\_\_ Lot 37  
Tax Map 1540200037 Other Property Identification \_\_\_\_\_ Dimension/Acreage of Property \_\_\_\_\_

### 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 4)      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 attached 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.

\_\_\_\_\_  
Signature of Owner/ Agent

05/02/16  
Date

**AOSE/PE Report for**  
**Construction Permit**


|   |  |
|---|--|
| <b>Property location:</b><br><br>8260 Wrenfield Way | <b>Lot:</b> 37 <b>Section:</b> <b>Subdivision:</b> Wexford Hills |
|   | <b>County:</b> James City  |
|   | <b>GPIN or Tax Map #:</b> 1540200037                             |

|   |  |
|---|--|
| <b>Applicant/Client Address:</b><br>Matthew Meadows c/o Mojo Custom Homes<br>89 Sandy Bay Drive<br>Poquoson, VA 23662 | <b>Prepared by AOSE/PE:</b><br>Larry W. Madison Jr.<br>Madison Environmental<br>12323 Windsor Road<br>Chester, VA 2381 |
|---|--|

|  |   |
|--|---|
| <b>Date:</b> 05/02/16<br><b>Revision Date:</b> | <b>AOSE/PE Job Number:</b> 2129<br><b>Health Dept. ID Number:</b> |
|--|---|

| Contents of this Report:    | Pg | Pg                        | Pg                          |
|-----------------------------|----|---------------------------|-----------------------------|
| Design Summary              |    | Pump calculations         | Pretreatment Specifications |
| Construction Specifications |    | Soil Summary Report       | LGMI Specifications         |
| Construction Drawing        |    | Soil Profile Descriptions | General Construction Notes  |
| Pump Chamber Specifications |    | Site Sketch               | Abbreviated Design          |
| Survey/Plat                 |    | Well Documentation        | Other:                      |

**Certification Statement(s)**

|   |  |
|---|--|
| <p>I hereby certify that the evaluations and/or designs contained herein were conducted in accordance with the Sewage Handling and Disposal Regulations (12 VAC5-610), the Private Well Regulations (12 VAC5-630), 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.</p> <p><input checked="" type="checkbox"/> 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</p> <p>I recommend approval of: Construction Permit</p> |  |
|---|--|