

**Bureau of Environmental Health**  
 8930 Stanford Boulevard, Columbia, MD 21045  
 Main: 410-313-2640 | Fax: 410-313-2648  
 TDD 410-313-2323 | Toll Free 1-866-313-6300  
[www.hchealth.org](http://www.hchealth.org)  
 Facebook: [www.facebook.com/hocohealth](http://www.facebook.com/hocohealth)

Maura J. Rossman, M.D., Health Officer

RECEIPT DATE: 9/29/16 **ONSITE SEWAGE DISPOSAL SYSTEM** P 559782

APPROVAL DATE: 1/26/17 **PERMIT: CONSTRUCTION** A \_\_\_\_\_

PROPERTY ADDRESS: 15892 Meadow Walk

SUBDIVISION: Daisy Hill Estates LOT: 13 TAX ID: 04-325222

CONTRACTOR: Fogle's Septic Clean Inc. EMAIL: kurt@foglesinc.com

CONTRACTOR ADDRESS: 580 Obrecht Road, Sykesville, MD 21784 PHONE: 410-795-5670

CONTRACTOR CERTIFIED FOR BAT INSTALLATION:  MDE  MANUFACTURER:

PROPERTY OWNER: Hanlon Construction EMAIL: \_\_\_\_\_

OWNER ADDRESS: 100 Brinkwood Road, Brookville, MD 20833 PHONE: (301) 774-7989

UNIT MODEL: \_\_\_\_\_ PUMP SIZE: \_\_\_\_\_ PUMP TANK CAPACITY: \_\_\_\_\_

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: \_\_\_\_\_ DATE RECORDED: \_\_\_\_\_

DISTRIBUTION SYSTEM:  GRAVITY  PRESSURE DOSED BEDROOMS: 3 APPLICATION RATE: 0.6

|           |   |  |
|-----------|---|--|
| TRENCHES: | LINEAR FEET REQUIRED: <u>150</u>          | INLET DEPTH: <u>3.5</u>                    |
|           | TRENCH WIDTH: <u>2</u>                    | MAXIMUM BOTTOM DEPTH: <u>7</u>             |
|           | MINIMUM SPACE BETWEEN TRENCHES: <u>10</u> | EFFECTIVE AREA BEGINNING DEPTH: <u>3.5</u> |

LOCATION: **PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND BAT UNIT LOCATION MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.**

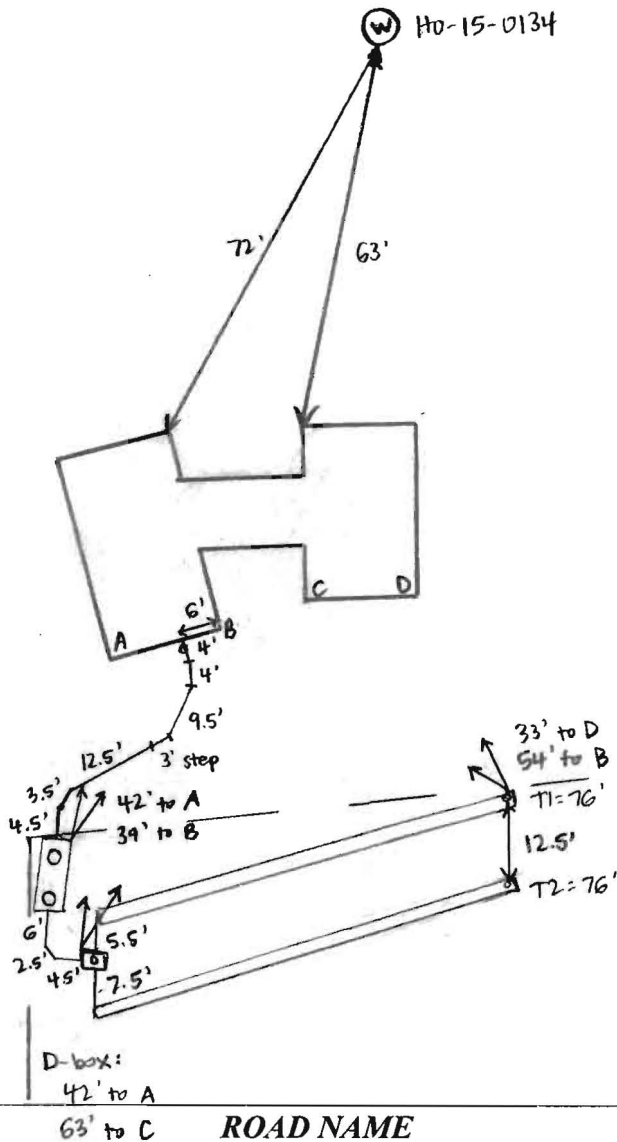
NOTES: Install BAT unit per plan. 1500 2-compartment tank

ISSUED BY: Hank Oswald ISSUE DATE: 9/29/16 EXPIRATION DATE: 9-29-17

- NOTE: CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION INSPECTION PRIOR TO BEGINNING ANY INSTALLATION
- NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING
- NOTE: STONE MUST BE APPROVED BY HEALTH DEPARTMENT AND GRAVEL TICKET MUST BE AVAILABLE FOR REVIEW.
- NOTE: WATERTIGHT SEPTIC TANKS REQUIRED
- NOTE: ALL PARTS OF SEPTIC SYSTEM SHALL BE AT LEAST 100 FEET DOWNGRAIENT FROM ANY WATER WELL
- NOTE: MANHOLE RISERS REQUIRED ON ALL SEPTIC TANKS AND PUMP CHAMBERS
- NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM  
 ELECTRICAL PERMIT ISSUED E 16004585
- NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.
- NOTE: MDE RECOMMENDS SEPTIC TANKS, BAT, AND OTHER PRETREATMENT UNITS BE PUMPED AT A FREQUENCY ADEQUATE TO ENSURE THAT SOLIDS ARE NOT DISCHARGED TO THE DISPOSAL AREA

**NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM.  
 PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT.  
 CALL 410-313-1771 TO SCHEDULE INSPECTIONS.**

NOT TO SCALE



| TRENCH/DRAINFIELD DATA  |                 |        |
|-------------------------|-----------------|--------|
| WIDTH                   | INLET           | BOTTOM |
| 2'                      | 3.5'            | 7'     |
| NUMBER OF TRENCHES      | 2               |        |
| TOTAL LENGTH            | 152'            |        |
| ABSORPTION AREA         | 304' + SIDEWALL |        |
| DISTRIBUTION BOX LEVEL  | YES             |        |
| DISTRIBUTION BOX BAFFLE | YES             |        |
| DISTRIBUTION BOX PORT   | YES             |        |

| SEPTIC TANK DATA                  |                     |
|-----------------------------------|---------------------|
| SEPTIC TANK I LEVEL               | YES                 |
| MANUFACTURER                      | BABYLON             |
| CAPACITY                          | 1500 GAL            |
| SEAM LOC                          | TOP                 |
| TANK LID DEPTH                    | 2' inlet, 1' outlet |
| BAFFLES                           | YES                 |
| BAFFLE FILTER                     | NO                  |
| MANHOLE LOC                       | FRONT + REAR        |
| 6" PORT LOC                       | NONE                |
| WATERTIGHT TEST                   | NONE                |
| SLOTTED                           | YES                 |
| DATE ON LID                       | 12-4-16             |
| <del>PUMP/SEPTIC TANK LEVEL</del> |                     |
| <del>MANUFACTURER</del>           |                     |
| <del>CAPACITY</del> GAL           |                     |
| <del>SEAM LOC</del>               |                     |
| <del>TANK LID DEPTH</del>         |                     |
| <del>BAFFLES</del>                |                     |
| <del>BAFFLE FILTER</del>          |                     |
| <del>MANHOLE LOC</del>            |                     |
| <del>6" PORT LOC</del>            |                     |
| <del>WATERTIGHT TEST</del>        |                     |
| <del>SLOTTED</del>                |                     |
| <del>DATE ON LID</del>            |                     |

PRE-CONSTRUCTION:

1/19/17 Met Fogle's on site for layout. No SDA stakes - 2<sup>nd</sup> trench and end of 1<sup>st</sup> staked. measured off house to confirm SDA corners. Shot contour - trenches staked to 75'. adjusted start of T1 to be on contour. Tank staked at 15' off house - moved down hill, farther from house, into SDA corner above T1. (SC)

INSTALLATION:

1/20/17 Tank set. House connection made + pipe laid to tank. Line bedded with #57 stone. D-box set and connected to tank. (SC) 1/26/17 Fogle's installing trenches. T1 finished + left open at ends adding stone to T2. End of T2 only 6.5' - Fogle's deepened to 7'. They said they measured 7' up to last 10' of trench (no transit used). Levelled speed levelers in D-box. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 1/26/17



## Bureau of Environmental Health

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TDD 410-313-2323 | Toll Free 1-866-313-6300

[www.hchealth.org](http://www.hchealth.org)

Facebook: [www.facebook.com/hocohealth](https://www.facebook.com/hocohealth)

Twitter: [HowardCoHealthDep](https://twitter.com/HowardCoHealthDep)

**Maura J. Rossman, M.D., Health Officer**

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January 29, 2016

SILL Engineering  
11130 Dovedale Court, Suite 200  
Marriottsville, MD 21104

*Sent via email to: [amber@sillengineering.com](mailto:amber@sillengineering.com)*

**RE: BAT Plan Review  
15892 Meadow Walk  
Woodbine, MD**

Amber:

This letter is in response to the BAT Plan for 15892 Meadow Walk (Daisy Hill Estates, Lot 13). Upon review of the plan, some items need to be added or changed on the plan. Please revise the plan to include the following:

- 1.) Add actual well site to well box on plan and a note that well has been field located.
- 2.) Septic tank must be located 20 feet from house with basement.
- 3.) Rip-rap must be located 25 feet from septic easement and components.
- 4.) Replacement system calculation # 5 should be 150 FT (Not 174)

Should you have any concerns or questions, please don't hesitate to inquire.

Respectfully,

*Hank Oswald*

Hank Oswald, L.E.H.S  
Bureau of Environmental Health  
Well & Septic Program

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Friday, February 12, 2016 1:22 PM  
**To:** MAILBOX@ROWESPRINTSHOP.COM  
**Cc:** 'Theresa@foglesinc.com'; AMBER@SILLENGINEERING.COM  
**Subject:** Daisy Hill Estates\_Lot 13\_15892 Meadow Walk

BK Builders:

On the revised BAT Plan, it indicates the field located well on Daisy Hill Estates, Lot 13 doesn't have a tag. If this is the case, this needs to be addressed prior to building permit approval.

Please confirm that it's been addressed and include tag # in response.

Thanks,

Hank

Hank Oswald, L.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
8930 Stanford Boulevard  
Columbia, MD 21045  
410.313.1786 (Office)  
410.313.2648 (Fax)

## Oswald, Hank

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**From:** Oswald, Hank  
**Sent:** Monday, November 28, 2016 8:15 AM  
**To:** 'Paul Sill'  
**Subject:** RE: Daisy Hill Estates, Lot 13  
**Attachments:** COMAR BAT revision memo.pdf; OSDS design plan requirements 11.21.16.pdf

Hi Paul:

Please see attached memo regarding COMAR revision and BAT requirements along with onsite sewage disposal design plan requirements. Lot 13 does not require a BAT.

Let me know if you have any questions.

Hank

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**From:** Paul Sill [<mailto:paul@sillengineering.com>]  
**Sent:** Friday, November 25, 2016 2:02 PM  
**To:** Oswald, Hank  
**Subject:** Daisy Hill Estates, Lot 13

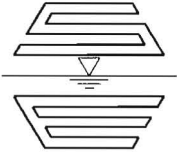
Afternoon Hank,

The property owners contacted me and asked for me to update the BAT plans to remove the BAT unit. Can you confirm that this property will not require a BAT unit, and then what do you need, plan-wise, for this to be official? Can we just cross out the BAT and write-in a 1,250-gallon septic tank, or do you need a whole new plan?

Thanks,

Paul M. Sill, PE, LEED AP  
Sill Engineering Group, LLC  
11130 Dovedale Court, Suite 200  
Marriottsville, MD 21104  
Office: 443-325-5076 ext. 102  
Fax: 410-696-2022  
Cell: 443-878-4314  
Website: [www.sillengineering.com](http://www.sillengineering.com)

 Please consider the environment before printing this email.



11130 Dovedale Court, Suite 200  
Marriottsville, MD 21104  
Website: [www.sillengineering.com](http://www.sillengineering.com)

Office: 443-325-7682  
Fax: 410-696-2022  
Email: [info@sillengineering.com](mailto:info@sillengineering.com)

Civil Engineering for Land Development

SILL ENGINEERING GROUP, LLC

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# Daisy Hill Property

## Lot 13

### 15892 Meadow Walk

## BAT Plan Report

January 20, 2016

### Prepared For:

GAIANE MKRTCHIAN  
200 Towson Town Court, #512  
Towson, Maryland 21204



Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland,  
License No. 32025,  
Expiration Date: June 20, 2017

Project #15-018

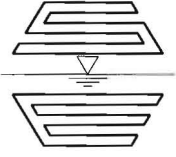
Daisy Hill Property  
Lot 13  
15892 Meadow Walk  
January 20, 2016

## Design

- Design Flow: 450 gpd
- The absorption beds in the Initial System are each 75' long and the distribution network is an End Feed Network.
- Diameter of lateral = 4"
- Spacing between laterals = 10'
- Number of laterals = 2
- Material: 4" Schedule 40 PVC

## Septic System Trench Design Specifications

- Initial System And Replacements:
  - Application Rate: 0.6
  - Effective Area Beginning Depth: 3.5'
  - Bottom Maximum Depth: 7.0'
- Design Flow:
  - 3 Bedrooms at 150 gpd
  - $3 \times 150 \text{ gpd} = 450 \text{ gpd}$
- Square Footage of Drain field Required:
  - Design Flow (450 gpd) / Application Rate (0.6) = 750 sf
- Sidewall Reduction Credit:
  - Trench Width (W) = 2'
  - Trench Effective Depth (D) = 3.5'
  - $(W+2) / (W+1+2D) \times 100 = 40\%$
- Linear Length of Trench Required:
  - Drain field Square Footage (750) x Sidewall Reduction Credit (0.4%) / Trench Width (2') = 150'
- Linear Length of Trench Provided = 150
  - Two trenches 75.0 lf each
- Design based on:
  - Norweco TNT-500 GPD or equivalent



11130 Dovedale Court, Suite 200  
Marriottsville, MD 21104  
Website: www.sillengineering.com

Office: 443-325-5076  
Fax: 410-696-2022  
Email: info@sillengineering.com

Civil Engineering for Land Development

## SILL ENGINEERING GROUP, LLC

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February 11, 2016

### **Bureau of Environmental Health**

8930 Stanford Boulevard  
Columbia, MD 21045  
Attn: Hank Oswald

Re: Site Plan for BAT Installation  
15892 Meadow Walk  
Woodbine, MD  
15-018

Dear Mr. Oswald,

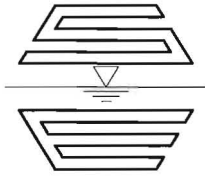
In response to your comments associated with the above referenced plan and dated January 29, 2016, please find this point-by-point response letter.

1. The well has been field located, and added to the plan.
2. The house does not have a basement. See architectural plans attached.
3. We are limited to have the rip-rap at the current location due to the Drainage and Utility Easement running on the south side of the property along the proposed road. Furthermore the swale that runs between the septic easement and the driveway, can't be placed closer to the driveway due to safety issues. Small size river-rocks will be used at the outfall of the roofleader, not the Class I type stone.
4. Replacement system calculation # 5 has been edited.

Thank you for your consideration of this submittal. Should you have any questions or comments regarding this matter, please do not hesitate to contact this office.

Sincerely,  
SILL ENGINEERING GROUP, LLC

  
Kate Szallo



11130 Dovedale Court, Suite 200  
 Marriottsville, MD 21104  
 Website: www.sillengineering.com  
 Civil Engineering for Land Development

Office: 443-325-5076  
 Fax: 410-696-2022  
 Email: info@sillengineering.com

**SILL ENGINEERING GROUP, LLC**

To:  
 Howard County Health Department  
 Bureau of Environmental Health  
 8930 Stanford Boulevard  
 Columbia, MD 21045

|            |   |
|------------|---|
| Date:      | February 11, 2016                               |
| Attention: | Hank Oswald                                     |
| Re:        | Daisy Hill<br>15892 Meadow Walk<br>Woodbine, MD |
| Project #: | 15-018  |

We are sending you

|  |  |        |
|--|--|--------|
| <input checked="" type="checkbox"/> Attached | Under Separate Cover Via Mail the following: |        |
| <input checked="" type="checkbox"/> Letter   | Originals                                    | Other: |
| <input checked="" type="checkbox"/> Plans    | Computations                                 |        |

| Quantity | Description                    | Quantity | Description |
|----------|--------------------------------|----------|-------------|
| 3        | Site Plan for BAT Installation |          |             |
| 1        | Architectural Plan             |          |             |
| 1        | Response Letter                |          |             |
|          |                                |          |             |
|          |                                |          |             |
|          |                                |          |             |
|          |                                |          |             |
|          |                                |          |             |

These are transmitted as checked below

|  |              |                           |
|--|--------------|---------------------------|
| <input checked="" type="checkbox"/> For Approval | As Requested | Please Return After Using |
| <input checked="" type="checkbox"/> For Review   | For Your Use | As Approved               |

Comments:

Copy To:

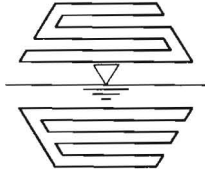
Signed:

Kate Szalló

Received by:

Date Received:

**Letter of Transmittal**



11130 Dovedale Court, Suite 200  
 Marriottsville, MD 21104  
 Website: www.sillengineering.com  
 Civil Engineering for Land Development

Office: 443-325-5076  
 Fax: 410-696-2022  
 Email: info@sillengineering.com

**SILL ENGINEERING GROUP, LLC**

To: Mr. Hank Oswald  
 Howard County Health Department  
 Bureau of Environmental Health  
 8930 Stanford Boulevard  
 Columbia, MD 21045

|            |  |
|------------|--|
| Date:      | December 13, 2016  |
| Attention: | Hank Oswald  |
| Re:        | 15892 Meadow Walk, Woodbine 21797<br>Onsite Sewage Disposal System Design Plan |
| Project #: | 15-018   |

**We are sending you**

|  |  |        |
|--|--|--------|
| <input checked="" type="checkbox"/> Attached | Under Separate Cover Via Mail the following: |        |
| Letter                                       | Originals                                    | Other: |
| <input checked="" type="checkbox"/> Plans    | Computations                                 |        |

| Quantity | Description                               | Quantity | Description |
|----------|---|----------|-------------|
| 3        | Onsite Sewage Disposal System Design Plan |          |             |
|          |   |          |             |
|          |   |          |             |
|          |   |          |             |
|          |   |          |             |
|          |   |          |             |
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**These are transmitted as checked below**

|  |              |                           |
|--|--------------|---------------------------|
| <input checked="" type="checkbox"/> For Approval | As Requested | Please Return After Using |
| <input checked="" type="checkbox"/> For Review   | For Your Use | As Approved               |

Comments:

Copy To:

Signed:

Paul M. Sill, PE LEED AP

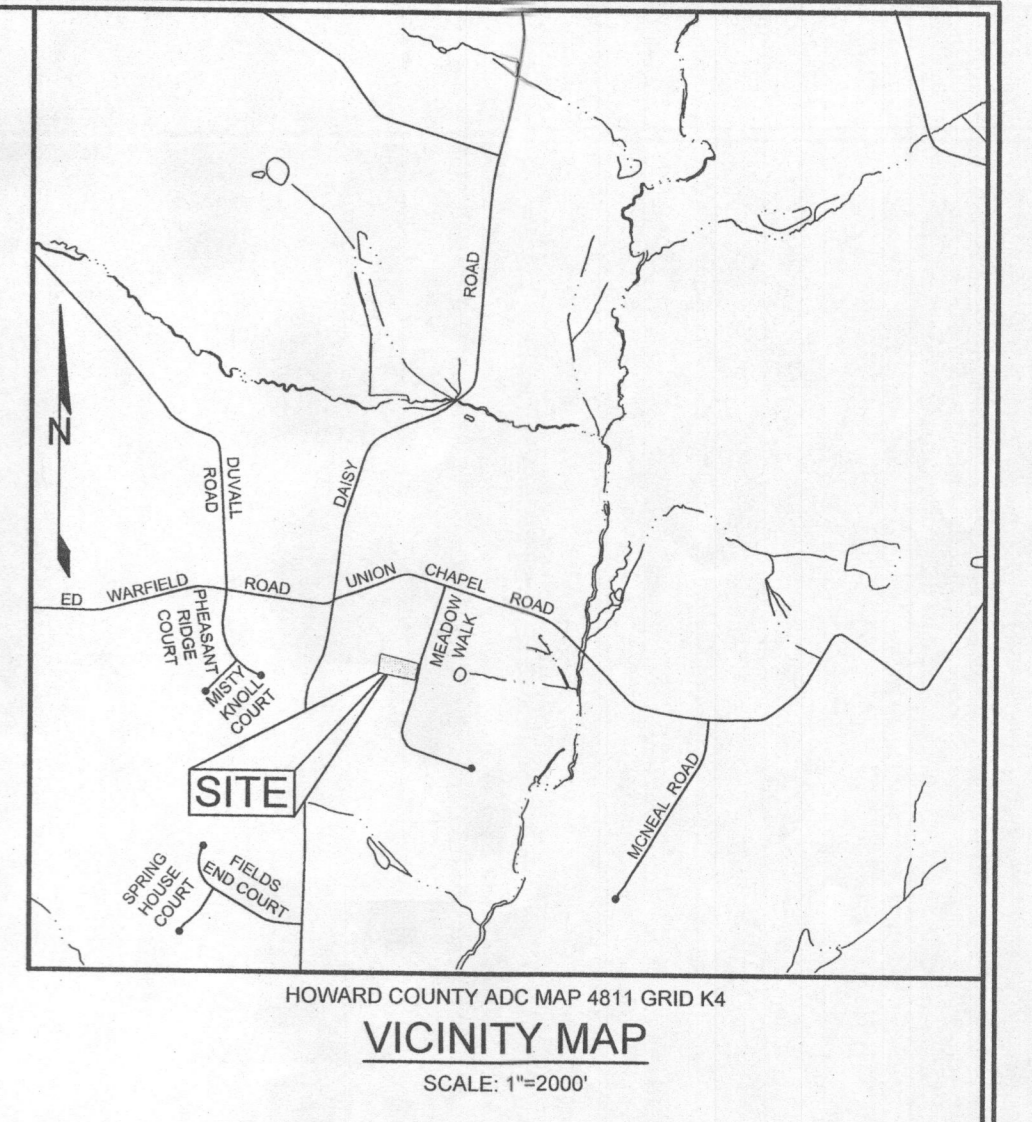
Received by:

Date Received:



**LEGEND**

- EXISTING CONTOUR: - 382
- EXISTING TREELINE: [Symbol]
- PROPOSED SPOT ELEVATION: +62.53
- PROP. PERCOLATION TEST HOLE STANDARD, PASSED: [Symbol]
- EX. APPROXIMATE WELL LOCATION: [Symbol]
- SOIL BOUNDARY: [Symbol]
- HYDROLOGIC SOIL GROUP 'C': [Symbol]
- PROPOSED WELL LOCATION: [Symbol]
- EX. STORM DRAIN INLET PER F73-024: [Symbol]
- SLOPES GREATER THAN 15%: [Symbol]
- SILT FENCE: SF
- SUPER SILT FENCE: SSF
- LIMIT OF DISTURBANCE: LOD
- STABILIZED CONSTRUCTION ENTRANCE: [Symbol]



PLAN VIEW  
SCALE: 1"=30'

**SOILS LEGEND**

| SYMBOL | NAME / DESCRIPTION                         | GROUP | 'K' FACTOR |
|--------|--|-------|------------|
| MaD    | MANOR LOAM, 15 TO 25 PERCENT SLOPES        | B     | 0.28       |
| GgC    | GLENELG LOAM, 8 TO 15 PERCENT SLOPES       | B     | 0.28       |
| GmB    | GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES | C     | 0.43       |

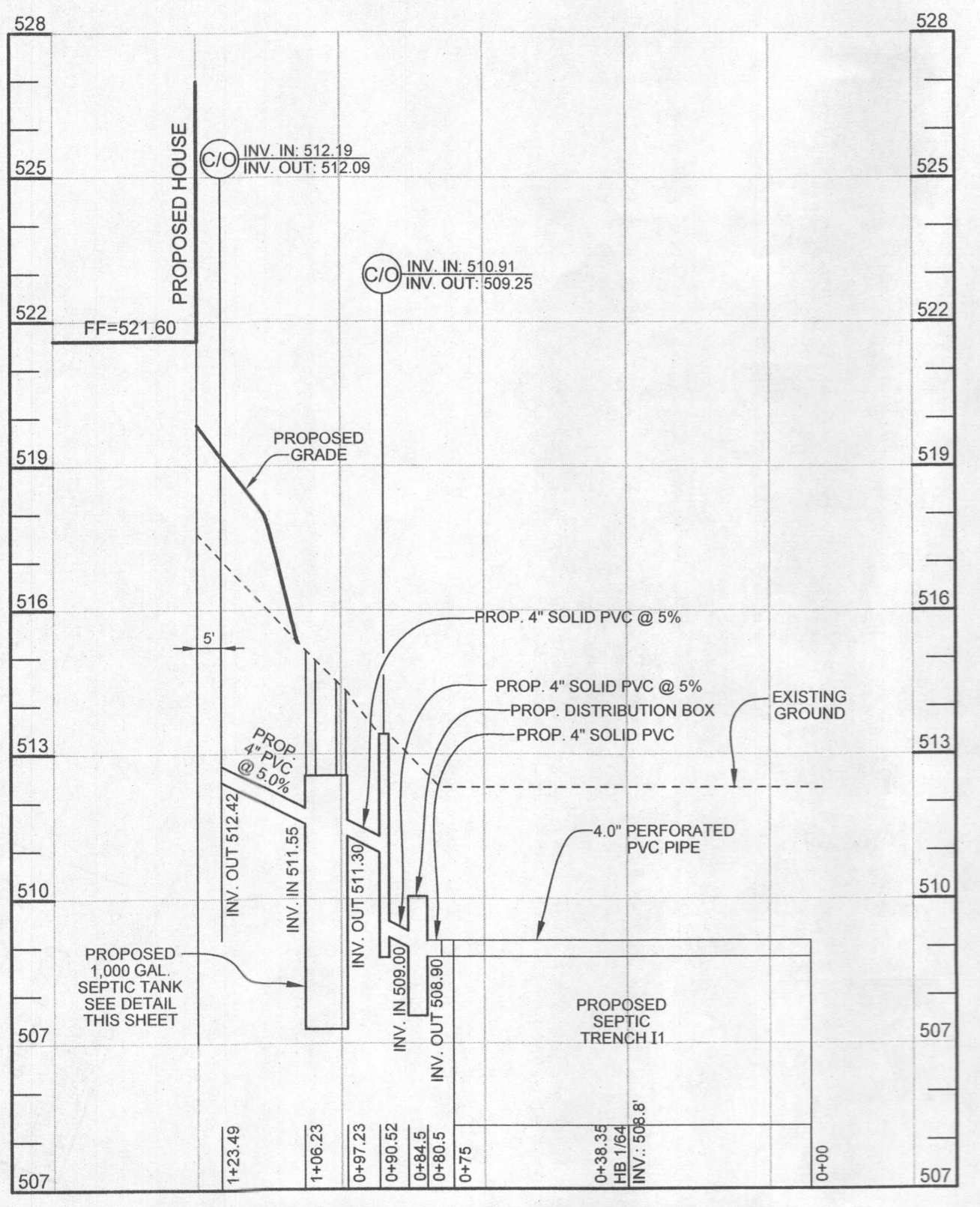
NOTES:  
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY, SOIL GRID 292.  
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

**GENERAL NOTES**

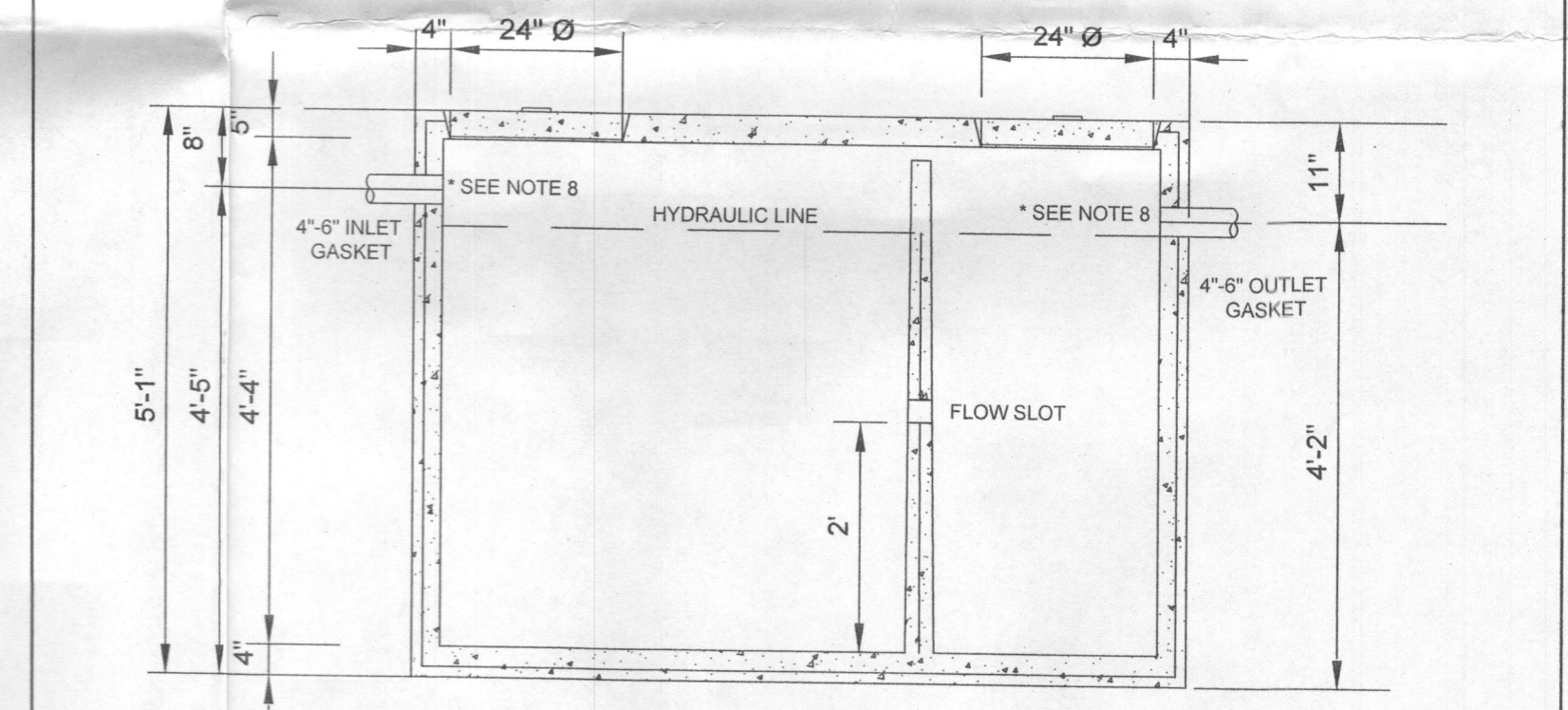
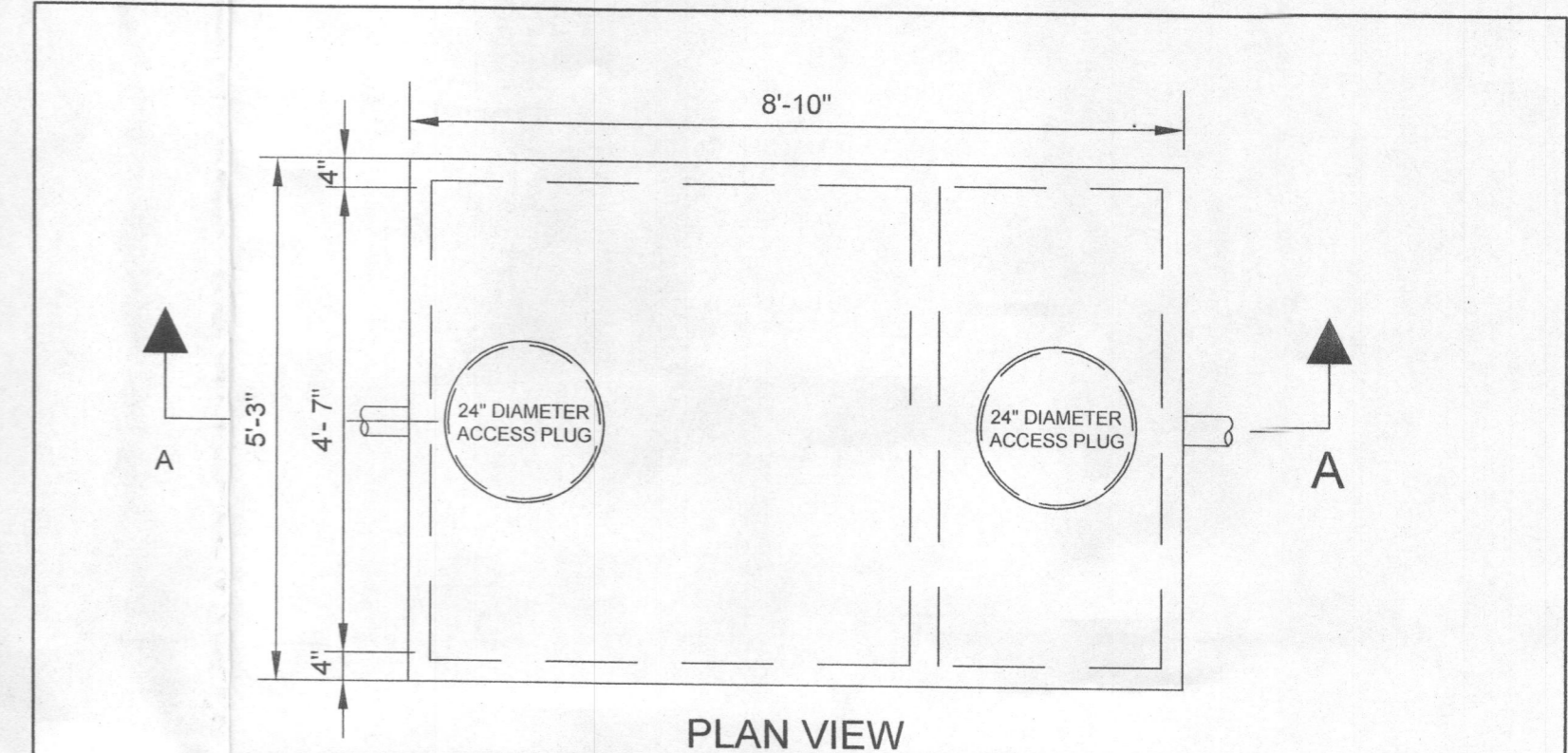
- SUBJECT PROPERTY ZONED RC-DEO PER 02/02/04 COMPREHENSIVE ZONING PLAN.
- TOTAL AREA OF PROPERTY = 1.45 AC ±.
- PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
- THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT, OF AT LEAST 10,000 SF AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
- THE BOUNDARY SHOWN HEREON IS BASED ON HOWARD COUNTY TAX MAP INFORMATION AND DEED PLOTS.
- THE TOPOGRAPHY SHOWN HEREON IS HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2004.
- PROPERTY ADDRESS: 15892 MEADOW WALK, WOODBINE 21797
- REFERENCES: LIBER 16437, FOLIO 382
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- ANY CHANGES TO A PRIVATE SEWAGE EASEMENT SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADE OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS HAVE BEEN LOCATED USING AVAILABLE RECORD DRAWINGS OR HAVE BEEN FIELD LOCATED.
- LIMIT OF DISTURBANCE 19,980 SQ. FT.

**SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS**

- INITIAL SYSTEM:**
    - APPLICATION RATE: 0.6
    - EFFECTIVE AREA BEGINNING DEPTH: 3.5'
    - BOTTOM MAXIMUM DEPTH: 7'
  - DESIGN FLOW:**
    - 3 BEDROOMS AT 150 GPD
    - 3X150 GPD = 450 GPD
  - SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:**
    - DESIGN FLOW (450 GPD) / APPLICATION RATE (0.6) = 750 SF
  - SIDEWALL REDUCTION CREDIT:**
    - TRENCH WIDTH (W) = 2'
    - TRENCH EFFECTIVE DEPTH (D) = 3.5'
    - (W+2) / (W+1+2D) X 100 = 40%
  - LINEAR LENGTH OF TRENCH REQUIRED:**
    - DRAIN FIELD SQUARE FOOTAGE (750) X SIDEWALL REDUCTION CREDIT (40%)
    - TRENCH WIDTH (2)
    - = 150'
  - LINEAR LENGTH OF TRENCH PROVIDED = 150'**
  - TWO TRENCHES 75 LF EACH**
  - EX. GRADE:** TRENCH 11: 512.30  
TRENCH 12: 511.00
  - INVERT:** TRENCH 11: 508.80  
TRENCH 12: 507.50
- REPLACEMENT SYSTEM:**
    - APPLICATION RATE: 0.6
    - EFFECTIVE AREA BEGINNING DEPTH: 3.5'
    - BOTTOM MAXIMUM DEPTH: 7'
  - DESIGN FLOW:**
    - 3 BEDROOMS AT 150 GPD
    - 3X150 GPD = 450 GPD
  - SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:**
    - DESIGN FLOW (450 GPD) / APPLICATION RATE (0.6) = 750 SF
  - SIDEWALL REDUCTION CREDIT:**
    - TRENCH WIDTH (W) = 2'
    - TRENCH EFFECTIVE DEPTH (D) = 3.5'
    - (W+2) / (W+1+2D) X 100 = 40%
  - LINEAR LENGTH OF TRENCH REQUIRED:**
    - DRAIN FIELD SQUARE FOOTAGE (750) X SIDEWALL REDUCTION CREDIT (40%)
    - TRENCH WIDTH (2)
    - = 150'
  - LINEAR LENGTH OF TRENCH PROVIDED = 150'**
  - TWO TRENCHES 75 LF EACH**
  - EX. GRADE:** TRENCH R1: 509.70  
TRENCH R2: 507.50
  - INVERT:** TRENCH R1: 506.20  
TRENCH R2: 504.40



ON-SITE SEWAGE DISPOSAL SYSTEM PROFILE  
 HORIZONTAL SCALE: 1"=30'  
 VERTICAL SCALE: 1"=3'



**DESIGN DATA & GENERAL NOTES**

- CONCRETE STRENGTH FC=4,000 P.S.I. @ 28 DAYS, DENSITY= 150 PCF.
- CEMENT- PORTLAND TYPE 1/11 PER ASTM C 150-92.
- ADDMIXTURES & PLASTICIZERS PER ASTM C 260-86 & C 494-92.
- REINFORCING PER ASTM A165, MIN 1-1/2" COVER.
- TOP SURFASSED WITH BUTYL ROPE MASTIC.
- 4" WALL, 4" BASE, & 5" TOP THICKNESS.
- MAX 3" OVERCOVER.
- DEPENDS ON USE OF TANK, INLET & OUTLET BAFFLE MAY BE REQUIRED BY CODE.

Approved Septic System Plan  
 Howard County Health Department  
 Hank Oswald  
 Signature: \_\_\_\_\_ Date: 12/10/16

MAYER BROTHERS, INC.  
 6264 RICE ROAD  
 ELKBRIDGE, MARYLAND 21075  
 TEL: 410.796.1431 FAX: 410.796.1438  
 WWW.MAYERBROS.PRECAST.COM

1000 GALLON TOP SEAM SEPTIC TANK  
 TWO COMPARTMENT

AUGUST 11, 2008

**ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN**  
 DAISY HILL ESTATES

TAX MAP 13 GRID 18  
 4TH ELECTION DISTRICT

LOT 13

PARCEL 226  
 HOWARD COUNTY, MARYLAND

**SILL ENGINEERING GROUP, LLC**

11130 Dovedale Court, Suite 200  
 Marriottsville, Maryland 21104  
 Phone: 443.325.5076  
 Fax: 410.696.2022  
 Email: info@sillengineering.com  
 Civil Engineering for Land Development

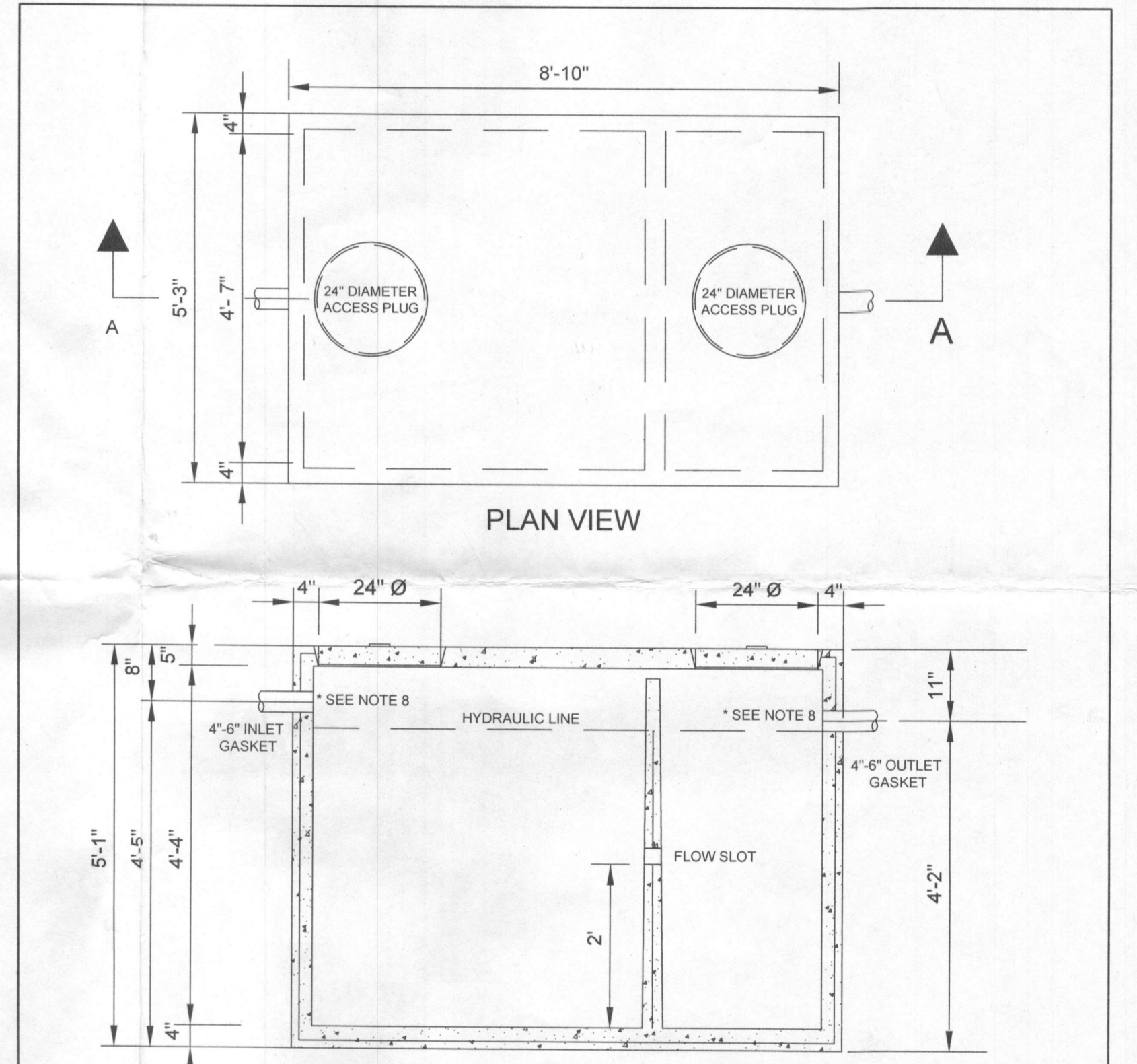
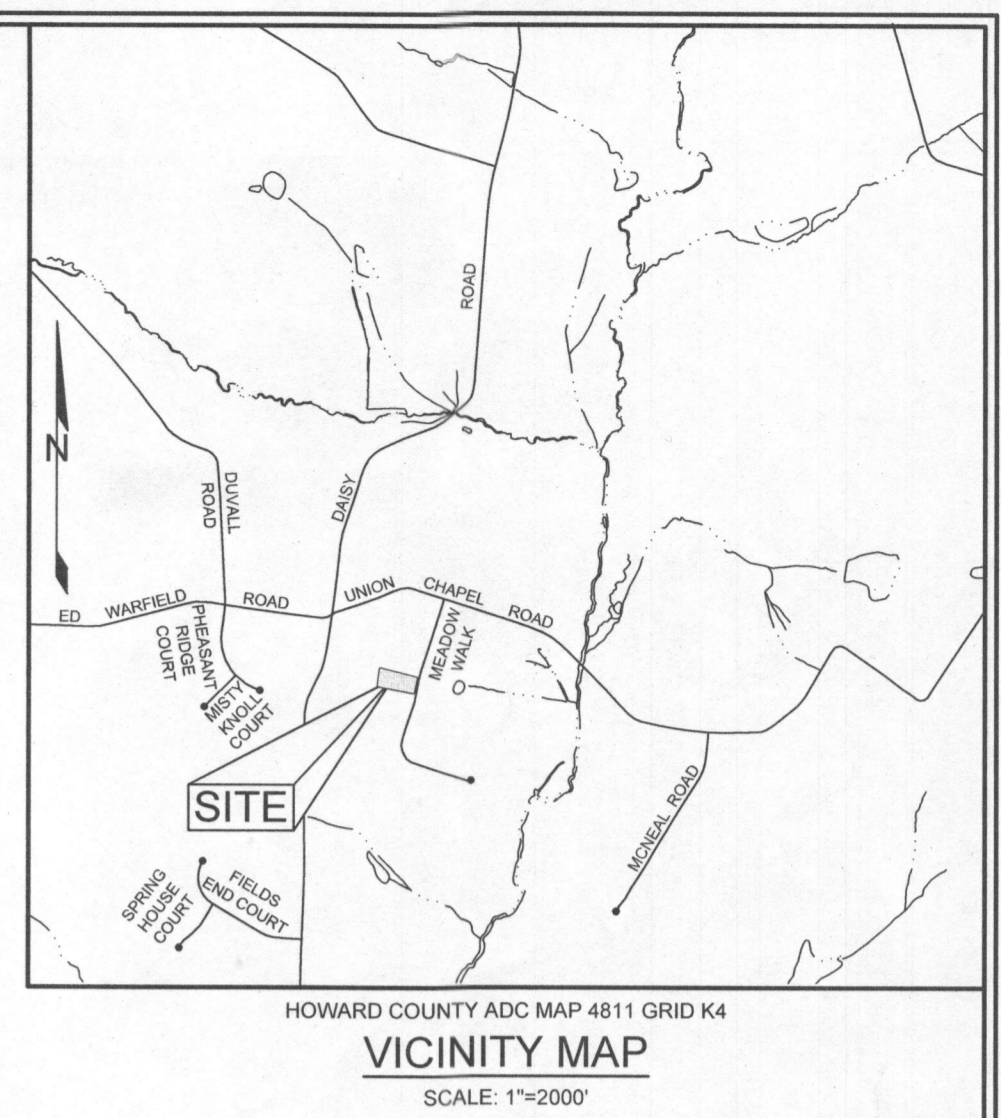
DESIGN BY: PS  
 DRAWN BY: AEA  
 CHECKED BY: PS  
 SCALE: AS SHOWN  
 DATE: DECEMBER 12, 2016  
 PROJECT #: 15-018  
 SHEET #: 1 of 1

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33025, EXPIRATION DATE: JUNE 30, 2017.



**LEGEND**

- EXISTING CONTOUR
- EXISTING TREELINE
- PROPOSED SPOT ELEVATION
- PROP. PERCOLATION TEST HOLE STANDARD, PASSED
- EX. APPROXIMATE WELL LOCATION
- SOIL BOUNDARY
- HYDROLOGIC SOIL GROUP 'C'
- PROPOSED WELL LOCATION
- EX. STORM DRAIN INLET PER F-73-024
- SLOPES GREATER THAN 15%
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE



**DESIGN DATA & GENERAL NOTES**

1. CONCRETE STRENGTH FC=4,000 P.S.I. @ 28 DAYS. DENSITY= 150 PCF.
2. CEMENT- PORTLAND TYPE 1/11 PER ASTM C 150-92.
3. ADMIXTURES & PLASTICIZERS PER ASTM C 260-86 & C 494-92.
4. REINFORCING PER ASTM A655. MIN. 1-1/2" COVER.
5. TOP SLAB SEALED WITH BUTYL ROPE MASTIC.
6. 4" WALL, 4" BASE, & 5" TOP THICKNESS.
7. MAX 3" COVER.
8. DEPENDING ON USE OF TANK, INLET & OUTLET BAFFLE MAY BE REQUIRED BY CODE.

Approved Septic System Plan  
Howard County Health Department  
Signature: Hank Oswald Date: 12/16/10

**MAYER BROTHERS, INC.**  
624 RACE ROAD  
ELK RIDGE, MARYLAND 21075  
TEL 410.796.1434 FAX 410.796.1438  
WWW.MAYERBROS.PRECAST.COM

**1000 GALLON TOP SEAM SEPTIC TANK  
TWO COMPARTMENT**

AUGUST 11, 2008

**SOILS LEGEND**

| SYMBOL | NAME / DESCRIPTION                         | GROUP | 'K' FACTOR |
|--------|--|-------|------------|
| MaD    | MANOR LOAM, 15 TO 25 PERCENT SLOPES        | B     | 0.28       |
| GgC    | GLENELG LOAM, 8 TO 15 PERCENT SLOPES       | B     | 0.28       |
| GmB    | GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES | C     | 0.43       |

**NOTES**

- 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY, SOIL GRID 7, SUB-GRID 232.
- 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

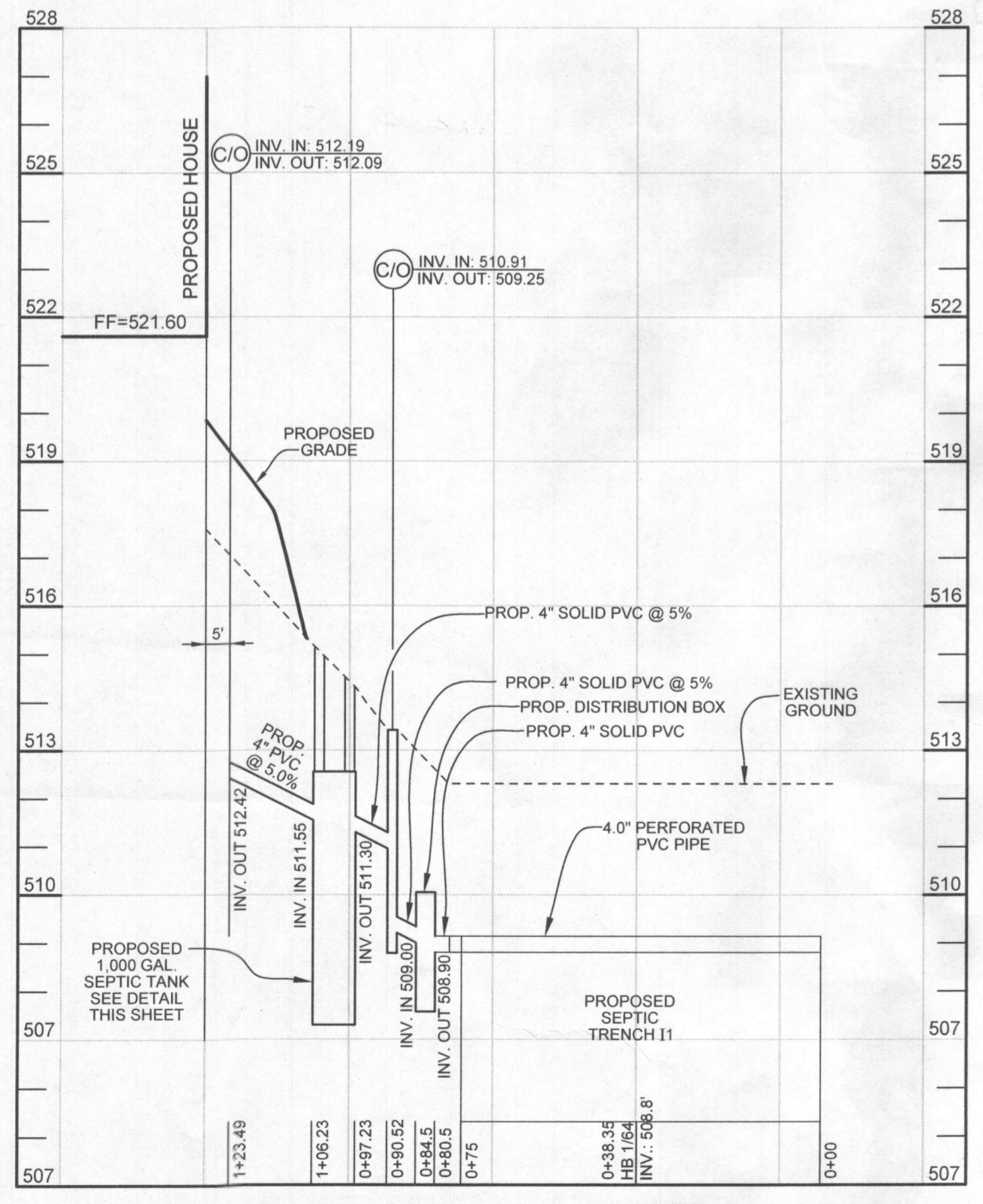
**GENERAL NOTES**

1. SUBJECT PROPERTY ZONED RC-DEO PER 02/02/04 COMPREHENSIVE ZONING PLAN.
2. TOTAL AREA OF PROPERTY = 1.45 AC.
3. PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
4. THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT, OF AT LEAST 10,000 SF AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
5. THE BOUNDARY SHOWN HEREON IS BASED ON HOWARD COUNTY TAX MAP INFORMATION AND DEED PLOTS.
6. THE TOPOGRAPHY SHOWN HEREON IS HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2004.
7. PROPERTY ADDRESS: 15892 MEADOW WALK, WOODBINE 21797
8. REFERENCES: LIBER 16437, FOLIO 382
9. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
10. ANY CHANGES TO A PRIVATE SEWAGE EASEMENT SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
11. ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS HAVE BEEN LOCATED USING AVAILABLE RECORD DRAWINGS OR HAVE BEEN FIELD LOCATED.
12. LIMIT OF DISTURBANCE 19,980 SQ.FT.

**SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS**

- INITIAL SYSTEM:**
  - APPLICATION RATE: 0.6
  - EFFECTIVE AREA BEGINNING DEPTH: 3.5'
  - BOTTOM MAXIMUM DEPTH: 7'
- DESIGN FLOW:**
  - 3 BEDROOMS AT 150 GPD
  - 3X150 GPD = 450 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:**
  - DESIGN FLOW (450 GPD) / APPLICATION RATE (0.6) = 750 SF
- SIDEWALL REDUCTION CREDIT:**
  - TRENCH WIDTH (W) = 2'
  - TRENCH EFFECTIVE DEPTH (D) = 3.5'
  - (W+2) / (W+1+2D) X 100 = 40%
- LINEAR LENGTH OF TRENCH REQUIRED:**
  - DRAIN FIELD SQUARE FOOTAGE (750) X SIDEWALL REDUCTION CREDIT (40%)
  - = 150'
- LINEAR LENGTH OF TRENCH PROVIDED = 150'**
- TWO TRENCHES 75 LF EACH**
- EX. GRADE:** TRENCH I1: 512.30  
TRENCH I2: 511.00
- INVERT:** TRENCH R1: 508.80  
TRENCH R2: 507.50

- REPLACEMENT SYSTEM:**
  - APPLICATION RATE: 0.6
  - EFFECTIVE AREA BEGINNING DEPTH: 3.5'
  - BOTTOM MAXIMUM DEPTH: 7'
- DESIGN FLOW:**
  - 3 BEDROOMS AT 150 GPD
  - 3X150 GPD = 450 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:**
  - DESIGN FLOW (450 GPD) / APPLICATION RATE (0.6) = 750 SF
- SIDEWALL REDUCTION CREDIT:**
  - TRENCH WIDTH (W) = 2'
  - TRENCH EFFECTIVE DEPTH (D) = 3.5'
  - (W+2) / (W+1+2D) X 100 = 40%
- LINEAR LENGTH OF TRENCH REQUIRED:**
  - DRAIN FIELD SQUARE FOOTAGE (750) X SIDEWALL REDUCTION CREDIT (40%)
  - = 150'
- LINEAR LENGTH OF TRENCH PROVIDED = 150'**
- TWO TRENCHES 75 LF EACH**
- EX. GRADE:** TRENCH R1: 509.70  
TRENCH R2: 507.90
- INVERT:** TRENCH R1: 506.20  
TRENCH R2: 504.40



**ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN**  
DAISY HILL ESTATES  
LOT 13

TAX MAP 13 GRID 18  
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DATE: DECEMBER 12, 2010  
PROJECT #: 15-018  
SHEET #: 1 of 1

OWNER  
GAIANE MKRTCHIAN  
200 TOWSON TOWN COURT, #512  
TOWSON, MD 21284

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