



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
 Facebook: www.facebook.com/hocohealth

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

RECEIPT DATE: 11/6/15 **ONSITE SEWAGE DISPOSAL SYSTEM** P 5 57448

APPROVAL DATE: 4/14/2016 **PERMIT: CONSTRUCTION** A _____

PROPERTY ADDRESS: 11030 Fuzzy Hollow Way, Marriottsville, MD

SUBDIVISION: Melchior Property LOT: 6 TAX ID: _____

CONTRACTOR: Hatfield's Equipment EMAIL: _____

CONTRACTOR ADDRESS: PO BOX 519, Annapolis Junction, MD PHONE: _____

CONTRACTOR CERTIFIED FOR BAT INSTALLATION: MDE MANUFACTURER:

PROPERTY OWNER: Williamsburg Group EMAIL: _____

OWNER ADDRESS: 5485 Harpers Farm Road, Columbia, MD 21044 PHONE: _____

BAT UNIT MODEL: Norweco TNT 500 PUMP SIZE: M4 PUMP TANK CAPACITY: 1500 Gal
 MyersSR

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 6/18/2014 DATE RECORDED: _____

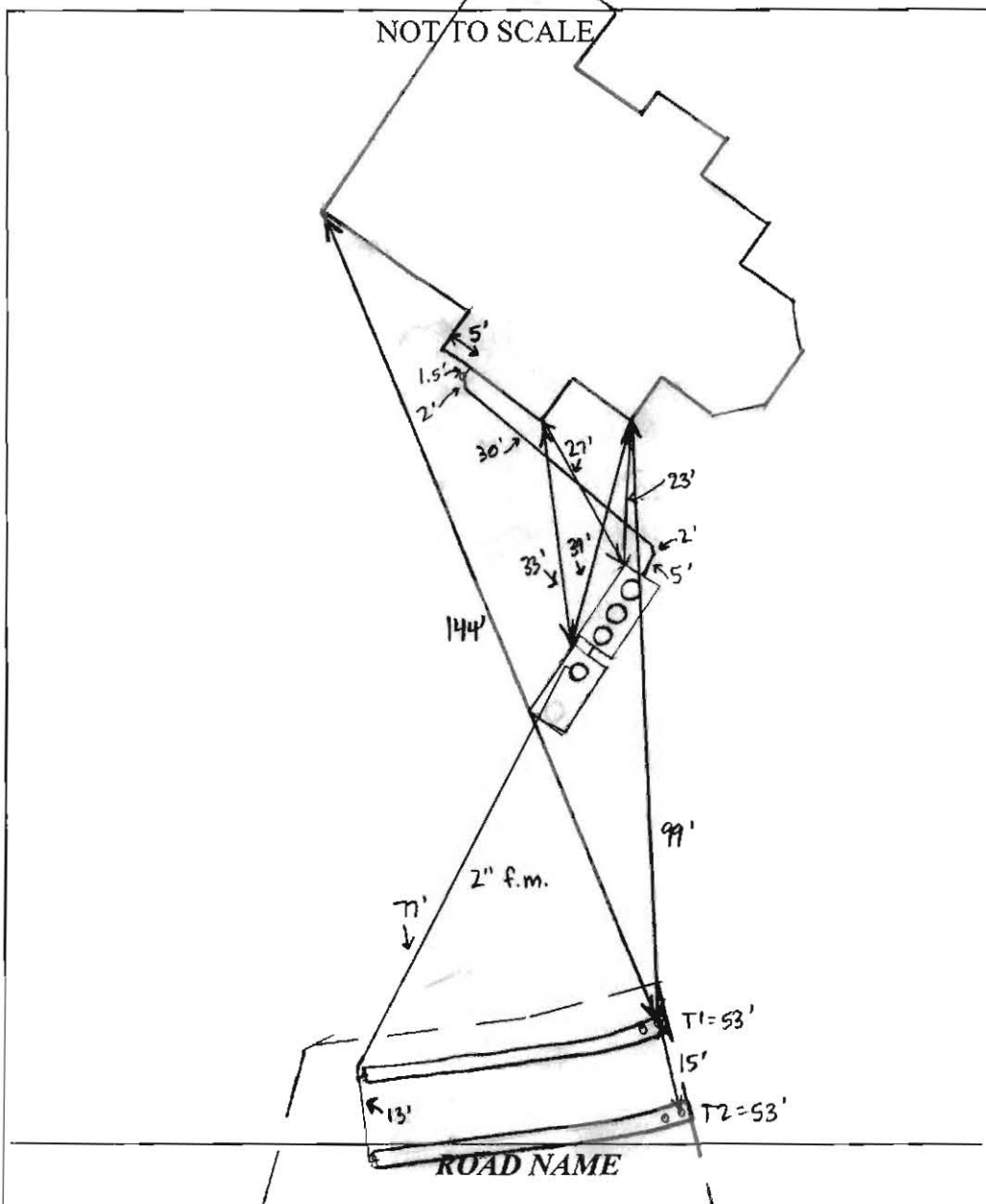
DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 4 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>104</u>	INLET DEPTH: <u>2</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>4</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>2</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:	Trenches must be survey staked prior to layout inspection. Install LPD per design plan – 2 laterals	

ISSUED BY: Hank Oswald ISSUE DATE: 12/4/2015 EXPIRATION DATE: 12/4/2016

- 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 DOWNGRADIENT 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 _____
- 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.



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
3'	2'	4'
NUMBER OF TRENCHES	2	
TOTAL LENGTH	106'	
ABSORPTION AREA	212' + SIDEWALL	
DISTRIBUTION BOX LEVEL	---	
DISTRIBUTION BOX BAFFLE	---	
DISTRIBUTION BOX PORT	---	

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	YES
MANUFACTURER	BACKRIVER/
CAPACITY	1300 GAL NO RWEC
SEAM LOC	TOP
TANK LID DEPTH	1.5-2'
BAFFLES	NO
BAFFLE FILTER	NO
MANHOLE LOC	FRONT, MID, REAR
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	11/7/15
PUMP/SEPTIC TANK LEVEL YES	
MANUFACTURER	BABYLON
CAPACITY	1500 GAL
SEAM LOC	TOP
TANK LID DEPTH	1.5-2'
BAFFLES	
BAFFLE FILTER	NO
MANHOLE LOC	FRONT
6" PORT LOC	NONE
WATERTIGHT TEST	NO
SLOTTED	NO
DATE ON LID	11/7/15

PRE-CONSTRUCTION:

1/19/16 Met Jeff from Hatfield's on site for layout. House sewer is coming out of house at a different location than shown on BAT site plan, will still make fall to tanks. All tank, SDA, and trench stakes present. Shot contour - ends of T1 are within 2" of each other; ends of T2 within 3" of each other. (SC)

INSTALLATION:

1/20/16 Tanks installed. Hit lots of rock while digging - moved tanks south a few feet. House connection made + connected to tank. Rock also hit while digging line. Hatfield's will backfill with non-rocky dirt. Jeff thought grade was cut around tank area could be why it's rocky so shallow - they hit no topsoil while digging. (SC) 1/21/16 Trenches finished + all connections made. T1 left uncovered, T2 covered and open at beginning. T1 slightly wider 10-15' from end. T1 2' to stone, T2 1.5' to stone. #57 stone used to bed pipe. Need to verify baffle in pump tank + pump size. Need BAT startup certification + pump and alarm. (SC) 1/27/16 BAT startup received. (SC)

FINAL INSPECTOR B. Baker DATE OF APPROVAL 4/14/2016

4/14/2016 Pumps and alarm working. (BB)

Back River Pre-Cast, LLC

PO BOX 329
Glyndon, MD 21071
Phone # 410-833-3394
Fax # 410-833-4116

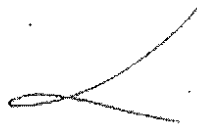
Letter of Certification

This is to certify that the Norweco Singulair TNT 600 GPD Septic Tank installed at 11030 Fuzzy Hollow Way, Marriottsville, MD 21104 January 20, 2016 was installed according to the manufacture's specifications.

Installer: Jeff Reiter

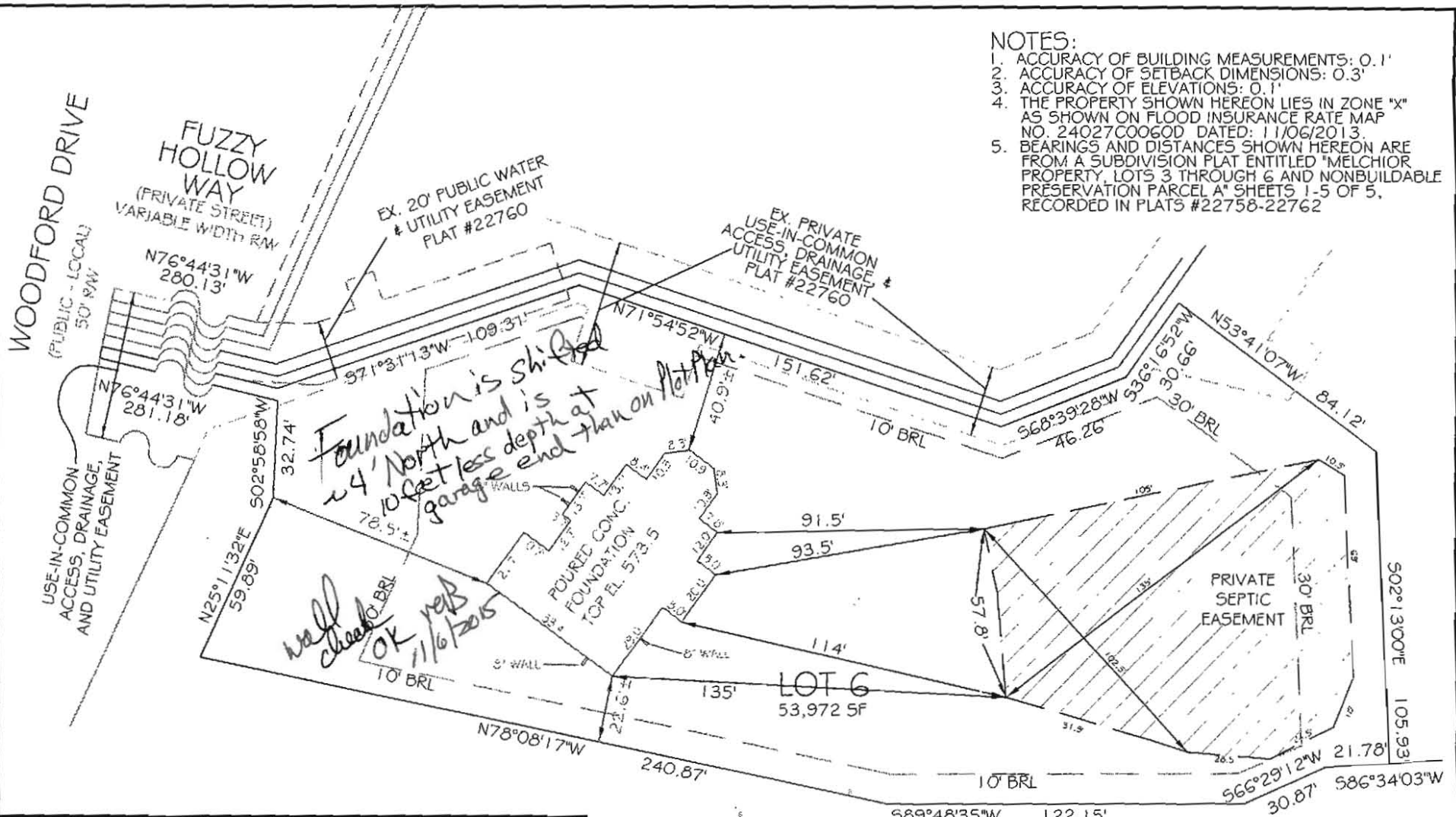
Property Owner: Williamsburg Group

Permit #



MATTHEW GECKLE

Vice-President



- NOTES:
1. ACCURACY OF BUILDING MEASUREMENTS: 0.1'
 2. ACCURACY OF SETBACK DIMENSIONS: 0.3'
 3. ACCURACY OF ELEVATIONS: 0.1'
 4. THE PROPERTY SHOWN HEREON LIES IN ZONE "X" AS SHOWN ON FLOOD INSURANCE RATE MAP NO. 24027C0060D DATED: 11/06/2013.
 5. BEARINGS AND DISTANCES SHOWN HEREON ARE FROM A SUBDIVISION PLAT ENTITLED "MELCHIOR PROPERTY, LOTS 3 THROUGH 6 AND NONBUILDABLE PRESERVATION PARCEL A" SHEETS 1-5 OF 5, RECORDED IN PLATS #22758-22762

THE INFORMATION SHOWN HAS BEEN ESTABLISHED BY CURRENT ACCEPTABLE SURVEY PROCEDURES AND FROM AVAILABLE RECORD INFORMATION. THIS DRAWING IS NOT TO BE USED FOR THE ESTABLISHMENT OF PROPERTY LINES, LOCATION OF FENCES, GARAGES, BUILDINGS, OR OTHER FUTURE IMPROVEMENTS. IT WAS PREPARED UNDER MY DIRECT SUPERVISION AND REVIEW IN ACCORDANCE WITH SEC. 09.13.06.06. OF THE ANNOTATED CODE OF MD.

G. SCOTT SHANABERGER PROFESSIONAL L.S. 10849
 LICENSE EXPIRATION DATE 4/2/2016
SHANABERGER & LANE
 8726 TOWN AND COUNTRY BLVD., SUITE 201
 ELLICOTT CITY, MD. 21043
 (410)461-9563 FAX: (410)461-9693

FOUNDATION LOCATION DRAWING
LOT 6 MELCHIOR PROPERTY
 PLAT # 22758-22762
 TAX MAP 10 GRID 13 PARCEL 184
 3rd ELECTION DISTRICT HOWARD COUNTY, MD.
 SCALE: 1"=50' DATE: 10/21/2015

11030 Fuzzy Hollow Way



Bureau of Environmental Health

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Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

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

OPERATION AND MAINTENANCE AGREEMENT
FOR AN ON-SITE SEWAGE DISPOSAL SYSTEM
HAVING AN ADVANCED PRE-TREATMENT SYSTEM

THIS AGREEMENT is made this 12th day of Nov 2015, among Williamsburg Group LLC, hereinafter collectively referred to as "Owner", and the Howard County Health Department hereinafter referred to as the "County".

WHEREAS, Owner is the owner or contract owner of a parcel of land located at Lot 6, Melchior Property, 11030 Fuzzy Hollow Way, in the 3rd Election District of Howard County, Maryland, and the deed to same is recorded or shall be recorded among the Land Records of Howard County, Maryland in Liber 16413 Folio 493

WHEREAS, The Lot is suitable for the installation of a conventional on-site sewage disposal system with an advanced pre-treatment system, utilizing best available technology to perform nitrogen reduction, in accordance with the Code of Maryland Regulations 26.04.02.07, effective January 1, 2013. The pre-treatment device being installed is NORWECO 600.

NOW; THEREFORE, the parties hereto agree as follows:

- A. Owner hereby grants to the County the right to enter upon the Lot at any reasonable time for access to the system to make periodic inspections and the Owner agrees to provide any information and data in Owner's possession reasonably requested and needed by the County to develop accurate and thorough test results.
- B. Owner acknowledges and agrees that neither the County nor any of its agents or employees, either officially or individually, underwrites the operation of any system approved by them.
- C. The Owner will devote reasonable care and effort to the operation and maintenance of the system in perpetuity or until a public sewer connection is made so that a system malfunction is not the result of poor maintenance, faulty operation, or neglect.
- D. The Owner agrees to enter into a contract reasonably acceptable to the Owner and the County with a private entity to operate and maintain on a regularly scheduled basis an approved advanced pre-treatment system. The owner shall supply a copy of the contract to the County when it is renewed or altered.
- E. This agreement shall run with the land and upon Owner's taking title to the Lot shall bind the Owner, their heirs, successors, and assigns to the provisions of the agreement as long as the property is in existence and after installation of the system. Owner further agrees that they shall inform in writing any subsequent purchaser or lessee of the Lot that the system shall require

maintenance or other attention. Upon taking title to the Lot, the Owner agrees to cause this agreement to be recorded in the Land Records of Howard County and assure that it becomes part of the Deed for the subject property in order that prospective buyers may be aware of the special conditions affecting this property.

F. This agreement shall not be construed to limit any authority of the County to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.

G. This agreement may be voided at any time at the discretion of the County.

H. This agreement contains the entire agreement and understanding between the County and the Owner. There are no additional terms other than as contained in this agreement. This agreement may not be modified, except in writing signed by each of the parties or by their authorized representatives.

I. The laws of the State of Maryland govern the provisions of all transactions pursuant to this agreement.

J. Owner acknowledges and agrees that interior renovations to increase the number of bedrooms or an increase in living space shall not be permitted without approval from the County.

IN WITNESS WHEREOF, the parties have signed and sealed this agreement on the date indicated above.

Beet Ripon 11/12/2015
Howard County Health Department

[Signature] 11/12/15
Owner #1 Signature Date
BOB CORBETT
Williamsburg Group LLC
Owner #1 Print Name

Owner #2 Signature Date

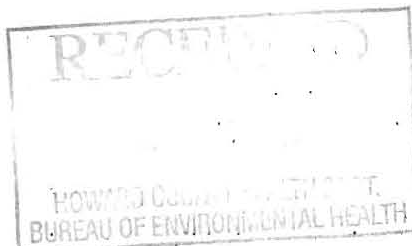
Owner #2 Print Name

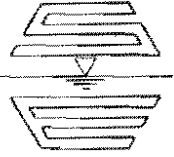
Buyer #1 Signature Date

Buyer #2 Signature Date

Buyer #1 Print Name

Buyer #2 Print Name





3300 North Ridge Road, Suite 160
Ellicott City, MD 21043
Website: www.sillengineering.com

Office: 443-325-7682
Fax: 443-325-7685
Email: info@sillengineering.com

Civil Engineering for Land Development

SILL ENGINEERING GROUP, LLC

Melchior Property
Lot 6
11030 Fuzzy Hollow Way

BAT Plan
Low Pressure Dosing System Report

August 18, 2015

Prepared For:

Williamsburg Group, LLC
5485 Harpers Farm Road
Columbia, Maryland 21044



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 #15-023

Melchior Property
Lot 6
11030 Fuzzy Hollow Way
August 18, 2015

Pressure Network Design

- Design Flow: 600 gpd
- The absorption beds in the Initial System are each 52' long and the distribution network is an End Feed Network.
- For Perforation Size, Number, and Spacing see Pressure Distribution table.
- Diameter of lateral = 1.5"
- Spacing between laterals = 13'
- Number of laterals = 2
- Diameter of force main = 2.0"
- Diameter of manifold = 2.0"
- Material: Schedule 40 PVC

Septic System Trench Design Specifications

- Initial System And Replacements:
 - Application Rate: 1.2
 - Effective Area Beginning Depth: 2'
 - Bottom Maximum Depth: 4.0'
- Design Flow:
 - 4 Bedrooms at 150 gpd
 - $4 \times 150 \text{ gpd} = 600 \text{ gpd}$
- Square Footage of Drain field Required:
 - Design Flow (600 gpd) / Application Rate (1.2) = 500 sf
- Sidewall Reduction Credit:
 - Trench Width (W) = 3'
 - Trench Effective Depth (D) = 2'
 - $(W+2) / (W+1+2D) \times 100 = 0.625\%$
- Linear Length of Trench Required:
 - Drain field Square Footage (500) x Sidewall Reduction Credit (0.625%) / Trench Width (3') = 104'
- Linear Length of Trench Provided = 104
 - Two trenches 52.0 lf each

Pumping System Design

- Dose Calculations:
 - Design Flow: 600 gpd
 - Length of force main and manifold
 - 2.0" force main = 77.1'
 - 2.0" manifold = 13.0'
 - Volume of force main:
 - $77.1 \times 17.4 \text{ gallons per } 100' = 13.4 \text{ gallons}$
 - Volume of manifold:
 - $13.0' \times 17.4 \text{ gallons per } 100' = 2.3 \text{ gallons}$
 - Length of 1.5" laterals: $52.0' \times 2 = 104.0'$

Melchior Property
 Lot 6
 11030 Fuzzy Hollow Way
 August 18, 2015

- Volume of laterals:
 - 104.0' x 10.6 gallons per 100' = 11.0 gallons
- Minimum dose is the greater of:
 - Volume of force main and manifold + (5 x Volume of the laterals):
 $13.4 + 2.3 \text{ gallons} + (5 \times 11.0 \text{ gallons}) = 70.5 \text{ gallons}$
 - Or
 - 1/6th the design flow:
 - 1/6 x 600 gallons = 100.0 gallons

Use 100 gallons for dose

- Pump Design:
 - Pump flow required: 27 gpm (see Pressure Distribution table for initial system)
 - Dose amount: 100 gallons
 - Pump run time: 3.7 minutes
 - Static head (see profile for detail): 4.33' use 4.5'
 - Friction head calculation (Table 4.3):

Pipe size	1.5"	2.0"
1/4 Bend (90°)	-	2 @ 7.0' = 14.0'
1/8 Bend (45°)	-	@ 4.0' = 4.0'
1/16 Bend (22.5°)	-	-
1/32 Bend (11.25°)	2 @ 1.0' = 2.0'	-
Gate Valve	-	1 @ 1.3' = 1.3'
Standard Tee	-	-
Run Tee	-	1 @ 2.0' = 2.0'
Cross	-	-
Reducer	-	2 @ 1.2' = 2.4'
Couplings	4 @ 1.5' = 6.0'	5 @ 2.0' = 10.0'
Total Equivalent Length of pipe	8.0'	33.7

- Flow at 2.0" pipe = 27 gpm
 - Friction loss per 100' (Table 4.4) of 2.0" schedule 40 plastic pipe: 1.28
 - Total equivalent length of 2.0" FM, manifold and appurtenances =
 $77.1 + 13.0' + 33.7 = 123.8'$
 - Friction loss in 2.0" pipe = $123.8' / 100 \times 1.28 = 1.58'$
- Flow at 1.5" pipe = 13.5 gpm
 - Friction loss per 100' (Table 4.4) of 1.5" schedule 40 plastic pipe: 1.25'
 - Total equivalent length of 1.5" laterals and appurtenances = $104' + 8.0' = 112.0'$
 - Friction loss in 1.5" pipe = $112.0' / 100 \times 1.25' = 1.40'$
- Total Friction Head = $1.58' + 1.4' = 2.98'$
- Total Dynamic Head = Static head + Distal Head + Friction head
 - $4.5' + 2.0' + 2.98 = 9.48'$ use 9.5'

Melchior Property
Lot 6
11030 Fuzzy Hollow Way
August 18, 2015

- Pump Chamber Design:
 - For pump tank dimensions and detail, see plans.
 - Pump chamber elevations:
 - Proposed grade at top of tank (at inlet): 562.12'
 - Top of pump tank: 560.47'
 - Pump chamber invert in: 559.38'
 - High Water Alarm: 555.97'
 - Pump On: 555.47'
 - Pump Off: 555.17'
 - Bottom inside slab of tank: 553.64'
 - Pump Chamber volumes:
 - Invert In to Pump On: 179.2 cf or 1,340.51 gallons
 - Pump On to Pump Off: 13.75 cf or 103 gallons
 - Design based on:
 - Norweco TNT-500 GPD or equivalent
 - Meyers SRM4 series pump or equivalent

Williams, Jeffrey

From: Bob Corbett <BobCorbett@williamsburgllc.com>
Sent: Monday, September 14, 2015 11:40 AM
To: Williams, Jeffrey
Subject: RE: Melchior lot 6
Attachments: Rutledge SVE006 Floor Plans.pdf

Great, thanks Jeff. I have attached the floor plans for the Rutledge as requested. Please note that the optional 5th bedroom on sheet 4 has NOT been selected in this home.

Bob Corbett
Vice President
(410) 997-8800 x 16
(410) 977-3343 Cell



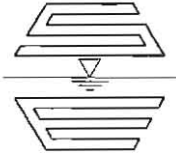
From: Williams, Jeffrey [<mailto:jewilliams@howardcountymd.gov>]
Sent: Monday, September 14, 2015 10:49 AM
To: Bob Corbett
Subject: Melchior lot 6

Hello Bob. I've approved the BAT plan for Melchior lot 6, 11030 Fuzzy Hollow. If you have a pdf of the Floorplans you can email me, I can verify 4 bedrooms and will be able to approve the building permit at that time. Thanks

Jeff Williams
Program Supervisor, Well & Septic Program
Bureau of Environmental Health
Howard County Health Dept.
410-313-4261
jewilliams@howardcountymd.gov

CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.



3300 North Ridge Road, Suite 160
Ellicott City, MD 21043
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Fax: 443-325-7685
Email: info@sillengineering.com
Civil Engineering for Land Development

SILL ENGINEERING GROUP, LLC

Melchior Property

Lot 6

11030 Fuzzy Hollow Way

BAT Plan Low Pressure Dosing System Report

August 18, 2015

Prepared For:

Williamsburg Group, LLC
5485 Harpers Farm Road
Columbia, Maryland 21044



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 #15-023

Melchior Property
Lot 6
11030 Fuzzy Hollow Way
August 18, 2015

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- Spacing between laterals = 13'
- Number of laterals = 2
- Diameter of force main = 2.0"
- Diameter of manifold = 2.0"
- Material: Schedule 40 PVC

Septic System Trench Design Specifications

- Initial System And Replacements:
 - Application Rate: 1.2
 - Effective Area Beginning Depth: 2'
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- Design Flow:
 - 4 Bedrooms at 150 gpd
 - $4 \times 150 \text{ gpd} = 600 \text{ gpd}$
- Square Footage of Drain field Required:
 - Design Flow (600 gpd) / Application Rate (1.2) = 500 sf
- Sidewall Reduction Credit:
 - Trench Width (W) = 3'
 - Trench Effective Depth (D) = 2'
 - $(W+2) / (W+1+2D) \times 100 = 0.625\%$
- Linear Length of Trench Required:
 - Drain field Square Footage (500) x Sidewall Reduction Credit (0.625%) / Trench Width (3') = 104'
- Linear Length of Trench Provided = 104
 - Two trenches 52.0 lf each

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 - Length of 1.5" laterals: $52.0' \times 2 = 104.0'$

Melchior Property
 Lot 6
 11030 Fuzzy Hollow Way
 August 18, 2015

- Volume of laterals:
 - $104.0' \times 10.6$ gallons per 100' = 11.0 gallons
- Minimum dose is the greater of:
 - Volume of force main and manifold + (5 x Volume of the laterals):
 $13.4 + 2.3$ gallons + (5 x 11.0 gallons) = 70.5 gallons
 - Or
 - $1/6^{\text{th}}$ the design flow:
 - $1/6 \times 600$ gallons = 100.0 gallons

Use 100 gallons for dose

- Pump Design:
 - Pump flow required: 27 gpm (see Pressure Distribution table for initial system)
 - Dose amount: 100 gallons
 - Pump run time: 3.7 minutes
 - Static head (see profile for detail): 4.33' use 4.5'
 - Friction head calculation (Table 4.3):

Pipe size	1.5"	2.0"
1/4 Bend (90°)	-	2 @ 7.0' = 14.0'
1/8 Bend (45°)	-	@ 4.0' = 4.0'
1/16 Bend (22.5°)	-	-
1/32 Bend (11.25°)	2 @ 1.0' = 2.0'	-
Gate Valve	-	1 @ 1.3' = 1.3'
Standard Tee	-	-
Run Tee	-	1 @ 2.0' = 2.0'
Cross	-	-
Reducer	-	2 @ 1.2' = 2.4'
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 - Friction loss in 2.0" pipe = $123.8'/100 \times 1.28 = 1.58'$
- Flow at 1.5" pipe = 13.5 gpm
 - Friction loss per 100' (Table 4.4) of 1.5" schedule 40 plastic pipe: 1.25'
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 - Friction loss in 1.5" pipe = $112.0'/100 \times 1.25' = 1.40'$
- Total Friction Head = $1.58' + 1.4' = 2.98'$
- Total Dynamic Head = Static head + Distal Head + Friction head
 - $4.5' + 2.0' + 2.98 = 9.48'$ use 9.5'

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 - For pump tank dimensions and detail, see plans.
 - Pump chamber elevations:
 - Proposed grade at top of tank (at inlet): 562.12'
 - Top of pump tank: 560.47'
 - Pump chamber invert in: 559.38'
 - High Water Alarm: 555.97'
 - Pump On: 555.47'
 - Pump Off: 555.17'
 - Bottom inside slab of tank: 553.64'
 - Pump Chamber volumes:
 - Invert In to Pump On: 179.2 cf or 1,340.51 gallons
 - Pump On to Pump Off: 13.75 cf or 103 gallons
 - Design based on:
 - Norweco TNT-500 GPD or equivalent
 - Meyers SRM4 series pump or equivalent



5485 Harpers Farm Road, Suite 200

Columbia, Maryland 21044

Transmittal Cover Sheet

TO: Jeff Williams
Howard County Health

FROM: BOB CORBETT

Date:

CC:

Email: BobCorbett@Williamsburgllc.com

Corporate Office Phone: (410) 997-8800, X 16

Corporate Office Fax: (410) 997-4358

Cellular: (410) 977-3343

REMARKS:

Jeff,

Enclosed please find the B.A.T. Septic Plan for the septic system located at Lot 6
Address 11030 FUZZY HOLLOW WAY for Health Dept. review and approval
in conjunction with Building Permit # 15003268. This Building Permit was
submitted to DILP on 7/28/15 for processing. Should you have any questions in
regards to this submission, please do not hesitate to contact me. Thanks for your assistance
in this matter.

Bob

*Jeff - this one fell through cracks & was never submitted.
Anything you can do to expedite would be appreciated*

BC



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

Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

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

SEWAGE DISPOSAL SYSTEM SPECIFICATIONS WORKSHEET

Address: Fuzzy Hollow Way

Subdivision: Melchior Property Lot: 6

Initial system: Application rate: 1.2 Effective area beginning depth: 2 Bottom maximum depth: 4
1st Replacement: Application rate: 1.2 Effective area beginning depth: 2 Bottom maximum depth: 4
2nd Replacement: Application rate: 1.2 Effective area beginning depth: 2 Bottom maximum depth: 4

Design Flow = 150 gallons per day per bedroom

Design flow + application rate = square footage of drainfield required

Linear length of trench required = drainfield square footage x sidewall reduction percentage + trench width

Sidewall reduction credit formula:

(W + 2) / (W + 1 + 2D) x 100 = Percent of length of standard trench where W=trench width and D= depth between effective area beginning depth and trench bottom.

Standard design requirements:

- All trenches must be equal length unless low pressure dosed
All trenches must be on contour
Minimum trench spacing: 10' for all trenches utilizing sidewall reduction credit. Additional spacing may be necessary for any trench using over 3.5' of effective sidewall. In those cases, the spacing formula is 2D +W up to a maximum spacing of 18'.
Minimum trench spacing for trenches with no sidewall credit (bottom area only) is 6' for a 2' wide trench and 9' for a 3' wide trench (spacing is measured edge to edge)
Maximum trench length is 100'
Maximum pipe depth is 4'

Additional requirements:

BAT unit
Pump chamber & LPD required

Approved: [Signature]

Date: 7/22/15



5485 Harpers Farm Road, Suite 200

Columbia, Maryland 21044

Transmittal Cover Sheet

TO: Jeff Williams
Howard County Health

FROM: BOB CORBETT

Date:

Email: BobCorbett@Williamsburgllc.com

Corporate Office Phone: (410) 997-8800, X 16

Corporate Office Fax: (410) 997-4358

Cellular: (410) 977-3343

CC:

REMARKS:

Jeff,

Enclosed please find the B.A.T. Septic Plan for the septic system located at Lot 6
Address 11030 FUZZY HOLLOW WAY for Health Dept. review and approval
in conjunction with Building Permit # B15003268. This Building Permit was
submitted to DILP on 11/9/15 for processing. Should you have any questions in
regards to this submission, please do not hesitate to contact me. Thanks for your assistance
in this matter.

Bob



PS: This is a resubmission due to a house type change. Number of bedrooms and bathe remain the same
as the original submission approval. Just wanted to make sure you have the current for your records.

Williams, Jeffrey

From: Paul <Paul@sillengineering.com>
Sent: Thursday, September 10, 2015 3:15 PM
To: Williams, Jeffrey
Subject: RE: 11030 Fuzzy Hollow BAT plan

Hey Jeff,

Thanks for catching that. You can make that change.

Thanks,
Paul

From: Williams, Jeffrey [<mailto:jewilliams@howardcountymd.gov>]
Sent: Thursday, September 10, 2015 1:26 PM
To: Paul <Paul@sillengineering.com>
Subject: 11030 Fuzzy Hollow BAT plan

I've reviewed the BAT plan for 11030 Fuzzy Hollow and see one issue in need of correction. On the LPD design chart, you list the lateral length as 52' for both laterals, but the true lateral length will be a ½ hole space shorter than that. The rest of the chart is accurate. The correct lateral length for lateral 1 is 48.75' and for 2 is 49.1'. Would you like to revise or do you want me to redline it? Thanks

Jeff Williams
Program Supervisor, Well & Septic Program
Bureau of Environmental Health
Howard County Health Dept.
410-313-4261
jewilliams@howardcountymd.gov

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This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

Williams, Jeffrey

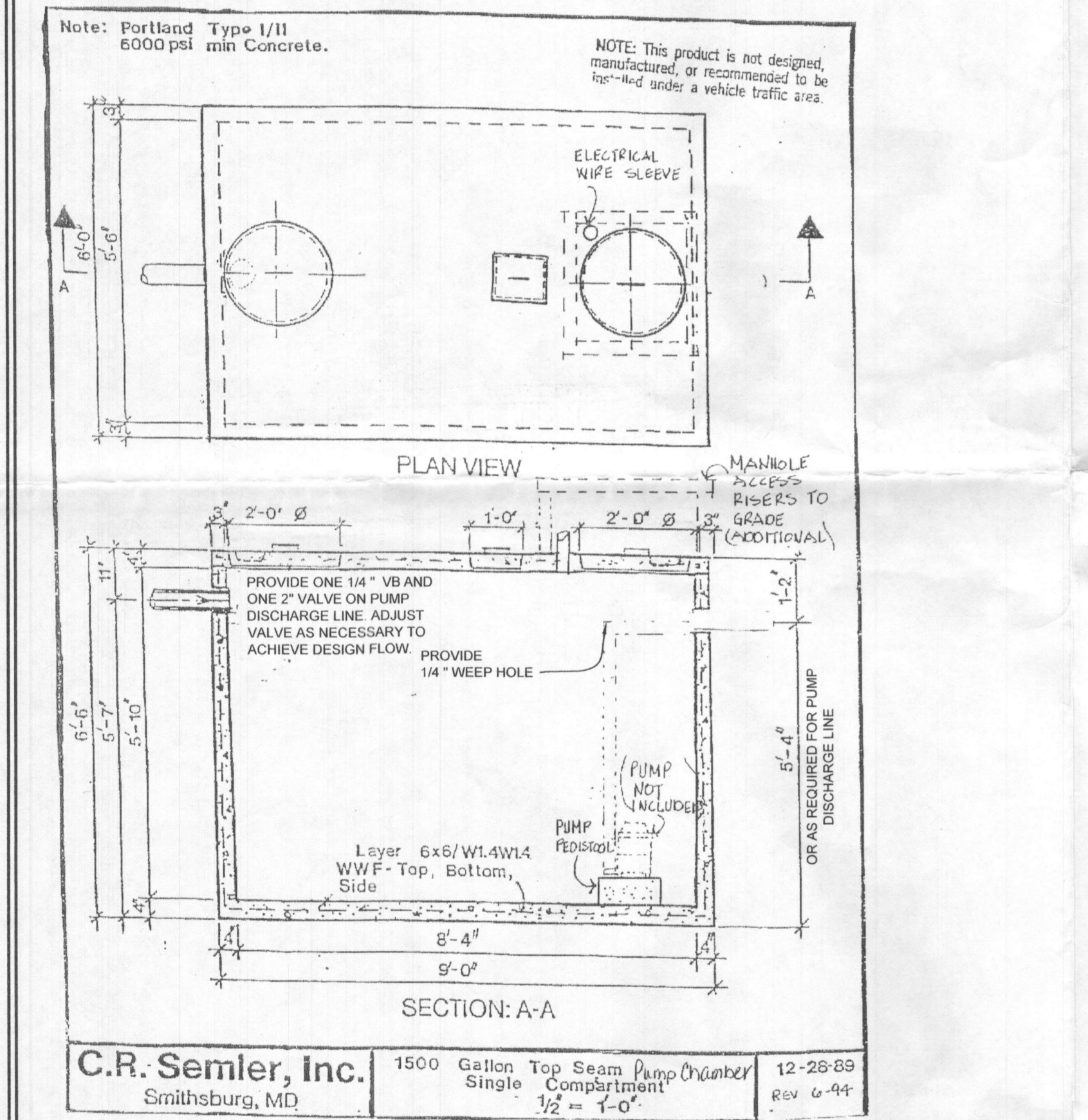
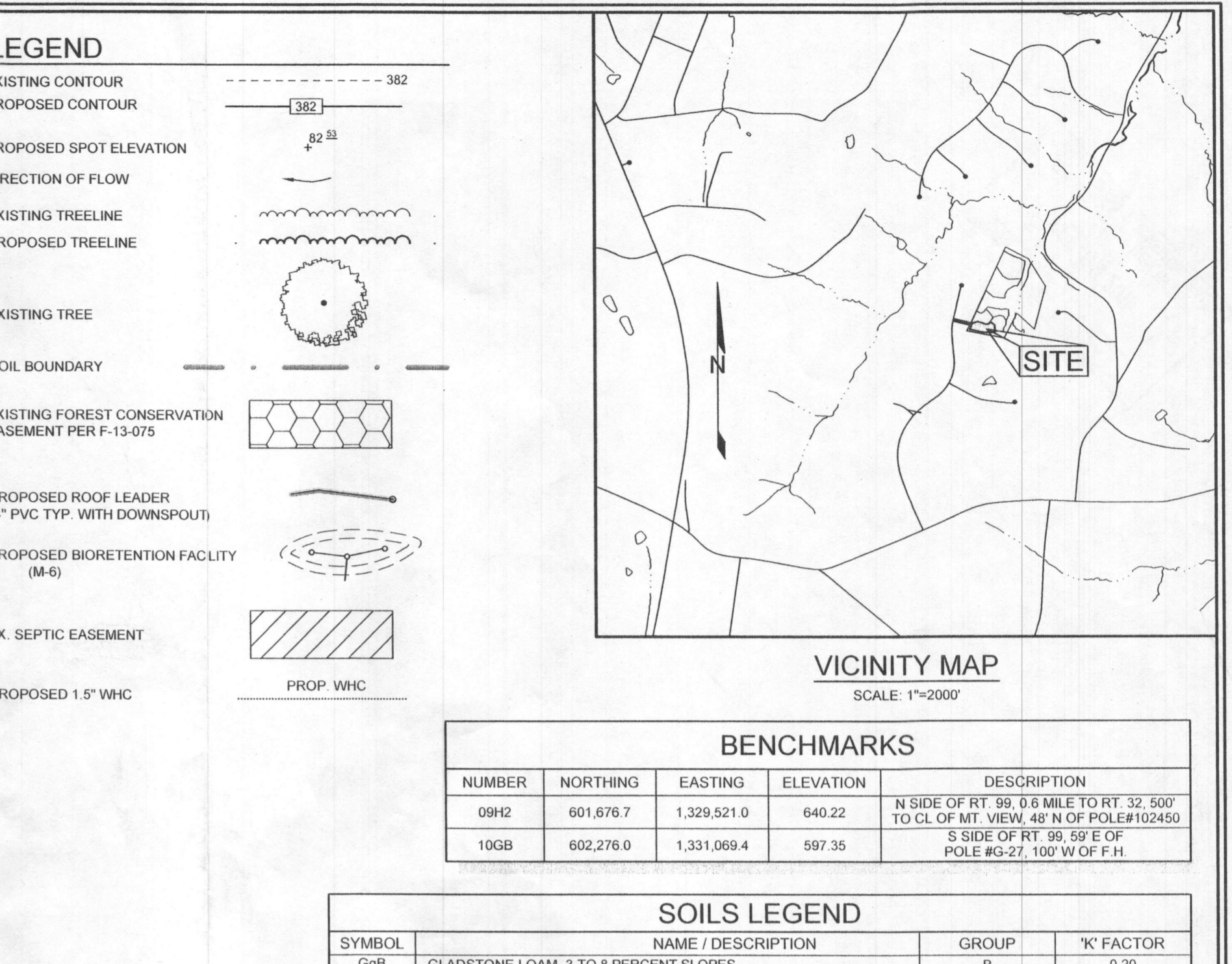
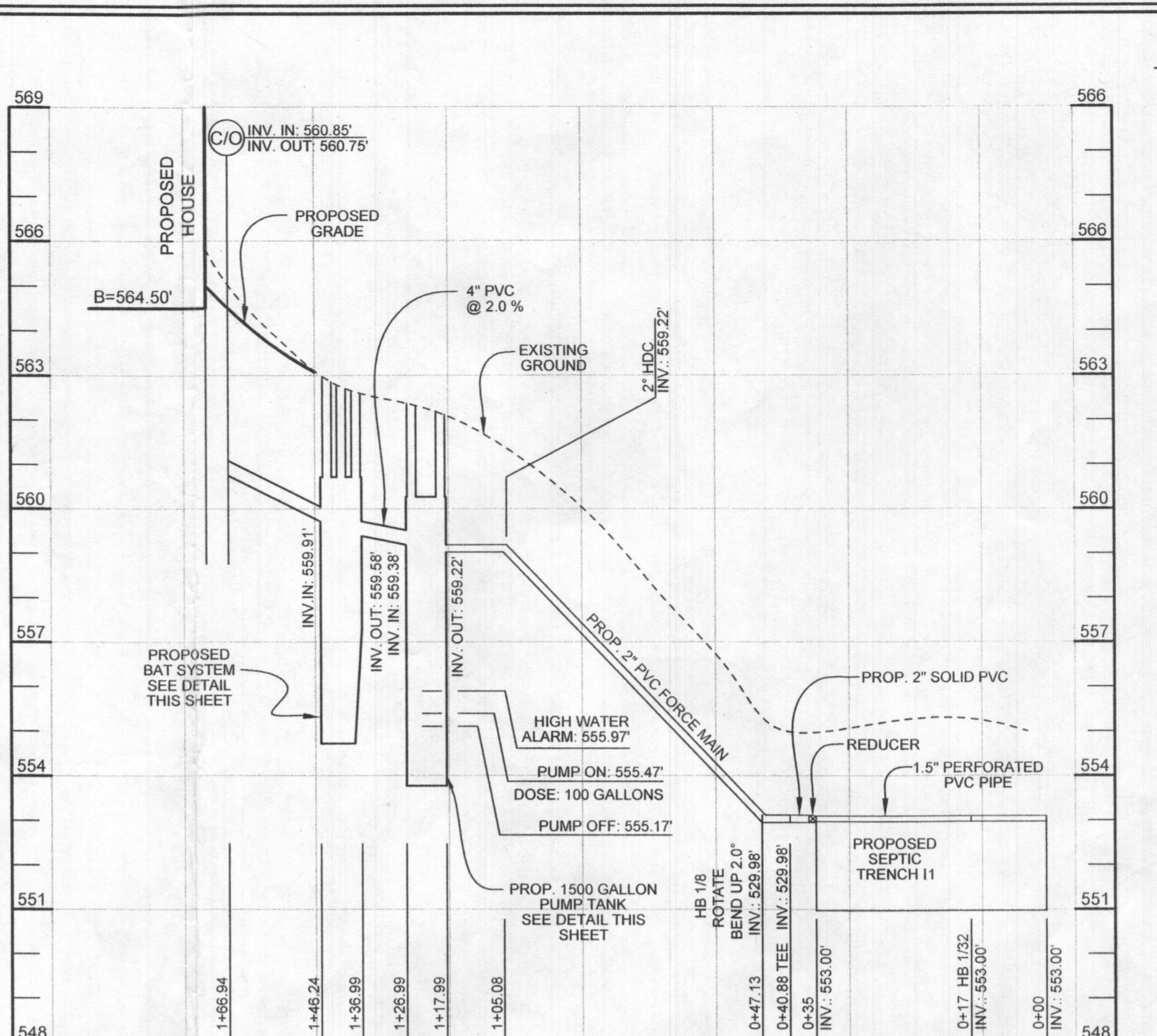
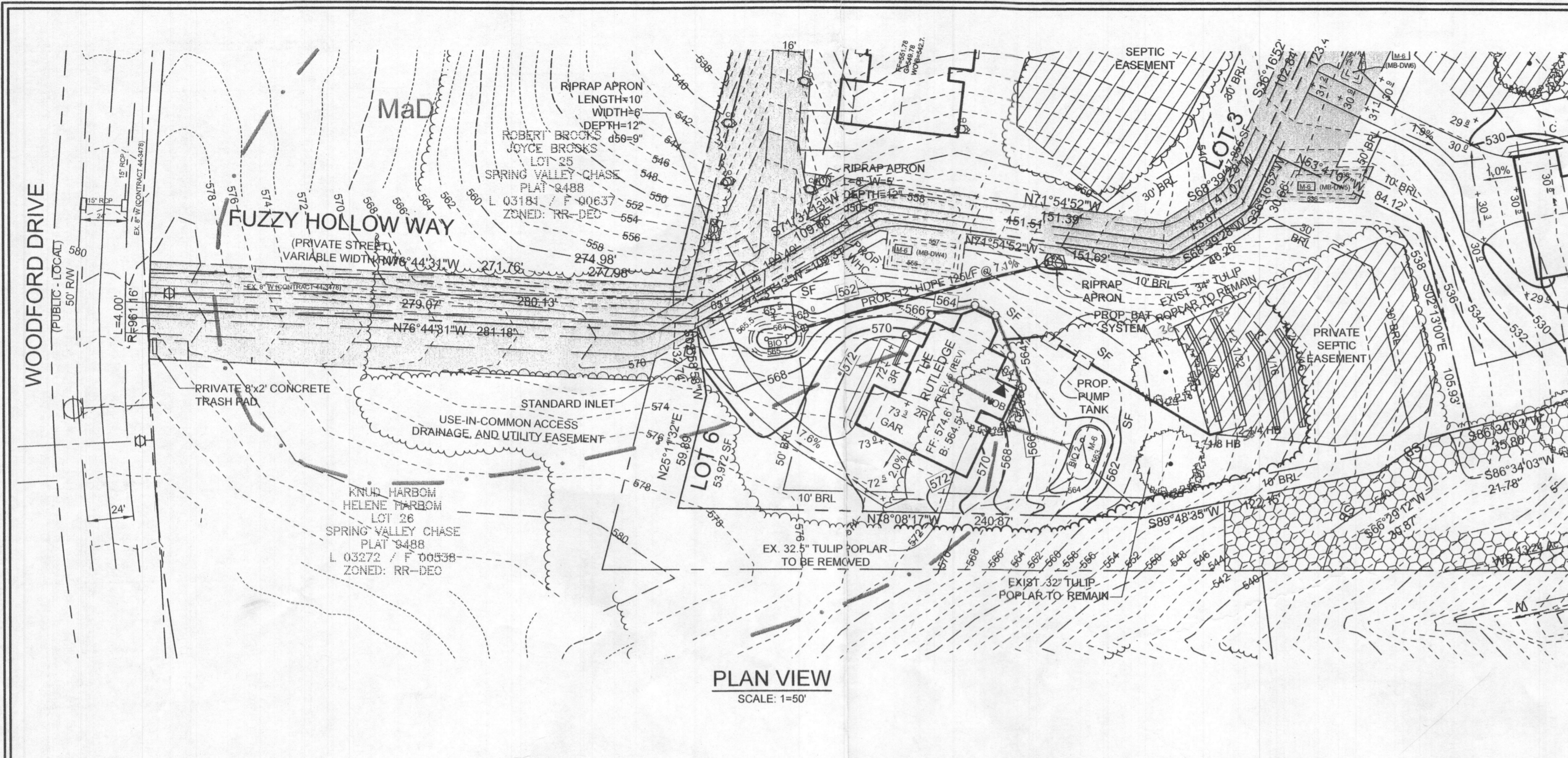
From: Williams, Jeffrey
Sent: Thursday, September 10, 2015 1:26 PM
To: Paul Sill (paul@sillengineering.com)
Subject: 11030 Fuzzy Hollow BAT plan

I've reviewed the BAT plan for 11030 Fuzzy Hollow and see one issue in need of correction. On the LPD design chart, you list the lateral length as 52' for both laterals, but the true lateral length will be a ½ hole space shorter than that. The rest of the chart is accurate. The correct lateral length for lateral 1 is 48.75' and for 2 is 49.1'. Would you like to revise or do you want me to redline it? Thanks

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Bureau of Environmental Health
Howard County Health Dept.
410-313-4261
jewilliams@howardcountymd.gov

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RESIDENTIAL SEWAGE PUMP

MYERS® SRM4 SERIES

ORDERING INFORMATION

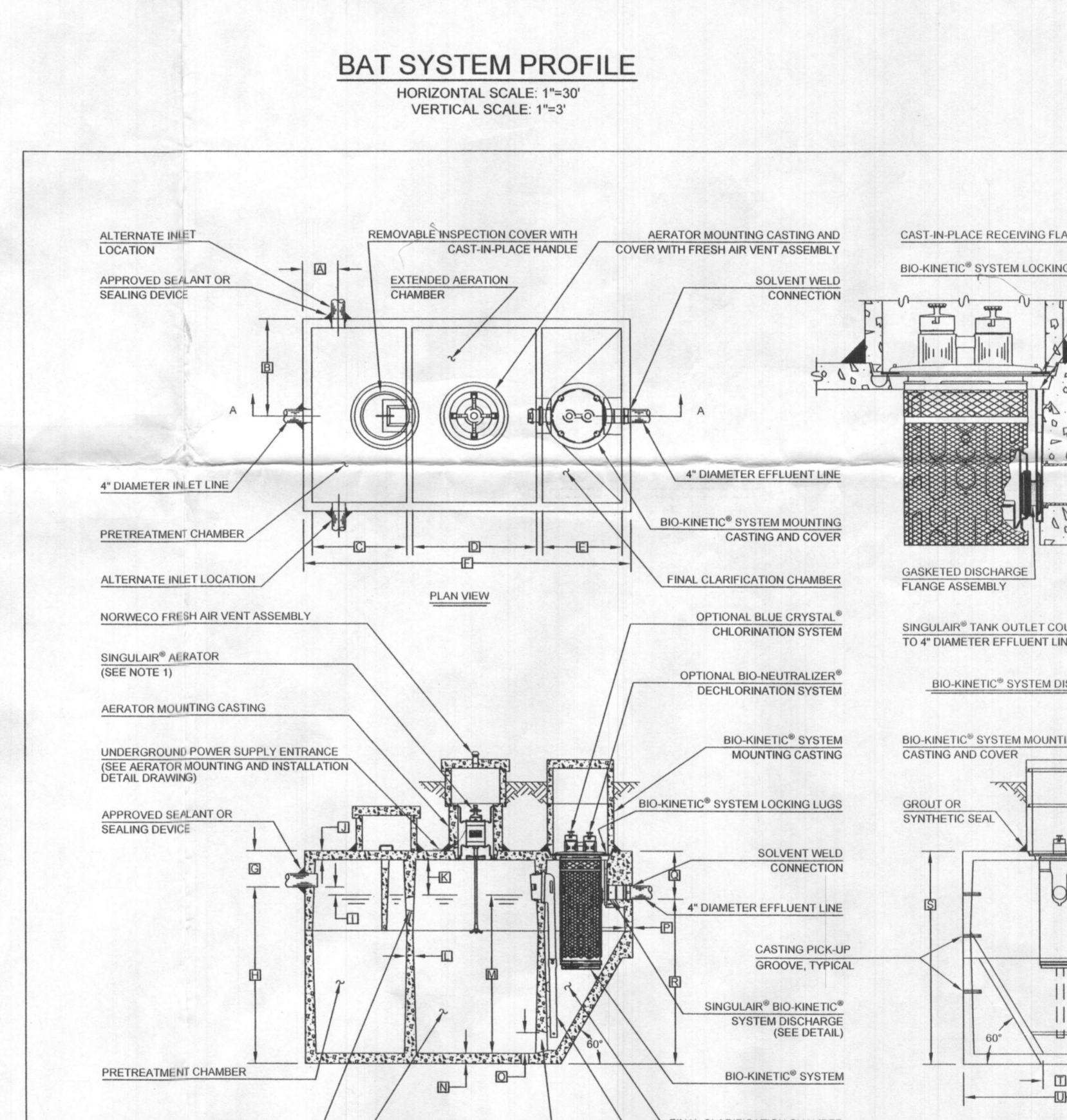
Catalog Number	HP	Volts	Phase/Cycles	Amps	Discharge Size	Switch Type	Cord Length	Approx. Wt. Lbs.
SRM4P-1	1/2	115	1/60	12	2"	Tethered Automatic*	12'	40
SRM4M-1	1/2	115	1/60	12	2"	Manual	20'	39
SRM4P-2	1/2	230	1/60	6	2"	Tethered Automatic*	20'	40
SRM4M-2	1/2	230	1/60	6	2"	Manual	20'	39
SRM4V-1	1/2	115	1/60	12	2"	Vertical Automatic*	20'	40
SRM4V-2	1/2	230	1/60	6	2"	Vertical Automatic*	20'	40

DIMENSIONS

PUMP PERFORMANCE

Capacity: 27 GPM

PENTAIR



BAT NOTES

- ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
- THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 5 FEET.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 50 FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
- THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
- THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
- WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A MANNER ACCEPTABLE TO MDE. THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
- ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
- AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
- THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.
- DOSE TO BE 125 GALLONS ON A PUMP RUN TIME OF 4-2 MINUTES.
- PUMP TO BE A MYERS SRM4 SERIES OR EQUIVALENT.
- BAT SYSTEM TO BE A NORWECO SINGULAR MODEL TNT-500 OR EQUIVALENT.

GENERAL NOTES

- SINGULAR® AERATOR, AS TESTED AND ACCEPTED BY NSF, OPERATING 60 MINUTES ON / 160 MINUTES OFF.
- FALL THROUGH SINGULAR® PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TWELVE INCHES BELOW TANK TOP.
- ON DEEPER INSTALLATIONS, PRECAST RISERS MUST BE USED TO EXTEND AERATOR MOUNTING CASTING AND BIO-KINETIC® SYSTEM MOUNTING CASTING TO GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.
- TANK REINFORCED PER ACI STD. 318.
- REMOVABLE COVERS OR RISERS WEIGH IN EXCESS OF SEVENTY-FIVE POUNDS EACH TO PREVENT UNAUTHORIZED ACCESS.
- CONTACT THE LOCAL LICENSED SINGULAR® DISTRIBUTOR FOR ELECTRICAL REQUIREMENTS.

PROJECT ENGINEER'S APPROVAL

(I/WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

CONTRACTOR'S CERTIFICATION

(I/WE) HEREBY CERTIFY THAT THIS DRAWING HAS BEEN CHECKED AND IS APPROVED FOR USE IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

CRITICAL DIMENSIONS

Symbol	Dimension	Symbol	Dimension
A	1'-0"	N	0'-3"
B	2'-9"	O	0'-6"
C	3'-7"	P	0'-2 1/2"
D	2'-8"	Q	0'-4"
E	2'-3"	R	4'-8"
F	9'-3"	S	0'-0"
G	1'-0"	T	1'-0"
H	5'-0"	U	0'-3"
I	0'-3"	V	0'-3"
J	1'-0"	W	0'-2"
K	0'-2"	X	0'-0"
L	4'-8"	Y	0'-0"

DISTRIBUTION LATERAL PROFILE DOSING FIELDS

NOTE: MAINTAIN A MINIMUM OF 4 FEET UNDISTURBED SOIL BETWEEN BOTTOM OF TRENCH AND TOP OF GROUND WATER ELEVATION.

SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

ENGINEER'S CERTIFICATE

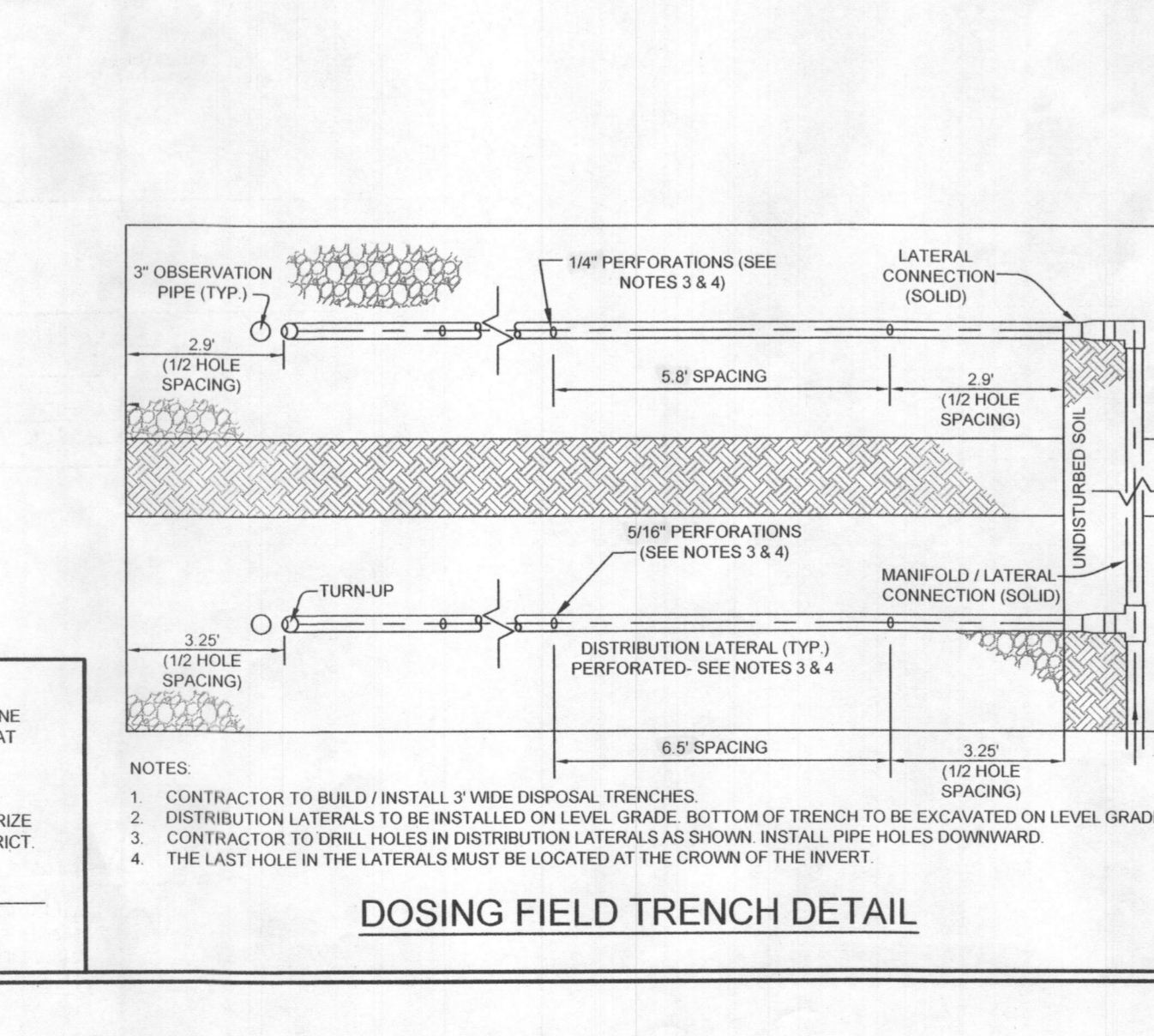
I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

DATE: 9-1-15
SIGNATURE OF ENGINEER: PAUL M. SILL, P.E.

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

DATE: 9-1-15
SIGNATURE OF DEVELOPER:



SEWAGE DISPOSAL AREA LATERAL / TRENCH SIZING SUMMARY

FIELD	LATERAL TRENCH NO.	EX. GROUND ELEVATION	INVERT ELEVATION	BOTTON ELEVATION	LATERAL LENGTH	HEAD	ORIFICE DIAMETER	ORIFICE FLOW RATE	ORIFICE SPACINGS	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)
INITIAL	2	553.0'	551.0'	549.0'	52'-11"	4.0'	1/4"	1.47	5.8'	9	13.23

SEWAGE DISPOSAL AREA LATERAL / TRENCH SIZING SUMMARY

APPROVED SEPTIC SYSTEM PLAN
HOWARD COUNTY HEALTH DEPARTMENT
DATE: 9/1/15
MELCHIOR PROPERTY

OWNER/DEVELOPER

WILLIAMSBURG GROUP
5485 HARRIS FARM ROAD
COLUMBIA, MARYLAND 21044

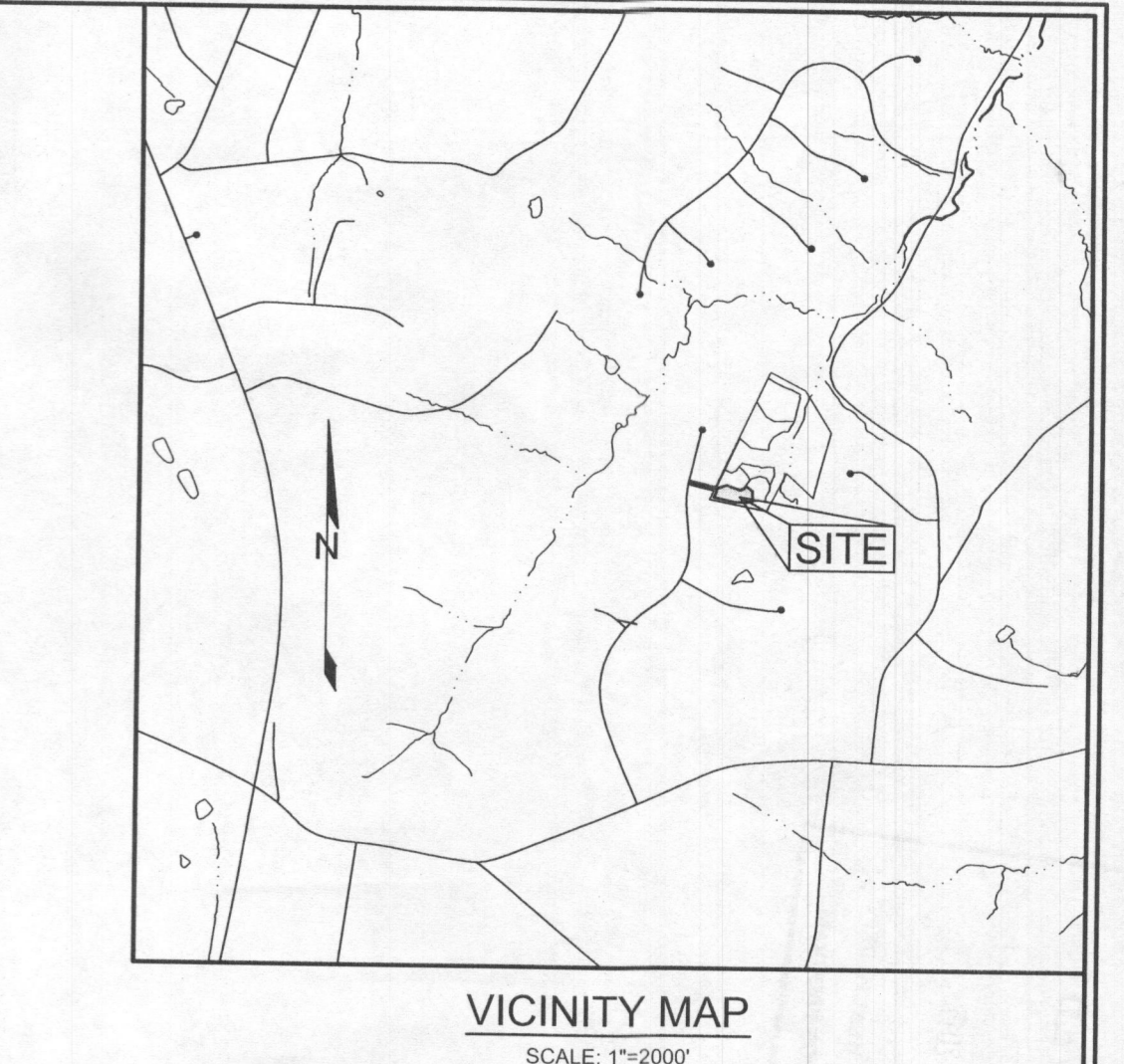
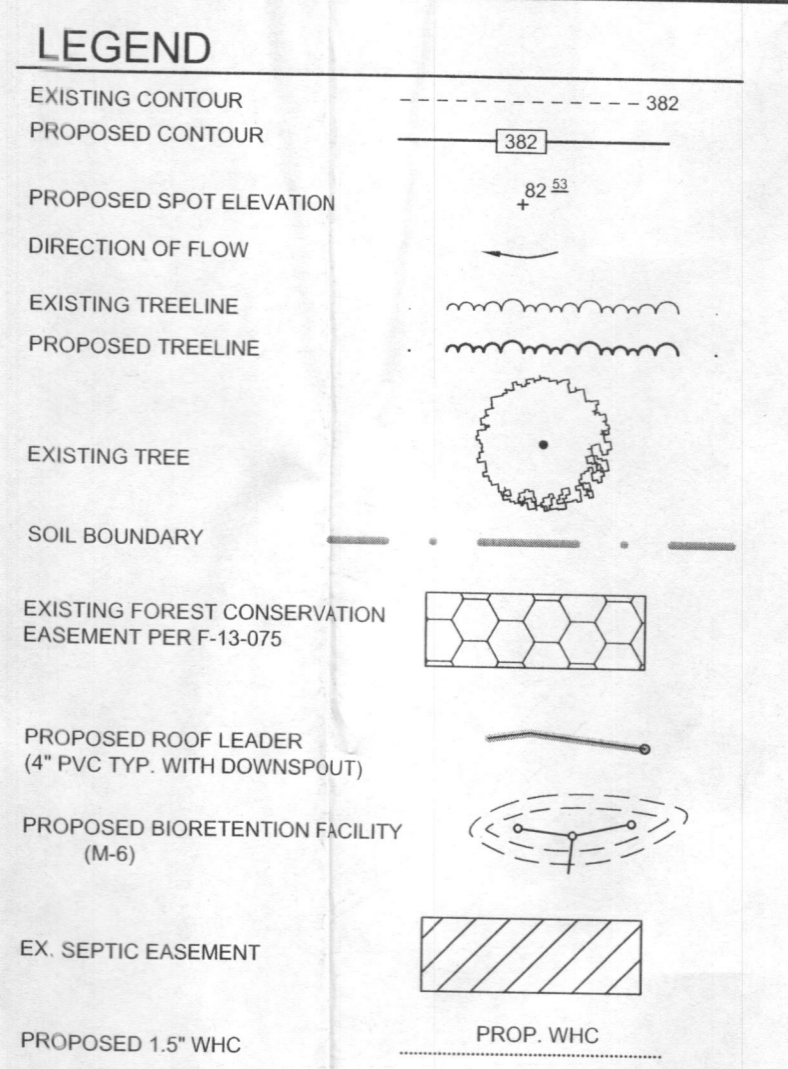
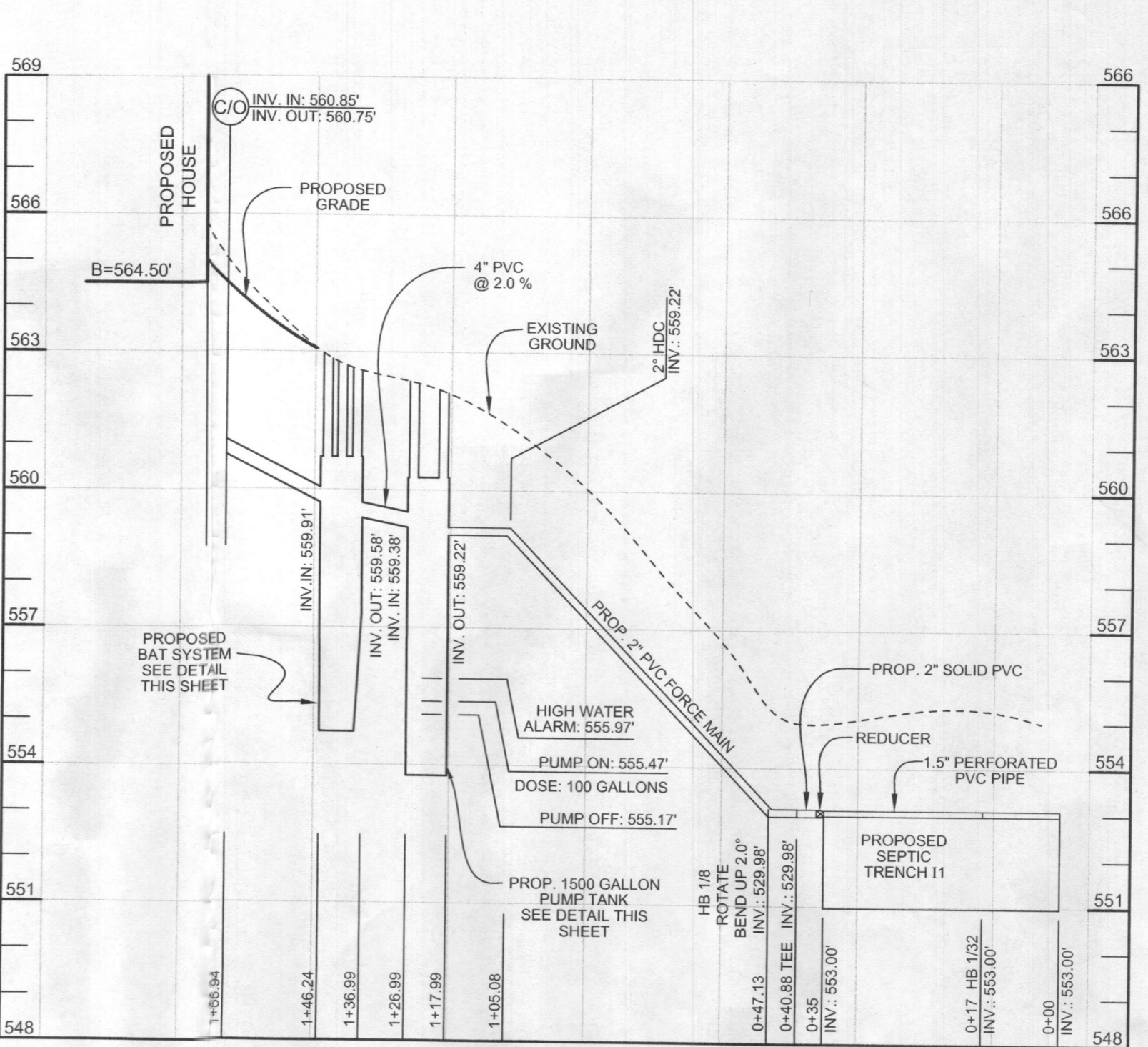
DESIGN BY: PS
DRAWN BY: AEA
CHECKED BY: PS
SCALE: AS SHOWN
DATE: AUGUST 31, 2015
PROJECT #: 15-023
SHEET #: 1 of 1

STATE OF MARYLAND PROFESSIONAL ENGINEER

SILL ENGINEERING GROUP, LLC

11130 Dovetail Court, Suite 200
Manorville, Maryland 21044
Phone: 443.325.5076
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

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. 32023, EXPIRATION DATE: JUNE 20, 2017.



BENCHMARKS

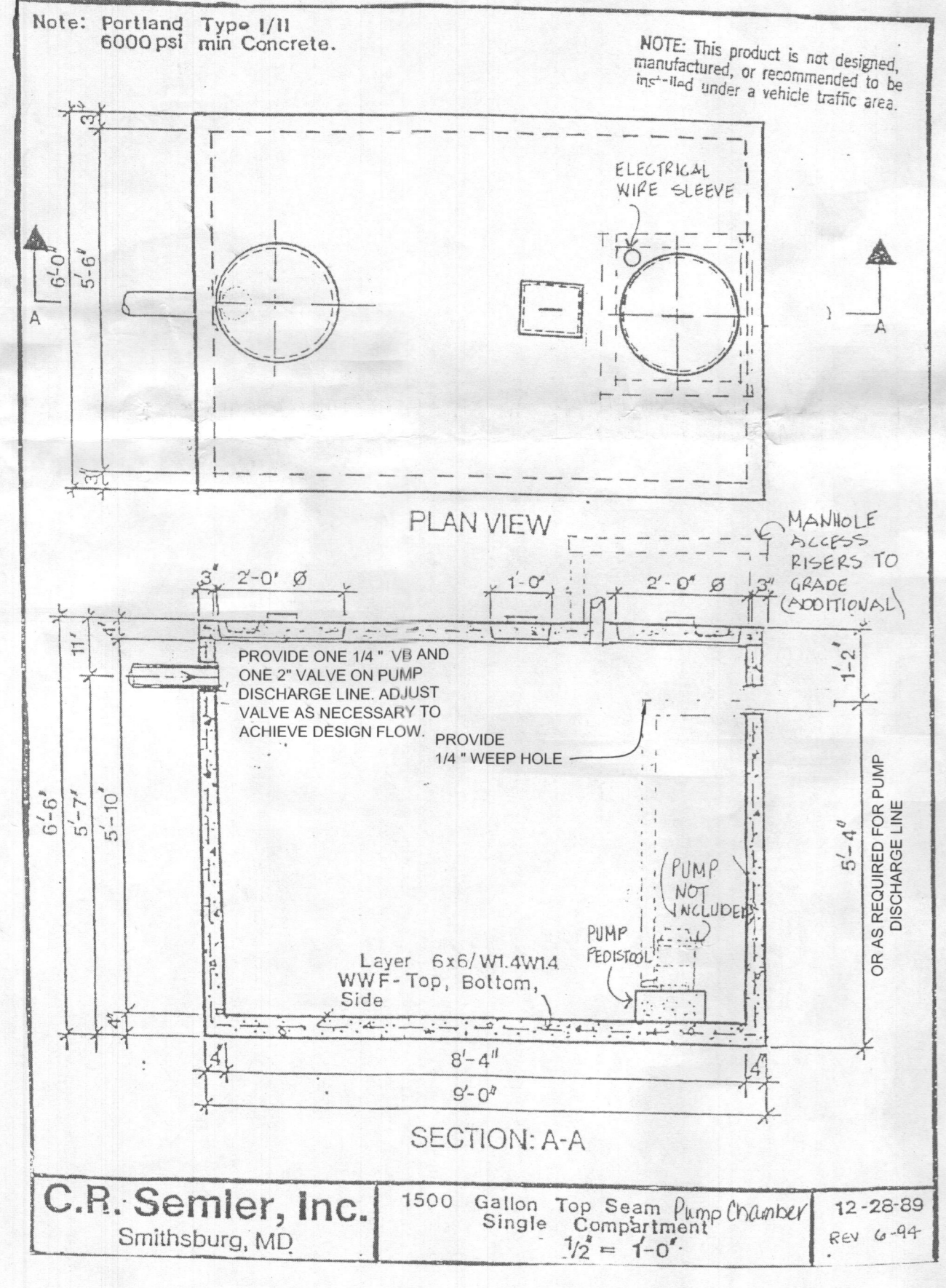
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
09H2	601,676.7	1,329,521.0	640.22	N SIDE OF RT. 99, 0.6 MILE TO RT. 32, 500' TO CL. OF MT. VIEW, 48' N OF POLE #102450
10GB	602,276.0	1,331,069.4	597.35	S SIDE OF RT. 99, 59' E OF POLE #G-27, 100' W OF F.H.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	'K' FACTOR
GgB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	0.20
MdD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.24

NOTES:

- SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, SOIL SURVEY.
- 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.



RESIDENTIAL SEWAGE PUMP

MYERS® SRM4 SERIES

ORDERING INFORMATION

Catalog Number	HP	Volts	Phase/Cycles	Amps	Discharge Size	Switch Type	Cord Length	Approx. Wt. Lbs.
SRM4-1	1/2	115	1/60	12	2"	Tethered Automatic*	19'	40
SRM4PC-1	1/2	115	1/60	12	2"	Tethered Automatic*	20'	40
SRM4MC-1	1/2	115	1/60	12	2"	Manual	20'	39
SRM4PC-2	1/2	230	1/60	6	2"	Tethered Automatic*	20'	40
SRM4MC-2	1/2	230	1/60	6	2"	Manual	20'	39
SRM4V-1	1/2	115	1/60	12	2"	Vertical Automatic*	20'	40
SRM4V-2	1/2	230	1/60	6	2"	Vertical Automatic*	20'	40

DIMENSIONS

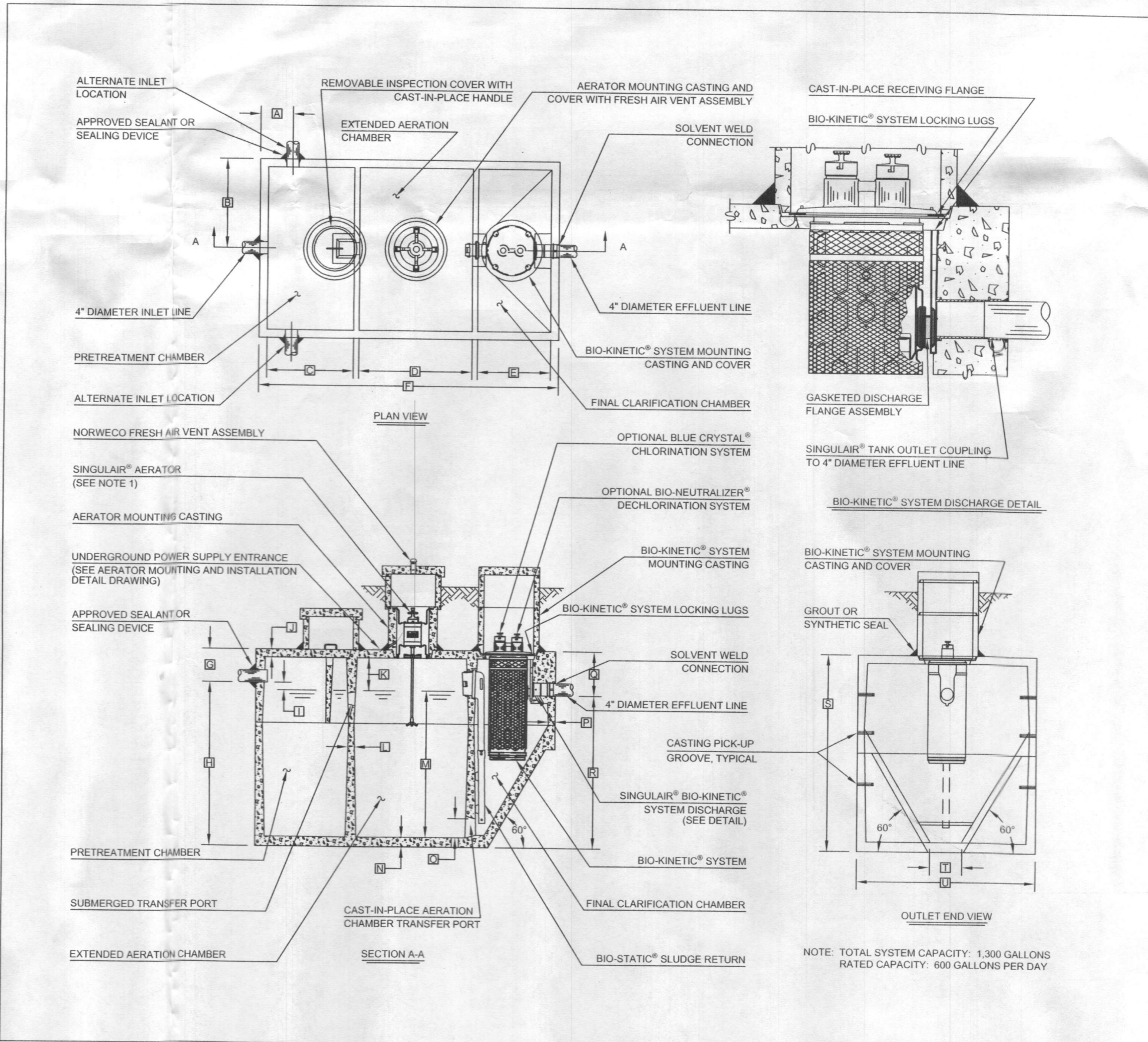
PUMP PERFORMANCE

Capacity liters per minute

Capacity gallons per minute

27 GPM

PENTAIR



GENERAL NOTES:

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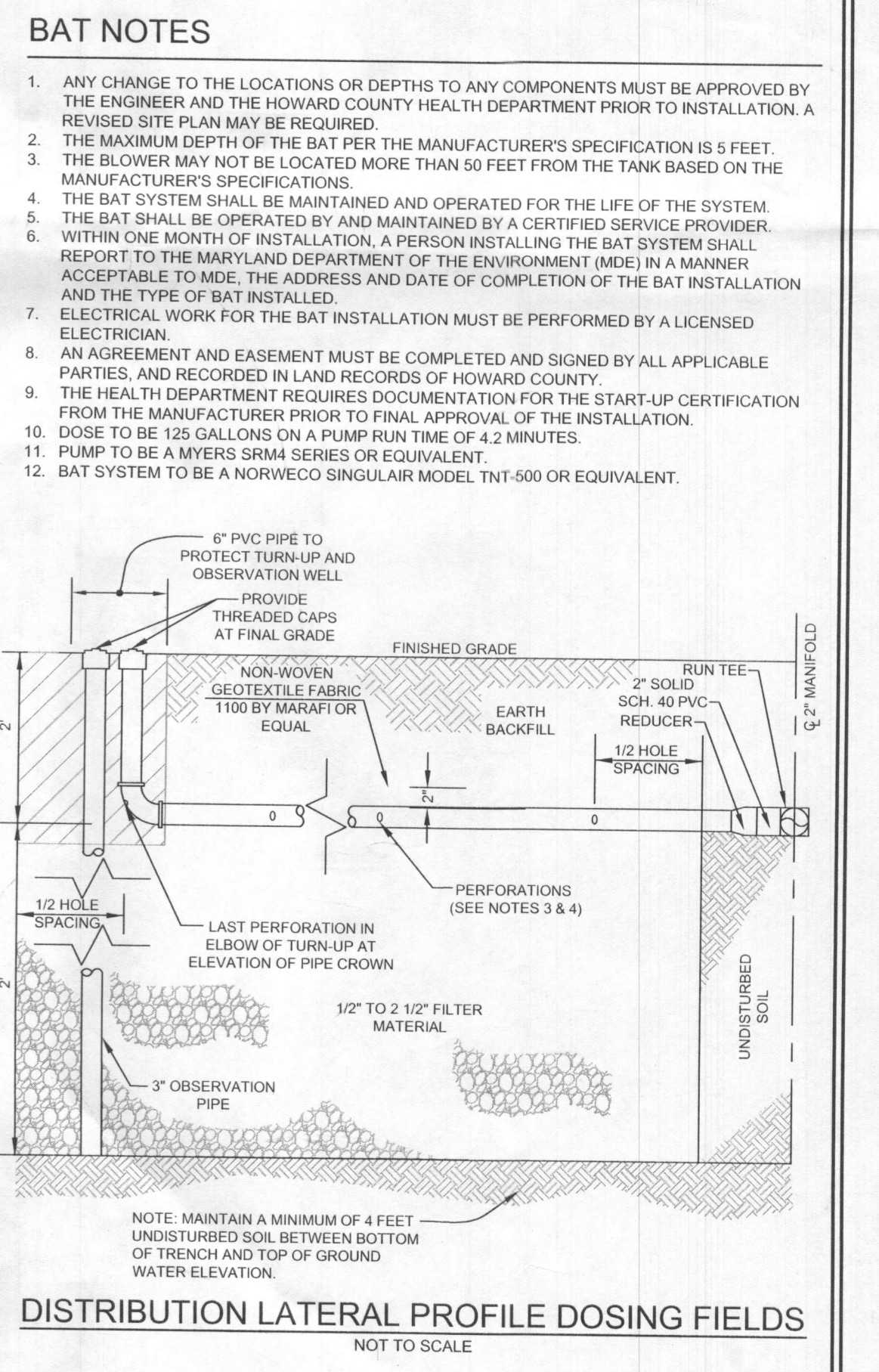
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C	2'-8"	S	0'-2 1/2"
D	3'-7"	T	1'-4"
E	2'-3"	U	4'-8"
F	0'-3"	V	6'-0"
G	1'-0"	W	1'-0"
H	5'-0"	X	5'-6"
I	0'-3"	Y	0'-3"
J	1'-0"	Z	0'-3"
K	0'-2"	AA	0'-3"
L	4'-6"	AB	0'-3"

norweco 8-23-07

SINGULAR® BIO-KINETIC® PRETREATMENT SYSTEM MODEL TNT-500-000

U.S. AND FOREIGN PATENTS PENDING

FC-9-064



SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

INITIAL SYSTEM:

- APPLICATION RATE: 1.2
- EFFECTIVE AREA BEGINNING DEPTH: 2'
- BOTTOM MAXIMUM DEPTH: 4'

DESIGN FLOW:

- 4 BEDROOMS AT 150 GPD = 4X150 GPD = 600 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED: DESIGN FLOW (600 GPD) / APPLICATION RATE (1.2) = 500 SF
- SIDEWALL REDUCTION CREDIT: TRENCH WIDTH (W) = 3'
- TRENCH EFFECTIVE DEPTH (D) = 2'
- (W+2) / (W+1-2D) X 100 = 62.5%
- LINEAR LENGTH OF TRENCH REQUIRED: DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (62.5%) / TRENCH WIDTH (3') = 104'
- LINEAR LENGTH OF TRENCH PROVIDED = 104'
- TWO TRENCHES 52' EACH

EXISTING GRADE: TRENCH 11: 555.0' TRENCH 12: 553.0' TRENCH 11: 553.0' TRENCH 12: 551.0'

REPLACEMENT SYSTEM:

- APPLICATION RATE: 1.2
- EFFECTIVE AREA BEGINNING DEPTH: 2'
- BOTTOM MAXIMUM DEPTH: 4'

DESIGN FLOW:

- 4 BEDROOMS AT 150 GPD = 4X150 GPD = 600 GPD
- SQUARE FOOTAGE OF DRAIN FIELD REQUIRED: DESIGN FLOW (600 GPD) / APPLICATION RATE (1.2) = 500 SF
- SIDEWALL REDUCTION CREDIT: TRENCH WIDTH (W) = 3'
- TRENCH EFFECTIVE DEPTH (D) = 2'
- (W+2) / (W+1-2D) X 100 = 62.5%
- LINEAR LENGTH OF TRENCH REQUIRED: DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (62.5%) / TRENCH WIDTH (3') = 104'
- LINEAR LENGTH OF TRENCH PROVIDED = 104'
- TWO TRENCHES 52' EACH

EXISTING GRADE: TRENCH R1: 551.1' TRENCH R2: 549.1' TRENCH R1: 549.1' TRENCH R2: 547.1'

ENGINEERS CERTIFICATE:

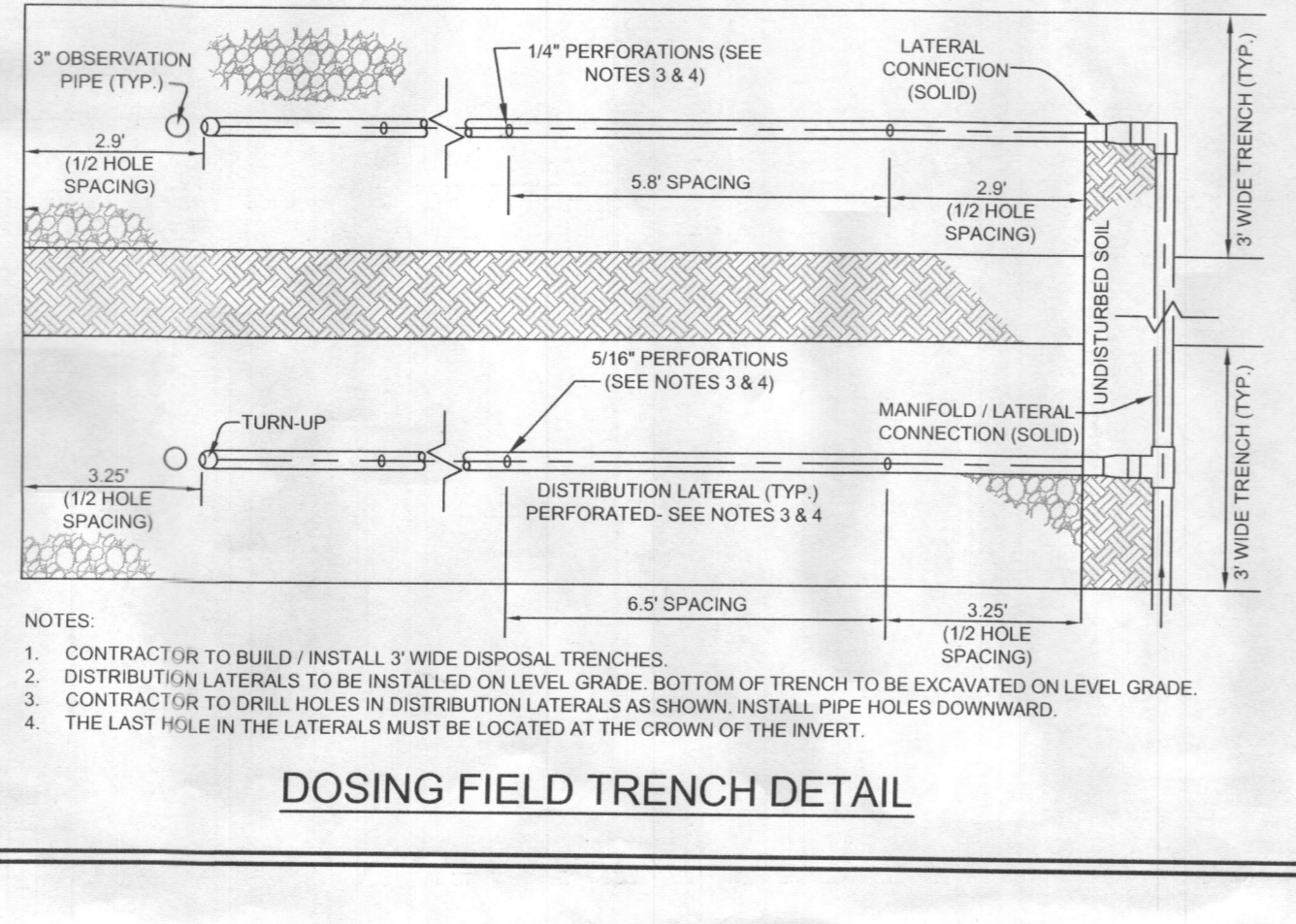
I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER'S CERTIFICATE:

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: PAUL M. SILL, P.E. DATE: _____

SIGNATURE OF DEVELOPER: _____ DATE: _____



SEWAGE DISPOSAL AREA LATERAL / TRENCH SIZING SUMMARY

FIELD	LATERAL TRENCH NO.	EX. GROUND ELEV.	INVERT ELEV.	BOTTOM ELEV.	LATERAL LENGTH	HEAD	ORIFICE DIAMETER	ORIFICE FLOW RATE	ORIFICE RATE (GPM)	NUMBER OF TRENCH FLOWS
INITIAL	1	555.0'	553.0'	551.0'	52'	2.0'	5/16"	1.63	6.5	13.04
	2	553.0'	551.0'	549.0'	52'	4.0'	1/4"	1.47	5.8	13.23

SITE PLAN FOR BAT INSTALLATION

MELCHIOR PROPERTY

LOT 6

TAX MAP 10 GRID 13 3RD ELECTION DISTRICT

PARCEL 184 HOWARD COUNTY, MARYLAND

SILL ENGINEERING GROUP, LLC

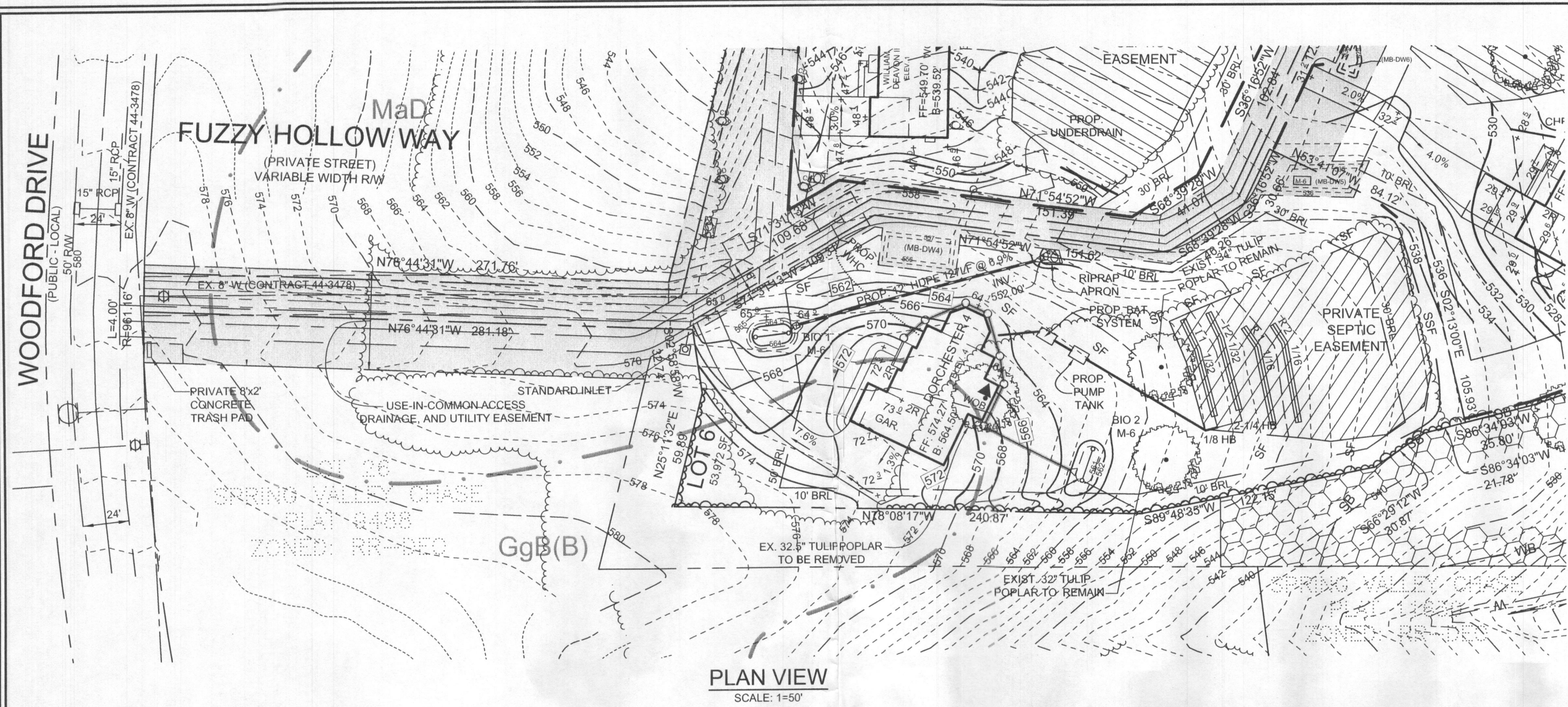
11130 Devedale Court, Suite 200
Marriottsville, Maryland 21104
Phone: 443.325.3076
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

OWNER/DEVELOPER

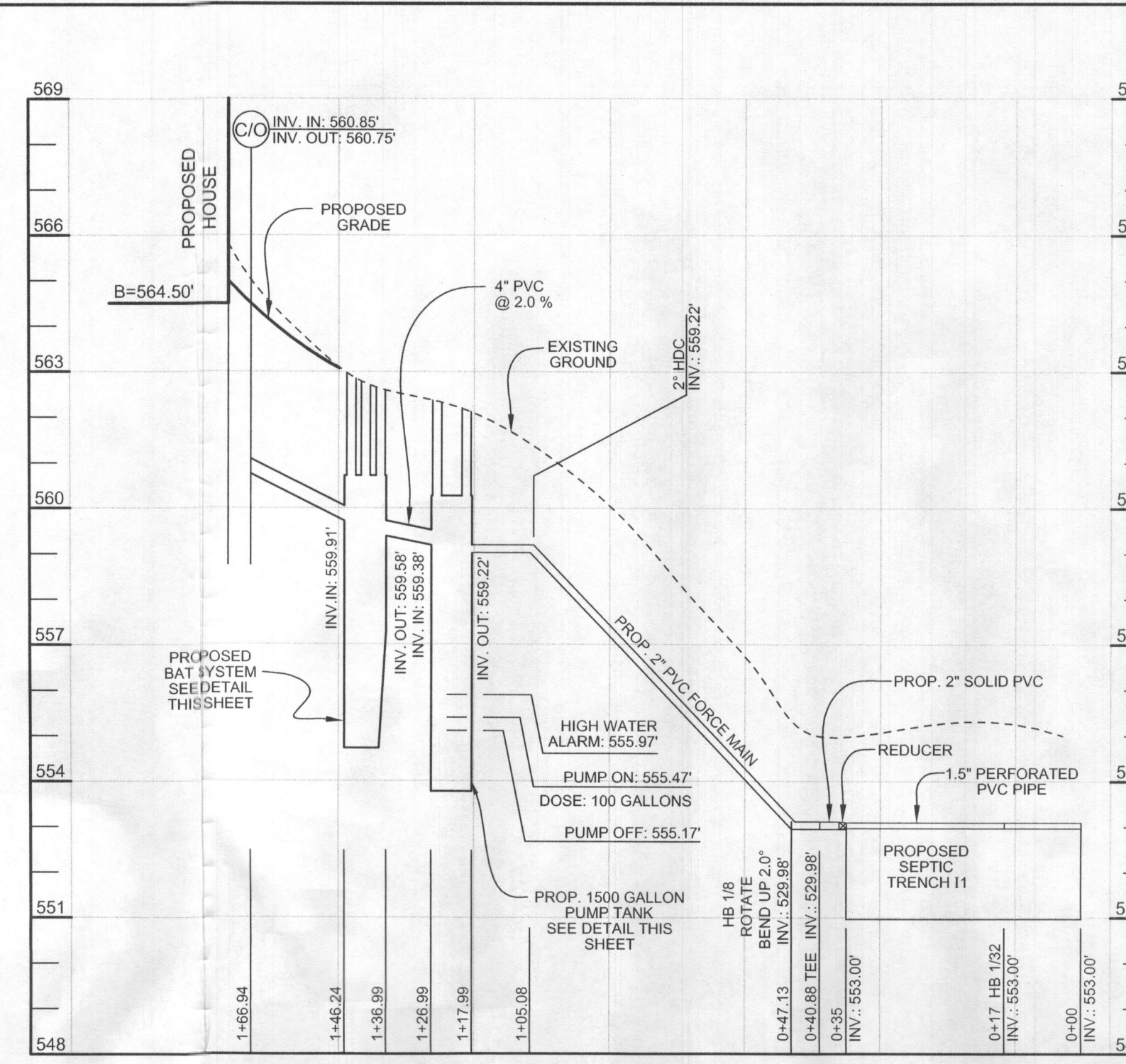
WILLIAMSBURG GROUP
5485 HARPERS FARM ROAD
COLUMBIA, MARYLAND 21044

DESIGN BY: PS
DRAWN BY: AEA
CHECKED BY: PS
SCALE: AS SHOWN
DATE: AUGUST 31, 2015
PROJECT #: 15-023
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



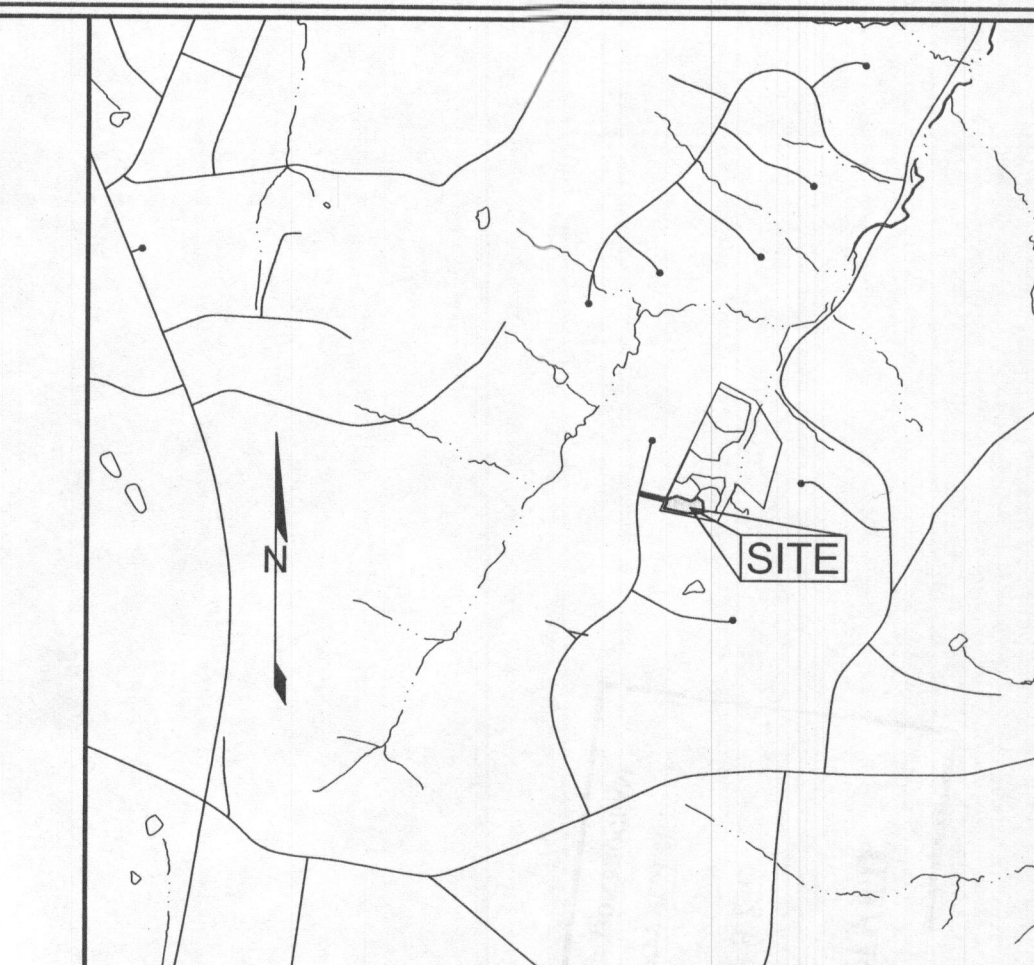
PLAN VIEW
SCALE: 1"=50'



BAT SYSTEM PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=3'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING TREE
- SOIL BOUNDARY
- EXISTING FOREST CONSERVATION EASEMENT PER F-13-075
- PROPOSED ROOF LEADER (4" PVC TYP. WITH DOWNSPOUT)
- PROPOSED BIORETENTION FACILITY (M-6)
- EX. SEPTIC EASEMENT
- PROPOSED 1.5" WHC



VICINITY MAP
SCALE: 1"=200'

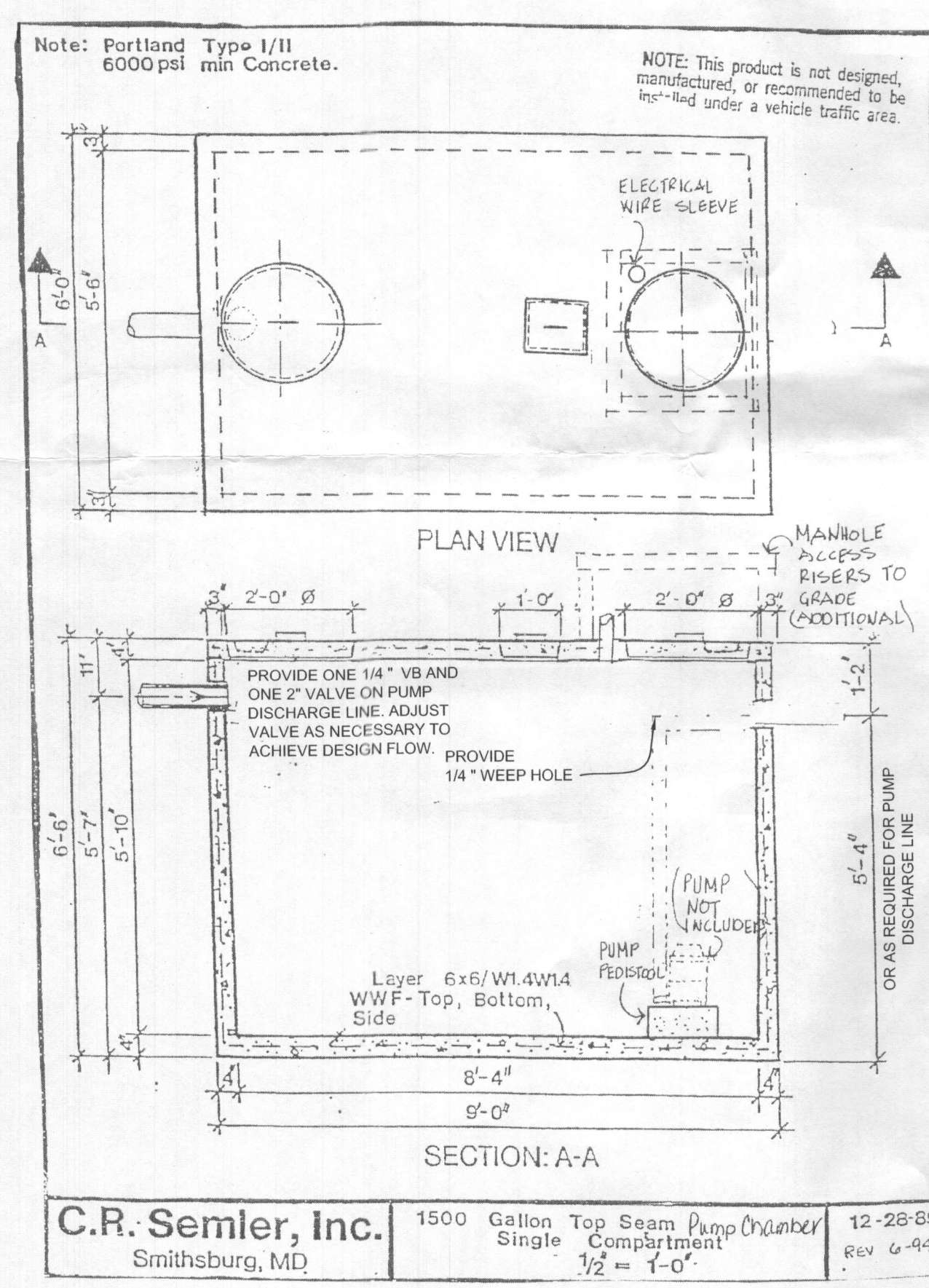
BENCHMARKS

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
09H2	601,676.7	1,329,521.0	640.22	N SIDE OF RT. 99, 0.6 MILE TO RT. 32, 500' TO CL OF MT. VIEW, 48' N OF POLE#102450
10GB	602,276.0	1,331,069.4	597.35	S SIDE OF RT. 99, 59' E OF POLE#27, 100' W OF F.H.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K' FACTOR
GgB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	0.20
MdA	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.24

- NOTES:
- SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY.
 - 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.



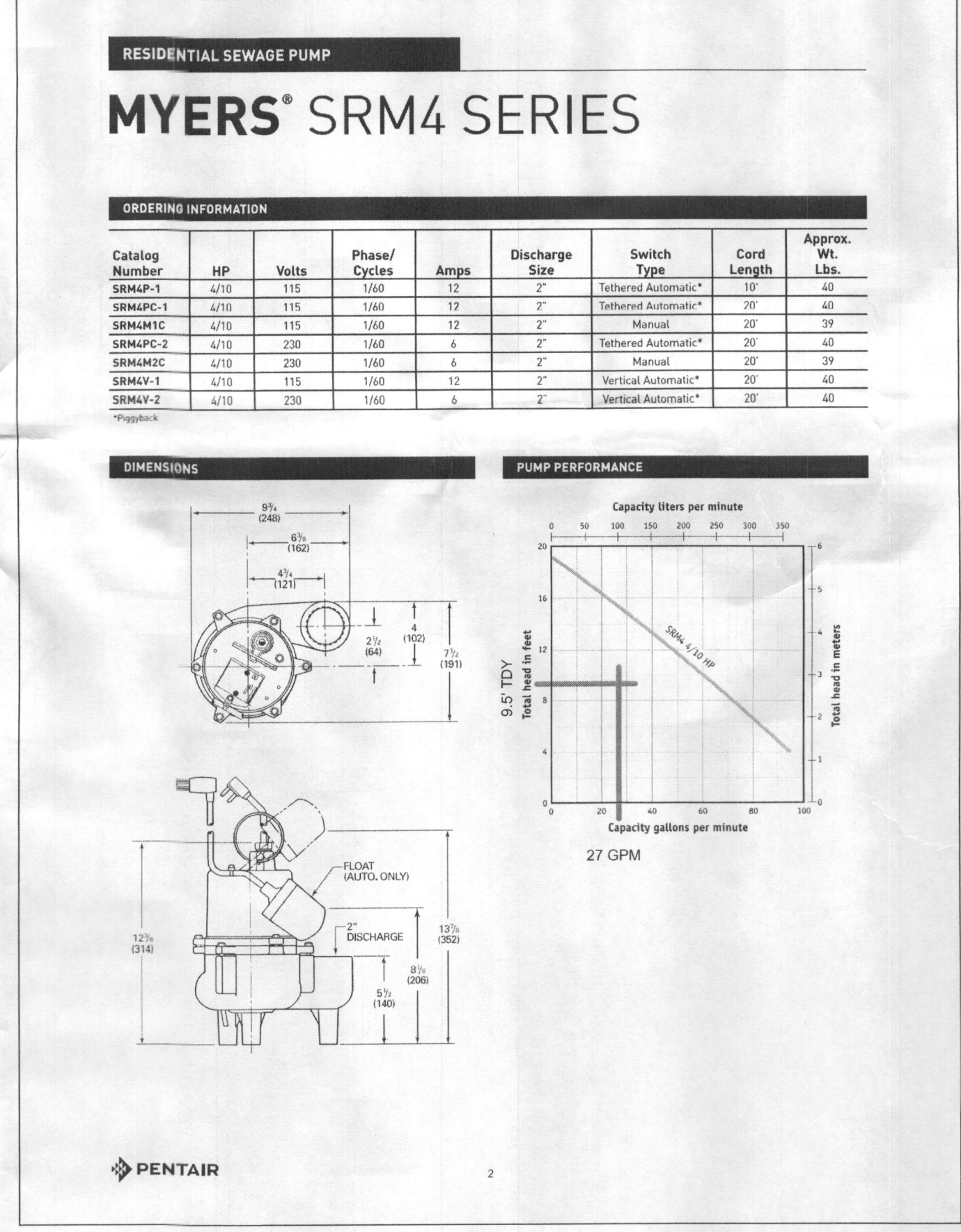
SEPTIC SYSTEM TRENCH DESIGN SPECIFICATIONS

- INITIAL SYSTEM:
 - APPLICATION RATE: 1:2
 - EFFECTIVE AREA BEGINNING DEPTH: 2'
 - BOTTOM MAXIMUM DEPTH: 4'
 - REPLACEMENT SYSTEM:
 - APPLICATION RATE: 1:2
 - EFFECTIVE AREA BEGINNING DEPTH: 2'
 - BOTTOM MAXIMUM DEPTH: 4'
- DESIGN FLOW:
 - 4 BEDROOMS AT 150 GPD
 - 4X150 GPD = 600 GPD
 2. SQUARE FOOTAGE OF DRAIN FIELD REQUIRED:
 - DESIGN FLOW (600 GPD) / APPLICATION RATE (1:2) = 500 SF
 - DESIGN FLOW (600 GPD) / APPLICATION RATE (1:2) = 500 SF
 - SIDEWALL REDUCTION CREDIT:
 - TRENCH WIDTH (W) = 3'
 - TRENCH EFFECTIVE DEPTH (D) = 2'
 - $(W+2) / (W+1+2D) \times 100 = 62.5\%$
 3. LINEAR LENGTH OF TRENCH REQUIRED:
 - DRAIN FIELD SQUARE FOOTAGE (500) X SIDEWALL REDUCTION CREDIT (62.5%) / TRENCH WIDTH (3') = 104'
 - LINEAR LENGTH OF TRENCH PROVIDED = 104'
 - TWO TRENCHES 52 LF/EACH
 4. EXISTING GRADE:
 - TRENCH I1: 555.0'
 - TRENCH I2: 553.0'
 - TRENCH I1: 553.0'
 - TRENCH I2: 551.0'
 5. INVERT:
 - TRENCH R1: 549.1'
 - TRENCH R2: 547.1'

ENGINEERS CERTIFICATE
I, THE ENGINEER, CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

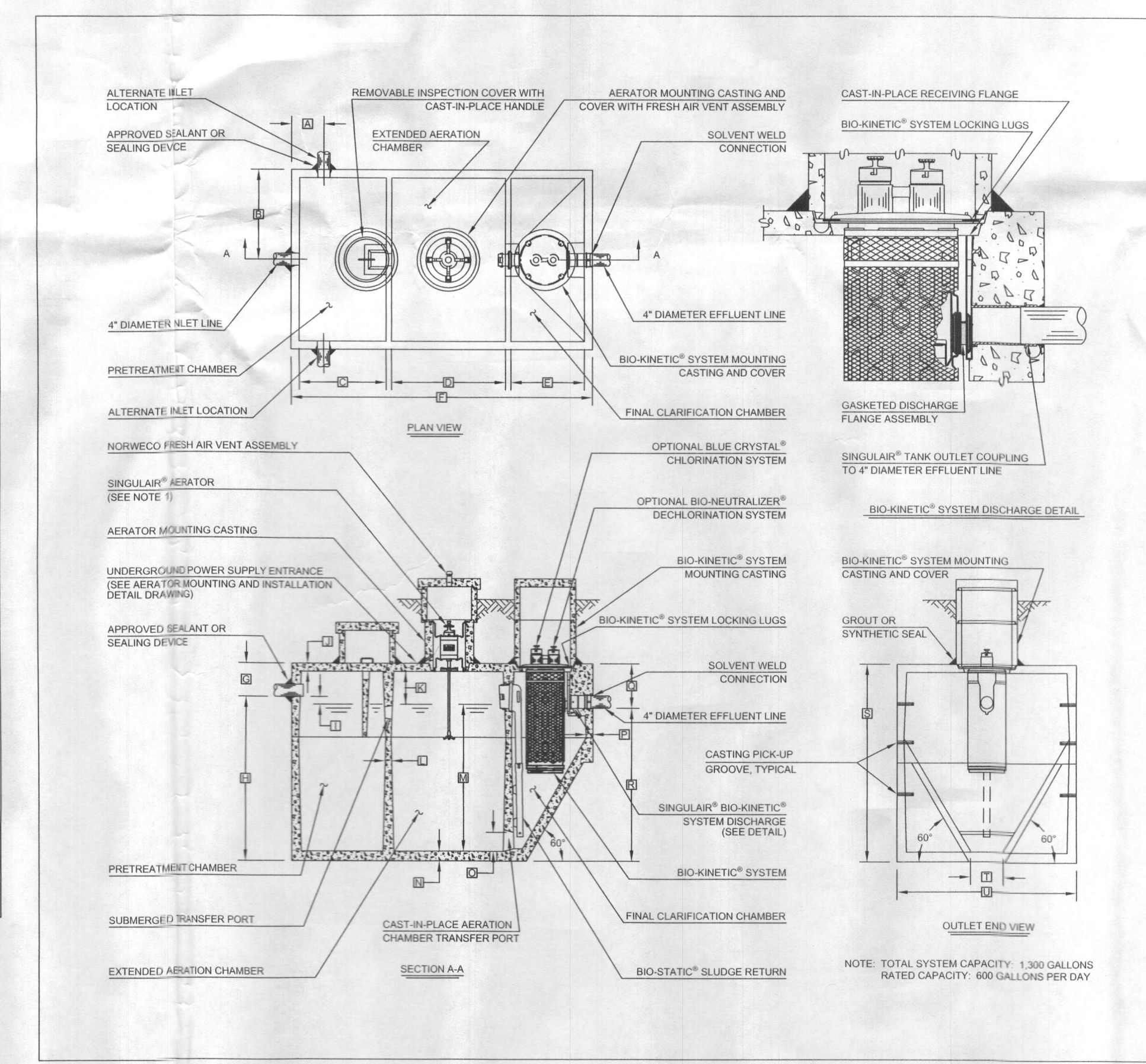
DEVELOPER'S CERTIFICATE
I, THE DEVELOPER, CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION/PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: PAUL M. SILL, P.E. DATE: _____ SIGNATURE OF DEVELOPER: _____ DATE: _____

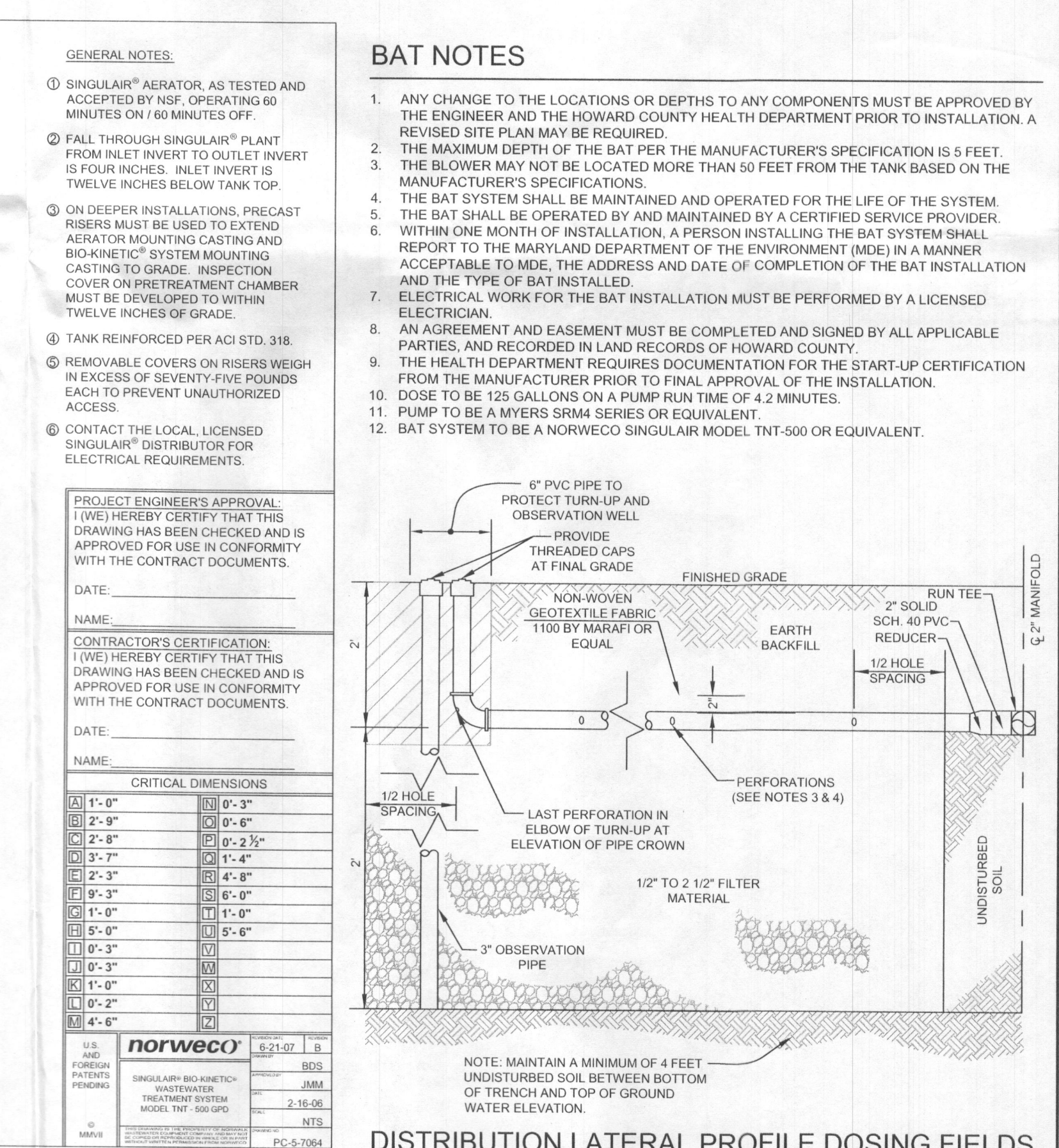


SEWAGE DISPOSAL AREA LATERAL / TRENCH SIZING SUMMARY

FIELD	LATERAL TRENCH NO.	EX. GROUND ELEVATION	INVERT ELEV.	BOTTOM ELEVATION	LATERAL LENGTH	HEAD	ORIFICE DIAMETER	ORIFICE FLOW RATE	ORIFICE SPACING	ORIFICE RATES	NUMBER OF ORIFICES	TRENCH FLOW RATE (GPM)
INITIAL	1	555.0'	553.0'	551.0'	52'	2.0'	5/16"	1.63	6.5'	8	13.04	
	2	553.0'	551.0'	549.0'	52'	4.0'	1/4"	1.47	5.8'	9	13.23	



DISTRIBUTION LATERAL PROFILE DOSING FIELDS
NOT TO SCALE



SEWAGE DISPOSAL AREA LATERAL / TRENCH SIZING SUMMARY

SITE PLAN FOR BAT INSTALLATION
MELCHIOR PROPERTY
LOT 6

TAX MAP 10 GRID 13
3RD ELECTION DISTRICT

PARCEL 184
HOWARD COUNTY, MARYLAND

SILL ENGINEERING GROUP, LLC
11130 Dovesdale 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: AUGUST 31, 2015
PROJECT #: 15-023
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. 20205, EXPIRATION DATE: JUNE 20, 2017