

**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: 9/19/16

**ONSITE SEWAGE DISPOSAL SYSTEM**

P 559769

APPROVAL DATE: \_\_\_\_\_

**PERMIT: CONSTRUCTION**

A \_\_\_\_\_

PROPERTY ADDRESS: 5023 Altogether Way

SUBDIVISION: Greenberry

LOT: 24

TAX ID: 05 598687

CONTRACTOR: South Carroll Backhoe

EMAIL: scbackhoe@comcast.net

CONTRACTOR ADDRESS: 4410 Salem Bottom Road

PHONE: 410-596-3618

CONTRACTOR CERTIFIED FOR BAT INSTALLATION:  MDE  MANUFACTURER:

PROPERTY OWNER: NVR Inc.

EMAIL: \_\_\_\_\_

OWNER ADDRESS: 9720 Patuxent Woods Road

PHONE: 410-379-5956

BAT UNIT MODEL: Hoot H-1000

PUMP SIZE: 0.6

PUMP TANK CAPACITY: \_\_\_\_\_

OPERATION & MAINTENANCE AGREEMENT DATE SIGNED: 4/15/16

DATE RECORDED: 4/15/16

DISTRIBUTION SYSTEM:  GRAVITY

PRESSURE DOSED

BEDROOMS: 6

APPLICATION RATE: 0.8

TRENCHES:	LINEAR FEET REQUIRED: <u>275</u>	INLET DEPTH: <u>4</u>
	TRENCH WIDTH: <u>3</u>	MAXIMUM BOTTOM DEPTH: <u>7</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>4.5</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:		

ISSUED BY: Robert Bricker

ISSUE DATE: 9/19/16

EXPIRATION DATE: 9/19/17

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 16003340

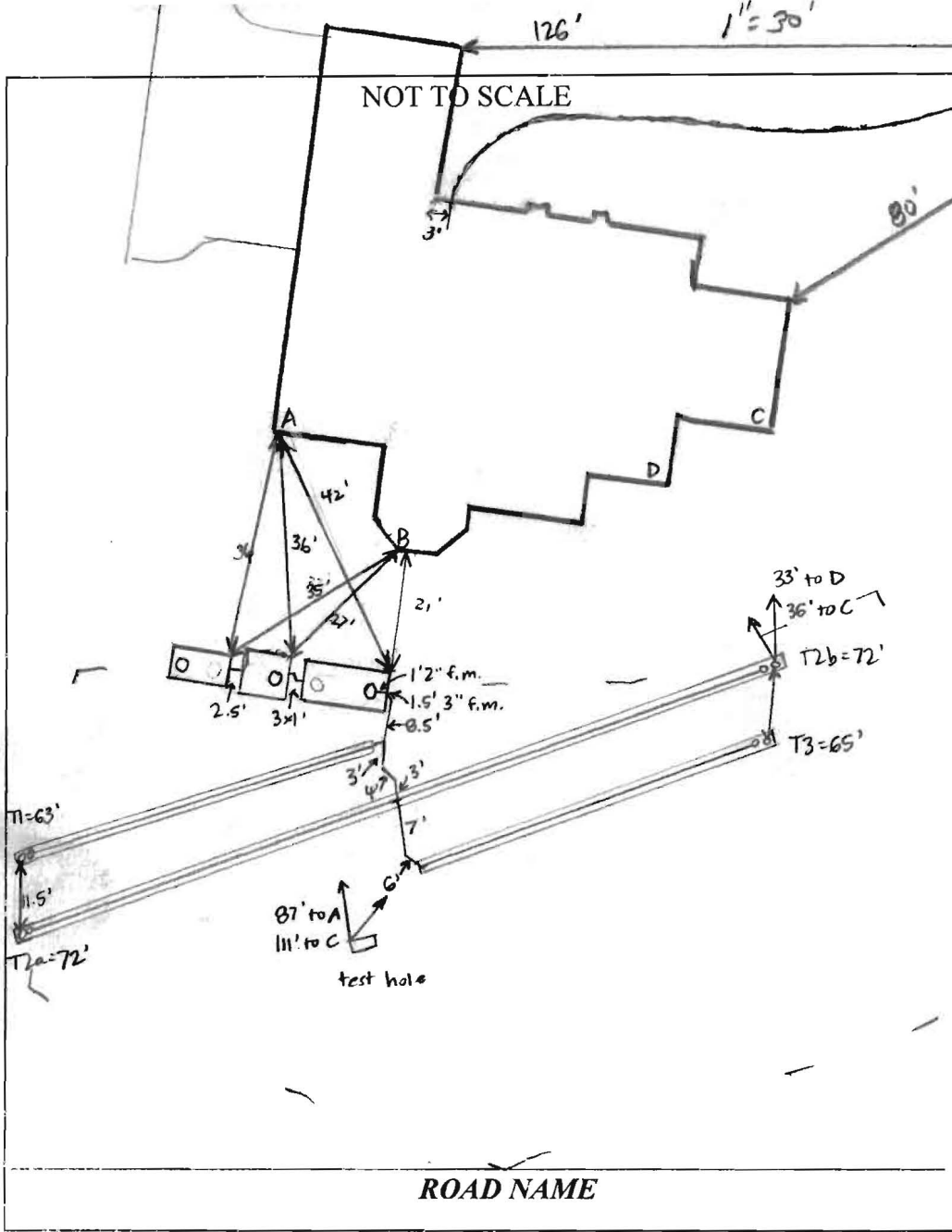
NOTE: AN INDIVIDUAL CERTIFIED BY MDE AND THE MANUFACTURER FOR BAT INSTALLATION MUST BE PRESENT AT ALL TIMES DURING BAT INSTALLATION.

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'	4'	7'
NUMBER OF TRENCHES		4
TOTAL LENGTH		282'
ABSORPTION AREA		846' + SIDEWALL
DISTRIBUTION BOX LEVEL		---
DISTRIBUTION BOX BAFFLE		---
DISTRIBUTION BOX PORT		---

**SEPTIC TANK DATA**

SEPTIC TANK 1 LEVEL YES

MANUFACTURER MAYER BROS.

CAPACITY 1000 GAL

SEAM LOC TDP

TANK LID DEPTH 1.5-2'

BAFFLES YES

BAFFLE FILTER NO

MANHOLE LOC FRONT

6" PORT LOC NONE

WATERTIGHT TEST NO

SLOTTED NO

DATE ON LID ---

③ PUMP/SEPTIC TANK LEVEL YES

MANUFACTURER BACKTHER/HOOT

CAPACITY 1000 / 2000 GAL

SEAM LOC TDP

TANK LID DEPTH 2'

BAFFLES YES

BAFFLE FILTER NO

MANHOLE LOC REAR

6" PORT LOC NONE

WATERTIGHT TEST NO

SLOTTED NO

DATE ON LID ---

Pump: 1/2 hp

**PRE-CONSTRUCTION:**

10/12 BAT locations staked in field. No laterals staked @ this time. OK to set tanks. Need to re-schedule. KW/RR 10/19/16  
 Trenches staked, most SDA corner stakes present. T1 goes through pump tank as laid out. Moved T1 ~10' south, slightly out of SDA but still 6' off property line + a few feet E to stay 5' off pump tank. Adjusted T2 + T3, now 11' centers. Trench starts + ends within 3-4'. (SC)

**INSTALLATION:**

10/12/16 - PM inspection contractor onsite. BAT tanks in place, hole for trash tank dug but tanks not set yet. contractor said that all 3 tanks will be in place for an inspection in the morning. WLI approved for contractor to backfill.  
 10/13/16 - site visits contractor not onsite. all 3 tanks have been set and partially backfilled. (SC) 10/20/16 house connection made. S. Carroll adding stone to T1 - 3' wide 7' bottom. Using laser to check depths. (SC) 10/20/16 T1 covered. S. Carroll digging + adding stone to T2. Some moisture/mottling at the bottom of T2 - dug test hole to 11' below T3, around center of T2. Water at bottom (11') after a few mins. causing 9-10' moisture at 6-7'. Spoke with RB at the office - OK to install initial system per specs on permit. (SC) 10/21/16 T2 + T3 finished + force main connected. Need pump + alarm + BAT startup certification. (SC) 11/23/16 on site for Hoot startup. Alarm sounds. Measured lateral heights @ turnups: T1 = 2', T2 = 2.5', T3 = 3'. Alarm for pump also sounds. (SC) 11/28/16 BAT startup certification received. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 11/28/16



**MAYER BROS., INC.**  
*Precast Concrete Products*  
6264 Race Rd. Elkridge, MD 21075

## Letter of Satisfaction Hoot System Installation

Address of Property: 5023 Altogether Way  
Clarksville, MD 21029

Date of Final Inspection: 11/23/16

Installer: South Carroll Backhoe Service

Hoot Technician/Inspector: Mike Sample

I hereby certify that the Hoot system installed at the property listed above has been installed according to proper Hoot installation practices. I have also verified the startup of the system and it is in proper working order.

Sincerely,

H. Michael Dager  
Name of Inspector  
Mayer Bros., Inc.

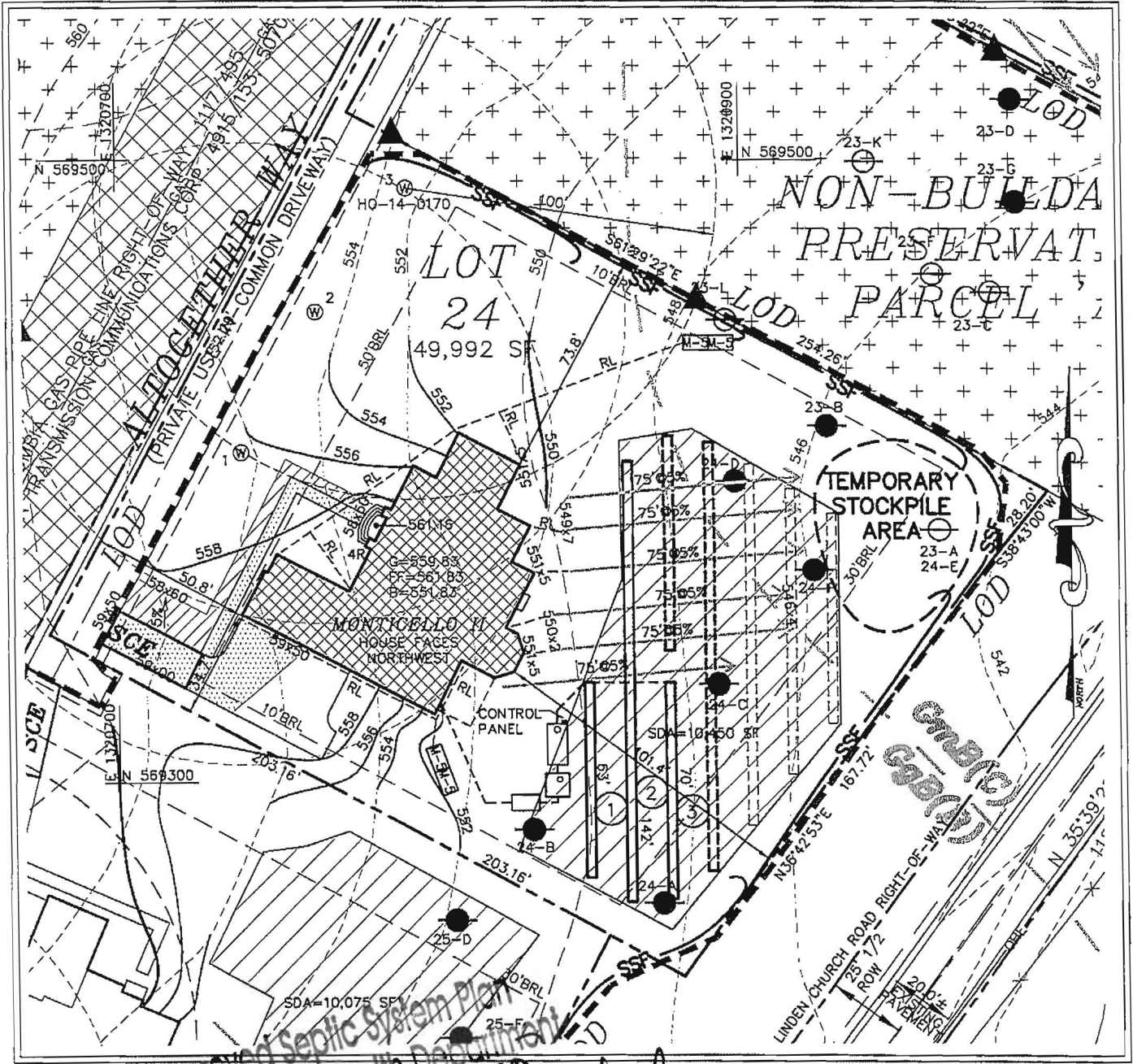
PH: 410-796-1434  
FX: 410-796-1438

WBE

[www.mayerbrosprecast.com](http://www.mayerbrosprecast.com)

Grease Interceptors, Grease Solutions, Aerobic Treatment Units, Septic Tanks, Holding Tanks, Storm Water Structures, Hydroceptors,  
Bench Barrier, Water Meter Vaults, Sectional Valve Vaults, Top Slabs, Curb Heads, Curb Bumpers,  
Custom Precast Products

N.W.



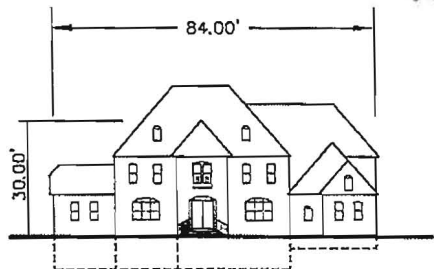
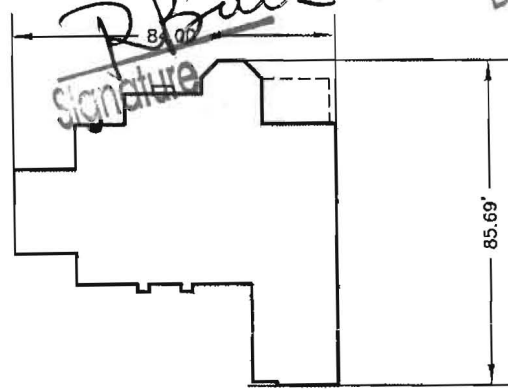
Approved Septic System Plan  
 Howard County Health Department  
 6-Bedroom SFD  
 approved as illustrated  
 R. Bricker 6/24/2016  
 Date: 6/22/16

REVISED

Date: 6/22/16

Comments: B16002427

REVISED SEPTIC DETAILS ONLY PER HEALTH



**MONTICELLO II**  
 ELEV. D

PLOT PLAN (SITE SPECIFIC)  
 GREENBERRY  
 LOT 24

FIFTH ELECTION DISTRICT      HOWARD COUNTY, MARYLAND

SCALE: 1"=50'      DRAWN BY: MMM      DATE: MAY 2016      PN:15-005

**MILDENBERG BOENDER, & ASSOC., INC.**  
 Engineers Planners Surveyors  
 7350-B Grace Drive, Columbia, Maryland 21044  
 (410) 997-0296 Balt. (410) 997-0298 Fax.

P:\2004\15-005\DEG\BAT-1

**SEPTIC TRENCH SIZING**

SYSTEM	APPLICATION RATE (GPD / SF)	MAXIMUM FLOW RATE (GPD)	AREA OF REQUIRED TRENCH (SF)	TRENCH WIDTH (FT)	LENGTH OF REQUIRED TRENCH (LF)	EFFECTIVE DEPTH BEGINS (FT)	TRENCH BOTTOM DEPTH (FT)	TRENCH REDUCTION FACTOR**	ADJUSTED TRENCH LENGTH OF REQUIRED TRENCH (LF)	MINIMUM TRENCH SPACING (FT)	NUMBER OF TRENCHES	PROVIDED TRENCH LENGTH (FT)
PRIMARY	0.6	900	1,500	3	500	4.5	7.0	0.55	275	10.0'	3	275
SECONDARY	0.8	900	1,125	3	375	2.5	5.0	0.55	206.25	10.0'	2	207
TERTIARY	0.8	900	1,125	3	375	3.5	5.0	0.71	266.25	10.0'	3	267

**SOILS TABLE (WITHIN LOD)**

SYMBOL	RATING	NAME	K FACTOR
GpB	(B)	GLENELG LOAM, 3-8% SLOPES.	.20
GmB	(C)	GLENVILLE SILT LOAM, 3-8% SLOPES.	.37

**ON-SITE SEWAGE DISPOSAL SYSTEM:**

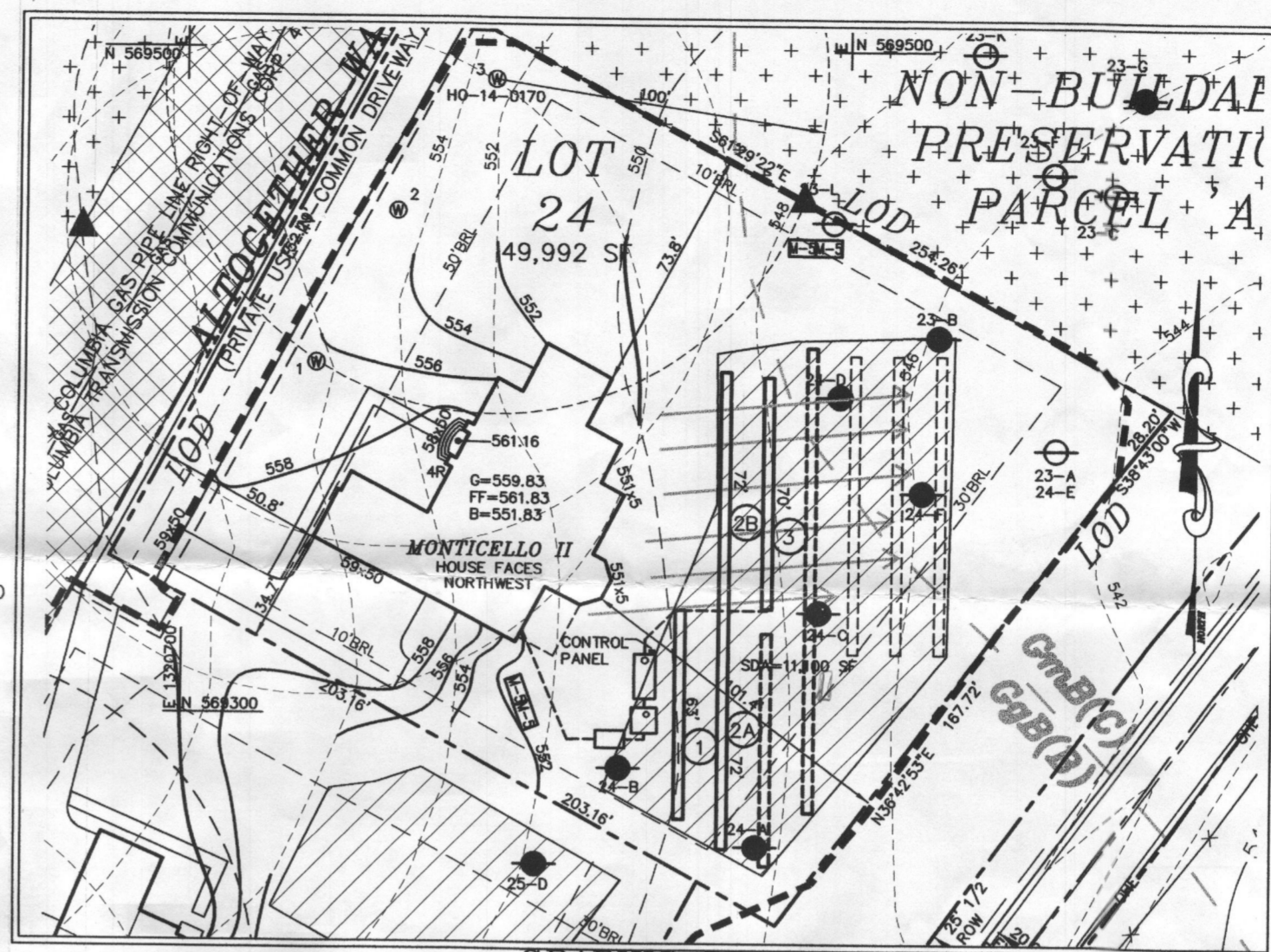
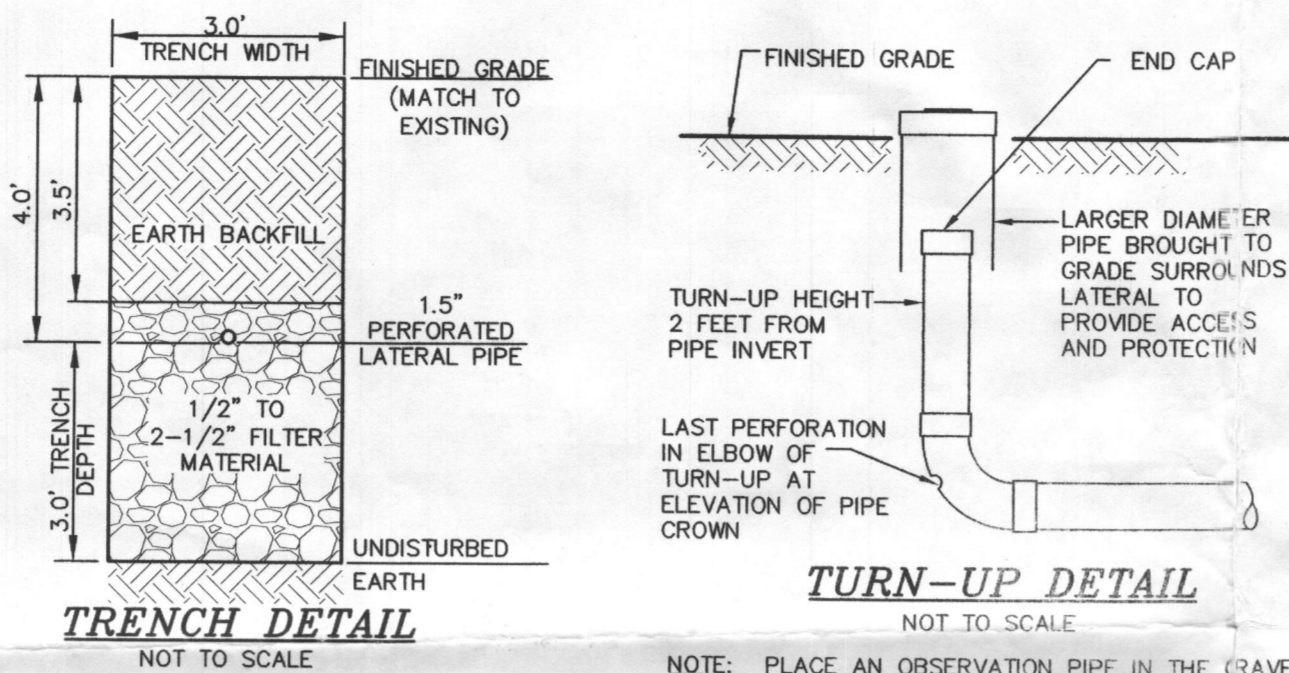
RESIDENTIAL SYSTEM DESIGN: HOOT 1000 BNR  
 6 BEDROOM HOUSE (LIVING AREA = 2,288 SQ.FT.)  
 150 GALLONS X # OF BEDROOMS = VOLUME OF WASTEWATER / DAY  
 150 X 6 = 900 GPD  
 PERC RATE = 16-30 MINUTES/INCH  
 APPLICATION RATE = 0.6 GPD/SQ.FT.  
 DESIGN FLOW + APPLICATION RATE = SQ.FT. OF TRENCH REQUIRED  
 900 + 0.6 = 1,500 SQ.FT.  
 SQ.FT. REQUIRED + WIDTH OF TRENCH = LENGTH OF TRENCH  
 1,500 + 3.0' = 500 FT  
 USE 30' OF GRAVEL BELOW DRAIN PIPE  
 500 X 0.55 = 275  
 USE FOUR (3) TRENCHES (#1-63', #2-144', #3-70')  
 A MINIMUM OF 10' BETWEEN TRENCHES UTILIZING SIDEWALL REDUCTION CREDIT.  
 MINIMUM TANK CAPACITY = 1000 GALLONS

**PRIMARY TRENCH DATA**

TRENCH	EX. GROUND ELEVATION	INVERT ELEVATION	BOTTOM OF TRENCH EL.
1	549.9	545.9	542.9
2	549.1	545.1	542.1
3	548.0	544.0	541.0

**LOW PRESURE DOSING SYSTEM - INITIAL INSTALLATION**

TRENCH	GROUND ELEVATION	PIPE INV. ELEVATION	TRENCH LENGTH (FT)	LATERAL LENGTH (FT)	PERFORMANCE DIAMETER (IN)	PERFORMANCE PRESSURE HEAD (PSI)	PERFORMANCE FLOW RATE (GPM)	PERFORMANCE SPACING (FT)	NUMBER OF PERFORATIONS	TRENCH FLOW RATE (GPM)
1	549.9	545.9	63.00'	57.00'	5/16	2.0	1.63	6.0	10	16.30
2A	549.1	545.1	72.0'	68.0'	5/16	2.8	1.92	8.0'	9	17.28
2B	549.1	544.3	72.0'	68.0'	5/16	2.8	1.92	8.0'	9	17.28
3	548.0	544.0	70.0'	60.0'	5/16	3.9	2.27	8.0'	8	18.16



**GENERAL NOTES:**

- THE SUBJECT PROPERTY IS ZONED RR-DEO PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- PARCEL BACKGROUND:  
 TAX MAP #: 28  
 GRID: 9  
 PARCEL #: 48  
 LOT #: 24  
 DEED REFERENCE: LIBER 5891 FOLIO 307  
 ELECTION DISTRICT: FIFTH  
 ZONING: RR-DEO  
 AREA: 49,992 S.F.  
 DPZ FILES: ECP-13-025, SP-13-010, F-14-095, GP-15-081
- TOPOGRAPHY FOR THE DEVELOPED AREAS IS BASED ON AERIAL SURVEY FLOWN BY WINGS TOPOGRAPHY INC. ON OR ABOUT MARCH 2007.
- PRIVATE WELL AND SEPTIC WILL BE UTILIZED.
- SOILS DATA BASED ON THE USDA SOIL SURVEY OF HOWARD COUNTY, MD, DATED MAY, 2008.
- THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF AT LEAST 100 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS SEWERAGE SYSTEM, THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- ANY CHANGES TO A PRIVATE SEWERAGE EASEMENT SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
- EXISTING WELLS, SEPTIC SYSTEMS, AND SEWERAGE DISPOSAL AREAS WITHIN 100' OF THE PROPERTY AND THOSE WELLS WITHIN 200' DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS OR SEWERAGE DISPOSAL AREAS HAVE BEEN SHOWN.

**BEST AVAILABLE TECHNOLOGY SITE PLAN 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 SPECIFICATIONS.
- THE BLOWER MAY NOT BE LOCATED MORE THAN 100 FEET FROM THE TANK BASED ON 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 (1) 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 THE 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.

**LOW PRESURE DOSING SYSTEM**

NO. OF BEDROOMS: 6  
 TRENCH LENGTH: 63.0'  
 TRENCH #2 = 72.0'  
 TRENCH #3 = 72.0'  
 TRENCH #3 = 70.0'  
 GRAVITY TO TANK  
 END FEED MANIFOLD (TRENCH #1 & #3)  
 CENTER FEED MANIFOLD (TRENCH #2)  
 5/16" LATERAL #1 = 6.0' (FIGURE 4.4)  
 LATERAL #2A = 9.0'  
 LATERAL #2B = 9.0'  
 LATERAL #3 = 8.0'  
 LATERAL #1 = 57.0'  
 LATERAL #2A = 68.0'  
 LATERAL #2B = 68.0'  
 LATERAL #3 = 60.0'  
 LATERAL #1 = 10'  
 LATERAL #2A = 9'  
 LATERAL #2B = 9'  
 LATERAL #3 = 8'  
 LATERAL #1 = 15.2' (FIGURE 4.4)  
 LATERAL #2 = 2.8';  
 LATERAL #3 = 3.9';  
 LATERAL #1 = 1.63 GPM;  
 LATERAL #2A = 1.92 GPM;  
 LATERAL #2B = 1.92 GPM;  
 LATERAL #3 = 2.27 GPM;  
 (NO. OF HOLES x CRITICE DISCHARGE)  
 LATERAL #1 = 16.30;  
 LATERAL #2A = 17.28;  
 LATERAL #2B = 17.28;  
 LATERAL #3 = 18.16;  
 69.02 GPM

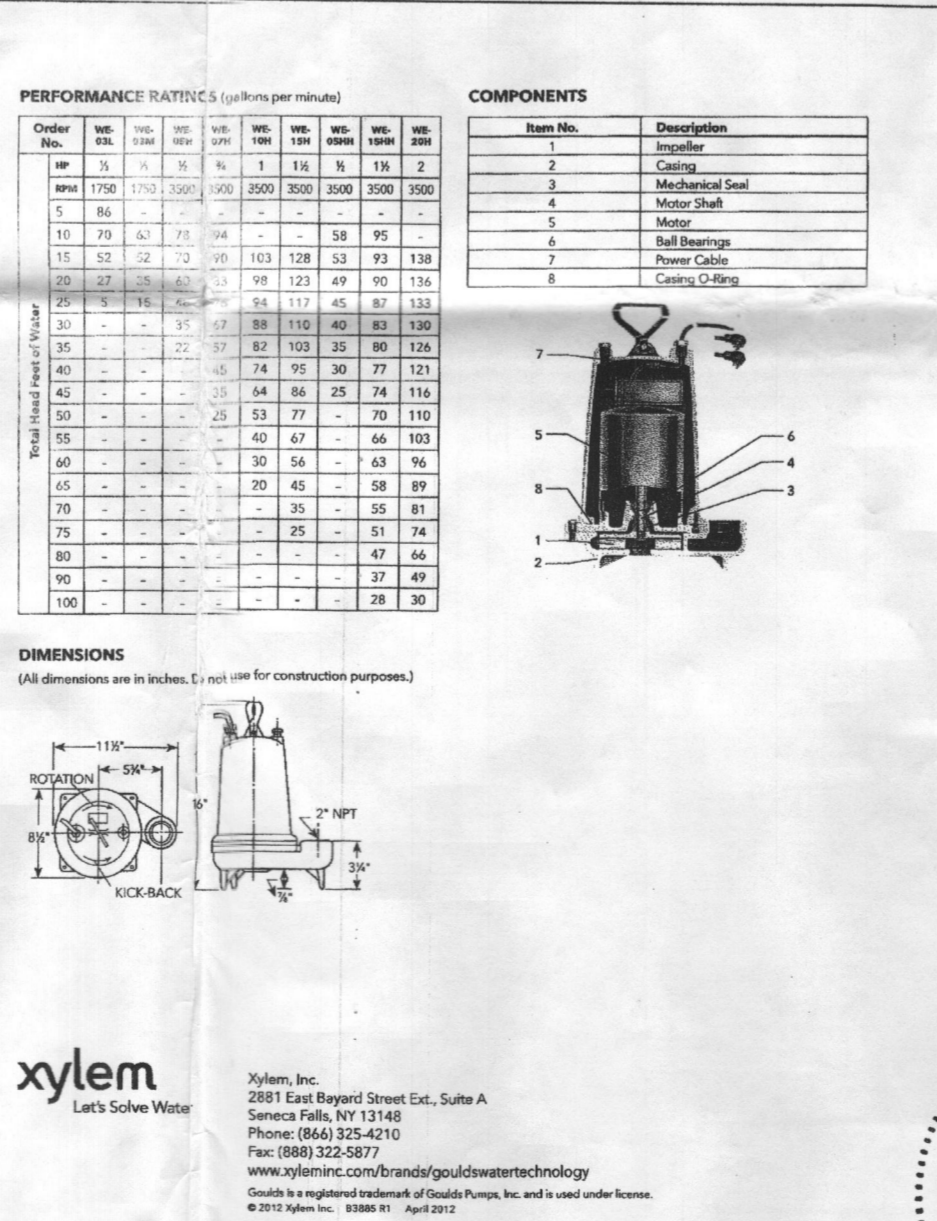
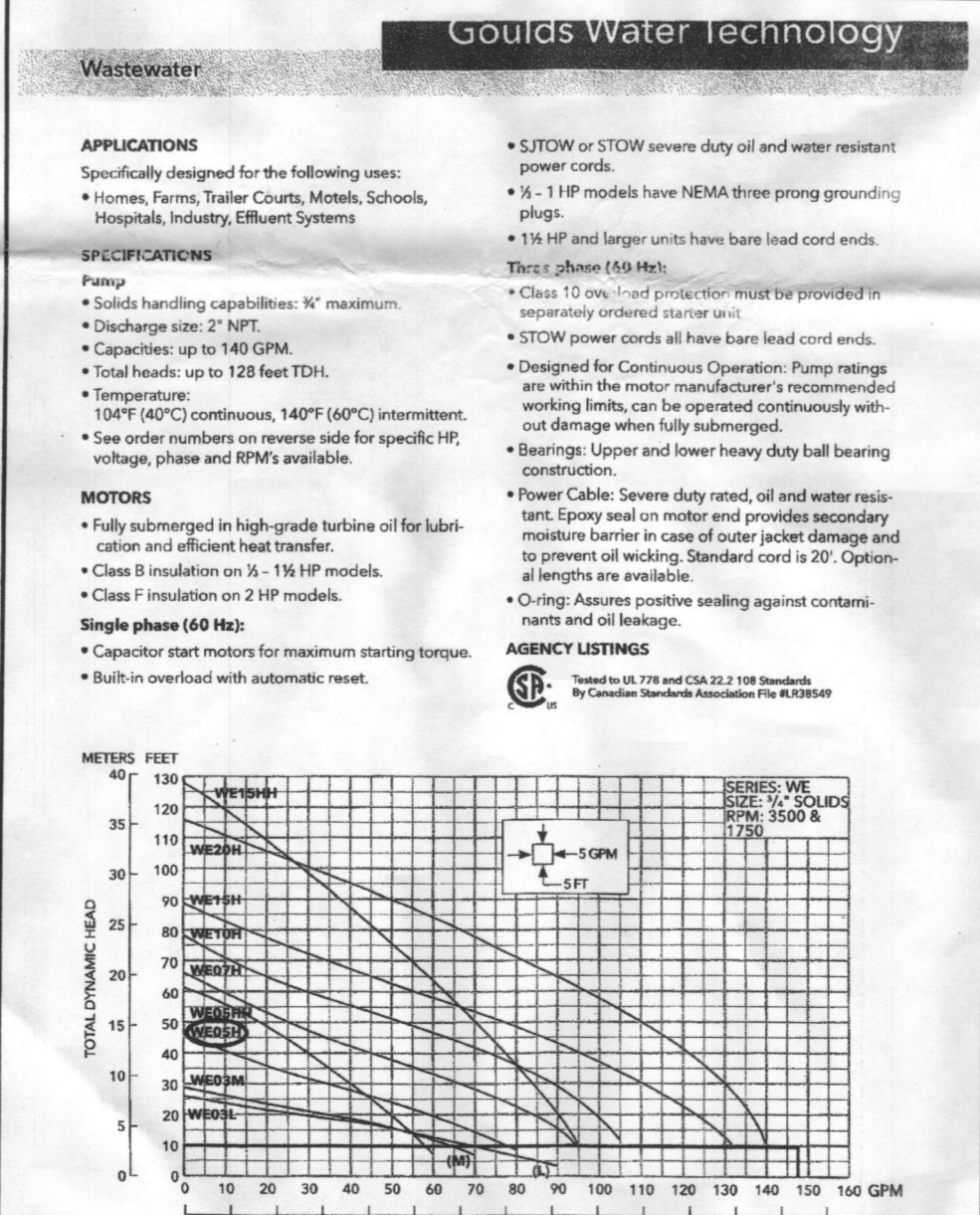
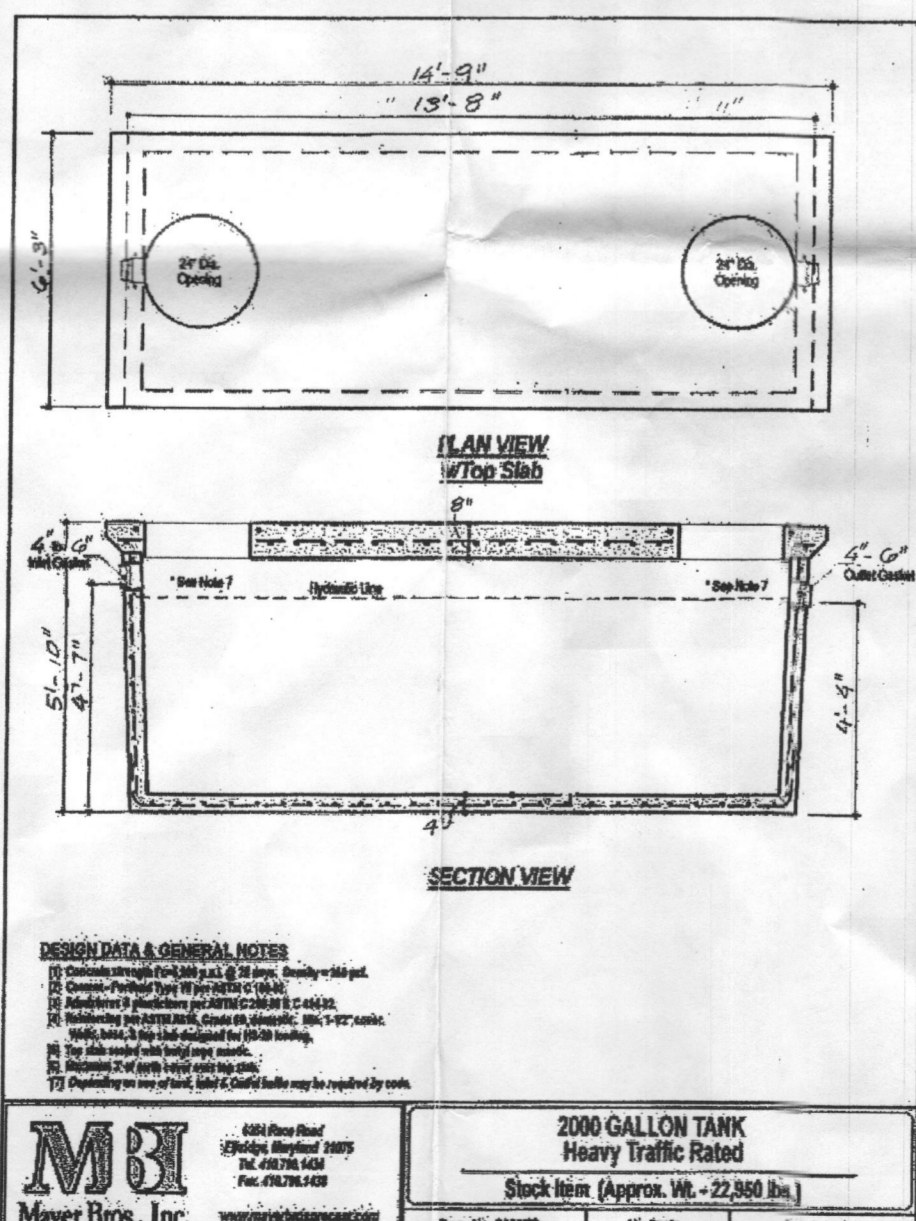
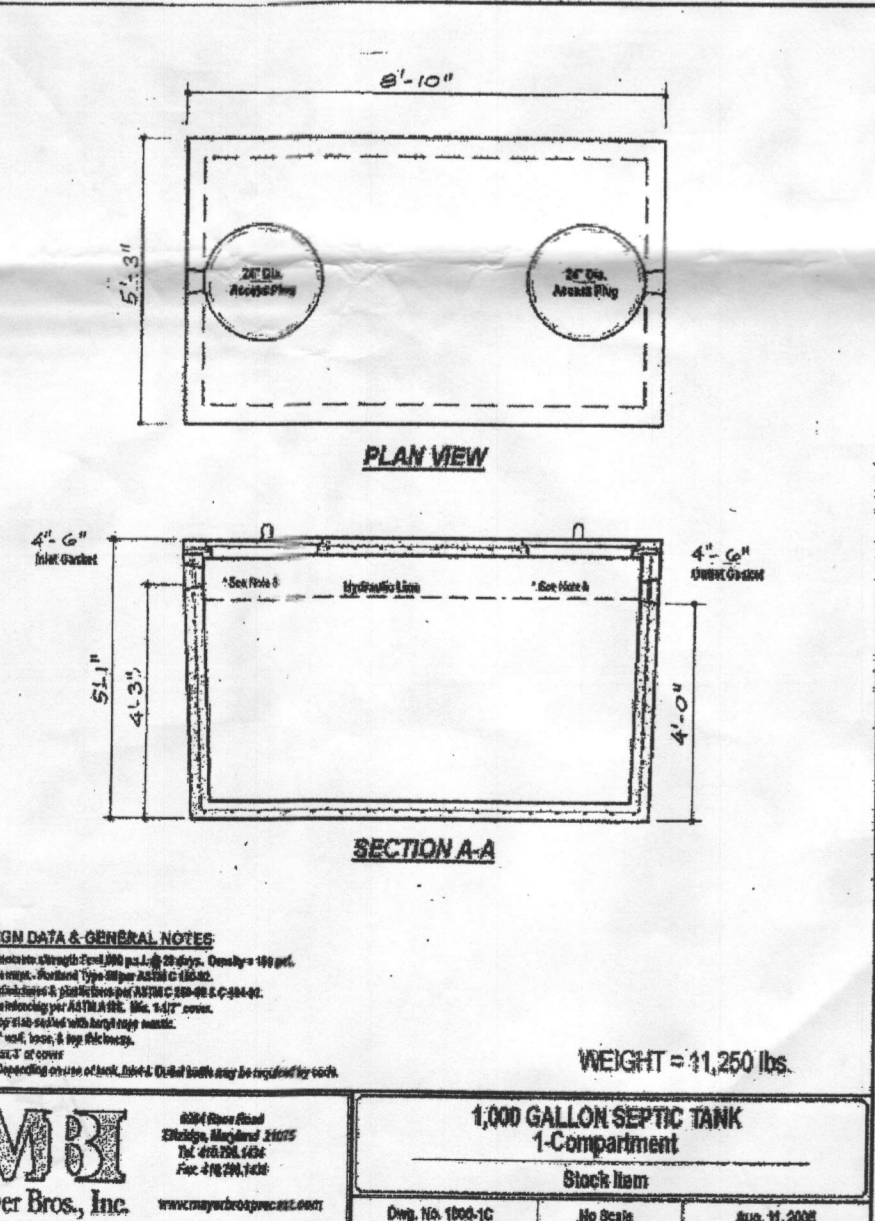
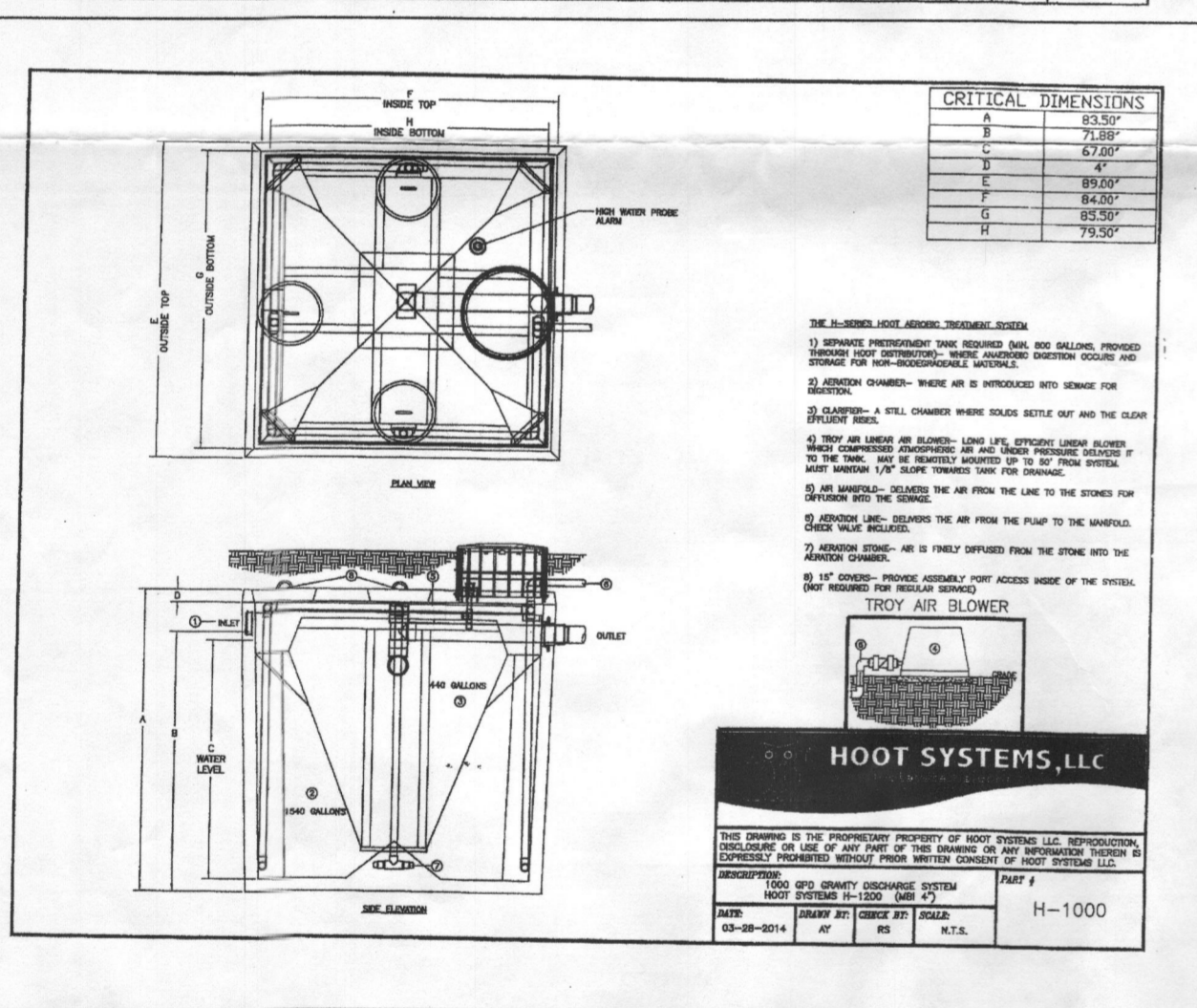
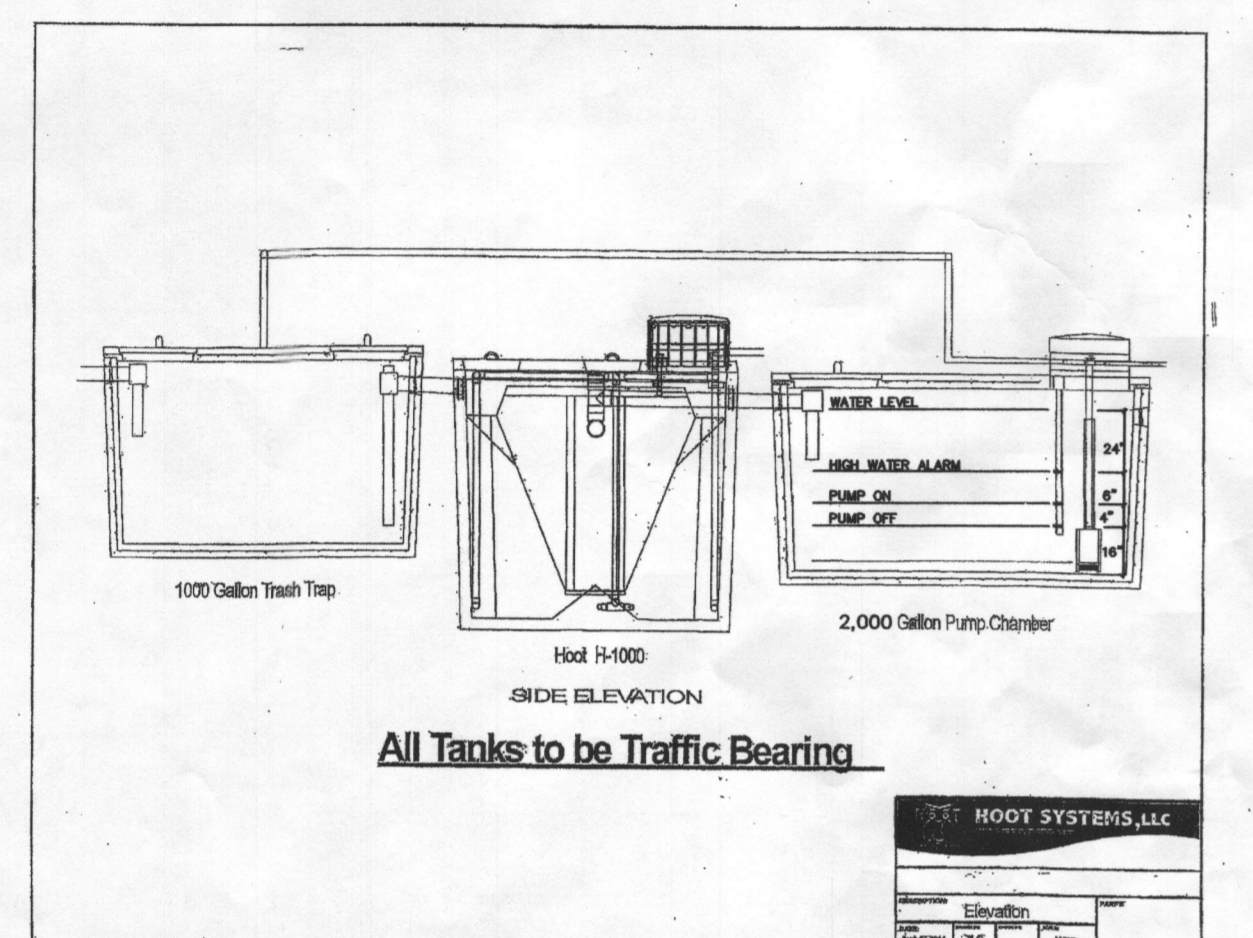
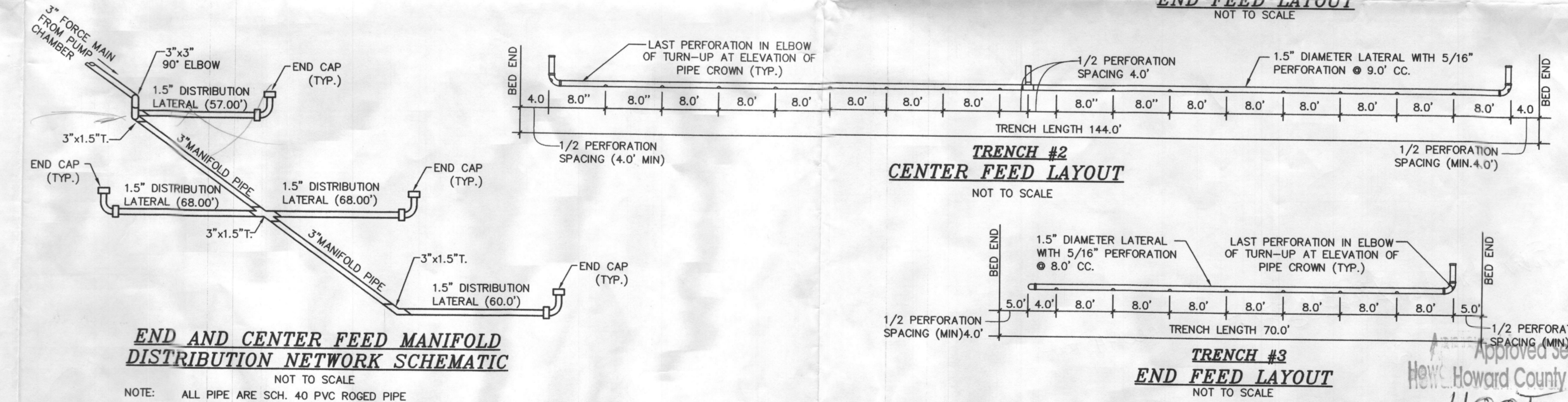
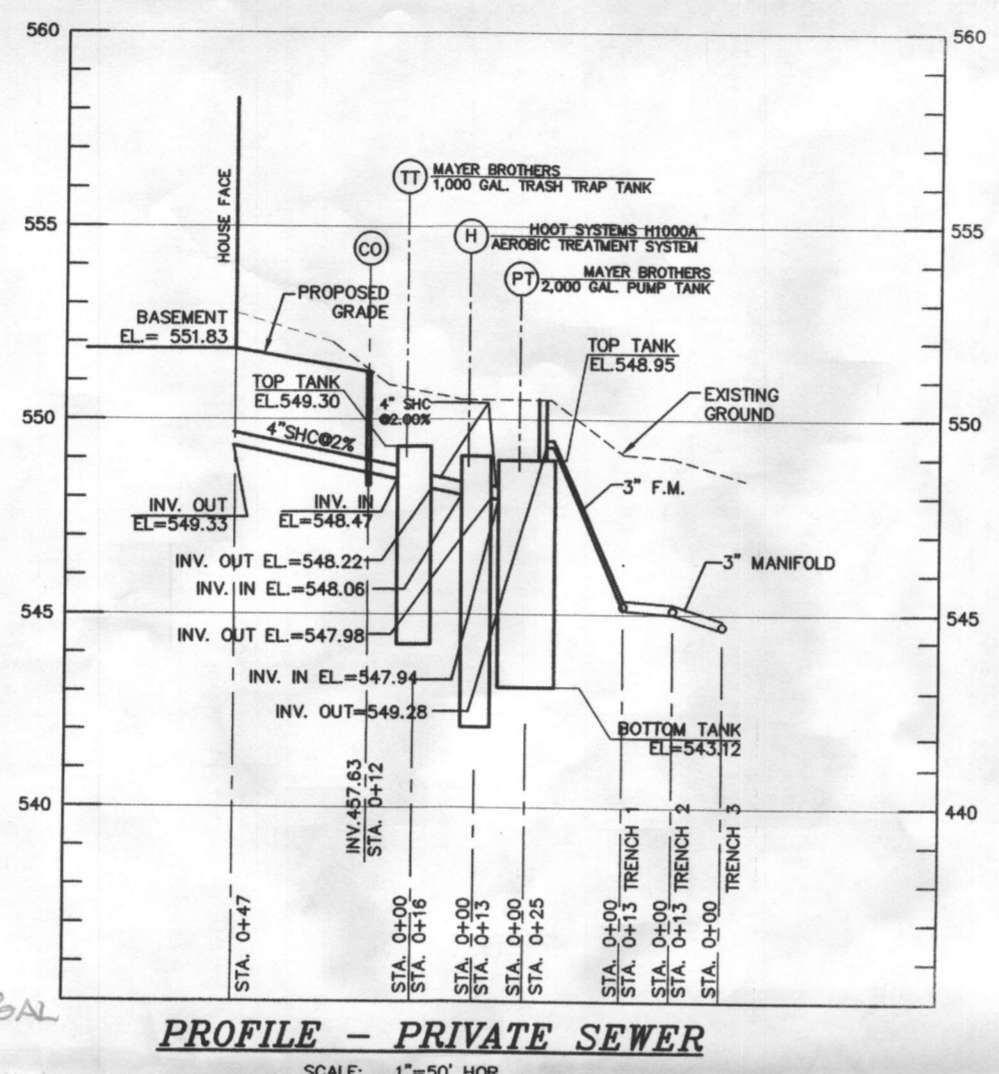
**MINIMUM DOSE:**  
 5xLATERAL VOL+MANIFOLD VOL+FORCE MAIN VOL.  
 FORCE MAIN DIAMETER: 3" (TABLE 4.4)  
 MANIFOLD DIAMETER: 3"  
 LATERAL VOLUME: 26.82 GAL (57.0+68.0+68.0+60.0)(10.6)/100  
 MANIFOLD VOLUME: 7.68 GAL (20x38.4)/100  
 FORCE MAIN VOLUME: 6.91 GAL (18.28x4)/100  
 MINIMUM DOSE: 148.69 GAL (5x26.82+7.68+6.91)  
 6 DISCHARGES PER DAY  
 VOLUME PER DISCHARGE (900/6) 150 GAL > 148.69 GAL

**TOTAL HEAD:**  
 DYNAMIC HEAD+STATIC HEAD+OPERATING HEAD  
 F. M. FRICTION LOSS: 0.21 (TABLE 4.4)  
 MANIFOLD FRICTION LOSS: 0.23 (TABLE 4.4)  
 FITTINGS FRICTION LOSS: 0.99 (3x90°EL, 10' PER FITTING=30' OF PIPE)+  
 2x45' EL. 6' PER FITTING=12' OF PIPE+  
 3x90°TEE, 15' PER FITTING=45' OF PIPE  
 (TABLE 4.4)

LATERAL SAFETY FACTOR: 1.5'  
 STATIC HEAD: 4.5'  
 DISTAL HEAD: 2.0'  
 TOTAL DYNAMIC HEAD: 9.43' (0.17+0.22+0.99+1.5+4.75+2.0)  
 USE GOULDS PUMP W/COSS

**SEWER SYSTEM CHART**

DESCRIPTION	VALUE
BASEMENT ELEVATION	551.83
INVERT OUT OF THE HOUSE	549.33
FINISHED GRADE AT SEPTIC TANK	551.00
INVERT INTO SEPTIC TANK	548.47
INVERT OUT OF SEPTIC TANK	548.22
FINISHED GRADE AT HOOT SYSTEM	550.50
INVERT INTO HOOT SYSTEM	548.06
INVERT OUT OF HOOT SYSTEM	547.89
FINISHED GRADE AT PUMP TANK	550.50
TOP OF TANK	548.95
INVERT INTO PUMP TANK	547.94
INVERT OUT OF PUMP TANK	549.28
PUMP TANK FLOOR	543.45
PUMP OFF	545.28
PUMP ON	545.56
HIGH WATER ALARM	546.56
TOTAL DYNAMIC HEAD	9.43
POSED RATE (69.12 gpm)	150 GPM
PUMP RUNTIME	2.17 MIN.



5023 ALTOGETHER WAY, CLARKSVILLE MD  
**GREENBERRY LOT 24**  
 HOWARD COUNTY  
 FIFTH ELECTION DISTRICT  
 SITE PLAN FOR BAT INSTALLATION

Project: 15-005  
 date: JUNE 2016  
 illustration: MAM  
 scale: 1"=60'  
 approval: RJH

description: revisions

no. date

1 OF 1

MILDENBERG, BOENDER & ASSOC., INC.  
 Surveyors  
 Engineers  
 Planners  
 7550-B Grace Drive, Columbia, Maryland 21044  
 (410) 997-0298 Fax