

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: 5/5/2017 **ONSITE SEWAGE DISPOSAL SYSTEM** P _____

APPROVAL DATE: 8/18/17 **PERMIT: CONSTRUCTION** A 560629-F

PROPERTY ADDRESS: 5620 CHAMBLIS DRIVE, CLARKSVILLE, MD 21029 (TENANT HOUSE AT 5610 CHAMBLIS DRIVE)

SUBDIVISION: GLEN MARY ESTATES LOT: 6 TAX ID: 05-341140

CONTRACTOR: SOUTH CARROLL BACKHOE, INC. EMAIL: _____

CONTRACTOR ADDRESS: 4410 SALEM BOTTOM ROAD, WESTMINSTER, MD 21157 PHONE: 410-596-3618

PROPERTY OWNER: GEORGE DOETSCH EMAIL: _____

OWNER ADDRESS: 5610 CHAMBLIS DRIVE, CLARKSVILLE, MD 21029 PHONE: 410-720-1042

SEPTIC TANK SIZE (GALLONS): 1500 TANK MANUFACTURER: MAYER BROTHERS, INC.

PUMP MODEL: EP 0511 PUMP SIZE 0.5 PUMP TANK CAPACITY: 1500

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: 3 APPLICATION RATE: 1.2

TRENCHES:	LINEAR FEET REQUIRED: <u>84</u>	INLET DEPTH: <u>4.0</u>
	TRENCH WIDTH: <u>2</u>	MAXIMUM BOTTOM DEPTH: <u>7.5</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>4.0</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:	FORCE MAIN MUST BE THERMALLY-WELDED HDPE WITHIN 50 FEET OF ANY WELL ZONE (SEE PLAN.)	

ISSUED BY: R BRICKER ISSUE DATE: 6/12/2017 EXPIRATION DATE: 5/5/2018

- 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 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 _____
- 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

See separate sheet for
as-built drawing

ROAD NAME

TRENCH/DRAINFIELD DATA

WIDTH INLET BOTTOM

2' 4' 7.5'

NUMBER OF TRENCHES 1

TOTAL LENGTH 84'

ABSORPTION AREA 268' + SIDEWALL

DISTRIBUTION BOX LEVEL YES

DISTRIBUTION BOX BAFFLE YES (FLUSH)

DISTRIBUTION BOX PORT YES

SEPTIC TANK DATA

SEPTIC TANK I LEVEL YES

MANUFACTURER MAYER BROS.

CAPACITY 1500 GAL

SEAM LOC TOP

TANK LID DEPTH 2.5-3'

BAFFLES YES

BAFFLE FILTER NO

MANHOLE LOC FRONT + REAR

6" PORT LOC NONE

WATERTIGHT TEST NO

SLOTTED YES

DATE ON LID

PUMP/SEPTIC TANK LEVEL YES

MANUFACTURER MAYER BROS.

CAPACITY 1500 GAL

SEAM LOC TOP

TANK LID DEPTH 1-2'

BAFFLES NO

BAFFLE FILTER NO

MANHOLE LOC REAR

6" PORT LOC NONE

WATERTIGHT TEST NO

SLOTTED NO

DATE ON LID

PRE-CONSTRUCTION:

6/30/17 Met S. Carroll on site for layout. Tanks staked, septic area corners staked. Shot contour + laid out 1 x 84' trench. Pulled 50' off lower well box to find a path for force main from pump tank to D-box w/o needing thermally-welded HDPE. (SC)

INSTALLATION: 7/7/17 House connection made, sewer line run from house to tank location. (SC)

7/10/17 Tanks set + connected to house. Baffles not yet installed in septic tank. (SC)

7/11/17 Trench complete + left open for inspection - 2' wide, 3-3.5' to stone. D-box installed @ trench start. 1 1/4" HDPE f.m. run from fence to D-box. (SC) 7/19/17 HDPE f.m. run from tank to SDA. Need pump + alarm. (SC)

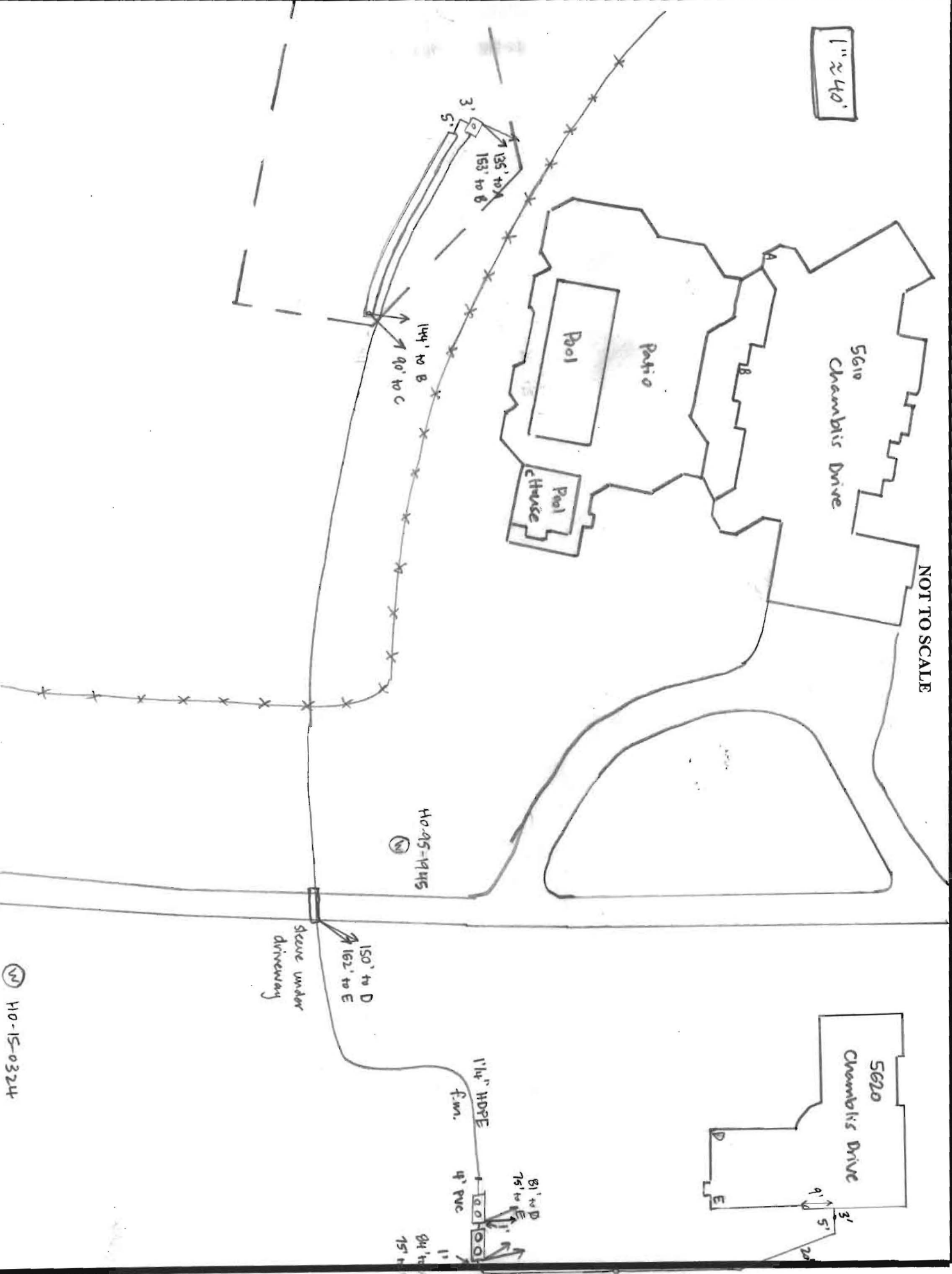
8/17/17 Met builder on site for pump + alarm. Alarm doesn't sound when float triggers - power is good. Pump float also not triggering pump to turn on. Pump pumps effluent to D-box when plugged directly into outlet. Need to fix + redo pump + alarm test. (SC)

8/18/17 Met S. Carroll on site Electric fixed, alarm sounds + floats work. (SC)

FINAL INSPECTOR Sarah Collins DATE OF APPROVAL 8/18/17

1" = 240'

NOT TO SCALE



HO-95-1945

HO-15-0324

LDE, INC.

Planning ♦ Engineering ♦ Surveying

March 22, 2017

Mr. Jeff Williams, Supervisor
Well & Septic Program
Bureau of Environmental Health
Howard County Health Department
8930 Stanford Boulevard
Columbia, MD 21045

RE: Glen Mary Estates / Lot 6 / Tenant House
B16002797

Dear Mr. Williams,

On behalf of the Owner, George L. Doetsch, we request authorization to revise the previously approved "BAT Site Plan" dated 11/1/2016 to a conventional "Onsite Sewage Disposal System Design Plan". The request is in accordance with COMAR 26.04.02.07 effective 11/24/2016 and procedures outlined in the Memo from the Bureau of Environmental Health, Howard County Health Department dated 11/21/2016.

We attach three(3) sets of plans for review and approval.

The above request is being made on my behalf:



GEORGE L. DOETSCH

3.21.2017
DATE

Should have any questions regarding the above, please contact our office.

Very truly yours,

Bruce D. Burton, PE
LDE, Inc.

Cc: Mueller Homes

LDE INC.
 9250 RUMSEY ROAD, SUITE 106
 COLUMBIA, MARYLAND 21045-2026

LETTER OF TRANSMITTAL
 2743

(410) 715-1070 (310) 596-3424
 (410) 715-9540 FAX
 TO HOWARD COUNTY HEALTH DEPARTMENT
 8930 STANFORD BLVD.
 COLUMBIA, MD 21045

DATE	3/28/17	JOB NO.
ATTENTION	ROBERT BRICKER	
RE:	GLEN MARY ESTATES LOT 6 REVISION TO BAT PLAN	

WE ARE SENDING YOU Attached Under separate cover via DIRECT SUBMITTAL the following items:

Shop drawings Prints Plans Samples Specifications

Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
1		1	OWNERS LETTER
3		2	REVISION TO BAT PLAN

THESE ARE TRANSMITTED as checked below:

For approval Approved as submitted Resubmit _____ copies for approval

For your use Approved as noted Submit _____ copies for distribution

As requested Returned for corrections Return _____ corrected prints

For review and comment _____

FOR BIDS DUE _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

RECEIVED REC. BY
 MAR 28 2017
 HOWARD COUNTY HEALTH DEPT.
 FOOD PROTECTION PROGRAM

[Handwritten Signature]

COPY TO MUELLER HOMES

SIGNED: BRUCE BURTON

LDE INC.
Historic Carriage House
7520 Main Street
Suite 203
Sykesville, MD 21784

LETTER OF TRANSMITTAL
2747

TO HOWARD COUNTY HEALTH DEPARTMENT
8930 STANFORD BLVD
COLUMBIA, MD 21045

DATE	5/8/17	JOB NO.
ATTENTION	ROBERT BRICKER	
RE:	GLEN MARY ESTATES	
	LOT 6	

WE ARE SENDING YOU Attached Under separate cover via DIRECT SUBMITTAL the following items:

Shop drawings Prints Plans Samples Specifications

Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
3		2	ONSITE SEWAGE SYSTEM PLAN

THESE ARE TRANSMITTED as checked below:

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REMARKS _____

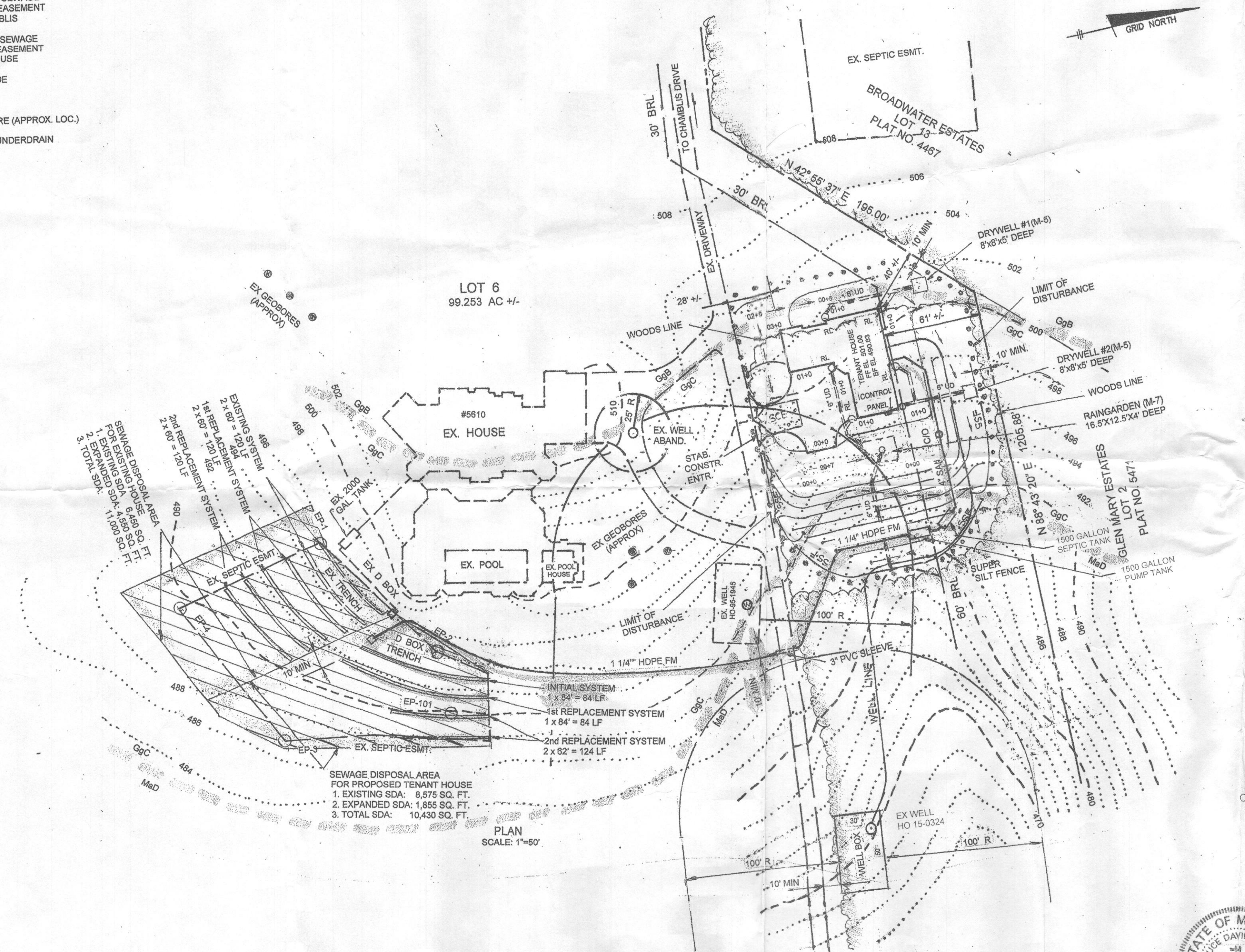
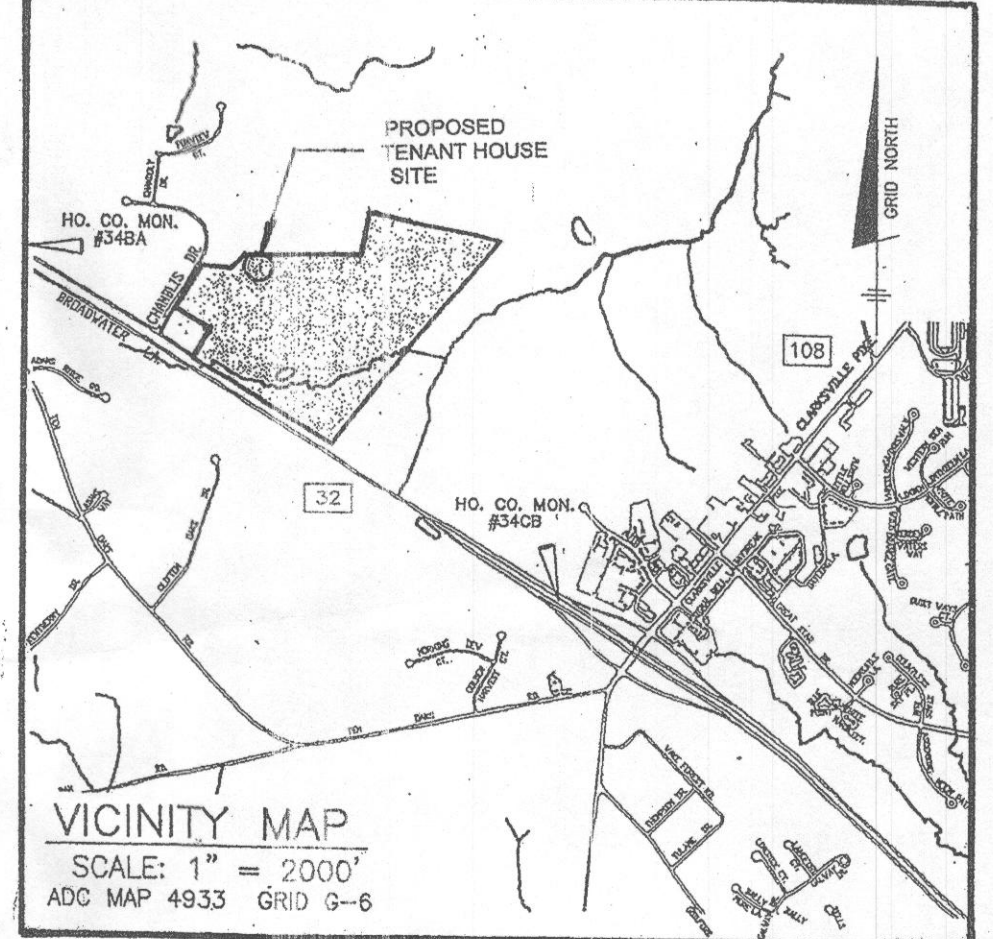
REC. BY Shirley Beatty

COPY TO MUELLER HOMES

SIGNED: BRUCE BURTON

- LEGEND**
- - - 10' INDEX CONTOUR
 - 2' INDEX CONTOUR
 - EXISTING PERCOLATION TEST LOCATION
 - ▭ EXISTING SEWAGE DISPOSAL EASEMENT
 - ▨ EXPANDED SEWAGE DISPOSAL EASEMENT 5610 CHAMBLIS
 - ▩ EXPANDED SEWAGE DISPOSAL EASEMENT TENANT HOUSE
 - SOILS DIVIDE
 - ⊙ EX. WELL
 - EX. GEOBORE (APPROX. LOC.)
 - SOLID PVC UNDERDRAIN

- SOILS LEGEND**
- | | | |
|-----|--------------|------------------|
| GgB | GLENELG LOAM | 3% - 8% SLOPES |
| GgC | GLENELG LOAM | 8% - 15% SLOPES |
| MaD | MANOR LOAM | 15% - 25% SLOPES |



- GENERAL NOTES**
- Existing Zoning: RC-DEO per 10/06/13 Comprehensive Zoning Plan.
 - Plat Reference: #12801
 - Total Area of Lot: 99.253 Acres +/-
 - The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.
 - All existing wells and septic systems within 100 feet of the lot which may effect this proposal have been shown.
 - The topography shown is field run by Benchmark Engineering Inc. on 6/18/08.
 - The well shall be drilled prior to Health Department approval of the building permit for the proposed tenant house (B16002797). It is the developer's responsibility to schedule the well drilling prior to building permit submission. It will not be considered "government delay" if the well drilling holds up Health Department approval of Building Permit B16002797.
 - Any changes to the Private Sewage Easement shall require a Revised Percolation Certification Plat.
 - The Howard County Health Department previously approved the Sewage Disposal Area shown on this plan as part of the Building Permit for 5610 Chamblis Drive (B10001608).
 - The location of the six (6) geobores near #5610 Chamblis Drive are approximate. The shown locations have been obtained from Health Department records and are derived from the well driller's sketches for well HO-95-2037.
 - The HDPE Force Main shall be thermally welded.

Approved Septic System Plan
 Howard County Health Department
 1500 gal Septic Tank &
 1500 gal Pump Chamber
 w/ 60 GALS EPO511 pump or equiv.
R. B. B. 5/10/17
 Signature Date
 5620 Chamblis Dr.

OWNER: GEORGE L. DOETSCH
 5610 CHAMBLIS DRIVE
 CLARKSVILLE, MD 21029
 410.309.1200

BUILDER: MUELLER HOMES INC.
 7520 MAIN STREET
 SUITE 201
 SYKESVILLE, MD 21784
 410.549.4444

PURPOSE NOTE
 THE PURPOSE OF THIS PLAN REVISES THE PREVIOUSLY APPROVED "BAT SITE PLAN" DATED 11/01/2016 TO A CONVENTIONAL "ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN".

This area designates a private sewage easement of at least 10,000 square feet for each residence as required by the Maryland Department of the Environment for individual sewage disposal. Improvements of any nature in this easement are restricted. This easement 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 revised sewage easement shall not be necessary.



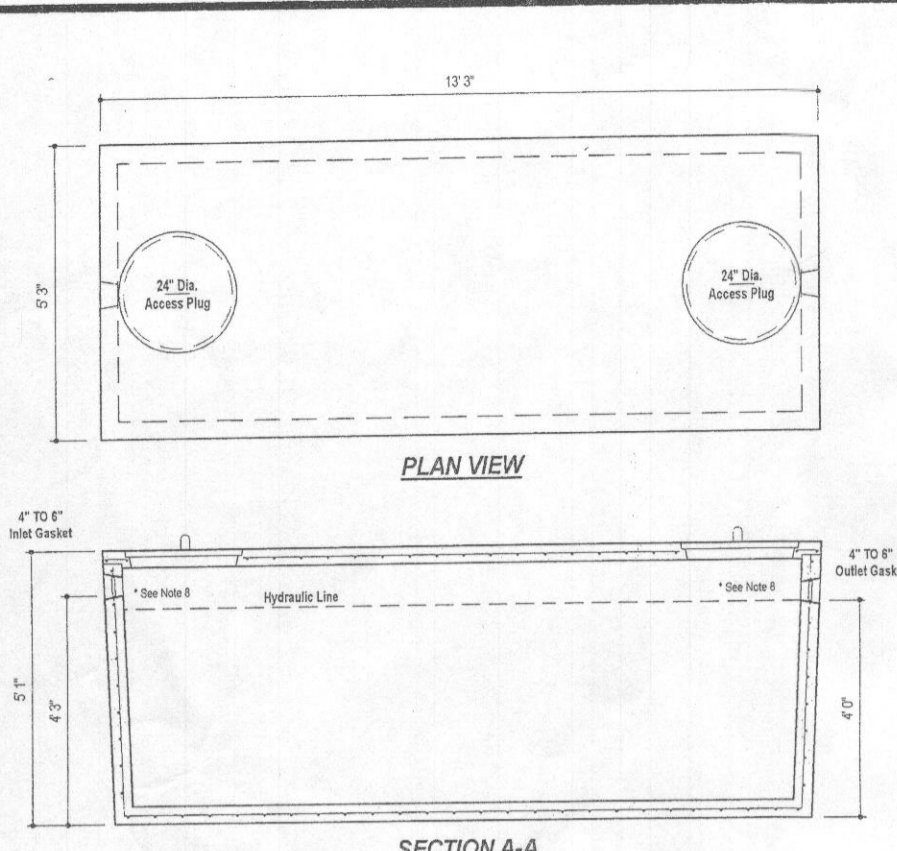
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19184, EXPIRATION DATE: 6/30/17.

Bruce D. Burton 5/10/17
 BRUCE D. BURTON DATE

NO	DATE	REVISION
1	3/27/17	REVISE FROM BAT SYSTEM TO CONVENTIONAL

ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN
GLEN MARY ESTATES
 LOT 6
 TENANT HOUSE
 (B 16002797)
 TAX MAP 34 GRID 5 PARCEL 15
 TAX ACCOUNT #05-341140
 5TH ELECTION DISTRICT HOWARD COUNTY, MD
 DATE: 3/2017 SCALE: AS SHOWN
 SHEET 1 OF 2

LDE Inc.
 Engineers • Surveyors • Planners
 Historic Carriage House • 7520 Main Street • Suite 203 • Sykesville, Maryland • 21784
 (410)795-6391 • (410)795-6392 • FAX (410)795-9540 • www.Landsurveyormd.com



DESIGN DATA & GENERAL NOTES

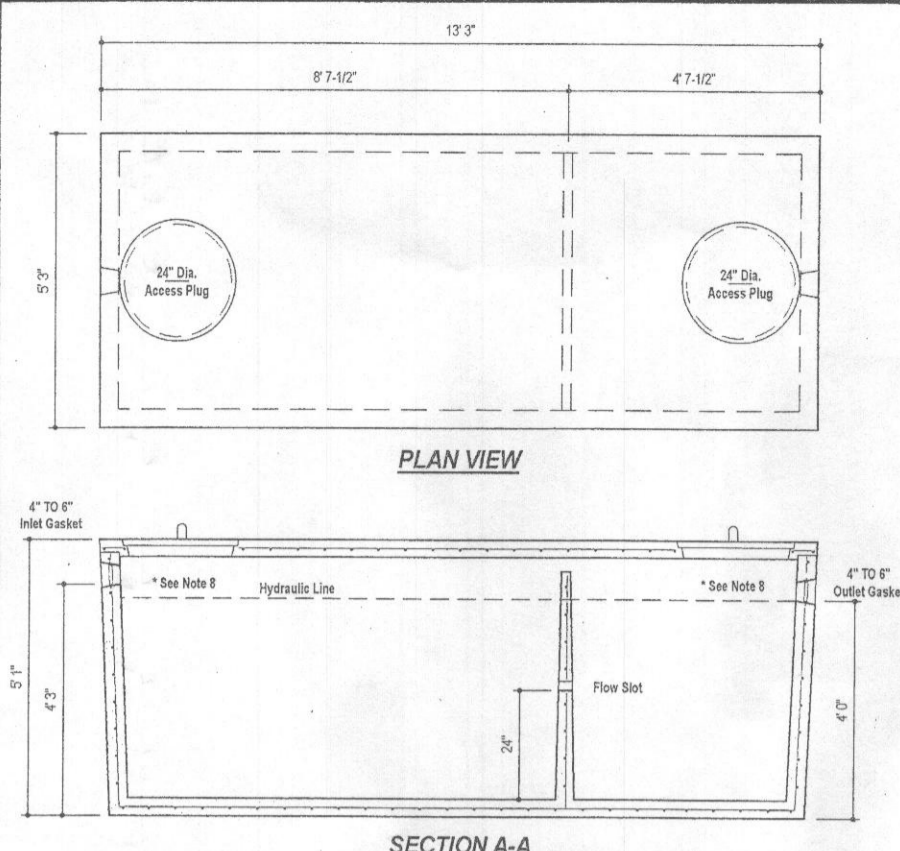
- Concrete strength $F_c=4,000$ p.s.i. @ 28 days. Density = 150 pcf.
- Concrete - Portland Type III per ASTM C 150-02.
- Admixtures & plasticizers per ASTM C 260-86 & C 494-02.
- Reinforcing per ASTM A186. Min. 1-1/2" cover.
- Top slab sealed with butyl rope mastic.
- 4" wall, base, & top thickness.
- Max 3" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

WEIGHT = 16,000 lbs.

1,500 GALLON SEPTIC/PUMP TANK
1-Compartment
NON-Traffic MAX 3 ft. OF COVER

Mayer Bros., Inc. 6364 Race Road, Elkridge, Maryland 21075. Tel: 410.796.1434 Fax: 410.796.1438 www.mayerbrosprecast.com

Dwg. No. 1900-1C No Scale Aug. 11, 2008



DESIGN DATA & GENERAL NOTES

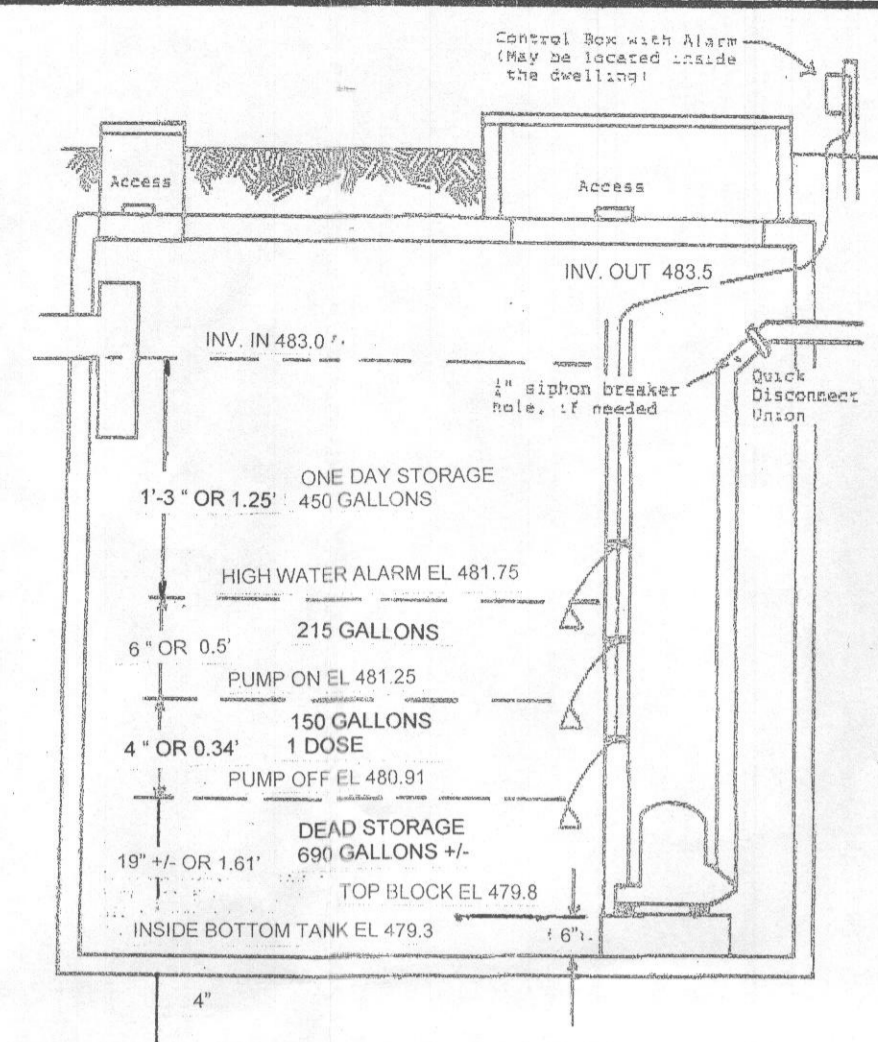
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- Concrete - Portland Type III per ASTM C 150-02.
- Admixtures & plasticizers per ASTM C 260-86 & C 494-02.
- Reinforcing per ASTM A186. Min. 1-1/2" cover.
- Top slab sealed with butyl rope mastic.
- 4" wall, base, & top thickness.
- Max 3-1/2" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

WEIGHT = 16,750 lbs.

1,500 GALLON TANK (Non-Traffic)
2-Compartment
Stock Item

Mayer Bros., Inc. 6364 Race Road, Elkridge, Maryland 21075. Tel: 410.796.1434 Fax: 410.796.1438 www.mayerbrosprecast.com

Dwg. No. 1900-2C No Scale Aug. 11, 2008



TYPICAL PUMP CHAMBER DETAIL

PUMP SYSTEM DESIGN

- DESIGN VOLUME : 450 GPD
- 3 BEDROOMS x 150/ BR
- FORCE MAIN SIZE: 1 1/4" HDPE
- TOTAL DESIGN HEAD: 23.24'
 - STATIC HEAD: 11.09'
 - EL@ BOX 492.0 - EL@ PUMP/OFF 480.91
 - FRICTION HEAD: 12.15'
 - PIPE LENGTH: 390'
 - EQUIV. PIPE LENGTH: 7.2'
 - 3 = 1 1/4" 45' HB: 3' EACH
 - TOTAL PIPE LENGTH : 397.2'
 - TRY PUMP RATE @ 15 GPM
 - 3.97.2 x 3.06 = 12.15'
- TRIAL PUMP SIZE :
 - FLOW x TDH x SPEC. GRAVITY
 - 3960 x 0.4 EFFICIENCY
 - 30 GPM x 23.24' x 1 = 0.440 HP
 - 3960 x 0.4
 - USE GOULDS MODEL EP 0511 OR EQUIVALENT
- DOSE VOLUME : 150 GALLONS/ DOSE (3 DOSES/ DAY)
- PUMP RATE : 30 GPM
- RUN TIME FOR PUMP : 5.0 MINUTES (150 GALLON DOSE ÷ 30 GPM)

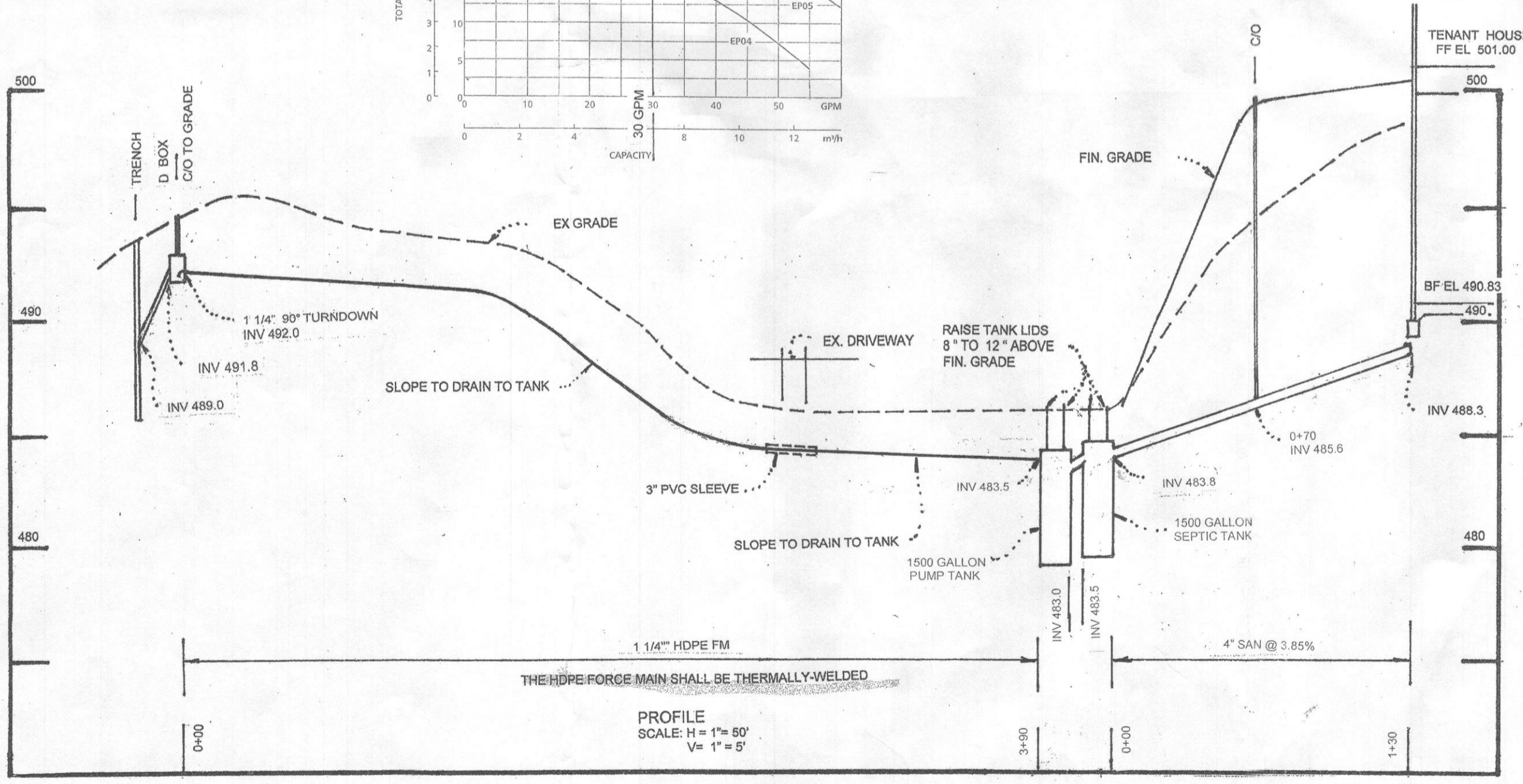
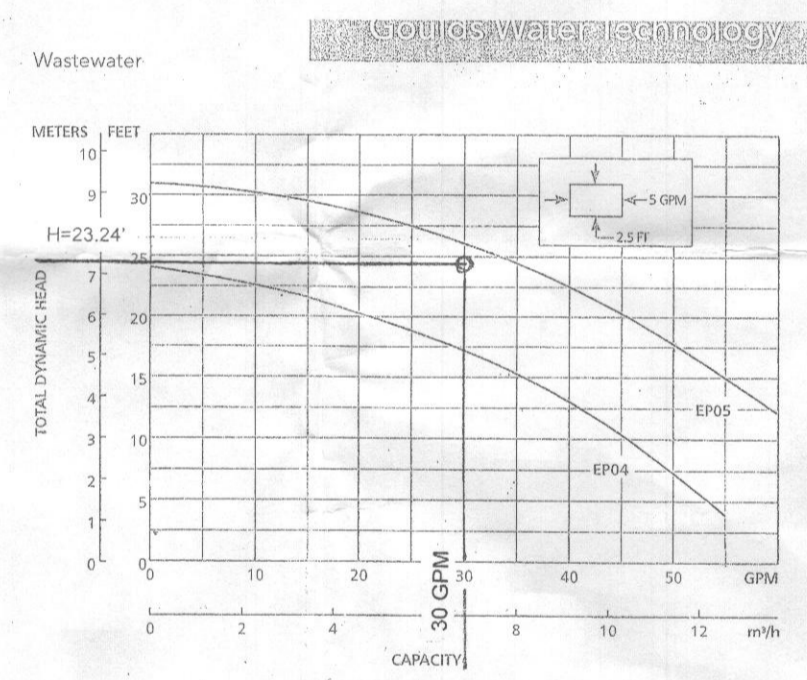
SEPTIC SYSTEM NOTES

- 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 earth cover over the tank is 3 feet. Greater earth cover will require a heavy load bearing tank.
- Electrical work for the installation must be performed by a licensed electrician.
- The well (tag # HO-15-0324) has been field located and is accurately shown.
- All wells and septic systems located within 100' of the property boundaries and 200' down gradient of any wells and/or septic systems have been shown.
- The HDPE Force Main shall be thermally-welded.

SEWAGE SYSTEM DESIGN DATA

- INVERT @ FOUNDATION OF HOUSE: 488.3 +/-
- 1500 GALLON SEPTIC TANK
 - 3 BEDROOMS
 - FINISHED GRADE @ TANK: 486.0 +/-
 - INVERT IN: 483.8 +/-
 - INVERT OUT: 483.5 +/-
- 1500 GALLON PUMP TANK
 - FINISHED GRADE @ TANK: 486.0 +/-
 - INVERT IN: 483.0 +/-
 - INVERT OUT: 483.5 +/-
- DISTRIBUTION BOX / CLEANOUT TO GRADE:
 - FINISHED GRADE @ BOX: 494.0 +/-
 - INVERT IN: 492.0 +/- (1 1/4" 90° TURN DOWN)
 - INVERT OUT: 491.8 +/-
- TRENCH :
 - 2' WIDE x 84" LENGTH x 3.5' STONE DEPTH
 - FINISHED GRADE OVER: 493.0 +/-
 - INVERT: 489.0 +/-
 - BOTTOM: 485.5 +/-

NOTE: TRENCH DESIGN MAY BE REVISED AT TIME OF INSTALLATION BASED ON SITE CONDITIONS



TRENCH DESIGN CALCULATIONS

- DESIGN FLOW : 450 GPD
- 3 BEDROOMS x 150 GPD/ BR
- APPLICATION RATE : 1.2 GPD/ SQ FT
- EFFECTIVE AREA BEGINNING DEPTH : 4.5'
- BOTTOM MAXIMUM DEPTH : 7.5'
- REQUIRED DRAINFIELD AREA : 375 SQ FT (450 GPD ÷ 1.2 GPD/ SQ FT)
- SIDEWALL REDUCTION CREDIT : 0.44
- WIDTH OF TRENCH : 2'

$$\frac{W+2}{W+1+2D} \times 100 = \frac{2+2}{2+1+2(3.0)} \times 100$$
- LINEAR LENGTH OF TRENCH : (1) 84' (375 SQ FT x 0.44 - 2' = 82.5')
- MINIMUM TRENCH SPACING : USE 10' MIN. (2D + W = 2(3.0) + 2' = 8' MIN. EDGE TO EDGE)

NOTE: TRENCH DESIGN MAY BE MODIFIED AT INSTALLATION BASED ON SITE CONDITIONS

OWNER: GEORGE L. DOETSCH
5610 CHAMBLIS DRIVE
CLARKSVILLE, MD 21029
410.309.1200

BUILDER: MUELLER HOMES INC.
7520 MAIN STREET
SUITE 201
SYKESVILLE, MD 21784
410.549.4444

PURPOSE NOTE
THE PURPOSE OF THIS PLAN REVISES THE PREVIOUSLY APPROVED "BAT SITE PLAN" DATED 11/01/2016 TO A CONVENTIONAL "ONSITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN".



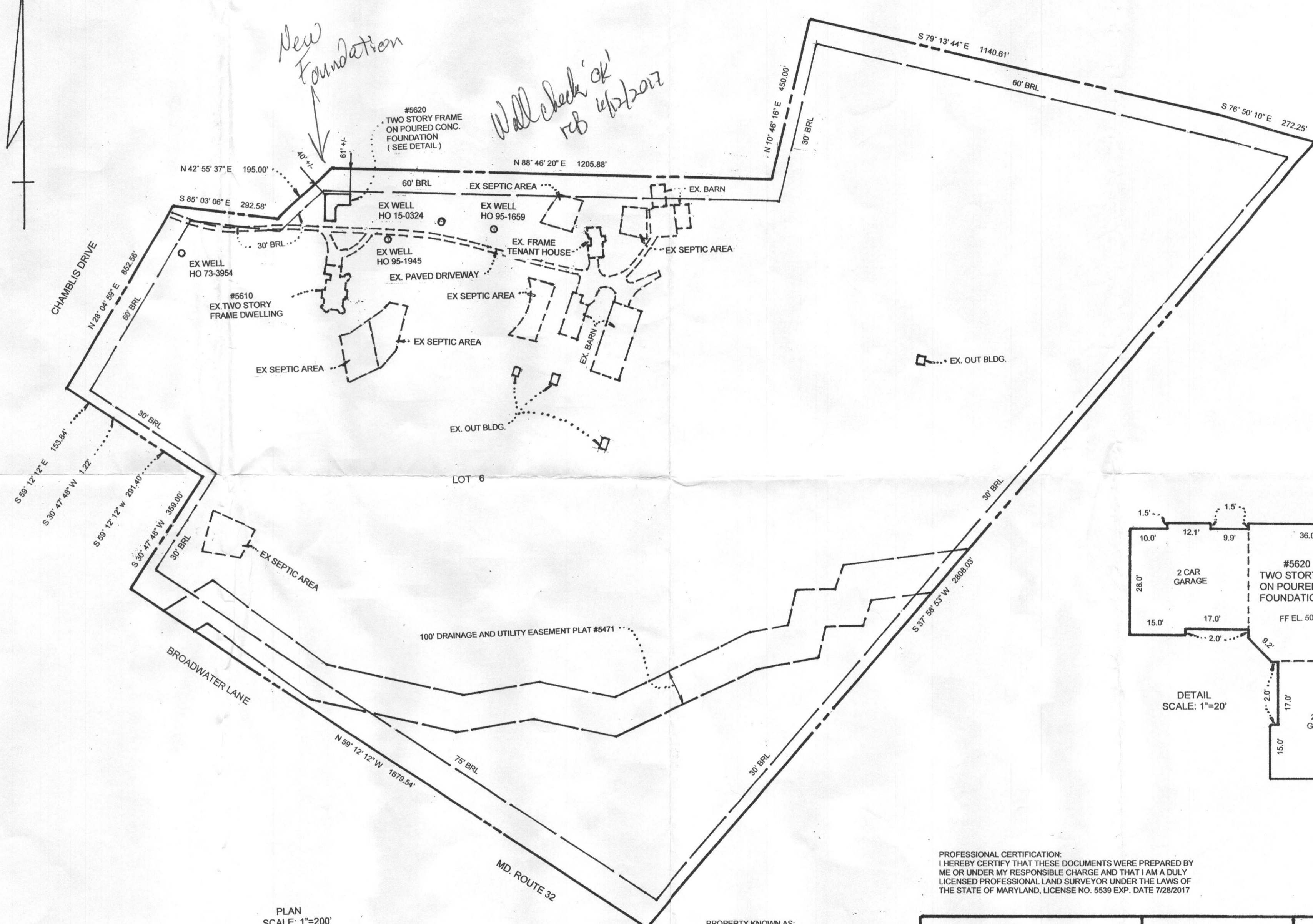
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Bruce D. Burton 5/10/17
BRUCE D. BURTON DATE

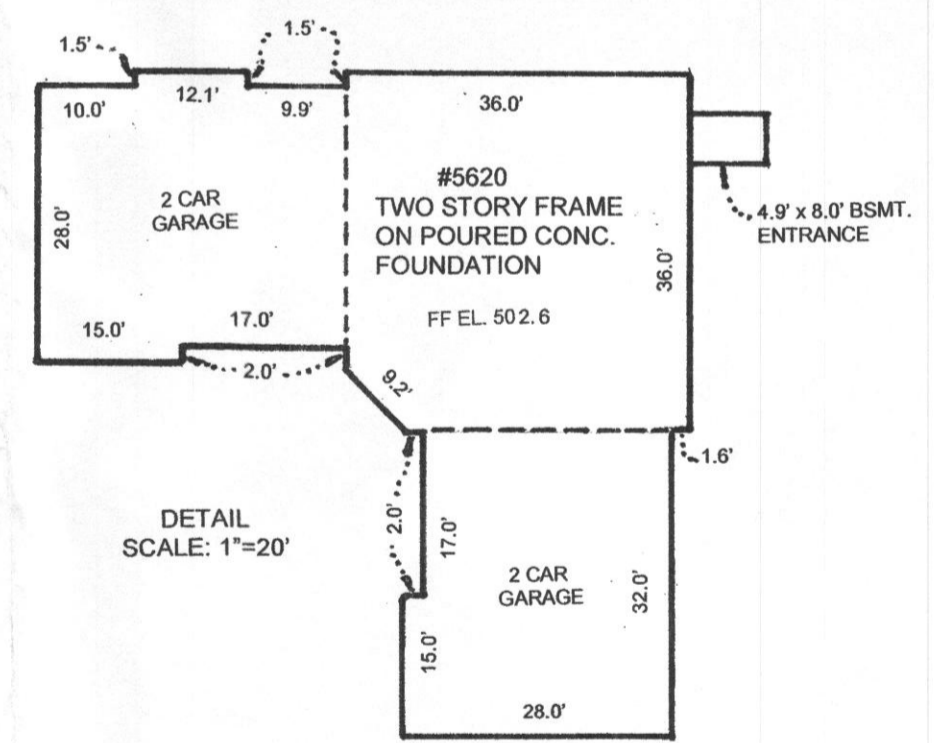
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LOT 6
TENANT HOUSE
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TAX MAP 34 GRID 5 PARCEL 15
TAX ACCOUNT #05-341140
5TH ELECTION DISTRICT HOWARD COUNTY, MD
DATE: 3/2017 SCALE: AS SHOWN
SHEET 2 OF 2

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NO	DATE	REVISION
1	3/22/17	REVISE FROM BAT SYSTEM TO CONVENTIONAL



PLAN
SCALE: 1"=200'



DETAIL
SCALE: 1"=20'

FOUNDATION
LOCATION DRAWING
FF EL. 502.6

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY
ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY
LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF
THE STATE OF MARYLAND, LICENSE NO. 5539 EXP. DATE 7/28/2017

PROPERTY KNOWN AS:
#5620 CHAMBLIS DRIVE
LOT 6
GLEN MARY ESTATES
LOTS 3, 4, 5 AND 6
PLAT #12801
A RESUBDIVISION OF LOT 1
GLEN MARY ESTATES
LOTS 1 AND 2
PLAT #5471
TAX MAP 34 GRID 5 PARCEL 15
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

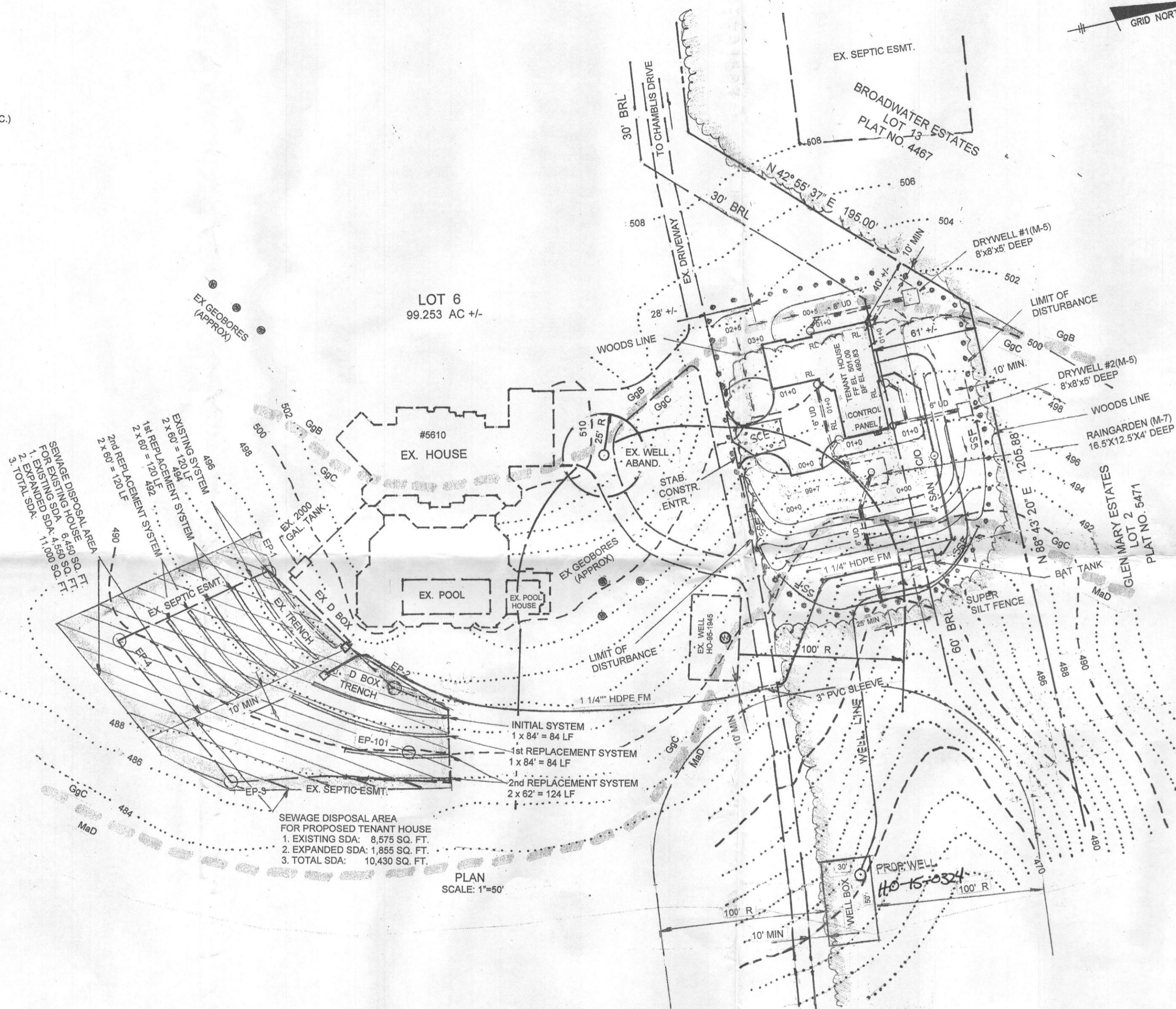
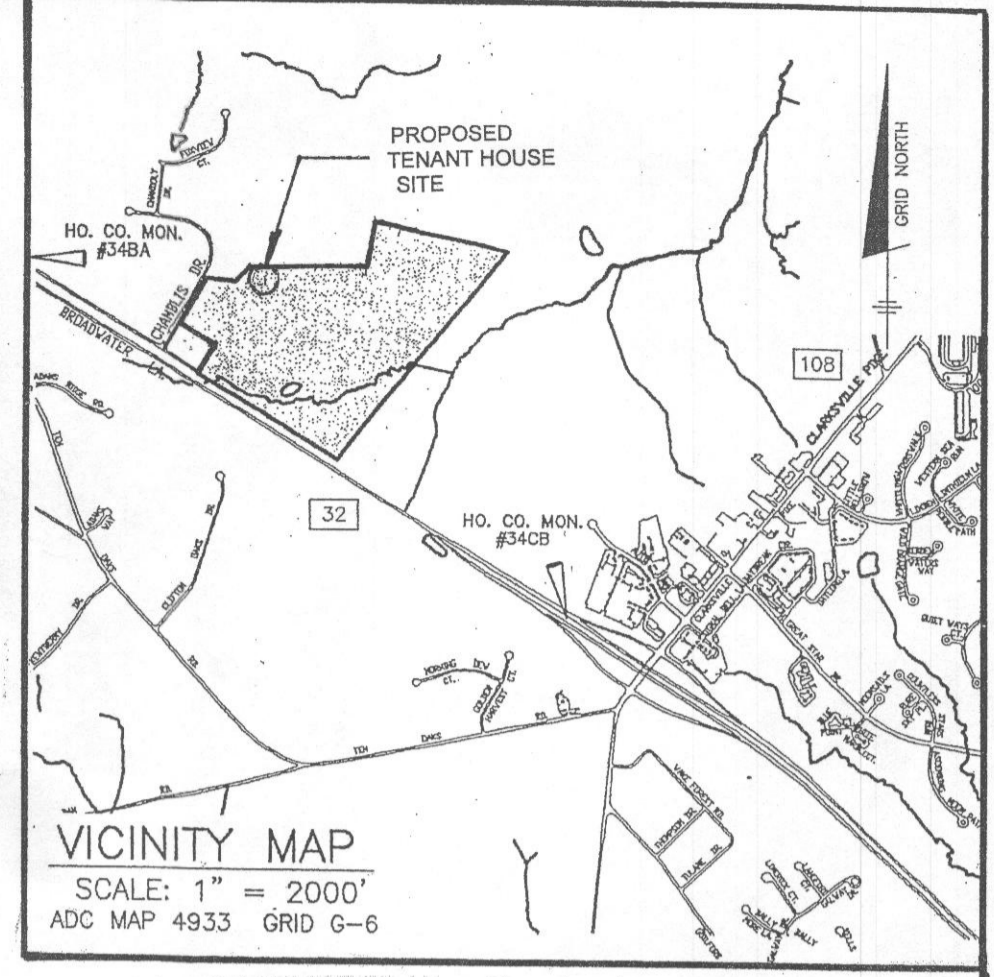
THIS PLAT CAN NOT BE USED TO ESTABLISH
PROPERTY LINES OR PROPERTY CORNERS

CERTIFICATION	SEAL	SCALE: AS SHOWN	DATE: 2/27/2017
<p>THIS IS TO CERTIFY THAT I HAVE SURVEYED THE PROPERTY KNOWN AS: #5620 CHAMBLIS DRIVE THE INFORMATION SHOWN HEREON HAS BEEN ESTABLISHED BY CURRENT ACCEPTABLE PROCEDURES AND FROM AVAILABLE RECORD INFORMATION. THIS DRAWING IS TO BE USED FOR TITLE TRANSFER FINANCING OR REFINANCING ONLY AND IS NOT TO BE USED FOR THE ESTABLISHMENT OF PROPERTY LINES, LOCATION OF FENCES, GARAGES, BUILDINGS, OR OTHER EXISTING OR FUTURE IMPROVEMENTS.</p>	<p>Walter Park</p>	<p>LDE Inc. Engineers • Surveyors • Planners Historic Carriage House 7520 Main Street • Suite 203 Sykesville, Maryland • 21784 (410)795-6391 • (410)795-6392 • FAX(410)795-9540 www.Landsurveyormd.com</p>	<p>DRAWING: LDE</p>

- LEGEND**
- - - 10' INDEX CONTOUR
 - 2' INDEX CONTOUR
 - EXISTING PERCOLATION TEST LOCATION
 - ▭ EXISTING SEWAGE DISPOSAL EASEMENT
 - ▨ EXPANDED SEWAGE DISPOSAL EASEMENT 5610 CHAMBLIS
 - ▨ EXPANDED SEWAGE DISPOSAL EASEMENT TENANT HOUSE
 - SOILS DIVIDE
 - ⊙ EX. WELL
 - EX. GEOBORE (APPROX. LOC.)
 - SOLID PVC UNDERDRAIN

SOILS LEGEND

GgB	GLENELG LOAM	3% - 8% SLOPES
GgC	GLENELG LOAM	8% - 15% SLOPES
MaD	MANOR LOAM	15% - 25% SLOPES



- GENERAL NOTES**
- Existing Zoning: RC-DEO per 10/06/13 Comprehensive Zoning Plan.
 - Plat Reference: #12801
 - Total Area of Lot: 99.253 Acres +/-
 - The lot shown hereon complies with the minimum lot area and ownership width as required by the Maryland Department of the Environment.
 - All existing wells and septic systems within 100 feet of the lot which may effect this proposal have been shown.
 - The topography shown is field run by Benchmark Engineering Inc. on 6/18/08.
 - The well shall be drilled prior to Health Department approval of the building permit for the proposed tenant house (B16002797). It is the developer's responsibility to schedule the well drilling prior to building permit submission. It will not be considered "government delay" if the well drilling holds up Health Department approval of Building Permit B16002797.
 - Any changes to the Private Sewage Easement shall require a Revised Percolation Certification Plat.
 - The Howard County Health Department previously approved the Sewage Disposal Area shown on this plan as part of the Building Permit for 5610 Chamblis Drive (B10001608).
 - The location of the six(6) geobores near #5610 Chamblis Drive are approximate. The shown locations have been obtained from Health Department records and are derived from the well driller's sketches for well HO-95-2037.
 - The HDPE Force Main shall be thermally welded.

OSDS Plan submitted & approved 5/19/17

Approved Septic System Plan
 Howard County Health Department
 3 bedroom SFD no basement
 Heat H-600 BNR w/ 1/2 hp pump
 to gravity drain field
 Signature: [Signature]
 Date: 11/1/2016
 OWNER: GEORGE L. DOETSCH
 5610 CHAMBLIS DRIVE
 CLARKSVILLE, MD 21029
 BUILDER: MUELLER HOMES INC.
 7520 MAIN STREET
 SUITE 201
 SYKESVILLE, MD 21784
 410.549.4444

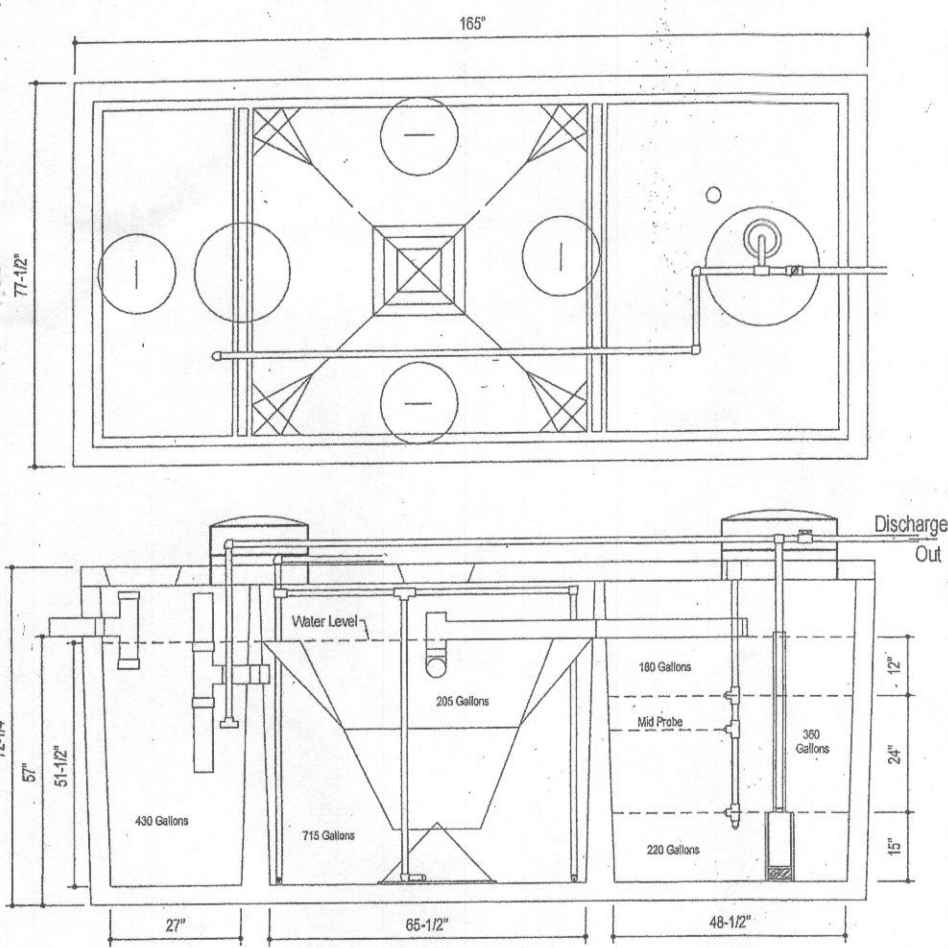
This area designates a private sewage easement of at least 10,000 square feet for each residence as required by the Maryland Department of the Environment for individual sewage disposal. Improvements of any nature in this easement are restricted. This easement shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant adjustments to the private sewage easement. Recordation of a revised sewage easement shall not be necessary.



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19184, EXPIRATION DATE: 8/30/17.
 BRUCE D. BURTON 10/30/16
 BRUCE D. BURTON DATE

BAT SITE PLAN
 GLEN MARY ESTATES
 LOT 6
 TENANT HOUSE
 (B 16002797)
 TAX MAP 34 GRID 5 PARCEL 15
 TAX ACCOUNT #05-341140
 5TH ELECTION DISTRICT HOWARD COUNTY, MD
 DATE: 10/2016 SCALE: AS SHOWN
 SHEET 1 OF 2

LDE Inc.
 Engineers • Surveyors • Planners
 Historic Carriage House • 7520 Main Street • Suite 203 • Sykesville, Maryland • 21784
 (410)795-6391 • (410)795-6392 • FAX(410)795-9540 • www.Landsurveyormd.com



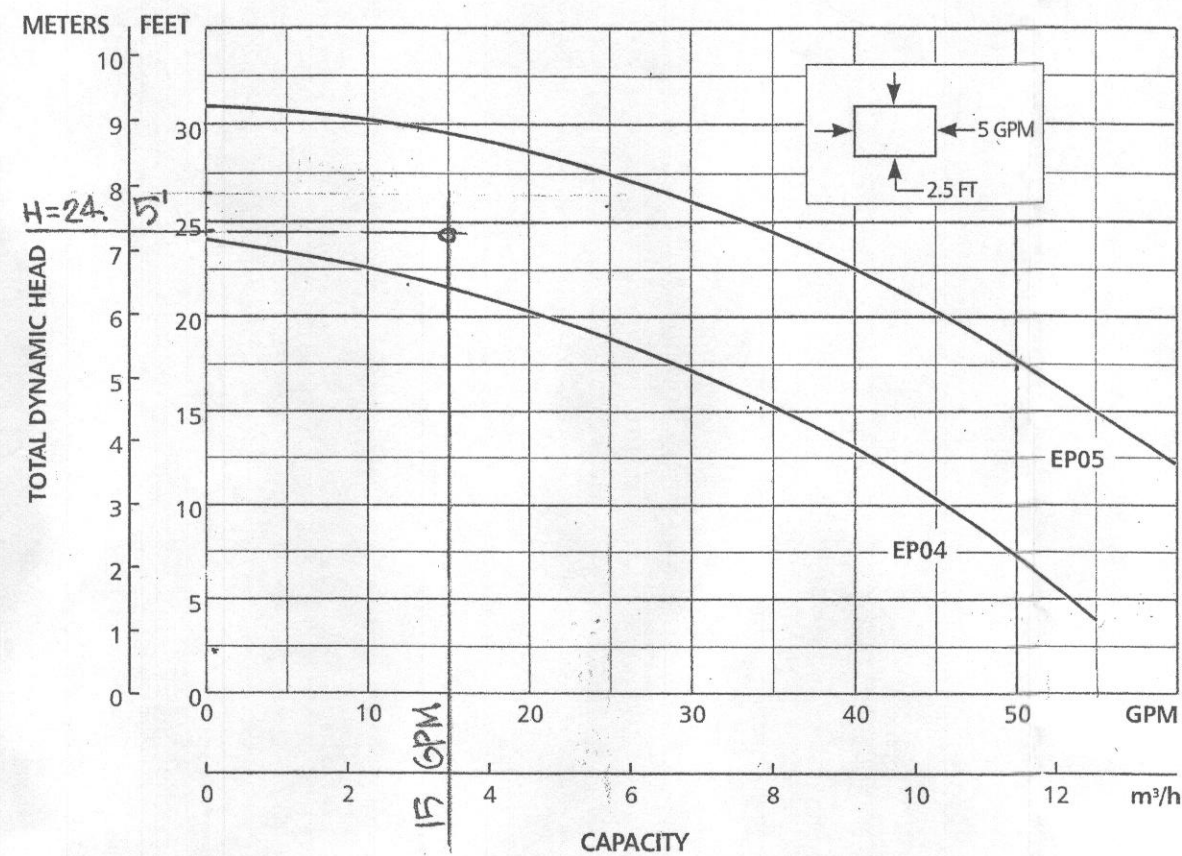
DESIGN DATA & GENERAL NOTES
 (1) Concrete strength $f'_{c} = 4,000$ psi, @ 28 days, Density = 150 pcf.
 (2) Concrete - Portland Type III per ASTM C 150-05.
 (3) Admixtures & plasticizers per ASTM C 260-98 & C 494-02.
 (4) Reinforcing per ASTM A185, Min. $\pm 1/16"$ cover.

Mayer Brothers, Inc.
 600 GPD BNR SYSTEM
 H-600 BNR
 with 750 GALLON PUMP CHAMBER

Diag. No. Hoot Form #1 No Scale March 19, 2009

Goulds Water Technology

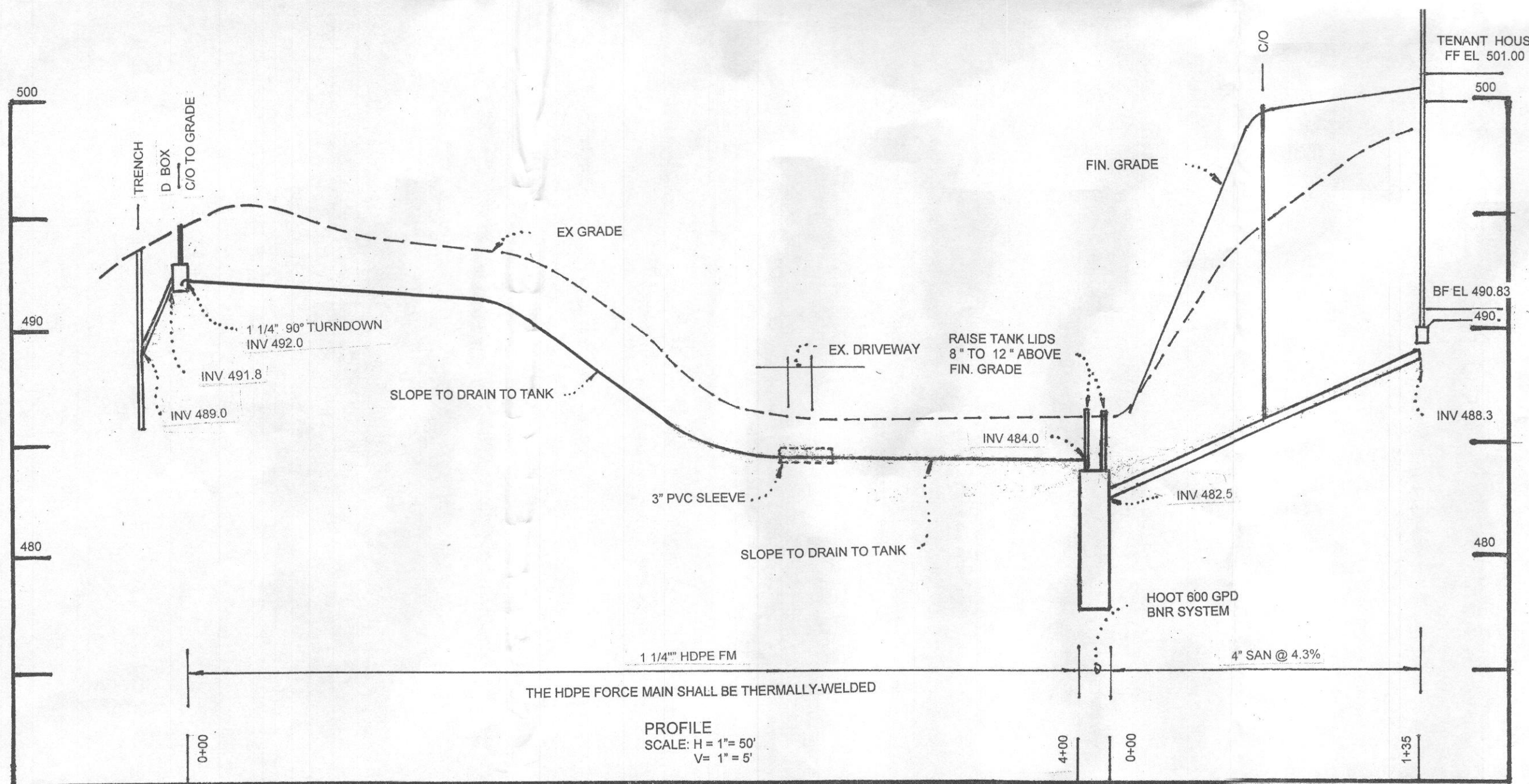
Wastewater



- PUMP SYSTEM DESIGN**
- DESIGN VOLUME : 450 GPD
3 BEDROOMS x 150/ BR
 - FORCE MAIN SIZE: 1 1/4" HDPE
 - TOTAL DESIGN HEAD: 24.5'
A. STATIC HEAD: 12.05'
EL@ BOX 492.0 - EL@ PUMP/OFF 479.95
B. FRICTION HEAD: 12.46'
1) PIPE LENGTH: 400'
2) EQUIV. PIPE LENGTH: 7.2'
3 - 1 1/4" 45° HB: 2.4' EACH
3) TOTAL PIPE LENGTH: 407.2'
4) TRY PUMP RATE @ 15 GPM
4.072 x 3.06 = 12.46'
 - TRIAL PUMP SIZE :
A. FLOW x TDH x SPEC. GRAVITY
3960 x 0.4 EFFICIENCY
15 GPM x 24.5' x 1 = 0.232 HP
3960 x 0.4
B. USE GOULDS MODEL EP 0511 OR EQUIVALENT
 - DOSE VOLUME : 75 GALLONS/ DOSE
(6 DOSES/ DAY)
 - PUMP RATE : 15 GPM
 - RUN TIME FOR PUMP : 5.0 MINUTES
75 GALLON DOSE \div 15 GPM

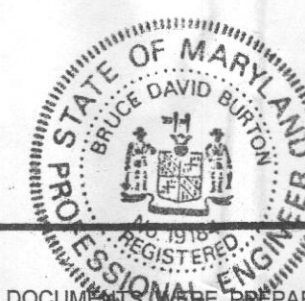
- SEWAGE SYSTEM DESIGN DATA**
- INVERT @ FOUNDATION OF HOUSE: 488.3 +/-
 - BAT TANK HOOT 600 GPD BNR SYSTEM
3 BEDROOMS
FINISHED GRADE @ TANK: 486.0 +/-
INVERT IN: 482.5 +/-
INVERT OUT: 484.0 +/-
 - DISTRIBUTION BOX / CLEANOUT TO GRADE:
FINISHED GRADE @ BOX: 494.0 +/-
INVERT IN: 492.0 +/- (1 1/2" 90° TURNDOWN)
INVERT OUT: 491.8 +/-
 - TRENCH :
2' WIDE x 84' LENGTH x 3.0' STONE DEPTH
FINISHED GRADE OVER: 493.0 +/-
INVERT: 489.0 +/-
BOTTOM: 485.5 +/-

NOTE: TRENCH DESIGN MAY BE REVISED AT TIME OF INSTALLATION BASED ON SITE CONDITIONS



- TRENCH DESIGN CALCULATIONS**
- DESIGN FLOW : 450 GPD
3 BEDROOMS x 150 GPD/ BR
 - APPLICATION RATE : 1.2 GPD/ SQ FT
 - EFFECTIVE AREA BEGINNING DEPTH : 4.5'
 - BOTTOM MAXIMUM DEPTH : 7.5'
 - REQUIRED DRAINFIELD AREA : 375 SQ FT
450 GPD \div 1.2 GPD/ SQ FT
 - SIDEWALL REDUCTION CREDIT : 0.44
WIDTH OF TRENCH : 2'
 $W + 2 \times 100 = \frac{2 + 2}{2 + 1 + 2(3.0)} \times 100$
 - LINEAR LENGTH OF TRENCH : (1) 84'
375 SQ FT x 0.44 \div 2' = 82.5'
 - MINIMUM TRENCH SPACING : USE 10' MIN.
2D + W = 2(3.0) + 2' = 8' MIN. EDGE TO EDGE
- NOTE: TRENCH DESIGN MAY BE MODIFIED AT INSTALLATION BASED ON SITE CONDITIONS

Approved Septic System Plan
 Howard County Health Department
 Hoot H-600 BNR
 15 hp Pump to gravity drainfield
 Signature: *R. Bricker*
 Date: 11/1/2016
 OWNER: GEORGE L. DOETSCH
 5610 CHAMBLIS DRIVE
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Bruce D. Burton 10/30/16
 BRUCE D. BURTON DATE

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