

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: 3/3/20 **ONSITE SEWAGE DISPOSAL SYSTEM** P 567333
 APPROVAL DATE: 6/2/2020 (ST) **PERMIT: CONSTRUCTION** A _____
 PROPERTY ADDRESS: 5521 Jacks Landing Way
 SUBDIVISION: Jacks Landing LOT: 5 TAX ID: _____
 CONTRACTOR: Bill Ingram/ Farm and Home Excavating EMAIL: _____
 CONTRACTOR ADDRESS: 901 Driver Road, Marriottsville, MD 21104 PHONE: 410-984-0189
 PROPERTY OWNER: Caruso Homes EMAIL: _____
 OWNER ADDRESS: 2120 Baldwin Ave PHONE: _____
 SEPTIC TANK SIZE (GALLONS): 1500 TANK MANUFACTURER: Mayer Bros, Inc Babylon
 PUMP MODEL: Goulds PUMP SIZE WE07H PUMP TANK CAPACITY: 2000

DISTRIBUTION SYSTEM: GRAVITY PRESSURE DOSED BEDROOMS: _____ APPLICATION RATE: _____

TRENCHES:	LINEAR FEET REQUIRED: <u>142.5 LF</u>	INLET DEPTH: <u>See Plan</u>
	TRENCH WIDTH: <u>2 FT</u>	MAXIMUM BOTTOM DEPTH: <u>8 FT</u>
	MINIMUM SPACE BETWEEN TRENCHES: <u>10 FT</u>	EFFECTIVE AREA BEGINNING DEPTH: <u>6 FT</u>
LOCATION:	PER APPROVED SITE PLAN. SEWAGE DISPOSAL AREA AND TANK LOCATIONS MUST BE STAKED BY LICENSED SURVEYOR PRIOR TO PRE-CONSTRUCTION INSPECTION.	
NOTES:	LPD Design	

ISSUED BY: Hank Oswald ISSUE DATE: 3/6/2020 EXPIRATION DATE: 3/3/21

- 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 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: 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.**

279189279189

NOT TO SCALE

* see attached
diagram

TRENCH/DRAINFIELD DATA

WIDTH INLET BOTTOM

2' 1.5-3' 8'

NUMBER OF TRENCHES 5

TOTAL LENGTH 298'

ABSORPTION AREA 596 sq ft + 56 well

DISTRIBUTION BOX LEVEL -

DISTRIBUTION BOX BAFFLE -

DISTRIBUTION BOX PORT -

PRE-CONSTRUCTION:

SEPTIC TANK DATA

SEPTIC TANK 1 LEVEL yes

MANUFACTURER Babylon

CAPACITY 1500 GAL

SEAM LOC top

TANK LID DEPTH 2'

BAFFLES front + back

BAFFLE FILTER -

MANHOLE LOC front + back

6" PORT LOC -

WATERTIGHT TEST -

SLOTTED yes

DATE ON LID 3-2-20

PUMP/SEPTIC TANK LEVEL

MANUFACTURER Babylon

CAPACITY 2000 GAL

SEAM LOC yes

TANK LID DEPTH 1'

BAFFLES -

BAFFLE FILTER -

MANHOLE LOC -

6" PORT LOC -

WATERTIGHT TEST -

SLOTTED -

DATE ON LID 3-23-20

ROAD NAME

5/13/20 Trenches, SDA, tanks and lines staked according to plan. (ST)

INSTALLATION: 5/20/20 tanks set and SDC and FM constructed. (ST)

6/2/20 Trenches, manifold, laterals all constructed according to plan. Observed digital head pressure at turnups. Trenches 1, 2 and 4 had 20" of head, trench 3 had 22" and trench 5 had 23". Alarm functioning, inside house. Alarm and pump on separate circuit breakers. (ST)

FINAL INSPECTOR Susan Thomas

DATE OF APPROVAL 6/2/2020

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

MEMORANDUM

TO: NJR & Associates
2770 Route 32
West Friendship, MD 21794

FROM: Hank Oswald, L.E.H.S.
Well & Septic Program

RE: OSDS Plan
5525 Jacks Landing Way

Date: October 22, 2019

The following comments pertain to the review of the OSDS Plan for **5525 Jacks Landing Way**:

- 1.) $F = 1.73$ (# taken from chart in sand mound system manual)
- 2.) Friction = $269.8 (1.73/100) = 4.67$
- 3.) Friction Laterals = 4.67
- 4.) TDH should be 15.41
- 5.) Change elevations in Trench Info. Initial System chart to 8-foot-deep trenches (not 9).

Oswald, Hank

From: Oswald, Hank
Sent: Tuesday, October 22, 2019 11:14 AM
To: 'roshannj@aol.com'
Subject: OSDS Plan_5525 Jacks Landing_Lot 5
Attachments: OSDS Memo_Jacks Landing Lot 5_2019.pdf

Hello Roshann:

Good morning. Attached, please find comments to the OSDS Plan for 5525 Jacks Landing Road. Should you have any questions, please don't hesitate to ask.

Respectfully,

Hank

Hank Oswald
Licensed Environmental Health Specialist
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
hoswald@howardcountymd.gov



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Maryland Real Estate Development



Transmittal

DATE: Saturday, September 7, 2019

TO:


Licensed Environmental Health Specialist
Howard County Health Department
Bureau of Environmental Health
Well & Septic Program
8930 Stanford Boulevard
Columbia, MD 21045
410.313.1786 (Office)
hoswald@howardcountymd.gov

Gregory Phillips
Maryland Real Estate Development LLC
7846 River Rock Way
Columbia, MD 21044

gphillips@mred.us

Direct 410-977-0864

Regarding:

Septic Discharge Plan Lot 5

JACKS LANDING

TRANSMITTAL OF PLANS FOR REVIEW
DEPARTMENT OF PLANNING & ZONING
DEVELOPMENT ENGINEERING DIVISION

Rev. Eng. JP

8/8/18

TO:

- DAN WARD, LITTLE PATUXENT WATER RECLAMATION PLANT
- MARK KREIS, BUREAU OF ENVIRONMENTAL SERVICES (SDP - TOWNHOUSE & APT.)
- REAL ESTATE SERVICES DIVISION (PLAT & ROAD CONST. DRWGS.)
- TRAFFIC ENG DIV.(SKETCH, PREL., FINAL RDS & PLAT & COM. SDP)
- TRANSPORTATION AND SPECIAL PROJECTS
- BUREAU OF HIGHWAYS (ROAD CONST. DRWGS. & RED-LINE)
- DIVISION OF LAND DEVELOPMENT
(DESIGN WAIVERS - SDP & ROAD CONST. DRWGS. - RED-LINE)
- INSPECTIONS, LICENSES & PERMITS (COMMERCIAL SDP - RED-LINE)
- SOIL CONSERVATION SERVICES (SDP & ROAD CONST. DRWGS. - RED-LINE)
- RONALD G. LEPSON, CHIEF, BUREAU OF ENGINEERING (DESIGN WAIVERS)
- PARRIS ZIRKENBACH, TRAFFIC ENG. DIV.(PREL., FINAL RDS & PLAT& COMMERCIAL SDP - STREET LIGHT LAYOUT)
- STATE HIGHWAY ADMINISTRATION
- FIRE AND RESCUE

✓ Health Dept. (well & septic / SWM)

SUBJECT: SUBDIVISION PLANS FOR REVIEW

COMMENTS DUE: 8/18/18

P & Z FILE NUMBER: F-08-101

NAME OF PLAN: Jack's Landing Lot 5
ENCLOSURE:

- SKETCH PLAN
- SKETCH PRELIMINARY PLAN
- PRELIMINARY PLAN
- FINAL PLAT
- FINAL PLAN
- DESIGN WAIVER

- SITE DEVELOPMENT PLAN
- INDUSTRIAL WASTE SURVEY
- RED-LINE ROAD CONST
- RED-LINE SDP
- TRAFFIC STUDY/APFO
- WAIVER PETITION

SUBMISSION RECEIVED FROM: DP&Z / _____ : NJR

Please return the redline drawing back to DED.

RETURN COMMENTS TO DEVELOPMENT ENGINEERING DIVISION EITHER ON THIS FORM OR VIA E-MAIL TO REVIEW ENGINEER

Comments:
no comments

SIGNED BY: JW DIVISION: Health DATE: 8/19/19

LETTER OF TRANSMITTAL

NJR & Associates, LLC.

LAND SURVEYING & PLANNING
2770 State Route 32
West Friendship, Maryland 21794
Tel. (240)508-3200
Email: roshannj@aol.com

Date: August 6, 2019

TO: Chief Engineering Division
Department of Planning and Zoning
Howard County, Maryland

RE: F-08-101
Jacks Landing, Lot-5
Tax Map-34, Parcel 414

Attached hereto, please find a Red-Line mark up of the sheets 1, 2, 5, 7 & 10 of the existing F-08-101 showing an updated proposed house type on Lot-5. In addition, we are showing the ESDv calculations and the size and location of the Micro-Bio Retention facility for the SWM obligations of the updated house and driveway on Lot-5.

No.	Description	Copies
<u>1</u>	<u>Mark up of the first sheet of SDP-19-002</u>	<u>1</u>
<u>2</u>	<u>Stormwater Management calculation</u>	<u>1</u>
<u>3</u>	<u>Email copy from Mr. James Witmer regarding Authorization</u> <u>Note from Engineer of Record</u>	<u>1</u>
<u>4</u>	<u>Email copy from Engineer of Record</u>	<u>1</u>

F-08-101
JACKS LANDING
LOT-5
TAX MAP 34, PARCEL 414

COMPUTATION OF THE REQUIRED ESDv:

PROPERTY SIZE = 58,413 SF
LIMITS OF DISTURBANCE (L.O.D.) = 23,588 SF
PROPOSED IMPERVIOUS AREA = 4,336 SF
SOIL: = HYDROLOGIC SERIES "B", 100% OF L.O.D.

TARGET Pe:

$$\% \text{ IMPERVIOUS AREA (I): } \frac{\text{PROP. IMPERVIOUS AREA}}{\text{PROP. L.O.D.}} = \frac{4,336}{23,588} = 18.38\%, \text{ (USE 20\%)}$$

USING TABLE 5.3 FOR "B" SOILS & 1% OF 20:

$$\text{PE} = 1.2''$$

TARGET RCN FOR WOODS IN GOOD CONDITION:

"B" SOILS = 55

TARGET ESDv:

$$\text{PE} = 1.2''$$

$$I = 18.38\%$$

$$R_v = 0.05 + (0.009)(18.38) = 0.2154$$

$$A = 23,588 \text{ SF}$$

$$\text{ESDv} = \frac{\text{PE} \times R_v \times A}{12}$$

$$\text{ESDv} = \frac{1.2 \times 0.2154 \times 23,588}{12} = \boxed{508 \text{ CF}}$$

COMPUTATION OF THE PROPOSED ESD_v:

MICRO-BIO RETENTION, M-6

TOTAL PROPOSED IMPERVIOUS IN DRAINAGE AREA (DA) = 4,336 SF
TOTAL APPROXIMATE DRAINAGE AREA = 5,840 SF
PERCENTAGE OF IMPERVIOUS IN DRAINAGE AREA = 74.25%

$$PE = 2.6''$$

$$I = 74.25\%$$

$$R_v = 0.05 + (0.009)(74.25) = 0.7183$$

$$A = 5,840 \text{ SF}$$

$$ESD_v = \frac{PE \times R_v \times A}{12}$$

$$ESD_v = \frac{2.6 \times 0.7183 \times 5,840}{12} = \boxed{909 \text{ CF}}$$

DIMENSIONS OF MICRO-BIO RETENTION-1

$$\text{POND DEPTH} = 1.0 \text{ FT}$$

$$\text{TOP POND AREA} = 848 \text{ SF}$$

$$\text{BOTTOM POND AREA} = 545 \text{ SF}$$

$$\text{POND VOLUME} = \left(\frac{848+545}{2} \right) \times 1.0 = 696 \text{ CF}$$

$$\text{POND MEDIA DEPTH} = 1.0 \text{ FT}$$

$$\text{POND MEDIA VOLUME} = 545 \times 1.0 \times 0.4 = 218 \text{ CF}$$

$$\text{POND STORAGE VOLUME} = (696 + 218) = 914 \text{ CF}$$

STORMWATER MANAGEMENT SUMMARY

$$ESD_v \text{ PROVIDED} = 909 \text{ CF}$$

$$ESD_v \text{ REQUIRED} = 508 \text{ CF}$$

$$ESD_v \text{ SURPLUS} = +401 \text{ CF}$$

From: Witmer, James jwitmer@howardcountymd.gov
Subject: RE: Engineers Letter
Date: July 29, 2019 at 9:58 AM
To: MRED gphillips@mred.us



Any other design professional can submit a redline but you will need to provide verification that you reached out to them for authorization with their response. If they do not give authorization you can still submit, we just need it on record.

From: MRED [<mailto:gphillips@mred.us>]
Sent: Saturday, July 27, 2019 11:06 AM
To: Witmer, James <jwitmer@howardcountymd.gov>
Subject: Engineers Letter

[Note: This email originated from outside of the organization. Please only click on links or attachments if you know the sender.]

Jim,

I hope this email finds you well. My client does not want to use the engineer of record on a project due to issues the last time he was used. There were a lot of issues and problems and neither the builder or the buyer want to use him.

How do I get a redline of a project done without being held hostage by the engineer of record.

Regards,

Gregory Phillips
Maryland Real Estate Development
6100 Day Long Lane
Suite 100
Clarksville, Maryland 21029

Direct 410.977.0864
gphillips@MRED.US



From: Rob Vogel <Rob.Vogel@timmons.com>
To: MRED <gphillips@mred.us>
Cc: Robert Oliff <roliff@carusohomes.com>; Najib Roshan <roshannj@aol.com>
Subject: RE: Jacks Landing Redline Lot 5
Date: Fri, Jul 26, 2019 6:00 pm

As the engineer of record I will not be providing the requested authorization. There were situations with the previous work being proposed on these lots which created subsequent issues. Please call if you have any questions.

Thanks

Robert H. Vogel P.E., M.ASCE

Principal

VOGEL ENGINEERING + TIMMONS GROUP | www.timmons.com
3300 N. Ridge Road, Suite 110 | Ellicott City, MD 21043
Office: 410.461.7666 | Fax: 410.461.8961

<https://www.linkedin.com/company/timmons-group>

Your Vision Achieved Through Ours

To send me files greater than 20MB [click here](#)

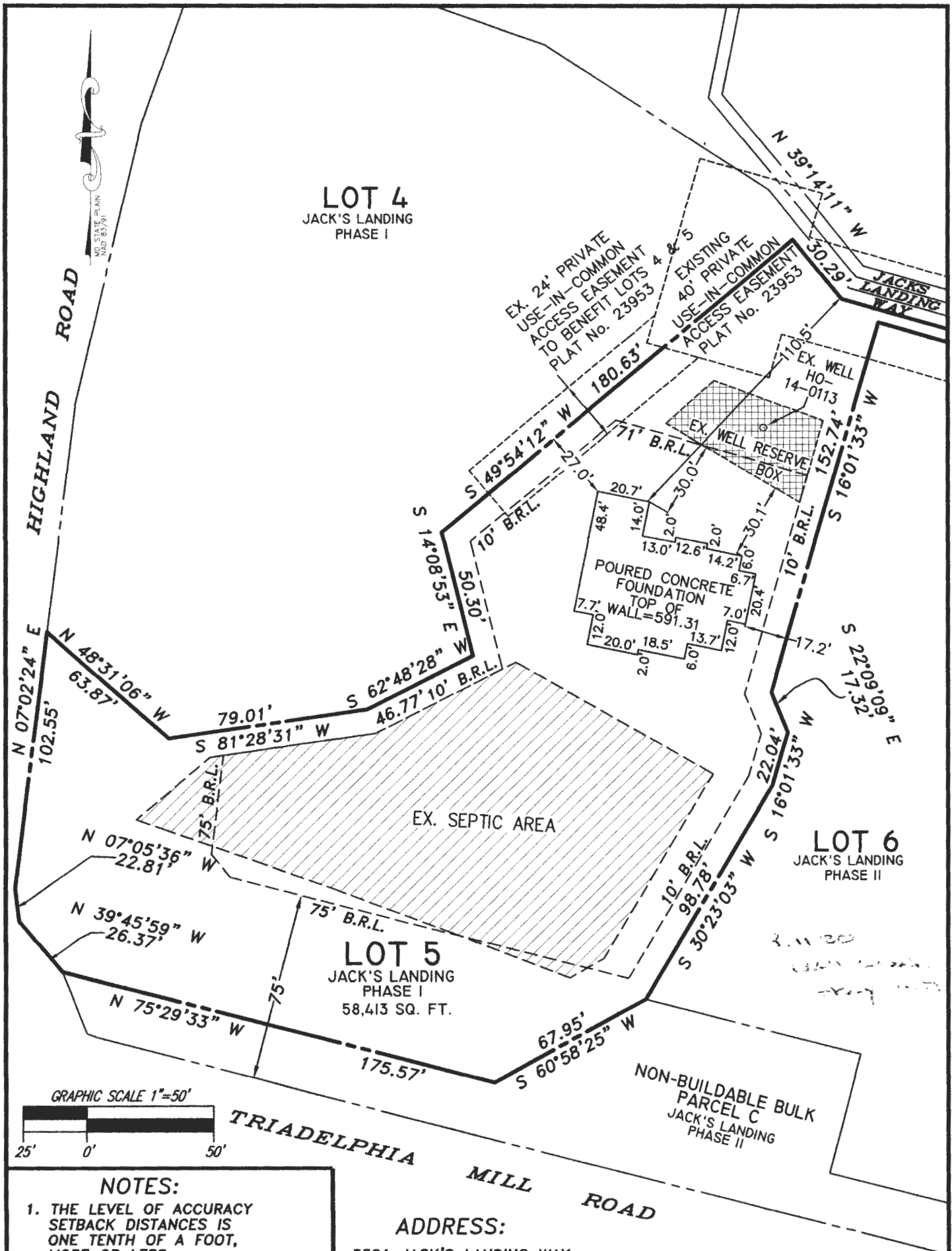
From: MRED <gphillips@mred.us>
Sent: Friday, July 26, 2019 2:54 PM
To: Rob Vogel <Rob.Vogel@timmons.com>
Cc: Robert Oliff <roliff@carusohomes.com>; Najib Roshan <roshannj@aol.com>
Subject: Jacks Landing Redline Lot 5

Rob,

NJR associates needs an authorization letter from you to reline lot 5.

Please reply to all.

Regards,



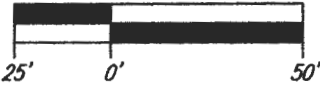
LOT 4
JACK'S LANDING
PHASE I

LOT 6
JACK'S LANDING
PHASE II

LOT 5
JACK'S LANDING
PHASE I
58,413 SQ. FT.

NON-BUILDABLE BULK
PARCEL C
JACK'S LANDING
PHASE II

GRAPHIC SCALE 1"=50'



TRIADELPHIA
MILL
ROAD

ADDRESS:

5521 JACK'S LANDING WAY
CLARKSVILLE, MD 21029

NOTES:

1. THE LEVEL OF ACCURACY SETBACK DISTANCES IS ONE TENTH OF A FOOT, MORE OR LESS.
2. THIS PLAT WAS PREPARED WITHOUT BENEFIT OF A TITLE REPORT

I HEREBY CERTIFY THAT IMPROVEMENTS ARE LOCATED AS SHOWN HEREON AND TO THE BEST OF MY INFORMATION, PROFESSIONAL KNOWLEDGE AND BELIEF, THERE ARE NO ENCROACHMENTS EXCEPT AS SHOWN

PREPARED BY:



NJR & ASSOCIATES, LLC.
LAND SURVEYING AND PLANNING

2770 STATE ROUTE 32
WEST FRIENDSHIP, MARYLAND 21794
TEL: (240) 508-3200 FAX: (410) 799-9093



MARCH 9, 2020

M.N. ROSHAN, L.S.
MD REG. No. 11049

DATE

WALL CHECK
JACK'S LANDING SUBDIVISION

LOT 5

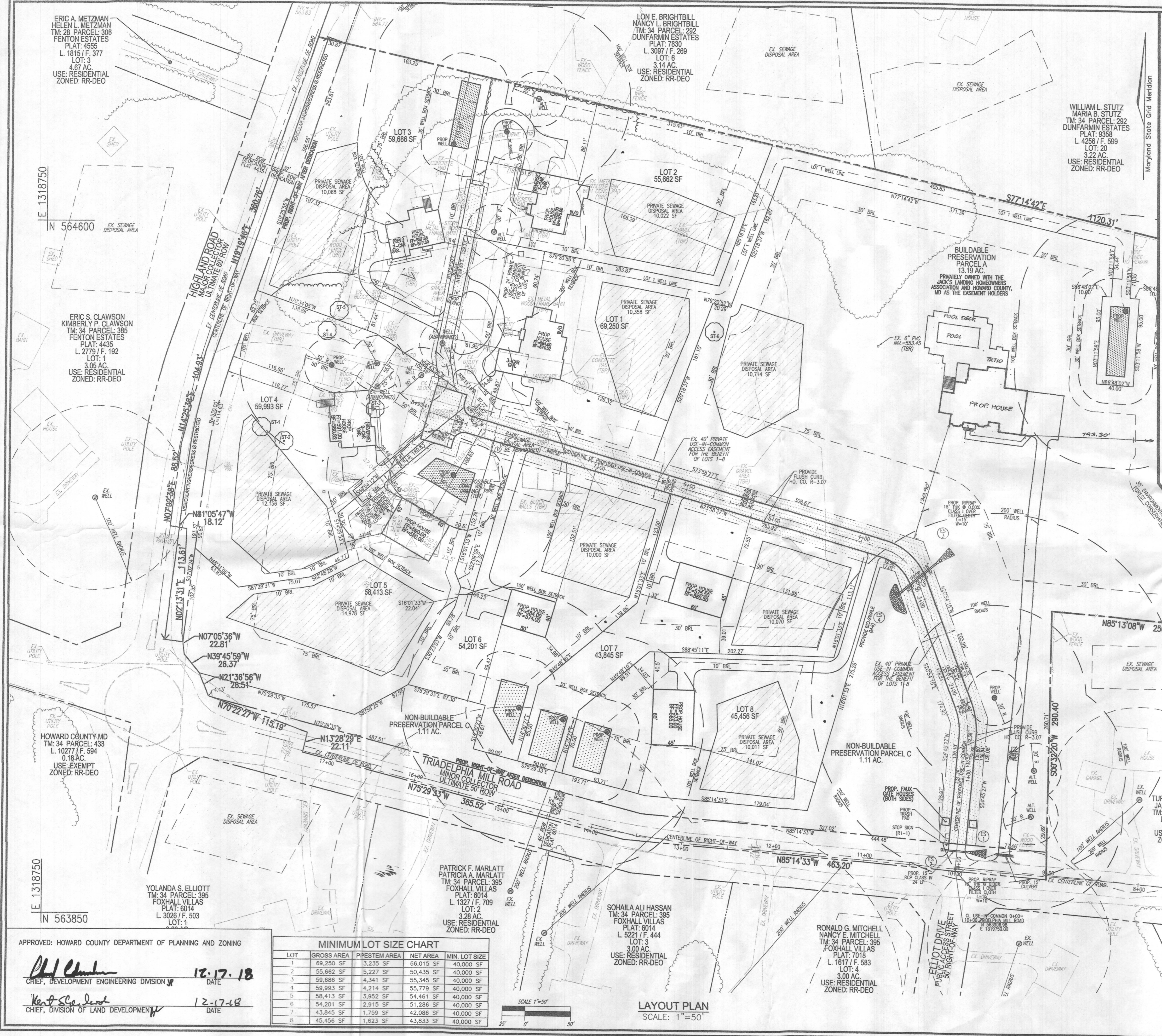
PLAT No. 23953

LIBER 18731, FOLIO 458

TAX MAP 34, GRID 3, PARCEL 414

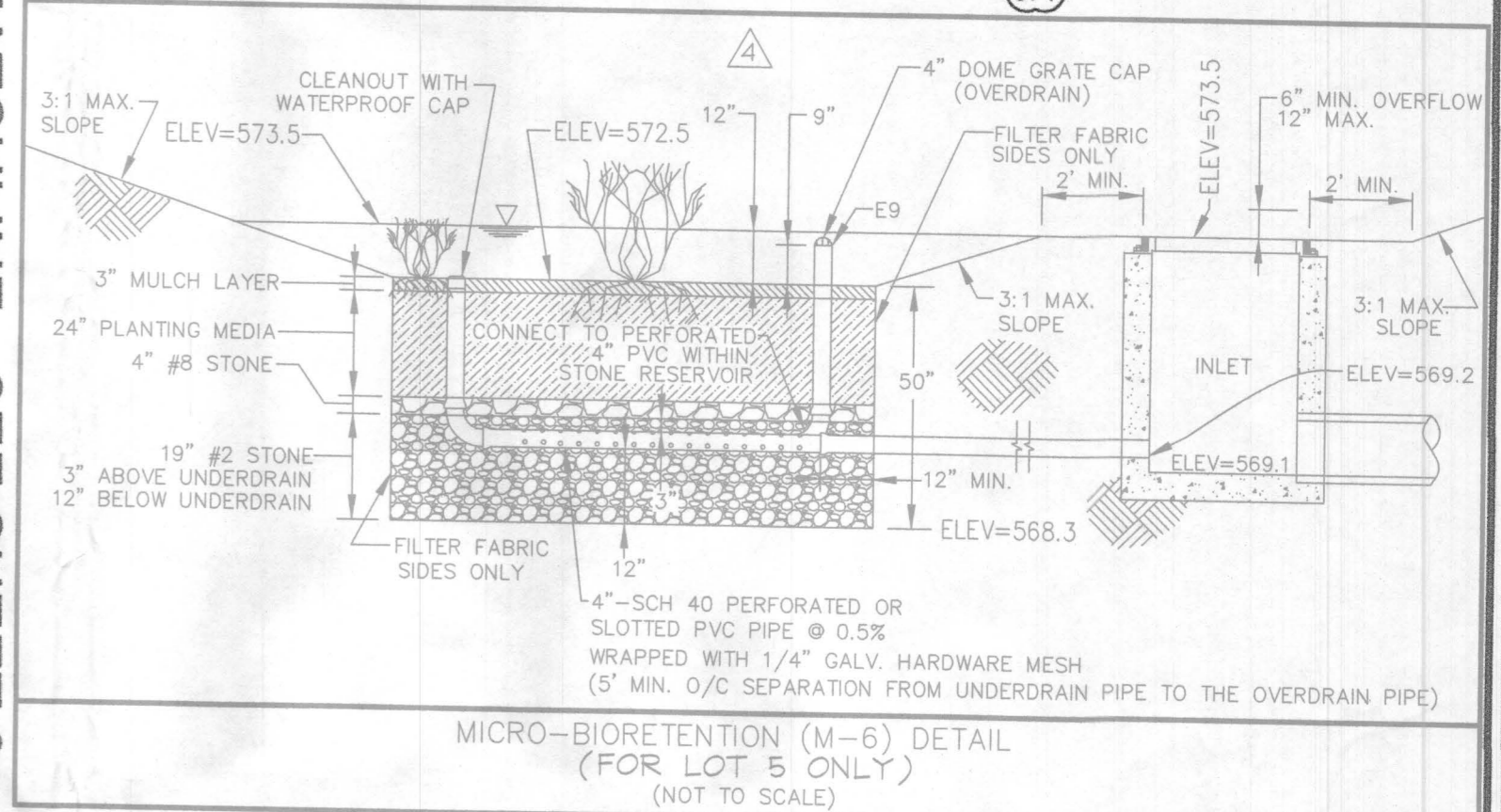
5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 50' DATE: JANUARY 21, 2020

FILE No.
3438



LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- PROPOSED RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVING
- EXISTING TREE LINE
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING UTILITY POLE
- EXISTING USE-IN-COMMON ACCESS EASEMENT
- EXISTING WELL LOCATION
- APPROVED WELL LOCATION (FIELD LOCATED)
- PROPOSED WELL LOCATION
- EXISTING DRY WELL CASING (TO BE ABANDONED)
- EXISTING PRIVATE SDA
- PROPOSED PRIVATE SDA
- PROPOSED WELL BOX
- EXISTING SPECIMEN TREE



SPECIMEN TREE CHART

NO.	SIZE	COMMON NAME	COMMENTS
ST-1	40" DBH	ELM	TO REMAIN
ST-2	40" DBH	ELM	TO REMAIN
ST-3	42" DBH	OAK	TO REMAIN
ST-4	36" DBH	OAK	TO REMAIN
ST-5	44" DBH	PINE	TO REMAIN
ST-6	42" DBH	ELM	TO REMAIN
ST-7	40" DBH	MULTI-STEM	TO REMAIN

NOTE: FOR SPECIMEN TREES 3, 4, & 5 TREE PROTECTION FENCING WILL BE REQUIRED

PROFESSIONAL CERTIFICATION
 I hereby certify that the red line markings shown herein were prepared or approved by me, and that I am a duly licensed professional Land Surveyor under the laws of the State of Maryland, License No. #1049, Expiration Date: 2/10/2021.

OWNER
 MARTY A. HOWARD
 P.O. BOX 740
 CLARKSVILLE, MD 21029

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DR., SUITE 102
 ELLICOTT CITY, MD 21042
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

NO.	REVISION	DATE
4	TO REVISE THE HOUSE CONFIGURATION AND TYPE FOR LOT 5	8/1/19
3	TO REVISE THE CONFIGURATION AND HOUSE TYPES FOR LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCELS A, B AND C	11-15-18

REVISION SUPPLEMENTAL INFORMATION PLAN

SITE LAYOUT PLAN

JACK'S LANDING
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL A, AND NON-BUILDABLE PRESERVATION PARCEL C
 A SUBDIVISION OF TAX MAP 34 PARCEL 414 (L. 3172 / F. 336)

TAX MAP: 34 GRID: 03 5TH ELECTION DISTRICT PARCELS: 414 ZONED: RR-DEO HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: OCTOBER 2018
 SCALE: AS SHOWN
 W.O. NO.: 13-31

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. 18183 EXPIRATION DATE: 08-27-2020

2 SHEET OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Clendenen 12-17-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

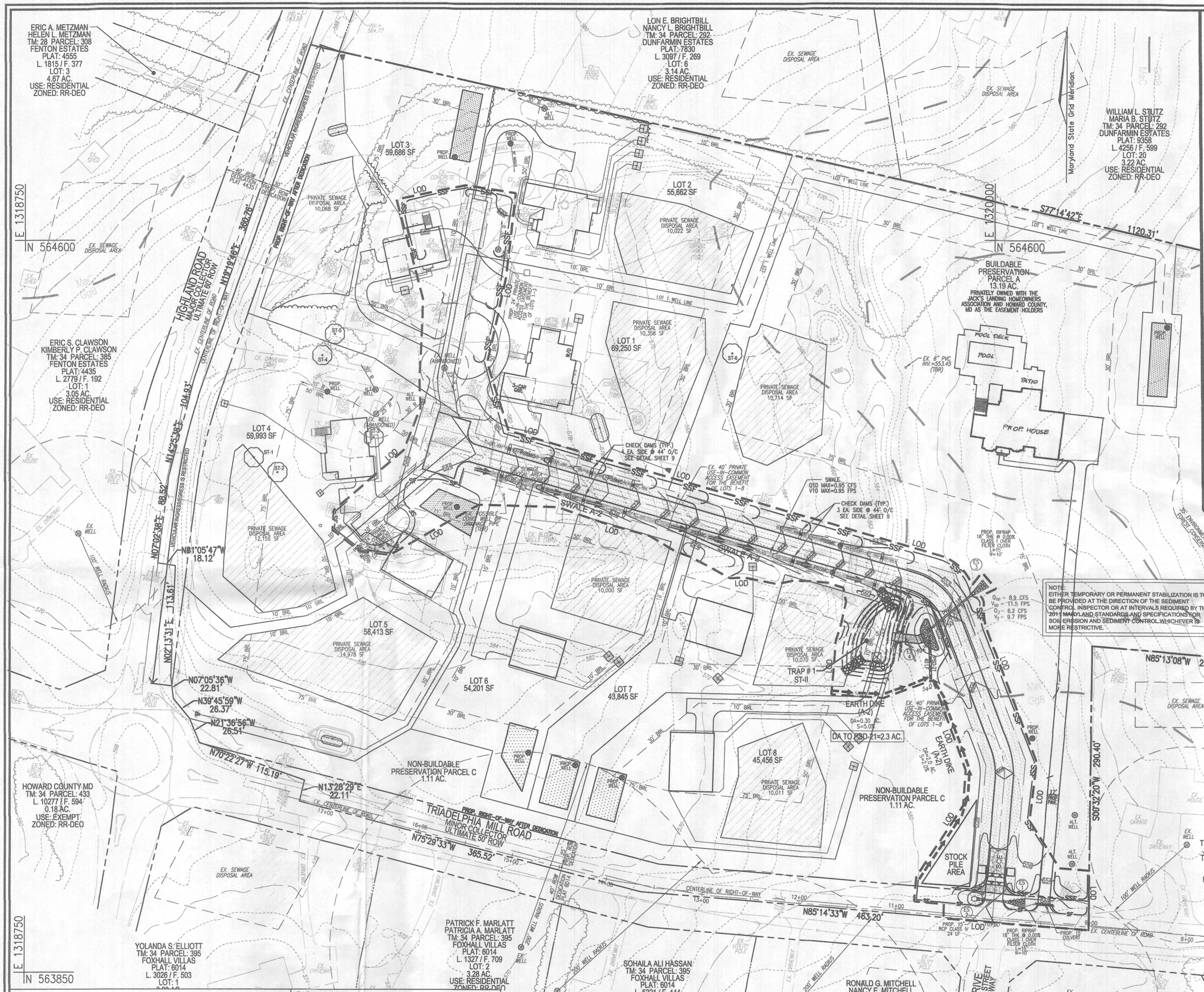
Kent Scalesh 12-17-18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

MINIMUM LOT SIZE CHART

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
1	89,250 SF	3,235 SF	66,015 SF	40,000 SF
2	55,662 SF	5,227 SF	50,435 SF	40,000 SF
3	59,686 SF	4,341 SF	55,345 SF	40,000 SF
4	59,993 SF	4,214 SF	55,779 SF	40,000 SF
5	58,413 SF	3,952 SF	54,461 SF	40,000 SF
6	54,201 SF	2,915 SF	51,286 SF	40,000 SF
7	43,845 SF	1,759 SF	42,086 SF	40,000 SF
8	45,456 SF	1,623 SF	43,833 SF	40,000 SF

SCALE: 1" = 50'

LAYOUT PLAN
 SCALE: 1" = 50'



LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- PROPOSED RIGHT-OF-WAY LINE
- ADVANCED PROPERTY LINE
- EXISTING CURB AND OUTER
- EXISTING EDGE OF PAVING
- EXISTING TREELINE
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING UTILITY POLE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- EXISTING USE-IN-COMMON ACCESS EASEMENT
- EXISTING WELL LOCATION
- APPROVED WELL LOCATION (FIELD LOCATED)
- PROPOSED WELL LOCATION
- EXISTING DRY WELL CASING (TO BE ABANDONED)
- EXISTING PRIVATE SDA
- PROPOSED PRIVATE SDA
- PROPOSED WELL BOX
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPECIMEN TREE
- PROPOSED SUPER SILT FENCE
- PROPOSED SILT FENCE
- PROPOSED ENGINEERED SHALE
- TEMPORARY DEWATERING DEVICE
- PROPOSED EARTH DIKE
- CARBON INLET PROTECTION
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED EROSION CONTROL MATTING
- CHECK DAM

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 1	STANDARD SYMBOL
DRAINAGE AREA - INITIAL	1.30 ACRES
DRAINAGE AREA - WITHIN	2.04 ACRES
DRAINAGE AREA - FINAL	1.50 ACRES
TOTAL STORAGE REQUIRED	7344 CF
NET STORAGE PROVIDED	7878 CF
DRY STORAGE PROVIDED	3872 CF
NET STORAGE REQUIRED	3872 CF
DRY STORAGE PROVIDED	3786 CF
EXISTING GROUND ELEVATION AT OUTLET	553.90 FT
TRAP BOTTOM ELEVATION	551.50 FT
TRAP BOTTOM DIMENSIONS	68 x 25 FT x FT
WELL LENGTH	8 FT
WELL CHEST (GORY STORAGE) ELEVATION*	555.50 FT
CLEANOUT ELEVATION	552.70 FT
TOP OF EMBANKMENT ELEVATION	556.50 FT
EMBANKMENT TOP WIDTH	4 FT
EMBANKMENT SLOPE	1:1 H:V RATIO
OUTLET PROTECTION - LENGTH*	10 FT
OUTLET PROTECTION - DEPTH*	19 IN

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GbB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
CgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	.37	YES
GnB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.37	YES
McC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	C	.24	NO

NOTE: 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.

PROFESSIONAL CERTIFICATION

I, NAJIB ROSHAN, hereby certify that the red line markings shown herein were prepared or approved by me, and that I am a duly licensed Professional Land Surveyor under the laws of the State of Maryland, License No. #11049, Expiration Date: 2/10/2021.

THIS PLAN MAY NOT BE USED TO OBTAIN GRADING OR BUILDING PERMITS FOR THE SHOWN HOUSES

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR., SUITE 102
ELLCOTT CITY, MD 21042
ATTN: MR. DONALD R. REUWER
(443) 367-0422

M. NAJIB ROSHAN
M.D. REG. PROF. LAND SURVEYOR No. 11049
(FOR LOT 5 ONLY)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 12-17-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 12-17-18
CHIEF, DIVISION OF LAND DEVELOPMENT

BY THE DEVELOPER:

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.

[Signature] 12-3-18
SIGNATURE OF DEVELOPER

[Signature] 12/3/18
DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

GRADING & SEDIMENT CONTROL PLAN
SCALE: 1" = 50'

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT 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.

[Signature] 12/3/18
SIGNATURE OF ENGINEER

12/3/18
DATE

REVISED SUPPLEMENTAL INFORMATION PLAN
USE-IN-COMMON DRIVEWAY GRADING, SEDIMENT CONTROL PLAN, AND SOILS MAP

JACK'S LANDING
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A, AND NON-BUILDABLE PRESERVATION PARCEL C
A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172/F. 336)

TAX MAP: 34 GRID: 03
5TH ELECTION DISTRICT

PARCELS: 414
ZONED: RR-DEO
HOWARD COUNTY, MARYLAND

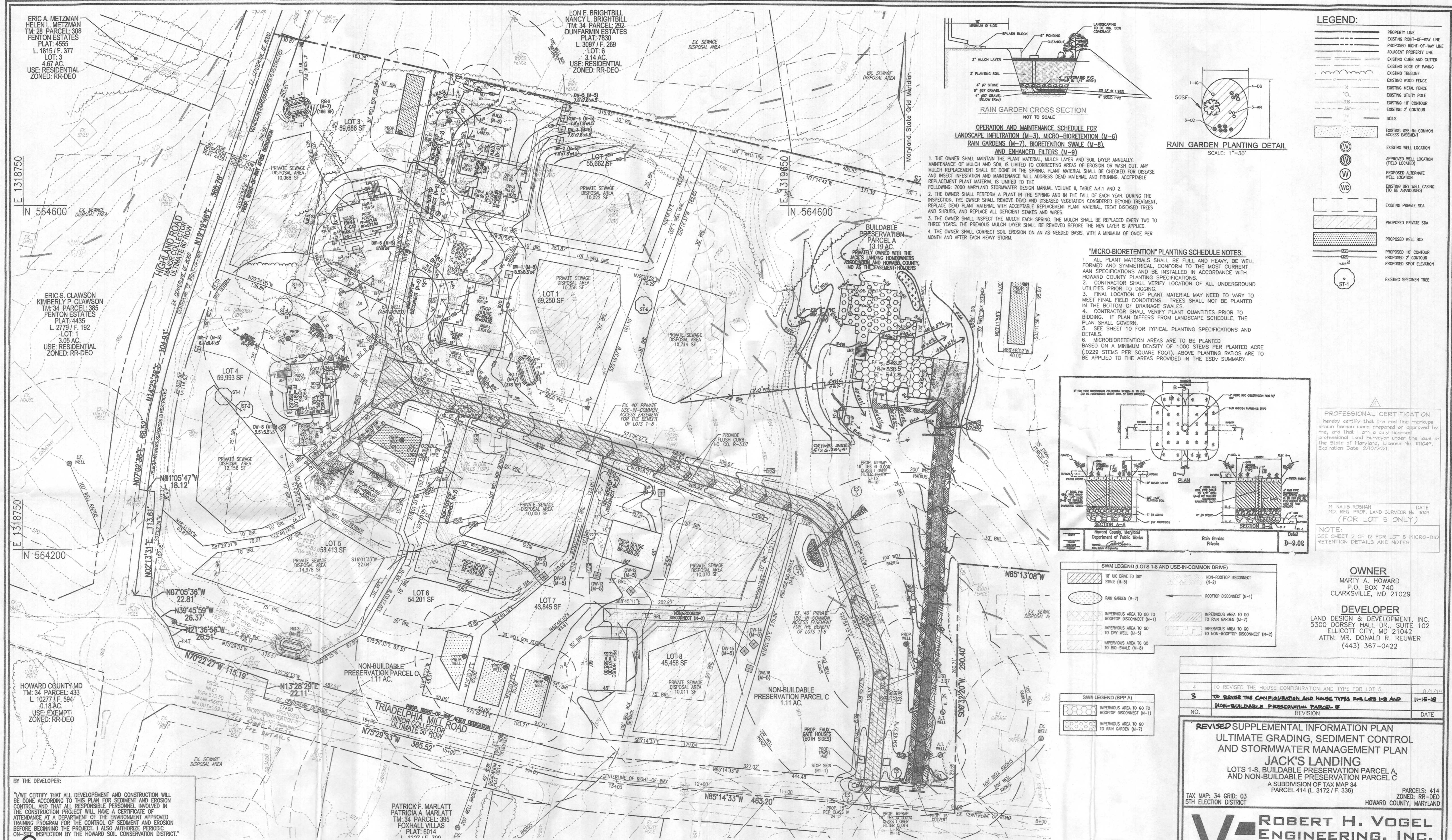
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.7666

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: OCTOBER 2018
SCALE: AS SHOWN
W.O. NO.: 13-31

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. 18193, EXPIRATION DATE: 09-27-2020.

5 SHEET OF 12

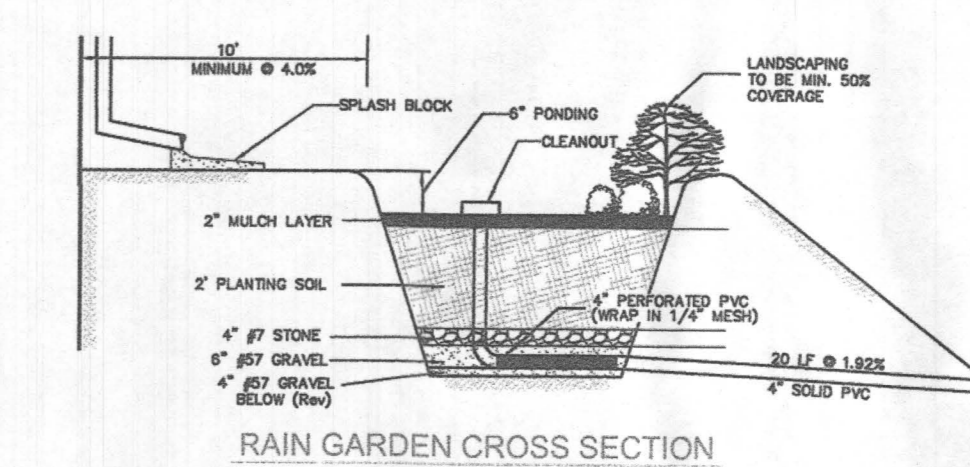


ERICA A. METZMAN
HELEN L. METZMAN
TM: 28 PARCEL: 308
FENTON ESTATES
PLAT: 4565
L. 1816 / F. 377
LOT: 3
4.67 AC
USE: RESIDENTIAL
ZONED: RR-DEO

ERIC S. CLAWSON
KIMBERLY P. CLAWSON
TM: 34 PARCEL: 385
FENTON ESTATES
PLAT: 4435
L. 2779 / F. 192
LOT: 1
3.05 AC
USE: RESIDENTIAL
ZONED: RR-DEO

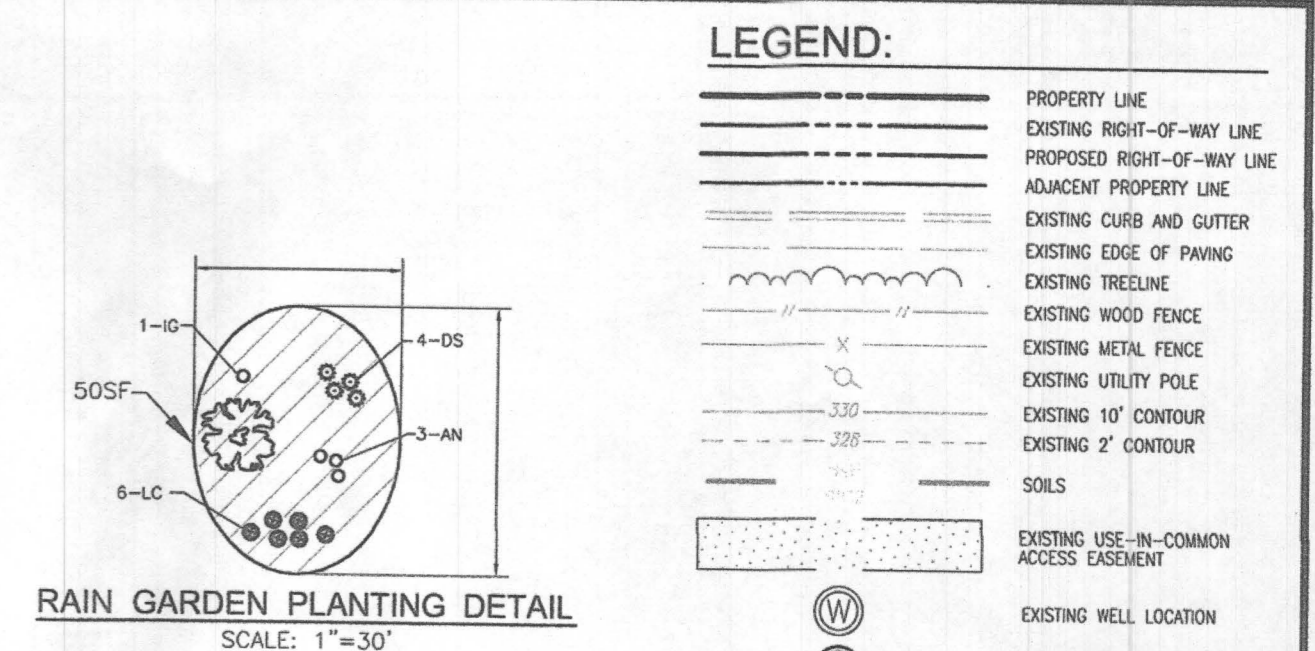
HOWARD COUNTY MD
TM: 34 PARCEL: 433
L. 10277 / F. 594
0.18 AC
USE: EXEMPT
ZONED: RR-DEO

LON E. BRIGHTBILL
NANCY L. BRIGHTBILL
TM: 34 PARCEL: 292
DUNFARMIN ESTATES
PLAT: 7830
L. 3097 / F. 269
LOT: 6
3.14 AC
USE: RESIDENTIAL
ZONED: RR-DEO



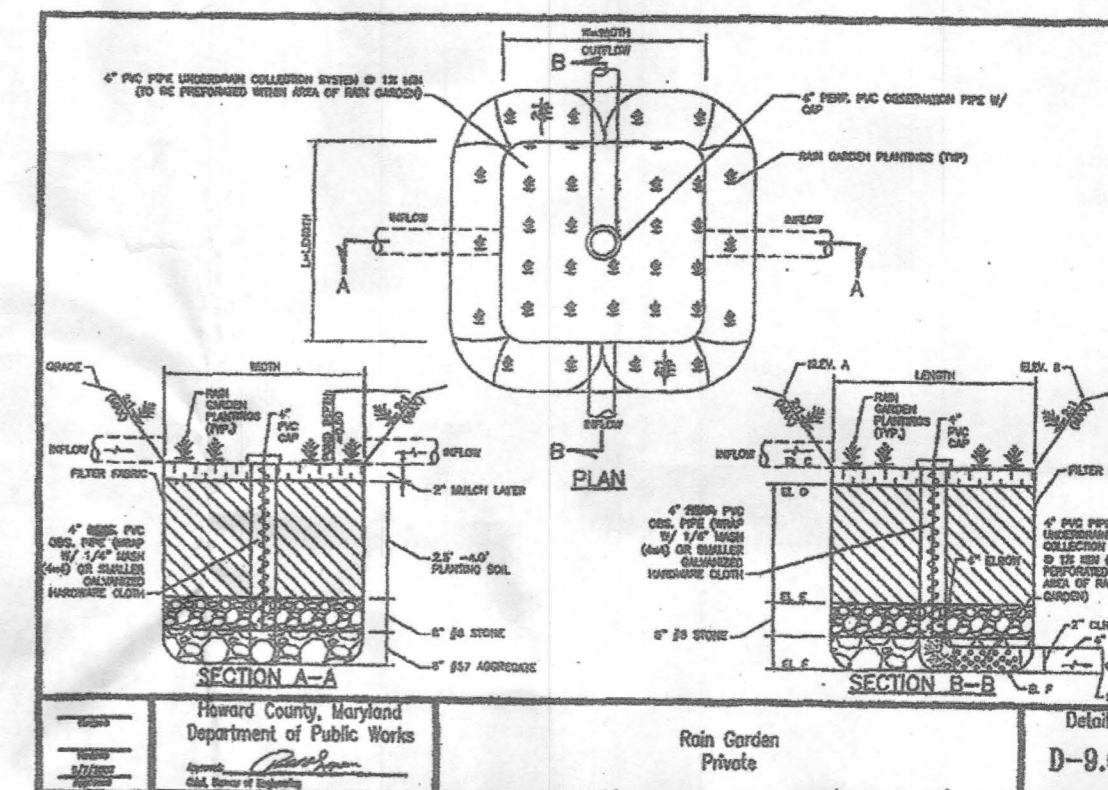
OPERATION AND MAINTENANCE SCHEDULE FOR
LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6)
RAIN GARDENS (M-7), BIORETENTION SWALE (M-8),
AND ENHANCED FILTERS (M-9)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME 1, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFUNCT STAKES AND WIRES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING, THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS, THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



- LEGEND:
- PROPERTY LINE
 - EXISTING RIGHT-OF-WAY LINE
 - PROPOSED RIGHT-OF-WAY LINE
 - ADJACENT PROPERTY LINE
 - EXISTING CURB AND GUTTER
 - EXISTING EDGE OF FINING
 - EXISTING TREELINE
 - EXISTING WOOD FENCE
 - EXISTING METAL FENCE
 - EXISTING UTILITY POLE
 - EXISTING 10' CONTOUR
 - EXISTING 2' CONTOUR
 - SOILS
 - EXISTING USE-IN-COMMON ACCESS EASEMENT
 - EXISTING WELL LOCATION
 - APPROVED WELL LOCATION (RED LOCATED)
 - PROPOSED WELL LOCATION
 - EXISTING DRY WELL CASING (TO BE ABANDONED)
 - EXISTING PRIVATE SDA
 - PROPOSED PRIVATE SDA
 - PROPOSED WELL BOX
 - PROPOSED 10' CONTOUR
 - PROPOSED 2' CONTOUR
 - PROPOSED SPOT ELEVATION
 - EXISTING SPECIMEN TREE

- "MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:
1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAS SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
 3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
 4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
 5. SEE SHEET 10 FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
 6. MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.



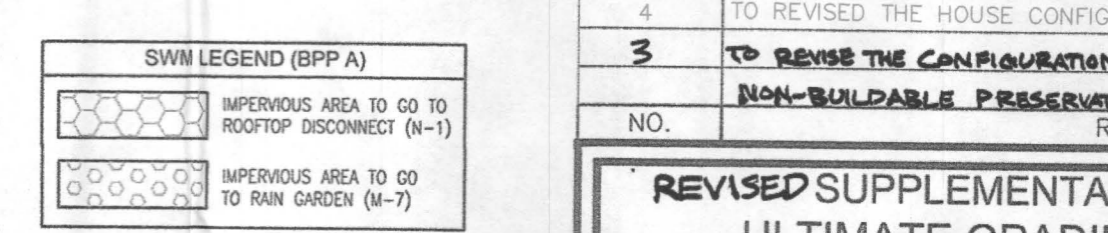
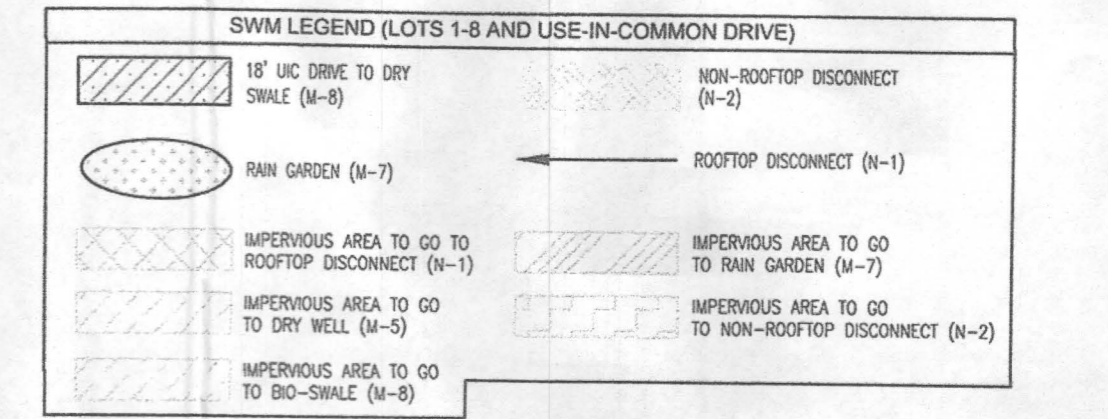
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THE RED LINE MARKINGS SHOWN HEREON WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 01049, EXPIRATION DATE: 2/10/2021.

M. NAJIB ROSHAN DATE: 11-18-18
REG. PROJ. LAND SURVEYOR No. 1049
(FOR LOT 5 ONLY)

NOTE:
SEE SHEET 2 OF 12 FOR LOT 5 MICRO-BIO RETENTION DETAILS AND NOTES.

OWNER
MARTY A. HOWARD
P.O. BOX 740
CLARKSVILLE, MD 21029

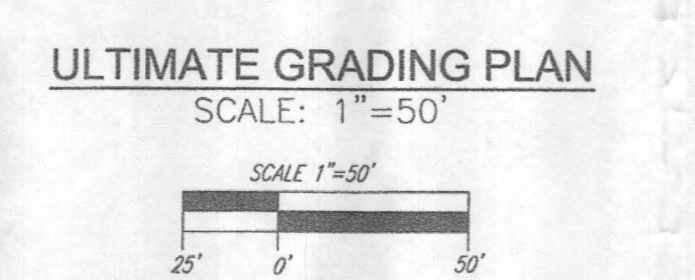
DEVELOPER
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DR. SUITE 102
ELLCOTT CITY, MD 21042
ATTN: MR. DONALD R. REUWER
(443) 367-0422



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
Gh1	GLADSTONE LAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
Gh2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
Gh3	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	.37	YES
Gh4	GLENVILLE-BALE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.37	YES
McC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	C	.24	NO

NOTE:
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



(3) RAINGARDEN PLANT LIST

QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
1	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	2 1/2"-3" Col.
1	ILEX GLABRA	INK BERRY	2'-3' HT.
6	LOBELEA CARDINALIS	CARDINAL FLOWER LOBELIA	1 GAL. CONTAINER
4	DRYOPTERIS SP.	WOOD FERN	1 GAL. CONTAINER
3	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER

NOTE:
THIS SHEET IS NOT TO BE USED FOR GRADING UNDER THIS PLAN. THIS PLAN SHOWS THE ULTIMATE GRADING OF THE LOTS ON THE SITE AND IS CONCEPTUAL ONLY. SEE SHEET 5 FOR GRADING AND SEDIMENT CONTROL UNDER THIS PLAN.

BY THE DEVELOPER:
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 Developer: [Signature]
DATE: 12-3-18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Signature: [Signature]
DATE: 12-17-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: [Signature]
DATE: 12-17-18
CHIEF, DIVISION OF LAND DEVELOPMENT

REVISED SUPPLEMENTAL INFORMATION PLAN
ULTIMATE GRADING, SEDIMENT CONTROL
AND STORMWATER MANAGEMENT PLAN
JACK'S LANDING
LOTS 1-8, BUILDABLE PRESERVATION PARCEL A
AND NON-BUILDABLE PRESERVATION PARCEL C
A SUBDIVISION OF TAX MAP 34
PARCEL 414 (L. 3172 / F. 336)

TAX MAP: 34 GRID: 03
5TH ELECTION DISTRICT

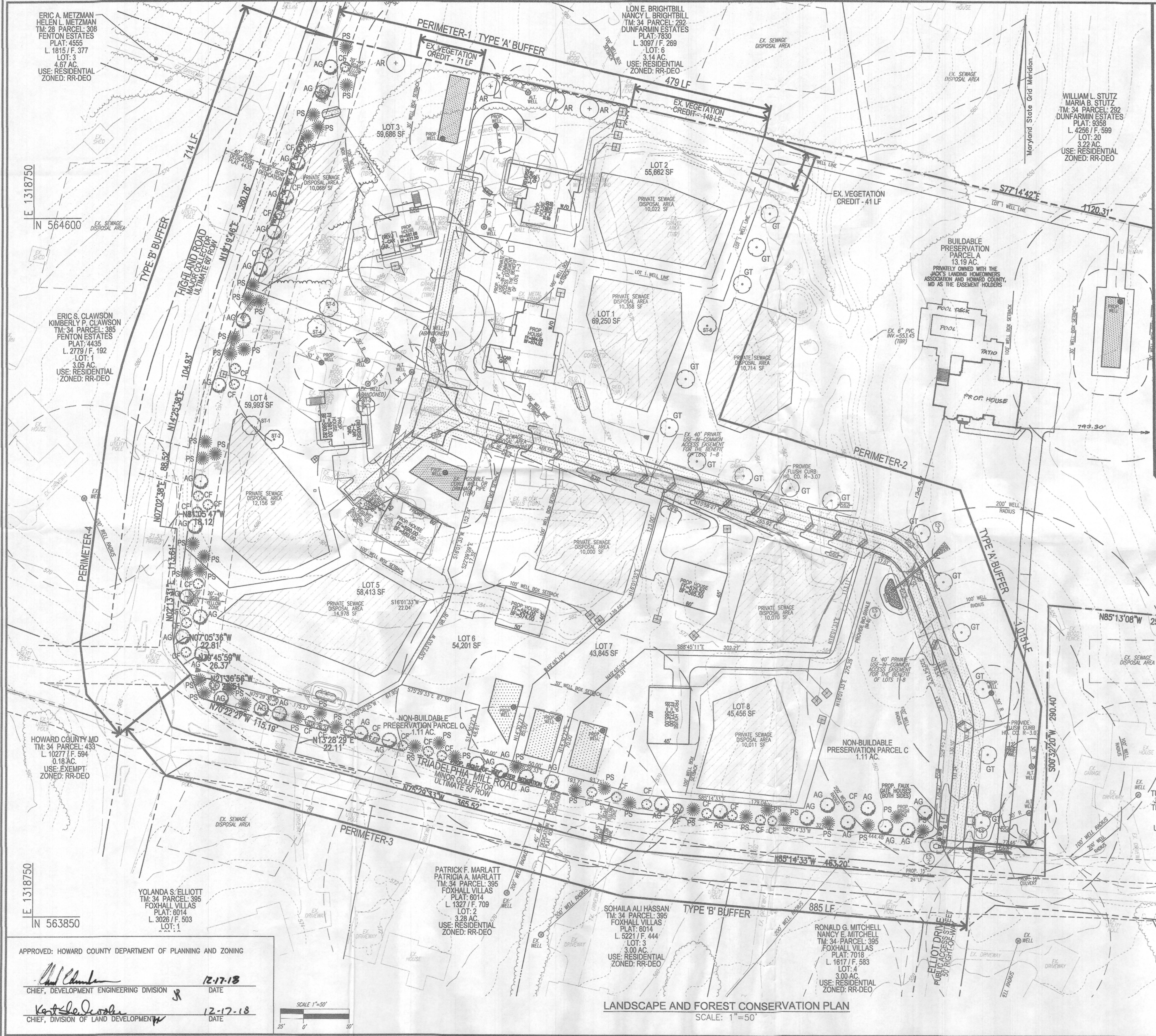
PARCELS: 414
ZONED: RR-DEO
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: OCTOBER 2018
SCALE: AS SHOWN
W.O. NO.: 13-31

PROFESSIONAL CERTIFICATE
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. 16193, EXPIRATION DATE: 09-27-2020.

7 OF 12 SHEETS



DEVELOPER/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.174 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
 Signature: *RHV* DATE: 12-3-18

PROFESSIONAL CERTIFICATION
 I hereby certify that the red line markings shown herein were prepared or approved by me, and that I am a duly licensed Professional Land Surveyor under the laws of the State of Maryland, License No. #11049, Expiration Date: 2/10/2021.
 M. NAJIB ROSHAN DATE: 12-3-18
 P.D. REG. PROF. LAND SURVEYOR No. 11049
 (FOR LOT 5 ONLY)

SPECIMEN TREE CHART

NO.	SIZE	COMMON NAME	COMMENTS
ST-1	40" DBH	ELM	TO REMAIN
ST-2	40" DBH	ELM	TO REMAIN
ST-3	42" DBH	OAK	TO BE REMOVED
ST-4	36" DBH	OAK	TO REMAIN
ST-5	44" DBH	PINE	TO REMAIN
ST-6	42" DBH	ELM	TO REMAIN
ST-7	40" DBH	MULTI-STEM	TO REMAIN

NOTE: FOR SPECIMEN TREES 4 & 5 TREE PROTECTION FENCING WILL BE REQUIRED

LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- PROPOSED RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING EDGE OF PAVING
- EXISTING TRENCH
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING UTILITY POLE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING USE-IN-COMMON ACCESS EASEMENT
- EXISTING WELL LOCATION
- APPROVED WELL LOCATION (FIELD LOCATED)
- PROPOSED ALTERNATE WELL LOCATION
- EXISTING DRY WELL CASING (TO BE ABANDONED)
- EXISTING PRIVATE SDA
- PROPOSED PRIVATE SDA
- PROPOSED WELL BOX
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING SPECIMEN TREE
- EXISTING B&E GREEN ZONE
- EXISTING B&E YELLOW ZONE
- PROPOSED FOREST CONSERVATION SIGN

- B & E NOTES:**
- THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
 - BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
 - THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTRUCTION'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

- FSD NOTES:**
- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR APPROPRIATE HABITAT WERE OBSERVED ON THE PROPERTY.
 - SURROUNDING LAND USE IS MEDIUM-HIGH DENSITY RESIDENTIAL DEVELOPMENT.
 - THERE ARE NO FORESTS PRESENT ON SUBJECT PROPERTY.
 - SPECIMEN TREES ARE SHOWN HEREON PER THE 10-6-2006 CAPITOL DEVELOPMENT DESIGN, INC. DELINEATION.

OWNER
 MARTY A. HOWARD
 P.O. BOX 740
 CLARKSVILLE, MD 21029

DEVELOPER
 LAND DESIGN & DEVELOPMENT, INC.
 5300 DORSEY HALL DR., SUITE 102
 ELLICOTT CITY, MD 21042
 ATTN: MR. DONALD R. RELUWER
 (443) 367-0422

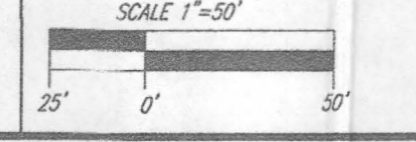
4	TO REVISE THE HOUSE CONFIGURATION AND TYPE FOR LOT 5	8/1/19
3	TO REVISE THE CONFIGURATION AND HOUSE TYPES FOR LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCEL B	11-15-18
NO.	REVISION	DATE

REVISED SUPPLEMENTAL INFORMATION PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN
JACK'S LANDING
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL A AND NON-BUILDABLE PRESERVATION PARCEL C
 A SUBDIVISION OF TAX MAP 34 PARCELS: 414
 TAX MAP: 34 GRID: 03 PARCEL 414 (L. 3172 / F. 336) ZONED: RR-DEO HOWARD COUNTY, MARYLAND
 5TH ELECTION DISTRICT

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

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 DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: OCTOBER 2018
 SCALE: AS SHOWN
 W.O. NO.: 13-31
 10 SHEET OF 12

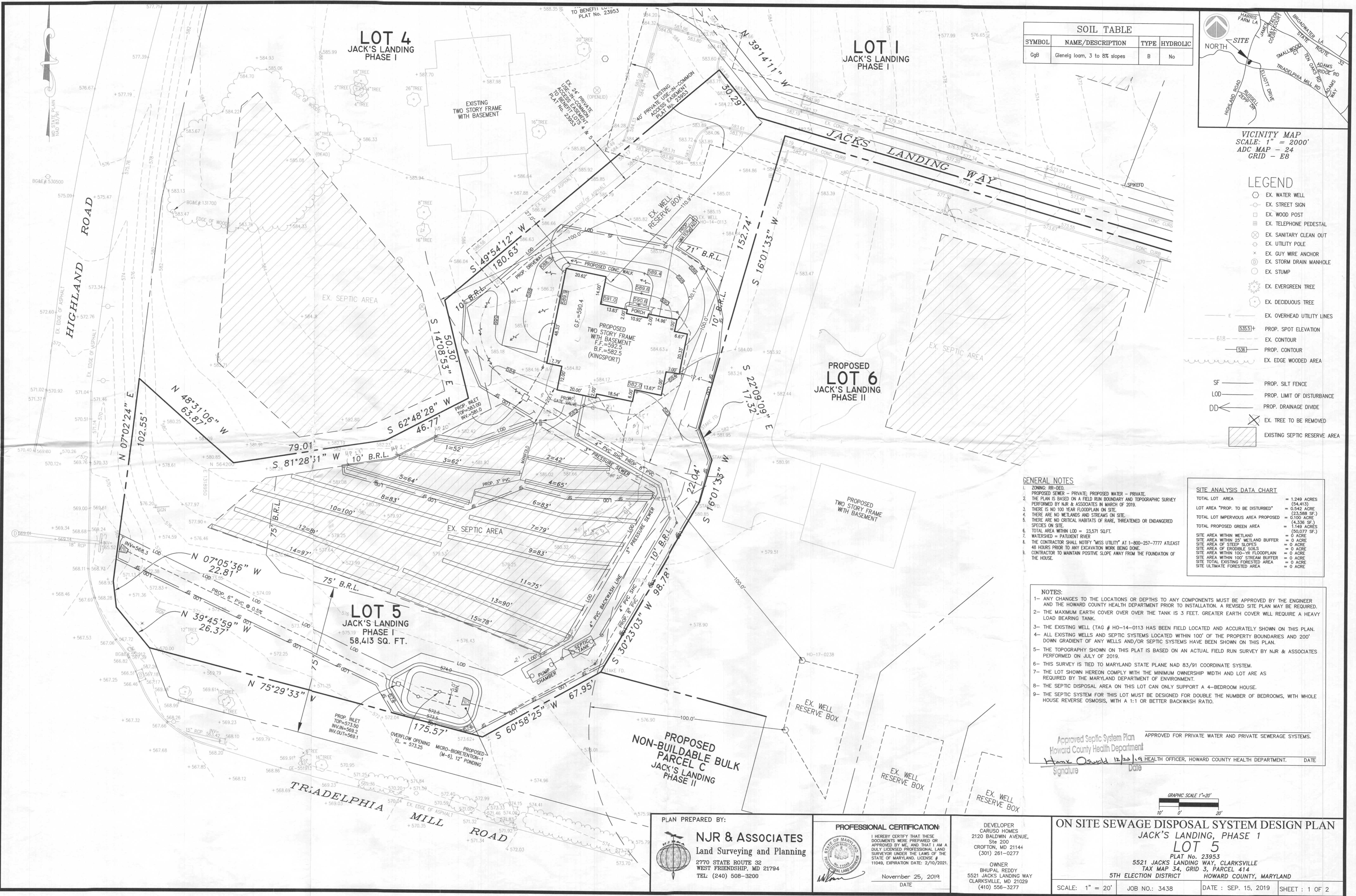
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* DATE: 12-17-18
 Chief, Division of Land Development: *[Signature]* DATE: 12-17-18



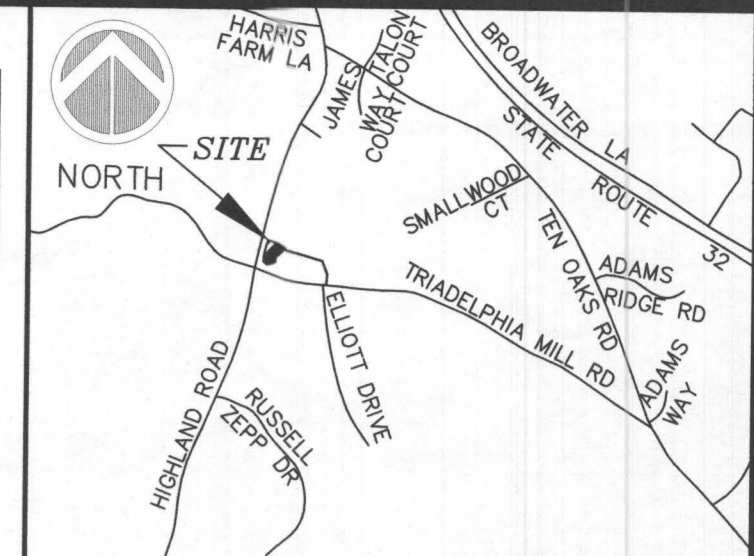
LANDSCAPE AND FOREST CONSERVATION PLAN
 SCALE: 1"=50'

MATCHLINE - SEE SHEET 10

MATCHLINE - SEE SHEET 10



SOIL TABLE			
SYMBOL	NAME/DESCRIPTION	TYPE	HYDROLIC
CgB	Genelg loam, 3 to 8% slopes	B	No



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP - 24
GRID - E8

- LEGEND**
- EX. WATER WELL
 - EX. STREET SIGN
 - EX. WOOD POST
 - EX. TELEPHONE PEDESTAL
 - ⊗ EX. SANITARY CLEAN OUT
 - EX. UTILITY POLE
 - × EX. GUY WIRE ANCHOR
 - EX. STORM DRAIN MANHOLE
 - EX. STUMP
 - EX. EVERGREEN TREE
 - EX. DECIDUOUS TREE
 - E — EX. OVERHEAD UTILITY LINES
 - 535.5+ PROP. SPOT ELEVATION
 - 618 — EX. CONTOUR
 - 536 — PROP. CONTOUR
 - EX. EDGE WOODED AREA
 - SF — PROP. SILT FENCE
 - LOD — PROP. LIMIT OF DISTURBANCE
 - DD ← PROP. DRAINAGE DIVIDE
 - ⊗ EX. TREE TO BE REMOVED
 - ▨ EXISTING SEPTIC RESERVE AREA

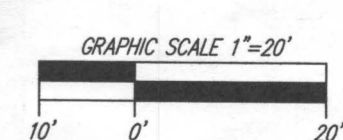
- GENERAL NOTES**
- ZONING: RR-DEO.
 - PROPOSED SEWER - PRIVATE; PROPOSED WATER - PRIVATE.
 - THE PLAN IS BASED ON A FIELD RUN BOUNDARY AND TOPOGRAPHIC SURVEY PERFORMED BY NJR & ASSOCIATES IN MARCH OF 2019.
 - THERE IS NO 100 YEAR FLOODPLAIN ON SITE.
 - THERE ARE NO WETLANDS AND STREAMS ON SITE.
 - THERE ARE NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES ON SITE.
 - TOTAL AREA WITHIN LOD = 23,571 SQ.FT.
 - WATERSHED = PATUENT RIVER
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - CONTRACTOR TO MAINTAIN POSITIVE SLOPE AWAY FROM THE FOUNDATION OF THE HOUSE.

SITE ANALYSIS DATA CHART

TOTAL LOT AREA	= 1.249 ACRES
LOT AREA "PROP. TO BE DISTURBED"	= 0.542 ACRE
TOTAL LOT IMPERVIOUS AREA PROPOSED	= (23,598 SF)
TOTAL PROPOSED GREEN AREA	= 100 ACRE
TOTAL PROPOSED GREEN AREA	= (4,336 SF)
TOTAL AREA WITHIN LOD	= 1.149 ACRES
TOTAL AREA WITHIN LOD	= (50,077 SF)
SITE AREA WITHIN WETLAND	= 0 ACRE
SITE AREA WITHIN 25' WETLAND BUFFER	= 0 ACRE
SITE AREA OF STEEP SLOPES	= 0 ACRE
SITE AREA OF ERODIBLE SOILS	= 0 ACRE
SITE AREA WITHIN 100-YR FLOODPLAIN	= 0 ACRE
SITE AREA WITHIN 100' STREAM BUFFER	= 0 ACRE
SITE TOTAL EXISTING FORESTED AREA	= 0 ACRE
SITE ULTIMATE FORESTED AREA	= 0 ACRE

- NOTES:**
- ANY CHANGES 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.
 - THE EXISTING WELL (TAG # HO-14-0113 HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN ON THIS PLAN.
 - ALL EXISTING 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 ON THIS PLAN.
 - THE TOPOGRAPHY SHOWN ON THIS PLAT IS BASED ON AN ACTUAL FIELD RUN SURVEY BY NJR & ASSOCIATES PERFORMED ON JULY OF 2019.
 - THIS SURVEY IS TIED TO MARYLAND STATE PLANE NAD 83/91 COORDINATE SYSTEM.
 - THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT.
 - THE SEPTIC DISPOSAL AREA ON THIS LOT CAN ONLY SUPPORT A 4-BEDROOM HOUSE.
 - THE SEPTIC SYSTEM FOR THIS LOT MUST BE DESIGNED FOR DOUBLE THE NUMBER OF BEDROOMS, WITH WHOLE HOUSE REVERSE OSMOSIS, WITH A 1:1 OR BETTER BACKWASH RATIO.

Approved Septic System Plan
 Approved for Private Water and Private Sewerage Systems.
 Howard County Health Department
 Howard Oswald, Health Officer, Howard County Health Department.
 Signature: _____ Date: _____

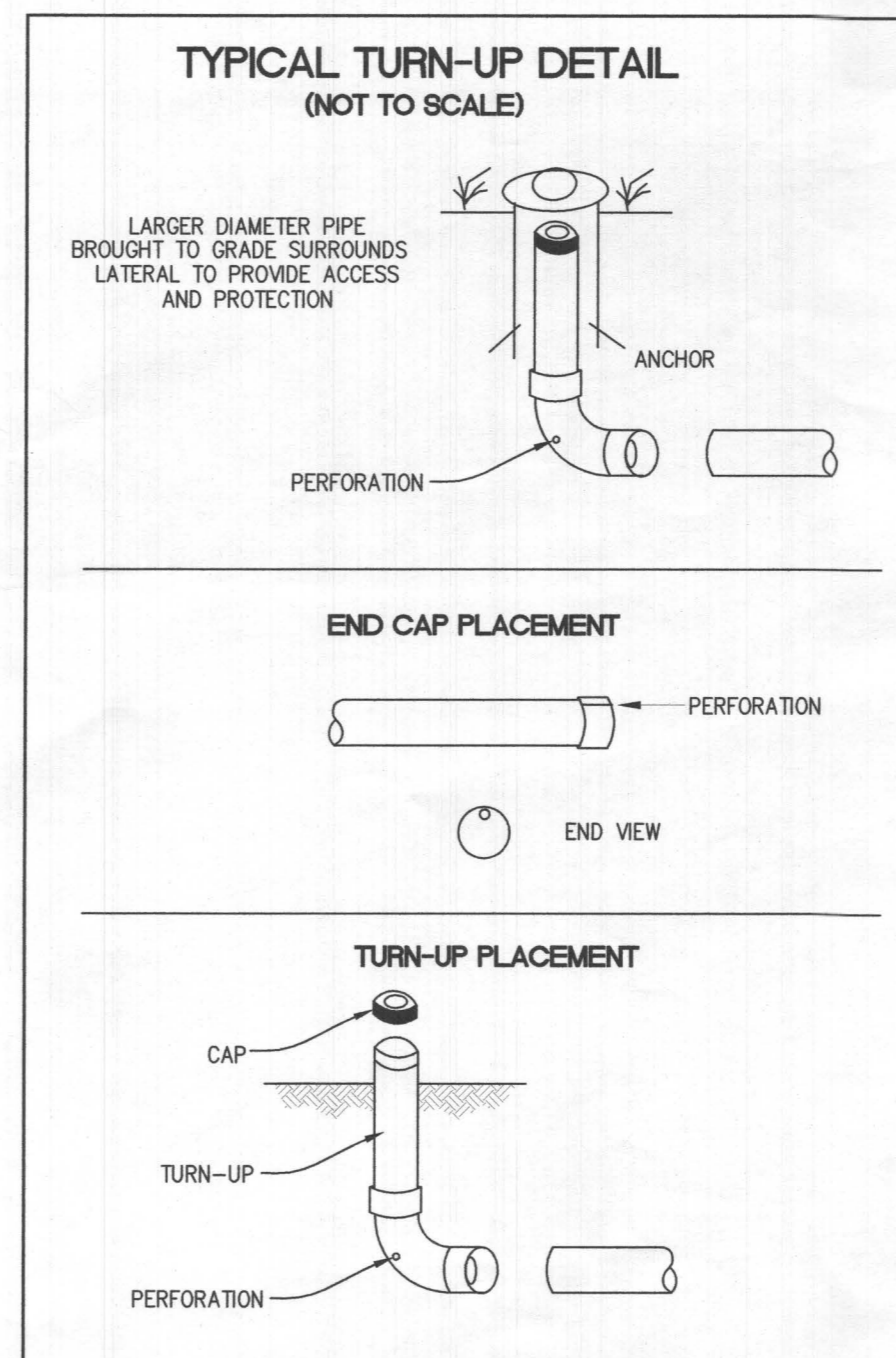
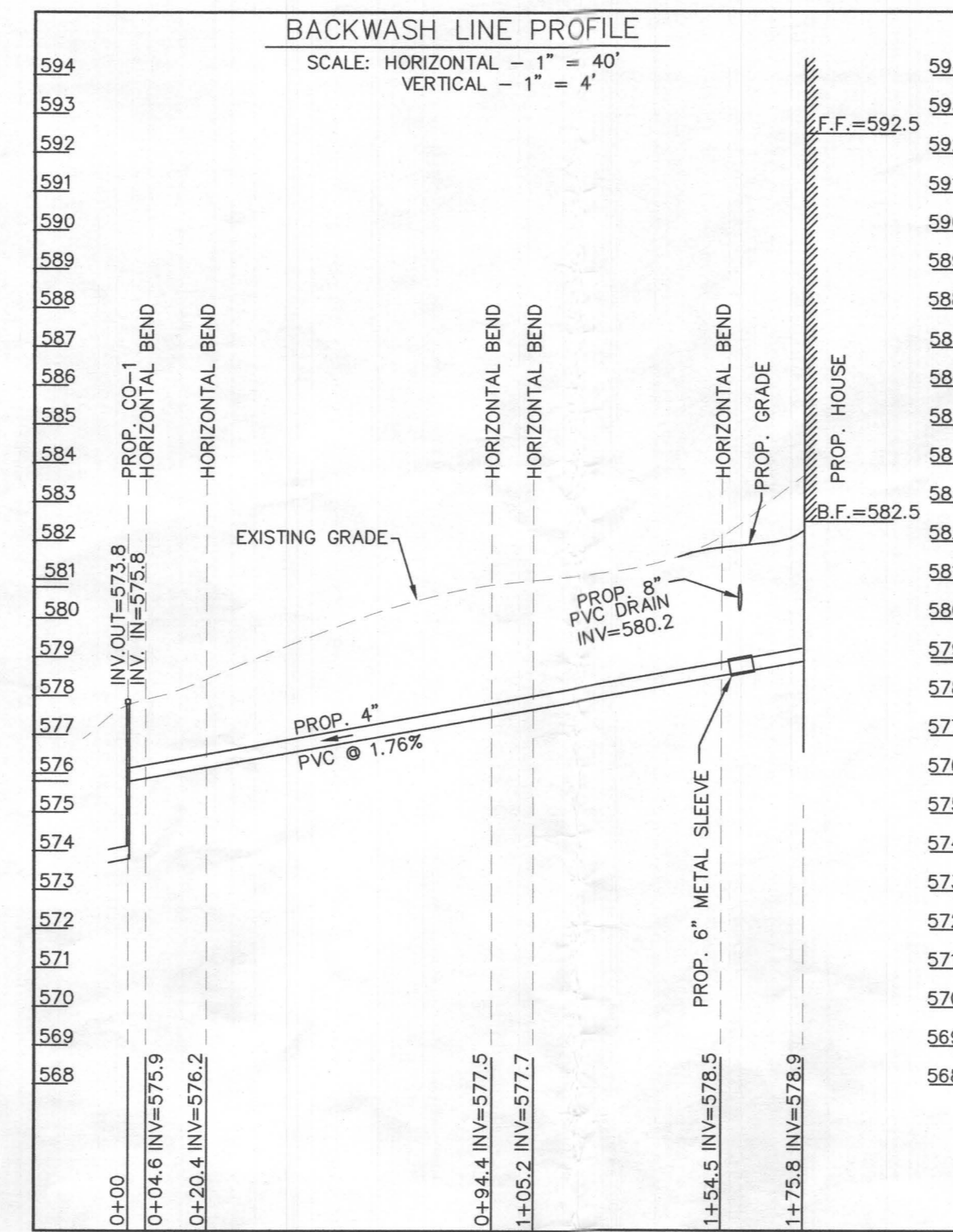
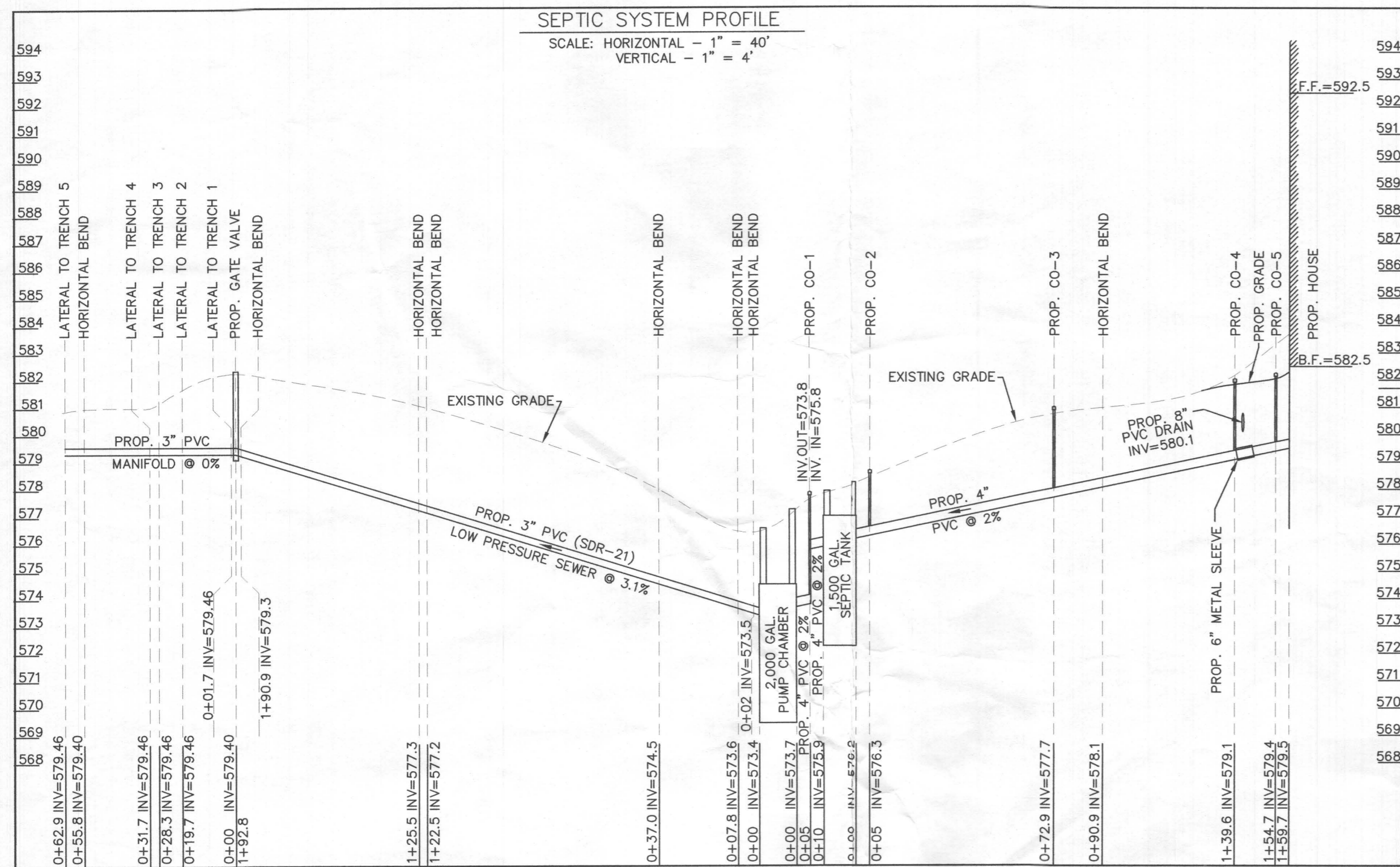


PLAN PREPARED BY:
NJR & ASSOCIATES
 Land Surveying and Planning
 2770 STATE ROUTE 32
 WEST FRIENDSHIP, MD 21794
 TEL: (240) 608-3200

PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE # 11049, EXPIRATION DATE: 2/10/2021.
 November 25, 2019
 DATE

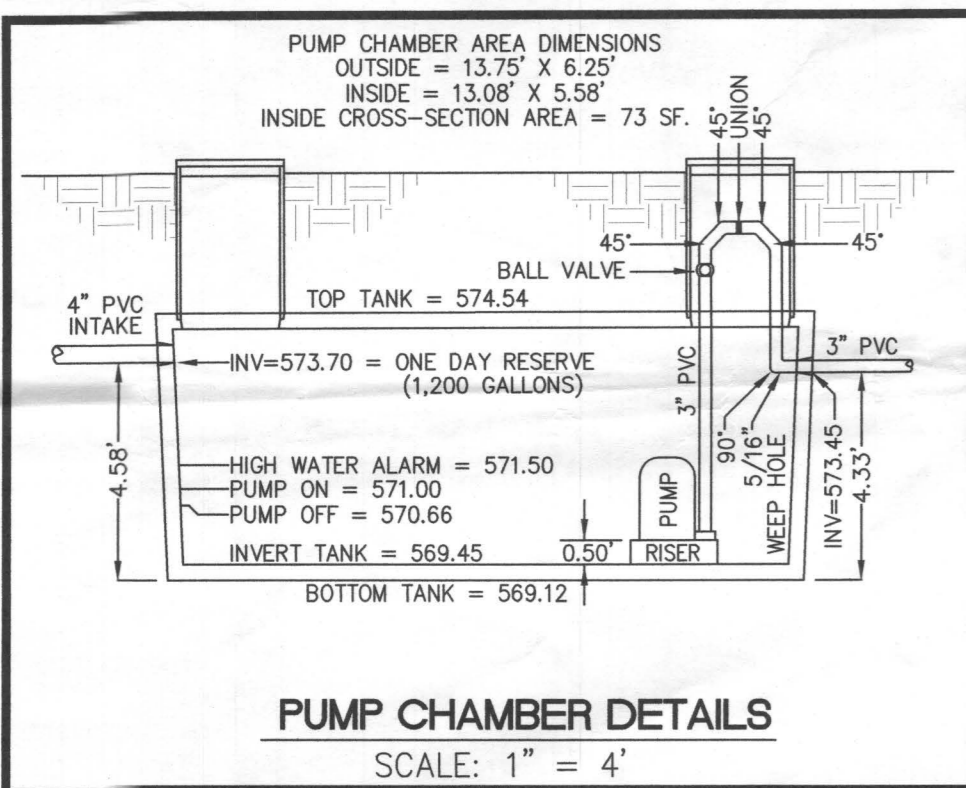
DEVELOPER
 CARUSO HOMES
 2120 BALDWIN AVENUE,
 Ste 200
 CROFTON, MD 21114
 (301) 261-0277
 OWNER
 BHUPAL REDDY
 5521 JACKS LANDING WAY
 CLARKSVILLE, MD 21029
 (410) 556-3277

ON SITE SEWAGE DISPOSAL SYSTEM DESIGN PLAN
 JACK'S LANDING, PHASE 1
LOT 5
 PLAT No. 23953
 5521 JACKS LANDING WAY, CLARKSVILLE
 TAX MAP 34, GRID 3, PARCEL 414
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 20' JOB NO.: 3438 DATE: SEP. 15, 2019 SHEET: 1 OF 2



TRENCH INFO, INITIAL SYSTEM

TRENCH	TRENCH LENGTH	EX. TOP OF GROUND	TOP OF GRAVEL	INV. INTO TRENCH	BOTTOM OF TRENCH
1	52'	582.3±	581.3	579.46	574.3
2	42'	581.7±	580.7	579.46	573.7
3	62'	581.7±	580.7	579.46	573.7
4	65'	581.0±	580.0	579.46	573.0
5	64'	581.0±	580.0	579.46	573.0



MINIMUM SYSTEM DISCHARGE RATE = 89.7 gpm
 3" PVC MAIN $f = 1.73' / 100'$
 3" MANIFOLD

DOSE:
 LATERALS + MANFOLD + MAIN = 145.0 GALS.
 1.5" LATERALS: 5 X 273.5 X 10.6 / 100 = 74.0 GALS.
 FORCE MAIN 192.8 X 38.4 GAL/100 LF. = 24.2 GALS.
 MANIFOLD 62.9 X 38.4 GAL/100 LF. = 343.2 GALS.

PUMP CHAMBER:
 ONE DAY DOSE = 1,200 GALLONS

TDH: (FITTINGS)
 DISCONNECT: 1 X 3 = 3
 45': 10 X 6 = 60
 90': 1 X 10 = 10
 VALVES: 2 X 2 = 4
 TOTAL = 77

FRICION:
 MAIN + FITTINGS = 192.8 + 77 = 269.8
 269.8 (1.73/100) = 4.67

STATIC:
 (INVERT OF MANIFOLD - PUMP OFF) 579.40 - 570.66 = 8.74
 DISTAL HEAD = 2.0'
 TDH (4.67 + 8.74 + 2.0) = 15.41 @ 89.7 GPM
 USE GOULDS PUMP MODEL (WE07H)

INITIAL SEPTIC SYSTEM CALCULATIONS: ABS. RATE=1.2, EFF. DEPTH=6'-8"
 DRAINFIELD AREA: 4 BEDROOMS AT 600 gpd / 1.2 ABSORPTION RATE=500 SQ. FT.
 SIDEWALL REDUCTION CREDIT: $\frac{WIDTH+2}{2} = \frac{4}{2} = 0.57$

LENGTH OF TRENCHES: $\frac{500 \text{ SQ. FT.} \times 0.57}{2} = 142.5 \text{ LINEAR FEET}$
 DOUBLE FOR BACKWASH SYSTEM = 285.0'

FIRST REPLACEMENT SYSTEM CALC: ABS. RATE=0.8, EFF. DEPTH=6'-8"
 DRAINFIELD AREA: 4 BEDROOMS AT 600 gpd / 0.8 ABSORPTION RATE=750 SQ. FT.
 SIDEWALL REDUCTION CREDIT: $\frac{WIDTH+2}{2} = \frac{4}{2} = 0.57$

LENGTH OF TRENCHES: $\frac{750 \text{ SQ. FT.} \times 0.57}{2} = 213.75 \text{ LINEAR FEET}$
 DOUBLE FOR BACKWASH SYSTEM = 427.5'

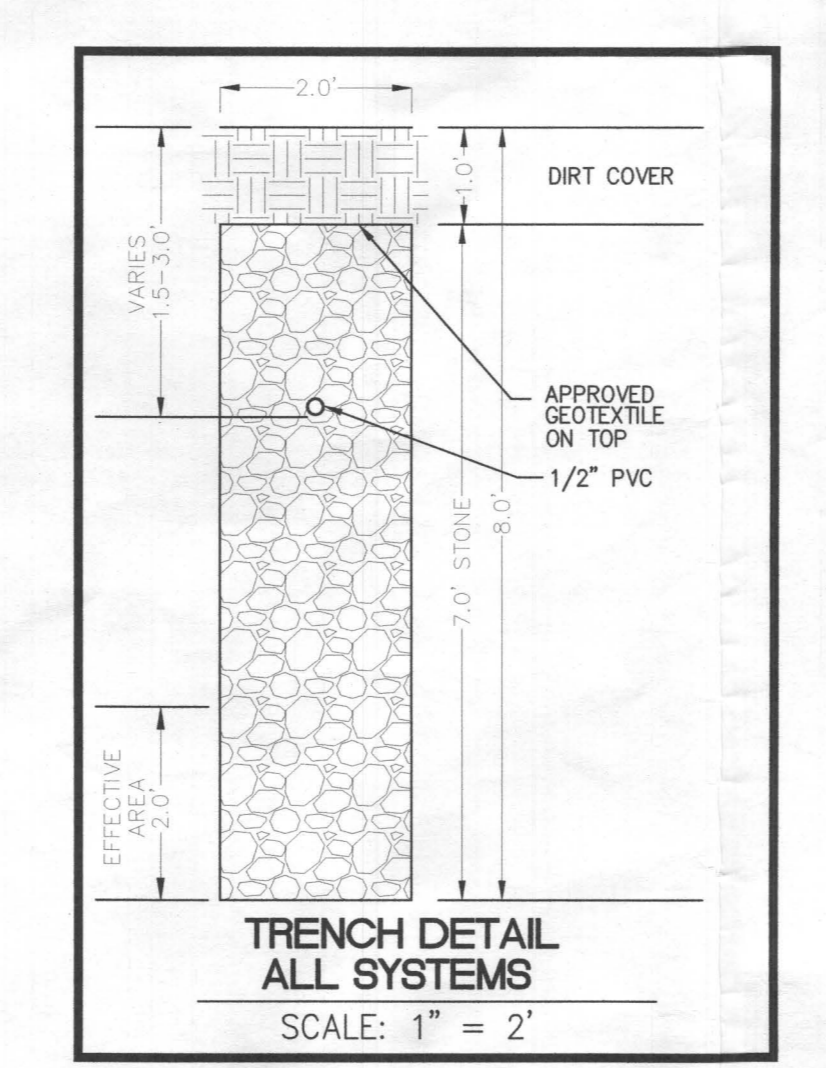
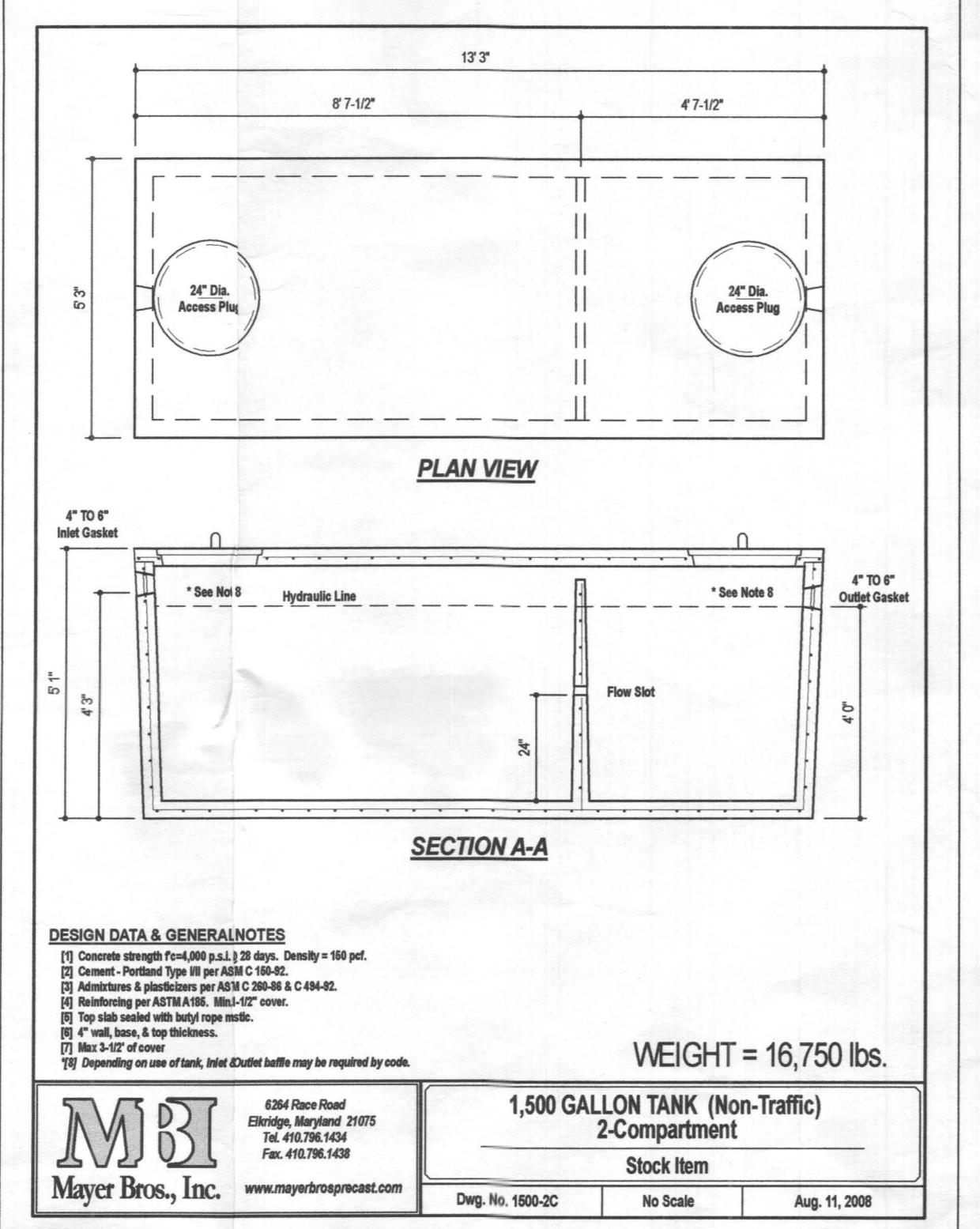
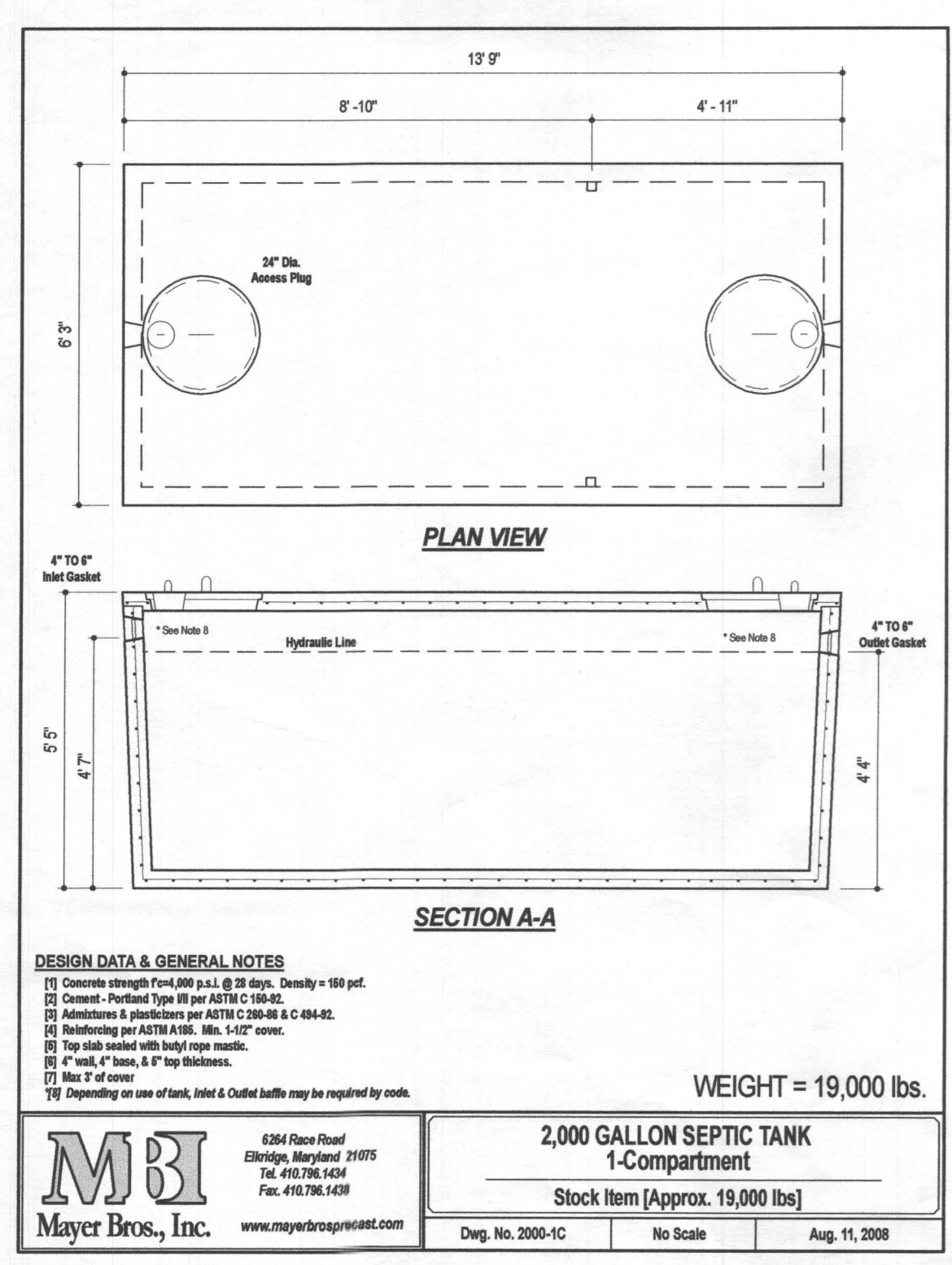
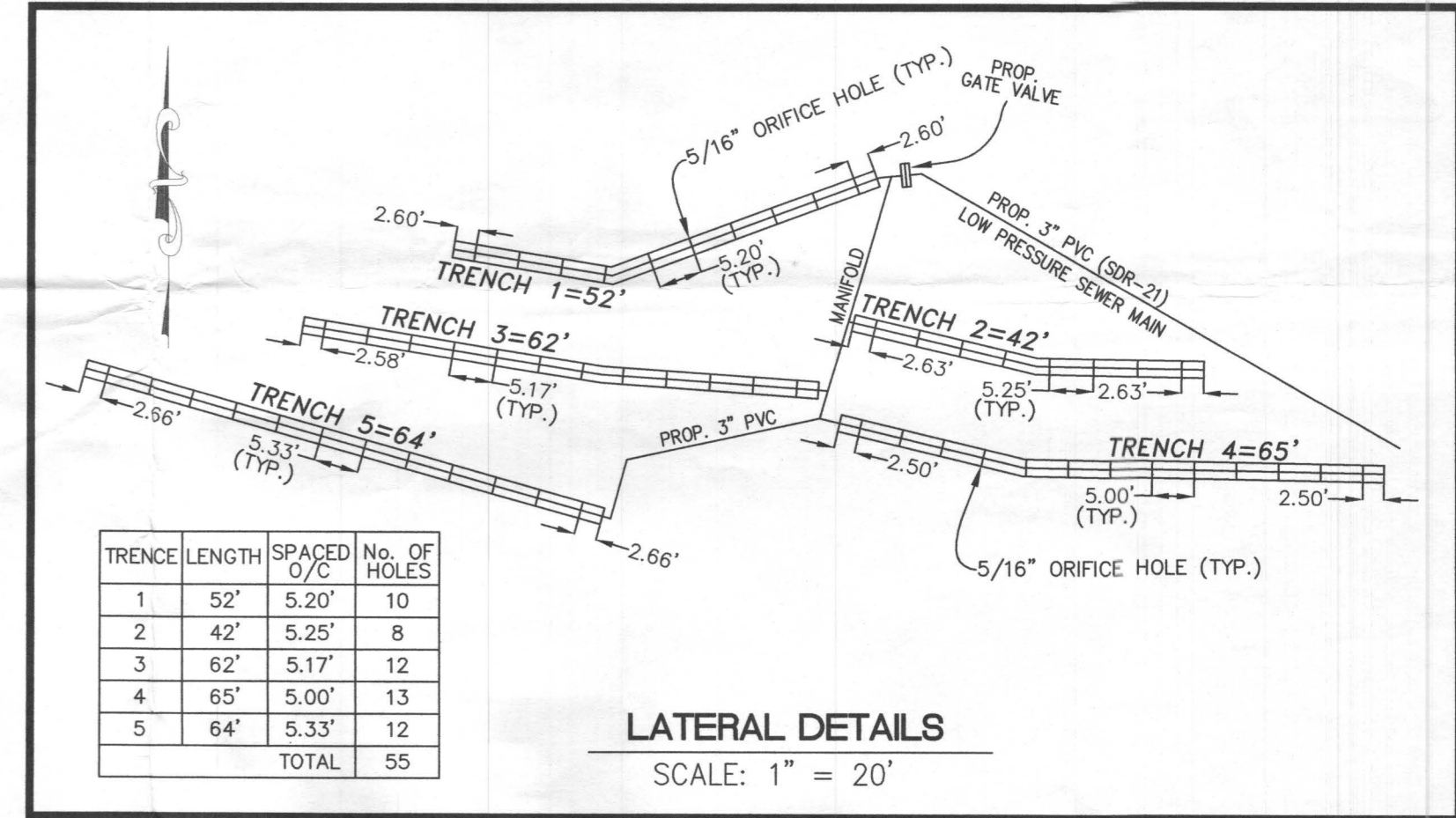
SECOND REPLACEMENT SYSTEM CALC: ABS. RATE=0.8, EFF. DEPTH=6'-8"
 DRAINFIELD AREA: 4 BEDROOMS AT 600 gpd / 0.8 ABSORPTION RATE=750 SQ. FT.
 SIDEWALL REDUCTION CREDIT: $\frac{WIDTH+2}{2} = \frac{4}{2} = 0.57$

LENGTH OF TRENCHES: $\frac{750 \text{ SQ. FT.} \times 0.57}{2} = 213.75 \text{ LINEAR FEET}$
 DOUBLE FOR BACKWASH SYSTEM = 427.5'

TOTAL TRENCHES PROVIDED, 11 TO 15 = 75'+89'+90'+97'+78' = 429'

TABLE-D WORKSHEET

TRENCH	RELATIVE ELEVATION	TRENCH LENGTH	LATERAL ASSUMED HEAD	ORIFICE DIAMETER	ORIFICE FLOW RATE	ORIFICE SPACING	ORIFICE NUMBER	FLOW RATE GPM/LF	FLOW RATE TRENCH	
1	579.46	52'	49.4'	2.0"	5/16"	1.63 gpd	5.20'	10	0.31	16.3 GPM
2	579.46	42'	39.37'	2.0"	5/16"	1.63 gpd	5.25'	8	0.31	13.0 GPM
3	579.46	62'	59.42'	2.0"	5/16"	1.63 gpd	5.17'	12	0.32	19.6 GPM
4	579.46	65'	62.5'	2.0"	5/16"	1.63 gpd	5.00'	13	0.33	21.2 GPM
5	579.46	64'	61.34'	2.0"	5/16"	1.63 gpd	5.33'	12	0.31	19.6 GPM
									TOTAL	89.7 GPM



Wastewater

GOULDS WATER TECHNOLOGY

APPLICATIONS
 Specifically designed for the following uses:
 • Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS
Pump
 • Solids handling capabilities: 3/4" maximum.
 • Discharge size: 2" NPT.
 • Capacities: up to 140 GPM.
 • Total heads: up to 128 feet TDH.
 • Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.
 • See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

MOTORS
 • Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
 • Class B insulation on 1/2 - 1 1/2 HP models.
 • Class F insulation on 2 HP models.

Single phase (60 Hz):
 • Capacitor start motors for maximum starting torque.
 • Built-in overload with automatic reset.

AGENCY LISTINGS
 Approved by 1178 and CSA 22.2 100 Standards by Canadian Standards Association File #R383849

PERFORMANCE CURVE
 A graph showing Total Dynamic Head (TDH) in meters and feet versus Capacity in m³/hr and GPM. The graph shows performance for various motor sizes (WE1000H, WE1100H, WE1200H, WE1300H, WE1400H, WE1500H, WE1600H, WE1750H) and a 5 GPM flow rate.

NOTES:

- ANY CHANGES 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.
- THE EXISTING WELL (TAG # HO-14-0113) HAS BEEN FIELD LOCATED AND ACCURATELY SHOWN ON THIS PLAN.
- ALL EXISTING 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 ON THIS PLAN.
- THE TOPOGRAPHY SHOWN ON THIS PLAN IS BASED ON AN ACTUAL FIELD RUN SURVEY BY NJR & ASSOCIATES PERFORMED ON JULY OF 2019.
- THIS SURVEY IS TIED TO MARYLAND STATE PLANE NAD 83/91 COORDINATE SYSTEM.
- THE LOT SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF ENVIRONMENT.
- THE SEPTIC DISPOSAL AREA ON THIS LOT CAN ONLY SUPPORT A 4-BEDROOM HOUSE.
- THE SEPTIC SYSTEM FOR THIS LOT MUST BE DESIGNED FOR DOUBLE THE NUMBER OF BEDROOMS, WITH WHOLE HOUSE REVERSE OSMOSIS, WITH A 1:1 OR BETTER BACKWASH RATIO.

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 HEALTH OFFICER, HOWARD COUNTY HEALTH DEPARTMENT. DATE

DESIGN DATA & GENERAL NOTES

- Concrete strength F_{cm} 4000 p.s.i., @ 28 days. Density = 150 pcf.
- Concrete: Portland Type I or ASTM C 150-02.
- Reinforcement: #4 and #5 bars per ASTM C 200-08 & C 404-02.
- Reinforcing per ASTM A618, Min. 140° cover.
- Top slab coated with butyl rope mastic.
- 1/2" thick, 4" deep, 2" top thickness.
- Max 2" of cover.
- Max 3'-0" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

2,000 GALLON SEPTIC TANK
 1-Compartment
 Stock Item [Approx. 19,000 lbs]
 Weight = 19,000 lbs.
 Aug. 11, 2008

DESIGN DATA & GENERAL NOTES

- Concrete strength F_{cm} 4000 p.s.i., @ 28 days. Density = 150 pcf.
- Concrete: Portland Type I or ASTM C 150-02.
- Reinforcement: #4 and #5 bars per ASTM C 200-08 & C 404-02.
- Reinforcing per ASTM A618, Min. 140° cover.
- Top slab coated with butyl rope mastic.
- 1/2" thick, 4" deep, 2" top thickness.
- Max 2" of cover.
- Max 3'-0" of cover.
- Depending on use of tank, inlet & outlet baffles may be required by code.

1,500 GALLON TANK (Non-Traffic)
 2-Compartment
 Stock Item
 Weight = 16,750 lbs.
 Aug. 11, 2008

PLAN PREPARED BY:
NJR & ASSOCIATES
 Land Surveying and Planning
 2770 STATE ROUTE 32
 WEST FRIENDSHIP, MD 21794
 TEL: (240) 508-3200

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