

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

Rev. Eng. JP

7/8/19

**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. for Septic  
**SUBJECT: SUBDIVISION PLANS FOR REVIEW**

**COMMENTS DUE:** 7/17/19

**P & Z FILE NUMBER:** F-08-101

**NAME OF PLAN:** Jack's Landing - Lot 4

**ENCLOSURE:**

- |  |   |
|--|---|
| <input type="checkbox"/> SKETCH PLAN             | <input type="checkbox"/> SITE DEVELOPMENT PLAN          |
| <input type="checkbox"/> SKETCH PRELIMINARY PLAN | <input type="checkbox"/> INDUSTRIAL WASTE SURVEY        |
| <input type="checkbox"/> PRELIMINARY PLAN        | <input checked="" type="checkbox"/> RED-LINE ROAD CONST |
| <input type="checkbox"/> FINAL PLAT              | <input type="checkbox"/> RED-LINE SDP                   |
| <input type="checkbox"/> FINAL PLAN              | <input type="checkbox"/> TRAFFIC STUDY/APFO             |
| <input type="checkbox"/> DESIGN WAIVER           | <input type="checkbox"/> WAIVER PETITION                |

SUBMISSION RECEIVED FROM: DP&Z / Vogel

*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 - no objections

SIGNED BY: JP DIVISION: Health DATE: 7/19/19

# VOGEL ENGINEERING + TIMMONS GROUP

3300 North Ridge Road, Suite 110 Ellicott City, MD 21043  
P 410.461.7666 F 410.461.8961 [www.timmons.com](http://www.timmons.com)

May 6, 2019

Mr. Chad Edmondson, P.E., Chief  
Development Engineering Division  
Howard County Department of  
Planning and Zoning  
3430 Court House Drive  
Ellicott City, Maryland 21043

Re: Jack's Landing – Lot 4  
F-08-101  
Redline Revision

Dear Mr. Edmondson,

The purpose of this letter is to request a redline revision to the subject property. The purpose of this redline is to remove the proposed permeable pavement originally shown for lot 4 and to treat the driveway with non-rooftop disconnection. Also, additional area has been added to the approved Private Sewage Disposal Area in order to accommodate the required trenching for the Lot 4 septic and backwash systems.

Should you have any questions regarding this matter, please do not hesitate to contact this office.

Sincerely,

**VOGEL ENGINEERING + TIMMONS GROUP**



**Robert H. Vogel, P.E.**


JACK'S LANDING LOT 4  
SIMPLIFIED ENVIRONMENTAL CONCEPT PLAN

SEPTEMBER 2018  
REVISED MAY 2019

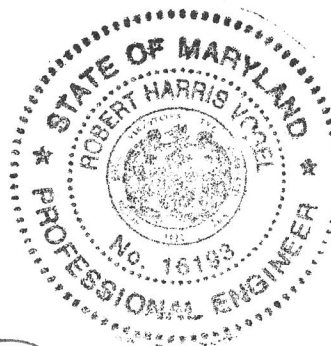
PREPARED FOR:

CARUSO HOMES  
2120 BALDWIN AVENUE, SUITE 200  
ELLCOTT CITY, MARYLAND 21114  
(301)832-4526

PREPARED BY:

 **ROBERT H. VOGEL  
ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
3300 N. RIDGE ROAD, SUITE 110, ELLCOTT CITY, MD 21043  
TEL: 410.461.7666 FAX: 410.461.8961

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 16193  
EXPIRATION DATE 09-27-20



5/6/19

A handwritten signature in black ink, appearing to read "Robert Harris Vogel", written over the bottom portion of the professional seal.

## **JACKS LANDING LOT 4**

### **SIMPLIFIED ENVIRONMENTAL CONCEPT PLAN**

#### **ENVIRONMENTAL SITE DESIGN**

1. The subject lot was created as part of the Jack's Landing subdivision and is zoned RR-DEO. The lot is 1.37 acres and 0.61 acres is proposed to be disturbed. There are no environmental resources located on the lot. The property is served by private well and septic. The soils are Glenelg Loam which is are classified as HSG 'B'.
2. The property slopes from north to south and the proposed ESD concept preserves the existing drainage patterns. Sediment control is provided in accordance with the 2011 Sediment and erosion Control Standards. These practices will prevent the discharge of erosion during the construction phase and will predominately consist of super silt fence. The grading and sediment control plan has been reviewed and approved by the Howard Soil Conservation District.
3. The computed PE for this project is 1.2" and the resulting ESD storage volume requirement is 494 cf. The ESD requirement is fulfilled through the use of drywells (M-5), disconnection of rooftop runoff (N-1) and non-disconnect rooftop runoff (N-2).
4. There are no requested waivers or alternative compliance requests required for this project.

## **SWM COMPUTATIONS**

LOD AREA: 26,734 SF  
IMP. AREA: 4,105 SF  
I:  $4,105/26,734 = 15.4\%$  (203)  
Rv:  $(0.009)(20) + 0.05 = 0.185$   
SOILS: GgB (B)  
Pe: 1.2"  
ESDv:  $(1.2)(0.185)(26,734)/12 = 494$  CF (REQ.)

### **ESDv PROVIDED**

#### **ROOFTOP DISCONNECTION**

ROOFTOP DISCONNECT CREDIT (#1) (N-1)  
ESDv =  $(0.95)(1.0)(500)/12 = 40$  CF

ROOFTOP DISCONNECT CREDIT (#2) (N-1)  
ESDv =  $(0.95)(1.0)(370)/12 = 29$  CF

ROOFTOP DISCONNECT CREDIT (#3) (N-1)  
ESDv =  $(0.95)(1.0)(247)/12 = 20$  CF

#### **NON-ROOFTOP DISCONNECTION**

NON-ROOFTOP DISCONNECT CREDIT (#1) (N-2)  
ESDv =  $(0.95)(1.0)(720)/12 = 57$  CF

#### **DRYWELLS**

USE 1003 IMPERVIOUS Rv=0.95  
ESDv =  $(0.95)(1.2)(\text{ROOF AREA})/12$   
ESDv/0.4 VOIDS = STONE VOLUME

##### **DRYWELL #1**

ESDv =  $(0.95)(1.2)(843)/12 = 80.1$  CF  
 $80.1/0.4 = 200$  CF (REQ.)  
 $6.4' \times 6.4' \times 5' = 205$  CF (PROV.)

##### **DRYWELL #2**

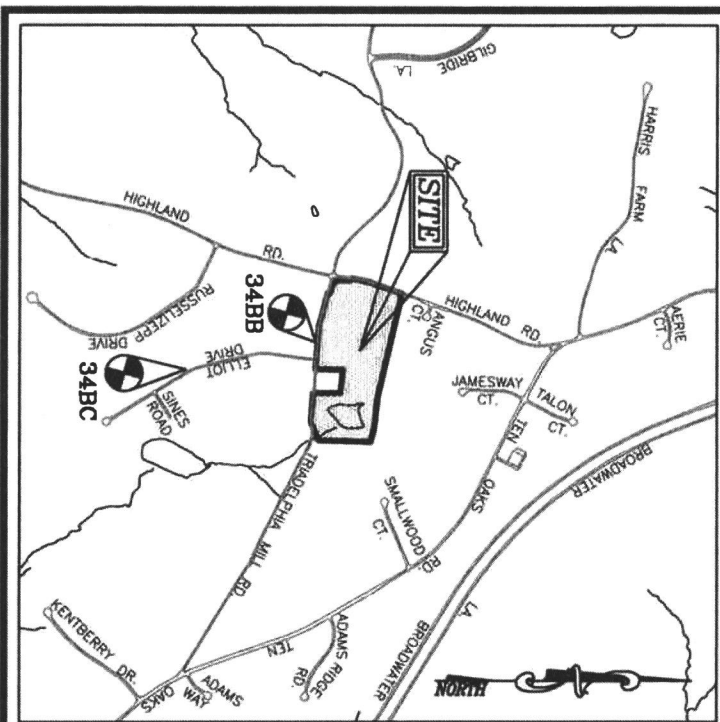
ESDv =  $(0.95)(1.2)(617)/12 = 58.6$  CF  
 $58.6/0.4 = 147$  CF (REQ.)  
 $5.5' \times 5.5' \times 5' = 151$  CF (PROV.)

TOTAL ESDv PROVIDED: 502 CF



## BENCHMARKS












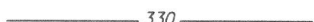












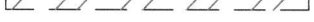



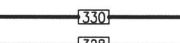
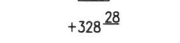
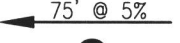
HOWARD COUNTY BENCHMARK 34BB (CONC. MON.)  
N 563,899.232 E 1319560.973 ELEV. 559.29  
SOUTH SIDE TRIADELPHIA MILL ROAD, APPROX. 13' EAST  
OF CENTERLINE OF DRIVEWAY FOR HOUSE # 13295.  
HOWARD COUNTY BENCHMARK 34BC (CONC. MON.)  
N 562,546.600 E 1,319,851.319 ELEV. 529.572  
SOUTH SIDE OF ELLIOTT DRIVE, EAST OF CENTERLINE  
FOR THE DRIVEWAY FOR HOUSE NUMBER 13318.



## VICINITY MAP

SCALE: 1"=2,000'  
ADC MAP COORDINATE: PAGE: 24 GRID: E8

# LEGEND:

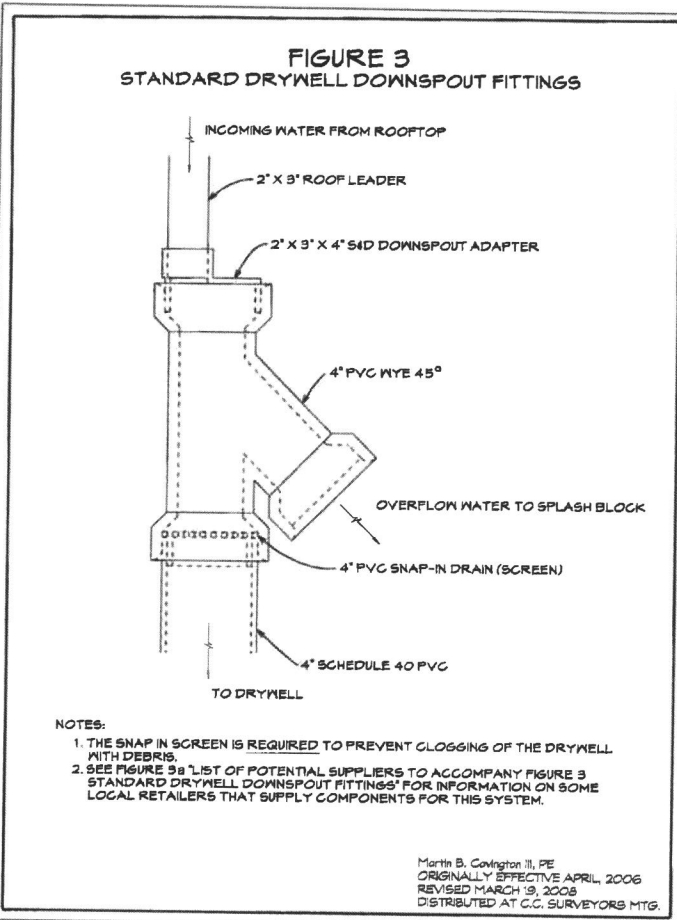
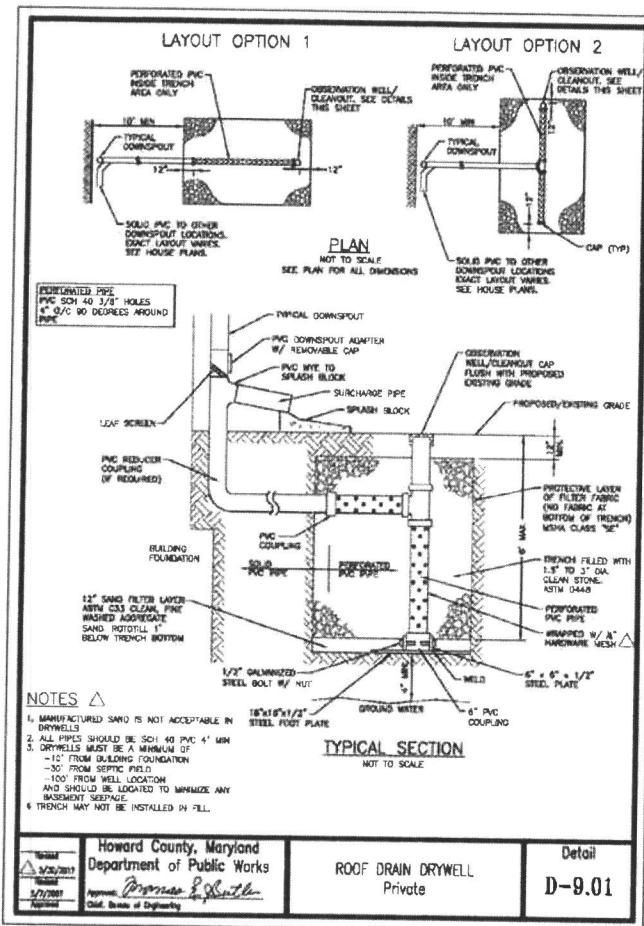
	PROPERTY LINE
	EXISTING RIGHT-OF-WAY LINE
	PROPOSED RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING CURB AND GUTTER
	EXISTING EDGE OF PAVING
	EXISTING TREELINE
	EXISTING WOOD FENCE
	EXISTING METAL FENCE
	EXISTING UTILITY POLE
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	SOILS
	EXISTING USE-IN-COMMON ACCESS EASEMENT
	EXISTING WELL LOCATION
	APPROVED WELL LOCATION (FIELD LOCATED)
	PROPOSED ALTERNATE WELL LOCATION
	EXISTING DRY WELL CASING (TO BE ABANDONED)
	EXISTING PRIVATE SDA
	APPROVED PRIVATE SDA
	APPROVED WELL BOX
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	PROPOSED SPOT ELEVATION
	ROOFTOP DISCONNECT (N-1)
	PASSED PERC. TEST
	FAILED PERC. TEST
	EXISTING SPECIMEN TREE
	AREA OF DRAINAGE TO GO TO DRY WELL (M-5)
	AREA OF DRAINAGE TO GO TO ROOFTOP DISCONNECT (N-1)
	IMPERVIOUS AREA TO GO TO NON-ROOFTOP DISCONNECT (N-2)

## SWM PRACTICE CHART

ESD PRACTICES USED FOR 5525 JACKS LANDING WAY (LOT 4)

DRY WELL FACILITIES (M-5), ROOFTOP DISCONNECTS (N-1) AND NON-ROOFTOP DISCONNECTS (N-2)





**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER DRY WELLS (M-5)**

1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
2. WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS, UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)**

- A. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**GENERAL NOTES**

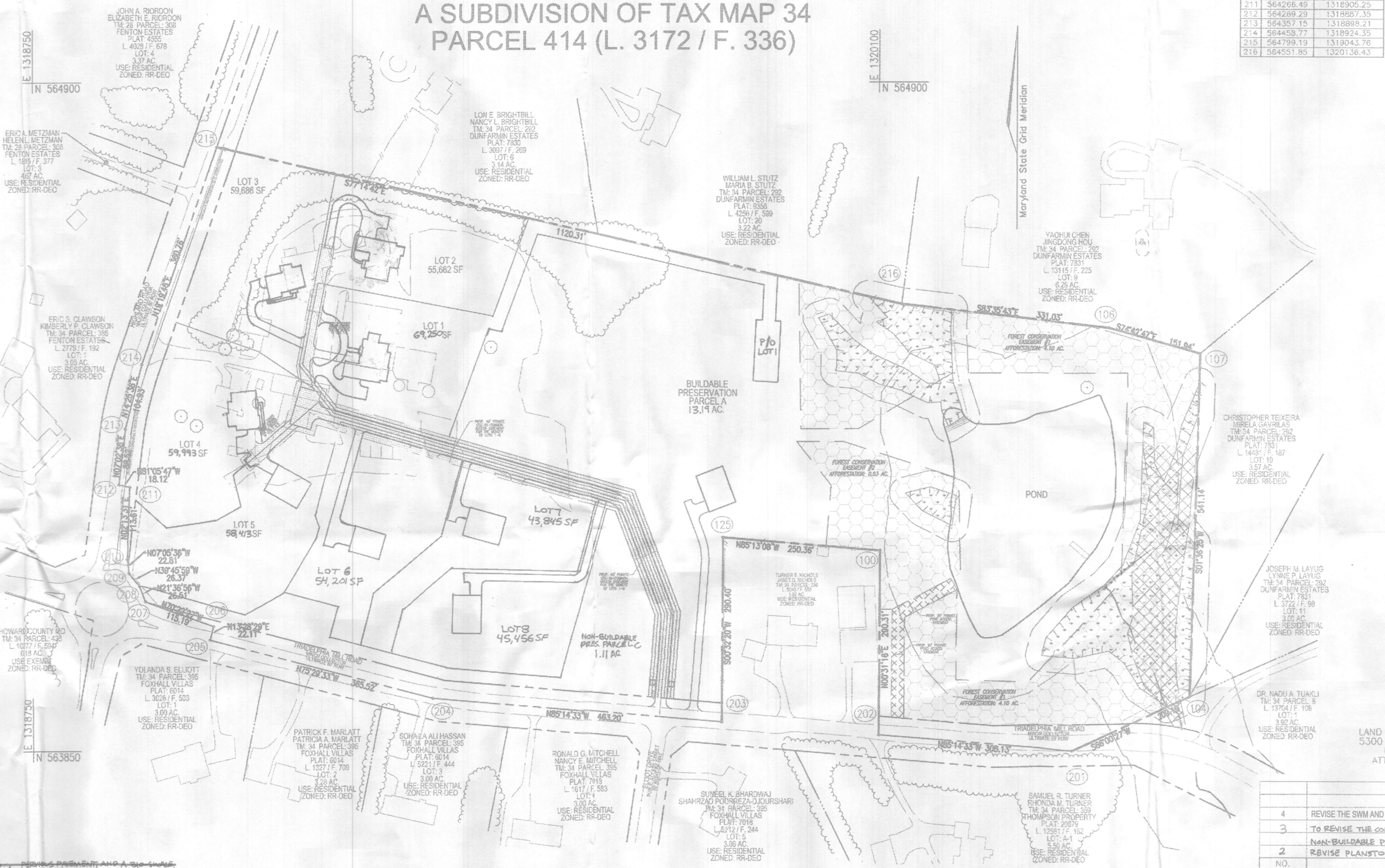
- PROJECT BACKGROUND:
  - LOCATION: TAX MAP 34 GRID 3
  - PARCELS: 414
  - ZONING: R-20
  - SUBDIVISION: JACK'S LANDING
  - GROSS AREA: 25.81 AC
  - DISTURBED AREA: 2.59 AC
  - AREA OF PLAN SUBMISSION: 25.81 AC
  - MINIMUM LOT SIZE: 40,000 SF
  - PROPOSED USE FOR SITE: RESIDENTIAL
  - TOTAL NUMBER OF UNITS: 9
  - TYPE OF PROPOSED UNIT: SFD
  - DEED REFERENCES: L-3172/F-336
  - DPZ REFERENCES: F-08-101, SP-06-14, BA-89-45E, WP-13-184, WP-10-25, WP-11-093, WP-12-086, WP-13-112
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS PLUS MGA STANDARDS IF APPLICABLE UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
  - MSS UTILITY: 1-800-257-7777
  - VERIZON TELEPHONE COMPANY: 1-410-934-6281
  - HOWARD COUNTY BUREAU OF UTILITIES: 410-313-2366
  - AT&T CABLE LOCATION DIVISION: 1-800-393-3553
  - B.C.&E. CO. CONTRACTOR SERVICES: 410-850-4620
  - B.C.&E. CO. UNDERGROUND DAMAGE CONTROL: 410-787-4620
  - STATE HIGHWAY ADMINISTRATION: 410-531-5533
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED NOVEMBER 2013.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 348B AND 348C WERE USED FOR THIS PROJECT.
- THE SUBJECT PROPERTY IS ZONED RR-DEO IN ACCORDANCE WITH THE 2-02-04 COMPREHENSIVE ZONING PLAN AND COMPLETE ZONING REGULATIONS EFFECTIVE ON 7/20/2006.
- TOPOGRAPHY SHOWN HEREON IS OBTAINED FROM CURRENT HOWARD COUNTY GIS DATA.
- EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE WEB SOIL SURVEY, HOWARD COUNTY MARYLAND.
- THE EXISTING DWELLING AND ACCESSORY STRUCTURES ON THE SITE WILL BE ABANDONED AND REMOVED PRIOR TO RECORDATION OF THE FINAL PLAT.
- THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- A FLOODPLAIN REPORT FOR THIS PROJECT WAS PREPARED BY CAPITOL DEVELOPMENT DESIGN, INC. JULY 3, 2006.
- NO STEEP SLOPES OVER 20.00% SF CONTIGUOUS ARE LOCATED ON-SITE.
- A TRAFFIC STUDY HAS BEEN PREPARED BY THE TRAFFIC GROUP 2005.
- NEITHER TRIADELPHIA MILL ROAD OR HIGHLAND ROAD IS A SCENIC ROAD.
- TRIADELPHIA MILL ROAD IS CLASSIFIED AS A MINOR COLLECTOR. HIGHLAND ROAD IS CLASSIFIED AS A MAJOR COLLECTOR.
- A NOISE STUDY IS NOT REQUIRED FOR THIS SUBDIVISION.
- STREET LIGHTS ARE NOT REQUIRED FOR THIS DEVELOPMENT.
- ALL DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6-06.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - A) WIDTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE) (16' FOR THE USE-IN-COMMON ASSOCIATED WITH THIS PROJECT. SEE GENERAL NOTE NUMBER 38)
  - B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
  - C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS
  - D) STRUCTURES (CULVERTS/BRIDGES) - MUST SUPPORT 25 GROSS TON LOADING (H25 LOADING)
  - E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
  - F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
  - G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
- THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER AND SEWER FOR THIS PROJECT WILL BE PRIVATE WELLS & SEPTIC SYSTEMS.
- A REVISED PERCOLATION CERTIFICATION PLAN WAS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED AUGUST 2013, AND APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT ON 08/29/2013, 2014.
- THE PROPOSED DWELLINGS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- WETLANDS AND STREAMS SHOWN HEREON ARE BASED ON A FIELD INVESTIGATION PREPARED BY BRAY HILL, LLC. DATED JANUARY 2008. THERE ARE NO PROPOSED DISTURBANCES TO THE WETLANDS OR ASSOCIATED BUFFERS.
- THE PROPOSED SUBDIVISION AND RELATED CONSTRUCTION WILL NOT AFFECT ENVIRONMENTAL FEATURES OR BUFFERS.
- FOREST STAND DELINEATION AND SPECIMEN TREES ARE SHOWN HEREON PER PLAN BY CAPITOL DEVELOPMENT DESIGN, INC. DATED OCTOBER 2, 2006.
- FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT NO. CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT WILL BE FULFILLED BY ON-SITE AFFORESTATION OF 5.03 ACRES WHICH IS SUFFICIENT TO MEET THE BREAK-EVEN POINT OF 5.03 ACRES OF REQUIRED AFFORESTATION FINANCIAL SURETY IN THE AMOUNT OF \$109,504 (219,008 x 0.50) WILL BE POSTED AS PART OF DEPARTMENT OF PUBLIC WORKS DEVELOPER'S AGREEMENT FOR THIS PLAN.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY FOR THE PERIMETER LANDSCAPING IN THE AMOUNT OF \$21,750.00 FOR THE REQUIRED 52 SHADE TREES (\$415,000), 40 EVERGREENS (\$6,000), AND 5 SHRUBS (\$150 - TRASH PAD) SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS PLAN.
- IN ACCORDANCE WITH SECTION 16.124(C) STREET TREES ARE NOT REQUIRED ALONG TRIADELPHIA MILL ROAD OR HIGHLAND ROAD AS NO IMPROVEMENTS ARE PROPOSED. NO INTERNAL STREETS ARE PROPOSED. PRIVATE RANGE OF ADDRESS SIGNS SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-343-2430 FOR DETAILS AND COST ESTIMATES.
- TRASH AND RECYCLING COLLECTION WILL BE AT TRIADELPHIA MILL ROAD WITHIN 5' OF THE EDGE OF THE COUNTY ROADWAY.
- STORMWATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING: ROOFTOP & NON-ROOFTOP DISCONNECTIONS, A BIO-SWALE, RAIN GARDENS, GRASS SWALES, DRAINWELLS, PERVIOUS PAVEMENT AND A TRASH PAD AND DRAINWELLS.
- THIS PLAN IS SUBJECT TO A DESIGN MANUAL W/AVER OF DESIGN MANUAL VOLUME III, SECTION 2.6.A TO ALLOW MORE THAN 6 USERS TO SHARE A SINGLE USE-IN-COMMON DRIVEWAY. ON OCTOBER 10, 2013, THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION APPROVED THE REQUEST BASED UPON JUSTIFICATION PROVIDED IN THE W/AVER REQUEST LETTER AND THE FACT THAT THE GRANTING OF SAID REQUEST WILL NOT IMPACT THE COUNTY'S EXISTING AND FUTURE INFRA-STRUCTURE SYSTEMS. SUBJECT TO AN 18' PAVING WIDTH WITH FLUSH CONCRETE CURB IN A 40 FOOT USE-IN-COMMON ACCESS EASEMENT.
- THIS PLAN IS SUBJECT TO W/AVER PETITION #WP-13-184 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.14(R)(3), REQUIRING THE SUBMISSION OF REVISED PLANS WITHIN 45 DAYS OF REQUEST OR THE FINAL PLAN FOR F-08-101/DUNFARMIN ESTATES SHALL BECOME VOID SUBJECT TO THE FOLLOWING CONDITIONS:
  - THIS DEPARTMENT WILL GRANT A 6 MONTH EXTENSION FROM THE JUNE 30, 2013, DEADLINE BY WHICH TO SUBMIT REVISED PLANS FOR F-08-101, THE NEW DEADLINE DATE BY WHICH TO SUBMIT REVISED PLANS IS ON OR BEFORE JANUARY 6, 2014.
  - COMPLIANCE WITH THE ATTACHED COMMENTS FROM THE DEVELOPMENT ENGINEERING DIVISION DATED JULY 9, 2013. THIS SUBDIVISION MUST BE REDESIGNED TO MEET NEW STORMWATER MANAGEMENT REQUIREMENTS.
- BUILDABLE PRESERVATION PARCEL 'A' IS INTENDED TO PROTECT THE EXISTING POND, STREAM AND WETLANDS AND ASSOCIATED BUFFERS, AND ESTABLISH FOREST CONSERVATION (AFFORESTATION).
- THE USE-IN-COMMON MAINTENANCE AGREEMENT FOR LOTS 1 TO 8 AND LOTS 1 TO 3 AND LOTS 4 AND 5 SHALL BE RECORDED IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MD SIMULTANEOUSLY WITH THE PLAT.
- BOBE HAS REVIEWED AND APPROVED THE PROPOSED TRASH PAD SCREENING AND PERIMETER TREE PLANTINGS.
- ALL EXISTING WELLS AND ON-SITE SEWAGE DISPOSAL SYSTEM COMPONENTS MUST BE PROPERLY ABANDONED AND NOTIFICATION OF SUCH SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE OF THE FINAL RECORD PLAT.
- ALL WELLS MUST BE DRILLED PRIOR TO HEALTH SIGNATURE OF THE FINAL RECORD PLAT.

# SUPPLEMENTAL INFORMATION PLAN

## JACK'S LANDING

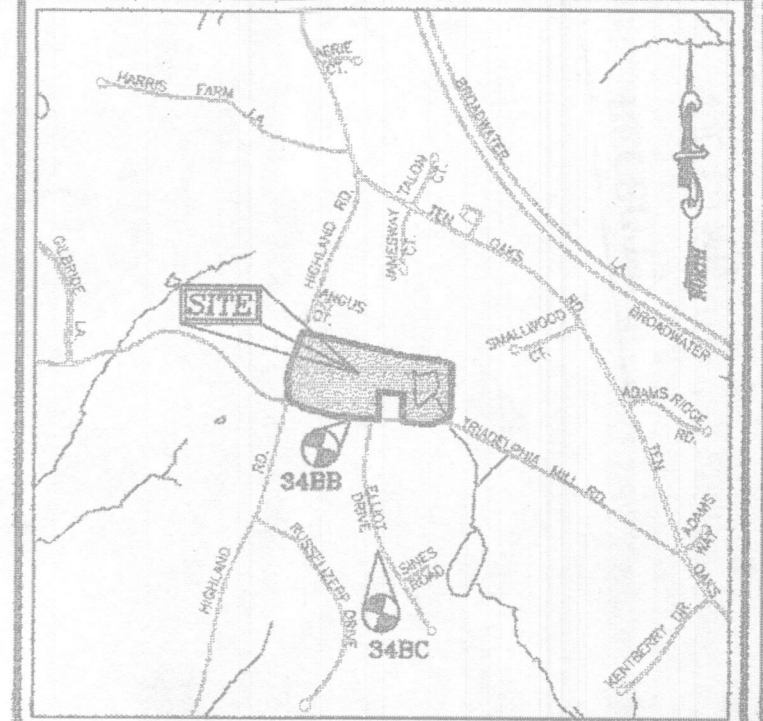
### LOTS 1-8, BUILDABLE PRESERVATION PARCEL A, AND NON-BUILDABLE PRESERVATION PARCEL C

#### A SUBDIVISION OF TAX MAP 34 PARCEL 414 (L. 3172 / F. 336)



**COORDINATE TABLE**

NO.	NORTH	EAST
100	564164.76	1320101.32
104	563933.63	1320566.78
106	564514.92	1320465.39
107	564474.86	1320611.96
125	564165.63	131951.83
201	563845.91	1320405.75
202	563874.46	1320098.68
203	563895.24	1319849.10
204	563933.66	1319357.60
205	564025.22	1319033.64
206	564046.72	1319038.79
207	564095.41	1318930.29
208	564110.06	1318920.52
209	564130.33	1318903.66
210	564152.96	1318900.84
211	564266.49	1318905.25
212	564289.29	1318867.35
213	564357.15	1318889.21
214	564438.77	1318924.35
215	564799.19	1319043.76
216	564551.85	1320136.43



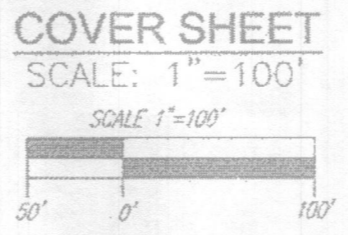
**BENCHMARKS**

HOWARD COUNTY BENCHMARK 348B (CONC. MON.)  
N 563,899.332 E 131,9560.973 ELEV. 559.25'  
SOUTH SIDE, TRIADELPHIA MILL ROAD, APPROX. 13' EAST OF CENTERLINE OF DRIVEWAY FOR HOUSE # 13295.

HOWARD COUNTY BENCHMARK 348C (CONC. MON.)  
N 562,546.600 E 1,319,851.319 ELEV. 529.572'  
SOUTH SIDE OF ELLIOTT DRIVE, EAST OF CENTERLINE FOR THE DRIVEWAY FOR HOUSE NUMBER 13318.

**LEGEND:**

[Symbol]	PROPERTY LINE
[Symbol]	EXISTING RIGHT-OF-WAY LINE
[Symbol]	PROPOSED RIGHT-OF-WAY LINE
[Symbol]	ADJACENT PROPERTY LINE
[Symbol]	EXISTING CURB AND GUTTER
[Symbol]	EXISTING EDGE OF PAVING
[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING WETLAND BUFFER
[Symbol]	EXISTING TREELINE
[Symbol]	EXISTING TREES
[Symbol]	EXISTING WOOD FENCE
[Symbol]	EXISTING METAL FENCE
[Symbol]	EXISTING STREAM
[Symbol]	EXISTING STREAM BUFFER
[Symbol]	OBVIOUSLY NOT CRITICAL FLOODPLAIN
[Symbol]	PROPOSED TREELINE
[Symbol]	PROP. FOREST CONSERVATION EASEMENT (AFFORESTATION) PLAT:
[Symbol]	PROP. USE-IN-COMMON ACCESS EASEMENT PLAT:
[Symbol]	PROP. PRIVATE POND ACCESS EASEMENT PLAT:



**MINIMUM LOT SIZE CHART**

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
1	69,250 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	59,915 SF	4,214 SF	55,701 SF	40,000 SF
5	58,915 SF	3,952 SF	54,963 SF	40,000 SF
6	54,204 SF	2,915 SF	51,289 SF	40,000 SF
7	49,845 SF	1,757 SF	48,088 SF	40,000 SF
8	49,456 SF	1,633 SF	47,823 SF	40,000 SF

**SITE DATA**  
LOCATION: TAX MAP 34, BLOCK 03, PARCEL 414  
13938 HIGHLAND ROAD, CLARKSVILLE, MD, 21029  
DEED REFERENCE: L-3172 / F-336  
5TH ELECTION DISTRICT  
PRESENT ZONING: RR-DEO  
PROPOSED USE OF SITE: RESIDENTIAL (SFD)  
GROSS AREA OF PROJECT: 25.81 AC  
AREA OF FLOOD PLAIN: 0.68 AC  
NET PROJECT AREA: 25.13 AC (25.81-0.68=25.13)  
AREA OF WETLANDS/BUFFER: 2.91 AC  
AREA OF STREAM/BUFFER: 5.75 AC  
AREA OF EXISTING FOREST COVER: 0.00 AC  
AREA OF STEEP SLOPES (25% OR GREATER): 0.00 AC  
AREA OF ERODIBLE SOILS: 9.11 AC  
TOTAL NUMBER OF UNITS ALLOWED BY RIGHT: 25.81/4.25 = 6  
TOTAL NUMBER OF UNITS ALLOWED: 25.13/2 = 12  
AREA OF RESIDENTIAL LOTS PROPOSED:  
LOTS 1-8: 10.25 AC  
BUILDABLE PRESERVATION PARCEL A: 13.19 AC  
NON-BUILDABLE PRESERVATION PARCEL C: 1.11 AC  
OPEN SPACE REQUIRED: N/A  
AREA OF RIGHT-OF-WAY DEDICATION: 1.26 AC  
PROPOSED WATER SYSTEM: PRIVATE WELL  
PROPOSED SEWER SYSTEM: PRIVATE SEPTIC  
LIMIT OF DISTURBANCE: 2.59 AC

**SHEET INDEX**

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 12
SITE LAYOUT PLAN	2 OF 12
SITE LAYOUT PLAN	3 OF 12
SITE DETAILS AND PROFILES	4 OF 12
USE-IN-COMMON DRIVEWAY GRADING, SEDIMENT CONTROL PLAN, AND SOILS MAP	5 OF 12
SOILS MAP, GRADING & SEDIMENT CONTROL PLAN	6 OF 12
ULTIMATE GRADING, SEDIMENT CONTROL, AND SWIM PLAN	7 OF 12
GRADING, SOIL EROSION, AND SEDIMENT CONTROL NOTES AND DETAILS	8 OF 12
STORM WATER MANAGEMENT NOTES AND DETAILS	9 OF 12
LANDSCAPE AND FOREST CONSERVATION PLAN	10 OF 12
LANDSCAPE AND FOREST CONSERVATION PLAN	11 OF 12
LANDSCAPE AND FOREST CONSERVATION PLAN NOTES AND DETAILS	12 OF 12

**STORMWATER MANAGEMENT PRACTICES**

Lot Number	ADDRESS	PRACTICES								
		A-1 (Y/N)	A-2 (Y/N)	A-3 (Y/N)	N-1 (Y/N)	N-2 (Y/N)	N-3 (Y/N)	M-1 (Y/N)	M-2 (Y/N)	M-3 (Y/N)
1	5524 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO
2	5518 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO
3	5525 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO
4	5525 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO
5	5521 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO
6	5521 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO
7	5521 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO
8	5521 2nd Landmark way	NO	NO	NO	YES	NO	NO	NO	NO	NO

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad E. Johnson* 7-8-14  
CHIEF, DEVELOPMENT ENGINEERING DIVISION J.P. DATE

*Kathleen Johnson* 7-09-14  
CHIEF, DIVISION OF LAND DEVELOPMENT J.P. DATE

**LOT TABULATION**

TOTAL NO. OF PROPOSED LOTS/PARCELS: 10  
- BUILDABLE PRESERVATION PARCEL A: 8  
- NON-BUILDABLE PRESERVATION PARCEL C: 2  
TOTAL NO. OF DWELLING UNITS: 9  
NO. OF SINGLE FAMILY DETACHED: 9

Revised SUPPLEMENTAL INFORMATION PLAN

NO.	REVISION	DATE
4	REVISE THE SWM AND SEWAGE DISPOSAL AREA ON LOT 4	05/06/19
3	TO REVISE THE COMPARISON AND HOUSE TYPES FOR LOTS 1, 2 AND 11	11/15/18
2	REVISE PLAN TO REVISE LOT 4	9/20/18
1	REVISION	

**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  
ELICOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961

DESIGN BY: RRV  
DRAWN BY: JMR  
CHECKED BY: RRV  
DATE: MARCH 2014  
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: 09-27-2014

1 SHEET OF 12



**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 TREELINE
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING UTILITY POLE
- EXISTING USE-IN-COMMON ACCESS EASEMENT
- EXISTING WELL LOCATION
- APPROVED WELL LOCATION (FIELD LOCATED)
- PROPOSED ALTERNATE WELL LOCATION
- EXISTING OR WELL LOCUS (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	SPINE	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

**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	REVISE THE SWM AND SEWAGE DISPOSAL AREA ON LOT 4	05/06/19
3	TO REVISE THE CONFIGURATION AND HOUSE TYPES FOR LOTS 1-B AND NON-BUILDABLE PRESERVATION PARCEL B	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 PARCELS: 414  
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND ZONED: RR-DEO

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET ELLICOTT CITY, MD 21043  
 TEL: 410.451.7666 FAX: 410.461.6961

**PROFESSIONAL CERTIFICATE**

STATE OF MARYLAND  
 ROBERT H. VOGEL  
 REGISTERED PROFESSIONAL ENGINEER  
 NO. 16189

DESIGN BY: RHY  
 DRAWN BY: JMR  
 CHECKED BY: RHY  
 DATE: OCTOBER 2018  
 SCALE: AS SHOWN  
 W.D. 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. 16189, EXPIRATION DATE: 09-27-2020

2 SHEET OF 12

**MINIMUM LOT SIZE CHART**

LOT	GROSS AREA	PRESTEM AREA	NET AREA	MIN. LOT SIZE
1	69,250 SF	3,235 SF	65,015 SF	40,000 SF
2	55,662 SF	3,227 SF	50,435 SF	40,000 SF
3	59,685 SF	4,341 SF	55,345 SF	40,000 SF
4	59,893 SF	4,214 SF	55,779 SF	40,000 SF
5	59,413 SF	3,852 SF	54,461 SF	40,000 SF
6	54,201 SF	2,615 SF	51,286 SF	40,000 SF
7	43,845 SF	1,750 SF	42,085 SF	40,000 SF
8	45,456 SF	1,823 SF	43,833 SF	40,000 SF

SCALE: 1"=50'

**LAYOUT PLAN**  
 SCALE: 1"=50'

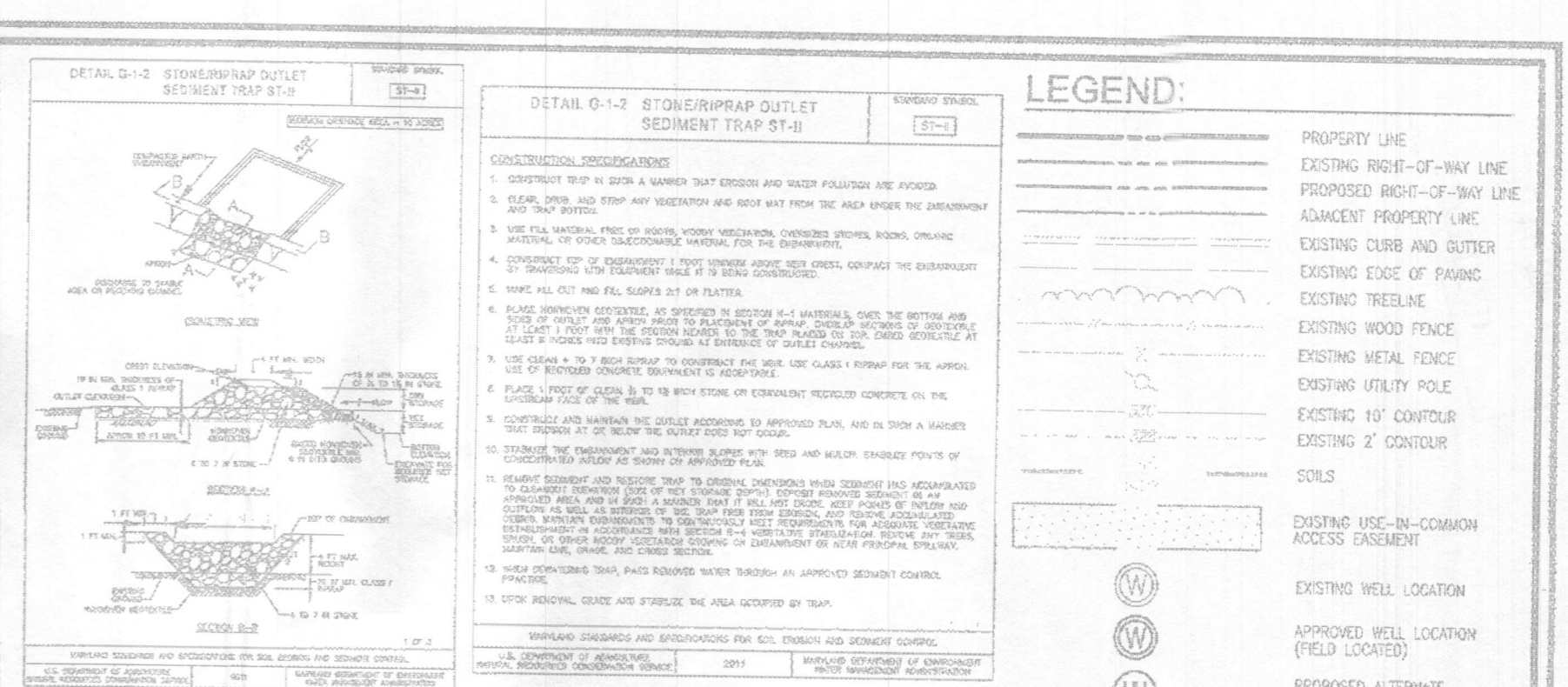
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad Chamberlain* 12-17-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Robert H. Vogel* 12-17-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT

MATCHLINE - SEE SHEET 3

MATCHLINE - SEE SHEET 3



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

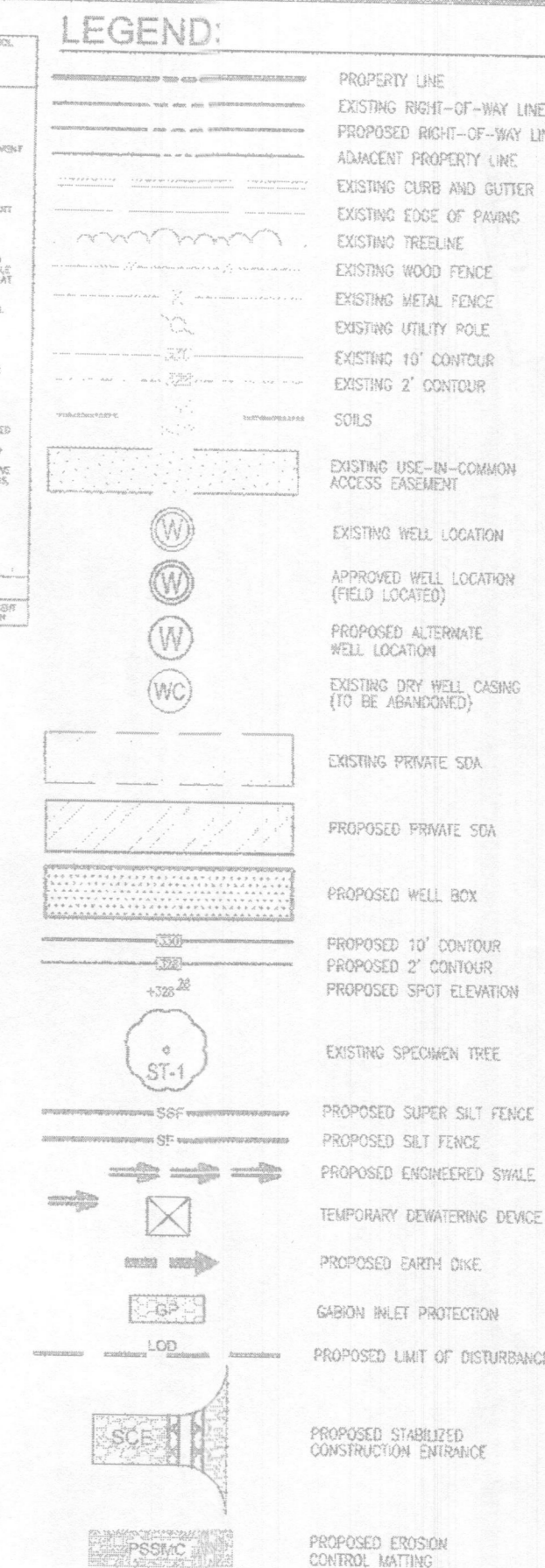
STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 1	STANDARD SYMBOL
DRAINAGE AREA - INITIAL	1.30 ACRES
DRAINAGE AREA - INTERIM	2.04 ACRES
DRAINAGE AREA - FINAL	1.00 ACRES
TOTAL STORAGE REQUIRED	7364 CF
TOTAL STORAGE PROVIDED	7870 CF
NET STORAGE REQUIRED	3572 CF
NET STORAGE PROVIDED	3983 CF
DRY STORAGE PROVIDED	3572 CF
EXISTING GROUND ELEVATION AT OUTLET	3108 FT
OUTLET ELEVATION	3039 FT
YEAR BOTTOM ELEVATION	3039 FT
YEAR TOP ELEVATION	3039 FT
YEAR GUEST (DRY STORAGE) ELEVATION	3039 FT
CLAYDART ELEVATION	3039 FT
TOP OF TREATMENT ELEVATION	3039 FT
SOIL SLOPE	4 H: 1 V
UNDERMINEMENT TOP WIDTH	4 FT
OUTLET PROTECTION - LENGTH	10 FT
OUTLET PROTECTION - HEIGHT	18 IN

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 ALL DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND GENERAL SERVICES WATER MANAGEMENT ADMINISTRATION

• USE PED-21 AS OUTFALL TO COLLECTOR

MATCHLINE - SEE SHEET 6

MATCHLINE - SEE SHEET 6



**SOILS LEGEND**

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
GbB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
GgB	GLENELC LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
Gmb	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	.37	YES
Grb	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.37	YES
MbC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	C	.24	NO

SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR A GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

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  
 ELLICOTT CITY, MD 21042  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

NO.	REVISION	DATE
4	REVISE THE SWM AND SEWAGE DISPOSAL AREA ON LOT 4	05/06/19
3	TO REVISE THE CONFIGURATION AND HOUSE TYPES FOR LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCEL C	11-15-18

**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.**  
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 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7696 FAX: 410.461.8961

DESIGN BY: RHY  
 CHECKED BY: JMR  
 DRAWN BY: RHY  
 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. 15184 EXPIRATION DATE: 08-27-2020

5 SHEET OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

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

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

BY THE DEVELOPER:

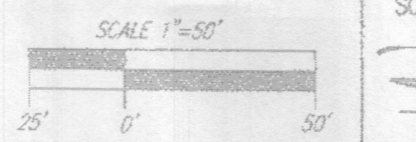
*[Signature]* 12-3-18  
 SIGNATURE OF DEVELOPER DATE

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

*[Signature]* 12/2/18  
 HOWARD S.C.D. DATE

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

BY THE ENGINEER:  
*[Signature]* 12/3/18  
 SIGNATURE OF ENGINEER DATE



ERIC A. METZMAN  
HELEN L. METZMAN  
TM: 28 PARCEL 308  
FENTON ESTATES  
PLAT: 4585  
L. 1815 / 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

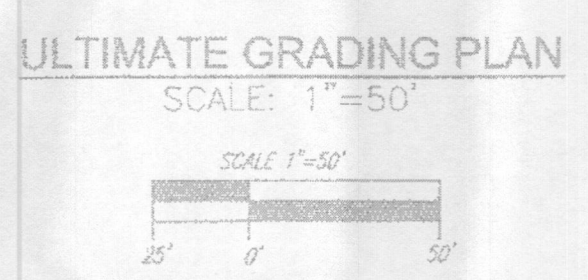
HOWARD COUNTY MD  
TM: 34 PARCEL 433  
L. 10277 / F. 594  
0.16 AC.  
USE: EXEMPT  
ZONED: RR-DEO

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]* 12-3-18  
SIGNATURE OF DEVELOPER DATE  
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 12-17-18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 12-17-18  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

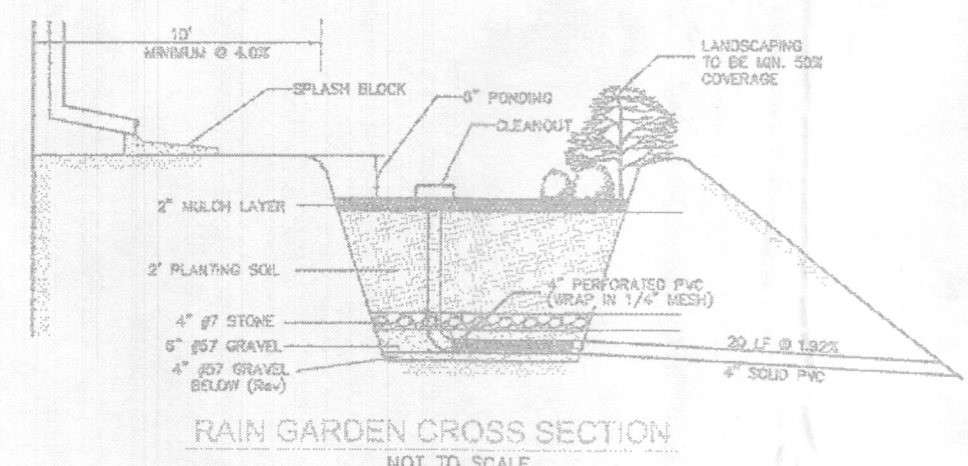
SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
Gh1	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
Gh2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	.20	NO
Gh3	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	.37	YES
Gh4	GLENVILLE-SALE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	.37	YES
Mh1	MANOR LOAM, 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 EROSION FACTOR K GREATER THAN 0.25 AND WITH A SURVEY GREATER THAN 5 PERCENT.



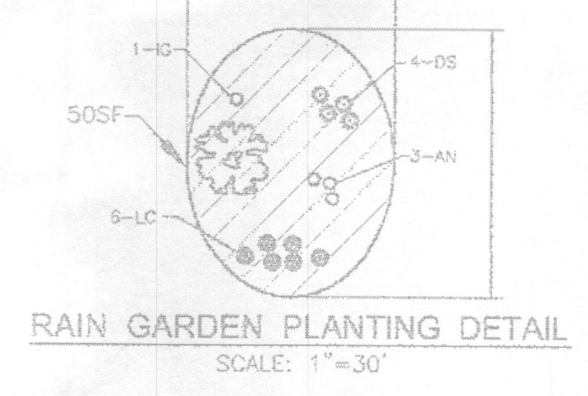
(3) RAINGARDEN PLANT LIST				
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	
1	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	2 1/2" - 3" Cal.	
1	ILEX GLABRA	INK BERRY	2 - 3" HT.	
6	LOBELIA CARDINALIS	CARDINAL FLOWER LOBELIA	1 GAL. CONTAINER	
4	DRYOPTERIS SP.	WOOD FERN	1 GAL. CONTAINER	
3	ASTER NOVAE-ANGLIAE	NEW 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.



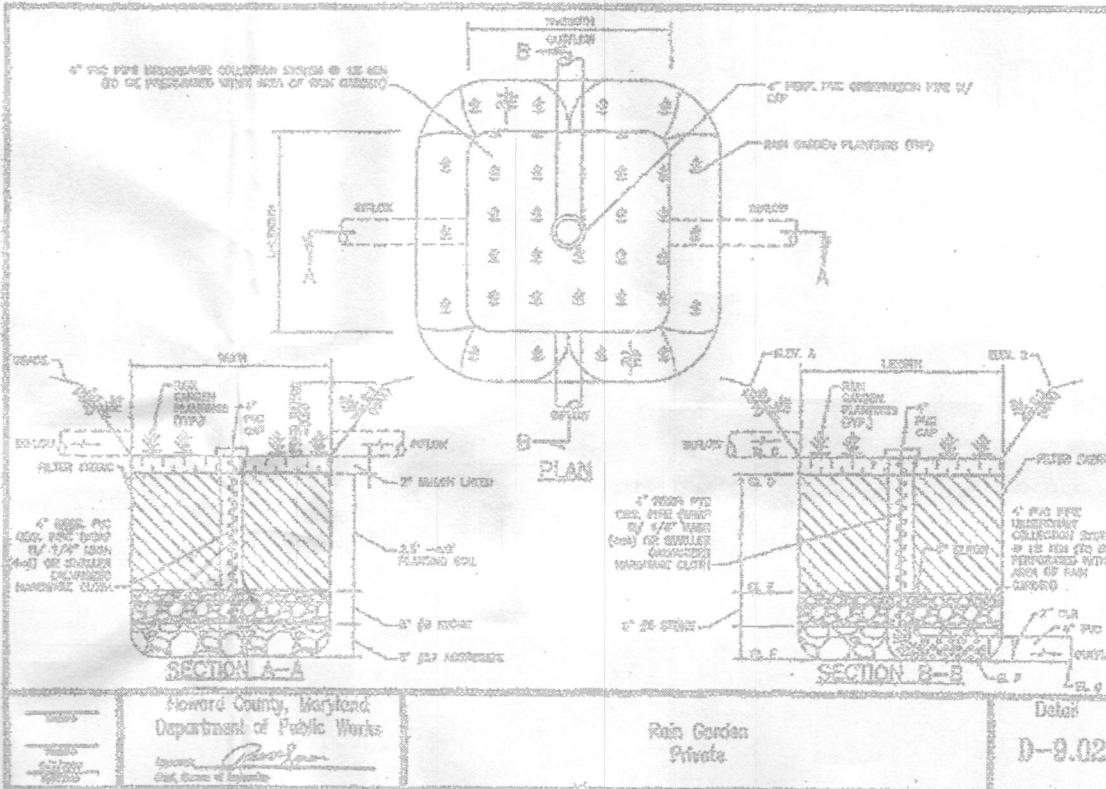
OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

- 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 SPRINGS. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A-4.1 AND 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 COMPACTED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MAXIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



"MICRO-BIORETENTION" PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- 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.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLANT DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
- SEE SHEET 10 FOR TYPICAL PLANTING SPECIFICATIONS AND DETAILS.
- 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.



SYMM LEGEND (LOTS 1-8 AND USE-IN-COMMON DRIVE)

[Symbol]	IF USE DRIVE TO DET. SWALE (M-5)	[Symbol]	NON-ROOFTOP DISCONNECT (N-2)
[Symbol]	RAIN GARDEN (M-7)	[Symbol]	ROOFTOP DISCONNECT (N-1)
[Symbol]	PERVIOUS AREA TO GO TO ROOFTOP DISCONNECT (N-1)	[Symbol]	PERVIOUS AREA TO GO TO RAIN GARDEN (M-7)
[Symbol]	PERVIOUS AREA TO GO TO DRY WELL (M-5)	[Symbol]	PERVIOUS AREA TO GO TO NON-ROOFTOP DISCONNECT (N-2)
[Symbol]	PERVIOUS AREA TO GO TO BIOWASH (M-6)		

LEGEND:

[Symbol]	PROPERTY LINE
[Symbol]	EXISTING RIGHT-OF-WAY LINE
[Symbol]	PROPOSED RIGHT-OF-WAY LINE
[Symbol]	EXISTING CURB AND GUTTER
[Symbol]	EXISTING EDGE OF PAVING
[Symbol]	EXISTING TREELINE
[Symbol]	EXISTING WOOD FENCE
[Symbol]	EXISTING METAL FENCE
[Symbol]	EXISTING UTILITY POLE
[Symbol]	EXISTING 2" CONTOUR
[Symbol]	EXISTING 2' CONTOUR
[Symbol]	SOILS
[Symbol]	EXISTING USE-IN-COMMON ACCESS EASEMENT
[Symbol]	EXISTING WELL LOCATION
[Symbol]	APPROVED WELL LOCATION (FIELD LOCATED)
[Symbol]	PROPOSED ALTERNATE WELL LOCATION
[Symbol]	EXISTING DRY WELL CASING (TO BE ABANDONED)
[Symbol]	EXISTING PRIVATE SEA
[Symbol]	PROPOSED PRIVATE SEA
[Symbol]	PROPOSED WELL BOX
[Symbol]	PROPOSED 19\"/>
[Symbol]	PROPOSED 2\"/>
[Symbol]	PROPOSED SPOT ELEVATION
[Symbol]	EXISTING SPOONED TREE

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

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

NO.	REVISION	DATE
4	REVISE THE SYMM AND SEWAGE DISPOSAL AREA ON LOT 4	05/06/19
3	TO REVISE THE CONFIGURATION AND HOUSE TYPES FOR LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCEL B	11-15-18

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. 536)

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

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

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

PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A QUALIFIED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 18183 EXPIRES: 08-31-2026

7 SHEET OF 12

**APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS**

- 1. MATERIAL SPECIFICATIONS**  
 THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
- 2. FILTERING MEDIA OR PLANTING SOIL**  
 THE SOIL SHALL BE A UNIFORM MIXTURE OF STONES, STAMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR QUARANTINED WITH THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVIDE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERBERIS GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER WEEDS AS SPECIFIED UNDER CHAIRS, LOGS, AND COMPOST (P2).  
 THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:  
 \* SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)  
 \* ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (40% TO 45%) OR SANDY LOAM (LOAM), COARSE SAND (LOAM), AND COMPOST (P2).  
 \* CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.  
 \* PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMMONIUMS (E.G., LIME, SODIUM SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.  
 THESE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE. STORED TOPSOIL, IF TOPSOIL IS IMPAIRED, THEN A TEXTURAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

- 3. COMPACTION**  
 IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR WASH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO LEAKAGE FAILURE.  
 COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REPERFORATE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUGGESTED METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLING TYPICALLY DOES NOT HELP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT. ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PUMPED WATER BEFORE PREPARING (ROTOTILLING) BASE.  
 WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FIRM GRADE.  
 WHEN BACKFILLING THE BIORETENTION FACILITY PLACE SOIL IN LIFTS 12 TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH WASH TRACKS.

- 4. PLANT MATERIAL**  
 RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
- 5. PLANT INSTALLATION**  
 COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDED MULCH MUST BE WELL AERED (6 TO 12 MONTHS) FOR ACCEPTANCE.  
 ROOTS OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/3RD OF THE BALL IS ABOVE FIRM GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THROUGHOUT WATER DROPPED INTO GROUND DEEP COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.  
 GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE HIGH GRASS GROUND COVER PLANTING SPECIFICATIONS.  
 THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFATS, OR AT A MINIMUM, IMPEDS THIS GOAL. ONLY AG FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

- 6. UNDERDRAINS**  
 UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:  
 \* PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM 758, PIPE 28, OR ASTM-10-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (E.G., PVC 4" OF 18").  
 \* PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER FOOT. PIPE SHALL BE WRAPPED WITH A 1/2" TO 1" THICK POLYETHYLENE GLASS FIBER REINFORCED PLASTIC (FRP) WRAP.  
 \* COVER - THE COVER LAYER (E.G., STONE, PERFORATED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.  
 \* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.  
 \* A RIGID HIGH-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1000 SQUARE FEET) TO PROVIDE A CLEAN-OUT POINT AND MONITOR PERFORMANCE OF THE FILTER.  
 \* A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONES) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN THE THICKNESS EXCEEDS 2".  
 \* THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

- 7. MISCELLANEOUS**  
 THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

**APPENDIX B.4.D SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF**

- THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC CONDITIONS.
- 1. PERVIOUS CONCRETE SPECIFICATIONS**  
 DESIGN THICKNESS - PERVIOUS CONCRETE THICKNESS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE CURB SHALL SUPPORT THE TYPICAL TRAFFIC LOADS THAT WILL BE CARRIED. PERVIOUS CONCRETE SHALL BE DESIGNED ACCORDING TO EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO, AASHTO, AASHTO) OR USING STRUCTURAL VALUES DERIVED FROM LABORATORY TESTING PROCEDURES.  
 MIX & INSTALLATION - PERVIOUS CONCRETE SHALL BE MIXED AND PLACED ACCORDING TO THE FOLLOWING SPECIFICATIONS. PHYSIOLOGICAL ADMIXTURES MAY ALSO BE USED. MATERIALS AND MIXTURES SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:  
 \* STRENGTH DEVELOPMENT, POROSITY, PERMEABILITY CAN BE DETERMINED.  
 \* PERVIOUS CONCRETE CONTAINS A LIMITED AMOUNT OF ADMIXTURES. ADMIXTURES USED SHOULD INCLUDE ASTM C 33 NO. 67 (3/4 IN. TO NO. 4), NO. 8 (3/8 IN. TO NO. 10) AND NO. 10 (3/8 IN. TO NO. 12).  
 \* WATER CONTENT - WATER-TO-CEMENT RATIOS SHALL BE 0.47 AND 0.50 ARE USED ROUTINELY WITH PERVIOUS CONCRETE. CHEMICAL ADMIXTURES, WATER QUALITY SHOULD MEET ASTM C 894 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS.  
 \* ADMIXTURES - CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADMIXTURES SHALL MEET ASTM C 894 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS.  
 \* FINISH - THE BASE COURSE SHALL BE ASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

**OPERATION AND MAINTENANCE SCHEDULE FOR M-7 RAIN GARDEN AREAS**

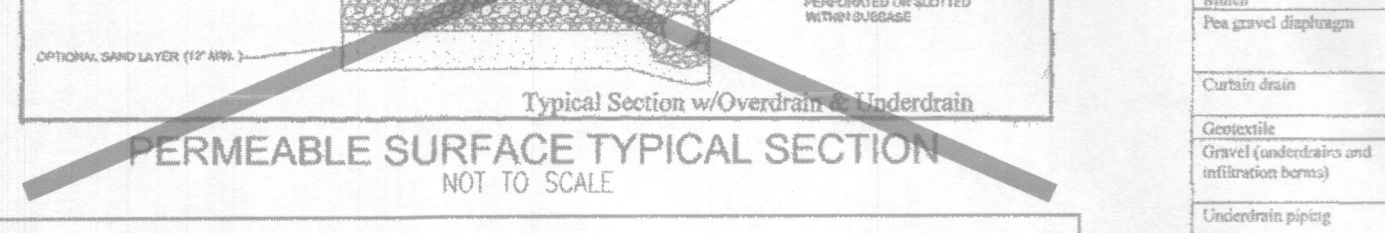
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT PESTICATION AND MAINTENANCE WILL ADDRESS WEED MATERIAL AND FRUITS. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 HIGHLAND STORMWATER DESIGN MANUAL, VOLUME 1, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT INSPECTION 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, TRIM DISEASED TREES AND SHRUBS AND REPLACE OF ALL DEFICIENT STAKES AND WIPES.
- 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON ANY AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

**PERVIOUS INTERLOCKING CONCRETE PAVEMENTS (PICP)**

- PAVER BLOCKS SHALL BE EITHER 37 IN. OR 4 IN. THICK AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS. APPLICATIONS SHOULD HAVE 20% OR MORE (40% PREFERRED) OPEN SURFACE AREA OPEN. INSTALLATION SHOULD FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INFILL AND BASE COURSE MATERIALS AND DRAINAGE SPECIFICATIONS. THE FOLLOWING SHALL BE FOLLOWED:  
 INFILL MATERIALS AND LEVELING COURSE - OPENINGS SHALL BE FILLED WITH ASTM C 33 SAND OR SANDY LOAM. PICP BLOCKS SHALL BE PLACED ON A ONE-INCH THICK LEVELING COURSE OF ASTM C-33 SAND.  
 BASE COURSE - THE BASE COURSE SHALL BE ASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

**REINFORCED TURF**

- REINFORCED TURF (RT) - WHETHER USED WITH GRASS OR GRAVEL, THE RT THICKNESS SHALL BE AT LEAST 1-3/4" AND SHALL BE A TURF CAPABLE OF SUPPORTING THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.



**PERMEABLE SURFACE TYPICAL SECTION**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chad Elmer* 7-8-14  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JP DATE

*W. St. Ouel* 7-09-14  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**N-1. DISCONNECTION OF ROOFTOP RUNOFF**

- CONSTRUCTION CRITERIA:**  
 THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN VEGETATED AREAS RECEIVING DISCONNECTED RUNOFF.
  - SITE DISTURBANCE: CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

- INSPECTION:**  
 A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT SIZING FOR TREATMENT AREAS HAVE BEEN MET AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

- MAINTENANCE CRITERIA:**  
 MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, HIGH FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**N-2. DISCONNECTION OF NON-ROOFTOP RUNOFF**

- CONSTRUCTION CRITERIA:**  
 THE FOLLOWING SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH NON-ROOFTOP DISCONNECTIONS:
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN AREAS DESIGNATED FOR NON-ROOFTOP DISCONNECTIONS.
  - SITE DISTURBANCE: TO MINIMIZE DISTURBANCE AND COMPACTION, CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

- INSPECTION:**  
 A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT ADEQUATE TREATMENT AREAS AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

- MAINTENANCE CRITERIA:**  
 MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, HIGH FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**HOWARD COUNTY - OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)**

- A. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, HIGH FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**APPENDIX B.4 - CONSTRUCTION SPECIFICATIONS**

Appendix B.4 - Construction Specifications for Environmental Site Design Practices

Material	Specification	Rate	Notes
Fillstone	As specified in Table A.4	n/a	Fillstone is site-specific
Planting soil	As specified in Table A.4	n/a	USDA soil types loamy sand or sandy loam; clay content < 3%
Organic content	Min. 10% by dry weight (ASTM D 2974)	n/a	
Mulch	Shredded hardwood (ASTM D 2974)	aged 6 months, min/maximum 10% or wood chips	
Perforated pipe	per ASTM D-4448	NO. 8 OR NO. 9 (1 1/4" TO 1 1/2")	
Curbs	conventional stone-washed curb	stone: 27 to 37"	
Geotextile	ASTM M-43	n/a	RE Type 1 minimum
Gravel (underdrain and distribution piping)	ASTM M-43	NO. 57 OR NO. 9	ADJUSTABLE (DIP TO 3/4")
Underdrain piping	F 75X Type PS 28 or AASHTO M-27	4" to 6" rigid schedule 40 PVC or HDPE	Sloped or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per foot, minimum 12" of gravel over pipe, and necessary underdrain piping. Perforated pipe shall be wrapped with 1/2" thick polyethylene cloth.
Perforated in-place concrete (if required)	MHA Mix No. 3, F-1000 (28 days, normal weight, unadorned, non-reinforced) per ASTM C-615-04	n/a	in-situ testing of poured in-place concrete required. 28 day strength and slump test, all concrete design (cast in place or precast) per using previously approved flow or load standards require design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland design to include meeting AASHTO Code 200.09B, vertical loading (R1 for H-30), allowable horizontal loading (based on soil permeability and analysis of potential loading).
Sand	AASHTO-M-66 or ASTM-C-33	0.075 to 0.04"	Small substitutions such as Diabase and Granite (AASHTO) will not be acceptable. No fines or deleterious materials. Substitutions are acceptable. No "rock dust" can be used for sand.

**N-2. PERMEABLE PAVEMENTS**

- CONSTRUCTION CRITERIA:**  
 THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH PERMEABLE PAVEMENTS:
- EROSION AND SEDIMENT CONTROL: FINAL GRADING FOR INSTALLATION SHOULD NOT TAKE PLACE UNTIL THE SURROUNDING SITE IS STABILIZED. IF THIS CANNOT BE ACCOMPLISHED, RUNOFF FROM DISTURBED AREAS SHALL BE DIVERTED AROUND PROPOSED PAVEMENT LOCATIONS.
  - SOIL DISTURBANCE: SITE SOILS SHALL NOT BE COMPACTED. CONSTRUCTION SHOULD BE PERFORMED WITH LOW-GROUND, WIDE TRACKED EQUIPMENT TO MINIMIZE COMPACTION. EXCAVATED MATERIALS SHOULD BE PLACED IN UNCOMPACTED AREAS.
  - DISTRIBUTION SYSTEMS: OVERDRAIN, UNDERDRAIN, AND DISTRIBUTION PIPES SHALL BE CHECKED TO ENSURE THAT BOTH THE MATERIALS AND PERFORATIONS MEET SPECIFICATIONS (SEE APPENDIX B.4). THE UNDERDRAIN PIPES SHOULD BE INSTALLED FIRST TO INSTALLATION. ALL UNDERDRAIN OR DISTRIBUTION PIPES USED SHOULD BE INSTALLED TIGHT ALONG THE BED BOTTOM.
  - SUBGRADE INSTALLATION: SUBGRADE AGGREGATE SHALL BE CLEAN AND FREE OF FINES. THE SURFACE SHALL BE PLACED IN BEDS AND LIGHTLY ROLLED ACCORDING TO THE SPECIFICATIONS (SEE APPENDIX B.4).

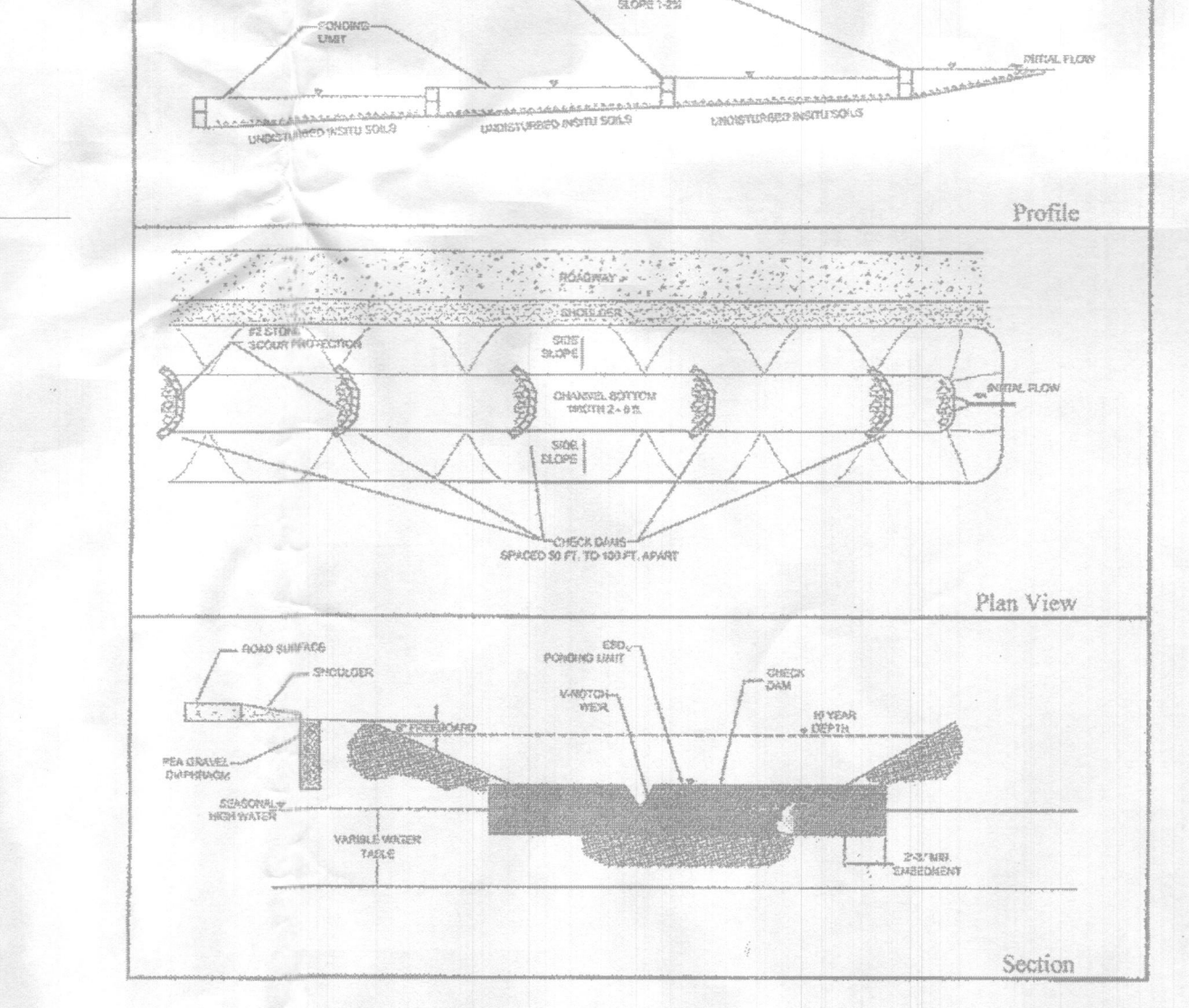
- INSPECTION:**  
 REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:  
 - DURING EXCAVATION FOR THE UNDERDRAIN.  
 - DURING PLACEMENT AND CURING OF ANY EXCAVATION OR DISTRIBUTION SYSTEMS.  
 - DURING PLACEMENT OF THE PERFORATED STONE SUBGRADE MATERIAL.  
 - DURING PLACEMENT OF THE SURFACE MATERIAL.  
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

- MAINTENANCE CRITERIA:**  
 THE FOLLOWING PROCEDURES SHOULD BE CONSIDERED ESSENTIAL FOR MAINTAINING PERMEABLE PAVEMENT SYSTEMS:  
 - PAVEMENT SURFACES SHOULD BE SWEEPED AND MAINTAINED TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERICAL CLEANING UNIT. WASHING WITH COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.  
 - DRAINAGE PIPES, INLETS, STONE EDGE DRAIN, AND OTHER STRUCTURES WITHIN OR DRIVING TO THE SURFACE SHOULD BE CLEANED OUT REGULARLY.  
 - TRUCKS AND OTHER HEAVY VEHICLES CAN GRIND CURB AND DRIVE TO THE POROUS SURFACES, LEADING TO CLOGGING AND PERMANENT FAILURE. THESE VEHICLES SHOULD BE PROTECTED FROM TRUCKING AND SPILLING MATERIAL ONTO THE PAVEMENT.  
 - DEICERS SHOULD BE USED IN MODERATION. WHEN USED, DEICERS SHOULD BE NON-TOXIC AND ORGANIC AND CAN BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT SNOW FLOWING SHOULD BE DONE CAREFULLY WITH BLADES SET ONE-INCH HIGHER THAN NORMAL. PLOWED SNOW PILES AND SNOW MELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.

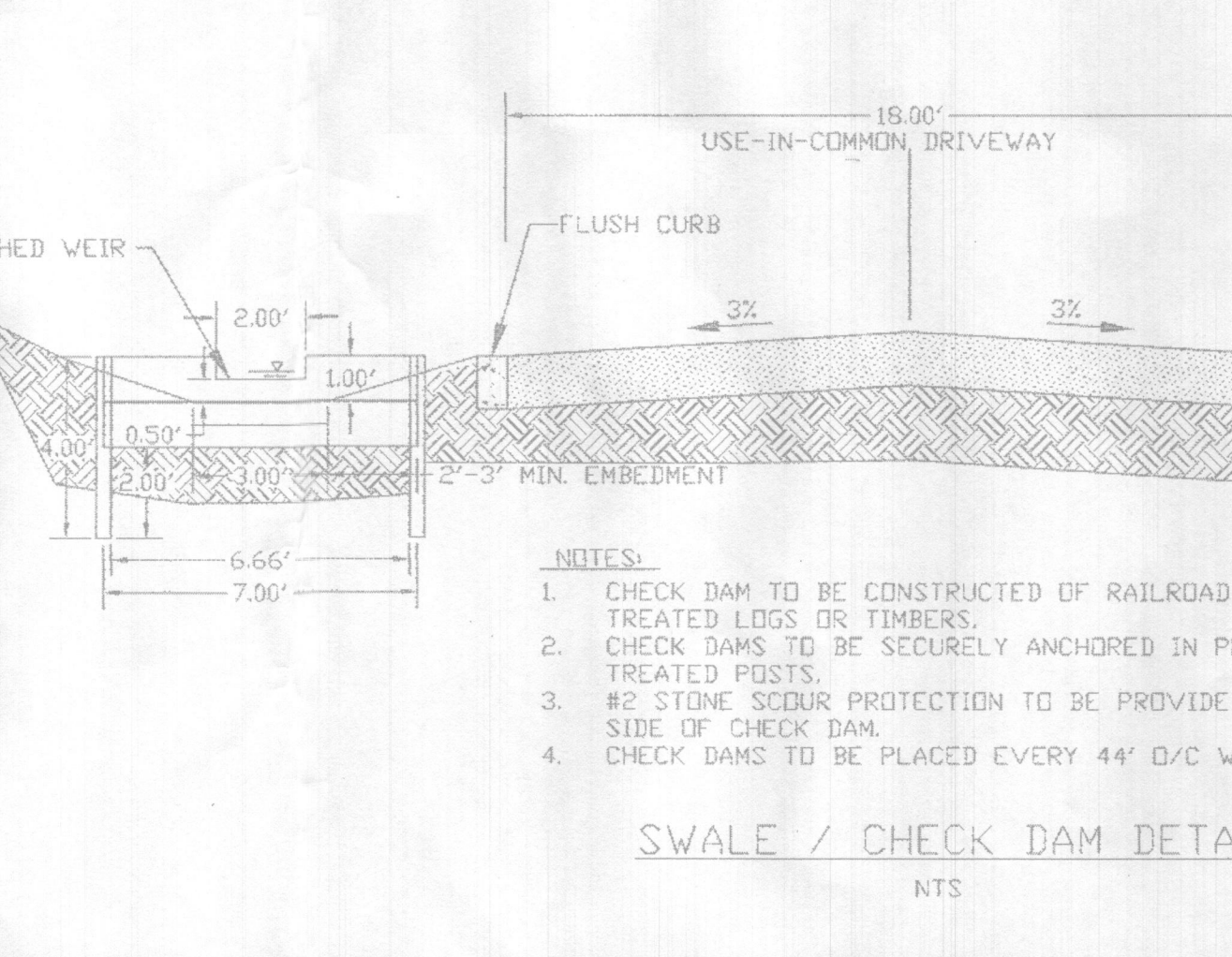
- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-N)**
- THE INDIVIDUAL LOT OWNER SHALL PERIODICALLY SWEEP (OR VACUUM PRODUCE CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
  - THE INDIVIDUAL LOT OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAIN, AND OTHER STRUCTURES WITHIN OR DRIVING TO THE SURFACE.
  - THE INDIVIDUAL LOT OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.
  - THE INDIVIDUAL LOT OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOW MELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.

**Chapter 5. Environmental Site Design - Nonstructural and Micro-Scale Practices**

Figure 5.19 Wet Swale



**SWALE / CHECK DAM DETAIL**



**BUSHMAN**

**BRTT205 Round Tank**

NEW 2015 Gallon Capacity

**Features & Benefits**

- Water capacity of four 50 gallon rain barrels
- High quality rotational-molded polyethylene construction assures maximum strength
- One-piece construction and horizontal ribs around the tank provide added wall strength
- Inlet strainer with mosquito screen and filter
- Overflow assembly provided with mosquito screen and 90 degree elbow
- Tank openings are pre-installed for easy installation
- Bushman 5 Year Warranty

**EASY STEPS TO ORDER**

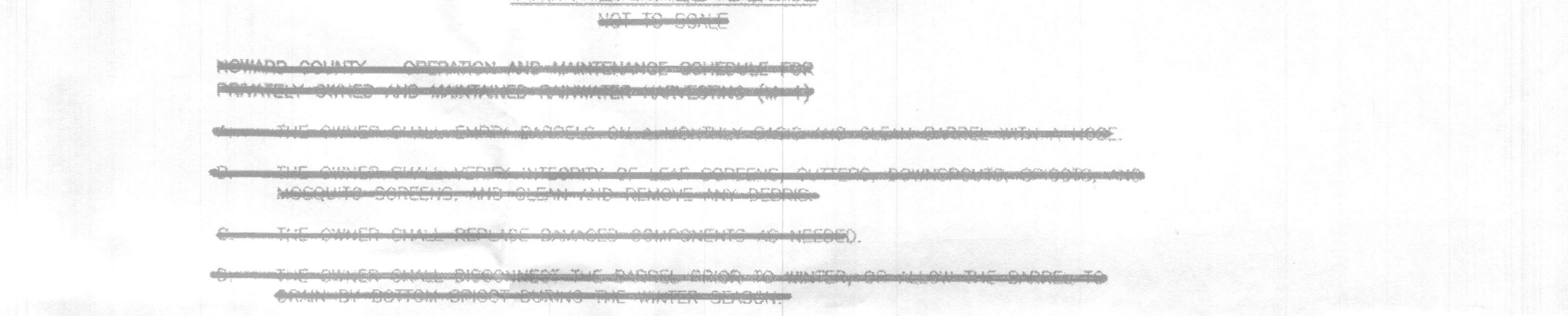
- Bushman Tank Configuration - BRTT - Round Tank
- Capacity (U.S. Gallons) - 205 - 205 U.S. Gallons (170 Imperial Gallons, 775 Liters)
- Color - C0 - Black, C1 - Forest Green, C2 - Macchia Brown, C3 - Brick Red
- Package - P1 - Basic Tank System, Package 1, P2 - Premier System, Package 2

**Example:** BRTT205C1P2 - BRTT 205 Gal. 205 U.S. Gallon Capacity, Forest Green, Premier Package.

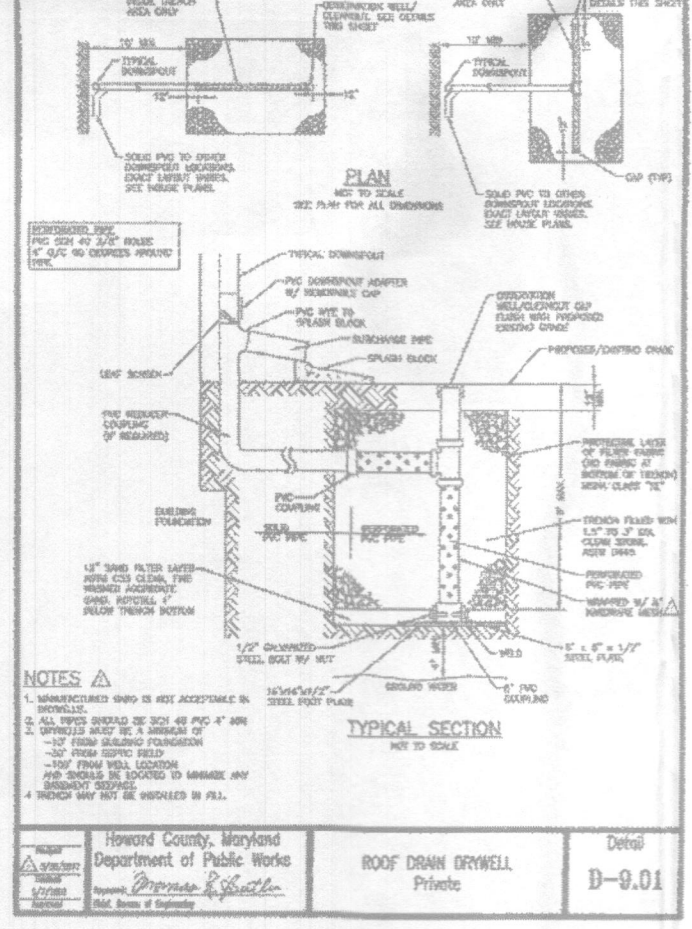
**CONTACT:** Bushman, Canada, 6125 Tonkin Road, Unit 5-5, Mississauga, Ontario L5T1D1, Tel: 905.387.8322, Fax: 905.565.8282, www.bushmancanada.com

**CONTACT:** American Bushman, 26040 Yates Road, P.O. Box 893051, Miami, FL 33188-03051, Tel: 866.926.1666, Fax: 951.296.6126, www.bushmanusa.com

**DUAL PARCEL DETAIL**



**LAYOUT OPTION 1 & 2**



- THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS, UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (I-1) AND DRY WELLS (M-5)**

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS, AND AFTER EVERY LARGE STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED, SO THAT IT DOES NOT DRAIN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.

**OWNER**  
 MARY 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: MRS. DONALD R. REUWER  
 (443) 387-0422

NO.	REVISION	DATE
4	REVISE THE SWM AND SEWAGE DISPOSAL AREA ON LOT 4	05/08/19
3	TO REVISE THE CONFIGURATION AND HOUSE TYPES FOR LOTS 1-B AND 11-15-18	11-15-18
2	REVISE PLANS TO REVISE LOT 4	9/20/18

**SUPPLEMENTAL INFORMATION PLAN**

**STORM WATER MANAGEMENT NOTES AND DETAILS**

**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 CRD: 03  
 5TH ELECTION DISTRICT

PARCELS: 414  
 ZONED: RT-10  
 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**

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: 08-27-2014

DESIGN BY: RHY  
 DRAWN BY: JMR  
 CHECKED BY: RHY  
 DATE: MARCH 2014  
 SCALE: AS SHOWN  
 W.O. NO.: 13-31

9 SHEET OF 12



**DEVELOPER/BUILDER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THE LANDSCAPING SCHEME ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN SECTION 16.02A OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATE OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
*Robert H. Vogel* 12-3-18  
 SIGNATURE DATE

**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 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING USE-IN-COMMON ACCESS EASEMENT
- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION (FIELD LOCATED)
- PROPOSED ALTERNATE WELL LOCATION
- EXISTING DRY WELL CASING (TO BE ABANDONED)
- EXISTING PRIVATE SEA
- PROPOSED PRIVATE SEA
- PROPOSED WELL BOX
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING SPECIMEN TREE
- EXISTING DGBE GREEN ZONE
- EXISTING DGBE YELLOW ZONE
- PROPOSED FOREST CONSERVATION SIGN

**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

**B.G.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 EMPLOYEES 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 FOREST 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

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

NO.	REVISION	DATE
4	REVISE THE SWM AND SEWAGE DISPOSAL AREA ON LOT 4	05/06/19
3	TO REVISE THE CONFIGURATION AND HOUSE TYPES FOR LOTS 1-8 AND NON-BUILDABLE PRESERVATION PARCEL B	11-15-18

**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  
 PARCEL 414 (L. 3172 / F. 336)

TAX MAP: 34 GRID: 03  
 5TH ELECTION DISTRICT

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

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**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 LING OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRES DATE 09-27-2020

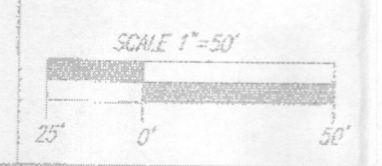
DESIGN BY: RHV  
 DRAWN BY: JMR  
 CHECKED BY: JMR  
 DATE: OCTOBER 2018  
 SCALE: AS SHOWN  
 W.G. NO.: 13-31

10 SHEET OF 12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chief* 12-17-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chief* 12-17-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE



**LANDSCAPE AND FOREST CONSERVATION PLAN**  
 SCALE: 1"=30'

MATCHLINE - SEE SHEET 10

MATCHLINE - SEE SHEET 10