

GENERAL NOTES

- PROJECT BACKGROUND:
 - LOCATION: TAX MAP 37 GRID 5
 - PARCELS: 320 & 354
 - ZONING: R-20 & R-12
 - SUBDIVISION: MONTGOMERY CROSSING
 - TOTAL LOT AREA: 3.34 AC.
 - DISTURBED AREA: 3.21 AC.
 - AREA OF PLAN SUBMISSION: 3.21 AC.
 - MINIMUM LOT SIZE: 12,000 SF (R-12)/20,000SF (R-20)
 - PROPOSED USE FOR SITE: RESIDENTIAL
 - TOTAL NUMBER OF UNITS: 8
 - TYPE OF PROPOSED UNIT: SFD
 - DEED REFERENCES: LIBER 13552 FOLIO 512 & LIBER 13552 FOLIO 519
 - DPZ REFERENCES: PLATS #17089-17093, F-04-095, F-04-095, F-96-066, F-96-062, F-96-030, SDP-10-078, S-88-86, S-89-80, S-89-19, P-90-28, P-92-17, F-93-36, WP-91-90, WP-94-89, F-95-19, F-94-101, WP-94-90, F-95-182, F-97-124, SP-98-06, SP-11-002, F-10-080, F-13-039, GP 13-080, SDP-13-056, F-14-029, ECP-11-034.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- TRAFFIC CONTROL DEVICES:
 - a) THE R1-1 SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - b) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
 - c) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)".
 - d) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED "QUICK PUNCH", SQUARE TUBE SLEEVE (12 GAUGE)-3" LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON AERIAL TOPOGRAPHY PERFORMED BY WINGS AERIAL MAPPING, DATED DECEMBER 2009 AND FIELD TOPOGRAPHY COMPILED BY ROBERT H. VOGEL ENGINEERING, INC. AUGUST 2014.
- THE PROJECT BOUNDARY IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY MILDENBERG, BOENDER, AND ASSOCIATES, ON OR ABOUT JANUARY 2012.
- 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. 378A AND 378B WERE USED FOR THIS PROJECT.
- THE SUBJECT PROPERTY IS ZONED "R-12 AND R-20" IN ACCORDANCE WITH THE COMPREHENSIVE ZONING PLAN, EFFECTIVE OCTOBER 6, 2013.
- STORMWATER MANAGEMENT REQUIREMENTS HAVE BEEN SATISFIED UNDER APPROVED F-96-30, ECP 11-034 AND PER THIS F-14-029 PLAN THROUGH THE USE OF PRIVATELY OWNED AND MAINTAINED PERMEABLE SURFACE DRIVEWAYS A-2 AND MICRO-BIORETENTION / RAINGARDEN M-7. THE DEVELOPER WILL BE REQUIRED TO EXECUTE THE DECLARATION OF COVENANTS AND/OR A DEVELOPER'S AGREEMENT FOR THE CONSTRUCTION OF THE STORMWATER MANAGEMENT PRACTICES AND A MAINTENANCE AGREEMENT FOR THE PRIVATELY OWNED AND MAINTAINED ESD PRACTICES.
- EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS, FIELD SURVEY, ROAD CONSTRUCTION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS 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 TO THE COUNTY'S RIGHTS-OF-WAY, PAVING, OR EXISTING UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- ALL DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6.06 UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING:
 - AT&T 1-800-252-1133
 - BGE (CONSTRUCTION SERVICES) 410-637-8713
 - BGE (EMERGENCY) 410-685-0123
 - BUREAU OF UTILITIES 410-313-4900
 - COLONIAL PIPELINE CO 410-795-1390
 - MISS UTILITY 1-800-257-7777
 - STATE HIGHWAY ADMINISTRATION 410-531-5533
 - VERIZON 1-800-743-0033
- IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT FRONT OR REAR YARD SETBACK.
- PER F-14-029; NO WETLANDS, STREAMS, 25% STEEP SLOPES OR FLOODPLAINS EXIST ON SITE.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER AND SEWER SERVICE FOR THIS PROJECT WILL BE PUBLIC.
 - WATER SERVICE CONNECTIONS WILL BE CONNECTIONS FROM CONTRACT 34-W AND 14-4697-D.
 - SEWER SERVICE CONNECTIONS WILL BE CONNECTIONS FROM CONTRACT 10-1043-D AND 14-4697-D.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
- THE PROPOSED UNITS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- NO STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE LOCATED ONSITE.
- THE LANDSCAPE PLAN, IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY LANDSCAPE MANUAL WAS APPROVED UNDER F-14-029. FINANCIAL SURETY IN THE AMOUNT OF \$11,700.00 SHALL BE POSTED WITH THE BUILDERS GRADING PERMIT.
- ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES AND ARE BASED UPON EXISTING AND PROPOSED CONTOURS.
- ALL SINGLE FAMILY DWELLINGS WILL HAVE A MINIMUM OF A 1-1/2" WHC WITH A 1" OUTSIDE METER SETTING.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - A) WIDTH - 12 FEET IF SERVING MORE THAN ONE RESIDENCE
 - B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.)
 - C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45-FOOT TURNING RADIUS
 - D) STRUCTURES - (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
 - E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1-FOOT DEPTH OVER DRIVEWAY SURFACE
 - F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
- THE 65 dBA NOISE CONTOUR LINE DRAWN ON THIS DEVELOPMENT PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992, AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dBA NOISE EXPOSURE. THE 65dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, ESTABLISHED UNDER PLAT NO. 22558, (F13-039)
- CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES ON SITE PRIOR TO COMMENCING CONSTRUCTION.
- A PRIVATE STREET SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT BOTH THE MONTGOMERY ROAD AND THE MARSHALEE DRIVE (SDP10-079/SDP13-056) INTERSECTIONS. COST OF THESE STREET NAME SIGNS SHALL BE THE DEVELOPER'S/OWNER'S RESPONSIBILITY. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
- FOREST STAND AND WETLAND DELINEATION WAS COMPLETED BY MILDENBERG, BOENDER AND ASSOCIATES, INC. DATED NOVEMBER, 2010 WAS APPROVED UNDER SP-11-002/F13-039.
- AN 85TH PERCENTILE SPEED STUDY AND SIGHT DISTANCE ANALYSIS WAS COMPLETED BY MILDENBERG, BOENDER AND ASSOCIATES, INC. UNDER SP-11-002.
- FOREST CONSERVATION, IN ACCORDANCE WITH SECTION 16.102 OF THE FOREST CONSERVATION MANUAL HAS BEEN PROVIDED BY THE PLACEMENT OF 1.08 ACRES OF AFFORESTATION INTO AN OFF-SITE EASEMENT ON THE PROPERTY IDENTIFIED AS THE ROSEBARK PROPERTY, PRESERVATION PARCEL A. REFER TO THE SUPPLEMENTAL PLAN FOR MONTGOMERY CROSSING, F-14-029 FOR FURTHER DETAILS.
- THE OPEN SPACE REQUIREMENT HAS BEEN MET BY A FEE IN LIEU PAYMENT OF \$12,000 UNDER F-14-029.

LOT NO	STREET ADDRESS
3	6323 STARBOARD WAY
4	6319 STARBOARD WAY
5	6315 STARBOARD WAY
6	6311 STARBOARD WAY
7	6418 MONTGOMERY ROAD
8	6314 STARBOARD WAY
9	6320 STARBOARD WAY
10	6493 MARSHALEE DRIVE

SITE DEVELOPMENT PLAN

MONTGOMERY CROSSING

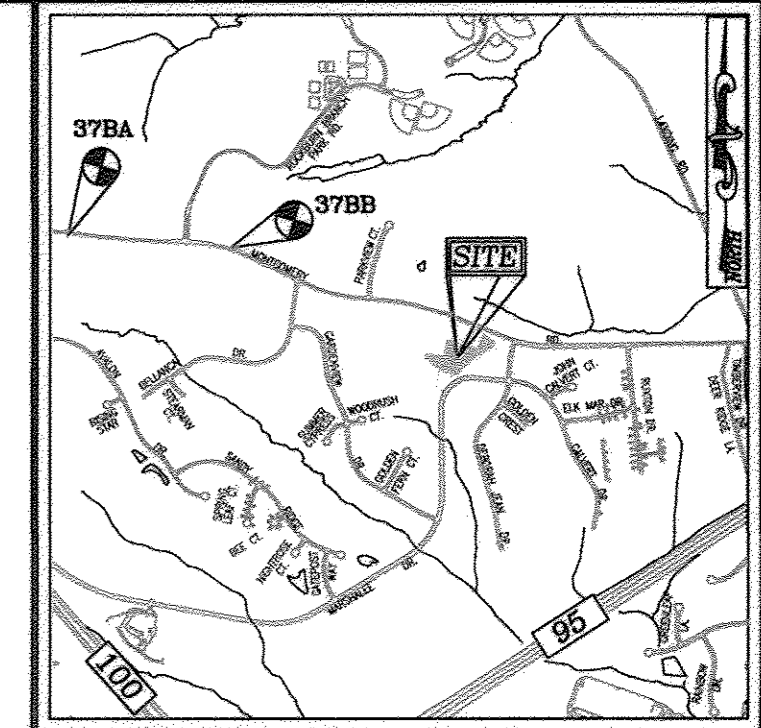
PHASE 2

LOT 3 THRU 10
L. 13552 / F. 526
HOWARD COUNTY, MARYLAND

BENCHMARKS

HOWARD COUNTY BENCHMARK - 378A (CONC. MONUMENT)
N 563785.6421 E 1376343.2088 ELEV. 393.94
LOCATION: MONTGOMERY ROAD 0.4 MILES EAST OF MEADOWBRIDGE ROAD

HOWARD COUNTY BENCHMARK - 378B (CONC. MONUMENT)
N 563663.4488 E 1378040.5059 ELEV. 373.01
LOCATION: MONTGOMERY ROAD BY ROCKBURN ELEMENTARY SCHOOL



VICINITY MAP

SCALE: 1"=2000'
ADC MAP COORDINATE: PG. 4936 J7

SHEET INDEX

COVER SHEET	DESCRIPTION	SHEET NO.
1	SITE LAYOUT AND LANDSCAPE PLAN	1 OF 6
2	SOILS MAP, GRADING AND SOIL EROSION AND SEDIMENT CONTROL PLAN	2 OF 6
3	GRADING AND SOIL EROSION AND SEDIMENT CONTROL PLAN - DETAILS	3 OF 6
4	STORMWATER MANAGEMENT DETAILS	4 OF 6
5	HOUSE TYPE DETAILS	5 OF 6
6	HOUSE TYPE DETAILS	6 OF 6

LEGEND

PROPERTY LINE	EX. 44' USE IN COMMON ACCESS AND UTILITY EASEMENT TO BENEFIT NON-BUILDABLE BULK PARCELS A AND ANY FUTURE SUBDIVISION OF MARSHALEE WOODS SECTION 7 OF MONTGOMERY CROSSING AND LOTS 150-152 OF MARSHALEE WOODS PLAT #17089-17093
RIGHT-OF-WAY LINE	EX. 30' PUBLIC WATER & SEWER EASEMENT PLAT #17093
ADJACENT PROPERTY LINE	EX. 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 1, 2 & PARCEL 10 OF MONTGOMERY CROSSING AND LOTS 150-152 OF MARSHALEE WOODS PLAT #17089-17093
CENTERLINE OF EXISTING STREAM	EX. 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 3, 4, 5, 6, 8, & 9
EXISTING CURB AND GUTTER	20' PUBLIC SEWER WATER & UTILITY EASEMENT
EXISTING UTILITY POLE	
EXISTING LIGHT POLE	
EXISTING MAILBOX	
EXISTING SIGN	

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION / AREA	LOTS			
MONTGOMERY CROSSING PHASE 2 - F-14-029	2/5	3 - 10			
PLAT REF.	BLOCK NO	ZONE	TAX MAP	ELECT. DIST.	CENSUS TR.
2317	5	R-12/R-20	37	1ST	6011.01

OWNER/DEVELOPER

COLUMBIA FORWARD PROPERTIES, LLC
7310 ESQUIRE CT., STE 14
ELKBRIDGE, MD 21075
PHONE: (410) 379-8681

BUILDER

KEVIN BOWSER
RYAN HOWARD
9720 PATUXENT WOODS DR.
COLUMBIA, MD 21046
(410) 796-0908

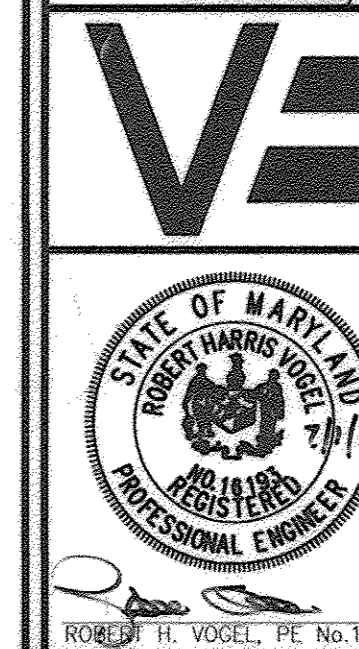
NO.	REVISION	DATE
4	REPLACE MBR WITH DRYWELLS LOTS 3-7	7/7/16
1	REPLACE MBR W/ DRYWELLS LOT 10	04/05/16

SITE DEVELOPMENT PLAN

COVER SHEET
MONTGOMERY CROSSING
PHASE 2
(SFD RESIDENTIAL)
LOT 3 THRU 10
L. 13552 / F. 526

1ST ELECTION DISTRICT TAX MAP 37 GRID 05 PARCEL 882 DPZ REF'S: (SEE GENERAL NOTE 1 ON COVER SHEET)

ZONED: R-12/R-20 HOWARD COUNTY, MARYLAND

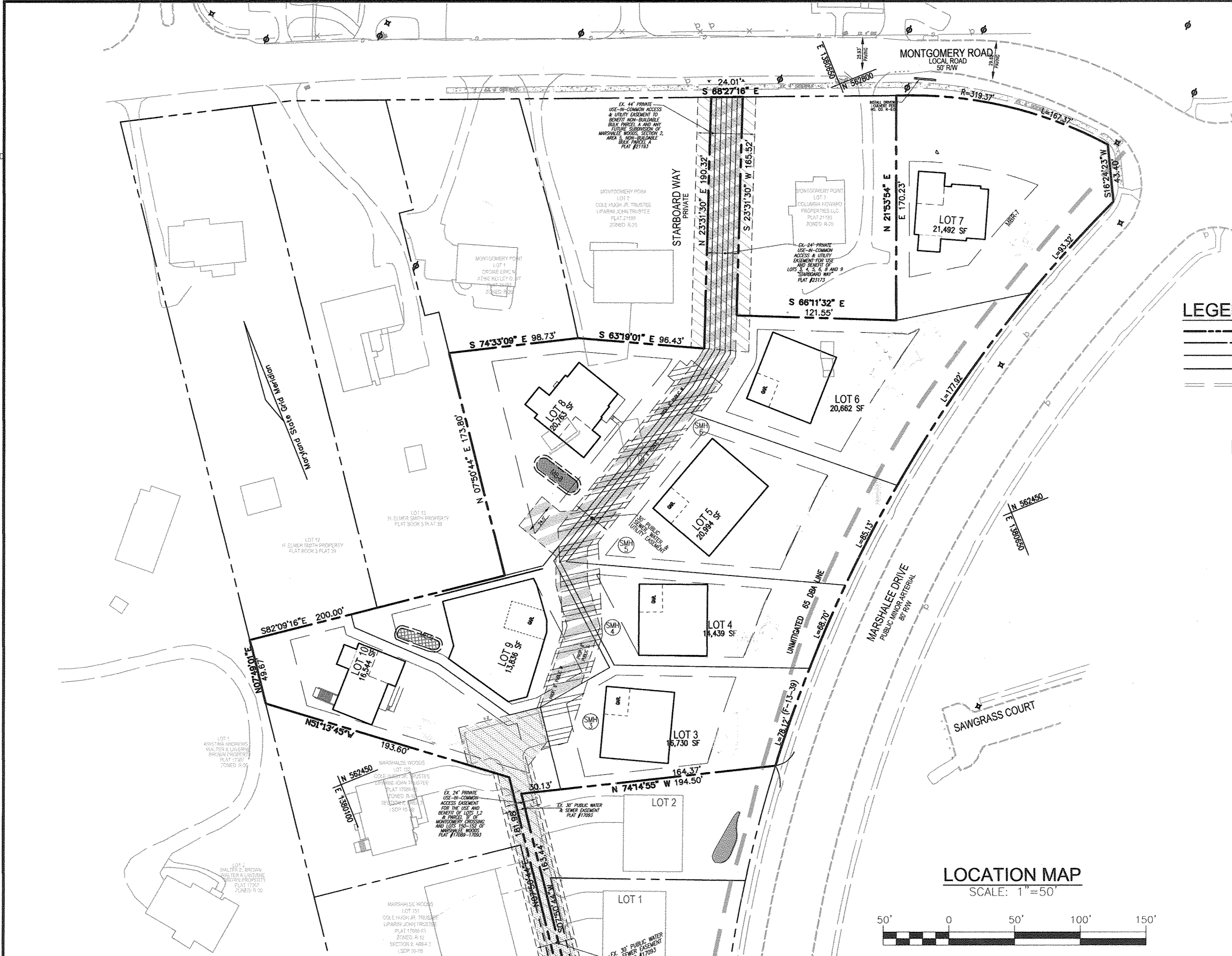


ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: T.W.
DRAWN BY: T.W./K.C.
CHECKED BY: R.H.V.
DATE: JULY, 2014
SCALE: AS SHOWN
W.O. NO.: 12-42

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. 18193 EXPIRATION DATE: 09-27-2016

1 SHEET OF 6



LOCATION MAP

SCALE: 1"=50'

SITE ANALYSIS DATA

A. TOTAL PROJECT AREA:	3.34 AC
B. AREA OF PLAN SUBMISSION:	3.34 AC (LOTS 3-10)
C. LIMIT OF DISTURBANCE:	3.21 AC
D. PROPOSED ZONING DESIGNATION:	R-12 / R-20
E. PROPOSED USES FOR SITE AND STRUCTURES:	SINGLE FAMILY DETACHED
F. FLOOR SPACE ON EACH LEVEL OF BUILDING PER USE:	N/A
G. TOTAL NUMBER OF UNITS ALLOWED FOR PROJECT AS SHOWN ON FINAL PLAT:	8 BUILDABLE LOTS TOTAL
H. TOTAL NUMBER OF UNITS PROPOSED ON SUBMISSION:	8
I. MAXIMUM NUMBER OF EMPLOYEES, TENANTS ON SITE PER USE:	N/A
J. NUMBER OF PARKING SPACES REQUIRED BY HO CO. ZONING REGULATIONS:	2 PER SFD HOUSE
K. NUMBER OF PARKING SPACES PROVIDED ON SITE:	2 PER SFD HOUSE
L. OPEN SPACE ON SITE:	PER FEE IN LIEU F-14-029
M. AREA OF RECREATION OPEN SPACE REQUIRED BY SUBDIVISION & LAND DEVELOPMENT REGULATIONS:	N/A
N. BUILDING COVERAGE OF SITE:	N/A
O. APPLICABLE DPZ FILE REFERENCES:	SEE NOTE 1
P. ANY OTHER INFORMATION WHICH MAY BE RELEVANT:	TAX MAP 37, GRID 5, PARCELS 320, 354 AND 682 1ST ELECTION DISTRICT
Q. FLOOR AREA RATIO:	N/A

STORMWATER MANAGEMENT PRACTICES CHART

LOT #	IMP. AREA	ESD PRACTICE
LOT 3	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (2) DRYWELL (M-5)
LOT 4	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (2) DRYWELL (M-5)
LOT 5	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (4) DRYWELL (M-5)
LOT 6	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (2) DRYWELL (M-5)
LOT 7	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (2) DRYWELL (M-5)
LOT 8	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (1) MICRO-BIORETENTION (M-6)
LOT 9	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (1) MICRO-BIORETENTION (M-6)
LOT 10	HOUSE & DRIVEWAY	PERMEABLE SURFACE (A-2) (2) DRYWELL (M-5)

33. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE)- 30" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

34. WP-94-90 GRANTED 1-13-95 TO WAIVE (A) SECTION 16.119(A)(2), TO PERMIT PRIVATE SHARED DRIVEWAYS TO HAVE DIRECT ACCESS TO A MINOR ARTERIAL ROADWAY, MARSHALEE DRIVE. (B) SECTION 16.116(A)(2) TO NOT REQUIRE A USEABLE YARD 25' MINIMUM BETWEEN THE 75' STREAM BUFFER AND THE REAR OF THE PROPOSED UNITS (LOTS 87-90). APPLICABLE TO F-96-62.

35. HORIZONTAL GEOMETRY OF THE MICRO-BIORETENTION FACILITIES MAY BE MODIFIED WHILE MAINTAINING SURFACE AREA.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
Chief, Division of Land Development
Director

7-24-15
7-29-15
7-30-15

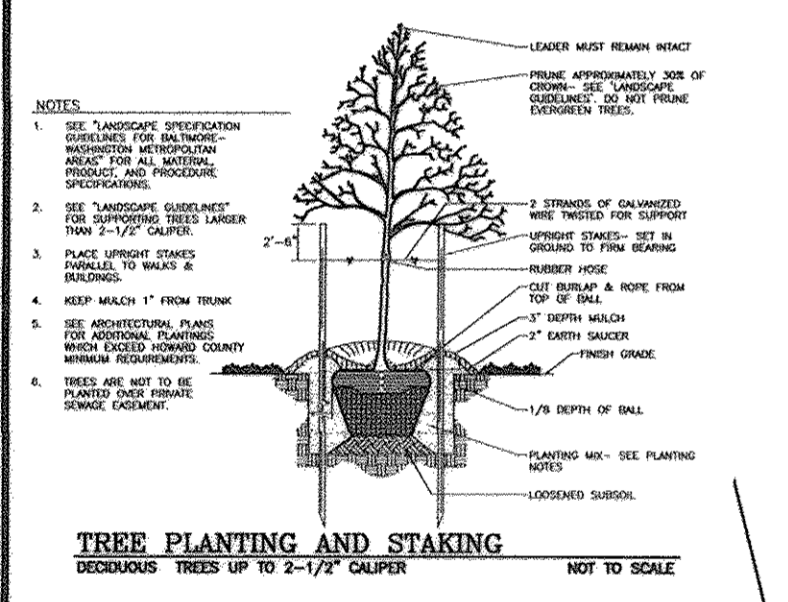
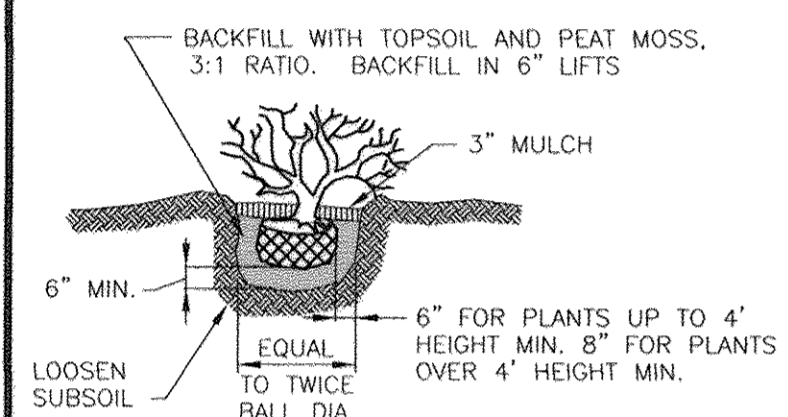
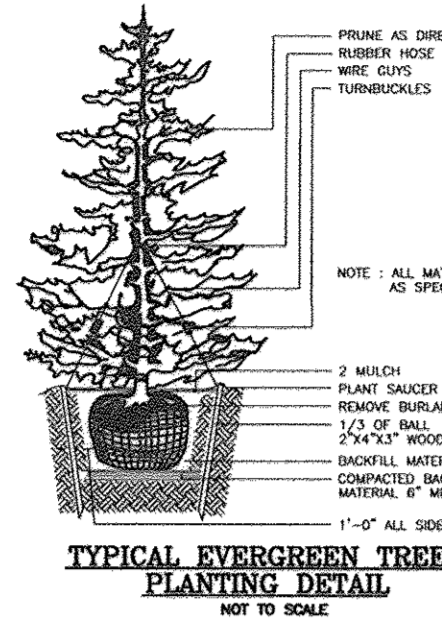
KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AS	26	ACER SACCHARUM GREEN MOUNTAIN SUGAR MAPLE OR EQUIVALENT	2 1/2"-3" CAL.	B & B
PT	14	PINUS THUNBERGIANA JAPANESE BLACK PINE OR EQUIVALENT	6'-8" HT.	B & B
GM	60	GREEN MOUNTAIN BOXWOOD BUXUS X 'GREEN MOUNTAIN' OR EQUIVALENT	2 1/2"-3" HT.	B & B

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 \$117,000.00 FOR THE PERIMETER TREES, 14 EVERGREENS AND 60 SHRUBS SHALL BE POSTED WITH THE GRADING PERMIT FOR THIS PLAN.

NOTE: LANDSCAPE SURETY WILL NOT BE RELEASED UNTIL ALL REQUIRED PLANTINGS HAVE BEEN INSTALLED.

LANDSCAPE SCHEDULE NOTE:
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 PERMITS AND PLANTING SPECIFICATIONS.
CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
FINAL LOCATION OF PLANT MATERIAL MAY VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO DIGGING. IF PLANT DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

GENERAL NOTES:
1. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPLACED.
2. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
3. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE BUILDER TO INSTALL DURING THE CONSTRUCTION OF THE HOME ON LOT 3-10.
4. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS LISTED HEREWITH AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY. ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.



DEVELOPER/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 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.

DATE: 7-24-15

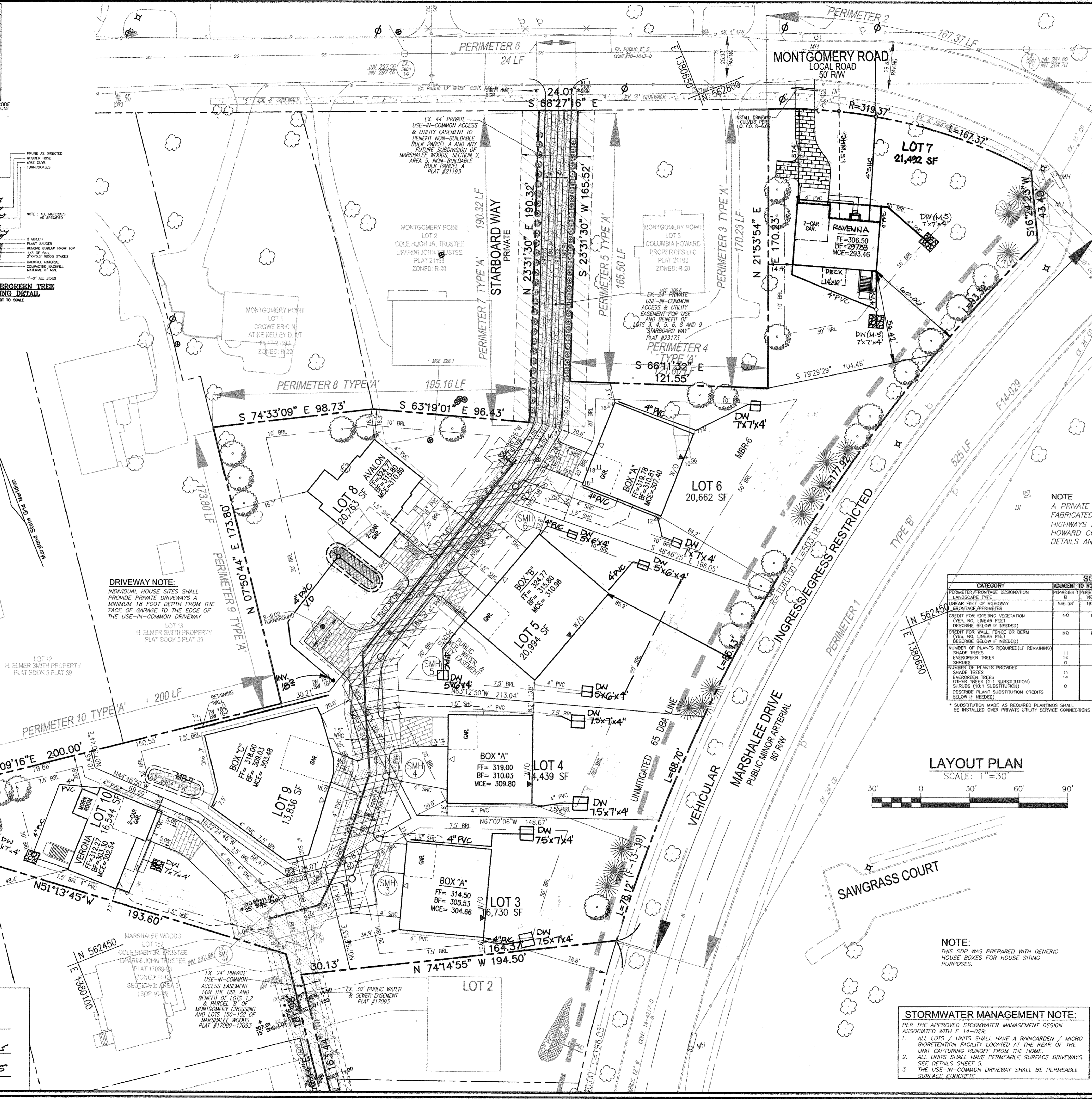
SIGNATURE OF DEVELOPER: [Signature]

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 7-24-15

DATE: 7-29-15

DATE: 7-30-15



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREE LINE
- EXISTING TREES
- EXISTING FENCE
- EX. 44' USE-IN-COMMON ACCESS AND UTILITY EASEMENT TO BENEFIT NON-BUILDABLE BULK PARCEL A, AND ANY FUTURE SUBDIVISION OF MARSHALLEE WOODS, PLAT #17089 (L-824 F-005)
- EX. 30' PUBLIC WATER & SEWER EASEMENT PLAT #17093
- EX. 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 150-152 OF MARSHALLEE WOODS, PLAT #17089-17093
- EX. 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 3,4,5,6,8, & 9

SCHEDULE 'A' - PERIMETER LANDSCAPE EDGE - F-14-029

CATEGORY	ADJACENT TO ROADWAY/ADJACENT TO PERIMETER PROPERTIES/ADJACENT TO PERIMETER PROPERTIES										TOTAL
	PERIMETER 1	PERIMETER 2	PERIMETER 3	PERIMETER 4	PERIMETER 5	PERIMETER 6	PERIMETER 7	PERIMETER 8	PERIMETER 9	PERIMETER 10	
PERMETER/PROPORTION DESIGNATION	PERIMETER 1	PERIMETER 2	PERIMETER 3	PERIMETER 4	PERIMETER 5	PERIMETER 6	PERIMETER 7	PERIMETER 8	PERIMETER 9	PERIMETER 10	
LANDSCAPE TYPE	A	A	A	A	A	A	A	A	A	A	
LINEAR FEET OF ROADWAY/PROPORTION/PERIMETER	546.58'	167.37'	170.23'	121.55'	165.52'	24.01'	190.32'	195.16'	173.80'	200'	49.67'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED (IF REMAINING)											
SHADE TREES	11	0	3	2	0	0	3	3	3	3	1
EVERGREEN TREES	0	0	0	0	0	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED											
SHADE TREES	11	0	3	2	0	0	3	3	3	3	1
EVERGREEN TREES	14	0	0	0	0	0	0	0	0	0	0
OTHER TREES (2-1 SUBSTITUTION)	0	0	0	0	0	0	0	0	0	0	0
SHRUBS (10-1 SUBSTITUTION)	0	0	0	0	0	0	30	0	0	0	0
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED											

LAYOUT PLAN
SCALE: 1"=30'

REVISIONS:

NO.	REVISION	DATE
4	REPLACE MBR WITH DRYWELLS LOTS 3-7	7/7/16
3	REVISE THE HOUSE TYPE AND GRADING ON LOT 7	06/16/16
1	REPLACE MBR W/ DRYWELLS LOT 10	04/05/16

SITE DEVELOPMENT PLAN
SITE LAYOUT AND LANDSCAPE PLAN
MONTGOMERY CROSSING
PHASE 2
(SFD RESIDENTIAL)
LOT 3 THRU 10
L. 13552 / F. 526

1ST ELECTION DISTRICT
TAX MAP: 37 GRID: 05
DPZ REF: (SEE GENERAL NOTE 1 ON COVER SHEET)

ZONED: R-12/R-20
PARCEL: 682
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

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: 09-27-2016

DESIGN BY: T.J.W.
DRAWN BY: T.J.W./K.C.
CHECKED BY: R.H.V.
DATE: JULY, 2014
SCALE: AS SHOWN
W.O. NO.: 12-42

2 SHEET OF 6

STORMWATER MANAGEMENT NOTE:
PER THE APPROVED STORMWATER MANAGEMENT DESIGN ASSOCIATED WITH F-14-029:
1. ALL LOTS / UNITS SHALL HAVE A RAINGARDEN / MICRO BIORETENTION FACILITY LOCATED AT THE REAR OF THE UNIT CAPTURING RUNOFF FROM THE HOME.
2. ALL UNITS SHALL HAVE PERMEABLE SURFACE DRIVEWAYS. SEE DETAILS SHEET S.
3. THE USE-IN-COMMON DRIVEWAY SHALL BE PERMEABLE SURFACE CONCRETE.

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

John R. Roberts 7/8/15
 HOWARD S.C.D. DATE

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 CONSTRUCTION. I/WE AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 7/15
 SIGNATURE OF DEVELOPER DATE

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

[Signature] 7/15
 SIGNATURE OF ENGINEER DATE

NOTE:
 STABILIZATION IS TO BE DONE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS REQUIRED BY THE 2011 STDS. & SPECS. WHICHEVER IS MORE RESTRICTIVE.

NOTES
 1. REFER TO SHEET 4 FOR STANDARD DETAILS AND STABILIZATION NOTES
 2. REFER TO SHEET 4 FOR SEQUENCE OF CONSTRUCTION

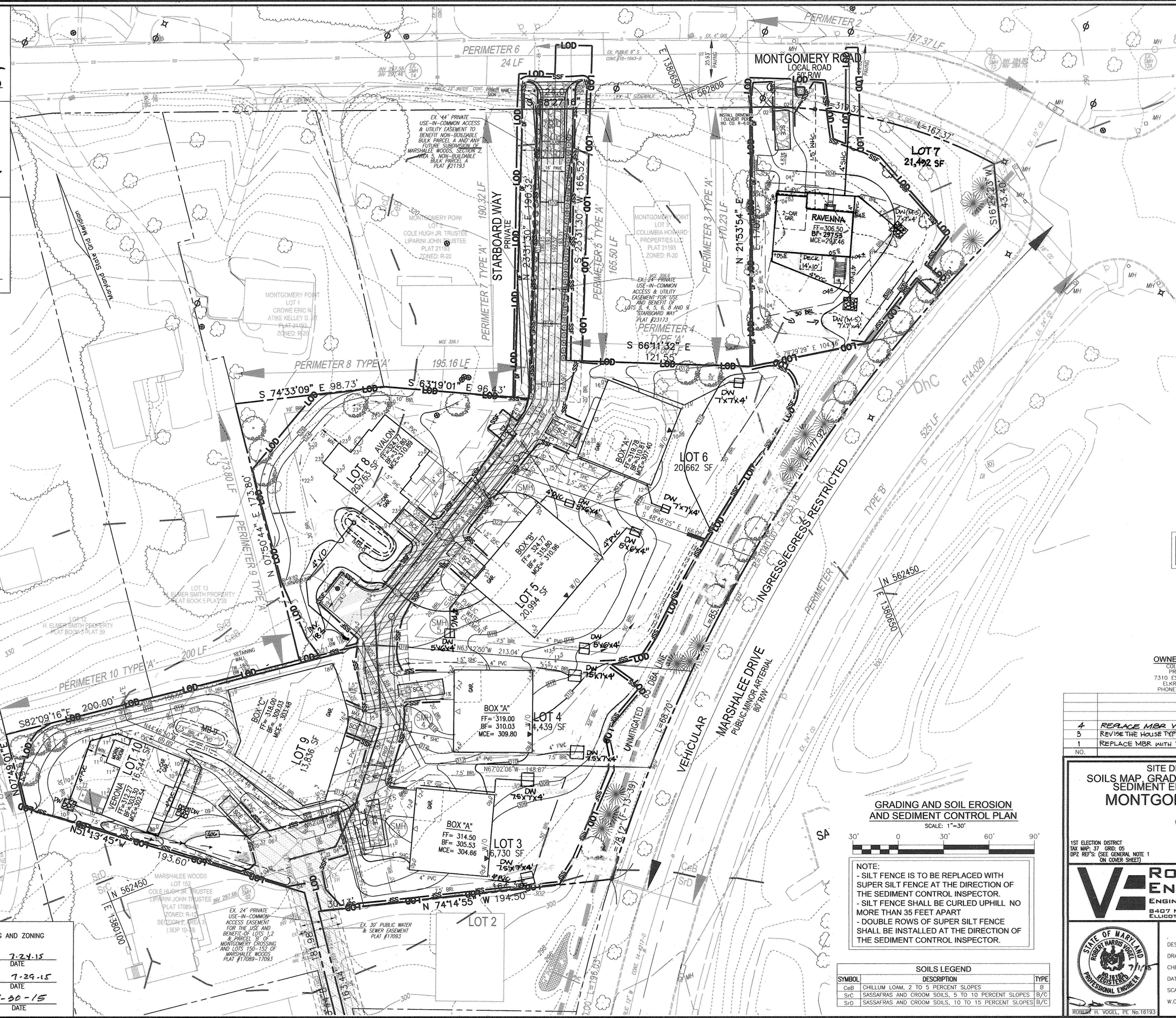
DRIVEWAY NOTE:
 INDIVIDUAL HOUSE SITES SHALL PROVIDE PRIVATE DRIVEWAYS A MINIMUM 18 FOOT DEPTH FROM THE FACE OF GARAGE TO THE EDGE OF THE USE-IN-COMMON DRIVEWAY

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 7-24-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 7-24-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 7-30-15
 DIRECTOR DATE



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANDOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- EXISTING TREES
- EXISTING FENCE
- CENTERLINE OF EXISTING STREAM
- PROPOSED TREELINE
- EX. 44' USE-IN-COMMON ACCESS AND UTILITY EASEMENT TO BENEFIT NON-BUILDABLE BULK PARCELS 1, 2, 3, 4, 5, 6, 7, 8, 9 AND ANY FUTURE SUBDIVISION OF MARSHALEE WOODS SECTION 2, AREA A, NON-BUILDABLE BULK PARCELS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
- EX. 30' PUBLIC WATER & SEWER EASEMENT PLAT #17093
- EX. 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 1, 2 & PARCEL 17 OF MONTGOMERY CROSSING AND LOTS 150-152 OF MARSHALEE WOODS PLAT #17089-17093
- EX. 24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 1, 2, 3, 4, 5, 6, 7, 8, 9

HOUSE BOX

LOD PROPOSED LIMIT OF DISTURBANCE

SSS PROPOSED SUPER SILT FENCE

10' PROPOSED 10' CONTOUR

2' PROPOSED 2' CONTOUR

SCS PROPOSED STABILIZED CONSTRUCTION ENTRANCE

DF PROPOSED DIVERSION FENCE

TYPICAL 5'X5' RIPRAP OUTFALL (MSHA CL1)

NOTE: STOCKPILING WILL BE PERMITTED ON EACH LOT ONLY.

NOTE: LOCATE STOCKPILE AS SHOWN HEREON OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. ANY STOCKPILES EXCEEDING 15 FEET IN HEIGHT SHALL BE BENCHED.

OWNER/DEVELOPER: COLUMBIA HOWARD PROPERTIES, LLC
 7310 ESQUIRE CT., STE 14
 ELKDRIDGE, MD 21075
 PHONE: (410) 379-8881

BUILDER: KEVIN BOWSER RYAN HOMES
 9720 PATUXENT WOODS DR.
 COLUMBIA, MD 21046
 (410) 796-0908

NO.	REVISION	DATE
4	REPLACE MBR WITH DRY WELLS LOTS 3-7	7/7/16
3	REVISE THE HOUSE TYPE AND GRADING ON LOT 7	06/16/16
1	REPLACE MBR WITH DRY WELLS LOT 10	04/05/16

GRADING AND SOIL EROSION AND SEDIMENT CONTROL PLAN
 SCALE: 1"=30'

NOTE:
 - SILT FENCE IS TO BE REPLACED WITH SUPER SILT FENCE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
 - SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART
 - DOUBLE ROWS OF SUPER SILT FENCE SHALL BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

SOILS LEGEND

SYMBOL	DESCRIPTION	TYPE
CoB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B
SrC	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES	B/C
SrD	SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B/C

SITE DEVELOPMENT PLAN
SOILS MAP, GRADING AND SOIL EROSION AND SEDIMENT EROSION CONTROL PLAN
MONTGOMERY CROSSING
 PHASE 2
 (SFD RESIDENTIAL)
 LOT 3 THRU 10
 L. 13552 I.F. 526

1ST ELECTION DISTRICT
 TAX MAP 37 ORD. 05
 DPZ REF'S: (SEE GENERAL NOTE 1 ON COVER SHEET)

ZONED: R-12/R-20
 PARCEL: 682
 HOWARD COUNTY, MARYLAND

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 FAX: 410-461-1896

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2016

DESIGN BY: TJW
 DRAWN BY: TJW/KSC
 CHECKED BY: RHY
 DATE: JULY, 2014
 SCALE: AS SHOWN
 W.O. NO.: 12-42

3 SHEET OF 6

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 MEDIUM FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERAMIA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOxious WEEDS AS SPECIFIED UNDER COMAR 15.08.01.02. 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 (35% TO 40%) OR SANDY LOAM (50%), COARSE SAND (30%), AND COMPOST (40%).
• CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
• PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.
THERE SHALL BE AT LEAST ONE SOIL TEST PER PRACTICE. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SQUIBBE SAYS A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE LOCATED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE 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 MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TYRES. 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 DESIGN FAILURE.
COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL FLOW RIPPER, OR SUBSIDER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO RELIEVE 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 AND PONDED 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 REAR 4 GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL 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 MARSH 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". SHREDDED 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. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/3RD OF THE BALL IS ABOVE FINAL 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. THOROUGHLY WATER GROUND BED 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 SHALL BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-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, DEFERS, OR AT A MINIMUM, IMPEDS THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTILL 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 756, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).
• 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 1/4" (10#) OR 1/2" (5#) STONE (PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
• GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) 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, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
• A 4" LAYER OF 1/2" (NO. 57) STONE SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
THIS 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.

LOT 3 - 10 - ESDV COMPUTATIONS

ROW	DA (#)	% IMPERV	Rv	DA (SF)	DA (AC)	MINIMUM VOLUME	MAXIMUM VOLUME	1.6' VOLUME	IMPERV (SF)	IMPERV (AC)	GREEN AREA	REMARKS
UC driveway	100.00	0.9500	5145	0.12	407	1059	652	0	5145	0.12	0.00	N/A PUBLIC EASEMENT
LOT 3 HSE	100.00	0.95	2010	0.05	REQ	3160	420	290	005	000	0.00	ALT SURFACE, MICROSCALE DRYWELLS 210x2=420 - 2 DRYWELLS
UC Requirement	100.00	0.9500	1100	0.03	87	226	139	33	1100	0.03	0.00	33 PERM SURFACE DW @ .196
LOT 4	100.00	0.95	2010	0.05	REQ	3160	420	290	005	000	0.00	ALT SURFACE, MICROSCALE DRYWELLS 210x2=420 - 2 DRYWELLS
UC Requirement	100.00	0.9500	705	0.02	56	145	89	67	705	0.02	0.00	67 PERM SURFACE DW @ .196
LOT 5	100.00	0.95	2340	0.05	REQ	4640	480	2350	005	000	0.00	ALT SURFACE, MICROSCALE DRYWELLS 120x4=480 - 4 DRYWELLS
UC Requirement	100.00	0.9500	475	0.01	38	98	60	28	475	0.01	0.00	28 PERM SURFACE DW @ .196
LOT 6 HSE	100.00	0.95	1850	0.04	REQ	3060	392	1850	004	000	0.00	ALT SURFACE, MICROSCALE DRYWELLS 196x2=392 - 2 DRYWELLS
UC Requirement	100.00	0.9500	440	0.01	35	91	56	43	440	0.01	0.00	43 PERM SURFACE DW @ .196
LOT 7	100.00	0.95	1725	0.04	REQ	3420	392	1725	004	000	0.00	ALT SURFACE, MICROSCALE DRYWELLS 196x2=392 - 2 DRYWELLS
UC Requirement	100.00	0.9500	975	0.02	77	201	124	144	975	0.02	0.00	144 PERM SURFACE DW @ .196
LOT 8	52.74	0.9247	4740	0.11	207	539	332	475	2500	0.06	0.05	ALT SURFACE, MICROSCALE MICRO-BIO RETENTION #3 475 356 SF MICRO-BIO
UC Requirement	100.00	0.9500	448	0.01	35	92	57	29	448	0.01	0.00	29 PERM SURFACE DW @ .196
LOT 9	58.82	0.9794	4250	0.10	205	534	328	350	2500	0.06	0.04	ALT SURFACE, MICROSCALE MICRO-BIO RETENTION #9 350 = 248 SF MICRO-BIO
UC Requirement	100.00	0.9500	240	0.01	19	49	30	47	240	0.01	0.00	47 PERM SURFACE DW @ .196
LOT 10	65.79	0.6421	3800	0.09	203	529	325	108.4	2010	0.06	0.03	108.4 ALT SURFACE DRYWELLS
UC Requirement	100.00	0.9500	272	0.01	22	56	34	53	272	0.01	0.00	53 PERM SURFACE DW @ .196

HOWARD COUNTY - OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

A. THE OWNER SHALL PERIODICALLY SWEEP (OR VACUUM POROUS 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.

B. THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.

C. THE OWNER SHALL USE DECIDERS IN MODERATION. DECIDERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.

D. THE 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.

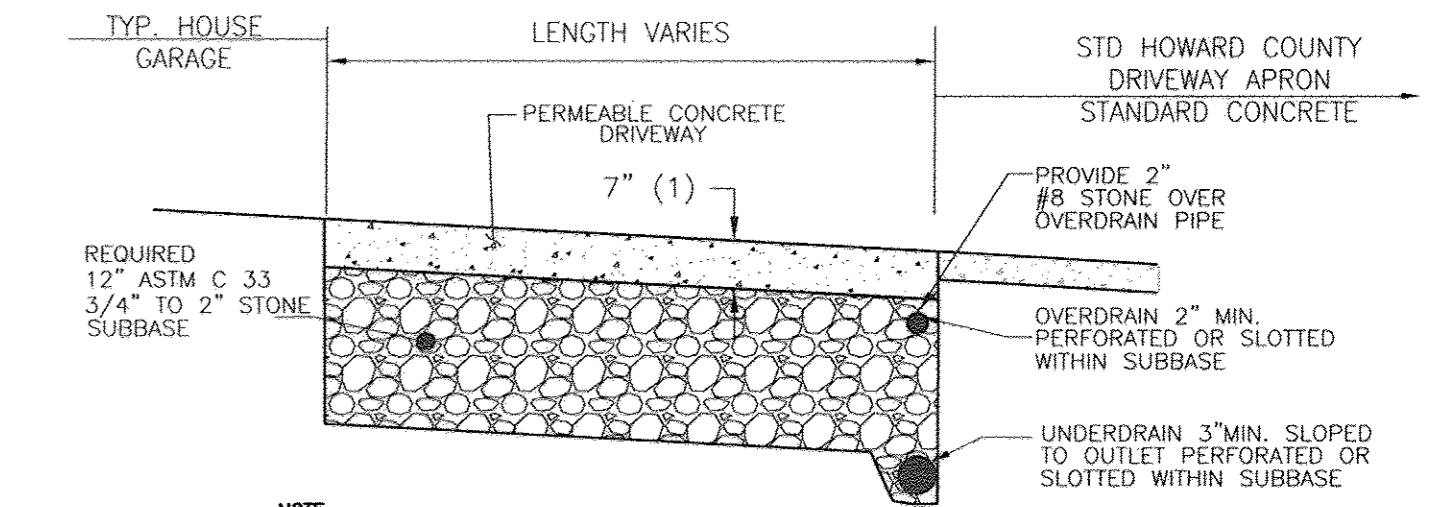
B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF
THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING. THE DESIGNER IS RESPONSIBLE FOR DEVELOPING SPECIFICATIONS FOR INDIVIDUAL PROJECTS AND SPECIFIC CONDITIONS.

1. PERVIOUS CONCRETE SPECIFICATIONS
DESIGN THICKNESS - PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE OPERATED. APPLICATIONS MAY BE DESIGNED USING EITHER STANDARD PAVEMENT PROCEDURES (E.G., AASHTO, ACI 308.6R, ACI 308R) OR USING STRUCTURAL VALUES DERIVED FROM FLEXIBLE PAVEMENT DESIGN PROCEDURES.
MIX & INSTALLATION - TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE USED IN PERVIOUS CONCRETE APPLICATIONS. PHOSPHORUS ADMIXTURES (E.G., STON-LOK) SHALL BE TESTED (E.G., STON-LOK) PRIOR TO CONSTRUCTION TO THAT CRITICAL PROPERTIES (E.G., SETTING TIME, RATE OF STRENGTH DEVELOPMENT, POROSITY, PERMEABILITY) CAN BE DETERMINED.
AGGREGATE - PERVIOUS CONCRETE CONTAINS A LIMITED AGGREGATE CONTENT. COMMONLY USED GRADATIONS INCLUDE ASTM C 33 NO. 67 (3/4 IN. TO NO. 4), NO. 8 (3/8 IN. TO NO.16) AND NO. 89 (3/8 IN. TO NO.30) SIZES. SINGLE-SIZED AGGREGATE (UP TO 1 INCH) MAY ALSO BE USED.
WATER CONTENT - WATER-TO-CEMENT RATIOS BETWEEN 0.27 AND 0.30 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADMIXTURES. WATER QUALITY SHOULD MEET AASHTO M 304. AS A GENERAL RULE, POTABLE WATER SHOULD BE USED. ALTHOUGH RECYCLED CONCRETE PRODUCTION WATER MEETING ASTM C 94 OR AASHTO M 157 MAY ALSO BE USED.
ADMIXTURES - CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE. USE OF ADMIXTURES SHOULD MEET ASTM C 494 (CHEMICAL ADMIXTURES) AND ASTM C 260 (AIR ENTRAINING ADMIXTURES) AND CLOSELY FOLLOW MANUFACTURER'S RECOMMENDATIONS.
BASE COURSE - THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)
PAVER BLOCKS - BLOCKS SHOULD BE EITHER 37 IN. OR 4 IN. THICK, AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS. APPLICATIONS SHOULD HAVE 20% OR MORE (VOLUME PREFERRED) OF THE SURFACE AREA OPEN. INSTALLATION SHOULD FOLLOW MANUFACTURER'S INSTRUCTIONS, EXCEPT THAT HULL AND BASE COURSE MATERIALS AND DIMENSIONS SPECIFIED IN THIS APPENDIX SHALL BE FOLLOWED.
JUNCTION MATERIALS AND LEVELING COURSE - OPENINGS SHALL BE FILLED WITH ASTM C-33 GRADED 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 AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

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

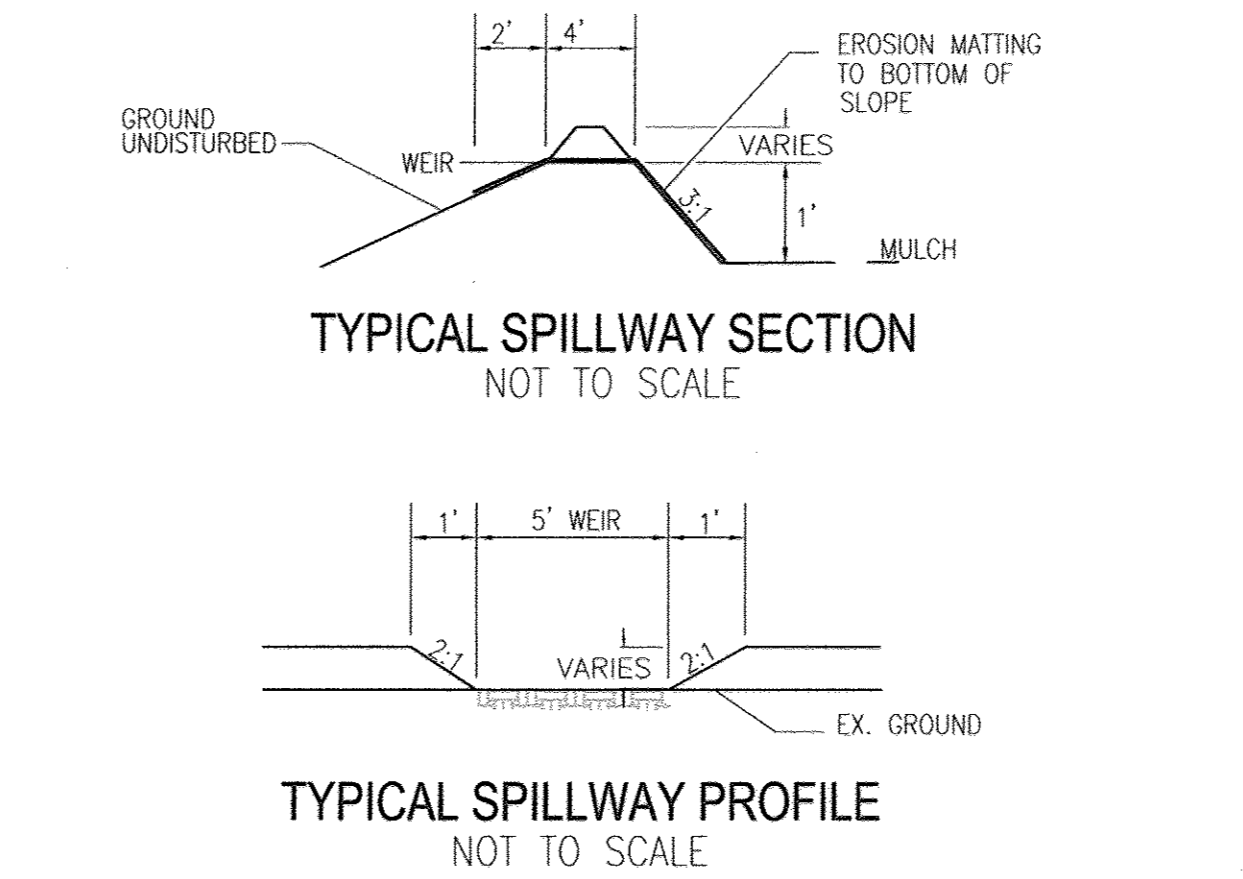
Material	Specification	Size	Notes
Plantings	See Appendix A, Table A.4	n/a	Plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)	n/a	
Mulch	shredded hardwood	NO. 8 OR NO. 9 (1/8" TO 3/8")	aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	n/a	n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
Underdrain piping	F 756, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe, 3/8" perf. @ 6" on center, 4 holes per foot; minimum of 3" of gravel over pipe; no necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Mix No. 3; f'c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.8R; vertical loading 11-10 or 11-20; allowable horizontal loading (based on soil pressure); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Dabasac and Graystone (AASHTO #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.



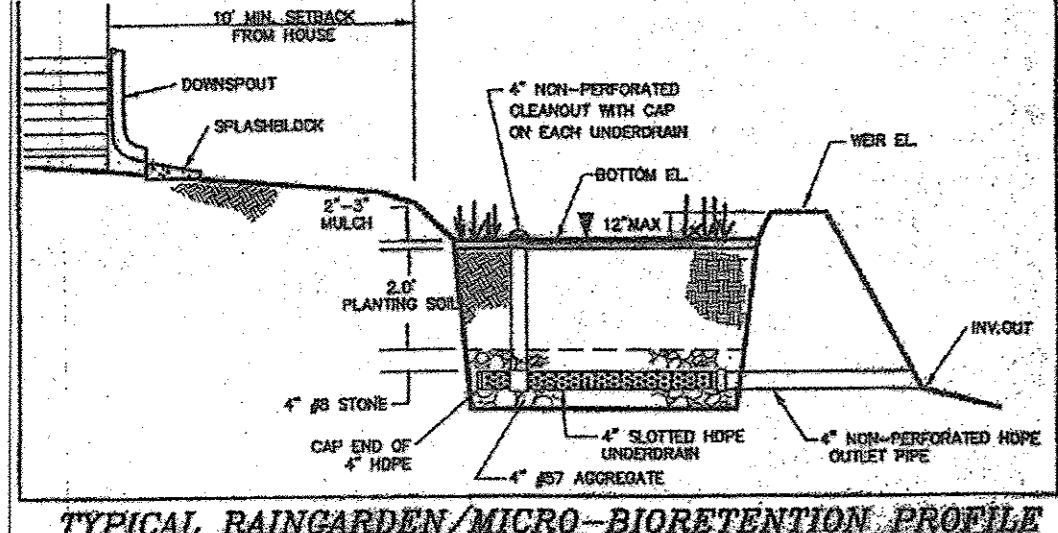
DETAIL - A-2 PERMEABLE CONCRETE DRIVEWAY - 5% OR LESS
NOT TO SCALE

NOTE:
1. CONCRETE SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER
2. UNDERDRAIN SHALL BE LOCATED SUCH THAT IT CAN DRAIN TO THE CURB INTO A BIO-RETENTION FACILITY OR TO THE REAR OF THE LOT
3. OVERDRRAIN SHALL COMBINE WITH UNDERDRAIN OR DAYLIGHT AS DETAILED FOR UNDERDRAIN, SEE NOTE 2.

WEIR OUTLET MICRO-BIORETENTION/RAINGARDEN



F14-029 M-3 - M-9 MICRO-BIORETENTION DETAILS



ON-LOT DRYWELL DESIGN ELEVATION CHART

DW LOT #	NUMBER OF DW'S	PROP GRADE OVER	TOP STONE	INV STONE	SURFACE SIZE FTXFT	STONE DEPTH FT	SAND DEPTH FT	INV PIT
3	2	305.00 308.00	302.00 307.00	298.00 303.00	7.5x7 7.5x7	4 4	1 1	297.00 302.00
4	2	307.50 309.50	306.50 304.50	302.50 304.50	7.5x7 7.5x7	4 4	1 1	301.50 303.50
5	4	317.00 311.00 313.00 316.00	316.00 310.00 308.00 315.00	312.00 306.00 304.00 311.00	5x6 5x6 5x6 5x6	4 4 4 4	1 1 1 1	311.00 305.00 307.00 310.00
6	2	311.00 304.00	310.00 308.00	306.00 304.00	7x7 7x7	4 4	1 1	305.00 303.00
7	2	302.00 301.00	301.00 300.80	294.00 296.00	7x7 7x7	4 4	1 1	296.00 295.00

ON-LOT MICRO-BIORETENTION PLANTING SCHEDULE

QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
5	ILEX GLABRA INK BERRY	5 GALLON	CONT
3	MYRTICA PENNSYLVANICA BAYBERRY	3 GALLON	CONT

TYP. 100 SF x 75% x 0.229 STEMS PER SQUARE FOOT = 2 PLANTS

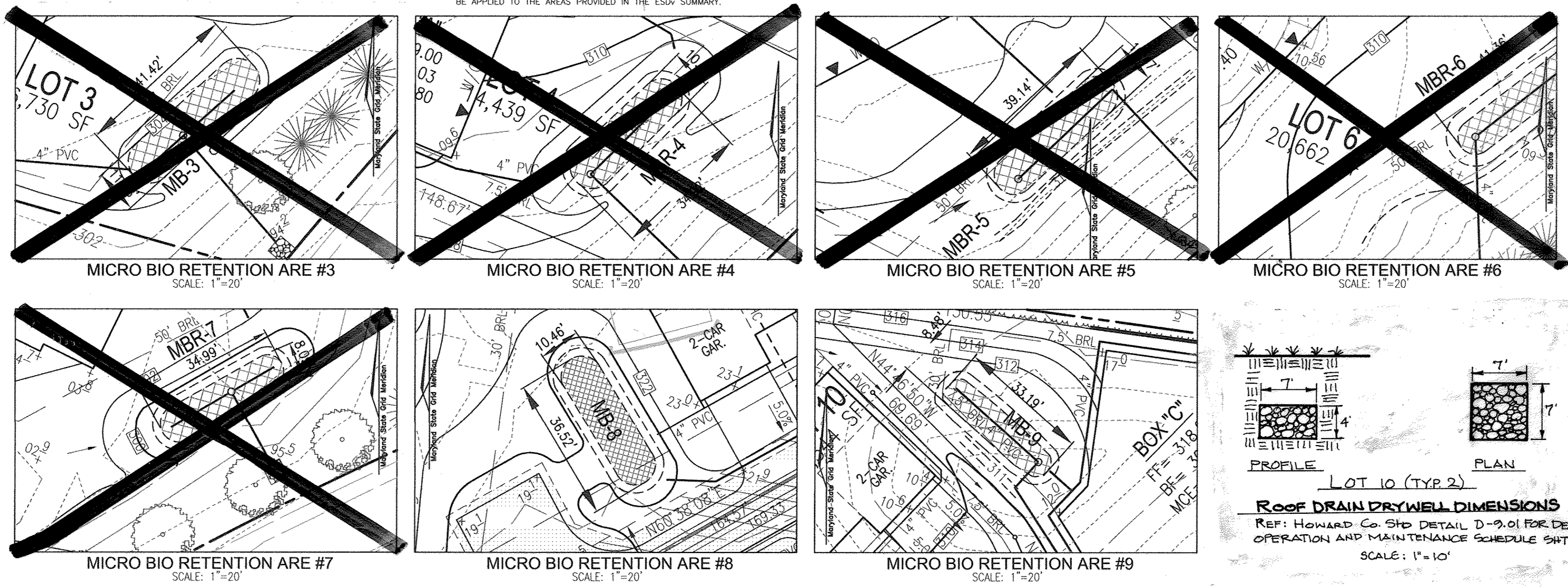
MICRO-BIORETENTION PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANN 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 COVER.
- SEE SHEET 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.

ON-LOT MICRO-BIORETENTION - DESIGN ELEVATION CHART

RG FACILITY #	WEIR ELEV	ESD WSEL A	TOP MULCH B	BOTTOM PLANT SOIL C	INV STONE D	INV UD
8	322.50	322.50	321.50	319.25	318.25	318.20
9	309.80	309.80	308.80	306.55	305.55	305.80

MBR FACILITY	SURFACE AREA	REQUIRED RATINGS	PLANTINGS
MBR #8	356 SF	6	3 ILEX GLABRA, INK BERRY 3 MYRTICA PENNSYLVANICA, BAYBERRY
MBR #9	180 SF	5	2 ILEX GLABRA, INK BERRY 2 MYRTICA PENNSYLVANICA, BAYBERRY



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad P. ... 7-24-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Keith ... 7-29-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William ... 7-30-15
DIRECTOR DATE

NO.	REVISION	DATE
4	REPLACE MBR WITH DRYWELLS LOTS 3-7	7/7/16
1	REPLACE MBR WITH DRYWELLS LOT 10	04/05/16

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT DETAILS
MONTGOMERY CROSSING
PHASE 2
(SFD RESIDENTIAL)
LOT 3 THRU 10
L. 13552 / F. 526

1ST ELECTION DISTRICT TAX MAP: 37 GRD: 05 DPZ REF: 5 (SEE GENERAL NOTE 1 ON COVER SHEET)

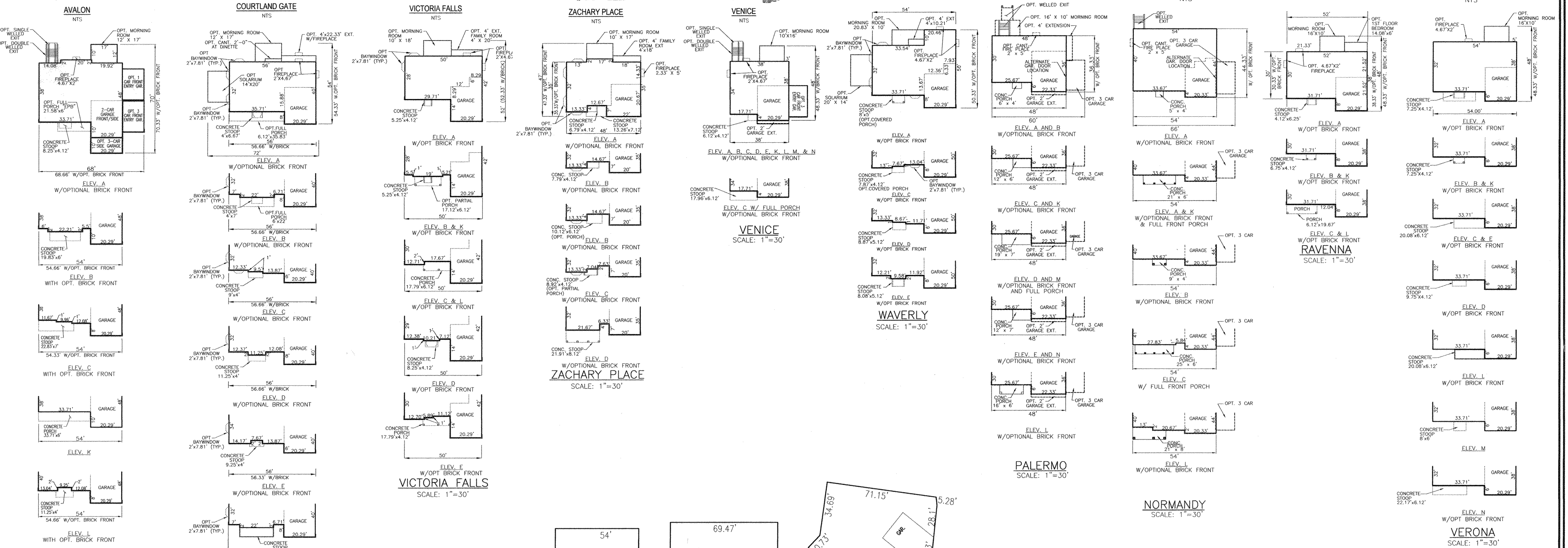
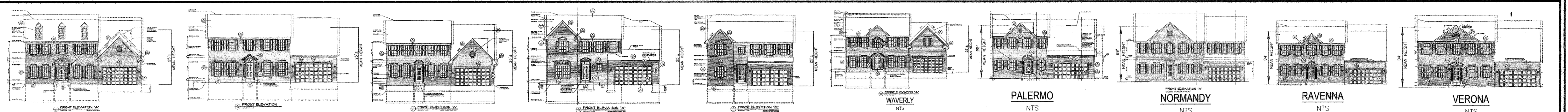
ZONED: R-12/R-20 PARCEL: 882 HOWARD COUNTY, MARYLAND

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: TJW
DRAWN BY: TJW/KG
CHECKED BY: RHV
DATE: JULY, 2014
SCALE: AS SHOWN
W.O. NO.: 12-42

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: 09-27-2016

5 SHEET OF 6



AVALON - VER. 15
SCALE: 1"=30'

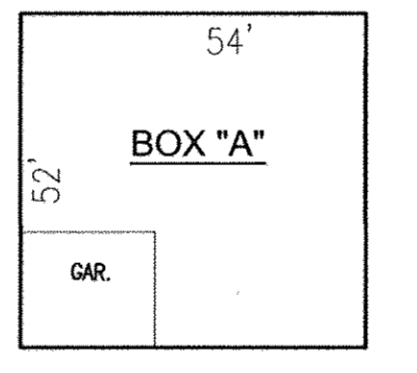
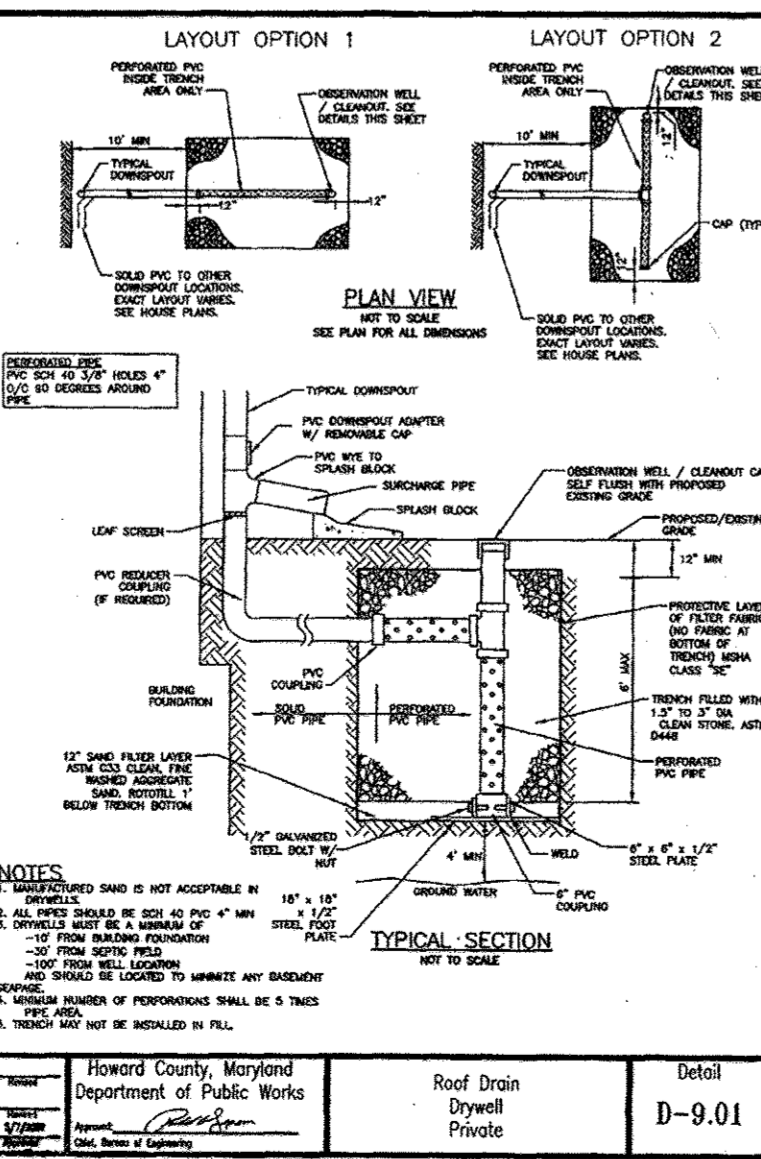
DRYWELL SIZE LOT 3
ROOFTOP AREA: 2010 SF
DRAINAGE AREA TO EACH DRYWELL: 1005 SF
ESDV = (0.95)(1005)(1/12) = 79.563 CF
VOL. STONE = 79.563 / 0.4 VOIDS = 198.91 CF
PROVIDE 7.5x7x4 = 210 cuft

DRYWELL SIZE LOT 4
ROOFTOP AREA: 2340 SF
DRAINAGE AREA TO EACH DRYWELL: 1170 SF
ESDV = (0.95)(1170)(1/12) = 92.625 CF
VOL. STONE = 92.625 / 0.4 VOIDS = 231.56 CF
PROVIDE 6x6x4 = 120 cuft

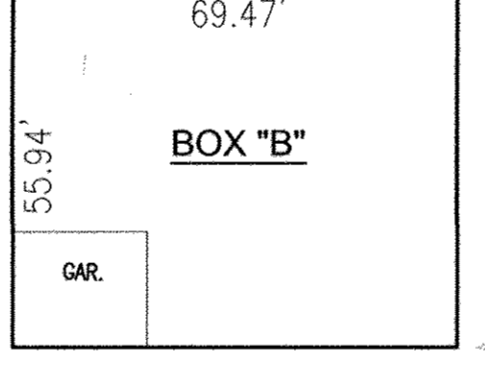
DRYWELL SIZE LOT 6
ROOFTOP AREA: 1850 SF
DRAINAGE AREA TO EACH DRYWELL: 925 SF
ESDV = (0.95)(925)(1/12) = 73.229 CF
VOL. STONE = 73.229 / 0.4 VOIDS = 183.07 CF
PROVIDE 7x7x4 = 196 cuft

DRYWELL SIZE LOT 7
ROOFTOP AREA: 1785 SF
DRAINAGE AREA TO EACH DRYWELL: 892.5 SF
ESDV = (0.95)(892.5)(1/12) = 70.7 CF
VOL. STONE = 70.7 / 0.4 VOIDS = 176.75 CF
PROVIDE 7x7x4 = 196 cuft

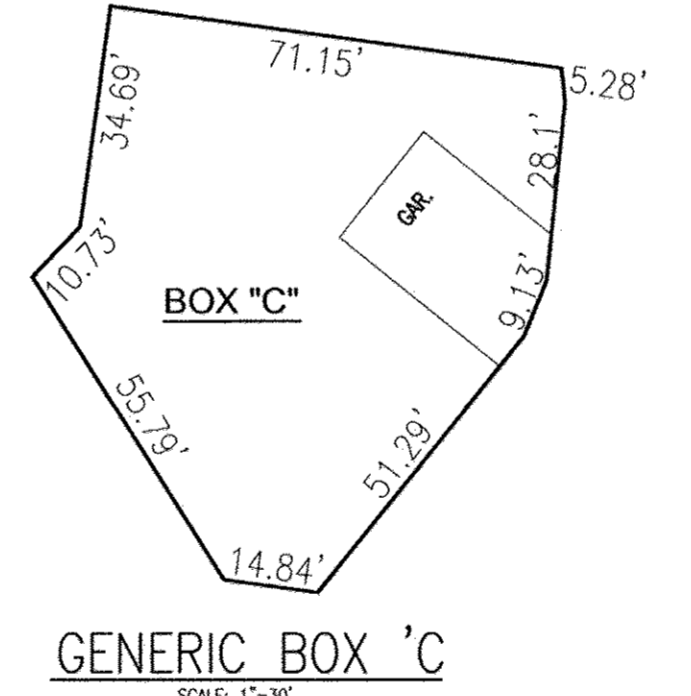
COURTLAND GATE
SCALE: 1"=30'



GENERIC BOX 'A'
SCALE: 1"=30'



GENERIC BOX 'B'
SCALE: 1"=30'



GENERIC BOX 'C'
SCALE: 1"=30'

AVALON
- ALL ELEVATIONS FIT
- NO BREAK
- NO MORNING ROOM
- NO 3-CAR SIDE LOAD GARAGE
- NO 3-CAR FRONT LOAD GARAGE
- NO 1-CAR FRONT ENTRY GARAGE

COURTLAND GATE
- DOES NOT FIT

VICTORIA FALLS
- ALL ELEVATIONS FIT
- NO BREAK WITH REAR MORNING ROOM

WAVERLY
- ALL ELEVATIONS FIT
- NO BREAK

ZACHARY PLACE
- ALL ELEVATIONS FIT
- NO BREAK

VENICE
- ALL ELEVATIONS FIT
- NO BREAK

PALERMO
- ALL ELEVATIONS FIT
- NO BREAK

NORMANDY
- ALL ELEVATIONS FIT
- NO BREAK

RAVENNA
- ALL ELEVATIONS FIT
- NO BREAK

VERONA
- ALL ELEVATIONS FIT
- NO BREAK

AVALON
- ALL ELEVATIONS FIT
- NO BREAK
- NO MORNING ROOM
- NO 3-CAR SIDE LOAD GARAGE
- NO 3-CAR FRONT LOAD GARAGE
- NO 1-CAR FRONT ENTRY GARAGE

COURTLAND GATE
- ALL ELEVATIONS FIT
- NO BREAK

VICTORIA FALLS
- ALL ELEVATIONS FIT
- NO BREAK

WAVERLY
- ALL ELEVATIONS FIT
- NO BREAK

ZACHARY PLACE
- ALL ELEVATIONS FIT
- NO BREAK

VENICE
- ALL ELEVATIONS FIT
- NO BREAK

PALERMO
- ALL ELEVATIONS FIT
- NO BREAK

NORMANDY
- ALL ELEVATIONS FIT
- NO BREAK

RAVENNA
- ALL ELEVATIONS FIT
- NO BREAK

VERONA
- ALL ELEVATIONS FIT
- NO BREAK

AVALON
- ALL ELEVATIONS FIT
- NO BREAK
- NO MORNING ROOM
- NO 3-CAR SIDE LOAD GARAGE
- NO 3-CAR FRONT LOAD GARAGE
- NO 1-CAR FRONT ENTRY GARAGE

COURTLAND GATE
- ALL ELEVATIONS FIT
- NO BREAK

VICTORIA FALLS
- ALL ELEVATIONS FIT
- NO BREAK

WAVERLY
- ALL ELEVATIONS FIT
- NO BREAK

ZACHARY PLACE
- ALL ELEVATIONS FIT
- NO BREAK

VENICE
- ALL ELEVATIONS FIT
- NO BREAK

PALERMO
- ALL ELEVATIONS FIT
- NO BREAK

NORMANDY
- ALL ELEVATIONS FIT
- NO BREAK

RAVENNA
- ALL ELEVATIONS FIT
- NO BREAK

VERONA
- ALL ELEVATIONS FIT
- NO BREAK

[OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (1-1) DRY WELLS (M-9)]

- The Owner shall inspect the monitoring wells and structures on a quarterly basis and after every heavy 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 down within a seventy-two (72) hour time period, corrective action shall be taken.
- The maintenance log book 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.

NOTE:

- GENERIC HOUSE BOX MODEL FIT SHOWN HEREON
- HOUSE BOXES ARE GENERIC AND SHOULD NOT BE CONSIDERED LIMITING. ADDITIONAL HOUSE TYPES AND OPTIONS MAY FIT ON ANY GIVEN LOT.
- THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.

DRYWELL SIZE LOT 10
ROOF TOP LOT 10: 2010 SF
DRAINAGE TO EACH DRYWELL: 1005 SF (2)
ESDV = (0.95)(1005)(1/12) = 79.6 CF
VOL. STONE = 79.6 / 0.4 VOIDS = 199 CF STONE
DIMENSIONS: 4' x 7' x 7' = 196 CF STONE EA.

OWNER/DEVELOPER
COLUMBIA HOWARD PROPERTIES, LLC
7310 ESQUIRE CT., STE 114
ELKRIE, MD 21075
PHONE: (410) 379-8681

BUILDER
KEVIN BOWSER
RYAN HOMES
9720 PATUXENT WOODS DR.
COLUMBIA, MD 21046
(410) 796-0808

NO.	REVISION	DATE
4	REPLACE MBR WITH DRYWELLS LOTS 3-7	7/7/16
1	REPLACE MBR WITH DRYWELLS LOT 10	04/05/16

**SITE DEVELOPMENT PLAN
HOUSE TYPE DETAILS
MONTGOMERY CROSSING
PHASE 2
(SFD RESIDENTIAL)
LOT 3 THRU 10
L. 13552 / F. 526**

1ST ELECTION DISTRICT
TAX MAP: 37 GRID: 05
DPZ REF'S: (SEE GENERAL NOTE 1 ON COVER SHEET)

ZONED: R-12/R-20
PARCEL: 882
HOWARD COUNTY, MARYLAND

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PROFESSIONAL CERTIFICATE
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DESIGN BY: T.J.W.
DRAWN BY: T.J.W./K.G.
CHECKED BY: R.H.V.
DATE: JULY, 2014
SCALE: AS SHOWN
W.O. NO.: 12-42

6 SHEET OF 6

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 7-24-15
Chief, Division of Land Development: *[Signature]* 7-29-15
Director: *[Signature]* 7-30-15

Howard County, Maryland
Department of Public Works
Roof Drain
Private
D-9.01