

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS IF APPLICABLE.
- 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 SUBJECT PROPERTY IS ZONED R-12 IN ACCORDANCE WITH THE 10/13 ZONING REGULATIONS, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 15-2003.
- DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, ALTERNATIVE COMPLIANCE, OR BUILDING AND GRADING PERMITS.
- THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
- SEWAGE TREATMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
- THE PROJECT SHALL BE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY REQUIREMENTS UNLESS ALTERNATIVE COMPLIANCE PETITIONS HAVE BEEN APPROVED.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON GRADING AS SHOWN ON F-18-007 AND OFFSITE TOPOGRAPHY IS BASED ON HOWARD COUNTY GIS.
- THE PROJECT SHOWN HEREON IS BASED ON A FIELD-RUN BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. DATED JANUARY, 2017.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
- 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. 37GH AND 37GB WERE USED FOR THIS PROJECT.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER FOR THIS PROJECT IS TO BE INDIVIDUAL PRIVATE SERVICE CONNECTIONS FROM (2) PUBLIC TWIN WHO'S FROM CONTRACT NO. 671-N.
- SEWER FOR THIS PROJECT IS TO BE INDIVIDUAL PRIVATE SERVICE CONNECTIONS FROM A PUBLIC ADD EXTENSION FROM CONTRACT NO. 20-1264.
- EXISTING UTILITIES LOCATED FROM CONTRACT AND AS-BUILT DRAWINGS, 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.
- SHO ELEVATIONS ARE LOCATED AT THE PROPERTY LINE/EDGE OF EASEMENT.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING:
 - AT&T 410-687-1133
 - BGE (CONSTRUCTION SERVICES) 410-687-0123
 - BGE (EMERGENCY) 410-685-0123
 - BUREAU OF UTILITIES 410-313-4900
 - COLONIAL PIPELINE CO 410-785-1350
 - MISS UTILITY 1-800-257-7777
 - STATE HIGHWAY ADMINISTRATION 410-531-3533
 - VERIZON 1-800-743-0333
- THERE ARE NO WETLANDS, STREAMS OR THEIR BUFFERS PRESENT ON THE PROPERTY. THERE ARE NO 100 YEAR FLOODPLAIN OR STEEP SLOPES OVER 20.00% OF CONTIGUOUS AREA PRESENT ON THE SITE. PER PSD PLAN, THERE IS NO FOREST LOCATED ON THE SITE.
- FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1202(b)(1)(i) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE FOREST CONSERVATION MANUAL:
 - TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY PAYMENT OF FEE-IN-LIEU IN THE AMOUNT OF \$11,108.00 UNDER F-18-007. REFER TO SECTION 16.1202(b)(1)(ii).
 - NO BARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITAT WERE OBSERVED ON THE PROPERTY.
 - GEOTECHNICAL INVESTIGATIONS WERE COMPLETED AS PART OF THE F-18-007 PLAN APPROVAL.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- NOISE STAND DELINEATION PLAN PREPARED BY GEO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, MARCH 2017. MR. CANOLES IDENTIFIED 4 SPECIMEN TREES ON THE PROJECT SITE. THE F-18-007 PLAN PROPOSAL REQUIRES THE REMOVAL OF 2 SPECIMEN TREES.
- ALLEN LANE IS CLASSIFIED AS A PUBLIC LOCAL ROAD.
- SITE ACCESS SHALL BE VIA THE F-18-007 PRIVATE USE-IN-COMMON DRIVEWAY.
- TO THE BEST OF OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
- THE EXISTING STRUCTURES ON LOT 1 & LOT 6 ARE TO REMAIN, NO NEW BUILDINGS, EXTENSIONS, OR ADDITIONS TO THE EXISTING DWELLINGS ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATIONS REQUIREMENTS. THE EXISTING SHED ON LOT 1 HAS BEEN REMOVED (F-18-007).
- THE PROPOSED UNITS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF RAINGARDENS (M-7), AND DRYWELLS (M-5) FACILITIES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
- THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, ALTERNATIVE COMPLIANCE APPLICATION OR BUILDING/GRADING PERMIT.
- A LANDSCAPE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$4,000.00 FOR THE REQUIRED 3 SHADE TREES (2,000), 5 SHRUBS (100), AND 4 SHADE TREES (GROWN TREE REPLACEMENT) (1,200) SHALL BE POSTED WITH THE BUILDERS GRADING PERMIT.
- A TRAFFIC STUDY FOR THIS PROJECT PREPARED BY THE TRAFFIC GROUP, INC., DATED JANUARY 19, 2018, WAS APPROVED MARCH 5, 2018.
- DRIVEWAY(S) SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - A) WIDTH- 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
 - B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1-1 1/2" MIN.)
 - C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45-FOOT TURNING RADIUS.
 - D) STRUCTURES (CULVERTS AND OTHER TYPES OF SUPPORTING DEVICES (POLES, BRACKETS, ETC.))
 - 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.
- CERTIFIED TEST PITS HAVE BEEN PROVIDED TO VERIFY THE LOCATIONS OF GROUNDWATER AND/OR ROCK. OPEN TEST PITS WERE OBSERVED BY ROBERT H. VOGEL ENGINEERING, INC. ON SEPTEMBER 20, 2017.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON MAY 01, 2017 AT 6:00 PM AT THE HOWARD COUNTY LIBRARY CENTRAL BRANCH.
- THE ENVIRONMENTAL CONCEPT PLAN (ECP-17-041) WAS APPROVED PER LETTER DATED JULY 21, 2017.
- A FINAL PLAN (F-18-007) WAS APPROVED ON MAY 6, 2018.
- MIHUS ARE REQUIRED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 108.0.E OF THE 10/06/13 COMPREHENSIVE ZONING REGULATIONS. THIS SUBDIVISION IS SUBJECT TO MODERATE INCOME HOUSING UNITS. THE MIHU OBLIGATION FOR THIS DEVELOPMENT WILL BE PROVIDED BY A PAYMENT OF FEE-IN-LIEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR EACH UNIT OR PORTION OF THE UNITS REQUIRED BY THE DEVELOPMENT. REFER TO L18364 F.295
- IN ACCORDANCE WITH SECTION 16.1210(c)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-12 PROJECT WAS SATISFIED BY PAYMENT OF FEE-IN-LIEU IN THE AMOUNT OF \$6,000 (4 LOTS X \$1,500) UNDER F-18-007.
- THIS DEVELOPMENT WAS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 RESIDENTIAL INFILL DEVELOPMENT OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS UNDER F-18-007. THE DEVELOPER OF THIS PROJECT SHALL CREATE COMPATIBILITY WITH THE EXISTING NEIGHBORHOOD THROUGH THE USE OF ENHANCED PERIMETER LANDSCAPING, BERMS, FENCES, SIMILAR HOUSING UNIT TYPES AND THE DIRECTIONAL ORIENTATION OF THE PROPOSED HOUSES.
- FLAG AND PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT OF WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- LOTS 2-5 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. A DECLARATION OF RIGHT OF ACCESS AND MAINTENANCE OBLIGATIONS FOR THE USE-IN-COMMON ACCESS AREA WAS RECORDED AT L18364 F.290 WITH THE F-18-007 PLAN.
- DECLARATION OF CONVEYANCE FOR LOTS 2-5 WAS RECORDED UNDER F-18-007 FOR THE PRIVATE STORMWATER DEVICES LOCATED ON THESE LOTS. REFER TO L. 18400 F192.
- THIS PROJECT IS SUBJECT TO WP-18-074. ON MARCH 6, 2018, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR ALTERNATIVE COMPLIANCE TO SECTION 16.1202(a)(7) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES THE RETENTION OF STATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF STATE CHAMPION TREES, AND TREES 30" IN DIAMETER OR LARGER, SECTION 16.127(C)(4)(i) WHICH REQUIRES A SHARED USE-IN-COMMON DRIVEWAY MUST BE PROVIDED IN ACCORDANCE WITH THE DESIGN MANUAL WITH A MINIMUM 24-FOOT-WIDE ACCESS EASEMENT FOR ALL PROPOSED RESIDENTIAL INFILL DEVELOPMENT LOTS. ANY EXISTING DRIVEWAY ENTRANCES ONTO THE PUBLIC ROAD RIGHT-OF-WAY MUST BE CONNECTED TO A SINGLE USE-IN-COMMON DRIVEWAY OR ABANDONED. APPROVAL FOR SECTION 16.127(C)(4)(i) AND SECTION 16.1202(a)(7) IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - ALTERNATIVE COMPLIANCE APPROVAL IS LIMITED TO THE REMOVAL OF SPECIMEN TREES #1 AND #3 AS DEPICTED ON THE EXHIBIT. ANY PROPOSAL TO REMOVE ANY OTHER SPECIMEN TREE WILL REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST.
 - A MINIMUM OF FOUR, NATIVE 2.5"-3" CALIPER, SHADE TREES SHALL BE PROVIDED AS MITIGATION FOR THE REMOVAL OF THE TWO SPECIMEN TREES FROM THE PROPERTY. LANDSCAPING SURETY, IN THE AMOUNT OF \$300.00 PER TREE SHALL BE PROVIDED WITH THE APPLICANT'S GRADING PERMIT.
- ON MARCH 6, 2018, THE PLANNING DIRECTOR HAS DENIED YOUR REQUEST FOR AN ALTERNATIVE COMPLIANCE TO: SECTION 16.132(A)(2)(B), LOCAL OR MINOR COLLECTOR ROADS; CONTRIBUTE TO THE COUNTY THE FUNDS NECESSARY TO DO SUCH CONSTRUCTION. SECTION 16.134(A)(1), IN RESIDENTIAL SUBDIVISIONS THE DEVELOPER SHALL CONSTRUCT SIDEWALKS ON BOTH SIDES OF ALL STREETS IN THE PROJECT AND ALONG THE PROJECT FRONTAGE. SECTION 16.135, STREET LIGHTING; UNLESS THE DEPARTMENT OF PLANNING AND ZONING, AFTER CONSULTATION WITH THE DIRECTOR OF PUBLIC WORKS, DETERMINES THAT ADEQUATE STREET LIGHTING ALREADY EXISTS, THE DEVELOPER SHALL CONSTRUCT SIDEWALKS ON BOTH SIDES OF ALL STREETS IN THE PROJECT AND ALONG THE PROJECT FRONTAGE. SECTION 16.135, STREET LIGHTING; UNLESS THE DEPARTMENT OF PLANNING AND ZONING, AFTER CONSULTATION WITH THE DIRECTOR OF PUBLIC WORKS, DETERMINES THAT ADEQUATE STREET LIGHTING ALREADY EXISTS, THE DEVELOPER SHALL CONSTRUCT SIDEWALKS ON BOTH SIDES OF ALL STREETS IN THE PROJECT AND ALONG THE PROJECT FRONTAGE. SECTION 16.135, STREET LIGHTING; UNLESS THE DEPARTMENT OF PLANNING AND ZONING, AFTER CONSULTATION WITH THE DIRECTOR OF PUBLIC WORKS, DETERMINES THAT ADEQUATE STREET LIGHTING ALREADY EXISTS, THE DEVELOPER SHALL CONSTRUCT SIDEWALKS ON BOTH SIDES OF ALL STREETS IN THE PROJECT AND ALONG THE PROJECT FRONTAGE.
- PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(a) OF THE SUBDIVISION REGULATIONS, LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$1,350.00 HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT UNDER F-18-007.
- FOR INDIVIDUAL DRIVEWAY ENTRANCE DETAILS REFER TO HOWARD COUNTY STANDARD DETAIL R-6.06 AS MODIFIED HEREON.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES. REFER TO F-18-007.

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
2	13,797 SF	834 SF	12,963 SF	12,000 SF
3	14,814 SF	1,445 SF	13,369 SF	12,000 SF
4	15,607 SF	1,405 SF	14,202 SF	12,000 SF
5	14,181 SF	860 SF	13,321 SF	12,000 SF

SITE DEVELOPMENT PLAN

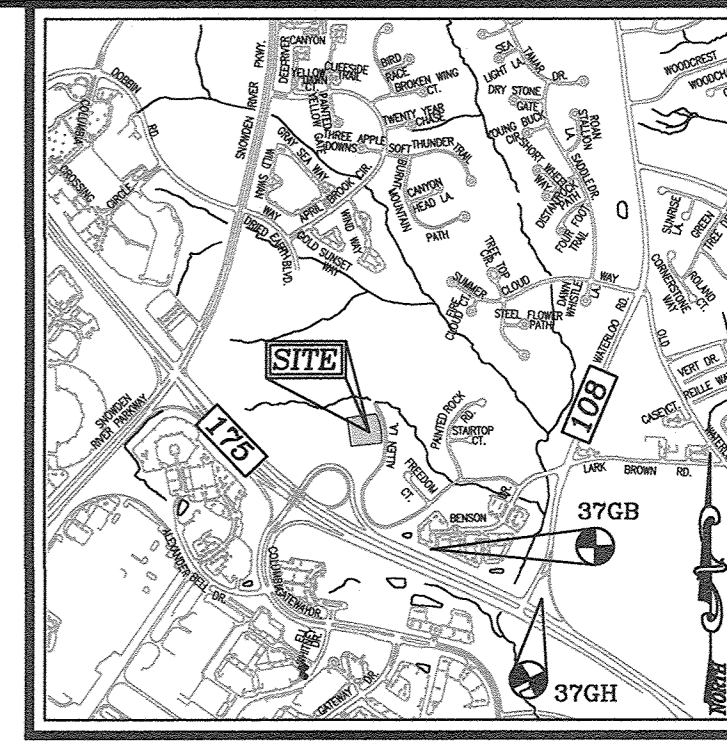
LARRICK SUBDIVISION

LOTS 2 - 5
LARRICK PROPERTY - LOTS 1-6
PLAT 24761-24762
HOWARD COUNTY, MARYLAND

EXISTING SERVICE CONNECTIONS
EXISTING SERVICE CONNECTIONS TO LOTS 1 & 6 SHALL REMAIN IN SERVICE.

BENCHMARKS

COORDINATES BASED ON NAD 83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 37GH AND 37GB
HOWARD COUNTY BENCHMARK - 37GH
N 55286E.7069532.76 ELEV.: 283.769
HOWARD COUNTY BENCHMARK - 37GB
N 55345E.82868503.19 ELEV.: 325.23



UTILITY NOTES:

- ALL WATER CONNECTIONS SHALL BE 1-1/2" WITH 1" OUTSIDE METER SETTINGS, UNLESS OTHERWISE NOTED. REFER TO HOWARD COUNTY DETAILS W-3.28 OUTSIDE METER SETTINGS.



STORMWATER MANAGEMENT PRACTICE CHART

LOT #	STREET ADDRESS	ESD PRACTICE
LOT 1	6604 ALLEN LANE	(1) MICRO BIO-RETENTION (M-6) - UIC DRIVE **
LOT 2	6106 LARRICK'S WAY	(1) RAINGARDEN (M-7); (2) DRY WELL (M-5)
LOT 3	6110 LARRICK'S WAY	(4) DRY WELL (M-5)
LOT 4	6111 LARRICK'S WAY	(4) DRY WELL (M-5)
LOT 5	6107 LARRICK'S WAY	(3) DRY WELL (M-5)
LOT 6	6608 ALLEN LANE	N/A

** PROVIDED UNDER F-18-007

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
 DATE: 7-10-19
 Chief, Division of Land Development
 DATE: 7-18-19
 Director
 DATE: 7-18-19

DEVELOPER'S/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.

Signature of Developer
 DATE: 6/11/19

PARKING TABULATION:

TOTAL NUMBER OF DWELLING UNITS PROPOSED : 4 (LOTS 2-5)
 TOTAL PARKING REQUIRED: 10 (4 X 2.5)
 OFF-STREET PARKING SPACES REQUIRED: 8 (2 SPACES PER UNIT)
 VISITOR / GUEST PARKING SPACES REQUIRED: 2 (0.5 SPACES PER UNIT)
 PARKING SPACES PROVIDED:
 STD = 2 GARAGE/2 DRIVEWAY
 2 SPACE IN GARAGE = 8 SPACES (FOR 4 UNITS)
 2 SPACES ON DRIVEWAY = 8 SPACES (FOR 4 UNITS)
 TOTAL PARKING SPACES PROVIDED: = 16 SPACES OFF-STREET
 VISITOR / GUEST PARKING SPACES PROVIDED:
 REFER TO PROVIDED EXCESS ABOVE (4 PROVIDED PER UNIT)

NOTE:

- GENERIC HOUSE BOXES ARE SHOWN IN ACCORDANCE WITH HOWARD COUNTY GUIDELINES AND DO NOT LIMIT MODEL TYPES AND OPTIONS THAT MAY FIT ON ANY INDIVIDUAL LOT.
- TYPICAL DRIVEWAY WIDTH SHOWN HEREON IS 16 FEET WIDE FOR THE PROPOSED 2 CAR GARAGE. WIDTH SUBJECT TO CHANGE WITH BUILDER RESITE.
- 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.

MIHU AGREEMENT

PLEASE NOTE THAT ALL NEW LOTS/RESIDENTIAL UNITS IN THIS SUBDIVISION (LOTS 2-5) ARE SUBJECT TO THE MIHU FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT.

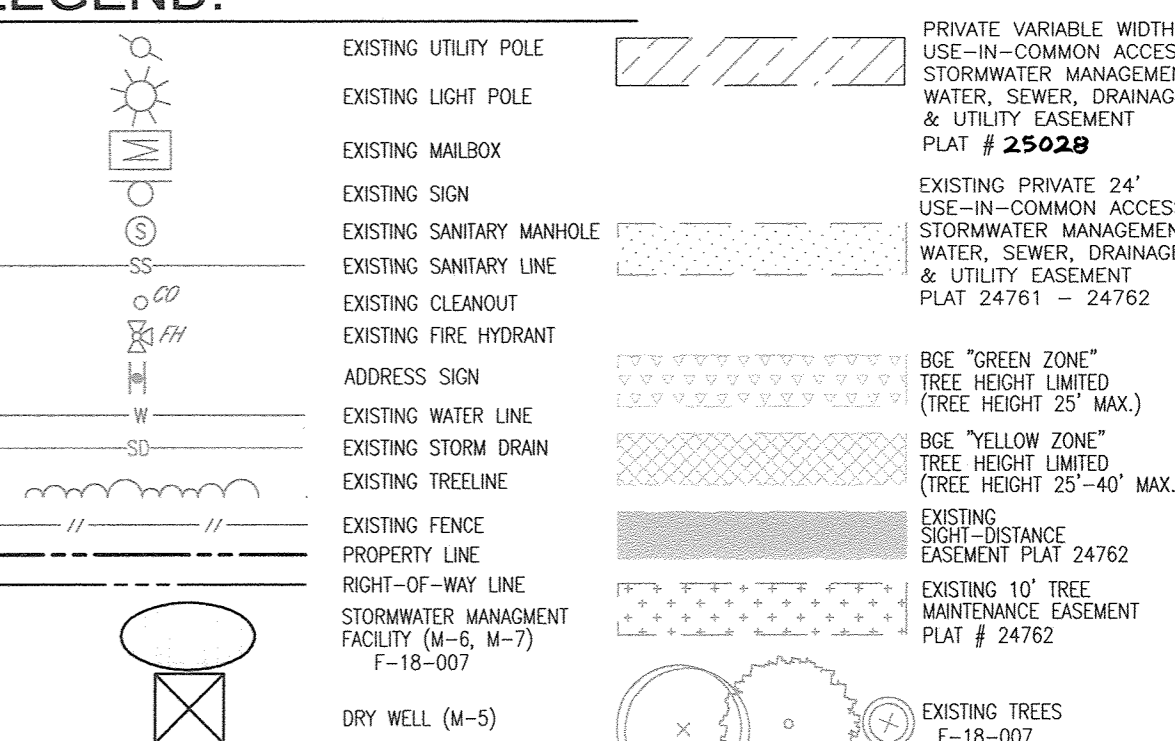
PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOTS/PARCEL #			
LARRICK PROPERTY	N/A	475 / 485			
PLAT # OR L/T	BLOCK NO.	ZONE	TAX MAP	ELECT. DIST.	CENSUS TR.
PLAT 24761-24762	F-18-007	R-12	37	6TH	606706

SHEET INDEX

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

LEGEND:



SITE ANALYSIS DATA

A. TOTAL PROJECT AREA:	1.34 AC
B. AREA OF PLAN SUBMISSION:	1.00 AC
C. LIMIT OF DISTURBANCE:	R-12
D. PRESENT ZONING DESIGNATION:	R-12
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:	4 (LOTS 2-5)
H. TOTAL NUMBER OF UNITS PROPOSED:	4 BUILDABLE LOTS (LOTS 2-5)
I. MAXIMUM NUMBER OF EMPLOYEES:	N/A
J. TENANTS ON SITE PER USE:	N/A
K. NUMBER OF PARKING SPACES REQUIRED BY HO.CD. ZONING REGULATIONS:	OFF-STREET: 2 PER UNIT = 8 SPACES VISITOR: 0.5 PER UNIT = 2 SPACES VISITOR: 8 SPACES SEE NOTE 39
L. NUMBER OF PARKING SPACES PROVIDED ON SITE:	N/A
M. OPEN SPACE ON SITE:	N/A
N. AREA OF RECREATION OPEN SPACE REQUIRED BY SUBDIVISION & LAND DEVELOPMENT REGULATIONS:	N/A
O. BUILDING COVERAGE OF SITE:	N/A
P. APPLICABLE DPZ FILE REFERENCES:	P.B. 8/PAGE 20, P.B. 8/ PAGE 67, ECP-17-041 WP-18-074, F-18-007
Q. FLOOR AREA RATIO:	N/A
TAX MAP 37, GRID 19, PARCEL 475 & 485 6TH ELECTION DISTRICT	

OWNER/DEVELOPER

BUILDER
 BURKARD HOMES, LLC
 5850 WATERLOO ROAD
 COLUMBIA, MD 21045
 (410)-992-2221

NO.	REVISION	DATE
1	REVISED THE HOUSE TYPE, ROOM AND ELEVATIONS ON LOT 2, THE GRADING ON LOT 3, AND ELEVATION FOR LOT 2 PATIENT HOUSE ON THE HOUSE TYPE SHEET.	7-7-21

REVISED SITE DEVELOPMENT PLAN
 COVER SHEET, LAYOUT AND LANDSCAPE PLAN
LARRICK SUBDIVISION
 LOTS 2-5
 LARRICK PROPERTY - LOTS 1-6
 PLAT 24761-24762

TAX MAP: 37 PARCELS: 475 & 485
 6TH ELECTION DISTRICT
 BLOCK: 19 ZONING: R-12
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 3300 N. RIDGE ROAD, SUITE 110, 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, THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19193, EXPIRATION DATE: 09-27-2020

DESIGN BY: RHV
 DRAWN BY: KG
 CHECKED BY: RHV
 DATE: APRIL 2019
 SCALE: AS SHOWN
 W.O. NO.: 16-38

1 SHEET OF 6

GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY IN THE AMOUNT OF \$4,000.00 FOR THE REQUIRED 9 SHADE TREES (2,700), 5 SHRUBS (150), AND 4 SHADE TREES (SPECIMEN TREE REPLACEMENT) (1,200) SHALL BE POSTED WITH THE BUILDERS GRADING PERMIT.
- THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION, OR BUILDING AND GRADING PERMITS.
- THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
- NO LANDSCAPING TO BE INSTALLED WITHIN ANY PUBLIC EASEMENT FOR WATER, SEWER, OR STORMDRAIN.
- ANY EXISTING STREET TREES DAMAGED OR DESTROYED DURING CONSTRUCTION WILL BE REPLACED BY THE CONTRACTOR.
- PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(c) OF THE SUBDIVISION REGULATIONS, LANDSCAPE MANUAL, FINANCIAL SURETY IN THE AMOUNT OF \$1,350.00 HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT UNDER F-18-007.

PROVIDED UNDER F-18-007

STREET TREE CALCULATION			
STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
ALLEN LANE	316 / 30	11	9*

*CREDIT FOR 2 EXISTING TREES (1) TO REMAIN LOCATED AT EITHER SIDE OF # 8608 EXISTING DRIVEWAY.
(1) MULTISTEM CRAPE MYRTLE

DPZ'S POLICIES GOVERNING THE PLACEMENT OF LANDSCAPING AND STREET TREES IN PROXIMITY TO BGE'S POWER LINES OR TRANSMISSION RIGHT-OF-WAY ARE BASED ON BGE'S PUBLISHED "PLANTING ZONE CONCEPT" WHICH STIPULATES THE MAXIMUM ALLOWABLE SIZE OF PLANT MATERIALS FOR THREE DEFINED ZONES. AS THE DISTANCE FROM BGE EQUIPMENT INCREASES, SO DOES THE SIZE OF THE ALLOWABLE PLANT MATERIALS. THESE THREE ZONES ARE DEFINED AS FOLLOWS:

ZONE	DISTANCE FROM THE BGE POWER LINE OR TRANSMISSION RIGHT-OF-WAY	MAXIMUM HEIGHT OF VEGETATION
GREEN	UP TO 20 FEET	25 FEET
YELLOW	BETWEEN 20 FEET AND 45 FEET	40 FEET
RED	BEYOND 45 FEET	ABOVE 40 FEET

B,G&E NOTES:

- BGE REQUIRES 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 SEPARATION 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 UNDERMINING THE WORK. DPZ UNDERSIGNEDS CONSULTATION ENGINEER'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLE WITHOUT PERMISSION.
- CALL MGS UTILITY TO MARK UP THE LOCATION OF EXISTING GAS LINE BEFORE PLANTING ALONG TREES ALLEN LANE & PLANT STREET TREES 10' AWAY FROM EXISTING GASLINE AS REQUIRED.

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

CATEGORY	AMOUNT TO REMOVALS & PERIMETER PROPERTIES	TOTAL
PERIMETER/FRONTAGE DESIGNATION	1 NONE	2
LANDSCAPE TYPE	A	916*
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	315'	---
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	YES*
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED	---	---
NUMBER OF PLANTS PROVIDED	---	---
SHADE TREES	---	1:60 15
EVERGREEN TREES	---	---
SHRUBS	---	---
NUMBER OF PLANTS PROVIDED	---	9*
SHADE TREES	---	---
EVERGREEN TREES	---	---
OTHER TREES (2:1 SUBSTITUTION)	---	---
SHRUBS (10:1 SUBSTITUTION)	---	---
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	---	---
CREDIT FOR 11 EXISTING TREES TO REMAIN	---	---
(3) 10' CHERRY	---	0.5 SHADE CREDIT
(4) MULTISTEM CRAPE MYRTLE	---	0.5 SHADE CREDIT
(5) MULTISTEM CRAPE MYRTLE	---	0.5 SHADE CREDIT
(6) MULTISTEM CRAPE MYRTLE	---	0.5 SHADE CREDIT
(7) 29' WHITE PINE	---	0.5 SHADE CREDIT
(8) 21' / 14' THIN RED OAK	---	1 SHADE CREDIT
(9) 8' POINT HICKORY	---	1 SHADE CREDIT
(9A) 12' WHITE OAK	---	1 SHADE CREDIT
(10) 28' WHITE OAK	---	1 SHADE CREDIT
(11) 13' AMERICAN HOLLY	---	0.5 SHADE CREDIT
(12) 4' WHITE SPRUCE	---	0.5 SHADE CREDIT
	---	7.5 SHADE TREE CREDIT TOTAL

- PLANTINGS SUBSTITUTIONS SHALL BE WITH APPROVAL OF HOWARD COUNTY AND IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND/OR AS ALLOWED BY BGE AS APPLICABLE.

LANDSCAPE SCHEDULE - REQUIRED PLANTING

SYMB	KEY	QUAN	BOTANICAL NAME	SIZE	CAT
OC	9	QUERCUS COCCINEA SCARLET OAK	2.5"-3" CAL	B & B	
AC	4 (1)	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2.5"-3" CAL	B & B	

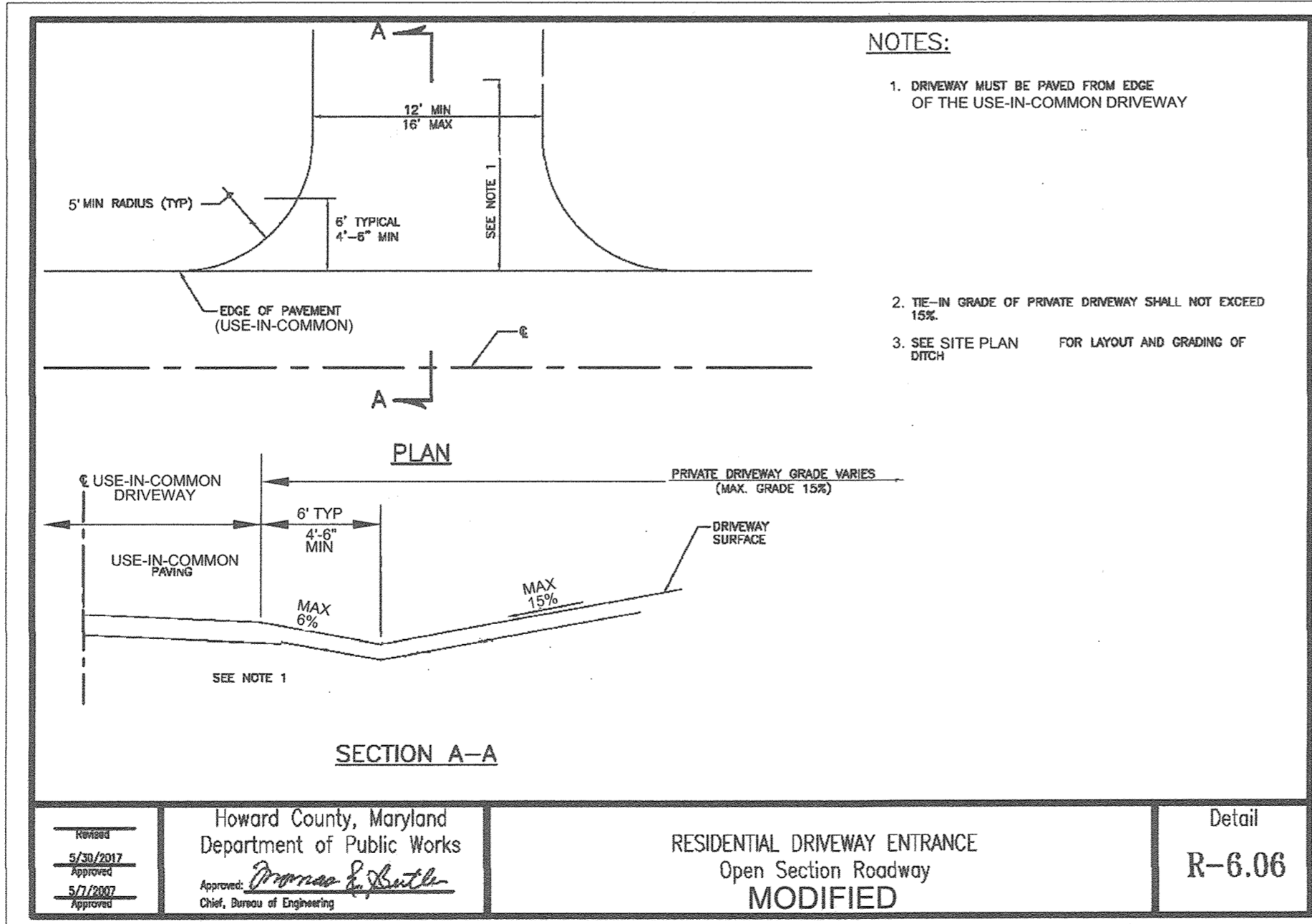
(1) PROVIDE 2:1 REPLACEMENT FOR REMOVAL OF 2 SPECIMEN TREES. REF. WP-18-074.

LANDSCAPE SCHEDULE NOTE:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANA SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD 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 BIDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

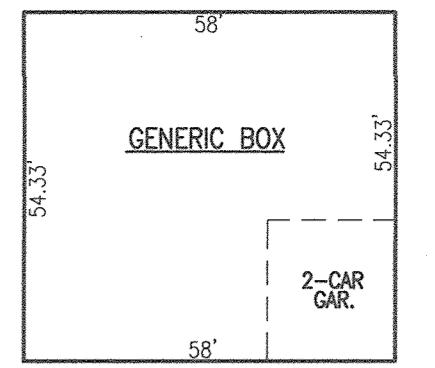
NOTES:

- DRIVEWAY MUST BE PAVED FROM EDGE OF THE USE-IN-COMMON DRIVEWAY
- THE IN-GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 15%.
- SEE SITE PLAN FOR LAYOUT AND GRADING OF DRCH



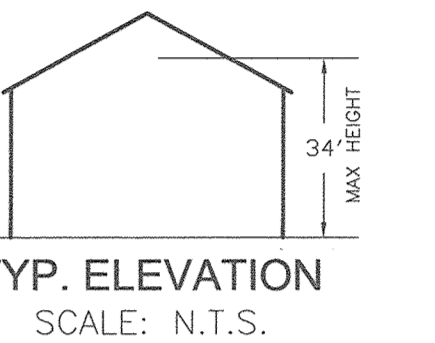
Approved: <i>[Signature]</i> Chief, Bureau of Engineering	Howard County, Maryland Department of Public Works	RESIDENTIAL DRIVEWAY ENTRANCE Open Section Roadway MODIFIED	Detail R-6.06
--	---	---	------------------

GENERIC HOUSE BOX OPTIONS:
THE GENERIC HOUSE BOXES DO NOT NEED TO SHOW AVAILABLE OPTIONS (CHIMNEYS, BAY WINDOWS, EAVES, DECKS, PORCHES, ETC. THAT ARE PERMITTED TO ENCRoACH INTO THE SIDE OR REAR YR BR/L'S PROVIDED THE SETBACK ENCROACHMENTS COMPLY WITH THE REQUIREMENTS OF SECTION 128.0 OF THE ZONING REGULATIONS.



- PATUXENT (40.00' X 40.33' BASE)
 - FITS ALL ELEVATIONS
 - FITS ALL OPTIONS
- SENECA I (48.00' X 48.00' BASE)
 - FITS ALL ELEVATIONS
 - FITS ALL OPTIONS
- SENECA II (48.00' X 48.00')
- FITS ALL ELEVATIONS
- NO MORNING ROOM WITH OPTIONAL 2' REAR EXTENSION
- FITS ALL OTHER OPTIONS

- SEVERN (46.00' X 36.00' BASE)
 - FITS ALL ELEVATIONS
 - FITS ALL OPTIONS



LANDSCAPE NOTES

- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- 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, REPAIRED OR REPLACED.
- 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 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.
- 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 BIDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

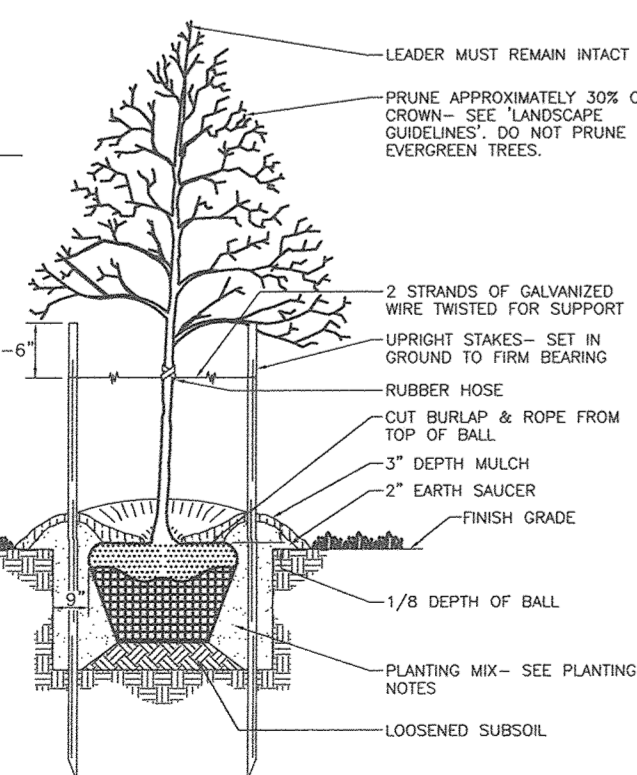
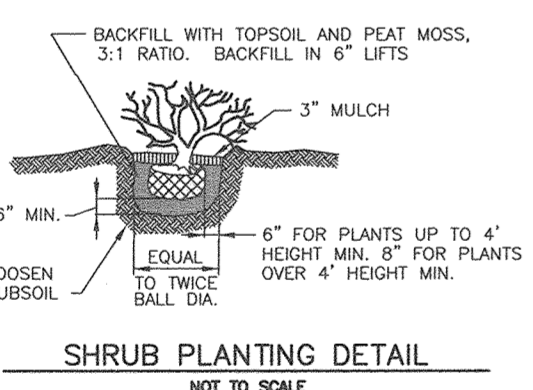
SPECIMEN TREE MITIGATION	
NUMBER OF SPECIMEN TREES TO BE REMOVED	2
NUMBER OF TREES REQUIRED (2 X SPECIMEN TREES TBR)	4
NUMBER OF TREES PROVIDED	4
SHADE TREES (2:1 SUBSTITUTION)	---
EVERGREEN TREES (2:1 SUBSTITUTION)	---
SHRUBS (10:1 SUBSTITUTION)	---

THIS PROJECT IS SUBJECT TO WP-18-074, ON MARCH 6, 2018, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR ALTERNATIVE COMPLIANCE TO SECTION 16.1205(A)(7) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES THE RETENTION OF STATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF STATE CHAMPION TREES, AND TREES 30" IN DIAMETER OR LARGER, SECTION 16.127(C)(4)(A) WHICH REQUIRES A SHARED USE-IN-COMMON DRIVEWAY MUST BE PROVIDED IN ACCORDANCE WITH THE DESIGN MANUAL WITHIN A MINIMUM 24'-FOOT-WIDE ACCESS EASEMENT FOR ALL PROPOSED RESIDENTIAL INFILL DEVELOPMENT LOTS. ANY EXISTING DRIVEWAY ENTRANCES ONTO THE PUBLIC ROAD RIGHT-OF-WAY MUST BE CONNECTED TO A SINGLE USE-IN-COMMON DRIVEWAY OR ABANDONED. APPROVAL FOR SECTION 16.127(C)(4)(A) AND SECTION 16.1205(A)(7) IS SUBJECT TO THE FOLLOWING CONDITIONS:

- ALTERNATIVE COMPLIANCE APPROVAL IS LIMITED TO THE REMOVAL OF SPECIMEN TREES #1 AND #3 AS DEPICTED ON THE EXHIBIT. ANY PROPOSAL TO REMOVE ANY OTHER SPECIMEN TREE WILL REQUIRE A NEW ALTERNATIVE COMPLIANCE REQUEST.
- A MINIMUM OF FOUR, NATIVE 2.5"-3" CALIPER, SHADE TREES SHALL BE PROVIDED AS MITIGATION FOR THE REMOVAL OF THE TWO SPECIMEN TREES FROM THE PROPERTY. LANDSCAPE SURETY, IN THE AMOUNT OF \$300.00 PER TREE SHALL BE PROVIDED WITH THE APPLICANT'S GRADING PERMIT.

TRASH PAD LANDSCAPING

SYMBOL	QTY.	DESCRIPTION	SIZE	REMARKS
TC	1	TAXUS CUSPIDATA 'NANA' DWARF JAPANESE YEW	18"-24" SPREAD	B & B



NOTES:

- SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BUILDING" WASHINGTON METROPOLITAN AGENCY FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
- SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
- PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
- KEEP MULCH 1" FROM TRUNK.
- SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTING WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
- TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWER EASEMENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

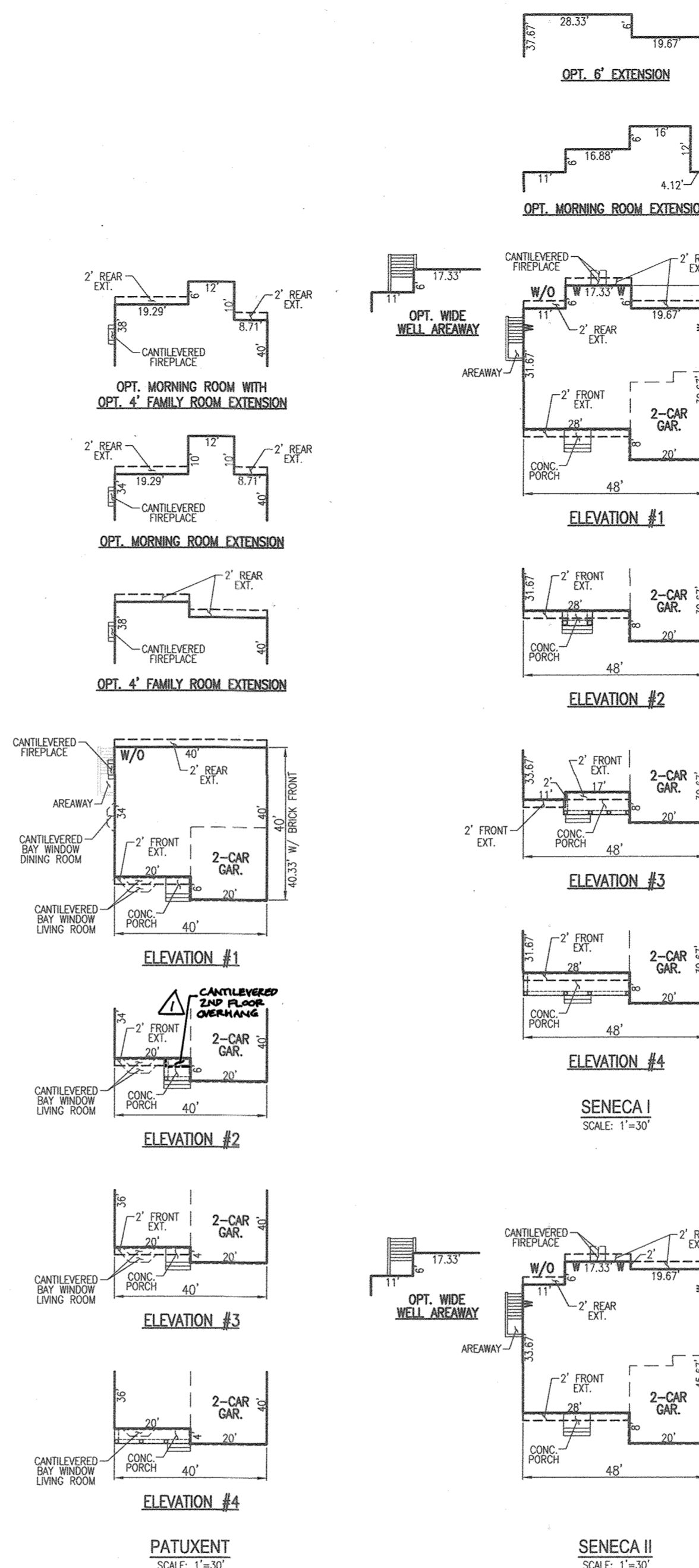
[Signature] **7-10-19**
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] **7-18-19**
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] **7-18-19**
 DIRECTOR

DEVELOPER'S/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.

[Signature] **6/11/19**
 SIGNATURE OF DEVELOPER
 DATE

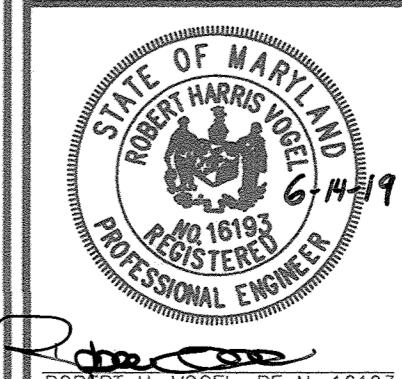
HOUSE TYPES
SCALE: 1"=30'



OWNER/DEVELOPER BUILDER		
BURKARD HOMES, LLC TIM BURKARD 5850 WATERLOO ROAD COLUMBIA, MD 21045 (410)-992-2221		
NO.	REVISION	DATE
BEFORE THE HOUSE TYPE, SNA AND GRADING ON LOT 2, THE GRADING ON LOT 3, AND ELEVATION FOR LOT 3 PATUXENT MODEL ON THE HOUSE TYPE SHEET		

REVISED SITE DEVELOPMENT PLAN
 LANDSCAPE PLAN - NOTES AND DETAILS & HOUSE TYPES
LARRICK SUBDIVISION
 LOTS 2-5
 LARRICK PROPERTY - LOTS 1-6
 PLAT 24761-24762
 TAX MAP: 37 PARCELS: 475 & 485
 BLOCK: 19 ZONING: R-12
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

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



DESIGN BY: RHY
 DRAWN BY: KG
 CHECKED BY: RHY
 DATE: APRIL 2019
 SCALE: AS SHOWN
 W.O. NO.: 16-38
 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 09-27-2020
 2 SHEET OF 6



EROSION AND SEDIMENT CONTROL NOTES:

1. EITHER PERMANENT OR TEMPORARY STABILIZATION IS TO BE APPLIED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR REGARDLESS OF DAYS/DATES IN THE STANDARD SEDIMENT CONTROL NOTES AND/OR SEEDING SPECIFICATIONS.
2. AT NO TIME DURING CONSTRUCTION WILL FENCING BE ALLOWED TO INTERCEPT CONCENTRATED FLOWS
3. A DOUBLE ROW OF SSF MAY BE REQUIRED IN THE PROXIMITY OF THE ENVIRONMENTAL AREAS
4. SOILS ON SITE ARE CONSIDERED HIGHLY ERODIBLE BY THE HOWARD SOIL CONSERVATION DISTRICT. MORE STRINGENT SEEDING AND STABILIZATION METHODS MAY BE EXPECTED AT SITE DEVELOPMENT STAGE

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY)
 2. DEVELOPER / CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO BEGINNING CONSTRUCTION. (1 DAY)
 3. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK. (1 DAY)
 4. STAKEOUT LIMITS OF DISTURBANCE. (3 DAYS)
 5. INSTALL STABILIZED CONSTRUCTION ENTRANCE AS SHOWN HEREON. (1 DAY)
 6. IN ACCORDANCE WITH DETAILS HEREON, INSTALL SEDIMENT CONTROL MEASURES AS SHOWN IN PLAN VIEW.
- SEDIMENT CONTROL DEVICES INSTALLED UNDER F-18-007 SHALL BE DRESSED AND UTILIZED AS APPLICABLE.
- EXISTING GRADES SHOWN HEREON WERE ESTABLISHED FROM THE PROPOSED GRADING AS SHOWN ON THE F-18-007 PLAN WHICH ESTABLISHED THE USE-IN-COMMON DRIVEWAY.
7. AFTER OBTAINING PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED, ROUGH GRADE INDIVIDUAL LOT FOR HOUSE CONSTRUCTION. - 1 DAY
 8. STOCKPILING SHALL BE LIMITED TO ONLOT OR AS SHOWN HEREON. STOCKPILES SHALL BE STABILIZED AS DETAILED HEREON. - 1 DAY
 9. CONSTRUCT HOUSES. THE FIRST FLOOR ELEVATIONS CANNOT BE MORE THAN 1' HIGHER OR 0.2' LOWER THAN THE ELEVATION SHOWN ON THIS PLAN. - 6 MONTHS
 10. FINE GRADE LOT AS DETAILED HEREON AND PER SPOT ELEVATION AS SHOWN TO BE IN CONFORMANCE WITH STORMWATER MANAGEMENT SCHEME APPROVED FOR THE PROJECT. - 3 DAYS
 11. UPON COMPLETION OF HOME CONSTRUCTION AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMPLETE ANY REMAINING FINE GRADING, INSTALL ONLOT STORMWATER MANAGEMENT FACILITIES TO INCLUDE: DRYWELLS & RAIN GARDEN. - 1 DAY
 12. ADD TOPSOIL PER THE SPECIFICATIONS SHOWN HEREON. - 1 DAY
 13. WITH ALL ONLOT DISTURBANCES COMPLETED, STABILIZE WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR EQUAL STABILIZATION. - 1 DAY
 14. AFTER PERMISSION HAS BEEN GIVEN BY SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING PERIMETER E/S CONTROLS AND STABILIZE THESE DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. (1 WEEK)

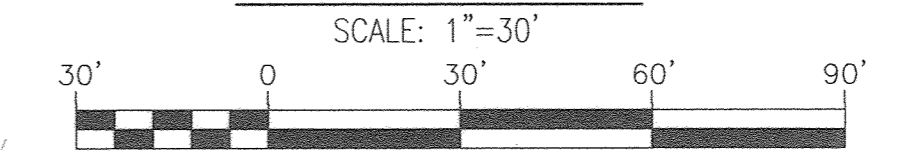
NOTE: ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION

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

NOTES

1. REFER TO SHEET 4 FOR STANDARD DETAILS AND STABILIZATION NOTES
2. ALL EARTH DIKES ARE TO BE PLACED IN WORKING ORDER AT THE END OF EACH WORKING DAY.

GRADING PLAN



NOTE:

1. LARRICK'S WAY AND ITS CONNECTION TO ALLEN LANE SHALL BE CONSTRUCTED UNDER THE F-18-007 PLAN.

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.

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.

LEGEND:

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- 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
- ADDRESS SIGN
- EXISTING WATER LINE
- EXISTING STORM DRAIN
- EXISTING TRENCH
- PROPOSED STORM DRAIN
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- STORMWATER MANAGEMENT FACILITY (M-S, M-7) F-18-007
- DRY WELL (M-S)
- EXISTING PRIVATE 24" USE-IN-COMMON ACCESS, STORMWATER MANAGEMENT, WATER, SEWER, DRAINAGE & UTILITY EASEMENT PLAT 24761 - 24762
- PRIVATE VARIABLE WIDTH USE-IN-COMMON ACCESS, STORMWATER MANAGEMENT, WATER, SEWER, DRAINAGE & UTILITY EASEMENT PLAT # 25028
- EXISTING 10' TREE MAINTENANCE EASEMENT PLAT # 24762
- EXISTING SIGHT-DISTANCE EASEMENT PLAT 24762
- 10' CONTOUR
- 2' CONTOUR
- SPOT ELEVATION
- EXISTING TREES F-18-007
- STABILIZED CONSTRUCTION ENTRANCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- STORMWATER TEST PIT

LARRICK SUBDIVISION			
STORMWATER TEST PITS			
TEST PIT	EX. SURFACE ELEVATION	DIG. DEPTH	BORING DEPTH / CONDITION
P-1	353.3	9.2	NO ROCK OR WATER @ 344.10
P-2	362.5	9	NO ROCK OR WATER @ 353.50
P-3	368.0	10	NO ROCK OR WATER @ 358.00
P-4	370.1	9.4	NO ROCK OR WATER @ 360.70
P-5	366.13	9.5	NO ROCK OR WATER @ 356.63

OWNER/DEVELOPER BUILDER
BURKARD HOMES, LLC
TIM BURKARD
5850 WATERLOO ROAD
COLUMBIA, MD 21045
(410)-992-2221

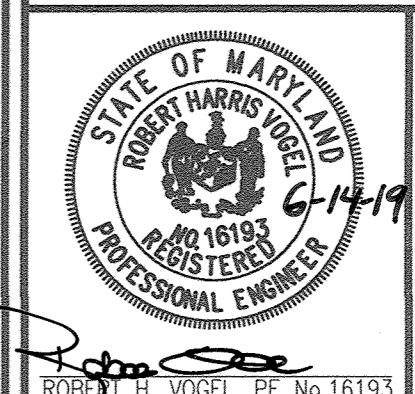
NO.	REVISION	DATE
1	REVISE THE HOUSE TYPE, SHA AND GRADING ON LOT 2, THE GRADING ON LOT 3, AND ELEVATION FOR LOT 2 PATENT MODEL ON THE HOUSE TYPE SHEET	9-7-21

REVISED SITE DEVELOPMENT PLAN GRADING, SOILS MAP, SOIL EROSION & SEDIMENT CONTROL PLAN
LARRICK SUBDIVISION
LOTS 2 - 5
LARRICK PROPERTY - LOTS 1-6
PLAT 24761-24762

TAX MAP: 37 PARCELS: 475 & 485
6TH ELECTION DISTRICT

BLOCK: 19 ZONING: R-12
HOWARD COUNTY, MARYLAND

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



DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: APRIL 2019
SCALE: AS SHOWN
W.O. NO.: 16-38

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 08-27-2020

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
7.10.19
DATE

OWNER/DEVELOPER CERTIFICATION:
I, THE UNDERSIGNED, CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

DESIGN CERTIFICATION:
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

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

SOILS LEGEND
HOWARD COUNTY SOILS MAP #19

SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR	ERODIBLE	HYDRIC
SrC	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES	B	0.37	YES	NO
UsD	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	D	0.37	YES	NO
CeB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B	0.37	YES	NO
FceA	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	0.02	NO	YES

NOTE:
TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

**HOWARD SOIL CONSERVATION DISTRICT
STANDARD EROSION CONTROL NOTES**

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-335 HBS AFTER THE FUTURE LOT AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOURS NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
A. PRIOR TO THE START OF EARTH DISTURBANCE.
B. UPON COMPLETION OF THE INSTALLATION OF PERMIET EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING LOT.
D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERMIET CONTROL AREAS, DROPS, SWALES, DITCHES, PERMIET SLOPES, AND ALL SLOPES STEEPER THAN 1 VERTICAL (S:1) AND SOVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-3), TEMPORARY SEEDING (SEC. B-4-4), AND MULCHING (SEC. B-4-5). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE DATE OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
- TEMPORARY STABILIZATION SHALL BE ENFORCED IN AREAS WITH >15% OF CUT AND/OR FILL STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE REACHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPES, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED UNDER ADEQUATE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

6. SITE ANALYSIS:

TOTAL AREA OF SITE:	1.34 ACRES
AREA DISTURBED:	1.01 ACRES
AREA TO BE PROTECTED OR PAVED:	0.34 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.66 ACRES
TOTAL CUT:	500 CU YDS. TOTAL
TOTAL FILL:	500 CU YDS. TOTAL
OFFSITE WASH/BORROW AREA LOCATION:	ON-SITE

(1) REFER TO ITEM 11 BELOW.

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVE FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID, THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:

- INSPECTION TYPE (ROUTINE, PRE-STARTUP EVENT, DURING RAIN TIME)
- NAME AND TITLE OF INSPECTOR
- WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECEIVED PRECIPITATION)
- BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE)
- ON/OFF CURRENT ACTIVITIES
- IDENTIFICATION OF PLAN DEFICIENCIES
- IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
- IDENTIFICATION OF MESSING OR IMPROVISED INSTALLED SEDIMENT CONTROLS
- COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
- PHOTOGRAPHS
- MONITORING/SAMPLING
- MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
- OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE (3) PIECE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION SHALL BE APPROVED BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. CONSTRUCTION, MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSD-APPROVED FIELD CHANGES.

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM AREA OF 20 AC. PER GRADING UNIT) AT A TIME, WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT AND OTHER TOXIC MATERIALS MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON THE-OUTSLOPE, AND BE IMBERGATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.

15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
USE 1 AND IF MARCH 1 - JUNE 15
USE 10 IF APRIL 1 - APRIL 30

16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

**B-4-5 STANDARDS AND SPECIFICATIONS
FOR PERMANENT STABILIZATION**

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA
A. SEED MIXTURES
1. GENERAL USE

- A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITIONS AND PURPOSES FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY, THE SUMMARY IS TO BE PLACED ON THE PLAN.
- B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR ACTIVITIES TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
- C. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE LOCAL TESTING AGENCY.
- D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY AREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURF MIXTURES
A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY, THE SUMMARY IS TO BE PLACED ON THE PLAN.

1. KENTUCKY BLUEGRASS: FULL SUN MIXTURE. FOR USE IN AREAS THAT RECEIVE DIRECT SUNSHINE MANAGEMENT IS REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

2. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE. FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/ CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

3. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE. FOR USE IN BROADWAY FRONTS AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 5 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET, ONE OR MORE CULTIVARS MAY BE BLENDED.

4. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE. FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 10 TO 30 PERCENT. SEEDING RATE: 1X TO 3 POUNDS PER 1000 SQUARE FEET.

5. BERMUDA GRASS: FULL SUN MIXTURE. FOR USE IN AREAS WITH FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 5 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET, ONE OR MORE CULTIVARS MAY BE BLENDED.

6. MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED

7. OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

8. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDING BED.

9. SEEDS AND DEBRIS OVER THE RESULTING SEEDING BED SHOULD BE REMOVED. SEEDS SHOULD BE PLACED ON THE SURFACE OF THE SEEDING BED. SEEDS MUST BE IN SUCH CONTACT WITH FUTURE MOVER OF GRASSES WILL POSE NO DIFFICULTY.

10. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH UNTIL THE SEEDS HAVE TAKEN HOLD. WATER SHOULD BE APPLIED TO AREAS THAT ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

11. SOIL: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER):
A. GENERAL SPECIFICATIONS
1. CLASS OF TURFGRASS SOIL MUST BE MARYLAND STATE CERTIFIED. SOIL LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR AT ALL TIMES.

2. FERTILIZER MUST BE APPLIED AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST INCLUDE TOP GROUND AND THATCH. BROKEN POTS AND TOWN OR UNIFORM MIXTURES WILL NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOIL MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 1/2 PORTION OF THE SECTION.

4. SOIL MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

5. SOIL MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOIL NOT INSTALLED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

6. SOIL MAINTENANCE
A. DURING PERIODS OF EXCESSIVE HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE ROWS.
B. LAY THE FIRST ROW OF SOIL IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOIL IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TOGETHER IN ORDER TO PREVENT Voids WHICH WOULD CAUSE AIR DRIPPING OF THE ROOTS.
C. WHEREVER POSSIBLE, LAY SOIL WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGING JOINTS, ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOIL TO PREVENT SURFACE SOIL LOSS. ENSURE SOLID CONTACT EXISTS BETWEEN SOIL ROOTS AND THE UNDERLYING SOIL SURFACE.
D. WATER THE SOIL IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOIL PAD AND SOIL SURFACE BELOW THE SOIL ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOIL WITHIN EIGHT HOURS.

7. WATER THE SOIL IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOIL PAD AND SOIL SURFACE BELOW THE SOIL ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOIL WITHIN EIGHT HOURS.

8. DO NOT MOW UNTIL THE SOIL IS FIRMLY ROOTED, NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

**B-4-3 STANDARDS AND SPECIFICATIONS
FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS**

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA
A. SOIL PREPARATION

1. SEEDING
1. SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO TESTING BY THE TESTING AGENCY.

2. PERMANENT STABILIZATION
A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LEADERSHIP WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

6. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CRITERIA AND ARE READY FOR SEED APPLICATION. LOOSEN SUBSURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE LEAVE THE TOP 1 TO 2 INCHES OF SOIL LOOSE AND FRAGILE. SEEDING LOOSENESS MAY BE UNNECESSARY FOR NEWLY DISTURBED AREAS.

7. TOPSOILING
I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, AND/OR ARE HIGHLY COMPACTED. TOPSOILING IS TO BE PERFORMED IN SUCH A MANNER THAT THE TOPSOIL IS PLACED IN CONTACT WITH THE SUBSOIL. TOPSOILING SHALL BE LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS TOO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE TO PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TO CLUMP GROWTH OF THE SOIL IS SO ADIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
D. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRING SPECIAL CONSIDERATION AND DESIGN.

8. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZERS WITH PRIOR APPROVAL FROM THE APPROPRIATE AUTHORITY. FERTILIZERS MUST NOT BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME) MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #200 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HEAVILY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

**B-4-3 STANDARDS AND SPECIFICATIONS
FOR SEEDING AND MULCHING**

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERMIET CONTROL AREAS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA
A. SEEDING
1. SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO TESTING BY THE TESTING AGENCY.

2. PERMANENT STABILIZATION
A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LEADERSHIP WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

6. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CRITERIA AND ARE READY FOR SEED APPLICATION. LOOSEN SUBSURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE LEAVE THE TOP 1 TO 2 INCHES OF SOIL LOOSE AND FRAGILE. SEEDING LOOSENESS MAY BE UNNECESSARY FOR NEWLY DISTURBED AREAS.

7. TOPSOILING
I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, AND/OR ARE HIGHLY COMPACTED. TOPSOILING IS TO BE PERFORMED IN SUCH A MANNER THAT THE TOPSOIL IS PLACED IN CONTACT WITH THE SUBSOIL. TOPSOILING SHALL BE LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS TOO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE TO PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TO CLUMP GROWTH OF THE SOIL IS SO ADIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
D. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRING SPECIAL CONSIDERATION AND DESIGN.

8. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZERS WITH PRIOR APPROVAL FROM THE APPROPRIATE AUTHORITY. FERTILIZERS MUST NOT BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME) MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #200 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HEAVILY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

**B-4-3 STANDARDS AND SPECIFICATIONS
FOR SEEDING AND MULCHING**

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERMIET CONTROL AREAS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA
A. SEEDING
1. SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO TESTING BY THE TESTING AGENCY.

2. PERMANENT STABILIZATION
A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LEADERSHIP WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

6. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CRITERIA AND ARE READY FOR SEED APPLICATION. LOOSEN SUBSURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE LEAVE THE TOP 1 TO 2 INCHES OF SOIL LOOSE AND FRAGILE. SEEDING LOOSENESS MAY BE UNNECESSARY FOR NEWLY DISTURBED AREAS.

7. TOPSOILING
I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, AND/OR ARE HIGHLY COMPACTED. TOPSOILING IS TO BE PERFORMED IN SUCH A MANNER THAT THE TOPSOIL IS PLACED IN CONTACT WITH THE SUBSOIL. TOPSOILING SHALL BE LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS TOO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE TO PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TO CLUMP GROWTH OF THE SOIL IS SO ADIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
D. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRING SPECIAL CONSIDERATION AND DESIGN.

8. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZERS WITH PRIOR APPROVAL FROM THE APPROPRIATE AUTHORITY. FERTILIZERS MUST NOT BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME) MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #200 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HEAVILY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

**B-4-3 STANDARDS AND SPECIFICATIONS
FOR SEEDING AND MULCHING**

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERMIET CONTROL AREAS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA
A. SEEDING
1. SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO TESTING BY THE TESTING AGENCY.

2. PERMANENT STABILIZATION
A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LEADERSHIP WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

6. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CRITERIA AND ARE READY FOR SEED APPLICATION. LOOSEN SUBSURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE LEAVE THE TOP 1 TO 2 INCHES OF SOIL LOOSE AND FRAGILE. SEEDING LOOSENESS MAY BE UNNECESSARY FOR NEWLY DISTURBED AREAS.

7. TOPSOILING
I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, AND/OR ARE HIGHLY COMPACTED. TOPSOILING IS TO BE PERFORMED IN SUCH A MANNER THAT THE TOPSOIL IS PLACED IN CONTACT WITH THE SUBSOIL. TOPSOILING SHALL BE LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS TOO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE TO PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TO CLUMP GROWTH OF THE SOIL IS SO ADIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
D. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRING SPECIAL CONSIDERATION AND DESIGN.

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LEGEND

- EXISTING PAVING
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING STORM DRAIN LINE
- EXISTING WOOD FENCE
- EXISTING OVER HEAD LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MICRO-BIOTRETION (M-6)
- RAIN GARDEN (M-7)
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPOSED STORM DRAIN
- EXISTING PRIVATE 24" USE-IN-COMMON ACCESS, STORMWATER MANAGEMENT, WATER, SEWER, DRAINAGE & UTILITY EASEMENT PLAT 24761 - 24762
- PRIVATE VARIABLE WIDTH USE-IN-COMMON ACCESS, STORMWATER MANAGEMENT, WATER, SEWER, DRAINAGE & UTILITY EASEMENT PLAT 24761 - 24762

- APPENDIX B.A.C SPECIFICATIONS FOR MICRO-BIOTRETION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS**
- MATERIAL SPECIFICATIONS**
THE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAIL IN TABLE B.A.1.
 - FILTERING MEDIA OR PLANTING SOIL**
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTITUTES SHALL BE MIXED OR BLENDED WITH THE MICRO-BIOTRETION PRACTICE. THE MEDIA SHALL BE MIXED TO PLANT GROWTH OR PROVE IN INHERENCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOxious WEEDS AS SPECIFIED UNDER COMAR 15.06.01.02. 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 (80%-85%) AND COMPOST (15% TO 20% OR SANDY LOAM (USDA) AND COMPOST (15%)).
* CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
* PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. ADJUSTMENTS TO PH RANGE (NON-SULFATE PLUS SULFUR) MAY BE MADE IN TO THE SOIL TO INCREASE OR DECREASE PH.
THESE SHALL BE AT LEAST ONE SOIL TEST PER PRACTICE. EACH TEST SHALL CONSIDER BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOIL SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
 - COMPACTION**
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIOTRETION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE. 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 BIOTRETION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS SHOVEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTIVE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIOTRETION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PLUMP ANY PACKED SAND LAYER BEFORE BACKFILLING 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 FINAL GRADE.
WHEN BACKFILLING THE BIOTRETION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIOTRETION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIOTRETION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
 - PLANT MATERIAL**
RECOMMENDED PLANT MATERIAL FOR MICRO-BIOTRETION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
 - 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 SUBSURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SPREADDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIOTRETION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SPREADDED MULCH MUST BE WELL KEPT (60 TO 120 MONTHS) FOR ACCEPTANCE.
ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHALL 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. SEE AND MAINTAIN THE PLANT STORAGE DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRANDED 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 PLANTS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ACCURATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIOTRETION 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. ROTOTILL URSA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.
 - UNDERDRAINS**
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
* PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIBBED PLASTIC PIPE (ASTM 758, TYPE PS 28, OR AEMD-4-278) IN A GRAVEL LAYER. THE PERFORATED MATERIAL IS SLOTTED, 4" RIBBED (E.G., PVC OF RIBPI).
* PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WAPPED WITH 1/4" (NO. 4 OR 4A) GALVANIZED HARDWARE CLOTH.
* CRAWL - THE CRAWL LAYER (NO. 5) STONE (PREPARED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
* A RIBBED, 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 PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO 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).
 - MISCELLANEOUS**
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3), MICRO-BIOTRETION (M-6), RAIN GARDENS (M-7), BIOTRETION 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. PRUNING 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 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. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIPERS.
- 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 MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

OWNER/DEVELOPER
BUILDER
BURKARD HOMES, LLC
TIM BURKARD
5850 WATERLOO ROAD
COLUMBIA, MD 21045
(410)-992-2221

SOILS LEGEND
HOWARD COUNTY SOILS MAP #19

SYMBOL	NAME / DESCRIPTION	GROUP	FACTOR	ERODIBLE	HYDRIC
SrC	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES	B	0.37	YES	NO
UsD	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	D	0.37	YES	NO
CeB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	B	0.37	YES	NO
FaaA	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES	D	0.02	NO	YES

NOTE: TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT
OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

STORMWATER MANAGEMENT DRAINAGE AREA MAP
SCALE: 1"=30'

LARRICK SUBDIVISION
STORMWATER TEST PITS

TEST PIT	EX. SURFACE ELEVATION	DUG	BORING DEPTH	CONDITION
P-1	353.3	9.2	NO ROCK OR WATER @ 344.10	
P-2	362.5	9	NO ROCK OR WATER @ 353.50	
P-3	368.0	10	NO ROCK OR WATER @ 358.0	
P-4	370.1	9.4	NO ROCK OR WATER @ 360.70	
P-5	366.13	9.5	NO ROCK OR WATER @ 356.63	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edwards 7-10-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

J. Markland 7-18-19
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William J. Blum 7-18-19
DIRECTOR DATE

ROBERT H. VOGEL ENGINEERING, INC.

PROJECT: LARRICK/ANNETTA GARDENS

AREA:	2.25 AC	GROSS AREA:	2.25 AC
IMPERVIOUS:	1.13 AC	LIMIT OF DISTURBANCE:	0.34 AC
TARGET PI:	1.45 IN		
ESDV:	0.93 CF	TOTAL ESDV TARGET:	

DRAINAGE AREA #	IMPERVIOUS AREA	TOTAL AREA	PERCENT IMPERVIOUS	R _v	ESDV	ESDV MIN	ESDV MAX	ESDV TARGET	ESDV PROVIDED
LOT 3	2000	2000	1.00	0.95	158	412	230	328	328
LOT 4	2000	2000	1.00	0.95	158	412	230	328	328
LOT 2	1000	1000	1.00	0.95	79	206	115	164	164
DA 1	1000	1100	0.48	0.48	84	218	135	218	218
LOT 5	1500	1500	1.00	0.95	119	309	172	246	246
DA 2	6000	9636	0.41	0.42	563	1465	816	627	627
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0

TOTAL ESDV PROVIDED: 1911

PROJECT: LARRICK
DESIGNER: RHV
DATE: 03/18/17

ROBERT H. VOGEL ENGINEERING, INC.
LARRICK/ANNETTA GARDENS

DRAINAGE AREA #	TREATMENT	FACILITY NUMBER	ENVIRONMENTAL SITE DESIGN PRACTICE (E/S)							ESDV VOLUME	
			PERFORATED	GRAVEL	BIOTRETION	BELOW SFB	FILTER	DRY WELL	BIOTRETION		
LOT 3	2000	DW	0	0	0	0	0	0	328	0	328
LOT 4	2000	DW	0	0	0	0	0	0	328	0	328
LOT 2	1000	DW	0	0	0	0	0	0	164	0	164
DA 1	1000	MBR-1	0	0	218	0	0	0	218	0	218
LOT 5	1500	DW	0	0	0	0	0	0	246	0	246
DA 2	16200	RC-1	0	0	0	0	0	0	627	0	627
	0		0	0	0	0	0	0	0	0	0
	0		0	0	0	0	0	0	0	0	0

REVISE THE HOUSE TYPE, SWM AND GRADING ON LOT 2, THE GRADING ON LOT 3, 9-7-21
AND ELEVATION FOR LOT 2 PATIENT MODEL ON THE HOUSE TYPE SHEET

NO.	REVISION	DATE

REVISED SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT
DRAINAGE AREA MAP - NOTES & DETAILS
LARRICK SUBDIVISION
LOTS 2-5
LARRICK PROPERTY - LOTS 1-6
PLAT 24761-24762

TAX MAP: 37 PARCELS, 475 & 485
BLOCK: 19 ZONING: R-12
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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

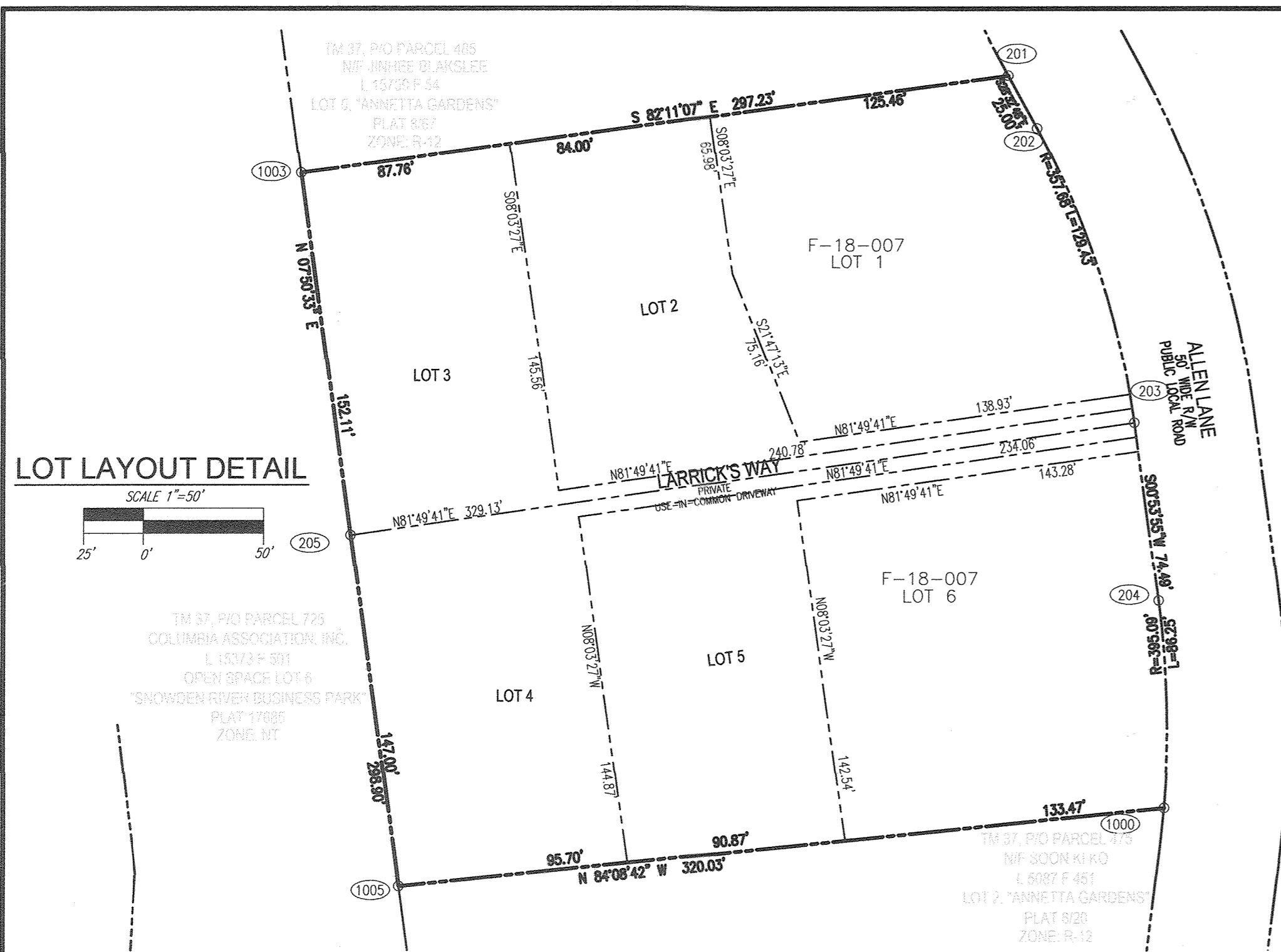
PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: APRIL 2019
SCALE: AS SHOWN
W.O. NO.: 16-38

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE 09-27-2020

5 SHEET OF 6

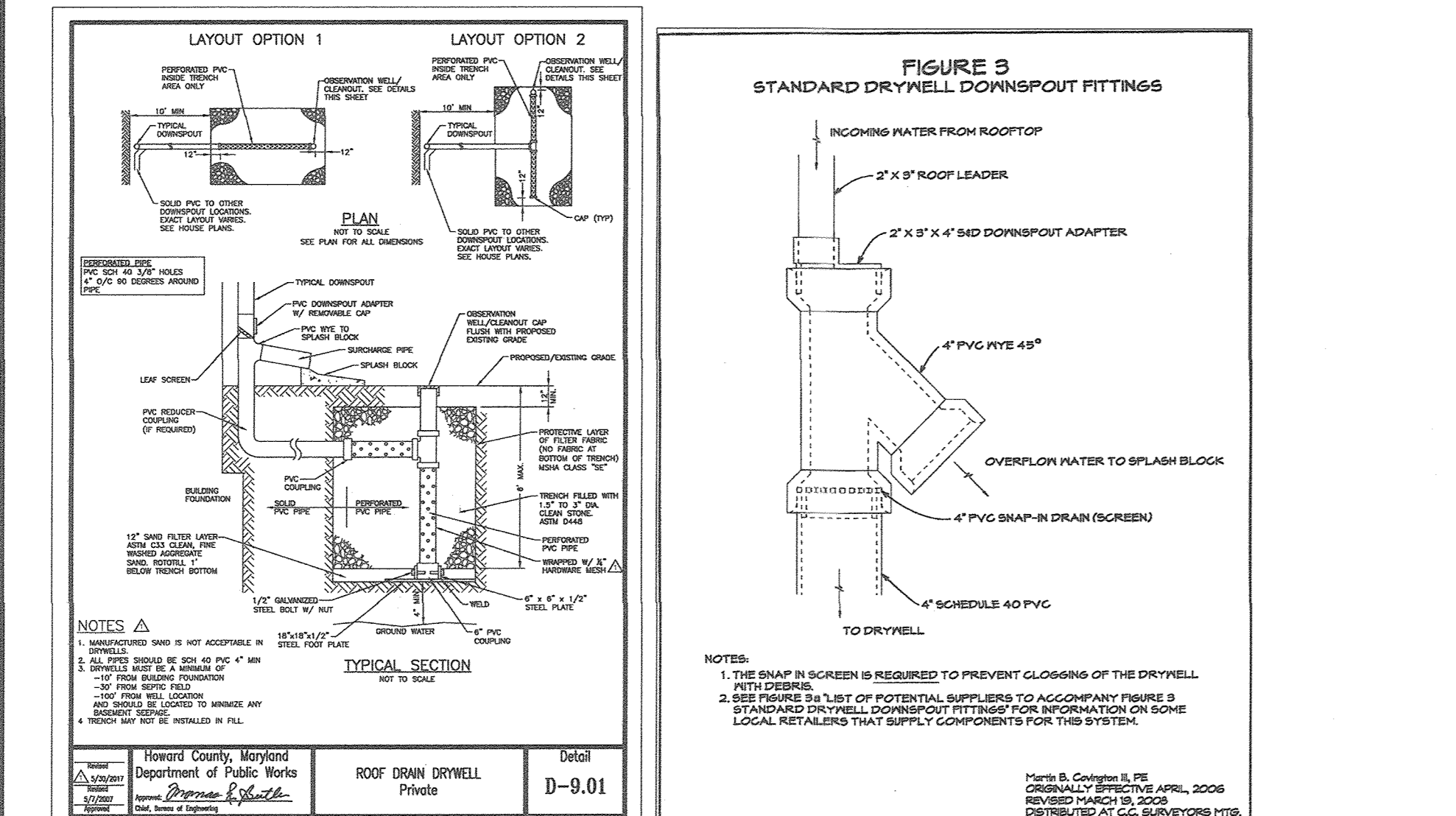
ROBERT H. VOGEL, PE No. 16193



ON-LOT DRYWELL - DESIGN ELEVATION CHART

SWM DA	LOT #	DW LOCATION	NUMBER OF DW'S	PROP GRADE* OVER	TOP STONE*	INV STONE*	INV SAND*	SURFACE SIZE FT X FT	STONE DEPTH FT	SAND DEPTH FT
2A	2	F	1	367.0	366.0	362.0	361.0	7 x 8	4	1
2B	2	F	1	366.5	365.5	361.5	360.5	7 x 8	4	1
3A	3	R	1	362.0	361.0	357.0	356.0	7 x 8	4	1
3B	3	R	1	366.6	365.6	361.6	360.6	7 x 8	4	1
3C	3	F	1	370.3	369.3	365.3	364.3	7 x 8	4	1
3D	3	F	1	369.0	368.0	364.0	363.0	7 x 8	4	1
4A	4	F	1	370.0	369.0	365.0	364.0	7 x 8	4	1
4B	4	F	1	372.0	371.0	367.0	366.0	7 x 8	4	1
4C	4	R	1	372.0	371.0	367.0	366.0	7 x 8	4	1
4D	4	R	1	367.0	366.0	362.0	361.0	7 x 8	4	1
5A	5	F	1	364.0	363.0	359.0	358.0	7 x 8	4	1
5B	5	R	1	366.7	365.7	361.7	360.7	7 x 8	4	1
5C	5	R	1	364.0	363.0	359.0	358.0	7 x 8	4	1

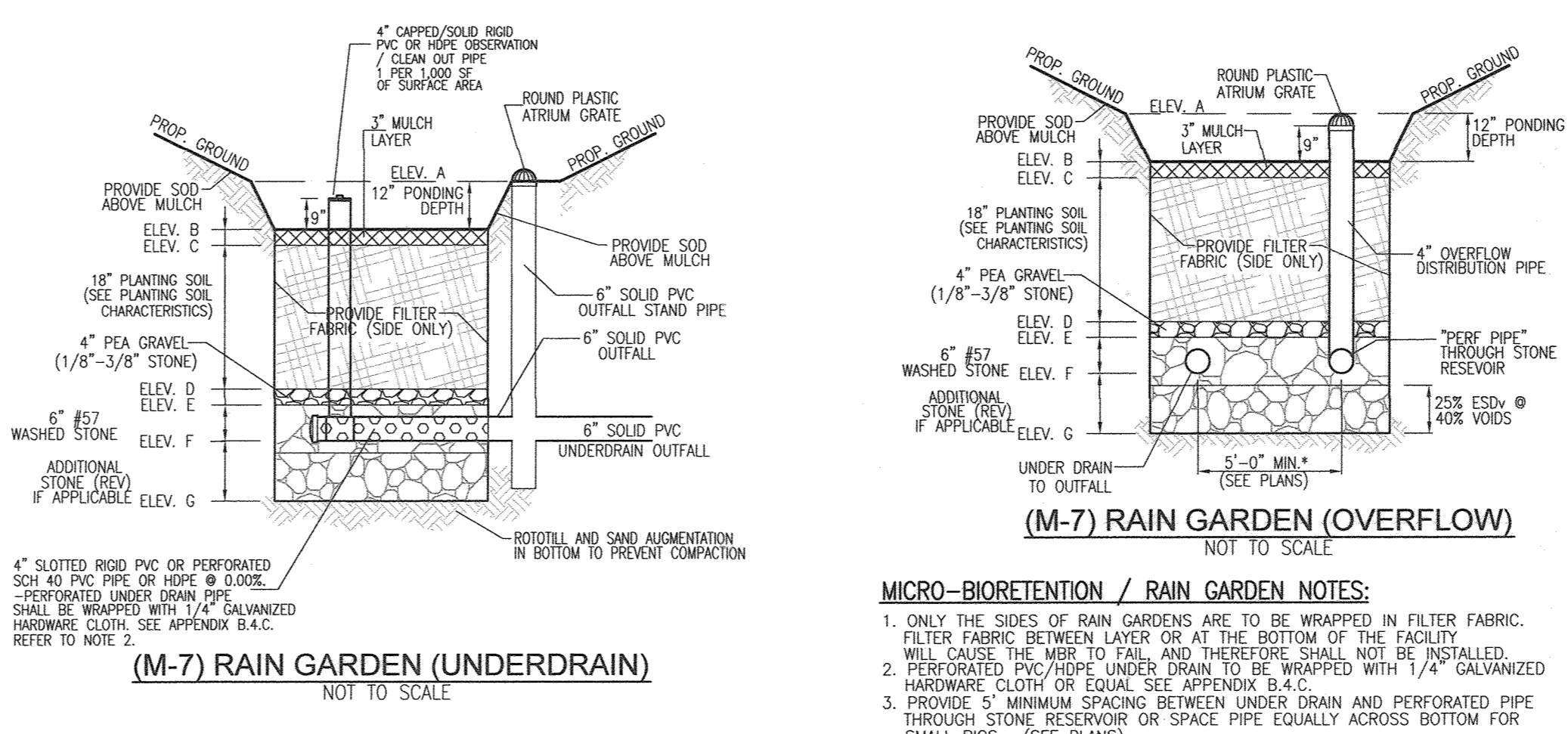
DESIGN ELEVATIONS ARE SUBJECT TO CHANGE WITH ACTUAL HOUSE SITE FOR CONSTRUCTION.



OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER DRYWELLS (M-5)

- THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
- WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 7-10-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 7-18-19
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 7-18-19
 DIRECTOR



RAIN GARDEN DATA CHART

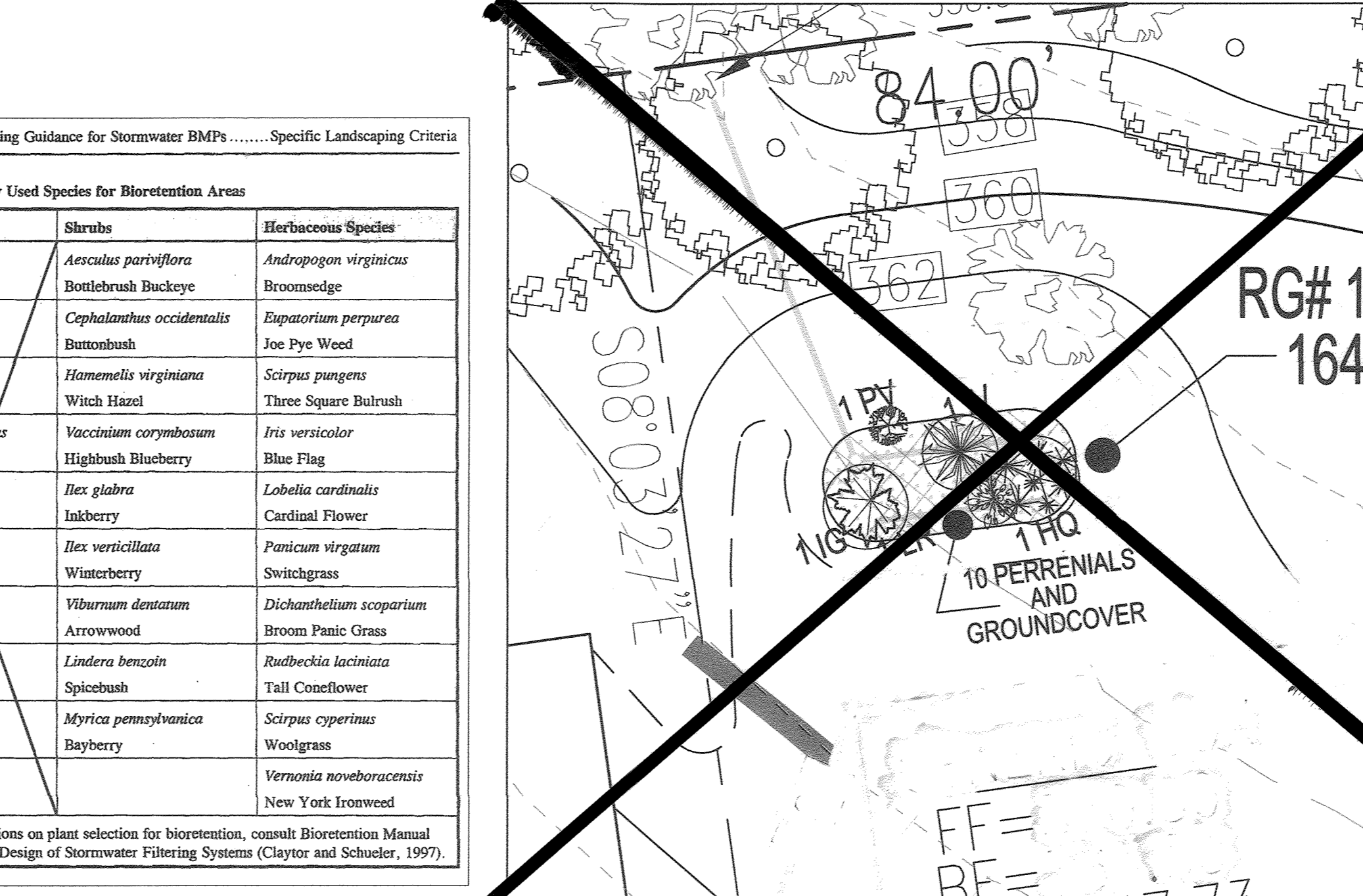
RG Facility	TOP	Ponding Depth (ft)	Ponding Elevation ELEV. A-1	Top of Mulch ELEV. B	Bottom of Mulch ELEV. C	Depth of Plant Mix	Bottom of Plant Mix ELEV. D	Bottom of Pea Gravel ELEV. E	Depth of Stone (ft.)	Invert of Underdrain INV. ELEV. F	Bottom of Stone ELEV. G
1	359.30	1.00	359.00	358.00	357.75	1.50	356.25	355.92	0.50	355.92	354.59

MICRO-BIORETENTION PLANTING REQUIREMENTS

MBR-RG #	LF	AREA	STEMS REQUIRED (0.0229)	STEMS PROVIDED	IG	IV	HQ	LR	PV	BA	AG	TOTAL
MBR-1	83	476	11	12	2	2	2	3	3	16	16	32
RG-1	51	167	4	5	1	1	1	1	1	5	5	10
TOTALS	134	643	15	17	3	3	3	4	4	21	21	42

MICRO-BIORETENTION/RAIN GARDEN PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAJ 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 PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.
- MICROBIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.0229 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY.
- FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH.



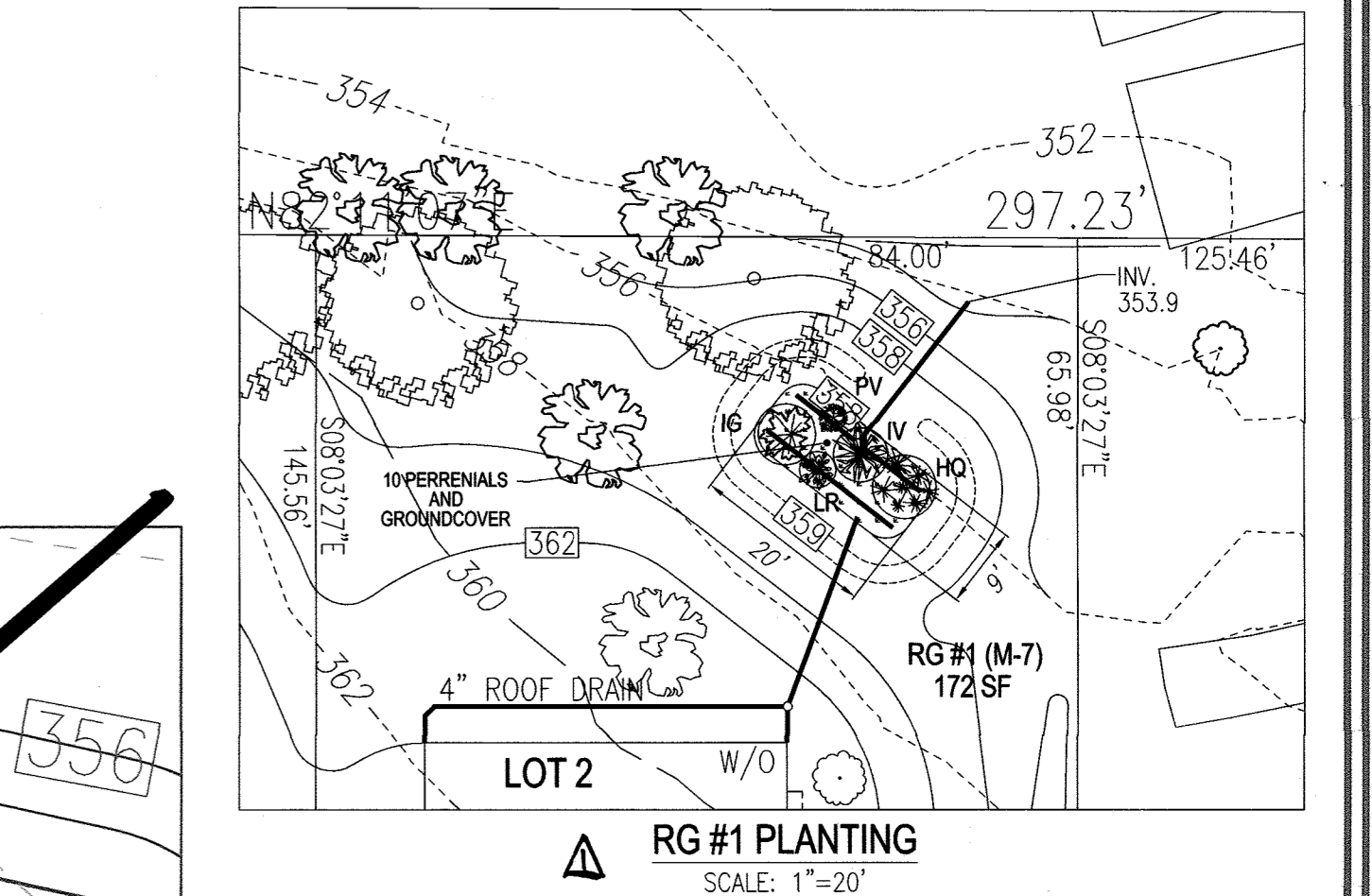
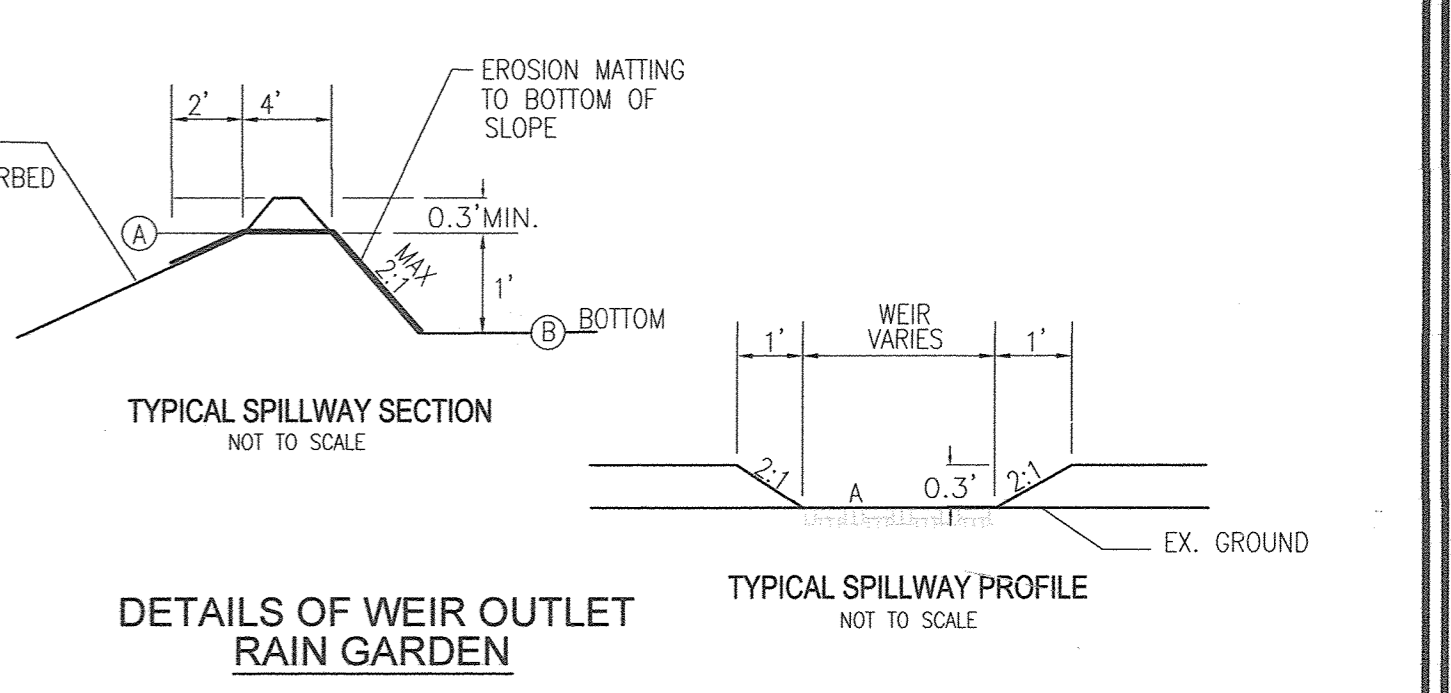
LARRICK PROPERTY - STORMWATER MANAGEMENT PRACTICES BY LOT

LOT NUMBER	ADDRESS*	GREEN ROOFS	PERMEABLE PAVEMENTS	REINFORCED TURF	DISCONNECTION OF ROOFTOP RUNOFF	DISCONNECTION OF NON-ROOFTOP RUNOFF	SHEETFLOW TO CONSERVATION AREAS	RAINWATER HARVESTING	SUBMERGED GRAVEL WETLANDS	LANDSCAPE INFILTRATION	INFILTRATION BERMS	DRY WELLS	MICRO-BIORETENTION	RAIN GARDENS	SWALES	ENHANCED FILTERS
1	610 LARRICKS WAY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
2	610 LARRICKS WAY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
3	611 LARRICKS WAY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
4	611 LARRICKS WAY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
5	612 LARRICKS WAY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

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

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration-

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%) & coarse sand (10%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5% (< 2" to 4" deep)
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		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"	PE Type 1 nonwoven
Geotextile	AASHTO M-43	n/a	
Gravel (underdrains and infiltration berms)	AASHTO M-278	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 1 1/4")	
Underdrain piping	F 758, 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 row, minimum of 3" of gravel over pipes, not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/2-inch galvanized hardware cloth
Poured in place concrete (if required)	MSEA Mts. No. 3, Ft. - 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 308.2R9; vertical loading (14-10 or 14-20); allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Gneiss (AASHTO #10) are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.



OWNER/DEVELOPER
 BUILDER
 BURKARD HOMES, LLC
 TIM BURKARD
 5850 WATERLOO ROAD
 COLUMBIA, MD 21045
 (410)-992-2221

REVISED SITE DEVELOPMENT PLAN
 STORMWATER MANAGEMENT NOTES & DETAILS
LARRICK SUBDIVISION
 LOTS 2 - 5
 LARRICK PROPERTY - LOTS 1-6
 PLAT 24761-24762

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 3300 N. RIDGE ROAD, SUITE 110, 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 FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 11933 EXPIRATION DATE: 09-27-2020

DESIGN BY: RHV
 DRAWN BY: KG
 CHECKED BY: RHV
 DATE: APRIL 2019
 SCALE: AS SHOWN
 W.O. NO.: 16-38

6 SHEET OF 6