

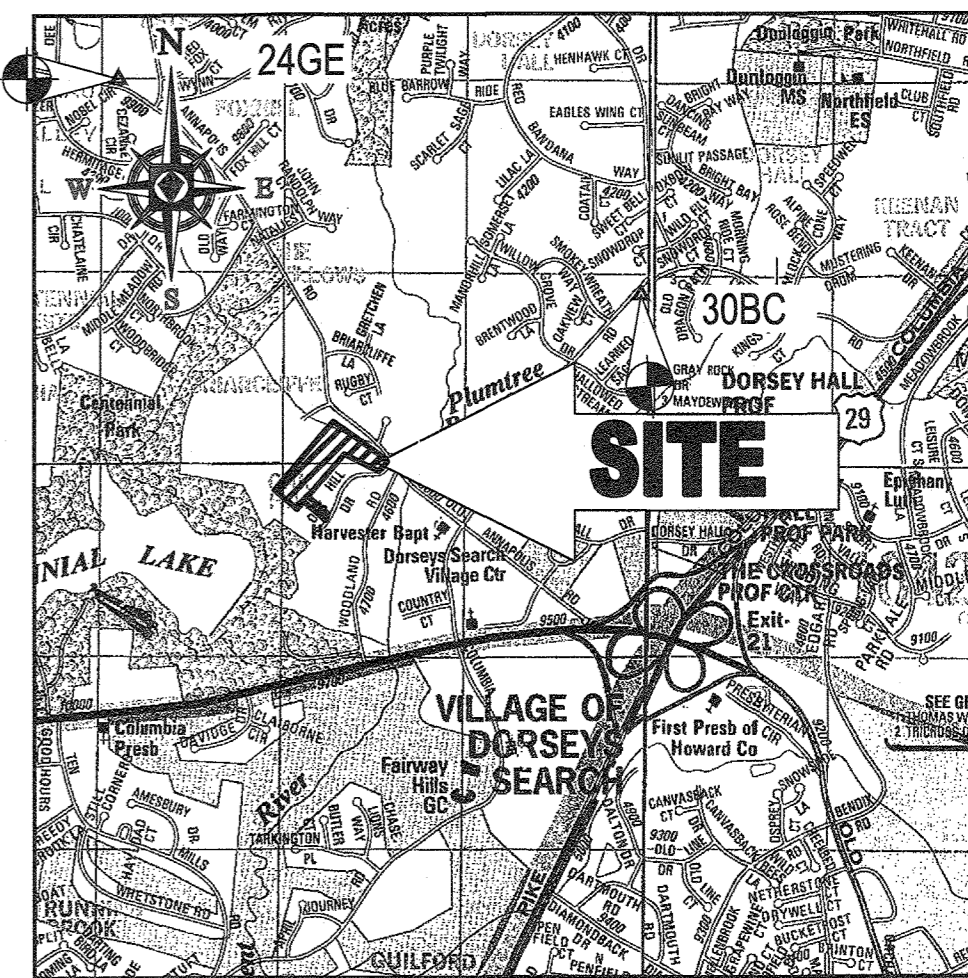
SITE DEVELOPMENT PLAN

FOR OAK HILL SUBDIVISION

BUILDABLE LOTS 1 THRU 6

LOCATION OF SITE

OAK HILL DRIVE
ELLCOTT CITY, MD
MAP 30, GRID 3, PARCELS 368 (LOT 16) & 321
2ND ELECTION DISTRICT, ZONED: R-20
HOWARD COUNTY



VICINITY MAP
COPYRIGHT ADC THE MAP PEOPLE
PERMIT USE NO. 0802015-5
SCALE: 1"=200'
ADC MAP COORDINATES: 4935-E2

LOT NO.	LOT AREA	PIPESTEM AREA	MINIMUM LOT SIZE
1	17,816SF	835 SF	16,983 SF
2	17,288 SF	1,162 SF	16,162 SF
3	17,520 SF	1,456 SF	16,064 SF
4	24,734 SF	2,170 SF	22,564 SF
5	21,604 SF	1,877 SF	19,827 SF
6	18,345 SF	809 SF	17,536 SF

EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
---	ONSITE PROPERTY LINE / R.O.W. LINE	---
---	NEIGHBORING PROPERTY LINE / INTERIOR PARCEL LINE	---
---	EASEMENT LINE	---
---	SETBACK LINE	---
---	CURB AND GUTTER	---
---	CONCRETE CURB & GUTTER	---
---	UTILITY POLE WITH LIGHT	---
---	POLE LIGHT	---
---	TRAFFIC LIGHT	---
---	UTILITY POLE	---
---	TYPICAL LIGHT	---
---	ACORN LIGHT	---
---	TYPICAL SIGN	---
---	CONTOUR LINE	---
---	SANITARY SEWER LATERAL	---
---	UNDERGROUND WATER LINE	---
---	UNDERGROUND ELECTRIC LINE	---
---	UNDERGROUND GAS LINE	---
---	OVERHEAD WIRE	---
---	UNDERGROUND TELEPHONE LINE	---
---	UNDERGROUND CABLE LINE	---
---	STORM SEWER	---
---	SANITARY SEWER MAN	---
---	HYDRANT	---
---	SANITARY MANHOLE	---
---	STORM MANHOLE	---
---	WATER METER	---
---	WATER VALVE	---
---	YARD INLET	---
---	CURB INLET	---
---	CLEAN OUT	---
---	ELECTRIC MANHOLE	---
---	TELEPHONE MANHOLE	---
---	ELECTRIC BOX	---
---	BENCHMARK	---
---	BORING	---
---	IMPERVIOUS AREA	---
---	TREELINE	---
---	TO BE REMOVED	---
---	OVERFLOW INLET	---
---	FLOW THROUGH INLET	---
---	SANITARY INLET	---
---	CURB INLET	---
---	LIMIT OF FIELD RUN SURVEY	---
---	POINT-OF-INVESTIGATION	---

	TOTAL
TOTAL PROJECT AREA (GROSS)	4.47 AC.
AREA OF WETLANDS AND BUFFER	2.16 AC.
AREA OF 100-YR FLOODPLAIN	1.68 AC.
AREA OF FOREST	1.47 AC.
AREA OF STEEP SLOPES (15% TO 25%)	0.78 AC.
AREA OF STEEP SLOPES (25% OR GREATER)	0.28 AC.
HIGHLY ERODIBLE SOILS (K< 0.35)	1.74 AC.
NET TRACT AREA	2.59 AC.
LIMIT OF DISTURBED AREA	1.15 AC.
PRESENT ZONING DESIGNATION	R-20
PROPOSED USE:	RESIDENTIAL
IMPERVIOUS COVER	0.44 AC.

DESCRIPTION	TOTAL SIZE
OPEN SPACE REQUIRED (20% OF GROSS AREA)	0.89 AC. (0.20 X 4.47 AC.)
TOTAL AREA OF OPEN SPACE PROVIDED	1.34 AC.
TOTAL AREA OF NON-CREDITED OPEN SPACE PROVIDED	0.12 AC.
TOTAL AREA OF CREDITED OPEN SPACE PROVIDED	1.22 AC.

LOT/PARCEL NUMBER	FACILITY NAME & NUMBER	PRACTICE TYPE (QUANTITY)	PUBLIC	PRIVATE	HOA MAINTENANCE	MSC.
1	DRYWELL #1A-10	MDE M-5		X		HOME OWNER MAINTENANCE
2	DRYWELL #2A-20	MDE M-5		X		HOME OWNER MAINTENANCE
3	DRYWELL #3A-30	MDE M-5		X		HOME OWNER MAINTENANCE
4	DRYWELL #4A-40	MDE M-5		X		HOME OWNER MAINTENANCE
5	DRYWELL #5A-50	MDE M-5		X		HOME OWNER MAINTENANCE
6	DRYWELL #6A-60	MDE M-5		X		HOME OWNER MAINTENANCE

LOT	ADDRESS	FACILITY TYPE & NUMBER
1	8505 Abby Lane	DRYWELLS #1A-10 (MDE M-5)
2	8509 Abby Lane	DRYWELLS #2A-20 (MDE M-5)
3	8513 Abby Lane	DRYWELLS #3A-30 (MDE M-5)
4	8517 Abby Lane	DRYWELLS #4A-40 (MDE M-5)
5	8521 Abby Lane	DRYWELLS #5A-50 (MDE M-5)
6	8525 Abby Lane	DRYWELLS #6A-60 (MDE M-5)

LOT TYPE	LOTS	MINIMUM LOT SIZE	MIN. LOT WIDTH AT FRONT BRL
SINGLE FAMILY DETACHED	1-6	14,000 SQUARE FEET	50'

UTILITIES:

THE FOLLOWING COMPANIES WERE NOTIFIED BY MISS UTILITY OF DELMARVA (1-800-282-6555) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.

UTILITY COMPANY	PHONE NUMBER	STATUS	COMMENTS
BGE ELECTRIC-USIC	(800) 778-8140	MARKED	PLANS NOT PROVIDED
BGE GAS-USIC	(800) 778-8140	MARKED	PLANS NOT PROVIDED
COLONIAL PIPELINE	(878) 752-2403	NO RESPONSE	NOT SHOWN
HWD CO GOVT/KCJ	(410) 785-4900	NO RESPONSE	NOT SHOWN
HOWARD COUNTY WATERSSEWER COMCAST/UTILITIES	(410) 313-4882	NO RESPONSE	NOT SHOWN
COMCAST-FIBER/UTILITIES	(410) 536-0070	CLEAR	N/A
VERIZON	(410) 536-0070	CLEAR	TELECOM BOXES OBSERVED

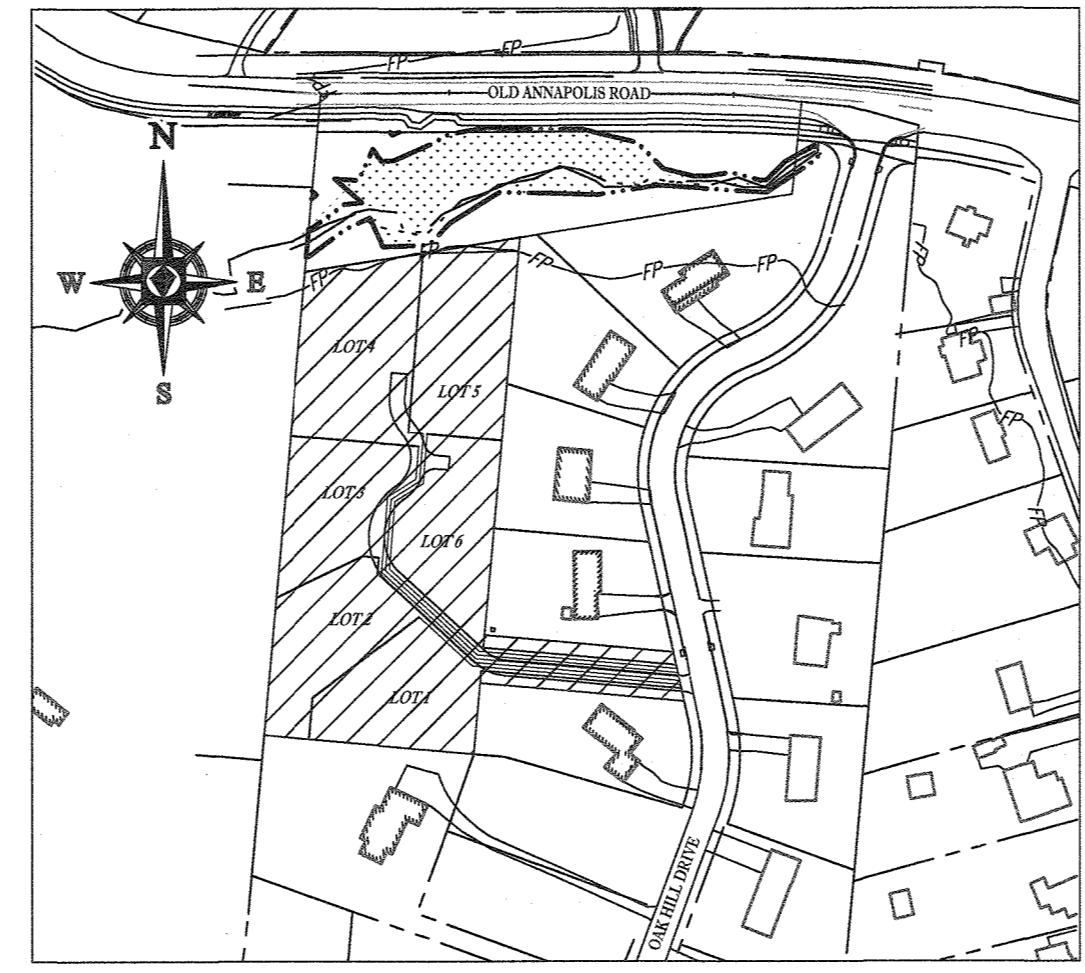
LOT No.	OWNER	PURPOSE	AREA
7	HOME OWNERS ASSOCIATION	OPEN SPACE*	2,745 SF 0.06 AC.
8	HOME OWNERS ASSOCIATION	OPEN SPACE*	2,592 SF 0.06 AC.
9	HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS	OPEN SPACE*	53,147 SF 1.22 AC.

*FOR THE CREATION OF FOREST CONSERVATION EASEMENTS, THE PROTECTION OF STEEP SLOPES, STREAMS, WETLAND, STORMWATER MANAGEMENT, AND THEIR ASSOCIATED BUFFERS, AND THE CREATION OF RECREATIONAL OPEN SPACE.

SINGLE FAMILY ATTACHED PARKING ANALYSIS

NUMBER OF SINGLE DETACHED LOTS FOR THIS SDP = 6
REQUIRED PARKING: 2.0 SPACES PER UNIT = 12 (PER SECTION 133.2.2(A) OF THE ZONING REGULATIONS) 0.5 SPACES PER UNIT = 3 (PER SECTION 133.0 OF THE ZONING REGULATIONS FOR VISITOR PARKING) TOTAL REQUIRED SPACES = 15 SPACES
PARKING PROVIDED: 4 SPACES/UNIT (2 GARAGE & 2 DRIVEWAY SPACES) = 24 SPACES

APPROVED: DEPARTMENT OF PLANNING AND ZONING
DATE: 1/27/19
DATE: 1/21/19
DATE: 12-6-19



LOCATION MAP
SCALE: 1"=200'

GEODETIC SURVEY CONTROL - 24GE CONC. MON. ELEV. 445.609 N. 576.706.500 E. 1,352,699.732
GEODETIC SURVEY CONTROL - 30BC CONC. MON. ELEV. 366.732 N. 576.751.286 E. 1,351,933.292

SHEET TITLE	SHEET NUMBER
COVER SHEET	1
GENERAL NOTES	2
HOUSE TYPES	3
SITE DEVELOPMENT PLAN AND SOILS MAP	4
EROSION AND SEDIMENT CONTROL PLAN	5
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	6-7
STORMWATER MANAGEMENT DRAINAGE AREA MAP	8
STORMWATER MANAGEMENT NOTES AND DETAILS	9

GENERAL NOTES (cont.)

- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- FOR FLAG OR 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.
- THIS SUBDIVISION IS SUBJECT TO SECTION 18.1228 OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF, EFFECTIVE WITH DEVELOPER AGREEMENT #F-17-067 WAS FILED AND ACCEPTED.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-99.
- A HOMEOWNERS ASSOCIATION HAS BEEN ESTABLISHED FOR THE RESIDENTS OF THIS SUBDIVISION AND PROTECTIVE COVENANTS AND COVENANTS GOVERNING THE MAINTENANCE OF THE COMMUNITY OWNED OPEN SPACE LOTS WAS RECORDED IN THE LAND RECORDS OF HOWARD COUNTY SIMULTANEOUS WITH THE RECORDING OF THE SUBDIVISION PLAN LIBER: 16329 FOLIO 460.
- THE SHARED DRIVEWAY ACCESS AND MAINTENANCE OBLIGATION AGREEMENTS FOR THE 16 DRIVEWAYS WHICH SERVE LOTS 1 THRU 6 WILL BE RECORDED IN THE LAND RECORDS OF HOWARD COUNTY SIMULTANEOUSLY WITH THE RECORDATION OF THIS SUBDIVISION PLAN F-17-067.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS ADOPTED BY "G" ORDINANCES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1969). A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- WATER METERS ARE TO BE PROVIDED IN OUTSIDE VAULTS.
- 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 (1/4 GAUGE) INSERTED INTO A 2 1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (1/2 GAUGE) - 9' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS, INC., DATED JANUARY, 2017, AND WAS APPROVED ON 6/13/17.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY THAT NEEDS TO BE INSTALLED AT THE INTERSECTION OF THE PRIVATE ROAD WITH THE PUBLIC ROAD SHALL BE FABRICATED AND INSTALLED BY THE CONTRACTOR AT HIS OWN EXPENSE. HIGHWAYS AT THE DEVELOPER'S/OWNERS EXPENSE. CONTACT HOARD COUNTY TRAFFIC DIVISION AT 410-313-2433 FOR DETAILS AND COST.

GENERAL NOTES (cont.)

- FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION HAVE BEEN FULFILLED UNDER F-17-067.
- LANDSCAPING FOR THIS SUBDIVISION IN ACCORDANCE WITH THIS CERTIFIED LANDSCAPE PLAN AND IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL, HAS BEEN FULFILLED UNDER F-17-067.
- FINANCIAL SURETY FOR THE REQUIRED 19 STREET TREES S POSTED WITH THE DEVELOPERS AGREEMENT (F-17-067) COST ESTIMATE UNDER THE FINAL PLAN SUBMISSION IN THE AMOUNT OF \$5,700.
- SMALLER LOT SIZES ARE BEING USED INSTEAD OF THE MINIMUM 18,000 S.F. MINIMUM LOT SIZE SINCE EXTENSIVE ENVIRONMENTAL FEATURES EXIST ON THE PROPERTY SEVERELY RESTRICTING WHERE LOTS AND HOUSES MAY BE PLACED. BECAUSE OF THESE EXTENSIVE ENVIRONMENTAL FEATURES, COUPLED WITH UNIQUE SHAPE OF THE PARCELS, TOPOGRAPHY, LOCATIONS OF THE SANITARY MAIN, AND THE NEED TO PROVIDE STORMWATER MANAGEMENT IN ACCORDANCE WITH THE LATEST MDC AND HOWARD COUNTY REGULATIONS, IT IS NOT POSSIBLE TO MAINTAIN 18,000 S.F. LOT SIZES AND STILL MAINTAIN REASONABLE DEVELOPMENT OF THE PROPERTY. AN ALTERNATIVE COMPLIANCE (WP-11-112) HAS BEEN APPROVED TO USE THE MINIMUM 14,000 SQUARE FEET.
- GEOTECHNICAL REPORT PROVIDED BY HULLIS-CARNES ENGINEERING ASSOCIATES, INC. ENTITLED "OAK HILL SWM" - PROJECT NUMBER 16220, DATED JULY 21, 2017.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- SHC ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.
- FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6.05.
- THE SUBJECT PROPERTY IS ZONED R-20 PER THE 10/6/2013 COMPREHENSIVE ZONING PLAN.
- IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 18 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 OR REAR YARD SETBACK (APPLIES FOR RESIDENTIAL SDP'S).
- DISTURBANCE TO ENVIRONMENTALLY SENSITIVE AREAS SHOWN HEREON WERE APPROVED UNDER F-17-067.
- REFER TO F-17-067 FOR IMPROVEMENTS ALONG OLD ANNAPOLIS ROAD.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON JULY 18, 2016 AT 6:00 PM IN THE ELLICOTT ROOM OF THE HOWARD COUNTY LIBRARY SYSTEM MILLER BRANCH, 8421 FREDERICK ROAD, ELLICOTT CITY, MD 21042. FOR THE REDEVELOPMENT OF PROPERTY DESCRIBED AS OAK HILL SUBDIVISION, TAX MAP 30, PARCELS 3 & 321, WHICH IS LOCATED AT 8505 OAK HILL DRIVE, ELLICOTT CITY, MARYLAND, 21042.

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY SUPPLEMENTARY U.S.M.A. STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT 410-513-6801 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-251-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- EXISTING TOPOGRAPHIC CONTOURS BASED ON BOUNDARY & TOPOGRAPHIC SURVEY PERFORMED BY CONTROL POINT ASSOCIATES, INC. ON 5/5/2016.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HORIZONTAL AND VERTICAL CONTROL DATUM ARE BASED ON HOWARD COUNTY MONUMENT NOS. 24GE AND 30BC WHICH WERE USED FOR THIS PROJECT.
- HOWARD COUNTY MONUMENT NO. 24GE ELEV. = 445.609
HOWARD COUNTY MONUMENT NO. 30BC ELEV. = 366.732
- WATER IS PUBLIC (CONTRACT NO. 24-5002-D)
- SEWER IS PUBLIC (CONTRACT NO. 24-5002-D)
- STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE 2010 MDC CHAPTER 5 REGULATIONS AND THE LATEST HOWARD COUNTY DESIGN MANUAL, VOL. 1, CHAPTER 5 ADOPTED ON OR AROUND MAY 4, 2010. GROUNDWATER RECHARGE VOLUMES WILL BE PRESENT THROUGH THE USE OF STONE RESERVOIRS LOCATED BENEATH THE VARIOUS ESU FACILITIES. THE REQUIRED ESU VOLUMES WILL BE PROVIDED BY ESD PRACTICES. OVERBANK FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUMES ARE NOT REQUIRED FOR THIS SITE. FACILITIES TREATING AREAS WITHIN PUBLIC ROW WILL BE PLACED IN EASEMENTS AND WILL BE MAINTAINED BY HOA. HOWARD COUNTY WILL MAINTAIN PIPES AND PROPERTY OWNERSHOA WILL MAINTAIN FACILITY SURFACES. A BIO-SWALE AND TWO (2) MICRO BIORETENTION FACILITIES HAVE BEEN PROVIDED PER DEVELOPERS AGREEMENT AND DRYWELLS PER DECLARATION OF COVENANTS EXECUTED UNDER F-17-067.
- EXISTING UTILITIES ARE BASED ON FIELD RUN SURVEY PERFORMED BY CONTROL POINT ASSOCIATES, INC. PREPARED ON 5/5/2016.
- A FLOOD PLAN STUDY WAS COMPLETED BY FISHER, COLLINS, INC. ON 10/22/2012, AND APPROVED ON MARCH 14th, 2013. FLOODPLAIN DOES EXIST ON THIS SITE. PROPOSED IMPROVEMENTS DO NOT IMPACT EX. FLOODPLAIN. BOHLER HAS PREPARED AND SUBMITTED A SUPPLEMENTARY FLOODPLAIN REPORT AND COMPUTATION DATED JULY 17th, 2017, APPROVED ON 7/24/17.
- WETLANDS EXIST ON SITE BASED UPON A WETLAND DELINEATION REPORT BY ECO-SCIENCE PROFESSIONALS, INC. DATED 11/17/14. FIELD WORK WAS PERFORMED ON 4/14/16, APPROVED ON 3/28/17.
- A GROSS AREA OF TRACT = 4.47 AC.
B. AREA OF FLOODPLAIN = 1.68 AC.
C. AREA OF 25% OR GREATER SLOPES = 0.20 AC.
D. NET AREA OF TRACT = 2.59 AC.
- LAND DEDICATED TO HOWARD COUNTY, MARYLAND, FOR PURPOSES OF THE PUBLIC ROAD (0.45 ACRES).
- RELATED DRP FILE NUMBERS ASSOCIATED WITH THIS PROJECT INCLUDE F-78-191, ECP-16-061, 24-5002-D, F-17-067, WP-17-014, ~~WP-17-112~~
- SOILS INFORMATION TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND, ISSUED MAY 2008.
- BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY CONTROL POINT ASSOCIATES, INC. ON 5/5/2016.
- A PORTION (0.20 AC.) OF THE PROPERTY QUALIFIES AS STEEP SLOPES (25% OR GREATER) AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116.B. THIS AREA IS SHOWN ON THE GRADING PLAN AND WILL REMAIN UNDISTURBED EXCEPT FOR ON LOT 4 AS SHOWN ON THE GRADING AND LANDSCAPE PLAN, PHASE 1. (FOR PROPOSED UTILITY LINES)
- THIS PROPERTY IS LOCATED INSIDE OF THE METROPOLITAN DISTRICT.
- NO CEMETERIES EXIST WITHIN THIS SUBDIVISION.
- A FOREST STAND DELINEATION REPORT WAS COMPLETED BY ECO-SCIENCE PROFESSIONALS, INC. ON 10/22/12. FIELD WORK WAS PERFORMED ON 8/20/15 AND 4/16/16. FSD AND FCP APPROVED ON 11/17/16.
- THE FOLLOWING ALTERNATIVE COMPLIANCE HAS BEEN APPROVED (WP-17-014) ON NOVEMBER 17, 2016:
SECTION 16.1205(a)(7) FOREST RETENTION PRIORITIES:
TO ALLOW FOR THE RETENTION OF NINE (9) SPECIMEN TREES 30" IN DIAMETER OR GREATER (34" BLACK OAK, RED OAK, 32" MOCKERNUT HICKORY, 31" RED OAK, RED OAK, 31" BLACK OAK, 31" RED OAK, AND 31" BLACK OAK)
SECTION 16.118(a)(2)(ii) PROTECTION OF WETLAND, STREAMS AND STEEP SLOPES:
STATES THAT GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING, AND NEW STRUCTURES SHALL NOT BE PERMITTED WITHIN ONE HUNDRED FEET OF PERENNIAL STREAM BANK FOR USE II AND IV STREAMS.
APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
A. REMOVAL OF THE NINE (9) SPECIMEN TREES WILL REQUIRE REPLACEMENT MITIGATION AT A RATIO OF TWO (2) LARGER CALIPER TREES SPECIES AT LEAST THREE (3) INCHES DBH FOR EACH SPECIMEN TREE REMOVED (19 TREES TOTAL). THE MITIGATION PLANTING CAN BE PROVIDED AS PART OF THE PERIMETER LANDSCAPING FOR THIS PROJECT. YOU MUST SUBMIT A SUPPLEMENTAL PLAN WITH YOUR FINAL SUBDIVISION PLAN FOR THIS PROPERTY THAT SHOWS HOW YOU PLAN TO ADDRESS THIS ALTERNATIVE FOREST CONSERVATION / LANDSCAPE MITIGATION.
B. ALL SPECIMEN TREES EXCEPT SPECIMEN TREE "5" MUST BE PROTECTED DURING CONSTRUCTION. A REGISTERED ARBORIST MUST INSPECT THE TREES AND IMPLEMENT RECOMMENDATIONS FOR PROFESSIONAL PROTECTION PRIOR TO ANY PRELIMINARY GRADING. PROTECTION MUST BE PERFORMED BY A MARYLAND LICENSED TREE EXPERT. TREE PROTECTION FENCING MUST BE INSTALLED AROUND THE ENTIRE PERIMETER OF EACH SPECIMEN TREE TO THE GREATEST EXTENT POSSIBLE TO PREVENT ROOT AND FOLIAGE DAMAGE DURING CONSTRUCTION. ON LOT 4 AS SHOWN ON THE GRADING AND LANDSCAPE PLAN, PHASE 1. IN ORDER TO MINIMIZE ROOT DAMAGE.
C. SUBMISSION OF A FINAL PLAN APPLICATION, INCLUDING A FINAL SUBDIVISION PLAN AND A SUPPLEMENTAL PLAN.
D. THE PROPOSED DRIVEWAY TO SERVE NEW LOTS 2 THROUGH 7 SHALL COMPLY WITH SECTION 16.120(b)(iv) OF THE HOWARD COUNTY SUBDIVISION REGULATIONS. THE DRIVEWAYS FOR PIPESTEM LOTS SHALL BE LOCATED AT LEAST TEN FEET FROM THE PROJECT BOUNDARY TO PROVIDE SPACE FOR REQUIRED PERIMETER LANDSCAPING TO BUFFER THE ADJACENT PROPERTY, WHERE A TEN FOOT BUFFER IS NOT POSSIBLE DUE TO THE EXISTING PARCELS CONFIGURATION, DRAINAGE, OR EASEMENT CONSTRAINTS, OR IS UNDESIRABLE BECAUSE OF THE FUTURE SHARING OF THE USE-IN-COMMON DRIVEWAY UNDER SUBSECTION (c)(iv) OF THIS SECTION. THE DEPARTMENT OF PLANNING AND ZONING MAY APPROVE A FIVE FOOT DRIVEWAY BUFFER IN SUCH INSTANCES. A HERD, SOLID FENCE, WALL, OR TYPE OF LANDSCAPE EDGE IS REQUIRED, EXCEPT IN THE FRONT SETBACK FROM PUBLIC ROAD, WHERE A SOLID SCREEN WOULD BLOCK SIGHT DISTANCE.
E. ENCROACHMENT INTO THE STREAM BUFFER MAY NOT EXCEED THE 0.13 ACRES (6,542 SQUARE FOOT) AREA AS SHOWN ON THE ALTERNATIVE COMPLIANCE EXHIBIT SUBMITTED WITH YOUR ALTERNATIVE COMPLIANCE PROPOSAL.
F. ANY DISTURBANCES WITHIN THE STREAM BUFFER SHALL BE THE MINIMUM DISTURBANCE NECESSARY TO AFFORD RELIEF.
G. ANY DISTURBED AREA WITHIN THE STREAM BUFFER SHALL BE RETURNED TO ITS ORIGINAL CONDITION TO THE GREATEST EXTENT POSSIBLE. THIS INCLUDES, BUT NOT LIMITED TO, REPLANTING AT THE SAME DENSITY AND WITH SIMILAR VEGETATION AS EXISTED PRIOR TO THE DISTURBANCE.
10/24/17:
22. THE FOLLOWING ALTERNATIVE COMPLIANCE WAS APPROVED (WP-17-112) ON ~~4/24/2017~~
SECTION 16.115(a)(2):
APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1. THE PROPOSED SINGLE FAMILY HOUSES ON LOTS 4 AND 5 MUST REMAIN COMPLETELY OUT OF THE 35 FOOT ENVIRONMENTAL SETBACK FROM THE STREAM BUFFER.
2. COMPLIANCE WITH APPROVAL CONDITIONS 1 THROUGH 4 AS CITED IN THE PREVIOUS APPROVAL LETTER DATED AUGUST 25, 2017. ~~FOR WP-17-114~~
DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
A. WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)
B. SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1 1/2" MINIMUM)
C. GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45' TURNING RADIUS
D. STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (1/25 TONS)
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

OWNER/DEVELOPER: EVG BREWERS CROSSING LLC
500 VIRGINIA AVE SUITE 62
TOWSON, MD 21286
CONTACT: ERIC GUDEMAN
PHONE: 717-819-2626

TAX MAP: 30 GRID: 3 ZONED: R-20
PARCELS: 368 (LOT 16) & 321
2ND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE NO.: F-78-191, ECP-16-061, 24-5002-D, F-17-067, WP-17-014, WP-14-11
PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, 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. 40808, EXPIRATION DATE 7/3/2021



PREPARED BY
BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
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Fax: (410) 821-7987
www.BohlerEngineering.com
CONTACT: BRANDON R. ROWE, P.E.

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NORTH VIRGINIA
CENTRAL VIRGINIA
THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO EXCAVATE THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CA (WV 1-800-245-6848) (PA 1-800-242-1777) (DC 1-800-257-7777) (VA 1-800-962-7070) (MD 1-800-257-7777) (DE 1-800-262-9999)

REV	DATE	COMMENT	BY

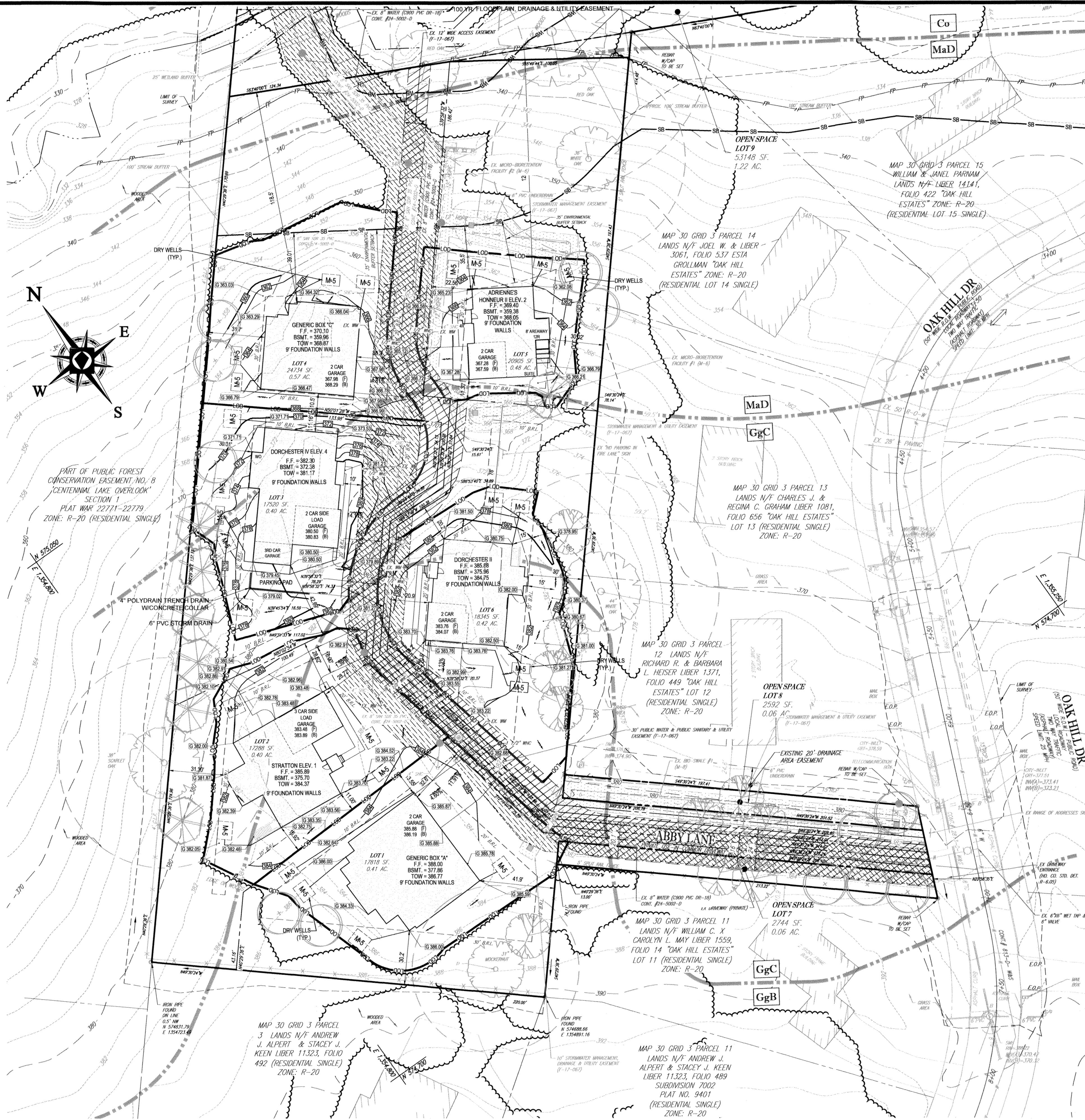
B.P. ROWE
PROFESSIONAL ENGINEER
MARYLAND LICENSE NO. 40808

PROJECT No: MD182069
DRAWN BY: CLF
CHECKED BY: BR
DATE: 8/29/19
SCALE: AS SHOWN
CAD I.D.: SDP-3

SITE DEVELOPMENT PLAN
FOR
OAK HILL SUBDIVISION
SINGLE FAMILY DETACH UNITS
BUILDABLE LOTS 1 - 6 AND OPEN SPACE LOTS 7-9
PLAT NO. F-17-067
LOCATION OF SITE
8505+8507 ABBY LANE
ELLIOTT CITY, MD
MAP 30, GRID 3, PARCELS 368
(LOT 16) & 321
2ND ELEC. DISTRICT, ZONED: R-20
HOWARD COUNTY

BOHLER ENGINEERING
901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 821-7900
Fax: (410) 821-7987
MD@BohlerEng.com

B.P. ROWE
PRO



SOILS TABLE

SOILS NAME	SOILS DESCRIPTION	HYDROLOGIC SOILS GROUP	HIGHLY ERODIBLE SOIL	HYDRIC SOIL	K FACTOR	AREA - AC.
Co	CODORUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT SLOPES	AD	NO	YES	0.37	1.63
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	AD	NO	NO	0.28	0.88
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.28	0.91
GgB	GLENVILLE-CODORUS SILT LOAM, 0 TO 8 PERCENT SLOPES	AD	YES	NO	0.43	0.09
MaC	MANOR SILT LOAM, 8 TO 15 PERCENT SLOPES	AD	NO	NO	0.28	0.03
MaD	MANOR SILT LOAM, 15 TO 25 PERCENT SLOPES	B	YES	NO	0.28	0.94

SPECIMEN TREE TABLE

KEY	SPECIES NAME	SIZE	CONDITION	TBR (Y/N)	ROOT ZONE RADIUS
D	MOCKERNUT	31"	GOOD	N	47
F	SCARLET OAK	38"	FAIRLY GOOD	N	57
Q	RED OAK	37"	FAIR	N	56
R	RED OAK	60"	POOR	N	90
S	TULIP POPLAR	30"	GOOD	N	45
T	WHITE OAK	36"	FAIR	N	54
X	WHITE OAK	44"	GOOD	N	66
2A	TULIP POPLAR	30"	FAIR	N	45

LEGEND

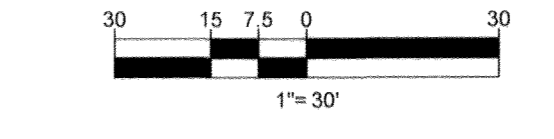
- PROPERTY LINE
- WETLAND BUFFER LIMITS
- STREAM BUFFER LIMITS
- LIMIT OF DISTURBANCE
- EX CONTOUR
- PROP. CONTOUR
- SOIL LIMIT
- PUBLIC SEWER, UTILITY & WATER EASEMENT
- PRIVATE USE-IN-COMMON ACCESS EASEMENT
- PRIVATE STORMWATER MANAGEMENT & UTILITY EASEMENT
- PRIVATE USE-IN-COMMON ACCESS EASEMENT
- PUBLIC SEWER, UTILITY & WATER EASEMENT
- PRIVATE STORMWATER MANAGEMENT & UTILITY EASEMENT
- SPECIMEN TREE (TO REMAIN)

SHC TABLE

LOT	FF ELEV.	BASEMENT TELV.	INV. @ MAN	SHC LENGTH TO EASEMENT (FT)	SHC SLOPE WITHIN EASEMENT	INVERT @ EASEMENT	SHC SLOPE WITHIN LOT	MAX. SHC LENGTH (FT)	2.50 FT BELOW BASEMENT	MIN. BASEMENT ELEV. (MBE)	CONNECTION TYPE
1	387.88	377.74	372.85	15.00	2.0%	373.15	2.0%	91.00	2.50	377.47	STD SHC
2	385.89	374.49	369.50	10.00	2.0%	369.70	2.0%	88.00	2.50	373.96	STD SHC
3	380.19	372.38	358.46	10.00	2.0%	358.66	2.0%	63.00	2.50	362.42	DROP TYPE A
4	370.10	359.96	351.32	10.00	2.0%	351.52	2.0%	63.00	2.50	355.28	DROP TYPE A
5	369.40	359.38	350.80	20.00	2.0%	351.00	2.0%	68.00	2.50	354.86	DROP TYPE A
6	365.88	375.74	364.33	20.00	2.0%	364.73	2.0%	68.00	2.50	368.59	DROP TYPE A

PURPOSE NOTE FOR REVISION 3:
 REVISION TO THE SDP TO REFLECT UPDATED FOOTPRINTS ON LOTS 1, 3 & 5 AND UPDATE SWM ON LOT 3 TO ADD AN ADDITIONAL DRYWELL.

NOTE: FOR GENERIC BOX FORMATS, SEE "HOUSE TYPES" ON SHEET 3 OF 9.



SUBDIVISION NAME: OAK HILL SUBDIVISION SECTION/AREA: N/A DEED # 00457 / 00477 & 16883 / 00498	TAX MAP: 30 GRID: 3 PARCEL: R-20 PARCELS: 368 (LOT 16) & 321 2ND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
OWNER/DEVELOPER: WILLIAMSBURG HOMES, LLC 5485 HARPERS FARM ROAD, SUITE 200 COLUMBIA, MD 21044 CONTACT: BRUCE A. HARVEY PHONE: (410) 821-7900	PROFESSIONAL CERTIFICATION I, BRANDON R. ROWE, 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. 49808 EXPIRATION DATE: 7/31/2021

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING
 DATE: 3-24-21

BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
 LAND SURVEYING PROGRAM MANAGEMENT LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN PERMITTING SERVICES TRANSPORTATION SERVICES

NEW YORK
 BOSTON, MA
 NEW JERSEY
 NEW YORK, NY
 PHOENIX, AZ
 RICHMOND, VA
 SOUTH CAROLINA
 SOUTH FLORIDA
 TEXAS
 VIRGINIA

REVISIONS

REV	DATE	COMMENT	BY
1	2/6/20	REVISED GENERIC BOXES	RLB
2	8/14/20	LOT 3 SPECIFIC FOOTPRINT, SIDE LOAD GARAGE, DRYWELL SIZES & LOCATIONS	AVG
3	2/5/21	REV. LOTS 1, 3 & 5 AND SWM LOT 3	RLB

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 811 (TOLL FREE) OR 1-800-245-4848 (PA) 1-800-242-3776 (DC) 1-800-251-7777 (VA) 1-800-552-7001 (MD) 1-800-251-7777 (DE) 1-800-262-8559

PROJECT NO: MD192285
 DRAWN BY: BRR
 CHECKED BY: BRR
 DATE: 8/29/19
 SCALE: 1" = 30'
 CAD I.D.: SSP-2

REVISED SITE DEVELOPMENT PLAN FOR OAK HILL SUBDIVISION
 SINGLE FAMILY DETACH UNITS
 BUILDABLE LOTS 1 - 6 AND OPEN SPACE LOTS 7-9
 PLAT NO. 17-087
 LOCATION OF SITE:
 8505 TO 8517 ABBY LANE
 ELLICOTT CITY, MD
 MAP 30, GRID 3, PARCELS 368 (LOT 16) & 321
 2ND ELEC. DISTRICT, ZONED R-20
 HOWARD COUNTY

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 MD@BohlerEng.com

B.R. ROWE

PROFESSIONAL ENGINEER
 MARYLAND LICENSE NO. 49808

SHEET TITLE:
SITE DEVELOPMENT PLAN AND SOILS MAP
 SHEET NUMBER:
4 OF 9

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION

PURPOSE
TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES
ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION, SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING, SEEDING AND MULCHING, TEMPORARY STABILIZATION, AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY
STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS. PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPARATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH. VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE GROUND. SOIL STABILIZATION PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT
INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUND COVER.
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUND COVER, REESTABLISH FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUND COVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

DEFINITION
ESTABLISHMENT OF VEGETATIVE COVER ON CUT AND FILL SLOPES.

PURPOSE
TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

CONDITIONS WHERE PRACTICE APPLIES
ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

CRITERIA

- INCREMENTAL STABILIZATION - CUT SLOPES**
 1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.
 2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1)
 - a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
 - b. PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
 - c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
 - d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDBED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

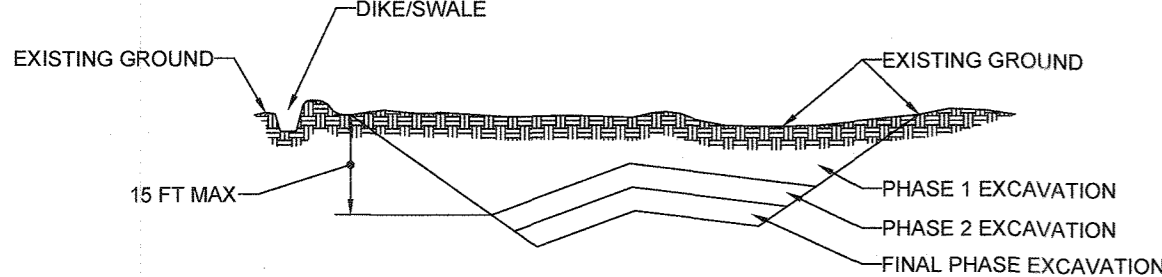


FIGURE B.1: INCREMENTAL STABILIZATION - CUT

CRITERIA

- INCREMENTAL STABILIZATION - FILL SLOPES**
 1. EXCAVATE AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
 2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
 3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
 4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
 - a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
 - b. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
 - c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
 - d. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
 - e. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDBED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

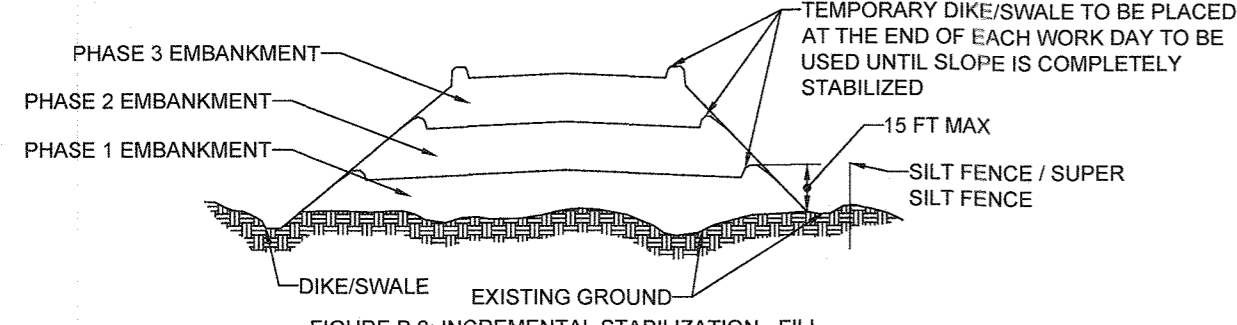


FIGURE B.2: INCREMENTAL STABILIZATION - FILL

B-4-2 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

- SOIL PREPARATION**
 1. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER SHOULD BE RIPPED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 2. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 3. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL, BY DISKING OR OTHER SUITABLE MEANS.
- PERMANENT STABILIZATION**
 - a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM 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 OVER FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE, AN EXCEPTION: IF LOVEGRASS 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.
 - b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN 1/4 INCHES IN DIAMETER TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED 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 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

TOPSOILING

1. 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, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS 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 SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL THAT WOULD INHIBIT PLANT GROWTH.
 - d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CHINDERS, STONES, SLAG, CONCRETE FRAGMENTS, GRAVEL, STICKS, COITS, TRASH, OR OTHER MATERIALS LARGER THAN 1/4 INCHES IN DIAMETER.
 - b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, PISON YRY, THISTLE, OR OTHERS AS SPECIFIED.
 - c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL.

DEVELOPER'S CERTIFICATE

I HEREBY 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 UNDERGONE A TRAINING PROGRAM AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO HEREBY CERTIFY THAT THIS INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

DATE: 11-21-19
DATE: 12-6-19

SIGNATURE OF DEVELOPER: ERIC GUDEMAN
DATE: 11/21/19

ENGINEER'S CERTIFICATE

I HEREBY 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 COUNTY SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: JOHN R. ROWE, P.E.
DATE: 11/21/19

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)		LIME RATE
					N	P2O5	
COOL SEASON GRASSES							
1	ANNUAL RYEGRASS	40	3/1 - 5/15 8/1 - 10/15	0.5"			
2	BARLEY	96	3/1 - 5/15 8/1 - 10/15	1"			
3	OATS	72	3/1 - 5/15 8/1 - 10/15	1"	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)	
4	WHEAT	120	3/1 - 5/15 8/1 - 10/15	1"			
5	CEREAL RYE	112	3/1 - 5/15 8/1 - 11/15	1"			
WARM SEASON GRASSES							
6	FOXTAIL MILLET	30	5/16 - 7/31	0.5"	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)	
7	PEARL MILLET	20	5/16 - 7/31	0.5"			

1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS PER PURE LIVE SEED (PLS); ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY. AS TESTED, ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.
2. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 10% OF THE SEEDING RATE LISTED ABOVE.
3. FOR BARLEY, OATS, AND WHEAT FOR SMALLER SEEDS (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED 10% OF THE SEEDING RATE LISTED ABOVE. FOR OTHER PERMANENT SEEDING MIXES, CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP. UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS.
4. CEREAL RYE HAS ALL OTHER PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATED ABOVE.
5. OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
6. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
7. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

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

- 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 CONDITION OR PURPOSE 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 AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 - c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA 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 PLANTING SUMMARY.
 2. TURFGRASS 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.
 - i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE. FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION 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 HEIGHT.
 - ii. 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 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 HEIGHT.
 - iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE. FOR USE IN DROUGHT PRONE 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 6 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED TO ACHIEVE THE DESIRED MIXTURE.
 - iv. KENTUCKY BLUEGRASS/PERENNIAL RYE: 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 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTE: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			
					N	P2O5	K2O	LIME RATE
9	TALL FESCUE KENTUCKY BLUEGRASS PERENNIAL RYE GRASS	60 40 20	3/1 - 5/15 8/15 - 10/31	1/4" - 1/2"				
5	HARD FESCUE PERENNIAL RYE GRASS FLAT PEA	20 15 10	3/1 - 5/15 8/1 - 10/15	1/4" - 1/2"	45 LB/AC (1.0 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
1	SWITCH GRASS CREEPING REE FESCUE PARTRIDGE PEA	15 4 15	3/1 - 5/15	1/4" - 1/2"				

1. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE. THESE DATES MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS.
2. ESPECIALLY NEAR THE BOUNDARIES OF THE ZONES, WHEN SEEDING TOWARD THE END OF THE LISTED PLANTING DATES, OR WHEN CONDITIONS ARE EXPECTED TO BE LESS THAN OPTIMAL, SELECT AN APPROPRIATE NURSE CROP FROM TABLE B.1. TEMPORARY SEEDING FOR SITE STABILIZATION AND PLANT TOGETHER WITH THE PERMANENT SEEDING MIX.
3. WHEN PLANTED DURING THE GROWING SEASON, MOST OF THESE MATERIALS MUST BE PURCHASED AND KEPT IN A DORMANT CONDITION UNTIL PLANTING. BARE-ROOT GRASSES ARE THE EXCEPTION—THEY MAY BE SUPPLIED AS GROWING (NON-DORMANT) PLANTS.
4. ADDITIONAL PLANTING DATES FOR THE LOWER COASTAL PLAIN, DEPENDENT ON ANNUAL RAINFALL AND TEMPERATURE TRENDS, RECOMMEND ADDING A NURSE CROP, AS NOTED ABOVE, IF PLANTING DURING THIS PERIOD.
5. WARM-SEASON GRASSES NEED A SOIL TEMPERATURE OF AT LEAST 50 DEGREES F IN ORDER TO GERMINATE. IF SOIL TEMPERATURES ARE COLDER THAN 50 DEGREES F, OR MOISTURE IS NOT ADEQUATE, THE SEEDS WILL REMAIN DORMANT UNTIL CONDITIONS ARE FAVORABLE. IN GENERAL, PLANTING DURING THE LATTER PORTION OF THIS PERIOD ALLOWS MORE TIME FOR WEED EMERGENCE AND WEED CONTROL PRIOR TO PLANTING.
6. WHEN SELECTING A PLANTING DATE, CONSIDER THE NEED FOR WEED CONTROL VS. THE LIKELIHOOD OF HAVING SUFFICIENT MOISTURE FOR LATER PLANTINGS, ESPECIALLY ON DROUGHTY SITES.
7. ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT.
8. PREVENT FREEZING AND THAWING OF WET SOILS MAY RESULT IN FROST-HEAVING OF MATERIALS PLANTED IN LATE FALL. IF PLANTS HAVE NOT SUFFICIENTLY ROOTED IN PLACE, FROST HEAVING MAY CAUSE PLANTS TO BE UPROOTED AND BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
9. SOIL USUALLY NEEDS 4 TO 6 WEEKS TO BECOME SUFFICIENTLY ROOTED. LARGE CONTAINERED AND BALLED-AND-BURLAPPED STOCK MAY BE PLANTED INTO THE WINTER MONTHS AS LONG AS THE GROUND IS NOT FROZEN AND SOIL MOISTURE IS ADEQUATE.
10. **FOR THE PERIOD 5/1 - 8/14 ADD EITHER FOXTAIL OR PEARL MILLET - 2 LB/AC TO MIX NO. 9, 2.25 LB/AC TO MIX NO. 5

- SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).**
 - a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
 - b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
 - c. STANDARD SIZE SECTIONS OF SOD 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 10 PERCENT OF THE SECTION.
 - d. SOD MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
 - e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
- SOD INSTALLATION**
 - a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - b. LAY THE FIRST ROW OF SOD 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 TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 - c. WHEN PLANTING IN AREAS WITH LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS, ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPAGE ON SLOPES. ENSURE SOIL CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 - d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
 - e. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - f. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - g. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/2 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

B-4-6 STANDARDS AND SPECIFICATIONS FOR SOIL STABILIZATION MATTING

DEFINITION
MATERIAL USED TO TEMPORARILY OR PERMANENTLY STABILIZE CHANNELS OR STEEP SLOPES UNTIL GROUND COVER IS ESTABLISHED.

PURPOSE
TO PROTECT THE SOILS UNTIL VEGETATION IS ESTABLISHED.

CONDITIONS WHERE PRACTICE APPLIES
ON NEWLY SEEDBED SURFACES TO PREVENT THE APPLIED SEED FROM WASHING OUT, IN CHANNELS AND ON STEEP SLOPES WHERE THE FLOW HAS EROSION VELOCITIES OR CONVEYS CLEAR WATER. ON TEMPORARY SWALES, EARTH DIKES, AND PERIMETER DIKE SWALES AS REQUIRED BY THE RESPECTIVE DESIGN STANDARD, AND ON STREAM BANKS WHERE MOVING WATER IS LIKELY TO WASH OUT NEW VEGETATIVE PLANTINGS.

MAINTENANCE
VEGETATION MUST BE ESTABLISHED AND MAINTAINED SO THAT THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

OWNER/DEVELOPER: EVG BREWERS CROSSING LLC
500 VIRGINIA AVE, SUITE G2
TOWSON, MD 21286
CONTACT: ERIC GUDEMAN
PHONE: 717-818-2626

SUBDIVISION NAME: OAK HILL SUBDIVISION
SECTION/AREA: N/A
DEED #
00457 / 00477 & 16883 & 00498

TAX MAP: 30 GRID: 3 ZONED: R-20
PARCELS: 368 (LOT 16) & 321
2ND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE NO.: F-78-181, ECP-16-061,
24-5092-4, F-17-067, WP-17-014, WP-14-11

PROFESSIONAL CERTIFICATION
I, BRADON R. ROWE, 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. 43808. EXPIRATION DATE: 7/31/2021

BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
SUSTAINABLE DESIGN
CONSTRUCTION MANAGEMENT
PERMITTING SERVICES
TRANSPORTATION SERVICES

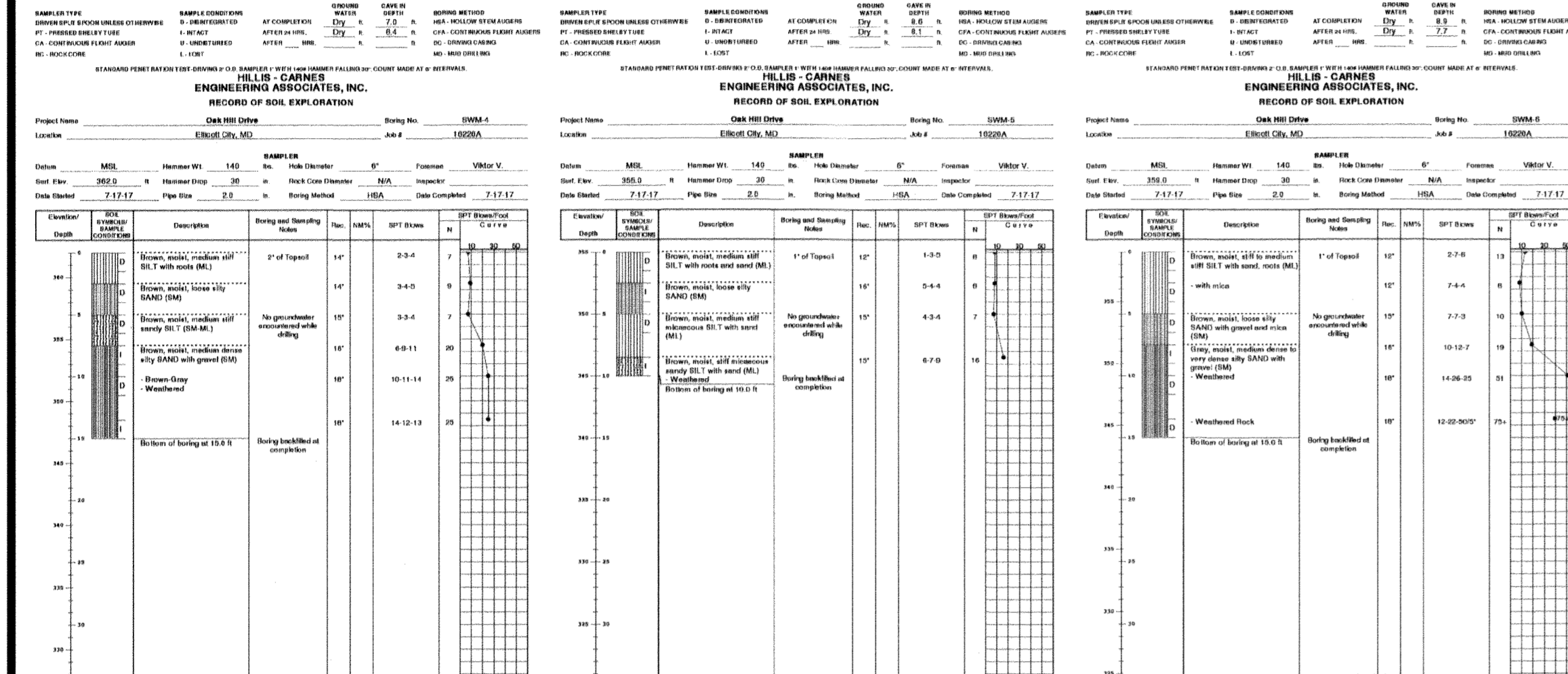
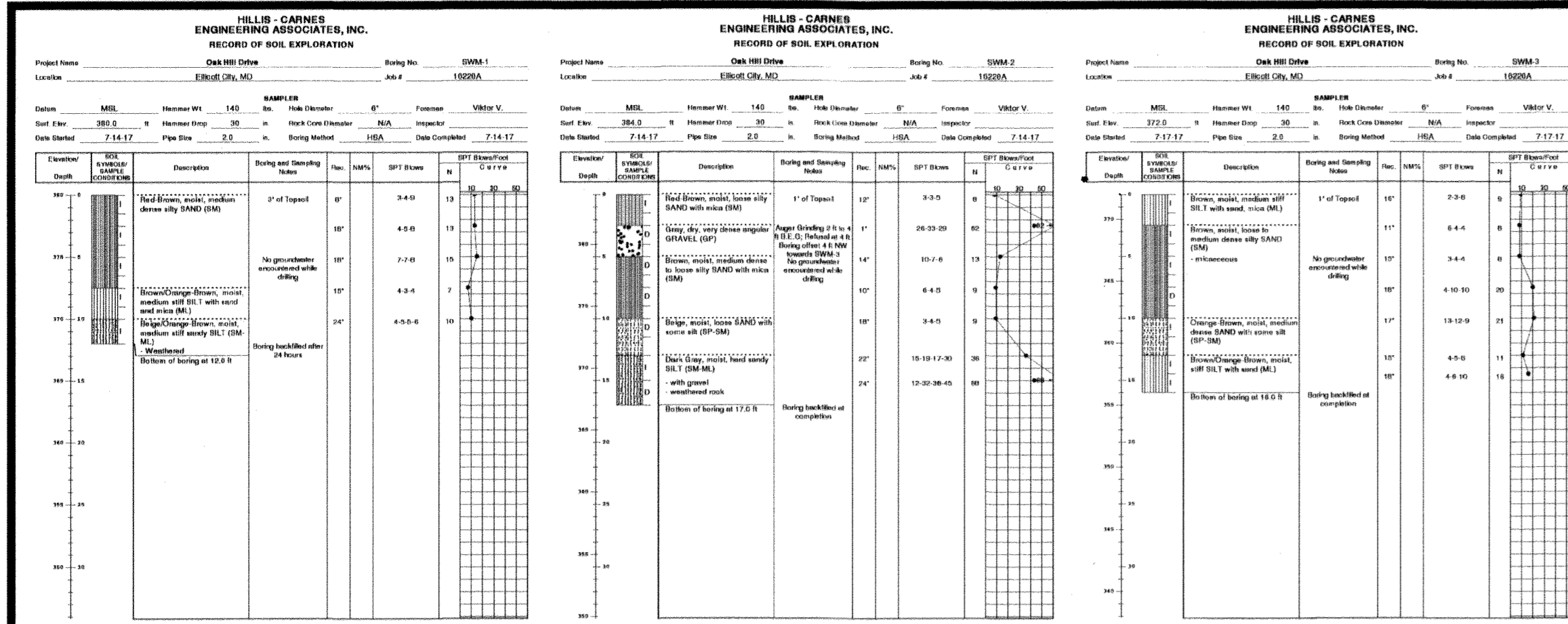
CHARLOTTE, NC
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JACKSONVILLE, FL
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NEW YORK, NY
PHOENIX, AZ
RICHMOND, VA
SOUTH BEND, IN
SOUTH FLOIDA

REV	DATE	COMMENT	BY

BOHLER ENGINEERING

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATES OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL (410) 821-7987
(WV 1-800-245-4849) (PA 1-800-242-1778) (DC 1-800-251-7777) (VA 1-800-562-7021) (MD 1-800-251-7777) (DE 1-800-292-8600)

PROJECT No.: MD182069
DRAWN BY: BR
CHECKED BY: BR
DATE: 8/29/19
SCALE: AS SHOWN
CAD I.D.: ODS-3



DRYWELL SIZE TABLE (LOT 1)

DRYWELL NO.	DRYWELL DIMENSIONS			DRYWELL ESDV STORAGE PROVIDED (CUBIC FOOT)
	A	B	C	
1A	6.75'	10.00'	5.00'	132.33
1B	8.25'	12.00'	5.00'	197.98
1C	8.25'	10.00'	5.00'	164.44
1D	9.50'	10.00'	5.00'	186.05

DRYWELL SIZE TABLE (LOT 2)

DRYWELL NO.	DRYWELL DIMENSIONS			DRYWELL ESDV STORAGE PROVIDED (CUBIC FOOT)
	A	B	C	
2A	8.25'	10.00'	5.00'	163.00
2B	6.50'	12.00'	5.00'	153.74
2C	9.75'	10.00'	5.00'	195.64
2D	8.25'	10.00'	5.00'	163.00

DRYWELL SIZE TABLE (LOT 3)

DRYWELL NO.	DRYWELL DIMENSIONS			DRYWELL ESDV STORAGE PROVIDED (CUBIC FOOT)
	A	B	C	
3A	7.50'	10.00'	5.00'	153.32
3B	9.50'	10.00'	5.00'	185.22
3C	9.50'	10.50'	5.00'	199.01
3D	5.25'	10.00'	5.00'	103.73
3E	10.00'	10.50'	5.00'	204.77

DRYWELL SIZE TABLE (LOT 4)

DRYWELL NO.	DRYWELL DIMENSIONS			DRYWELL ESDV STORAGE PROVIDED (CUBIC FOOT)
	A	B	C	
4A	5.75'	10.00'	5.00'	112.37
4B	7.50'	10.00'	5.00'	145.09
4C	6.50'	10.00'	5.00'	125.95
4D	6.25'	10.00'	5.00'	123.28

DRYWELL SIZE TABLE (LOT 5)

DRYWELL NO.	DRYWELL DIMENSIONS			DRYWELL ESDV STORAGE PROVIDED (CUBIC FOOT)
	A	B	C	
5A	4.50'	10.00'	5.00'	86.44
5B	5.50'	10.00'	5.00'	106.81
5C	4.75'	10.00'	5.00'	93.85
5D	5.25'	10.00'	5.00'	100.84

DRYWELL SIZE TABLE (LOT 6)

DRYWELL NO.	DRYWELL DIMENSIONS			DRYWELL ESDV STORAGE PROVIDED (CUBIC FOOT)
	A	B	C	
6A	6.00'	10.00'	5.00'	118.34
6B	8.00'	10.00'	5.00'	155.59
6C	7.00'	10.00'	5.00'	136.86
6D	5.25'	10.00'	5.00'	104.96

INFILTRATION AND FILTER SYSTEM CONSTRUCTION SPECIFICATIONS

INFILTRATION AND FILTER SYSTEMS EITHER TAKE ADVANTAGE OF EXISTING PERMEABLE SOILS OR CREATE A PERMEABLE MEDIUM SUCH AS SAND FOR WC1, AND REV. IN SOME INSTANCES WHERE PERMEABILITY IS GREAT, THESE FACILITIES MAY BE USED FOR QIP AS WELL. THE MOST COMMON SYSTEMS INCLUDE INFILTRATION TRENCHES, INFILTRATION BASINS, SAND FILTERS, AND ORGANIC FILTERS.

WHEN PROPERLY PLANTED VEGETATION WILL THRIVE AND ENHANCE THE FUNCTIONING OF THESE SYSTEMS. FOR EXAMPLE, PRE-TREATMENT BUFFERS TRAP SEDIMENTS THAT OFTEN ARE BOUND WITH PHOSPHOROUS AND METALS. VEGETATION PLANTED IN THE FACILITY WILL AID IN NUTRIENT UPTAKE AND WATER STORAGE. ADDITIONALLY, PLANT ROOTS WILL PROVIDE ARTERIES FOR STORMWATER TO PERMEATE SOIL FOR GROUNDWATER RECHARGE. FINALLY, SUCCESSFUL PLANTINGS PROVIDE AESTHETIC VALUE AND WILDLIFE HABITAT MAKING THESE FACILITIES MORE DESIRABLE TO THE PUBLIC.

- #### DESIGN CONSTRAINTS:
- PLANTING BUFFER STRIPS OF AT LEAST 20 FEET WILL CAUSE SEDIMENTS TO SETTLE OUT BEFORE REACHING THE FACILITY, THEREBY REDUCING THE POSSIBILITY OF CLOGGING.
 - DETERMINE AREAS THAT WILL BE SATURATED WITH WATER AND WATER TABLE DEPTH SO THAT APPROPRIATE PLANTS MAY BE SELECTED (HYDROLOGY WILL BE SIMILAR TO BIORETENTION FACILITIES. SEE FIGURE A5 AND TABLE A4 FOR PLANTING MATERIAL GUIDANCE).
 - PLANTS KNOWN TO SEND DOWN DEEP TAPROOTS SHOULD BE AVOIDED IN SYSTEMS WHERE FILTER FABRIC IS USED AS PART OF FACILITY DESIGN.
 - TEST SOIL CONDITIONS TO DETERMINE IF SOIL AMENDMENTS ARE NECESSARY.
 - PLANTS SHALL BE LOCATED SO THAT ACCESS IS POSSIBLE FOR STRUCTURE MAINTENANCE.
 - STABILIZE HEAVY FLOW AREAS WITH EROSION CONTROL MATS OR SOIL.
 - TEMPORARILY DIVERT FLOWS FROM SEEDED AREAS UNTIL VEGETATION IS ESTABLISHED.
 - SEE TABLE A5 FOR ADDITIONAL DESIGN CONSIDERATIONS.

BIO-RETENTION SOIL BED CHARACTERISTICS

THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT BIOTIC COMMUNITIES ABOVE AND BELOW GROUND.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME (ENVIRONMENTAL QUALITY RESOURCES (EQR), 1996, ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC. (ETAB), 1993). SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 10 FEET PER DAY (5" HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS (E.G. JOHNSON GRASS, MUGWORT, NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05) SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12 TO 18 LFSTS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVERSED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

TABLE A.3 PLANTING SOIL CHARACTERISTICS

PARAMETER	VALUE
PH RANGE	5.2 TO 7.00
ORGANIC MATTER	1.5 TO 4.0% (BY WEIGHT)
MAGNESIUM	35 LBS. PER ACRE, MINIMUM
PHOSPHORUS (PHOSPHATE - P205)	75 LBS. PER ACRE, MINIMUM
POTASSIUM (POTASH - 1(K2O))	85 LBS. PER ACRE, MINIMUM
SOLUBLE SALTS	500 PPM
CLAY	10 TO 25%
SILT	30 TO 55%
SAND	35 TO 60%

MULCH LAYER

THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING, WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRE-TREATMENT LAYER, TRAPPING THE FINER SEDIMENTS, WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRE-TREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREPPED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.

PLANTING GUIDANCE

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES. BIORETENTION SIMULATES AN UPLAND-SPECIES ECOSYSTEM. THE COMMUNITY SHOULD BE DOMINATED BY TREES, BUT HAVE A DISTINCT COMMUNITY OF UNDERSTORY TREES, SHRUBS AND HERBACEOUS MATERIALS. BY CREATING A DIVERSE, DENSE PLANT COVER, A BIORETENTION FACILITY WILL BE ABLE TO TREAT STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS, DISEASE, DROUGHT, TEMPERATURE, WIND AND EXPOSURE.

THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THERE ARE ESSENTIALLY THREE ZONES WITHIN A BIORETENTION FACILITY (FIGURE A5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANTS ADAPTED TO DRIER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPLES DESCRIBED IN TABLE A5. THE OBJECTIVE IS TO HAVE A SYSTEM, WHICH RESEMBLES A RANDOM, AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLAN, CONSULT ETAB, 1993 OR CLAYTON AND SCHUELER, 1997.

DRYWELL (M-5) ELEVATION CHART

DRYWELL #	LOT #	DIMENSIONS	GROUND ELEV.	TOP ELEV.	BOTTOM ELEV.
1A	1	10' X 6.75' X 5'D	383.83	382.83	377.83
1B	1	12' X 8.25' X 5'D	383.41	382.41	377.41
1C	1	10' X 8.25' X 5'D	384.30	383.30	378.30
1D	1	10' X 9.50' X 5'D	384.12	383.12	378.12
2A	2	10' X 8.25' X 5'D	380.18	379.18	374.18
2B	2	12' X 6.50' X 5'D	383.21	382.21	377.21
2C	2	10' X 9.75' X 5'D	382.13	381.13	376.13
2D	2	10' X 8.25' X 5'D	382.10	381.10	376.10
3A	3	10' X 7.75' X 5'D	374.00	373.00	368.00
3B	3	10' X 9.50' X 5'D	367.18	366.18	361.18
3C	3	10.5' X 9.5' X 5'D	371.12	370.12	365.12
3D	3	10' X 5.25' X 5'D	373.23	372.23	367.23
3E	3	10.5' X 10' X 5'D	376.99	375.99	370.99
4A	4	10' X 5.75' X 5'D	364.71	363.71	358.71
4B	4	10' X 7.50' X 5'D	362.02	361.02	356.02
4C	4	10' X 8.50' X 5'D	363.99	362.99	357.99
4D	4	10' X 6.25' X 5'D	363.05	362.05	357.05
5A	5	10' X 7.75' X 5'D	361.25	360.25	355.25
5B	5	10' X 9.50' X 5'D	359.00	358.00	353.00
5C	5	10.5' X 9.5' X 5'D	355.58	354.58	349.58
5D	5	10' X 5.25' X 5'D	355.60	354.60	349.60
6A	6	10' X 6' X 5'D	382.02	381.02	376.02
6B	6	10' X 8' X 5'D	376.20	375.20	370.20
6C	6	10' X 7' X 5'D	378.27	377.27	372.27
6D	6	10' X 5.25' X 5'D	381.05	380.05	375.05

STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL.

STORMWATER MANAGEMENT PRACTICES

LOT	ESD CODE	TREATMENT
1	M-5	(4) DRYWELLS
2	M-5	(4) DRYWELLS
3	M-5	(5) DRYWELLS
4	M-5	(4) DRYWELLS
5	M-5	(4) DRYWELLS
6	M-5	(4) DRYWELLS

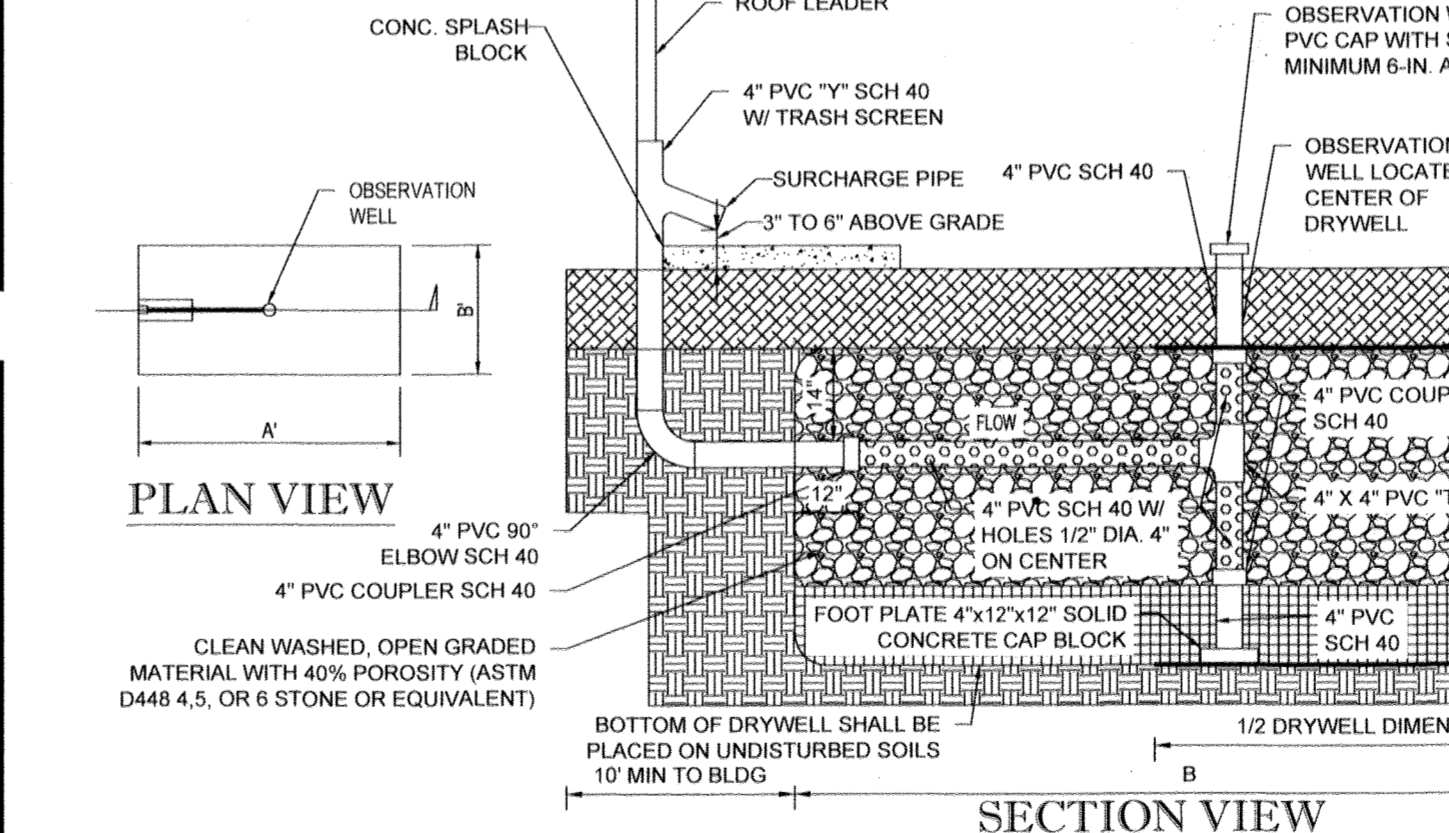
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER DRY WELLS (M-5)

- 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.

DRYWELL CONSTRUCTION SPECIFICATIONS

REGULAR INSPECTIONS SHALL BE DURING THE FOLLOWING STAGES OF CONSTRUCTION:

- DURING EXCAVATION TO SUBGRADE
- DURING PLACEMENT OF BACKFILL AND PERFORATED INLET PIPE AND OBSERVATION WELL
- DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA
- DURING CONSTRUCTION OF THE APPURTENANCE CONVEYANCE
- UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION



- #### NOTES:
- FROM THE DOWNSPOUT TO THE DRYWELL, THE DRAIN PIPE MUST BE AT LEAST 6" BELOW GRADE.
 - NONWOVEN GEOTEXTILE FABRIC TO BE INSTALLED ON TOP AND SIDES ONLY. THESE GEOTEXTILES ARE AVAILABLE IN FINKSBURG @ E&S DISTRIBUTORS 2601 EMORY RD. BLDG B 800-744-9200. ANY EQUIVALENTS.
 - DRYWELL BOTTOM TO BE INSTALLED AS LEVEL AS POSSIBLE AND IN UNDISTURBED SOILS.
 - WHEN TOP OF DRYWELL IS PLACED IN FILL WITHIN 10' OF SLOPES 15% OR GREATER, AN IMPERMEABLE LINER SHALL BE PROVIDED ON THE STEEP SLOPE SIDE OF THE FACILITY AS SHOWN ABOVE.
 - ALL ROOF DRAINS LEADING TO A DRYWELL FACILITY SHALL HAVE A GUTTER DRAIN FILTER.
 - CONSTRUCTION OF A DRYWELL SHALL BE PERFORMED WITH A LIGHTWEIGHT WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION.

DRYWELL DETAIL

NOT TO SCALE

SUBDIVISION NAME: OAK HILL SUBDIVISION	TAX MAP: 30	GRID: 3	ZONED: R-20
SECTION/AREA: N/A	DEED #	PARCELS: 368 (LOT 16) & 321	
00457 / 00477 & 16883 / 00498		2ND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	

PREVIOUS FILE No.: F-78-191, ECP-16-051, 24-9092-D, F-17-067, WP-17-014, WP-14-11

PROFESSIONAL CERTIFICATION: I, BRANDON R. ROWE, 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. 48088. EXPIRATION DATE: 7/30/21

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THE PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND I WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER: [Signature]
DATE: 2/9/2021

DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERCESSION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER: [Signature]
DATE: 2/9/2021

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

HOWARD SCD _____ DATE _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING DATE: 3/24/21

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3-17-21

DIRECTOR OF PLANNING AND ZONING DATE: 3-24-21

SEE STORMWATER MANAGEMENT DRAINAGE AREA MAP (SHEET 8) FOR BORING LOCATIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING DATE: 3/24/21

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 3-17-21

DIRECTOR OF PLANNING AND ZONING DATE: 3-24-21

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CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING DATE: 3/24/21

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BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LANDSCAPE ARCHITECTURE
LAND SURVEYING
PROGRAM MANAGEMENT
PERMITTING SERVICES
TRANSPORTATION SERVICES

OFFICE: WASHINGTON, DC
NEW YORK, NY
PHILADELPHIA, PA
BALTIMORE, MD
BOSTON, MA
NEW JERSEY, NJ
NEW YORK, NY
NORTH CAROLINA, NC
NORTH VIRGINIA, VA
SOUTH CAROLINA, SC
SOUTH FLORIDA, FL

REVISIONS

REV	DATE	COMMENT	BY
1	2/6/20	REVISED GENERIC BOXES	RLB
2	8/14/20	REVISED FOOTPRINTS, SEE LOADS AND DRYWELL SIZES AND SWM	AVG
3	2/5/21	REV. LOTS 1, 3 & 5 AND SWM LOT 3	RLB

BOHLER ENGINEERING

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE: CALL 811 (WWW.811-4848) (PA 1-800-242-1776) (DC 1-800-291-7777) (VA 1-800-652-7071) (MD 1-800-293-7777) (DE 1-800-282-8555)

PROJECT NO.: MD192285
DRAWN BY: BRR
CHECKED BY: BRR
DATE: 8/29/19
SCALE: AS SHOWN
GAD I.D.: SWP-2

REVISIONS: 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, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 3