

SITE DATA

LOCATION: TAX MAP 31, BLOCK 15
 PARCEL: 545
 DEED REFERENCE: L 17720 / F. 89
 1ST ELECTION DISTRICT
 PRESENT ZONING: R-20
 GROSS AREA OF PROJECT: 0.66 AC.
 LIMIT OF DISTURBANCE: 0.44 AC.
 PROPOSED USE OF SITE: RESIDENTIAL (SFD)
 OPEN SPACE REQUIRED: 0.10 AC. (1.67 AC. x 6% = 0.10 AC. (4,356 SF))
 OPEN SPACE PROVIDED: 0.00 AC. (FEE-IN-LIEU) (F-15-002)
 IMPERVIOUS AREA: 0.07 AC.
 GREEN AREA: 0.37 AC.
 AREA OF STREAM/BUFFER: 0.00 AC.
 AREA OF WETLANDS/BUFFER: 0.00 AC.
 AREA OF STEEP SLOPES (25% OR GREATER): 0.00 AC.
 AREA OF MODERATE SLOPES (15% TO 25%): 0.16 AC.
 AREA OF FLOOD PLAIN: 0.00 AC.
 NET PROJECT AREA: 0.66 AC.
 AREA OF EXISTING FOREST COVER: 0.00 AC.
 AREA OF ERODIBLE SOILS: 0.00 AC.

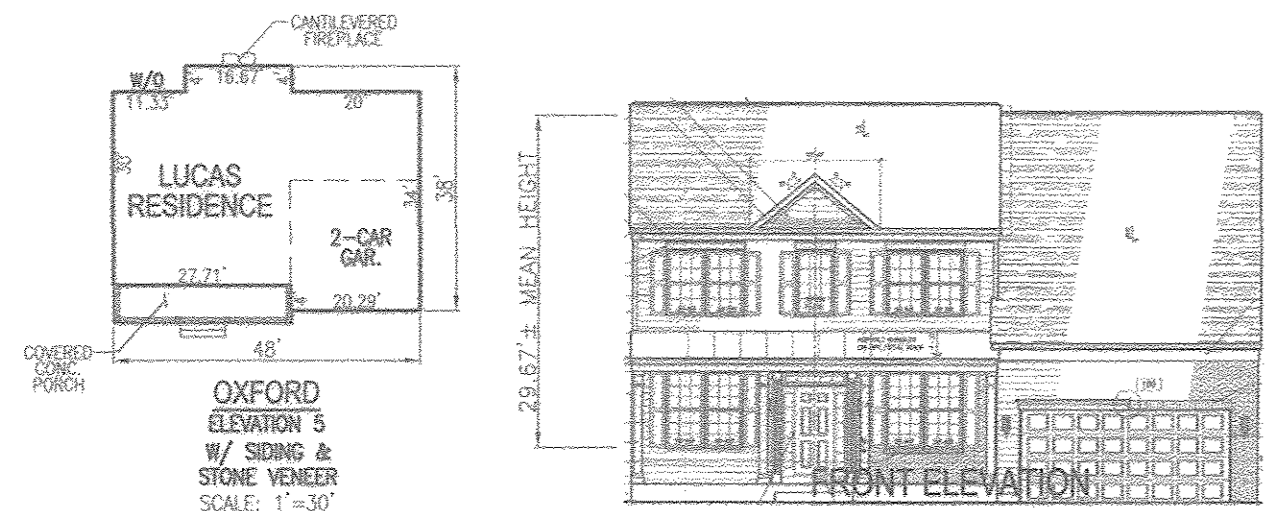
UTILITY NOTE:

ALL WATER CONNECTIONS SHALL BE 1-1/2" WITH 1" OUTSIDE
 METER SETTINGS, UNLESS OTHERWISE NOTED. REFER TO HOWARD
 COUNTY DETAIL W-3-28 OUTSIDE METER SETTINGS.

GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT (410) 313-1880.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
 MISS UTILITY: 1-800-257-7777
 VERIZON TELEPHONE COMPANY: 1-410-954-6281
 HOWARD COUNTY BUREAU OF UTILITIES: 410-313-3866
 AT&T CABLE LOCATION DIVISION: 1-800-393-3553
 B.S&C. CO. CONTRACTOR SERVICES: 410-650-4620
 B.S&C. CO. UNDERROAD DAMAGE CONTROL: 410-397-4620
 STATE HIGHWAY ADMINISTRATION: 410-331-5533
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THIS SITE DEVELOPMENT PLAN IS SUBJECT TO THE FOLLOWING DRP FILES: F-83-17, CONT. 10-3470, CONT. 14-4775-D, ECP-14-048 (APPROVED 03/17/14), F-15-002 (APPROVED 02/15/15) AND W-15-002 (APPROVED 12/08/14).
- IN ACCORDANCE WITH SECTION 16.12(b)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-20 PROJECT WAS SATISFIED BY PAYMENT OF FEE-IN-LIEU UNDER F-15-002.
- THE SUBJECT PROPERTY IS ZONED R-20 IN ACCORDANCE WITH THE 10/6/13 ZONING REGULATIONS, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, EFFECTIVE 10/27/03 PER COUNCIL BILL 75-2003.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM A FIELD RUN TOPOGRAPHICAL SURVEY WITH 2-FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. DATED AUGUST, 2013.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON A FILED RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY ROBERT H. VOGEL ENGINEERING, INC. DATED AUGUST, 2013.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 31EA AND 31EB WERE USED FOR THIS PROJECT.
- THIS PLAN IS SUBJECT TO THE MARCH 1978 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, WATER PATTERN, OR BUILDING AND GRADING PERMITS.
- STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) AND MICRO-BIORETENTION FACILITIES (M-6). THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER. OUTLET STRUCTURES AND PIPES, MULCH, WEEDING, PLANTINGS, RESTORED UNDERDRAINS, FEEDER PIPES, AND ROUTING SOILS REPLACEMENT.
- DECLARATION OF COVENANTS AND MAINTENANCE AGREEMENT FOR LOT 6 WERE PREVIOUSLY RECORDED UNDER F-15-002. ALL STORMWATER MANAGEMENT DEVICES ON LOT 6 ARE TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER.
- SOILS DATA WAS TAKEN FROM USDA WEB SOIL SURVEY WEBSITE.
- EXISTING UTILITIES ARE BASED ON ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER EXTENSION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ANY DAMAGE TO THE COUNTY'S RIGHTS-OF-WAY, PAVING, OR EXISTING UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- SHE ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.
- IN ACCORDANCE WITH SECTION 12.0.0 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS. OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- THE PROPOSED LINES SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 a) WIDTH - 12' (4" SERVING MORE THAN ONE RESIDENCE).
 b) SURFACE - 6" OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1-1/2" MIN.)
 c) GEOMETRY - MAX. 1.5% GRADE, MAX. 10% CHANGING AND MIN. 45-FOOT TURNING RADIUS.
 d) STRUCTURE (GULLIES, DRENCHERS, CABLES OF SUPPORTING 25 GROSS TONS (NO EASING))
 e) DRAINAGE ELEMENTS - 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.
 h) FOR DRIVEWAY ENTRANCE DETAILS REFER TO THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-6-06.
- TRASH AND RECYCLING COLLECTION WILL BE AT TALBOTS LANDING WITHIN 5' OF THE EDGE OF THE COUNTY ROADWAY.
- ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT. NO GRADING, REMOVAL OF VEGETATION COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS OR THEIR RESPECTIVE BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
 - WATER FOR THIS PROJECT SHALL BE PRIVATE WATER HOUSE CONNECTIONS TO CONTRACT NO. 14-4775-D.
 - SEWER FOR THIS PROJECT SHALL BE PRIVATE SEWER HOUSE CONNECTION TO CONTRACT NO. 14-4775-VIA ADD.
 - WATER AND SEWER SERVICE WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.12.2.B OF THE HOWARD COUNTY CODE.
 - PUBLIC WATER AND SEWER ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- ALL WATER HOUSE CONNECTIONS SHALL BE OUTSIDE METER SETTINGS UNLESS OTHERWISE NOTED ON THE PLANS OR IN SPECIFICATIONS.
- TO THE BEST OF THE OWNER'S KNOWLEDGE OR THE HOWARD COUNTY CEMETERY INVENTORY MAP, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- TALBOTS LANDING IS A PUBLIC LOCAL ROAD.
- THE FOREST CONSERVATION REGULATIONS HAS BEEN MET BY A FEE-IN-LIEU PAYMENT OF \$5,540.00 TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR THE 0.29 ACRES AFFORESTATION REQUIREMENT FOR THIS PROJECT (F-15-002).
- FEE-IN-LIEU = (0.29 AC.) x 17,720 SF x 0.75 = \$6,554.00
- LANDSCAPING FOR LOT 6 IS PROVIDED IN ACCORDANCE WITH SECTION 16.12.A OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FRANCHISE SURVEY IN THE AMOUNT OF \$800.00 FOR THE REQUIRED (3) SHADE TREES SHALL BE POSTED WITH THE GRADING PERMIT APPLICATION.
- NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
- NO TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
- A SIMPLIFIED FOREST STAND DELINEATION AND ENVIRONMENTAL RESOURCES ASSESSMENT WAS PERFORMED BY JOHN CANOLES OF ECO-SCIENCE PROFESSIONALS, INC. DATED DECEMBER 17, 2013. THERE IS A 30.5' AMERICAN BEECH SPECIMEN TREE LOCATED ON LOT 6 THAT IS TO REMAIN ON THE PROPERTY.
- NO FLOODPLAIN IS LOCATED ON-SITE.
- THERE ARE NO STEEP SLOPES IN EXCESS OF 20.00% SF LOCATED ON-SITE.
- HIGHLY ERODIBLE SOILS ARE LOCATED WITHIN THE LIMITS OF THIS PROJECT.
- A COMMUNITY MEETING WAS CONDUCTED ON OCTOBER 30, 2013 FOR THE PURPOSES OF THE DEVELOPER TO PROVIDE INFORMATION TO THE COMMUNITY REGARDING THE PROPOSED RESIDENTIAL DEVELOPMENT AND TO ALLOW THE COMMUNITY TO ASK QUESTIONS AND TO MAKE COMMENTS. PER THE REQUIREMENTS OF SECTION 16.12(b)(2) OF THE SUBDIVISION REGULATIONS.
- REFERENCE W-15-002, APPROVED 12/08/14, TO ALLOW:
 1.) TO MAKE CERTAIN CONSTRUCTION REQUIREMENTS FOR A MAJOR SUBDIVISION, INCLUDING:
 A.) ROAD WIDENING CONSTRUCTION (SECTION 16.132).
 B.) SIDEWALKS (SECTION 16.134).
 C.) STREET LIGHTING (SECTION 16.135).
 D.) STREET TREES (SECTION 16.136).

APPROVED SUBJECT TO PAYMENT OF A FEE-IN-LIEU OF CONSTRUCTION, REQUIRED BY DEED, FEE PAID IN CONJUNCTION WITH F-15-002.
 DATED 12/09/14, NOT ALLOWING:
 2.) TO MAKE SECTION 16.12(b)(4) TO ALLOW THE CREATION OF A 10' FEE SIMPLE STRIP (LOT 6) FOR DIRECT FRONTAGE ON A PUBLIC MAIN.

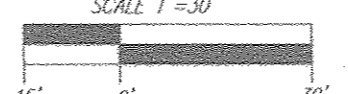


SPECIMEN TREE CHART

NO.	SIZE (IN. DBH)	COMMON NAME	CONDITION	COMMENTS
ST-1	30.5"	AMERICAN BEECH	GOOD, SUBSTANTIAL SUCKER GROWTH ALONG THE TRUNK AND A BROKEN CANOPY STEM.	TO REMAIN

LAYOUT AND LANDSCAPE PLAN

SCALE: 1"=30'



STORMWATER MANAGEMENT PRACTICES CHART

LOT	FEATURE	ESD PRACTICE
6	HOUSE	MICRO-BIORETENTION FACILITIES (M-6). TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER
6	DRIVEWAY	NON-ROOFTOP DISCONNECT (N-2). TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 2/8/18

 CHIEF DIVISION OF LAND DEVELOPMENT
 DATE: 2-8-18

 DIRECTOR

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.12.A 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: 1.9.18

SITE DEVELOPMENT PLAN

WRIGHT PROPERTY - LOT 6

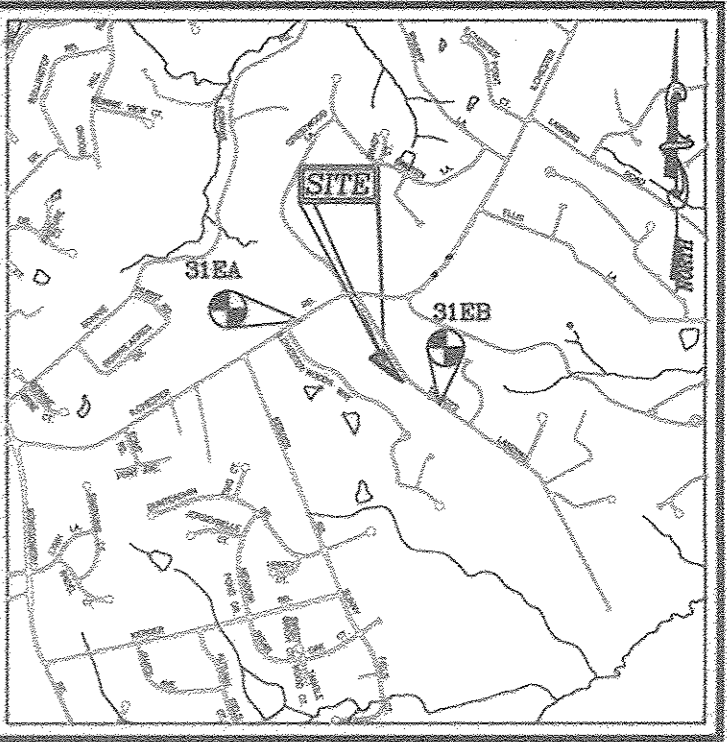
5114 TALBOTS LANDING

ELLCOTT CITY, MD 21043

PLAT: 23588

BENCHMARKS

HOWARD COUNTY BENCHMARK 31EA
 N 569641.17 E 1374816.01 ELEV. 468.84
 ILCHESTER RD. 3/4 MI NE OF RT-103
 HOWARD COUNTY BENCHMARK 31EB
 N 568731.03 E 1376273.569 ELEV. 452.63
 TALBOT LANDING RD 0.3 MIL EAST OF ILCHESTER RD.



VICINITY MAP
 SCALE: 1"=2,000'
 ADC MAP COORDINATE: PAGE: 28, BLOCK: D5

COORDINATE LIST

POINT	NORTHING	EASTING
203	569019.92	1375874.43
500	569331.98	1375688.49
501	569251.12	1375551.43

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING EDGE OF PAVING
- EX. 20" PUBLIC SEWER & UTILITY EASEMENT LIBER 3658 FOLIO 446
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING TREES
- SPECIMEN TREE
- MICRO-BIORETENTION (M-6)

SHEET INDEX

COVER SHEET, LAYOUT AND LANDSCAPE PLAN	DESCRIPTION	SHEET NO.
	COVER SHEET, LAYOUT AND LANDSCAPE PLAN	1 OF 5
	SITE AND LANDSCAPING NOTES AND DETAILS	2 OF 5
	SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN	3 OF 5
	GRADING, EROSION AND SEDIMENT CONTROL, NOTES AND DETAILS	4 OF 5
	STORMWATER MANAGEMENT PLAN, NOTES AND DETAILS	5 OF 5

OWNER
 CHRISTOPHER E. LUCAS
 EMILEIGH R. LUCAS
 9314 STEEPLE COURT
 LAUREL, MD 20723
 301-261-0277

BUILDER
 CARUSO HOMES
 C/O GARY EVANS
 2120 BALDWIN AVE., #200
 CROFTON, MD 21114
 301-261-0277

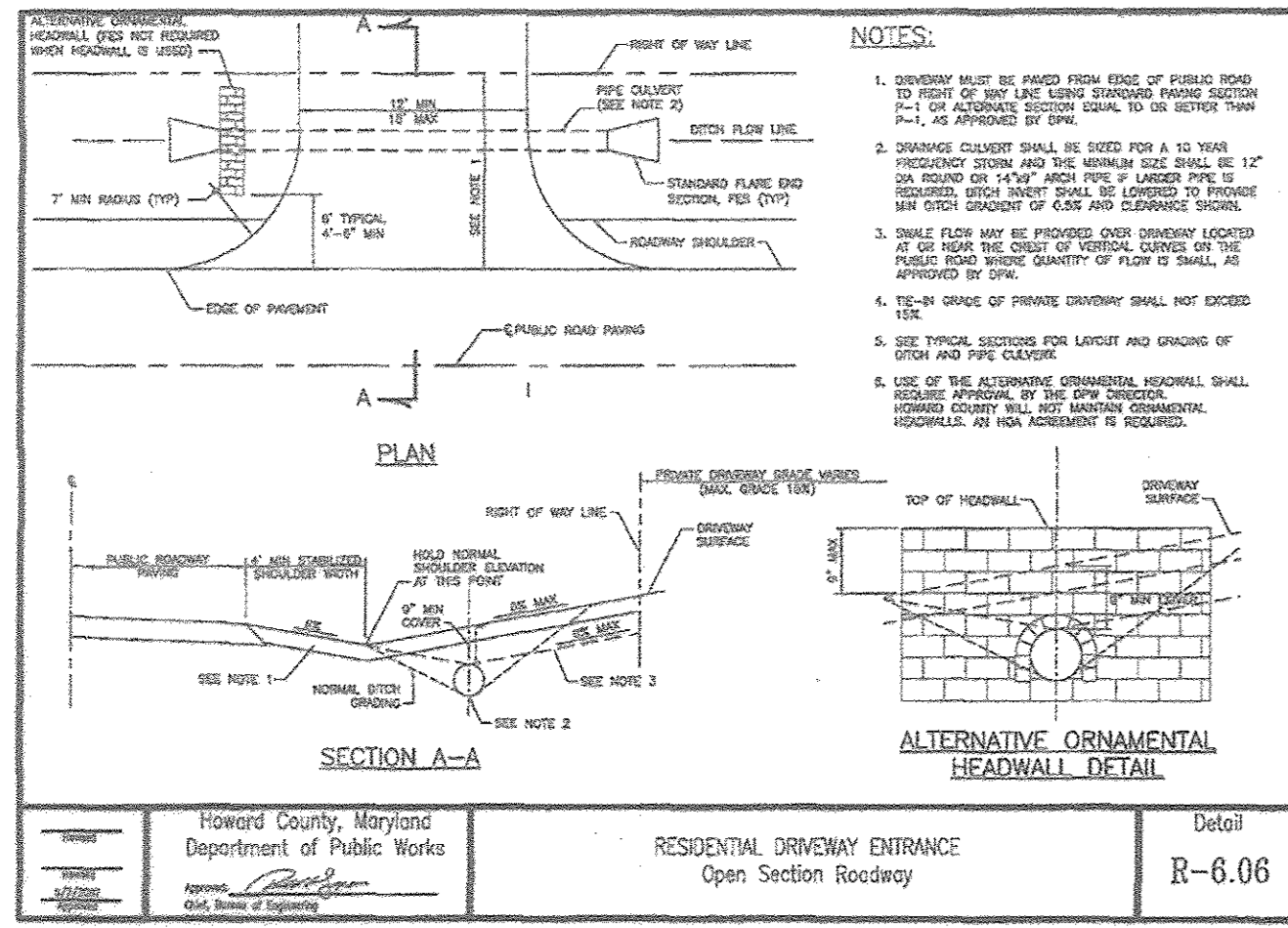
NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
COVER SHEET, LAYOUT AND LANDSCAPE PLAN
WRIGHT PROPERTY - LOT 6
5114 TALBOTS LANDING
ELLCOTT CITY, MD 21043
 PLAT: 23588
 DRP REF'S: F-83-17, CONT. 10-3470, CONT. 14-4775-D, PHASE: 545
 ECP-14-048, F-15-002 AND W-15-002 HOWARD COUNTY, MARYLAND
 TAX MAP 31 GRID: 15 PARCEL: 545
 1ST ELECTION DISTRICT

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

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: NOVEMBER 2017
 SCALE: AS SHOWN
 W.O. NO.: 40199

 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.
 EXPIRATION DATE: 09-27-2018
 1 SHEET OF 5



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA GRANULAR BOND (GMB)	3 TO <4 TO 4"	3.7	3 TO <4 TO 4"	3.7
P-1	FRONTAGE ROAD WITH SIDEWALK	15.0 MM (5/8") PER 100 SQ. FT. (100%)	1.5	1.5	1.5	1.5
P-2	FRONTAGE ROAD WITH SIDEWALK AND SIDEWALK	15.0 MM (5/8") PER 100 SQ. FT. (100%)	2.0	2.0	2.0	2.0
P-3	FRONTAGE ROAD WITH SIDEWALK AND SIDEWALK	15.0 MM (5/8") PER 100 SQ. FT. (100%)	2.0	2.0	2.0	2.0
P-4	FRONTAGE ROAD WITH SIDEWALK AND SIDEWALK	15.0 MM (5/8") PER 100 SQ. FT. (100%)	2.0	2.0	2.0	2.0

Notes:

- HEAVY TRUCKS ARE DEFINED AS THOSE WITH 60 WHEELS OR MORE INCLUDING BATTERY TRUCKS.
- SOIL SURVEYORS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS. 12.0 MM (1/2") TO 4.0" MAX.
- GRAVEL GRANULAR BOND (GMB) TO BE PLACED AND COMPACTED IN 8" MAX COMPACTED LIFTS.
- THE GRANULAR BOND (GMB) LAYER SHALL BE PLACED WITHIN 4 WEEKS OF FINISH OF BASE COURSE, AND IS REQUIRED PRIOR TO UNDERGROUND UTILITIES AND SIDEWALKS.
- IF THE GRANULAR BOND (GMB) LAYER IS NOT PLACED WITHIN 4 WEEKS OF FINISH OF BASE COURSE, IT CAN BE PLACED TO THE GRANULAR BOND (GMB) LAYER PRIOR TO THE GRANULAR BOND (GMB) LAYER.
- THE GRANULAR BOND (GMB) SHALL BE THE GRANULAR BOND, ROAD CLASSIFICATION AND CURB VALUE FOR EACH SECTION.

Howard County, Maryland
Department of Public Works
PAVING SECTIONS
P-1 to P-4
Detail R-2.01

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

1. MATERIAL SPECIFICATIONS
THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTITUTES SHALL BE USED OR MIXED WITH THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVIDE A HURDLE 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 COMMON REGULATIONS.

THE PLANTING SOIL SHALL MEET THE FOLLOWING CRITERIA:
 • SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURE CLASSIFICATION)
 • ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (50%), COMPOST (35%), AND COMPOST (15%).
 • CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 • PH RANGE - SHOULD BE BETWEEN 6.5 - 7.5. AMMONIUMS (E.G., UREA, FROM SULFATE PLUS SALTS) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.

THESE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE-SPECIFIC TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TREADS. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO PREPARE THE SOIL PROFILE THROUGH THE 12" MIN COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT RILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY POINDED WATER BEFORE PREPARING BACKFILLING BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL
RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/2" OF THE BALL IS ABOVE FROM GROUND SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACKETED 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.

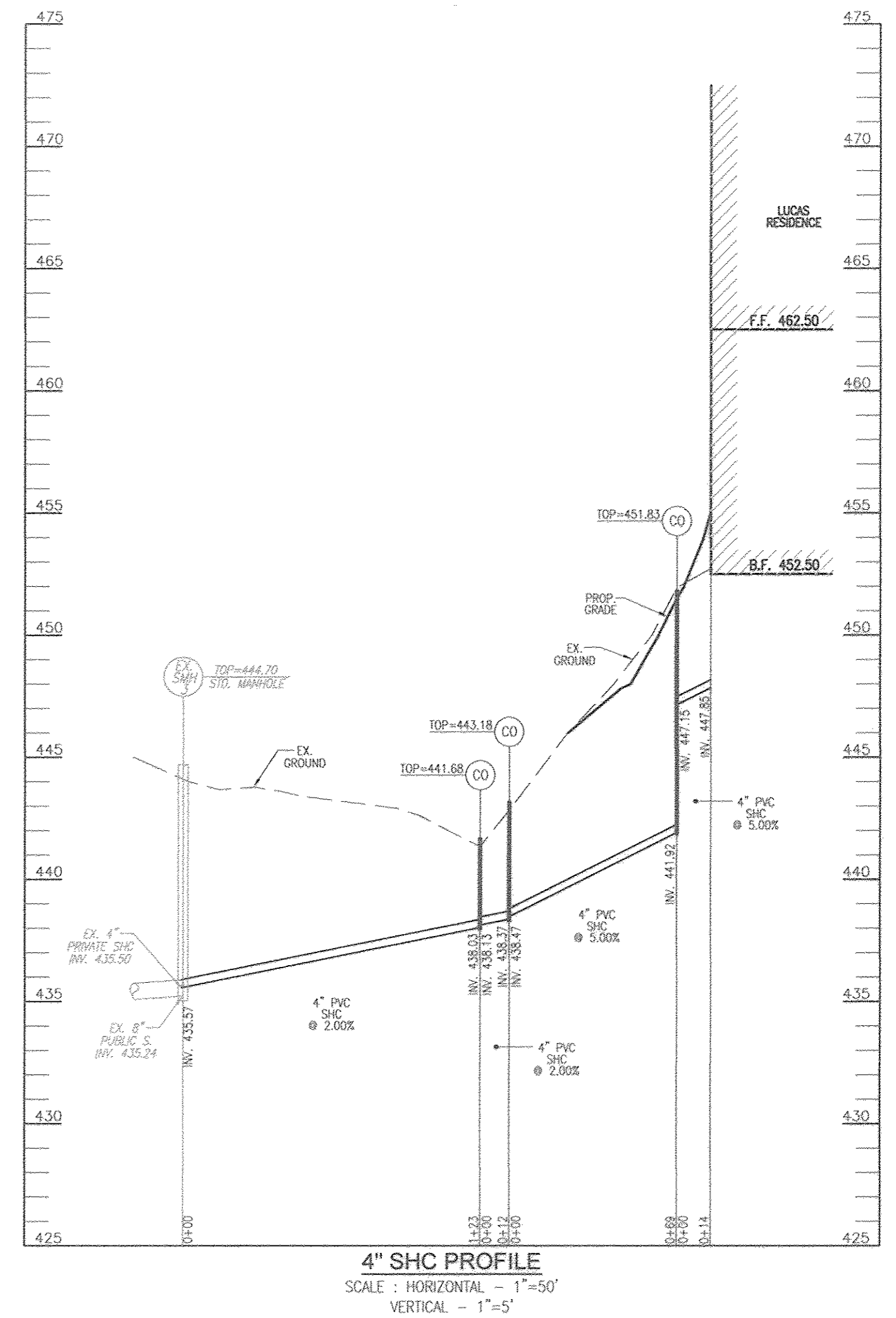
GRASSES AND LEGUME SEED SHOULD BE BRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-CROSS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFERS, OR AT A MINIMUM, IMPROVES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 • PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM 758, TYPE 2B, OR AISHD-M-278) IN A GRADUAL LAYER. THE PERFORATED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HIPS).
 • 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 WRAPPED WITH A 1/2" (NO. 4 OR 4A) GALVANIZED HARDWARE CLOTH.
 • GRAD - THE GRAD LAYER (NO. 57 STONE FINE) SHALL BE AT LEAST 1" THICK ABOVE AND BELOW THE UNDERDRAIN.
 • THE MANI COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
 • A 1/2" (NO. 4 OR 4A) GALVANIZED HARDWARE CLOTH MUST BE PROVIDED (ONE PER EVERY 1000 SQUARE FEET) TO PROVIDE A CLEAN-OUT POINT AND MONITOR PERFORMANCE OF THE FILTER.
 • A 1" LAYER OF SAND (1/2" TO 3/8" SIZES) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 2".

THIS MANI COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

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

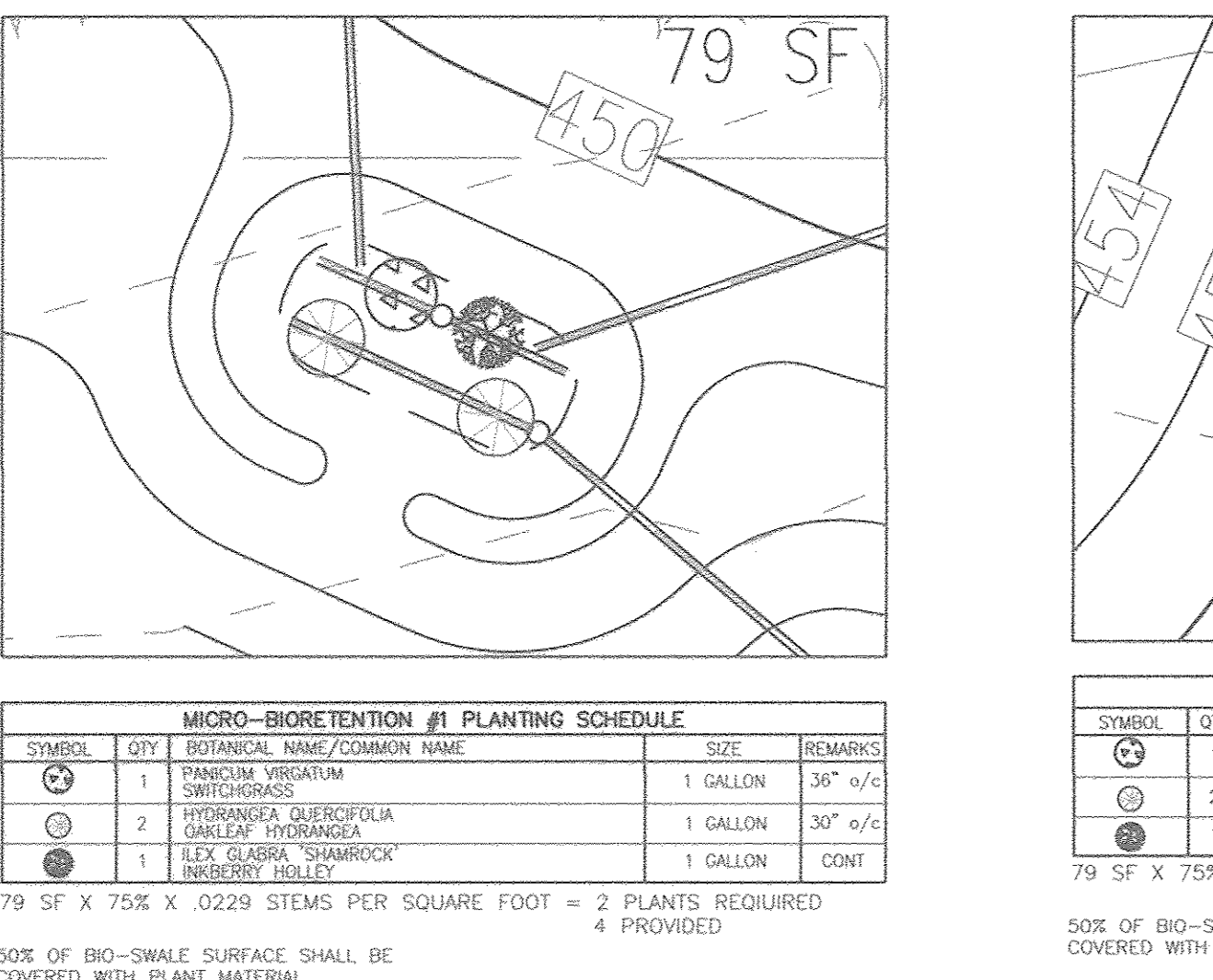


Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil	loamy sand (60-65%) & compost (35-40%) or sandy loam (50%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 3% (2" to 4" deep)
Organic content	Min. 10% by dry weight (ASTM D 2974)	n/a	
Mulch	wood chips (ASTM D-448)	n/a	aged 6 months, minimum; no pine or wood chips
Pea gravel diagram	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/4" TO 3/8")	
Curtain drain	ornamental stone; washed cobbles	stone: 2" to 5"	
Geotextile	AASHTO M-43	n/a	PE, Type 1 nonwoven
Gravel (landscaping and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (1/2" TO 3/4")	
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 pipe; not necessary underdrain pipe. Perforated pipe shall be wrapped with 1/2" galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Min. No. 3, F, - 5000 psi (28 days, normal weight, air-entrained; reinforcing to meet ASTM A63-06)	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 ACT Code 350.82B; vertical loading (10 k or 14 k); allowable horizontal loading (based on soil pressure); and analysis of potential cracking. Sand substitutes such as Silica sand and Gypsilite (AASHTO #10 are not acceptable. No calcium carbide or dolomitic sand substitutes are acceptable. No "rock dust" can be used for sand.
Sand	AASHTO M-6 or ASTM C-33	0.02" to 0.08"	

"MICRO-BIORETENTION/RAINGARDEN" PLANTING SCHEDULE NOTES:

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF 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 (.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.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1-31-18
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

[Signature] 2/8/18
DIRECTOR, DIVISION OF LAND DEVELOPMENT & USE
DATE

[Signature] 2-8-18
DIRECTOR
DATE

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] 1-9-18
SIGNATURE OF DEVELOPER
DATE

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 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 OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
- PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.

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 SPECULATES 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 & E NOTES:

- BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
- THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OF A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST OR OPEN SPACE, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS THAT BGE'S NEED TO TRIM OR REMOVE TREES IS AN UNAVOIDABLE PERMISSIBLE AND WILL NOT UNREASONABLE WITHHOLD PERMISSION.
- CALL MISS UTILITY TO MARK UP THE LOCATION OF EXISTING GAS LINE BEFORE PLANTING STREET TREES ALONG JONES ROAD & PLANT STREET TREES 10'AWAY FROM EXISTING GASLINE AS REQUIRED.

GENERAL NOTE:

- LANDSCAPING FOR LOT 6 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$500 FOR THE REQUIRED 3 SHADE TREES SHALL BE POSTED WITH THE GRADING PERMIT APPLICATION.

LANDSCAPE SCHEDULE NOTE:

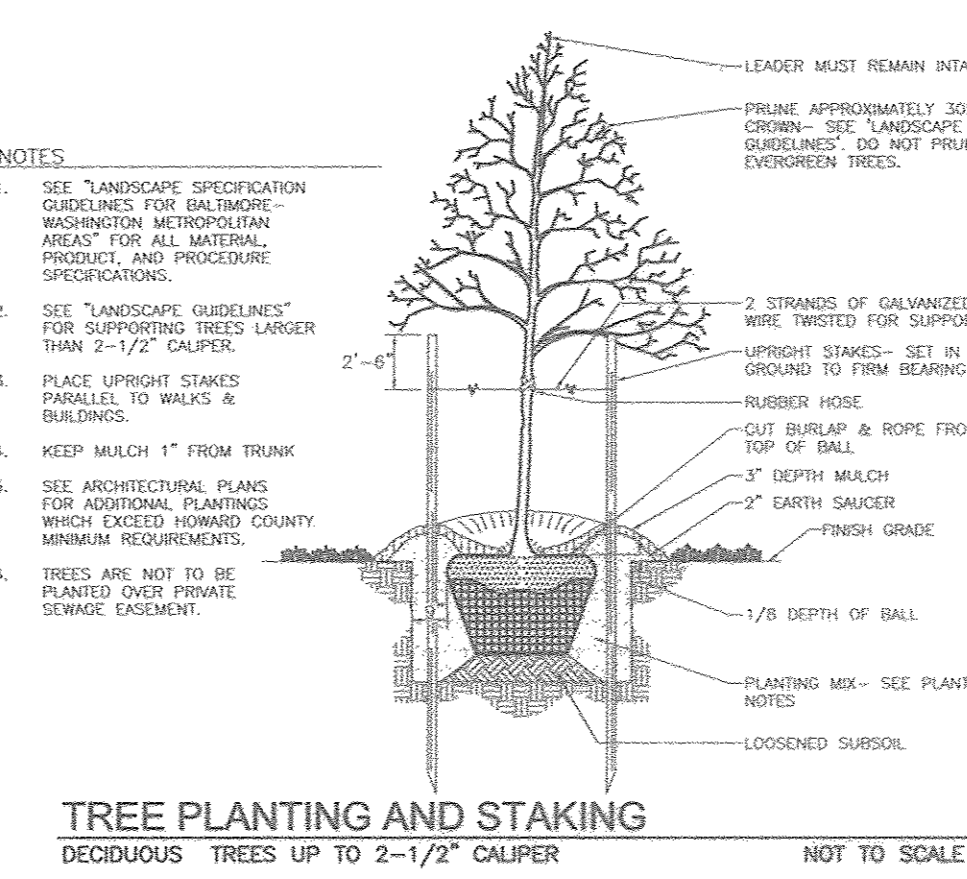
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HOW COUNTY PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT 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.

SCHEDULE A: PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES	TOTAL
PERIMETER/FRONTAGE DESIGNATION	1	
LANDSCAPE TYPE	A	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	397'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES 232'	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	
NUMBER OF PLANTS REQUIRED (LIFETIME REMAINING)	165'	3
SHADE TREES	1,60'	3
EVERGREEN TREES	-	-
SHRUBS	-	-
NUMBER OF PLANTS PROVIDED		
SHADE TREES	3	3
EVERGREEN TREES	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED:		

LANDSCAPE SCHEDULE

SYMBOL	KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
(Symbol)	AR	2	ACER RUBRUM "RED SUNSET" RED SUNSET RED MAPLE	2 1/2"-3" CAL.	B & B
(Symbol)	GB	1	GINKGO BILBOA "AUTUMN GOLD" AUTUMN GOLD GINKGO (MALE ONLY)	2-1/2"-3" CAL.	B & B



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EMILEIGH R. LUCAS
9314 STEEPLE COURT
LAUREL, MD 20723
301-261-0277

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

DESIGN BY: RHY
DRAWN BY: JMR
CHECKED BY: RHY
DATE: NOVEMBER 2017
SCALE: AS SHOWN
W.D. NO.: 40199

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. 18188, EXPIRATION DATE 09-27-2018

2 SHEET OF 5

SDP-18-007

SOILS LEGEND				
SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
ChB	CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES	B	.37	YES
CrD	CROOM AND EYESBORO SOILS, 10 TO 15 PERCENT SLOPES	C	.28	NO
SrC	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES	B	.37	YES
LrD	URBAN LAND-CHILLUM-BELLEVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	B	.37	YES

SOILS INFORMATION FROM USDA WEB SOIL SURVEY WEBSITE
- HOWARD COUNTY SOILS MAP NUMBER 19 - SAWAGE NE

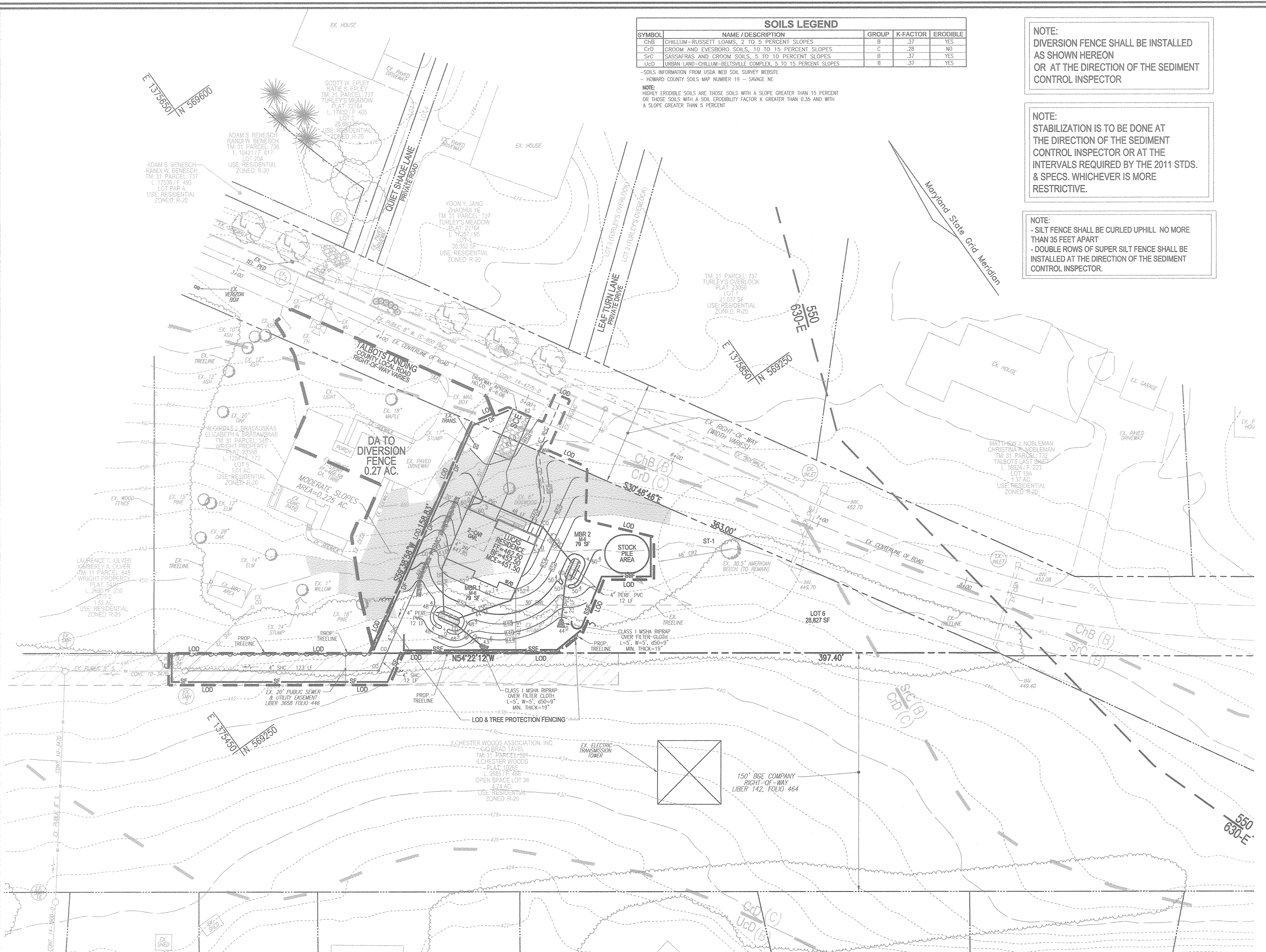
NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SOIL SLOPE GREATER THAN 5 PERCENT

NOTE:
DIVERSION FENCE SHALL BE INSTALLED AS SHOWN HEREON OR AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR

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 SHALL BE CURLLED 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:	
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING EDGE OF PAVING
	EX. 20" PUBLIC SEWER & UTILITY EASEMENT LIBER 3658 FOLD 446
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING FENCE
	EXISTING TREELINE
	PROPOSED TREELINE
	EXISTING TREES
	SPECIMEN TREE
	MICRO-BIORETENTION (M-6)
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	SOILS
	EXISTING MODERATE SLOPES (15% TO 24.99% SLOPES)
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	PROPOSED SPOT ELEVATION
	PROPOSED DIVERSION FENCE
	PROPOSED SUPER SILT FENCE
	PROPOSED SILT FENCE
	PROPOSED LIMIT OF DISTURBANCE
	PROPOSED EROSION CONTROL MATTING
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE



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301-261-0277

NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN
WRIGHT PROPERTY - LOT 6
5114 TALBOTS LANDING
ELLCOTT CITY, MD 21043

PLAT: 23588
DPZ REF'S: F-83-17, CONT. 10-3470, CONT. 14-4775-D, PARCEL: 545
TAX MAP: 31 GRID: 15 ZONED: R-20
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

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. EXPIRATION DATE: 09-27-2018

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: NOVEMBER 2017
SCALE: AS SHOWN
W.O. NO.: 40199

3 SHEET OF 5

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief Development Engineering Division
Date: 1/31/18

Chief Division of Land Development
Date: 2/8/18

Director
Date: 2-8-18

BY THE DEVELOPER:

I HAVE CERTIFIED THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer
Date: 1-9-18

BY THE ENGINEER:

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

Signature of Engineer
Date: 1/9/18

GRADING PLAN
SCALE: 1"=30'

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

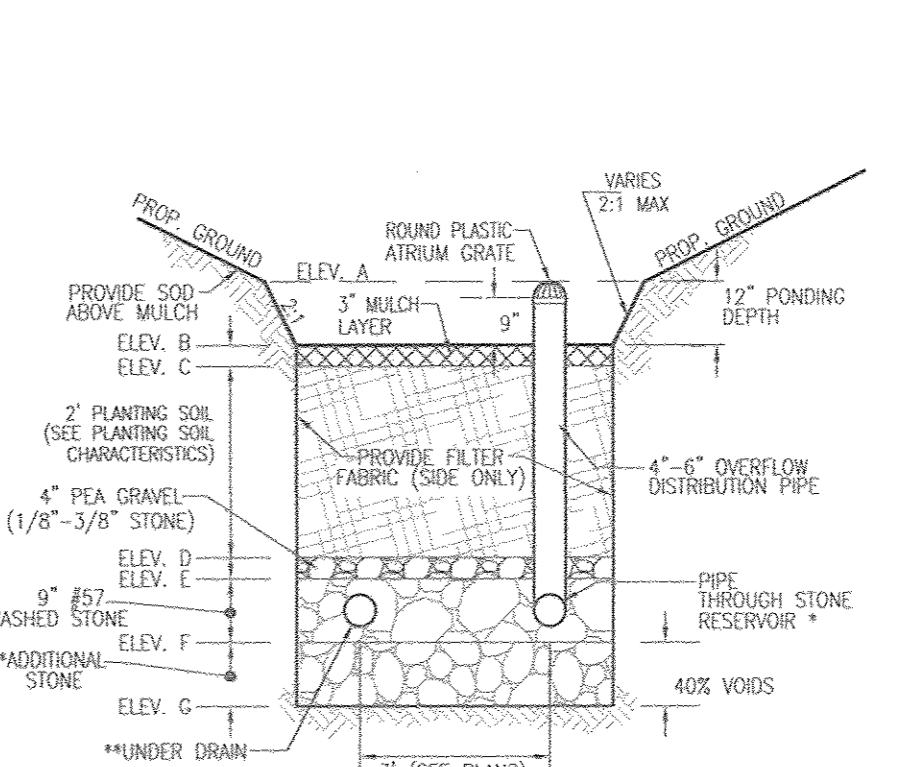
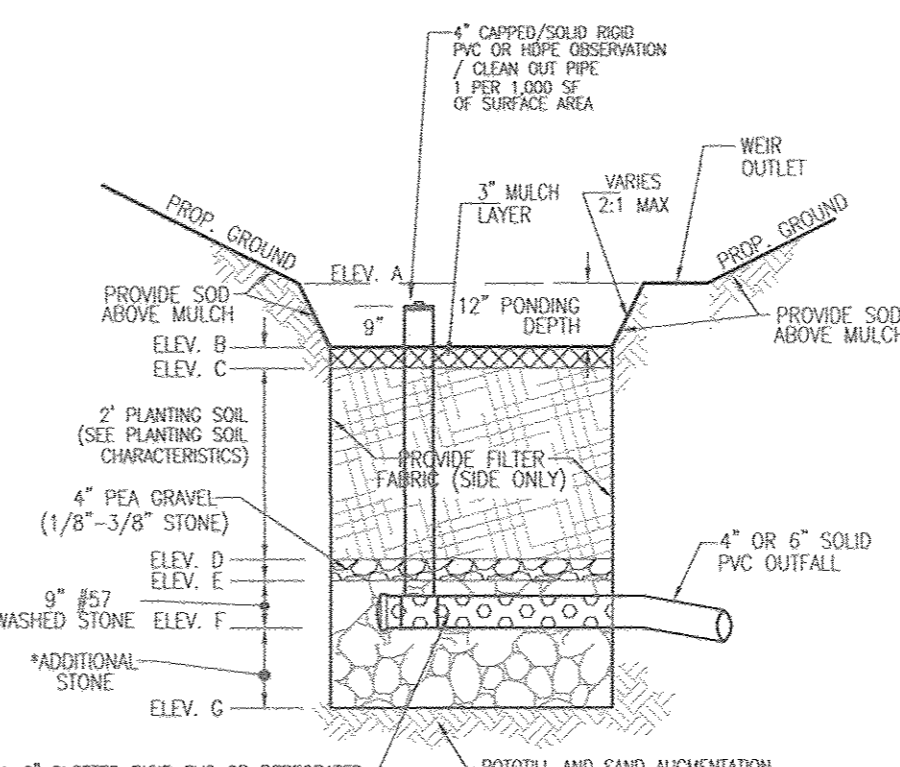
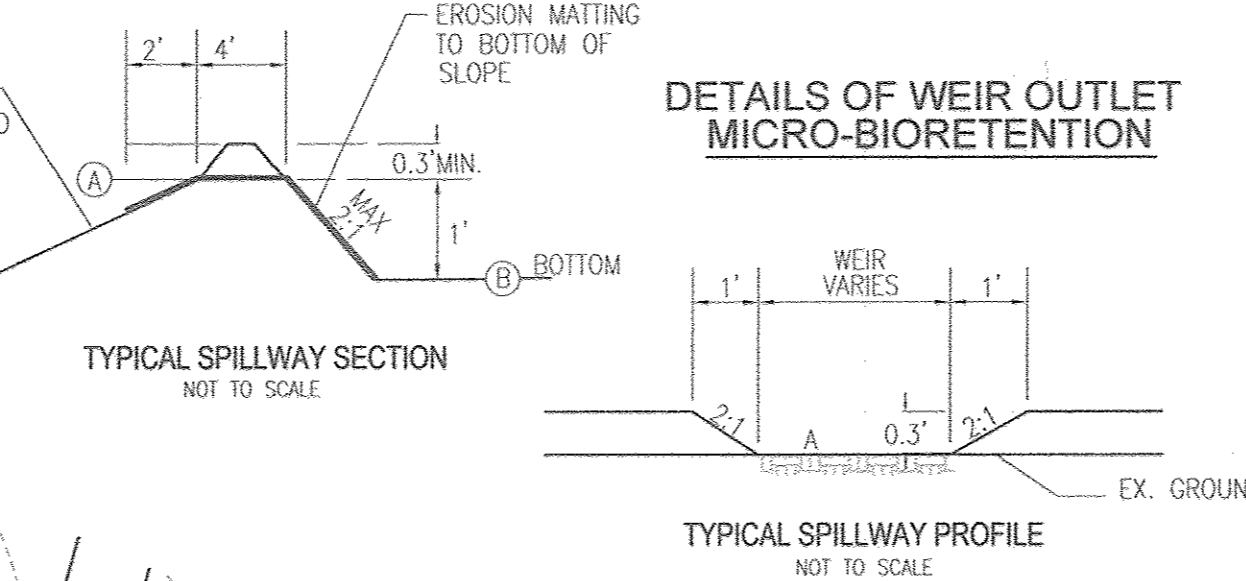
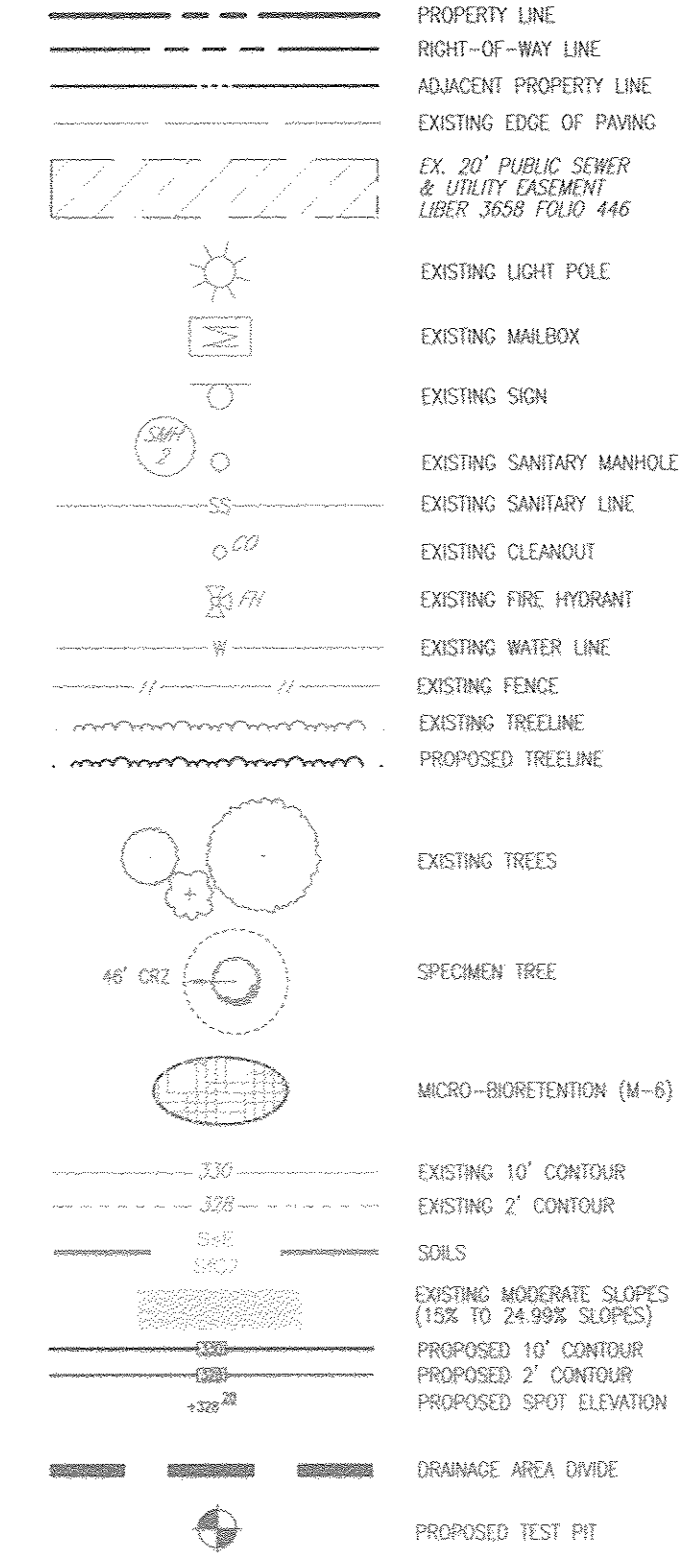
Signature of Howard S.C.D.
Date: 1/7/18

NOTE:
SUPER SILT FENCE MAY BE REPLACED BY STANDARD SILT FENCE WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR

NOTE: STOCKPILING WILL BE PERMITTED ON LOT 6 ONLY.



LEGEND:



MICRO-BIORETENTION (UNDERDRAIN)
NOT TO SCALE
*ADDITIONAL STONE PROVIDED FOR 10 YEAR ATTENUATION/REV

MICRO-BIORETENTION (OVERFLOW)
NOT TO SCALE
*ADDITIONAL STONE PROVIDED FOR 10 YEAR ATTENUATION/REV

FACILITY	A	B	C	D	E	F	G	UNDERDRAIN INV. OUT	OUTFALL INV.	FACILITY SIZE
MBR-1 (M-6)	448.00	447.00	446.75	444.75	444.42	443.42	442.72	443.75	443.60	79 SF
MBR-2 (M-6)	450.00	449.00	448.75	446.75	446.42	445.42	444.72	445.75	444.00	79 SF

MBR-1
D.A.=2,061 SF IMP=861 GRASS=1,200 SF I=42
Rv=0.05+(0.009)(42)=4.3
ESDv=(2.061)(1.0)(0.44)/12=76 CF (106 CF PROVIDED)
Cpv=PROVIDED BY MEETING ESDv
Q10=N/A
Q100=N/A

MBR-2
D.A.=1,561 SF IMP=787 GRASS=700 SF I=55
Rv=0.05+(0.009)(55)=5.5
ESDv=(1,561)(1.0)(0.55)/12=72 CF (106 CF PROVIDED)
Cpv=PROVIDED BY MEETING ESDv
Q10=N/A
Q100=N/A

- MICROBIORETENTION NOTES:**
- ONLY THE SIDES OF MICROBIORETENTION ARE TO BE WRAPPED IN FILTER FABRIC. FILTER FABRIC BETWEEN LAYER OR AT THE BOTTOM OF THE MICROBIORETENTION WILL CAUSE THE MBR TO FAIL AND THEREFORE SHALL NOT BE INSTALLED.
 - WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
 - PROVIDE 5" MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)
- OPERATION AND MAINTENANCE SCHEDULE FOR (M-6) MICROBIORETENTION AREAS**
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND 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 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 WIRES.
 - THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
 - THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

OWNER
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EMILEIGH R. LUCAS
9314 STEEPE COURT
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

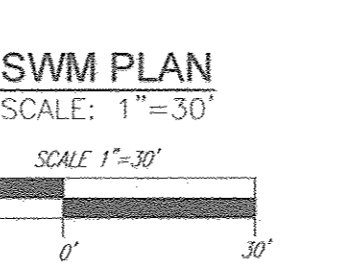
[Signature] 1/31/18
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

[Signature] 2/8/18
CHIEF, DIVISION OF LAND DEVELOPMENT & DATE

[Signature] 2-8-18
DIRECTOR & DATE

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

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



TEST PIT DATA:
THERE WERE TWO TEST PITS EXCAVATED IN CONJUNCTION WITH THE FINAL PLAN. TP-1 IS LOCATED AT MBR-1 AND TP-2 IS LOCATED AT MBR-2. BOTH TEST PITS WERE EXCAVATED TO 6' AND NO GROUNDWATER OR ROCK WAS ENCOUNTERED. SEE SWM REPORT FOR PHOTOS OF TEST PITS.

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K-FACTOR	ERODIBLE
ChB	CHILLUM-RUSSETT LOAMS, 2 TO 5 PERCENT SLOPES	B	.37	YES
Cd	CROOM AND EVESBORO SOILS, 10 TO 15 PERCENT SLOPES	C	.28	NO
SrC	SASSAFRAS AND CROOM SOILS, 5 TO 10 PERCENT SLOPES	B	.37	YES
UcD	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX, 5 TO 15 PERCENT SLOPES	B	.37	YES

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

NO. _____ REVISION _____ DATE _____

SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT PLAN,
NOTES AND DETAILS
WRIGHT PROPERTY - LOT 6
5114 TALBOTS LANDING
ELLICOTT CITY, MD 21043

PLAT: 23588
DRY REF'S: F-83-17, CONT. 10-5470, CONT. 14-4775-D, PARCEL: 545
ECP-14-048, F-15-002 AND WP-15-082 ZONED: R-20
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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ENGINEERS • SURVEYORS • PLANNERS
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CHECKED BY: RHV
DATE: NOVEMBER 2017
SCALE: AS SHOWN
W.O. NO.: 40199

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. 1183 EXPIRATION DATE: 09-27-2018

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