

**GENERAL NOTES**

- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS NEPA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:
  - UTILITY: 1-800-257-7777
  - TELEPHONE COMPANY: 1-410-854-6281
  - HOWARD COUNTY BUREAU OF UTILITIES: 1-410-854-6281
  - AT&T CABLE LOCATION DIVISION: 1-800-353-3553
  - B.G.A.E. CO. CONTRACTOR SERVICES: 410-850-4620
  - B.G.A.E. CO. UNDERGROUND DAMAGE CONTROL: 410-351-5533
  - STATE HIGHWAY ADMINISTRATION: 410-511-5533
- THIS FINAL PLAN IS SUBJECT TO THE FOLLOWING DPZ FILES:
  - CONF # 24-3746-01 CONF # 173-5-F-99-057, EDP-17-026
  - THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY CONFORMED BY ROBERT H. VOGEL ENGINEERING INC. DATED AUGUST 2016 AND ENGINEERING DRAWINGS OF RECORD OFFICE TOPOGRAPHY AND HOWARD COUNTY CD.
  - THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., ON OR ABOUT OCTOBER 4, 2016.
  - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
  - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
  - ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. TO THE BEST OF THE OWNER'S KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THE SUBJECT PROPERTY.
  - 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 MICRO-BIORETENTION, THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. MAINTENANCE INCLUDES: GUTTER STRUCTURES AND PIPES, MULCH, WEEDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.
  - THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
  - WATER FOR THE PROJECT SHALL BE PRIVATE WATER HOUSE CONNECTIONS TO PUBLIC CONDUIT 24-3746-01.
  - SEWER FOR THIS PROJECT SHALL BE VIA A.D.D. FROM CONTRACT 739-S. SEE NOTE 46.
  - WATER AND SEWER SERVICE WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.122(B) OF THE HOWARD COUNTY CODE. ALLOCATIONS WILL BE GRANTED AT TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
  - THIS PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, DEVELOPMENT OR CONSTRUCTION OF THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, ALTERNATIVE COMPLIANCE PETITION, OR BUILDING AND GRADING PERMITS.
  - 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 07/2/03 PER COUNCIL BILL 75-2003.
  - THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
  - 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. THE 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.
  - 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. 176A AND 176B WERE USED FOR THIS PROJECT.
  - NO STEEP SLOPES OVER 20% OF ARE LOCATED ON THE PROJECT SITE.
  - NO FLOODPLAIN IS LOCATED ON SITE.
  - SEDMIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
  - WETLANDS AND STREAMS SHOWN HEREON ARE BASED ON THE DETERMINATION BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, DATED AUGUST 2016.
  - PER THE FIELD INVESTIGATION BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, AUGUST 31, 2016; NO FOREST RESOURCES ARE LOCATED ON SITE.
  - A TOTAL OF 1 NEW RESIDENTIAL UNIT IS PROPOSED UNDER THIS PLAN, 2 LOTS.
  - NO GRADING, REMOVAL OF VEGETATION OR TREES, DRIVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS) OR THEIR BUFFERS. FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
  - THE RECONSTRUCTION OF THE EXISTING SEWER CONNECTION TO CONTRACT 739-S AND CONSTRUCTION OF THE NEW TWIN CONNECTION CREATES DISTURBANCE IN THE STREAM BUFFER. SEE NOTE 45.
  - A NOISE STUDY IS NOT REQUIRED.
  - IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME 3, CHAPTER 4 - SECTION 4.7(B)(5), A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
  - THE SUBJECT PROPERTY IS EXEMPT FROM THE FOREST CONSERVATION ACT PER COUNTY CODE SECTION - 16.1202. (b)(1)(iv), A MINOR SUBDIVISION THAT CREATES ONE ADDITIONAL LOT AND HAS NO FURTHER SUBDIVISION POTENTIAL.
  - A LANDSCAPE PLAN FOR LOT 2 HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$ 9,600.00 FOR THE REQUIRED 18 SHADE TREES (\$ 5,400) AND 28 EVERGREENS (\$ 4,200). SURETY SHALL BE POSTED WITH THE BUILDERS GRADING PERMIT.
  - UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6-03 FOR THE USE-IN-COMMON DRIVEWAY ENTRANCE AT HIDDEN HAVEN COURT 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 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
    - B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH 1% AND CHIP COATING. (1-1 1/2" MIN.)
    - C) GEOMETRY - MAXIMUM USE GRADE, MAXIMUM 10% CHANGE AND MINIMUM OF 45-FOOT TURNING RADIUS.
    - D) STRUCTURES (GULLY/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H2S LOADING).
    - E) DRAINAGE ELEMENTS-CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
    - F) STRUCTURE CLEARANCE-MINIMUM 13 FEET.
    - G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
  - THERE IS AN EXISTING DWELLING AND STRUCTURES ON LOT 1 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSIDERED AT A DISTANCE LESS THAN THE ZONING REGULATORY REQUIREMENTS.
  - HIDDEN HAVEN COURT IS CLASSIFIED AS A LOCAL ROAD - 40' R/W.
  - FOR THIS MINOR SUBDIVISION, NO PUBLIC ROAD EXTENSION IS REQUIRED.
  - USE IN COMMON DRIVEWAY IS PROPOSED FOR ACCESS TO THE PROPOSED LOTS FROM HIDDEN HAVEN COURT.
  - A SHARED DRIVEWAY ACCESS AND MAINTENANCE OBLIGATION AGREEMENT FOR THE SHARED DRIVEWAY WHICH SERVES LOTS 1, 2 AND PARCEL 597 SHALL BE RECORDED IMMEDIATELY WITH THE RECORDATION OF THE F-17-074 PLAT.
  - FLAG AND PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE FOR LOTS 1 & 2 ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
  - CENTRED TEST THIS HAVE BEEN PROVIDED. OPEN TEST PITS SHALL BE OBSERVED BY THE DEVELOPER AGENT, FEBRUARY 2017.
  - IN ACCORDANCE WITH SECTION 16.121(B)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-20 PROJECT IS TO BE SATISFIED BY PAYMENT OF FEE-IN-LEU IN AMOUNT \$1,500.00 FOR ONE LOT.
  - A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON OCTOBER 6, 2016 AT THE MILLER BRANCH LIBRARY.
  - MIHU'S ARE REQUIRED FOR THIS PROJECT.
  - IN ACCORDANCE WITH SECTION 108.0.E OF THE 10/06/13 COMPREHENSIVE ZONING REGULATIONS, THIS SUBDIVISION IS SUBJECT TO MODERATE INCOME HOUSING UNITS. THE MIHU OBLIGATION FOR THIS DEVELOPMENT WILL BE PROVIDED BY A PAYMENT OF FEE-IN-LEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR EACH UNIT OR PORTION OF THE UNITS REQUIRED BY THE DEVELOPMENT.
  - THIS DEVELOPMENT IS DESIGNED TO BE IN ACCORDANCE WITH SECTION 16.127 RESIDENTIAL INFILL DEVELOPMENT OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
  - DECLARATION OF COVENANTS FOR LOT 2 SHALL BE RECORDED WITH THE DEVELOPERS AGREEMENT AND SIMULTANEOUSLY WITH THE F-17-074 PLAT FOR THE PRIVATE STORMWATER DEVICES LOCATED ON THIS LOT.
  - A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE AT THE DEVELOPER'S/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-9752 FOR DETAILS AND COSTS ESTIMATES. THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
  - 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.
  - SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GAUGE) 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
  - PREVIOUS DPZ FILES: ECP-17-026.
  - ON AUGUST 8, 2017 THE DIRECTOR OF THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DETERMINED THE ENCROACHMENT INTO THE STREAM BUFFER, FOR THE RECONSTRUCTION OF THE EXISTING SEWER CLEARDOUT TO PROVIDE TWO INDIVIDUAL 4" SEWER HOUSE CONNECTIONS, WOULD BE CONSIDERED "NECESSARY" AND ESSENTIAL.

**46. THIS PROJECT IS SUBJECT TO A DESIGN MANUAL WAIVER, ON SEPTEMBER 16, 2017, THE DEPUTY DIRECTOR OF THE DEPT. OF PUBLIC WORKS DENIED THE APPROVAL FOR THE USE OF TWIN SEWER HOUSE CONNECTION TO PROVIDE SERVICE TO THE SUBJECT PROPERTY. THE WAIVER WAS DENIED BECAUSE THE DESIGNER (R.H.V.) DID NOT PROVIDE A DESIGN NEW LINE TO THE SEWER. PROPOSED BY THE DESIGNER (A.D.D) PROCESS, THE INSTALLATION OF TWO (2) NEW MANHOLES AND (2) 10" 6" STUBS FOR THE FUTURE EXTENSION TO SERVICE PARCEL 597. SEE DETAILS HEREON.**

**EXISTING SERVICE CONNECTIONS**  
 -EXISTING SEWAGE SERVICE CONNECTIONS TO PARCEL 28 SHALL BE RECONSTRUCTED. DETAILED HEREON, 1E 2 MANHOLES AND A 10" 6" EXTENSION FOR FUTURE EXTENSION TO PARCEL 597

**Eco-Science Professionals, Inc.**  
 Consulting Ecologists  
 P.O. Box 5066 Glen Arm, Maryland 21057 Telephone (410) 832-2480 Fax (410) 832-2488

**MD DNR Qualified Professional USACOE Wetland Delistment Certification # WD093MD0610044B2**  
 John P. Canoles

- NO FOREST RESOURCES ARE PRESENT ON THE SITE, HOWEVER A TULIP POPULAR DOMINATED FOREST IS PRESENT TO THE WEST OF THE SUBJECT PROPERTY.
- THE WETLANDS AND STREAMS ADJACENT TO THE PROPERTY ARE PART OF AN UNNAMED TRIBUTARY OF THE PATAPSCO RIVER AND ARE CLASSIFIED AS USE 1. THE WETLANDS WILL REQUIRE 25 FOOT BUFFERS, THE PERENNIAL STREAM WILL REQUIRE 75 FOOT BUFFERS AND THE INTERMITTENT STREAM WILL REQUIRE 50 FOOT BUFFERS.
- THE SUBJECT PROPERTY IS EXEMPT FROM THE FOREST CONSERVATION ACT PER COUNTY CODE SECTION - 16.1202.(b)(1)(iv).
- NO HISTORIC ELEMENTS OR CEMETERIES ARE KNOWN TO OCCUR ON THIS PROPERTY.
- THE SITE DOES NOT CONTAIN ANY 100 YEAR FLOODPLAIN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DATE: 10-20-17

DATE: 10-20-17

**SITE DATA**

DEED REFERENCE: PARCEL 28; L.836 F.30  
 ELECTION DISTRICT: 2ND  
 LOCATION: HIDDEN HAVEN COURT  
 EXISTING ZONING: R-20  
 GROSS AREA: 1.076 AC  
 AREA OF 100' YEAR FLOODPLAIN: N/A  
 AREA OF STEEP SLOPES: 0.00 AC  
 AREA OF WETLANDS & BUFFERS: 0.00 AC  
 NET AREA (GROSS-STEEP SLOPES & FLOODPLAIN): 1.076 AC  
 BASE DENSITY: 2 LOTS PER NET ACRE : 2 LOTS  
 NUMBER OF PROPOSED RESIDENTIAL LOTS: 2 LOTS  
 AREA OF PROPOSED RESIDENTIAL LOTS (SFD): 1.076 AC  
 AREA OF ROAD RIGHT OF WAY: 0.00 AC  
 OPEN SPACE REQUIRED: 6% OF GROSS AREA = 0.064 AC  
 TOTAL AREA OF OPEN SPACE PROPOSED: 0.00 AC +/-  
 FEE-IN-LEU: 0.44 AC  
 RESIDENTIAL, SFD  
 SINGLE FAMILY DETACHED  
 PUBLIC  
 MINIMUM LOT AREA: 20,000 SF

**UTILITY NOTES:**

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

**FINAL SUPPLEMENTAL PLAN  
 HOLLOWAN PROPERTY  
 LOT 1, 2 AND OLD MILL OVERLOOK  
 - NON-BUILDABLE PARCEL 'A'  
 HOWARD COUNTY, MARYLAND**



**COORDINATE TABLE**

| NO. | NORTH       | EAST         |
|-----|-------------|--------------|
| 201 | 595899.2841 | 1353018.1603 |
| 202 | 596018.1642 | 1353080.7251 |
| 203 | 596011.2843 | 1353090.6687 |
| 204 | 595910.0469 | 1353037.4741 |
| 205 | 596007.0023 | 1352989.2238 |
| 310 | 595885.0511 | 1353037.9332 |
| 312 | 595885.9452 | 1352936.0155 |
| 313 | 595762.4022 | 1352783.9745 |
| 400 | 596006.9798 | 1353101.9597 |
| 401 | 595921.0042 | 1353056.7843 |
| 402 | 595871.0106 | 1353057.7023 |

**MINIMUM LOT SIZE CHART**

| LOT | GROSS AREA | PIPESTEM AREA | NET AREA  | MIN. LOT SIZE |
|-----|------------|---------------|-----------|---------------|
| 1   | 25,297 SF  | 813 SF        | 24,484 SF | 20,000 SF     |
| 2   | 21,501 SF  | 948 SF        | 20,553 SF | 20,000 SF     |

**SHEET INDEX**

| DESCRIPTION   | SHEET NO. |
|---|-----------|
| COVER SHEET, LAYOUT & LANDSCAPE PLAN  | 1 OF 3    |
| GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN, SOILS MAP AND LANDSCAPE PLAN DETAILS | 2 OF 3    |
| STORMWATER MANAGEMENT PLAN  | 3 OF 3    |

**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEARDOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- EXISTING TREE LINE
- MICRO-BIORETENTION FACILITY
- PROPOSED WATER HOUSE CONNECTION
- PROPOSED SEWER HOUSE CONNECTION
- PROPOSED LANDSCAPE PLANTINGS SEE SHEET 2
- LANDSCAPE PERIMETER

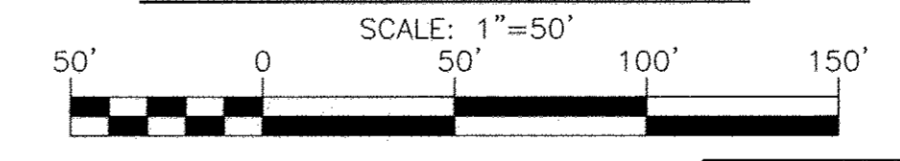
**NOTE:**  
 -HOUSES MAY NOT BE BUILT USING THIS PLAN.

**MIHU AGREEMENT**  
 PLEASE NOTE THAT ALL NEW LOTS/RESIDENTIAL UNITS IN THIS SUBDIVISION (LOTS 1-2) ARE SUBJECT TO THE MIHU FEE-IN-LEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT.

**OWNER**  
 MATTHEW T. & TINA L. LEBARON  
 9934 OLD MILL ROAD  
 ELLICOTT CITY, MD 21042

**OWNER/DEVELOPER**  
 GEORGE (DECEASED) & SHARON HOLLOWAN  
 9930 OLD MILL ROAD  
 ELLICOTT CITY, MD 21042  
 410-340-5773

**COVER SHEET, LAYOUT AND LANDSCAPE PLAN**



**LANDSCAPE NOTES**

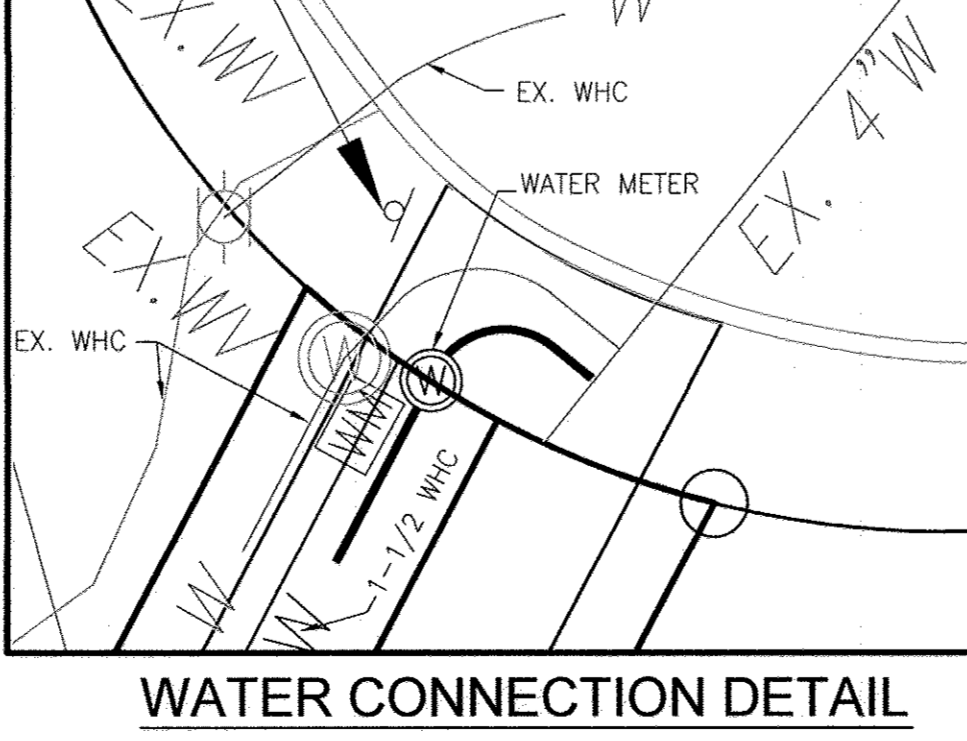
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BENCHES, 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 CREDITS 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 SITE DEVELOPMENT PLAN.

**SCHEDULE 'A' PERIMETER LANDSCAPE EDGE**

| CATEGORY   | ADJACENT TO ROADS |         |         |         |         | ADJACENT TO PERIMETER PROPERTIES |    |   |   |  | TOTAL |
|--|-------------------|---------|---------|---------|---------|----------------------------------|----|---|---|--|-------|
|  | 1                 | 2A      | 2B      | 3       | 4       | 5                                | 6  | 7 | 8 |  |       |
| PERIMETER/FRONTAGE DESIGNATION   | 1                 | 2A      | 2B      | 3       | 4       | 5                                | 6  | 7 | 8 |  |       |
| LANDSCAPE TYPE   | 1                 | 2A      | 2B      | 3       | 4       | 5                                | 6  | 7 | 8 |  |       |
| LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER                                      | 24'               | 135'    | 248'    | 170'    | 280'    | 135'                             |    |   |   |  |       |
| CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED) | NO                | NO      | NO      | NO      | NO      | NO                               |    |   |   |  |       |
| CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED) | NO                | NO      | NO      | NO      | NO      | NO                               |    |   |   |  |       |
| NUMBER OF PLANTS REQUIRED  |                   |         |         |         |         |                                  |    |   |   |  |       |
| SHADE TREES  | 1                 | 1.60 3* | 1.60 4  | 1.60 3  | 1.60 5  | 1.60 3*                          | 18 |   |   |  |       |
| EVERGREEN TREES  | 1                 | 1.10 14 | 1.10 14 | 1.10 14 | 1.10 14 | 1.10 14                          | 18 |   |   |  |       |
| NUMBER OF PLANTS PROVIDED  |                   |         |         |         |         |                                  |    |   |   |  |       |
| SHADE TREES  |                   |         |         |         |         |                                  |    |   |   |  |       |
| EVERGREEN TREES  |                   | 20      | 4       | 3       | 5       | 20                               | 40 |   |   |  |       |
| OTHER TREES (2:1 SUBSTITUTION)   |                   |         |         |         |         |                                  |    |   |   |  |       |
| SHRUBS (10:1 SUBSTITUTION)   |                   |         |         |         |         |                                  |    |   |   |  |       |
| DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED                            |                   |         |         |         |         |                                  |    |   |   |  |       |

**GENERAL NOTE:**

- LANDSCAPING FOR LOT 2 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$ 9,600.00 FOR THE REQUIRED 18 SHADE TREES (\$ 5,400) AND 28 EVERGREENS (\$ 4,200). SURETY SHALL BE POSTED WITH THE BUILDERS GRADING PERMIT.
- REFER TO SHEETS 1 & 2 FOR LANDSCAPE PLAN DETAILS & LANDSCAPE SCHEDULES.



**WATER CONNECTION DETAIL**  
 SCALE: 1"=10'

**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.

DATE: 9-13-17

**FINAL SUPPLEMENTAL PLAN  
 COVER SHEET, LAYOUT & LANDSCAPE PLAN**

**HOLLOWAN PROPERTY  
 LOTS 1, 2 AND OLD MILL OVERLOOK  
 - NON-BUILDABLE PARCEL 'A'**

TAX MAP 17 - GRID B - PARCEL 28 & P/29  
 2ND ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

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

**PROFESSIONAL CERTIFICATE**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 91291-003 EXPIRATION DATE: 09-27-2018

DESIGN BY: RVE  
 DRAWN BY: MDL/KG  
 CHECKED BY: RHY  
 DATE: SEPTEMBER 2017  
 SCALE: AS SHOWN  
 W.O. NO.: 16-16

1 SHEET OF 3



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

- 1. MATERIAL SPECIFICATIONS**  
THE AVAILABLE 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 OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.  
THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:  
• SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)  
• ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (50%-60%) AND COMPOST (5% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).  
• CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.  
• PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.  
THERE SHALL BE AT LEAST ONE SOIL TEST PER 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 STOCKPILED 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 HIRES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE INDICATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR WASH TRACK EQUIPMENT OR LIGHT EQUIPMENT WITH TIRE TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.  
WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO 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 WASH TRACKS.

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

- 6. UNDERDRAINS**  
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:  
• PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE PS 28, OR AASHTO M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).  
• PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4A) GALVANIZED HARDWARE CLOTH.  
• GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.  
• THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 1/8" SLOPE.  
• A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER BED.  
• A 4" LAYER OF PEA GRAVEL (1/8" - 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".  
THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1,000 SQUARE FEET OF SURFACE AREA).

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

**MAPPED SOILS TYPES - ELLICOTT CITY SW#13**

| SYMBOL | NAME / DESCRIPTION                                | GROUP | HYDRIC | MOISTURE REGIMEN | Kw FACTOR | PERCENT SAND | PERCENT SILT | PERCENT CLAY |
|--------|---|-------|--------|------------------|-----------|--------------|--------------|--------------|
| GSC    | GLENDLE LOAM, 8 TO 15 PERCENT SLOPES              | B     | NO     | NO               | 0.20      | NO           | NO           | NO           |
| GHB    | GLENDLE-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES | B     | NO     | NO               | 0.20      | NO           | NO           | NO           |
| GHB1   | GLENDLE Silt LOAM, 3 TO 8 PERCENT SLOPES          | C     | YES    | NO               | 0.37      | NO           | NO           | YES          |
| GHB2   | GLENDLE-Silt LOAM, 0 TO 8 PERCENT SLOPES          | C     | YES    | NO               | 0.43      | NO           | NO           | YES          |

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

**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

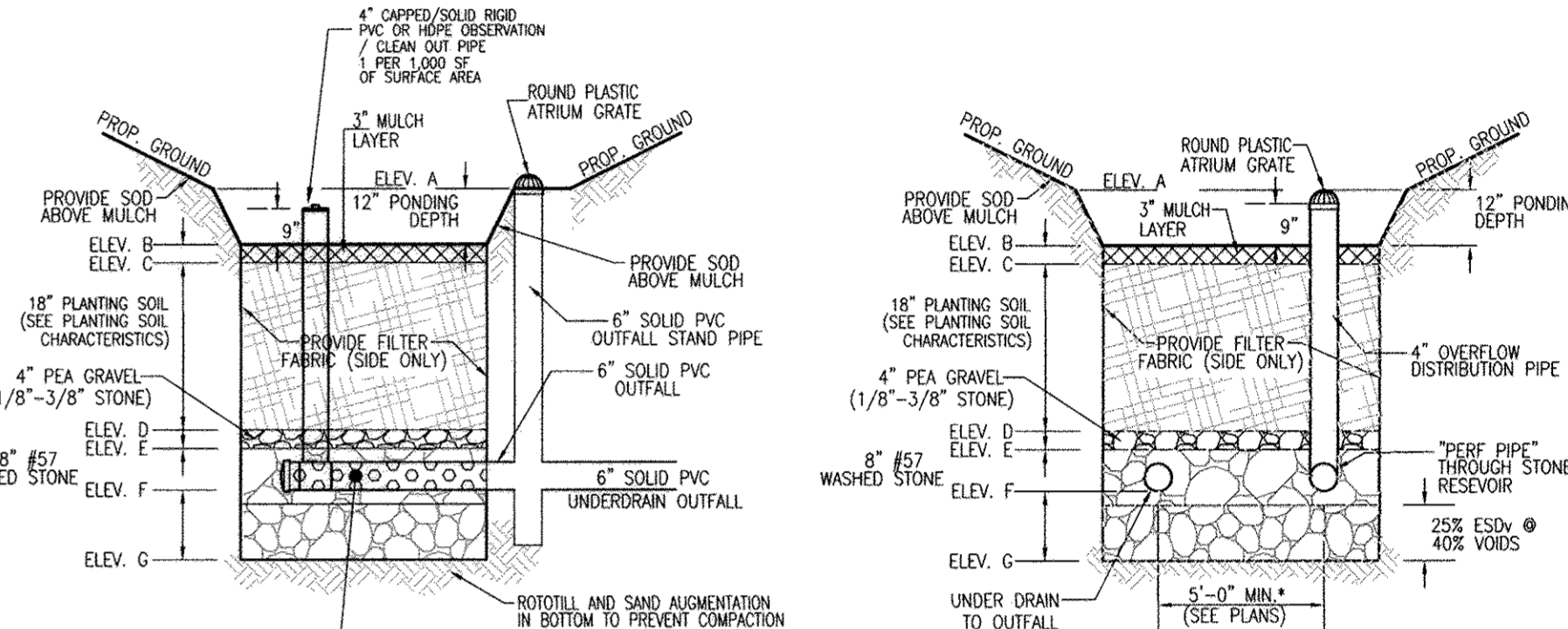
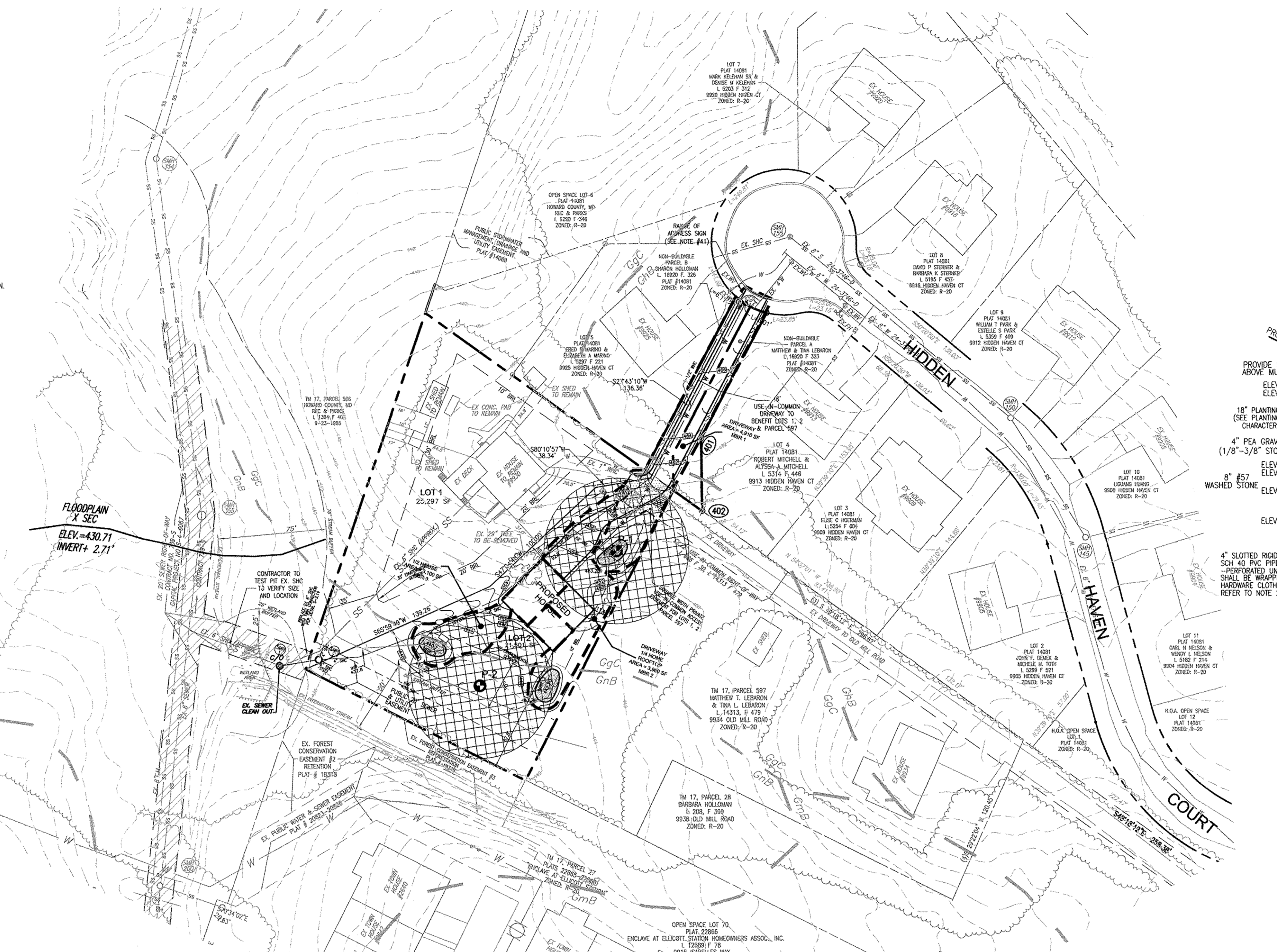
**OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION**

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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 REPLACEMENT OF ALL DISEASED TREES AND SHRUBS AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DISEASED TREES AND SHRUBS.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

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

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

| Material                                    | Specification   | Size  | Notes   |
|---|---|---|---|
| Planting soil (2" to 4" deep)               | loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)       | n/a   | USDA soil types loamy sand or sandy loam; clay content < 5%   |
| Organic content                             | Min. 10% by dry weight (ASTM D 2974)  |   |   |
| Mulch                                       | shredded hardwood   |   | aged 6 months, minimum; no pine or wood chips   |
| Pea gravel diaphragm                        | pea gravel: ASTM-D-448  | NO. 8 OR NO. 9 (1/8" TO 3/8")   |   |
| Curtain drain                               | ornamental stone: washed cobbles  | stone: 2" to 5"   |   |
| Geotextile                                  | AASHTO M-43   | n/a   | PE Type 1 nonwoven  |
| Gravel (underdrains and infiltration berms) | see Appendix A, Table A.4   | n/a   |   |
| Underdrain piping                           | F 758, Type PS 28 or AASHTO M-278   | NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")<br>4" to 6" rigid schedule 40 PVC or SDR35 | Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes, not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth  |
| Poured in place concrete (if required)      | MSHA Mix No. 3, f'c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60 | n/a   | on-site testing of poured-in-place concrete required. 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308.9R; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil pressure); and analysis of potential cracking |
| Sand  | AASHTO-M-6 or ASTM-C-33   | 0.02" to 0.04"  | Sand substitutions such as Diabase and Gneiss (AASHTO) #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.  |



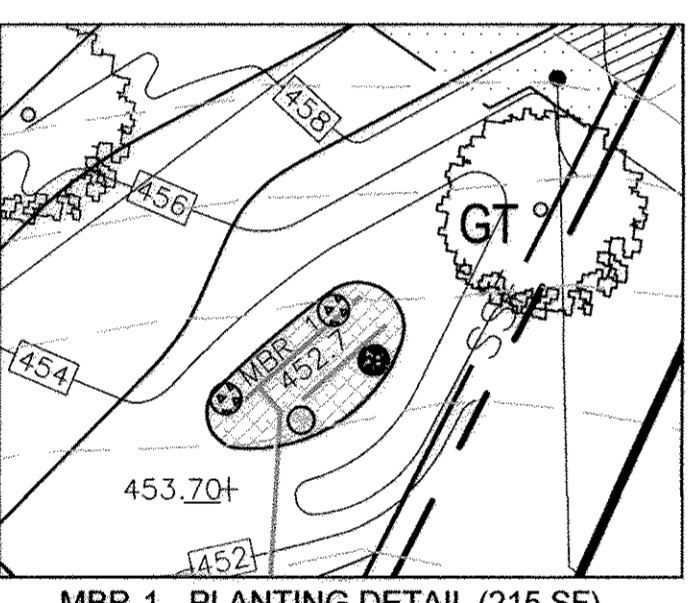
**MICRO-BIORETENTION (UNDERDRAIN)**  
NOT TO SCALE

**MICRO-BIORETENTION (OVERFLOW)**  
NOT TO SCALE

- 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.
  - PERFORATED PVC/HDPE UNDER DRAIN TO BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH OR EQUAL. SEE APPENDIX B.4.C.
  - PROVIDE 5" MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL BIOS. (SEE PLANS)

**MICRO-BIORETENTION FACILITY - DESIGN ELEVATION CHART**

| MBR FACILITY # | ESD WESEL | WEIR ELEV | TOP MULCH B | TOP PLANT SOIL C | BOTTOM PLANT SOIL D | PEA GRAVEL E | INV PIPE (1) F | INV STONE G | SURFACE AREA SF | APPROX DIM |
|----------------|-----------|-----------|-------------|------------------|---------------------|--------------|----------------|-------------|-----------------|------------|
| 1              | 453.70    | 453.70    | 452.70      | 452.45           | 450.95              | 450.62       | 450.12         | 449.95      | 215             | SEE PLAN   |
| 2              | 443.70    | 443.70    | 442.70      | 442.45           | 440.95              | 440.62       | 440.12         | 439.95      | 261             | SEE PLAN   |
| 3              | 441.70    | 441.70    | 440.70      | 440.45           | 438.95              | 438.62       | 438.12         | 437.95      | 171             | SEE PLAN   |

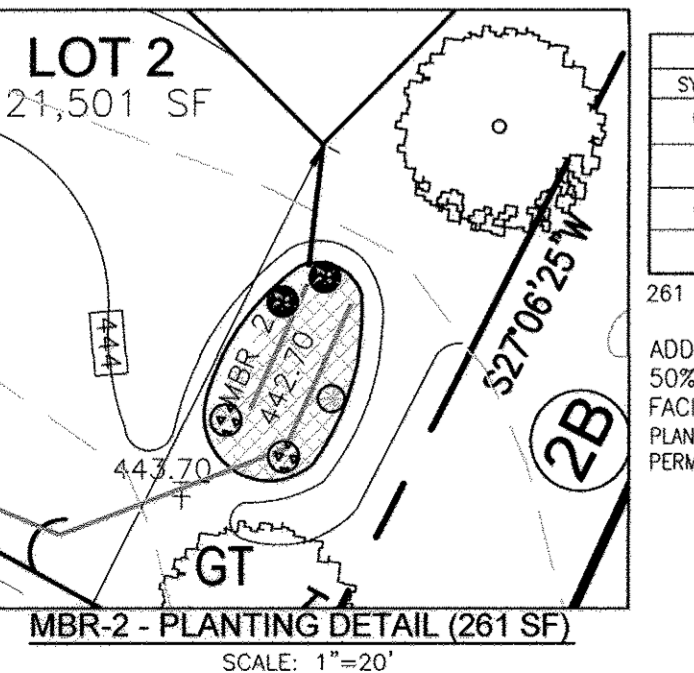


**MICRO-BIORETENTION #1 PLANTING SCHEDULE**

| SYMBOL | QTY | BOTANICAL NAME/COMMON NAME              | SIZE             | REMARKS    |
|--------|-----|---|------------------|------------|
| ⊕      | 2   | PANICUM VIRGATUM SWITCHGRASS            | 1 GALLON 36" o/c | 5 PROVIDED |
| ⊙      | 1   | HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA | 1 GALLON 30" o/c |            |
| ⊗      | 1   | ILEX GLABRA 'SHAMROCK' INKBERRY HOLLEY  | 1 GALLON         | CONT       |

215 SF X 75% X .0229 STEMS PER SQUARE FOOT = 4 PLANTS REQUIRED  
4 PROVIDED

ADDITIONAL PLANTINGS SHALL BE WITH THE FINAL INSPECTION IF 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION FACILITY DOES NOT HAVE VEGETATIVE COVER  
PLANT SUBSTITUTIONS MAY BE MADE WITH PERMISSION FROM HOWARD COUNTY

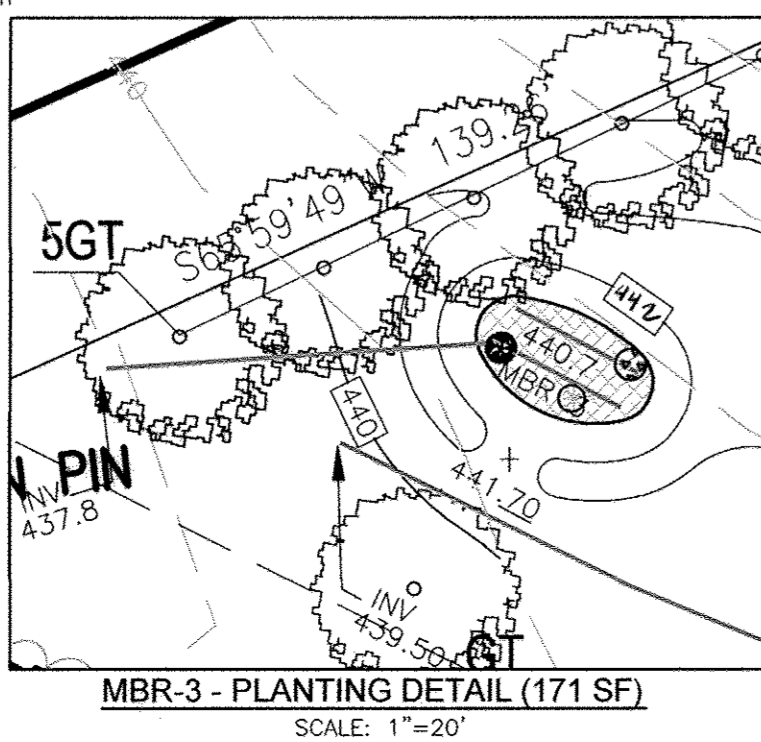


**MICRO-BIORETENTION #2 PLANTING SCHEDULE**

| SYMBOL | QTY | BOTANICAL NAME/COMMON NAME              | SIZE             | REMARKS |
|--------|-----|---|------------------|---------|
| ⊕      | 2   | PANICUM VIRGATUM SWITCHGRASS            | 1 GALLON 36" o/c |         |
| ⊙      | 1   | HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA | 1 GALLON 30" o/c |         |
| ⊗      | 2   | ILEX GLABRA 'SHAMROCK' INKBERRY HOLLEY  | 1 GALLON         | CONT    |

261 SF X 75% X .0229 STEMS PER SQUARE FOOT = 5 PLANTS REQUIRED

ADDITIONAL PLANTINGS SHALL BE WITH THE FINAL INSPECTION IF 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION FACILITY DOES NOT HAVE VEGETATIVE COVER  
PLANT SUBSTITUTIONS MAY BE MADE WITH PERMISSION FROM HOWARD COUNTY



**"MICRO-BIORETENTION/RAINGARDEN" PLANTING SCHEDULE NOTES:**

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT MANUFACTURER 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 ESD SUMMARY.
- FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH

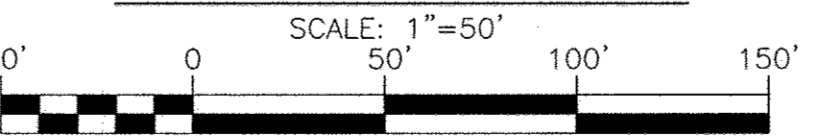
**MICRO-BIORETENTION #3 PLANTING SCHEDULE**

| SYMBOL | QTY | BOTANICAL NAME/COMMON NAME              | SIZE             | REMARKS |
|--------|-----|---|------------------|---------|
| ⊕      | 1   | PANICUM VIRGATUM SWITCHGRASS            | 1 GALLON 36" o/c |         |
| ⊙      | 1   | HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA | 1 GALLON 30" o/c |         |
| ⊗      | 1   | ILEX GLABRA 'SHAMROCK' INKBERRY HOLLEY  | 1 GALLON         | CONT    |

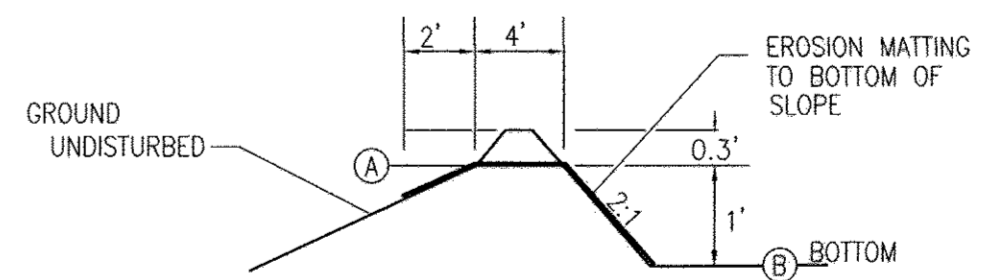
171 SF X 75% X .0229 STEMS PER SQUARE FOOT = 3 PLANTS REQUIRED  
3 PROVIDED

ADDITIONAL PLANTINGS SHALL BE WITH THE FINAL INSPECTION IF 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION FACILITY DOES NOT HAVE VEGETATIVE COVER  
PLANT SUBSTITUTIONS MAY BE MADE WITH PERMISSION FROM HOWARD COUNTY

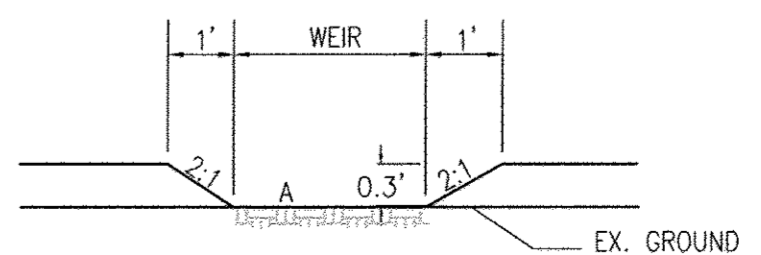
**STORMWATER MANAGEMENT DRAINAGE AREA MAP**



**WEIR OUTLET MICRO-BIORETENTION**



**TYPICAL SPILLWAY SECTION**  
NOT TO SCALE



**TYPICAL SPILLWAY PROFILE**  
NOT TO SCALE

**SWM PRACTICE CHART**

**ESD PRACTICES BY LOT**

| LOT # | ADDRESS                  | ESD PRACTICE                  |
|-------|--------------------------|-------------------------------|
| #1    | XXXXX HIDDEN HAVEN COURT | NOT APPLICABLE                |
| #2    | XXXXX HIDDEN HAVEN COURT | THREE (3) - RAIN GARDEN (M-7) |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 10.20.17  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 10.20.17  
CHIEF, DIVISION OF LAND DEVELOPMENT

**OWNER**  
MATTHEW T. & TINA L. LEBARON  
9934 OLD MILL ROAD  
ELLICOTT CITY, MD 21042

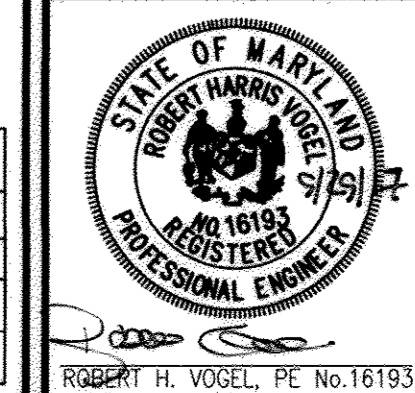
**OWNER/DEVELOPER**  
GEORGE (DECEASED) & SHARON HOLLAMAN  
9930 OLD MILL ROAD  
ELLICOTT CITY, MD 21042  
410-340-5773

FINAL SUPPLEMENTAL PLAN  
STORMWATER MANAGEMENT PLAN  
HOLLOMAN PROPERTY  
LOTS 1, 2 AND OLD MILL OVERLOOK  
- NON-BUILDABLE PARCEL 'A'

TAX MAP 17 - GRID 8 - PARCEL 28 & P/29  
2ND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

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



**PROFESSIONAL CERTIFICATE**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16193 EXPIRATION DATE: 09-27-2018

DESIGN BY: RVE  
DRAWN BY: MDL/KG  
CHECKED BY: RHV  
DATE: SEPTEMBER 2017  
SCALE: AS SHOWN  
W.O. NO.: 16-16

3 SHEET OF 3