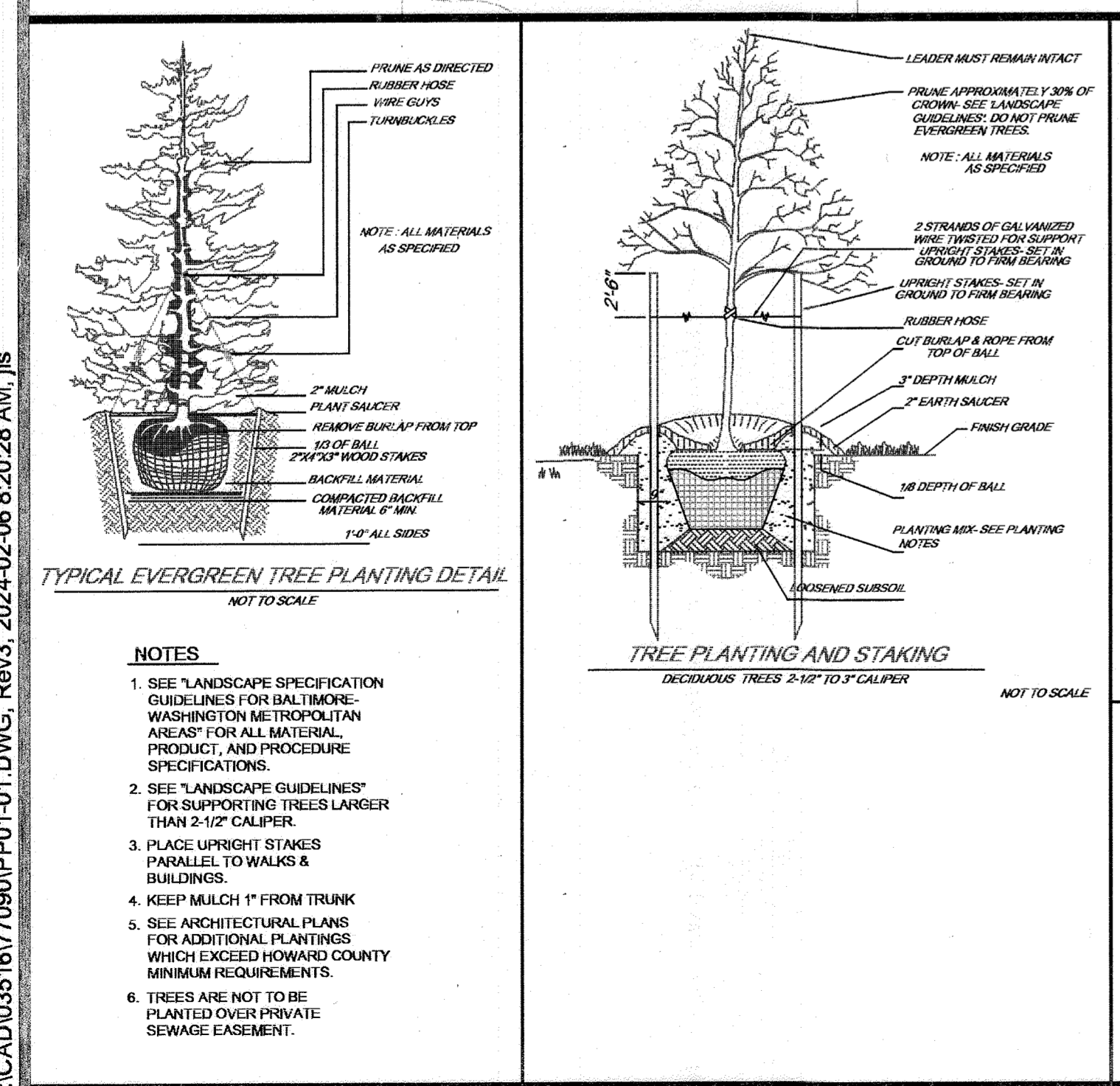
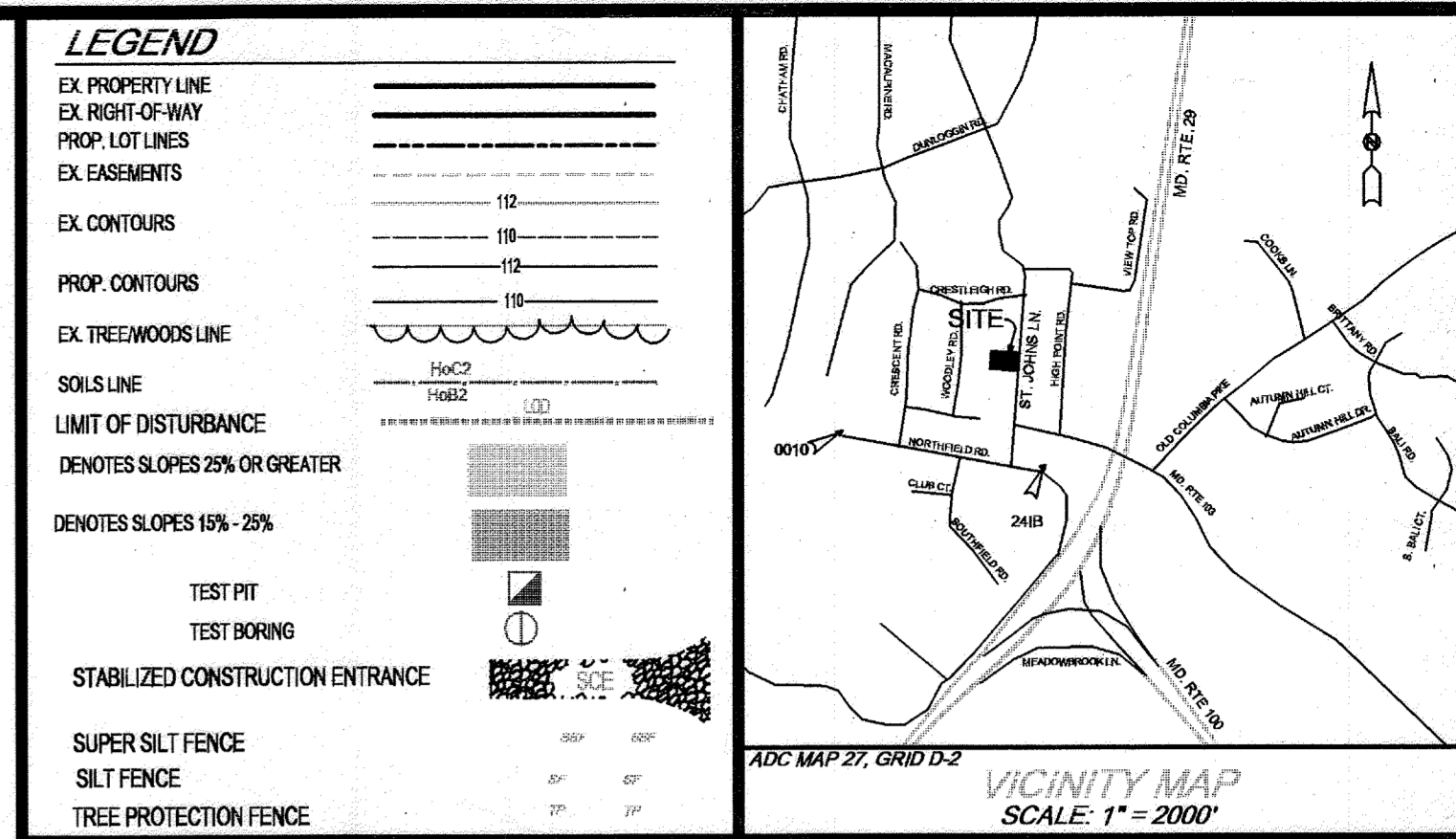


- GENERAL NOTES:**
- COORDINATES BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 2418 AND NO. 0010. GEODETIC CONTROL STATION: NO. 2418 N578.753.499 E1,362,302.95 ELEV. 390.62. GEODETIC CONTROL STATION: NO. 0010 N578.167.018 E1,360,280.20 ELEV. 387.21
  - BRL INDICATES BUILDING RESTRICTION LINE
  - SUBJECT PROPERTY IS ZONED R-20 PER THE 10-06-2013 COMPREHENSIVE ZONING REGULATIONS.
  - DENOTES CONCRETE MONUMENT
  - DENOTES IRON PIPE OR REBAR W/ IDENTIFICATION CAPS
  - THIS PLAN IS BASED ON A FIELD RUN MONUMENTED SURVEY PERFORMED ON OR ABOUT 9/10/12 BY CHARLES R. CROCKEN AND ASSOC., INC.
  - AREAS SHOWN ARE MORE OR LESS.
  - DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DRIVEWAYS TO ENSURE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    - WIDTH - 12 (16 FEET SERVING MORE THAN ONE RESIDENCE)
    - AS SURFACE - 8 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.)
    - GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE, AND MIN. 45' TURNING RADIUS.
    - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (425,000 LBS.)
    - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
    - STRUCTURAL CLEARANCE - MINIMUM 12 FEET
    - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
  - 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 ON THE DRIVEWAY
  - LAND DEDICATED TO HOWARD COUNTY MARYLAND FOR PURPOSES OF A PUBLIC ROAD 0.0646 ACRES (2813.6635 SF.)
  - WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE.
  - PUBLIC WATER AND PUBLIC SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF THE ISSUANCE OF THE BUILDING PERMIT IF CAPABLE OF BEING INSTALLED AT THAT TIME.
  - THERE IS AN EXISTING DWELLING LOCATED ON LOT 1 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLINGS ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
  - LANDSCAPING FOR LOTS 2 & 3 IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. LANDSCAPE SURETY IN THE AMOUNT OF \$6,500 FOR (5) SHADE TREES, (11) EVERGREEN TREES AND (265 L7) PRIVACY FENCE WILL BE POSTED AS PART OF THE BUILDING/GRADING PERMIT.
  - THIS PLAT COMPLIED WITH THE REQUIREMENTS OF SECTION 16.120 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY A PAYMENT OF A FEE IN LIEU IN THE AMOUNT OF \$15,246.00 FOR THE 0.28 ACRE OBLIGATION (0.28 ACRES x \$53,880 SF/AC).
  - PROTECTIVE COVENANTS AND RESTRICTIONS GOVERNING THE MAINTENANCE OF THE USE IN COMMON DRIVEWAY ARE TO RECORD WITH THIS PLAT AND CROSS HOWARD COUNTY SIMULTANEOUSLY WITH THE RECORDING OF THIS PLAT.
  - WIDTH OF PANHANDLES FOR LOTS 2 & 3 IS 5.00'
  - "IN ACCORDANCE WITH SECTION 16.120(d) OF THE SUBDIVISION REGULATIONS REGARDING MINIMUM PUBLIC ROAD FRONTAGES, THE 24 FOOT WIDE USE-IN-COMMON DRIVEWAY EASEMENT WITH A 16 FOOT PAVING WIDTH PROVIDES SUFFICIENT PUBLIC ROAD FRONTAGE COLLECTIVELY TO MEET THE DRIVEWAY EASEMENT REQUIREMENTS IN THE DESIGN MANUAL."
  - DEVELOPER SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PUBLIC RIGHT-OF-WAY
  - TRASH AND RECYCLING WILL BE AT SAINT JOHN'S LANE WITHIN 5' OF THE PUBLIC ROADWAY
  - THERE ARE NO BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE SITE SHOWN HEREON.
  - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
  - 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 THE START OF WORK.
  - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-897-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
  - TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNS 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 TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME 11 (1989) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)". A MINIMUM SPACING OF 20 FEET SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
  - ALL SIGN POSTS USED FOR TRAFFIC CONTROL, SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) 9'-3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
  - THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH TWO FOOT CONTOUR INTERVALS PREPARED BY CROCKEN AND ASSOC. DATE: 05-19-12.
  - WATER IS PUBLIC. (CONTRACT NUMBER 10-W, DRAINAGE AREA 02131105)
  - SEWER IS PUBLIC. (CONTRACT NUMBER 31-S, DRAINAGE AREA 02131105)
  - STORMWATER MANAGEMENT FOR LOTS 2 & 3 SHOWN HEREON HAS BEEN SATISFIED BY CONSTRUCTION OF BIO-RETENTION FACILITIES, PERFORATED PAVEMENT AND DISCONNECTED DOWN-ROOF TOP RUNOFF. MGC/CMC WITH WIDE ENVIRONMENTAL SITE DESIGN (ESD), MDC STORMWATER DESIGN MANUAL VOL. 18.18 AND THE HOWARD COUNTY DESIGN MANUAL VOL. 1 (CHAPTER 8: STORMWATER MANAGEMENT FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH THE OPERATION AND MAINTENANCE SCHEDULES SHOWN HEREON.
  - EXISTING UTILITIES ARE PLOTTED FROM HOWARD COUNTY UTILITY DRAWINGS AND FIELD LOCATED WHERE POSSIBLE.
  - A WETLAND DELINEATION AND FOREST STAND DELINEATION WAS PREPARED ON MARCH 4, 2013 BY MAR-LEN ENVIRONMENTAL AND DRAGONFLY ENVIRONMENTAL.
  - THERE ARE NO FLOODPLAIN, STEEP SLOPES, STREAMS, WETLANDS OR THEIR BUFFERS, OR FOREST CONSERVATION EASEMENTS LOCATED ON SITE.
  - A TRAFFIC STUDY IS NOT REQUIRED FOR THIS SITE.
  - THE USE-IN-COMMON DRIVEWAY AND MAINTENANCE AGREEMENT FOR LOTS 1-3 WILL BE RECORDED IN THE LAND RECORDS OF HOWARD COUNTY ALONG WITH THE RECORDING OF THE FINAL PLAT.
  - THE EXISTING STRUCTURE ON THE PROPERTY IS NOT LISTED ON THE HISTORIC REGISTRY BUT IS OLDER THAN 50 YEARS. THE DPZ, RESOURCE CONSERVATION DIVISION DETERMINED THAT THE SITE DOES NOT REQUIRE HIC APPROVAL.
  - THIS PLAT IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2000 AND THE ZONING REGULATIONS BY COUNCIL BILL 32-2010. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR GRADING/BUILDING PERMIT AND PER THE ZONING REGULATIONS DATED 10/6/2013.
  - OPEN SPACE REQUIREMENTS ARE PROVIDED BY A FEE-IN-LIEU PAYMENT OF \$3,000.
  - APPROVAL OF A SITE DEVELOPMENT PLAN IS REQUIRED FOR THE DEVELOPMENT OF ALL RESIDENTIAL LOTS WITHIN THIS SUBDIVISION PRIOR TO ISSUANCE OF ANY GRADING OR BUILDING PERMITS FOR NEW HOUSE CONSTRUCTION IN ACCORDANCE WITH SECTION 16.155 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
  - IN ACCORDANCE WITH SECTION 16.134(A) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS THE DEVELOPER WILL PAY A FEE-IN-LIEU FOR CONSTRUCTION OF ROAD IMPROVEMENTS ALONG SAINT JOHN'S LANE.
  - THE MHA OBLIGATION WILL BE PAID BY FEE-IN-LIEU AND THE MHA AGREEMENT WILL BE RECORDED SIMULTANEOUSLY WITH THE PLAT.
  - THE PLAN SHOWN HEREON IS SUBJECT TO A WAIVER FROM SECTION 16.144(X)(3) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WP-15-049 APPROVED 11/04/2014.
  - DPZ FILE NUMBERS: WP-15-048, ECP-13-071



**PLANT LIST**

SYMBOL	QUANTITY	BOTANICAL COMMON NAME	SIZE
●	2	ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY WILD MAPLE	2.5" CAL. 100%
●	3	QUERCUS SPINOSA 'PATRIOT' / PATRIOT OAK	2.5" CAL. 100%
★	11	PINUS STREPERA / EASTERN WHITE PINE	6'-8" HT.

THIS LIST INCLUDES LANDSCAPE MATERIAL FOR PERIMETER LANDSCAPE EDGE AND STREET TREES.

1. THE OWNER, TRACT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, TREES, 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. OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION.

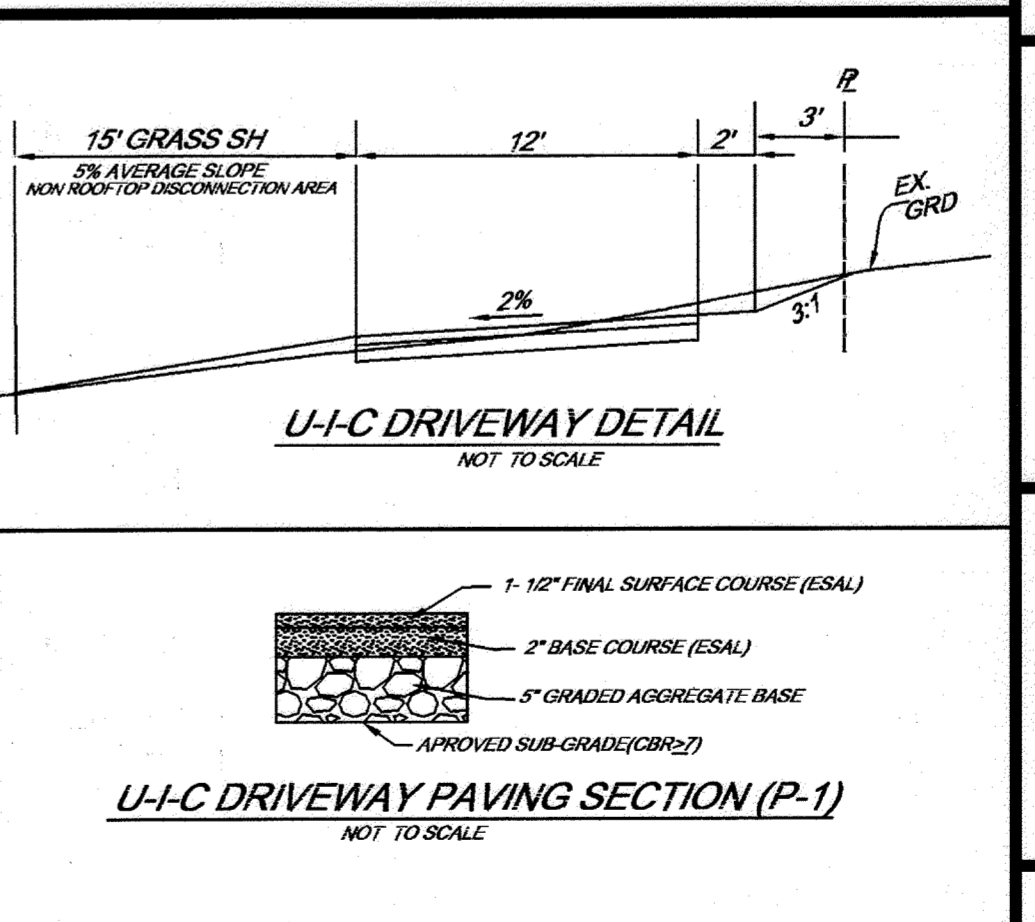
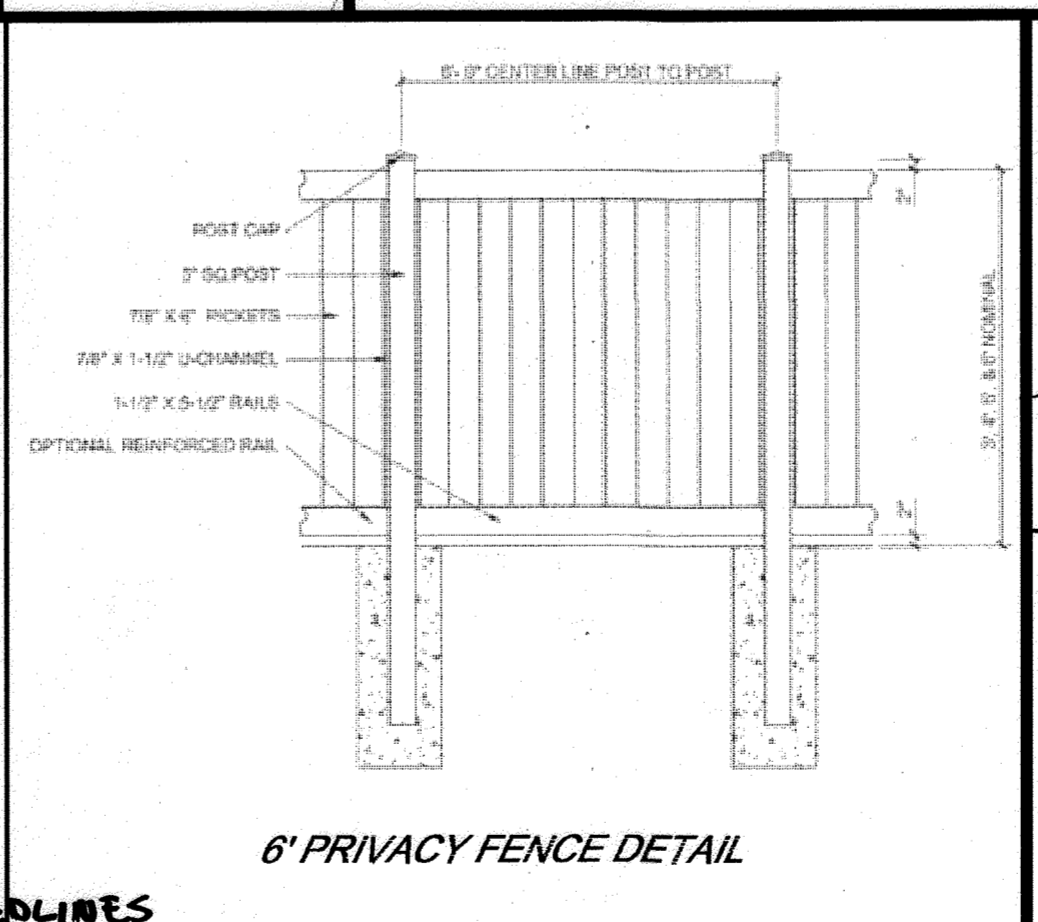
2. AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN AN EVENT OF SUBSTITUTION OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL, OR DELAY IN THE RELEASE OF LANDSCAPE SURETY FUNDS. SUCH TIME AND ALL REQUIRED MATERIALS ARE PLANTED AND/OR DELIVERED ARE MADE TO APPLICABLE LAWS AND CERTIFICATIONS. UNLESS OTHERWISE NOTED, ALL EXISTING TREES ARE TO BE REMOVED FOR PLANTING IMPROVEMENTS.

**SCHEDULE A PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO ROADWAYS
Perimeter/Frontage Designation	B	C
Linear Foot of Roadway	325	218
Frontage/Perimeter	240	256
Credit for Existing Vegetation	YES	YES
Shade Trees	2	21*
Evergreen Trees	2	21*
Number of Plants Required	5 (1:60)	5 (1:40)
Shade Trees	8 (1:40)	11 (1:20)
Evergreen Trees	4 (1:60)	24 (1:10)
Number of Plants Provided	5	NA
Shade Trees	5	NA
Evergreen Trees	0	NA
Other Trees (2:1 Substitution)	0	2
Shrubs (10:1 Substitution)	0	2

NOTE: \* PERIMETER #2 10 EXISTING EVERGREEN TREES ARE BEING CREDITED FOR THE 5 REQUIRED SHADE TREES.

\*\* PERIMETER #6 6 PRIVACY FENCE PROVIDED IN LIEU OF REQUIRED LANDSCAPING



- LIST OF DRAWINGS**
- SUPPLEMENTAL AND LANDSCAPE PLAN
  - ENVIRONMENTAL SITE DESIGN
  - SIGHT DISTANCE ANALYSIS
  - STRUCTURAL STORMWATER MANAGEMENT DRAINAGE AREA, WEIR WALL DETAIL
  - STRUCTURAL STORMWATER MANAGEMENT PLAN, DETAILS & PROFILES
  - SEDIMENT CONTROL PLAN
  - SEDIMENT CONTROL NOTES
  - SEDIMENT CONTROL DETAILS
- SUPPLEMENTAL AND LANDSCAPE PLAN FOR CENTENNIAL CHOICE**
- LOTS 1-3
- SINGLE FAMILY DETACHED
- LIBERTY 14161 FOLIO 520
- ZONED R-20
- SECOND ELECTION DISTRICT TAX MAP 24, GRID 17, PARCEL 370
- HOWARD COUNTY, MARYLAND
- Prepared by: CHARLES R. CROCKEN AND ASSOCIATES, INC.
- 902 LEE AVE.
- SYKESVILLE, MARYLAND 21157
- Tel: (410) 549-2708
- Fax: (410) 549-9063
- SCALE: 1"=30'
- DATE: 05/07/13
- DPZ FILE NO: F-14-112
- SHEET 1 OF 8

**REVISIONS**

REV. NO.	DATE	BY	DESCRIPTION
1	2023-11-20	DRS/jfs	PER HCDD 2023-07-19
2	2024-01-02	DRS/jfs	PER HCSD 2023-12-27
3	2024-02-01	DRS/jfs	PER HCDD 2024-01-31

**DRS ASSOCIATES**

LAND DESIGN CONSULTANTS

52 WINTERS STREET WESTMINSTER, MARYLAND 21157

410-848-4060 410-876-6040 F. 410-848-8818

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**Professional Certification**

I hereby certify 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.

*Shawn Cooper*

License No. 7803 Expiration Date 4-22-2025

**DEVELOPER'S/BUILDER'S CERTIFICATE**

I hereby certify that the LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I HEREBY CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPANIED BY AN INSURED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

*Wally*

DATE: 05/16/24

**Professional Certification**

I hereby certify 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.

*Shawn Cooper*

License No. 7803 Expiration Date 4-22-2025

**DEVELOPER'S/BUILDER'S CERTIFICATE**

I hereby certify that the LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I HEREBY CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPANIED BY AN INSURED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

*Wally*

DATE: 05/16/24

**APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING**

CHIEF, DIVISION LAND DEVELOPMENT

*idz424*

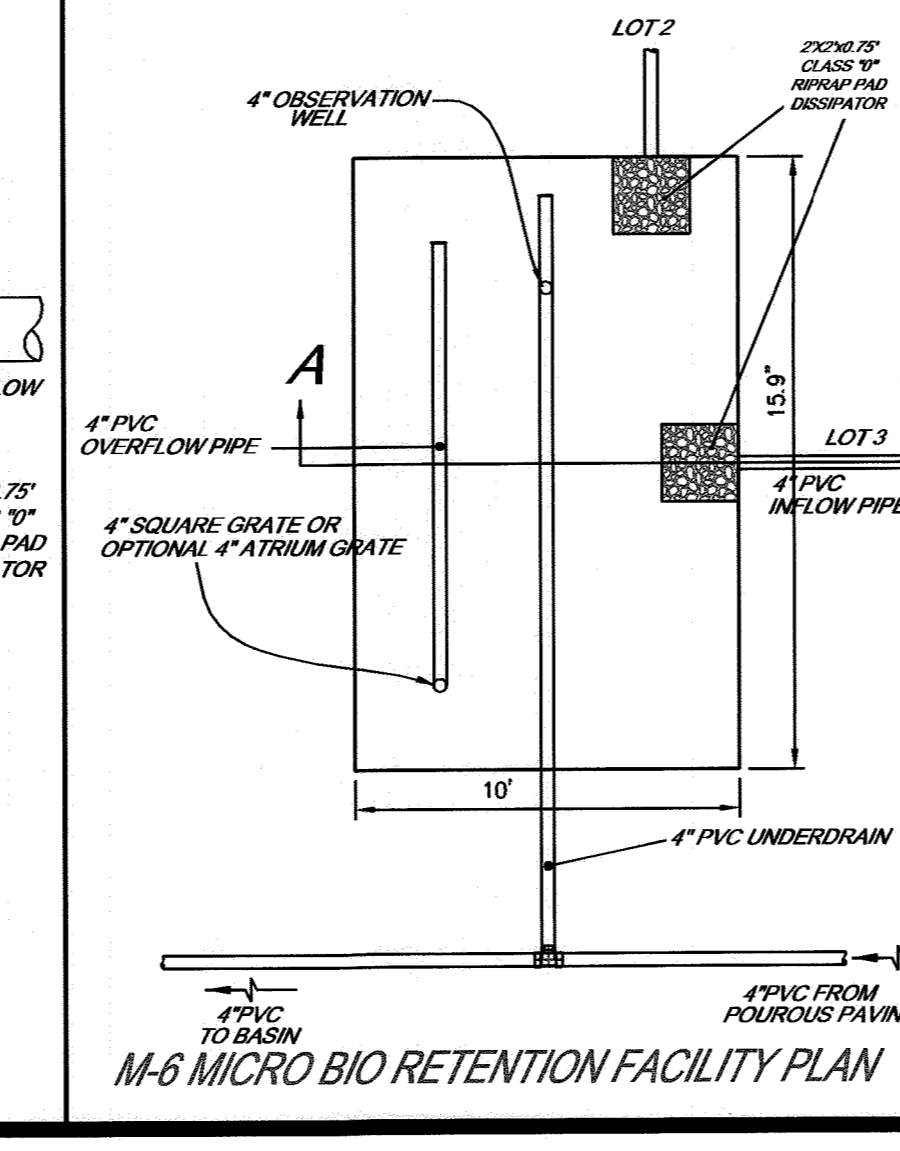
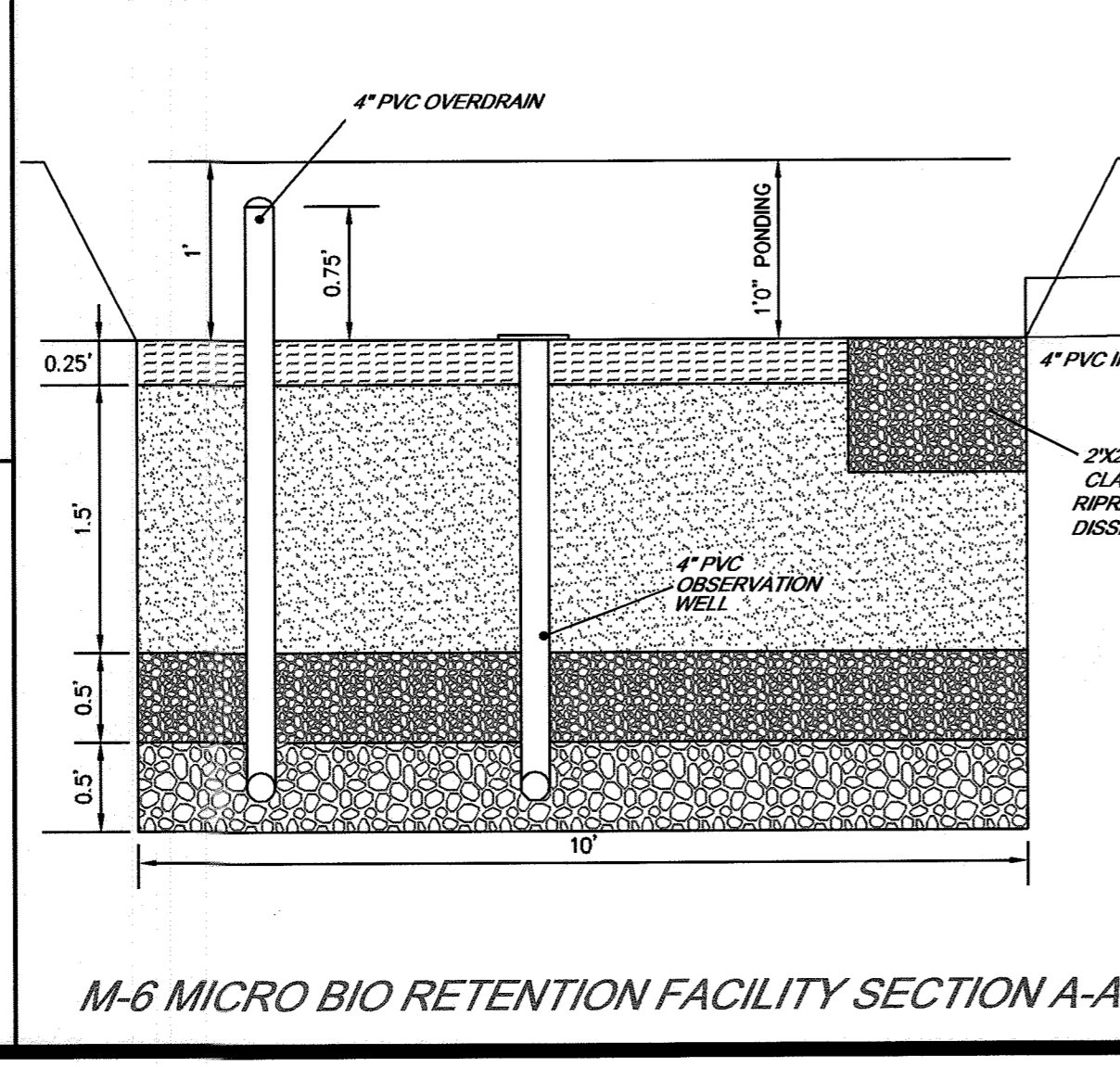
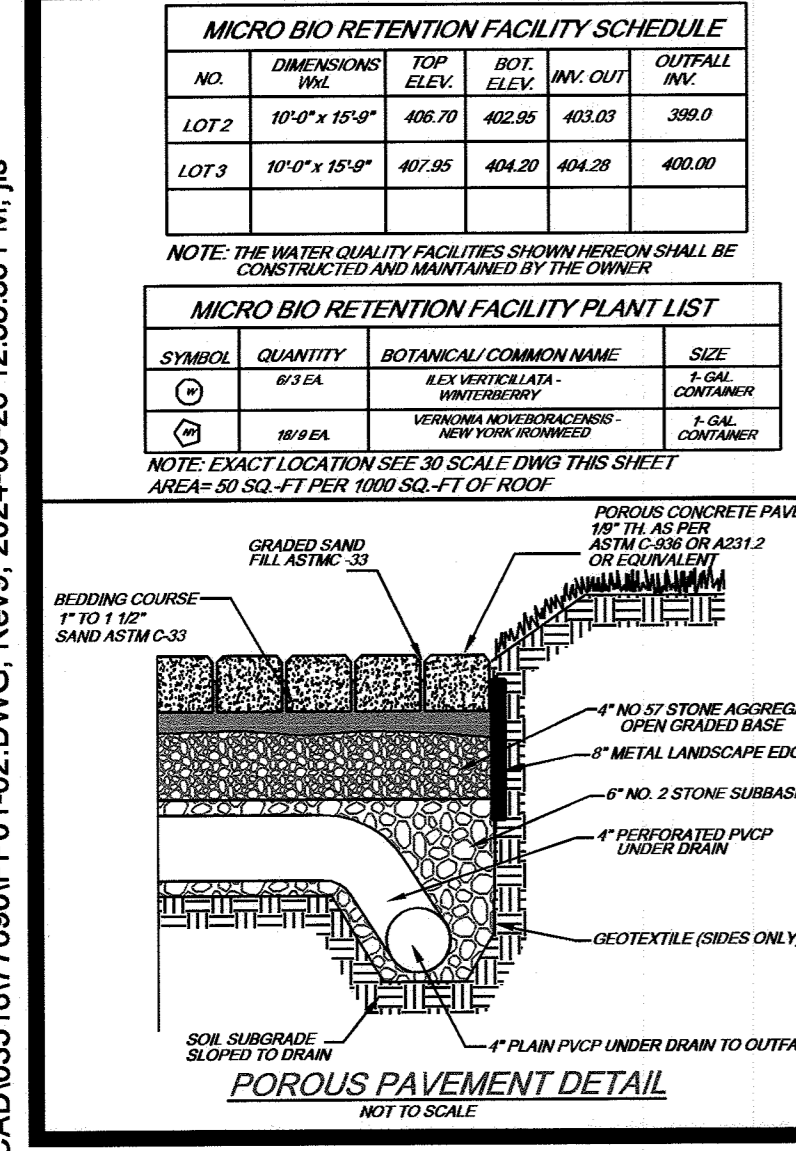
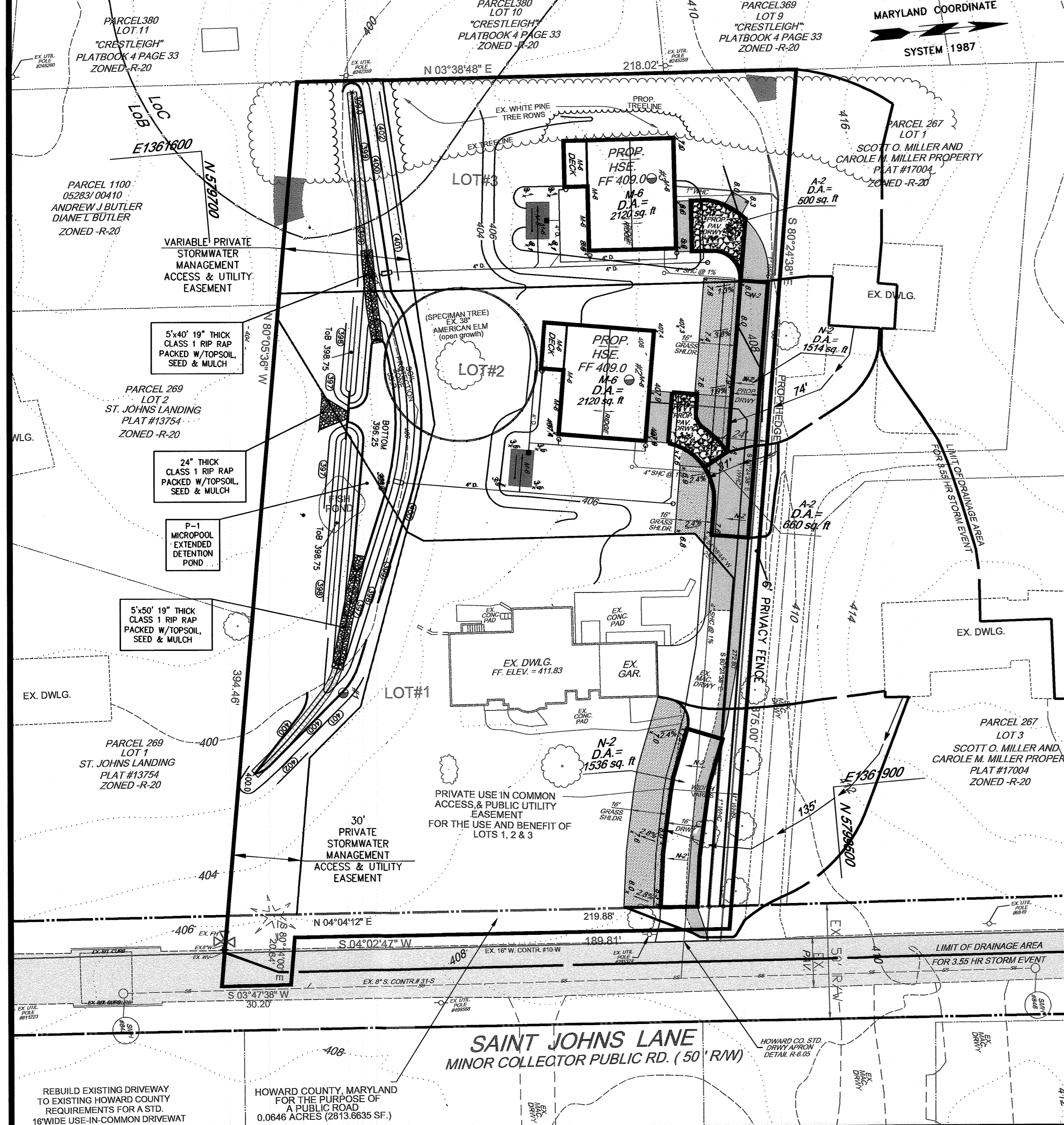
DATE: 05/16/24

CHIEF, DEVELOPMENT ENGINEERING

*Wally*

DATE: 05/16/24

**F-14-112**



**Construction Specifications for Environmental Site Design Practices**  
**B.4.B. Specifications for Permeable Pavements & Reinforced Turf**  
 These specifications include information on acceptable materials for typical applications and are not exclusive or limiting. The designer is responsible for developing detailed specifications for individual projects and specific conditions.

1. Previous Concrete Specifications  
 Design Thickness - Previous concrete applications shall be designed so that the thickness of the concrete slab shall support the traffic and vehicle types that will be carried. Applications may be designed using either standard pavement procedures (e.g., AASHTO, ACI 325.9R, ACI 330R) or using structural values derived from flexible pavement design procedures.

Mix & Installation - Traditional Portland cements (ASTM C 150, C 1157) may be used in previous concrete applications. Phosphorus admixtures may also be used. Materials should be tested (e.g., trial batching) prior to construction so that critical properties (e.g., setting time, rate of strength development, porosity, permeability) can be determined.

Aggregate - Previous concrete contains a limited fine aggregate content. Commonly used gradations include ASTM C 33 No. 67 (in. to No. 4), No. 8 (3/8 in. to No. 16) and No. 89 (3/8 in. to No. 50) sieves. Single-sized aggregate (up to 1 inch) may also be used. Water Content - Water-to-cement ratios between 0.27 and 0.30 are used routinely with proper use of chemical admixtures. Water quality should meet ACI 308. As a general rule, potable water should be used although recycled concrete reduction water meeting ASTM C 94 or AASHTO M 157 may also be used. Admixtures - Chemical admixtures (e.g., retarders or hydration-stabilizers) are used to obtain special properties in previous concrete. Use of admixtures should meet ASTM C 494 (chemical admixtures) and ASTM C 260 (air entraining admixtures) and closely follow manufacturer's recommendations. Base Course - The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (n = 0.30).

2. Permeable Interlocking Concrete Pavements (PICP)  
 Paver Blocks - Blocks should be either 3-1/8 in. or 4 in. thick, and meet ASTM C 936 or CSA A231.2 requirements. Applications should have 20% or more (40% preferred) of the surface area open. Installation should follow manufacturer's instructions, except that fill and base course materials and dimensions specified in this Appendix shall be followed. Infill Materials and Leveling Course - Openings shall be filled with ASTM C-33 graded sand or sandy loam. PICP blocks shall be placed on a one-inch thick leveling course of ASTM C-33 sand. Appendix B.4. Construction Specifications for Environmental Site Design Practices Supp. 1 B.4.4 Base Course - The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (n = 0.30).

1. Reinforced Turf  
 Reinforced Grass Pavement (RGP) - Whether used with grass or gravel, the RGP thickness shall be at least 12" thick with a load capacity capable of supporting the traffic and vehicle types that will be carried.

**B.4.C. Specifications for Micro-Bioretenion, Rain Gardens, Landscape Infiltration & Infiltration Basins**

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 substances shall be mixed or dumped within the micro-bioretenion 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:

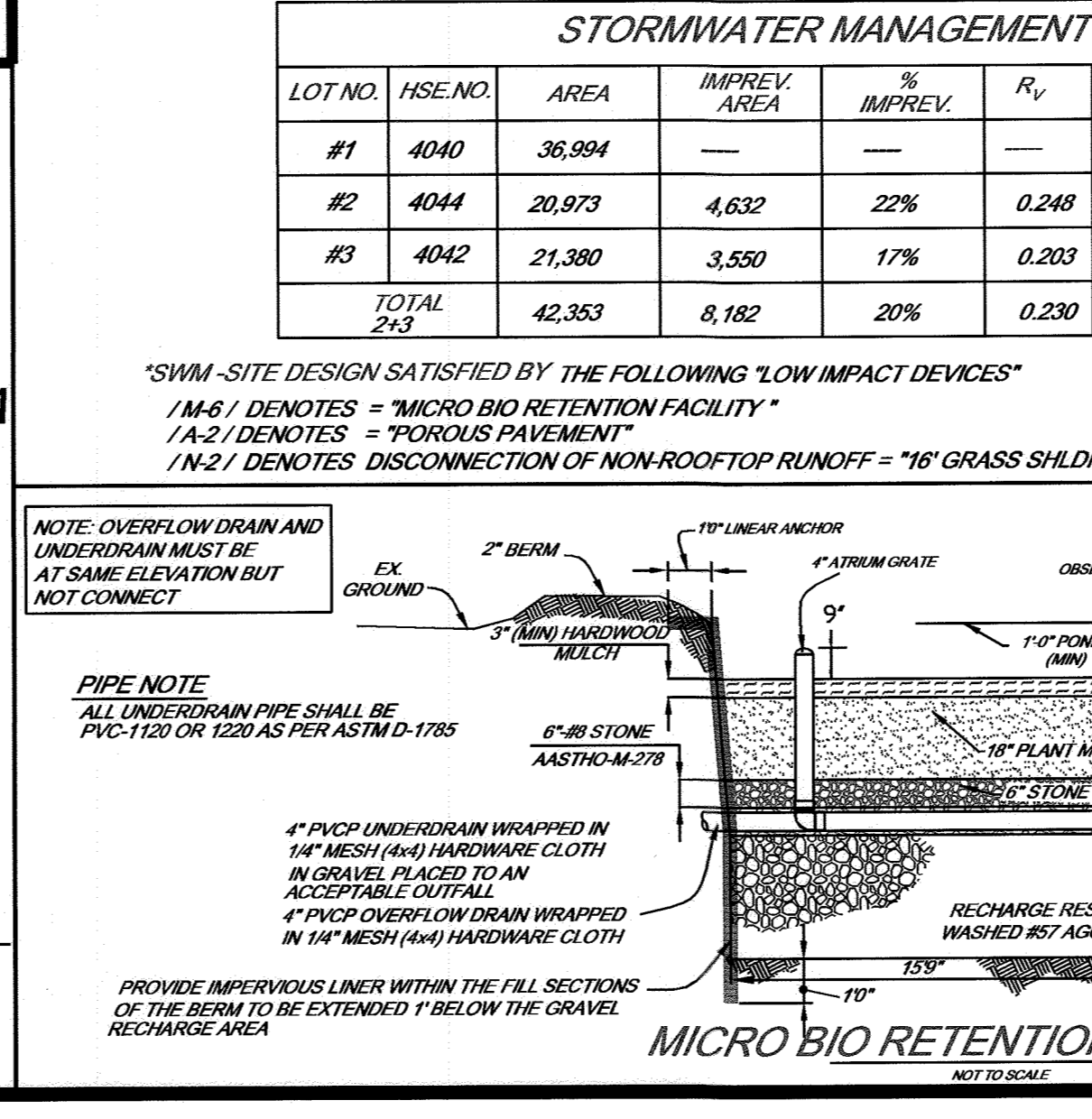
Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)  
 Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).  
 Clay Content - 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 into 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 hoes to remove original soil. If practices are Appendix B.4. Construction Specifications for Environmental Site Design Practices B.4.5 Supp. 1 excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow 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 a hoes plow, ripper, or subsoiler. These tilling operations are to fracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment. Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before prepap (rototilling) hoes. 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 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.

**STORMWATER MANAGEMENT INFORMATION**

Lot	House Number	Facility Name & Number	Practice	Type / Vol	Public	Private	Organization	Coordinates	Miscellaneous
1-3	4040-4044	N-2 Disconnection of Non-Rooftop Runoff	ESD / 113 cf	No	Yes	HOA	579868 1361907	Imp = 1,427 sf	
1-3	4040-4044	N-2 Disconnection of Non-Rooftop Runoff	ESD / 37 cf	No	Yes	HOA	579901 1361773	Imp = 466 sf	
1-3	4040-4044	N-2 Disconnection of Non-Rooftop Runoff	ESD / 63 cf	No	Yes	HOA	579917 1361701	Imp = 791 sf	
1-3	4040-4044	P-1 Micropool Extended Detention Pond	STRUC / 3,726 cf	No	Yes	HOA	579765 1361736	DA = 125,717 sf	



4. Plant Material  
 Recommended plant material for micro-bioretenion 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 moist during transport and on-site storage. The plant root ball should be planted so 1/8th 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 after installation.

**Appendix B.4. Construction Specifications for Environmental Site Design Practices Supp. 1 B.4.6**  
 Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball. Grasses and legume seed shall be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications. The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, ducts, or at a minimum, topsoil. Only odd 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.

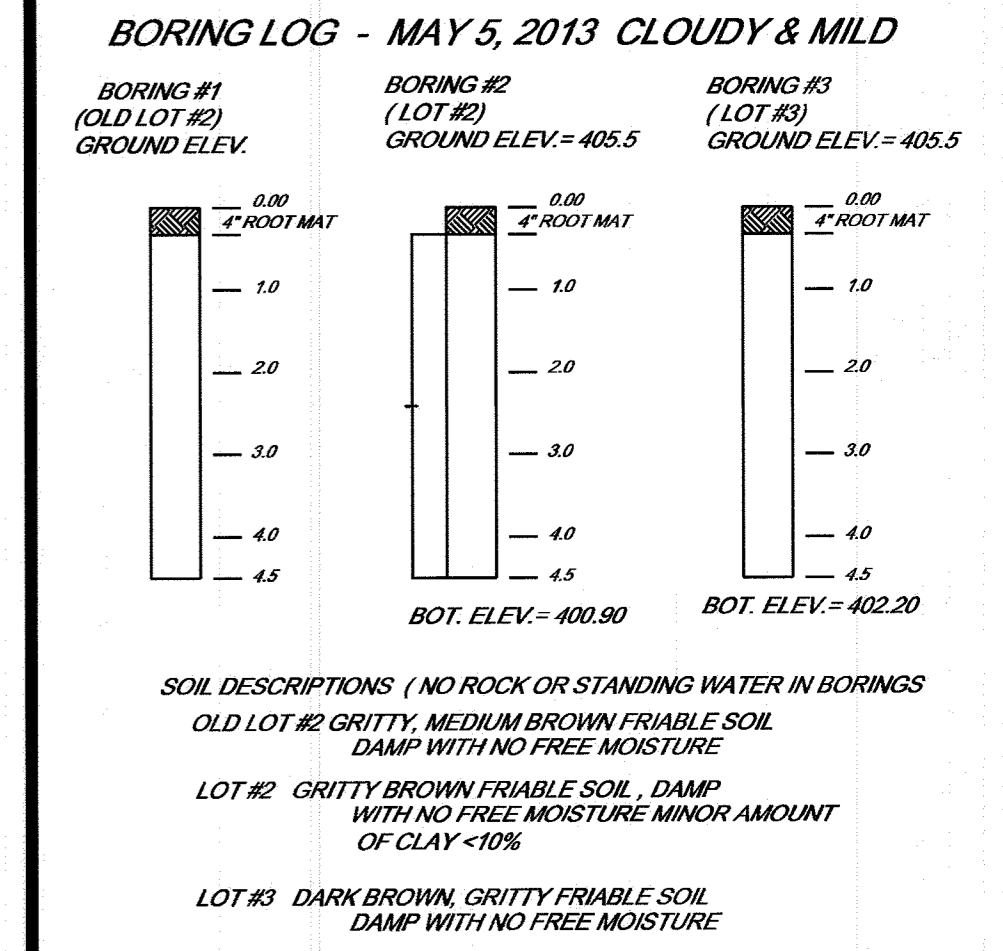
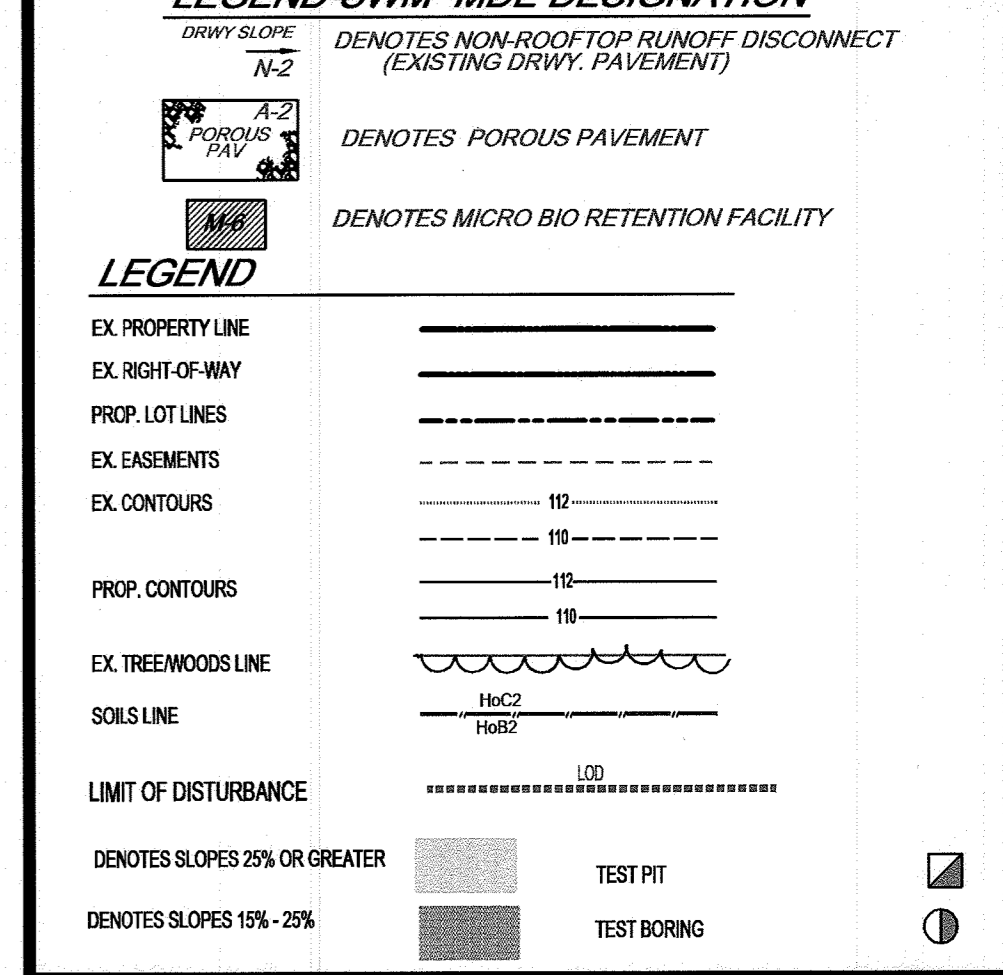
6. Underdrains  
 Underdrains should meet the following criteria:  
 Pipes - Should be 4" diameter, slotted or perforated rigid plastic pipe (ASTM 758, Type PS 2B, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).  
 Perforations - If perforated pipe is used, perforations should be 9" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.  
 Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain. The gravel shall be placed on a minimum 0.5% slope.  
 A rigid, non-perforated observation well must be provided (one per every 1000 square feet) to provide a clean-out port and monitor performance of the filter. A 4" layer of pea gravel (2" to 3" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed but thickness exceeds 24".  
 The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous  
 These practices may not be constructed until all contributing drainage area has been stabilized.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1) DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)**  
 1. Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscaped areas. The areas receiving runoff should be protected from future compaction or development of impervious area. In commercial areas, foot traffic should be discouraged as well.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)**  
 a. The Owner shall periodically sweep (or vacuum porous concrete pavement) the pavement surfaces to reduce sediment accumulation and ensure adequate surface porosity. Sweeping should be performed at least twice annually with a commercial cleaning unit. Washing or compressed air units should not be used to perform surface cleaning.  
 b. The Owner shall periodically clean drainage pipes, inlets, stone edge drains and other structures within or adjoining the practice.  
 c. The Owner shall use deicers in moderation. Deicers should be non-toxic and applied either as calcium magnesium acetate or as pretreated salt.  
 d. The Owner shall ensure snow plowing is performed carefully with blades set one inch above the surface. Plowed snow piles and snowmelt should not be directed to permeable pavement.

**OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3) MICRO-BIORETENTION (M-6) RAIN GARDENS (M-7) BIORETENTION SWALE (M-8) ENHANCED FILTERS (M-9)**  
 a. 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.  
 b. 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.  
 c. 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.  
 d. The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.



**Professional Certification**  
 I hereby certify 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.

Charles Crocker 3/26/24  
 License No. 7803 Expiration Date 4-22-2025

**APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING**  
 CHIEF, DIVISION LAND DEVELOPMENT  
 PHIL PHIBBS  
 CHIEF, DEVELOPMENT ENGINEERING

10/24/24  
 10.16.24

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 410-848-4060 410-876-6040 F. 410-848-8818

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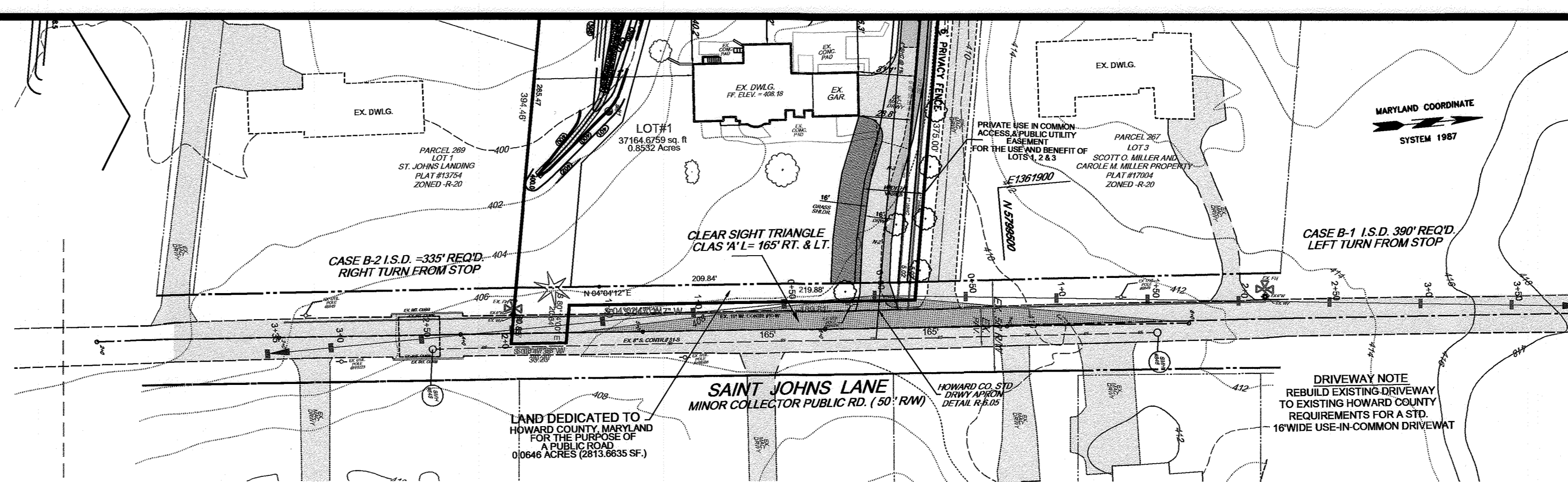
**OWNER/DEVELOPER**  
 MING QIU, HUIJING YANG & SHERRY MAOWEI YANG

66 MR. ZHANG, (LILU) XI, AGENT  
 GREAT HOMES REALTY  
 3822 TENNEY COURT  
 ELLICOTT CITY, MD 21114  
 PHONE: 410-304-6007

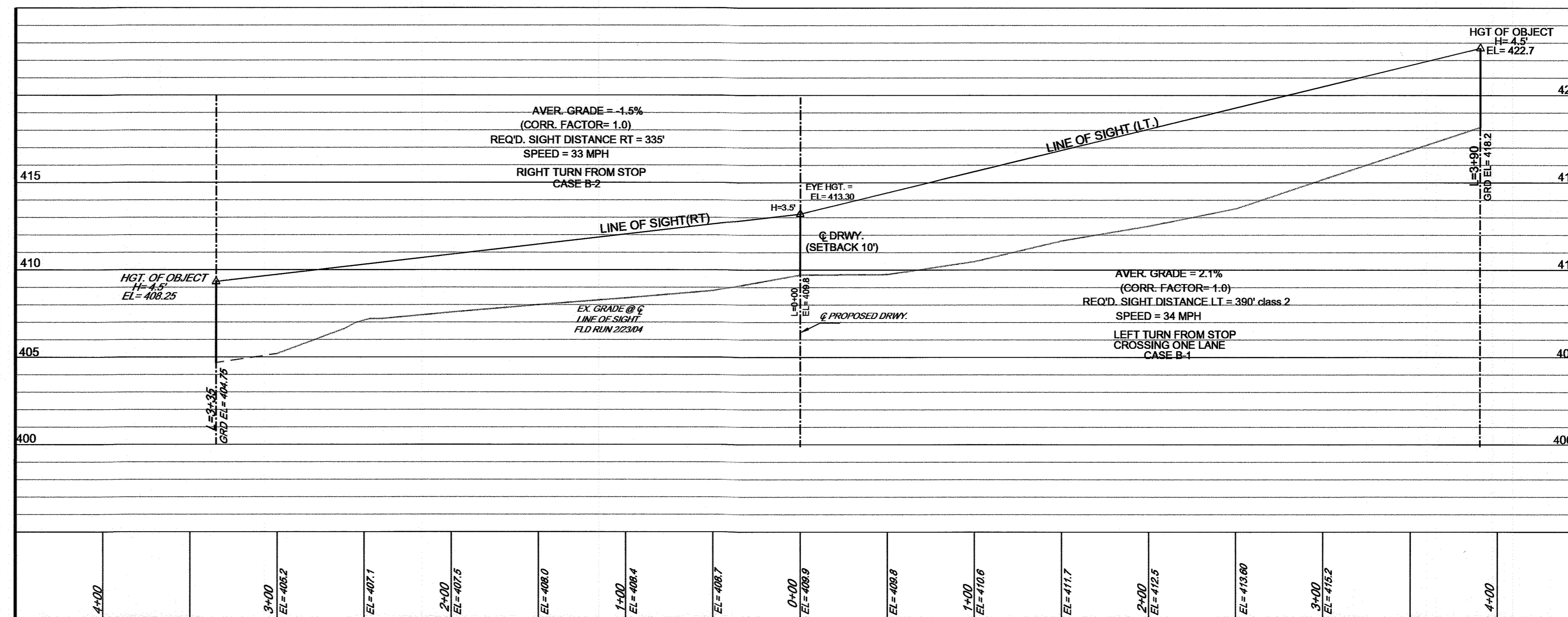
**ENVIRONMENTAL SITE DESIGN DRAINAGE AREA MAP & DETAILS**  
 FOR  
**CENTENNIAL CHOICE**  
 4040 ST. JOHNS LANE  
 SINGLE FAMILY DETACHED  
 LBER 113617 FCD 044  
 ZONED R-20  
 SECOND ELECTION DISTRICT 1A MAP #24, GRID 17, PARCEL 370  
 HOWARD COUNTY, MARYLAND

Prepared by  
**CHARLES R. CROCKER AND ASSOCIATES, INC.**  
 902 LEE AVE.  
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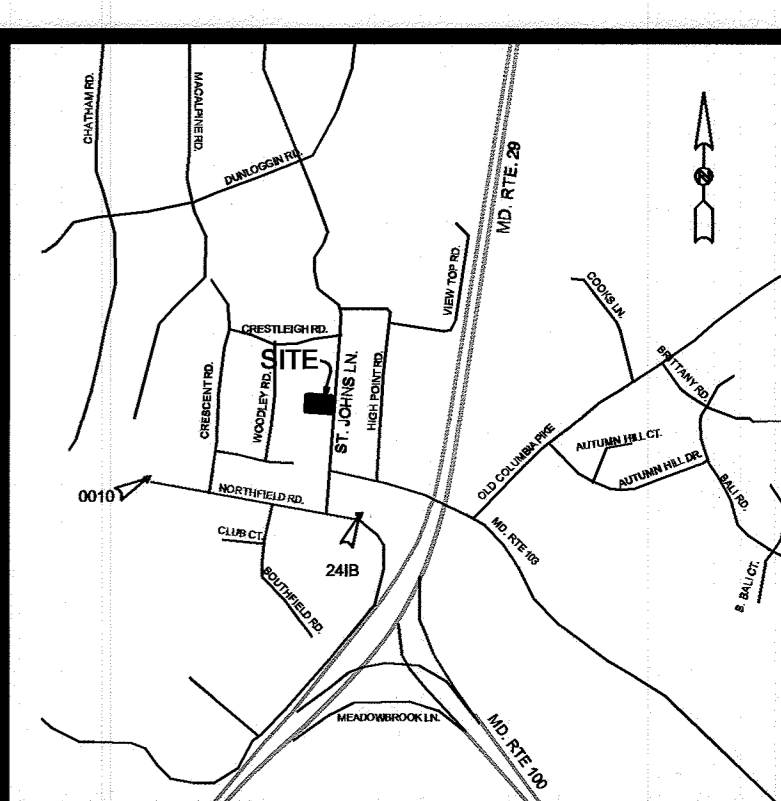
SCALE: 1" = 30'  
 DATE: 05/07/13  
 DP&Z FILE NO: F-14-112  
 SHEET 2 OF 8



PLAN  
SCALE: 1"=50' H.



INTERSECTION SIGHT DISTANCE PROFILE FOR DRIVEWAY @ ST. JOHNS LANE -  
CASE B' TRAFFIC CONTROL ENTERING MINOR COLLECTOR ROAD FROM STOP CONDITION  
SCALE: 1"=50' H.  
1"=5' V.



VICINITY MAP  
SCALE: 1"=2000'

**LEGEND**

- EX. PROPERTY LINE
- EX. RIGHT-OF-WAY
- PROP. LOT LINES
- EX. EASEMENTS
- EX. CONTOURS
- PROP. CONTOURS
- EX. TREEWOODS LINE
- SOILS LINE
- LIMIT OF DISTURBANCE
- DENOTES SLOPES 25% OR GREATER
- DENOTES SLOPES 15% - 25%
- TEST PIT
- TEST BORING
- STABILIZED CONSTRUCTION ENTRANCE
- SUPER SILT FENCE
- SILT FENCE
- TREE PROTECTION FENCE

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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION LAND DEVELOPMENT

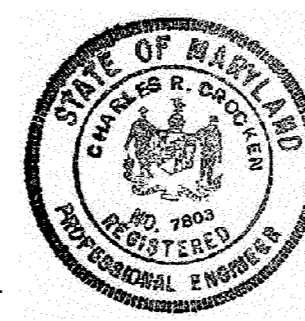
*Chad Edwards*  
CHIEF, DEVELOPMENT ENGINEERING

10/23/24 DATE

10.16.24 DATE

Professional Certification  
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*Charles R. Crocken* 3/26/24  
License No. 7803 Expiration Date 4-22-2025



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**DRS ASSOCIATES**  
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**OWNER/DEVELOPER**  
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SIGHT DISTANCE ANALYSIS  
PLAN PROFILE FOR  
CENTENNIAL CHOICE  
4040 ST. JOHNS LANE  
SINGLE FAMILY DETACHED  
LIBER 11361 FOLIO 044  
ZONED R-30

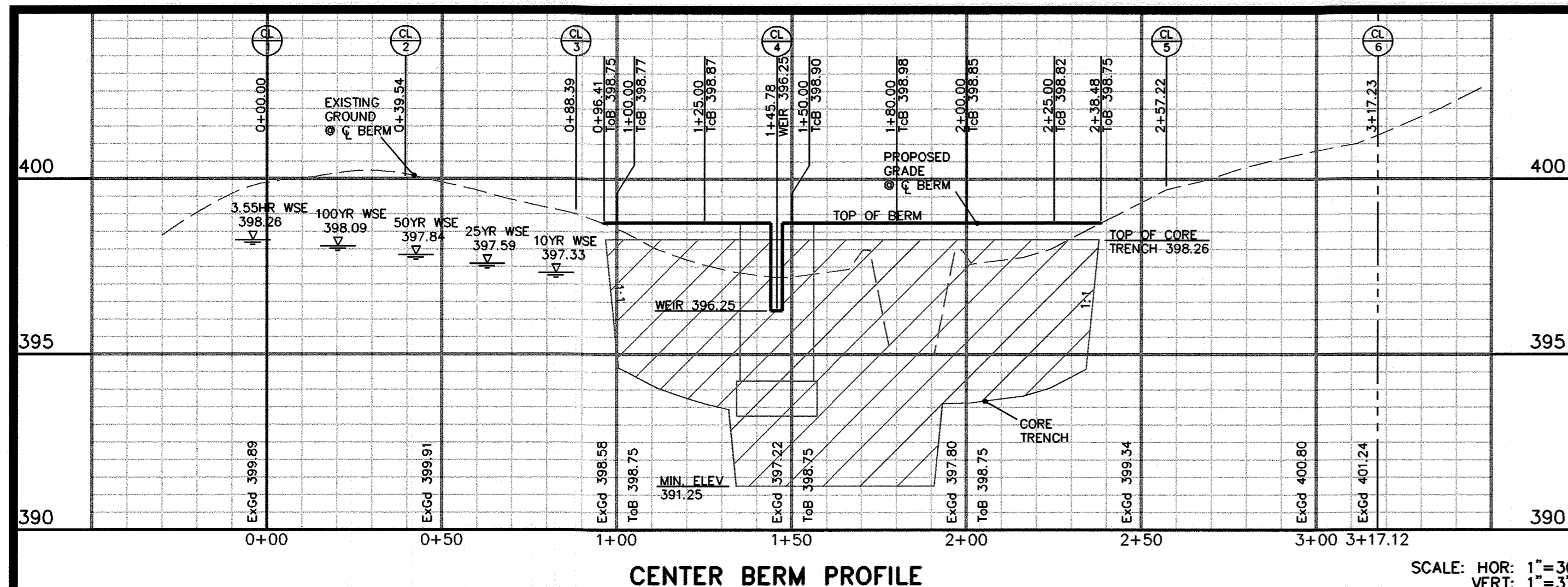
SECOND ELECTION DISTRICT TAX MAP #24, GRID 17, PARCEL 370  
HOWARD COUNTY, MARYLAND

Prepared by:  
**CHARLES R. CROCKEN AND ASSOCIATES, INC.**  
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Tel. (410) 549-2708  
Fax. (410) 549-9063

SCALE: 1"=30' DATE: 05/07/23 DP&Z FILE NO: F-14-112 SHEET 3 OF 8

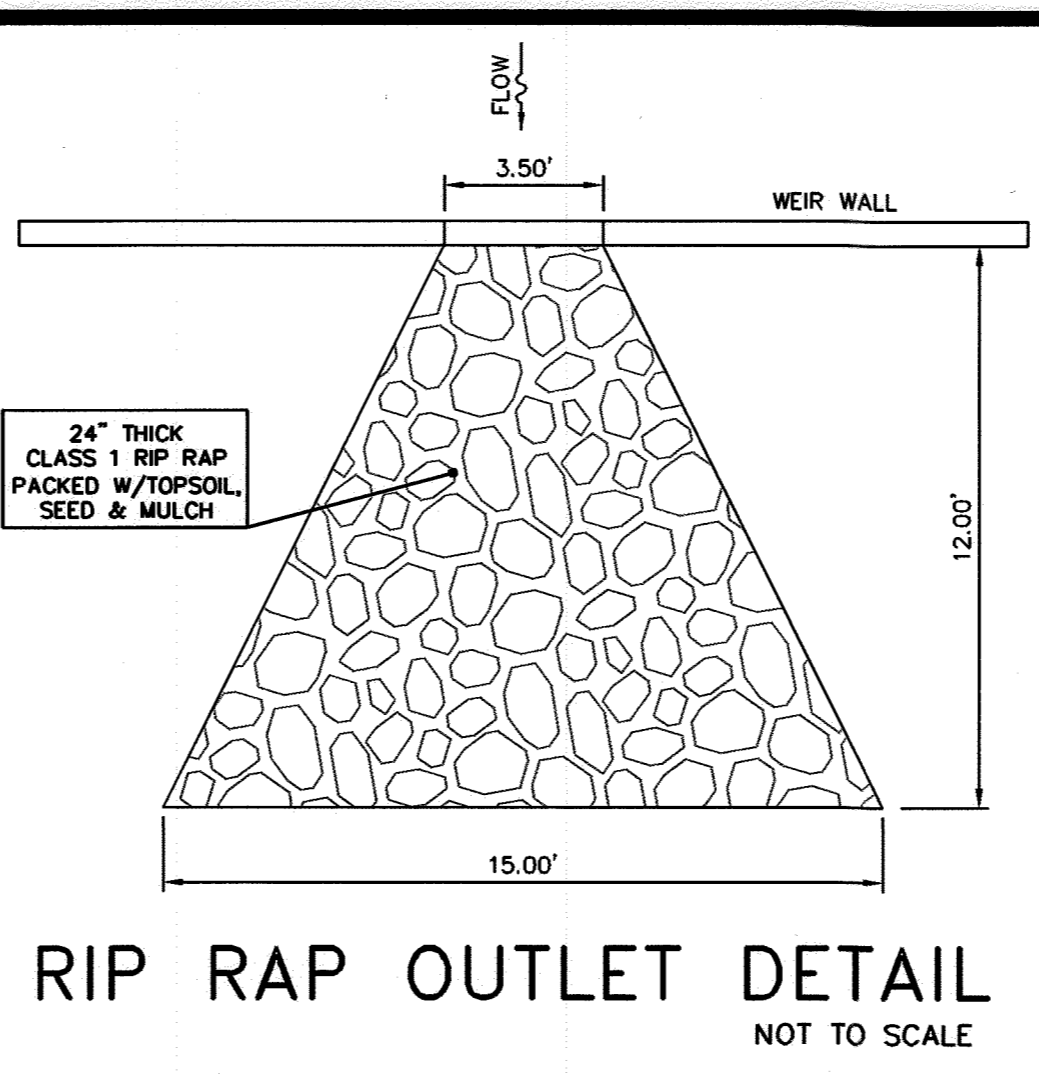
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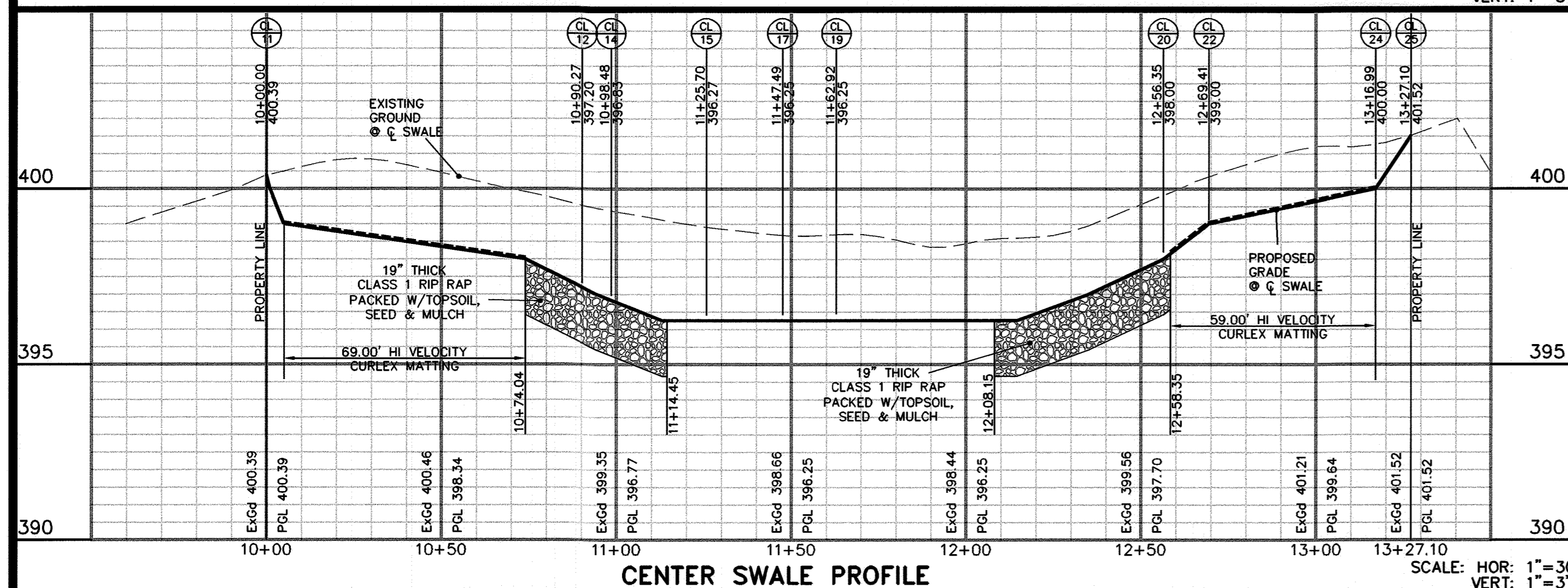


CENTER BERM PROFILE

SCALE: HOR: 1"=30'  
VERT: 1"=3'

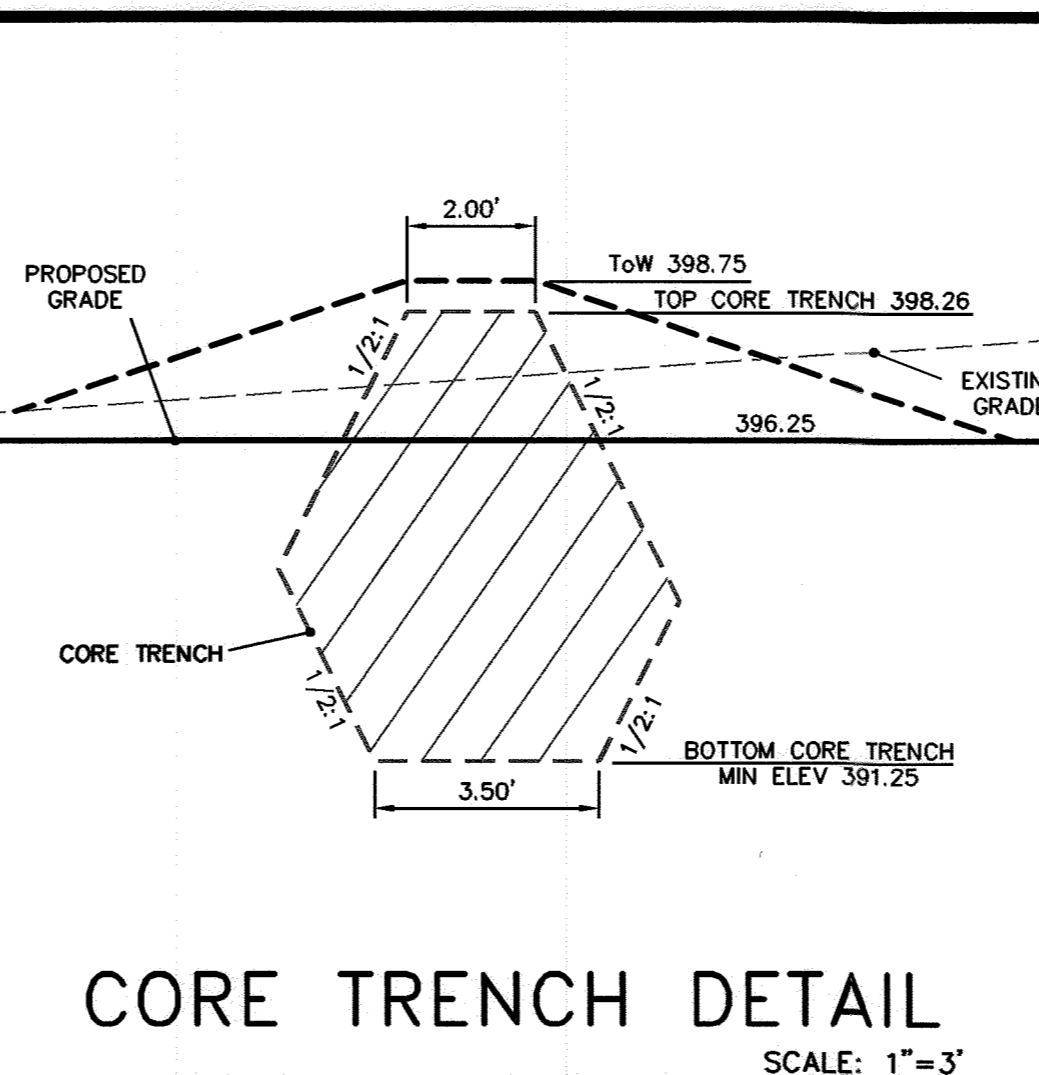


RIP RAP OUTLET DETAIL  
NOT TO SCALE



CENTER SWALE PROFILE

SCALE: HOR: 1"=30'  
VERT: 1"=3'



CORE TRENCH DETAIL

SCALE: 1"=3'

CENTER SWALE BASELINE DATA

NAME	NORTH	EAST	ANGLE/BEARING	STATION/DISTANCE	REMARKS
CL11	579767.67	1361575.37	0°00'00"	10+00.00	PROP LINE
CL12	579767.98	1361665.64	N 89°48'11"E	90.27	PC
CL13	579917.98	1361665.12	N 0°11'49"W	150.00	
			Delta/Arc	3°08'09"	8.21
			S 3°19'58"E	150.00	
CL14	579768.23	1361673.84	90°00'00"	10+98.48	PT
			N 86°40'02"E	27.22	
CL15	579769.81	1361701.02	270°00'00"	11+25.70	PC
			S 3°19'58"E	109.20	
CL16	579660.80	1361707.37	11°26'05"	Radius Pt	
			Delta/Arc	11°26'05"	21.79
			N 8°06'06"W	109.20	
CL17	579768.91	1361722.76	0°00'00"	11+47.49	
			S 8°06'06"W	109.20	
CL18	579660.80	1361707.37	8°05'39"	Radius Pt	
			Delta/Arc	8°05'39"	15.43
			N 16°11'45"E	109.20	
CL19	579765.66	1361737.83	270°00'00"	11+62.92	PT
			S 73°48'15"E	93.44	
CL20	579739.60	1361827.55	270°00'00"	12+56.35	PC
			S 16°11'45"W	30.00	
CL21	579710.79	1361819.19	24°57'17"	Radius Pt	
			Delta/Arc	24°57'17"	13.07
			N 41°09'02"E	30.00	
CL22	579733.38	1361838.93	0°00'00"	12+69.42	PCC
			S 41°09'02"W	256.91	
CL23	579539.93	1361669.87	10°36'37"	Radius Pt	
			Delta/Arc	10°36'37"	47.58
			N 51°45'38"E	256.91	
CL24	579698.95	1361871.66	270°00'00"	13+16.99	PT
			S 38°14'22"E	10.11	
CL25	579691.01	1361877.91	0°00'00"	13+27.10	PROP LINE

CENTER SWALE BASELINE DATA

NAME	NORTH	EAST	ANGLE/BEARING	STATION/DISTANCE	REMARKS
CL1	579763.45	1361575.11	0°00'00"	0+00.00	PROP LINE
CL2	579760.81	1361614.56	174°12'47"	0+39.54	ANG BREAK
CL3	579762.48	1361663.38	191°52'07"	0+88.39	ANG BREAK
			S 80°05'36"E	57.38	
CL4	579752.61	1361719.91	180°00'00"	1+45.78	C/L WEIR
			S 80°05'36"E	111.44	
CL5	579733.44	1361829.69	213°42'57"	2+57.22	ANG BREAK
			S 4°42'38"E	60.01	
CL6	579692.04	1361873.13	0°00'00"	3+17.23	PROP LINE

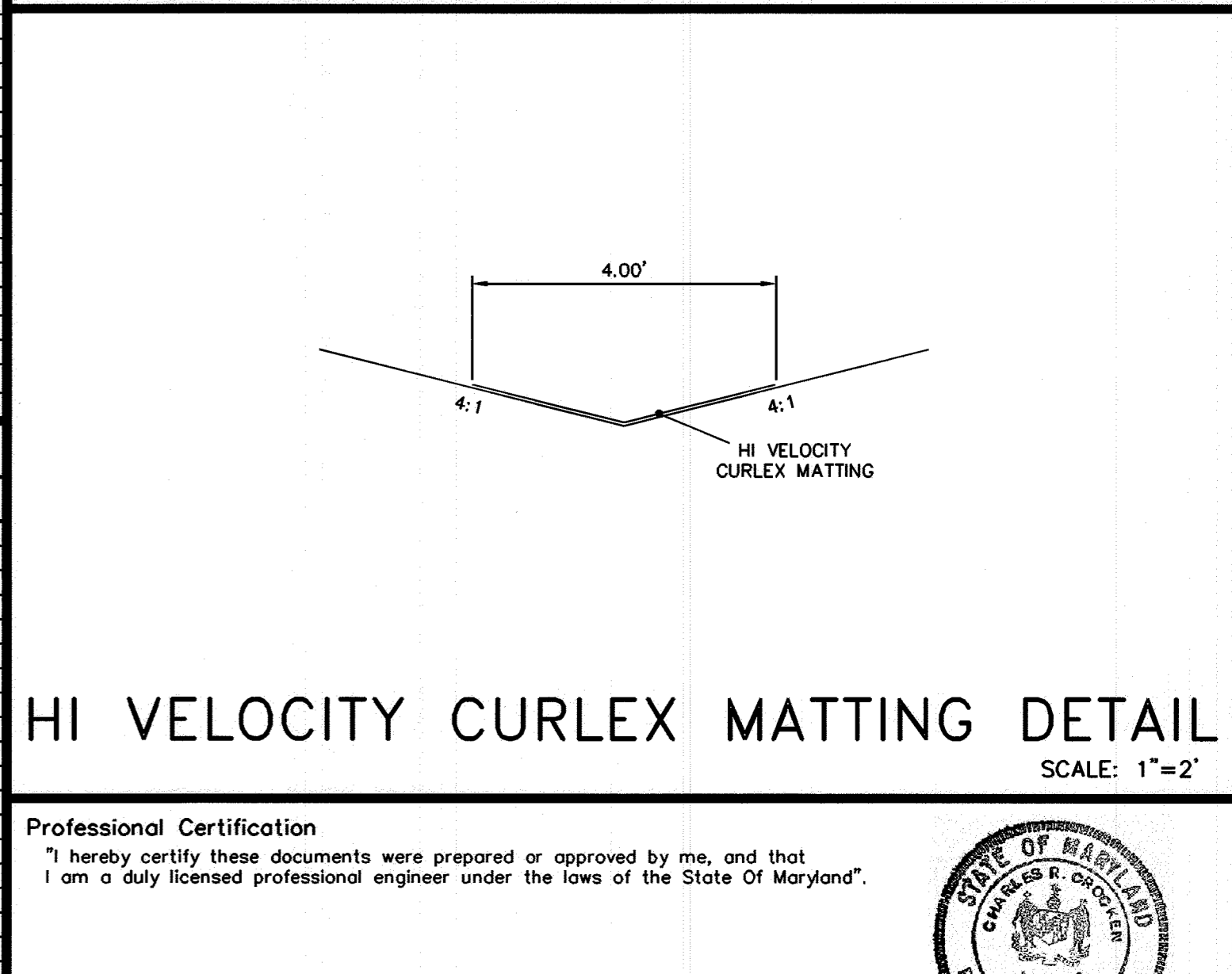
ABBREVIATIONS

- BoF Bottom of Footer
- C-C Center to Center
- ExGd Existing Ground
- PSWMAUE Private Stormwater Management, Stormwater Management Access & Utility Easement
- Tob Top of Berm
- ToF Top of Footer
- ToW Top of Wall
- STD Standard
- SWM StormWater Management
- WSE Water Surface Elevation

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER P-1 PONDS

ROUTINE MAINTENANCE:

- THE OWNER SHALL INSPECT THE FACILITY ANNUALLY AND AFTER EVERY HEAVY STORM. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
- THE OWNER SHALL MOW THE TOP AND SIDE SLOPES OF THE EMBANKMENT A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
- THE OWNER SHALL REMOVE ANY DEBRIS AND LITTER FROM THE FACILITY.
- THE OWNER SHALL REPAIR ANY EROSION IN THE POND AS WELL AS THE RIPRAP OR GABION OUTLET AREA AS SOON AS NOTICED.
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- THE OWNER SHALL REMOVE SEDIMENT FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.



HI VELOCITY CURLEX MATTING DETAIL  
SCALE: 1"=2'

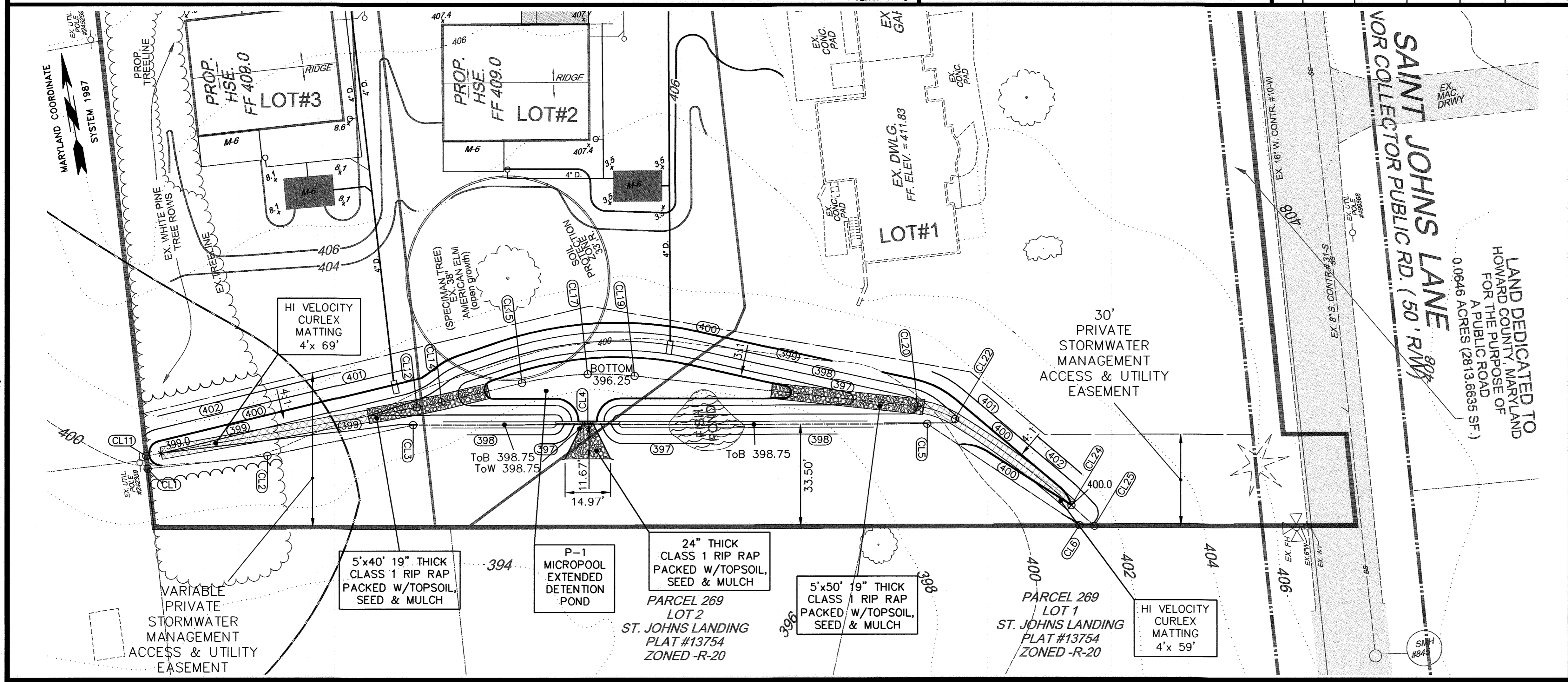
Professional Certification

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*Charles R. Crocken* 3/26/24  
License No. 7803 Expiration Date 4-22-2025

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION LAND DEVELOPMENT 12/1/24 DATE  
CHIEF, DEVELOPMENT ENGINEERING 10/16/24 DATE



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REV. No.	DATE	BY	DESCRIPTION

DRS ASSOCIATES  
LAND DESIGN CONSULTANTS  
52 WINTERS STREET WESTMINSTER, MARYLAND 21157  
410-848-4060 410-876-6040 F. 410-848-8818

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STATE OF MARYLAND  
REGISTERED PROFESSIONAL ENGINEER  
Charles R. Crocken

LEGEND

- EX. PROPERTY LINE
- EX. RIGHT-OF-WAY
- PROP. LOT LINES
- EX. EASEMENTS
- EX. CONTOURS
- PROP. CONTOURS
- EX. TREEWOODS LINE
- SOILS LINE
- LIMIT OF DISTURBANCE
- DEMOTES SLOPES 25% OR GREATER
- DEMOTES SLOPES 15%-25%
- TEST PIT
- TEST BORING
- DRIVE SLOPE N:2
- DEMOTES NON-ROOFTOP RUNOFF DISCONNECT (EXISTING DRIVE, PAVEMENT)
- DEMOTES POROUS PAVEMENT
- DEMOTES MICRO BIO RETENTION FACILITY

OWNER/DEVELOPER  
MINFA GU, HUIJING, JIANG & SHERRY XIAOWEI YANG

MR. ZHANG (BILL) YU, AGENT  
GREAT HOMES REALTY  
9800 FENWAY COURT  
ELLSWORTH CITY, MD 21040  
PHONE: 410-884-8661

STRUCTURAL STORMWATER MANAGEMENT  
PLAN, DETAILS & PROFILES  
FOR  
CENTENNIAL CHOICE  
4040 ST. JOHNS LANE  
SINGLE FAMILY DETACHED  
LIBER 11361 FOLIO 044

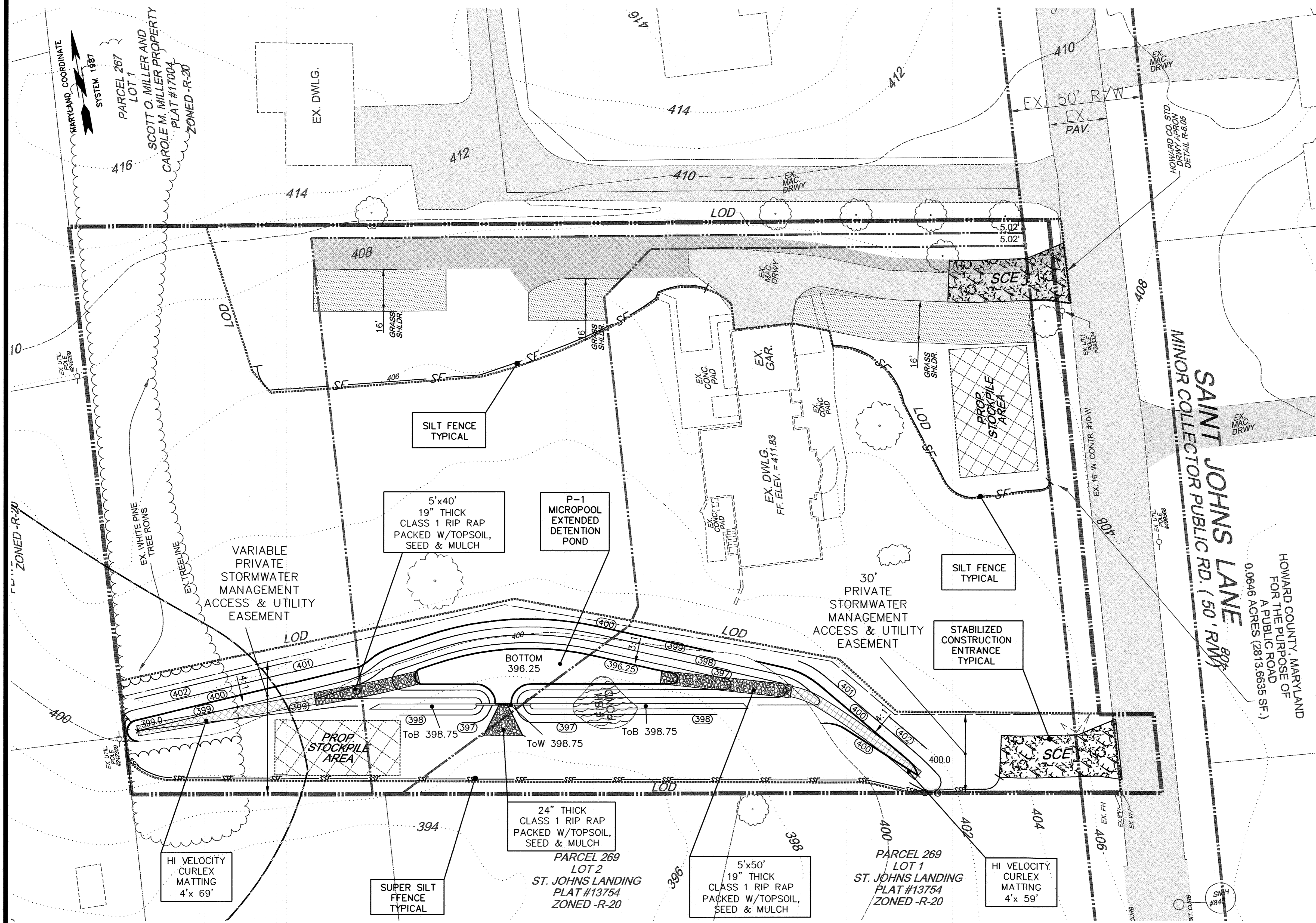
ZONED R-20  
SECOND ELECTION DISTRICT TAX MAP R2A, GRID 17, PARCEL 370  
HOWARD COUNTY, MARYLAND

Prepared by:  
CHARLES R. CROCKEN AND ASSOCIATES, INC.  
902 LEE AVE.  
SYKESVILLE, MARYLAND 21157  
Tel. (410) 549-2708  
Fax. (410) 549-9063

SCALE: 1"=20' DATE: 2023-07-07 DRPZ FILE NO: F-14-112 SHEET 5 OF 6  
DRPZ FILE NO: F-14-112

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**Owners/Developer Certification**  
 "I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE.

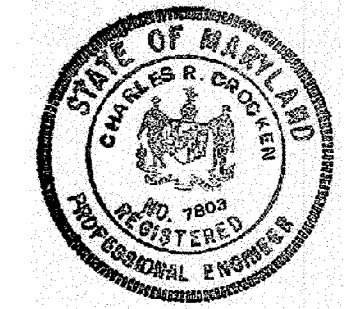
Owner's/Developer's Signature: *[Signature]* Date: 3/27/2024  
 Printed Name & Title: Zhiwei Ye

**Design Certification**  
 "I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Developer's Signature: *[Signature]* Date: 3/27/24  
 Printed Name: CHARLES R. CROCKEN  
 M.D. Registration No. 7803  
 P.E.  R.L.S. or R.L.A. (circle one)

**Professional Certification**  
 "I hereby certify 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."

*[Signature]* Date: 3/26/24  
 License No. 7803 Expiration Date 4-22-2025



**Howard SCD**  
 This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Approved: *[Signature]* Date: 10/21/24  
 Howard Soil Conservation District

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*[Signature]* Date: 10/24/24  
 CHIEF, DIVISION LAND DEVELOPMENT

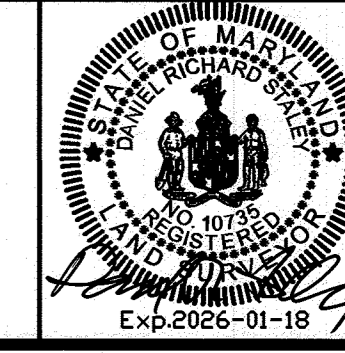
*[Signature]* Date: 10-16-24  
 CHIEF, DEVELOPMENT ENGINEERING

REV.No.	DATE	BY	DESCRIPTION

REVISIONS

**DRS ASSOCIATES**  
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 52 WINTERS STREET WESTMINSTER, MARYLAND 21157  
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**LEGEND**

EX. PROPERTY LINE	---
EX. RIGHT-OF-WAY	---
PROP. LOT LINES	---
EX. EASEMENTS	---
EX. CONTOURS	---
PROP. CONTOURS	---
EX. TREEWOODS LINE	---
SOILS LINE	---
LIMIT OF DISTURBANCE	----- LOD
Denotes Slopes 25% or Greater	█
Denotes Slopes 15% - 25%	█
TEST PIT	⊠
TEST BORING	⊙

**OWNER/DEVELOPER**  
 MINFA GU, HUIBING JIANG & SHERRY XIAOWEI YANG

610 MR. ZHANG (BILL) YU, AGENT  
 GREAT HOMES REALTY  
 8822 TENNEY COURT  
 ELLICOTT CITY, MD 21117  
 PHONE: 410-994-9881

**SEDIMENT CONTROL PLAN**  
 FOR  
**CENTENNIAL CHOICE**  
 4040 ST. JOHNS LANE  
 SINGLE FAMILY DETACHED  
 LIBER 11381/FOLIO 044  
 ZONED R-20  
 SECOND ELECTION DISTRICT TAX MAP #2A, GRID 11, PARCEL 370  
 HOWARD COUNTY, MARYLAND

Prepared by:  
**CHARLES R. CROCKEN AND ASSOCIATES, INC.**  
 802 LEE AVE.  
 SYKESVILLE, MARYLAND 21157  
 Tel. (410) 549-2708  
 Fax. (410) 549-9063

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.

- A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment...

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

Definition The application of seed and mulch to establish vegetative cover.

Purpose To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

- A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory...

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

Definition To stabilize disturbed soils with vegetation for up to 6 months.

Purpose To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

- 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3)...

Table B.1: Temporary Seeding Summary. Columns: No., Species, Application Rate (lb/acre), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate.

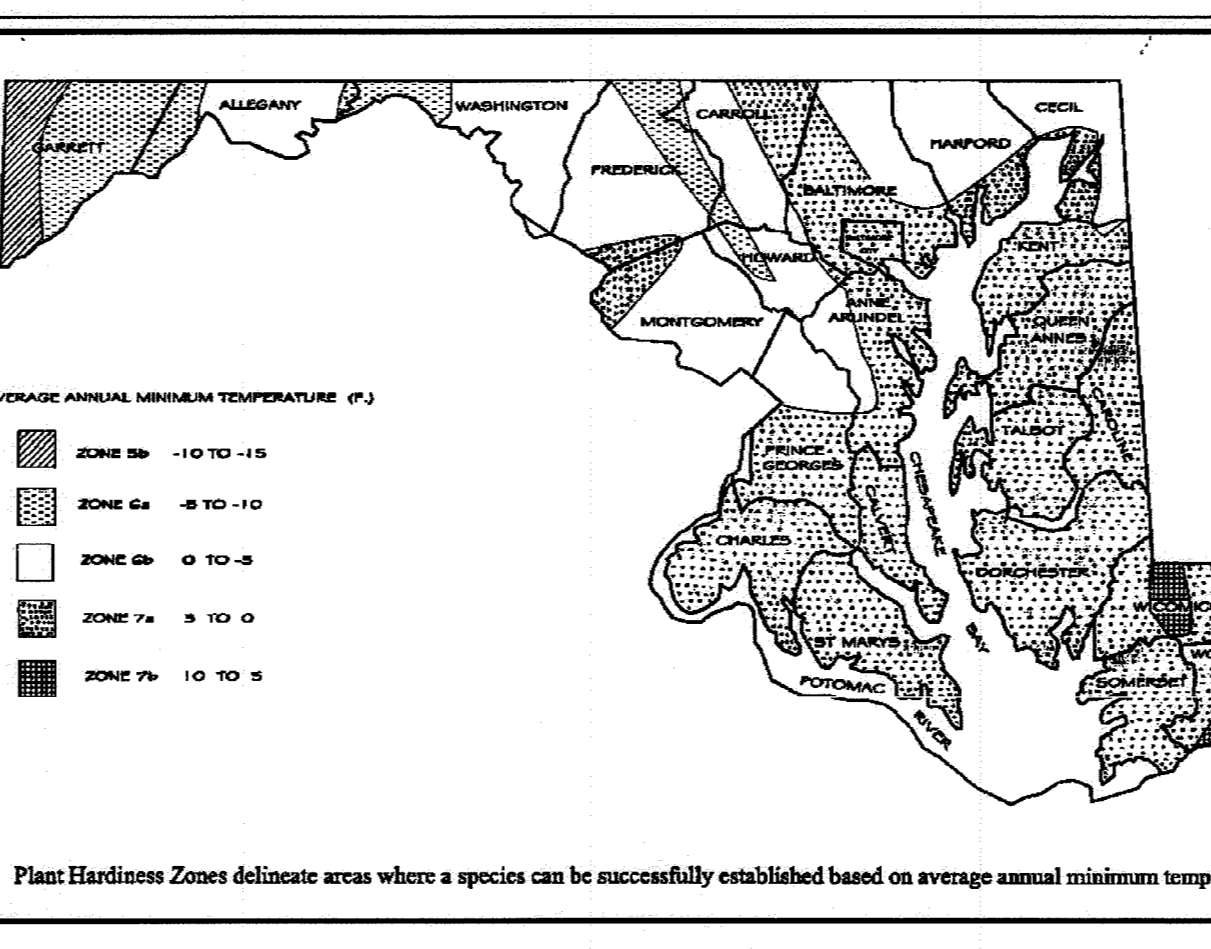


Figure B.3: U.S.D.A. Plant Hardiness Zones

Table B.1: Temporary Seeding for Site Stabilization. Columns: Plant Species, Seeding Rate (lb/acre), Seeding Depth (inches), Recommended Seeding Dates by Plant Hardiness 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

- A. Seed Mixtures
1. General Use
a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3)...

Notes: 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

c.ideal Times of Seeding for Turf Grass Mixtures
Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 6b)

Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

- d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1/2 inch in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

Table B.3: Permanent Seeding Summary. Columns: No., Species, Application Rate (lb/acre), Seeding Dates, Seeding Depths, N, P205, K20, Lime Rate.

\*For the period 5/1-8/14 add 5 lb/acre of Foxtail Millet to mix No. 8

- B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).
1. General Specifications
a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.

- B. 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.

- B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law...

- iii. Synthetic binders such as Acrylic DLR (Agra-Tack), DCA-70, Petrosol, Terra Tex II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches much, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.

Table H.1: Geotextile Fabrics. Columns: PROPERTY, TEST METHOD, MD, CD, MD, CD, MD, CD.

1 All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

2 Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NITEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition Controlling the suspension of dust particles from construction activities.

Purpose To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

- 1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.

SEQUENCE OF CONSTRUCTION

On sediment erosion control plans, the following steps, (as shown), must constitute the first six steps of any plan submitted to this office:

- 1. Obtain grading permit. (1-Day)
2. Notify Howard County Department of Inspections, Licenses & Permits, Sediment Control, 410-315-2455 at least 48 hours prior to beginning work.
3. If applicable, orange high visibility fence shall be manually installed along the limit of disturbance...

Upon stabilization of site with established vegetation and with permission of the sediment control inspector, remove sediment control measures and stabilize those areas disturbed by this process.

Owners/Developer Certification
I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project.

Owner's/Developer's Signature: Charles R. Crocker, Date: 3/27/24

Design Certification
I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: Charles R. Crocker, Date: 3/27/24, Registration No. 7803, (P.E., R.L.S., or R.L.A. (circle one))

Professional Certification
I hereby certify 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.

Signature: Charles R. Crocker, Date: 3/26/24, Expiration Date 4-22-2025

Howard SCD
This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
Approved: Alexander Barthie, Date: 10/21/24

B-4-8 STANDARDS AND SPECIFICATIONS

FOR STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

- 1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material stored on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

SITE ANALYSIS table with columns: TOTAL AREA SITE, AREA OF WETLANDS AND THEIR BUFFERS, AREA OF STREAMS AND THEIR BUFFERS, AREA OF FLOODPLAIN AND THEIR BUFFERS, AREA OF STEEP SLOPES 15% OR GREATER, AREA OF FOREST, AREA DISTURBED, AREA TO BE REVEGETATED, AREA TO BE GRADED, TOTAL IMPERVIOUS AREA, AREA TO BE TEMPORARILY STABILIZED, TOTAL VOLUME CUT, TOTAL VOLUME FILL.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Signatures: Chief, Division Land Development (dated 10/21/24), Chief, Development Engineering (dated 10-16-24)

Table with columns: REV. No., DATE, BY, DESCRIPTION

REVISIONS

DRS ASSOCIATES LAND DESIGN CONSULTANTS, 52 WINTERS STREET WESTMINSTER, MARYLAND 21157, 410-848-4060

OWNER/DEVELOPER: MINYA GU, HUIJING JIANG & SHEERYI XIAOWEI YANG

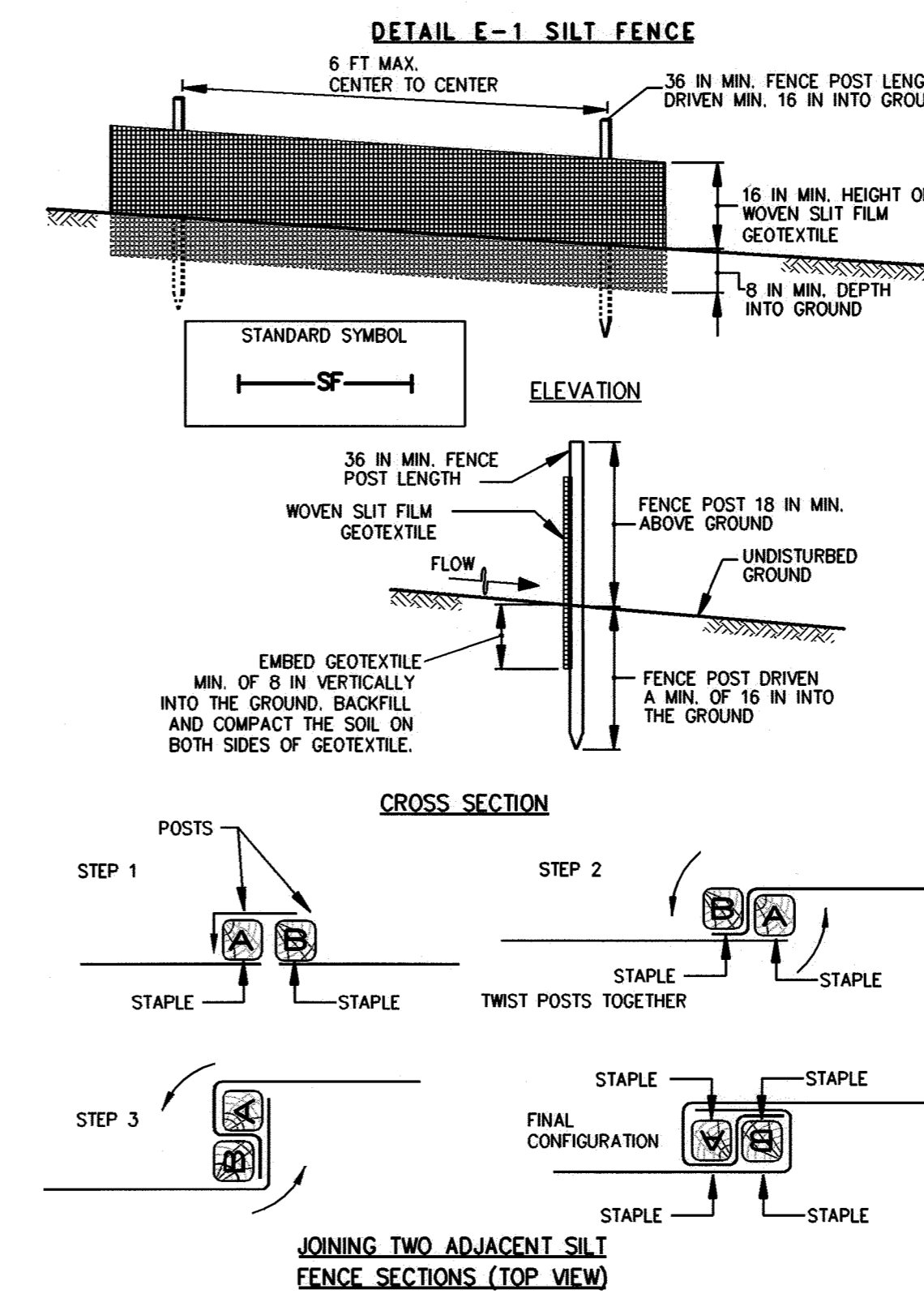
66 MR. ZHIMEI (BILL) YU AGENT, GREAT HOMES REALTY, 8422 TOWNLEY COURT, ELICOTT CITY, MD 21042, PHONE: 410-884-8861

SEDIMENT CONTROL NOTES FOR CENTENNIAL CHOICE, 4802 ST. JOHNS LANE, SYKESVILLE, MARYLAND 21157, TEL: (410) 549-2078, FAX: (410) 549-9063

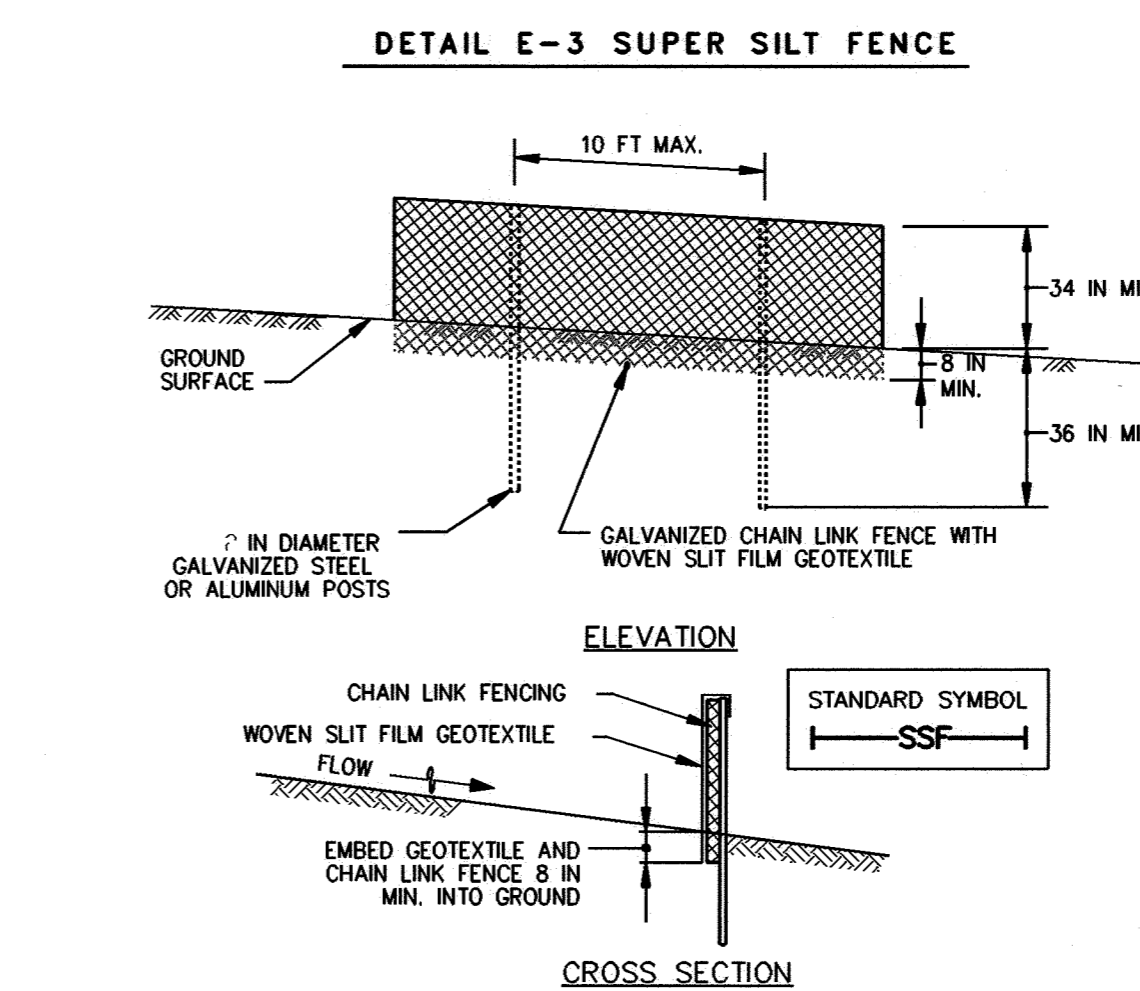
CHARLES R. CROCKER AND ASSOCIATES, INC., 902 LEE AVE., SYKESVILLE, MARYLAND 21157, TEL: (410) 549-2078, FAX: (410) 549-9063

**HOWARD SOIL CONSERVATION DISTRICT (HSCD)  
STANDARD SEDIMENT CONTROL NOTES**

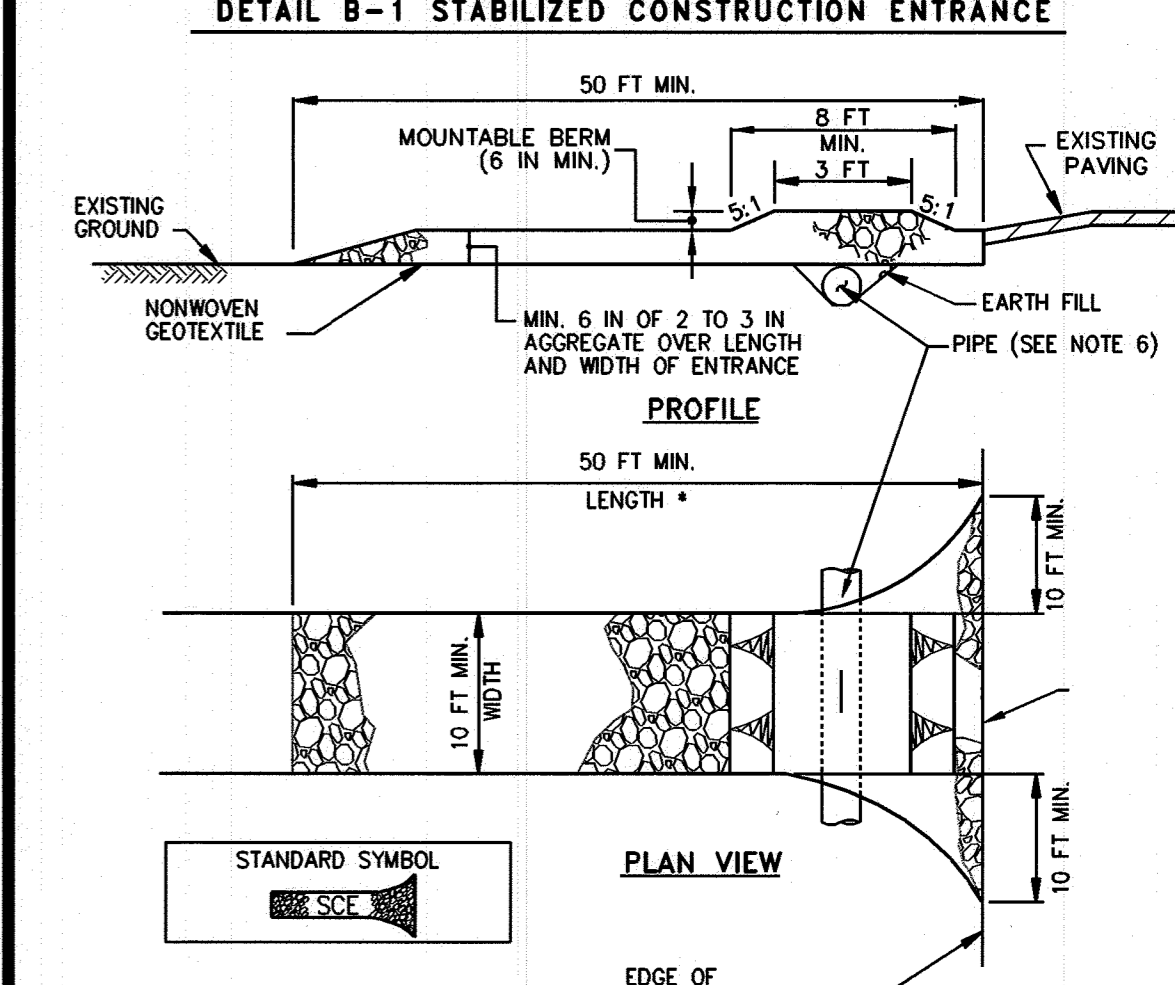
- A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:
  - Prior to the start of earth disturbance,
  - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
  - Prior to the start of another phase of construction or opening of another grading unit,
  - Prior to the removal or modification of sediment control practices.
 Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
- All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
- Site Analysis:
  - Total Area of Site: 1.8862 Acres
  - Area Disturbed: \_\_\_\_\_ Acres
  - Area to be roofed or paved: \_\_\_\_\_ Acres
  - Area to be vegetatively stabilized: 0.3866 Acres
  - Total Cut: 1168 Cu. Yds.
  - Total Fill: 1168 Cu. Yds.
  - Offsite waste/borrow area location: \_\_\_\_\_
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly, and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
  - Inspection date
  - Inspection type (routine, pre-storm event, during rain event)
  - Name and title of inspector
  - Weather information (current conditions as well as time and amount of last recorded precipitation)
  - Brief description of project's status (e.g., percent complete) and/or current activities
  - Evidence of sediment discharges
  - Identification of plan deficiencies
  - Identification of sediment controls that require maintenance
  - Identification of missing or improperly installed sediment controls
  - Compliance status regarding the sequence of construction and stabilization
  - requirements
  - Photographs
  - Monitoring/sampling
  - Maintenance and/or corrective action performed
  - Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
- Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
- Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.
- Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
- Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
- Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
- All Silt Fence and Super Silt Fence shall be placed on-the-contour, or be imbricated at 25' maximum intervals, with lower ends curled uphill by 2' in elevation.
- Stream channels must not be disturbed during the following restricted time periods (inclusive):
  - Use I and IP March 1 - June 15
  - Use III and IIIP October 1 - April 30
  - Use IV March 1 - May 31
- A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.



- USE WOOD POSTS 1 3/4 X 1 3/4 ±1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 3/8 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND ID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.



- CONSTRUCTION SPECIFICATIONS**
- INSTALL 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
  - FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE 2 3/8 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
  - FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
  - WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
  - EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
  - PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
  - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.



- CONSTRUCTION SPECIFICATIONS**
- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (\*50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SIZE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
  - PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 10 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
  - PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
  - PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
  - MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

REV.No.	DATE	BY	DESCRIPTION

**REVISIONS**

**DRS ASSOCIATES  
LAND DESIGN CONSULTANTS**  
52 WINTERS STREET WESTMINSTER, MARYLAND 21157  
410-848-4060 410-876-6040 F. 410-848-8818

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**OWNER/DEVELOPER**  
MINA CHU, HUIJING JIANG & SHERRY XIAOWEI YANG

66 MR. DANIEL (BILL) YU AGENT  
6825 THAMES BELLEVUE  
9822 TENNEY COURT  
ELLICOTT CITY, MD 21042  
PHONE: 410-884-8861

**SEDIMENT CONTROL DETAILS**  
FOR  
**CENTENNIAL CHOICE**  
4040 ST. JOHNS LANE  
SINGLE FAMILY DETACHED  
LIBER 11361 FOLIO 044  
ZONED R-30  
SECOND ELECTION DISTRICT TAX MAP #24, GRID 17, PARCEL 370  
HOWARD COUNTY, MARYLAND

Prepared by  
**CHARLES R. CROCKEN AND ASSOCIATES, INC.**  
902 LEE AVE.  
SYKESVILLE, MARYLAND 21157  
Tel. (410) 549-2708  
Fax. (410) 549-9063

SCALE: N/A DATE: 2023-12-07 DPA2 FILE NO: F-14-112 SHEET 8 OF 8  
DPA2 FILE NO: F-14-112

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION LAND DEVELOPEMENT 10/24/24 DATE

Chief, Development Engineering 10-16-24 DATE

**Owners/Developer Certification**  
I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE.

17/1/24  
Owner's/Developer's Signature Date  
Zhiwei Yu  
Printed Name & Title

**Design Certification**  
I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Charles R. Crocken 3/27/2024 DATE  
Developer's Signature  
CHARLES R. CROCKEN 7803  
Printed Name MD Registration No.  
P.E., R.L.S., or R.L.A. (circle one)

**Professional Certification**  
I hereby certify 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.

Charles R. Crocken 3/24/2024 DATE  
License No. 7803 Expiration Date 4-22-2025

**Howard SCD**  
This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Approved: Amanda Butterlin 10/21/24 DATE  
Howard Soil Conservation District