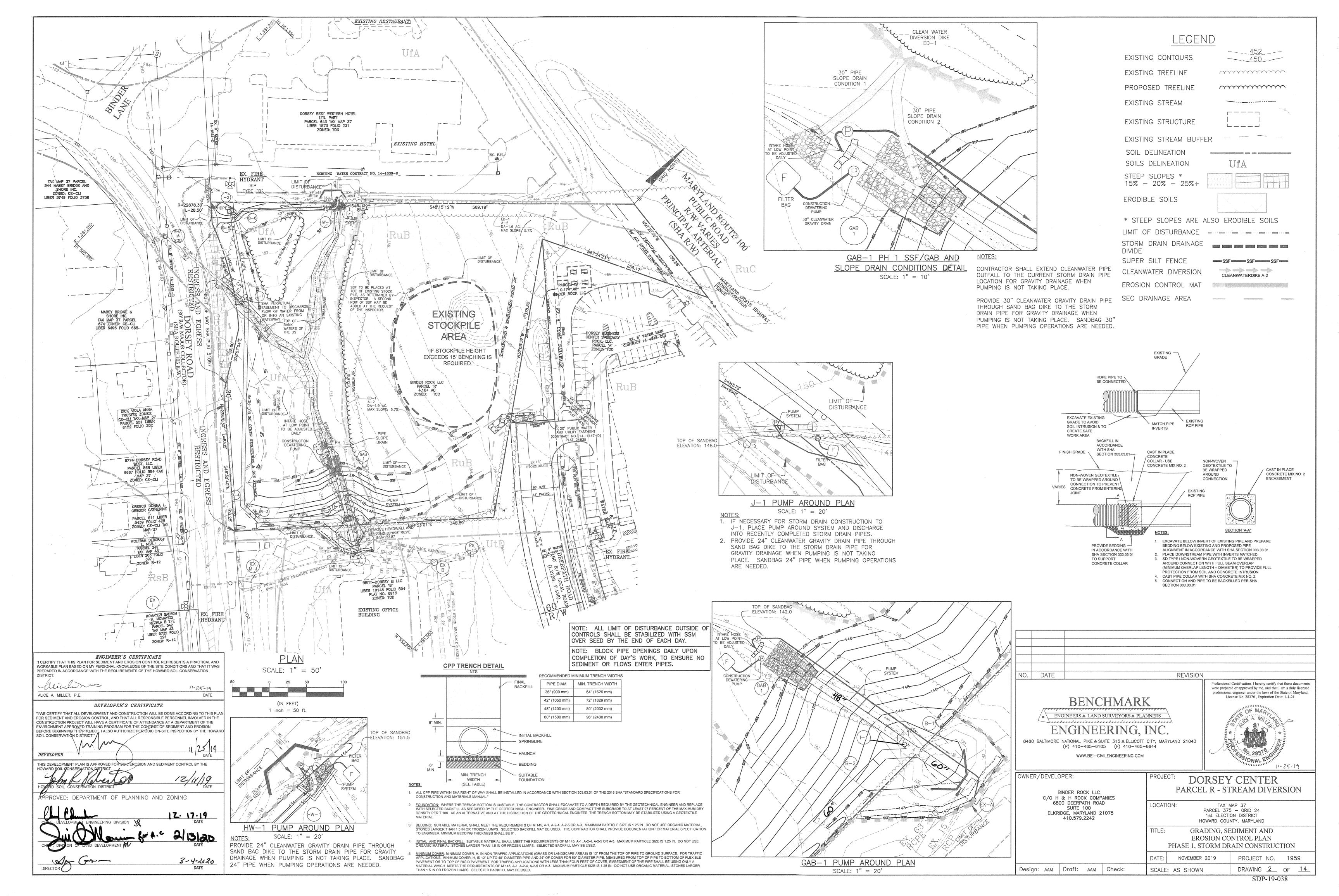
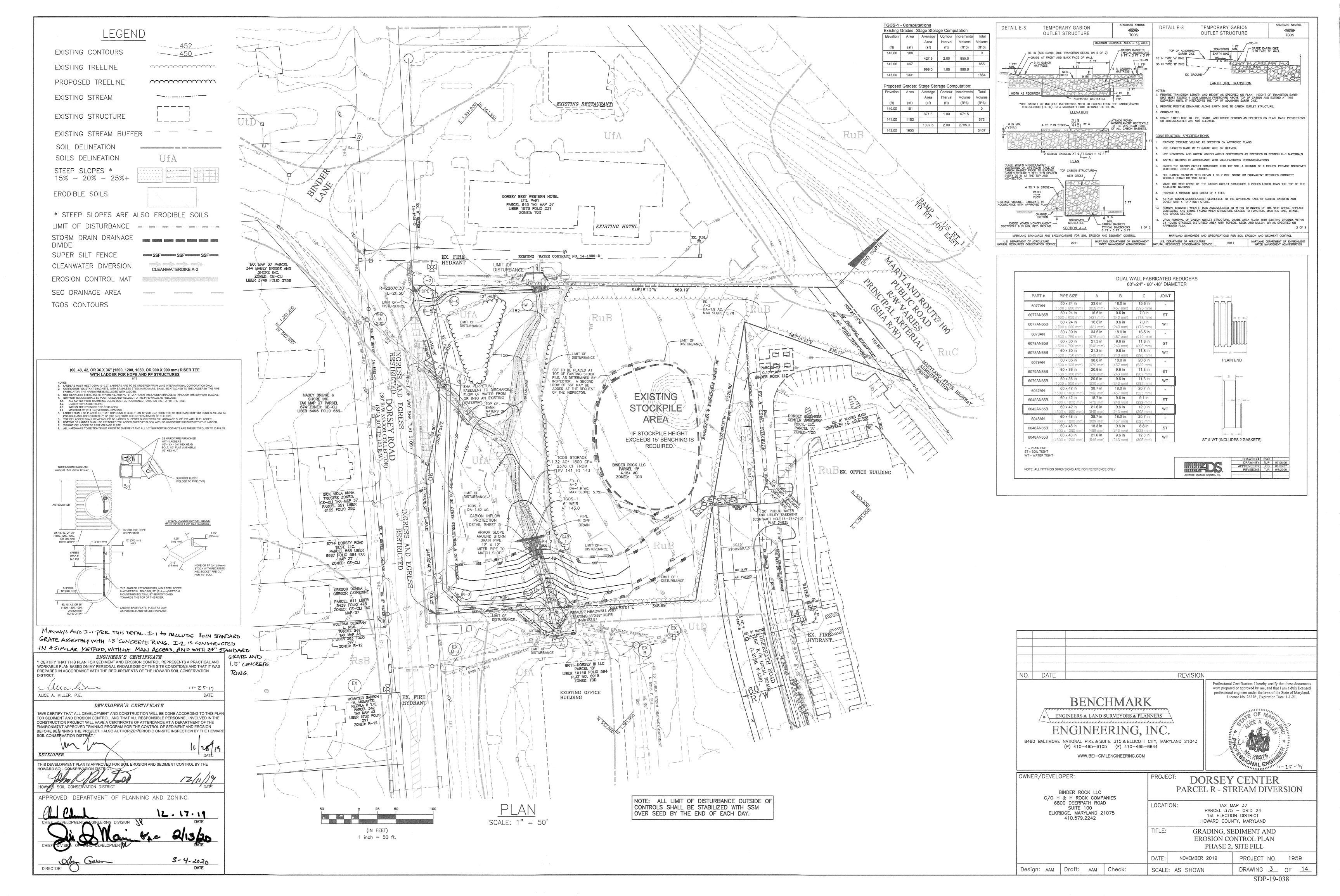
#### SHEET INDEX SITE DEVELOPMENT PLAN BENCH MARKS-(NAD 83) EXISTING CONDITION PLANS AND SOILS MAP DORSEY CENTER, PARCEL R STREAM DIVERSION CONSTRUCTION TRAV. PT. 1 EL.157.73 (NGVD 29) TRV. MAG; 18.0' NORTHEAST OF CONC. GRADING, SEDIMENT AND EROSION CONTROL PLAN PHASE 1 STORM DRAIN CONSTRUCTION GRADING, SEDIMENT AND EROSION CONTROL PLAN PHASE 2 SITE FILL CURB OF SOUTHEASTBOUND LANE OF 4 SEDIMENT AND EROSION CONTROL NOTES AND DETAILS DEERPATH ROAD; 20.3' NORTH OF EX. INLET STORM DRAIN PROFILES N 553,149.12 E 1,381,844.44 00 YEAR STORM DRAIN DRAINAGE AREA MAP EL.154.64 (NGVD 29) AND OFFSITE STREAM MITIGATION FINAL GRADING PLAN TFLY MAG; 3.1' NORTHEAST OF CONC. CURB OF SOUTHEASTBOUND LANE OF 8-14 STREAM MITIGATION PLANS DEERPATH ROAD; 20.3' NORTH OF EX. INLET N 553,037.81 E 1,381,953.46 1ST ELECTION DISTRICT GENERAL NOTES HOWARD COUNTY, MARYLAND 1. THE EXISTING TOPOGRAPHY IS TAKEN FROM FROM FIELD RUN TOPOGRAPHIC SURVEYS AT 2' INTERVALS PREPARED BY BENCHMARK ENGINEERING, INC., ON OR ABOUT JUNE, 2006. 2. THE COORDINATES SHOWN HEREON ARE BASED ON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 37IA AND 43B2 WERE USED FOR THIS PROJECT. 3. THIS PROPERTY IS WITHIN THE METROPOLITAN WATER AND SEWER DISTRICT 4. NO WATER OR SEWER CONNECTIONS ARE PROPOSED UNDER THIS SITE DEVELOPMENT PLAN. WATER AND SEWER SERVICE FOR THIS SUBDIVISION WILL BE PUBLIC. THE PUBLIC SEWER CONNECTION WILL BE TO CONTRACT 14-1521-D. THE PUBLIC WATER WILL BE TO CONTRACT 24-W. THIS SUBDIVISION FALLS WITHIN THE PATAPSCO . EXISTING UTILITIES SHOWN WERE LOCATED BY RECORD DRAWINGS AND FIELD LOCATIONS. THE BOUNDARY SHOWN HEREON IS TAKEN FROM THE BOUNDARY SURVEY PREPARED BY BENCHMARK LEGEND ENGINEERING, INC., ON OR ABOUT JUNE, 2006. . PREVIOUS DEPARTMENT OF PLANNING AND ZONING REFERENCE NUMBERS: SDP-05-29, F-86-109 & F-07-80, SDP-07-016, WP-15-131, ECP-15-017, S-17-004. --- 452 8. THE FOREST CONSERVATION ACT REQUIREMENTS FOR 1.09 ACRES OF REQUIRED REFORESTATION HAVE BEEN MET EXISTING CONTOURS THROUGH THE PAYMENT OF \$35,610.30, PAID UNDER SDP-07-016. NO ADDITIONAL REFORESTATION IS WARRANTED WITH THIS STREAM DIVERSION PROJECT. THE OFF-SITE STREAM RESTORATION DOES NOT HAVE A FOREST CONSERVATION OBLIGATION BECAUSE THE LIMIT OF DISTURBANCE IS WITHIN THE FLOODPLAIN AREA. THE DORSEY BEST WESTERN HOTEL FOREST CONSERVATION EASEMENT LOCATED ON PARCEL H-1 WILL BE ABANDONED AS PART OF THE DEEP RUN EXISTING TREELINE SEWER INTERCEPTOR PROJECT (CAPITAL PROJECT NO. S-6284). WP-15-131 WAS APPROVED MAY 21, 2015 TO WAIVE SECTION 16.116(a)(2)(i) PROHIBITING GRADING, REMOVAL PROPOSED TREELINE OF VEGETATIVE COVER AND TREES, PAVING AND NEW CONSTRUCTION WITHIN 50' OF AN INTERMITTENT STREAM BANK BUFFER, AND SECTION 16.115(c)(2) PROHIBITING CLEARING, EXCAVATION, FILLING, ALTERING DRAINAGE OR IMPERVIOUS PAVING IN A FLOODPLAIN, FOR CONSTRUCTION OF AN APARTMENT BUILDING, RELATED PARKING AND ....... -----EXISTING STREAM AMENITIES AREA. APPROVAL OF THE REQUESTED WAIVERS IS SUBJECT TO THE FOLLOWING CONDITIONS: a. MARYLAND DEPARTMENT OF THE ENVIRONMENT AND ARMY CORP. OF ENGINEER PERMIT APPROVALS ARE REQUIRED FOR THE DISTURBANCE OF THE INTERMITTENT STREAMS, 50' INTERMITTENT STREAM BANK BUFFERS AND FILLING OF THE 100 YEAR FLOOD PLAIN AREA ON PARCEL R OF THE DORSEY CENTER EXISTING STRUCTURE SUBDIVISION. ALL OTHER COUNTY AND STATE PERMITS ARE REQUIRED AS APPLICABLE. A NOTE SHALL BE ADDED TO THE SITE DEVELOPMENT PLAN INDICATING ALL PERMIT NUMBERS, DATE AND ACTION TAKEN. TAX WAP 37 PARCEL EXISTING STREAM BUFFER b. PROVIDING SAFE CONVEYANCE, WITHOUT ADVERSELY IMPACTING DOWNSTREAM PROPERTIES, OF THE 100 YEAR DISCHARGE OF 397.3 CFS TO THE EXISTING DOWNSTREAM STORMWATER MANAGEMENT POND. THE 100 YEAR CFS IS BASED ON THE COMPUTATIONS RECEIVED AT THE ENVIRONMENTAL CONCEPT PLAN: APPROXIMATE 100 YEAR ECONOMIC EMERICACIÓN ESTACACIÓN (CONTROLLE MODERNAM MARCHANA ECONOMIC $Q=CIA=0.89\times12.75\times35=397.2.$ R=22878.30'-FLOODPLAIN LIMIT (PLAT 6729) S4815'12"W 569.197 L=28.50' c. SKETCH PLAN COMPLIANCE WITH THE COMMENTS DATED MAY 20, 2015 FROM THE DEVELOPMENT , building the same of the sam SOIL DELINEATION principal and the principal section of the section d. ALL CONSTRUCTION ON PARCEL R SHALL BE SUBJECT TO REQUIREMENTS OF THE HOWARD COUNTY SOILS DELINEATION e. MITIGATION OF THE APPROVAL OF THE WAIVER REQUESTS FOR THE PROPOSED ON-SITE STREAM DIVERSION STEEP SLOPES \* VIA A STORM DRAIN BYPASS SYSTEM WILL REQUIRE THE RESTORATION OF THE SECTION OF DEEP RUN STREAM SEGMENT BY THE APPLICANT AS INDICATED IN THE WAIVER PETITION APPLICATION JUSTIFICATION. A 15% - 20% - 25%+ SITE DEVELOPMENT PLAN SHALL BE SUBMITTED FOR THE OFF-SITE STREAM RESTORATION PROJECT PRIOR TO FINAL SIGNATURE APPROVAL OF THE SITE DEVELOPMENT PLAN FOR PARCEL R. ERODIBLE SOILS 10. ENVIRONMENTAL PERMIT REFERENCES: DEPARTMENT OF THE ARMY PERMIT NUMBER CENAB-OPR-M (PARKWAY ROCK LLC/DORSEY CENTER/STREAM CHANNELIZATION). MDE AUTHORIZATION NUMBER 201561093/15-NT-3197 PARCEL TO 11. THERE ARE NO WETLANDS ON THIS SITE, BASED ON THE WETLAND STUDY PROVIDED BY HILLIS-CARNES \* STEEP SLOPES ARE ALSO ERODIBLE SOILS ENGINEEING ASSOCIATES, INC. DATED JULY 12, 2004 AND VERIFIED BY ECO-SCIENCE PROFESSIONALS, INC. SITE ANALYSIS DATA CHART 12. NO STORMWATER MANAGEMENT IS CURRENTLY PROPOSED, AS THERE ARE NO IMPERVIOUS SURFACES PROPOSED. STORMWATER MANAGEMENT WILL BE PROVIDED UNDER A SEPARATE SITE DEVELOPMENT PLAN FOR BUILDING A. TOTAL PROJECT AREA \_\_\_\_\_ OR INTO AN EXISTING 13. A PRE-SUBMISSION COMMUNITY MEETING FOR THIS PROJECT WAS HELD ON NOVEMBER 28, 2015 IN SHORE INC. AX MAP 37 PARCEL B. AREA OF THIS PLAN SUBMISSION \_\_\_\_\_ ACCORDANCE WITH SECTION 16.128 AND 16.147(B)(1) OF THE SUBDIVISION REGULATIONS. 14. THIS PLAN WAS PRESENTED TO DESIGN ADVISORY PANEL ON OCTOBER 26, 2016, REFERENCE REVIEW PROJECT C. APPROXIMATE LIMIT OF DISTURBANCE \_\_\_\_\_ \_\_ 2.78± AC. D. PRESENT ZONING: \_\_\_\_ \_ APARTMENTS (FUTURE) E. PROPOSED USE OF SITE: \_\_\_ DESIGN ADVISORY PANEL RECOMMENDATION: F. TOTAL NUMBER OF UNITS ALLOWED . A. THE APPLICANT RECONSIDER THE PRIMARY ENTRANCE TO THE MOTOR COURT AND HOW THAT CAN BE G. NUMBER OF PARKING SPACES REQ'ED DEALT WITH IN A BETTER SCALE WITH ENTRY WALLS AND PYLONS OR SOME METHOD THAT RESOLVES THE H. BUILDING COVERAGE OF SITE \_\_\_\_ ISSUE WITH THE LARGE MOUTH GARAGE. I. APPLICABLE DPZ FILE REFERENCES: SDP-05-29 F-86-109 F-07-80, SDP-07-016, THE EXTERIOR BUILDING ELEVATION AT THE GARAGE ENTRY WILL BE REDUCED IN SCALE AND PROMINENCE WP-15-131, ECP-15-017 BY LOWERING THE PARAPET WALL AND EXPLORING OTHER MATERIAL COMBINATIONS SO ONES EYE WILL BE DRAWN INSTEAD TO THE MAIN BUILDING ELEVATION ON THE RIGHT SIDE OF THE MOTOR COURT. **DESIGN NARRATIVE -**J. PROPOSED WATER AND SEWER SYSTEMS: X PUBLIC PRIVATE BINDER ROCK LLC PARCEL 'R' 4.18 AC DORSEY CENTER, PARCEL R B. TAKE ANOTHER LOOK AT THE ELEVATIONS AND SEE IF YOU CANT ACCENT THE COURTYARDS AND MAYBE KUDEX. OFFICE BUILDING BREAK THE VERTICAL ELEMENTS DOWN A LITTLE BIT BASED ON WHETHER IT IS A COURTYARD OR A STREET THE CURRENT DEVELOPMENT IS LIMITED TO CONSTRUCTION OF A STREAM DIVERSION SYSTEM AND THE STREAM CLOSURE. THE TO HELP YOU GET SOME VARIETY AND DEFINITION. STORM SYSTEM WILL CAPTURE THE UPSTREAM HEADWALL RELEASES. THE OUTFALL FROM DORSEY ROAD AND THE ON-SITE RUNOFF IN A CLOSED SYSTEM, AND TIE THEM INTO THE DOWNSTREAM CLOSED SYSTEM. THE CLOSED SYSTEM IS DESIGNED TO CONVEY THE THE TWO MAIN BUILDINGS WING FACADES CLOSET TO DORSEY ROAD WILL BE RE-EXAMINED WITH THE 100-YEAR STORM IN ACCORDANCE WITH HOWARD COUNTY METHODS. NO STORMWATER MANAGEMENT IS REQUIRED UNTIL THE SITE IS DEVELOPED. EROSION AND SEDIMENT CONTROLS ARE IN ACCORDANCE WITH THE DESIGN STANDARDS OF THE MARYLAND INTENT TO DISTINGUISH THEM ARCHITECTURALLY FROM THE COURTYARD EXTERIOR FACADES THEREBY STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. AS MITIGATION FOR THE STREAM CLOSURE, STREAM CREATING A BUILDING HIERARCHY THAT ADDS IDENTITY, INTEREST AND FURTHER VARIETY TO THE OVERALL RESTORATION WILL BE PERFORMED DOWNSTREAM OF THE SITE. THE STREAM RESTORATION PLANS ARE DESIGNED IN ACCORDANCE BUILDING ELEVATION AND OUTDOOR SPACES THE DEFINE. WITH MARYLAND'S WATERWAY CONSTRUCTION GUIDELINES AND HE MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. SEE 'DESIGN NARRATIVE - STREAM RESTORATION' SHEET C. THAT THE APPLICANT SEND A LETTER TO THE COUNTY LOBBYING FOR BETTER A CONNECTION AND IDENTIFICATION TO THE MARC STATION. OFFSITE STREAM RESTORATION PARCELS (FIRST ELECTION DISTRICT): DOCUMENTS WILL ACCOMPANY ELECTRONIC PLAN SUBMISSIONS TO REQUEST THAT HOWARD COUNTY REVIEW THE NEED FOR A BETTER CONNECTION AND IDENTIFICATION FOR THE MARC STATION WITHIN THE T.O.D GREGOR, EDWIN O & WF 6937 DORSEY RD 6774 DORSEY ROAD AND MCCLUNG, VIRGIL 6941 DORSEY RD 15. THE SUBJECT PROPERTY IS ZONED TOD PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN. DORSEY EMMANUEL EVANG CH 6951 DORSEY RD 466, LOT 385 16. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD EMMANUEL UNITED EVANGEL CH 6951 DORSEY RD 282, LOT 387 COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE. ELKRIDGE ROCK LLC 6965 DORSEY RD 17. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION MOSAIC CHRISTIAN CHURCH 6845 DEERPATH RD INSPECTION DIVISION AT (410)-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK. 6855 DEERPATH RD ENT. LLC 6855 DEERPATH RD 634, LOT I WHALEN PROPERTIES LLC 6865 DEERPATH RD 18. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE STATE RAILROAD ADMIN 634. LOT G 19. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ROBERT WILTROUT, III ET AL 7129 STATION HOUSE RD 43 284, LOT 266 GREGOR DONNA L GREGOR CATHERINE 7132 STATION HOUSE RD 43 THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE HANDA ANITA 7134 STATION HOUSE RD 43 284, LOT 254 IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT. 7140 STATION HOUSE RD 43 BAAH BELINDA 20. EXISTING UTILITIES ARE BASED ON FIELD SURVEY AND RECORD PLANS. CONTRACTOR SHALL VERIFY DEPTHS 284, LOT 252 GREEK ANCHORS ROCK LLC 284, LOT 249, 250, 251 AND LOCATIONS OF EXISTING UTILITIES. 21. DISTURBED AREAS ON ADJACENT PARCEL 'B' SHALL BE STABILIZED WITH SOD AND WATERED UNTIL GROWTH IS ESTABLISHED. ANY TREES REMOVED ON PARCEL 'B' SHALL BE REPLACED TO REESTABLISH A VEGETATIVE BUFFER BETWEEN THE PROPERTIES 22. THE DISTURBANCES TO THE 100-YEAR FLOODPLAIN, STREAM AND BUFFERS ASSOCIATED WITH THE STREAM RESTORATION ACTIVITIES HAVE BEEN DETERMINED BY DPZ TO BE 'NECESSARY DISTURBANCES' IN A LETTER DATED APRIL 15, 2019. THE APPROVAL IS SUBJECT TO UTILIZATION OF SPECIFIED MITIGATION METHODS, AND HYDRANT\_ ISSUANCE OF THE MDE/ACOE AUTHORIZATION LETTER. 23. RIGHT OF ENTRY SHALL BE ACQUIRED FROM MITA FOR STREAM RESTORATION PRIOR TO APPROVAL OF ANY SOP TO CONSTRUCT residences on this parcel . 24. THE DISTURBANE REFERENCED IN NOTE 22 WAS REEVALUATED AND REAPPROVED IN A LETTER NO. DATE REVISION 25. WP-20-0 81 EVALUATED AND UPDATED THE REQUEST TO WORK IN THE STREAM AND BUFFERS, AS APPROVED Professional Certification. I hereby certify that these document IN WP-15-131 (SEE NOTE#9), THE ALTERNATIVE COMPULANCE WAS APPROVED WITH THE CONDITIONS NOTED IN GENERAL NOTE 9, AN AN ADDITIONAL REQUIREMENT THAT THE OFFSITE STREAM were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, RESTORATION MUST BE COMPLETED BEFORE USE + OCCUPANCY PERMITS MAY BE ISSUED FOR THE APARTMENT BUILDING ON PARCEL'R' **BENCHMARK** License No. 28376, Expiration Date: 1-1-21. EXISTING OFFICE EX. FIRE BUILDING ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS HYDRANT ENGINEERING, INC 8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CIVILENGINEERING.COM 11-25-19 PROJECT: DORSEY CENTER OWNER/DEVELOPER: EXISTING CONDITIONS PLAN PARCEL R - STREAM DIVERSION BINDER ROCK LLC AND OFFSITE STREAM MITIGATION APPROVED: DEPARTMENT OF PLANNING AND ZONING SOILS LEGEND C/O H & H ROCK COMPANIES 6800 DEERPATH ROAD ADDRESS CHART SYMBOL NAME/DESCRIPTION K VALUE GROUP DORSEY CENTER: 1 inch = 50 ft.SUITE 100 TAX MAP 37 - PARCEL 375 - GRID 24 RUSSETT AND BELTSVILLE SOIL, 2 TO 5 PERCENT SLOPES STREET ADDRESS ELKRIDGE, MARYLAND 21075 0.37 1st ELECTION DISTRICT 410.579.2242 RUSSETT AND BELTSVILLE SOIL, 5 TO 10 PERCENT SLOPES\* 0.37 6771 DORSEY ROAD HOWARD COUNTY, MARYLAND OFFSITE: SEE ABOVE 0.37 RUSSETT FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES\* PERMIT INFORMATION CHART 0.20 URBAN LAND-FALLSINGTON COMPLEX, 0 TO 5 PERCENT SLOPES SECTION/AREA: PARCEL. URBAN LAND-UDORTHENTS COMPLEX, 0 TO 15 PERCENT SLOPES 0.28 D 12-17-19 EXISTING CONDITIONS PLAN AND SOILS MAP OBTAINED FROM USDA NRCS WEB SOIL NATIONAL COOPERATIVE SOIL SURVEY, NOVEMBER 2018. 6771 DORSEY ROAD 375 SEE HOWARD COUNTY SOIL SURVEY MAP NO. 25 \*HIGHLY ERODIBLE SOILS K>0.35 AND 5% OR GREATER SLOPES. OR 15% AND GREATER SLOPES. BLOCK No. ZONE: TAX MAP: ELECTION CENSUS NOVEMBER 2019 PROJECT NO. 1959 3-42020 DISTRICT 6012.03 Design: AAM | Draft: AAM | Check: CAM DRAWING <u>1</u> OF <u>14</u>





#### 8-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION B-4-3 STANDARDS AND SPECIFICATIONS Using vegetation as cover to protect exposed soil from erosion. Purpose To promote the establishment of vegetation on exposed soil. Conditions Where Practice Applies On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil

amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

<u>Effects on Water Quality and Quantity</u>

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is Criteria Seeding
 Specifications tabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas. Planting vegetation in disturbed areas will have an effect on the water hudget, especially on volumes and rates of runoff infiltration. 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 evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by

Adequate Vegetative Establishment
Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season. Adequate vegetative stabilization requires 95 percent groundcover.
 If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation,

If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION Establishment of vegetative cover on cut and fill slopes.

To provide timely vegetative cover on cut and fill slopes as work progresses. ditions Where Practice Applies Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as

a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation. b. Perform Phase 1 excavation, prepare seedbed, and stabilize.

d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary. Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization

Construct and stabilize fill slopes in increments not to exceed 15 feet in height, prepare seedbed and apply seed and mulch on all slopes as

2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the 3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the

4. Construction sequence example (refer to figure b.2): a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. construct silt fence on low side of fill

b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner. c. Place phase 1 fill, prepare seedbed, and stabilize

e. Place final phase fill, prepare seedbed, and stabilize. overseed previously seeded areas as necessary. Note: once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. any interruptions in the operation or completing the operation out of the seeding season will

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

The process of preparing the soils to sustain adequate vegetative stabilization. Purpose

To provide a suitable soil medium for vegetative growth

Conditions Where Practice Applies
Where vegetative stabilization is to be established. Criteria

a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of

c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means. a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative

ii. Soluble salts less than 500 parts per million (ppm).

iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if love-grass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
iv. Soil contains 1.5 percent minimum organic matter by weight.

v. Soil contains sufficient pore space to permit adequate root penetration. b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions

. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test. e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

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 2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth

of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by 3. Topsoiling is limited to areas having 2:1 or flatter slopes where: a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and

c. The original soil to be vegetated contains material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible.
 Areas having slopes steeper than 2:1 require special consideration and design.

Topsoil Specifications: Soil to be used as topsoil must meet the following criteria: a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.

Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

a. Erosion and sediment control practices must be maintained when applying topsoil.

b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets. soil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of

5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses. 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name trade name or trademark and warranty of the producer

3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will, pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.

4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means 5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil

H-5 STANDARDS AND SPECIFICATIONS

CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION ACTIVITIES. <u>PURPOSE</u>

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. VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION.
TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. BEGIN PLOWING ON WINDWARD SIDE OF SITE.

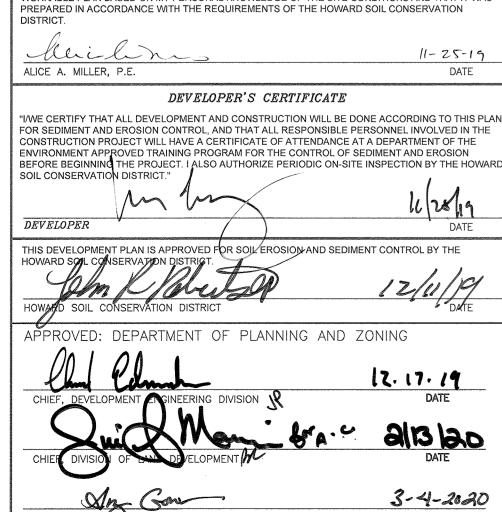
TYPE PLOWS SPACED ABOUT 12 INCHES APART. SPRING-TOOTHED HARROWS. AND SIMILAR PLOWS ARE EXAMPLE: OF EQUIPMENT THAT MAY PRODUCE THE DESIRED EFFEC

4. IRRIGATION: SPRINKLE SITE WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. THE SITE MUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS.

5. BARRIERS: SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

6. CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE APPROPRIATE PLAN REVIEW ENGINEER'S CERTIFICATE



### SEEDING AND MULCHING 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.

project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate. b.Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws. c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective. d.Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

d. Dry Seeding: This includes use of conventional drop or broadcast spreaders. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or

site-specific seeding summaries. ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be

firm after planting. ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer). If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre. ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons

are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding. iii. Mix seed and fertilizer on site and seed immediately and without interruption. v. When hydroseeding do not incorporate seed into the soil.

processed into a uniform fibrous physical state.

. 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 and not musty, moldy, caked, decayed, or excessively dusty Note: Use only sterile straw mulch in areas where one species of grass is desired. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose

WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of ii.WCFM, including dye, must contain no germination or growth inhibiting factors. iii.WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch

material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic. v. WCFM must conform to the following physical requirements; fiber length of approximately 10 millimeters, diameter approximately 1

millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum Application a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply

mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre. c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard: A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour. ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood

cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax 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 mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited. iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in

B-4-5 STANDARDS AND SPECIFICATION FOR PERMANENT STABILIZATION To stabilize disturbed soils with permanent vegetation. Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more. Criteria Seed Mixtures 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) and based

on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanen Seeding Summary. The Summary is to be placed on the plan. b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guild, Section 342 - Critical Area Planting. c. For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the PermanentSeeding Summary. The summary is to be placed on the plan. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight. iii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when tu will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2

pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 30 percent of the total mixture by weight. ii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality ensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 squarefeet. Notes:Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, endations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purit The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consume

protection and assures a pure genetic line. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b,6a) entral MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b) n MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b). 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 ½ inches in diameter. The resulting seedbed must be in such condition that futu

of grasses will pose no difficulty. e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter). General Specifications a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.

b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness nust exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable. c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section. d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival. e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by

a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.

Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface. d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are horoughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours. 3. Sod Maintenance a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a

depth of 4 inches. Water sod during the heat of the day to prevent wilting. b. After the first week, sod watering its required as necessary to maintain adequate moisture content.

Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

 $\underline{\textbf{B-4-4}} \ \ \underline{\textbf{STANDARDS}} \ \underline{\textbf{AND}} \ \underline{\textbf{SPECIFICATIONS}} \ \underline{\textbf{FOR}} \ \underline{\textbf{TEMPORARY}} \ \underline{\textbf{STABLIZATION}}$ 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.

an agronomist or soil scientist prior to its installation.

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), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan. 2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary 3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b

> B-4-8 STANDARDS AND SPECIFICATIONS 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 and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading. 3.Runoff from the stockpile area must drain to a suitable sediment control practice.

4.Access the stockpile area from the upgrade side.
5.Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.

6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge. 7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.

If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting. 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

# **Permanent Seeding Summary**

slopes, benching must be provided in accordance with Section B-3 Land Grading

	Hardiness Zone (from Fig Seed Mixture (from Table	•	6b Tall Fescue/Kentucky Bl	uegrass		Fertilizer Rate (10-20-20)		Lime Rate
No.	Species	Application Rate (lb/ac.)	Se <b>d</b> ding Dates	Seeding Depths	N N	P2O5	K2O	
	Switch Grass	10	Mar 1 to May 15 May 16 to June 15	1/4 - 1/2 in	45 pounds per acre(1.0	90 pounds per acre(1.0	90 pounds per acre(1.0	2 tons per acre (90
1	Creeping Red Fescue	15	Mar 1 to May 15 May 16 to June 15	1/4 - 1/2 in	lb/100 sf)	lb/100 sf)	lb/100 sf)	lb/1000 sf)
	Bush Clover	2	Mar 1 to May 15 May 16 to June 15	1/4 - 1/2 in	45 nounds	00 nounda	00 nounds	24000000
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre(1.0	90 pounds per acre(1.0	90 pounds per acre(1.0	2 tons per acre (90
3	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	lb/100 sf)	lb/100 sf)	lb/100 sf)	lb/1000 sf)

	Table	B.1: Ten	nporary S	eeding for Sit	e Stabilization		Binder Pro	operty	Swale Co	mputations					
	Seedir	ng Rate 1/	Seeding	Recom	mended Seeding Dates by Plant Harding	ess Zone 3/		Q10	Slope	Mannings 'n'	Flow Depth	R	Velocity	Shear Stress	IV
Plant Species	lb/ac	lb/1000 ft2	Depth 2/ (inches)	5b and 6a	6b	7a and 7b		CFS	%		feet	feet	FPS	lb/ft^2	Pro
Cool-Season Grasses							Swale A	18.40	3.0%	0.150	1.6	1.04	1.71	1.94	Pei
Annual Ryegrass (Lolium perenne ssp. Multiflorum	40	1.0	0.5		Mar 1 to May 15; Aug 1 to Oct 31			Q2	6.60/	0.000					
Barley (Hordeum vulgare)	96	2.2	1.0		Mar 1 to May 15; Aug 1 to Oct 31		ED-1 ED-2	4.70 0.23	5.7%	0.020	0.80	0.84	6.98	3.45	Ter
Oats (Avena sativa)	72	1.7	1.0		Mar 1 to May 15; Aug 1 to Oct 31			-	-	-	nt conditions, an	d temporary	arth dikes w	/ere computed us	Ter
Wheat (Triticum aestivum)	120	2.8	1.0		Mar 1 to May 15; Aug 1 to Oct 31			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-	,,,				
Cereal Rye (Secale cereale)	112	2.8	1.0		Mar 1 to May 15; Aug 1 to Nov 15										
Warm-Season Grasses															
Foxtail Millet (Serataria italica)	30	0.7	0.5		May 16 to Jul 31										
Pearl Millet (Pennisetum glaucum	20	0.5	0.5		May 16 to Jul 31										
Notes:  1/ Seeding rates for the warm season grasse tested. Adjustments are usually not neede				ual planting rates sh	all be adjusted to reflect percent seed germi	nation and purity, as	unced								

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur very late fall beyond the seeding dates for other temporary seedings. Cereal rive has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above

STANDARD SYMBOL

-----SSF--------

DETAIL B-4-6-C

Oats are the recommended nurse crop for warm-season grasses.

DETAIL E-3

For sandy soils, plant seeds at twice the depth listed above The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone

SUPER SILT

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

FENCE

	FENCE	5511	CHANNEL APPLICATION (* INCLUDE SHEAR S	TRESS) CHANNEL APPLICATION (* INCLUDE SHEAR STRESS
	10 FT MAX.	iN.	OVERLAP OR ABUT— EDGES (TYP.)  6 IN MIN.  KEY IN UPPER ROLL END FILL MAT VOIDS IF SPECIFIED (SEE NOTE 9)	OVERLAP OR ABUT ROLL EDGE (TYP.)  6 IN MIN. DEPTH KEY TRENCHFOR ROL END (TYP.)
,	GROUND SURFACE II II II JAMIN. J36 IN MI II J36 IN MI III	in.	6 IN MIN. OVERLAP AT ROLL END (TYP.)  6 IN DEEP (MIN.) KEY TRENCH FOR	6 IN MIN. OVERLAP AT ROLL END (TYP.)  6 IN MIN. DEPTH KEY TRENCH FOR UPPER END OF
Ι,	GALVANIZED WOVEN SLIT FILM GEOTEXTILE STEEL OR ALUMINUM POSTS  ELEVATION  CHAIN LINK FENCING		PREPARED FLOW CHANNEL WITH SEED  UT (16)  UPPER END OF DOWN SLOPE ROLL. (TYP.) IN PLACE  CONSTRUCTION SPECIFICATIONS:  ISOMETRIC VIEW	DOWNSLOPE ROLL (TYP.)  PREPARED SURFACE WITH  SEED IN PLACE  1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR
	WOVEN SLIT FILM GEOTEXTILE  FLOW  EMBED GEOTEXTILE AND CHAIN LINK FENCE 8 IN MM. INTO GROUND		<ol> <li>USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.</li> <li>USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIB OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT I BE NON-LEACHING AND NON-TIOMIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 222 INCHE AND SUFFICIENTLY BÖNDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL PREVENT SEPARATION (OF THE NET FROM THE PARENT MATERIAL.</li> </ol>	STRESS DESIGNATED ON APPROVED PLANS.  2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN—MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON—LEACHING AND NON—TOXIC TO VEGETATION AND SEED GERMINATION AND NON—INJURIOL TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2X2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCHE CENTERS ALONG LONGITUDINAL AXIS OF
	CROSS SECTION  CONSTRUCTION SPECIFICATIONS  1. INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM	AND SIX	3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STE WHE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM 0 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STA MUST BE ROUGH-SAWH HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WE SHAPE AT THE BOTTOM.  4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN	THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.  3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1X3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
	INCHES INTO THE GROUND.  2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPEN INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.  3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H—1 MATERIALS, SECURE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP	ING) 42 ELY TO THE AND MID	ACCORDANCE WITH SPECIFICATIONS, PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERAT UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONPLAN.  5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER WORK FROM CENTER OF CHANNEL DUTWARD WHEN PLACING ROLLS, LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE, AVOID STRETCHING THE MATTING.	4. PERFORM FINAL GRADING, IDPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.  5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERINF, WORK FROM CENTER OF CHANNEL QUITWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY
	SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE  4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.  5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UF 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND OF THE SUPER SILT FENCE.	Y 6 INCHES, PSLOPE AT	<ol> <li>OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS, OVERLAP ROLL E BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM M</li> <li>KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MAT ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.</li> <li>STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.</li> </ol>	6 KEY_IN LIPSTREAM END OF EACH MAT ROLL BY DICCING A 6 INCH (MINIMIM) TRENCH AT THE
	6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SI THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.  7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHE REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS CHAIN LINK FENCING AND GEOTEXTILE.	EN SEDIMENT	9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTAL ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANUL MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.  10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHME ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.	8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.  9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE
		ENVIRONMENT	MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE  DETAIL D-1  PIPE SLOPE  MARYLAND DEPARTMENT OF ENVIRON WATER MANAGEMENT ADMINISTRATI STANDARD SYMBI [PSD - 12]	ON NATURAL RESOURCES CONSERVATION SERVICE 2011 WATER MANAGEMENT ADMINISTRATION OL STANDARD SYMBOL
		TION (e.g. A-1) NEL SIDE OF DIKE.	DRAIN  DESIGNATION PSD-12 REF	CONSTRUCTION SPECIFICATIONS
	a - DIKE HEIGHT 18 IN MIN. 30 I		FLOW  2.5 FT  2.5 FT  FLOW  The standard flag and section flow flow flow flow flow flow flow flow	1. THE HEIGHT OF THE EARTH DIKE MOST BE AT LEAST 2 INMES THE PIPE DIAMETER MEASURED FROM THE INVERT OF THE PIPE. EXTEND THE TOP ELEVATION OF DIKE AT ZERO PERCENT GRADE UNTIL I INTERCEPTS THE TOP OF THE ADJOINING EARTH DIKE.  2. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. ALL CONNECTIONS MUST BE WATERTIGHT.  3. ATTACH A FLARED END SECTION TO THE INLET END OF PIPE WITH A WATERTIGHT CONNECTION. AT THE INLET OF THE PIPE SLOPE DRAIN, INSTALL 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PLACED 12 INCHES IN DEPTH ON NONWOVEN GEOTEXTILE AND EXTEND OUT 5 FEET FROM THE INLET IN ALL DIRECTIONS.  4. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H—1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
	PLAN VIEW d - FLOW DEPTH 12 IN MIN. 24 I	T MIN. IN MIN.	COMPACTED EARTH DIKE  EXTEND TOP ELEVATION AT ZERO PERCENT GRADE UNT IT INTERCEPTS ADJOINING EARTH DIKE.	5. SECURELY ANCHOR THE PIPE SLOPE DRAIN (PSD) TO THE SLOPE. SPACE THE ANCHORS EVERY 10 FEET.  6. HAND TAMP THE SOIL AROUND AND UNDER THE PIPE AND END SECTION IN 4 INCH LIFTS TO THE TOP OF THE EARTH DIKE.  7. UPON COMPLETING INSTALLATION OF THE PSD, STABILIZE ASSOCIATED DISTURBANCES WITH SEED, MULCH, AND TACK.
	A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLE WATER DIVERSION.)  A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.  A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.  CONSTRUCTION SPECIFICATIONS  1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONS.	D INTO	DISCHARGE INTO A— STABILIZED CHANNEL, SEDIMENT TRAPPING DEVICE, OR INTO A STABLE AREA AT A NON-EROSIVE VELOCITY.  ANCHORS EVERY 10 FT  STABLE AREA AT A ISOMETRIC VIEW	8. INSTALL CUTLET PROTECTION AS SPECIFIED ON APPROVED PLAN.  9. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REMOVE ACCUMULATED SEDIMENT AND DEBRIS.
	MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHOIKE.  2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. E PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.  3. COMPACT FILL.  4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.  5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.  6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL BY WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.	BANK E LOCATION	DISCHARGES TO TRAPS AND BASINS MUST ENTER AT OR ABOVE WET POOL ELEVATION  12 IN  NONWOVEN GEOTEXTILE OR GREATER  4 TO 7 IN STONE	
	7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBI MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF ERC CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCUMENT SECTION B-4 VEGETATIVE STABILIZATION.  8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED APPROVED PLAN.	OSIÓN, AND ORDANCE	19 IN 4 FT PROFILE  MINIMUM LENGTH AT LESS THAN 1% SLOPE  NONWOVEN GEOTEXTILE  PROVIDE ROCK OUTLET	
	MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTR  U.S. DEPARTMENT OF AGRICULTURE 0011 MARYLAND DEPARTMENT OF		PROTECTION AS REQUIRED ON PLAN.  1 OF 2  MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2 OF 2  MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
	NATURAL RESOURCES CONSERVATION SERVICE 2011 WATER MANAGEMENT ADMI	D SYMBOL	U.S. DEPARTMENT OF AGRICULTURE 2011 MARYLAND DEPARTMENT OF ENVIRON NATURAL RESOURCES CONSERVATION SERVICE 2011 WATER MANAGEMENT ADMINISTRATIVE STANDARD SYMBOL SYMB	N NATURAL RESOURCES CONSERVATION SERVICE 2011 WATER MANAGEMENT ADMINISTRATION
	MOUNTABLE BERM 8 FT MIN. MIN. S. IN. G. IN. G. 2. TO 3 IN. EARTH FILL	AVEMENT	6 FT MAX. CENTER TO CENTER  36 IN MIN. FENCE POST LENGTH DRIVEN MIN. 16 IN INTO GROUND  16 IN MIN. HEIGHT OF WOVEN SLIT FILM GEOTEXTILE	CONSTRUCTION SPECIFICATIONS  1. USE WOOD POSTS 1¾ X 1¾ ± ⅓ 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.  2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
	GEOTEXTILE  AGGREGATE OVER LENGTH AND WIDTH OF ENTRANCE  PROFILE  50 FT MIN.  LENGTH *		V B IN MIN. DEPTH INTO GROUND  ELEVATION	3. 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 MID-SECTION.  4. 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.
	OF EXISTINGP	AVEMENT	36 IN MIN. FENCE POST LENGTH  WOVEN SLIT FILM GEOTEXTILE  FLOW GROUND  FENCE POST 18 IN MIN.  ABOVE GROUND  GROUND	5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.  6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.  7. 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.
	PLAN VIEW  CONSTRUCTION SPECIFICATIONS		EMBED GEOTEXTILE  MIN. OF 8 IN VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF GEOTEXTILE.	8. 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.
	<ol> <li>PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINI THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.</li> </ol>	(*30 FEET IMUM AT	CROSS SECTION  POSTS—	
	2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTR MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MEDIT OF STONE OVER THE PIPE. PROVIS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NOT LOCATED AT A HIGH SPOT AND HAS NOT LOCATED AT A HIGH SPOT.  3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1!	OUNTABLE IDE PIPE AS NO IEN SCE IS	STEP 2  STAPLE  STAPLE  STAPLE  STAPLE  STAPLE  STAPLE  STAPLE	
THE PROPERTY OF THE PROPERTY O	<ol> <li>PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCR (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.</li> <li>MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONI OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERI SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPE TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WAS</li> </ol>	E OR MAKE M, AND ED, OR	STAPLE STAPLE  FINAL CONFIGURATION CONFIGURA	

JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

2011

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE
WATER MANAGEMENT ADMINISTRATION NATURAL RESOURCES CONSERVATION SERVICE

STANDARD SYMBO

STABILIZATION MATTING PSSMC - 2.0 lb/ft² CHANNEL APPLICATION (\* INCLUDE SHEAR STRESS)

DETAIL B-4-6-A

TEMPORARY SO

TABILIZATION MATTING

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

Matting

Proposed:

Permanent

Temporary

STANDARD SYMBOL

TSSMC - 3.5 lb/ft² (\* INCLUDE SHEAR STRESS)

#### HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES FOR PARCEL 'R'

. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages:

a. Prior to the start of earth disturbance b. Upon completion of the installation of 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,

d. Prior to the removal or modification of sediment control practices 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.

3. 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. 4. 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 feet must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6). 5. 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

6. Site Analysis: 4.18 Acres Total Area of Site: Area Disturbed: Area to be roofed or payed: 2.38 Acres Area to be vegetatively stabilized \_\_\_458\_\_ Cu Yds \_\_\_4341\_\_ Cu Yds

Off-site waste/borrow area location: A SITE WITH AN APPROVED SEDIMENT CONTROL PLAN AND ACTIVE GRADING PERMIT

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance. 8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the

next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

 Inspection date Inspection type (routine, pre-storm event, during rain event)

 Name and title of inspector Weather information (current conditions as well as time and an=mount of last recorded precipitation)

 Brief description of project's status (e.g. percent complete) and/or current activities Evidence of sediment discharges e 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 o Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back filled and stabilized by the end of each work day, whichever is shorter.

10. 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. 11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum 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

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure. 13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

14. All silt fence and super silt fence shall be placed on—the—contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation. 15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

• Use I and IP March 1 — June 15 • Use III and IIIP October 1 - April 30 Use IV March 1 - May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active

PLEASE REFER TO SHEET 8 FOR SOC FOR STREAM RESTORATION WORK - NOTE THAT THIS WORK MAY PROGRESS INDEPENDENTLY FROM THE STREAM RESTORATION WORK).

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

OBTAIN GRADING PERMIT AND NPDES PERMIT. A LETTER OF AUTHORIZATION FROM MDE WAS ISSUED FOR THIS SITE, DATED JULY 17, 2019, AUTHORIZING CERTAIN DISTURBANCES TO THE STREAM, WETLANDS AND FLOODPLAIN FOR THE STREAM DIVERSION AND FILL OPERATIONS FOR THE SITE, ALONG WITH THE OFFSITE STREAM RESTORATION. IN-STREAM WORK MAY NOT BE CONDUCTED FROM MARCH 1-JUNE 15, INCLUSIVE, ANY YEAR. STREAM, WETLAND AND FLOODPLAIN WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE AUTHORIZATION TO PROCEED, NO. 201561093/15-NT-3197. (DAY 1) HOLD ON-SITE PRE-CONSTRUCTION MEETING. (DAY 2)

FENCE, SUPER SILT FENCE, ETC.) (DAY 3-6) PHASE 1: BEGINNING DURING EXPECTED DRY WEATHER (5-DAY SPAN OF NO PRECIPITATION FROM THE NATIONAL WEATHER SERVICE) AND WITH THE INSPECTOR'S PERMISSION, INSTALL PUMP-AROUND PRACTICE NEAR GABION INFLOW GAB-1, DISCHARGING INTO EX-A THROUGH MANHOLE COVER. CLEAN WATER SLOPE DRAIN SHOULD DISCHARGE BEHIND THE SAND BAG DIKE, AND ANY DISCHARGE SHOULD BE PART OF THE PUMP-AROUND FLOWS (CONDITION 1 PER DETAIL SHEET 2). FOR END-OF-DAY PUMP REMOVAL, A 30" CLEANWATER DIVERSION PIPE SHOULD BE PLACED THROUGH SAND BAG DIKE. (DAY 7-8

. UPON APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, PROCEED TO CLEAR AND GRUB FOR EMBANKMENT FILL BETWEEN GAB-1 AND CONSTRUCT STORM DRAIN FROM EX-A TO GAB-1, B-1 TO B-3, INCLUDING GABION BASKET INFLOW AND SLOPE PROTECTION. BLOCK OPEN END OF STORM DRAIN PIPES AT DAY'S END TO ELIMINATE SEDIMENT ENTRY. WHEN THE PIPE SLOPE PROTECTION IS PLACED, WRAP SSF ALONG EDGE OF SLOPE PROTECTION

CONSTRUCT EMBANKMENT FILL OVER STORM DRAIN, AND WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE PUMP-AROUND SYSTEM. CLEAN WATER SLOPE DRAIN SHOULD BE RELOCATED TO DISCHARGE TO GAB-1 (CONDITION 2 PER DETAIL SHEET 2). (DAY 16-21) 3. CONSTRUCT STORM DRAIN FROM B-3 TO LOCATION OF J-1. (DAY 21-26)

UNDER DRY WEATHER CONDITIONS (5-DAY SPAN OF NO PRECIPITATION FROM THE NATIONAL WEATHER SERVICE) AND WITH THE INSPECTOR'S PERMISSION, REMOVE THE EXISTING 36" END SECTION, FILL TO THE EXISTING INVERT OF THE 36" OUTFALL, AND INSTALL 36" OUTFALL EXTENSION TO WYE STRUCTURE J-1 AND CONNECT TO STORM DRAIN. (DAY 29-31) 10. CONSTRUCT STORM DRAIN FROM J-1 TO HW-1, INCLUDING I-2. (DAY 32-34)

1. UNDER DRY WEATHER CONDITIONS (5-DAY SPAN OF NO PRECIPITATION FROM THE NATIONAL WEATHER SERVICE) AND WITH THE INSPECTOR'S PERMISSION, INSTALL PUMP AROUND ABOVE HW-1, PUMPING INTO INSTALLED STORM DRAIN, AND CONSTRUCT HW-1. UPON COMPLETION OF HW-1, AND WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE PUMP-AROUND SYSTEM. (DAY 35-49) 12. PHASE 2: UPON APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, AND WITH STORM DRAIN SYSTEM FULLY OPERATIONAL. CONSTRUCT

SOS-1. CLEANWATER DIVERSION SLOPE DRAIN SHOULD DISCHARGE DIRECTLY INTO GAB-1, AND SHOULD NOT RELEASE INTO TGOS-1. BEGIN STREAM FILL OPERATIONS PLACING EROSION CONTROL MATTING AS FINISH GRADES ARE ACHIEVED, AND MAINTAINING SITE DRAINAGE TO TGOS-1. (DAY 50-64) 13. UPON APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY REMAINING DISTURBED AREAS WITH THE PERMANENT SEEDBED NOTES. (DAY 65)

NOTE: NO CHANGES ARE ALLOWED TO THE SEQUENCE OF CONSTRUCTION WITHOUT PRIOR HOWARD SCD APPROVAL NOTE: ALL SUPER SILT FENCES TO BE CHECKED DAILY TO ENSURE COMPLIANCE AND

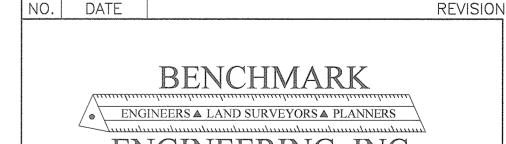
REPAIRED IMMEDIATELY AS REQUIRED

OWNER/DEVELOPER:

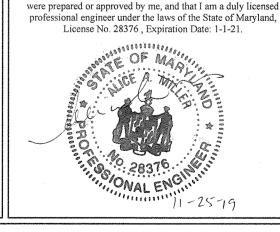
NOTE: TEMPORARY OR PERMANENT SEEDING AND STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE TIME FRAME REQUESTED BY THE 2011 MARYLAND STANDARDS & SPECIFICATIONS, SOIL EROSION AND SEDIMENT CONTROL WHICH EVER IS MORE STRINGENT

CONTROLS AND SEQUENCE OF CONSTRUCTION SHALL BE PROVIDED FOR THE OFFSITE STREAM RESTORATION, SHEETS 8-13 OF THIS PLAN.

NOTE: SEPARATE SEDIMENT



ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CIVILENGINEERING.COM

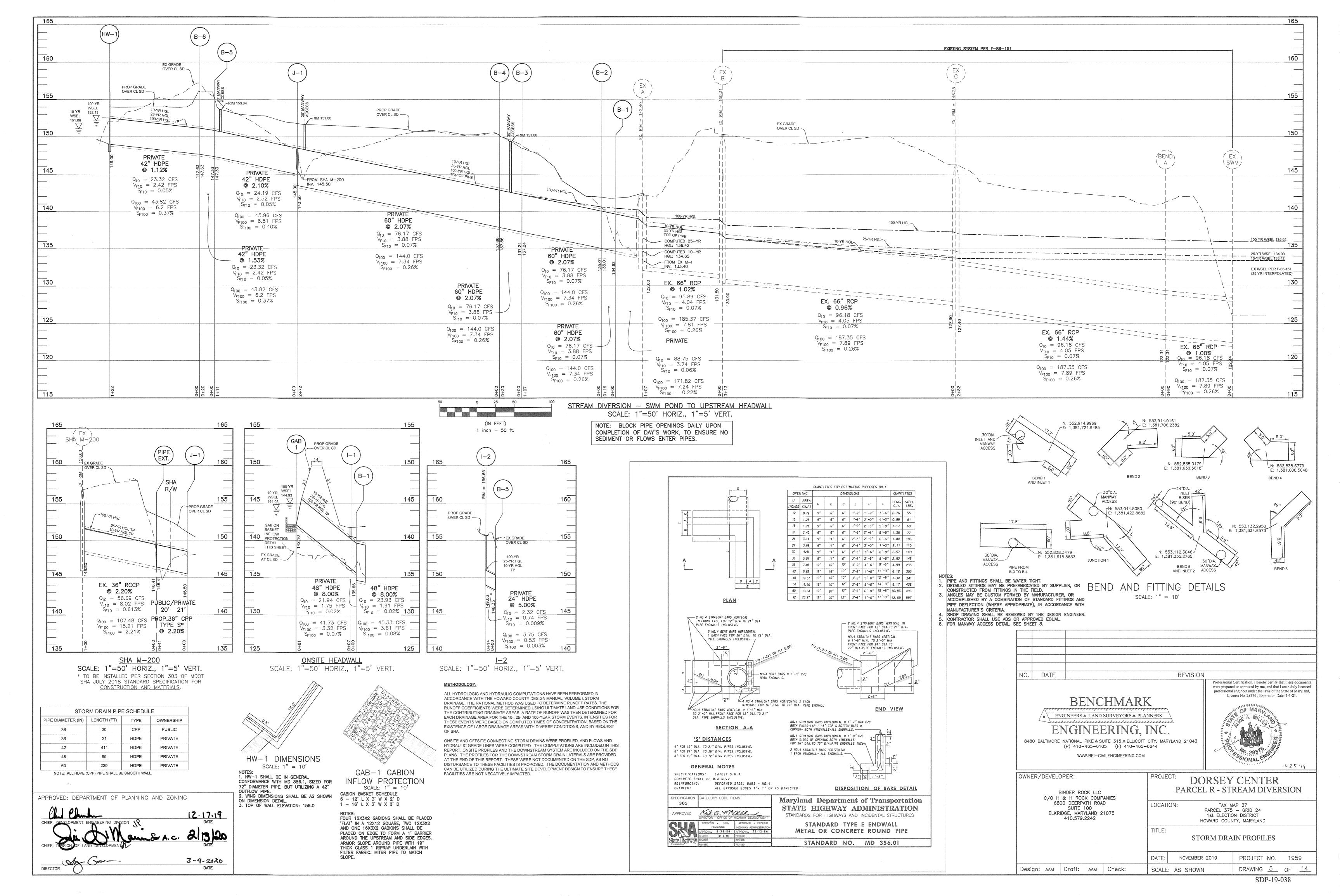


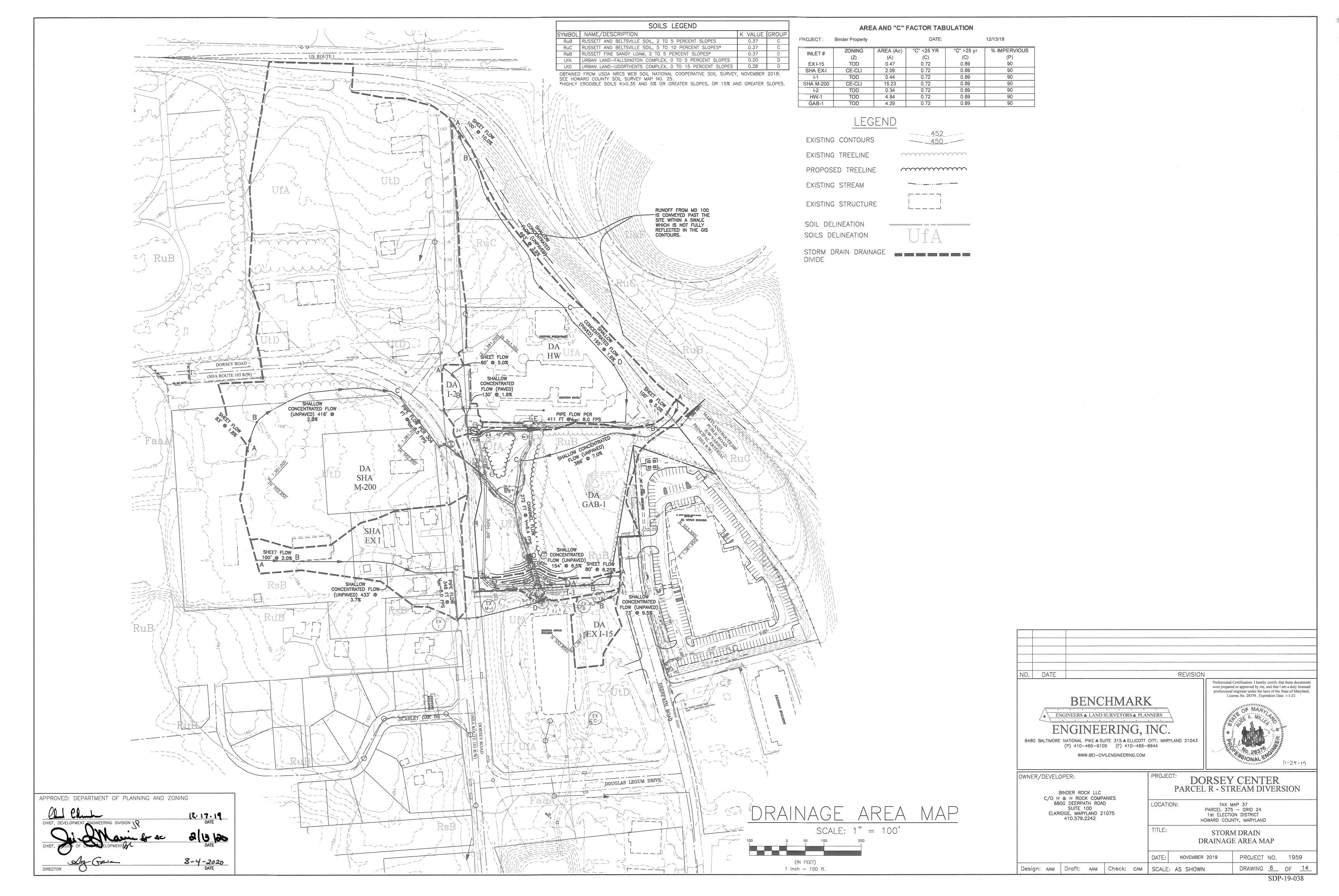
Professional Certification. I hereby certify that these document

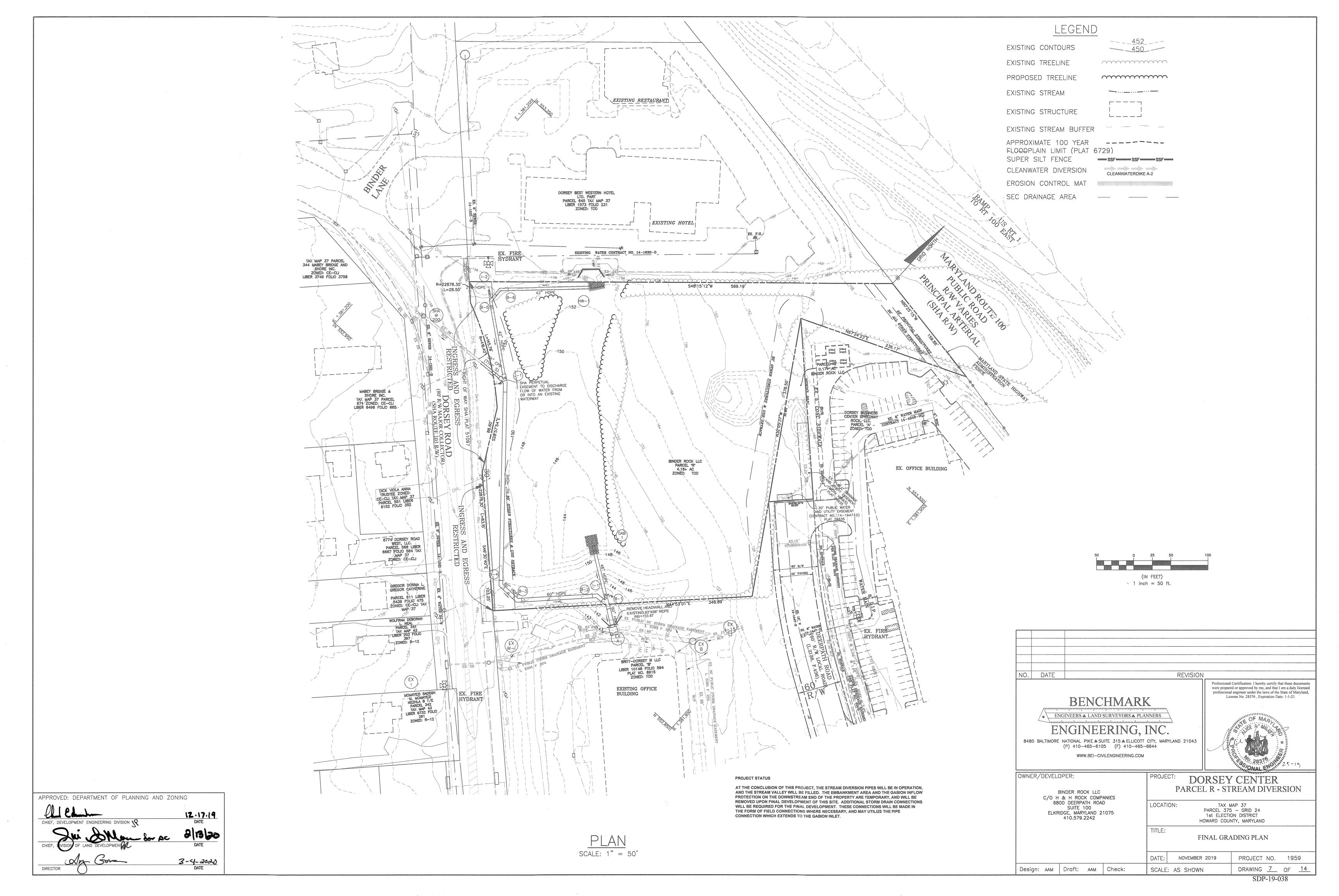
**DORSEY CENTER** PARCEL R - STREAM DIVERSION BINDER ROCK LLC C/O H & H ROCK COMPANIES 6800 DEERPATH ROAD LOCATION: TAX MAP 37 SUITE 100 PARCEL 375 - GRID 24 ELKRIDGE, MARYLAND 21075 1st ELECTION DISTRICT 410.579.2242 HOWARD COUNTY, MARYLAND SEDIMENT AND EROSION CONTROL NOTES AND DETAILS DATE: NOVEMBER 2019 PROJECT NO. 1959 Design: AAM | Draft: AAM | Check: DRAWING 4 OF 14 SCALE: AS SHOWN

PROJECT:

SDP-19-038







#### BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, **WATERWAYS, AND 100-YEAR FLOODPLAINS**

- 1. No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 2. Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 3. Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other
- deleterious substance. 4. Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 5. Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill. Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
- 7. All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Barley (Hordeum sp.), Oats (Uniola sp.), and/or Rye (Secale cereale). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in
- wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed. 8. After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in
- 9. To protect aguatic species, in-stream work is prohibited as determined by the classification of the stream:

#### Use I waters: In-stream work shall not be conducted during the period

March 1 through June 15 inclusive, during any year. Use III waters: In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year. Use IV waters: In-stream work shall not be conducted during the period

March 1 through May 31, inclusive, during any year.

- 10. Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- 11. Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.
- 12. A dewatering pump will be utilized in conjunction with a dirt bag (see detail this sheet) to remove standing water in the project area during construction. The dirt bag will be placed on a vegetated area a sufficient distance from subject reach so that any sediment leaving the dirt bag has time/distance to settle out before reaching the waterway.

#### **SEDIMENT CONTROL NOTES**

- 1. Refer to "2011 Maryland Standards and Specifications for Soil Erosion and Sediment control" for standard details and detailed specifications of each practice specified herein.
- 2. With the approval of the sediment control inspector, minor field adjustments can and will be made to insure the control of any sediment. Changes in sediment control practices require prior approval of the sediment control inspector and the Howard Soil Conservation District.
- 3. At the end of each working day, all sediment control practices will be inspected and left in operational condition.
- 4. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a.) Three calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater
  - than three horizontal to one vertical (3:1), and
- b.) Seven days as to all other disturbed or graded areas on the project site which will remain idle over fourteen days.
- 5. Any change to the grading proposed on this plan requires resubmission to Howard Soil Conservation District for approval.
- 6. Dust control will be provided for all disturbed areas. Refer to "2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control", pg. H-30-1, for acceptable methods and specifications for dust control.
- 7. Any variations from the sequence of operations stated on this plan require the approval of the sediment control inspector and the Howard Soil Conservation District prior to the initiation of the change.
- 8. Excess cut or borrow material shall go to, or come from, respectively, a site with an open grading permit or approved agricultural ground. 9. The following item may be used as applicable: refer to "Maryland's Guidelines to Waterway Construction" by the Water Management Administration of the Maryland Department of the Environment, revised November, 2000, for standard details and detailed specifications
- of each practice specified herein for waterway construction. 10. All work is to be completed "in the dry", see sequence of operations. After rainfall events during construction, the site is to be fully
- dewatered prior to proceeding with grading.
- 11. Ingress and egress to the site shall be from Dorsey Road. 12. The contractor must adhere to "Best Management Practices for Working in Nontidal Wetlands, Wetland Buffers, Waterways, and the 100-year Floodplain".

### **GENERAL NOTES**

- 1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MDSHA standards and
- The contractor shall notify 'Miss Utility" at 1-800-257-7777 at least five (5) working days prior to any work being done.
- This plan is prepared in accordance with the provisions of section 16.124 of the Howard County code and the landscape manual 4. 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. 5. Survey of the site was performed by C.F. Kreutter & Associates Inc. in June 2017.
- 6. The coordinates shown hereon are based on Howard County Geodetic Control, which is based upon the Maryland state plane coordinate
- 7. Obstructions shown on this drawing are for the convenience of the contractor only and Ecotone does not warrant or guarantee the
- correctness or completeness of the information given. The contractor must verify such information to his own satisfaction.
- 8. The existing information shown on the plans was taken from the best available sources and shall be verified before starting construction. Howard County does not guarantee the completeness or the correctness of the shown information.
- 9. The contractors shall take all necessary precautions to protect the existing utilities and maintain uninterrupted service. Any damage incurred due to the contractor's operation shall be repaired immediately. All utilities shall have a clearance by a minimum of 6 inches vertically and a minimum of 5 feet horizontally.
- 10. Should the contractor discover discrepancies between the plans and field conditions, the contractor shall notify Ecotone immediately to resolve the situation.
- 11. All pipe elevations shown are invert elevations.
- 12. The contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and
- 13. Joint Permit Tacking Number (MDE/COE) 2015-61093-M02
- 14. Impairment status: nutrients/metals listing Categories 2, 4a, 4c, and 5. Project area is not located in a Tier II catchment. Deep Run in the project area has the following impairments: E. coli, selenium, channelization, chlrodane, chlorides, sulfates, cadmium, arsenic, chromium, copper, lead, mercury, nickel, zinc, nitrogen, phosphorus, and total suspended solids.

# **SEQUENCE OF CONSTRUCTION - STREAM RESTORATION**

- (SEE SHEET 4 FOR SOC, PHASE 1 & PHASE 2. NOTE: THIS WORK MAY PROGRESS INDEPENDENTLY FROM PHASE 1 & PHASE 2.
- 1. Contractor shall notify owner and Howard County CIS inspector at least 48 hours prior to beginning any work and the Maryland Department of the Environment Inspection and Compliance Program (410 537-3510) at least 5 days prior to beginning any work. Miss Utility must be contacted at least 72 hours prior to beginning work. A pre-construction meeting is required with the landowner, contractor, and Howard County CID inspector prior to construction starting.
- 2. County grading permit, and other necessary approvals and permits must be obtained prior to start of construction.
- 3. Clear and grub for the installation of sediment and erosion control measures or devices (1 Day). 4. Install stabilized construction entrances and all sediment control devices (1 Day).
- 5. Notify Howard County CID inspector upon completion of said installation.
- 6. With the approval of Howard County CID inspector, clear and grub for in-stream work. The stream is in the Patapsco River watershed, designated as Use I by the Maryland Department of the Environment. No in-stream work shall be conducted during the period March 1 through June 15 (1 Day).
- 7. Install pump around practices in the unnamed tributaries. All pump around diversions shall be set up and running before in-stream work will be permitted to start. See Pump-Around Note, this Sheet (1 Day). 8. Begin stream work starting at the upstream end of the project and work downstream. Complete installation of all in-stream structures. Remove
- any accumulated sediment in the stream channel at the end of each working day and prior to the removal of the pump around practice (7
- 9. Stabilize all disturbed areas at the end of each working day. 10. Once stream restoration is complete, seed and stabilize any remaining work areas (1 Day).
- 11. Upon stabilization of site with established vegetation and with permission of the Howard County CID inspector, remove sediment control
- measures and stabilize those areas disturbed by this process, including any spoils areas (1 Day). 12. Install plant material during appropriate planting dates (1 Day).

# PUMP-AROUND NOTE

Pump around shows the maximum extents of stream to be diverted. Actual pump around length will be the length which can be completed in a working day. Pump around only to be used when flow is present in the channel.

### **100-YEAR FLOODPLAIN NOTE**

FEMA mapped floodplain is present on-site according to FEMA mapping and County GIS data. FIRM panel #24027C0170D and #24027C0190D.

# **SOIL STABILIZATION MATTING NOTE**

mix immediately after disturbance. See detail on Sheet 12.

All disturbed areas shall be stabilized with soil stabilization matting and seed

OFFSITE STREAM RESTORATION PARCELS (FIRST ELECTION DISTRICT):

**MAINTENANCE NOTE** 

needed to ensure proper function.

50,

Contractor shall inspect and maintain all sediment control measures and devices

after every storm event. Maintenance shall include, but not be limited to the

removal of all accumulated sediment. Geotextile fabric shall be replaced as

melia S. Reed

ENGINEER'S CERTIFICATE "I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 11/26/19 DATE DEVELOPER'S CERTIFICATE "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNE INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT." DEVELOPER

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment

control by the Howard Soil Conservation District.

DEEP RUN

OFF-SITE STREAM RESTORATION

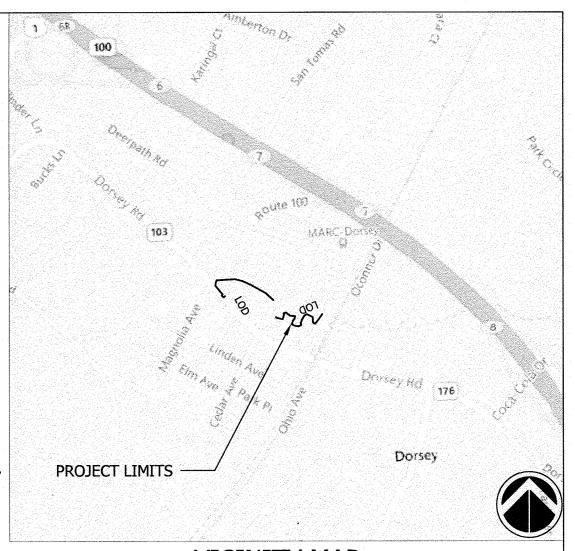
DORSEY ROAD, ELKRIDGE, MD 21075

**TEMPORARY** BENCHMARKS 126.18' | MAG NAIL 103.06' REBAR & CAP TBM 150 123.12' | MAG NAIL

> MITIGATION USER INFORMATION BINDER ROCK, LLC 6800 DEERPATH ROAD, SUITE 100 ELKRIDGE, MD 21075 HOWARD COUNTY

> > SITE DATA DEED REF. 10525/00451 MAP: 43, GRID: 06, PARCEL: 283 **ELECTION DISTRICT: 1** EXISTING ZONING: RESIDENTIAL SITE ACREAGE: ±0.69 AC. 8 DIGIT HUC: 02060003 MD 8 DIGIT BASIN: 02130906 (PATAPSCO RIVER L N BR)

SITE ANALYSIS LIMIT OF DISTURBANCE: ±152,326 SF. / 3.50 AC. **NEW IMPERVIOUS AREA: NONE** TOTAL AREA TO BE STABILIZED: 3.50 AC. APPROXIMATE CUT: 1545 CY. APPROXIMATE FILL: 737 CY. APPROXIMATE NET: 808 CY. (CUT)



**VICINITY MAP** SCALE: 1'' = 1000'

#### **DESIGN NARRATIVE - STREAM RESTORATION**

Deep Run will be restored between Dorsey Road (MD-103) and the MARC Train overpass in Howard County, MD. The proposed restoration is offered as mitigation for the proposed impact of 460 feet of stream channel for Dorsey Center, Parcel R (See "Design Narrative - Dorsey Center, Parcel R", Sheet 1) The stream channel at the proposed restoration site has been impacted by urbanization and development in the watershed leading to channel incision and bank erosion.

The proposed restoration approach will address bank erosion by grading bankfull benches and installing toe wood bank protection. In-stream structures will be added to diversify channel profile and deflect water away from eroding banks. Log vanes will provide grade control to prvent headcuts and to develop deep habitat pools. The design life of logs is estimated to be at least 15 years. This will vary based on the amount of flow and the amount of log cubmerged. The logs are designed to be transient structures that provide grade control short term and assist in developing stable riffles which when combined with vegetation will provide long-term stability. Where existing rubble has been used to stabilize banks, the rubble will be removed and replaced with bioengineering and hardened structures. Where the channel is over-widened, it will be narrowed to promote aquatic species passage. The riparian buffer will consist of planted trees and shrubs to provide shade, habitat, and vegetative stabilization.

In the years following construction, the Deep Run steam corridor will closely resemble a stable, natural mid-order stream ecosystem with in-stream habitat, stable channel conditions, and an established vegetated buffer. The stream channel will be a C4 stream system with bankfull benches that improve floodplain attenuation.

> STORM WATER MANAGEMENT DIVISION BUREAU OF ENVIRONMENTAL SERVICES 6751 COLUMBIA GATEWAY DRIVE, SUITE 514 COLUMBIA, MARYLAND 21046-3143 (410) 313-6444

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 50819 , expiration date: 4/17/21 amelia S. Reed



APPROVED: DEPARTMENT OF PLANNING AND ZONING 12.17.19 CHIEF. DEVELOPMENT ENGINEERING DIVISION NO 3-4-2020

PLAN IS IN NAD 83 MARYLAND STATE PLANE FIPS 1900 COORDINATE SYSTEM.

# UTILITY NOTIFICATION

"Ecotone, Inc. makes no representation as to the existence or non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities. It is suggested that Miss Utility be contacted at: 1-800-257-7777."

DEEP RUN **OFF-SITE STREAM RESTORATION COVER** 

DORSEY ROAD, ELKRIDGE, MD 21075

ecological restoration 129 Industry Lane · Forest Hill, Maryland 21050 (410) 420 2600 · www.ecotoneinc.com

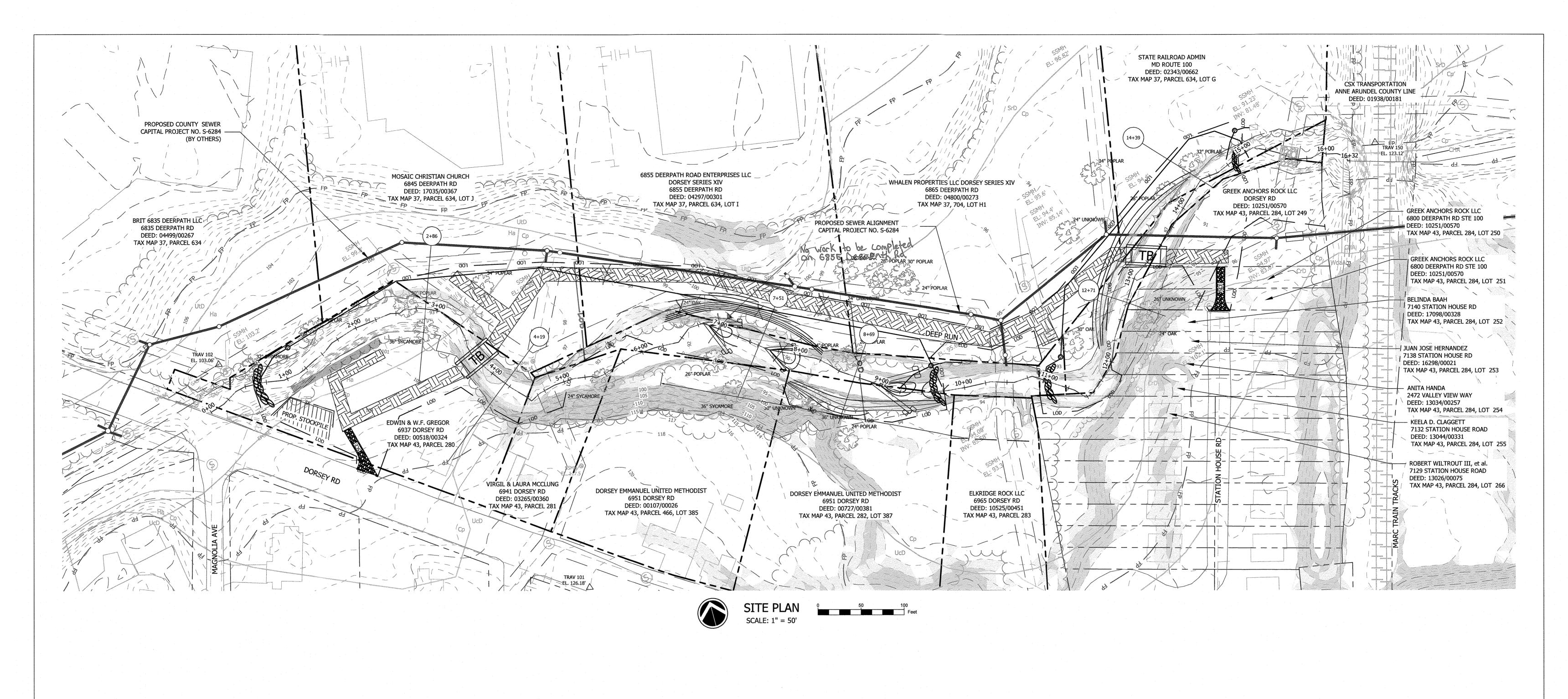
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8 of 14 SDP-19-038

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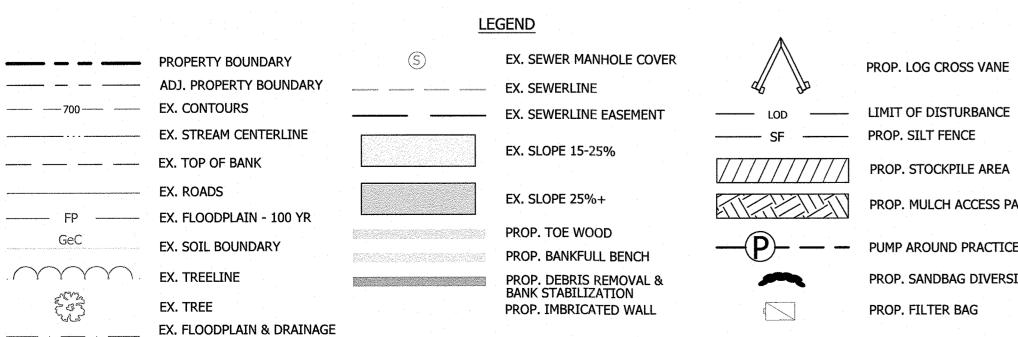
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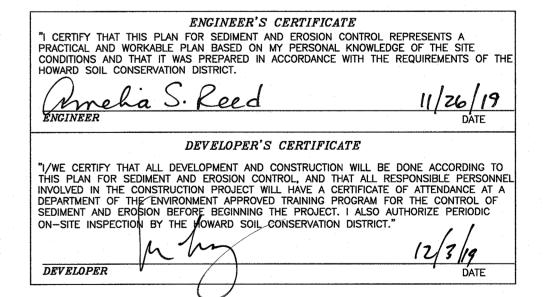


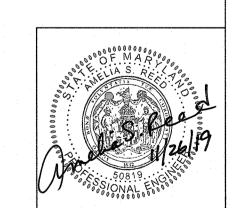
PARCEL
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466, LOT 385
282, LOT 387
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634, LOT J
634, LOT †
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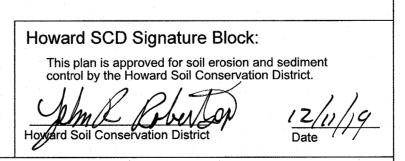
	SOILS LEGEND	
SYMBOL	SOIL DESCRIPTION	K-VALUE
Ср	Codorus and Hatboro soils, 0-2% slopes, frequently flooded	0.32
CrD	Chillum loam, 5-10% slopes	0.37
На	Hatboro-Codorus silt loams, 0-3% slopes	0.43
SrD	Sassafras and Croom soils, 10-15% slopes	0.37
UcD	Urban land-Chillum-Beltsville complex, 5-15% slopes	
UtD	Urban land-Udorthents complex, 0-15% slopes	
WdaA	Woodstown sandy loam, 0-2% slopes, Northern Coastal Plain	0.32



	PROP. LOG CROSS VANE				
	LINET OF PICTURE AND	OFFSITE STREAM RESTORATION	PARCELS (FIRST	ELECTION	DISTRICT):
LOD	LIMIT OF DISTURBANCE	OWNER	ADDRESS		TAX MAP
SF	PROP. SILT FENCE	GREGOR, EDWIN O & WF	6937 DORSEY	RD	43
31		MCCLUNG, VIRGIL	6941 DORSEY	RD	43
	PROP. STOCKPILE AREA	DORSEY EMMANUEL EVANG CH	6951 DORSEY		43
	FROM STOCKFILL AREA	EMMANUEL UNITED EVANGEL CH			43
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		ELKRIDGE ROCK LLC MOSAIC CHRISTIAN CHURCH	6965 DORSEY 6845 DEERPAT		<del>4</del> 3 37
	PROP. MULCH ACCESS PATH	6855 DEERPATH RD ENT. LLC	6855 DEERPA		37
		WHALEN PROPERTIES LLC	6865 DEERPAT	H RD	37
_ <b>_</b>	PUMP AROUND PRACTICE	STATE RAILROAD ADMIN	7400 074701	HOUSE D	37
	PUMP AROUND PRACTICE	ROBERT WILTROUT, III ET AL KEELA D. CLAGGETT	7129 STATION 7132 STATION		
	DOOD CANDDAC DIVERCION	HANDA ANITA	7134 STATION		
	PROP. SANDBAG DIVERSION	BAAH BELINDA	7140 STATION		
	PROP. FILTER BAG	GREEK ANCHORS ROCK LLC			43







APPROVED: DEPARTMENT OF PLANNING AND ZONING

/Z./7./9

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DATE

DATE

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3/2/25 DATE	
3-4-2020 DATE	12

DEEP RUN

OFF-SITE STREAM RESTORATION

EROSION & SEDIMENT CONTROL & DESIGN

DORSEY ROAD, ELKRIDGE, MD 21075

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ecological restoration

129 Industry Lane Forest Hill, Maryland 21050
(410) 420 2600 www.ecotoneinc.com

 CHECKED BY:
 CRH

 DESIGNED:
 CSM

 DRAWN:
 SDC

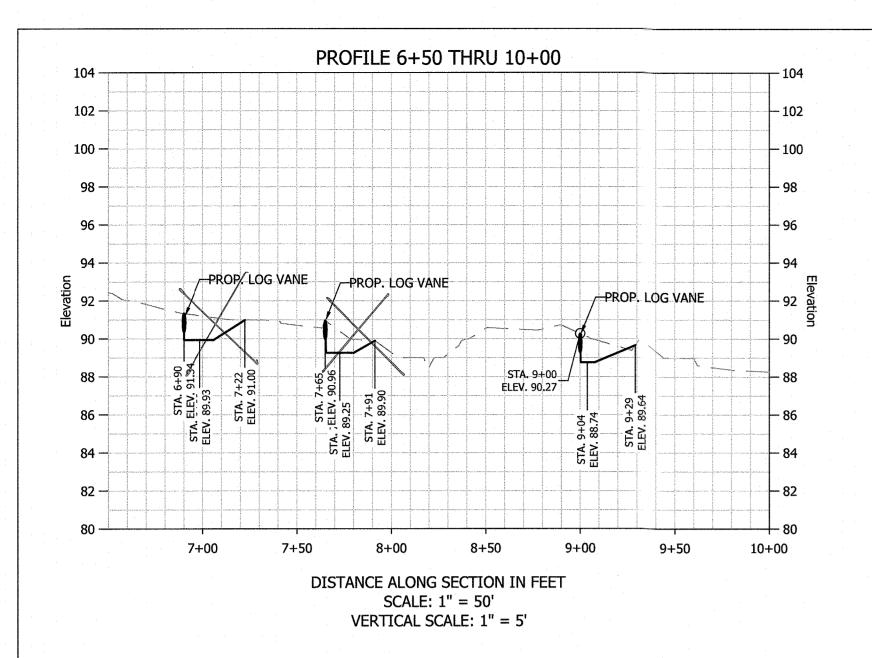
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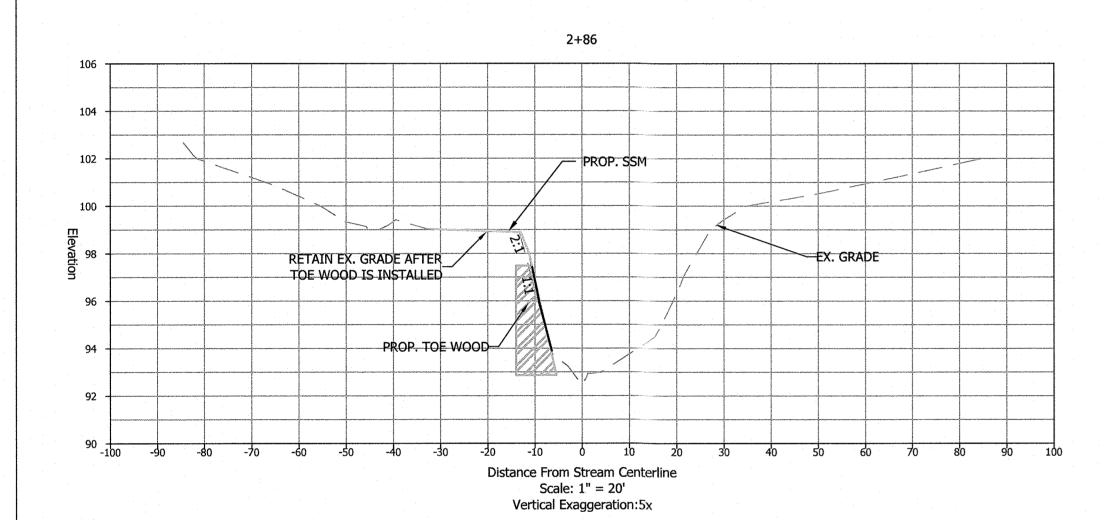
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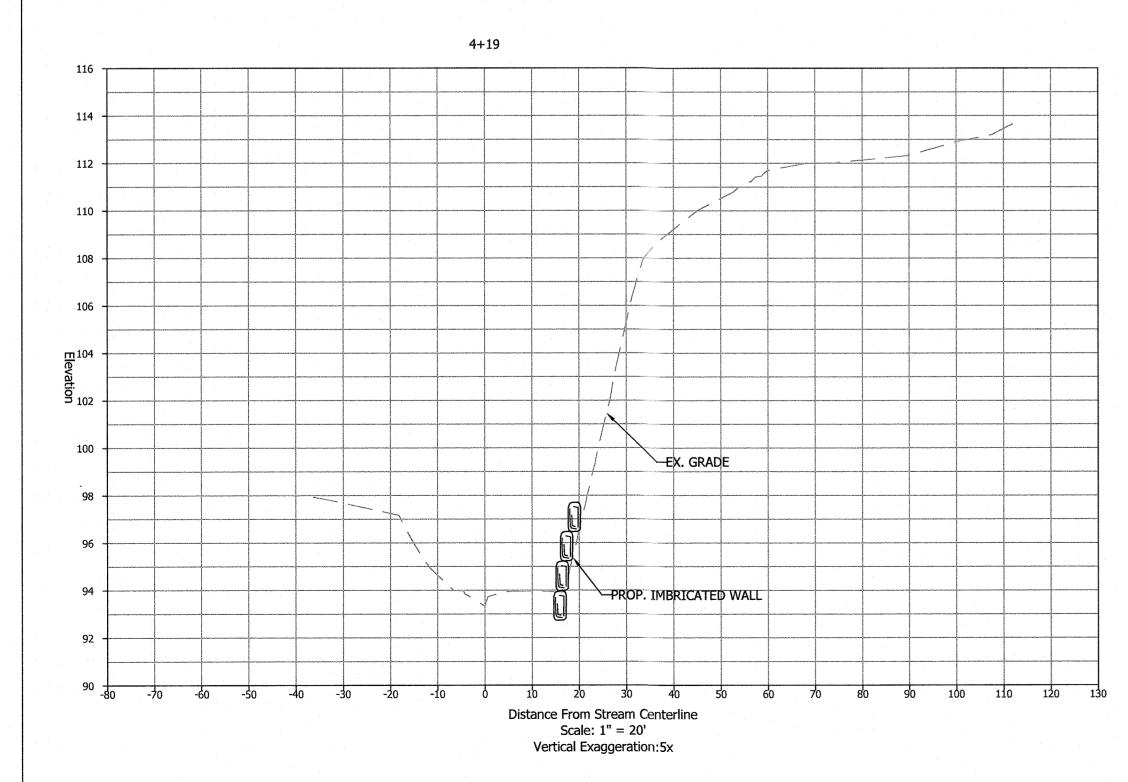
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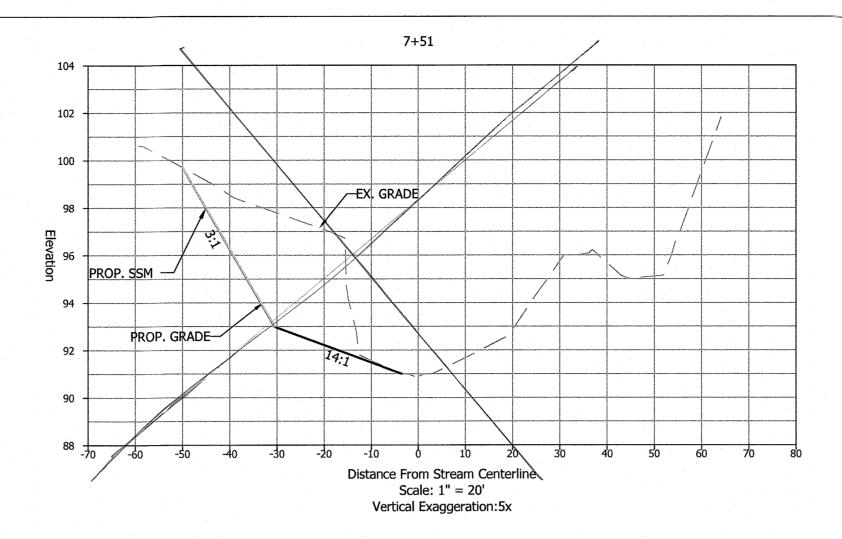
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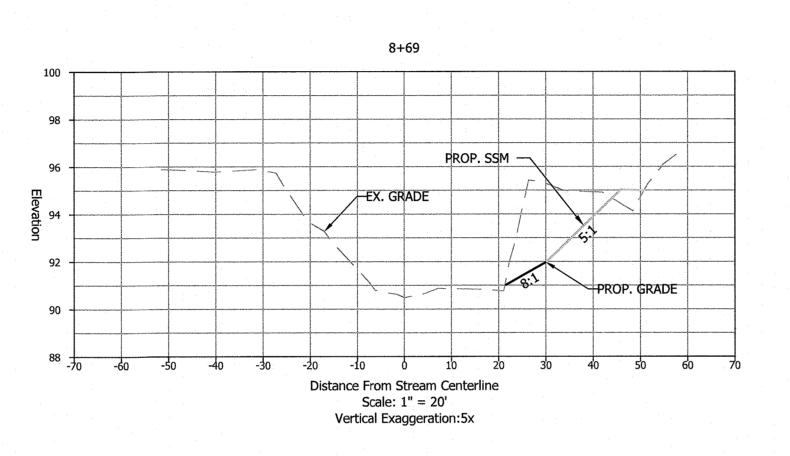


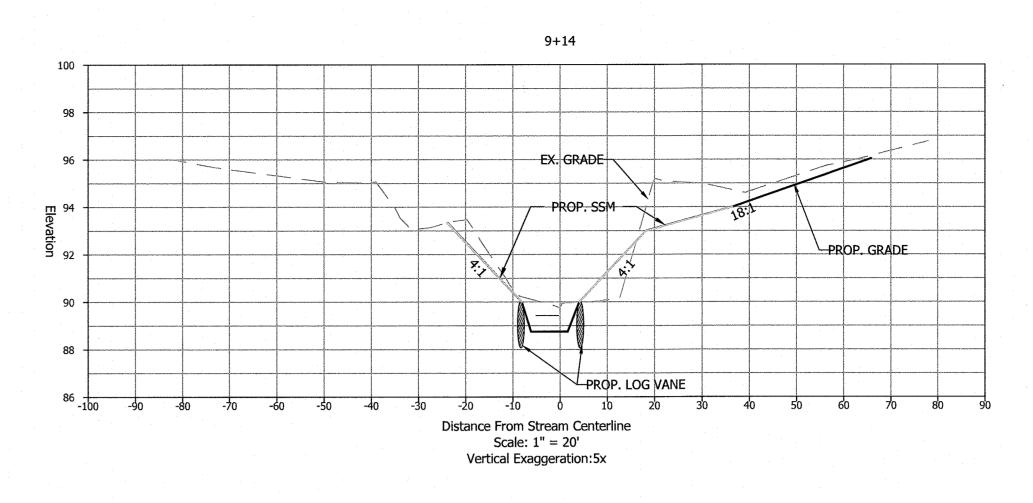


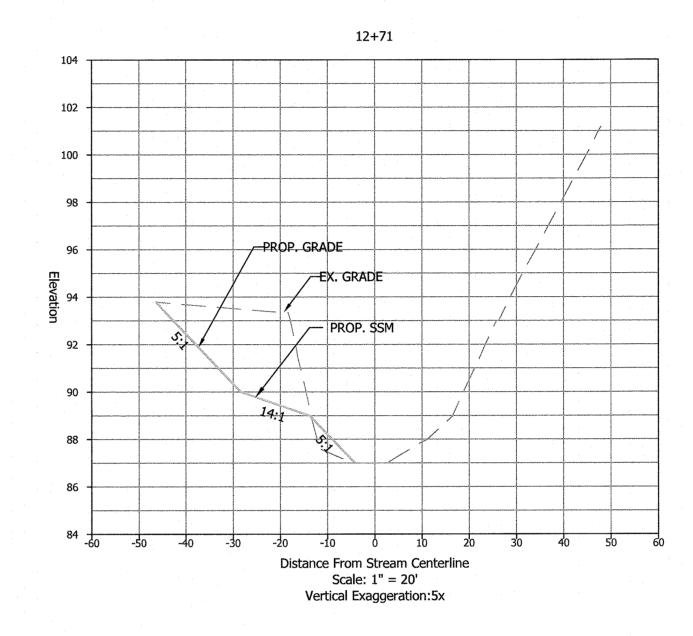


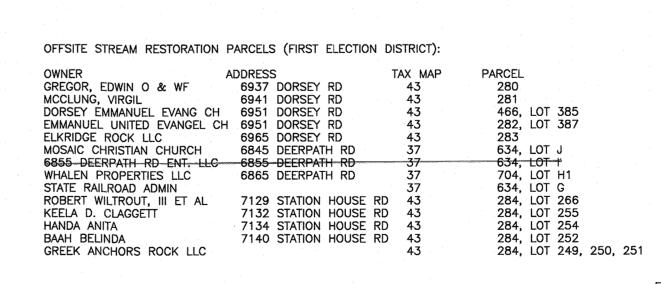
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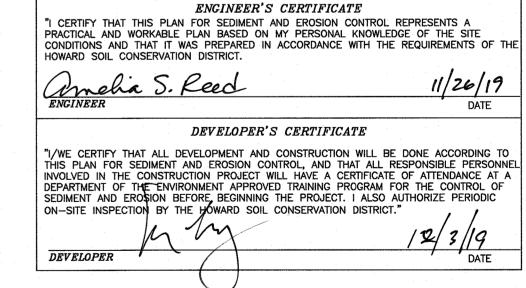










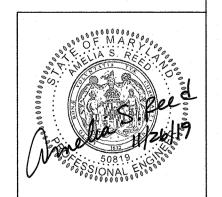


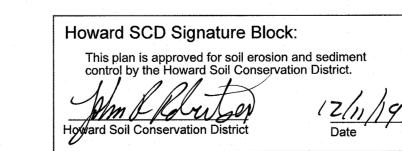
DEEP RUN

OFF-SITE STREAM RESTORATION

**EROSION & SEDIMENT CONTROL & DESIGN** 

DORSEY ROAD, ELKRIDGE, MD 21075





APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION JP

CHIEF, DIVISION OF EARL DEVELOPMENT A.C.

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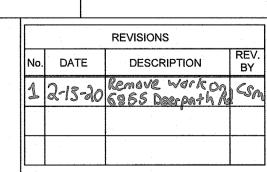
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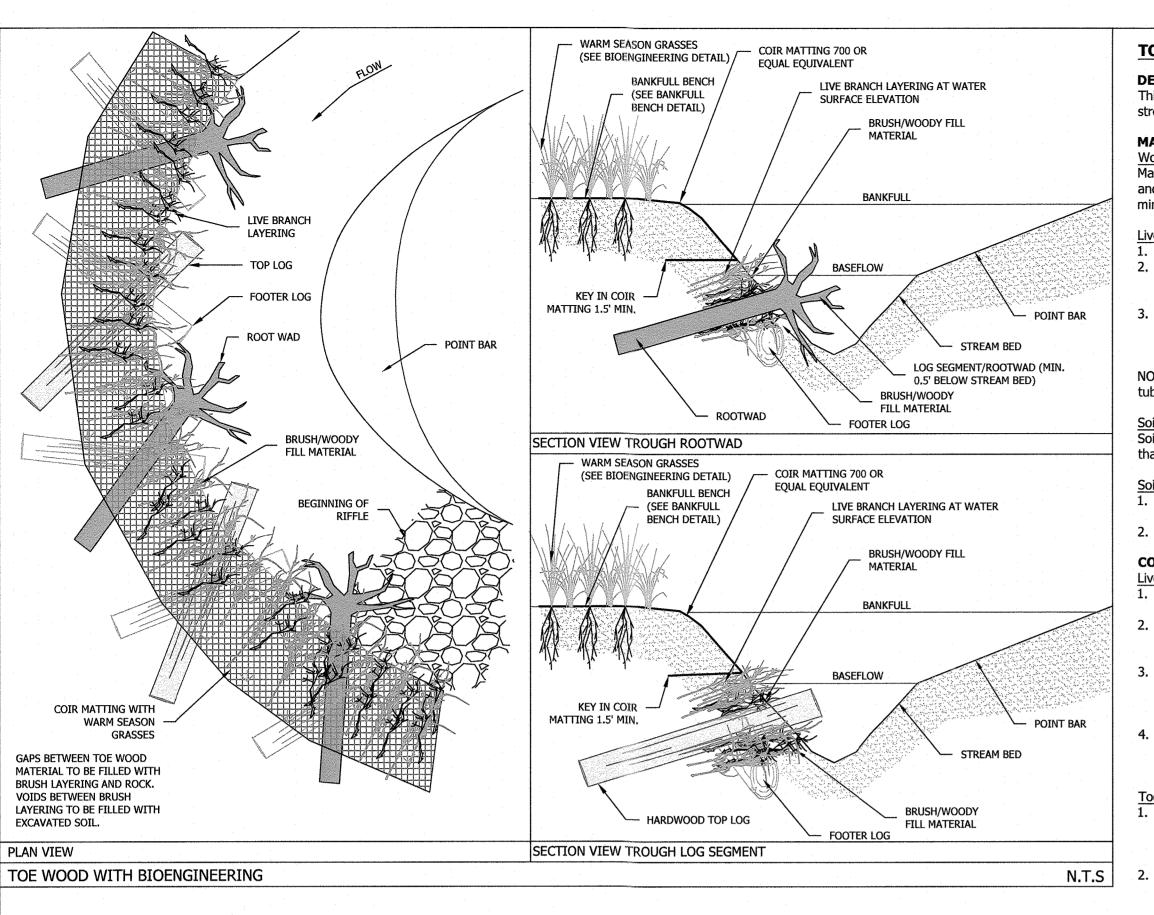
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10 of 14 SDP-19-038

17-05-011

11/25/2019



#### TOE WOOD WITH BIOENGINEERING INSTALLATION

This work shall consist of installing toe wood structure to provide bank stability, minimize near bank stress, maintain low width/depth ratio, and enhance aquatic habitat.

### **MATERIALS**

Woody Material Material shall consist of woody material such as large limbs, branches, brush, logs and rootwads. Logs and rootwads shall be solid hardwood with minimum trunk diameter of 10 inches. Logs shall have a minimum length of 10 feet. All material shall be free of rot and evidence of pests.

Live branch cuttings shall be approximately 1.5 inch in diameter.

- 2. Cuttings shall be 24-36" in length and long enough to extend a minimum of 1 foot and maximum of 18 inches from the rebuilt slope face. Side branches and bark shall remain intact prior to
- Live branch cuttings shall consist of a mix of three or more of the following species as shown on the "Live Branch Plant List" shown on Planting Plan, with at least one willow (salix) and one dogwood (cornus) species included. Each species shall comprise no more than 50% and no less

NOTE: When not in dormancy period (Dec. 1 to Apr.1), livestakes shall be substituted with tubelings spaced 1 per foot.

Soil material shall consist of top soil salvaged from within the construction limits or supplied topsoil that meets the specifications for topsoil in the Sediment and Erosion Control Plans.

### Soil Stabilization Matting

1. Matting shall be woven machine spun bristle coir twine made of coir fiber obtained from fresh water cured coconut husks. 2. Soil stabilization matting (Coir700 or equivalent) shall conform to the "Soil Stabilization Chart".

#### CONSTRUCTION

Live Material Preparation: All cuts shall be smooth and the cut surface kept small. The use of large pruning shears or power saws may be required.

- Live materials not installed within 8 hours of harvesting shall be protected against drying out and overheating. Protection against drying out shall be accomplished by keeping the material covered, transported in unheated vehicles, moistened and/or kept in soak pits.
- Storage of live materials shall include continuous shade by covering with evergreen branches or plastic sheeting. Proper storage shall also include sheltering live plant material from the wind and protection from drying by being heeled into moist soils and/or sprayed with anti-transpirant chemicals. Where water is available, live branch cuttings shall be sprayed or immersed.
- 4. Live materials shall be installed the same day that the cuttings are harvested. If installation of live materials cannot be accomplished on the same day and storage is required, live materials shall be stored for a period no longer than 2 days in cold storage.

#### Toe Wood and Branch Layering Installation

- Excavate channel bed and outside bank to a subgrade depth that allows for the thickness of footer logs and stacked rootwads and top log segments (when complete, Baseflow water height should match or be slightly higher than height of the rootwad and top log.) Excavation into the bank shall be atleast wide enough to place log sections and rootwads at a 20-30° angle.
- Place footer logs into expanded area so that log ends face downstream at approximately a 20-30° angle. Logs shall be spaced roughly 8-10 feet apart and the ends shall protrude proposed past the toe no more than 2'.

3. Place rootwads and top log segments on top of the footer logs in a criss-cross fashion so that the ends face up stream at a 20-30° angle. Installed angles shall be field adjusted/ determined so as logs and rootwads face directly into the flow/energy vectors. Rootwads and top logs shall be spaced per the spacing chart. Smaller supplemental logs shall be placed in between rootwads and top logs to fill voids.

- 4. Small material (limbs, branches, brush) shall be forced into large voids so that backfill will not slough. Woody debris shall not protrude more than 12" beyond the toe where the bank meets the
- 5. Place a thin layer of backfill (0.2' max) over woody material to form a planting bed for live branch
- 6. Place live branch material over backfill such that 2/3 of the brush will be covered with soil and 1/3 of the brush is exposed, extending out beyond the face of the bank. Live branches placed minimum
- 3/ft with growing tops facing out. 7. A layer of topsoil backfill shall be placed on top of the branches and compacted such that soil
- completely fills all voids between all the branches. 8. Mark out proposed toe on top of backfill with marking paint.
- 9. Roll out and place matting so that one edge is 1.5' (min.) wider than the marked toe line. Excess matting will extend toward center of channel and should be folded or rolled to avoid tears or punctures by equipment.
- 10. Secure back edge of the matting with stakes every 4' to prevent movement during backfill operations.
- 11. Where soil stabilization matting roll ends overlap (perpendicular to stream profile), overlap matting a minimum of 2 feet. 12. Begin backfilling to create a new bank per the grading plan with a 2:1 slope (typ.) on the face and also a bankfull bench per the detail above and typical corrections. Toe of newly formed bank
- should match marked toe line. 13. The new bank should be capped with 0.3' (min.) of topsoil. Use salvaged topsoil when ever
- possible.

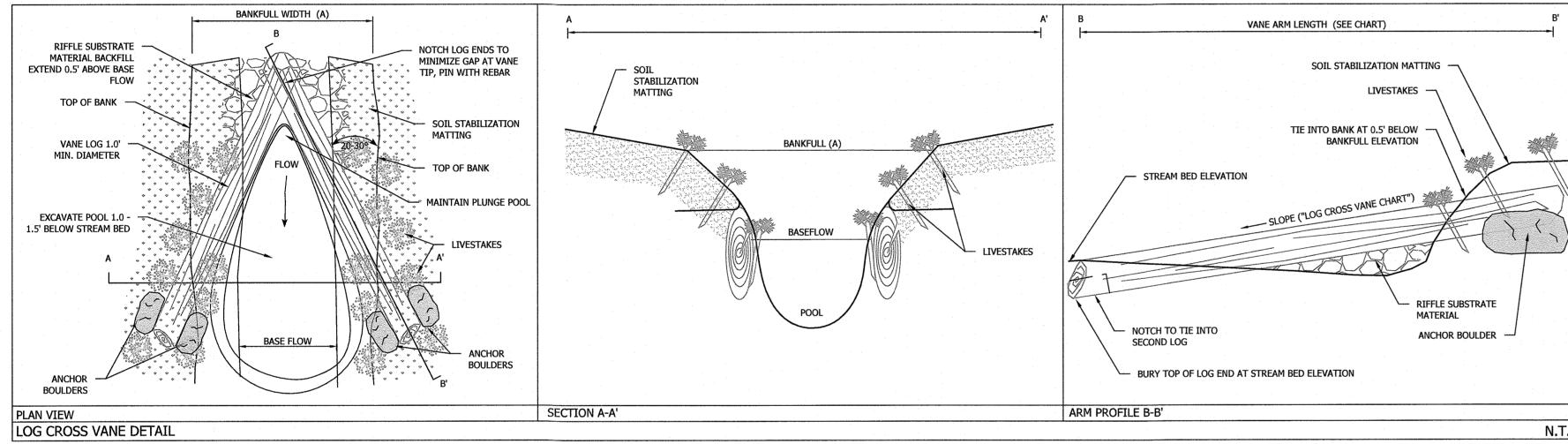
#### 14. Apply permanent seed mixture to newly formed bank.

- 15. Stabilize the stream bank with soil stabilization matting by extending excess soil stabilization matting along surface of slope and across top of lift a minimum of three feet, pulling matting taut but not stretched such that contact with sod is maintained in all areas.
- 16. Key soil stabilization matting into floodplain a minimum of 6 inches on rear edge of soil lift.

### NOTE: The spacing of root wads will vary on each meander based on the following table:

Ratio of Radius to Bankfull Width Root Wad Spacing <2x bankfull width 10-14'

2-2.5x bankfull width >2.5x bankfull width 15-20'



### LOG CROSS VANE INSTALLATION

This work shall consist of installing a log cross vane structure to provide grade control, bank stability, and minimize near bank stress.

#### **MATERIALS**

Logs shall be hardwood species, have a minimum length as indicated on the "Log Cross Vane Chart", and a minimum diameter of 12 inches. All material shall be free of rot and evidence of pests. All branches and root mass shall be removed.

### **Backfill Substrate Material**

Backfill material shall conform to riffle substrate specifications.

Anchor boulders shall consist of Class II Riprap or equivalent salvaged boulders found on site.

1. Matting shall be woven machine spun bristle coir twine made of coir fiber obtained from fresh water cured coconut husks.

# Soil stabilization matting shall conform to the "Soil Stabilization Matting Specifications" chart.

- Rough grade channel and floodplain areas prior to installing logs.
- Excavate trench for vane log so that tip of log will be flush with proposed stream bed elevation at thalweg and log ties into the bank at approximately 0.5' below bankfull elevation.
- Install vane log and backfill with riffle substrate material. Ensure that all voids have been filled on the upstream side of log and beneath.

# Excavate trench for opposing vane log.

- N.T.S. | 5. Install log with tip at same elevation as previously installed log and bank tie in point at same elevation as first log. Logs shall be notched so that the lowest point is at the tip where the logs meet. Secure log tips with a 3 foot section of rebar.
  - 6. Backfill remaining areas with riffle substrate material, ensuring that all voids have been filled. 7. Grade banks, seed and mulch per bank treatment specifications and details.

# OFFSITE STREAM RESTORATION PARCELS (FIRST ELECTION DISTRICT):

OWNER AI	DDRESS	TAX MAP	PARCEL	
GREGOR, EDWIN O & WF	6937 DORSEY RD	43	280	
MCCLUNG, VIRGIL	6941 DORSEY RD	43	281	
DORSEY EMMANUEL EVANG CH	6951 DORSEY RD	43	466, LOT 385	
EMMANUEL UNITED EVANGEL CH	6951 DORSEY RD	43	282, LOT 387	
ELKRIDGE ROCK LLC	6965 DORSEY RD	43	283	
MOSAIC CHRISTIAN CHURCH	6845 DEERPATH RD	37	634, LOT J	
6855 DEERPATH RD ENT. LLC	6855 DEERPATH RD	37	634, LOT-I	
WHALEN PROPERTIES LLC	6865 DEERPATH RD	37	704, LOT H1	
STATE RAILROAD ADMIN		37	634, LOT G	
ROBERT WILTROUT, III ET AL	7129 STATION HOUSE R	D 43	284, LOT 266	
KEELA D. CLAGGETT	7132 STATION HOUSE R	D 43	284, LOT 255	
HANDA ANITA	7134 STATION HOUSE R	D 43	284, LOT 254	
BAAH BELINDA	7140 STATION HOUSE R	D 43	284, LOT 252	
GREEK ANCHORS ROCK LLC		43	284, LOT 249,	250, 251

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment

12-17-19

3/2/20

3-4-2020

control by the Howard Soil Conservation District.

# DEEP RUN

ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER

ENGINEER'S CERTIFICATE

CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE

DEVELOPER'S CERTIFICATE "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNE INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF

SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC

"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE

OFF-SITE STREAM RESTORATION **EROSION & SEDIMENT CONTROL NOTES & DETAILS** 

DORSEY ROAD, ELKRIDGE, MD 21075

No.	DATE	DESCRIPTION	REV. BY
1	2-13-20	Remove Work on 6855 DeerpathR	JCM
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SDP-19-038

11/25/2019

REVISIONS



11 of 14

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MAXIMUM 2:1 SLOPE WIDE BANKFULL BENCH WITH SOD MATTING (WIDTH PER GRADING PLAN) BANKFULL 2'-3' SPACING SOIL STABILIZATION MATTING TO BE USED WHEN SOD IS NOT AVAILABLE N.T.S BANKFULL BENCH DETAIL

1. Grade stream bank to a subgrade elevation that allows for the placement of sod matting (0.5' - 0.75' typ.).

3. If sod matting is not available, utilize soil stabilization matting making sure to key in all edges a minimum of 6". 4. When using stabilization matting, subgrade elevations are not needed, however topsoil must be place on bank

TIE GRADE OUT AT

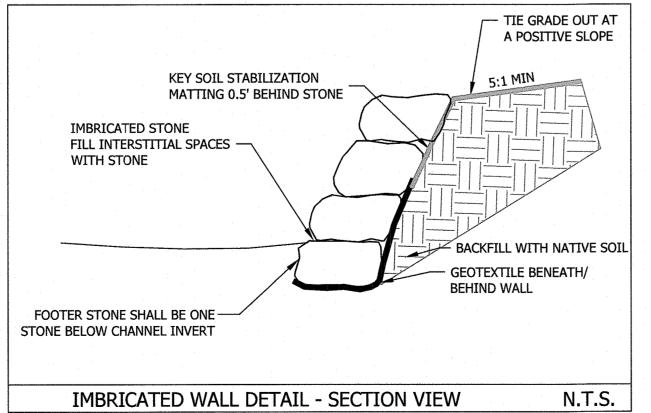
WARM SEASON GRASSES

Bank face slope and bench width to match grading plan and typical cross sections.

and bench at a minimum of 3". Utilize salvaged topsoil whenever possible.

1. See "Bioengineering Detail" for installation sequence.

2. Install sod matting starting at edge of base flow and continue up bank and over the bankfull bench.



# **IMBRICATED WALL INSTALLATION**

Work shall consist of furnishing and installing imbricated rock to stabilize the streambank and provide additional sewer line protection. 2. MATERIALS

# Imbricated Riprap

Material Stone shall consist of angular flat rock with a blocky shape so that it is easily stacked. Dimensions of all rock shall be a minimum 2' x 2' x 3'.

# Geotextile material shall consist of Class E geotextile fabric.

Select Topsoil Material Subgrade fill material shall consist of soil brought onto site consisting of no more than 2% organic material will be brought in and utilized.

#### 3. CONSTRUCTION 1. Grade streambank to the desired slope then excavate trench along the toe of the bank for the placement of footer stones. A layer of geotextile material shall be placed and secured from the top of bank down into

2. Place footer stones on top of the geotextile in the trench.

3. Once a layer of footer stone is in place, place each stone overlapping the one underneath by half. The stones that are placed above footer stones but below base level should be set so as to create a void space between the adjacent stones.

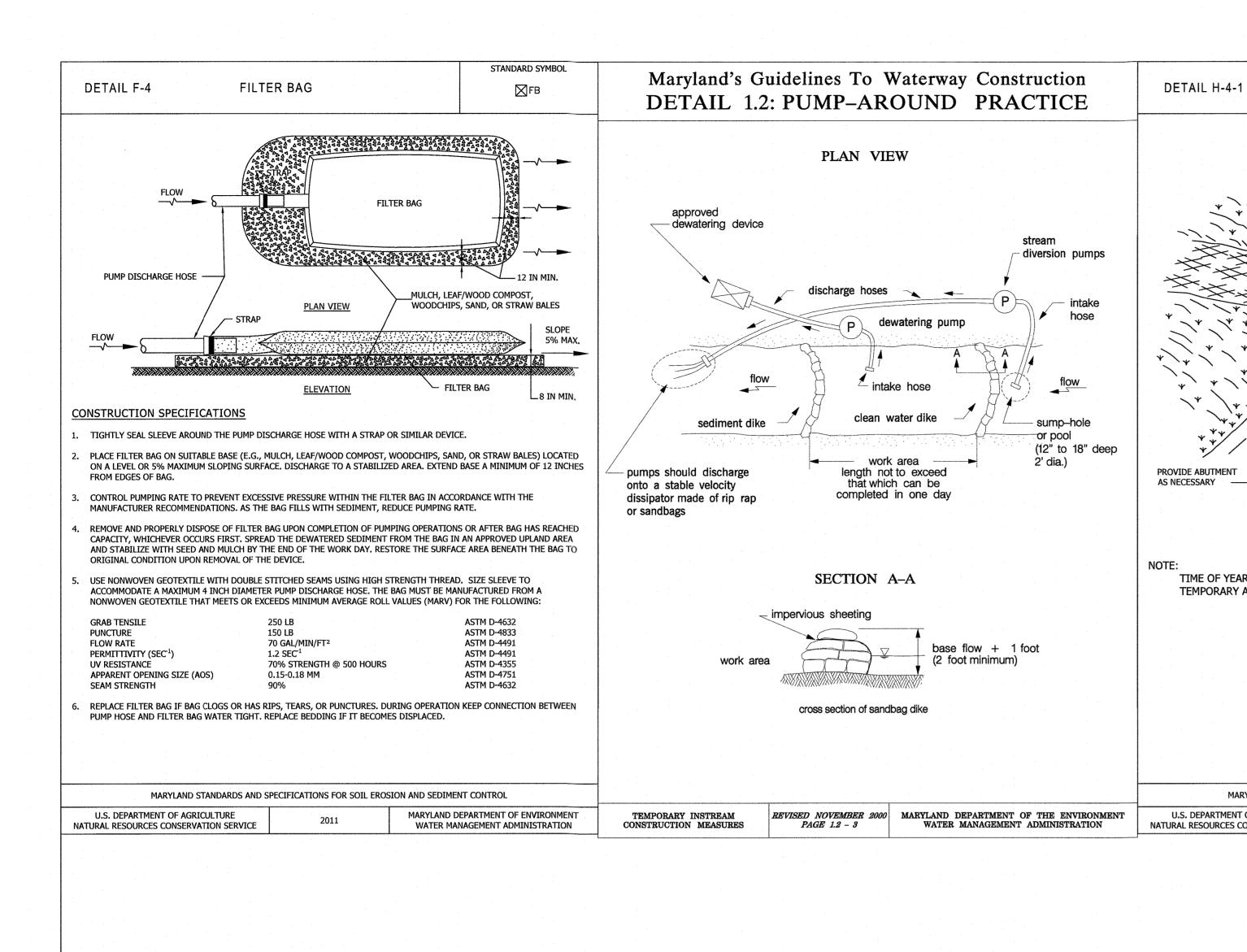
4. Continue placement of stone until desired wall height is achieved. 5. The top of the streambank will transitioned into the wall by grading at a 5:1 slope. Erosion control

matting will be placed over graded area and keyed 0.5 foot behind top of imbricated wall.

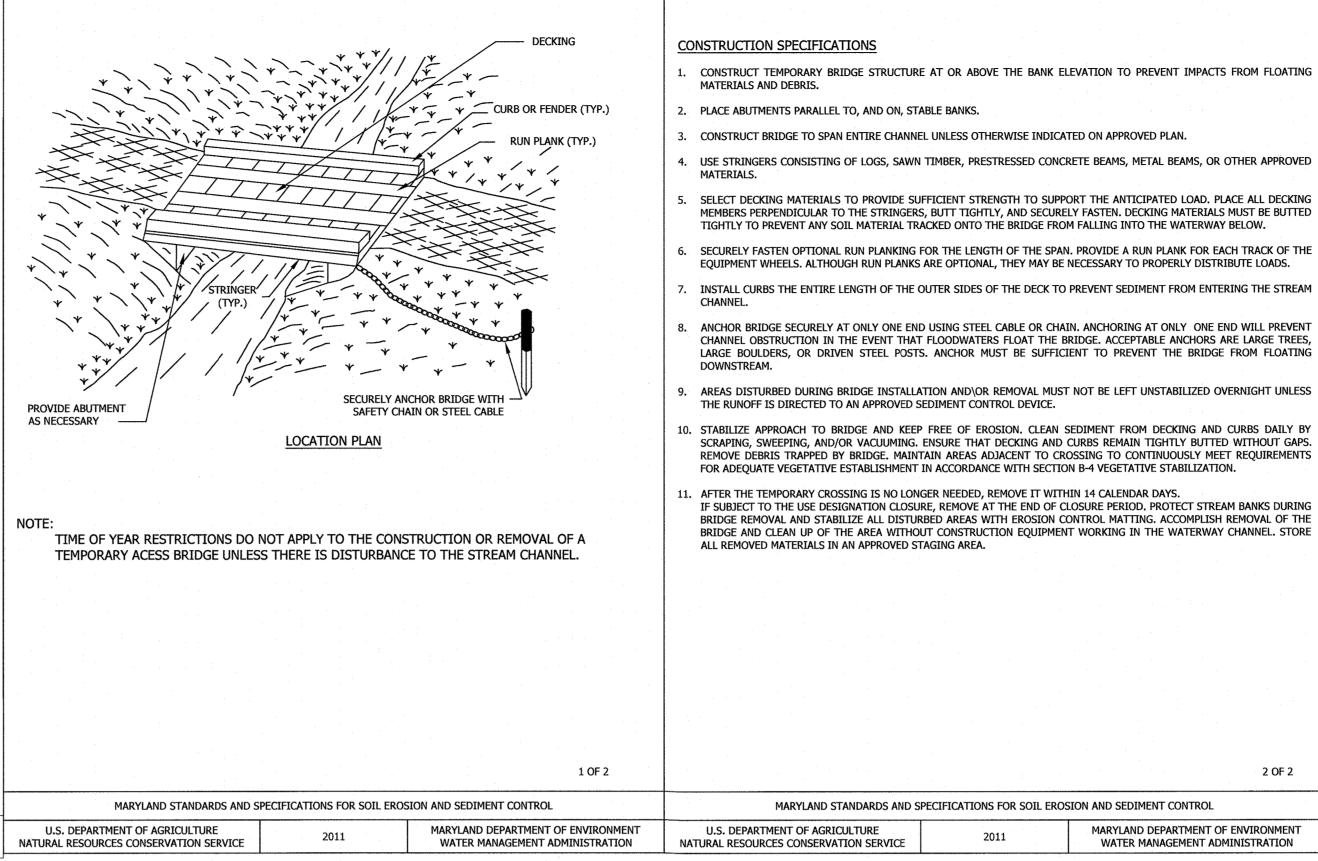
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**BANKFULL BENCH INSTALLATION** 

Bankfull Bench Installation:



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STANDARD SYMBOL

TB

DETAIL H-4-1

TEMPORARY ACCESS BRIDGE

## **MGWC 1.2: Pump-Around Practice**

Temporary measure for dewatering inchannel construction sites

# The work should consist of installing a temporary pump around and supporting measures to divert flow around in-

#### IMPLEMENTATION SEQUENCE

stream construction sites.

DESCRIPTION

STANDARD SYMBOL

TB

TEMPORARY ACCESS BRIDGE

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

- Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.
- The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
- The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
- Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
- Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
- Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

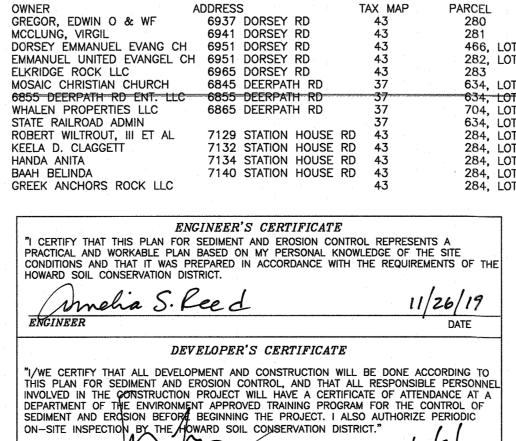
TEMPORARY INSTREAM CONSTRUCTION MEASURES

MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000

PAGE 1.2 - 1

### **MGWC 1.2: PUMP-AROUND PRACTICE**

- 7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.
- 8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).
- 9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.
- 10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
- 11. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
- 12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
- 13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
- 14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.



OFFSITE STREAM RESTORATION PARCELS (FIRST ELECTION DISTRICT): 466, LOT 284, LOT 266 284, LOT 254

ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

DATE

DEVELOPER

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING 12.17.19

DEVELOPMENT ENGINEERING DIVISION

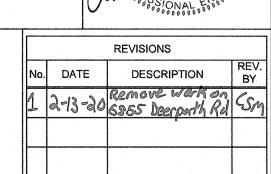
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DEEP RUN **OFF-SITE STREAM RESTORATION EROSION & SEDIMENT CONTROL** 

**SEE SHEET 4 FOR ADDITIONAL DETAILS** 

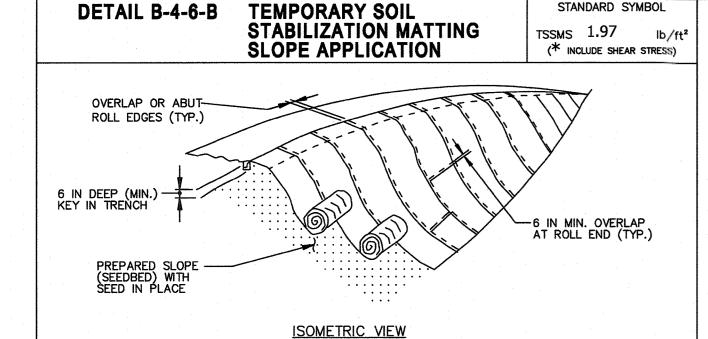
**NOTES & DETAILS** DORSEY ROAD, ELKRIDGE, MD 21075





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CONSTRUCTION SPECIFICATIONS

- I. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- 2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN, IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL
- 3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 11/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- 5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- 6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- 8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- 3. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

#### HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES (STREAM RESTORATION)

- 1. 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:
- a. Prior to the start of earth disturbance, b. 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,
  - d. 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. 2. 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.
- 3. 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
- 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.
- 6. Site Analysis: Total Area of Site: XX Acres
  - Area Disturbed: 3.72 Acres
  - Area to be roofed or paved: \_\_\_\_0.0 Area to be vegetatively stabilized: 3.72 Acres
  - Total Cut: \_\_\_\_\_ Cu. Yds.
  - Total Fill: \_\_\_\_\_ Cu. Yds. UNEXPECTED WASTE TO BE DISPOSED AT SITE WITH ACTIVE Offsite waste/borrow area location: GRADING PERMIT, AS APPROVED BY HC CID INSPECTOR
- 7. 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). 9. 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.
- 10. 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 allowed by the CID per the list of HSCD-approved field changes.
- 11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum 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.
- 12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
- 13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade. 14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled
- uphill by 2' in elevation. 15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
  - Use I and IP March 1 June 15
  - Use III and IIIP October 1 April 30
- Use IV March 1 May 31 16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

SOIL STABILIZATION	MATTING INSTALLATION

This work shall consist of installing soil stabilization matting. Soil stabilization matting is to be installed concurrently with installation of Riffle Grade

### **MATERIALS**

### Soil Stabilization Matting

Matting shall be woven machine spun bristle coir twine made of coir fiber obtained from fresh water cured coconut husks. Soil stabilization matting shall conform to the "Soil Stabilization"

#### CONSTRUCTION

# Soil Stabilization Matting:

- Final grade stream banks to proposed dimension and slope per the grading plan. Seed streambank areas with proposed permanent and temporary seed mix per the
- planting plan.
- Matting shall be laid smoothly and firmly upon the seeded bed in the direction of the water flow. Excessive stretching shall be avoided.
- Where more than one width of matting is required, the ends of each strip shall overlap at least 1 foot for both vertical and horizontal overlaps. Overlapping shall be done with the up-slope matting overlapping the down-slope matting and the upstream matting
- overlapping the downstream matting. Matting shall be firmly fastened in place with stakes driven vertically into the soil and flush with the surface. Stakes shall be placed on 4- foot centers throughout the matting and
- along the edges of the matting. The contractor shall excavate a shallow trench along the up-slope, down-slope, and vertical edges of the matting at both the upstream and downstream edges of the matting. The matting shall be keyed into the trench a minimum of 6 inches. Following the installation of the stakes, the matting trenches shall be backfilled with soil (or stream bed material if keying in within the channel) and tamped firmly.

Soil Stabiliza	ation Matting Spe	cifications
Property	Test Method	CoirMat 700
Weight	ASTM D 3776	20.6 oz/SY
Thickness	ASTM D 1777	0.3 inch
Dry Tensile Strength	***************************************	
Machine Direction	ACTM D 4F0F	1512 lbs/sf
Cross Direction	ASTM D 4595	1032 lbs/sf
Wet Tensile Strength		
Machine Direction	ACTM D 4F0F	924 lbs/sf
Cross Direction	ASTM D 4595	684 lbs/sf
Open Area	Calulated	50%

		WOVE FII GEOTE	LM ·	WOV MONOFIL GEOTE	AMENT		OVEN EXTILE
		MINIMUN	INIMUM AVERAGE ROLL VALUE1				
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size2	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec -1		0.28 sec -1		1.1 sec -1	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

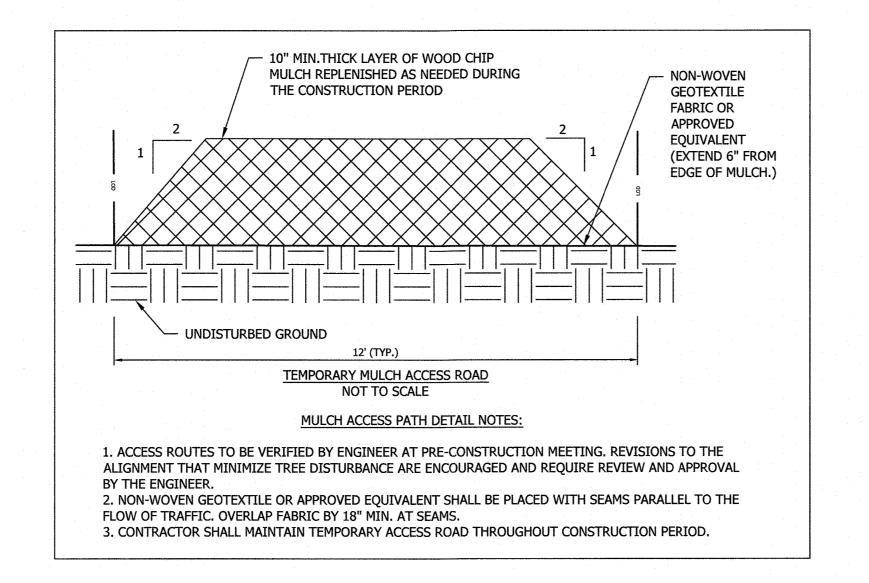
- 1. All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.
- Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPEP) and conform to the values in

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.

-		TEMPORA	RY SEEDING SU	JMMARY		
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
	S ZONE = 7a (TURE = COOL SEAS)	ON (FEB 15 — /	APR 30; AUG 15 – N	10V 30)		
	ANNUAL RYEGRASS (LOLIUM PERENNE)	40 LB/AC (1.0 LB /1000 SF)	FEB 15 - APR 30; AUG 15 - NOV 30	0.5 IN.		
	BARLEY (HORDEUM VULGARE)	96 LB/AC (2.2 LB /1000 SF)	FEB 15 - APR 30; AUG 15 - NOV 30	1.0 IN.		
	OATS (AVENA SATIVA)	72 LB/AC (1.7 LB /1000 SF)	FEB 15 - APR 30; AUG 15 - NOV 30	1.0 IN.	470 18 (40	0. TONO (14
	WHEAT (TRITICUM AESTIVUM)	120 LB/AC (2.8 LB /1000 SF)	FEB 15 - APR 30; AUG 15 - NOV 30	1.0 IN.	436 LB/AC (10 LB /1000 SF)	2 TONS/AG (90 LB /1000 SF
	CEREAL RYE (SECALE CEREALE)	112 LB/AC (2.8 LB /1000 SF)	FEB 15 - APR 30; AUG 15 - DEC 15	1.0 IN.		
	S ZONE = 7a (TURE = WARM SEAS)	ON (MAY 1 — A	UG 14)	:		
- -	FOXTAIL MILLET (SETARIA ITALICA)	30 LB/AC (0.7 LB /1000 SF)	MAY 1 - AUG 14	0.5 IN.		
	PEARL MILLET (PENNISETUM GLAUCUM)	20 LB/AC (0.5 LB /1000 SF)	MAY 1 - AUG 14	0.5 IN.		



	PERMANENT SEEDING SUMMARY								
Hardiness Zone = 7a Seed Mixture = Cool Season (FEB 15 - APR 30; AUG 15 - OCT 31) Fertilizer Rate (10-20-20)						Lime			
No.	Species*	Applicatio n Rate (lb/ac)	Seeding	Dates	Seeding Depths	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Rate
	Tall Fescue (Lolium arundinaceum)	60 lb/ac (1.38 lb /1000 sf)			$\frac{1}{4} - \frac{1}{2}$ in.	45	90	90	2
9	Kentucky Bluegrass <i>(Poa</i> <i>pratensis)</i>	40 lb/ac (0.92 lb /1000 sf)	30 Aug	15 — Apr Aug 15 — Oct 31	$\frac{1}{4} - \frac{1}{2}$ in.	(1.0 lb /100	lb/ac   (2   lb  /100	lb/ac (2 lb /100	tons/ ac (90 lb /1000
	Perennial Ryegrass (Lolium perenne)	20 lb/ac (0.46 lb /1000 sf)			$\frac{1}{4} - \frac{1}{2}$ in.	() of)	0 sf)	0 sf)	sf)

OFFSITE STREAM RESTORATION P	ARCELS (FIRST ELECTION	DISTRICT):		
	DDRESS	TAX MAP	PARCEL	
GREGOR, EDWIN O & WF	6937 DORSEY RD	43	280	
MCCLUNG, VIRGIL	6941 DORSEY RD	43	281	
DORSEY EMMANUEL EVANG CH	6951 DORSEY RD	43	466, LOT 385	
EMMANUEL UNITED EVANGEL CH	6951 DORSEY RD	43	282, LOT 387	
ELKRIDGE ROCK LLC	6965 DORSEY RD	43	283	
MOSAIC CHRISTIAN CHURCH	6845 DEERPATH RD	37	634, LOT J	
6855 DEERPATH RD ENT. LLC	6855 DEERPATH RD	37	634, LOT-I	
WHALEN PROPERTIES LLC	6865 DEERPATH RD	37	704, LOT H1	
STATE RAILROAD ADMIN		37	634, LOT G	
ROBERT WILTROUT, III ET AL	7129 STATION HOUSE R	D 43	284, LOT 266	
KEELA D. CLAGGETT	7132 STATION HOUSE R	D 43	284, LOT 255	
HANDA ANITA	7134 STATION HOUSE R	D 43	284, LOT 254	
BAAH BELINDA	7140 STATION HOUSE R		284, LOT 252	
GREEK ANCHORS ROCK LLC		43	284, LOT 249, 250, 251	

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District. CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF TI HOWARD SOIL CONSERVATION DISTRICT 11/26/19 DATE DEVELOPER'S CERTIFICATE "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE MOWARD SOIL CONSERVATION DISTRICT." DEVELOPER

**SEE SHEET 4 FOR ADDITIONAL DETAILS** 



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Howard SCD Signature Block:

3-4-202



DORSEY ROAD, ELKRIDGE, MD 21075

REVISIONS No. DATE DESCRIPTION 12-13-20 Remove Work on Som

CHECKED BY: DESIGNED:

17-05-011 11/25/2019 13 of 14

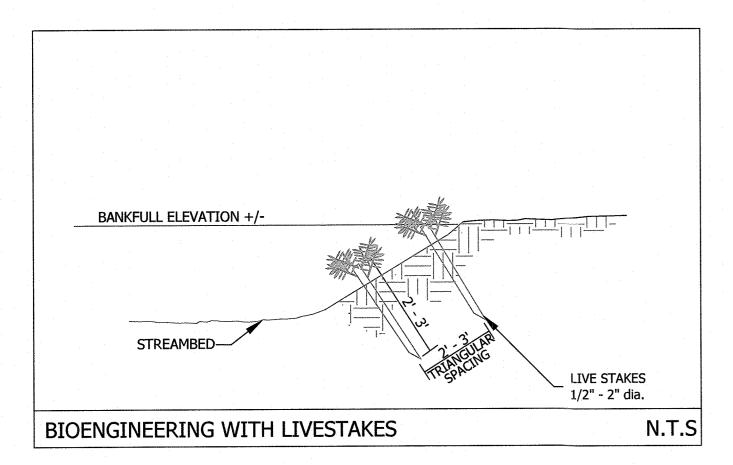
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LIVE STAKE PLANT LIST						
<b>Botanical Name</b>	Common Name	Spacing	Quantity			
Salix interior	Sandbar Willow	2-3' triangular	146			
Cornus ammomum	Silky Dogwood	2-3' triangular	146			
Salix nigra	Black Willow	2-3' triangular	146			

### LEGEND PROPOSED LIVESTAKES



# **PERMANENT SEEDING NOTES:**

1. ALL STREAM BANKS AND OTHER SPECIFIC AREAS NOTED ON THIS PLAN WILL BE SEEDED

WITH WARM SEASON GRASS STABILIZATION SEED. 2. ALL OTHER DISTURBED AREAS WILL BE SEEDED WITH THE PERMANENT SEED MIX ON

THE STREAM RESTORATION PLAN SET

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#### **BIOENGINEERING WITH LIVE STAKES INSTALLATION** 1. DESCRIPTION

1. This work shall consist of harvesting, transporting, installing and maintaining live staking materials.

2. Harvesting, transporting, and installation of live stakes shall take place when plants are dormant (December 1 through April 1).

3. Live stakes are to be installed after bank grading has been completed.

# 2. MATERIALS

**Live Stakes** 

1. Live stakes shall be between 0.5 inches and 2 inches in diameter. 2. Stakes shall be 3 to 5 feet in length and all side branches shall be clipped flush

3. Live stakes shall consist of the species and quantity per the "Live Stake Planting List" table found on this sheet.

# 3. CONSTRUCTION

Live Staking:

1. Live stakes shall be installed two to three (2-3) feet apart using random, triangular spacing. The density of the spacing will range from two (2) to four (4) stakes per square yard. Site variations may require spacing adjustments.

2. The basal end of the live stake shall be cleanly cut at an angle immediately before insertion into the soil. The top of the stake shall be cut square for tamping. 3. Install the live stakes top side up, with any buds pointing upward. The live stakes shall be tamped into the ground for approximately four-fifths (4/5) of their length. The stakes shall be tamped into the ground at vertical angle of ninety (90) degrees to the slope and at a horizontal angle of forty-five (45) degrees downstream. A three-eighths (3/8) of an inch iron bar can be used to make a pilot hole in compacted or rocky soils, or between imbricated rip rap boulders.

4. Foot compact around each live stake after it has been installed. Any live stakes that split during tamping shall be pulled out and replaced.

5. The top of the live stake shall be cut square again after installation, to remove the damaged mushroom top.

6. See "Live Stake Planting List", on this sheet for species and quantity specifications.

# OFFSITE STREAM RESTORATION PARCELS (FIRST ELECTION DISTRICT):

OWNER AI	DDRESS	TAX MAP	PARCEL	
GREGOR, EDWIN O & WF	6937 DORSEY RD	43	280	
	6941 DORSEY RD	43	281	
DORSEY EMMANUEL EVANG CH		43	466, LOT 385	
EMMANUEL UNITED EVANGEL CH	6951 DORSEY RD	43	282, LOT 387	
ELKRIDGE ROCK LLC	6965 DORSEY RD	43	283	
MOSAIC CHRISTIAN CHURCH	6845 DEERPATH RD	37	634, LOT J	
6855 DEERPATH RD ENT. LLC		<del>37</del>	634, LOT +	
	6865 DEERPATH RD	37	704, LOT H1	
STATE RAILROAD ADMIN		37	634, LOT G	
ROBERT WILTROUT, III ET AL	7129 STATION HOUSE RD	43	284, LOT 266	
	7132 STATION HOUSE RD	43	284, LOT 255	
HANDA ANITA	7134 STATION HOUSE RE	) 43	284, LOT 254	
	7140 STATION HOUSE RE	) 43	284, LOT 252	
GREEK ANCHORS ROCK LLC		43	284, LOT 249, 2	50, 25
			•	-

ENGINEER'S CERTIFICATE "I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A
PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE
CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE DEVELOPER'S CERTIFICATE "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON—SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT." DEVELOPER



Howard SCD Signature Block: This plan is approved for soil erosion and sediment

APPROVED: DEPARTMENT OF PLANNING AND ZONING

# DEEP RUN

OFF-SITE STREAM RESTORATION **EROSION & SEDIMENT CONTROL & DESIGN** DORSEY ROAD, ELKRIDGE, MD 21075



REVISIONS DESCRIPTION 12-13-20 Remove work on Sm CHECKED BY: 17-05-011

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11/25/2019