ITB 19-07 March 5, 2019

ADDENDUM NO. 1

BID NO. 19-07

MIDDLETON ROAD EXTENSION CITY OF ABERDEEN, MARYLAND

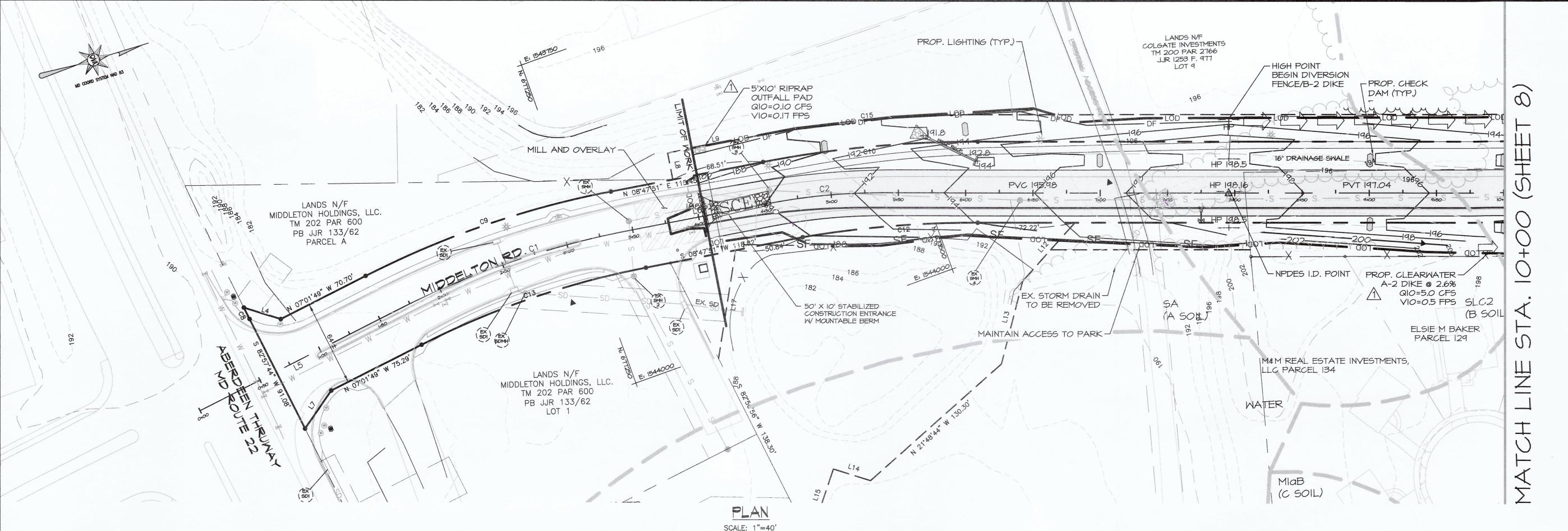
To all holders of the specifications, the following corrections are hereby made. All other items shall remain unchanged. This addendum shall become part of the Contract Documents for the above referenced project.

Name:	
Company:	
Date:	
Signature:	

• Section 1: Erosion and Sediment Control Plan

Acknowledgement of Addendum

The Erosion and Sediment Control Plan has been revised as indicated on the following plans.



SEQUENCE OF CONSTRUCTION

- I. NOTIFY CITY OF ABERDEEN PUBLIC WORKS, SEDIMENT CONTROL INSPECTOR AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. PHONE (410) 272-1600.
- 2. CLEAR AND GRUB AREA FOR STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
- 3. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
- 4. CLEAR AND GRUB ONLY THOSE AREAS NECESSARY TO INSTALL PERIMETER CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY. (1 DAY)
- 5. INSTALL CLEARWATER EARTHDIKES, 38" X 24" ELLIPTICAL. STORM DRAIN, AND TEMPORARY CL-I RIPRAP OUTFALLS ON FILTER CLOTH.
- 6. INSTALL REMAINING SEDIMENT CONTROLS, INCLUDING SILT FENCE AND SUPER SILT FENCE. (1 DAY)
- 7. CLEAR AND GRUB REMAINDER OF THE SITE. CONTRACTOR TO FOLLOW TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS. (1 DAY)
- 8. DEMO EXISTING STORM DRAIN. (1 DAY)
- 9. BEGIN MASS GRADING OF THE SITE. (2 WEEKS)
- 10. INSTALL PROPOSED WATER MAIN. CONTRACTOR TO FOLLOW TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS.
- 11. CONTINUE GRADING OPERATIONS. INSTALL STONE BASE FOR ROADWAY AS SOON AS SUBBASE GRADES ARE SET.
- 12. COMPLETE STORM DRAIN INSTALLATION, INCLUDING OPEN BACK INLETS.
- 13. COMPLETE ROAD CONSTRUCTION. ROADWAY WORK, INCLUDING THE CURB, SIDEWALK AND THE ROUND ABOUT, IS TO BE BACKFILLED WITH STONE AS SOON AS SUBBASE GRADES ARE SET TO ENSURE STABILIZATION. CONTRACTOR TO FOLLOW TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS FOR ALL GRASS AREAS.
- 14. BEGIN SWALES CONSTRUCTION. CONTRACTOR TO FOLLOW TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS.
- 15. INSTALL GRASS SWALES CHECK DAMS.
- 16. COMPLETE SWALES IN ACCORDANCE WITH APPROVED SWM PLANS.
- 17. INSTALL SURFACE COURSE. FINE GRADE ALL DISTURBED AREAS AND PERMANENTLY STABILIZE.
- 18. WITH THE APPROVAL OF THE CITY OF ABERDEEN PUBLIC WORKS, SEDIMENT CONTROL INSPECTOR, REMOVE EXISTING SEDIMENT CONTROLS FROM THE REMAINDER OF THE SITE ONCE PERMANENTLY STABILIZED.

OVERALL SITE ANALYSIS

- TOTAL SITE AREA: 3.33 AC.±
- 2. TOTAL DISTURBED AREA: 3.39 AC.± (147,772 SF.)
- . ESTIMATED EARTHWORK:
- A. GRADING CUT: 226 C.Y.
- B. GRADING FILL: 1,917 C.Y.
- C. TOPSOIL: 2,100 C.Y. TOTAL PROPOSED IMPERVIOUS AREA: 1.55 AC.±
- AREA TO BE VEGETATIVELY STABILIZED: 1.85 AC.± 6. NPDES I.D. POINT N: 677,712.44 E: 1,544,017.06
- WATERSHED: BUSH RIVER
- 8. SITE IS NOT LOCATED WITHIN A TIER II WATERSHED NOTE: THESE EARTHWORK ESTIMATES ARE FOR SEDIMENT CONTROL USE ONLY. CONTRACTOR SHALL NOT RELY ON THESE EARTHWORK FIGURES FOR ESTIMATING AND BIDDING PURPOSES.

SUMMARY OF SEDIMENT CONTROL QUANTITIES

	SWALE:	0		L.F.
-	EARTH DIKE:	2,073±		L.F.
-	DIVERSION FENCE:	406±		L.F.
	SILT FENCE:	379±		L.F.
	SUPER SILT FENCE:	55±		L.F.
	ORANGE CONSTRUCTION FE	NCE:0		L.F.
	SEDIMENT BASIN:O		EA.	
	SEDIMENT TRAP:0		EA.	
	MOUNTABLE BERM:	0		EA.
	STABILIZED CONSTRUCTION	ENTRANCE: _	1	ENTRANCE(
-	AREA TO BE PERMANENTLY	STABILIZED:		3.40± ACRES

NOTE: THIS SUMMARY OF SEDIMENT CONTROL QUANTITIES IS FOR USE BY THE CITY OF ABERDEEN. THIS SUMMARY IS NOT INTENDED TO BE USED BY THE CONTRACTOR FOR ESTIMATING AND BIDDING PURPOSES.

CITY OF ABERDEEN SEDIMENT CONTROL NOTES

- 1. THE CONTRACTOR/OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS. FURTHER, NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE UNTIL ALL REQUIRED PERMITS HAVE BEEN OBTAINED.
- 2. THE LIMITS OF DISTURBANCE SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO GRADING OF THE SITE TO ENSURE COMPLIANCE WITH APPROVED PLANS. ALL FOREST RETENTION AREAS WILL BE DELINEATED WITH BLAZE ORANGE FENCE AS WELL AS ANY SWM INFILTRATION PRACTICE PRIOR TO ANY CLEARING. WORK BEYOND THE LIMITS OF DISTURBANCE AND IN THE FOREST RETENTION AND SWM INFILTRATION AREA IS CONSIDERED TO BE A VIOLATION OF THIS PLAN.
- 3. ALL SEDIMENT CONTROL PRACTICES MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY. UPON COMPLETION OF THI INSTALLATION OF PERIMETER SEDIMENT CONTROL PRACTICES THE SITE MUST BE INSPEC WORKS (DPW). NO ADDITIONAL CONSTRUCTION ACTIVITY WILL BE AUTHORIZED WITHOUT THE APPROVAL FROM DPW.
- 4. ALL POINTS OF INGRESS AND EGRESS SHALL BE PROTECTED TO PREVENT TRACKING OF MUD INTO PUBLIC WAYS. DURING CONSTRUCTION, EVERY MEANS WILL BE TAKEN TO CONTROL SOIL EROSION AND SILTATION. IF NECESSARY A WASH RACK MAY
- 5. EARTH DIKES, SEDIMENT TRAPS, ETC. WILL BE LOCATED AS SHOWN ON THESE DRAWINGS. FIELD CHANGES AND MINOR ADJUSTMENTS ARE PERMISSIBLE AS LONG AS THE INSTALLATION FUNCTIONS AND CONFORMS TO SPECIFICATIONS. THE SITE INSPECTOR PRIOR TO INSTALLATION MUST APPROVE ALL SUCH CHANGES, MAJOR CHANGES TO THE APPROVED PLAN WILL REQUIRE RE-APPROVAL BY THE HARFORD SOIL CONSERVATION DISTRICT.
- 6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED A. THREE CALENDAR DAYS ON SLOPES GREATER THAN 3:1, ALL WATERWAYS AND TO THE SURFACE OF ALL PERIMETER B. SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS OF THE PROJECT SITE.
- 7. DUST CONTROL MUST BE MANAGED AS PART OF ALL SEDIMENT CONTROL PLANS. FAILURE TO DO SO IS A VIOLATION OF
- 8. SEDIMENT BASINS MUST BE BUILT TO DESIGN SPECIFICATIONS SHOWN ON THE PLAN. IF THE BASIN IS TO BE USED AS A FUTURE SWM FACILITY, THE BASIN WILL BE BUILT IN ACCORDANCE WITH THE LATEST MD-378 STANDARDS AND SPECIFICATIONS. SPECIFIED MATERIALS MUST BE USED. NO CHANGES OR MODIFICATIONS WILL BE MADE WITHOUT WRITTEN AUTHORIZATION OF THE HARFORD SOIL CONSERVATION DISTRICT.
- 9. TEMPORARY FENCING SHALL BE PLACED AROUND ALL SEDIMENT BASINS, TRAPS, AND PONDS DURING CONSTRUCTION AND SITE GRADING.
- 10. AT THE END OF EACH WORKING DAY ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT OPERATIONAL BY THE CONTRACTOR. A WEEKLY LOG WILL BE KEPT IN ACCORDANCE WITH NOI/NPDES REGULATIONS. A COPY OF THE APPROVED SEDIMENT CONTROL PLANS SHALL BE AVAILABLE AT THE SITE AT ALL TIMES.
- 11. ENSURE POSITIVE DRAINAGE TO ALL ROAD INLETS DURING ALL PHASES OF ROAD CONSTRUCTION TO ENSURE POSITIVE FLOW TO TRAPS AND OR BASINS.
- 12. CUT AND/OR FILL SHALL BE DONE IN CONFORMANCE WITH 2011 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS FOR LAND GRADING.
- 13. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY CONVEY WATER DOWN SLOPES WITHOUT CAUSING EROSION.
- 14. OFF-SITE WASTE OR BORROW AREAS SHALL HAVE AN APPROVED EROSION AND SEDIMENT CONTROL PLAN PRIOR TO THE IMPORT OR EXPORT OF MATERIAL TO/FROM THE PROJECT SITE.
- 15. ALL MATERIAL ORIGINATING FROM THE DEVELOPMENT OF THE PROPERTY AND DEPOSITED ON THE PUBLIC RIGHT-OF-WAY SHALL BE IMMEDIATELY REMOVED.
- 16. STORM DRAIN INLETS AND OUTLETS SHALL BE PROTECTED PER 2011 EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS.
- 17. TOPSOIL, LIMING, FERTILIZING, SEEDING, MULCHING, SOD, ETC. ARE ALL ESSENTIAL PARTS OF THE SEDIMENT CONTROL PLAN AND MUST BE COMPLETED ALONG WITH ALL OTHER PRACTICES.
- 18. TRAPS TO BE REMOVED SHALL BE DEWATERED AS PER THE 2011 EROSION AND SEDIMENT CONTROL STANDARDS AND
- 19. PRIOR TO REMOVAL OF TRAPS OR CONVERSION OF SEDIMENT BASINS TO SWM FACILITIES, THE STORM DRAINS WILL BE

CITY OF ABERDEEN

20. SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED UNTIL ALL DISTURBED AREAS FOR WHICH THE PRACTICES WERE INSTALLED HAVE BEEN STABILIZED. SEDIMENT CONTROL PRACTICES MAY BE REMOVED ONLY WITH THE AUTHORIZATION OF THE DPW INSPECTOR. ALL DISTURBED AREAS RESULTING FROM THE REMOVAL OF SEDIMENT CONTROL DEVICES SHALL BE STABILIZED IMMEDIATELY. REMOVAL PRIOR TO INSPECTOR'S APPROVAL CONSTITUTES A VIOLATION.

- 1. THE CONTRACTOR SHALL NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, SEDIMENT CONTROL INSPECTOR AT (410) 901-4020 AND CITY OF ABERDEEN PUBLIC WORKS SEDIMENT CONTROL INSPECTOR AT (410) 638-3127 AT LEAST 48 HOURS PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES AND, UNLESS WAIVED BY THE SEDIMENT CONTROL INSPECTOR, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTIONMEETING AT THE PROJECT SITE. THE CONTRACTOR MUST PROVIDE THE NAME OF THE PERSON ON THE SITE WHO IS RESPONSIBLE FOR INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES, AND A COPY OF THEIR GREEN CARD TO THE SEDIMENT CONTROL INSPECTOR.
- 2. ALL "PROJECTS WITH CONSTRUCTION ACTIVITIES DISTURBING 1 ACRE OR MORE ARE REQUIRED TO SUBMIT A NOTICE OF INTENT (NOI) TO MDE TO COMPLY WITH THE GENERAL PERMIT-FOR CONSTRUCTION ACTIVITY FOR STORMWATER DISCHARGES. THE NOI NOI FORM CONTACT BARBARA TYLER, MDE GENERAL PERMITS COORDINATOR AT (410) 537-3525 OR, PREFERABLY, BY E-MAIL AT
- 4. THE HARFORD SOIL CONSERVATION DISTRICT RESERVES THE RIGHT TO MODIFY THE EROSION AND SEDIMENT CONTROL PLAN.
- 5. THE HARFORD SOIL CONSERVATION DISTRICT MAY REVOKE THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL PLAN IF WORK PERFORMED AT THE PROJECT SITE DOES NOT CONFORM TO THE PROVISIONS OF THE GRADING PERMIT, THE APPROVED PLAN OR TO ANY WRITTEN INSTRUCTIONS FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, THE CITY OF ABERDEEN PUBLIC WORKS OR THE HARFORD SOIL CONSERVATION DISTRICT
- 6. THE CONTRACTOR MUST REQUEST THAT THE CITY OF ABERDEEN APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT AND THE CITY OF ABERDEEN AT THE FOLLOWING POINTS OF PROJECT DEVELOPMENT:
- PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY MDE IS MADE B. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
- C. UPON FINAL STABILIZATION OF THE SITE AND PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL MEASURES.
- 7. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND
- 8. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES. AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE CITY OF ABERDEEN. THE CONTRACTOR IS RESPONSIBLE FOR THE SEDIMENT CONTROL INSPECTION AND DOCUMENTATION IN ACCORDANCE
- 9. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND
- 15. SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED UNTIL THE ENTIRE CONTRIBUTING AREA TO THE PRACTICE HAS BEEN STABILIZED TO THE SATISFACTION OF THE SEDIMENT CONTROL INSPECTOR. SEDIMENT CONTROLS MAY ONLY BE REMOVED WITH THE
- 16. ALL AREAS DISTURBED BY THE REMOVAL OF SEDIMENT CONTROL DEVICES MUST BE IMMEDIATELY STABILIZED.
- 17. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS, A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLANS WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATION STABILIZATION.
- 19. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE HALF (1/2) THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP. SEDIMENT BASINS SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE HALF (1/2) THE DEPTH BETWEEN THE DEWATERING ELEVATION AND THE BOTTOM OF THE BASIN.
- 20. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR FOREST RETENTION ÁREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT TRAPS THEMSELVES ARE BEING PUMPED OUT.
- 21. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISHED GRADE ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.
- 22. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING

ADDITIONAL SEDIMENT CONTROL NOTES

- BTYLER@MDE.STATE.MD.US
- 3. THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE KEPT AT THE PROJECT SITE.

- A. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL MEASURES, BUT BEFORE
- CONSTRUCTION SEQUENCE AND, SHALL HAVE THEM INSPECTED AND APPROVED BY THE CITY OF ABERDEEN INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES.
- WITH THE MARYLAND DEPARTMENT OF THE ENVIRONMENT NPDES/NOI REQUIREMENTS.
- SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE CITY OF ABERDEEN.
- AUTHORIZATION OF THE SEDIMENT CONTROL INSPECTOR.
- 18. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION WHICH IS EXISTING OR UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.

- AND OVERFLOW OF INLETS IN SUMP AREAS.

SPILLED, DROPPED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY BY VACUUM SWEEPING, SCRAPING, OR SWEEPING. Erosion and Sediment Control

LEGEND

---- PARCEL BOUNDARY

------ 432 ------ PROPOSED CONTOUR Y MY MY PROPOSED TREELINE

SILT FENCE

THE PURPOSE OF THIS PLAN IS TO ADDRESS SEDIMENT

AND EROSION CONTROL. THE CONTRACTOR/DEVELOPER

SHALL REFER TO APPROVED WATER/SEWER,

STORMWATER MANAGEMENT, AND SITE CONSTRUCTION

DRAWINGS FOR ALL OTHER PHASES OF THE PROJECT

ALL CONSTRUCTION EQUIPMENT SHALL BE

CLEANED/WASHED AT STABILIZED CONSTRUCTION

ENTRANCE TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAYS. ALL SEDIMENT

- SSF---- SUPER SILT FENCE

EXISTING 2' CONTOUR

EXISTING 10' CONTOUR

EXISTING PROPERTY LINES

EXISTING ROAD CENTER LINE

PROPOSED ROAD CENTER LINE

EXISTING BUILDINGS

EXISTING ROAD LEFT

EXISTING ROAD RIGHT

EXISTING TREELINE

EXISTING BUILDING

LIMIT OF DISTURBANCE

STABILIZED CONSTRUCTION

Recommended for Approval

City of Aberdeen

Plan #19-02

Technical Concurrence

Harford Soil Conservation District

Approved

Harford Soil Conservation District

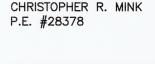
OWNERS CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON SITE INSPECTION BY THE CITY OF ABERDEEN & THE HARFORD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE

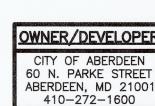
DEEMED NECESSARY."	
PRINTED NAME	TITLE
SIGNATURE	DATE

ENGINEERS CERTIFICATION

HEREBY CERTIFY THAT ALL SEDIMENT AND EROSION CONTROL MEASURES SHOWN ON THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 2011 MD STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR CURRENT REVISIONS



THEREOF





Professional Certification: I hereby certify that these ESC REVISIONS SPM documents were prepared or approved by me, and that I am a 02/14/19 A ESC REVISIONS SPM duly licensed professional engineer under the laws of the State DATE of Maryland, License No. 28378, Expiration Date: 01/01/2021. DRAWING COMPLETED 10 1720116.00 SPM/RLR

CITY OF ABERDEEN MARYLAND

APPROVED: ABERDEEN DEPT. OF PUBLIC WORKS GRADING PERMIT NO: 19-02 STORM WATER MANAGEMENT NO.: ____19-02 CITY ENGINEER PUBLIC WORKS AGREEMENT NO .: N/A DIRECTOR

MIDDELTON ROAD EXTENSION - CONTRACT #19-07 EROSION AND SEDIMENT CONTROL PLAN

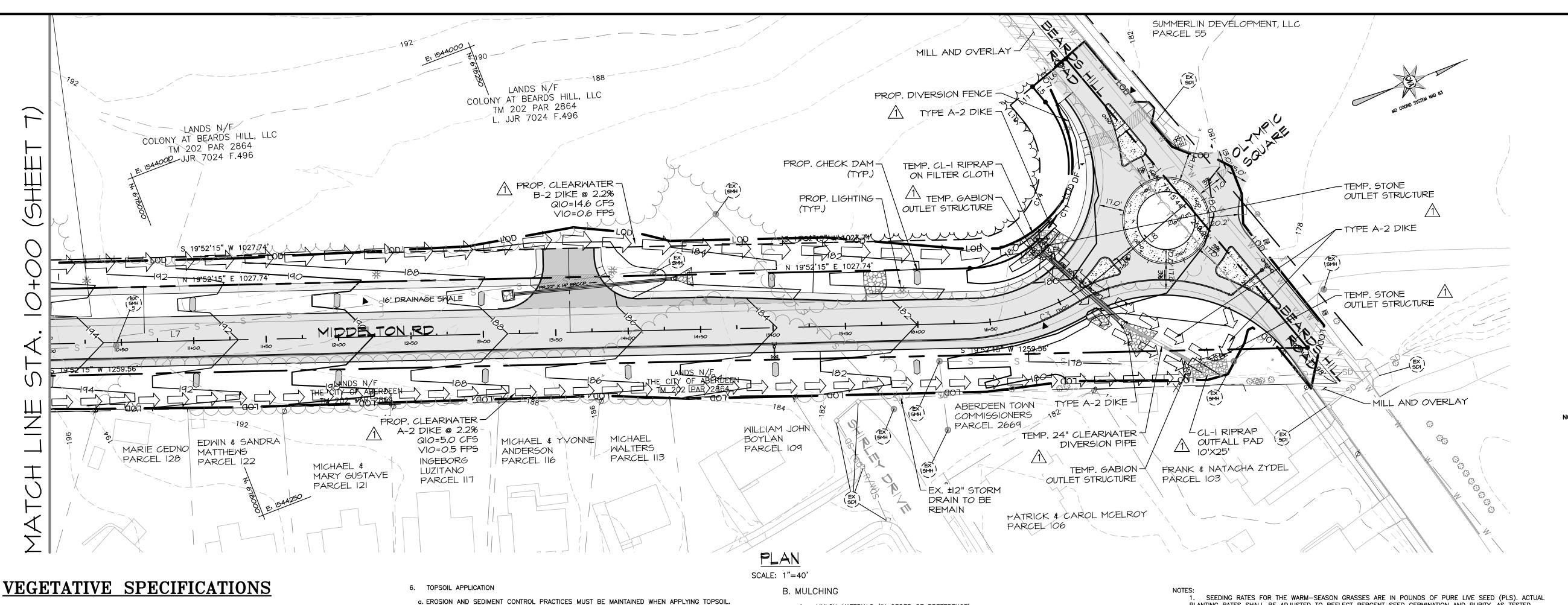
HARFORD COUNTY, MARYLAND

engineers, surveyors & landscape architect Civil Engineers • Land Surveyors • Landscape Architects Planners • Geotechnical Engineers • Environmental Engineers 1630 Robin Circle Forest Hill, Maryland 21050 Phone (443 652-6141 * Fax (410) 838-1811

CRM

SPM/RRL

600 AS SHOWN GRIDS



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

A. SOIL PREPARATION

1. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT, AFTER THE SOIL IS LOOSENED. IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS

. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER

2. PERMANENT STABILIZATION

a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE: i. SOIL pH BETWEEN 6.0 AND 7.0

ii SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM)

iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT 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 LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS

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

c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES. d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF

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.

B. TOPSOILING

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

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

D. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

- c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
- d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- 4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
- 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA: . 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 OF CONTRASTING TEXTURED.

SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE

. 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

FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER. b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

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 TOPSOIL OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT

c. TOPSOIL 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 BE OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

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 PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.

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 WITH 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.

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/ACRES (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO

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

SPECIFICATIONS

THE PLACEMENT OF TOPSOIL.

a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJEC REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO

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.

: 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 MPORTANT 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 BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR

DISSIPATION OF PHYTO-TOXIC MATERIALS.

a. 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.

CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT

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

b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. i. 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

c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). i. 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; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (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.

CITY OF ABERDEEN

iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL

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.

b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

. 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 THE UNIFORMLY SPREAD SLURRY.

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

WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS. iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OF COMPOUNDS AT CONCENTRATION LEVELS THAT WILL v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY

AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL

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 RATE TO 2.5 TONS PER ACRE.

THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

b. WHEN STRAW 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 THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE

:. 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.

a. 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:

i. 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,

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

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION 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.

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 I'HE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.b AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TEST ARE NOT REQUIRED FOR TEMPORARY SEEDING. 3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW

SEEDING MIXTURE (FOR HARDINESS ZONE 6B) (FROM TABLE B.1) FRTILIZER RATE (10-20-20) SPECIES APPLICATION SEEDING DATES SEEDING DEPTHS RATE (lb/ac) 436 lb/ac **RYEGRASS** 8/1 - 10/151000 sf) 1/2" FOXTAIL MILLET 5/16 - 7/31

PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.

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 IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE 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 ESTABLISHMENT

OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.

2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.

IHE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEED FOR 6 MONTHS OR MORE.

A. 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 PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.

c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL

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 LEVEL OF MAINTENANCE. b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR

PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT.

IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE, RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT

ESTABLISHMENT IS NECESSARY AND WHEN TURF 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 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

I. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID

iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

iv. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 11/2 TO 3 POUNDS PER 1000 SQUARE FEET.

c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

HARFORD COUNTY, MARYLAND

WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 11/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

EXISTING 10' CONTOUR EXISTING BUILDINGS EXISTING PROPERTY LINES —— EXISTING ROAD LEFT ----- EXISTING ROAD CENTER LINE EXISTING TREELINE EXISTING BUILDING ——— PROPOSED ROAD CENTER LINE - 432 — PROPOSED CONTOUR Y MY MY W PROPOSED TREELINE LIMIT OF DISTURBANCE - DF ----- DIVERSION FENCE \longrightarrow CLEARWATER DIVERSION PIPE $^{oldsymbol{ol}ol{ol}}}}}}}}}}}}}}}}}}}$ STABILIZED CONSTRUCTION STONE/GABION OUTLET STRUCTURE

LEGEND

———— PARCEL BOUNDARY

EXISTING 2' CONTOUR

SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

	SEED MIXTURE (FOR HARDINESS ZONE <u>6B</u>) (FROM TABLE B.3)				FERTILIZER RATE (10–20–20)			
MIX	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P205	K20	LIME RATE
2	BIG BLUESTEM INDIAN GRASS LITTLE BLUESTEM CREEPING RED FESCUE PARTRIDGE PEA	6 6 4 15 4	♦ ♦ 3/1-5/15 *5/16-6/15	1/4"- 1/2"	45 lb/ac (1.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
5	CREEPING RED FESCUE RED TOP FLAT PEA	20 1 15	3/1-5/15 8/1-10/15	1/4"- 1/2"	45 lb/ac (1.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	90 lb/ac (2.0 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)

PERMANENT SEEDING NOTE: PLANT THIS MIX WITH A SPECIALIZED NATIVE SEED DRILL

ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT

◆◆ WARM-SEASON GRASSES NEED A SOIL TEMPERATURE OF AT LEAST 50 DEGREES F IN ORDER TO GERMINATE. IF SOIL TEMPERATURES ARE COLDER THAN 50 DEGREES, OR MOISTURE IS NOT ADEQUATE, THE SEEDS WILL REMAIN DORMANT UNTIL CONDITIONS ARE FAVORABLE. IN GENERAL, PLANTING DURING THE LATTER PORTION OF THIS PERIOD ALLOWS MORE TIME FOR WEED EMERGENCE AND WEED CONTROL PRIOR TO PLANTING. WHEN SELECTING A PLANTING DATE, CONSIDER THE NEED FOR WEED CONTROL VS. THE LIKELIHOOD OF HAVING

SUFFICIENT MOISTURE FOR LATER PLANTINGS, ESPECIALLY ON DROUGHTY SITES

SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER). GENERAL SPECIFICATIONS

a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE

b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF % INCH. PLUS OR MINUS 1/4 INCH. AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS

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

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 AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO

2. SOD INSTALLATION

a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT 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.

c. 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 THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

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 IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE

c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN % 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.

> ES-202/28/19 ESC REVISIONS A ESC REVISIONS 02/14/19 SPM RAWING COMPLETED <u>o. 1720116.00</u>

CITY OF ABERDEEN MARYLAND

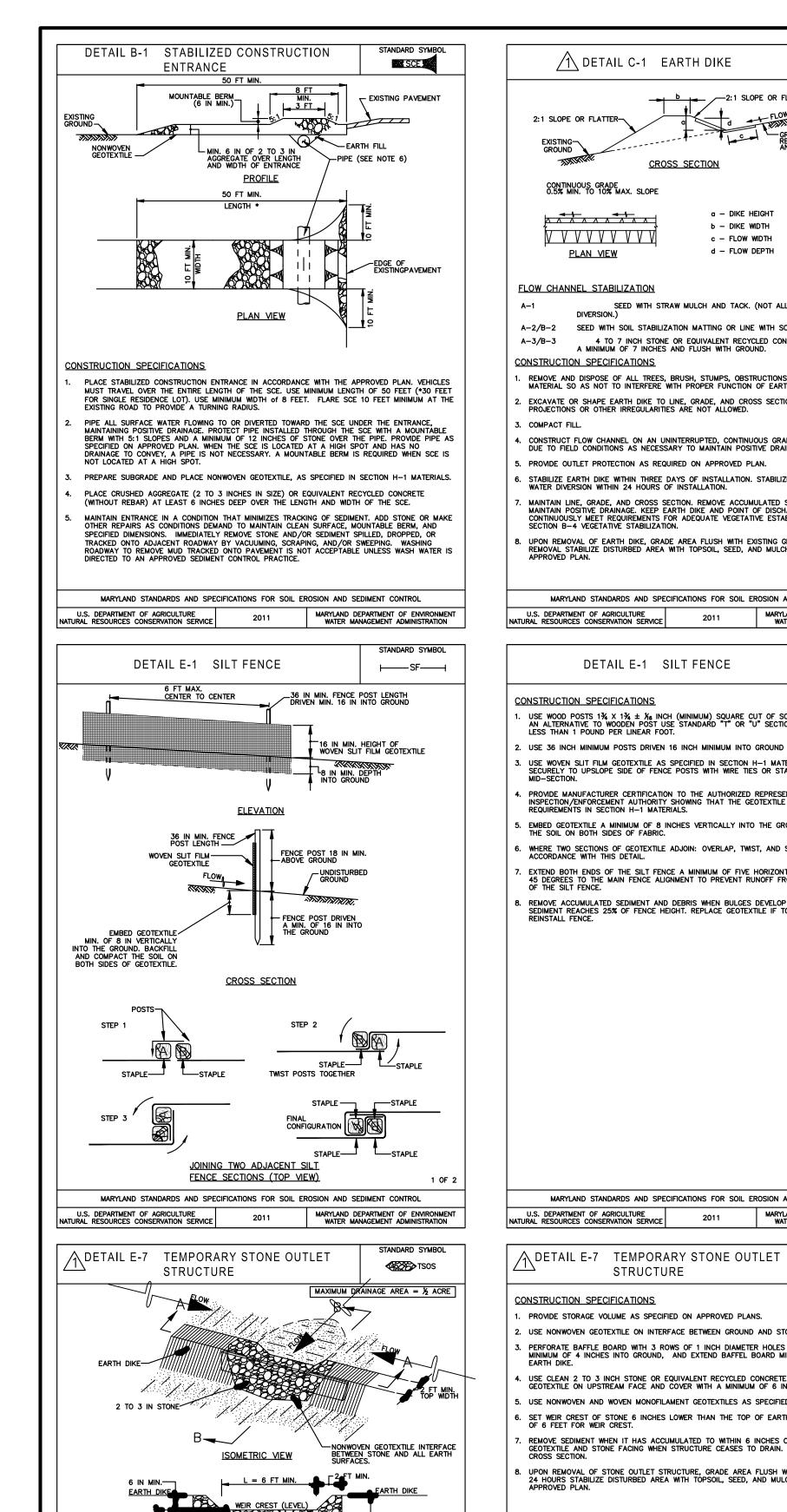
SRADING PERMIT NO: _______19-02_ STORM WATER MANAGEMENT NO.: ______19-02__ PUBLIC WORKS AGREEMENT NO.: <u>N/A</u>

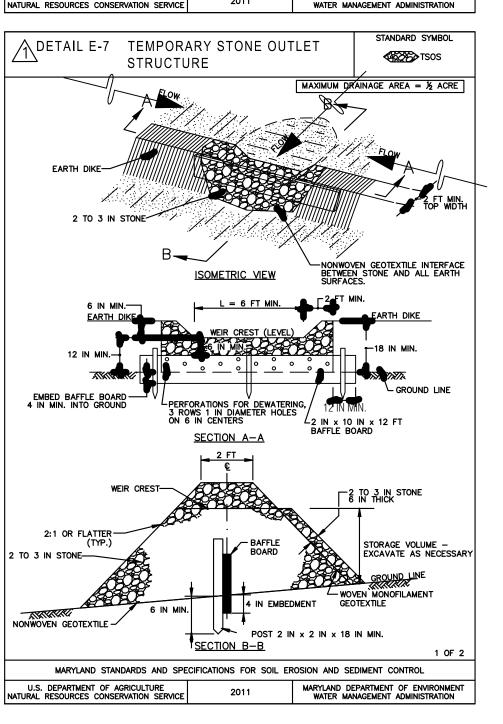
MIDDELTON ROAD EXTENSION - CONTRACT #19-07 EROSION AND SEDIMENT CONTROL PLAN

ivil Engineers • Land Surveyors • Landscape Architects Planners • Geotechnical Engineers • Environmental Engineers 1630 Robin Circle Forest Hill, Maryland 21050 Phone (443 652-6141 • Fax (410) 838-1811 E-mail: cnamail@cna-engineers

SPM/RLR SPM/RRL

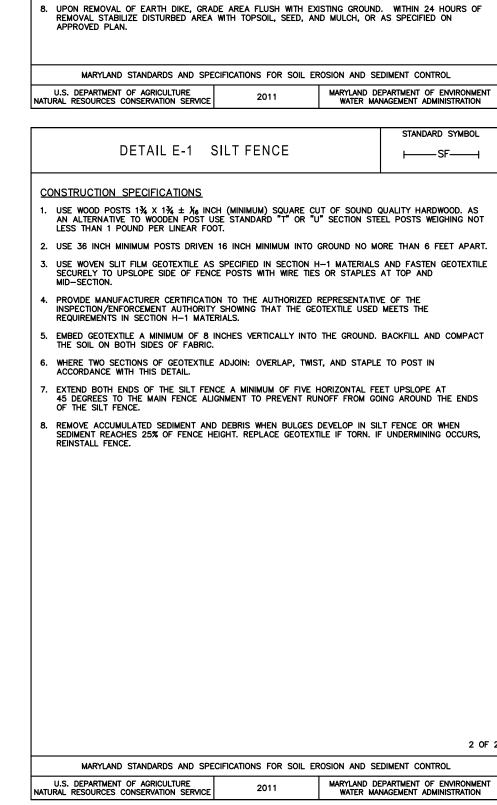
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CITY OF ABERDEEN

MARYLAND



STRUCTURE

PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.

USE CLEAN 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE AND COVER WITH A MINIMUM OF 6 INCHES OF ADDITIONAL STONE. 5. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS. . SET WEIR CREST OF STONE 6 INCHES LOWER THAN THE TOP OF EARTH DIKE. USE MINIMUM LENGTH OF 6 FEET FOR WEIR CREST.

REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6 INCHES OF WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO DRAIN. MAINTAIN LINE, GRADE, AND CROSS SECTION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

STORM WATER MANAGEMENT NO.: ______19-02___

PUBLIC WORKS AGREEMENT NO.: <u>N/A</u>

A-1

PLACE DESIGNATION (e.g. A-1)
ON FLOW CHANNEL SIDE OF DIKE.

DIKE TYPE

18 IN MIN. 30 IN MIN.

₹\$\$\$TSOS

b - DIKE WIDTH 24 IN MIN. 36 IN MIN. c - FLOW WIDTH 4 FT MIN. 6 FT MIN.

d — FLOW DEPTH 12 IN MIN. 24 IN MIN.

/1\ DETAIL C-1 EARTH DIKE

CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE

PLAN VIEW

FLOW CHANNEL STABILIZATION

CROSS SECTION

A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.

5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.

a – DIKE HEIGHT

SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER

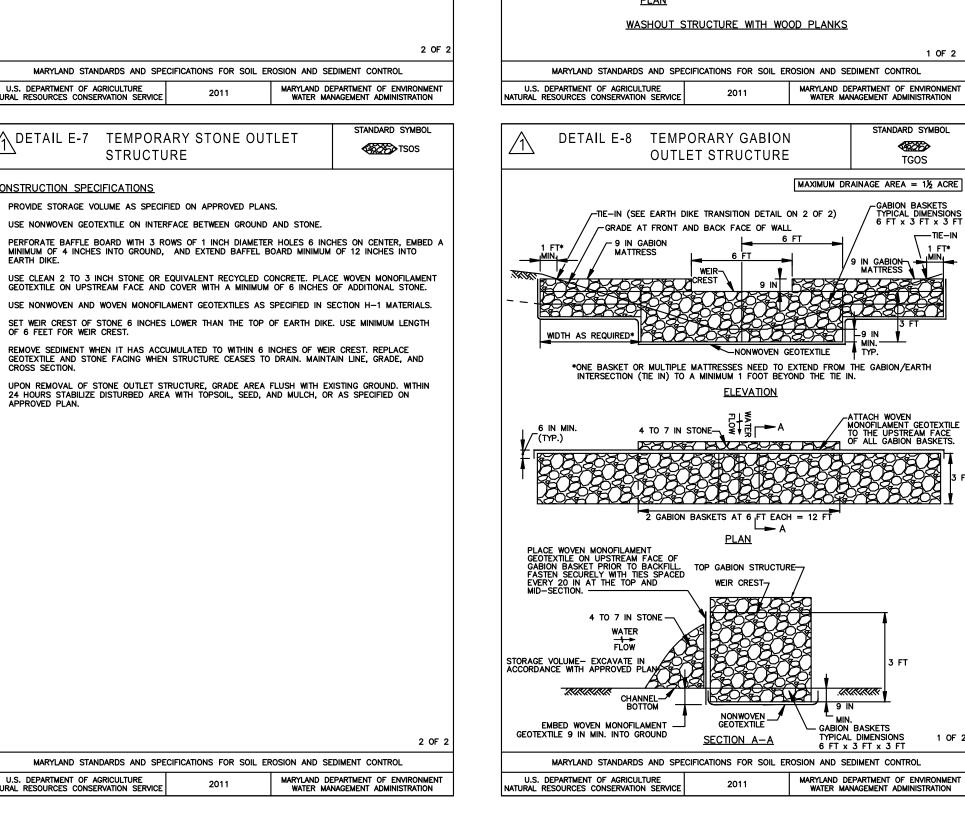
4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

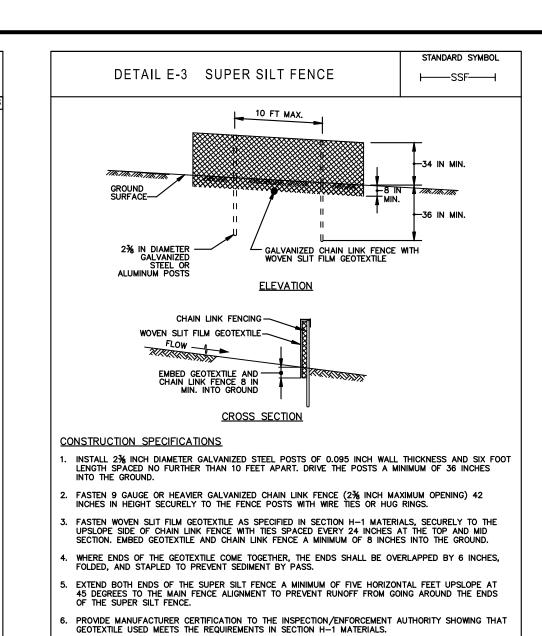
REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.

CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.

STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.

MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.





STANDARD SYMBOL

—— DF ———

cws

SECTION A-A

WOOD FRAME SECURELY FASTENED AROUND ENTIRE PERIMETER WITH TWO STAKES—

SECTION B-B

MAXIMUM DRAINAGE AREA = 2 ACRES

<u>SECTION</u>

USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2% INCH MAXIMUM OPENING).

FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.

DETAIL H-6 ONSITE CONCRETE

2. USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.

EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.

WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.

KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

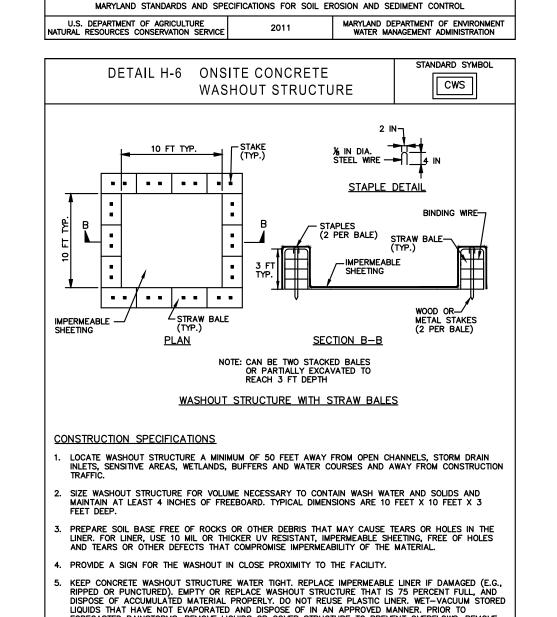
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

WASHOUT STRUCTURE

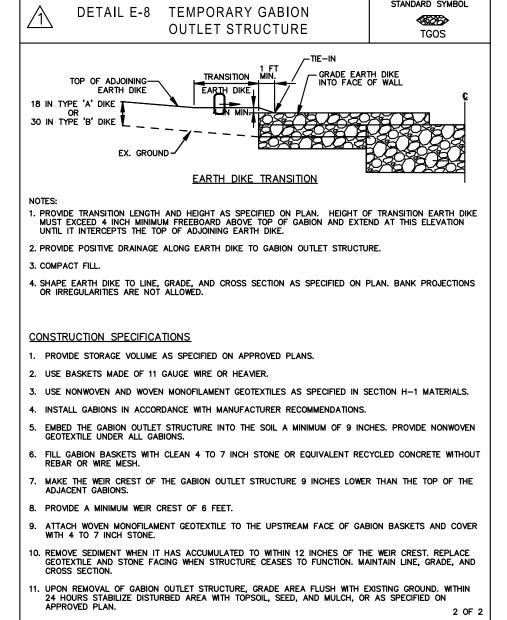
EXCAVATED WASHOUT STRUCTURE

<u>∕1\</u> DETAIL C-9 DIVERSION FENCE

CONSTRUCTION SPECIFICATIONS



REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

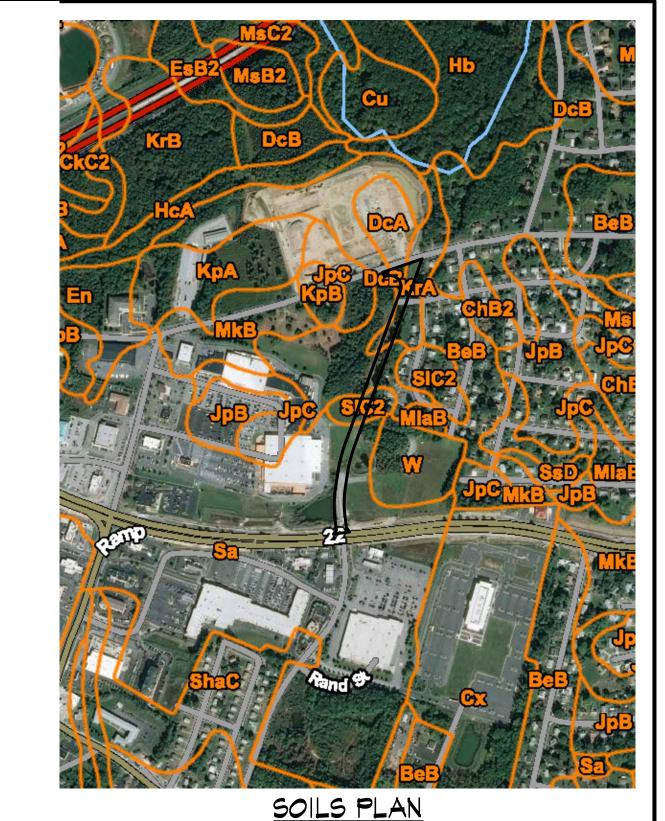


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

Custom Soil Resource Report

Map Unit Legend

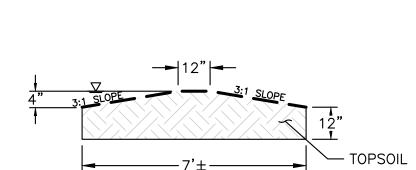
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdB	Aldino silt loam, 3 to 8 percent slopes	11.8	1.7%
AdC	Aldino silt loam, 8 to 15 percent slopes	0.2	0.0%
AsB	Aldino very stony silt loam, 0 to 8 percent slopes	7.1	1.0%
BeA	Beltsville silt loam, 0 to 2 percent slopes	2.2	0.3%
ВеВ	Beltsville silt loam, 2 to 5 percent slopes	41.4	6.0%
BeC	Beltsville silt loam, 5 to 10 percent slopes	2.3	0.3%
ChB2	Chillum silt loam, 2 to 5 percent slopes, moderately eroded	26.9	3.9%
CkC2	C2 Chillum-Neshaminy silt loams, 5 to 10 percent slopes, moderately eroded		0.3%
Cu	Codorus silt Ioam	7.2	1.1%
Сх	Cut and fill land	51.2	7.5%
DcA	Delanco silt loam, 0 to 3 percent slopes	3.7	0.5%
DcB	Delanco silt loam, 3 to 8 percent slopes	84.7	12.4%
En	Elkton silt loam	20.7	3.0%
EsA	Elsinboro loam, 0 to 2 percent slopes	0.3	0.0%
EsB2	Elsinboro loam, 2 to 5 percent slopes, moderately eroded	15.0	2.2%
EsC2	Elsinboro loam, 5 to 10 percent slopes, moderately eroded	7.1	1.0%
Hb	Hatboro silt Ioam	22.4	3.3%
HcA Hatboro-Codorus complex, 0 to 3 percent slopes, frequently flooded		26.3	3.8%
JpB	Joppa gravelly sandy loam, 2 to 5 percent slopes	23.3	3.4%
JpC	Joppa gravelly sandy loam, 5 to 10 percent slopes	26.5	3.9%
KpA	Keyport silt loam, 0 to 2 percent slopes	10.4	1.5%
КрВ	Keyport silt loam, 2 to 5 percent slopes	33.6	4.9%
KrA	Kinkora silt loam, 0 to 3 percent slopes	6.9	1.0%



SCALE: 1"=600'

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
(rB	Kinkora silt loam, 3 to 8 percent slopes	12.8	1
fC	Legore very stony silt loam, 0 to 15 percent slopes	3.8	C
gC3	Legore silty clay loam, 8 to 15 percent slopes, severely eroded	0.8	С
ИkA	Matapeake silt loam, 0 to 2 percent slopes	5.9	C
ИkВ	Matapeake silt loam, 2 to 5 percent slopes	23.8	3
/laB	Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain	5.0	C
M sA	Montalto silt loam, 0 to 3 percent slopes	0.4	C
/IsB2	Montalto silt loam, 3 to 8 percent slopes, moderately eroded	17.3	2
AsC2	Montalto silt loam, 8 to 15 percent slopes, moderately eroded	4.0	C
IsC	Neshaminy and Montalto very stony silt loams 0 to 15 percent slopes	4.2	C
IsD	Neshaminy and Montalto very stony silt loams, 15 to 25 percent slopes	0.8	C
Sa	Sand and gravel pits	100.3	14
ShaB	Sassafras sandy loam, 2 to 5 percent slopes, Northern Coastal Plain	22.0	3
ShaC	Sassafras sandy loam, 5 to 10 percent slopes, Northern Coastal Plain	27.0	3
SIB2	Sassafras loam, 2 to 5 percent slopes	5.0	C
SIC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	8.4	1
SsD	Sassafras and Joppa soils, 10 to 15 percent slopes	1.5	C
V	Water	5.8	C
VaA	Watchung silt loam, 0 to 3 percent slopes	0.8	C
VaB	Watchung silt loam, 3 to 8 percent slopes	2.1	C
otals for Area of Interest		685.5	100



CHECK DAM PROFILE

ES-3

<u>o. 1720116.00</u>

SPM

✓ VARIES · PROPOSED : GRASS COVER DEPTH -4" HIGH TOPSOIL CHECK DAM - PROPOSED SPACED EVERY 100'. LOCATIONS EDGE OF PAVING AS SHOWN ON PLAN

> NOT TO SCALE ESC REVISIONS

RAWING COMPLETED 45 SHOWI SPM/RRL Forest Hill, Maryland 21050 Phone (443 652-6141 • Fax (410) 838-1811 E-mail: cnamail@cna-engineers.com

MIDDELTON ROAD EXTENSION - CONTRACT #19-07

EROSION AND SEDIMENT CONTROL PLAN DETAILS HARFORD COUNTY, MARYLAND

PROPOSED FINISHED GRADE GRASS SWALE CROSS SECTION MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

