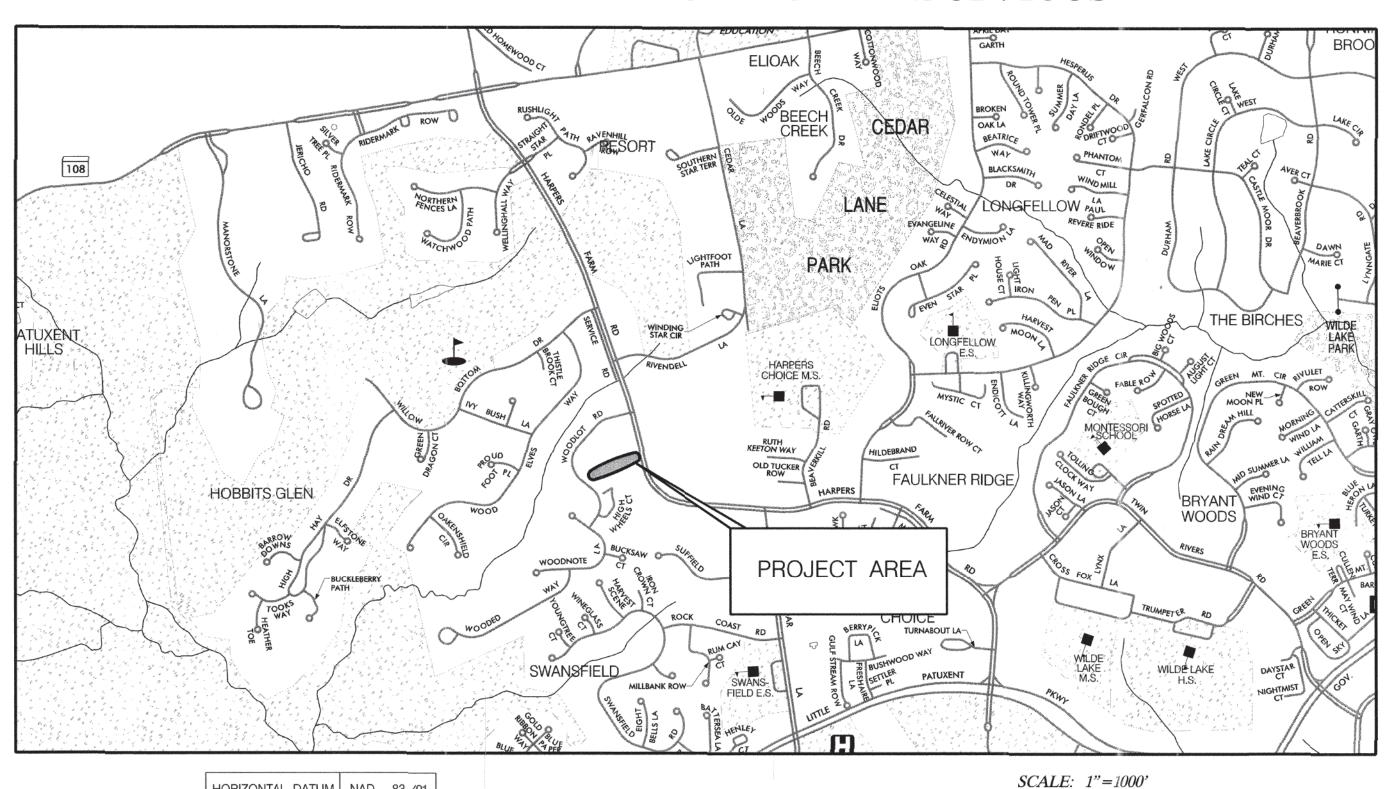
HOWARD COUNTY

Capital Project #D-1158

Woodlot Road Channel Stabilization Project

Stormwater Management Division Bureau Of Environmental Services



HORIZONTAL DATUM NAD 83 /91 VERTICAL DATUM NAVD 88

DESIGN CERTIFICATION

HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENT OF THE HOWARD SOIL CONSERVATION

REGISTRATION 32013

OWNER'S DEVELOPER'S CERTIFICATION

WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO THE BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.'

GENERAL NOTES

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MDSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- 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.
- SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANTS, INC-JULY 2014
- THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. BENCHMARKS SHOWN HEREON WERE PROVIDED BY AB CONSULTANTS, INC.
- WETLANDS AND WATERS OF THE US WERE DELINEATED BY McCORMICK TAYLOR- JUNE 2014.
- OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND McCORMICK TAYLOR DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN
- THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. HOWARD COUNTY DOES
- THE CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE, ANY DAMAGE INCURRED DUE TO THE CONTRACTORS'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.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY McCORMICK TAYLOR IMMEDIATELY TO RESOLVE THE SITUATION.
- 12. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- 13. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- SITE DEVELOPMENT DETAILS ARE REFERENCED FROM THE AS-BUILT PLANS FOR WOODLOT SECTION 1 (F-93-125) AND VILLAGE OF HARPER'S CHOICE SECTION 5 AREA 10 (SDP-96-058).
- A JOINT PERMIT APPLICATION HAS BEEN APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR THIS PROJECT. (TRACKING NUMBER 201560864) THE SITE IS LOCATED ALONG A TRIBUTARY TO THE MIDDLE PATUXENT RIVER AND IS NOT WITHIN A TEIR II HIGH QUALITY WATERSHED AND IS NOT RESTRICTED BY A TMDL FOR SEDIMENT
- PROJECT IMPACTS INCLUDE WORK IN A USE IV-P STREAM. WORK MAY NOT BE CONDUCTED DURING THE PERIOD BETWEEN MARCH 1 AND MAY 31, INCLUSIVE, DURING ANY YEAR,
- AS OF OCTOBER 30, 2017, THE PLANNING DIRECTOR APPROVED AN ALTERNATIVE COMPLIANCE OF UNNECESSARY, FOREST CONSERVATION OBLIGATIONS WERE MET FOR LOTS 85 AND 86 WITH THE RECORDATION OF PLATS 11206 THRU 11214. THE CA LOT (PARCEL 288) IS ZONED NEW TOWN AND IS EXEMPT FROM FOREST CONSERVATION.

APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

- A. THE ALTERNATIVE COMPLIANCE PLAN EXHIBIT SHALL SERVE AS THE SUBSTITUTE FOR A SITE DEVELOPMENT PLAN FOR DEVELOPMENT. NO DISTURBANCE IS PERMITTED BEYOND THE 1.08 ACRE LIMIT OF DISTURBANCE AS SHOWN ON THE ALTERNATIVE COMPLIANCE EXHIBIT UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED.
- B. THE REMOVAL OF THE 38" POPLAR TREE IS PERMITTED AS SHOWN ON THE PLAN EXHIBIT. THE REMOVAL OF ANY ADDITIONAL SPECIMEN TREE IS NOT PERMITTED UNDER THIS ALTERNATIVE COMPLIANCE REQUEST. ALL EFFORTS SHALL BE MADE TO REDUCE IMPACTS TO SPECIMEN TREES DURING CONSTRUCTION, TREE PROTECTION MEASURES AS DETAILED ON THE PLAN EXHIBIT SHALL BE UTILIZED AS NECESSARY.
- C. ONCE CAPITAL PROJECT D-1158 IS COMPLETE, THE LIMIT OF DISTURBANCE SHALL BE RESTORED TO ITS PREVIOUS CONDITION THROUGH STABILIZATION AND REPLANTING OF FOREST RESOURCES BY THE DEPARTMENT OF RECREATION & PARKS.
- D. ALL CONSTRUCTION AND DRAINAGE EASEMENTS AND RIGHT-OF-ENTRY AGREEMENTS MUST BE OBTAINED PRIOR TO THE START OF CONSTRUCTION.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT IAM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 32013, EXPIRATION DATE: 7/5/2019

DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

MANAGEMENT DIVISION

McCORMICK TAYLOR

MARYLAND Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046–3143 (410) 313-6444



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WOODLOT ROAD CHANNEL STABILIZATION PROJECT CAPITAL PROJECT #D-1158 **ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND** TAX MAP 29, GRID/BLOCK NO. 22

HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION

WAIVER PETITION #WP-18-040

SHEET 1 OF 20

SHOWN

TITLE SHEET

BASE OR SURVEY LINE ----- 3 +50 32 TRAVERSE POINT ————————— APPROXIMATE LIMITS OF CUT AND/OR FILL --PROPOSED MINOR CONTOUR ----LIMIT OF DISTURBANCE ---- LOD ----EXISTING DROP INLET ----- FIE ==== HEDGE /TREE LINE -----BUSH /TREE ________ LIGHT POLE -----TREE TO BE REMOVED -----

INDEX OF SHEETS

CHANNEL STABILIZATION DETAILS

LANDSCAPE NOTES AND DETAILS

EROSION AND SEDIMENT CONTROL PLANS

EROSION AND SEDIMENT CONTROL NOTES

EROSION AND SEDIMENT CONTROL DETAILS

LEGEND

PROPOSED MEDIAN BARRIER -----

STATE, COUNTY OR CITY LINES ------

PROPOSED TRAFFIC BARRIER — — — — T T T T

EXISTING TRAFFIC BARRIER ---- --- ---

PROPOSED FENCE LINE — — — — — — X———X——

EXISTING ROADWAY -----

EXISTING FENCE LINE -----

RIGHT OF WAY LINE -----

TITLE SHEET

SITE PLANS

GEOMETRY SHEET

LANDSCAPE PLANS

ELECTRICAL HAND BOX - SIGNALS -----

FLOW LINE -----

PROFILE SHEET

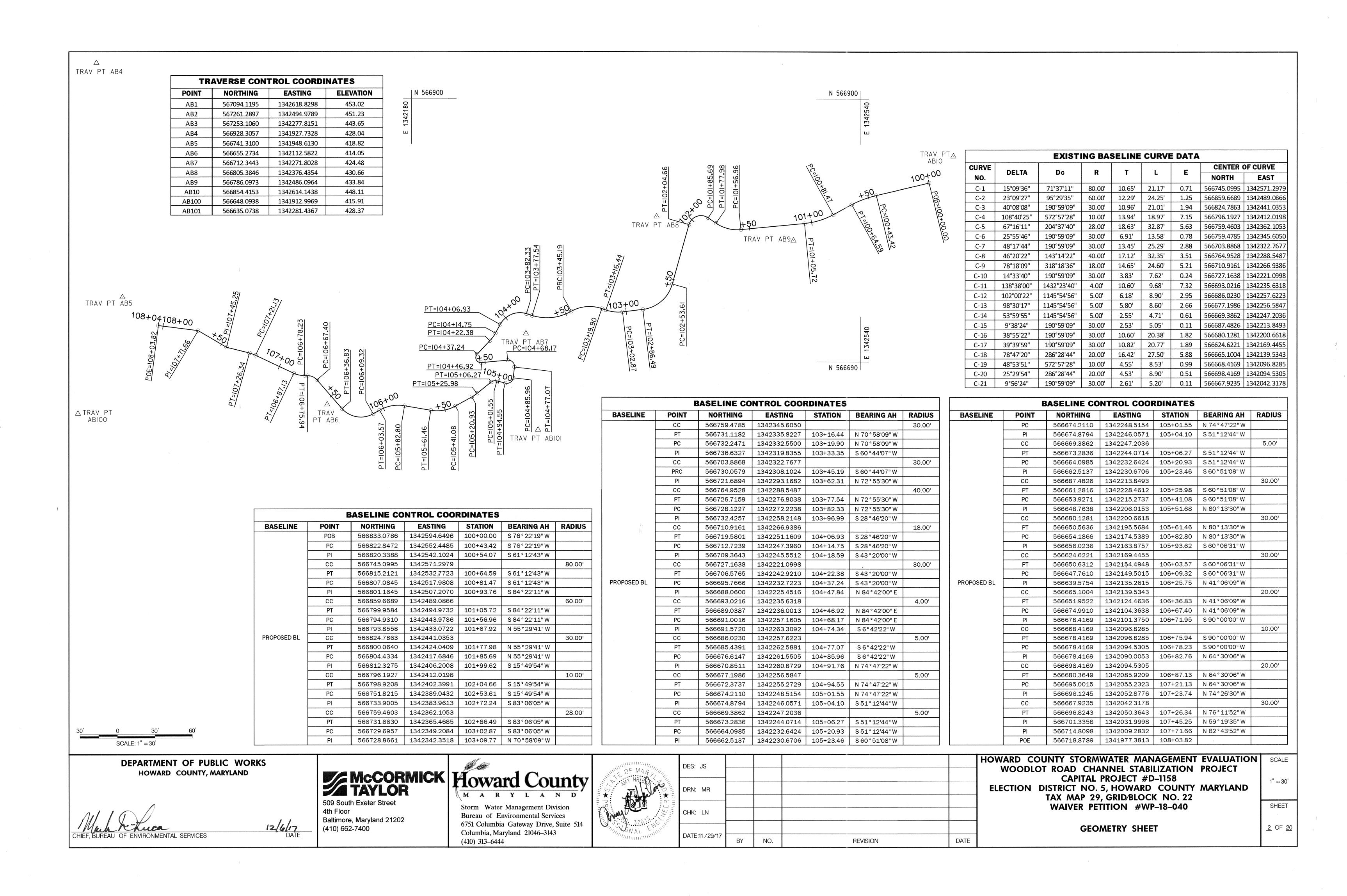
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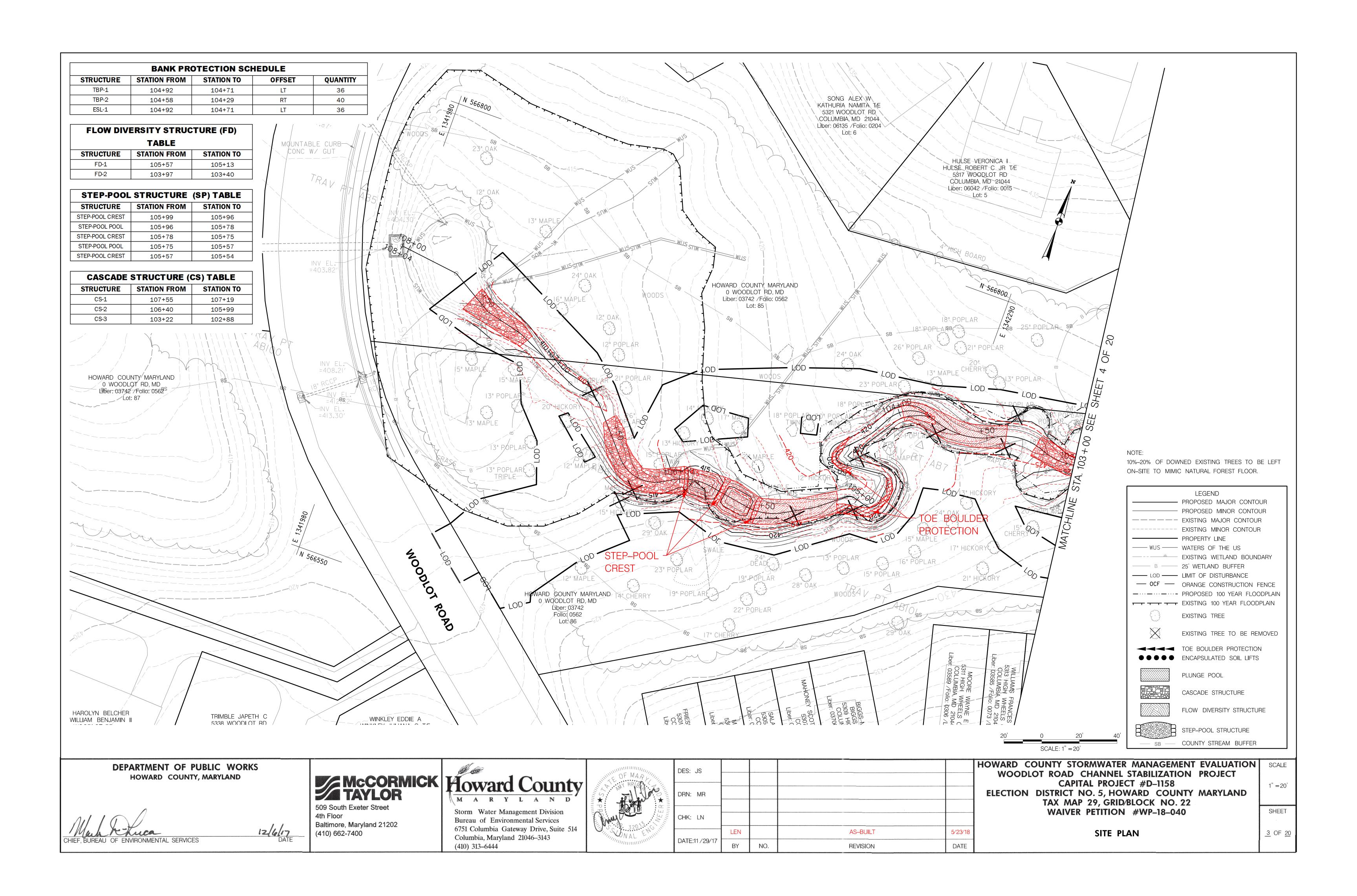
DEPARTMENT OF RECREATION AND PARKS, HOWARD COUNTY, MD 12-6-17 DIRECTOR OF RECREATION AND PARKS REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS. THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

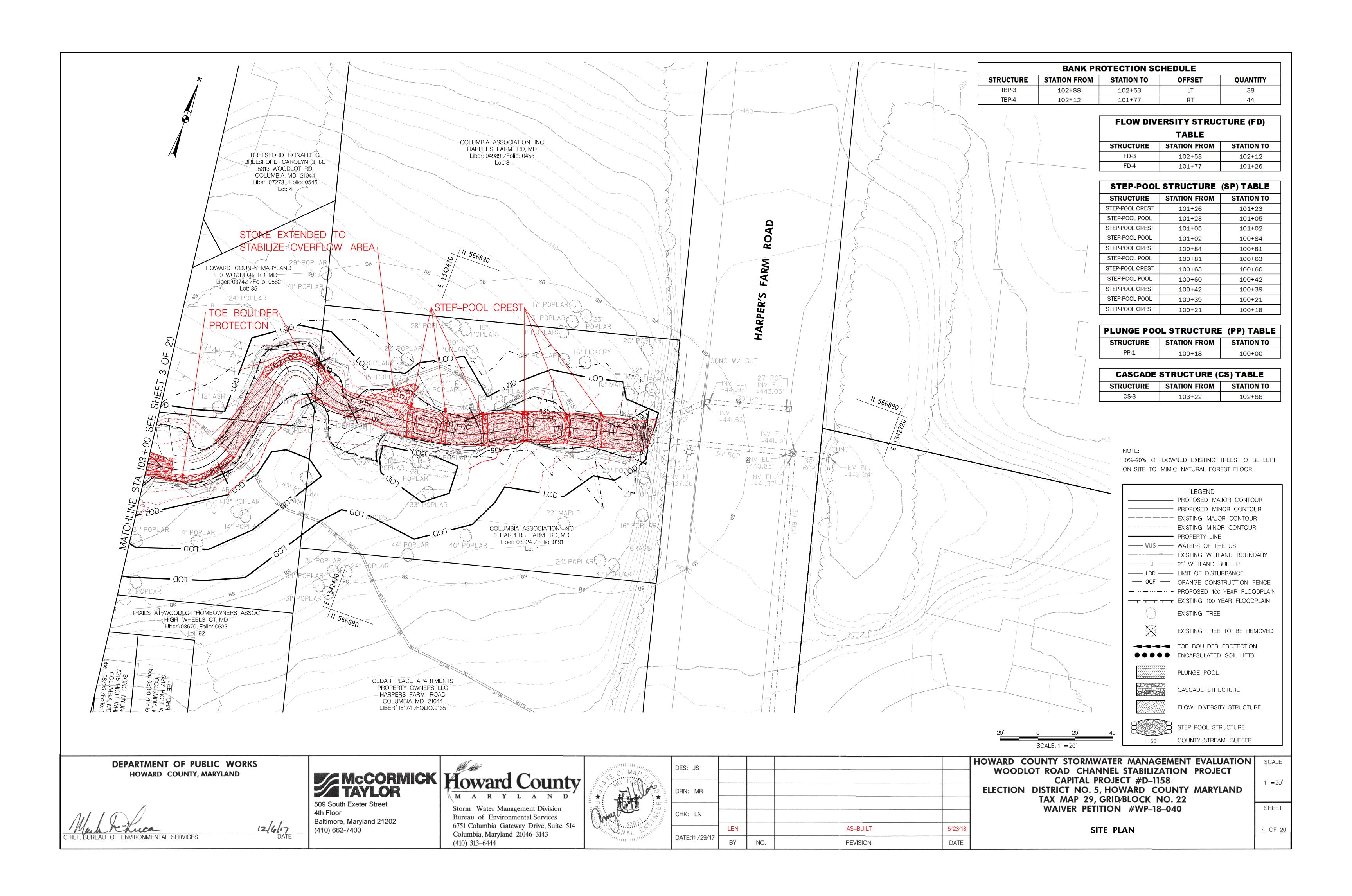
HOWARD COUNTY, MARYLAND

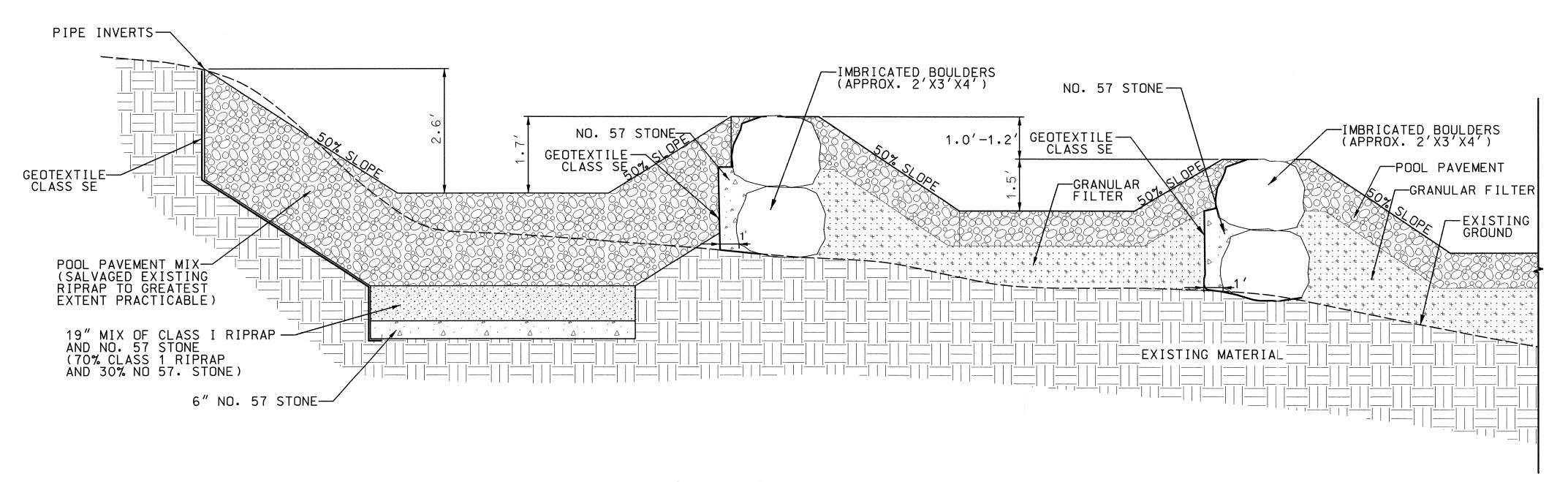
509 South Exeter Street Baltimore, Maryland 21202 (410) 662-7400

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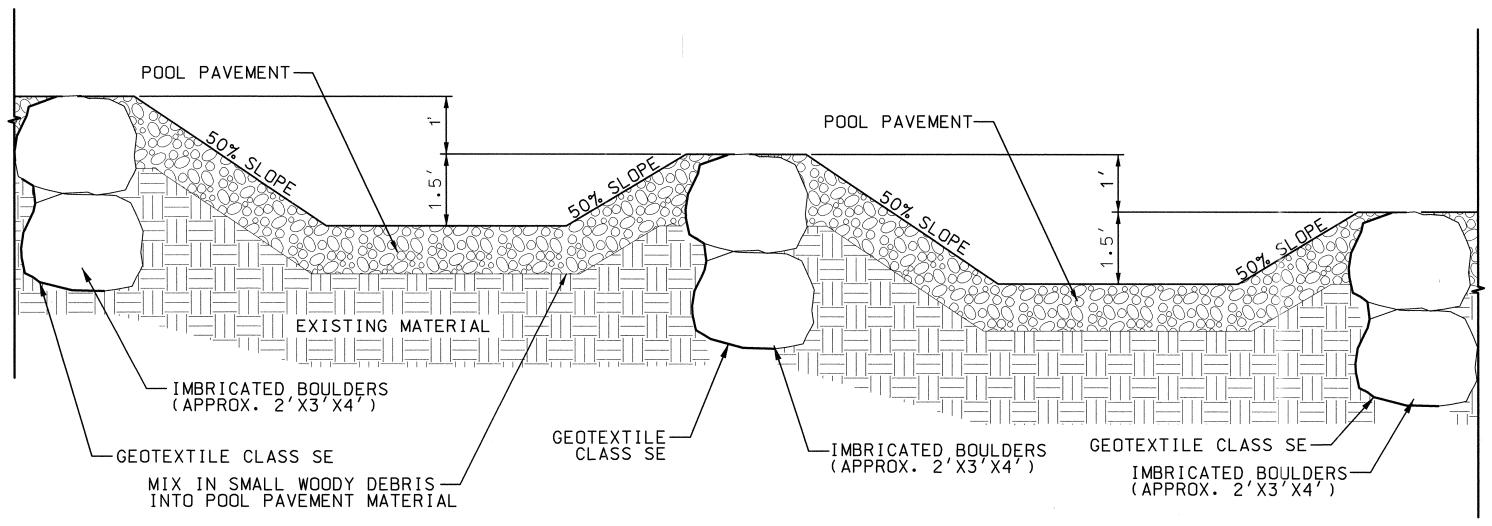






TYPICAL PROFILE ALONG PLUNGE POOL /INFILTRATION
TREATMENT FOREBAY AND STEP POOL IN FILL CONDITION
NOT TO SCALE

POOL PAVEMENT MIX								
AMOUNT OF STONE (%)	TYPE							
10	57 STONE							
30	SHA CLASS 0							
60	SHA CLASS 1							
100	TOTAL							



TYPICAL STEP-POOL PROFILE IN CUT CONDITIONS

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark Shues

F, BUREAU OF ENVIRONMENTAL SERVICES

McCORMICK
TAYLOR

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202

(410) 662-7400

Howard County

M A R Y L A N D

Storm Water Management Division

Bureau of Environmental Services

M A R Y L A N D

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046–3143
(410) 313–6444



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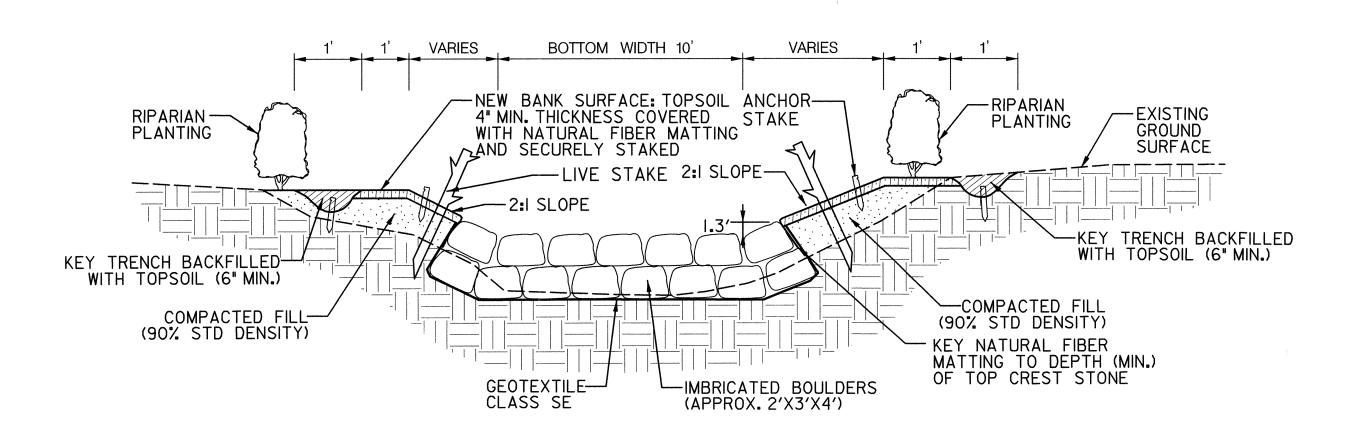
HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
WOODLOT ROAD CHANNEL STABILIZATION PROJECT
CAPITAL PROJECT #D-1158

ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND
TAX MAP 29, GRID/BLOCK NO. 22
WAIVER PETITION #WP-18-040

CHANNEL STABILIZATION DETAILS

SHOWN

<u>5</u> OF <u>20</u>



TYPICAL STEP-POOL CREST NOT TO SCALE

BOTTOM WIDTH **VARIES** VARIES 6' TYP. KEY TRENCH BACKFILLED — WITH TOPSOIL (6" MIN.) KEY TRENCH— BACKFILLED WITH TOPSOIL ANCHOR STAKE-PLANTING —EXISTING (6" MIN.) NEW BANK SURFACE: TOPSOIL 4" MIN.
THICKNESS COVERED WITH NATURAL
FIBER MATTING AND SECURELY STAKED
LIVE STAKE GROUND SURFACE -BOTTOM OF BANK COMPACTED FILL-(90% STD DENSITY) KEY NATURAL FIBER MATTING TO DEPTH (MIN.) OF POOL PAVEMENT MIX IN SMALL WOODY-GRANULAR FILTER DEBRIS INTO POOL POOL PAVEMENT MIX PAVEMENT MATERIAL (19" PLACEMENT THICKNESS)

> NOTE: I. MIX IN SMALL WOODY DEBRIS, INCLUDING BRANCHES AND BRUSH MATERIAL THAT IS APPROXIMATELY 2 INCHES OR LESS IN DIAMETER AND GENERALLY 3 FEET OR LESS IN LENGTH INTO POOL PAVEMENT ALONG THE LENGTH OF THE POOL PAVEMENT

> 2. ADD SMALL WOODY DEBRIS TO THE FULL DEPTH OF THE POOL PAVEMENT SUCH THAT THE SMALL WOODY DEBRIS REPRESENTS 20% MAX. BY VOLUME OF THE POOL MATERIAL WITHIN THE CHANNEL BOTTOM, WHERE THE CHANNEL BOTTOM IS DEFINED AS THE AREA BETWEEN THE BOTTOM OF THE BANK LIMITS/TOE OF SLOPE LIMITS.

3. MIX SMALL PIECES OF WOOD AND OR WOOD CHIPS INTO GRANULAR FILTER MATERIAL SUCH THAT THE WOOD COMPRISES 20% MAX BY VOLUME OF THE GRANULAR FILTER MATERIAL. ADD WOOD TO THE GRANULAR FILTER THAT IS I FOOT OR LESS IN SIZE.

TYPICAL STEP-POOL POOL IN FILL CONDITIONS NOT TO SCALE

NATURAL FIBER MATTING TO MEET THE SPECIFICATIONS OF B-4-6-B, AS PROVIDED ON SHEET 15

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

509 South Exeter Street

4th Floor Baltimore, Maryland 21202 (410) 662-7400



6751 Columbia Gateway Drive, Suite 514

Columbia, Maryland 21046–3143

(410) 313-6444

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HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION | SCALE WOODLOT ROAD CHANNEL STABILIZATION PROJECT CAPITAL PROJECT #D-1158 **ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND** TAX MAP 29, GRID/BLOCK NO. 22

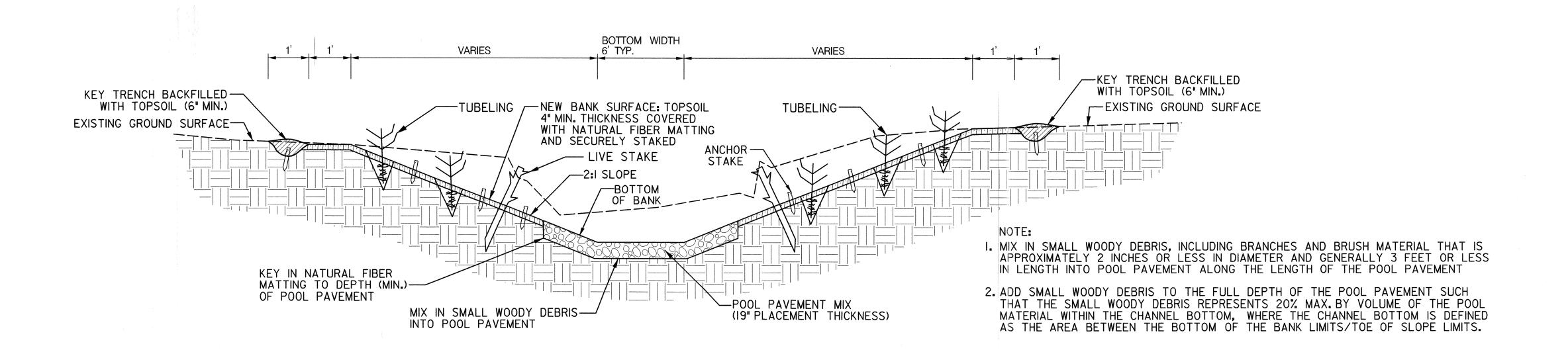
WAIVER PETITION #WP-18-040

CHANNEL STABILIZATION DETAILS

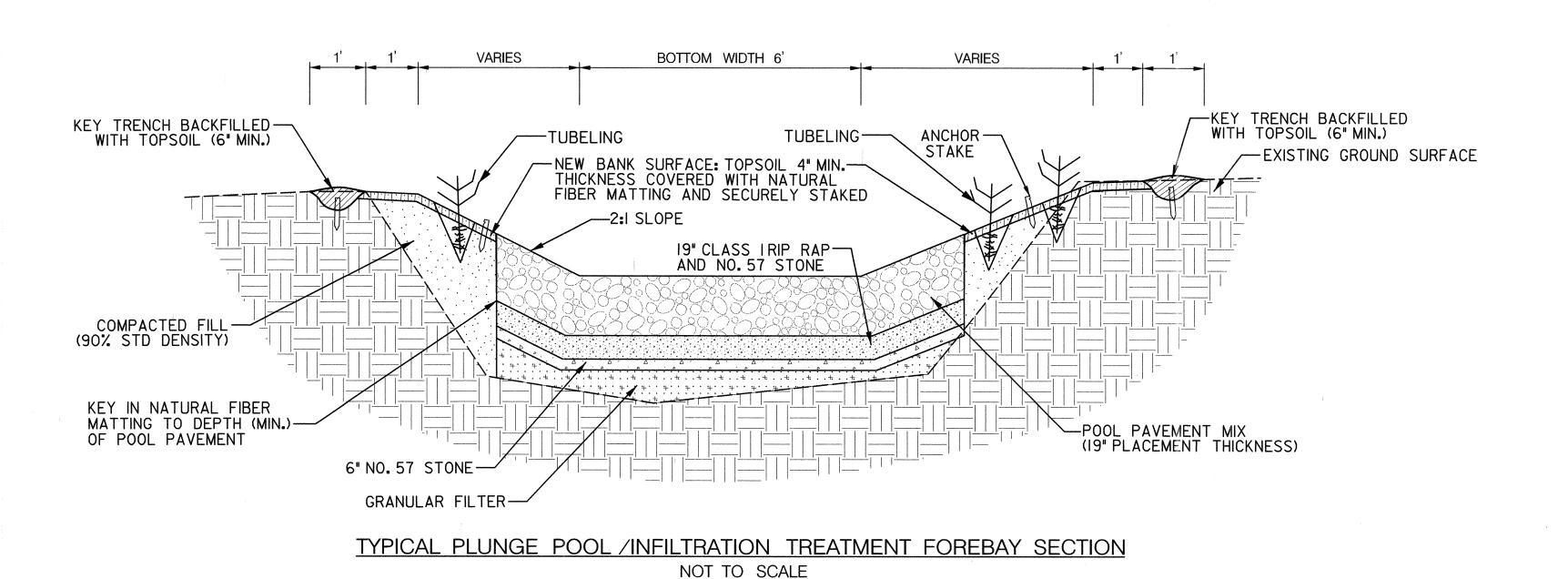
<u>6</u> OF <u>20</u>

SHOWN

SHEET



TYPICAL STEP-POOL POOL IN CUT CONDITIONS NOT TO SCALE



NATURAL FIBER MATTING TO MEET THE SPECIFICATIONS OF B-4-6-B, AS PROVIDED ON SHEET 15

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

McCORMICK TAYLOR 509 South Exeter Street 4th Floor

Baltimore, Maryland 21202

(410) 662-7400

Howard County MARYLAND Storm Water Management Division Bureau of Environmental Services

6751 Columbia Gateway Drive, Suite 514

Columbia, Maryland 21046–3143

(410) 313-6444



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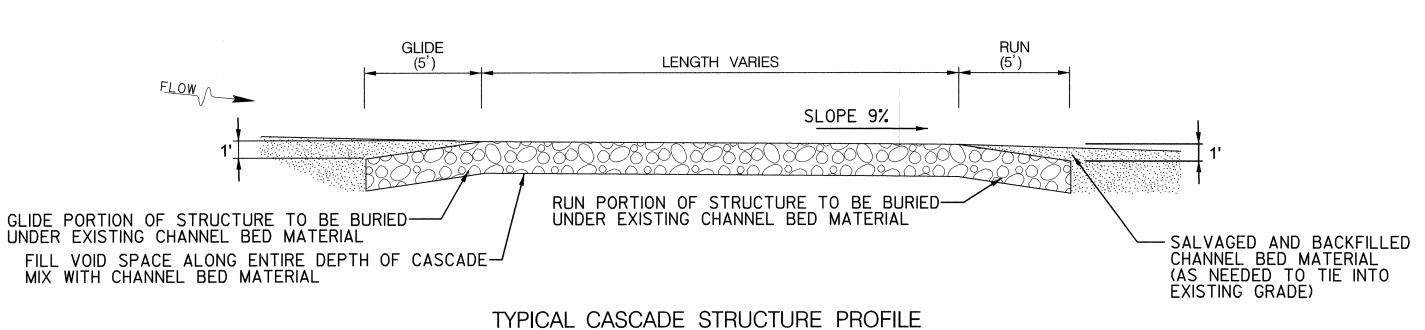
ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND TAX MAP 29, GRID/BLOCK NO. 22 WAIVER PETITION #WP-18-040

CHANNEL STABILIZATION DETAILS

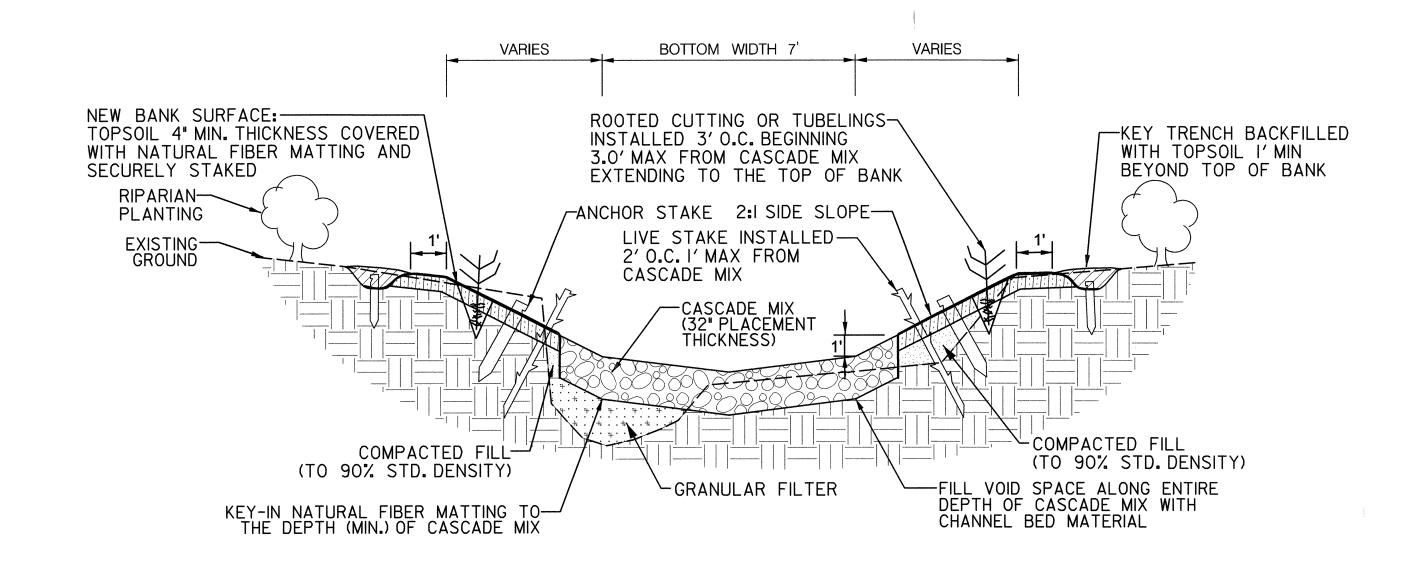
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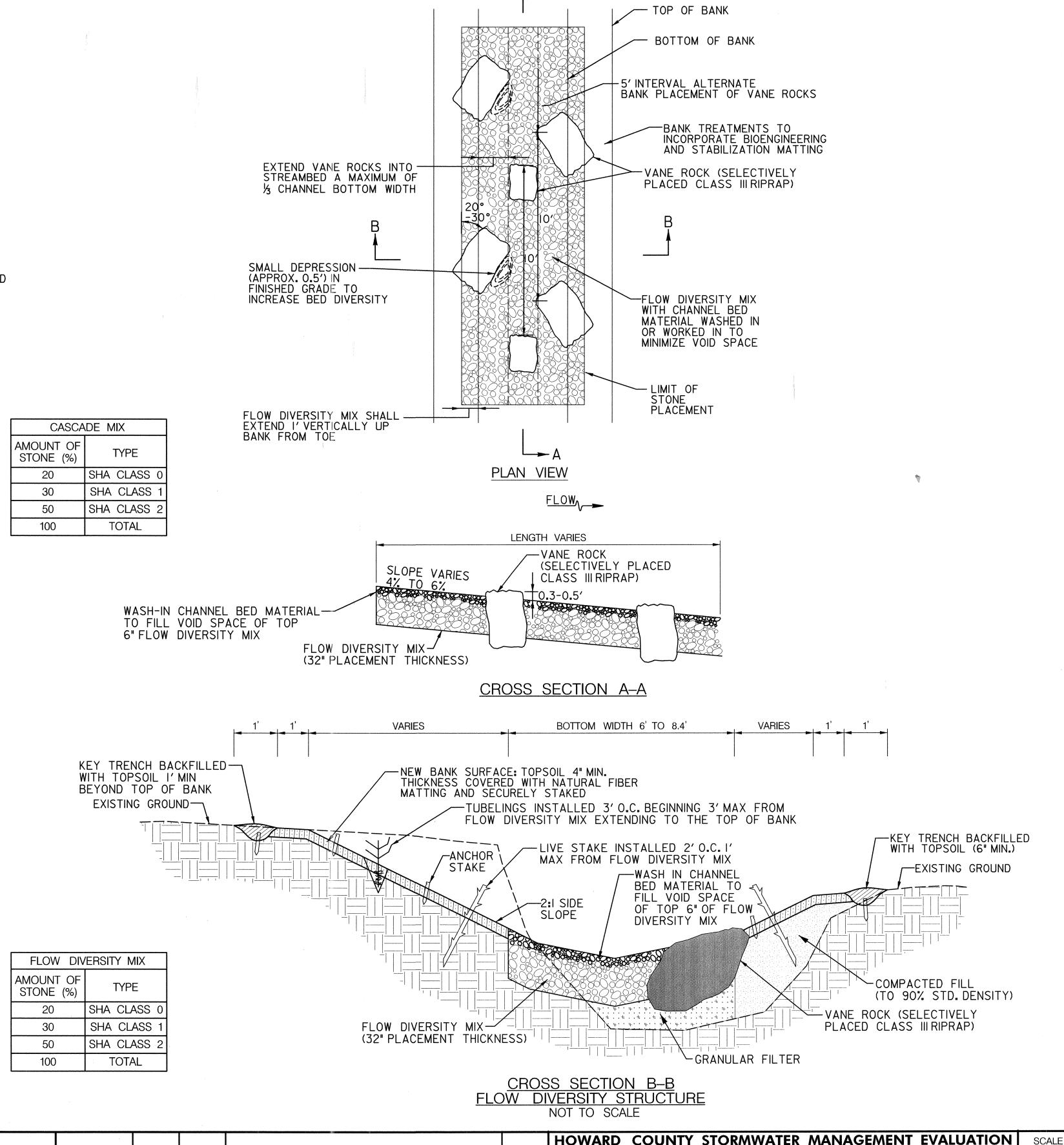


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TYPICAL CROSS SECTION CASCADE STRUCTURE
NOT TO SCALE

NOTE: NATURAL FIBER MATTING TO MEET THE SPECIFICATIONS OF B-4-6-B, AS PROVIDED ON SHEET IS



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

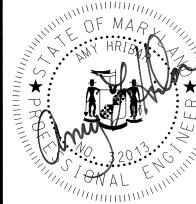
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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McCORMICK TAYLOR

509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400 Howard County
M A R Y L A N D

Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046–3143 (410) 313–6444



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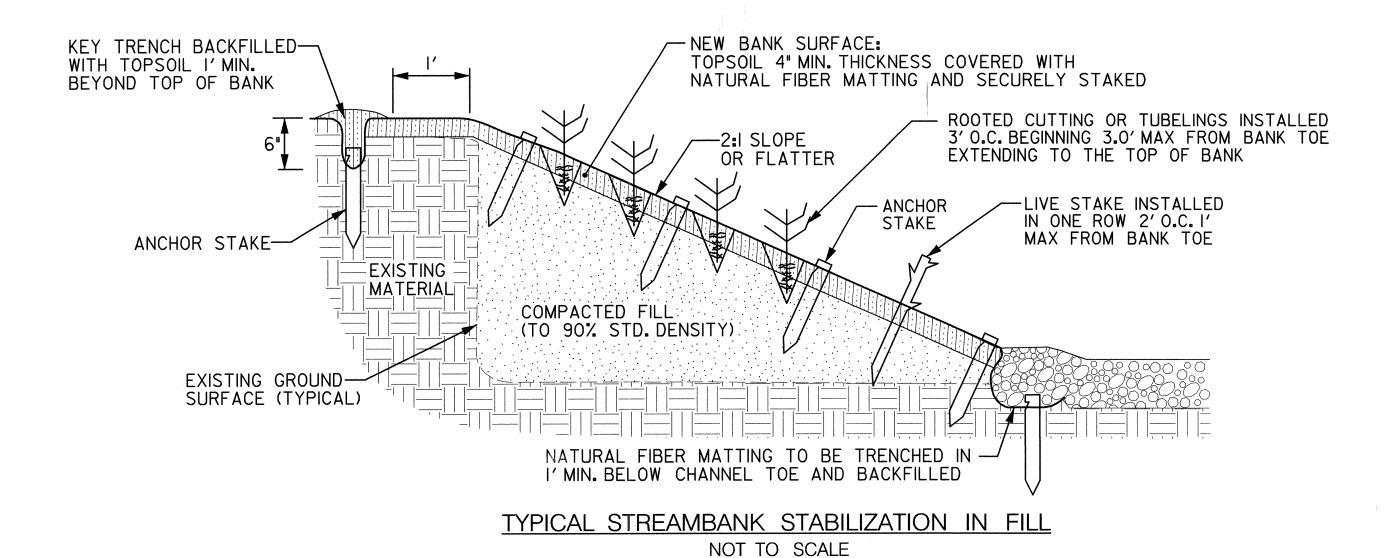
HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
WOODLOT ROAD CHANNEL STABILIZATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND
TAX MAP 29, GRID/BLOCK NO. 22
WAIVER PETITION #WP-18-040

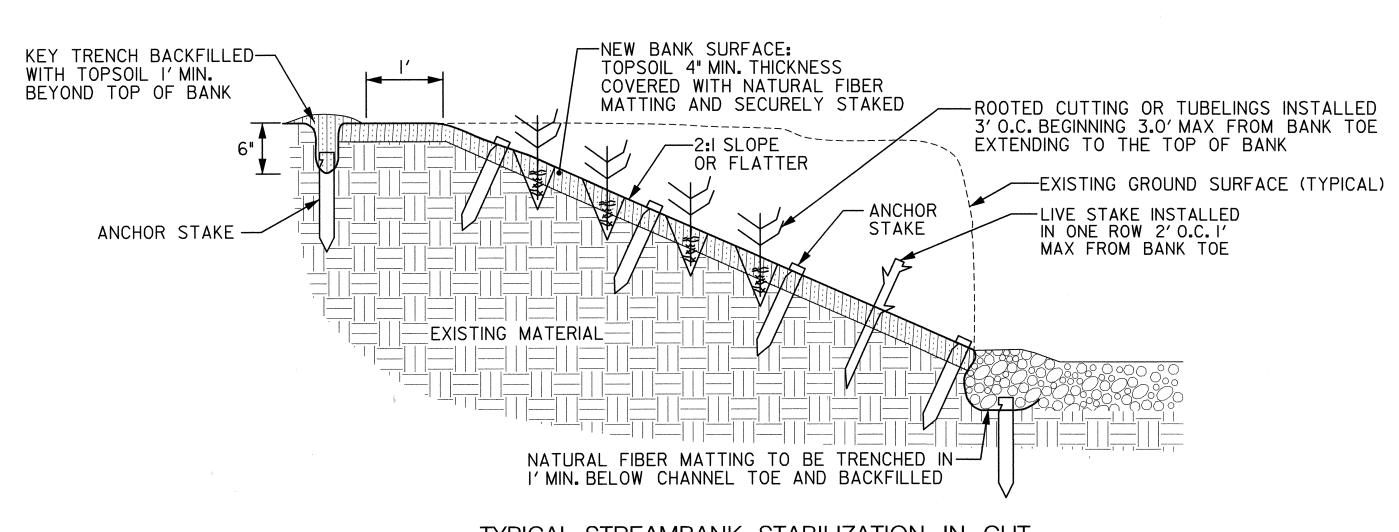
CHANNEL STABILIZATION DETAILS

8 OF 20

CHANNEL STABILIZATION DETAILS

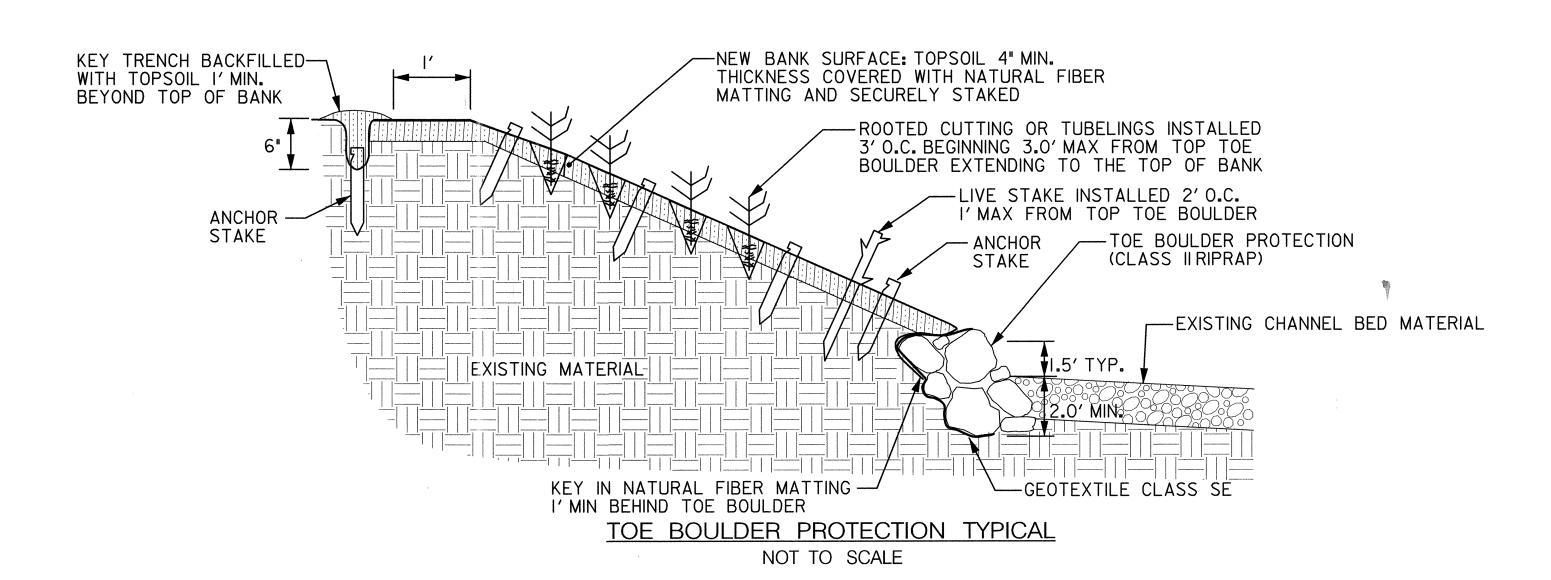
8 OF 20

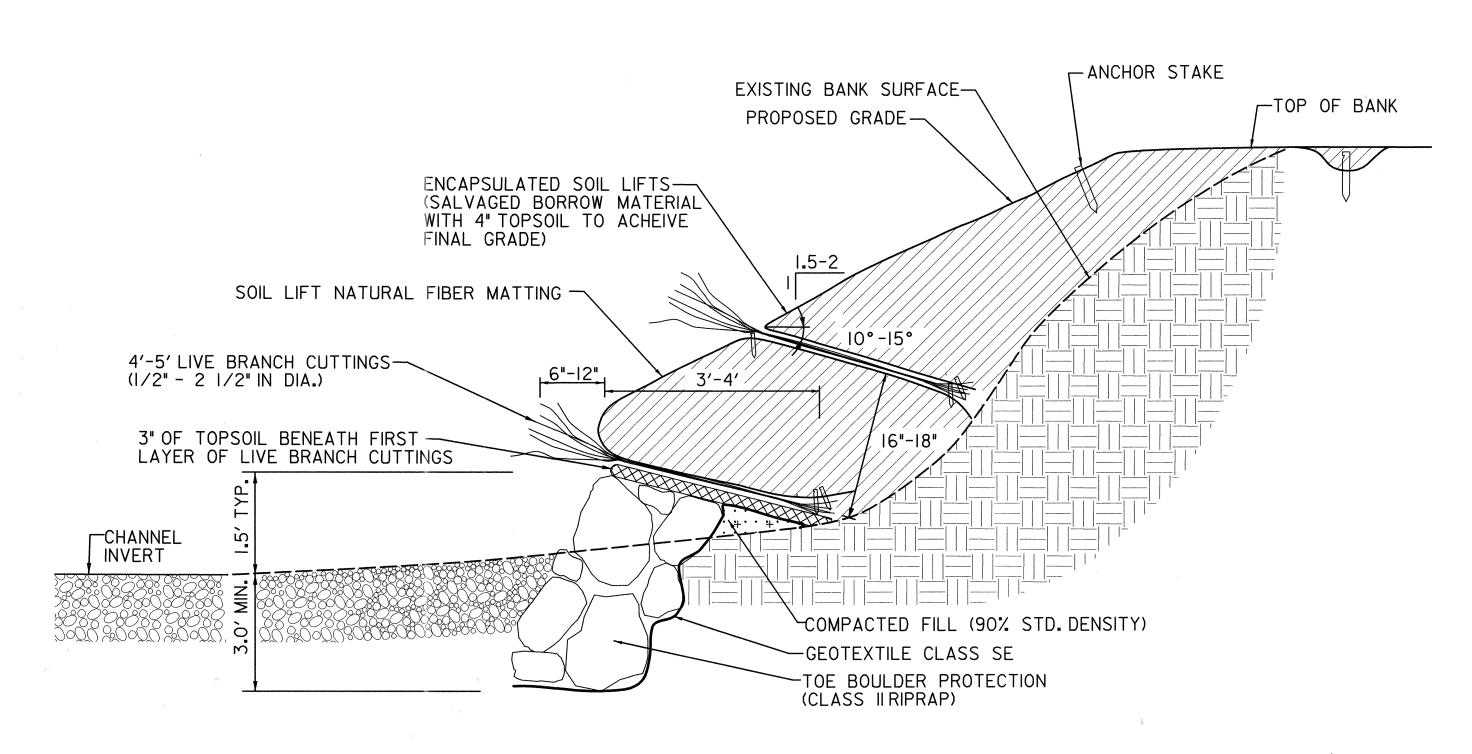




TYPICAL STREAMBANK STABILIZATION IN CUT NOT TO SCALE

NATURAL FIBER MATTING TO MEET THE SPECIFICATIONS OF B-4-6-B, AS PROVIDED ON SHEET IS





TYPICAL SECTION ENCAPSULATED SOIL LIFTS WITH TOE BOULDER PROTECTION NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400

McCormick Howard County TAYLOR

Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046–3143 (410) 313–6444

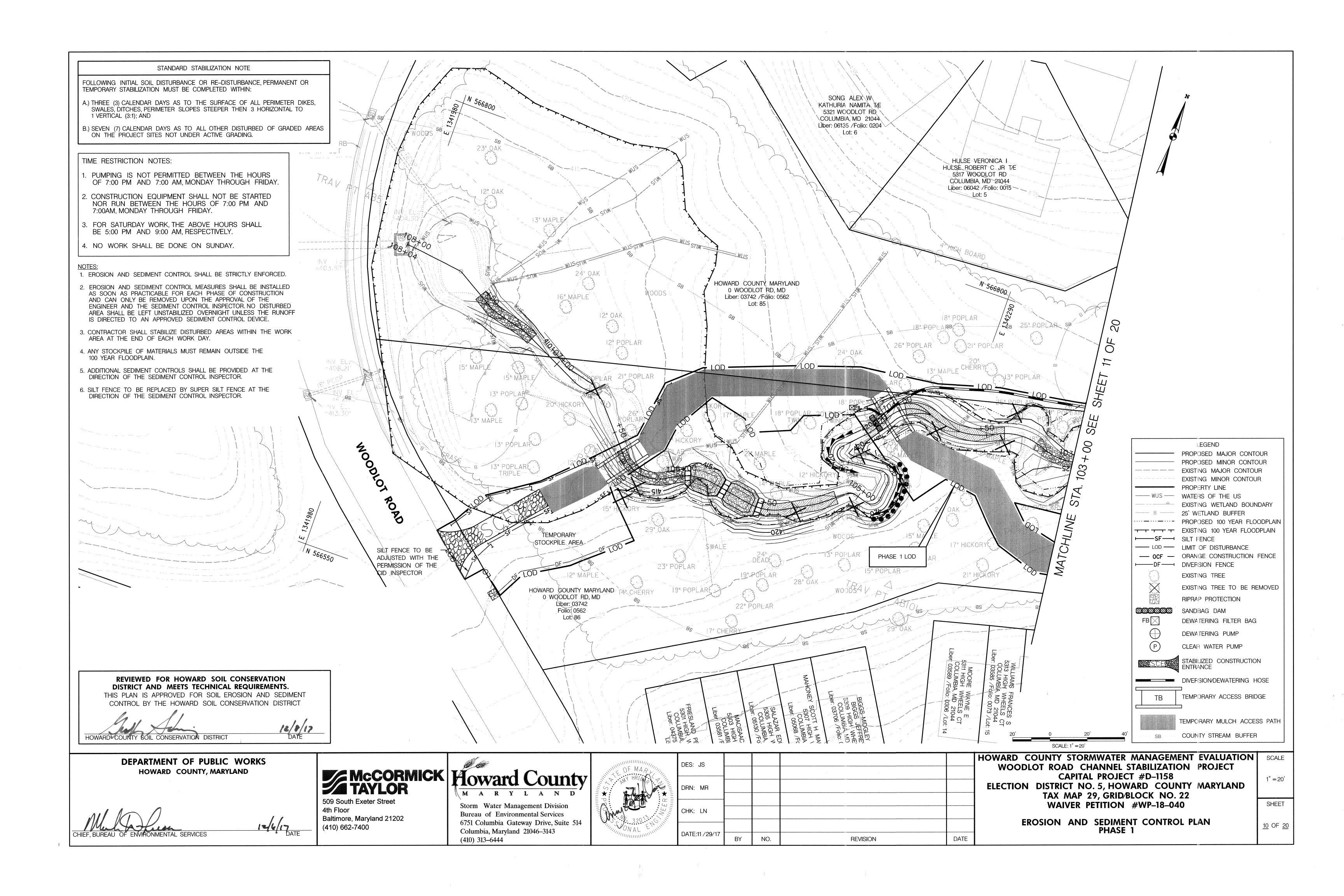


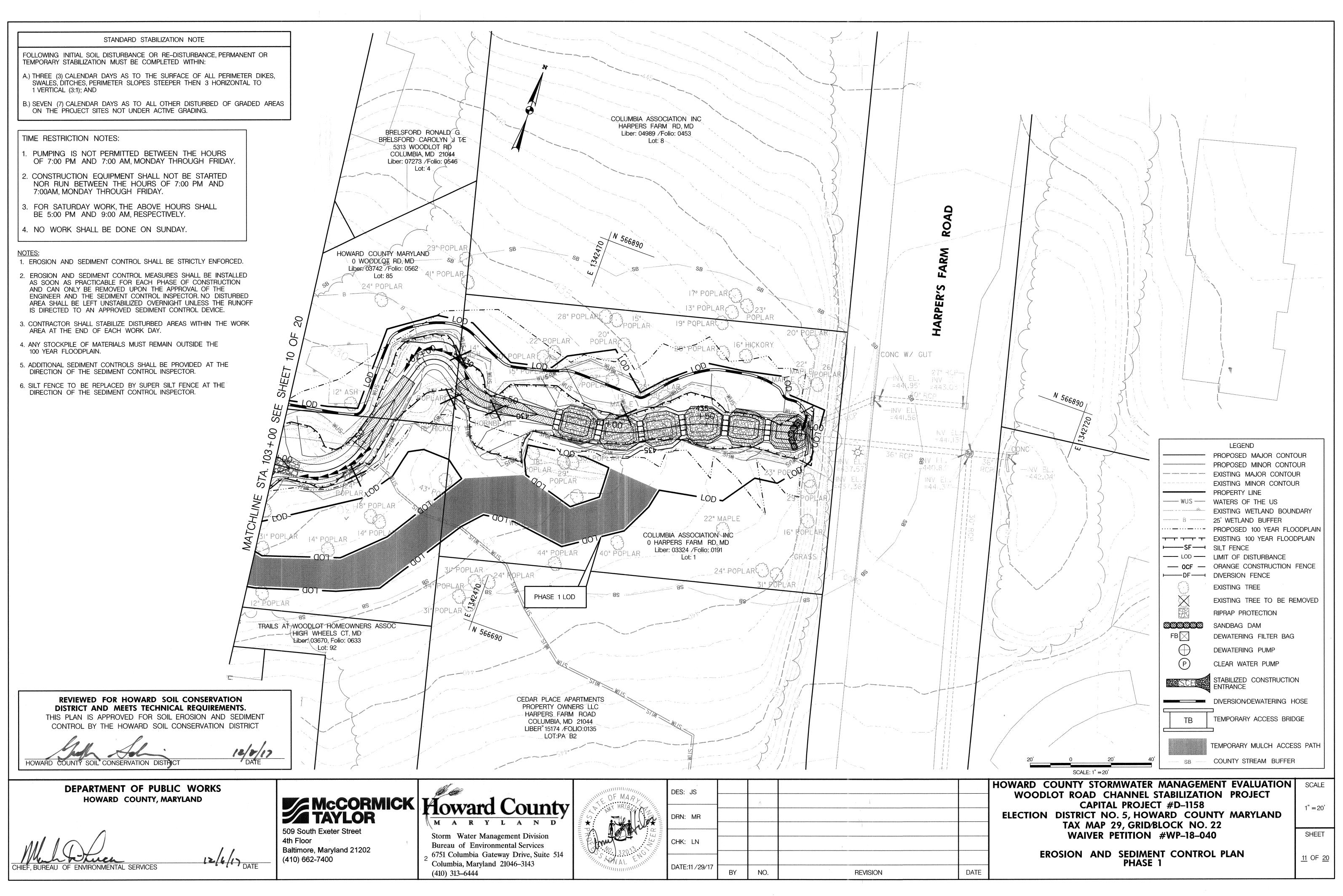
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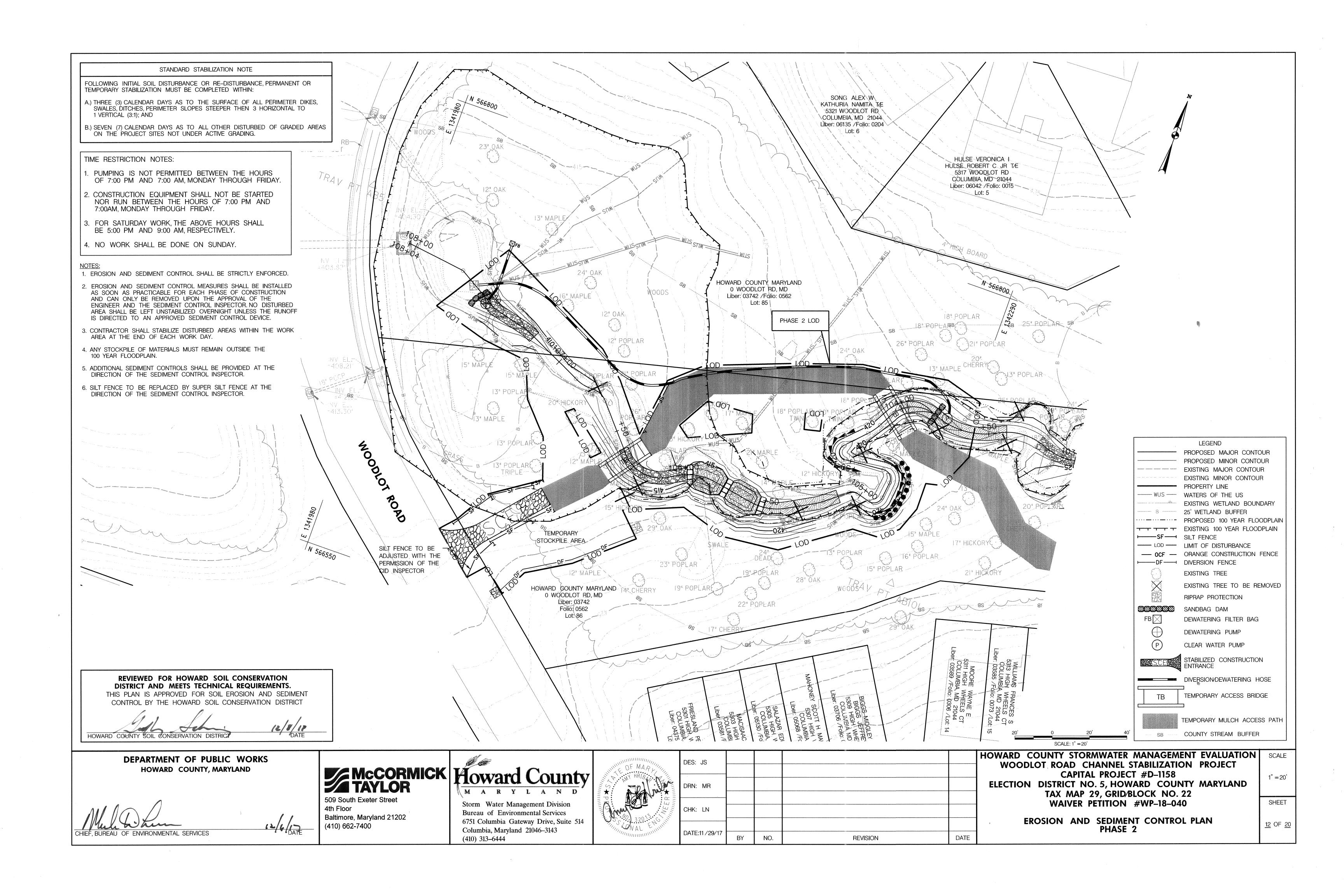
HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION SCALE WOODLOT ROAD CHANNEL STABILIZATION PROJECT CAPITAL PROJECT #D-1158 SHOWN **ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND** TAX MAP 29, GRID/BLOCK NO. 22 SHEET WAIVER PETITION #WP-18-040

CHANNEL STABILIZATION DETAILS

<u>9</u> OF <u>20</u>







EROSION AND SEDIMENT CONTROL - GENERAL NOTES

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT AND MDE PERMIT (TRACKING NUMBER 201560864).

 2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 313-1880 A MINIMUM OF FIVE (5) DAYS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900 AND MARYLAND DEPARTMENT OF ENVIRONMENT INSPECTOR AT (301) 665-2850, FIVE (5) DAYS BEFORE ANY LAND DISTURBING ACTIVITY.
- 3. NO IN-STREAM WORK SHALL BE COMPLETED DURING THE IN-STREAM CLOSURE PERIOD OF MARCH 1 TO MAY 31 FOR USE IV-P STREAMS.

 4. THE LOD SHALL BE STAKED OUT WHERE INDICATED ON THE PLANS. THIS SHALL BE COMPLETED BY AND INSPECTED AT THE PRECONSTRUCTION MEETING. (1 DAY)
- 5. THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, A REPRESENTATIVE FROM THE DEPARTMENT OF RECREATION AND PARKS, A REPRESENTATIVE FROM THE BUREAU OF UTILITIES AND A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION, TREES TO BE REMOVED SHALL BE MARKED AT THE PRE-CONSTRUCTION MEETING. (1 DAY)
- 6. ORANGE CONSTRUCTION FENCE SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS. (2 DAYS)
- PHASE 1: STA. 100+00 TO STA. 103+85
- 7. CONSTRUCT THE FOLLOWING PERIMETER CONTROLS AS SHOWN ON THE PLAN: STABILIZED CONSTRUCTION ENTRANCE, DIVERSION FENCE, RIPRAP PROTECTION, AND SILT FENCE, CLEARING ONLY THE AREA NEEDED TO INSTALL THE E&S CONTROLS. (1 DAY)
- 8. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, INSTALL TEMPORARY ACCESS BRIDGES, MULCH ACCESS PATH AND THE STREAM DIVERSION/PUMPAROUND WHICH INCLUDES THE SANDBAG, PUMP AND DIVERSION HOSES FOR THE PHASE 1 STREAM REACH. DEWATER ALL WORK AREAS AS NEEDED TO A DEWATERING FILTER BAG. (2 DAYS)

 9. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMMENCE IN STREAM CONSTRUCTION AND GRADING, STABILIZE ALL
- 9. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMMENCE IN STREAM CONSTRUCTION AND GRADING, STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORK DAY AND REMOVE THE STREAM DIVERSION/PUMP AROUND, COMPLETE CHANNEL GRADING FROM UPSTREAM TO DOWNSTREAM, (10 DAYS)

 10. STABILIZE TEMPORARY CONSTRUCTION ACCESS AND GRADE TO FINAL ELEVATIONS REMOVING ALL RUTS. (1 DAY)
- PHASE 2: STA. 103+85 TO STA. 107+65
- 11. WHEN AREAS ARE FULLY STABILIZED, AND UPON PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, RESET THE REMAINING SEDIMENT CONTROL DEVICES FOR PHASE 2. (1 DAY)
 12. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, INSTALL THE STREAM DIVERSION/PUMP AROUND WHICH INCLUDES THE SANDBAG, PUMP AND DIVERSION HOSES FOR THE PHASE 2 STREAM REACH. DEWATER ALL WORK AREAS AS NEEDED TO A DEWATERING FILTER BAG. (1 DAY)
- FILTER BAG. (1 DAY)

 13. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, COMMENCE IN STREAM CONSTRUCTION AND GRADING. STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORK DAY AND REMOVE THE STREAM DIVERSION/PUMP AROUND. COMPLETE CHANNEL GRADING AND STRUCTURE INSTALLATION FROM UPSTREAM TO DOWNSTREAM. (7 DAYS)
- 14. STABILIZE TEMPORARY CONSTRUCTION ACCESS AND GRADE TO FINAL ELEVATIONS REMOVING ALL RUTS. (1 DAY)
 ALL PHASES
- 22. INSTALL LANDSCAPING PER PLAN. (5 DAYS)
- 23. STABILIZE TEMPORARY CONSTRUCTION ACCESS AND GRADE TO FINAL ELEVATIONS REMOVING ALL RUTS. (1 DAY)
- 24. WHEN AREAS ARE FULLY PERMANENTLY STABILIZED, AND UPON PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY DISTURBED AREAS. (1 DAY)

IN-CHANNEL PUMPING NOTES

- 1. AT THE END OF EACH WORK DAY, THE WORK AREA MUST BE STABILIZED AND THE PUMP AROUND REMOVED FROM THE CHANNEL. REFER TO THE DETAILS AND SPECIFICATIONS FOR MCWC 1.2: PUMP-AROUND PRACTICE INCLUDED ON THE PLANS.
- 2. THE CONTRACTOR SHALL USE A PUMP AND DIVERSION HOSES TO ACCOMMODATE A 3 INCH DISCHARGE DIAMETER AND THE FLOWS ANTICIPATED DURING CONSTRUCTION IN THE CHANNEL SECTION.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING A CONSTRUCTION PHASE DEWATERING SYSTEM, INCLUDING A TEMPORARY SYSTEM OF PUMPS, DRAINAGE DITCHES AND, SANDBAG/ STONE DIVERSIONS, AS REQUIRED TO REMOVE WATER FROM ANY SOURCE, INCLUDING GROUND WATER, AND MAINTAIN WORKABLE, DRY CONDITIONS IN THE WORK AREA.
- 4. THE CONTRACTOR SHALL NOTE THAT THE WATERWAY LOCATED WITHIN THE PROJECT LIMITS IS CLASSIFIED AS USE IV-P WATERS. INSTREAM WORK IS PROHIBITED MARCH 1 THROUGH MAY 31, INCLUSIVE DURING ANY YEAR.

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
- A. PRIOR TO THE START OF EARTH DISTRUBANCE,
 B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING
 WITH ANY OTHER DISTURBANCE OR GRADING,
 C. 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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1. B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATION 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' MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOILS STABILIZATION MATTING
- 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 FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 6. SITE ANALYSIS:

 TOTAL AREA OF SITE

 AREA DISTURBED

 AREA TO BE ROOFED OR PAVED

 AREA TO BE VEGETATIVELY STABILIZED

 TOTAL CUT

 1.08 ACRES

 0.00 ACRES

 1.08 ACRES

 1.08 ACRES

 1.08 ACRES

 1.08 ACRES

 1.08 ACRES

OFFSITE WASTE/BORROW AREA LOCATION

REVIEWED FOR HOWARD SOIL CONSERVATION
DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT

CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

Ged Sel; 12/0/17

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES (CONTD)

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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, 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 SHALL INCLUDE ITEMS LISTED AT HOWARDSCD.ORG.

- 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
- 10. ANY MAJOR CHANGES OR REVISIONS TO THE 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 CID. 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. 17. OFFSITE WASTE / BORROW SITE SHALL HAVE AN APPROVED SEDIMENT CONTROL PLAN AND PERMIT.

B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, 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 FERTILIZED AND LIME AS PRESCRIBED ON THE PLANS.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

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).

II.SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III.SOLUBLE 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 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.

APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

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 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.

OPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH,

MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

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 USDA-NRCS.

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 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:

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 OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS. STONES

NOT BE A MIXTURE OF 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 1 INCH 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.

C. 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.

6. TOPSOIL APPLICATION

A. FROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING 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.

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 OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. 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.

B-4-3 SEEDING AND MULCHING

A. SEEDING
1.SPECIFICATIONS
A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY 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.

APPLICATION

A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

I. 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.

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 EACH DIRECTION.

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.

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.

IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR, STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW 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.

I. 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, 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.

IV. 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.

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

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, 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.

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 ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

SEE SHEET 15 OF 20 (EROSION AND SEDIMENT CONTROL DETAIL SHEET) FOR SEEDING MIXTURE TABLES.

B-4-4 TEMPORARY STABILIZATION

	HARDINESS ZONE () SEED MIXTURE (F		SEE BELOW		FERTILIZER RATE (10-20-20)	LIME
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	436 LB/AC	RATE
	ANNUAL RYEGRASS	· 40	MAR. 1 TO MAY 15; AUG. 1 TO OCT 15	0.5	(10 LB/ 1000 SF)	2 TON/AC (90 LB/
	FOXTAIL MILLET	30	MAY 16 TO JULY 31	0.5	1000 31 7	1000 SF)

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

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 MATERIAIL 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.

4. ACCESS THE STUCKPILE AREA FROM THE UPGRADE SIDE.

5. CLEAR WATER UNOFF 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.

INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
8. 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.

<u>MA INTENANCE</u>

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION, SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 SLOPE, 30 FEET FOR 3:1 SLOPS, 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

12/6/1 DATE



Baltimore, Maryland 21202

(410) 662-7400

Howard County
M A R Y L A N D

Storm Water Management Division

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Bureau of Environmental Services

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HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
WOODLOT ROAD CHANNEL STABILIZATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND
TAX MAP 29 GRID/RIOCK NO. 22

TAX MAP 29, GRID/BLOCK NO. 22

WAIVER PETITION #WP-18-040

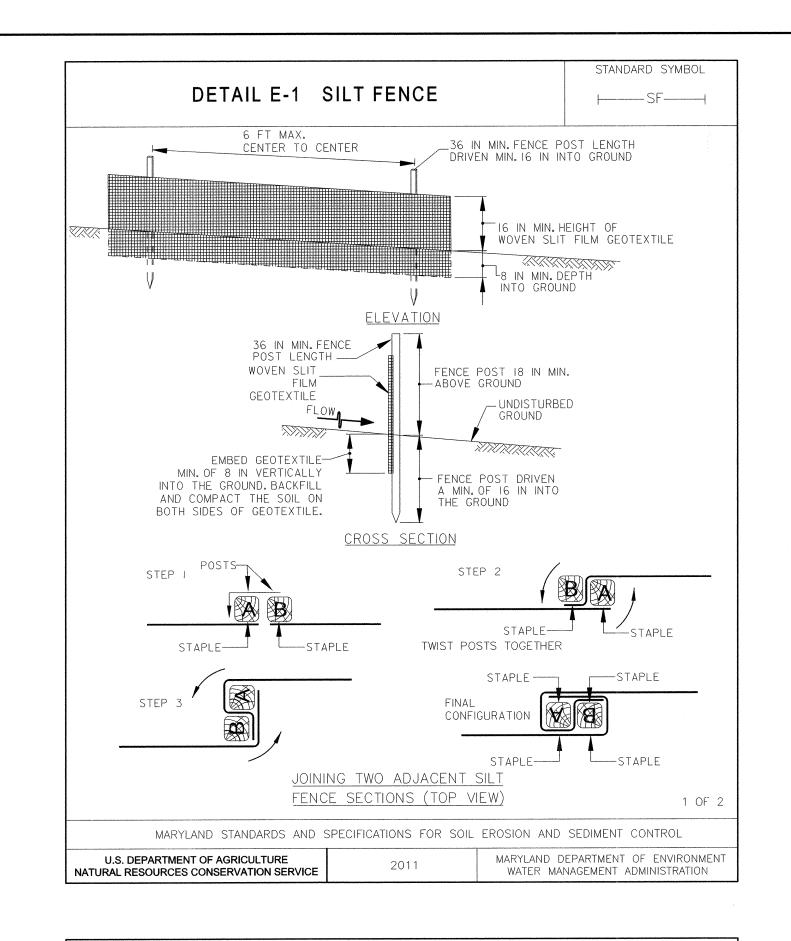
EROSION AND SEDIMENT CONTROL NOTES

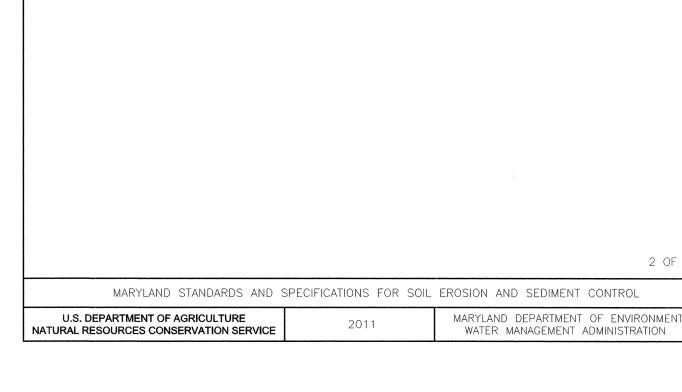
SHEET 13 OF 20

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DETAIL E-1 SILT FENCE

USE WOOD POSTS 1¾ X 1¾ ± 1/6 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

2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.

3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE

PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE

SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.

INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS

EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE

WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE

45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF

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

EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT

<u>CONSTRUCTION SPECIFICATIONS</u>

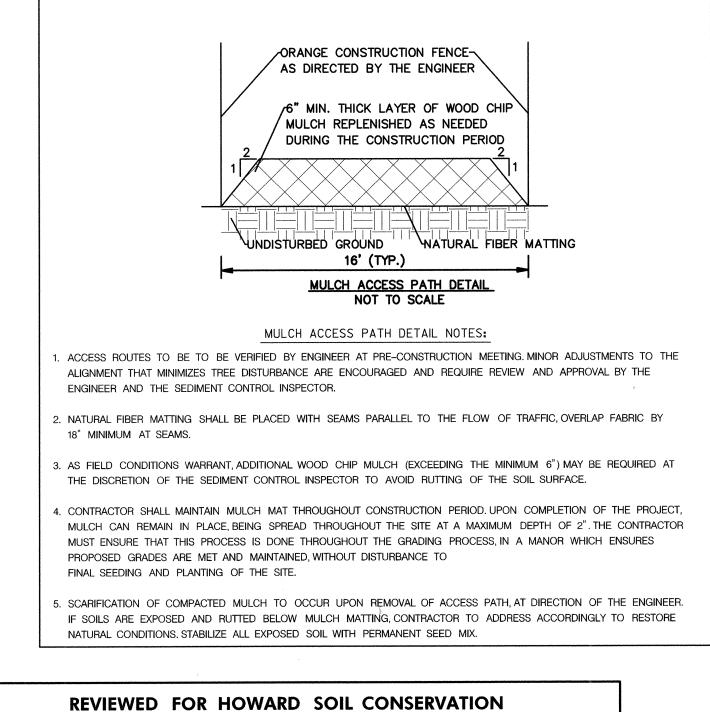
THAN I POUND PER LINEAR FOOT.

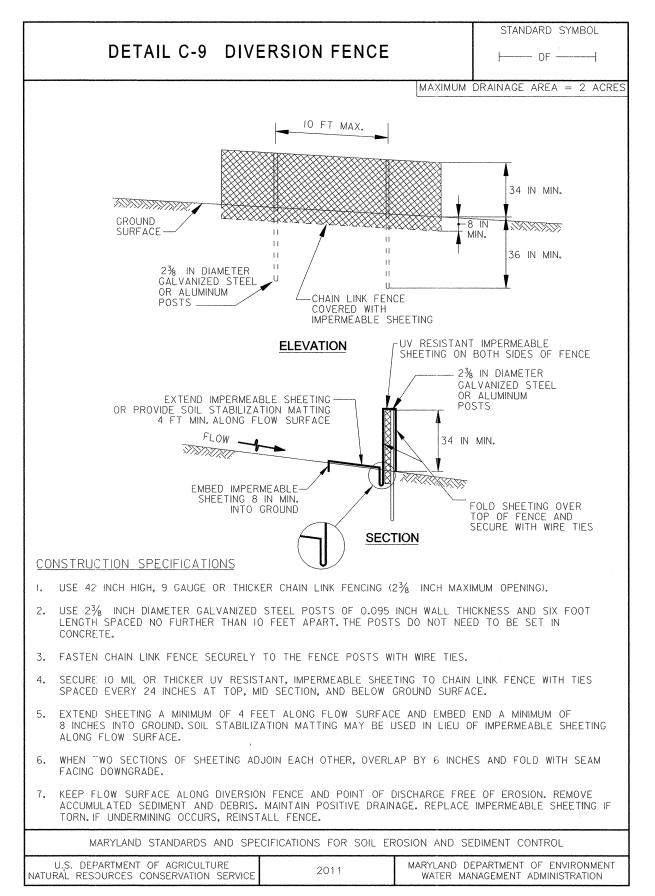
IN SECTION H-I MATERIALS.

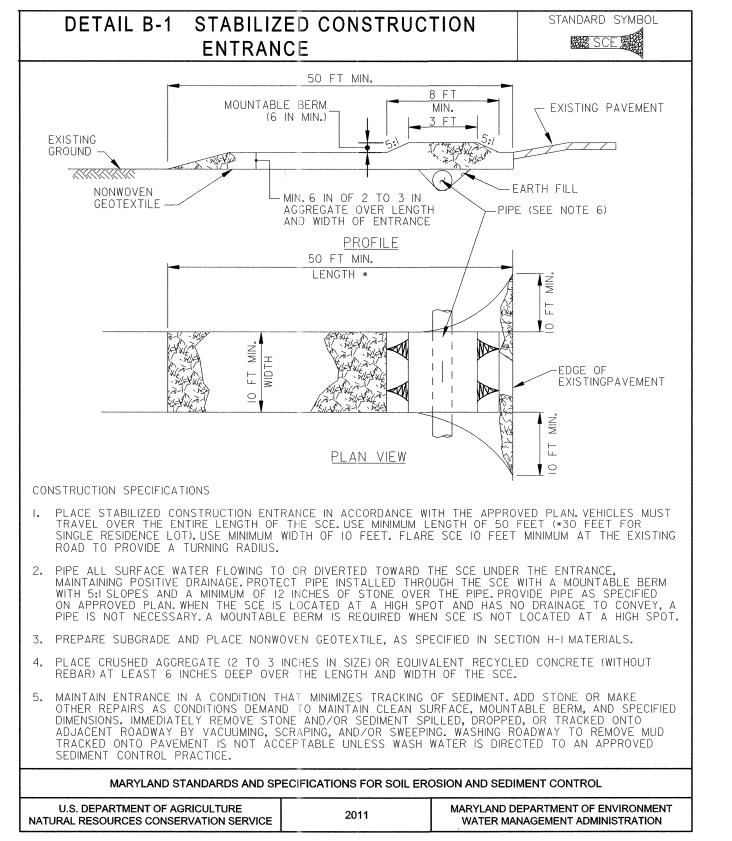
SOIL ON BOTH SIDES OF FABRIC.

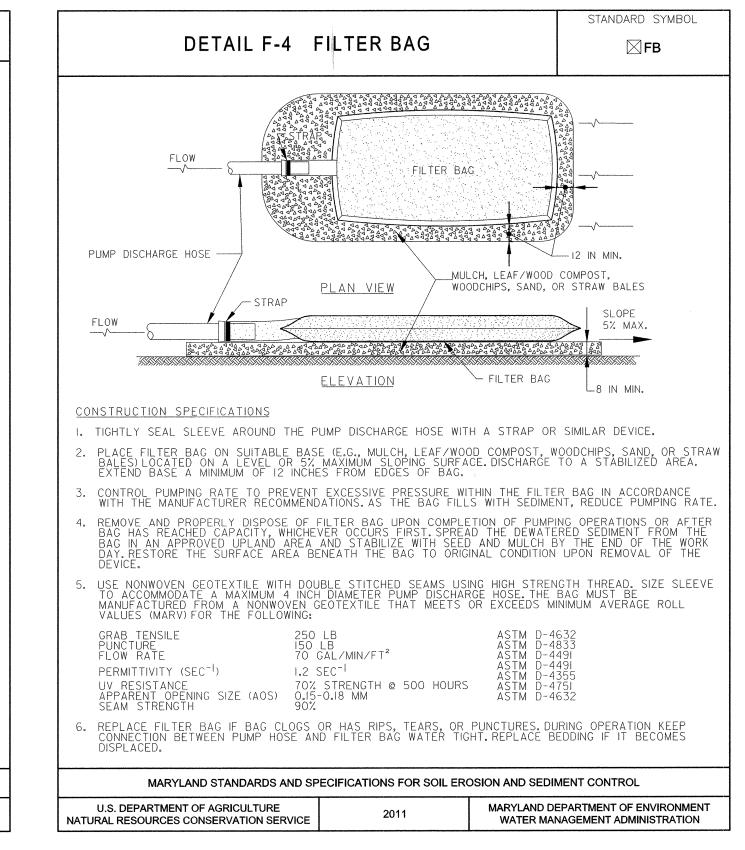
STANDARD SYMBOL

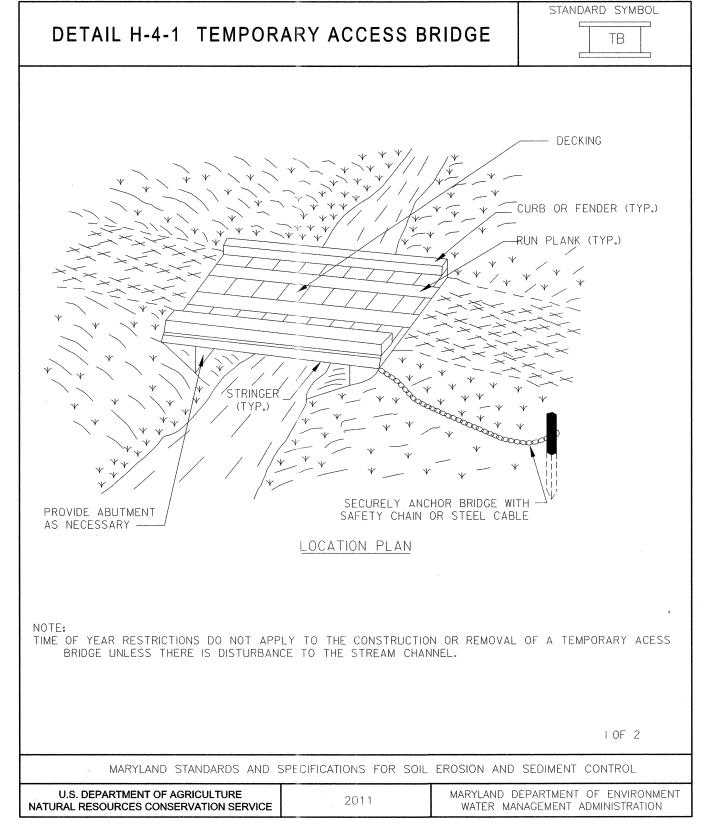
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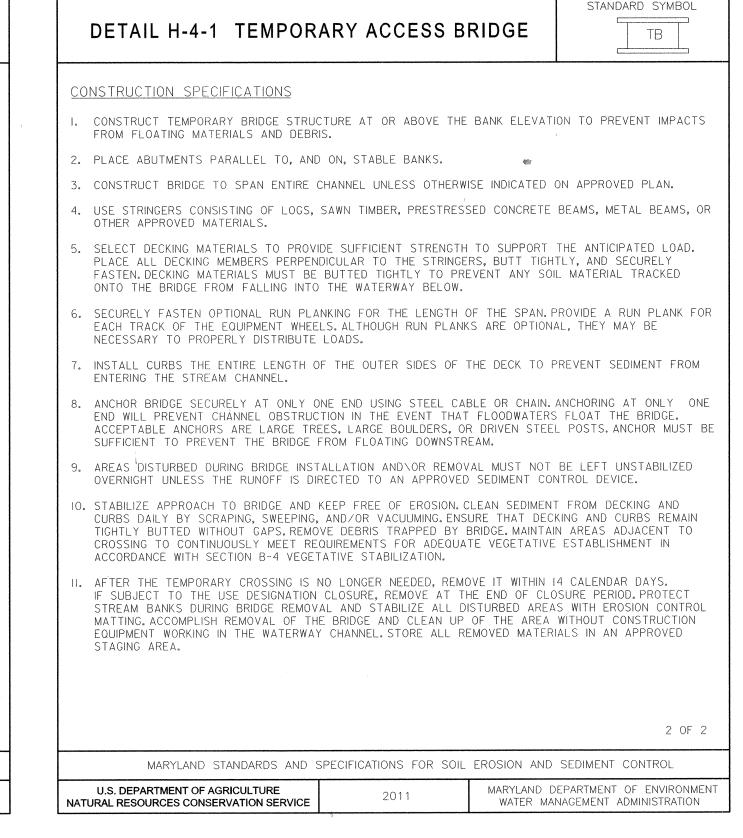












DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

HOWARD SOIL CONSERVATION DISTRICT

DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT

CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

McCORMICK TAYLOR 509 South Exeter Street

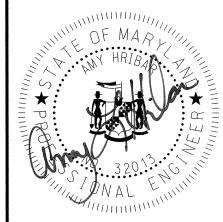
Baltimore, Maryland 21202

4th Floor

(410) 662-7400

M A R Y L A N D

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046–3143
(410) 313–6444



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HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
WOODLOT ROAD CHANNEL STABILIZATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND
TAX MAP 29, GRID/BLOCK NO. 22

TAX MAP 29, GRID/BLOCK NO. 22

WAIVER PETITION #WP-18-040

EROSION AND SEDIMENT CONTROL DETAILS

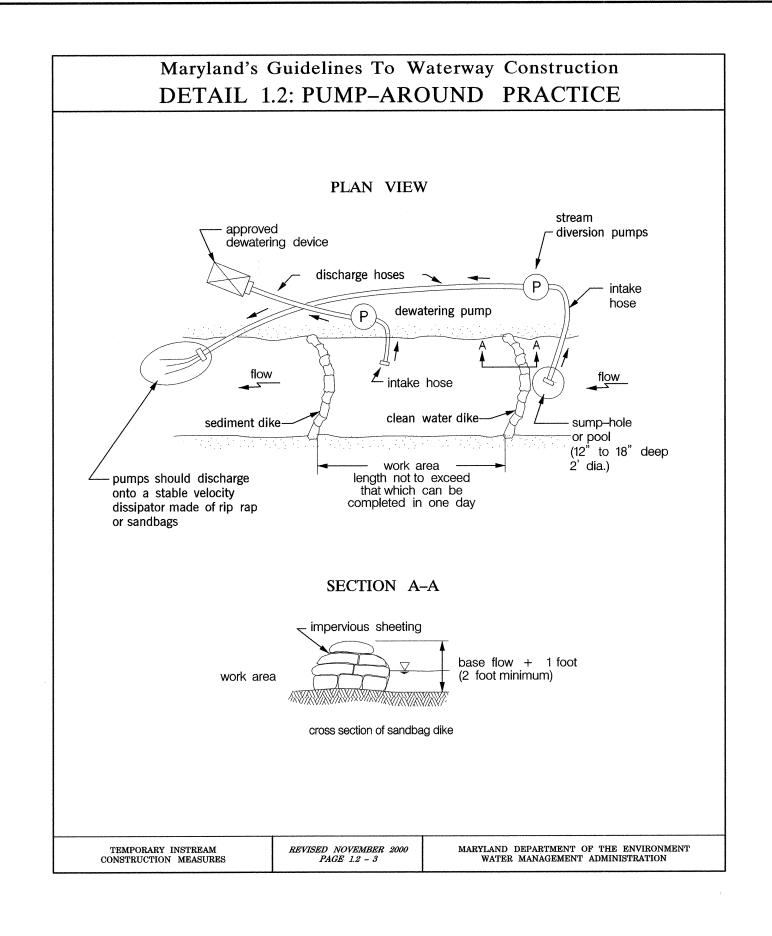
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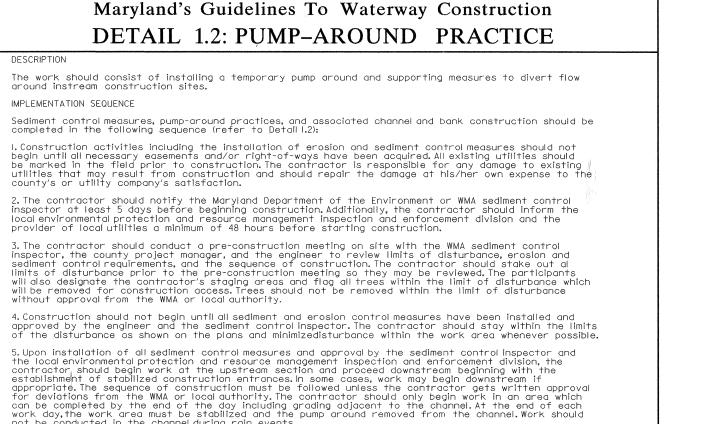
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for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.

6. 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 ripray or sandbags.

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 mots 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 marting 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 bould be destablished upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be remov

14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

REVISED NOVEMBER 2000 PAGE 1.2 - 3

BLAZE ORANGE CONSTRUCTION FENCE BETWEEN POSTS 6' MIN. METAL 'T' FENCE POSTS DRIVEN 2' INTO THE GROUND 4' HEIGHT STANDARD SYMBOL OCF—OCF

NOTES:

- I. PRACTICE MAY BE COMBINED WITH SEDIMENT CONTROL FENCING.
- 2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ENGINEER.
- 3. BOUNDARIES OF PROTECTION AREA SHALL BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
- 4. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
- 5. ROOT DAMAGE SHALL BE AVOIDED.
- 6. SECURE FENCING TO POSTS USING TENSION WIRE OR REINFORCED PLASTIC TIE OF GAUGE SUFFICIENT TO PREVENT TEARING OF FENCING FROM POSTS.

ORANGE CONSTRUCTION FENCE DETAIL

NOT TO SCALE

B-4-5 PERMANENT STABILIZATION

MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

A.SEED MIXTURES 1.GENERAL USE

TEMPORARY INSTREAM

CONSTRUCTION MEASURES

- 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 TESTING
- D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 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.

 2.TURFGRASS MIXTURES
- 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 SUMMARY. THE
- SUMMARY IS TO BE PLACED ON THE PLAN.

 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.

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

 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.
- PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDEI
 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: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.
- SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
- C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

 WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)

 CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS 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 1 1/2 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

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING TSSMS 2.0 lb/ft² SLOPE APPLICATION OVERLAP OR ABUT-ROLL EDGES (TYP.) 6 IN DEEP (MIN.) -KEY IN TRENCH -6 IN MIN. OVERLAP AT ROLL END (TYP.) PREPARED SLOPE (SEEDBED) WITH SEED IN PLACE ISOMETRIC VIEW 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. II AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE I TO 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG. A MINIMUM I INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, IX3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM. 4. 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 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

B-4-5 PERMANENT STABILIZATION TABLES

6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.

8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND

3. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE

2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.

7. 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

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

WATER MANAGEMENT ADMINISTRATION

	HARDINESS ZONE (F SEED MIXTURE (F		FER	LIME					
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P ₂ O ₅	K ₂ O	RATE	
	SWITCH GRASS	10	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.	3	90 IB/AC	90 18/40	2 TON/AC	
1	CREEPING RED FESCUE	15	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.	(1.0 LB/	1	(2.0 LB/	1	
	PARTRIDGE PEA	4	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.		1000 3F)	1000 37	1000 377	

NOTE: MAY 16 TO JUNE 15 ARE ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT

TO SECURE THE MAT END IN THE KEY.

U.S. DEPARTMENT OF AGRICULTURE

NATURAL RESOURCES CONSERVATION SERVICE

	HARDINESS ZONE (F			FER	LIME			
NO.	SPECIES	SEEDING DEPTHS	N	P ₂ O ₅	K ₂ O	RATE		
	TALL FESCUE	40	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1/4-1/2 IN.	45 LB/AC 90 LB/A	90 18/40	90 LB/AC	2 TON/AC
6	PERENNIAL RYEGRASS	25	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1/4-1/2 IN.	(1.0 LB/	ı	(2.0 LB/	1 1
	WHITE CLOVER	5	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1/4-1/2 IN.		1000 37)	1000 37	1000 37)

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

HOWARD COUNTY SOIL CONSERVATION DISTRICT

REVIEWED FOR HOWARD SOIL CONSERVATION

DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

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

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

McCORMICK TAYLOR

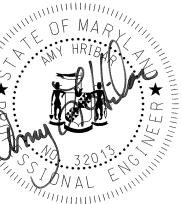
509 South Exeter Street
4th Floor

Baltimore, Maryland 21202

(410) 662-7400



Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046–3143 (410) 313–6444



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HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION
WOODLOT ROAD CHANNEL STABILIZATION PROJECT
CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND

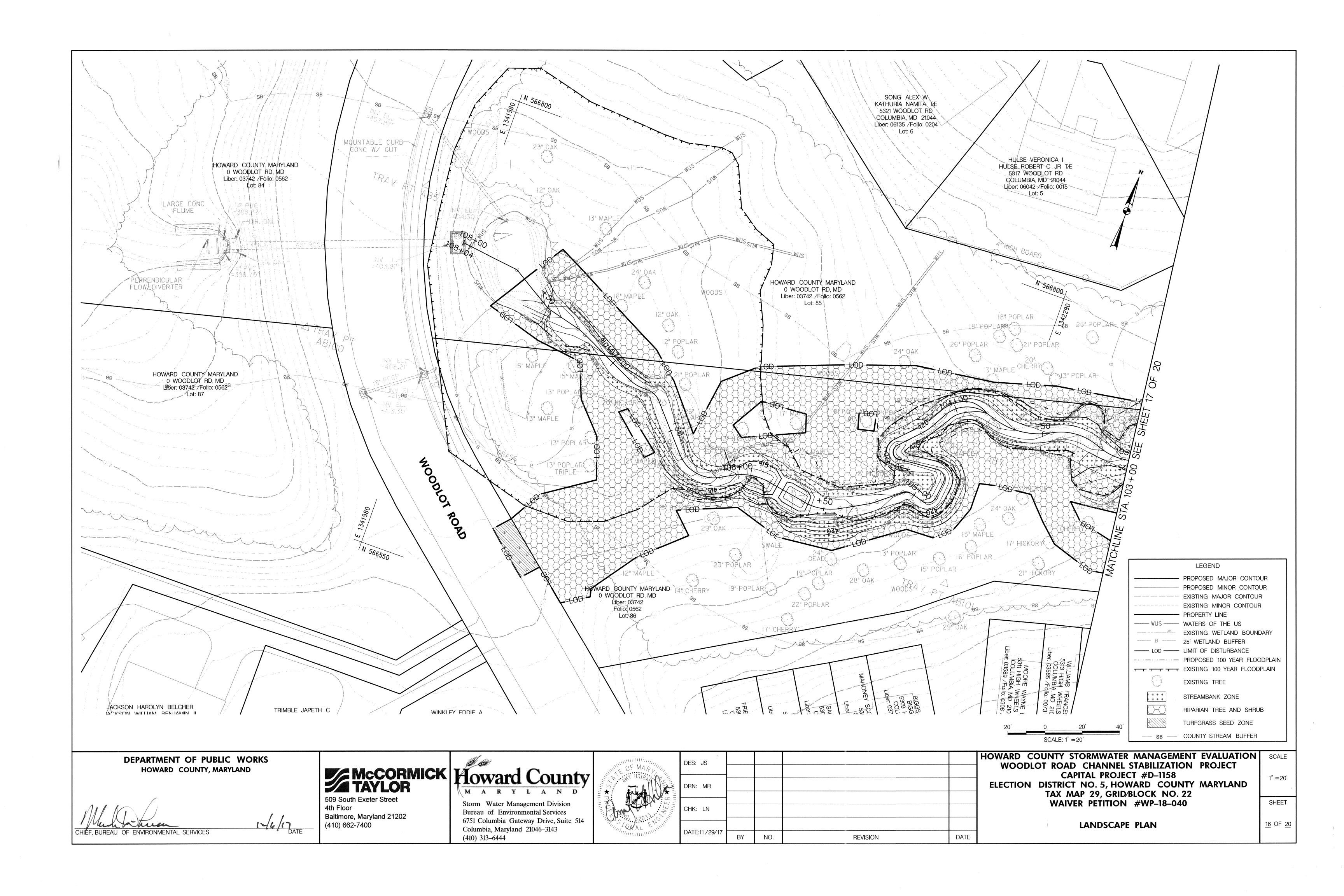
LECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND
TAX MAP 29, GRID/BLOCK NO. 22
WAIVER PETITION #WP-18-040

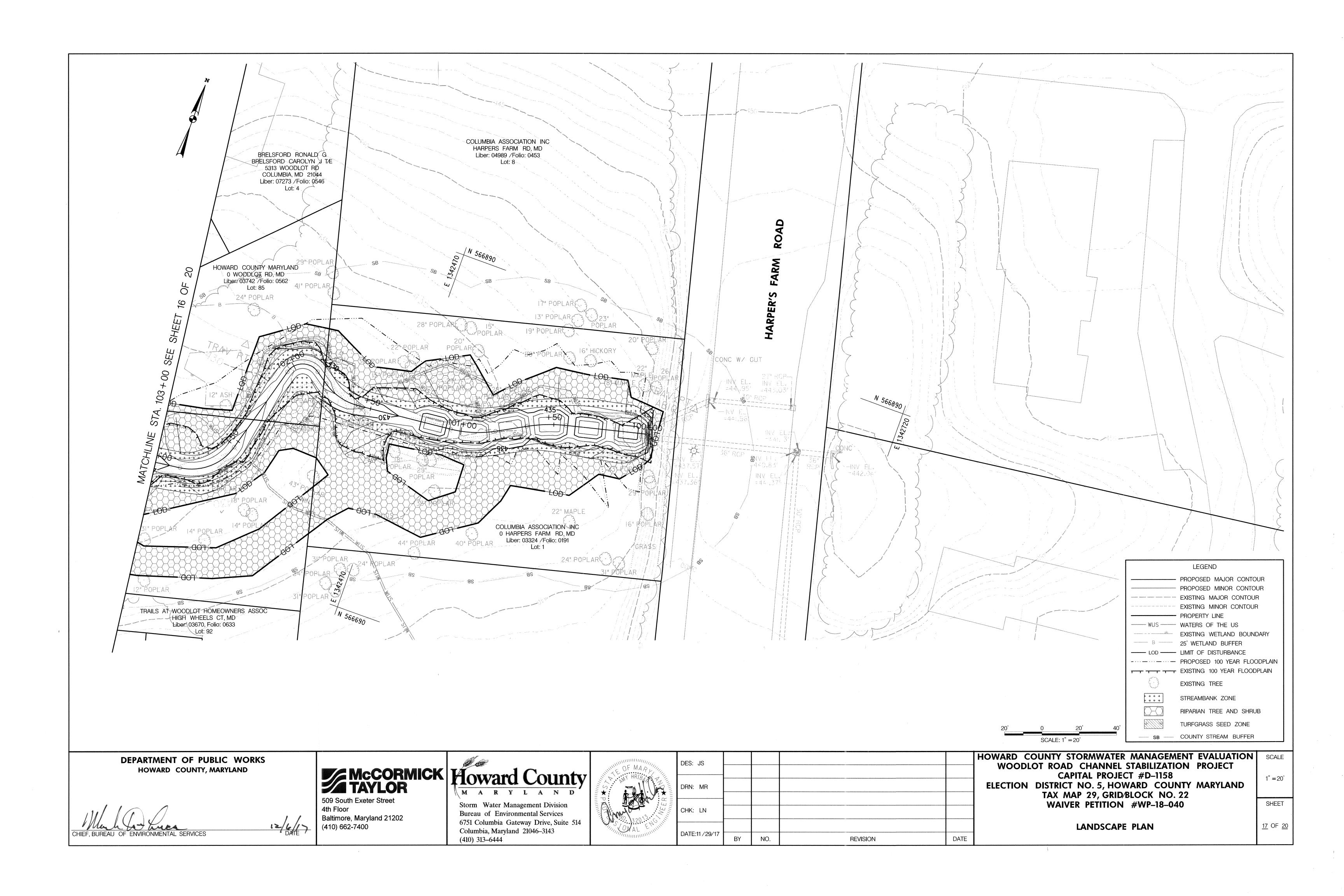
EROSION AND SEDIMENT CONTROL DETAILS

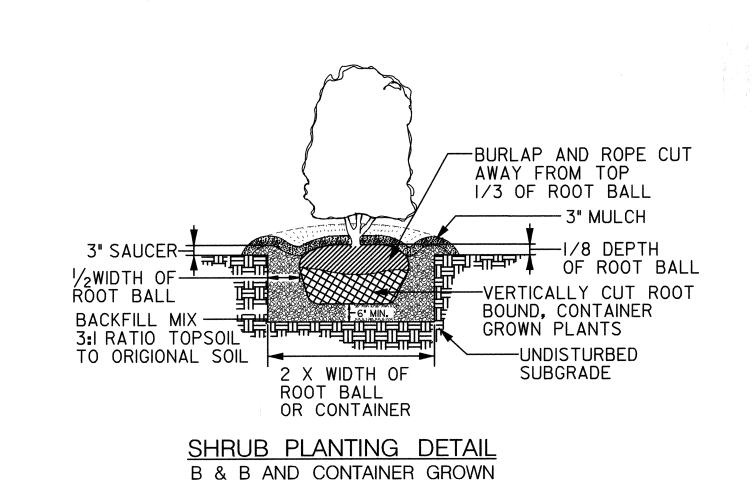
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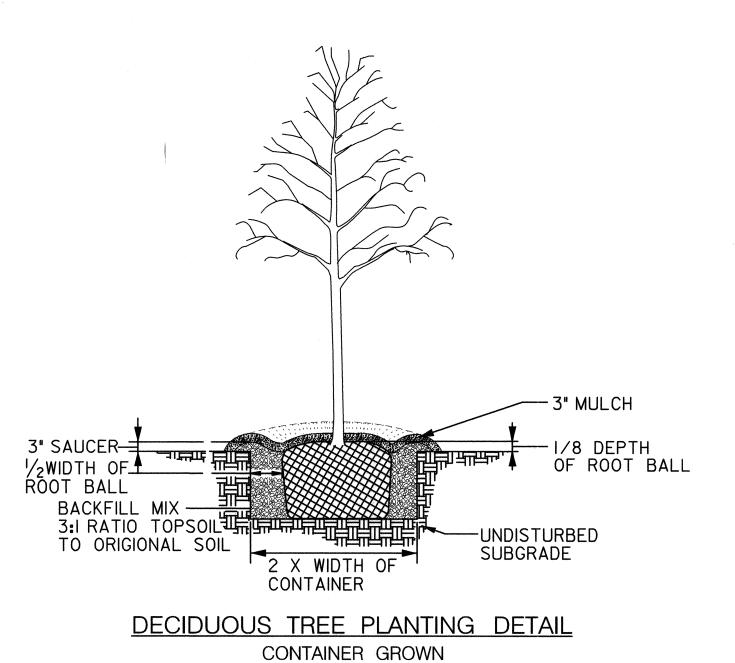
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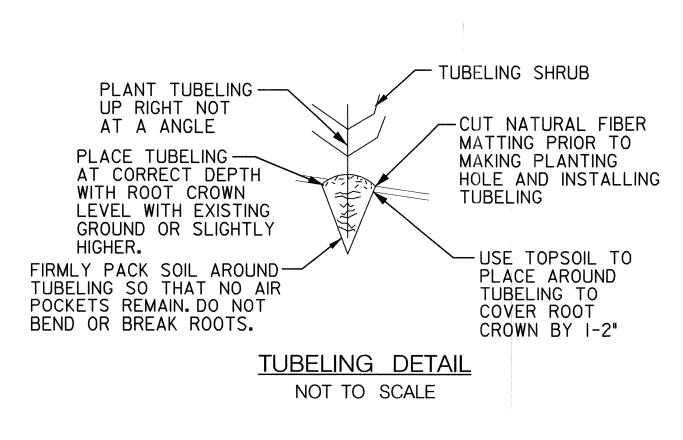


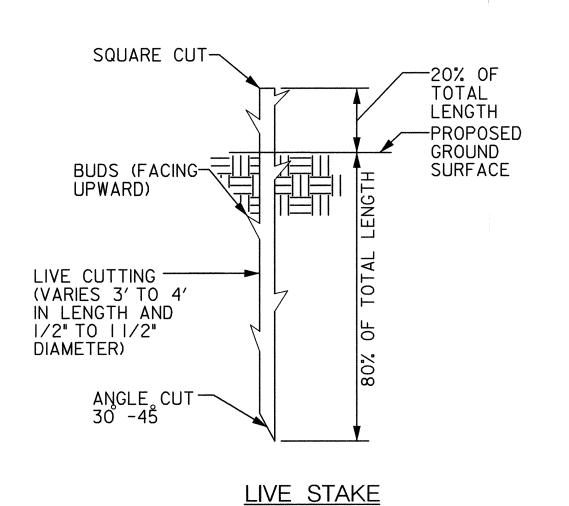


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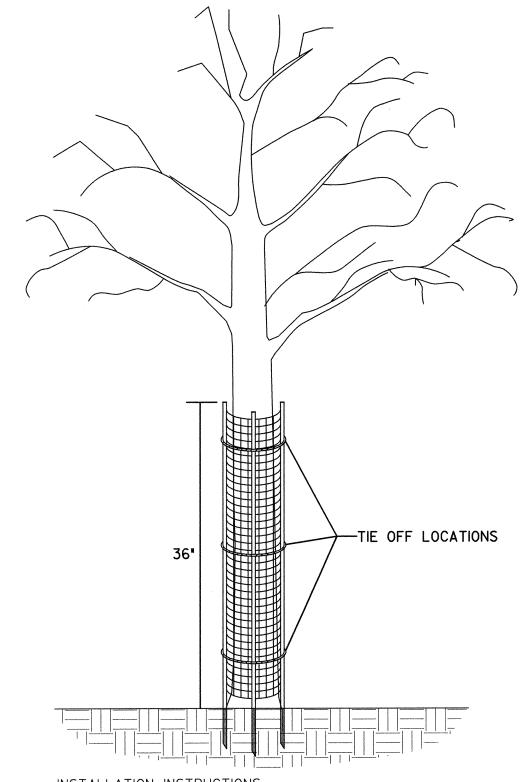


NOT TO SCALE





I. LIVE STAKES MUST BE INSTALLED WHILE DORMANT (LATE FALL TO EARLY SPRING). DO NOT ALLOW THEM TO DRY OUT.



INSTALLATION INSTRUCTIONS:

I. PLANT TREE ACCORDING TO STANDARD SPECIFICATIONS. PLACE THE SHELTER AROUND THE TREE. DRIVE LONGER STAKES INTO THE GROUND.

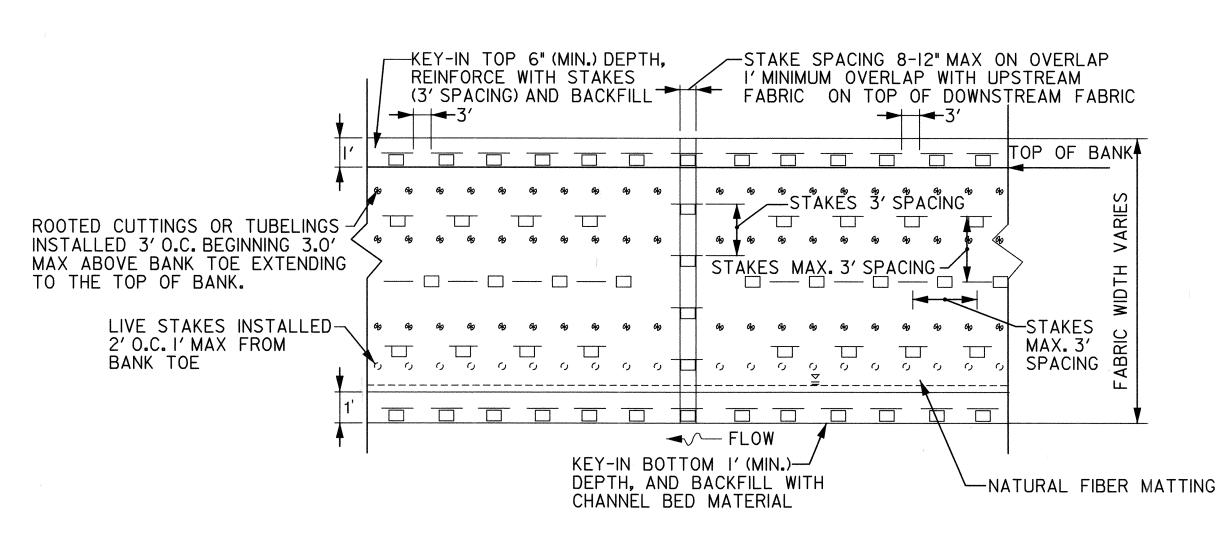
PRODUCT NOTES:

I. TREE SHELTER SHALL BE A.M. LEONARD TREE BARK

4. TIE-OFF ROPE ENDS AROUND TREE.

PROTECTOR OR APPROVED EQUAL 2. TREE SHELTER MUST HAVE LONGER, HARDY STAKES FOR INSERTION INTO GROUND TO PROVIDE SUPPORT.

TREE SHELTER DETAIL NOT TO SCALE

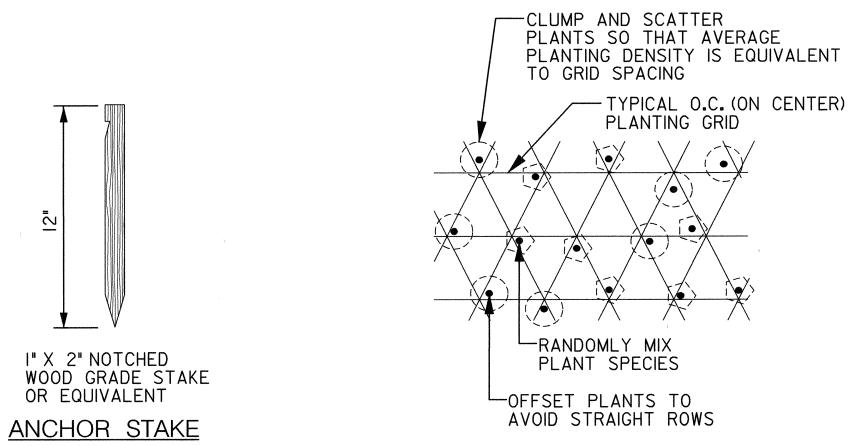


NATURAL FIBER MATTING - PLAN VIEW NOT TO SCALE

USE NEDIA KOIR MAT 700 TYPE MATTING, ECO MESH CM 700, GEOCOIR DEKOWE 900 TYPE MATTING, OR AN EQUIVALENT MATTING CONSISTING OF MACHINE PRODUCED MATTING MEETING THE FOLLOWING MINIMUM SPECIFICATIONS.

	•
MATERIAL	WOVEN COIR MATTING
THICKNESS	0.3 IN.
WEIGHT	20 OZ/SY
WATER VELOCITY	12 FT/SEC
OPEN AREA	50%

NATURAL FIBER MATTING TO MEET THE SPECIFICATIONS OF B-4-6-B, AS PROVIDED ON SHEET 15



I" X 2" NOTCHED

OR EQUIVALENT

NOT TO SCALE

RANDOM PLANTING PATTERN NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

UREAU OF ENVIRONMENTAL SERVICES

McCORMICK TAYLOR

509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400



Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046–3143 (410) 313–6444



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HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION WOODLOT ROAD CHANNEL STABILIZATION PROJECT CAPITAL PROJECT #D-1158 **ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND**

TAX MAP 29, GRID/BLOCK NO. 22 WAIVER PETITION #WP-18-040

LANDSCAPE NOTES AND DETAILS

SHEET <u>18</u> OF <u>20</u>

NOT

SCALE

		Planting S	chedule			
Zone	Botanical Name	Common Name	Size	Comment	Quantity	
Streambank	Cornus amomum	Silky Dogwood	3'-4' Live Stake	Plant 2' O. C.	254	
Streambank	Viburnum dentatum	Southern Arrowwood	3'-4' Live Stake	Plant 2' O. C.	254	
Streambank	Salix nigra	Black Willow	3'-4' Live Stake	Plant 2' O. C.	254	
Streambank	Cornus amomum	Silky Dogwood	1" Dia. X 8-12" Deep Tubeling	Plant 3' O. C.	172	
Streambank	Viburnum dentatum	Southern Arrowwood	1" Dia. X 8-12" Deep Tubeling	Plant 3' O. C.	172	
Streambank	Salix nigra	Black Willow	1" Dia. X 8-12" Deep Tubeling	Plant 3' O. C.	172	
Live Branch Cuttings	Cornus amomum	Silky Dogwood	0.5-2.5" Dia. X 4-5' HT	See Detail Sheet 9	24 LF	
Live Branch Cuttings	Viburnum dentatum	Southern Arrowwood	0.5-2.5" Dia. X 4-5' HT	See Detail Sheet 9	24 LF	
Live Branch Cuttings	Salix nigra	Black Willow	0.5-2.5" Dia. X 4-5' HT	See Detail Sheet 9	24 LF	
Riparian Tree & Shrub	Cercis canadensis	Eastern Redbud	5' HT, 3 GAL Cont.	Plant 12' O.C.	27	
Riparian Tree & Shrub	Quercus alba	White Oak	5' HT, 3 GAL Cont.	Plant 12' O.C.	27	
Riparian Tree & Shrub	Platanus occidentalis	American Sycamore	5' HT, 3 GAL Cont.	Plant 12' O.C.	27	
Riparian Tree & Shrub	Acer saccharum	Sugar Maple	5' HT, 3 GAL Cont.	Plant 12' O.C.	27	
Riparian Tree & Shrub	Amelanchier arborea	Serviceberry	2' HT, 3 GAL. Cont.	Plant 8' O.C.	79	
Riparian Tree & Shrub	Comus amomum	Silky Dogwood	2' HT, 3 GAL. Cont.	Plant 8' O.C.	79	
Riparian Tree & Shrub	Lindera benzoin	Spice Bush	2' HT, 3 GAL. Cont.	Plant 8' O.C.	79	

Riparian Seed Mix								
Zone	Botanical Name	Common Name	Percent Mix	Seeding Rate	Quantity (lbs.)			
Streambank, Riparian	Elymus virginicus	Virginia Wildrye	5	30 lbs per acre				
Streambank, Riparian	Agrostis alba	Redtop	5	30 lbs per acre				
Streambank, Riparian	Poa compressa	Canada Bluegrass	5	30 lbs per acre				
Streambank, Riparian	Festuca arundinacea	Trident tall Fescue	10	30 lbs per acre				
Streambank, Riparian	Sorghastrum nutans	Indian Grass	5	30 lbs per acre				
Streambank, Riparian	Lollum multiflorum	Annual Ryegrass	25	30 lbs per acre				
Streambank, Riparian	Elymus sp.	Saint Perennial Ryegrass	20	30 lbs per acre				
Streambank, Riparian	Festuca rubra	Creeping Red Fescue	25	30 lbs per acre				
			TOTAL MIX		26.1			

Turfgrass Seed Mix								
Zone	Botanical Name	Common Name	Percent Mix	Seeding Rate	Quantity (lbs.)			
Turfgrass	Poa pratengis	Kentucky Blue Grass	33	50 lbs per acre				
Turfgrass	Lolium perenne	Perennial Rye Grass	33	50 lbs per acre				
Turfgrass	Schedonoris phoenix	Tall Fescue	34	50 lbs per acre				
			TOTAL MIX		0.4			

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

509 South Exeter Street 4th Floor

Baltimore, Maryland 21202

(410) 662-7400

McCORMICK Howard County

M A R V Storm Water Management Division

Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046-3143 (410) 313-6444

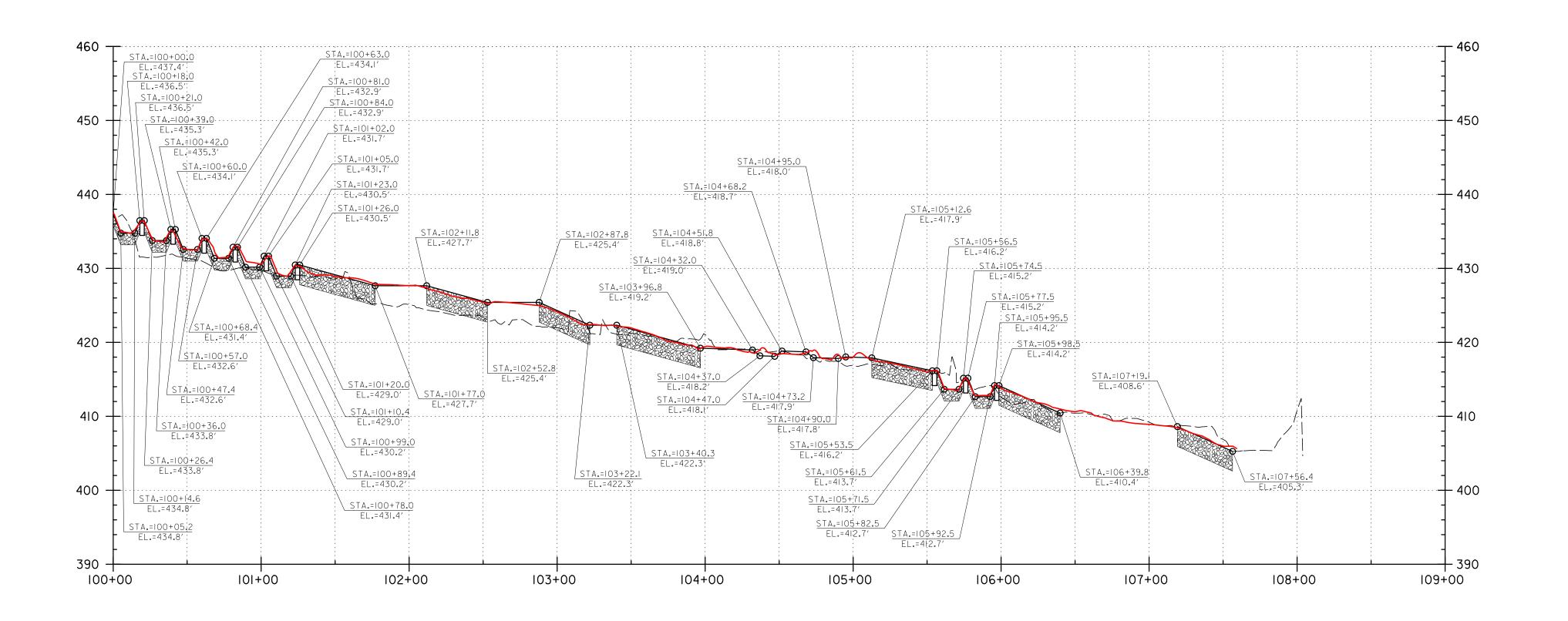
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HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION SCALE WOODLOT ROAD CHANNEL STABILIZATION PROJECT CAPITAL PROJECT #D-1158
ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND
TAX MAP 29, GRID/BLOCK NO. 22
WAIVER PETITION #WP-18-040

LANDSCAPE NOTES AND DETAILS

SCALE SHEET

<u>19</u> OF <u>20</u>



SCALE: HORIZONTAL: I"=50' VERTICAL: I"=10'

LEGEND -——EXISTING ——PROPOSED

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

McCORMICK TAYLOR 509 South Exeter Street 4th Floor Baltimore, Maryland 21202

(410) 313-6444

(410) 662-7400

Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046–3143

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HOWARD COUNTY STORMWATER MANAGEMENT EVALUATION WOODLOT ROAD CHANNEL STABILIZATION PROJECT CAPITAL PROJECT #D-1158 ELECTION DISTRICT NO. 5, HOWARD COUNTY MARYLAND TAX MAP 29, GRID/BLOCK NO. 22

WAIVER PETITION #WP-18-040

PROFILE SHEET

SHOWN SHEET

20 OF 20

