HOWARD COUNTY
Capital Project #D-1176

Pirch Way
Stream Stabilization Project

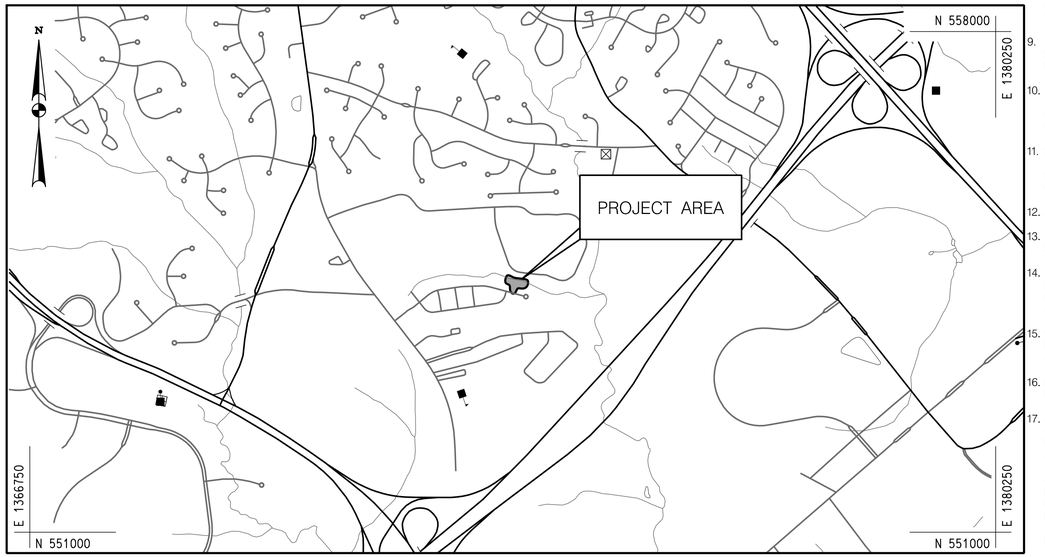
Storm Water Management Division
Bureau Of Environmental Services

INDEX OF SHEETS

PERMITS /APPROVALS			
AGENCY	PERMIT #	DATE APPLIED	DATE APPROVED
MDE JOINT PERMIT APPLICATION	2020600732 / 20–NT–3096	05 /01 /2020	06 /02 /2020
HOWARD SOIL CONSERVATION DISTRICT	EP–20–11	CONCEPT:01 /08 /2020 SEMI–FINAL:02 /28 /2020 FINAL:01 /28 /2021	CONCEPT:01 /29 /2020 SEMI–FINAL:03 /12 /2020 FINAL:02 /19 /2021
ALTERNATIVE COMPLIANCE APPROVAL	WP–21–072	12 /22 /2020	03 /01 /2021
N.P.D.E.S. NOTICE OF INTENT	N /A	N /A	N /A
NECESSARY DISTURBANCE	N /A	01 /27 /2021	02/11 /2021

LEGEND

EXISTING FENCE LINE —X—X—
BASELINE +50
TRAVERSE POINT △
LIMIT OF DISTURBANCE — LOD —
EXISTING MAJOR CONTOURS —190—
EXISTING MINOR CONTOURS —191—
EXISTING CULVERT
EXISTING STORM DRAIN — SD —
EXISTING SANITARY SEWER — SAN — SS — SAN —
PROPERTY LINE
EASEMENT LINE
WATERS OF THE US — WUS —
WETLAND
WETLAND BUFFER — B —
HEDGE /TREE LINE
BUSH /TREE
TREE TO BE REMOVED
EXISTING 100 YEAR FLOODPLAIN
PROPOSED 100 YEAR FLOODPLAIN



HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88

SCALE: 1" = 1000'
1000 0 1000 2000 feet

DESIGN NARRATIVE

THIS PROJECT, LOCATED WITHIN ELKRIDGE, MD, CONSISTS OF STREAM STABILIZATION ALONG ONE UNNAMED TRIBUTARY TO DEEP RUN BY PIRCH WAY. THE PROJECT GOAL IS TO STABILIZE THE STREAM CHANNEL WHILE EFFECTIVELY MITIGATING EXCESSIVE EROSION WITH FEATURES THAT ENHANCE THE HYDROLOGIC, HYDRAULIC, AND ECOLOGIC FUNCTIONS OF THE SYSTEM. THE PROPOSED STREAM STABILIZATION PROJECT CONSISTS OF APPROXIMATELY 150 LINEAR FEET ALONG THE UNNAMED TRIBUTARY.

NO IMPERVIOUS SURFACES ARE PROPOSED AND THEREFORE NO SWM IS REQUIRED. EROSION AND SEDIMENT CONTROL WILL BE STRICTLY ENFORCED THROUGHOUT THE DURATION OF THE PROJECT, INCLUDING PUMP AROUNDS TO ALLOW DRY WORKING CONDITIONS.

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.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1–800–257–7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE.
3. THIS PLAN IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS /BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT (410) 313–1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
5. SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANTS, INC – NOVEMBER 2019.
6. 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.
7. WETLANDS AND WATERS OF THE US WERE DELINEATED BY McCORMICK TAYLOR – OCTOBER 2019.
8. 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 THEIR OWN SATISFACTION.
9. THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. HOWARD COUNTY DOES NOT GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THE SHOWN INFORMATION.
10. 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.
11. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY McCORMICK TAYLOR IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE COUNTY, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
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.
14. A JOINT PERMIT APPLICATION HAS BEEN APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR THIS PROJECT. (TRACKING NUMBER 2020060732 /20–NT–3096). THE PROJECT CONTRIBUTES TO THE PATAPSCO RIVER LOWER NORTH BRANCH WATERSHED, WHICH IS UNDER A TMDL FOR SEDIMENT. THE PROJECT WATERSHED IS NOT RECOGNIZED AS A TIER II WATERSHED.
15. WORKING HOURS ARE 7 A.M. TO 7 P.M. MONDAY THROUGH FRIDAY. WITH ADVANCED PERMISSION FROM THE COUNTY. CONTRACTORS MAY WORK ON SATURDAY 9 A.M. TO 3 P.M. NO WORK IS ALLOWED ON SUNDAY.
16. PROJECT IMPACTS INCLUDE WORK IN A USE – I STREAM. INSTREAM WORK MAY NOT BE CONDUCTED DURING THE PERIOD BETWEEN MARCH 1 AND JUNE 15.
17. AS OF FEBRUARY 11, 2021, THE PLANNING DIRECTOR APPROVED ALTERNATIVE COMPLIANCE FOR WP–21–072 WITH SECTIONS 16.155(A)(1) AND 16.1201(V) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AS THEY APPLY TO THE PIRCH WAY STREAM STABILIZATION PROJECT. ALTERNATIVE COMPLIANCE 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 0.17–ACRE LIMIT OF DISTURBANCE AS SHOWN ON THE ALTERNATIVE COMPLIANCE EXHIBIT UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED BY THE APPLICANT TO BE JUSTIFIED.

    B. ONCE THE PROPOSED PROJECT IS COMPLETE, THE LIMIT OF DISTURBANCE SHALL BE RESTORED TO ITS PREVIOUS CONDITION THROUGH STABILIZATION AND REPLANTING OF FOREST RESOURCES IN ACCORDANCE WITH THE ALTERNATIVE COMPLIANCE PLANTING PLAN EXHIBIT.

    C. THE APPLICANT SHALL OBTAIN ALL REQUIRED AUTHORIZATIONS AND PERMITS FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE U.S. ARMY CORPS OF ENGINEERS FOR DISTURBANCES WITHIN THE FLOODPLAIN, STREAMS, WETLANDS, AND WETLAND BUFFERS. REFERENCE THE APPLICABLE MDE OR USACE PERMIT NUMBERS ON ANY BUILDING OR GRADING PERMIT.

    D. PRIOR TO THE COMMENCEMENT OF THE PROPOSED STREAM STABILIZATION PROJECT, THE APPLICANT WILL OBTAIN ALL RIGHT–OF–ENTRY DOCUMENTS FOR ANY PRIVATELY–OWNED LOTS. COPIES SHALL BE FORWARDED TO THE DEPARTMENT OF PLANNING AND ZONING– DIVISION OF LAND DEVELOPMENT.
18. APPROVAL FROM DPZ FOR ESSENTIAL AND NECESSARY DISTURBANCE PER SECTION 16.116(C) WAS GRANTED FEBRUARY 11, 2021.
19. FEMA FIRM PANEL NO. 24027C0160D. THE PROJECT BOUNDARY FALLS WITHIN A FEMA ZONE X FLOODPLAIN.
20. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXITING THE PROJECT SITE AND PAY CLOSE ATTENTION TO PEDESTRIANS WALKING NEAR THE SITE.
21. CONTRACTOR SHALL CONTINUOUSLY MONITOR WEATHER FORECASTS DURING WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS.
22. THERE IS NO FOREST CONSERVATION OBLIGATION FOR THIS PROJECT BASED ON NET TRACT AREA CALCULATIONS.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 48173 EXPIRATION DATE: 01/13/2022

HOWARD SCD SIGNATURE BLOCK

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/15/21

DESIGN CERTIFICATION

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

04/01/2021 DATE — Lauren Havener DESIGNER'S SIGNATURE

MARYLAND REGISTRATION NUMBER 48173 — Lauren A. Havener PRINTED NAME

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."

4/14/2021 DATE — OWNER /DEVELOPER SIGNATURE

Thomas J. Meunier DPW Director
PRINTED NAME AND TITLE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/14/2021
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 4/9/21
CHIEF, STORMWATER MANAGEMENT DIVISION — DATE 4/9/21

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

Storm Water Management Division
Bureau of Environmental Services
9801 Broken Land Parkway
Columbia, MD 21046
(410) 313–6444

DES: NCW/OJB	LEN		AS–BUILT	7/23/21
DRN: OJB				
CHK: LEN				
DATE: 3/31/21				
	BY	NO.	REVISION	DATE

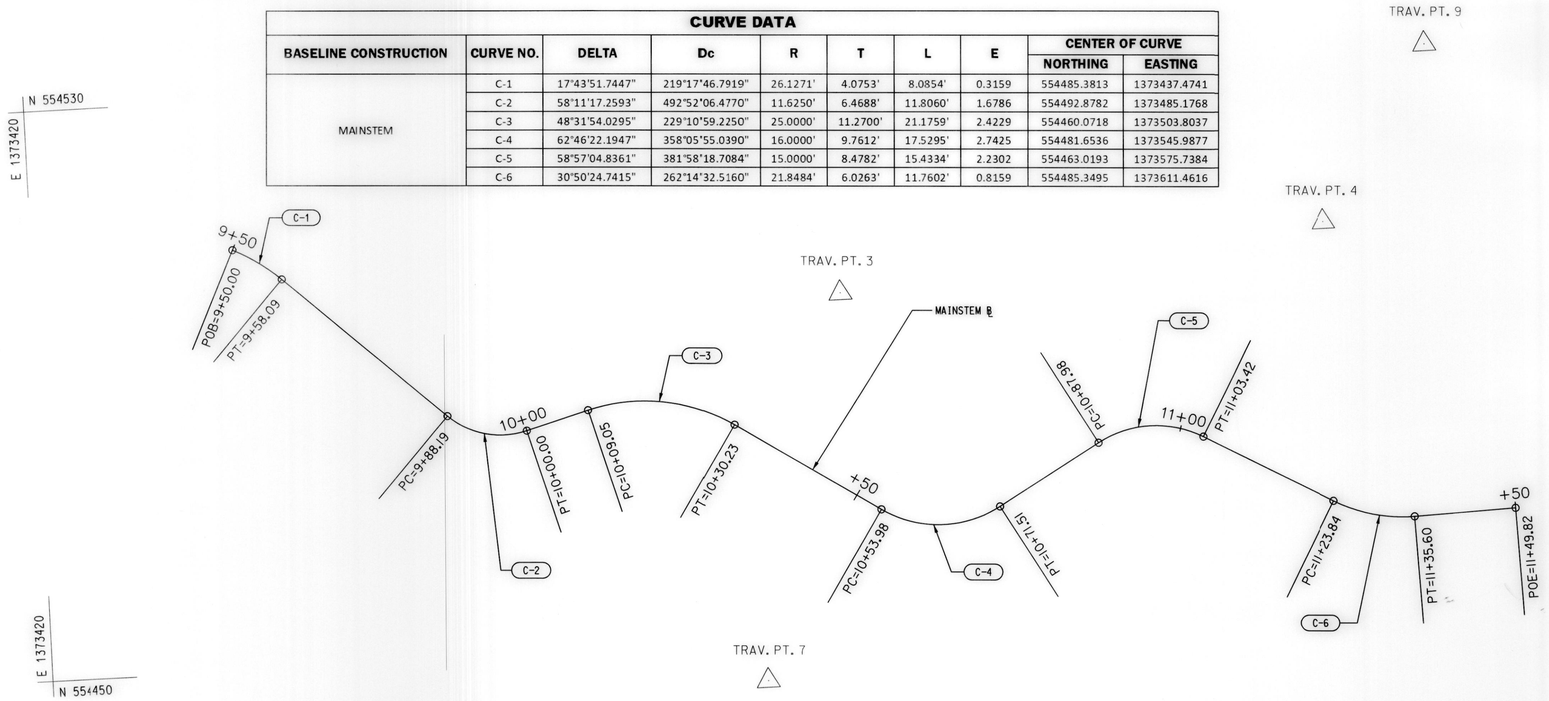
PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D–1176
HOWARD COUNTY
HSCD #: EP–20–11

TITLE SHEET

SCALE: AS SHOWN

SHEET: 1 OF 12

CURVE DATA									
BASELINE CONSTRUCTION	CURVE NO.	DELTA	Dc	R	T	L	E	CENTER OF CURVE	
								NORTHING	EASTING
MAINSTEM	C-1	17°43'51.7447"	219°17'46.7919"	26.1271'	4.0753'	8.0854'	0.3159	554485.3813	1373437.4741
	C-2	58°11'17.2593"	492°52'06.4770"	11.6250'	6.4688'	11.8060'	1.6786	554492.8782	1373485.1768
	C-3	48°31'54.0295"	229°10'59.2250"	25.0000'	11.2700'	21.1759'	2.4229	554460.0718	1373503.8037
	C-4	62°46'22.1947"	358°05'55.0390"	16.0000'	9.7612'	17.5295'	2.7425	554481.6536	1373545.9877
	C-5	58°57'04.8361"	381°58'18.7084"	15.0000'	8.4782'	15.4334'	2.2302	554463.0193	1373575.7384
	C-6	30°50'24.7415"	262°14'32.5160"	21.8484'	6.0263'	11.7602'	0.8159	554485.3495	1373611.4616



BASELINE CONTROL COORDINATES						
BL CONSTRUCTION	POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
MAINSTEM	POB	554509.1058	1373448.4182	9+50.00	S 65°14'10.2709" E	
	PI	554507.3988	1373452.1188	9+54.08	S 47°30'18.5263" E	
	CC	554485.3813	1373437.4741			26.1271'
	PT	554504.6458	1373455.1236	9+58.09	S 47°30'18.5261" E	
	PC	554484.3067	1373477.3239	9+88.19	S 47°30'18.5263" E	
	PI	554479.9369	1373482.0936	9+94.66	N 74°18'24.2144" E	
	CC	554492.8782	1373485.1768			11.6250'
	PT	554481.6866	1373488.3212	10+00.00	N 74°17'12.5795" E	
	PC	554484.1376	1373497.0332	10+09.05	N 74°17'12.5634" E	
	PI	554487.1897	1373507.8820	10+20.32	S 57°10'53.4071" E	
	CC	554460.0718	1373503.8037			25.0000'
	PT	554481.0816	1373517.3532	10+30.23	S 57°10'53.4071" E	
	PC	554468.2073	1373537.3161	10+53.98	S 57°10'53.4071" E	
	PI	554462.9170	1373545.5193	10+63.74	N 60°02'44.3982" E	

TRAV. PT. 2

BASELINE CONTROL COORDINATES						
BL CONSTRUCTION	POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
MAINSTEM	CC	554481.6536	1373545.9877			16.0000'
	PT	554467.7908	1373553.9767	10+71.51	N 60°02'44.3982" E	
	PC	554476.0156	1373568.2487	10+87.98	N 60°02'44.3982" E	
	PI	554480.2489	1373575.5944	10+96.46	S 61°00'10.7658" E	
	CC	554463.0193	1373575.7384			15.0000'
	PT	554476.1389	1373583.0098	11+03.42	S 61°00'10.7658" E	
	PC	554466.2399	1373600.8703	11+23.84	S 61°00'10.7686" E	
	PI	554463.3186	1373606.1412	11+29.86	N 88°09'24.4901" E	
	CC	554485.3495	1373611.4616			21.8484'
	PT	554463.5124	1373612.1644	11+35.60	N 88°09'24.4930" E	
	POE	554463.9700	1373626.3822	11+49.82		

TRAVERSE CONTROL COORDINATES			
POINT	NORTHING	EASTING	ELEVATION
1	554268.8215	1373729.5607	236.73
2	554370.0659	1373505.2783	235.46
3	554498.7709	1373533.0658	228.99
4	554505.3429	1373601.3633	228.43
5	554497.5631	1373672.4772	226.10
6	554423.3421	1373693.2043	236.46
7	554445.0094	1373520.2974	236.36
9	554529.4378	1373616.8310	237.36

10' 0 10' 20'
SCALE: 1"=10'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond — 4/7/21
CHIEF, STORMWATER MANAGEMENT DIVISION — DATE

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
9801 Broken Land Parkway
Columbia, MD 21046
(410) 313-6444

STATE OF MARYLAND — LAUREN A. HAVENER — 21713 — PROFESSIONAL ENGINEER

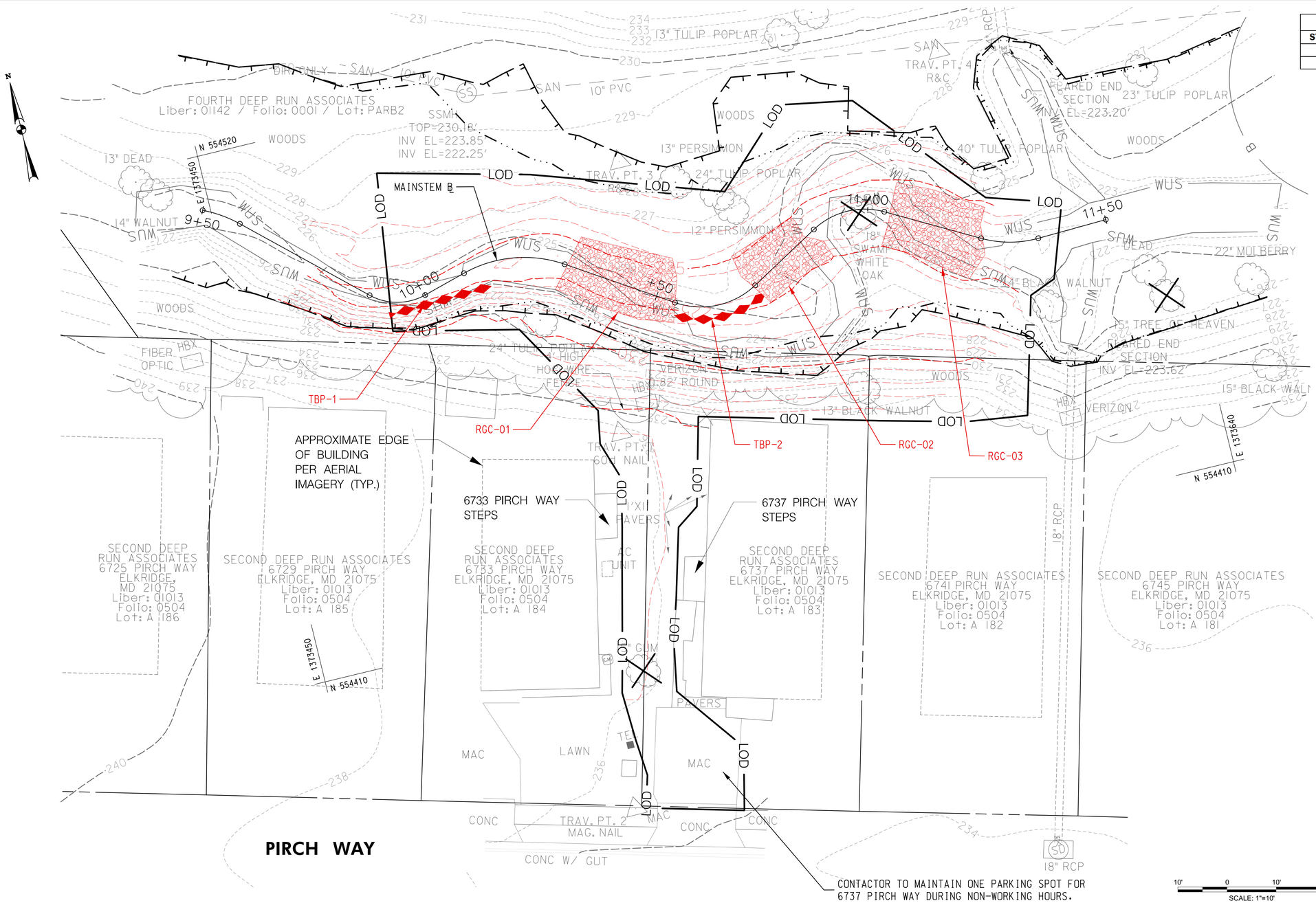
DES: NCW/OJB				
DRN: OJB				
CHK: LEN				
DATE: 3/31/21	BY	NO.	REVISION	DATE

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

GEOMETRY SHEET

SCALE 1" = 10'

SHEET 2 OF 12



TOE BOULDER PROTECTION (TBP)			
STRUCTURE	STATION FROM	STATION TO	OFFSET
TBP-1	9+97	10+08	RT
TBP-2	10+54	10+72	RT

RIFFLE GRADE CONTROL (RGC)		
STRUCTURE	STATION FROM	STATION TO
RGC-01	10+30	10+54
RGC-02	10+72	10+88
RGC-03	11+03	11+24

NOTE:

1. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS SHALL BE TAKEN.

2. CONTRACTOR SHALL NOT STORE EQUIPMENT, MATERIALS, AND/OR SUPPLIES BEYOND THE ORANGE FENCING SHOWN ON THE PLANS.

3. ALL MATERIAL SHALL BE REMOVED AND DISPOSED OF OFFSITE.

4. CONTRACTOR SHALL EXERCISE CARE IN ACTIVITIES INVOLVING EITHER CUT AND FILL OR GRADING IN THE VICINITY OF TREES THAT ARE TO REMAIN. ACTIVITIES NEAR TREES THAT ARE TO REMAIN SHALL BE DONE IN A MANNER THAT DOES NOT DISTURB THE CRITICAL ROOT ZONE OR WITHIN THE DRIPLINE OF THE TREES. ORANGE FENCING SHALL BE INSTALLED AROUND THE PERIMETER OF THE CRITICAL ROOT ZONE PRIOR TO CONSTRUCTION.

5. CONTRACTOR SHALL CONTINUOUSLY MONITOR WEATHER FORECASTS DURING WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS.

6. UPON COMPLETION OF WORK BUT PRIOR TO DE-MOBILIZATION, THE CONTRACTOR SHALL REMOVE REMNANTS OF CONSTRUCTION MATERIAL FROM THE SITE. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITIONS.

LEGEND
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPERTY LINE
- WUS — WATERS OF THE US
- WETLAND BOUNDARY
- B — 25' WETLAND BUFFER
- SAN — EXISTING SANITARY SEWER
- LOD — LIMIT OF DISTURBANCE
- EXISTING 100 YEAR FLOODPLAIN
- PROPOSED 100 YEAR FLOODPLAIN
- 12+00 PROPOSED BASELINE
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- RIFFLE GRADE CONTROL
- TOE BOULDER PROTECTION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/14/2021
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 4/8/21
CHIEF, STORMWATER MANAGEMENT DIVISION — DATE 4/7/21

McCORMICK TAYLOR
509 South Exeter Street
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(410) 662-7400

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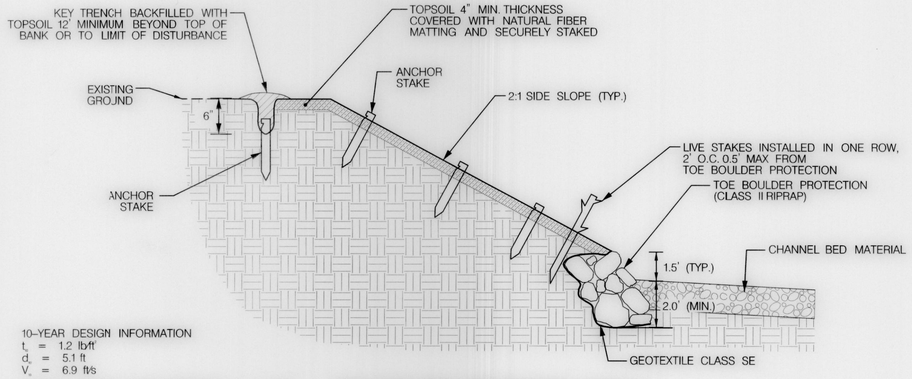
	BY	NO.	REVISION	DATE
DES: NCW/OJB	LEN		AS-BUILT	7/23/21
DRN: OJB				
CHK: LEN				
DATE: 3/31/21				

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

SITE PLAN

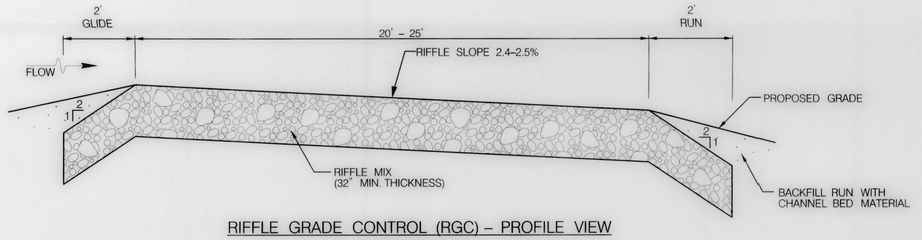
SCALE 1" = 10'

SHEET 3 OF 12

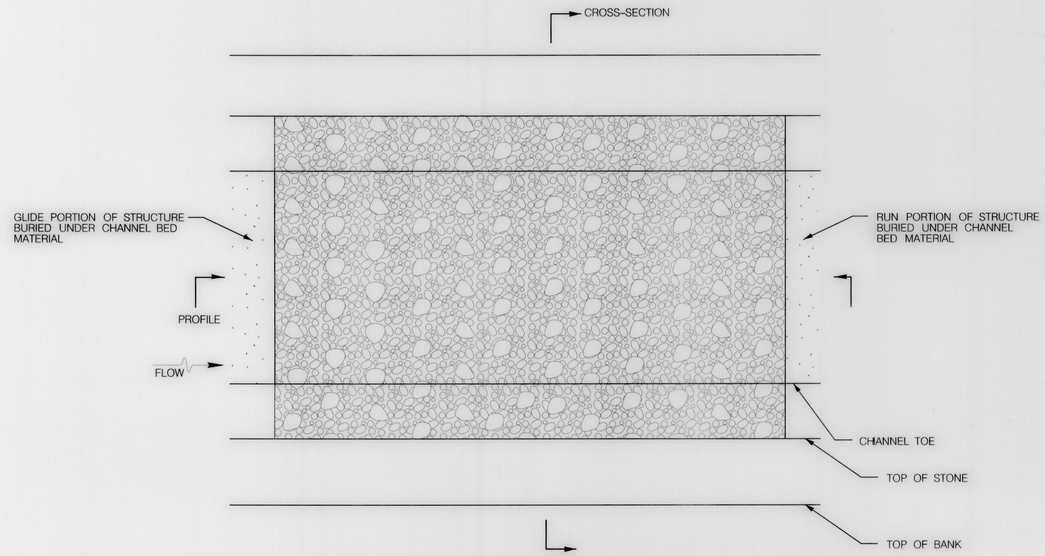


10-YEAR DESIGN INFORMATION
t_s = 1.2 lb/ft²
d_s = 5.1 ft
V_s = 6.9 ft/s
MINIMUM DESIGN SHEAR STRENGTH = 5.7 lb/ft²

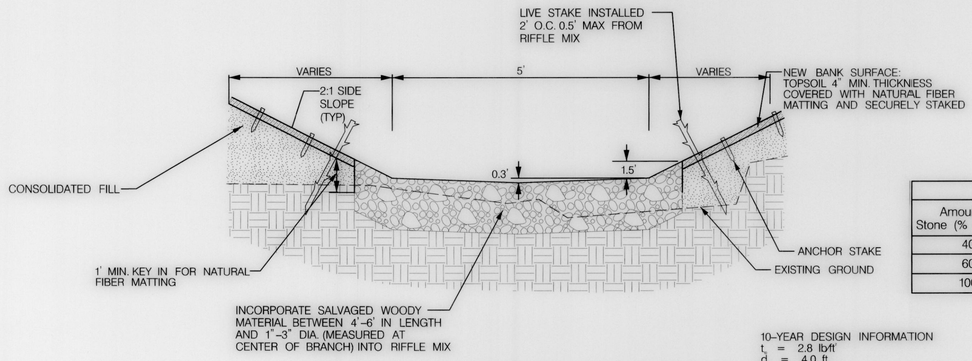
TOE BOULDER PROTECTION TYPICAL
NOT TO SCALE



RIFFLE GRADE CONTROL (RGC) – PROFILE VIEW
NOT TO SCALE



RIFFLE GRADE CONTROL (RGC) – PLAN VIEW
NOT TO SCALE



Riffle Mix	
Amount of Stone (% by Vol.)	Stone type
40	SHA Class 1
60	SHA Class 2
100	Total

10-YEAR DESIGN INFORMATION
t_s = 2.8 lb/ft²
d_s = 4.0 ft
V_s = 10.2 ft/s
MINIMUM DESIGN SHEAR STRENGTH = 3.8 lb/ft²

RIFFLE GRADE CONTROL (RGC) – CROSS SECTION
NOT TO SCALE

GENERAL NOTES:
1. ALL STONE WILL BE GRAY OR BROWN IN COLOR FROM AN APPROVED SOURCE. WHITE COLORED STONE WILL NOT BE ACCEPTED.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond 4/7/21
CHIEF, STORMWATER MANAGEMENT DIVISION DATE

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
9801 Broken Land Parkway
Columbia, MD 21046
(410) 313-6444

	BY	NO.	REVISION	DATE
DES: NCW/OJB				
DRN: OJB				
CHK: LEN				
DATE: 3/31/21				

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

CHANNEL STABILIZATION DETAILS

SCALE: NOT TO SCALE
SHEET: 4 OF 12

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

1. OBTAIN GRADING PERMIT AND MDE PERMIT (TRACKING NUMBER 202060732/20-NT-3096).

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 JUNE 15 FOR USE I STREAMS.

SEQUENCE OF CONSTRUCTION

1. THE LOD SHALL BE STAKED OUT WHERE INDICATED ON THE PLANS. THIS SHALL BE COMPLETED BY AND INSPECTED AT THE PRECONSTRUCTION MEETING. (1 DAY)

2. THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, AND A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION. TREES TO BE REMOVED SHALL BE MARKED AT THE PRE-CONSTRUCTION MEETING. (1 DAY)

3. ORANGE CONSTRUCTION FENCE SHALL BE MANUALLY INSTALLED ALONG PERIMETER OF LOD. (1 DAY)

4. CONSTRUCT THE STABILIZED CONSTRUCTION ENTRANCE CLEARING ONLY THE AREA NEEDED TO INSTALL THE E&S CONTROLS. (1 DAY)

5. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, INSTALL THE STREAM DIVERSION/PUMP AROUND WHICH INCLUDES THE SANDBAG, PUMP AND DIVERSION HOSES. DEWATER ALL WORK AREAS AS NEEDED TO A DEWATERING FILTER BAG. (1 DAY)

6. COMMENCE IN STREAM CONSTRUCTION AND GRADING. STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORK DAY AND REMOVE THE STREAM DIVERSION/PUMP AROUND. (5 DAYS)

7. INSTALL LANDSCAPING PER PLAN. (2 DAYS)

8. STABILIZE TEMPORARY CONSTRUCTION ACCESS AND GRADE TO FINAL ELEVATIONS REMOVING ALL RUTS. (1 DAY)

9. 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)

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID),410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

   A. PRIOR TO THE START OF EARTH 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 (SEC. B-4-6).

5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

6. SITE ANALYSIS:

TOTAL AREA OF SITE	0.17 ACRES
AREA DISTURBED	0.17 ACRES
AREA TO BE ROOFED OR PAVED	0.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.17 ACRES
TOTAL CUT	48 CU. YDS.
TOTAL FILL	96 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	SEE NOTE 17

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BEREPAIRED 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 AND IVP 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.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

4/15/21

HOWARD ~~COUNTY~~ SOIL CONSERVATION DISTRICT — DATE

B-4-5 PERMANENT STABILIZATION TABLES

HARDINESS ZONE (FROM FIGURE B.3) 7A
SEED MIXTURE (FROM TABLE B.3) 1

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20) N	P_2O_5	K_2O	LIME RATE
1	SWITCH GRASS	10	**FEB 15 TO APR 30 MAY 1 TO MAY 31	1/4-1/2 IN.	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 TON/AC (90 LB/ 1000 SF)
	CREEPING RED FESCUE	15	**FEB 15 TO APR 30 MAY 1 TO MAY 31	1/4-1/2 IN.				
	PARTRIDGE PEA	4	**FEB 15 TO APR 30 MAY 1 TO MAY 31	1/4-1/2 IN.				

NOTE: MAY 1 TO MAY 31 ARE ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT

HARDINESS ZONE (FROM FIGURE B.3) 7A
SEED MIXTURE (FROM TABLE B.3) 6

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20) N	P_2O_5	K_2O	LIME RATE
6	TALL FESCUE	40	AUG. 15 TO OCT. 31	1/4-1/2 IN.	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 TON/AC (90 LB/ 1000 SF)
	PERENNIAL RYEGRASS	25	AUG. 15 TO OCT. 31	1/4-1/2 IN.				
	WHITE CLOVER	5	AUG. 15 TO OCT. 31	1/4-1/2 IN.				

NOTE: FOR SEEDING DATES MAY 31 TO AUG 14 ADD 4.0 LBS OF FOXTAIL MILLET TO SEED MIXTURE NO. 1

**WARM-SEASON GRASSES NEED A SOIL 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 UNITL 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 LIKLIHOOD OF HAVING MOISTURE FOR LATER PLANTINGS, ESPECIALLY ON DROUGHTY SITES.

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 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).
      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 CLAY) WOULD BE ACCEPTABLE.
      IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
   B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
   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.

B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
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, 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. 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.

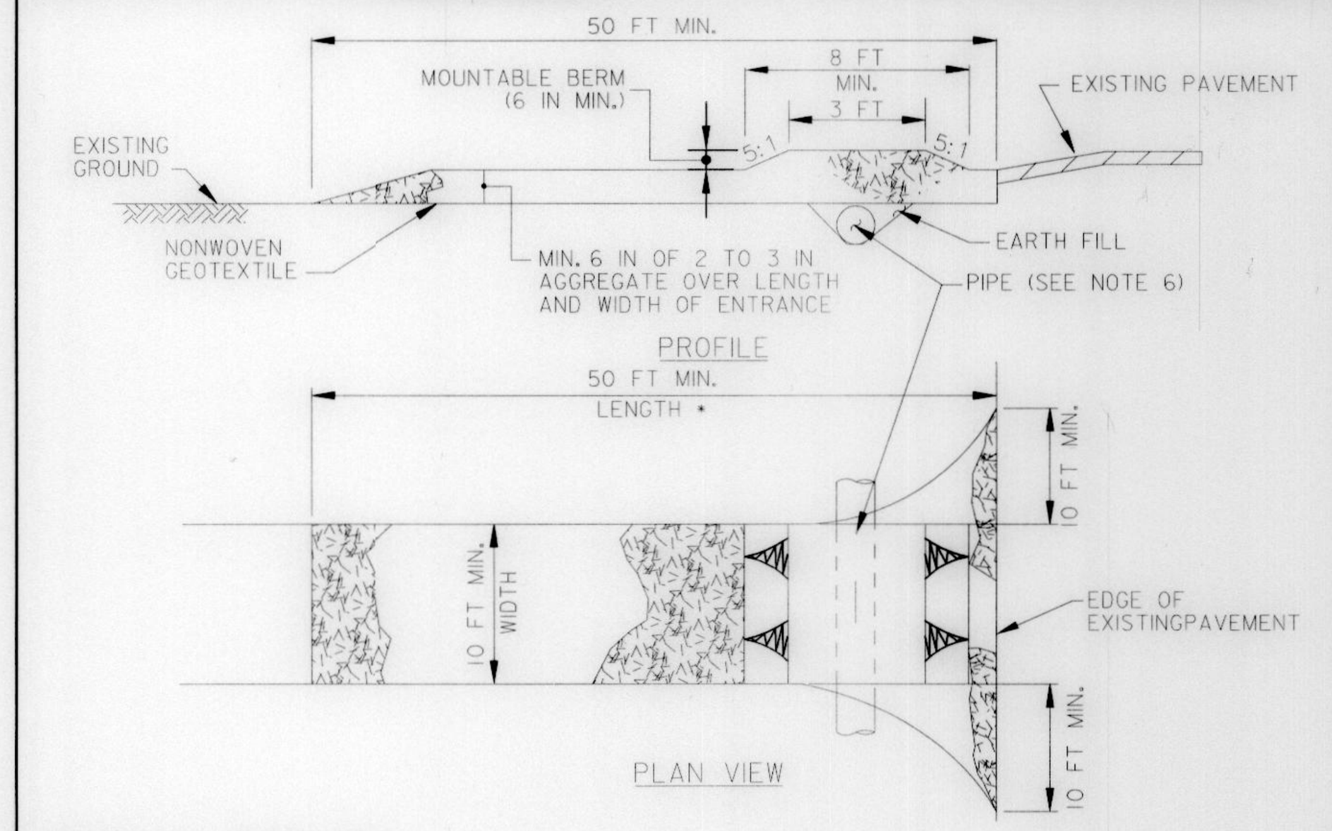
2. APPLICATION
   A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
      I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
      II. APPLY SEED IN TWO DIRECTIONS, 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; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
      II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
      III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
      IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
   A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW 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 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.
2. APPLICATION
   A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
   B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
   C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
   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.
      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 7 OF 12 (EROSION AND SEDIMENT CONTROL DETAIL SHEET) FOR TEMPORARY STABILIZATION SEEDING MIXTURE TABLE.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL
SCE



CONSTRUCTION SPECIFICATIONS

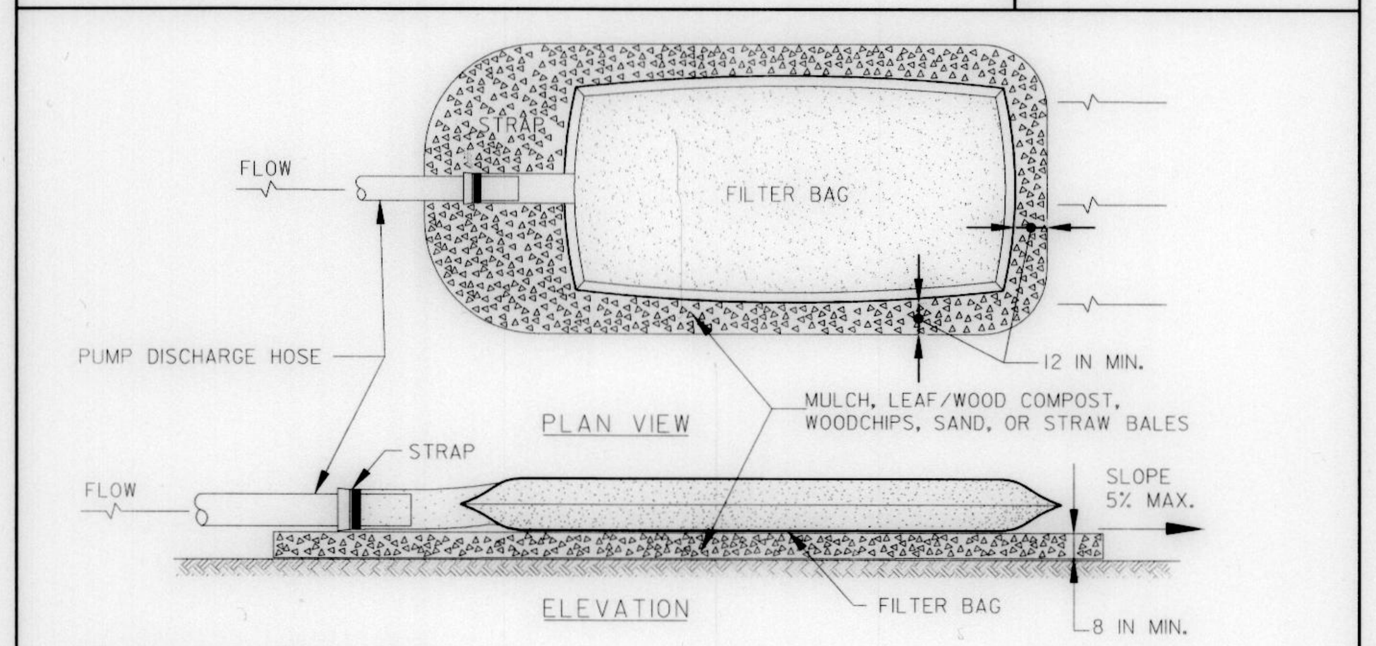
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIFE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (•30 FEET FOR SINGLE RESIDENCE LOT). JSE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-4 FILTER BAG

STANDARD SYMBOL
FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT	ASTM D-4491
PERMITTIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

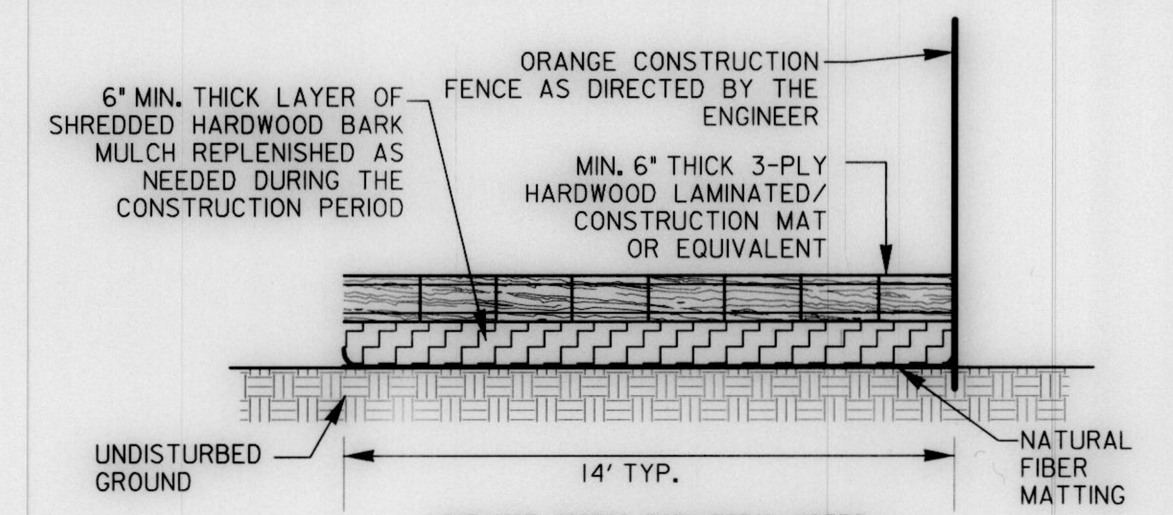
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TEMPORARY LOAD MAT

STANDARD SYMBOL



LOAD MAT ACCESS PATH DETAIL NOTES:

1. LOAD MATS TO BE INSTALLED TO PROTECT THE CRITICAL ROOT ZONE OF SPECIMEN TREES IF TRACKING IN THESE AREAS IS REQUIRED
2. ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT PRE-CONSTRUCTION MEETING. MINOR ADJUSTMENTS TO THE ALIGNMENT THAT MINIMIZES TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR.
3. NATURAL FIBER MATTING SHALL BE PLACED WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC, OVERLAP FABRIC BY 18" MINIMUM AT SEAMS.
4. AS FIELD CONDITIONS WARRANT, ADDITIONAL SHREDDED HARDWOOD BARK MULCH (EXCEEDING THE MINIMUM 6") MAY BE REQUIRED AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR TO AVOID RUTTING OF THE SOIL SURFACE.
5. CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD. UPON COMPLETION OF THE PROJECT, MULCH IS TO BE REMOVED AND DISPOSED OF OFF-SITE.
6. IF SOILS ARE EXPOSED AND RUTTED BELOW MULCH MATTING, CONTRACTOR TO ADDRESS ACCORDINGLY TO RESTORE NATURAL CONDITIONS. STABILIZE ALL EXPOSED SOIL WITH PERMANENT SEED MIX.

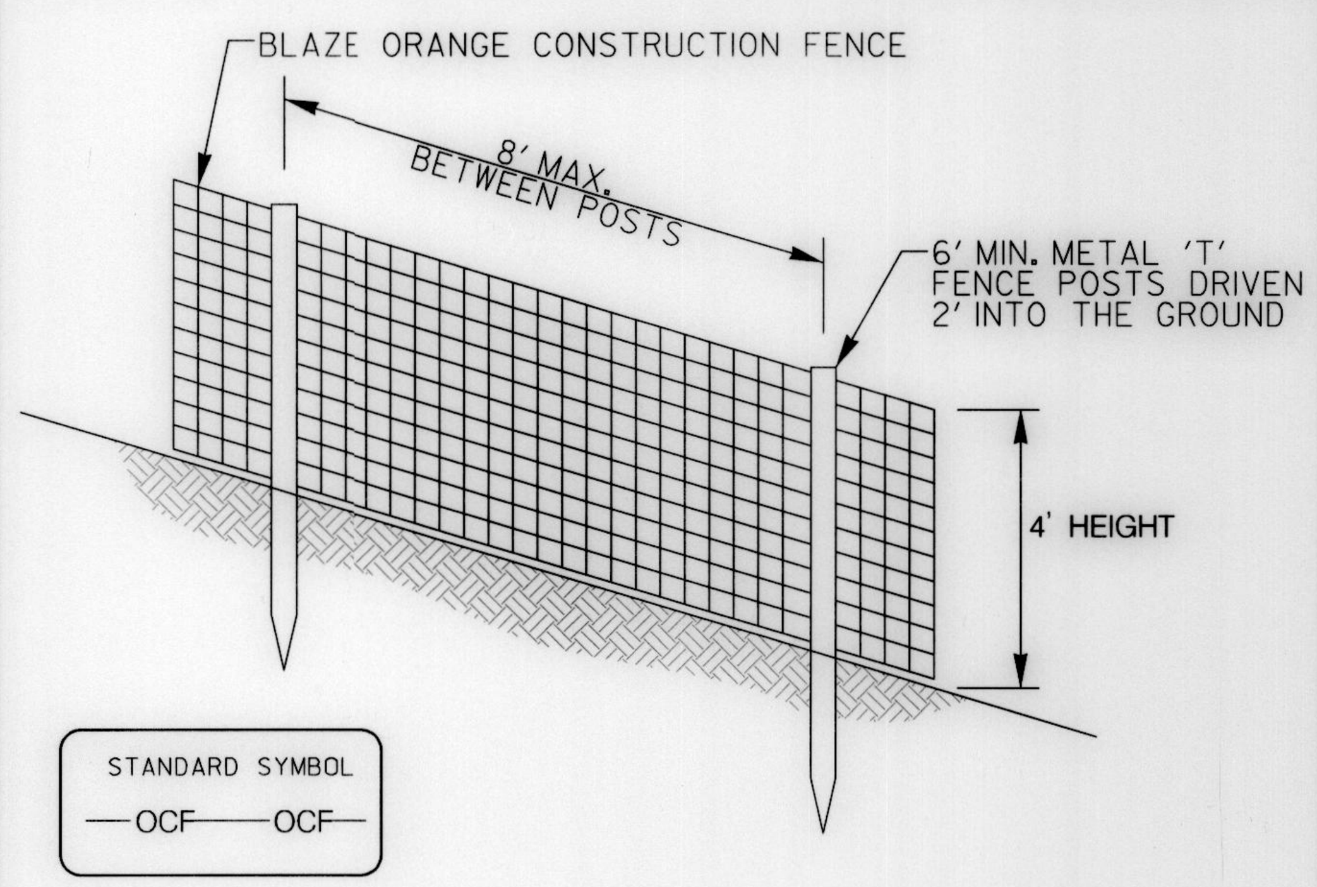
IN-CHANNEL PUMPING NOTES

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 THE FLOWS ANTICIPATED DURING CONSTRUCTION IN THE CHANNEL SECTION. AT A MINIMUM THE PUMP AND DIVERSION HOSES SHALL BE ABLE TO ACCOMODATE A FLOW OF 198 GPM, WHICH REPRESENTS TWO TIMES EXPECTED BASEFLOW.

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 I WATERS. INSTREAM WORK IS PROHIBITED MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.



NOTES:

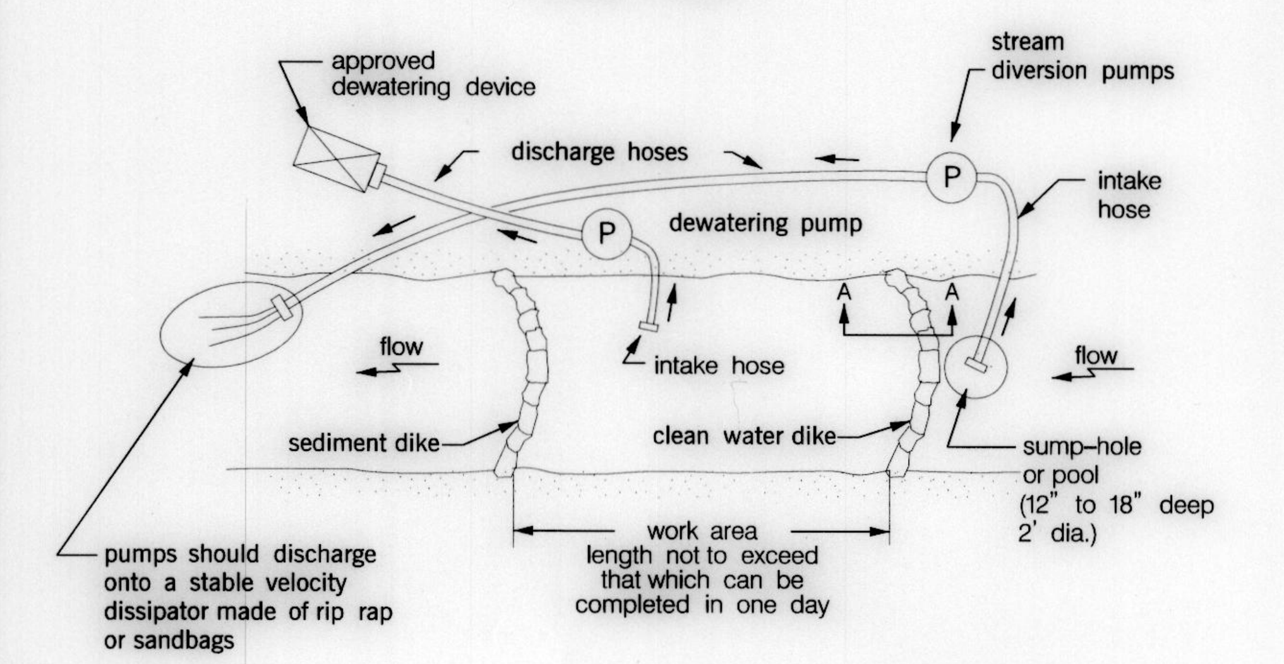
1. PRACTICE MAY BE COMBINED WITH SEDIMENT CONTROL FENCING.
2. LOCATION AND LIMITS OF FENCING SHALL BE COORDINATED IN FIELD WITH ENGINEER.
3. BOUNDARIES OF PROTECTION AREA SHALL BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
4. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
5. ROOT DAMAGE SHALL 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

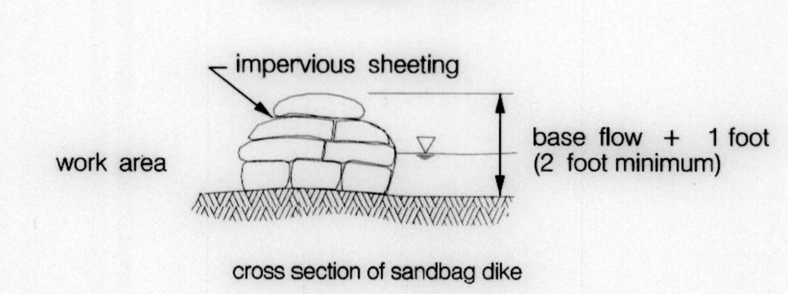
NOT TO SCALE

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE

PLAN VIEW



SECTION A-A



cross section of sandbag dike

TEMPORARY INSTREAM CONSTRUCTION MEASURES	*REVISED NOVEMBER 2000 PAGE 1.2 - 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE

DESCRIPTION

The work should consist of installing a temporary pump around and supporting measures to divert flow around instream construction sites.

IMPLEMENTATION SEQUENCE

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

1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.

2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.

3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out al limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.

4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimizedisturbance within the work area whenever possible.

5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.

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 riprap 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 mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).

9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross- sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.

10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.

11. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.

12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.

13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.

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

TEMPORARY INSTREAM CONSTRUCTION MEASURES	*REVISED NOVEMBER 2000 PAGE 1.2 - 3*	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[illegible] 4/15/21

HOWARD ~~COUNTY~~ SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond 4/7/21

CHIEF, STORMWATER MANAGEMENT DIVISION DATE

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
9801 Broken Land Parkway
Columbia, MD 21046
(410) 313-6444

STATE OF MARYLAND
LAUREN A. HAVEN
48173
PROFESSIONAL ENGINEER
[illegible]

DES: NCW/OJB				
DRN: OJB				
CHK: LEN				
DATE: 3/31/21	BY	NO.	REVISION	DATE

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

EROSION AND SEDIMENT CONTROL DETAILS

SCALE
NOT TO SCALE

SHEET
6 OF 12

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

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.

4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO THE NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.

6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.

7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

USE I. IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.

10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.

11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

B-4-5 PERMANENT STABILIZATION

A. SEED MIXTURES
1. GENERAL USE
A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) 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 AGENCY.
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.
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.
NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS 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 SITES.

B-4-4 TEMPORARY STABILIZATION

HARDINESS ZONE (FROM FIGURE B.3) 7A SEED MIXTURE (FROM TABLE B.3) SEE BELOW					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	436 LB/AC (10 LB/ 1000 SF)	
	ANNUAL RYEGRASS	40	FEB 15 TO APR 30; AUG 15 TO NOV 30	0.5		2 TON/AC (90 LB/ 1000 SF)
	FOXTAIL MILLET	30	MAY 1 TO AUG 14	0.5		

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.
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.
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.

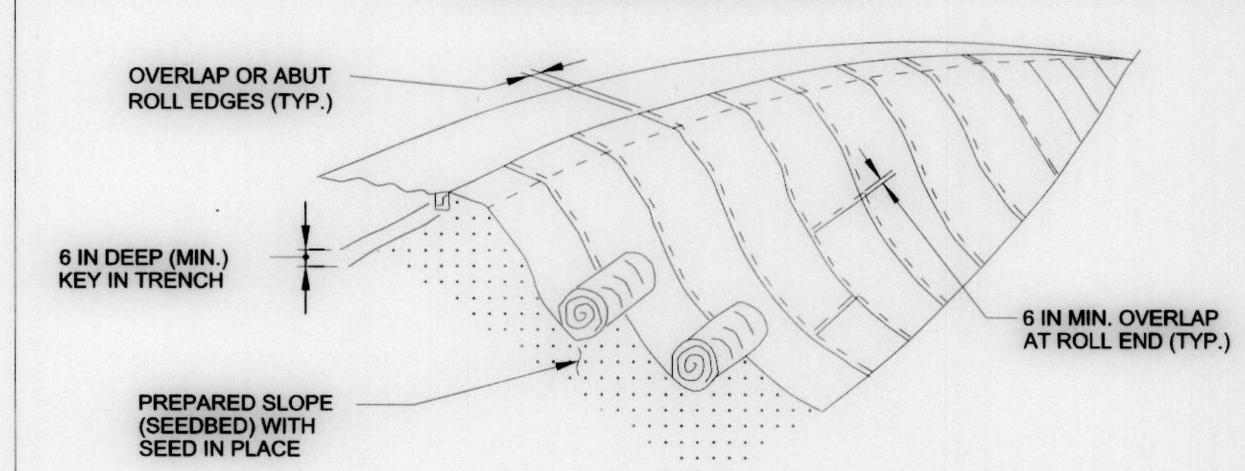
MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 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.

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL

TSSMS - 2.1 lb/ft²



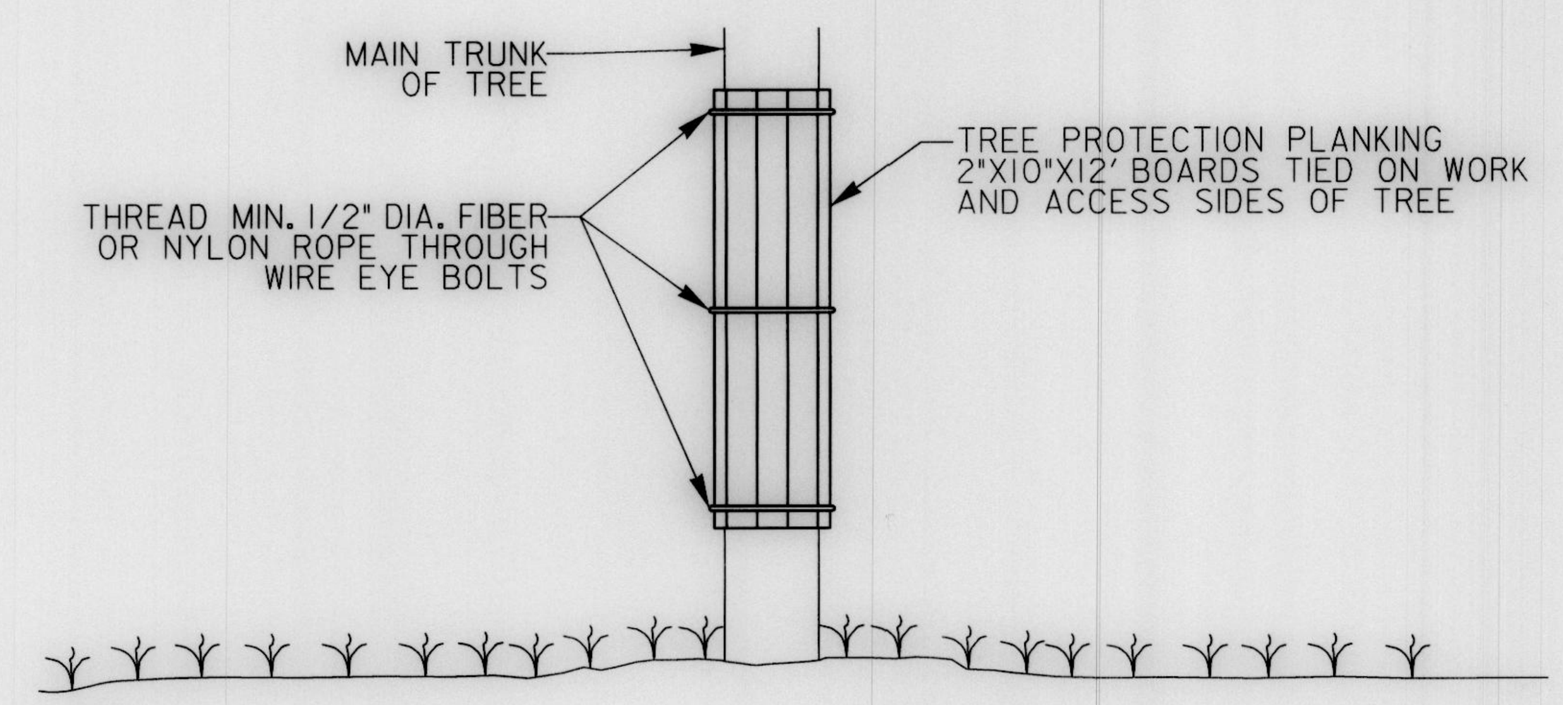
ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
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 PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
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 TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



NOTES

1. FOR TREE PROTECTION PLANKING, AS DIRECTED BY THE ENGINEER, TIE WITH 1/2" DIAMETER ROPE (FIBER OR NYLON). SUFFICIENT 2"X10"X12' BOARDS AROUND MAIN TRUNK OF TREE TO PROTECT ALL AREAS EXPOSED TO CONSTRUCTION OR ACCESS. IN THE EVENT THAT 2"X10"X12' BOARDS ARE TOO LARGE FOR A TREE, 2"X10"X6', 2"X10"X8' OR 2"X10"X10' BOARDS MAY BE USED AS DIRECTED BY THE ENGINEER

TREE PROTECTION PLANKING DETAIL

NOT TO SCALE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[illegible] 4/15/21

HOWARD ~~COUNTY~~ SOIL CONSERVATION DISTRICT — DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[illegible] 4/7/21

CHIEF, STORMWATER MANAGEMENT DIVISION — DATE

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
9801 Broken Land Parkway
Columbia, MD 21046
(410) 313-6444

STATE OF MARYLAND LAUREN A. HAVENER 48173 PROFESSIONAL ENGINEER

[illegible]

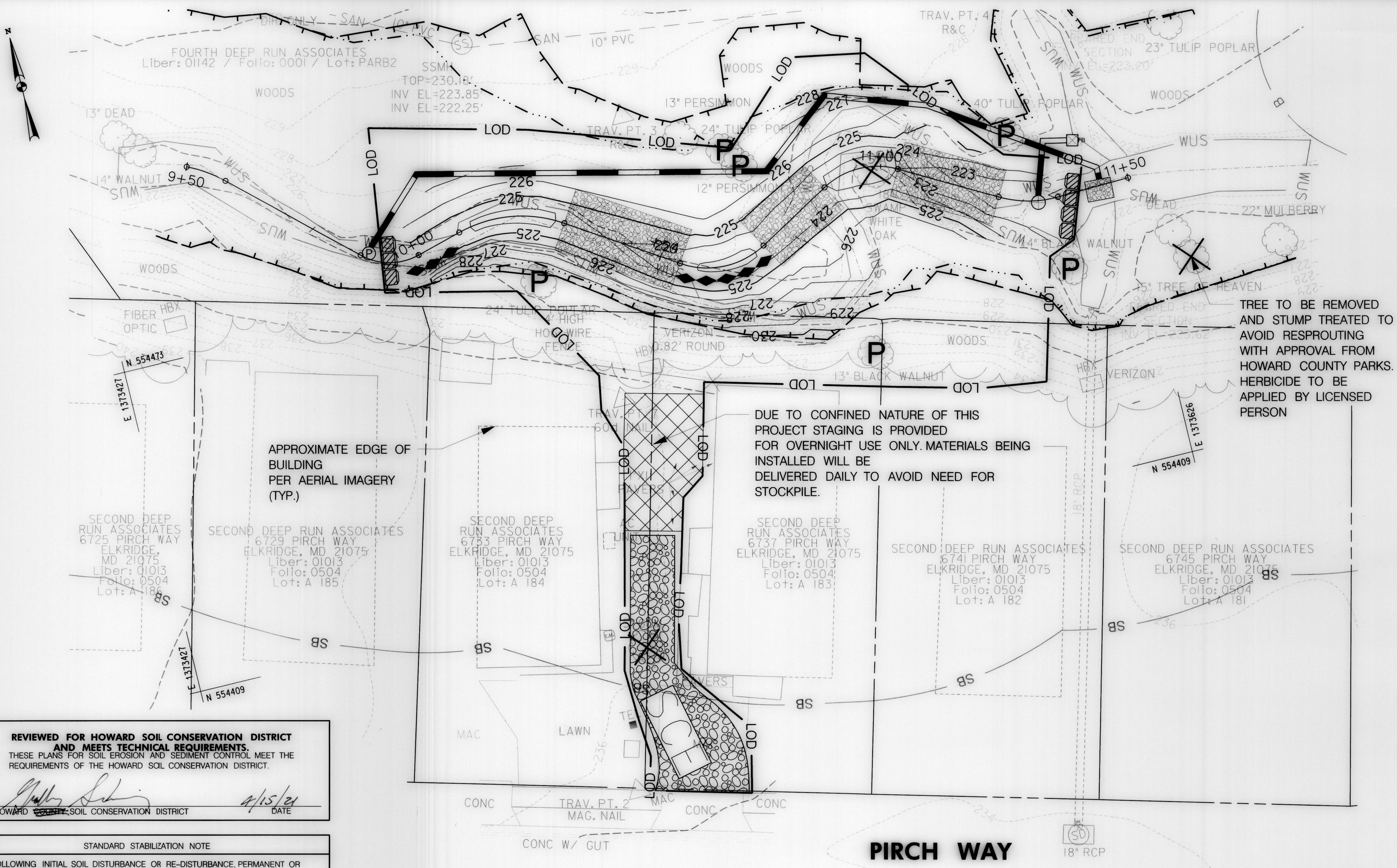
DES: NCW/OJB				
DRN: OJB				
CHK: LEN				
DATE: 3/31/21	BY	NO.	REVISION	DATE

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

EROSION AND SEDIMENT CONTROL DETAILS

SCALE: NOT TO SCALE

SHEET 7 OF 12



NOTE:

1. THE LOCATION OF PROTECTIVE ORANGE FENCE SHALL BE APPROVED BY THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS PRIOR TO CONSTRUCTION.

2. EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.

3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BEFORE EACH PHASE OF CONSTRUCTION AND CAN ONLY BE REMOVED UPON THE APPROVAL OF THE ENGINEER AND THE SEDIMENT CONTROL INSPECTOR. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.

4. CONTRACTOR SHALL STABILIZE DISTURBED AREAS WITHIN THE WORK AREA AT THE END OF EACH WORK DAY.

5. ANY STOCKPILE OF MATERIALS MUST REMAIN OUTSIDE THE 100 YEAR FLOODPLAIN.

6. ADDITIONAL SEDIMENT CONTROLS SHALL BE PROVIDED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

7. THE CONTRACTOR SHALL AVOID TRACKING HEAVY EQUIPMENT OVER CRITICAL ROOT ZONE OF SPECIMEN TREES. IF UNAVOIDABLE, LOAD MATS (MIN. 6" 3–PLY HARDWOOD LAMINATED CONSTRUCTION MAT OR EQUIVALENT) SHOULD BE USED WHEN TRACKING OVER THE CRITICAL ROOT ZONES.

7. WORKING HOURS ARE 7 A.M. TO 7 P.M. MONDAY THROUGH FRIDAY. WITH ADVANCED PERMISSION FROM THE COUNTY, CONTRACTORS MAY WORK ON SATURDAY 9 A.M. TO 3 P.M. NO WORK IS ALLOWED ON SUNDAY.

LEGEND

– – – – – –	EXISTING MAJOR CONTOUR
- - - - - -	EXISTING MINOR CONTOUR
———	PROPOSED MAJOR CONTOUR
———	PROPOSED MINOR CONTOUR
— — — —	PROPERTY LINE
— WUS —	WATERS OF THE US
● ● ●	WETLAND BOUNDARY
— B —	25' WETLAND BUFFER
— SAN —	EXISTING SANITARY SEWER
— LOD —	LIMIT OF DISTURBANCE
	EXISTING 100 YEAR FLOODPLAIN
	PROPOSED 100 YEAR FLOODPLAIN
	EXISTING TREE
	EXISTING TREE TO BE REMOVED
P	TREE PROTECTION PLANKING
FB ☒	DEWATERING FILTER BAG
⊕	DEWATERING PUMP
	OUTLET PROTECTION
☒	STAGING AREA
(P)	CLEAR WATER PUMP
	DIVERSION/DEWATERING HOSE
	SANDBAG DIKE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
– SB –	STREAM BUFFER

10' 0 10' 20'
SCALE: 1"=10'

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[illegible] 4/15/21
HOWARD ~~COUNTY~~ SOIL CONSERVATION DISTRICT — DATE

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES STEEPER THEN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OF GRADED AREAS ON THE PROJECT SITES NOT UNDER ACTIVE GRADING.

SOIL STABILIZATION MATTING NOTE

NATURAL FIBER MATTING IS TO EXTEND 12' MINIMUM BEYOND TOP OF BANK OR TO LIMIT OF DISTURBANCE IN ALL LOCATIONS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond 4/7/21
CHIEF, STORMWATER MANAGEMENT DIVISION — DATE

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Howard County
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STATE OF MARYLAND
LAUREN A. HAVENER
48173
PROFESSIONAL ENGINEER
[illegible]

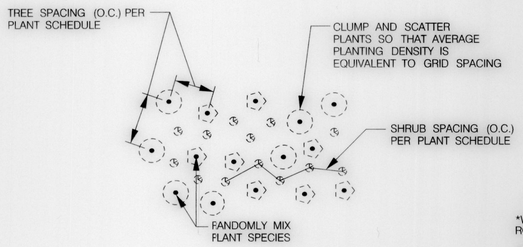
DES: NCW/OJB				
DRN: OJB				
CHK: LEN				
DATE: 3/31/21	BY	NO.	REVISION	DATE

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D–1176
HOWARD COUNTY
HSCD #: EP–20–11

EROSION AND SEDIMENT CONTROL PLAN

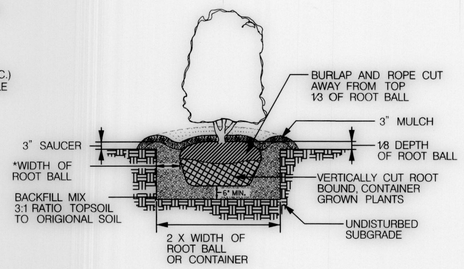
SCALE 1" =10'

SHEET 8 OF 12

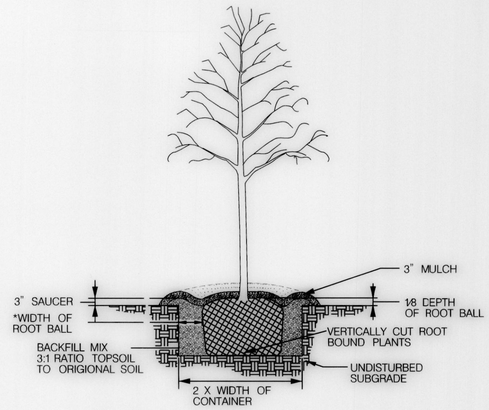


RANDOM PLANTING PATTERN
NOT TO SCALE

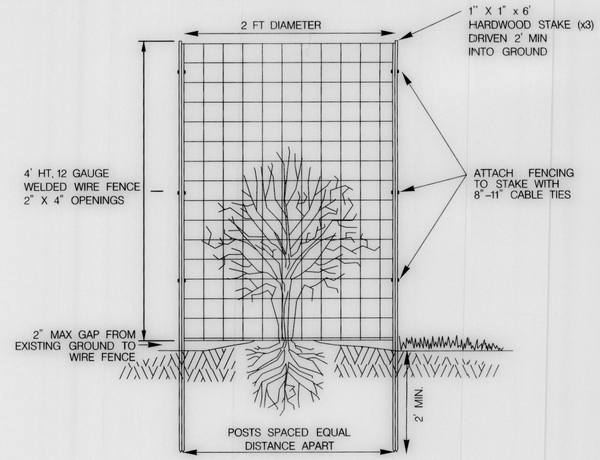
NOTES:
PLANTING IS TO MIMIC NATURAL SEED DISPERSAL. OFFSET PLANTS TO AVOID STRAIGHT ROWS



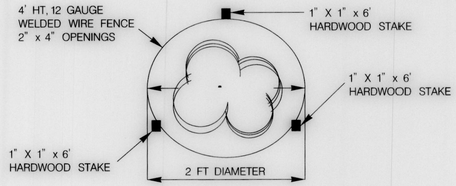
SHRUB PLANTING DETAIL
B & B AND CONTAINER GROWN
(NOT TO SCALE)



DECIDUOUS TREE PLANTING DETAIL
CONTAINER GROWN
(NOT TO SCALE)

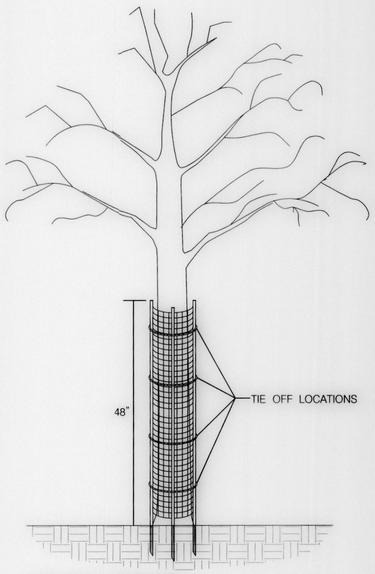


DEER PROTECTION DETAIL - SHRUB SECTION VIEW
(NOT TO SCALE)



DEER PROTECTION - SHRUB TOP VIEW
(NOT TO SCALE)

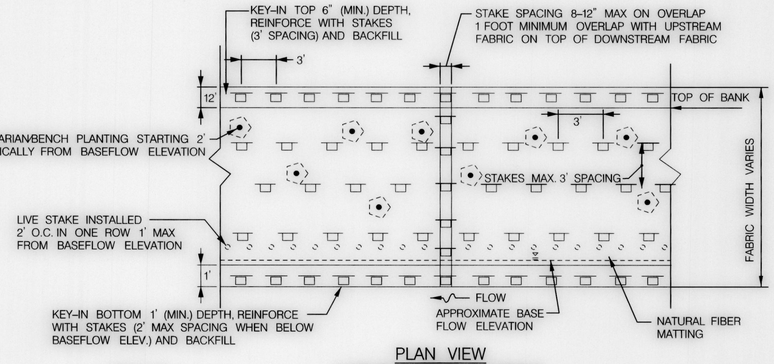
NOTE:
1. INSTALL DEER PROTECTION ON ALL SHRUBS



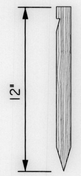
INSTALLATION INSTRUCTIONS:
1. PLANT TREE ACCORDING TO STANDARD SPECIFICATIONS.
2. PLACE THE SHELTER AROUND THE TREE.
3. DRIVE LONGER STAKES INTO THE GROUND.
4. SHELTERS SHALL BE ZIP TIED (8-11" CABLE TIES) TO STAKES IN FOUR LOCATIONS

PRODUCT NOTES:
1. TREE SHELTER SHALL BE A.M. LEONARD TREE BARK 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)



PLAN VIEW
NATURAL FIBER MATTING
(NOT TO SCALE)

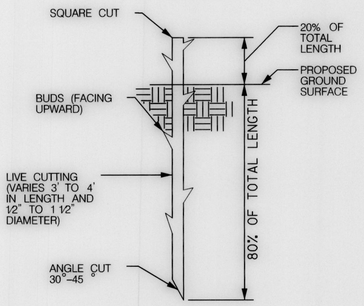


SPLIT 2" X 4" WOOD WEDGE OR EQUIVALENT

ANCHOR STAKE
(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%
SHEAR STRENGTH	4 LBS/SF



LIVE STAKE
(NOT TO SCALE)

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark L. Richmond — 4/7/21
CHIEF, STORMWATER MANAGEMENT DIVISION — DATE

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

Howard County MARYLAND
Storm Water Management Division
Bureau of Environmental Services
9801 Broken Land Parkway
Columbia, MD 21046
(410) 313-6444

	BY	NO.	REVISION	DATE
DES: NCW/OJB				
DRN: OJB				
CHK: LEN				
DATE: 3/31/21				

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

LANDSCAPE DETAILS

SCALE: NOT TO SCALE

SHEET: 9 OF 12

Planting Schedule							
Zone	Quantity	Botanical Name	Common Name	Wetland Status	Size	Root	Comment
Streambank	75	*Cornus amomum*	Silky Dogwood	FACW	3' Min. Length	Live Stake	Plant 2' O. C.
Streambank	75	*Salix nigra*	Black Willow	OBL	3' Min. Length	Live Stake	Plant 2' O. C.
Riparian Tree & Shrub	6	*Quercus alba*	White Oak	FACU	6'-7' HT, 1" Caliper Min.	5-7 GAL. CONT.	Plant 12' O.C.
Riparian Tree & Shrub	6	*Platanus occidentalis*	American Sycamore	FACW	6'-7' HT, 1" Caliper Min.	5-7 GAL. CONT.	Plant 12' O.C.
Riparian Tree & Shrub	6	*Diospyros virginiana*	Persimmon	FAC	6'-7' HT, 1" Caliper Min.	5-7 GAL. CONT.	Plant 12' O.C.
Riparian Tree & Shrub	6	*Liriodendron tulipifera*	Tulip Poplar	FACU	6'-7' HT, 1" Caliper Min.	5-7 GAL. CONT.	Plant 12' O.C.
Riparian Tree & Shrub	6	*Nyssa sylvatica* Marshall	Blackgum	FAC	6'-7' HT, 1" Caliper Min.	5-7 GAL. CONT.	Plant 12' O.C.
Riparian Tree & Shrub	4	*Ilex verticillata*	Winterberry Holly	FACW	2'-3' HT, 4 canes Min.	3 GAL. CONT.	Plant 8' O.C.
Riparian Tree & Shrub	4	*Viburnum dentatum*	Southern Arrowwood	FAC	2'-3' HT, 4 canes Min.	3 GAL. CONT.	Plant 8' O.C.

Riparian Seed Mix					
Zone	Botanical Name	Common Name	Percent Mix	Seeding Rate	Quantity (lbs.)
Streambank, Riparian Tree & Shrub	*Elymus virginicus*	Virginia Wildrye	5		
Streambank, Riparian Tree & Shrub	*Agrostis alba*	Redtop	5		
Streambank, Riparian Tree & Shrub	*Poa compressa*	Canada Bluegrass	5		
Streambank, Riparian Tree & Shrub	*Festuca arundinacea*	Trident tall Fescue	10		
Streambank, Riparian Tree & Shrub	*Sorghastrum nutans*	Indian Grass	5		
Streambank, Riparian Tree & Shrub	*Lolium multiflorum*	Annual Ryegrass	25		
Streambank, Riparian Tree & Shrub	*Elymus sp.*	Saint Perennial Ryegrass	20		
Streambank, Riparian Tree & Shrub	*Festuca rubra*	Creeping Red Fescue	25		
			TOTAL MIX	40 lbs per acre	3.6

Turfgrass Seed Mix					
Zone	Botanical Name	Common Name	Percent Mix	Seeding Rate	Quantity (lbs.)
Turfgrass	*Poa pratensis*	Kentucky Blue Grass	33		
Turfgrass	*Lolium perenne*	Perennial Rye Grass	33		
Turfgrass	*Schedonoris phoenix*	Tall Fescue	34		
			TOTAL MIX	50 lbs per acre	1.6

NOTE: TURFGRASS PROPOSED TO RESTORE LAWN AREAS ADJACENT TO PRIVATE RESIDENCES.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[illegible] 4/7/21
CHIEF, STORMWATER MANAGEMENT DIVISION DATE

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MARYLAND
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STATE OF MARYLAND
LAUREN A. HAVENER
48173
PROFESSIONAL ENGINEER

DES: NCW/OJB
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PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
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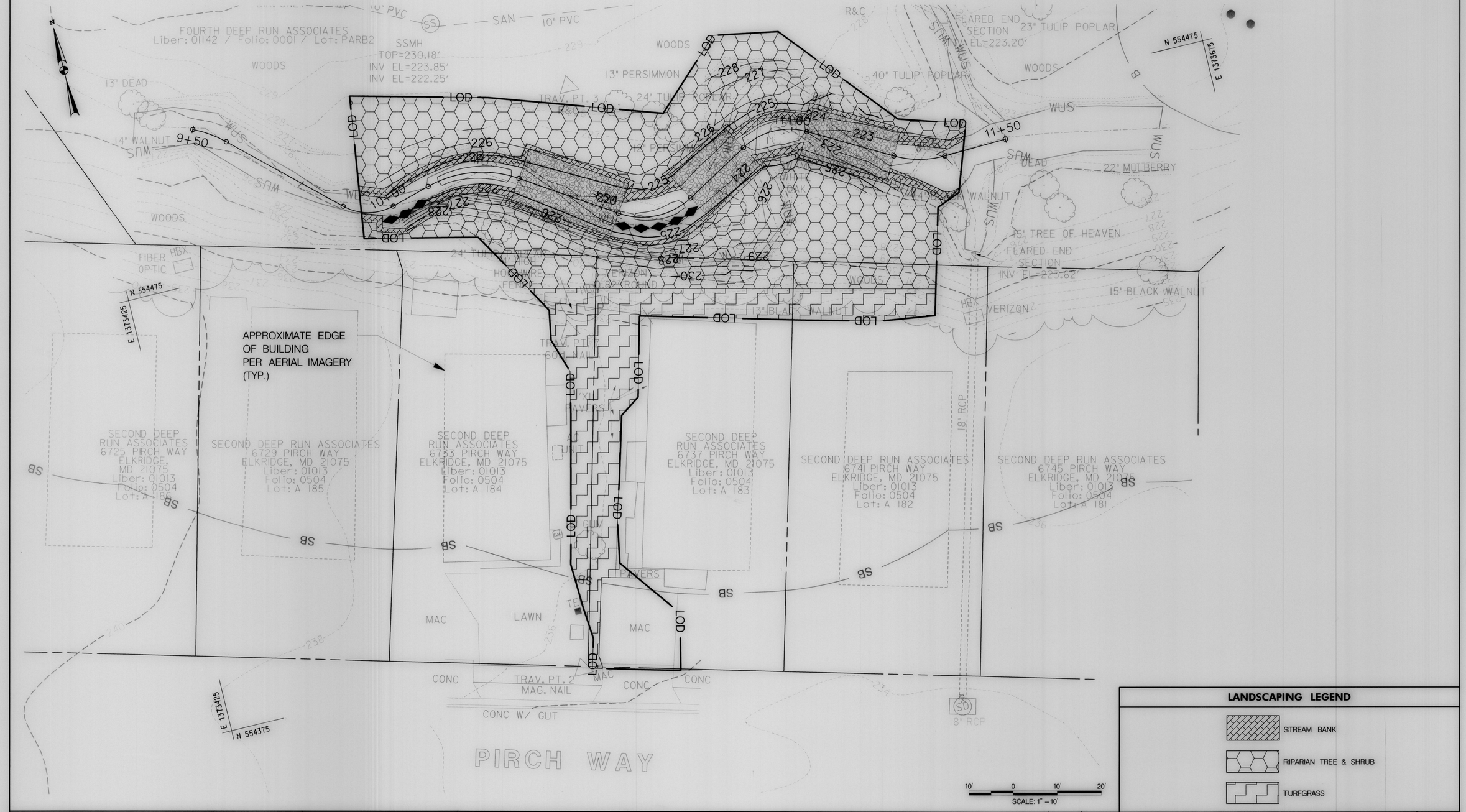
LANDSCAPE DETAILS

SCALE
NOT TO SCALE

SHEET
10 OF 12



LANDSCAPING LEGEND

- STREAM BANK
- RIPARIAN TREE & SHRUB
- TURFGRASS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark S. Richmond — 4/7/21
CHIEF, STORMWATER MANAGEMENT DIVISION — DATE

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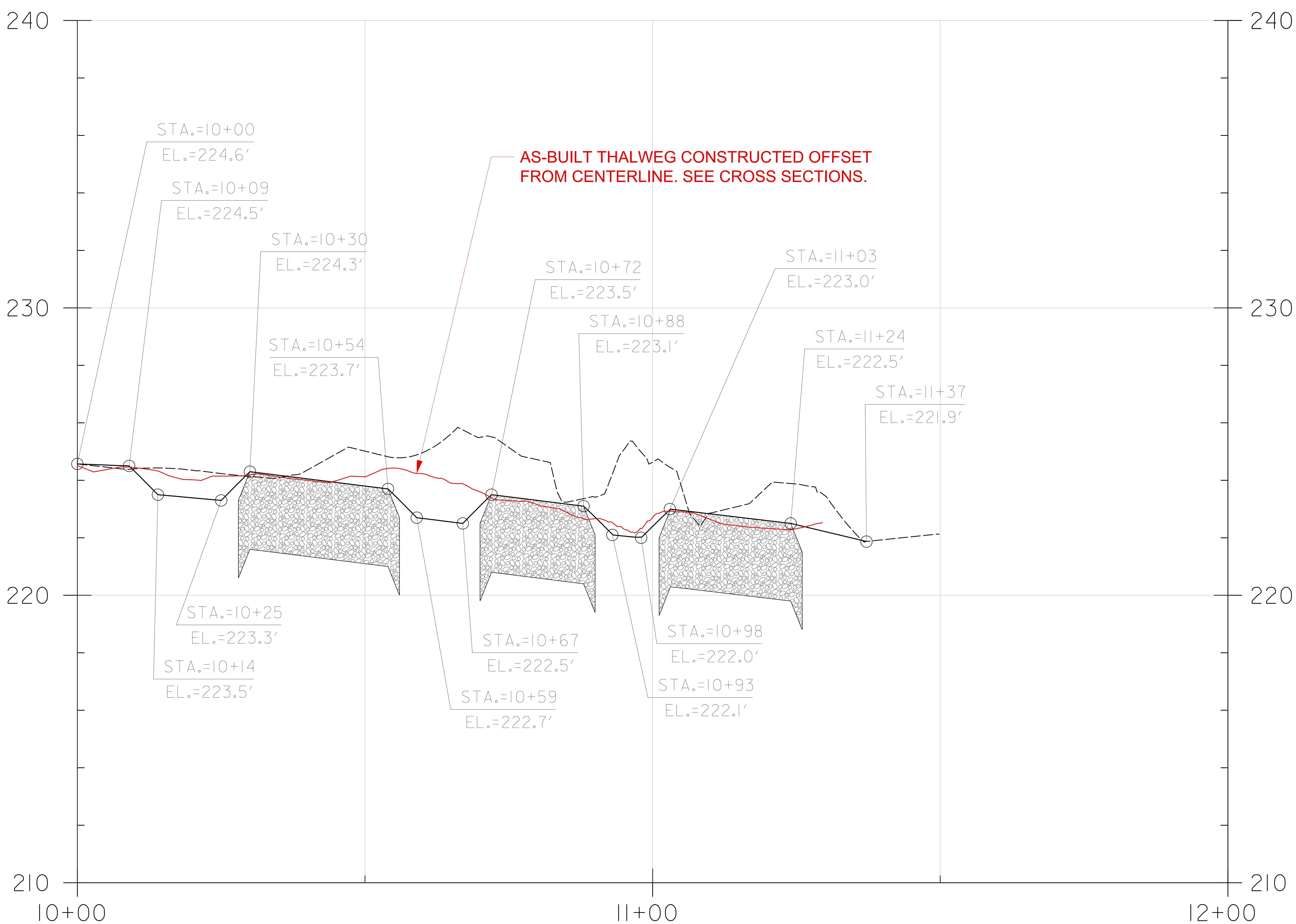
PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

LANDSCAPE PLAN

SCALE: 1" = 10'

SHEET: 11 OF 12



LEGEND

AS-BUILT (red solid line) — – – – – – – — EXISTING GROUND 2019 — ——— PROPOSED GRADE — ▨ RIFFLE GRADE CONTROL

SCALE
HORIZONTAL: 1"=10′ VERTICAL: 1"=2′

DEPARTMENT OF PUBLIC WORKS **HOWARD COUNTY, MARYLAND** [illegible] 4/14/2021 DIRECTOR OF PUBLIC WORKS DATE [illegible] 4/7/21 CHIEF, STORMWATER MANAGEMENT DIVISION DATE [illegible] 4/8/21 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE	**McCORMICK TAYLOR** 509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400	Storm Water Management Division Bureau of Environmental Services 9801 Broken Land Parkway Columbia, MD 21046 (410) 313-6444

STATE OF MARYLAND · LAUREN A. HAVENER · 48173 · PROFESSIONAL ENGINEER
[illegible]

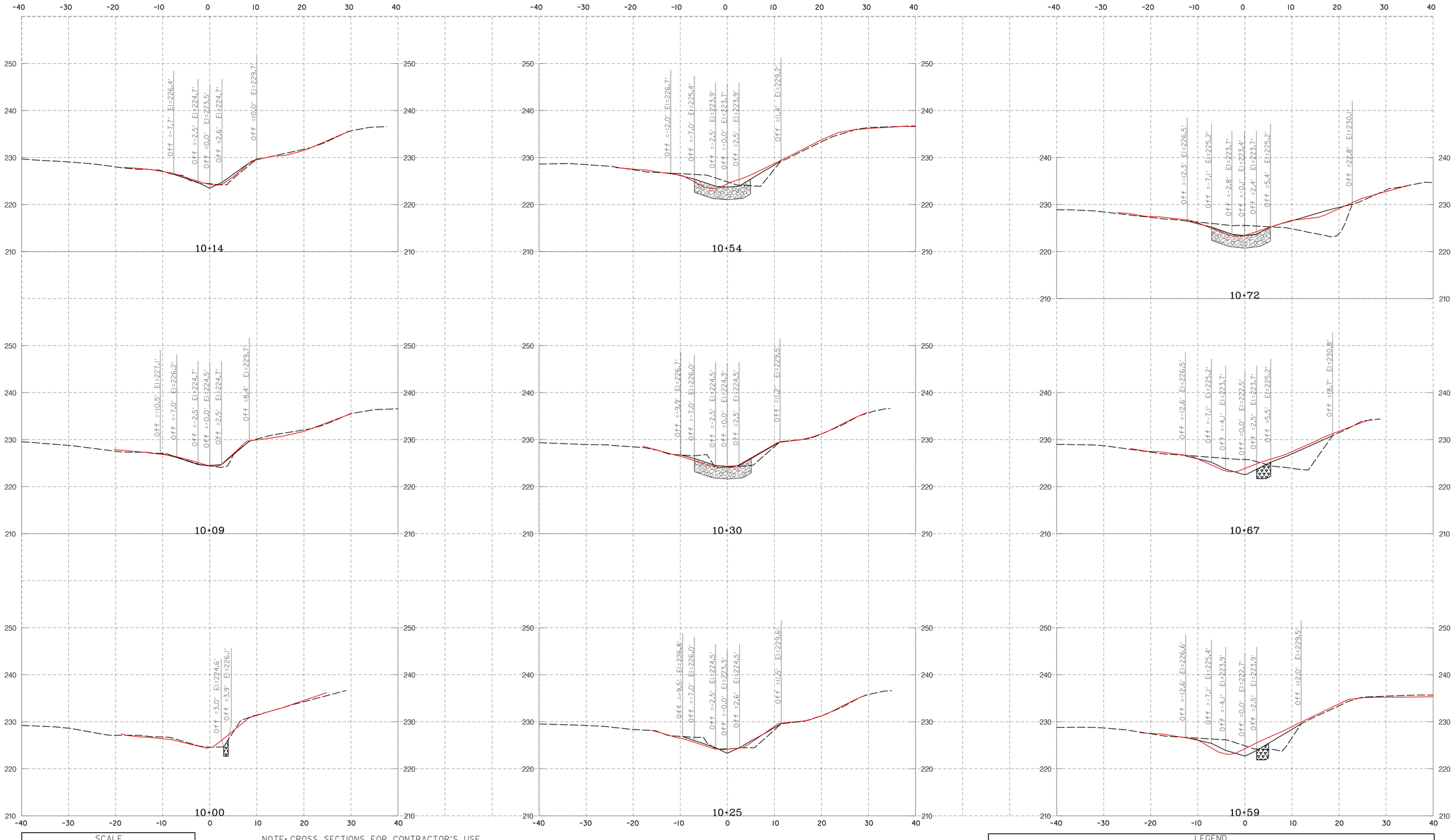
	BY	NO.	REVISION	DATE
DES: NCW/OJB	LEN		AS-BUILT	7/23/21
DRN: OJB				
CHK: LEN				
DATE: 3/31/21				

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

PROFILE SHEET

SCALE: AS SHOWN

SHEET: 12 OF 12



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1" = 10'

NOTE: CROSS SECTIONS FOR CONTRACTOR'S USE.
NOT PART OF GRADING PERMIT PLANS.

LEGEND
AS-BUILT
EXISTING
PROPOSED
RIFFLE GRADE CONTROL
TOE BOULDER PROTECTION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/14/2021
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 4/9/21
CHIEF, STORMWATER MANAGEMENT DIVISION — DATE 4/7/21

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STATE OF MARYLAND — LAUREN A. HAUER — 21813 — PROFESSIONAL ENGINEER

DES: NCW/OJB	LEN		AS-BUILT	7/23/21	
DRN: OJB					
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PIRCH WAY
STREAM STABILIZATION PROJECT
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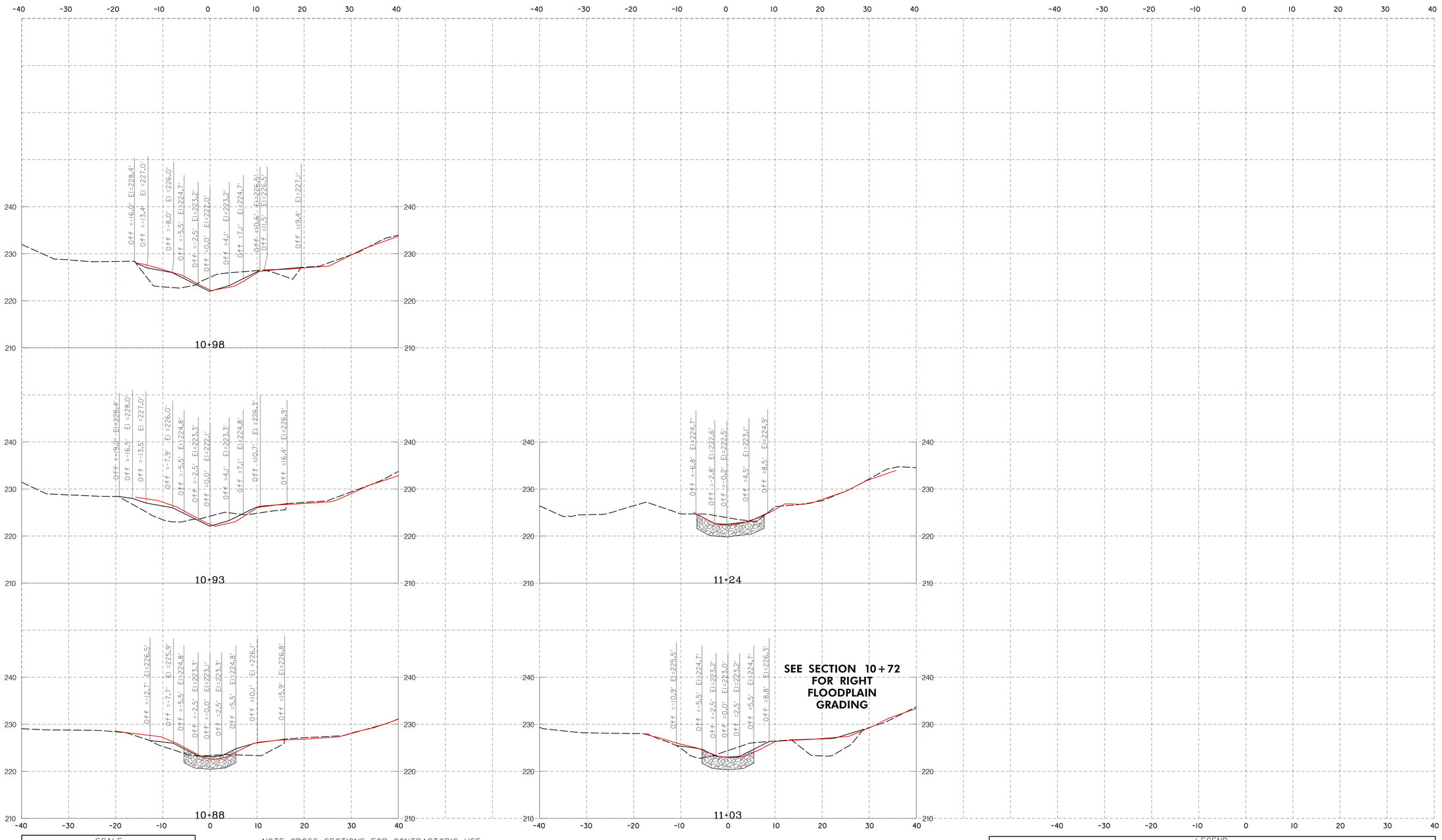
CROSS SECTIONS

SCALE: AS SHOWN

SHEET: 1 OF 2



SCALE
HORIZONTAL: 1"=10' VERTICAL: 1" = 10'

NOTE: CROSS SECTIONS FOR CONTRACTOR'S USE. NOT PART OF GRADING PERMIT PLANS.

AS-BUILT

LEGEND
EXISTING PROPOSED RIFFLE GRADE CONTROL TOE BOULDER PROTECTION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/14/2021

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES — DATE 4/8/21

CHIEF, STORMWATER MANAGEMENT DIVISION — DATE 4/7/21

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

Storm Water Management Division
Bureau of Environmental Services
9801 Broken Land Parkway
Columbia, MD 21046
(410) 313-6444

DES: NCW/OJB
DRN: OJB
CHK: LEN
DATE: 3/31/21

BY	NO.	REVISION	DATE
LEN		AS-BUILT	7/23/21

PIRCH WAY
STREAM STABILIZATION PROJECT
CAPITAL PROJECT #D-1176
HOWARD COUNTY
HSCD #: EP-20-11

CROSS SECTIONS

SCALE: AS SHOWN

SHEET: 2 OF 2