

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

- No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 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.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
- Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
- 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.
- After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
 - Use IV-P waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.
- Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- 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.
- A dewatering pump will be utilized in conjunction with a dirt bag (see detail this sheet) to remove standing water in the project area during construction. The dirt bag will be placed on a vegetated area a sufficient distance from subject reach so that any sediment leaving the dirt bag has time/distance to settle out before reaching the waterway.

GENERAL NOTES

- Property consists of four parcels totaling ±25.04 acres. The entire property is zoned exempt. Tax map identification can be found on the plan view on sheet one and in the property owner information.
- Base map information provided by CLSI and Howard County GIS.
- The streams and nontidal wetlands as shown were delineated on-site by Ecotone, LLC in June 2019, and should be considered preliminary until approved.
- Forest stand delineation conducted by Ecotone, LLC in June 2019.
- 100-year floodplain is located on the project site, information provided by FEMA.
- No rare, threatened, or endangered species were encountered on the site. A letter was received from the Maryland Department of Natural Resources Wildlife Heritage Service verifying that there are no records of any rare, threatened, or endangered species, or their habitats known to occur on or near the site.
- There are no structures on site that will require Historic Preservation Commission review, per email correspondence from DPZ dated 4/23/2020.
- No state or county champion trees or trees exceeding 75% of a state champion are present.
- Plumtree Run and its Tributary have the following impairments: Category 2 (Cadmium, Nitrogen, Phosphorus), Category 3 (E. coli), Category 4a (Total Suspended Solids), Category 5 (Chloride), and PCBs. The streams are not located within a Tier II catchment.

SEQUENCE OF CONSTRUCTION

- Contractor shall notify owner and Howard County Department of Public Works, Construction Inspection Division at least 48 hours prior to beginning any work and the Maryland Department of the Environment Inspection and Compliance Program (410 537-3510) at least 5 days prior to beginning any work. Miss Utility must be contacted at least 72 hours prior to beginning work. A pre-construction meeting is required with the landowner, contractor, and Howard County Department of Public Works, Construction Inspection Division prior to construction starting.
- All necessary approvals and permits must be obtained prior to start of construction. **Grading Permit #**: MDE Permit #: 202061894.
- Clear and grub for the installation of sediment and erosion control measures or devices (2 days).
- Install stabilized construction entrances and all sediment control devices (3 days).
- Notify Howard County Department of Public Works, Construction Inspection Division upon completion of said installation.
- With the approval of Howard County Department of Public Works, Construction Inspection Division, clear and grub for in-stream work. The stream is in the Little Patuxent River watershed, designated as Use IV-P by the Maryland Department of the Environment. No in-stream work shall be placed during the period March 1 through May 31 (15 days).
- Construct the offline portions of the stream first. This can be completed during the stream closure assuming all work is occurring outside of the existing channel for all tributaries. Excavate channels and floodplain grading as shown on the grading plans. Using excavated material, create earthen dike above the ordinary high water mark of the existing channels and stabilize to prevent runoff from floodplain entering the existing channel. Stabilize berms at the end of each working day and inspect/repair after rain events.
- Construct confluence of tributaries 1-3 with temporary grade control. Confluence will be constructed downstream to upstream outside of the closure period.
- Construct tie-ins within existing channel outside of the closure period.
- Backfill existing channels with earthen dike material, bringing floodplain to grade as shown on plans.
- Install pump around practices in the unnamed tributaries. All pump around diversions shall be set up and running before in-stream work will be permitted to start. See Pump-Around Note, this sheet (1 day) (adjust daily as necessary).
- Begin stream work starting at the upstream end of the project and work downstream. Complete installation of all in-stream structures. Remove any accumulated sediment in the stream channel at the end of each working day and prior to the removal of the pump around practice (100 days).
- Stabilize all disturbed areas at the end of each working day or within a 3-day dry weather forecast.
- Once stream restoration is complete, seed and stabilize any remaining work areas (7 days).
- Upon stabilization of site with established vegetation and with permission of the Howard County Department of Public Works, Construction Inspection Division field technician, remove sediment control measures and stabilize those areas disturbed by this process, including any spoils areas (1 day).
- Install plant material during appropriate planting dates (10 days).

SEDIMENT CONTROL NOTES

- Refer to "2011 Maryland Standards and Specifications for Soil Erosion and Sediment control" for standard details and detailed specifications of each practice specified herein.
- With the approval of the sediment control inspector, minor field adjustments can and will be made to insure the control of any sediment. Changes in sediment control practices require prior approval of the sediment control inspector and the Howard Soil Conservation District.
- At the end of each working day, all sediment control practices will be inspected and left in operational condition.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:
 - Three calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than three horizontal to one vertical (3:1), and
 - Seven days as to all other disturbed or graded areas on the project site which will remain idle over fourteen days.
- Disturbance shall not exceed that which can and shall be stabilized daily.
- Any change to the grading proposed on this plan requires resubmission to Howard Soil Conservation District for approval.
- Dust control will be provided for all disturbed areas. Refer to "2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control", pg. H-3-1, for acceptable methods and specifications for dust control.
- Any variations from the sequence of operations specified on this plan require the approval of the sediment control inspector and the Howard Soil Conservation District prior to the initiation of the change.
- Excess cut or borrow material shall go to, or come from, respectively, a site with an open grading permit or approved agricultural ground.
- The following item may be used as applicable: refer to "Maryland's Guidelines to Waterway Construction" by the Water Management Administration of the Maryland Department of the Environment, revised November, 2000, for standard details and detailed specifications of each practice specified herein for waterway construction.
- All work is to be completed "in the dry", see sequence of operations. After rainfall events during construction, the site is to be fully dewatered prior to proceeding with grading.
- Ingress and egress to the site shall be from Dunloggin Middle School off of Northfield Rd, Ellicott City, MD 21042.
- The contractor must adhere to "Best Management Practices for Working in Nontidal Wetlands, Wetland Buffers, Waterways, and the 100-year Floodplain".

PROPERTY OWNER INFORMATION

HOWARD COUNTY MD
DEPT. OF RECREATION AND PARKS
CHATHAM RD
ELLICOTT CITY, MD 21042
HOWARD COUNTY

PROPERTY OWNER INFORMATION

HOWARD COUNTY MD
BOARD OF EDUCATION
10910 CLARKSVILLE PK
ELLICOTT CITY MD 21042-
HOWARD COUNTY

SITE DATA

DEED REF. 01936/00339
MAP 24, GRID 16, PARCEL 1073
ELECTION DISTRICT 2
EXISTING ZONING EXEMPT
SITE ACREAGE: ±0.52 AC.
8 DIGIT HUC: 02060006
MD 8 DIGIT BASIN: 02131105
(LITTLE PATUXENT RIVER)

SITE DATA

DEED REF. 00972/00775
MAP 24, GRID 21, PARCEL 1147
ELECTION DISTRICT 2
EXISTING ZONING EXEMPT
SITE ACREAGE: ±15.46 AC.
8 DIGIT HUC: 02060006
MD 8 DIGIT BASIN: 02131105
(LITTLE PATUXENT RIVER)

SITE DATA

DEED REF. 00587/00152
MAP 24, GRID 21, PARCEL 1064
ELECTION DISTRICT 2
EXISTING ZONING EXEMPT
SITE ACREAGE: ±20.00 AC.
8 DIGIT HUC: 02060006
MD 8 DIGIT BASIN: 02131105
(LITTLE PATUXENT RIVER)

SITE DATA

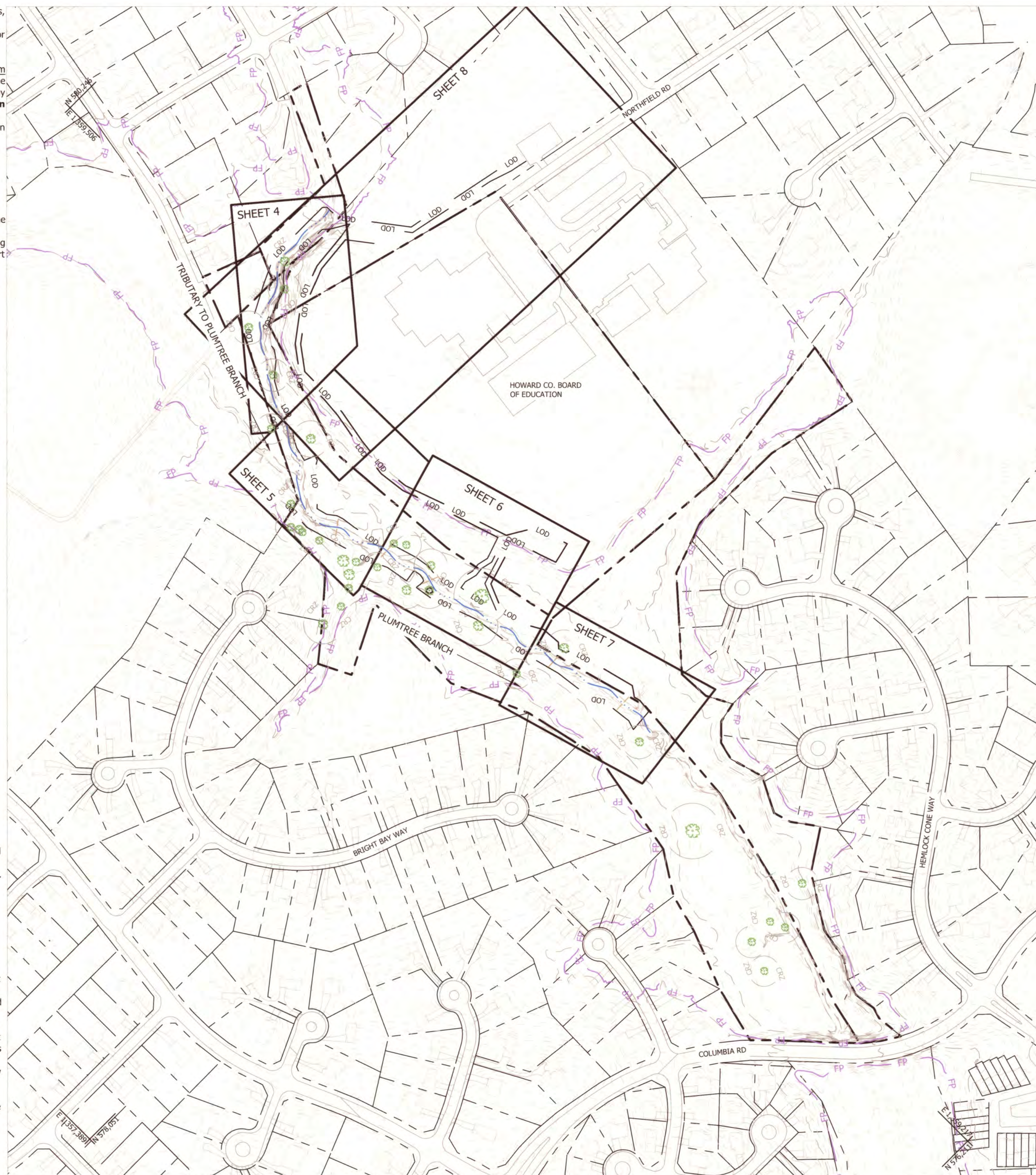
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MAP 30, GRID 4, PARCEL 396
ELECTION DISTRICT 2
EXISTING ZONING EXEMPT
SITE ACREAGE: ±7.92 AC.
8 DIGIT HUC: 02060006
MD 8 DIGIT BASIN: 02131105
(LITTLE PATUXENT RIVER)

SITE DATA

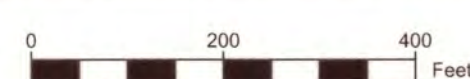
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MAP 24, GRID 16, PARCEL 1016
ELECTION DISTRICT 2
EXISTING ZONING EXEMPT
SITE ACREAGE: ±1.14 AC.
8 DIGIT HUC: 02060006
MD 8 DIGIT BASIN: 02131105
(LITTLE PATUXENT RIVER)

PLUMTREE BRANCH AT DUNLOGGIN MIDDLE SCHOOL ECOLOGICAL RESTORATION

9129 NORTHFIELD RD, ELLICOTT CITY, MD 21042



**LOCATION MAP /
KEY SHEET**
SCALE: 1" = 200'



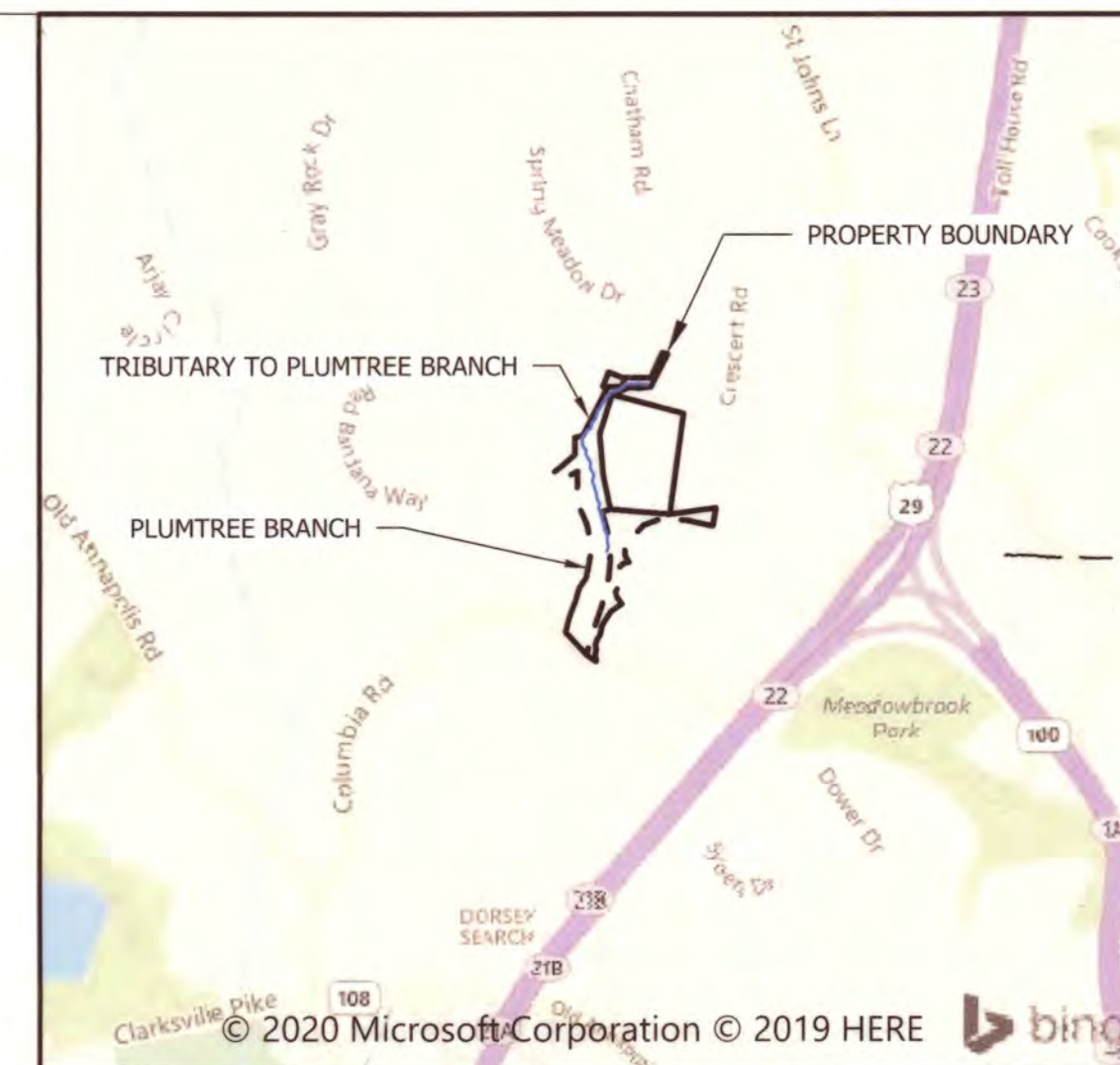
Note: Design H&H calculations were computed and checked by Ecosystem Planning & Restoration (EPR) in April 2022.

SITE ANALYSIS
LIMIT OF DISTURBANCE: ±185,987 SF. / 4.27 AC.
NEW IMPERVIOUS AREA: NONE
TOTAL AREA TO BE STABILIZED: 4.34 AC.
APPROXIMATE CUT: 1,608 CY.
APPROXIMATE FILL: 1,537 CY.
APPROXIMATE NET: 71 CY. (CUT)

COORDINATE NOTE

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

TEMPORARY BENCHMARKS	
TBM 1	346.92'
TBM 2	335.23'
TBM 3	333.86'
TBM 4	330.76'
TBM 5	330.28'
TBM 6	330.02'
TBM 7	329.62'
TBM 8	328.98'
TBM 9	328.39'
TBM 10	327.65'
TBM 11	327.65'
TBM 12	326.69'
TBM 13	326.23'
TBM 13	339.32'



VICINITY MAP
SCALE: 1" = 2000'

ENGINEER'S CERTIFICATE

I hereby certify that this Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature of Engineer: *[Signature]* Date: 5/18/22

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature of Developer: *[Signature]* Date: 5/18/22

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Signature: *[Signature]* Date: 5/24/22
District: Howard Soil Conservation Dist. EPR-21-03

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development _____ Date _____

Chief, Development Engineering Division _____ Date _____

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways _____ Date _____

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. 27189, expiration date: 03/26/24.

Signature: *[Signature]* Date: 5/18/22



**PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL**
COVER SHEET
GRADING & SEDIMENT CONTROL PLAN
9129 NORTHFIELD RD
ELLICOTT CITY, MD 21042

REVISIONS			
No.	DATE	DESCRIPTION	REV. BY

CHECKED BY: JPD

DESIGNED: SDB/SGM

DRAWN: REL/RG

PROJECT No.: 19-05-003

DATE: 5/11/2022

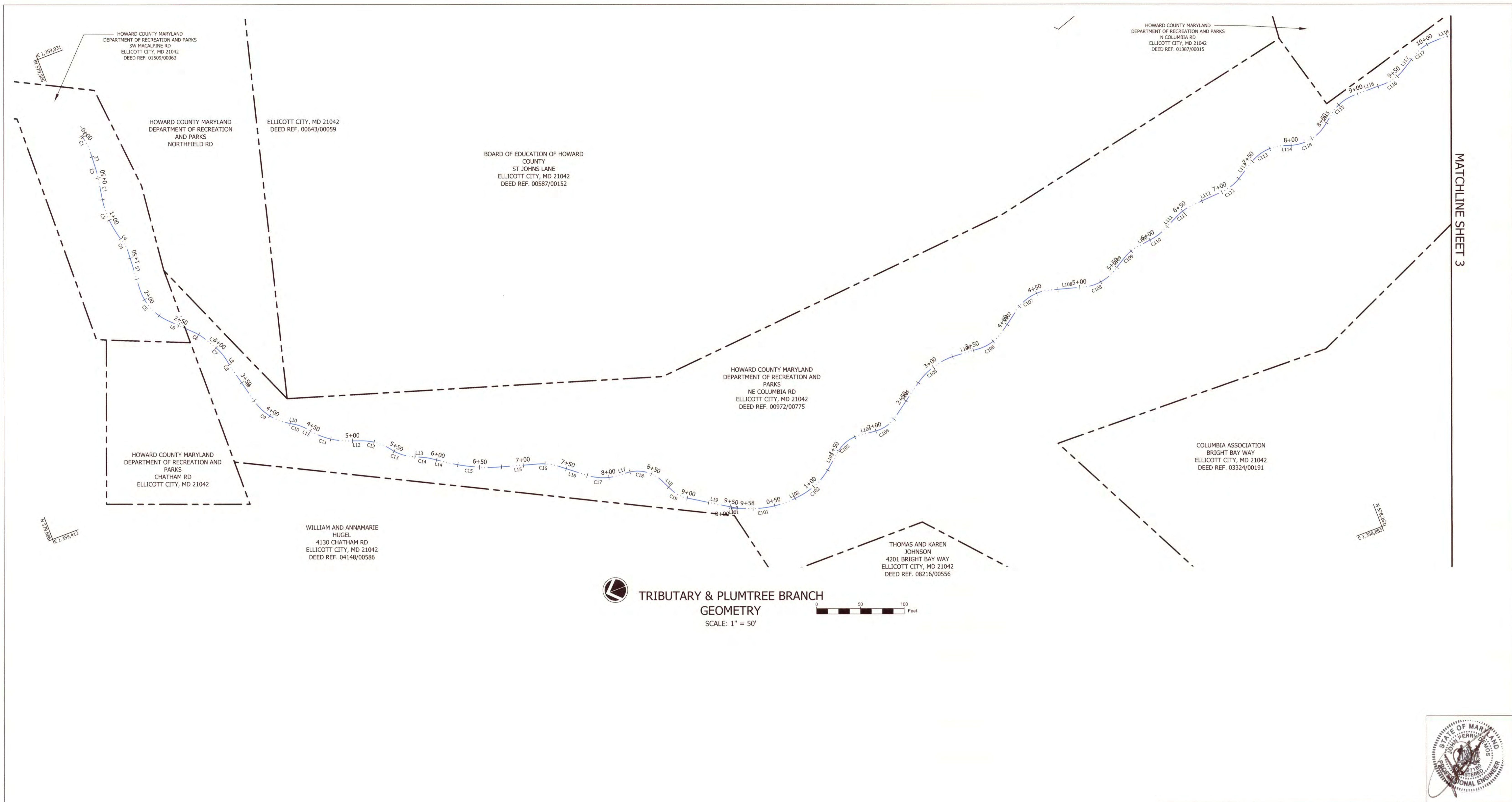
SHEET:

1 of 20



ecotone
ecological restoration

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



PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
GEOMETRY
GRADING & SEDIMENT CONTROL PLAN
9129 NORTHFIELD RD
ELLICOTT CITY, MD 21042

REVISIONS			
No.	DATE	DESCRIPTION	REV. BY

CHECKED BY: JPD
 DESIGNED: SOB/SGM
 DRAWN: REL/RG
 PROJECT No.: 19-05-003
 DATE: 5/11/2022
 SHEET:



\\projects\2019\Projects\19-05-003 Plumtree Branch (Dunloggin)\CAD\19-05-003 LAYOUT STREAM.dwg R0000000

MATCHLINE SHEET 2



UT PLUMBTREE BASELINE CONTROL COORDINATES					
Number	Station	Bearing	Radius	Northing	Easting
L1	0+02	S71° 31' 53.69\"W		579491.1326	1359831.6953
C1	0+00		50.00	579490.4885	1359829.7668
L2	0+19	N86° 48' 16.91\"W		579487.9912	1359811.1407
C2	0+39		100.00	579489.1142	1359791.0234
L3	0+50	N80° 17' 34.70\"W		579490.3905	1359779.7364
C3	0+74		110.00	579494.3176	1359756.7788
L4	1+21	S75° 09' 16.32\"W		579492.2207	1359710.0483
C4	1+30		40.00	579489.7544	1359700.7436
L5	1+43	N86° 23' 21.61\"W		579488.4986	1359687.9760
C5	1+86		60.00	579491.1844	1359645.4136
L6	2+37	S44° 48' 13.49\"W		579473.5843	1359599.0636
C6	2+69		60.00	579450.9477	1359576.5815
L7	2+87	S59° 31' 09.40\"W		579440.2931	1359562.2561
C7	2+95		60.00	579436.0508	1359555.0487
L8	3+19	S79° 41' 53.08\"W		579427.4082	1359533.2083
C8	3+28		60.00	579425.7147	1359523.8912
L9	3+32	S76° 08' 12.11\"W		579424.9341	1359520.2449
C9	3+76		60.00	579414.4539	1359477.7797
L10	4+21	S32° 55' 14.38\"W		579388.8104	1359441.7907
C10	4+32		40.00	579379.6998	1359435.8921

UT PLUMBTREE BASELINE CONTROL COORDINATES					
Number	Station	Bearing	Radius	Northing	Easting
L11	4+45	S50° 59' 20.30\"W		579370.3579	1359427.4939
C11	4+50		85.00	579367.1530	1359423.5378
L12	4+95	S20° 14' 03.80\"W		579330.5041	1359397.2885
C12	5+11		60.00	579316.1640	1359392.0026
L13	5+46		50.02	579288.3417	1359370.9271
C13	5+71	S25° 42' 48.51\"W		579269.5535	1359355.2261
L14	5+86		50.00	579255.9288	1359348.6650
L14	5+94	S34° 41' 50.23\"W		579249.1604	1359344.7248
C15	6+12		200.00	579234.4147	1359334.5155
L15	6+75	S16° 26' 08.48\"W		579177.1544	1359307.1221
C16	7+18		60.00	579136.6940	1359295.1866
L16	7+41	S38° 22' 58.03\"W		579116.4156	1359284.6711
C17	7+75		60.00	579089.5316	1359263.3762
L17	8+11	S03° 28' 44.98\"W		579055.9179	1359250.5196
C18	8+22		40.00	579045.5861	1359249.8915
L18	8+64	S64° 27' 04.60\"W		579011.9247	1359227.2163
C19	8+78		40.00	579005.8169	1359214.4390
L19	9+04	S32° 33' 10.14\"W		578988.8203	1359196.5406

RADIUS TABLE				
RADIUS NUMBER	REALIGNMENT STATION START	REALIGNMENT STATION END	RADIUS OF CURVATURE	RADIUS OF CURVATURE/BANKFULL
C1	0+00	0+19	50.00'	2.75
C2	0+39	0+50	100.00'	5.50
C3	0+74	1+21	110.00'	6.05
C4	1+30	1+43	40.00'	2.75
C5	1+86	2+37	60.00'	3.30
C6	2+69	2+87	60.00'	3.30
C7	2+95	3+19	60.00'	3.30
C8	3+28	3+32	60.00'	3.30
C9	3+76	4+21	60.00'	3.30
C10	4+32	4+45	40.00'	2.75
C11	4+50	4+95	85.00'	4.68
C12	5+11	5+46	60.00'	3.30
C13	5+46	5+71	50.02'	2.75
C14	5+86	5+94	50.00'	2.75
C15	6+12	6+75	200.00'	11.00
C16	7+18	7+41	60.00'	2.75
C17	7+75	8+11	60.00'	2.75
C18	8+22	8+64	40.00'	2.20
C19	8+78	9+04	40.00'	2.20

PLUMTREE-MAIN BRANCH BASELINE CONTROL COORDINATES					
Number	Station	Bearing	Radius	Northing	Easting
L101	0+00	S21° 57' 09.98\"W		578949.0170	1359169.6170
C101	0+14		115.08	578936.1445	1359164.4285
L102	0+71	S06° 01' 43.58\"E		578880.4489	1359153.7224
C102	0+81		80.00	578870.8961	1359154.7312
L103	1+28	S39° 39' 26.96\"E		578828.2426	1359172.6989
C103	1+49		40.00	578812.1122	1359186.0705
L104	1+81	S06° 09' 58.66\"W		578782.2877	1359195.0441
C104	1+99		40.00	578763.7195	1359193.0380
L105	2+28	S35° 08' 25.16\"E		578736.3996	1359200.0968
C105	2+74		80.00	578699.0884	1359226.3588
L106	3+29	S04° 24' 24.63\"W		578646.8949	1359240.7027
C106	3+56		50.00	578619.7600	1359238.6115
L107	3+91	S35° 06' 44.33\"E		578587.1591	1359247.5624
C107	4+21		50.00	578562.2425	1359265.0820
L108	4+66	S16° 03' 11.00\"W		578519.6571	1359272.2310
C108	5+04		50.00	578482.8354	1359261.6357
L109	5+45	S30° 20' 02.89\"E		578443.7569	1359266.5312
C109	5+64		50.00	578426.8258	1359276.4385
L110	5+84	S07° 46' 25.41\"E		578408.3368	1359282.8243
C110	6+04		50.00	578388.7373	1359285.4999

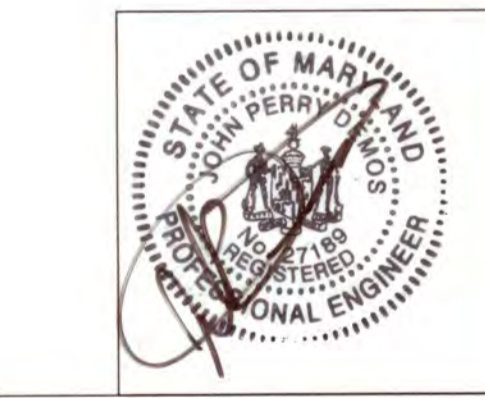
PLUMTREE-MAIN BRANCH BASELINE CONTROL COORDINATES					
Number	Station	Bearing	Radius	Northing	Easting
L111	6+19	S24° 49' 48.38\"E		578374.5039	1359289.6626
C111	6+43		50.00	578351.9429	1359300.1016
L112	6+62	S03° 53' 50.96\"E		578334.3451	1359304.6081
C112	7+01		50.00	578294.6968	1359307.3093
L113	7+26	S31° 34' 39.48\"E		578271.9127	1359314.5971
C113	7+48		50.00	578252.6969	1359326.4084
L114	7+93	S19° 42' 36.22\"W		578209.6512	1359330.8824
C114	7+97		50.00	578205.4283	1359329.3696
L115	8+48	S38° 17' 17.68\"E		578157.5844	1359337.1950
C115	8+62		50.00	578146.5608	1359345.8972
L116	8+96	S00° 39' 36.35\"W		578115.0039	1359356.6487
C116	9+32		50.00	578078.9236	1359356.2330
L117	9+60	S31° 09' 47.90\"E		578052.4736	1359363.4449
C117	9+81		50.00	578034.8572	1359374.0983
L118	10+06	S01° 27' 29.64\"E		578010.2557	1359381.2973
C118	10+42		50.00	577975.1208	1359382.1917
L119	10+67	S30° 38' 07.72\"E		577950.9145	1359389.1542
C119	11+06		50.00	577917.4963	1359408.9456
L120	11+35	S02° 43' 51.26\"W		577889.6353	1359415.8675
C120	11+79		50.00	577846.0574	1359413.7889

PLUMTREE-MAIN BRANCH BASELINE CONTROL COORDINATES					
Number	Station	Bearing	Radius	Northing	Easting
L121	11+94	S14° 37' 56.38\"E		577831.0444	1359415.3537
C121	12+30		50.00	577796.0782	1359424.4828
L122	12+69	S29° 35' 55.16\"W		577758.7513	1359419.5798
C122	12+74		50.00	577753.5886	1359416.6472

RADIUS TABLE				
RADIUS NUMBER	REALIGNMENT STATION START	REALIGNMENT STATION END	RADIUS OF CURVATURE	RADIUS OF CURVATURE/BANKFULL
C101	0+14	0+71	115.08'	3.71
C102	0+81	1+28	80.00'	2.57
C103	1+49	1+81	40.00'	1.28
C104	1+99	2+28	40.00'	1.28
C105	2+74	3+29	80.00'	2.57
C106	3+56	3+91	50.00'	1.61
C107	4+21	4+66	50.00'	1.61
C108	5+04	5+45	50.00'	1.61
C109	5+64	5+84	50.00'	1.61
C110	6+04	6+19	50.00'	1.61
C111	6+43	6+62	50.00'	1.61
C112	7+01	7+26	50.00'	1.61
C113	7+48	7+93	50.00'	1.61
C114	7+97	8+48	50.00'	1.61
C115	8+62	8+96	50.00'	1.61
C116	9+32	9+60	50.00'	1.61
C117	9+81	10+06	50.00'	1.61
C118	10+42	10+67	50.00'	1.61
C119	11+06	11+35	50.00'	1.61
C120	11+79	11+94	50.00'	1.61

RADIUS TABLE				
RADIUS NUMBER	REALIGNMENT STATION START	REALIGNMENT STATION END	RADIUS OF CURVATURE	RADIUS OF CURVATURE/BANKFULL
C121	12+30	12+69	50.00'	1.61
C122	12+74	13+00	50.00'	1.61

PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
GEOMETRY
GRADING & SEDIMENT CONTROL PLAN
 9129 NORTHFIELD RD
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No.	DATE	DESCRIPTION	REV. BY

CHECKED BY: JPD
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 DRAWN: REL/RG
 PROJECT No.: 19-05-003
 DATE: 5/11/2022
 SHEET: 3 of 20

MATCHLINE SHEET 8

MATCHLINE SHEET 5

HOWARD COUNTY MARYLAND DEPARTMENT OF RECREATION AND PARKS
NORTHFIELD RD
ELLCOTT CITY, MD 21042
DEED REF. 00643/00059

BOARD OF EDUCATION OF HOWARD COUNTY
ST JOHNS LN
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DEED REF. 00587/00152

HOWARD COUNTY MARYLAND DEPARTMENT OF RECREATION AND PARKS
SW MACALPINE RD
ELLCOTT CITY, MD 21042
DEED REF. 01509/00063

THOMAS DOWD AND ARLENE MCCOOG
4054 SW MACALPINE RD
ELLCOTT CITY, MD 21042
DEED REF. 04388/00153

DONALD AND ANDREA ROGERS
4037 SE CHATHAM RD
ELLCOTT CITY, MD 21042
DEED REF. 09364/00560

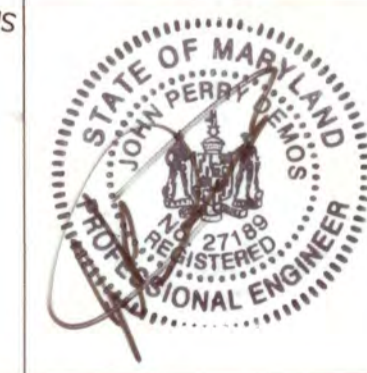
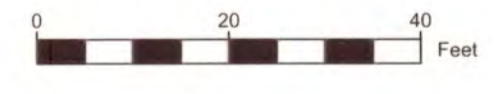
HOWARD COUNTY MARYLAND DEPARTMENT OF RECREATION AND PARKS
CHATHAM RD
ELLCOTT CITY, MD 21042
DEED REF. 01936/00339

WILLIAM AND ANNAMARIE HUGEL
4130 CHATHAM RD
ELLCOTT CITY, MD 21042
DEED REF. 04148/00586

LEGEND

- PROPERTY BOUNDARY
- EX. CONTOURS
- EX. STREAM CENTERLINE
- EX. STREAM TOP OF BANK
- EX. SOIL BOUNDARY
- EX. ROADS
- EX. TREE
- EX. TREELINE
- EX. CRITICAL ROOT ZONE
- EX. FLOODPLAIN - FEMA 100 YR
- EX. STREAM BUFFER (75 FT)
- EX. WETLAND
- EX. WETLAND BUFFER (25 FT)
- EX. SEWER LINE AND MANHOLE
- PROP. CONTOURS
- PROP. CENTERLINE
- LOD - LIMIT OF DISTURBANCE
- SF - PROP. SILT FENCE
- PROP. HIGH VISIBILITY FENCE
- PROP. TREE PROTECTION FENCING
- PUMP AROUND PRACTICE HOSE
- PUMP AROUND PRACTICE PUMP
- PUMP AROUND PRACTICE FILTER BAG
- PUMP AROUND PRACTICE SANDBAG DIVERSION
- TEMPORARY ACCESS BRIDGE OR TIMBER MAT IF APPLICABLE
- RIFFLE
- PROP. LOG SILL GRADE CONTROL
- PROP. TREE TO BE REMOVED
- PROP. ACCESS ROAD
- STOCKPILE AREA
- EX. STEEP SLOPES 15-25%
- EX. STEEP SLOPES >25%
- PROP. STABILIZED CONSTRUCTION ENTRANCE
- PROP. PIPE RIFFLE PROTECTION

TRIBUTARY TO PLUMTREE BRANCH
STA. 0+00 - 7+00
SCALE: 1" = 20'



PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
DESIGN
GRADING & SEDIMENT CONTROL PLAN
9129 NORTHFIELD RD
ELLCOTT CITY, MD 21042

REVISIONS		
No.	DATE	DESCRIPTION

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DATE: 5/11/2022
SHEET: 4 of 20

SOILS LEGEND		
SYMBOL	SOIL DESCRIPTION	K-FACTOR
Ha	Hatboro-Codorus silt loams, 0-3% slopes	0.37
MoB	Mount Lucas silt loam, 3-8% slopes, stony	0.37
GFB	Gladstone Urban land complex, 0-8% slopes	0.28
GRC	Gladstone Urban land complex, 8-15% slopes	-
LoC	Legore-Montaite Urban land complex, 8-15% slopes	-

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MATCHLINE SHEET 4

MATCHLINE SHEET 6

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ST. JOHNS LN
ELLCOTT CITY, MD 21042
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E 1,359,499
N 576,704

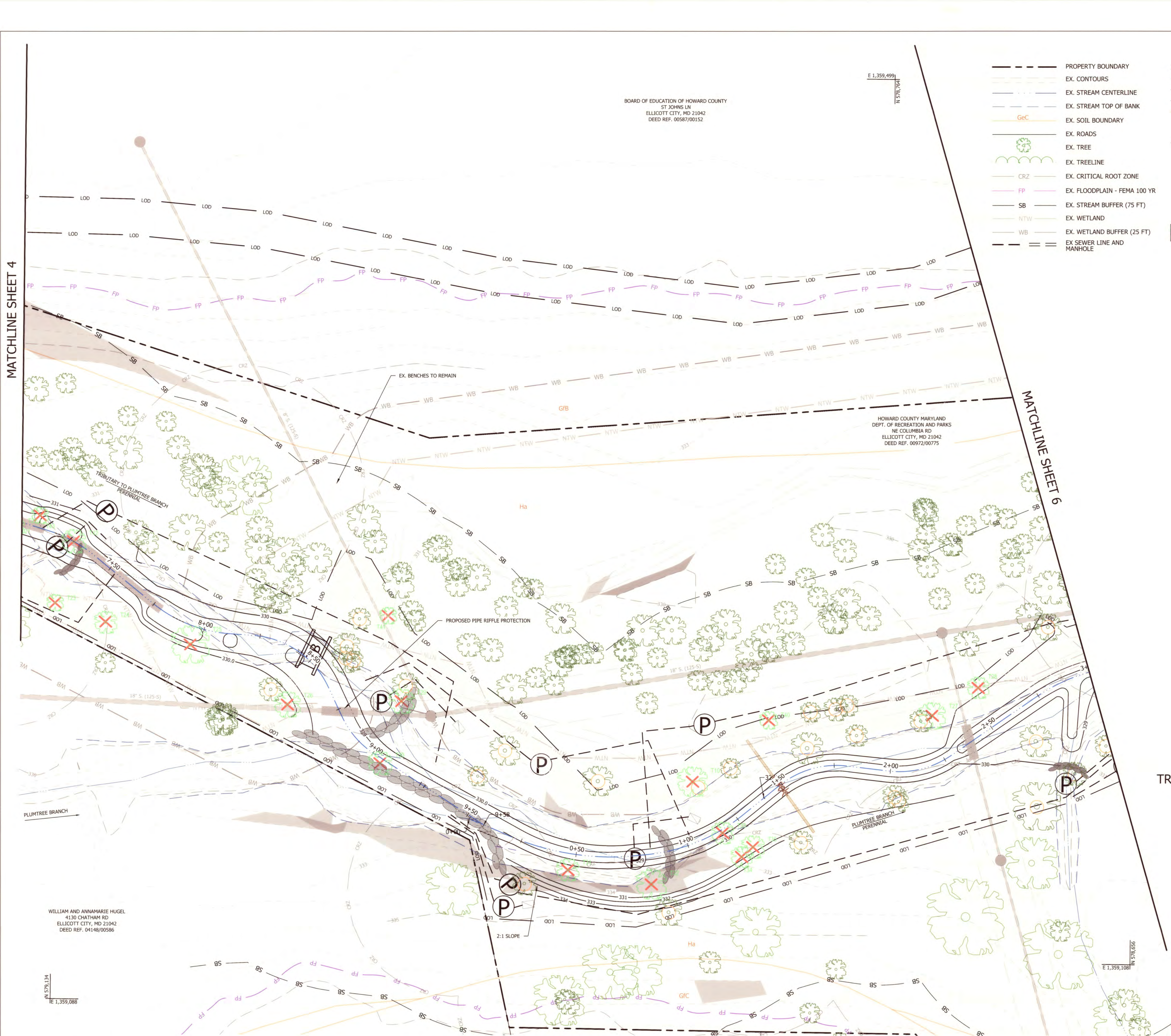
HOWARD COUNTY MARYLAND
DEPT. OF RECREATION AND PARKS
NE COLUMBIA RD
ELLCOTT CITY, MD 21042
DEED REF. 00972/00775

WILLIAM AND ANNAMARIE HUGEL
4130 CHATHAM RD
ELLCOTT CITY, MD 21042
DEED REF. 04148/00586

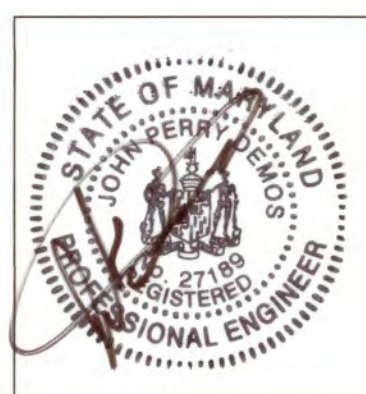
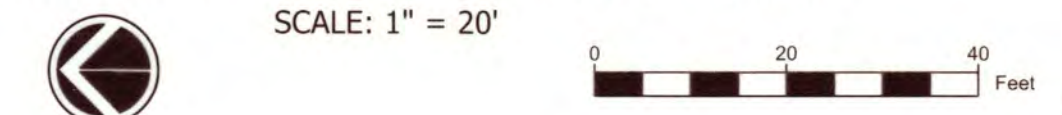
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E 1,359,088

LEGEND

- PROPERTY BOUNDARY
- EX. CONTOURS
- EX. STREAM CENTERLINE
- EX. STREAM TOP OF BANK
- EX. SOIL BOUNDARY
- EX. ROADS
- EX. TREE
- EX. TREELINE
- CRZ EX. CRITICAL ROOT ZONE
- FP EX. FLOODPLAIN - FEMA 100 YR
- SB EX. STREAM BUFFER (75 FT)
- NTW EX. WETLAND
- WB EX. WETLAND BUFFER (25 FT)
- EX SEWER LINE AND MANHOLE
- PROP. CONTOURS
- PROP. CENTERLINE
- LOD LIMIT OF DISTURBANCE
- SF PROP. SILT FENCE
- HVF PROP. HIGH VISIBILITY FENCE
- PROP. TREE PROTECTION FENCING
- PUMP AROUND PRACTICE HOSE
- PUMP AROUND PRACTICE PUMP
- PUMP AROUND PRACTICE FILTER BAG
- PUMP AROUND PRACTICE SANDBAG DIVERSION
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- PROP. ACCESS ROAD
- STOCKPILE AREA
- EX. STEEP SLOPES 15-25%
- EX. STEEP SLOPES >25%
- PROP. STABILIZED CONSTRUCTION ENTRANCE
- PROP. PIPE RIFFLE PROTECTION



TRIBUTARY TO PLUMTREE BRANCH STA. 7+00 - 9+52
&
PLUMTREE BRANCH STA. 0+00 - 3+00
SCALE: 1" = 20'



**PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
DESIGN
GRADING & SEDIMENT CONTROL PLAN**
9129 NORTHFIELD RD
ELLCOTT CITY, MD 21042



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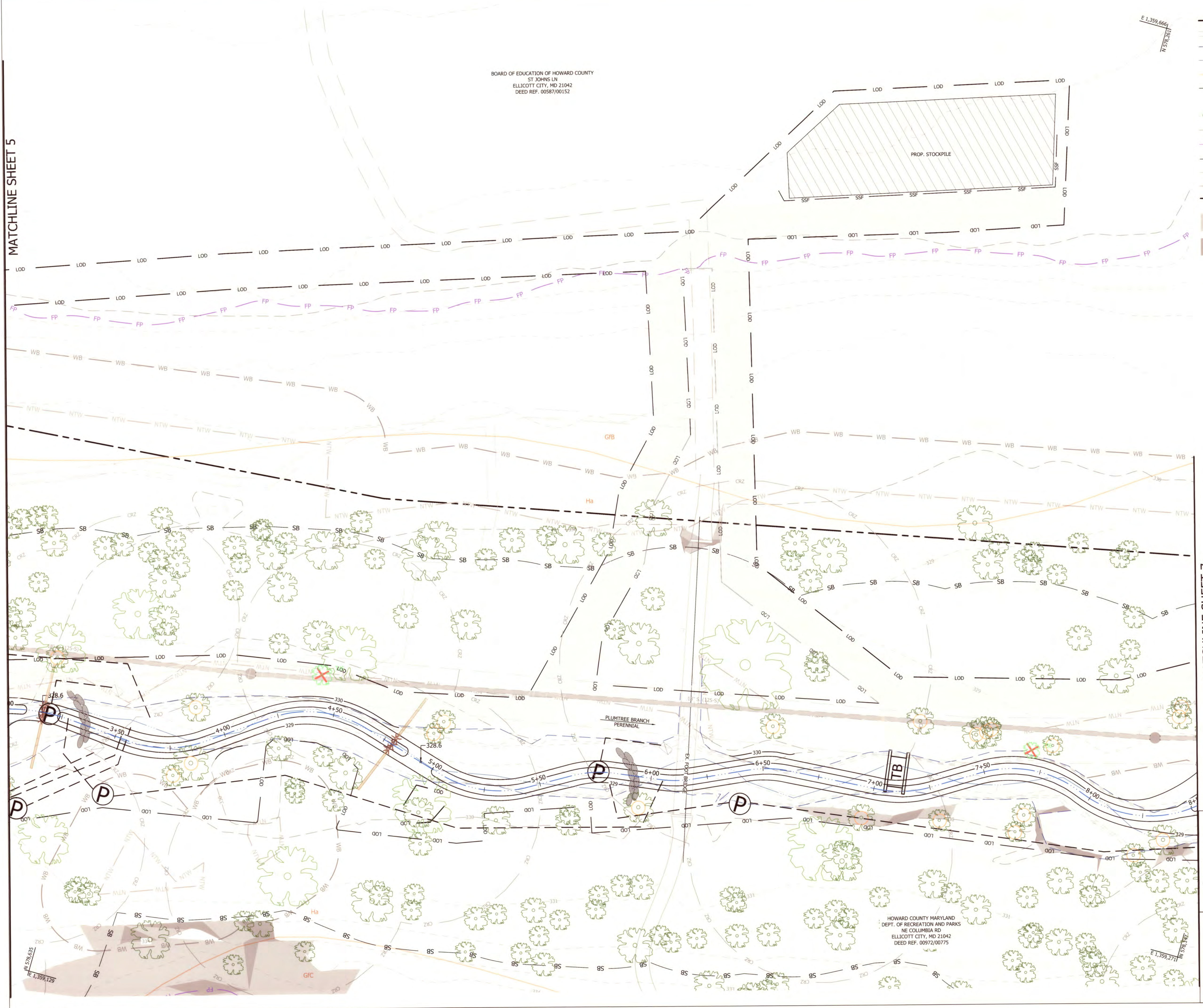
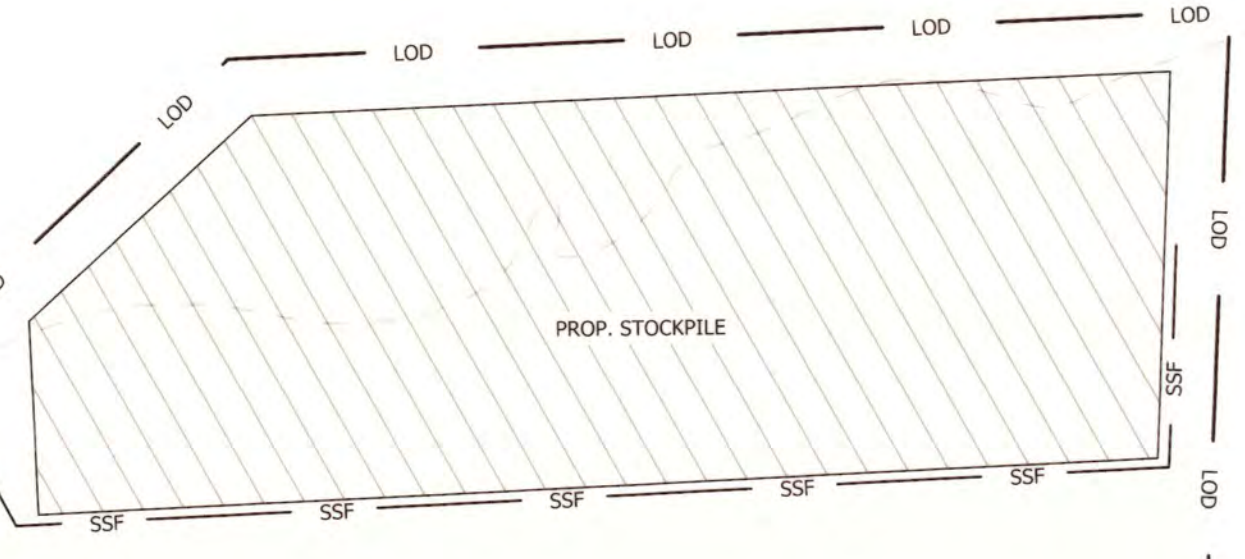
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MATCHLINE SHEET 5

LEGEND

- PROPERTY BOUNDARY
- EX. CONTOURS
- EX. STREAM CENTERLINE
- EX. STREAM TOP OF BANK
- EX. SOIL BOUNDARY
- EX. ROADS
- EX. TREE
- EX. TREELINE
- EX. CRITICAL ROOT ZONE
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- EX. WETLAND BUFFER (25 FT)
- EX. SEWER LINE AND MANHOLE
- EX. STEEP SLOPES 15-25%
- EX. STEEP SLOPES >25%
- PROP. STABILIZED CONSTRUCTION ENTRANCE
- PROP. CONTOURS
- PROP. CENTERLINE
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- PROP. SILT FENCE
- PROP. HIGH VISIBILITY FENCE
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- TEMPORARY ACCESS BRIDGE OR TIMBER MAT IF APPLICABLE
- PROP. LOG SILL GRADE CONTROL
- PROP. TREE TO BE REMOVED
- PROP. ACCESS ROAD
- STOCKPILE AREA
- PROP. PIPE RIFFLE PROTECTION
- RIFFLE

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MATCHLINE SHEET 7

PLUMTREE BRANCH STA. 3+00 - 8+50
SCALE: 1" = 20'



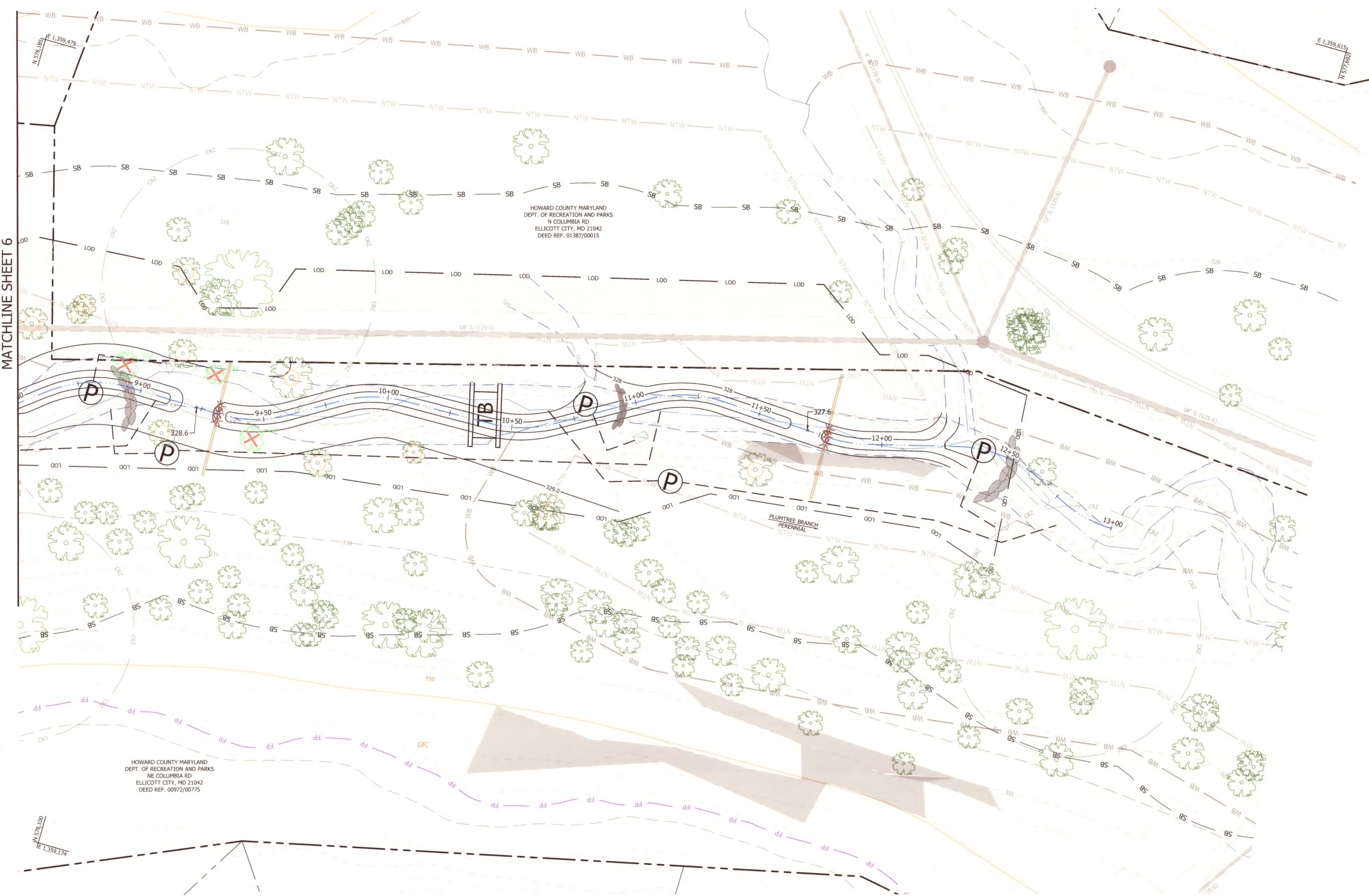
**PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
DESIGN**
GRADING & SEDIMENT CONTROL PLAN
9129 NORTHFIELD RD
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MATCHLINE SHEET 6

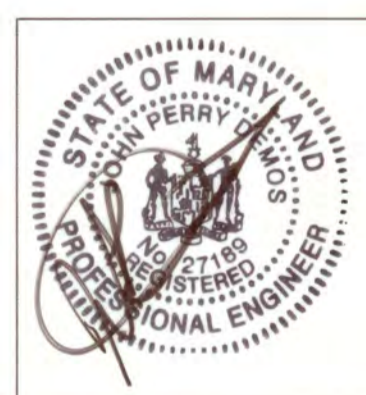


LEGEND

	PROPERTY BOUNDARY		PROP. CONTOURS		PROP. LOG SILL GRADE CONTROL
	EX. CONTOURS		PROP. CENTERLINE		PROP. TREE TO BE REMOVED
	EX. STREAM CENTERLINE		LOD		PROP. ACCESS ROAD
	EX. STREAM TOP OF BANK		LIMIT OF DISTURBANCE		STOCKPILE AREA
	EX. SOIL BOUNDARY		PROP. SILT FENCE		EX. STEEP SLOPES 15-25%
	EX. ROADS		PROP. HIGH VISIBILITY FENCE		EX. STEEP SLOPES >25%
	EX. TREE		PROP. TREE PROTECTION FENCING		PROP. STABILIZED CONSTRUCTION ENTRANCE
	EX. TREELINE		PUMP AROUND PRACTICE HOSE		PROP. PIPE RIFFLE PROTECTION
	EX. CRITICAL ROOT ZONE		PUMP AROUND PRACTICE PUMP		
	EX. FLOODPLAIN - FEMA 100 YR		PUMP AROUND PRACTICE FILTER BAG		
	EX. STREAM BUFFER (75 FT)		PUMP AROUND PRACTICE SANDBAG DIVERSION		
	EX. WETLAND		TEMPORARY ACCESS BRIDGE OR TIMBER MAT IF APPLICABLE		
	EX. WETLAND BUFFER (25 FT)		RIFFLE		
	EX. SEWER LINE AND MANHOLE				

**PLUMTREE BRANCH
STA. 8+50 - 13+00
SCALE: 1" = 20'**

0 20 40 Feet

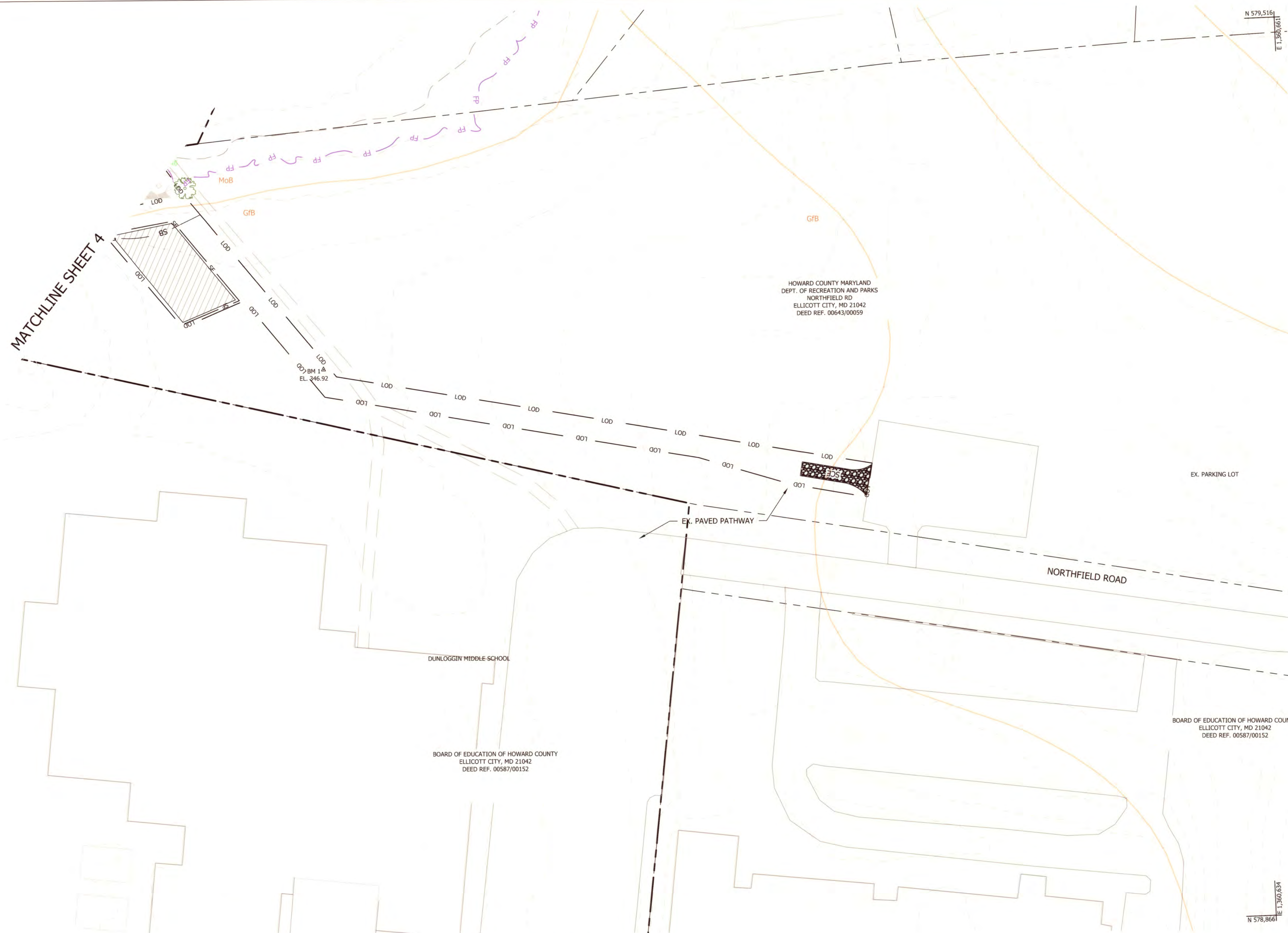


**PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
DESIGN
GRADING & SEDIMENT CONTROL PLAN**
9129 NORTHFIELD RD
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EX. PARKING LOT

NORTHFIELD ROAD

DUNLOGGIN MIDDLE SCHOOL

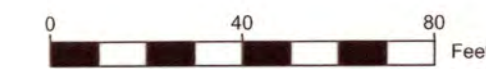
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ELLCOTT CITY, MD 21042
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EX. PAVED PATHWAY

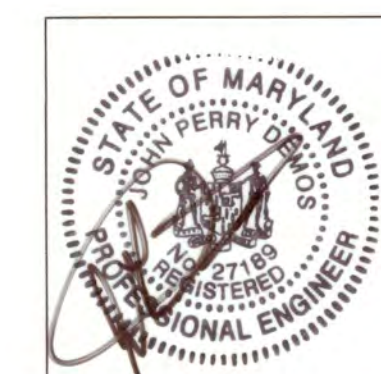


ACCESS PLAN
SCALE: 1" = 40'



LEGEND	
	PROPERTY BOUNDARY
	EX. CONTOURS
	EX. STREAM CENTERLINE
	EX. STREAM TOP OF BANK
	GeC EX. SOIL BOUNDARY
	EX. ROADS
	EX. TREE
	EX. TREELINE
	EX. CRITICAL ROOT ZONE
	EX. FLOODPLAIN - FEMA 100 YR
	EX. STREAM BUFFER (75 FT)
	EX. WETLAND
	EX. WETLAND BUFFER (25 FT)
	EX SEWER LINE AND MANHOLE
	PROP. CONTOURS
	PROP. CENTERLINE
	L00 LIMIT OF DISTURBANCE
	PROP. SILT FENCE
	PROP. HIGH VISIBILITY FENCE
	PROP. TREE PROTECTION FENCING
	PUMP AROUND PRACTICE HOSE
	PUMP AROUND PRACTICE PUMP
	PUMP AROUND PRACTICE FILTER BAG
	PUMP AROUND PRACTICE SANDBAG DIVERSION
	TEMPORARY ACCESS BRIDGE OR TIMBER MAT IF APPLICABLE
	RIFFLE
	PROP. LOG SILL GRADE CONTROL
	PROP. TREE TO BE REMOVED
	PROP. ACCESS ROAD
	STOCKPILE AREA
	EX. STEEP SLOPES 15-25%
	EX. STEEP SLOPES >25%
	PROP. STABILIZED CONSTRUCTION ENTRANCE
	PROP. PIPE RIFFLE PROTECTION

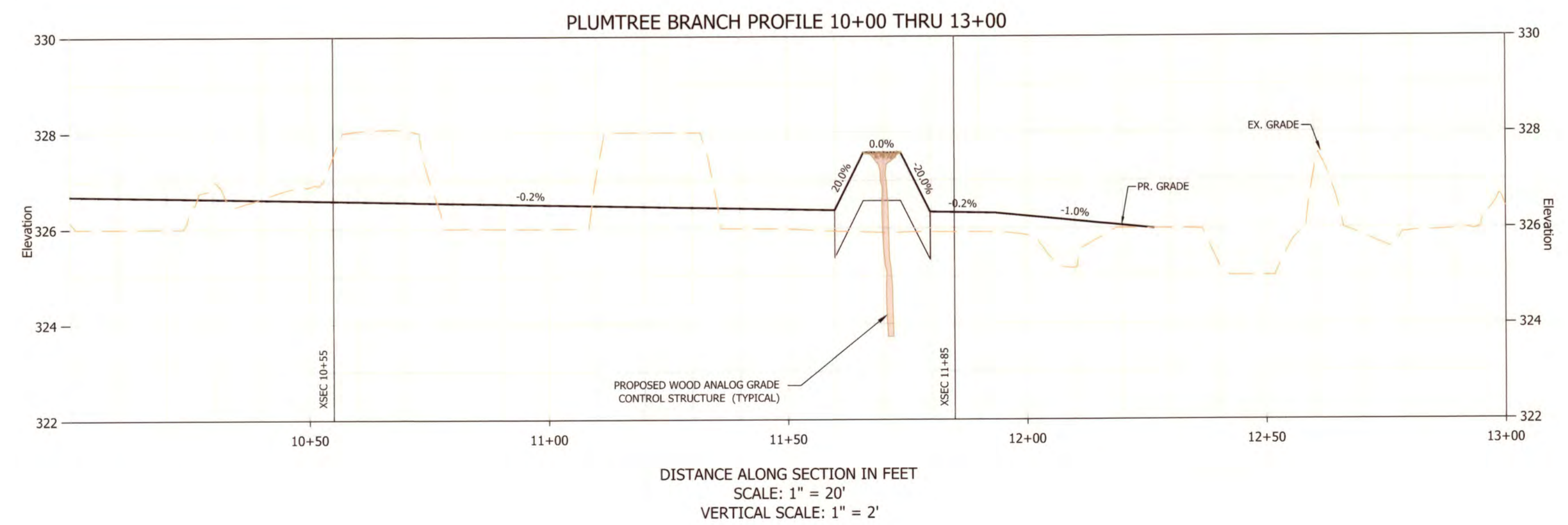
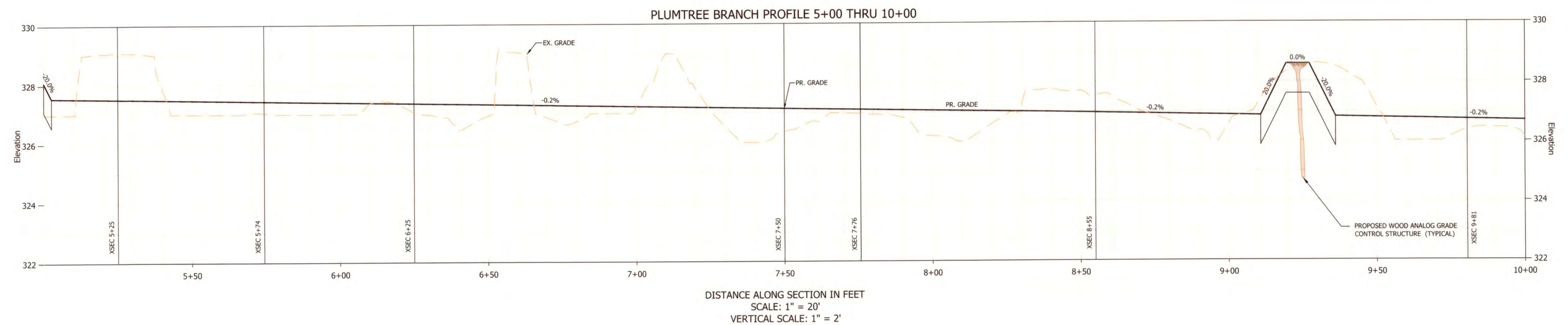
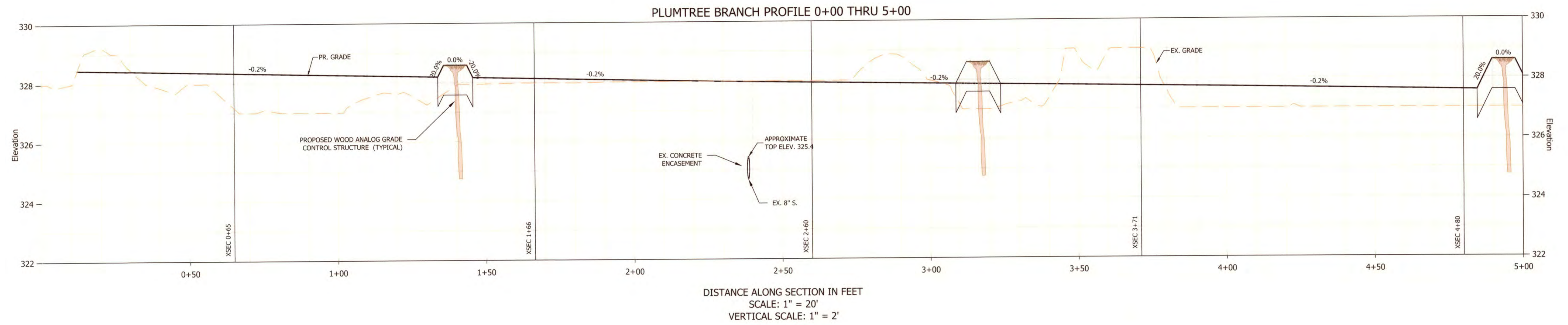
PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
ACCESS PLAN
GRADING & SEDIMENT CONTROL PLAN
9129 NORTHFIELD RD
ELLCOTT CITY, MD 21042



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PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
 PROFILE AND CROSS SECTIONS
 STA. 0+00 - 13+00
GRADING & SEDIMENT CONTROL PLAN
 9129 NORTHFIELD RD
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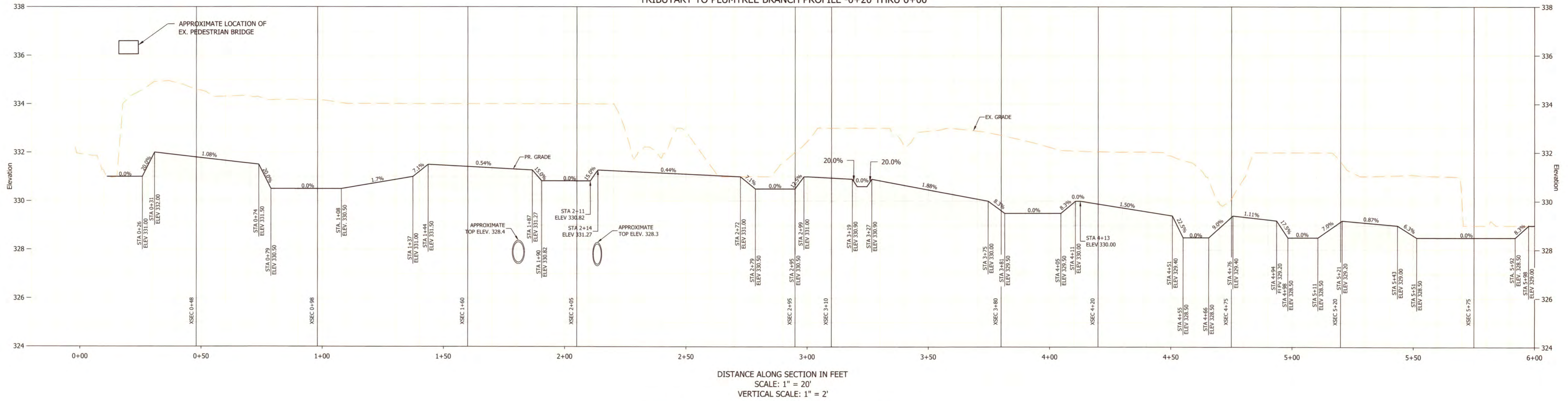


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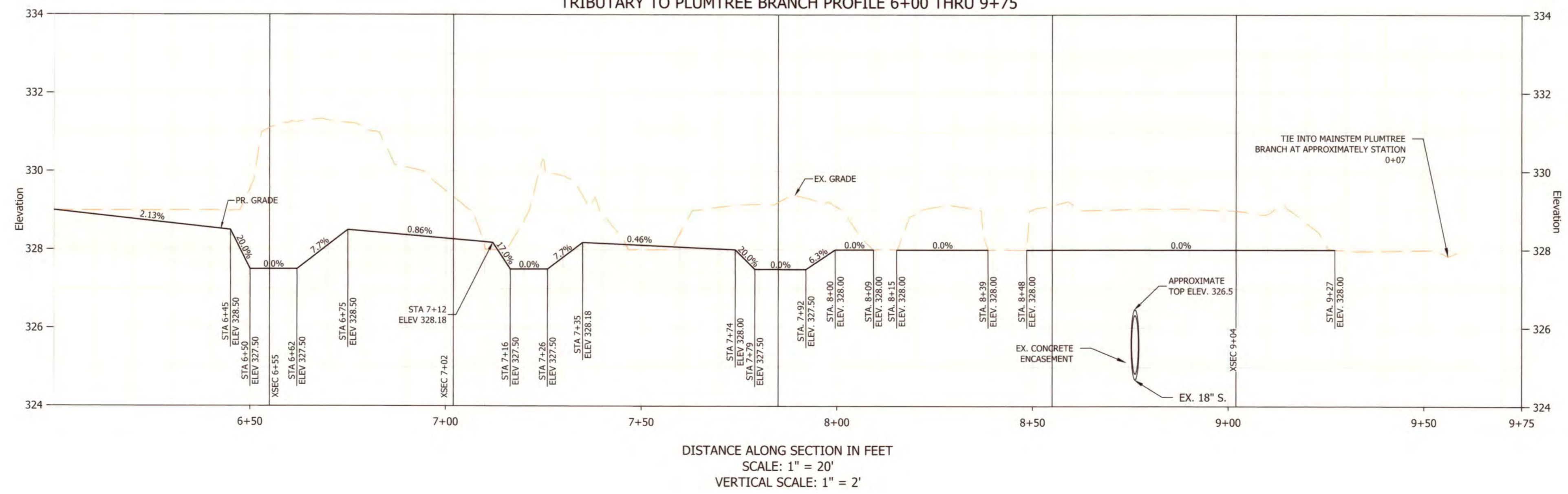
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 PROJECT No.: 19-05-003
 DATE: 5/11/2022
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TRIBUTARY TO PLUMTREE BRANCH PROFILE -0+20 THRU 6+00



TRIBUTARY TO PLUMTREE BRANCH PROFILE 6+00 THRU 9+75



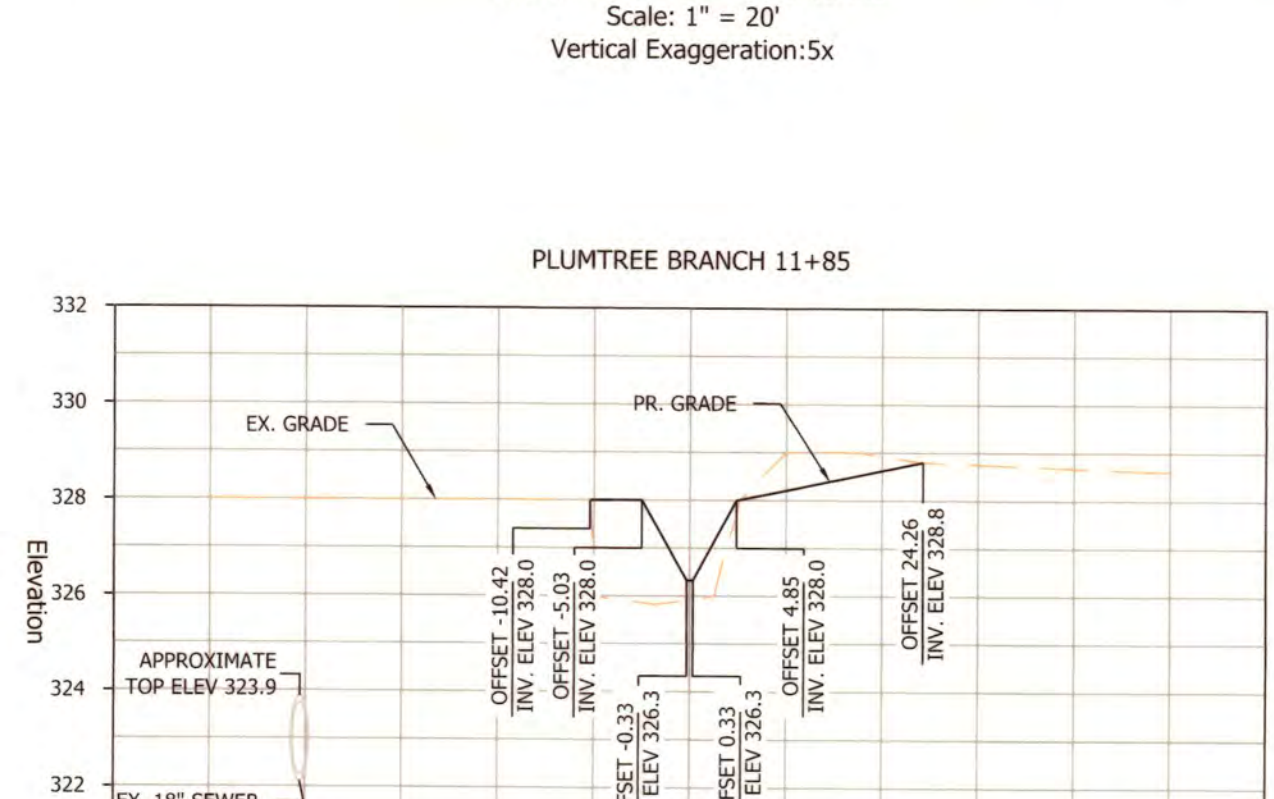
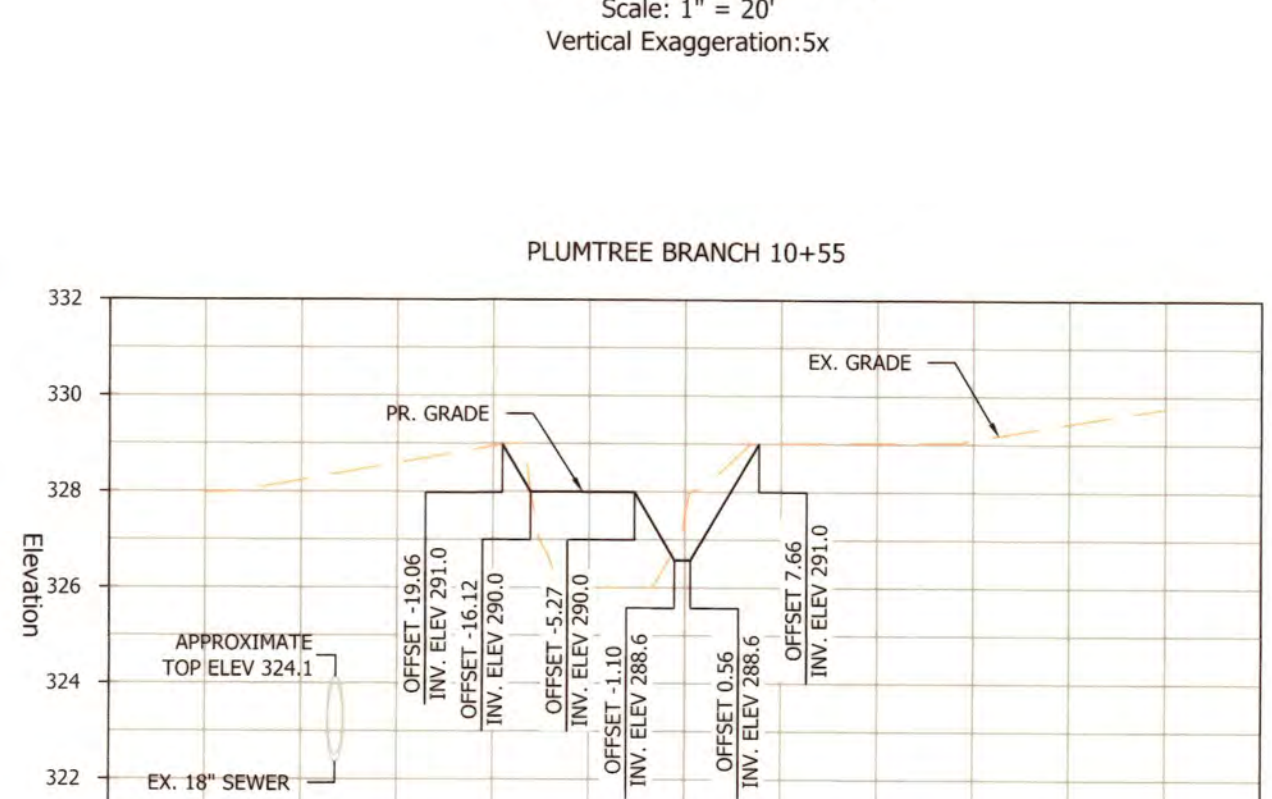
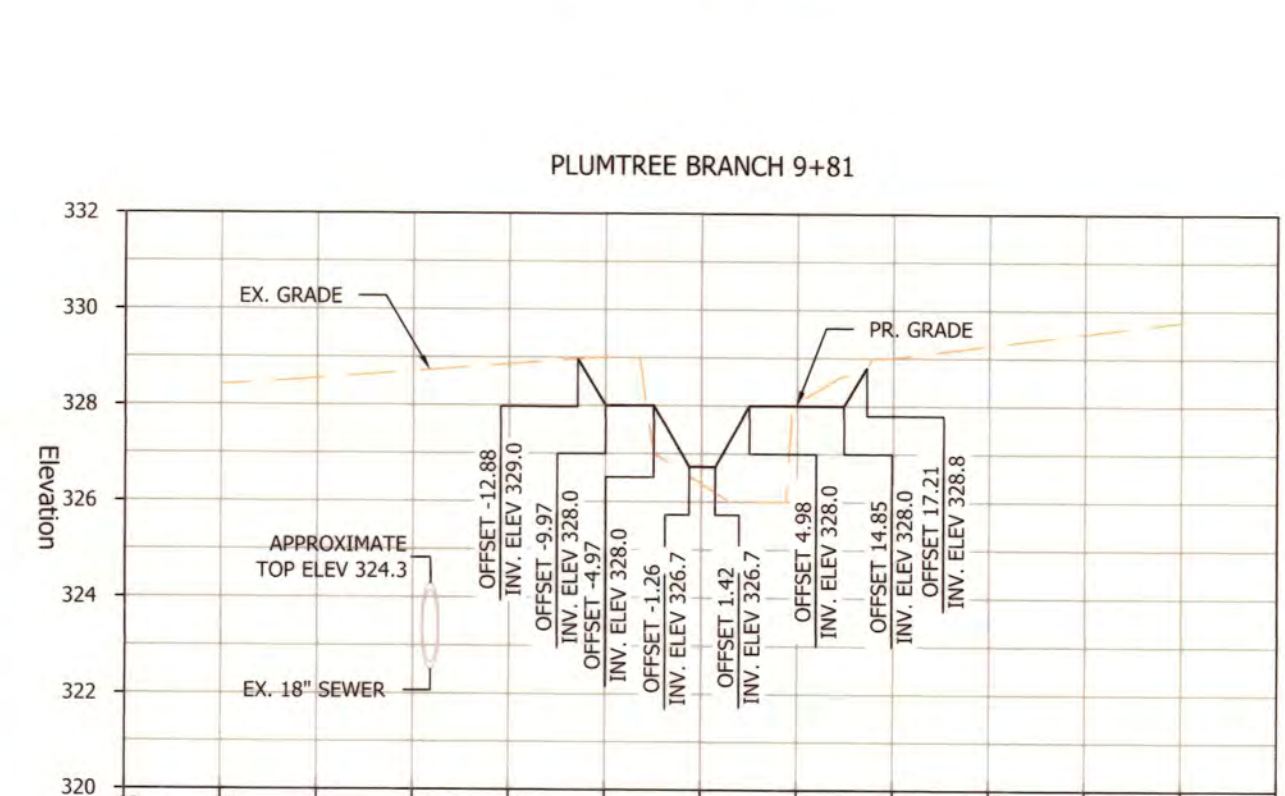
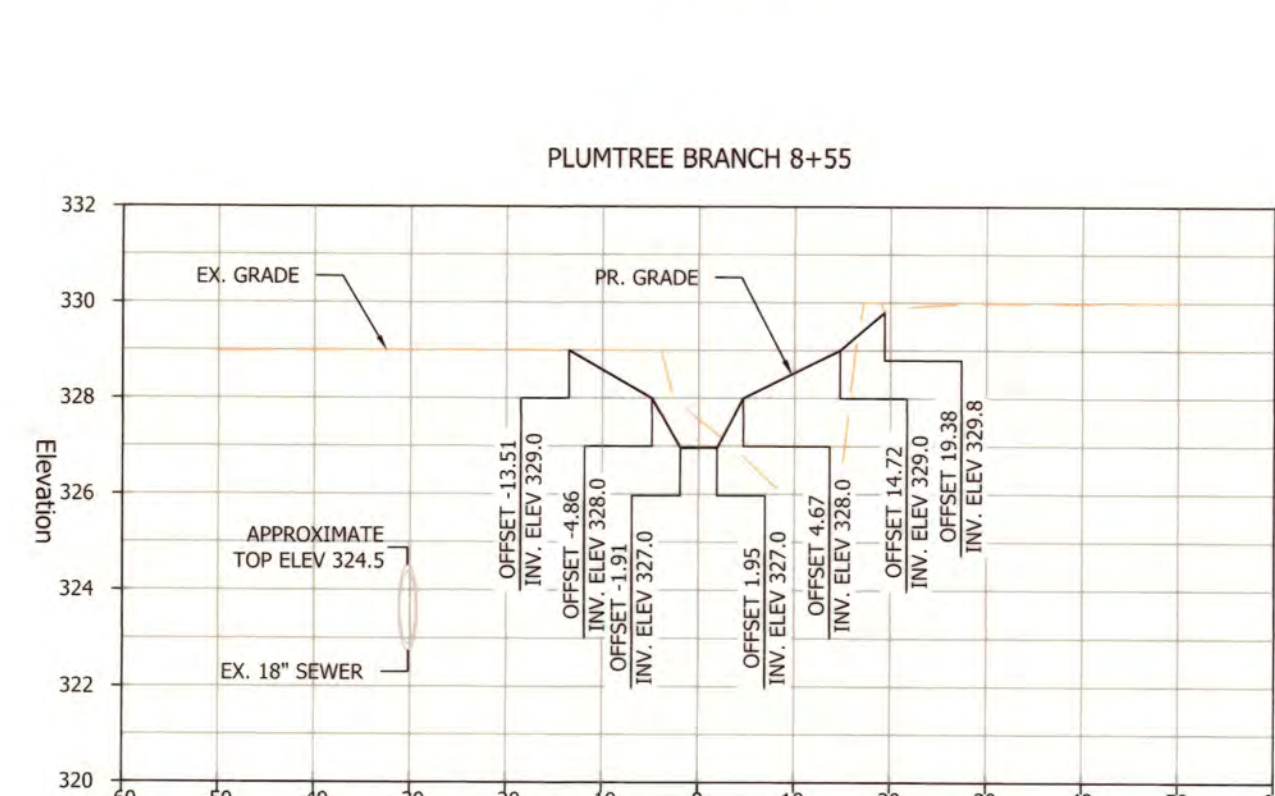
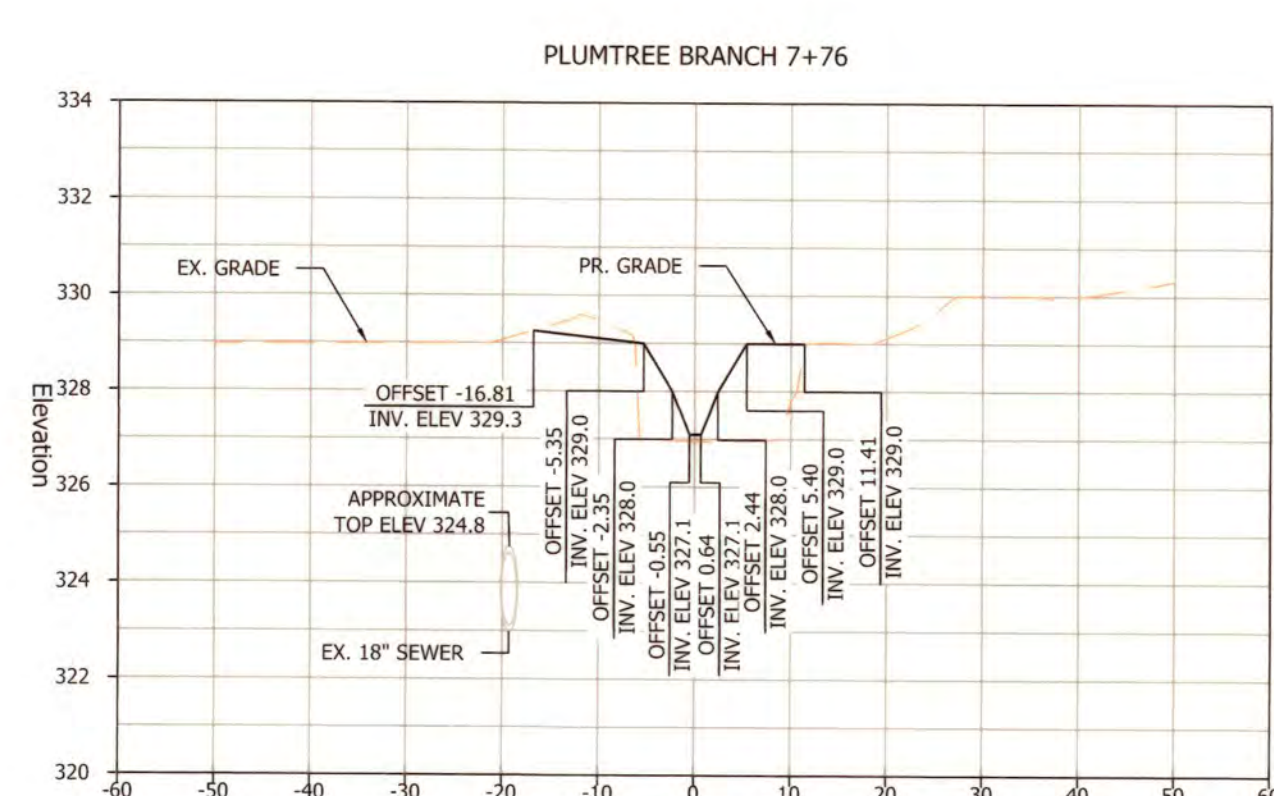
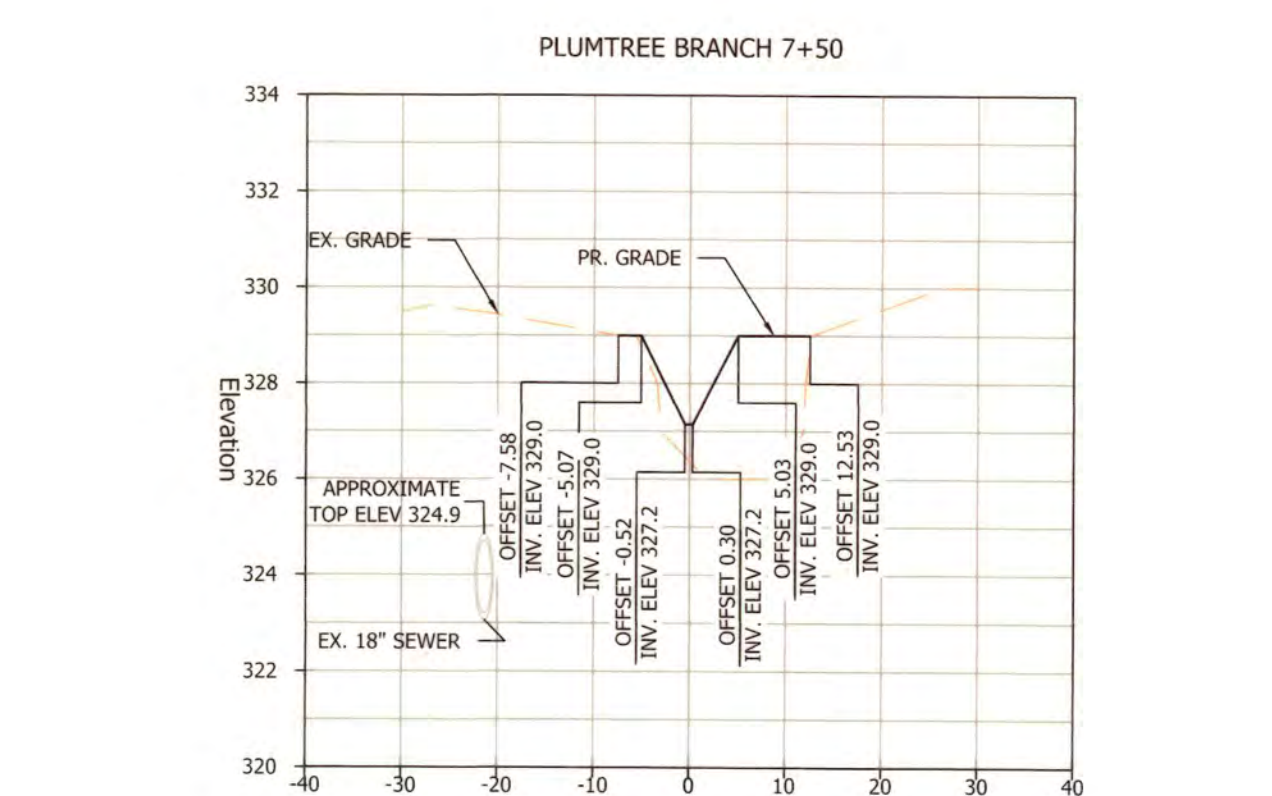
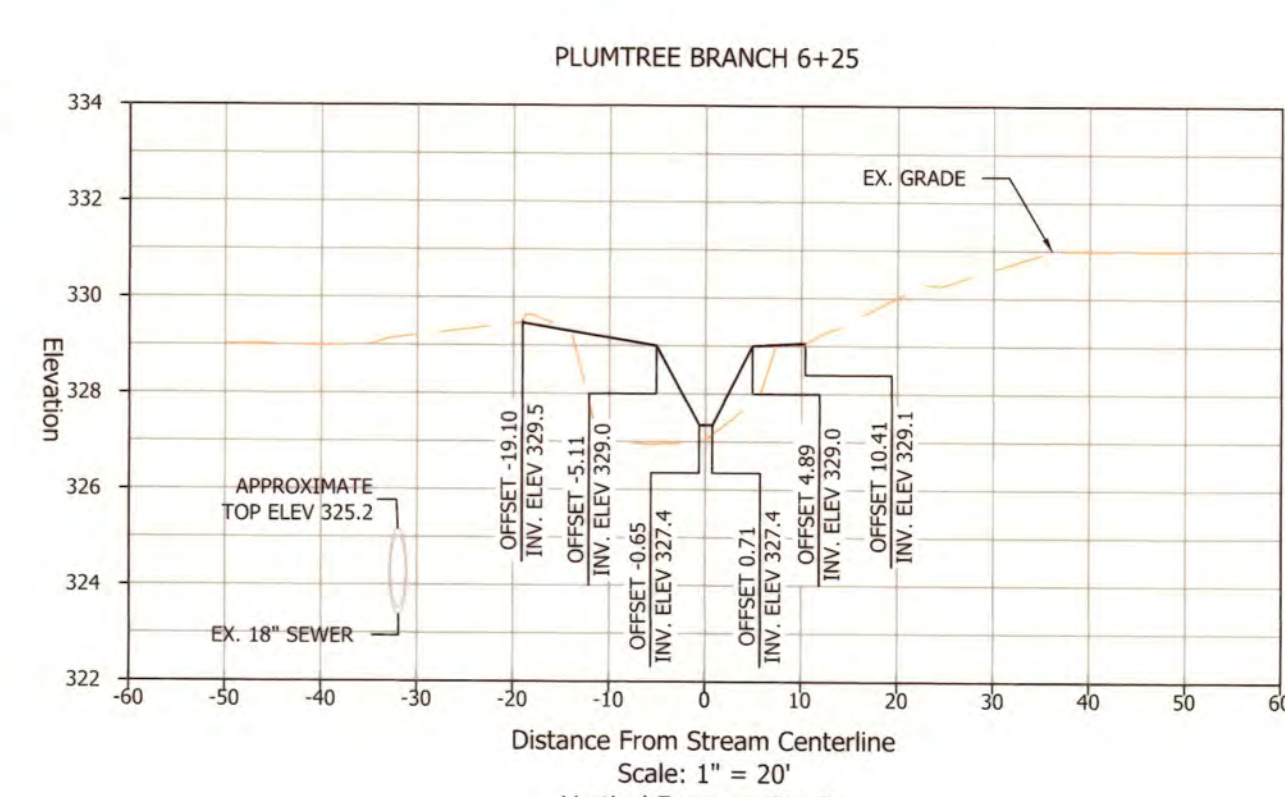
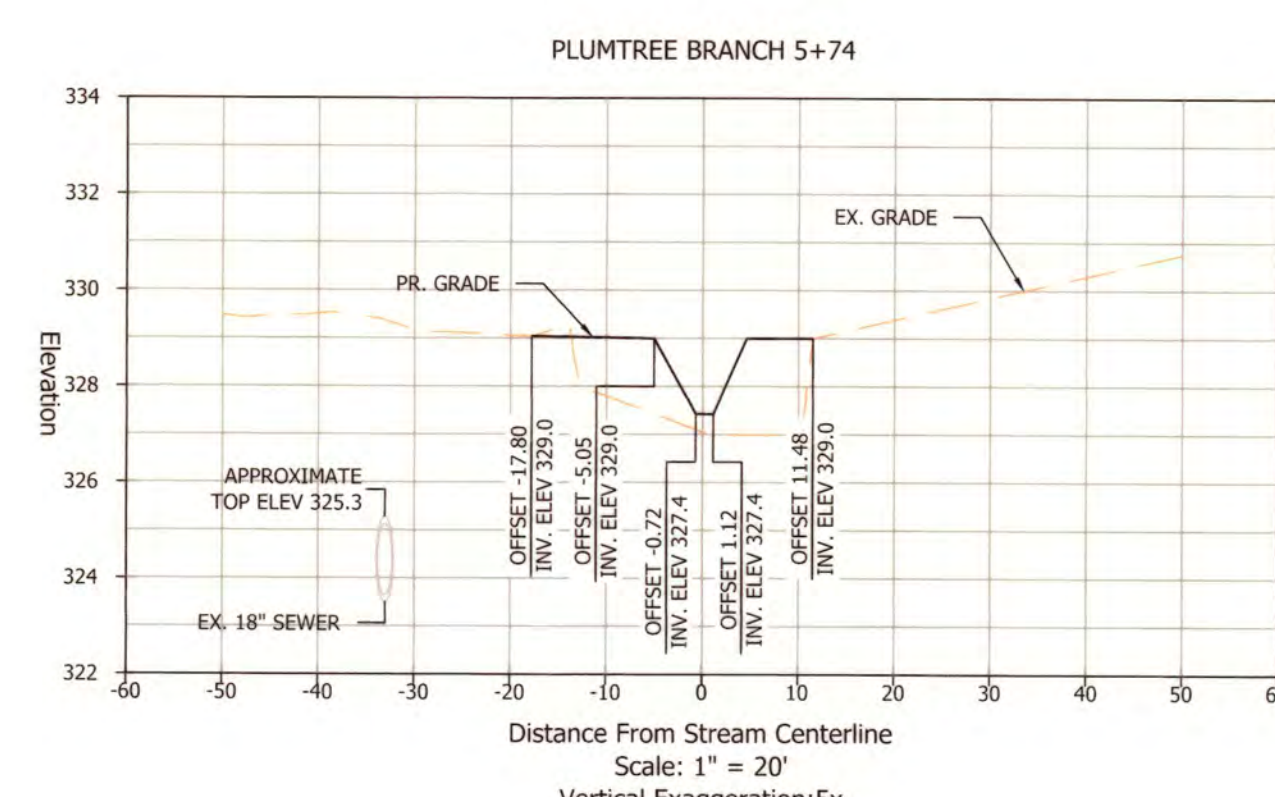
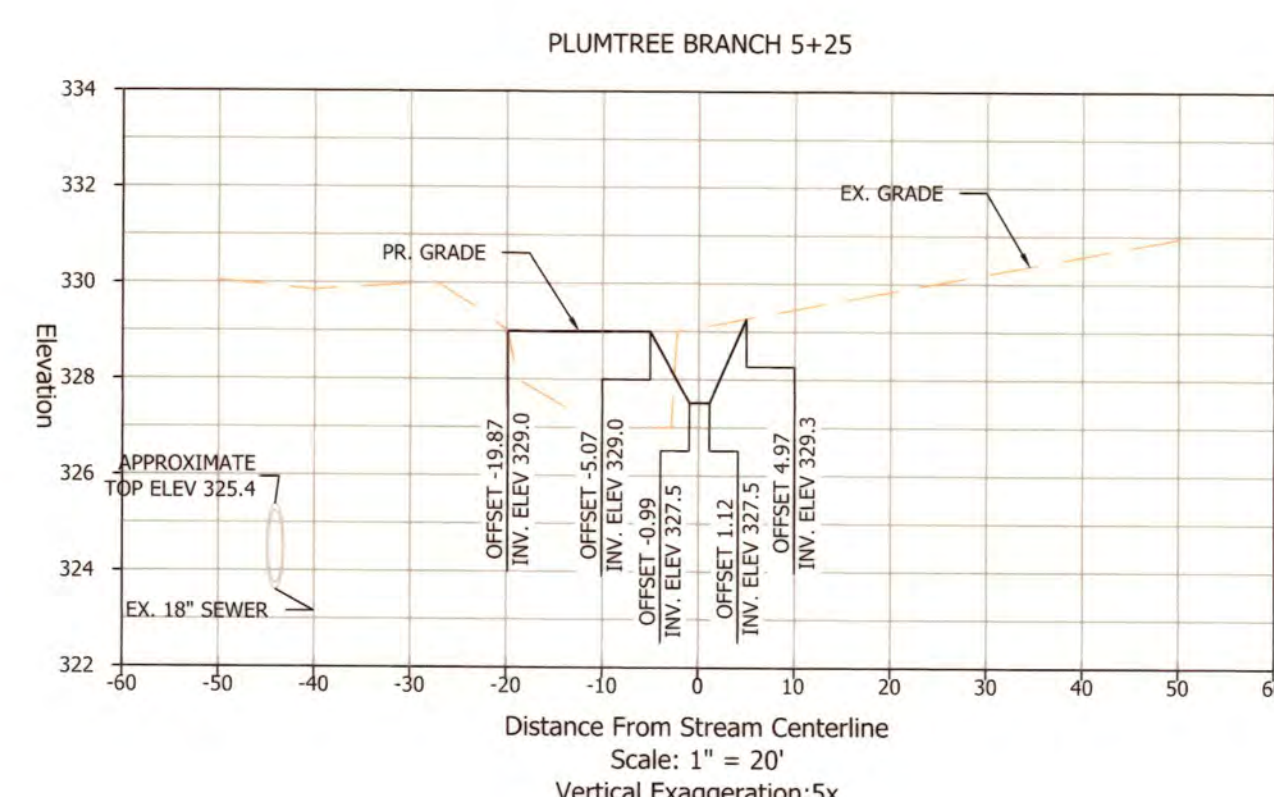
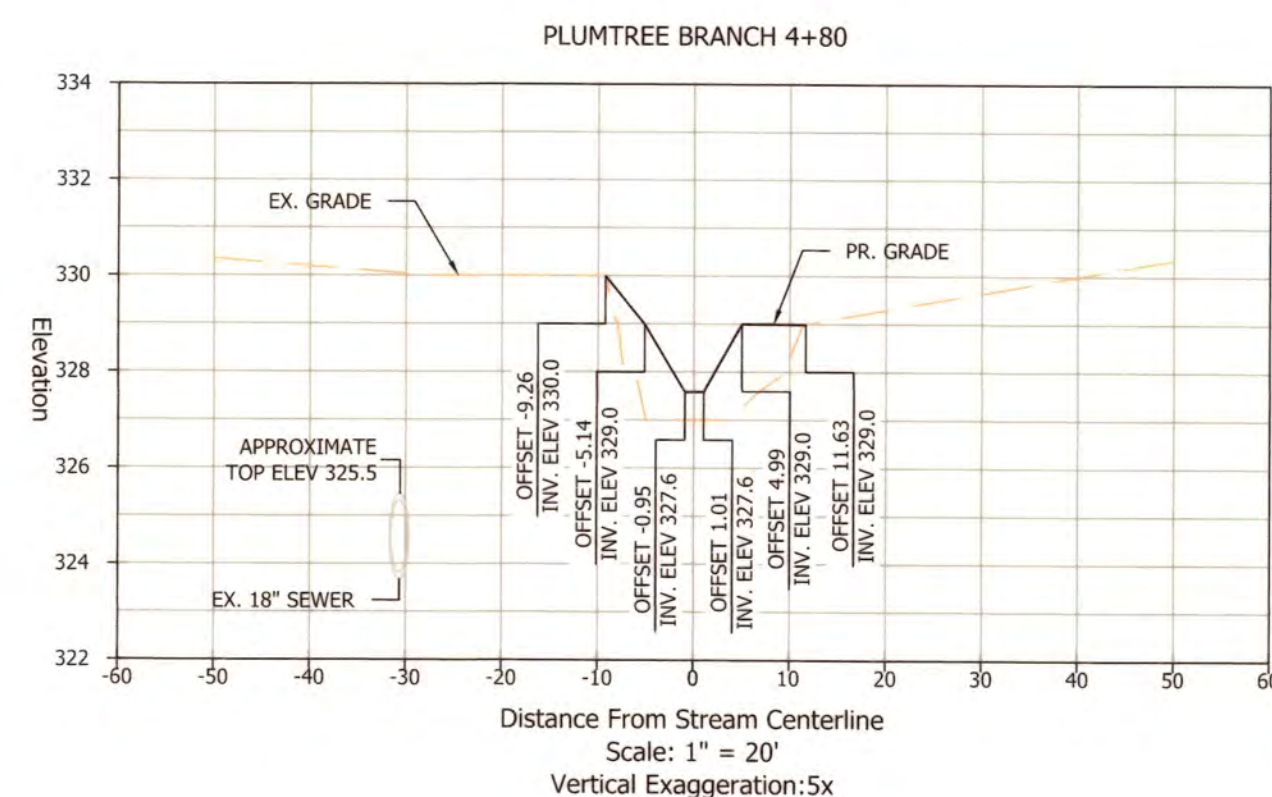
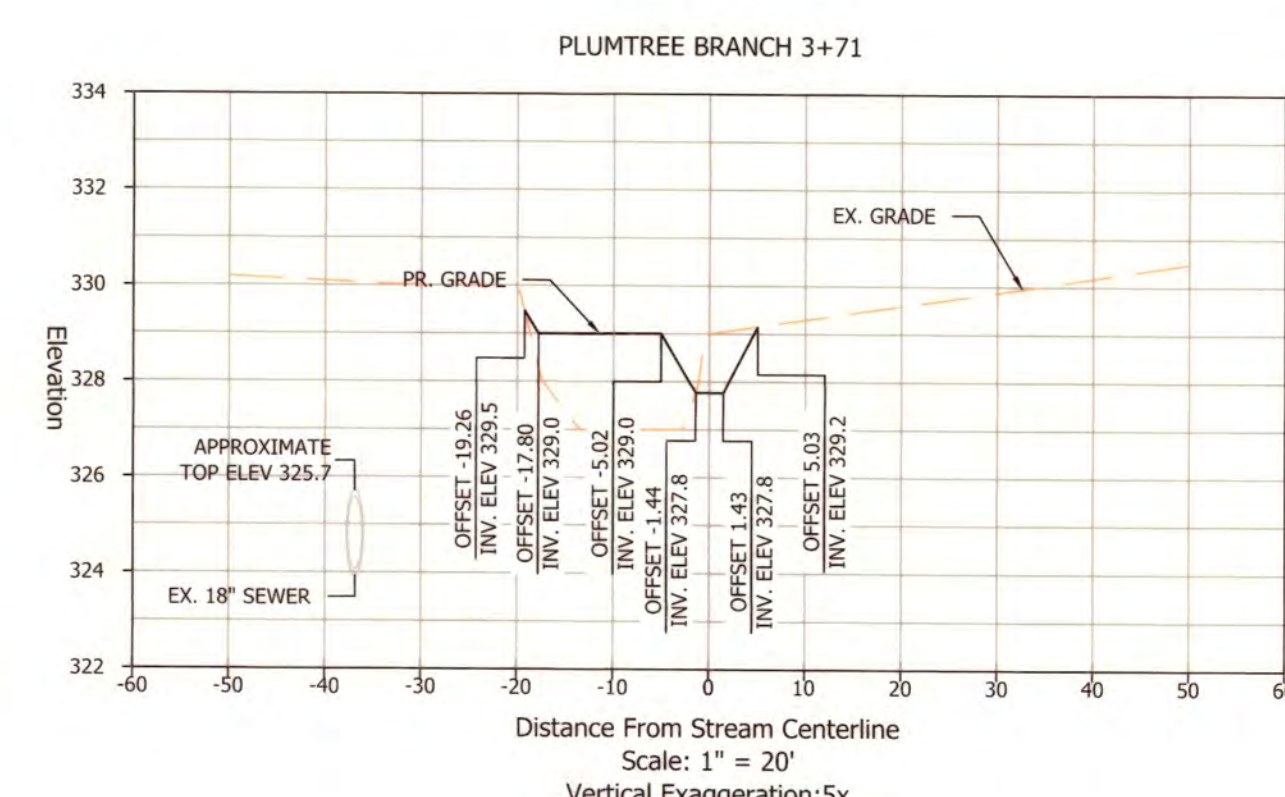
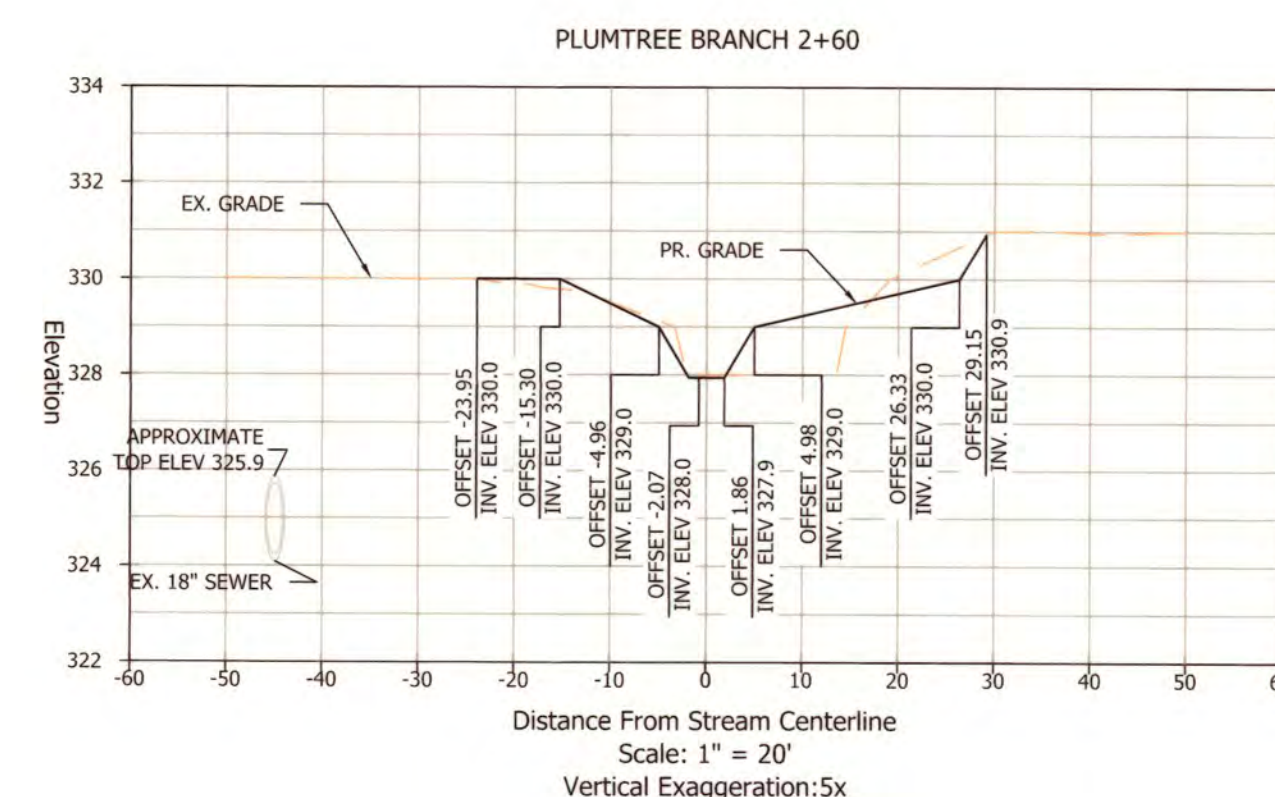
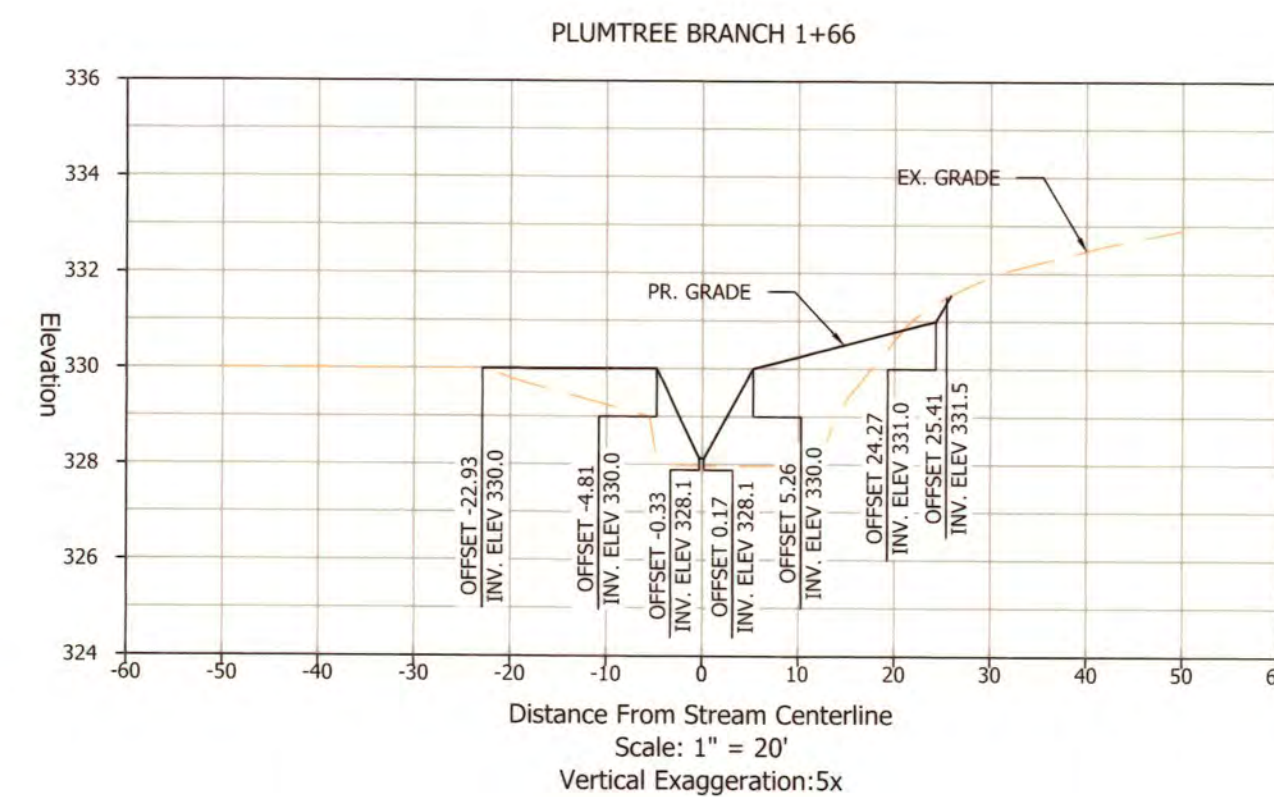
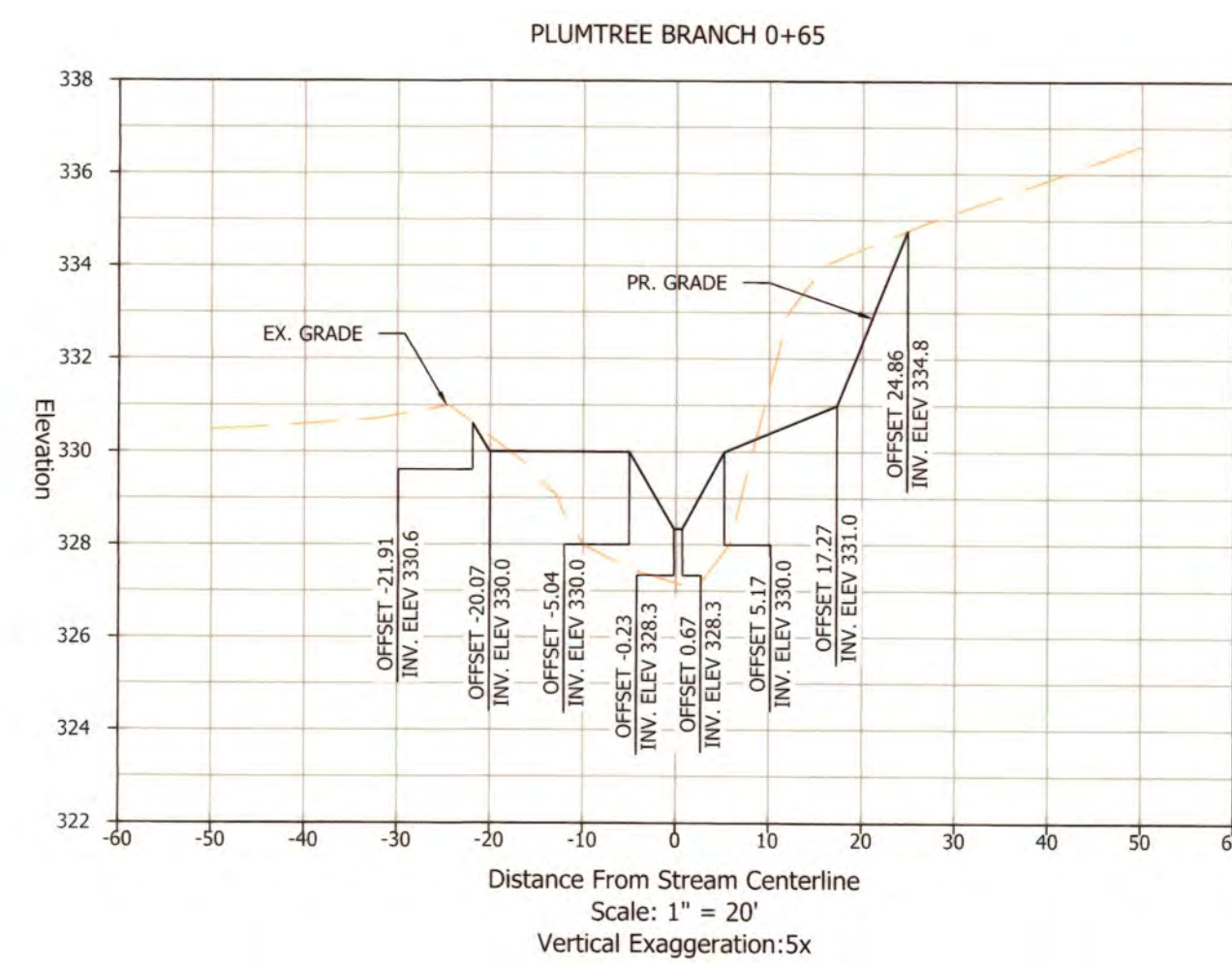
PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL
 TRIBUTARY PROFILE
GRADING & SEDIMENT CONTROL PLAN
 9129 NORTHFIELD RD
 ELLICOTT CITY, MD 21042

REVISIONS			
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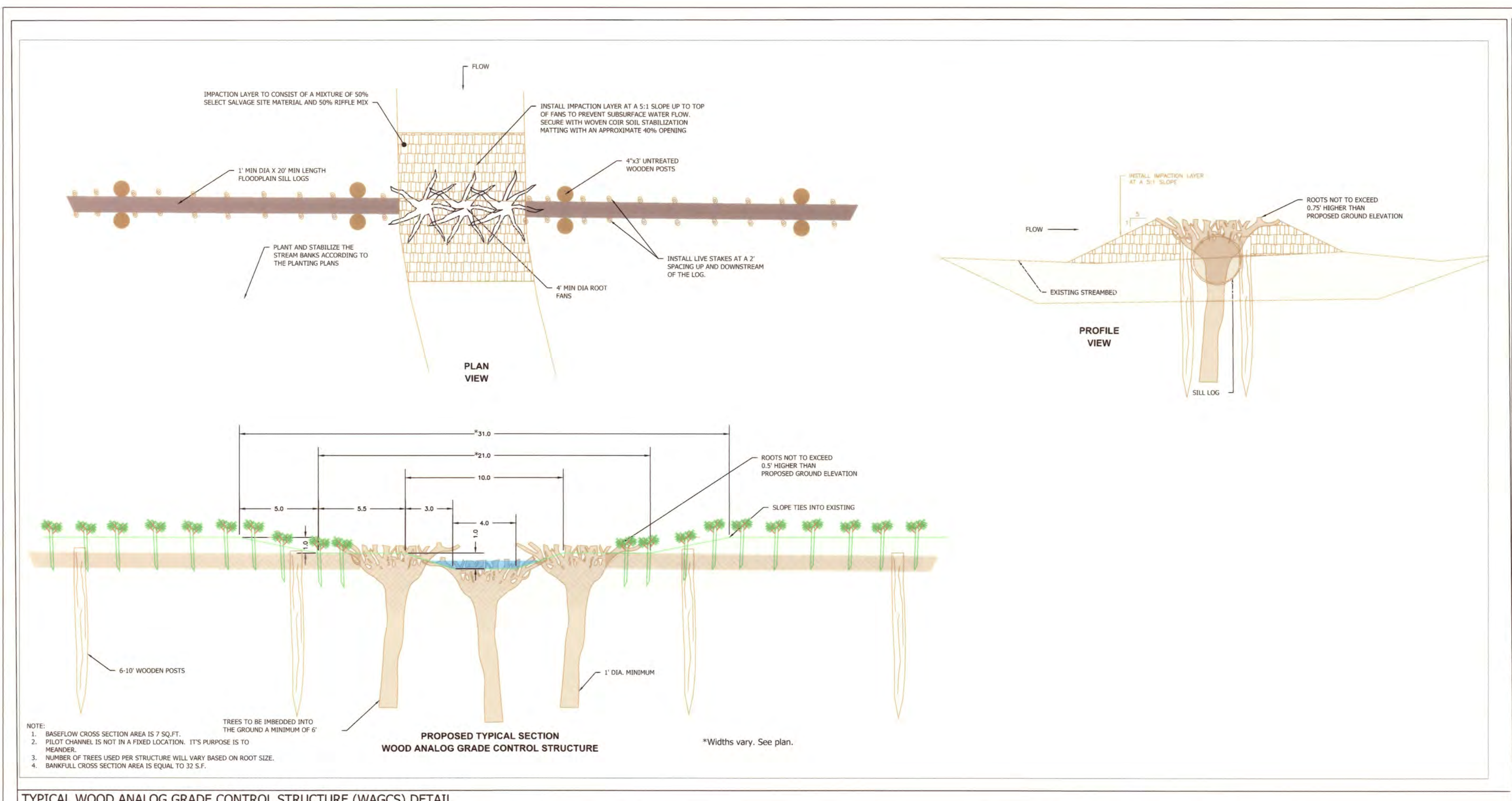


PLUMTREE BRANCH
 AT DUNLOGGIN MIDDLE SCHOOL
 PLUMTREE BRANCH
 CROSS SECTIONS
 GRADING & SEDIMENT CONTROL PLAN
 9129 NORTHFIELD RD
 ELLICOTT CITY, MD 21042

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TYPICAL WOOD ANALOG GRADE CONTROL STRUCTURE (WAGCS) DETAIL

WOOD ANALOG GRADE CONTROL STRUCTURE (WAGCS) INSTALLATION

DESCRIPTION
This work shall consist of installing logs with rootwads installed with log cutoff sills for the purpose of preventing incision, creating bed diversity, and adding channel roughness. Soil stabilization matting is to be installed concurrently with installation of the WAGCS.

MATERIALS
Soil Stabilization Matting
Matting shall be woven machine spun bristle coir twine made of coir fiber obtained from fresh water cured coconut husks. Soil stabilization matting shall conform to the "Soil Stabilization Chart".
Woody Material
Woody material shall consist of logs (12" min dia) with rootwads intact (min 4' dia) and sill logs (min 1' dia/20' length).
Wooden Posts
Wooden posts should be a minimum length of 8' and secured at least 4' into the ground.
Impaction Layer
Layer should be comprised of 1/2 silty loam soil or clayey soil, 1/2 fine organics such as leaves and roots, 1/2 small woody debris such as sticks and branches. Layer to be covered by soil stabilization matting.

CONSTRUCTION

- See planting plan.
- WAGCS positions should be located using the planview grading sheets.
- Excavate vertically to prepare the installation of weir wad logs. Leave 2' depth in the trench to depress the inverted log into the channel at the appropriate location in the cross section then depress the log into the channel at the proposed channel invert according to the profile and/or section. Backfill any exposed log up to the invert of the proposed channel bottom invert.
- Install floodplain log sills along the surface of the flat bench, protruding no more than 3" above the surrounding finished grade. Install wooden posts to secure both ends of the sill approximately 3' from the end of each log on the up and downstream sides. Posts should not extend more than 1' above the log. Backfill log and banks to finish grade.
- Pack the impaction material along the upstream side of the weir wads at a 20 percent slope from the channel invert to the start of the root wad fan. Secure soil stabilization matting to the weir wads using ring shanks and galvanized nails and secure the rest of the matting into the channel and stream banks using soil stabilization matting stakes.
- Stabilize the floodplain with Soil Stabilization Matting. See this sheet for details.

RIFFLER SUBSTRATE SPECIFICATION

USE EXISTING STREAM BED MATERIAL WHERE EXISTING MATERIAL MEETS THE FOLLOWING SIZE SPECIFICATIONS. WHERE EXISTING MATERIAL DOES NOT MEET THE FOLLOWING SIZE SPECIFICATIONS, SUPPLEMENT WITH ANGULAR QUARRY ROCK SO THAT THE D50 IS MADE TO MEET THE FOLLOWING SIZE:

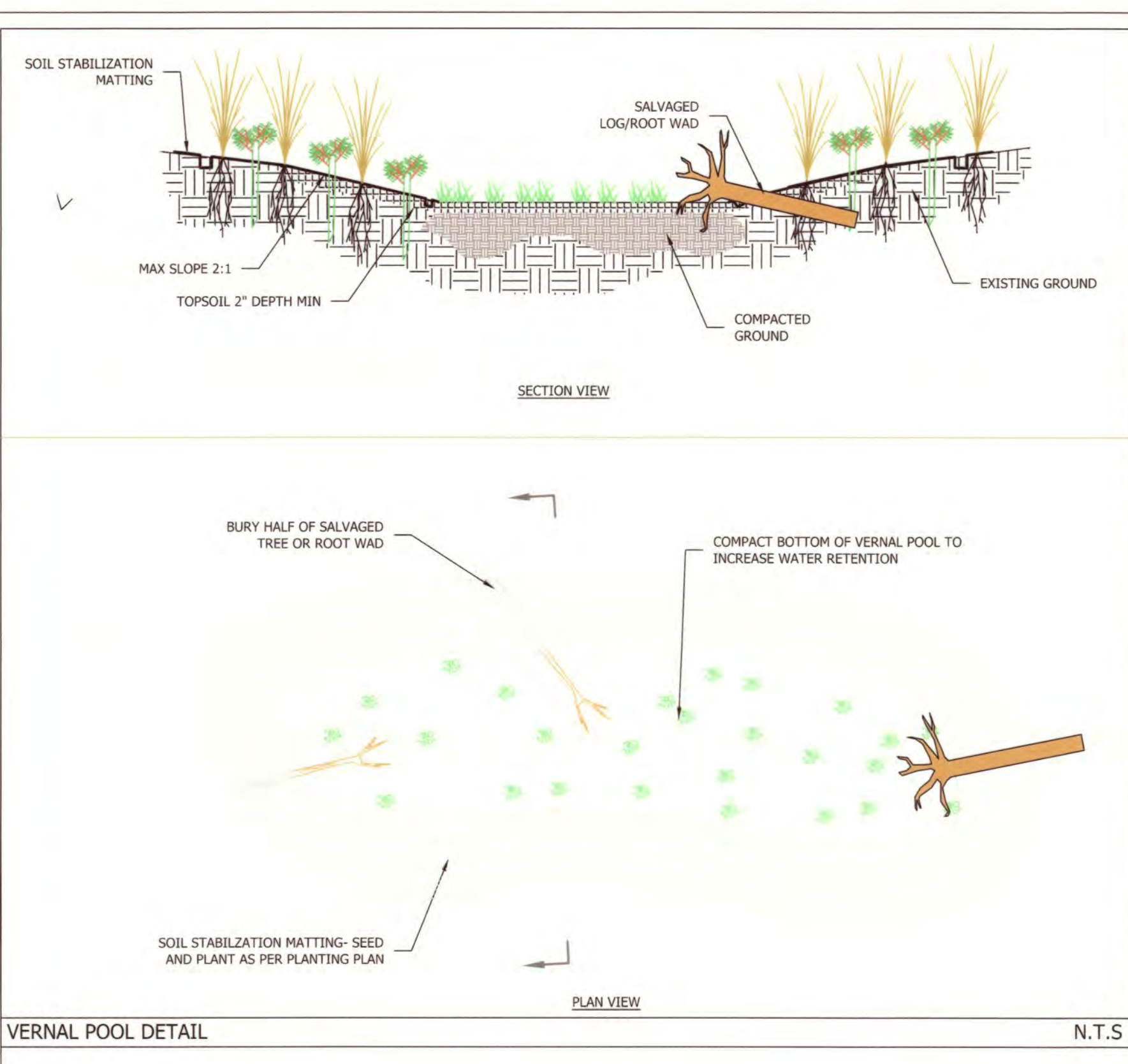
RIFFLER MATERIAL MIX		
NO. 57	20%	D ₅₀ = 1.0"
CLASS 0	30%	D ₅₀ = 6.0"
CLASS I	50%	D ₅₀ = 9.5"

PERMISSIBLE SHEAR STRESS AND VELOCITY

THE MAXIMUM PERMISSIBLE SHEAR STRESS AND PERMISSIBLE VELOCITY FOR THE TRIBUTARY TO PLUMTREE BRANCH AND THE PLUMTREE BRANCH ARE 3.0 LBS/FT WITH A PERMISSIBLE VELOCITY OF 4.75 FT/SEC TO 9.75 FT/SEC.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN DAYS (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.



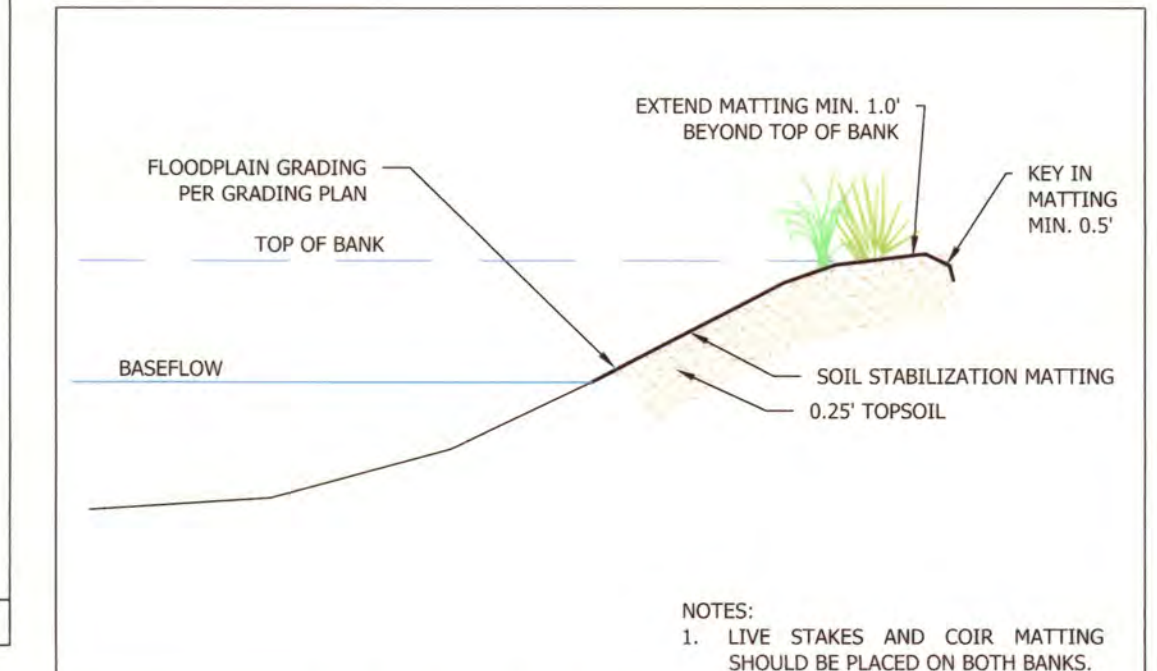
VERNAL POOL DETAIL N.T.S.

VERNAL POOL INSTALLATION

DESCRIPTION
This work shall consist of installing a vernal pool for herpetile habitat.

MATERIALS
Logs
Logs shall be hardwood species, have a minimum length as indicated on the "Log Cross Vane Chart", and a minimum diameter of 12 inches. All material shall be free of rot and evidence of pests. All branches and root mass shall be removed.
Topsoil Material
Topsoil shall be harvested onsite.
Soil Stabilization Matting
1. Matting shall be woven machine spun bristle coir twine made of coir fiber obtained from fresh water cured coconut husks.
2. Soil stabilization matting shall conform to the "Soil Stabilization Matting Specifications" chart.

CONSTRUCTION
1. Remove topsoil and set aside for furnishing finished vernal pool.
2. Excavate the pool to a depth of 1-2'.
3. Install log and backfill to finished grade. Ensure that the log is buried halfway with the branching of the crown or wad so that it is exposed within the pool.
4. Seed and plant per planting plan and details.



SOIL STABILIZATION MATTING DETAIL N.T.S.

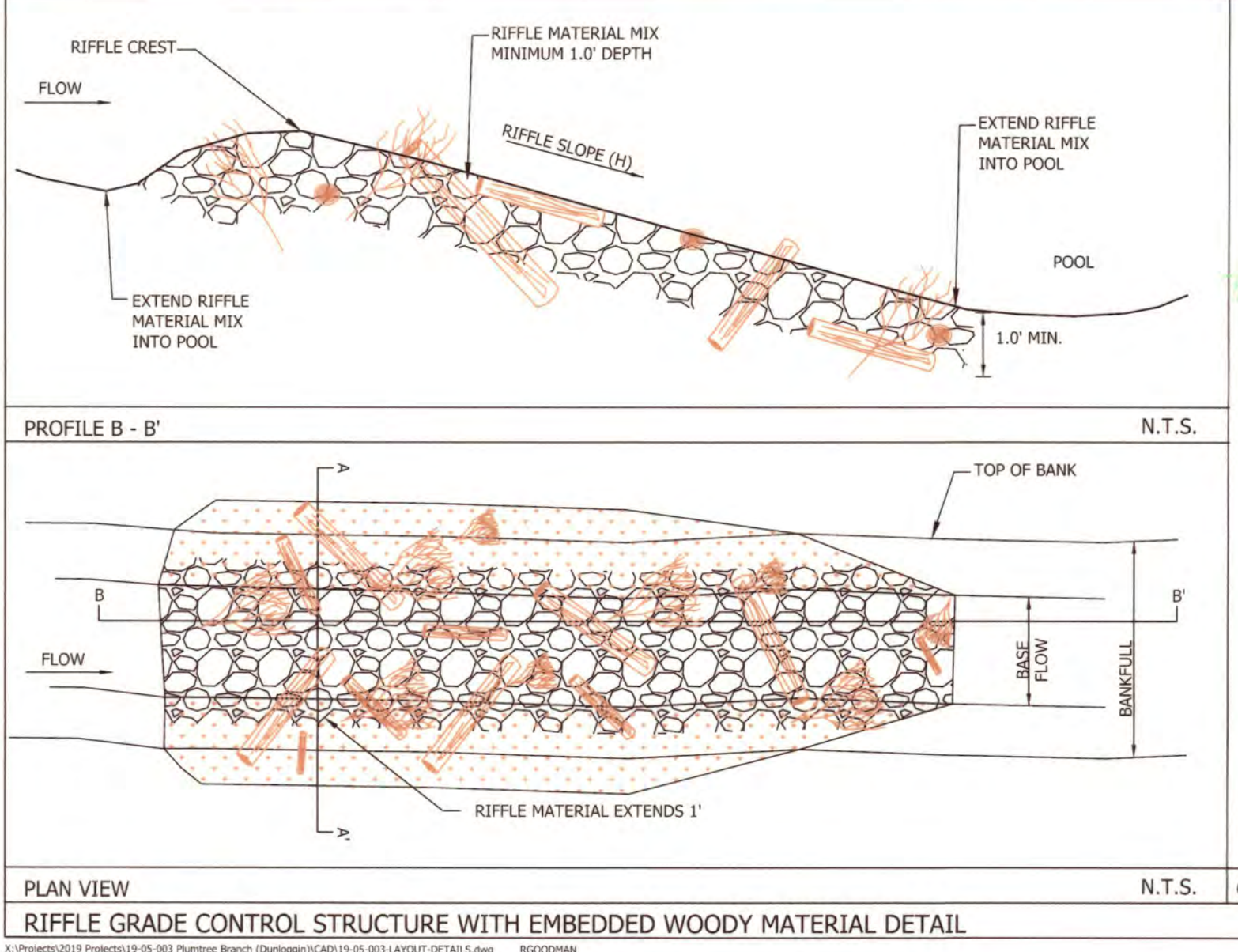
Soil Stabilization Matting Specifications		
Property	Test Method	CoirMat 700
Weight	ASTM D 3776	20.6 oz/SY
Thickness	ASTM D 1777	0.3 inch
Dry Tensile Strength		
Machine Direction		1512 lbs/sf
Cross Direction	ASTM D 4595	1032 lbs/sf
Wet Tensile Strength		
Machine Direction		924 lbs/sf
Cross Direction	ASTM D 4595	684 lbs/sf
Open Area	Calculated	50%

SOIL STABILIZATION MATTING INSTALLATION

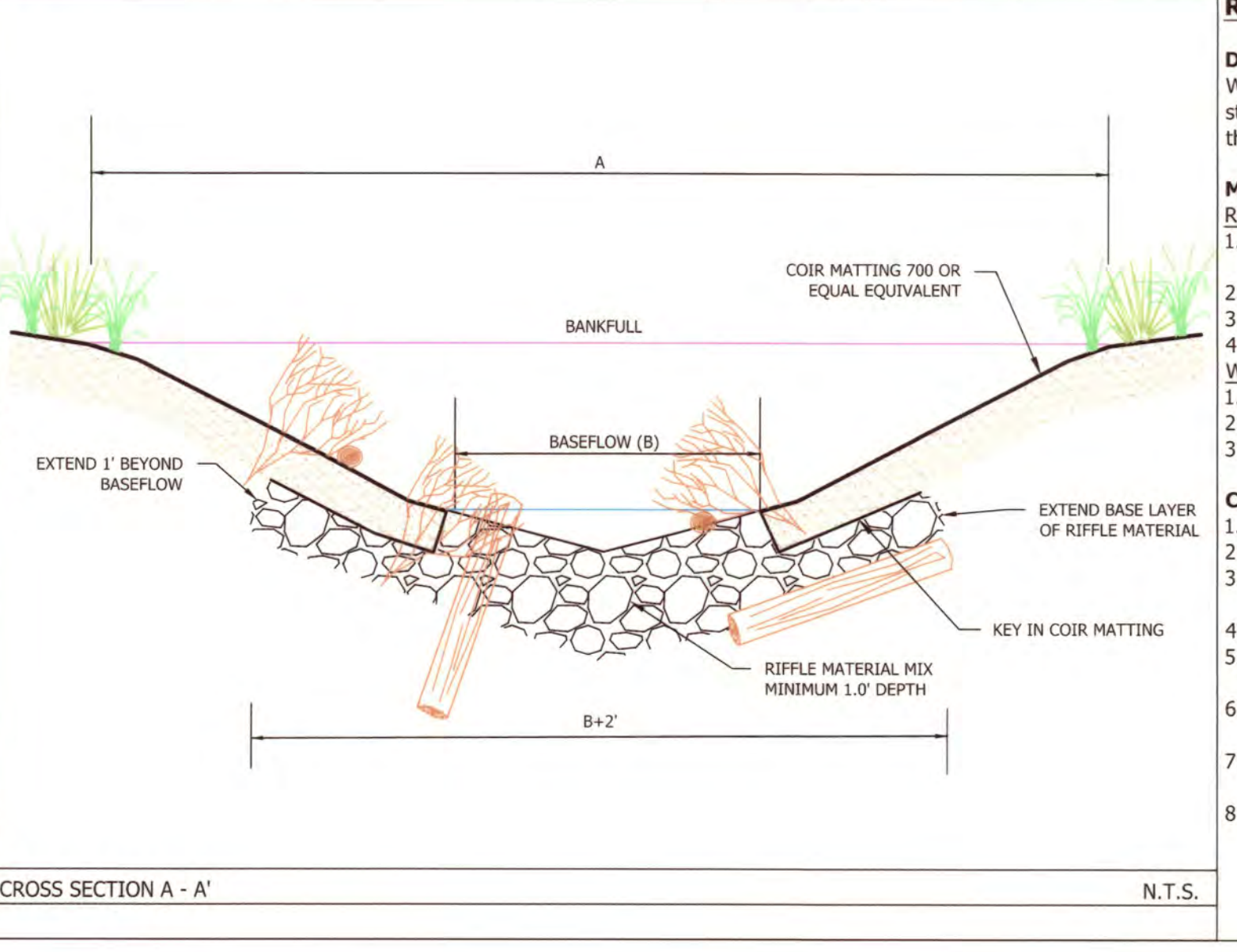
DESCRIPTION
This work shall consist of installing soil stabilization matting.

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

CONSTRUCTION
Soil Stabilization Matting:
1. Matting shall be placed from baseflow to ≥ 12' of streambank.
2. Final grade stream banks to proposed dimension and slope per the grading plan.
3. Seed streambank areas with proposed permanent and temporary seed mix per seeding charts on sheet 7 of this plan set. At least one treatment of seed should be added before the stabilization matting is laid.
4. Matting shall be laid smoothly and firmly upon the seeded bed in the direction of the water flow. Excessive stretching shall be avoided.
5. Where more than one width of matting is required, the ends of each strip shall overlap at least 1 foot for both vertical and horizontal overlaps. Overlapping shall be done with the up-slope matting overlapping the down-slope matting and the upstream matting overlapping the downstream matting.
6. Matting shall be firmly fastened in place with stakes driven vertically into the soil and flush with the surface. Stakes shall be placed on 4-foot centers throughout the matting and along the edges of the matting.
7. The contractor shall excavate a shallow trench along the up-slope, down-slope, and vertical edges of the matting at both the upstream and downstream edges of the matting. The matting shall extend 1' beyond top of bank and be keyed into the trench a minimum of 6 inches. Following the installation of the stakes, the matting trenches shall be backfilled with soil (or stream bed material if keying in within the channel) and tamped firmly.



RIFFLER GRADE CONTROL STRUCTURE WITH EMBEDDED WOODY MATERIAL DETAIL N.T.S.



CROSS SECTION A - A' N.T.S.

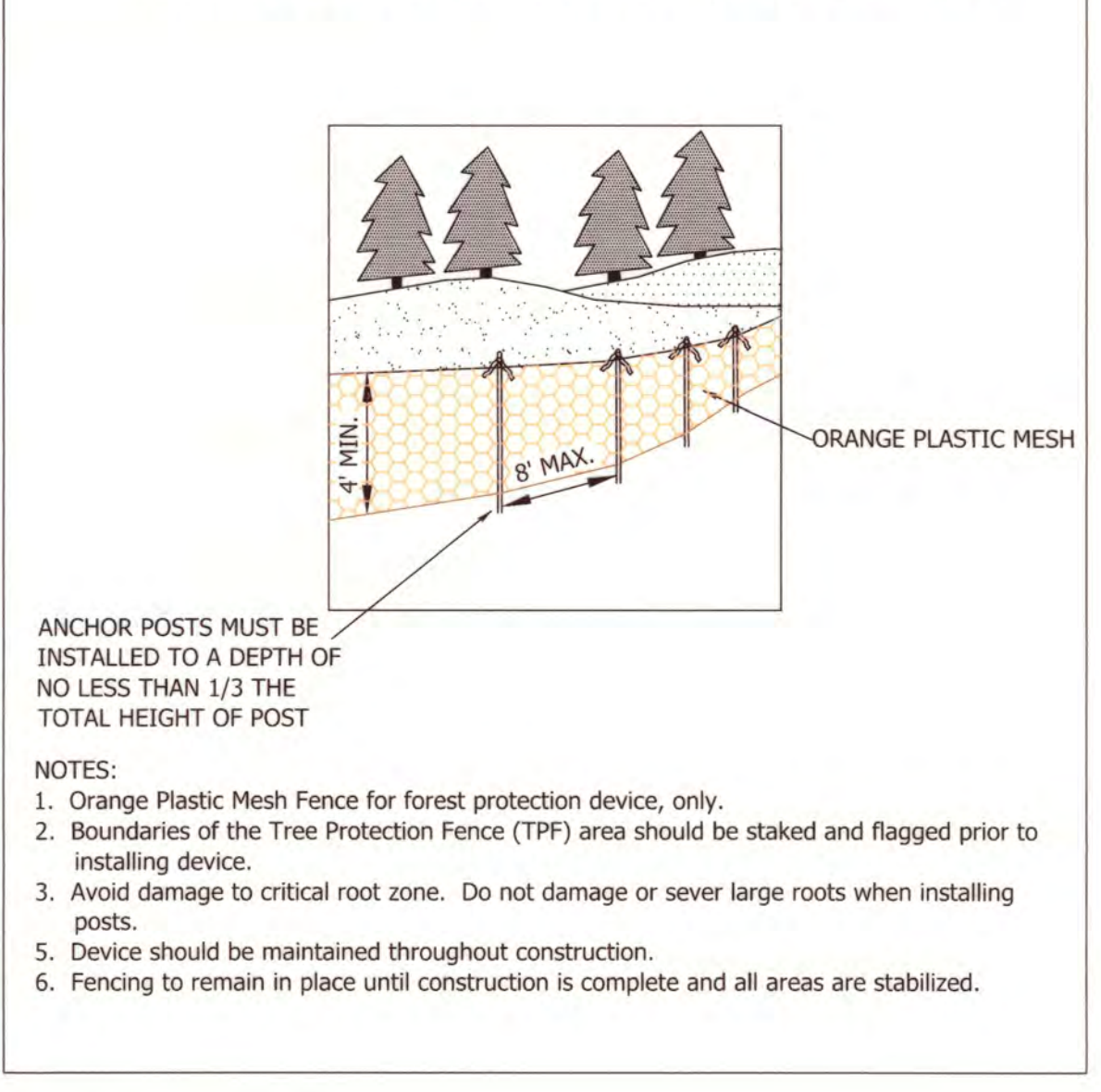
RIFFLER GRADE CONTROL STRUCTURE WITH EMBEDDED WOODY MATERIAL INSTALLATION

DESCRIPTION
Work shall consist of installing stone and woody materials for the creation of riffle grade control structures within the proposed stream bed. Riffle grade control structures are to be utilized at every riffle along the proposed stream alignment as indicated on the plan views and profiles.

MATERIALS
Riffle Material Mix
1. Riffle material mix material shall consist of salvaged natural field rock or furnished crushed rock from a quarry and shall be sound, tough, dense, resistant to the action of air and water, and suitable in all respects for the purpose intended.
2. The Construction Manager shall review riffle material for review and approval prior to beginning construction.
3. Substrate shall be a mixture conforming to the "Riffle Substrate Specifications".
4. All material shall meet the approval of the Construction Manager.
Woody Material
1. Woody material shall be 1-8" in diameter (maximum) and 18-48 inches in length.
2. Woody material shall be from native trees and shrubs. No exotic or invasive species are to be used.
3. No willow (Salix) or shrub dogwood (Cornus sericea, Cornus mas or Cornus racemosa) species are to be used.

CONSTRUCTION
1. Salvageable material within any given work area shall be harvested and stockpiled for later use.
2. Excavate proposed channel to form subgrade of proposed riffle structure.
3. Place a portion of woody debris in the excavated riffle. Woody material shall be placed in a manner in which it is keyed into the proposed banks, proposed riffle material, and/or driven into the substrate prior to riffle material placement.
4. If furnished material is required, thoroughly mix specified furnished material with existing material.
5. Add base layer of compacted material. Extend substrate 1-ft beyond base flow width and approximately 1.0' below finished grade.
6. Regrade stream banks to the proposed site and elevation, making sure to key in coir matting a full 1-ft along edge of baseflow.
7. Spread proposed seed mix on newly graded banks, fold back, coir matting, and stake in place. Coir should be carried past bankfull width by 3-ft minimum. Key in edge of coir along top of bank.
8. Place remaining substrate material within baseflow and bring to final elevation, making sure to cover and protect the edge of the soil stabilization matting.

TREE PROTECTION (BLAZE ORANGE) FENCE DETAIL



PLUMTREE BRANCH AT DUNLOGGIN MIDDLE SCHOOL

GRADING & SEDIMENT CONTROL PLAN

9129 NORTHFIELD RD
ELLCOTT CITY, MD 21042

CHECKED BY: JPD

DESIGNED: SDB/SGM

DRAWN: REL

PROJECT No.: 19-05-003

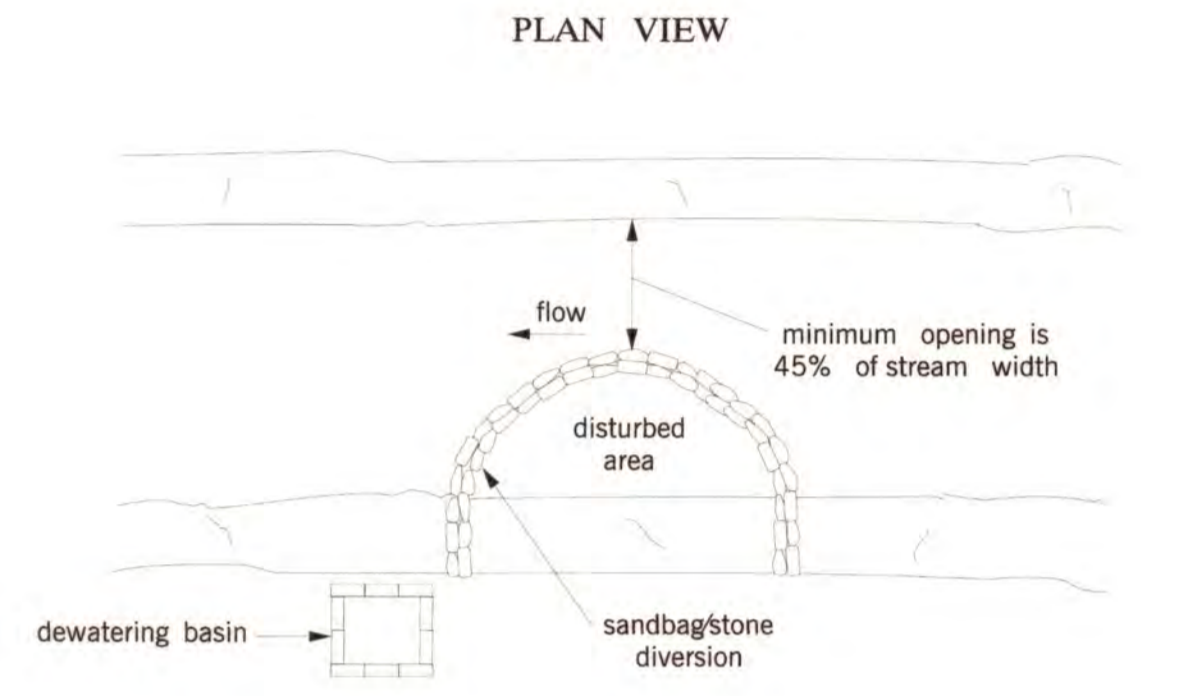
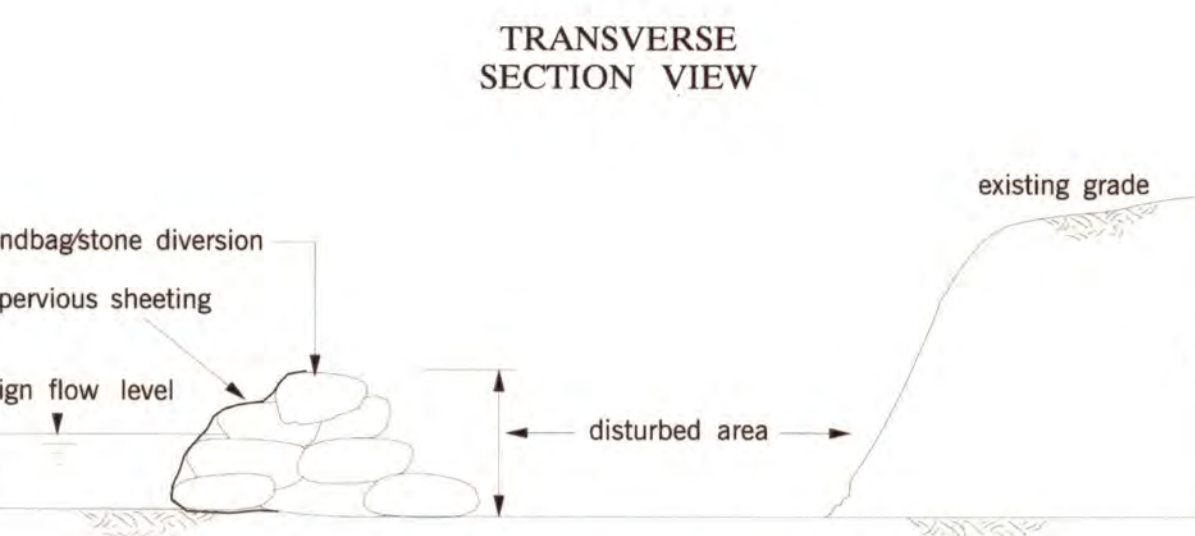
DATE: 5/11/2022

SHEET: 14 of 20

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Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAGSTONE DIVERSION



TEMPORARY INSTREAM CONSTRUCTION MEASURES
 REVISED NOVEMBER 2000
 MARYLAND DEPARTMENT OF THE ENVIRONMENT
 WATERWAY CONSTRUCTION GUIDELINES

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION
 The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

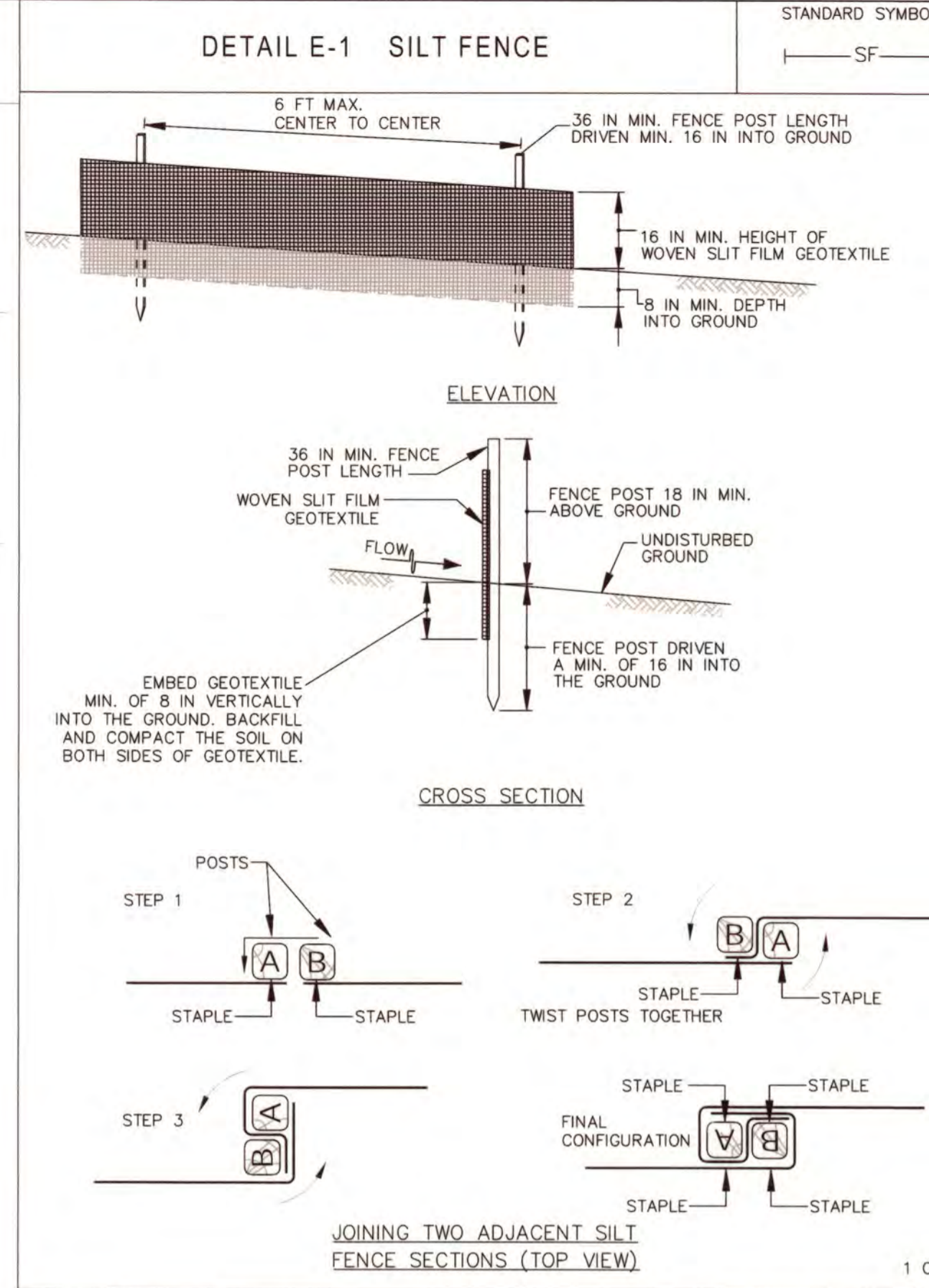
EFFECTIVE USES & LIMITATIONS
 Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS
 Materials for sandbag and stone stream diversions should meet the following requirements:
 • Riprap: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
 • Sandbags: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
 • Sheeting: Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

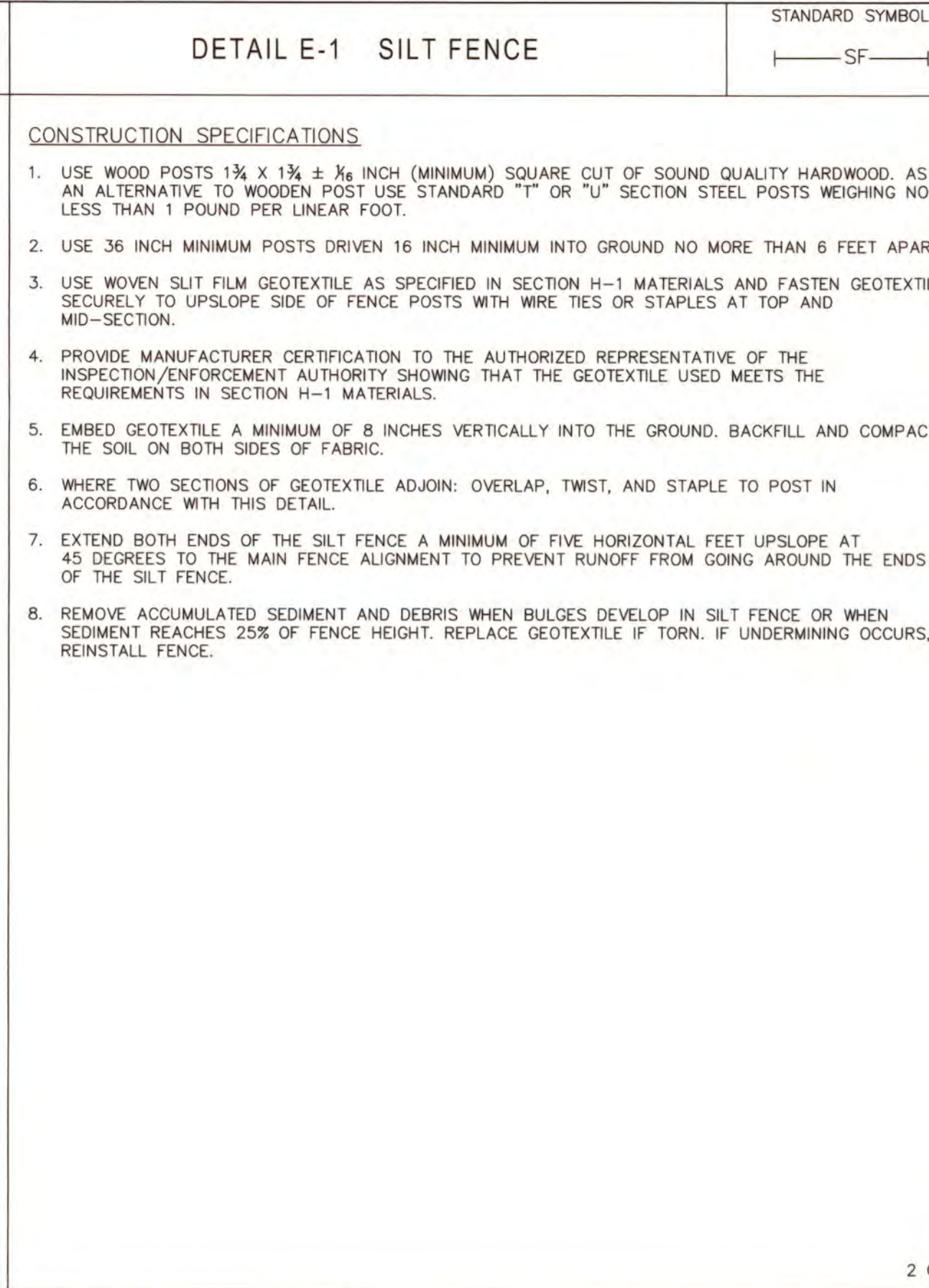
INSTALLATION GUIDELINES
 All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

- Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):
- The diversion structure should be installed from upstream to downstream.
 - The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
 - All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
 - Sediment-laden water from the construction area should be pumped to a dewatering basin.

TEMPORARY INSTREAM CONSTRUCTION MEASURES
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 WATERWAY CONSTRUCTION GUIDELINES
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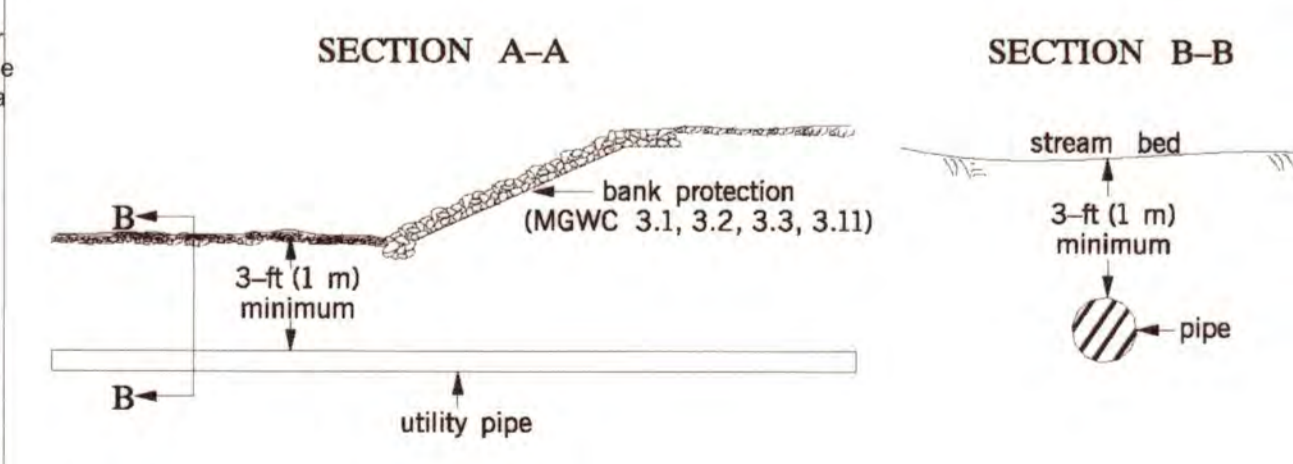
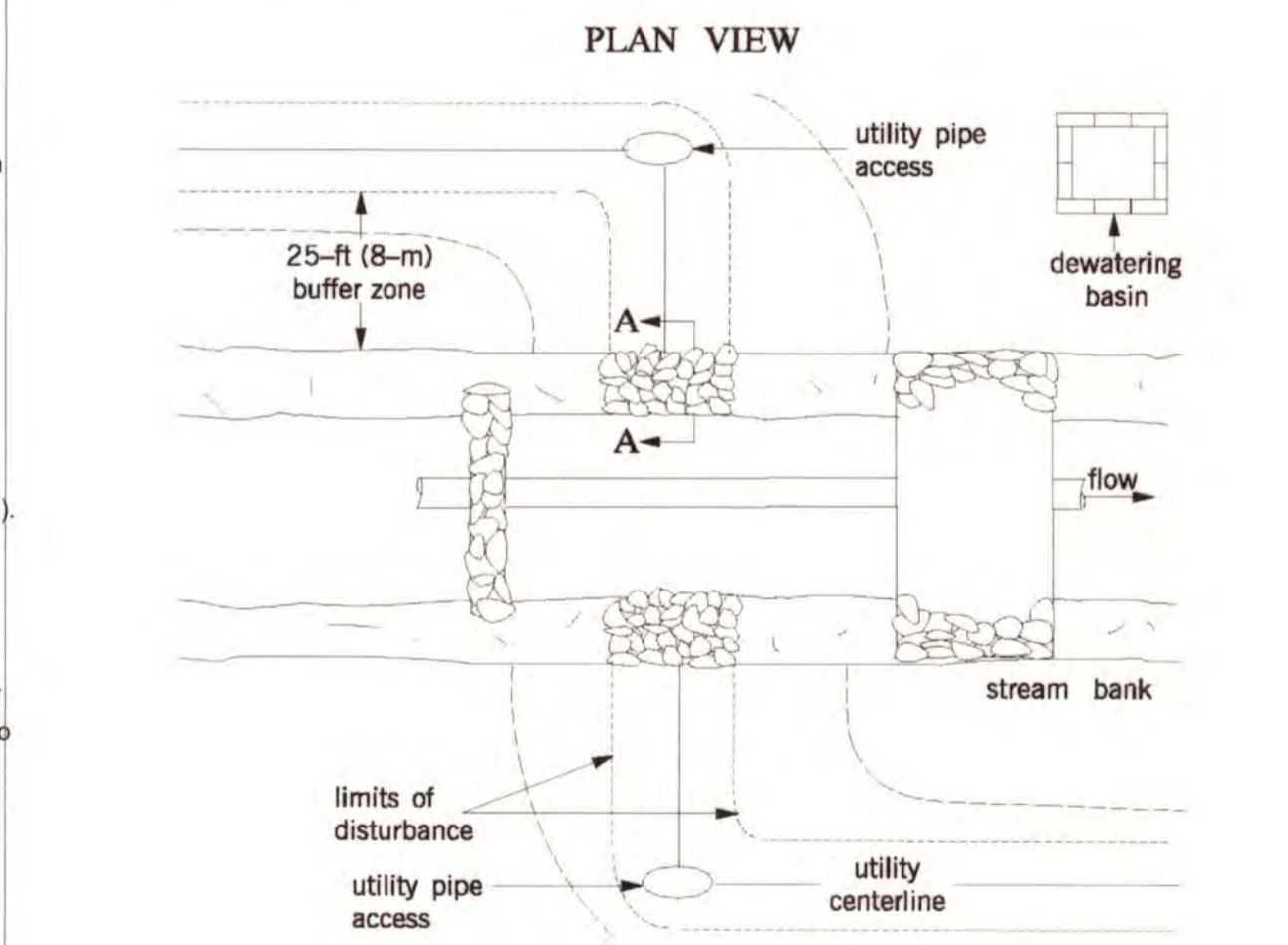


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 2011



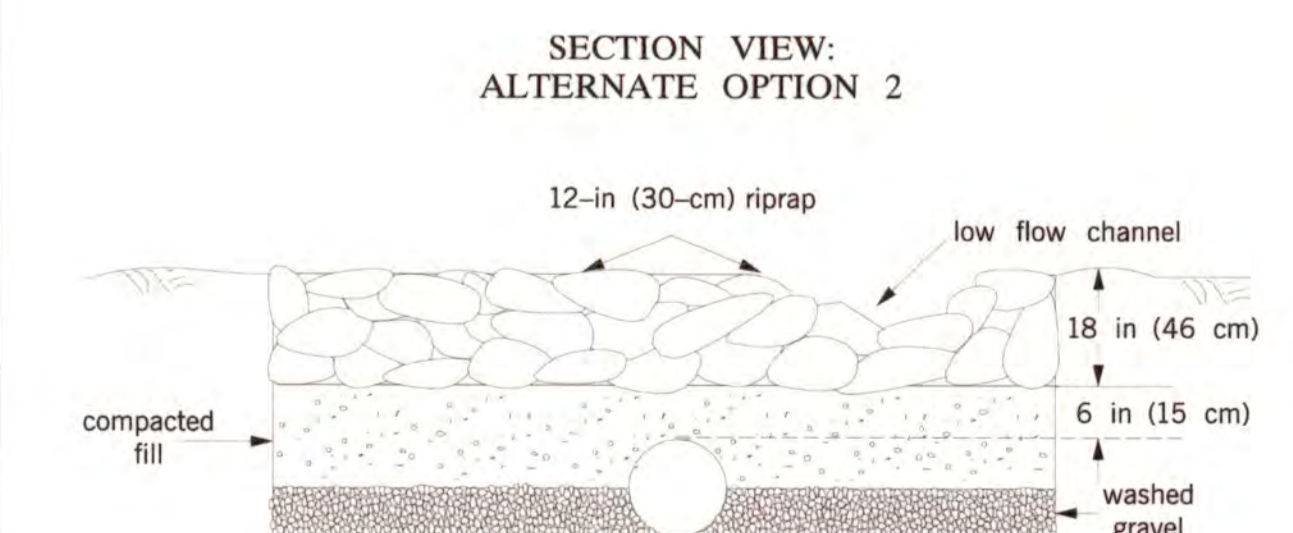
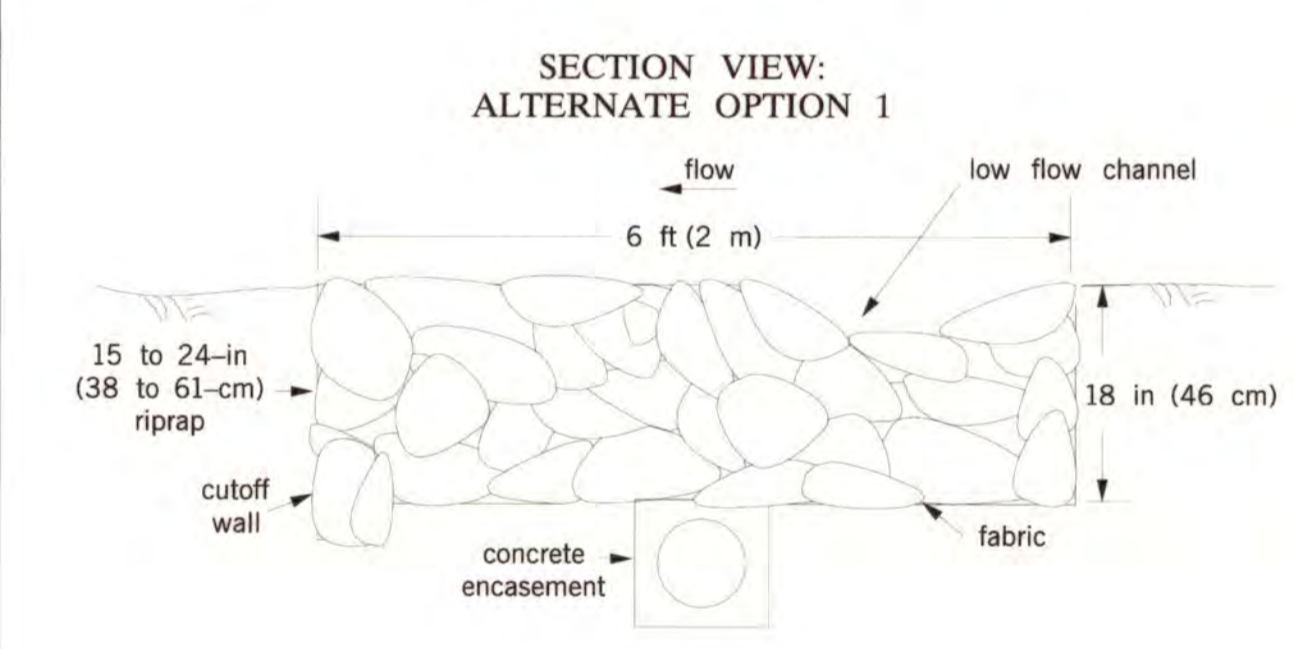
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 2011

Maryland's Guidelines To Waterway Construction
DETAIL 4.2(a): UTILITY CROSSING

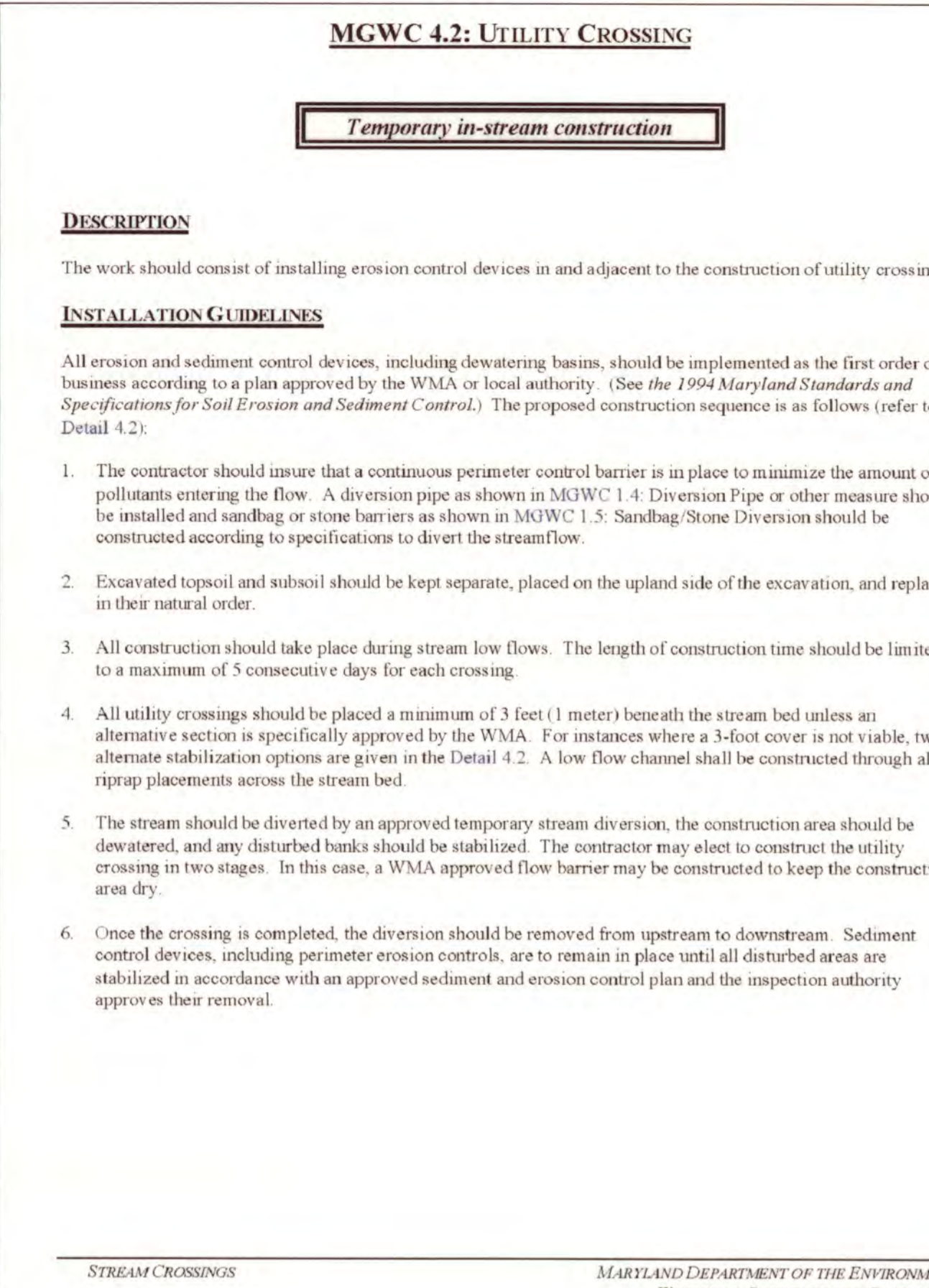


STREAM CROSSINGS
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 MARYLAND DEPARTMENT OF THE ENVIRONMENT
 WATER MANAGEMENT ADMINISTRATION

Maryland's Guidelines To Waterway Construction
DETAIL 4.2(b): UTILITY CROSSING



STREAM CROSSINGS
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 MARYLAND DEPARTMENT OF THE ENVIRONMENT
 WATER MANAGEMENT ADMINISTRATION



MARYLAND DEPARTMENT OF THE ENVIRONMENT
 WATERWAY CONSTRUCTION GUIDELINES
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MGWC 1.1: DEWATERING BASINS

Temporary measure for filtering sediment-laden water

DESCRIPTION
 The work should consist of installing dewatering basins jointly with channel diversion measures to filter sediment-laden water from in-stream construction sites before the water re-enters the downstream reach.

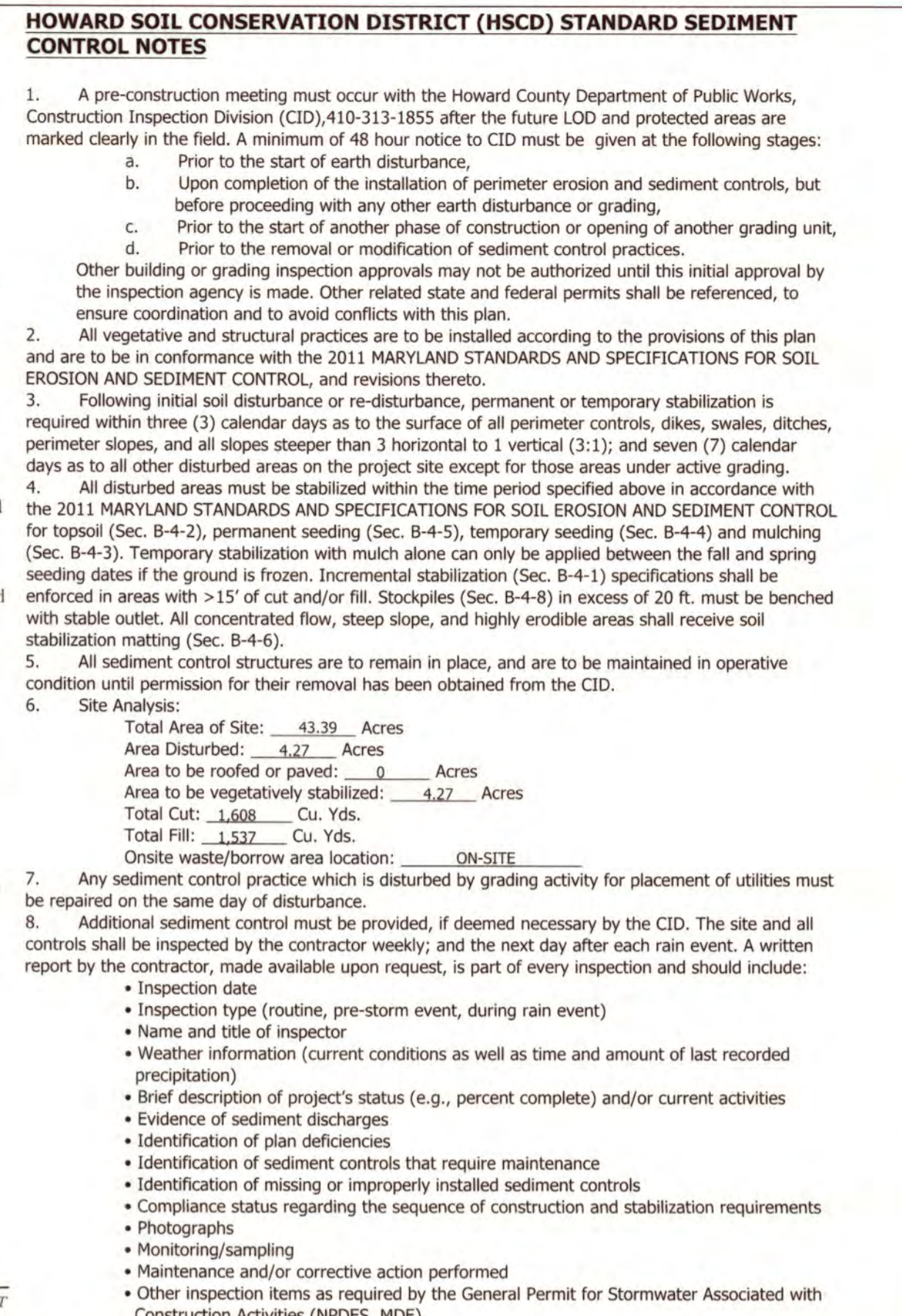
EFFECTIVE USES & LIMITATIONS
 Undersized dewatering basins will not adequately filter sediment-laden water from the construction site.

MATERIAL SPECIFICATIONS
 Materials for dewatering basins should meet the following requirements:
 • Riprap: Riprap should be washed and have a diameter ranging from 4 to 6 inches (10 to 15 centimeters).
 • Filter Cloth: Filter cloth should be a woven or non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric should be inert to commonly encountered chemicals, hydro-carbons, ultraviolet light, and mildew and should be rot resistant.
 • Straw Bales/Silt Fence: Straw bales should meet the criteria as specified in the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

INSTALLATION GUIDELINES
 Due to the danger of overtopping by events greater than the design flow, dewatering basins require a vegetative buffer strip to filter sediment-laden overflow. A 50-foot (15-meter) minimum grass-covered buffer width is required for slopes less than 20 degrees (1:2.7) when right-of-way is not limited. For slopes greater than 20 degrees, basins should have a 100-foot (30-meter) minimum buffer width when practical.

All erosion and sediment control devices should be installed as the first order of business according to a plan approved by the Water Management Administration (WMA) or local authority. Dewatering basins should be constructed as follows (refer to Detail 1.1):

- Excavated subsoil and topsoil should be stored separately and replaced in their natural order. Additionally, the excavated sediments should be prevented from entering the waterway by using sediment perimeter controls or other measures.
- The dewatering basin should have a minimum depth of 3 feet (1 meter) where basin depth is measured from the top of the straw bales to the bottom of the excavation.
- Once the dewatering basin becomes filled to one-half of the excavated depth, accumulated sediment should be removed and disposed of in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
- Sediment control devices should remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. All disturbed ground contours should be returned to their original condition unless otherwise approved by the WMA or local authority.



MARYLAND DEPARTMENT OF THE ENVIRONMENT
 WATERWAY CONSTRUCTION GUIDELINES
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**PLUMTREE BRANCH
 AT DUNLOGGIN MIDDLE SCHOOL**

GRADING & SEDIMENT CONTROL PLAN

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 (410) 420 2600 - www.ecotoneinc.com

REVISIONS			
No.	DATE	DESCRIPTION	REV BY

CHECKED BY: JPD
 DESIGNED: SDB/SGM
 DRAWN: REL
 PROJECT No.: 19-05-003
 DATE: 5/11/2022
 SHEET: 15 of 20

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOP SOILING, 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.
 - b. Topsoil must 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 1½ inches in diameter.
 - c. 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.
 - d. 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 Standards and Specifications for 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. Cultipacker 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 (phosphorus), 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 1,000 feet long.

B-4-4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

Conditions Where Practice Applies

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

Criteria

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

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) 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 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary .
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: 1½ 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 1½ 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 seedlings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications

- a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
- b. Sod must be machine cut at a uniform soil thickness of ¼ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
- c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grass on the upper 10 percent of the section.
- d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
 - a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
 - b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
 - c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
 - d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
3. Sod Maintenance
 - a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
 - b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
 - c. Do not mow until the sod to firmly rooted. No more than 1/3 of the leaf grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

Table B-3: Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 7a					Fertilizer Rate 10-20-20			Lime Rate
Seed Mixture (from Table B.3): 2								
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
2	Big Bluestem (<i>Andropogon gerardii</i>)	6	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Indiangrass (<i>Sorghastrum nutans</i>)	6	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Little Bluestem (<i>Schizachyrium scoparium</i>)	4	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Creeping Red Fescue (<i>Festuca rubra var. rubra</i>)	15	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Bush Clover (<i>Lespedeza capitata</i>)	2	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre

Hardiness Zone (from Figure B.3): 7a					Fertilizer Rate 10-20-20			Lime Rate
Seed Mixture (from Table B.3): 8								
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
8	Tall Fescue (<i>Lolium arundinaceum</i>) (formerly <i>Festuca arundinacea</i>)	100	2/15 - 4/30 8/15 - 10/31 11/1 - 11/30	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre

- For period 5/1 - 8/14, add 5.0 lb/ac. of foxtail millet to mix No. 8.

Warm season grasses need a soil temperature of at least 50 degrees F in order to germinate. If soil temperatures are colder than 50 degrees, or moisture is not adequate, the seeds will remain dormant until conditions are favorable. In general, planting during the latter portion of this period allows more time for weed emergence and weed control prior to planting. When selecting a planting date, consider the need for weed control vs. the likelihood of having sufficient moisture for later plantings, especially on droughty sites.

* Additional planting dates during which supplemental watering may be needed to ensure plant establishment.

- Seed Mixture No 2 will be used as a riparian mix along the floodplain. Seed Mixture No 8 will be used in the upland areas of the LOD. Refer to the planting plan to see riparian and upland areas.

Table B-1: Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 7a					Fertilizer Rate (10-20-20)	Lime Rate
Seed Mixture (from Table B.1)						
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5
	Annual Rye (<i>Lolium perenne spp. multiflorem</i>)	40	2/15 - 4/30 8/15 - 11/30	.5 in.	45 lb/ac (1 lb/1000 sf)	2 tons per acre
	Foxtail Millet (<i>Setaria italica</i>)	30	5/1 - 8/14	.5 in.	45 lb/ac (1 lb/1000 sf)	2 tons per acre



REVISIONS			
No.	DATE	DESCRIPTION	REV BY

PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL

GRADING & SEDIMENT CONTROL PLAN

9129 NORTHFIELD RD
ELLICOTT CITY, MD 21042

CHECKED BY: JPD
DESIGNED: SDB/SGM
DRAWN: REL
PROJECT No.: 19-05-003
DATE: 5/11/2022
SHEET:

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

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

STANDARD SYMBOL: TSSMS - 2.25 lb/ft²

CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- 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.
- 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 1 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 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLES/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: TSSMC - * 2.25 lb/ft² (* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- 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.
- 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 1 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 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
- OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE NEXT DOWNSLOPE MAT.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: FB

CONSTRUCTION SPECIFICATIONS

- TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
- 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.
- 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.
- 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.
- 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 ²	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

- 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.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 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.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, 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.

DETAIL 1.2: PUMP-AROUND PRACTICE

N.T.S.

MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION

PUMP-AROUND PRACTICE

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

IMPLEMENTATION SEQUENCE
Sediment control measures, pump-around practices, and associated channel and bank construction shall be completed in the following sequence (refer to Detail 1.2): PUMP-AROUND PRACTICE.

- Construction activities including the installation of erosion and sediment control measures shall not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities shall be marked in the field prior to construction. The contractor will be responsible for any damage to existing utilities that may result from construction and shall repair the damage at his/her own expense to the county's or utility company's satisfaction.
- The contractor shall notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor shall inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
- The contractor shall conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review the limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor shall stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees shall not be removed within the limit of disturbance without approval from the WMA or local authority.
- Construction shall not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor shall stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
- Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor shall 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 shall 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 shall not be conducted in the channel during rain events.
- Sandbag dikes shall be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow shall be pumped around the work area. The pump shall discharge onto a stable velocity dissipater of riprap or sandbags.
- Water from the work area shall be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure shall be located such that the water drains back into the channel below the downstream sandbag dike.
- Reversing a channel reach with equipment within the work area where no work is proposed shall be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures shall be used to minimize disturbance to the channel. Temporary stream crossing shall be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction).
- All stream restoration measures shall be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections.
- After an area is completed and stabilized, the clean water dike shall be removed. After the first sediment flush, a new clean water dike shall be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike shall be removed.
- A pump-around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This shall 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 shall discharge onto the same velocity dissipater used for the main stem pump-around.
- If a tributary is to be restored, construction shall take place on the main stem tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump-around practices, shall 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 shall resume. Water from the tributary shall continue to be pumped around the work area in the main stem.
- The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
- After construction, all disturbed areas shall be regraded and revegetated.

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

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

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

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

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 H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB

CONSTRUCTION SPECIFICATIONS

- CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.
- PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
- CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
- USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
- SELECT DECKING MATERIALS TO PROVIDE SUFFICIENT STRENGTH TO SUPPORT THE ANTICIPATED LOAD. PLACE ALL DECKING MEMBERS PERPENDICULAR TO THE STRINGERS, BUTT TIGHTLY, AND SECURELY FASTEN. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY BELOW.
- SECURELY FASTEN OPTIONAL RUN PLANKING FOR THE LENGTH OF THE SPAN. PROVIDE A RUN PLANK FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
- INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.
- ANCHOR BRIDGE SECURELY AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL POSTS. ANCHOR MUST BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSLOPE.
- AREAS DISTURBED DURING BRIDGE INSTALLATION AND/OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
- STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDIMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.

NOTE:
TIME OF YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACCESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB

CONSTRUCTION SPECIFICATIONS

- CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.
- PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
- CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
- USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
- SELECT DECKING MATERIALS TO PROVIDE SUFFICIENT STRENGTH TO SUPPORT THE ANTICIPATED LOAD. PLACE ALL DECKING MEMBERS PERPENDICULAR TO THE STRINGERS, BUTT TIGHTLY, AND SECURELY FASTEN. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY BELOW.
- SECURELY FASTEN OPTIONAL RUN PLANKING FOR THE LENGTH OF THE SPAN. PROVIDE A RUN PLANK FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
- INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.
- ANCHOR BRIDGE SECURELY AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL POSTS. ANCHOR MUST BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSLOPE.
- AREAS DISTURBED DURING BRIDGE INSTALLATION AND/OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
- STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDIMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.

NOTE:
TIME OF YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACCESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL: PP

CONSTRUCTION SPECIFICATIONS

- USE SPECIFIED CLASS OF RIPRAP.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
- PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
- STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL: PP

CONSTRUCTION SPECIFICATIONS

- USE SPECIFIED CLASS OF RIPRAP.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
- PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
- STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DELIVER AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

PLUMTREE BRANCH AT DUNLOGGIN MIDDLE SCHOOL GRADING & SEDIMENT CONTROL PLAN

9129 NORTHFIELD RD
ELLCOTT CITY, MD 21042

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

REVISIONS

No.	DATE	DESCRIPTION	REV. BY

CHECKED BY: JPD
DESIGNED: SDB/SGM
DRAWN: REL
PROJECT No.: 19-05-003
DATE: 5/11/2022
SHEET: 17 of 20

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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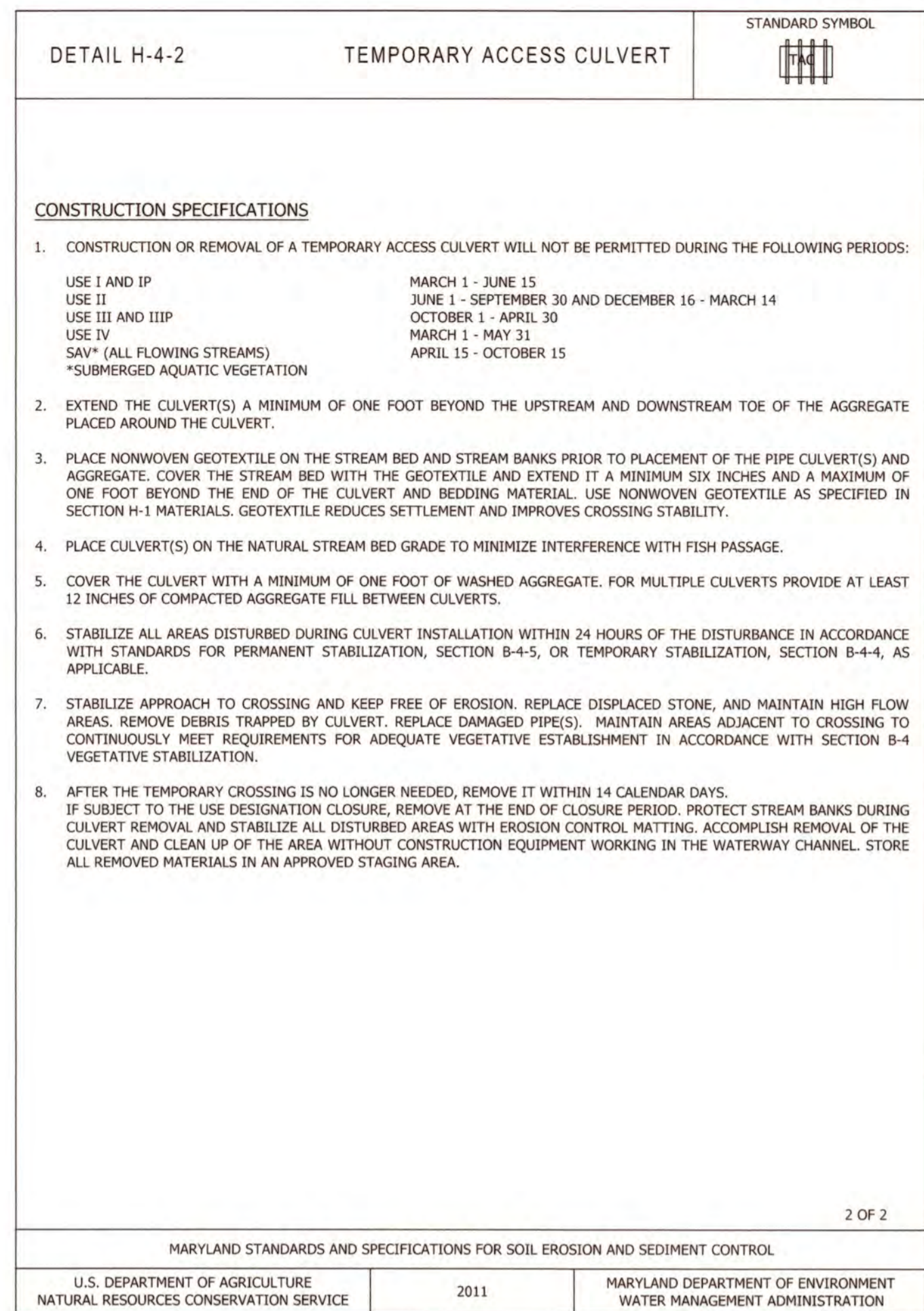
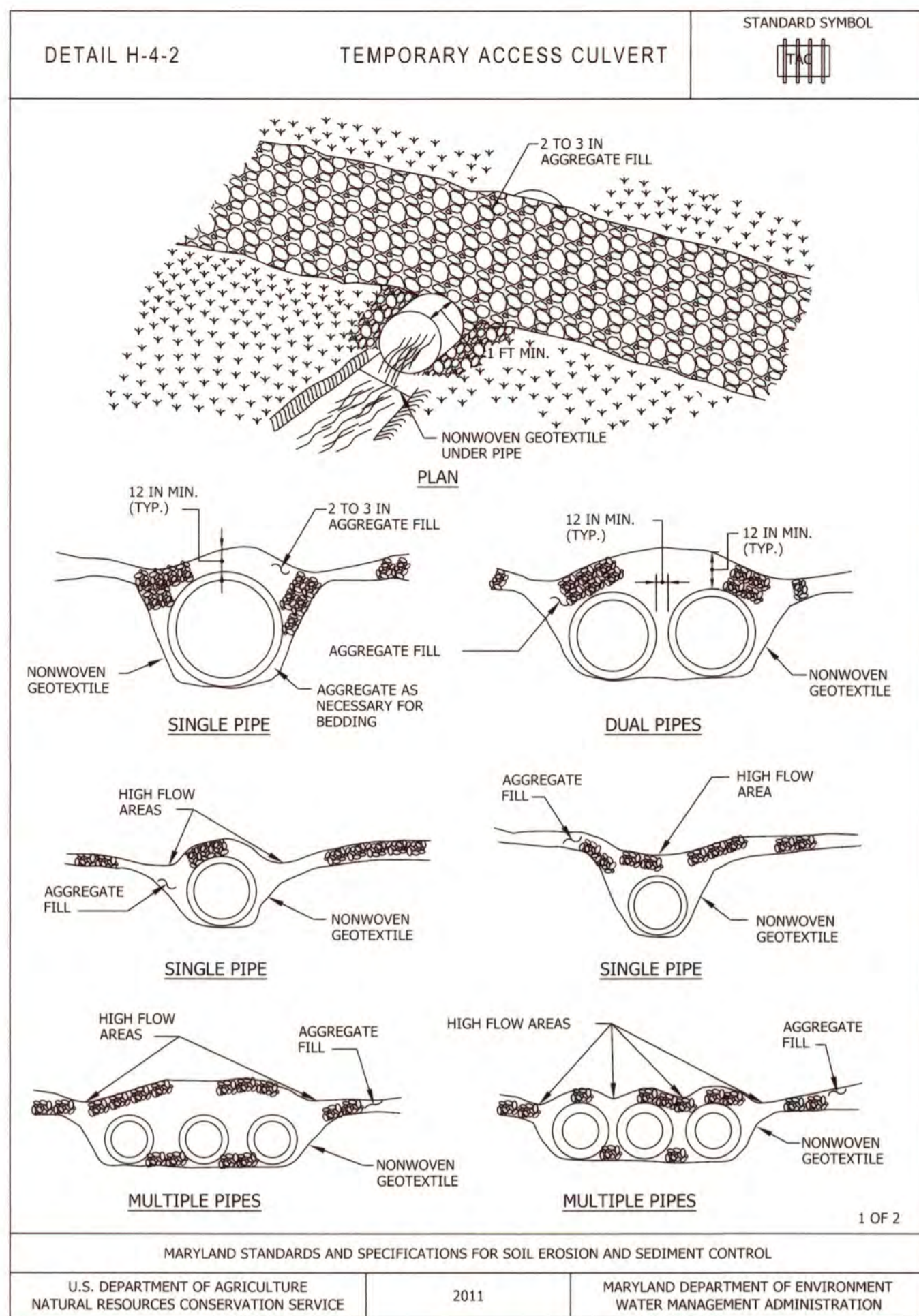
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B-4-8 STANDARDS AND SPECIFICATIONS

FOR

STOCKPILE AREA

Definition

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

Purpose

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

Conditions Where Practice Applies

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

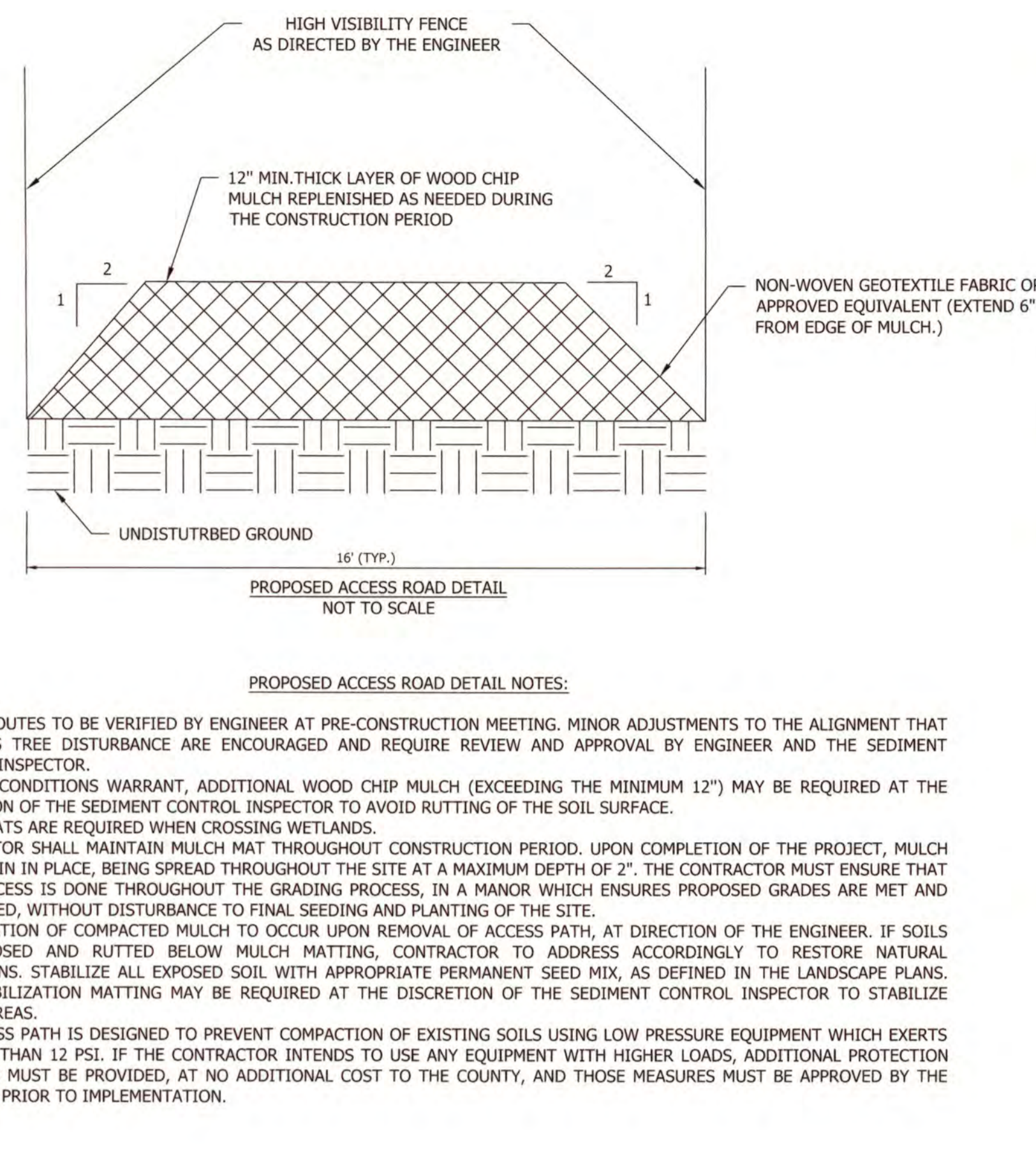
Criteria

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the upgrade side.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

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

B-43



PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL

GRADING & SEDIMENT CONTROL PLAN

9129 NORTHFIELD RD
ELLICOTT CITY, MD 21042

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No.	DATE	DESCRIPTION	REV. BY

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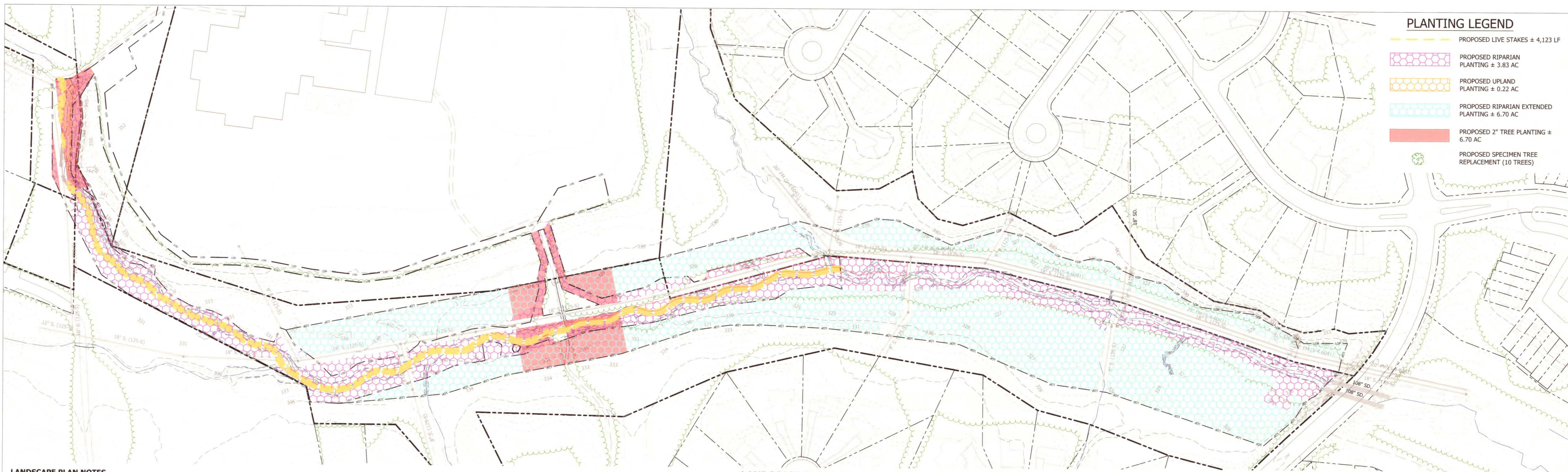
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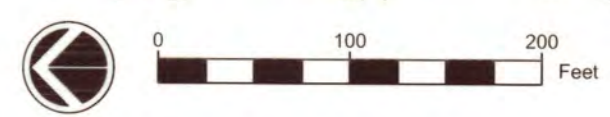
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LANDSCAPE PLAN NOTES

- TREE SURVEY INCLUDES ALL TREES 12-INCHES AND GREATER. CONTRACTOR MAY REMOVE TREES SMALLER THAN 12-INCHES THAT ARE WITHIN LOD AS NECESSARY FOR GRADING AND ACCESS.
- SURVEYED TREES OVER 12-INCHES NOT MARKED FOR REMOVAL WITHIN THE LOD WILL NOT BE REMOVED. TREES MARKED FOR REMOVAL THAT CAN BE SAVED DURING GRADING OPERATIONS WILL BE SAVED AT THE DISCRETION OF THE STREAM SPECIALIST.

LANDSCAPE PLAN
SCALE: 1"=100'



RIPARIAN PLANTINGS TABLE (3.42 ACRES)								UPLAND PLANTINGS TABLE (0.07 ACRES)								RIPARIAN EXTENDED PLANTING SCHEDULE (6.2 ACRES)							
TREES	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Indicator	TREES	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Indicator	TREES	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Indicator
	136	<i>Acer rubrum</i>	Red Maple	3/4" cal./6' ht.	container/bare root	15x15'	FAC		3	<i>Prunus serotina</i>	Black Cherry	3/4" cal./6' ht.	container/bare root	15x15'	FACU		277	<i>Betula nigra</i>	River Birch	3/4" cal./6' ht.	container/bare root	15x15'	FACW
	137	<i>Platanus occidentalis</i>	American Sycamore	3/4" cal./6' ht.	container/bare root	15x15'	FACW		2	<i>Juglans nigra</i>	Black walnut	3/4" cal./6' ht.	container/bare root	15x15'	UPL		276	<i>Celtis occidentalis</i>	Hackberry	3/4" cal./6' ht.	container/bare root	15x15'	FACU
	137	<i>Quercus palustris</i>	Pin Oak	3/4" cal./6' ht.	container/bare root	15x15'	FACW		3	<i>Quercus alba</i>	White Oak	3/4" cal./6' ht.	container/bare root	15x15'	FACU		277	<i>Platanus occidentalis</i>	American Sycamore	3/4" cal./6' ht.	container/bare root	15x15'	FACW
	136	<i>Salix nigra</i>	Black Willow	3/4" cal./6' ht.	container/bare root	15x15'	OBL		3	<i>Quercus palustris</i>	Pin Oak	3/4" cal./6' ht.	container/bare root	15x15'	FACW		276	<i>Quercus bicolor</i>	Swamp White Oak	3/4" cal./6' ht.	container/bare root	15x15'	FACW
	137	<i>Betula nigra</i>	River Birch	3/4" cal./6' ht.	container/bare root	15x15'	FACW		2	<i>Quercus rubra</i>	Northern Red Oak	3/4" cal./6' ht.	container/bare root	15x15'	FACU		277	<i>Nyssa sylvatica</i>	Black Gum	3/4" cal./6' ht.	container/bare root	15x15'	FAC
Total	683							Total	13							Total	1383						
Note: The plant schedule above reflects a planting rate of 200 stems/acre.								Note: The plant schedule above reflects a planting rate of 200 stems/acre.								Note: The plant schedule above reflects a planting rate of 200 stems/acre.							
2" RIPARIAN PLANTINGS TABLE (0.41 ACRES)								2" UPLAND PLANTINGS TABLE (0.15 ACRES)								2" RIPARIAN EXTENDED PLANTING SCHEDULE (0.47 ACRES)							
TREES	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Indicator	TREES	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Indicator	TREES	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Indicator
	8	<i>Acer rubrum</i>	Red Maple	2" cal./6' ht.	container/bare root	22'x22'	FAC		3	<i>Prunus serotina</i>	Black Cherry	2" cal./6' ht.	container/bare root	22'x22'	FACU		9	<i>Betula nigra</i>	River Birch	2" cal./6' ht.	container/bare root	22'x22'	FACW
	8	<i>Platanus occidentalis</i>	American Sycamore	2" cal./6' ht.	container/bare root	22'x22'	FACW		3	<i>Juglans nigra</i>	Black walnut	2" cal./6' ht.	container/bare root	22'x22'	UPL		9	<i>Celtis occidentalis</i>	Hackberry	2" cal./6' ht.	container/bare root	22'x22'	FACU
	7	<i>Quercus palustris</i>	Pin Oak	2" cal./6' ht.	container/bare root	22'x22'	FACW		3	<i>Quercus alba</i>	White Oak	2" cal./6' ht.	container/bare root	22'x22'	FACU		9	<i>Platanus occidentalis</i>	American Sycamore	2" cal./6' ht.	container/bare root	22'x22'	FACW
	7	<i>Salix nigra</i>	Black Willow	2" cal./6' ht.	container/bare root	22'x22'	OBL		3	<i>Quercus palustris</i>	Pin Oak	2" cal./6' ht.	container/bare root	22'x22'	FACW		8	<i>Quercus bicolor</i>	Swamp White Oak	2" cal./6' ht.	container/bare root	22'x22'	FACW
	7	<i>Betula nigra</i>	River Birch	2" cal./6' ht.	container/bare root	22'x22'	FACW		2	<i>Quercus rubra</i>	Northern Red Oak	2" cal./6' ht.	container/bare root	22'x22'	FACU		8	<i>Nyssa sylvatica</i>	Black Gum	2" cal./6' ht.	container/bare root	22'x22'	FAC
Total	37							Total	14							Total	43						
Note: The plant schedule above reflects a planting rate of 110 stems/acre.								Note: The plant schedule above reflects a planting rate of 110 stems/acre.								Note: The plant schedule above reflects a planting rate of 110 stems/acre.							
LIVE STAKE PLANTING TABLE (4,123 LF)																							
	Quantity	Scientific Name	Common Name	Size	Condition	Spacing	Indicator																
	2910	<i>Salix nigra</i>	Black Willow	-	Live stake	3' triangular	OBL																
	2910	<i>Salix interior</i>	Sandbar Willow	-	Live stake	3' triangular	OBL																
Total	5820																						
Note: The plant schedule above reflects a planting rate of 7,260 livestakes/acre based on spacing.																							

PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL

PLANTING PLAN

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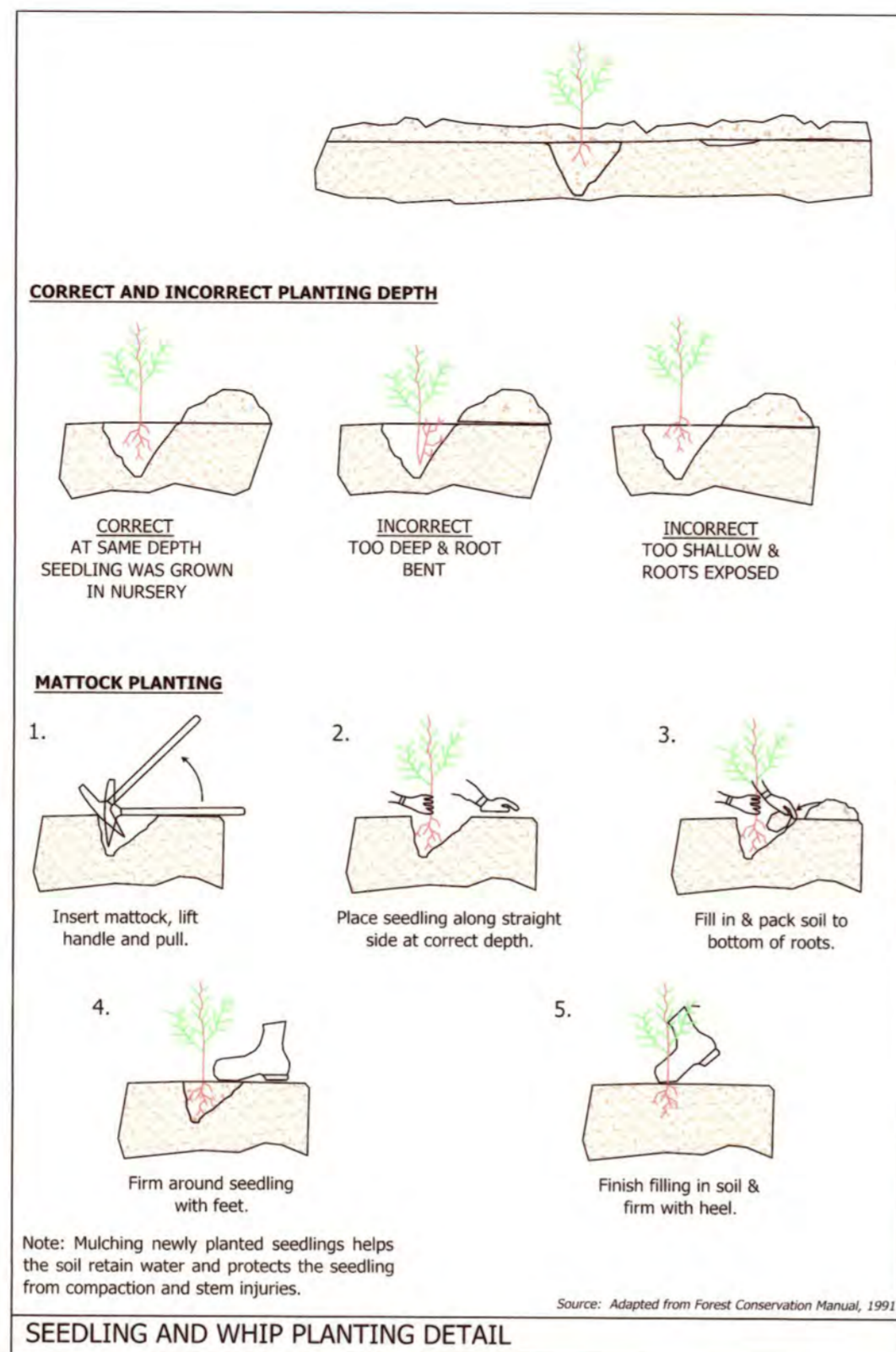
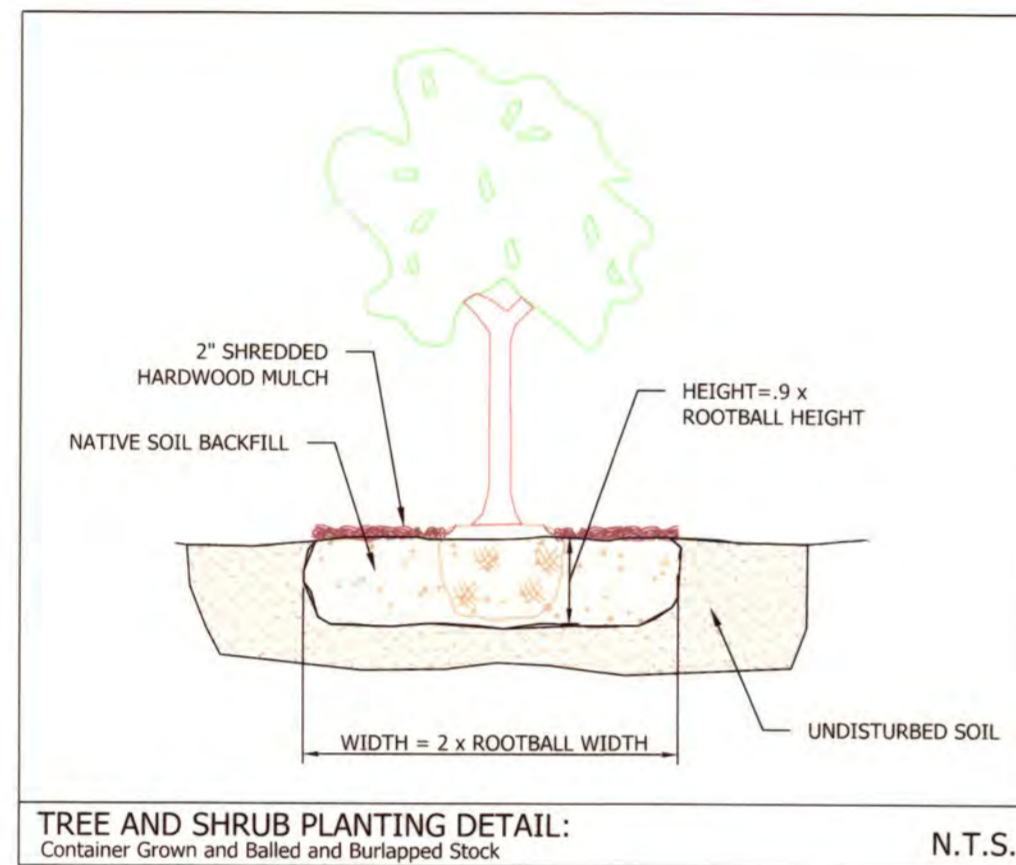
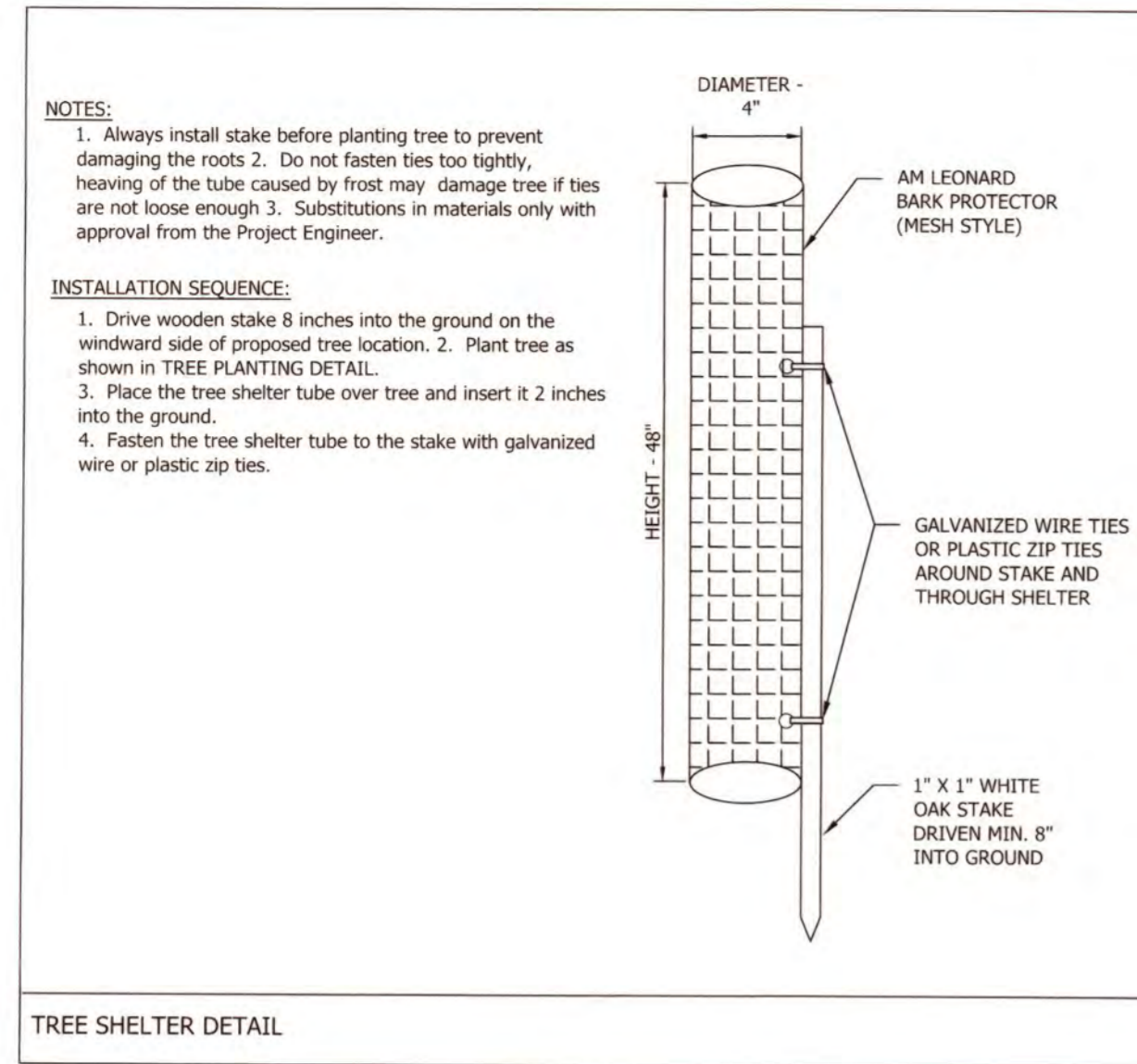
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DESIGNED: MIL
DRAWN: REL
PROJECT No.: 19-05-003
DATE: 5/11/2022
SHEET: 19 of 20



TREES TO BE REMOVED

Tree Number	Common Name	Scientific Name	DBH	Condition	Notes
T1	Red Maple	<i>Acer Rubrum</i>	18.8	Poor	Multi stemmed; vines; trunk rot; leaning
T2	Sweet Gum	<i>Liquidambar styraciflua</i>	16.1	Poor	Leaning heavy on slope; vines; trunk rot; dieback
T3	American Elm	<i>Ulmus Americana</i>	18.4	Poor	Leaning on slope; exposed roots from stream erosion; vines; major crown dieback
T4	Black Walnut	<i>Juglans Nigra</i>	20.2	Poor	Leaning on slope; roots undercut by stream erosion; dieback; vines
T5	Red Maple	<i>Acer Rubrum</i>	19.9	Poor	Vines; trunk damage; major dieback; multi stemmed
T6	Unknown	-	17.6	Dead	Dead
T7	American Elm	<i>Ulmus Americana</i>	11.5	Fair	Crown dieback; vines
T8	Black Walnut	<i>Juglans Nigra</i>	13.0	Fair	Leaning on slope; undercut roots from stream erosion
T9	Pin Oak	<i>Quercus Palustris</i>	11.9	Fair	Slightly leaning; vines
T10	American Sycamore	<i>Platanus occidentalis</i>	18.0	Fair	Slightly leaning
T11	Unknown	-	13.4	Dead	Heavily leaning and half uprooted; dead
T12	Pin Oak	<i>Quercus Palustris</i>	13.5	Good	-
T13	Black Walnut	<i>Juglans Nigra</i>	17.9	Fair	Undercut roots by stream erosion
T14	Black Walnut	<i>Juglans Nigra</i>	15.6	Fair	Undercut roots from stream erosion
T15	American Elm	<i>Ulmus Americana</i>	10.5	Poor	Heavy Vines; heavy lean
T16	Black Walnut	<i>Juglans Nigra</i>	14.3	Fair	Heavy vine cover
T17	Red Maple	<i>Acer Rubrum</i>	19.1	Poor	Heavily leaning over; hollowed/split trunk
T18	American Elm	<i>Ulmus Americana</i>	21.1	Poor	Leaning on slope; undercut roots from stream erosion; heavy vines; dead branching
T19	Black Walnut	<i>Juglans Nigra</i>	11.5	Fair	Slight dieback
T20	American Elm	<i>Ulmus Americana</i>	17.5	Poor	Heavy vine cover; major dieback
T21	American Elm	<i>Ulmus Americana</i>	14.5	Poor	Vine cover; major crown dieback, no crown
T22	American Elm	<i>Ulmus Americana</i>	12.1	Fair	Slightly leaning
T23	Red Maple	<i>Acer Rubrum</i>	10.1	Fair	Slightly leaning
T24	Pin Oak	<i>Quercus Palustris</i>	13.5	Fair	Vines
T25	Red Maple	<i>Acer Rubrum</i>	22.7	Poor	Major trunk damage and rot
T26	Red Maple	<i>Acer Rubrum</i>	15.6	Fair	Multi stemmed;
T27	American Sycamore	<i>Platanus occidentalis</i>	16.0	Fair	Slightly leaning
T28	Green Ash	<i>Fraxinus Pennsylvanica</i>	13.0	Poor	Undercut roots; heavily leaning
T29	Green Ash	<i>Fraxinus Pennsylvanica</i>	15.0	Poor	Undercut roots; heavily leaning
T30	American Elm	<i>Ulmus Americana</i>	14.3	Good	-
T31	Black Cherry	<i>Prunus Serotina</i>	13.5	Poor	Major dieback; heavy lean on stream bank
T32	Black Cherry	<i>Prunus Serotina</i>	18.1	Fair	Major undercut roots from stream erosion and high vertical banks
T33	Red Maple	<i>Acer Rubrum</i>	13.4	Poor	Heavily leaning; dieback; undercut roots from stream erosion
T34	Black Cherry	<i>Prunus Serotina</i>	12.7	Fair	Invasive bamboo encroachment; base rot
T35	Black Cherry	<i>Prunus Serotina</i>	13.8	Poor	Heavily leaning over; major dieback
T36	Black Walnut	<i>Juglans Nigra</i>	9.6	Fair	Undercut and exposed roots from stream erosion
T37	Black Cherry	<i>Prunus Serotina</i>	12.7	Dead	Dead or almost dead; very heavy dieback and trunk/base damage and rot; vines
T38	Black Walnut	<i>Juglans Nigra</i>	10.1	Poor	Heavily leaning over stream channel; undercut and exposed roots from stream erosion
T39	Black Walnut	<i>Juglans Nigra</i>	13.7	Poor	Leaning over stream channel; undercut and exposed roots from stream erosion
T40	Green Ash	<i>Fraxinus Pennsylvanica</i>	10.8	Poor	Heavy lean; poor form; major branch and crown dieback; trunk rot; dying via EAB
T41	Red Maple	<i>Acer Rubrum</i>	10.2	Good	-
T42	Red Maple	<i>Acer Rubrum</i>	14.4	Fair	Exposed roots; slightly leaning; dead branching; dieback
T43	Red Maple	<i>Acer Rubrum</i>	10.1	Poor	Heavy undercut roots from stream erosion; heavily leaning; poor form
T44	Red Maple	<i>Acer Rubrum</i>	12.1	Poor	Trunk rot; heavily leaning on slope; under it roots from stream erosion; dieback
T45	Green Ash	<i>Fraxinus Pennsylvanica</i>	12.0	Fair	Undercut roots; heavily leaning
T46	Silver Maple	<i>Acer Saccharinum</i>	11.5	Fair	Some dieback; multi stemmed; leaning

TREE REMOVAL NOTES

1. TREES SURVEY INCLUDES ALL TREES 12-INCHES AND GREATER. CONTRACTOR MAY REMOVE SMALLER THAN 12-INCHES THAT ARE WITHIN LIMIT OF DISTURBANCE AS NECESSARY FOR GRADING AND ACCESS.
2. SURVEYED TREES OVER 12-INCHES NOT MARKED FOR REMOVAL WITHIN LIMIT OF DISTURBANCE WILL NOT BE REMOVED. TREES MARKED FOR REMOVAL THAT CAN BE SAVED DURING GRADING OPERATIONS WILL BE SAVED AT THE DISCRETION OF THE STREAM SPECIALIST.

Table B-3: Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 7a					Fertilizer Rate 10-20-20			Lime Rate
Seed Mixture (from Table B.3): 2					N	P2O5	K2O	
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
2	Big Bluestem (<i>Andropogon gerardii</i>)	6	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Indiangrass (<i>Sorghastrum nutans</i>)	6	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Little Bluestem (<i>Schizachyrium scoparium</i>)	4	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Creeping Red Fescue (<i>Festuca rubra var. rubra</i>)	15	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre
	Bush Clover (<i>Lepedeza capitata</i>)	2	2/15 - 4/30 * 5/1 - 5/31 *	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre

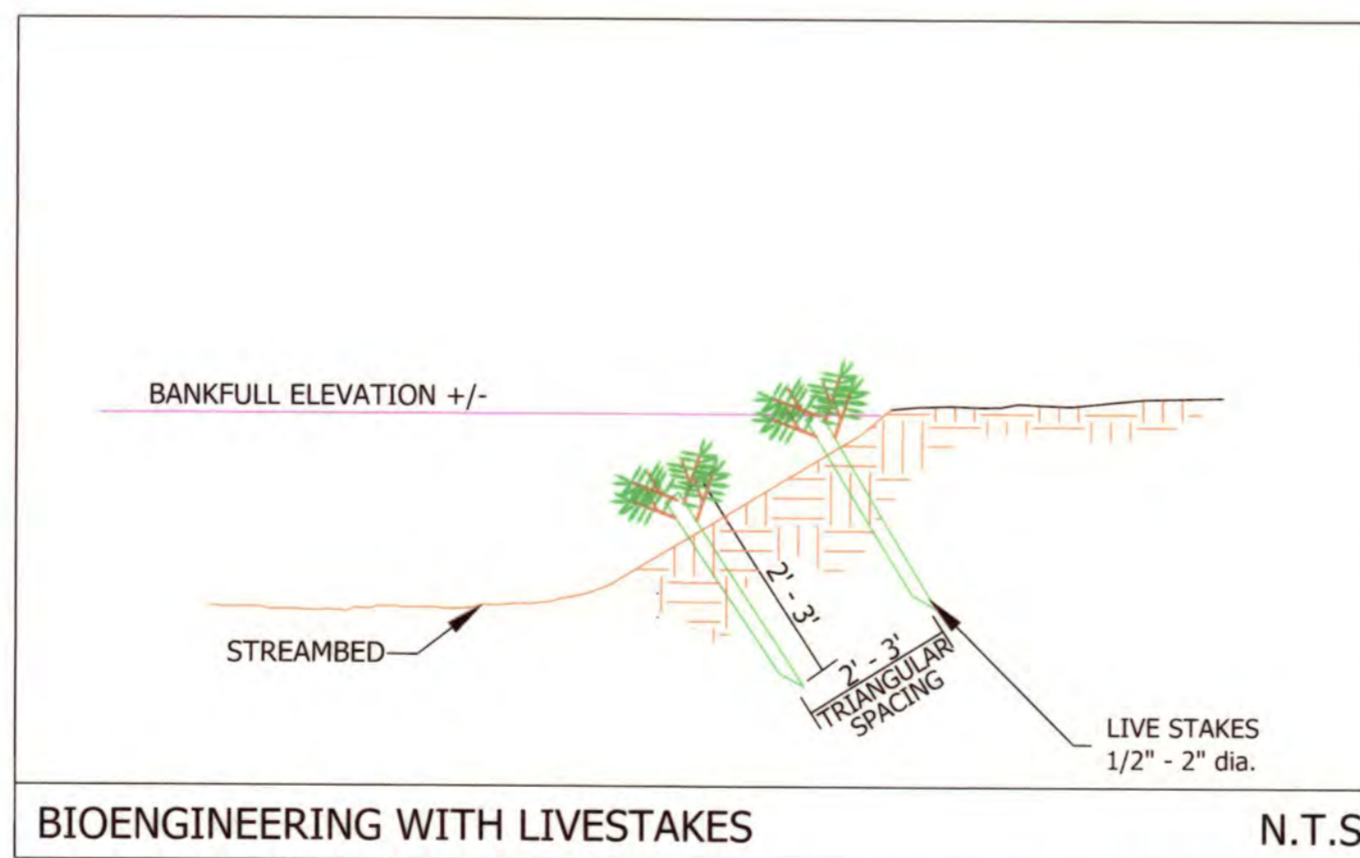
Hardiness Zone (from Figure B.3): 7a					Fertilizer Rate 10-20-20			Lime Rate
Seed Mixture (from Table B.3): 8					N	P2O5	K2O	
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
8	Tall Fescue (<i>Lolium arundinaceum</i>) (formerly <i>Festuca arundinacea</i>)	100	2/15 - 4/30 8/15 - 10/31 11/1 - 11/30	.25-.5 in	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons per acre

* For period 5/1 - 8/14, add 5.0 lb/ac. of foxtail millet to mix No. 8.

• Warm season grasses need a soil temperature of at least 50 degrees F in order to germinate. If soil temperatures are colder than 50 degrees, or moisture is not adequate, the seeds will remain dormant until conditions are favorable. In general, planting during the latter portion of this period allows more time for weed emergence and weed control prior to planting. When selecting a planting date, consider the need for weed control vs. the likelihood of having supplemental moisture for later plantings, especially on droughty sites.

* Additional planting dates during which supplemental watering may be needed to ensure plant establishment.

- Seed Mixture No 2 will be used as a riparian mix along the floodplain. Seed Mixture No 8 will be used in the upland areas of the LOD. Refer to the planting plan to see riparian and upland areas.



BIOENGINEERING INSTALLATION

DESCRIPTION

This work shall consist of:

1. Placing, harvesting, transporting, installing and maintaining live stake materials. Harvesting, transporting and installing live stakes shall take place during dormant season (December 1 through April 1).

MATERIALS

Live Stakes

1. Live stakes shall be between 0.5 inches and 2 inches in diameter.
2. Stakes shall be a minimum of 2 feet in length and all side branches shall be clipped flush with stem.
3. Live stakes shall consist of the species and quantity per the "Live Stake Planting List" as shown on the Planting Plan.

CONSTRUCTION

Live Staking:

1. Live stakes shall be installed two to three (2-3) feet apart using random, triangular spacing. The density of the spacing will range from two (2) to four (4) stakes per square yard. Site variations may require spacing adjustments.
2. The basal end of the cutting shall be cleanly cut at an angle immediately before insertion into the soil. The top of the cutting shall be cut square for tamping.
3. Install the cuttings right side up, with any buds pointing upward. The cuttings shall be tamped into the ground for approximately four-fifths (4/5) of their length. The cuttings shall be tamped into the ground at vertical angle of ninety (90) degrees to the slope and at a horizontal angle of forty-five (45) degrees downstream. A three-eighths (3/8) of an inch iron bar can be used to make a pilot hole in compacted or rocky soils, or between imbricated rip rap boulders.
4. Foot compact around each cutting after it has been installed. Any cuttings that split during tamping shall be pulled out and replaced.
5. The top of the cutting shall be cut square again after installation, to remove the damaged mushroom top.
6. See Planting Plan for species and size specifications.



PLUMTREE BRANCH
AT DUNLOGGIN MIDDLE SCHOOL

PLANTING DETAILS
9129 NORTHFIELD RD, ELLICOTT CITY, MD 21042



REVISIONS			
No.	DATE	DESCRIPTION	REV. BY

CHECKED BY: JPD
DESIGNED: MIL
DRAWN: REL
PROJECT No.: 19-05-003
DATE: 5/11/2022
SHEET: