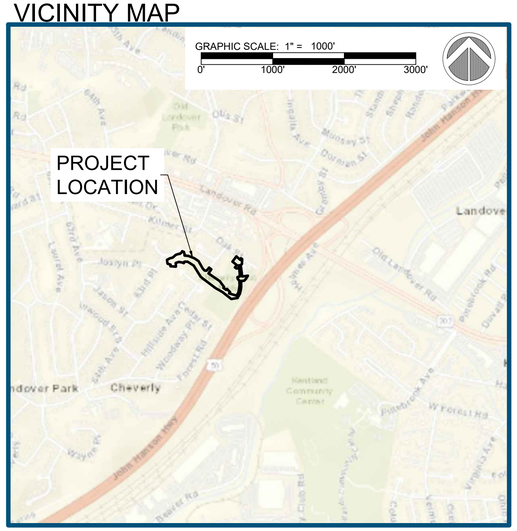
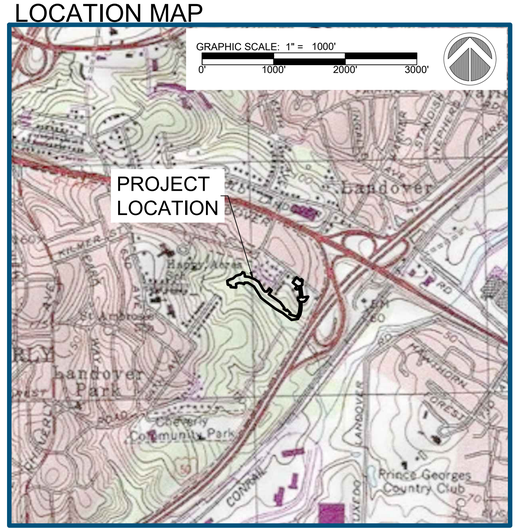
CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

DOE CLEAN WATER PARTNERSHIP
PRINCE GEORGE'S COUNTY, MD

VICINITY MAP

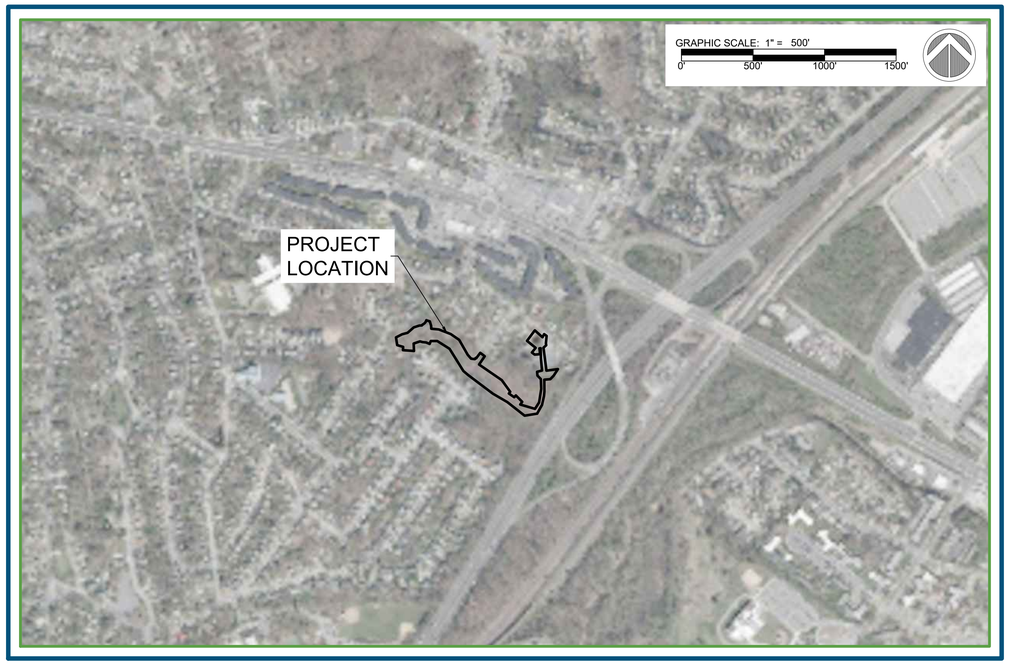


LOCATION MAP

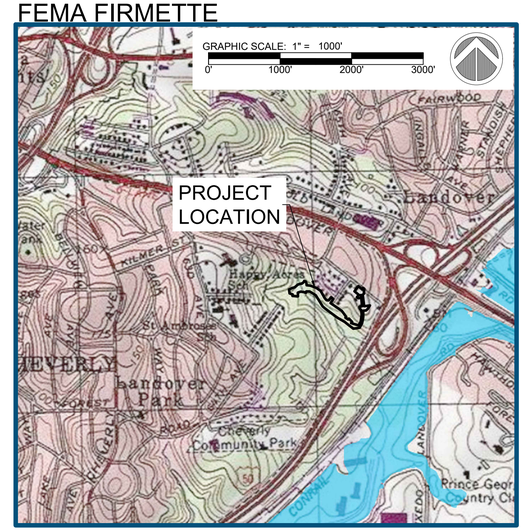


LATITUDE: N 38° 44' 02"
LONGITUDE: W 76° 53' 51"

AERIAL PHOTOGRAPH-PROJECT OVERVIEW



FEMA FIRMETTE



REFERENCE FEMA MAP: 24033C0142E

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	DRAINAGE AREA MAP
3	KEY SHEET
4	TREE CLEARING PLAN
5	TREE CLEARING PLAN
6	TREE TABLE
7	TREE TABLE
8	ESC PLAN
9	ESC PLAN
10	ESC NOTES
11	ESC DETAILS
12	ESC DETAILS
13	ESC DETAILS
14	ESC DETAILS
15	ESC DETAILS
16	ESC DETAILS

NOTE: PLEASE SEE THE CHEVERLY OUTFALL & STREAM RESTORATION TECHNICAL PLAN SET (DOE PERMIT 29620-2022-0) FOR THE TECHNICAL DESIGN. THIS PLAN SET (FSC#7-24) IS FOR EROSION AND SEDIMENT CONTROL ONLY.

PRINCE GEORGE'S SOIL CONSERVATION DISTRICT
FINAL APPROVAL
GRADING, EROSION AND SEDIMENT CONTROL

FSC# 7-24 EXPIRATION DATE

POND (P#) DISTRICT SIGNATURE APPROVAL DATE

JOB NUMBER: 106683

CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

CONSULTANT'S CERTIFICATION

I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICABLE AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT THIS PLAN WAS DESIGNED AND PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PRINCE GEORGE'S SOIL CONSERVATION DISTRICT AND "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL". I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER".

SIGNATURE _____ MD LICENSE# 52852

PRINT NAME: BAILEY J. WILFONG DATE 10/31/2023

STANDARD STABILIZATION NOTE

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

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

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

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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND · BAILEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER

10/31/2023

CLIENT:
NAME: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LLC
ADDRESS: 1801 MCCORMICK DRIVE, SUITE 280 LARGO, MARYLAND 20774
CONTACT: DEEPAK SHARMA
EMAIL: SHARMAD@BV.COM

PROPERTY OWNER:
NAME: MNCPPC
ADDRESS: 6600 KENILWORTH AVE RIVERDALE, MD 20737
ADDRESS: CHEVERLY EAST PARK, N33 6605 OAK STREET HYATTSVILLE MD, 20785

NAME: CHEVERLY MAYOR & TOWN COUNCIL
ADDRESS: 6401 FOREST RD CHEVERLY MARYLAND 20785

APPLICANT:
NAME: RES
ADDRESS: 5367 TELEPHONE ROAD WARRENTON, VA 20187
CONTACT: JOEY MONHEIT
PHONE NUMBER: 410-236-4986
EMAIL: JMONHEIT@RES.US

SITE INFORMATION:

1. SITE DATA:
   - TAX ID: 0163519
     - ADDRESS: 63RD PL. HYATTSVILLE, MD 20785
   - ACREAGE: 0.83 AC.+/-
   - TAX ID: 0129551
     - ADDRESS: HILLSIDE AVE HYATTSVILLE, MD 20785
     - ACREAGE: 1.53 AC.+/-
   - TAX ID: 0086843
     - ADDRESS: HILLSIDE AVE HYATTSVILLE, MD 20785
     - ACREAGE: 0.69 AC. +/-
   - TAX ID: 0146084
     - ADDRESS: 6607 OAK ST HYATTSVILLE MD, 20785
     - ACREAGE: 4.74 AC. +/-
   - TAX ID: 0086744
     - ADDRESS: 6605 OAK ST HYATTSVILLE MD, 20785
     - ACREAGE: 0.836 AC. +/-
   - TAX ID: 0101733
     - ADDRESS: OAK ST HYATTSVILLE MD, 20785
     - ACREAGE: 0.018 AC. +/-
   - TAX ID: 0146068
     - ADDRESS: 6607 OAK ST HYATTSVILLE MD, 20785
     - ACREAGE: 1.176 AC. +/-
   - FLOODPLAIN ACREAGE: 2.92 AC.
   - DISTURBED AREA: 3.26 AC.
   - CUT & FILL: 1072.12 CY CUT
   - MAX. CUT/FILL DEPTH: 6.28 FT CUT/ 6.56 FT FILL
2. EXISTING ZONE: ROS AND RSF-65
3. WSSC GRID: 204NE06 AND 204NE05
4. TAX MAP: 0059 GRID: 00B1
5. PARCELS: A, B, AND 0209
6. PG COUNTY STREET MAP PAGE: 0066; GRID 00C1
7. NO CEMETERIES EXIST ON OR CONTIGUOUS TO PROPERTY.
8. NO HISTORIC SITES ON OR IN THE VICINITY OF THE PROPERTY.
9. COUNTY WATERSHED NAME: LOWER BEAVERDAM CREEK
   COUNTY WATERSHED #021402050816
10. NRI: 156-2022
11. TCPII #: TCP2-112-96 AND E-025-11
11. ENVIRONMENTAL INFORMATION:
    - SITE IS NOT WITHIN CHESAPEAKE BAY CRITICAL AREA
    - SITE DOES NOT CONTAIN HIGHLY ERODIBLE SOILS
    - SITE DOES CONTAIN STEEP SLOPES
    - SITE IS WITHIN WATERSHED WITH TMDL FOR SEDIMENT
    - SITE IS NOT WITHIN TIER II WATERSHED
    - WETLANDS ARE PRESENT ON SITE
    - 100-YEAR FLOODPLAIN IS PRESENT ON SITE
12. SOURCE OF TOPOGRAPHY: SURVEY WITHIN LIMITS OF SURVEY (LOS) OBTAINED BY A MORTON AND THOMAS AND ASSOCIATES IN JUNE 2022. CONTOURS OUTSIDE THE LOS ARE FROM PRINCE GEORGE'S COUNTY 2021 DATA.

PROJECT NARRATIVE

THE PURPOSE OF THE CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION IS TO GENERATE IMPERVIOUS ACRE CREDITS THAT WILL HELP PRINCE GEORGE'S COUNTY MEET MS4/TMDL REQUIREMENTS. THIS PROJECT IS PART OF THE CLEAN WATER PARTNERSHIP.

THE PROJECT SITE IS LOCATED NEAR 6607 OAK STREET HYATTSVILLE, MD 20785.

THE PROPOSED STREAM WORK INCLUDES THE DESIGN AND GRADING OF PROPOSED STREAM CHANNELS. THESE STREAM CHANNELS ARE SIZED BASED ON THE HYDROLOGIC AND HYDRAULIC FACTORS INFLUENCING THE WATERSHED. BASED UPON THE APPROPRIATELY SIZED AND DESIGNED CHANNELS, THE PLANFORM AND PROFILE WILL BE ENGINEERED TO CREATE THE APPROPRIATE RIFFLE-POOL SEQUENCING. ADDITIONALLY, TO PROVIDE HORIZONTAL AND VERTICAL STABILITY, STRUCTURES SUCH AS ROCK CROSS-VANES AND SILLS WILL BE UTILIZED. THE APPROPRIATELY SIZED CHANNELS AND ENGINEERED PLANFORM WILL REDUCE EROSION, THEREFORE REDUCING SEDIMENT AND POLLUTANT LOADING WITHIN THE STREAM.

SEE FULL ESC NARRATIVE ON FSC SHEET 10.

OWNER'S/DEVELOPER'S CERTIFICATION

"I/We hereby certify that I/we have reviewed this erosion and sediment control plan and that any clearing, grading, drainage, construction and/or development will be done pursuant to this approved plan, including inspecting and maintaining controls and that any responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment approved training program for the control of erosion and sediment before beginning the project. Prince George's Soil Conservation District and the enforcement authority shall have the right of entry for periodic on-site evaluations."

Signature James Lyons **Date** 5/18/2023
Name(printed) James Lyons **Title** CWP Program Admin
Ph# 301.278.1493 **Firm** PG County Dept. of the Environment
Complete address 1801 MCCormick Dr #500, Largo, MD 20774

30% DESIGN REVIEW	x N/A
PERMIT PLAN DESIGN REVIEW	5/11/23
CONSTRUCTION PLAN REVIEW	x BRIANA STEPHENS 7/25/23

REVISIONS

1ST SUBMISSION: 7-6-2023

2ND SUBMISSION: 9-22-2023

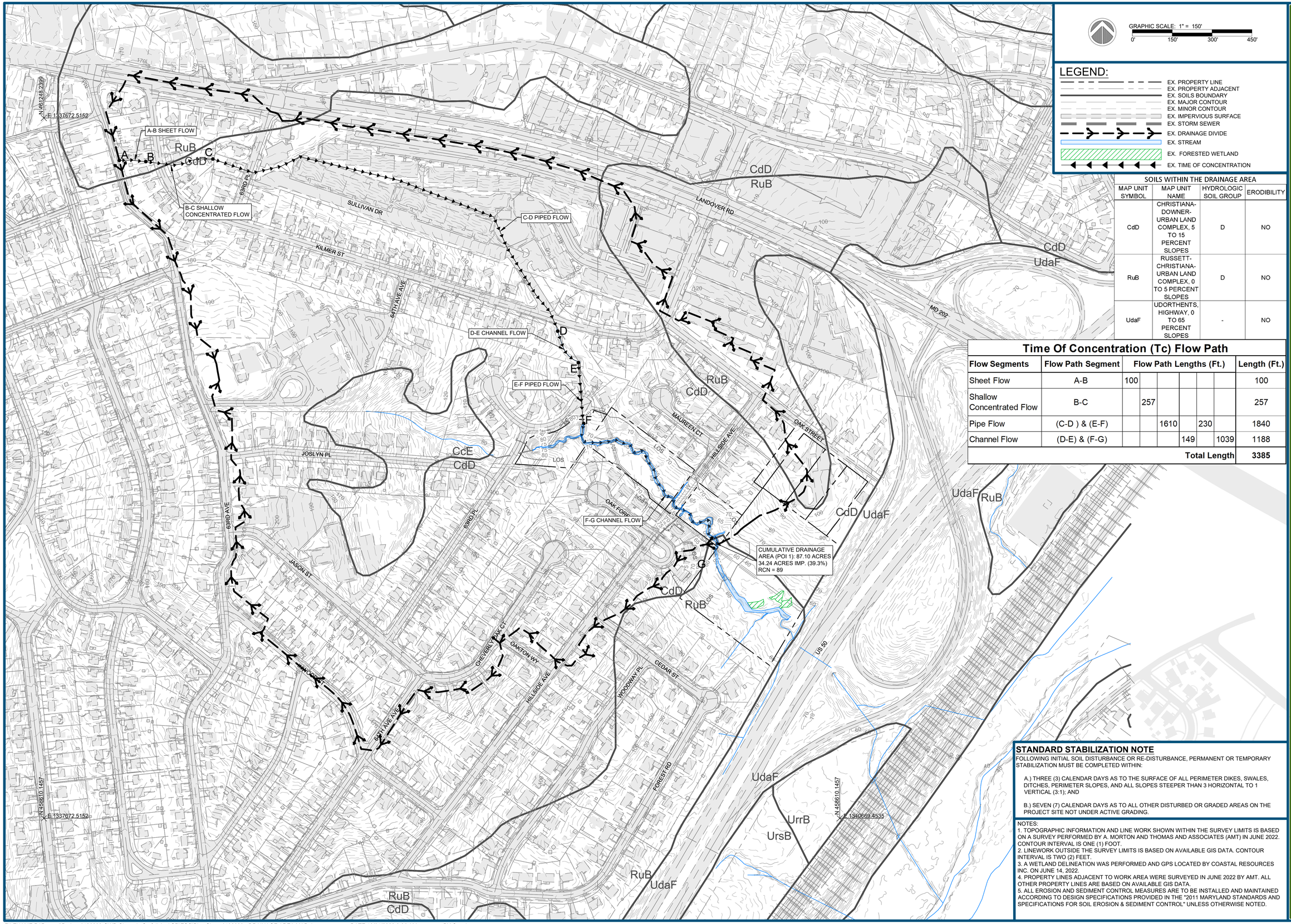
CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL
6607 OAK STREET HYATTSVILLE MD, 20785 - PRINCE GEORGE'S COUNTY, MD

PROJECT MANAGER:	JM	JOB NUMBER:	106683
DESIGNED:	CD	DESIGN TYPE:	ESC
DRAWN:	CD	PLAN DATE:	10/31/2023

HGS, LLC. A RES COMPANY
5367 TELEPHONE ROAD, WARRENTON, VIRGINIA 20187
P: 703.393.4844 | F: 703.393.2934
WWW.RES.US

PRINCE GEORGE'S COUNTY | CORVIAS SOLUTIONS
CLEAN WATER PARTNERSHIP

COVER SHEET FSC SHEET 1 OF 16



GRAPHIC SCALE: 1" = 150'
0' 150' 300' 450'

LEGEND:

- EX. PROPERTY LINE
- EX. PROPERTY ADJACENT
- EX. SOILS BOUNDARY
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. IMPERVIOUS SURFACE
- EX. STORM SEWER
- EX. DRAINAGE DIVIDE
- EX. STREAM
- EX. FORESTED WETLAND
- EX. TIME OF CONCENTRATION

SOILS WITHIN THE DRAINAGE AREA

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP	ERODIBILITY
CdD	CHRISTIANA-DOWNER-URBAN LAND COMPLEX, 5 TO 15 PERCENT SLOPES	D	NO
RuB	RUSSETT-CHRISTIANA-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES	D	NO
UdaF	UDORTHENTS, HIGHWAY, 0 TO 65 PERCENT SLOPES	-	NO

Time Of Concentration (Tc) Flow Path

Flow Segments	Flow Path Segment	Flow Path Lengths (Ft.)	Length (Ft.)
Sheet Flow	A-B	100	100
Shallow Concentrated Flow	B-C	257	257
Pipe Flow	(C-D) & (E-F)	1610 230	1840
Channel Flow	(D-E) & (F-G)	149 1039	1188
		Total Length	**3385**

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NOTES:
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2. LINEWORK OUTSIDE THE SURVEY LIMITS IS BASED ON AVAILABLE GIS DATA. CONTOUR INTERVAL IS TWO (2) FEET.
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HGS, LLC, A RES COMPANY
5367 TELEPHONE ROAD, WARRENTON, VIRGINIA 20187
P: 703.393.4844 | F: 703.393.2934
WWW.RES.US

CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

DRAINAGE AREA MAP

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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STATE OF MARYLAND · BAILEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW
x N/A
Signature Date

PERMIT PLAN DESIGN REVIEW
5/11/23
Signature Date

CONSTRUCTION PLAN REVIEW
7/25/23
Signature Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023
SHEET NO:	FSC SHEET 2 OF16

FILENAME:R:\Rescad\Projects\106683-CWP-Cheverly Outfall And SR\ESC\Plan Sheets\106683 - DRAINAGE AREA MAP.dwg DATE:10/31/2023 9:05 AM BY:Cpankow

GRAPHIC SCALE: 1" = 60'

0' 60' 120' 180'

LEGEND:

- EX. PROPERTY LINE
- EX. PROPERTY ADJACENT
- EX. STREAM
- EX. FORESTED WETLAND
- PR. BANKFULL
- LOD — PR. LIMITS OF DISTURBANCE
- PR. TEMP. STOCKPILE
- PR. CONSTRUCTION ENTRANCE
- PR. DECK MAT
- PR. MULCH ACCESS ROAD
- TSC — PR. TEMP. STREAM CROSSING
- PR. TEMP. DIVERSION FENCE
- PR. TEMP. DIVERSION FENCE, IF REQ'D.
- PR. PIPE SLOPE DRAIN

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CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

KEY SHEET

PRINCE GEORGE'S COUNTY, MD

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STATE OF MARYLAND — BAILEY J. WILFONG — 52852 — PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW	
x	N/A
Signature	Date

PERMIT PLAN DESIGN REVIEW	
	5/11/23
Signature	Date

CONSTRUCTION PLAN REVIEW	
	7/25/23
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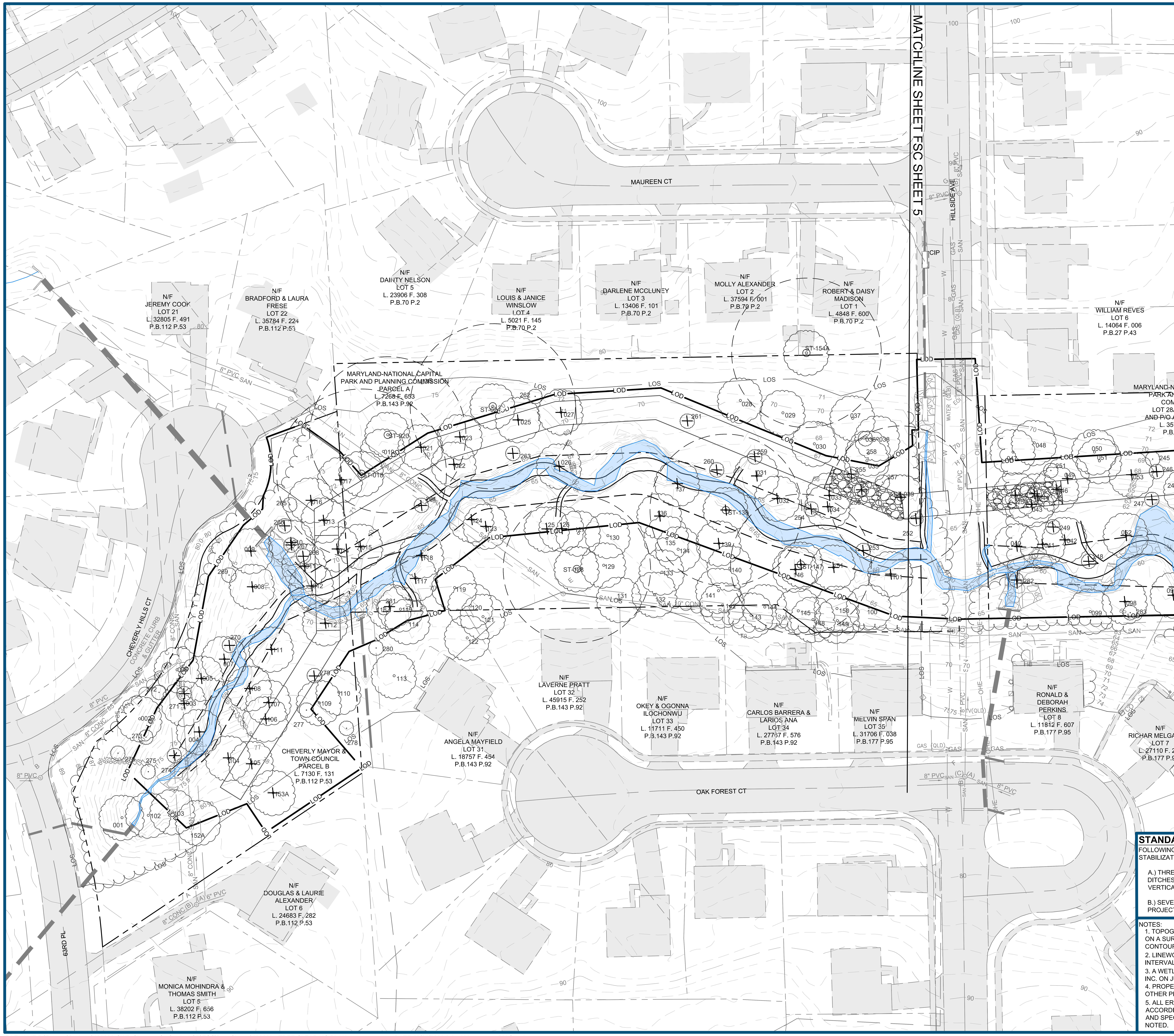

GRAPHIC SCALE: 1" = 30'

0' 30' 60' 90'

LEGEND:

- EX. PROPERTY LINE
- EX. PROPERTY ADJACENT
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. TREELINE
- EX. OVERHEAD ELECTRIC (OHE)
- EX. SANITARY SEWER (SAN)
- EX. LIMITS OF SURVEY (LOS)
- EX. STREAM
- EX. STORM SEWER
- EX. SOILS BOUNDARY
- EX. RIP RAP
- EX. IMPERVIOUS SURFACE
- EX. FORESTED WETLAND
- EX. TREE GREATER THAN 11" DBH
- EX. SPECIMEN TREE
- EX. TREE TO BE REMOVED
- PR. LIMITS OF DISTURBANCE (LOD)
- PR. BANKFULL
- PR. BANKFULL BENCH
- PR. CONSTRUCTION ENTRANCE
- PR. CONSTRUCTION ACCESS

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CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

TREE CLEARING PLAN

PRINCE GEORGE'S COUNTY, MD

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STATE OF MARYLAND · BAILEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW	
x	N/A
Signature	Date

PERMIT PLAN DESIGN REVIEW	
[signature]	5/11/23
Signature	Date

CONSTRUCTION PLAN REVIEW	
[signature]	7/25/23
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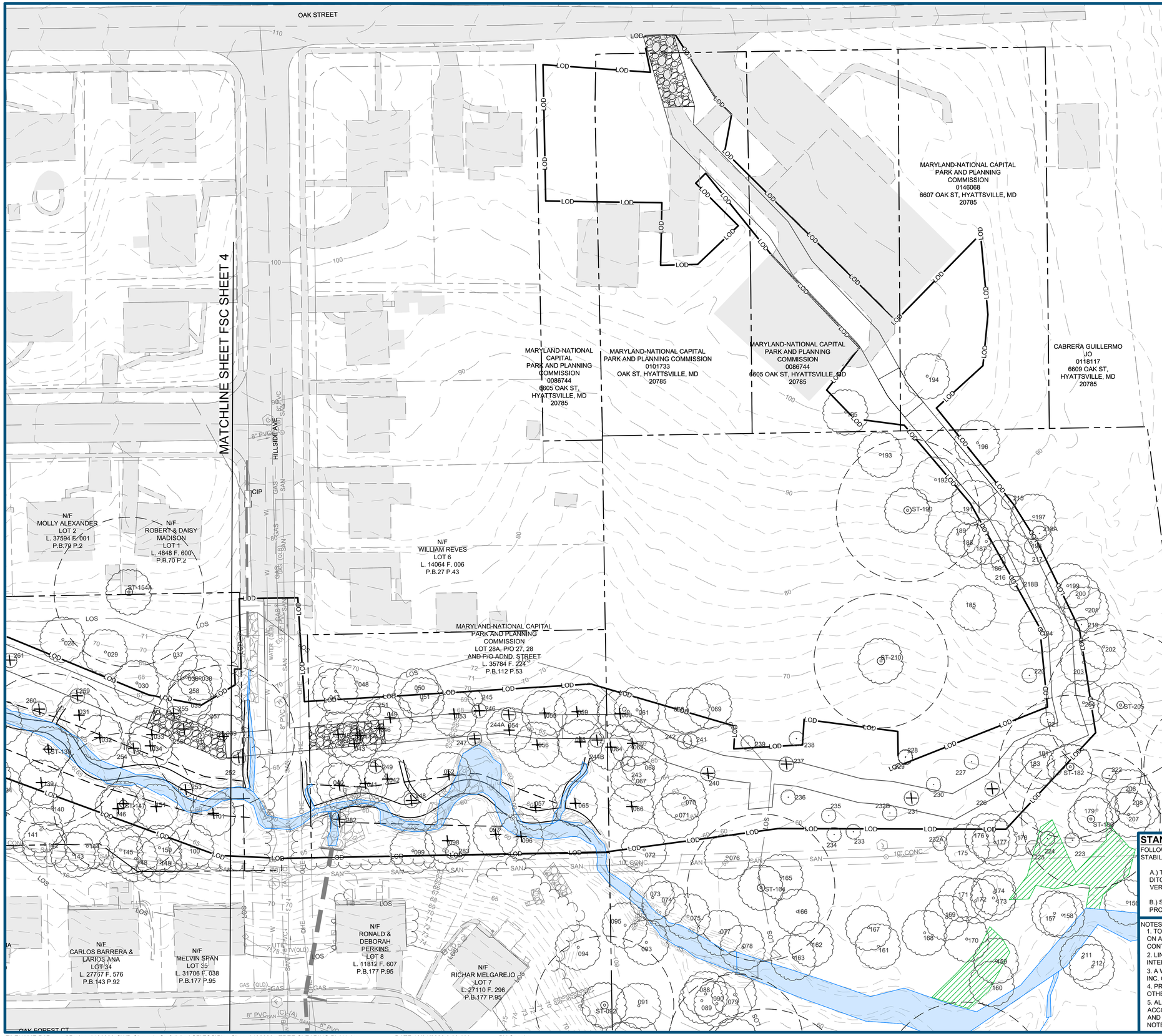

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CLEAN WATER PARTNERSHIP

res
HGS, LLC, A RES COMPANY
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CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

TREE CLEARING PLAN

PRINCE GEORGE'S COUNTY, MD

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STATE OF MARYLAND — BAILEY J. WILFONG — 52852 — PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW	
x	N/A
Signature	Date

PERMIT PLAN DESIGN REVIEW	
	5/11/23
Signature	Date

CONSTRUCTION PLAN REVIEW	
	7/25/23
Signature	Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023

SHEET NO:
FSC SHEET 5OF 16

FILENAME:R:\Rescad\Projects\106683-CWP-Cheverly Outfall And SR\ESC\Plan Sheets\106683 - TREE CLEARING PLAN.dwg DATE:10/31/2023 9:08 AM BY:Cpankow

ID	SPECIES	DBH	CONDITION	NOTES	PROPOSED STATUS
1	PLATANUS OCCIDENTALIS	17.5	GOOD		REMAIN
2	QUERCUS ALBA	29	GOOD	SOME VINES	REMAIN
3	LIQUIDAMBAR STYRACIFLUA	17	GOOD		REMOVE
4	LIQUIDAMBAR STYRACIFLUA	16	FAIR	VINES, DEAD BRANCHES	REMOVE
5	FAGUS GRANDIFOLIA	17.5	FAIR	EXPOSED ROOTS	REMOVE
6	PLATANUS OCCIDENTALIS	16	GOOD		REMAIN
7	UNKNOWN	19	DEAD		REMOVE
8	LIRIODENDRON TULIPIFERA	19	GOOD	SOME VINES	REMOVE
9	PLATANUS OCCIDENTALIS	15	GOOD	SOME VINES	REMOVE
10	LIRIODENDRON TULIPIFERA	17	FAIR	EXPOSED ROOTS	REMOVE
11	SASSAFRAS ALBIDUM	15	FAIR	EXPOSED ROOTS	REMOVE
12	NYSSA SYLVATICA	16	FAIR	EXPOSED ROOTS, LEANING, VINES	REMOVE
13	FAGUS GRANDIFOLIA	23	GOOD		REMOVE
14	QUERCUS ALBA	17	FAIR	SOME VINES, STRESSED, DIEBACK	REMOVE
15	NYSSA SYLVATICA	18	GOOD		REMOVE
16	LIQUIDAMBAR STYRACIFLUA	18	FAIR	LEANING, DEAD LIMBS	REMOVE
17	QUERCUS ALBA	24	FAIR	VINES, DEAD BRANCHES	REMOVE
18	QUERCUS ALBA	38	FAIR	SOME VINES, DEAD BRANCHES	REMAIN
19	UNKNOWN	24	DEAD	STANDING DEAD	REMAIN
20	QUERCUS ALBA	35	FAIR	VINES, DEAD BRANCHES	REMAIN
21	UNKNOWN	24	DEAD	STANDING DEAD	REMOVE
22	QUERCUS MONTANA	22	GOOD		REMOVE
23	FAGUS GRANDIFOLIA	19	FAIR	VINES	REMOVE
24	QUERCUS ALBA	37	POOR	MANY VINES, LEANING	REMAIN
25	LIQUIDAMBAR STYRACIFLUA	17	POOR	VINES, STRESSED	REMOVE
26	LIQUIDAMBAR STYRACIFLUA	17	FAIR	UNDERMINED ROOTS	REMOVE
27	QUERCUS MONTANA	16	FAIR	LEANING	REMOVE
28	LIQUIDAMBAR STYRACIFLUA	24	FAIR	VINES, DEAD BRANCHES	REMAIN
29	QUERCUS ALBA	23	GOOD	SOME VINES	REMAIN
30	QUERCUS FALCATA	17	FAIR	DEAD BRANCHES, LEANING	REMAIN
31	LIQUIDAMBAR STYRACIFLUA	21	FAIR	VINES, BROKEN BRANCH	REMOVE
32	LIQUIDAMBAR STYRACIFLUA	24	GOOD		REMOVE
33	LIQUIDAMBAR STYRACIFLUA	26	FAIR	VINES, DEAD BRANCH	REMOVE
34	QUERCUS RUBRA	17	POOR	LEANING, VINES	REMOVE
35	QUERCUS ALBA	18	FAIR	VINES, LEANING	REMAIN
36	QUERCUS ALBA	18	FAIR	VINES	REMAIN
37	QUERCUS ALBA	18	GOOD	VINES	REMAIN
38	QUERCUS STELLATA	17	FAIR	LEANING	REMAIN
39	QUERCUS RUBRA	32	FAIR	MANY VINES	REMOVE
40	QUERCUS ALBA	21	FAIR	VINES	REMOVE
41	QUERCUS ALBA	20	FAIR	VINES	REMOVE
42	QUERCUS RUBRA	21	FAIR	TRUNK ROT, LEANING	REMOVE
43	LIQUIDAMBAR STYRACIFLUA	17	FAIR	VINES	REMOVE
44	QUERCUS ALBA	15	FAIR	LEANING, DEAD BRANCHES	REMOVE
45	QUERCUS ALBA	17	POOR	MANY VINES	REMOVE
46	LIQUIDAMBAR STYRACIFLUA	17	GOOD		REMOVE
47	QUERCUS ALBA	22	FAIR	VINES, DEAD BRANCHES	REMAIN
48	QUERCUS ALBA	17	FAIR	DEAD BRANCHES	REMAIN
49	LIQUIDAMBAR STYRACIFLUA	17	GOOD		REMOVE
50	QUERCUS RUBRA	20	FAIR	DEAD BRANCH	REMAIN
51	QUERCUS ALBA	20	GOOD		REMAIN
52	LIQUIDAMBAR STYRACIFLUA	17	POOR	TRUNK ROT, DEAD BRANCHES, DYING	REMOVE
53	QUERCUS RUBRA	21	FAIR	DEAD BRANCHES	REMOVE
54	QUERCUS VELUTINA	16	GOOD		REMOVE
55	QUERCUS ALBA	17	GOOD		REMOVE
56	QUERCUS PHELLOS	22	FAIR	DEAD BRANCHES	REMOVE
57	QUERCUS VELUTINA	26	GOOD		REMOVE
58	QUERCUS ALBA	26	GOOD		REMOVE
59	QUERCUS ALBA	19	GOOD		REMOVE
60	CARYA GLABRA	15	GOOD		REMAIN
61	QUERCUS ALBA	15	FAIR	SOME VINES	REMAIN
62	QUERCUS ALBA	16	FAIR	DEAD BRANCHES	REMAIN
63	QUERCUS ALBA	15	GOOD		REMOVE
64	QUERCUS RUBRA	15	FAIR	LEANING	REMOVE
65	QUERCUS ALBA	16	GOOD		REMOVE
66	QUERCUS ALBA	21	FAIR	DEAD BRANCHES	REMOVE
67	QUERCUS VELUTINA	21	GOOD		REMOVE

ID	SPECIES	DBH	CONDITION	NOTES	PROPOSED STATUS
68	QUERCUS VELUTINA	16	FAIR	LEANING, VINES	REMAIN
69	QUERCUS ALBA	24	FAIR	DEAD BRANCHES	REMAIN
70	QUERCUS ALBA	16	GOOD		REMOVE
71	QUERCUS ALBA	16	GOOD		REMAIN
72	LIQUIDAMBAR STYRACIFLUA	20	FAIR	BROKEN BRANCHES	REMAIN
73	QUERCUS ALBA	18, 17	FAIR	VINES, UNDERMINED ROOTS	REMAIN
74	QUERCUS ALBA	16	FAIR	VINES	REMAIN
75	QUERCUS ALBA	22	FAIR	VINES	REMAIN
76	LIQUIDAMBAR STYRACIFLUA	18	GOOD		REMAIN
77	LIQUIDAMBAR STYRACIFLUA	16	GOOD	SOME VINES	REMAIN
78	QUERCUS ALBA	20	FAIR	LEANING	REMAIN
79	LIQUIDAMBAR STYRACIFLUA	17	FAIR	VINES	REMAIN
80	LIRIODENDRON TULIPIFERA	30, 23	GOOD	SOME VINES	REMAIN
81	PINUS TAEDA	22	FAIR	DEAD BRANCHES	REMAIN
82	QUERCUS ALBA	30	GOOD	VINES	REMAIN
83	LIRIODENDRON TULIPIFERA	23	GOOD		REMAIN
84	LIQUIDAMBAR STYRACIFLUA	15	POOR	MANY VINES, DEAD BRANCHES	REMAIN
85	LIQUIDAMBAR STYRACIFLUA	16	POOR	MANY VINES, DEAD BRANCHES	REMAIN
86	ACER RUBRUM	18	FAIR	VINES, LEANING	REMAIN
87	LIQUIDAMBAR STYRACIFLUA	16	FAIR	DEAD BRANCHES	REMAIN
88	LIQUIDAMBAR STYRACIFLUA	16	FAIR	VINES, DEAD BRANCHES	REMAIN
89	LIRIODENDRON TULIPIFERA	21	GOOD		REMAIN
90	LIQUIDAMBAR STYRACIFLUA	15	GOOD		REMAIN
91	LIQUIDAMBAR STYRACIFLUA	17	GOOD	SOME VINES	REMAIN
92	ACER RUBRUM	31, 5, 3	GOOD		REMAIN
93	QUERCUS RUBRA	29	GOOD		REMAIN
94	QUERCUS FALCATA	24	FAIR	MANY VINES	REMAIN
95	QUERCUS ALBA	16	FAIR	DEAD BRANCHES	REMAIN
96	QUERCUS ALBA	20, 14	FAIR	VINES, UNDERMINED	REMOVE
97	QUERCUS ALBA	20	FAIR	VINES	REMOVE
98	LIRIODENDRON TULIPIFERA	24	FAIR	VINES	REMOVE
99	LIQUIDAMBAR STYRACIFLUA	17	POOR	MANY VINES, DYING	REMAIN
100	LIRIODENDRON TULIPIFERA	22	POOR	MANY VINES	REMAIN
101	ACER RUBRUM	18	DEAD	STANDING DEAD	REMOVE
102	QUERCUS PHELLOS	19.5	FAIR	LEANING, REDUCED CANOPY	REMAIN
103	ULMUS AMERICANA	15	GOOD		REMAIN
104	UNKNOWN	17.5	DEAD		REMOVE
105	QUERCUS MONTANA	22	GOOD		REMOVE
106	QUERCUS MONTANA	20.5	DEAD		REMOVE
107	QUERCUS ALBA	23	GOOD		REMOVE
108	FAGUS GRANDIFOLIA	17.5	POOR	SEVERE TRUNK ROT, UNDERMINED	REMOVE
109	QUERCUS ALBA	28	GOOD	FEW DEAD BRANCHES	REMAIN
110	NYSSA SYLVATICA	18	POOR	REDUCED CANOPY, TRUNK ROT AT BASE	REMAIN
111	QUERCUS ALBA	21	GOOD		REMOVE
112	UNKNOWN	19	DEAD		REMOVE
113	ACER RUBRUM	18.5	POOR	SEVERE TRUNK ROT	REMAIN
114	ACER RUBRUM	17	FAIR	UNDERMINED	REMAIN
115	LIQUIDAMBAR STYRACIFLUA	18	GOOD		REMAIN
116	LIRIODENDRON TULIPIFERA	17	GOOD		REMOVE
117	QUERCUS ALBA	25	GOOD		REMOVE
118	FAGUS GRANDIFOLIA	23.5	FAIR	LEANING, UNDERMINED	REMOVE
119	FAGUS GRANDIFOLIA	22.5	GOOD		REMAIN
120	ACER RUBRUM	16	GOOD		REMAIN
121	LIRIODENDRON TULIPIFERA	24	GOOD		REMAIN
122	ACER RUBRUM	15.5	POOR	VINES, DEAD LEADER	REMAIN
123	QUERCUS ALBA	28	GOOD		REMOVE
124	LIRIODENDRON TULIPIFERA	26.5	GOOD		REMOVE
125	LIRIODENDRON TULIPIFERA	23.5	FAIR	REDUCED CANOPY	REMOVE
126	QUERCUS ALBA	17	FAIR		REMOVE
127	LIRIODENDRON TULIPIFERA	15	FAIR	VINES IN CANOPY	REMAIN
128	LIRIODENDRON TULIPIFERA	33	FAIR	MANY VINES, REDUCED CANOPY	REMAIN
129	LIRIODENDRON TULIPIFERA	26	FAIR	MANY VINES, REDUCED CANOPY	REMAIN
130	LIRIODENDRON TULIPIFERA	29.5	FAIR	MANY VINES, REDUCED CANOPY	REMAIN
131	LIQUIDAMBAR STYRACIFLUA	18.5	FAIR	MANY VINES, REDUCED CANOPY	REMAIN
132	LIRIODENDRON TULIPIFERA	18.5	POOR	MOSTLY DEAD	REMAIN

ID	SPECIES	DBH	CONDITION	NOTES	PROPOSED STATUS
133	LIRIODENDRON TULIPIFERA	19	FAIR	REDUCED CANOPY	REMAIN
134	QUERCUS RUBRA	28	FAIR	LEANING, VINES	REMAIN
135	LIRIODENDRON TULIPIFERA	25	FAIR	VINES, SOME TRUNK DAMAGE	REMAIN
136	LIRIODENDRON TULIPIFERA	23	POOR	SEVERE TRUNK ROT, LEANING, DYING	REMOVE
137	LIQUIDAMBAR STYRACIFLUA	26	FAIR	LEANING, UNDERMINED	REMOVE
138	QUERCUS RUBRA	34	FAIR	FEW DEAD BRANCHES, UNDERMINED	REMOVE
139	LIRIODENDRON TULIPIFERA	24	GOOD		REMOVE
140	LIRIODENDRON TULIPIFERA	25	FAIR	VINES, REDUCED CANOPY	REMAIN
141	ACER RUBRUM	17, 7	FAIR	MANY VINES	REMAIN
142	LIRIODENDRON TULIPIFERA	23.5	POOR	DYING	REMAIN
143	LIQUIDAMBAR STYRACIFLUA	15.5	FAIR	VINES, REDUCED CANOPY	REMAIN
144	LIRIODENDRON TULIPIFERA	23.5	FAIR	VINES, REDUCED CANOPY	REMAIN
145	LIRIODENDRON TULIPIFERA	20.5	POOR	OVERTAKEN BY VINES, REDUCED CANOPY	REMAIN
146	QUERCUS ALBA	21	DEAD		REMOVE
147	LIQUIDAMBAR STYRACIFLUA	31.5	FAIR	VINES, REDUCED CANOPY	REMOVE
148	LIQUIDAMBAR STYRACIFLUA	17	POOR	MANY VINES, REDUCED CANOPY	REMAIN
149	LIRIODENDRON TULIPIFERA	20	POOR	MANY VINES, REDUCED CANOPY	REMAIN
150	ACER RUBRUM	20.5, 7	FAIR	VINES, REDUCED CANOPY	REMAIN
151	LIRIODENDRON TULIPIFERA	28	FAIR	MANY VINES, REDUCED CANOPY	REMOVE
155	LIQUIDAMBAR STYRACIFLUA	18	FAIR	DIEBACK, VINES	REMAIN
156	QUERCUS RUBRA	15.5	POOR	DIEBACK, MANY VINES, STRESSED, UNDERMINED	REMAIN
157	ACER RUBRUM	24	FAIR	VINES, LEANING	REMAIN
158	LIQUIDAMBAR STYRACIFLUA	26.5	POOR	ROOT ROT, DYING, DEAD LIMBS	REMAIN
159	LIQUIDAMBAR STYRACIFLUA	20.5	POOR	DYING, MANY VINES	REMAIN
160	LIQUIDAMBAR STYRACIFLUA	27	FAIR	VINES	REMAIN
161	LIQUIDAMBAR STYRACIFLUA	23.5	FAIR	DEAD BRANCHES	REMAIN
162	LIQUIDAMBAR STYRACIFLUA	24	GOOD	FEW BROKEN BRANCHES	REMAIN
163	LIQUIDAMBAR STYRACIFLUA	19	FAIR	REDUCED CANOPY, VINES	REMAIN
164	QUERCUS PHELLOS	33, 14	GOOD	FEW BROKEN BRANCHES	REMAIN
165	QUERCUS ALBA	29.5	FAIR	MANY VINES	REMAIN
166	LIQUIDAMBAR STYRACIFLUA	18	FAIR	LEANING, REDUCED CANOPY	REMAIN
167	LIQUIDAMBAR STYRACIFLUA	16	FAIR	REDUCED CANOPY	REMAIN
168	ACER RUBRUM	19	FAIR	REDUCED CANOPY, LEANING	REMAIN
169	LIQUIDAMBAR STYRACIFLUA	16, 15	FAIR	REDUCED CANOPY	REMAIN
170	ACER RUBRUM	19, 16	GOOD		REMAIN
171	LIQUIDAMBAR STYRACIFLUA	17	GOOD		REMAIN
172	LIQUIDAMBAR STYRACIFLUA	15.5	POOR	DIEBACK, REDUCED CANOPY	REMAIN
173	LIRIODENDRON TULIPIFERA	15.5	FAIR	REDUCED CANOPY, VINES	REMAIN
174	LIRIODENDRON TULIPIFERA	22.5	POOR	DIEBACK, VINES	REMAIN
175	LIQUIDAMBAR STYRACIFLUA	23	FAIR	VINES	REMAIN
176	LIQUIDAMBAR STYRACIFLUA	17	FAIR	DIEBACK, REDUCED CANOPY	REMAIN
177	LIQUIDAMBAR STYRACIFLUA	20	POOR	SEVERE TRUNK DAMAGE AND ROT, DYING	REMAIN
178	LIQUIDAMBAR STYRACIFLUA	22	FAIR	TRUNK ROT AT BASE	REMAIN
179	ACER RUBRUM	19.5, 16	FAIR	REDUCED CANOPY	REMAIN
180	ACER RUBRUM	31	GOOD		REMAIN
181	QUERCUS ALBA	19.5	FAIR	REDUCED CANOPY	REMAIN
182	QUERCUS ALBA	32	FAIR	VINES, FEW DEAD BRANCHES	REMAIN
183	QUERCUS ALBA	22	GOOD		REMAIN
184	QUERCUS ALBA	20	FAIR	VINES, SOME DEAD BRANCHES	REMAIN
185	QUERCUS ALBA	28	GOOD		REMAIN
186	QUERCUS STELLATA	15, 10	FAIR	REDUCED CANOPY	REMOVE
187	LIQUIDAMBAR STYRACIFLUA	15	GOOD		REMOVE
188	LIRIODENDRON TULIPIFERA	17	FAIR	LEANING, REDUCED CANOPY	REMAIN
189	LIRIODENDRON TULIPIFERA	21	GOOD		REMAIN

ID	SPECIES	DBH	CONDITION	NOTES	PROPOSED STATUS
190	QUERCUS ALBA	32	GOOD		REMAIN
191	QUERCUS FALCATA	19	FAIR	REDUCED CANOPY	REMOVE
192	QUERCUS FALCATA	17	FAIR	REDUCED CANOPY, LEANING	REMAIN
193	NYSSA SYLVATICA	18, 16, 14	GOOD		REMAIN
194	ACER RUBRUM	23	GOOD		REMOVE
195	ACER RUBRUM	19	FAIR	LEANING, TRUNK DAMAGE	REMAIN
196	QUERCUS FALCATA	22.5	FAIR	VINES, REDUCED CANOPY	REMOVE
197	QUERCUS FALCATA	19	FAIR	VINES	REMAIN
198	QUERCUS ALBA	17.5, 15.5	GOOD		REMOVE
199	QUERCUS ALBA	20	FAIR	REDUCED CANOPY, DEAD BRANCHES	REMAIN
200	QUERCUS ALBA	21.5	FAIR	REDUCED CANOPY	REMAIN
201	QUERCUS FALCATA	19.5	FAIR	REDUCED CANOPY, LEANING	REMAIN
202	QUERCUS ALBA	19	FAIR	REDUCED CANOPY	REMAIN
203	QUERCUS ALBA	22.5	GOOD		REMAIN
204	QUERCUS ALBA	16.5	FAIR	VINES, REDUCED CANOPY	REMAIN
205	QUERCUS PHELLOS	33.5	GOOD	FEW DEAD BRANCHES	REMAIN
206	LIQUIDAMBAR STYRACIFLUA	19	FAIR	REDUCED CANOPY	REMAIN
207	LIQUIDAMBAR STYRACIFLUA	17.5	FAIR	REDUCED CANOPY	REMAIN
208	ACER RUBRUM	15.5	FAIR	REDUCED CANOPY, LEANING	REMAIN
209	QUERCUS PALUSTRIS	32.5	FAIR	DIEBACK, REDUCED CANOPY, VINES	REMAIN
210	QUERCUS ALBA	30	FAIR	REDUCED CANOPY	REMAIN
211	LIQUIDAMBAR STYRACIFLUA	26	FAIR	UNDERMINED, REDUCED CANOPY	REMAIN
212	LIQUIDAMBAR STYRACIFLUA	22	FAIR	VINES	REMAIN
213	QUERCUS ALBA	37.5	GOOD		REMAIN
214	QUERCUS COCCINEA	38	FAIR	VINES, DEAD BRANCHES	REMAIN
152 A	QUERCUS ALBA	29	GOOD		REMAIN
152 B	ACER RUBRUM	18	FAIR	REDUCED CANOPY	REMAIN
153 A	QUERCUS MONTANA	19.5	DEAD		REMOVE
153 B	ACER RUBRUM	17	FAIR	VINES	REMAIN
154 A	QUERCUS ALBA	33.5	FAIR	MANY VINES IN CANOPY.	REMAIN
154 B	LIQUIDAMBAR STYRACIFLUA	18	FAIR	DEAD BRANCHES	REMAIN
215	QUERCUS FALCATA	12.7	FAIR		REMOVE
216	QUERCUS STALLATA	11	FAIR		REMAIN
217	QUERCUS FALCATA	13.2	FAIR		REMAIN
218 A	QUERCUS STALLATA	15.1	FAIR		REMAIN
218 B	QUERCUS ALBA	11.1	GOOD		REMOVE
219	QUERCUS STALLATA	13.0	FAIR		REMAIN
220	QUERCUS RUBES	15.1	FAIR		REMAIN
221	QUERCUS RUBRA	12.5	GOOD		REMAIN
222	CARYA GALBRAITH	12.8	GOOD		REMAIN
223	LIQUIDAMBAR STYRACUFLUA	14.1	FAIR		REMAIN
224	LIQUIDAMBAR STYRACUFLUA	11.7	FAIR		REMAIN
225	ACRE RUBRUM	13.1	FAIR		REMAIN
226	ACRE RUBRUM	12.3	POOR		REMAIN
227	LIRIODENDRON TULIPIFERA	14.7	GOOD		REMOVE
228	QUERCUS ALBA	15.5	FAIR		REMAIN
229	QUERCUS ALBA	23.9	GOOD		REMAIN
230	LIRIODENDRON TULIPIFERA	27.4	GOOD		REMAIN
231	QUERCUS FALCATA	14.1	FAIR		REMAIN
232 A	LIQUIDAMBAR STYRACUFLUA	15.7	FAIR		REMAIN
232 B	QUERCUS ALBA	19.5	FAIR		REMAIN

STANDARD STABILIZATION NOTE

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

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

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

NOTES:

1. TOPOGRAPHIC INFORMATION AND LINE WORK SHOWN WITHIN THE SURVEY LIMITS IS BASED ON A SURVEY PERFORMED BY A. MORTON AND THOMAS AND ASSOCIATES (AMT) IN JUNE 2022. CONTOUR INTERVAL IS ONE (1) FOOT.
2. LINEWORK OUTSIDE THE SURVEY LIMITS IS BASED ON AVAILABLE GIS DATA. CONTOUR INTERVAL IS TWO (2) FEET.
3. A WETLAND DELINEATION WAS PERFORMED AND GPS LOCATED BY COASTAL RESOURCES INC. ON JUNE 14, 2022.
4. PROPERTY LINES ADJACENT TO WORK AREA WERE SURVEYED IN JUNE 2022 BY AMT. ALL OTHER PROPERTY LINES ARE BASED ON AVAILABLE GIS DATA.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED ACCORDING TO DESIGN SPECIFICATIONS PROVIDED IN THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION & SEDIMENT CONTROL" UNLESS OTHERWISE NOTED.

PRINCE GEORGE'S COUNTY | CORVIAS SOLUTIONS
CLEAN WATER PARTNERSHIP

HGS, LLC. A RES COMPANY
5367 TELEPHONE ROAD, WARRENTON, VIRGINIA 20187
P: 703.393.4844 | F: 703.393.2934
WWW.RES.US

CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

TREE TABLE

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND
BAILEY J. WILFONG
52852
PROFESSIONAL ENGINEER

[illegible]
10/31/2023

30% DESIGN REVIEW
x N/A
Signature Date

PERMIT PLAN DESIGN REVIEW
[illegible] 5/11/23
Signature Date

CONSTRUCTION PLAN REVIEW
[illegible] 7/25/23
Signature Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023

SHEET NO:
FSC SHEET 6OF16

ID	SPECIES	DBH	CONDITION	NOTES	PROPOSED STATUS
233	LIQUIDAMBAR STYRACUFLUA	15.6; 18.3	GOOD		REMAIN
234	LIQUIDAMBAR STYRACUFLUA	23.1	POOR		REMAIN
235	ACER RUBRUM	13.8	GOOD		REMAIN
236	QUERCUS PHELLOS	18.8	FAIR		REMAIN
237	QUERCUS ALBA	11.6	FAIR		REMOVE
238	QUERCUS FALCATA	17.5	FAIR		REMAIN
239	QUERCUS ALBA	15.4	FAIR		REMAIN
240	QUERCUS ALBA	11.3	GOOD		REMOVE
241	LIQUIDAMBAR STYRACUFLUA	11.6	GOOD		REMAIN
242	QUERCUS RUBRA	13.2	FAIR		REMAIN
243	QUERCUS RUBRA	13.1	FAIR		REMOVE
244A	QUERCUS ALBA	11.9	GOOD		REMOVE
244B	QUERCUS ALBA	11.9	GOOD		REMOVE
245	QUERCUS ALBA	13.2	GOOD		REMAIN
246	QUERCUS FALCATA	13	GOOD		REMOVE
247	QUERCUS ALBA	12.4	POOR		REMOVE
248	ULMUS RUBRA	13.7	FAIR		REMOVE
249	QUERCUS ALBA	11.6	POOR		REMOVE
250	LIQUIDAMBAR STYRACUFLUA	11.2	GOOD		REMOVE
251	QUERCUS ALBA	13.6	GOOD		REMAIN
252	MORUS ALBA	14.8	POOR		REMOVE
253	ULMUS RUBRA	11.2	POOR		REMOVE
254	LIRIODENDRON TULIPIFERA	13.2	GOOD		REMOVE
255	LIQUIDAMBAR STYRACUFLUA	11.5	FAIR		REMOVE
256	LIQUIDAMBAR STYRACUFLUA	14.3; 13.5	FAIR		REMOVE
257	LIQUIDAMBAR STYRACUFLUA	12	POOR		REMAIN
258	QUERCUS ALBA	15	FAIR		REMAIN
259	QUERCUS ALBA	14.5	FAIR		REMOVE
260	LIRIODENDRON TULIPIFERA	12.6	POOR		REMOVE
261	ACER RUBRUM	14	POOR		REMOVE
262	LIQUIDAMBAR STYRACUFLUA	14.7	POOR		REMAIN
263	QUERCUS ALBA	14	POOR		REMOVE
264	ACER RUBRUM	11	POOR		REMOVE
265	QUERCUS ALBA	14.1	FAIR		REMAIN
266	LIQUIDAMBAR STYRACUFLUA	13.7	POOR		REMOVE
267	LIRIODENDRON TULIPIFERA	11.6	POOR		REMOVE
268	QUERCUS PRINTS	15.2	POOR		REMOVE
269	ACER RUBRUM	11.9	FAIR		REMAIN
270	FAGUS GRANDIFOLIA	12.3	POOR		REMOVE
271	LIQUIDAMBAR STYRACUFLUA	13.1	FAIR		REMOVE
272	QUERCUS PALUSTRIS	12.2	FAIR		REMAIN
273	QUERCUS PRINUS	11.4	FAIR		REMAIN
274	PLATANUS OCCIDENTALIS	11.2	POOR		REMOVE
275	ACER RUBRUM	11.4	GOOD		REMAIN
276	PRUNUS SEROTINA	11.4	POOR		REMAIN
277	QUERCUS ALBA	11.7	FAIR		REMAIN
278	LIQUIDAMBAR STYRACUFLUA	17.5	GOOD		REMAIN
279	QUERCUS PALUSTRIS	12.2	FAIR		REMOVE
280	QUERCUS PHELLOS	11	POOR		REMAIN
281	LIRIODENDRON TULIPIFERA	17.3	FAIR		REMAIN
282	ACER SACCHARINUM	11.2	FAIR		REMOVE
283	LIQUIDAMBAR STYRACUFLUA	12	POOR		REMAIN

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CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL

CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

TREE TABLE

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND · STACEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW

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Signature — Date

PERMIT PLAN DESIGN REVIEW

5/11/23
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CONSTRUCTION PLAN REVIEW

7/25/23
Signature — Date

REVISIONS:

1ST SUBMISSION: 7-6-2023

2ND SUBMISSION: 9-22-2023

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DRAWN:	CD
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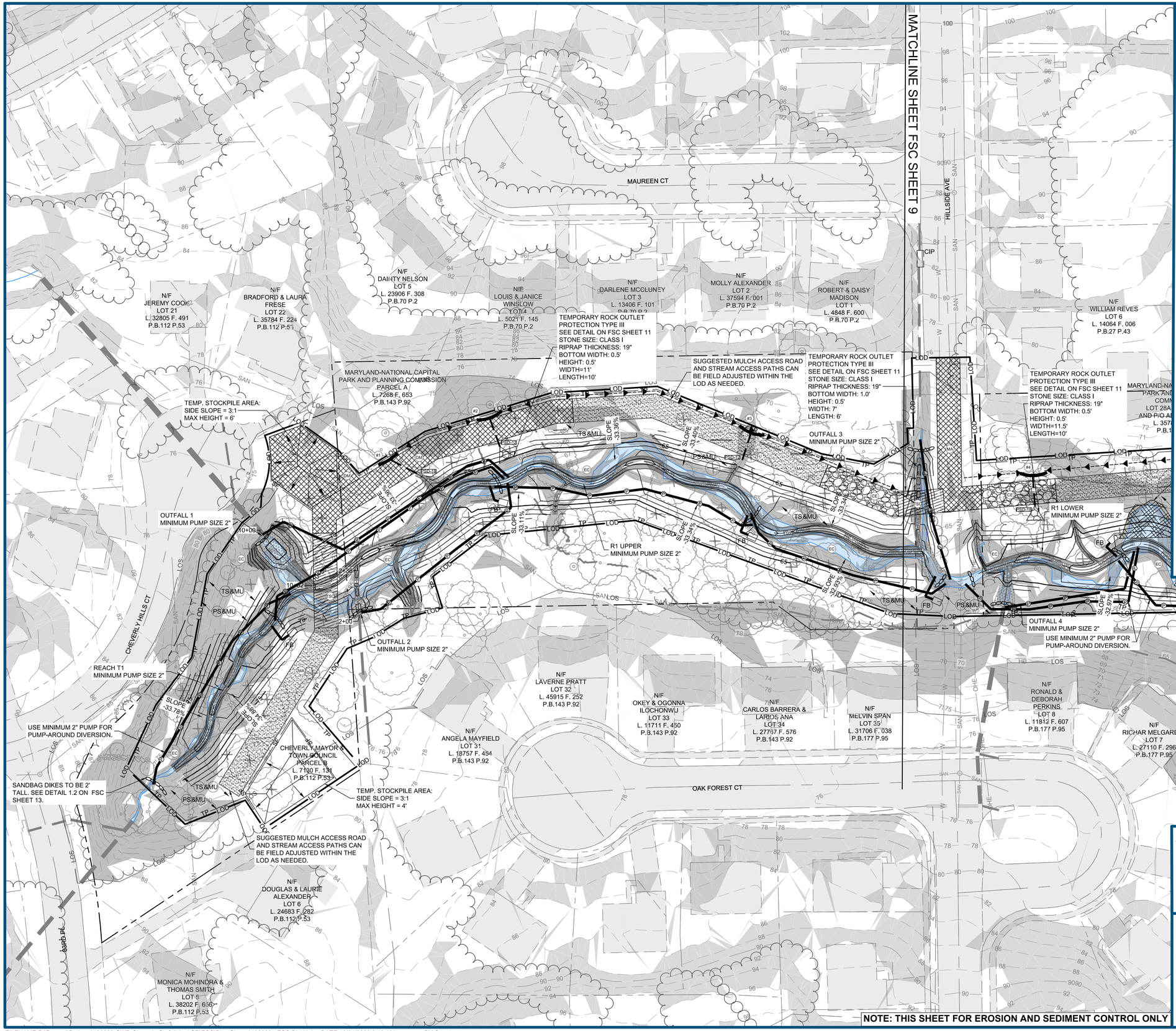

GRAPHIC SCALE: 1" = 30'
0' 30' 60' 90'

LEGEND:

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- EX. STREAM
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CLEAN WATER PARTNERSHIP
PRINCE GEORGE'S COUNTY | CORVIAS SOLUTIONS

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STATE OF MARYLAND — BAILEY J. WILFONG — 52852 — PROFESSIONAL ENGINEER

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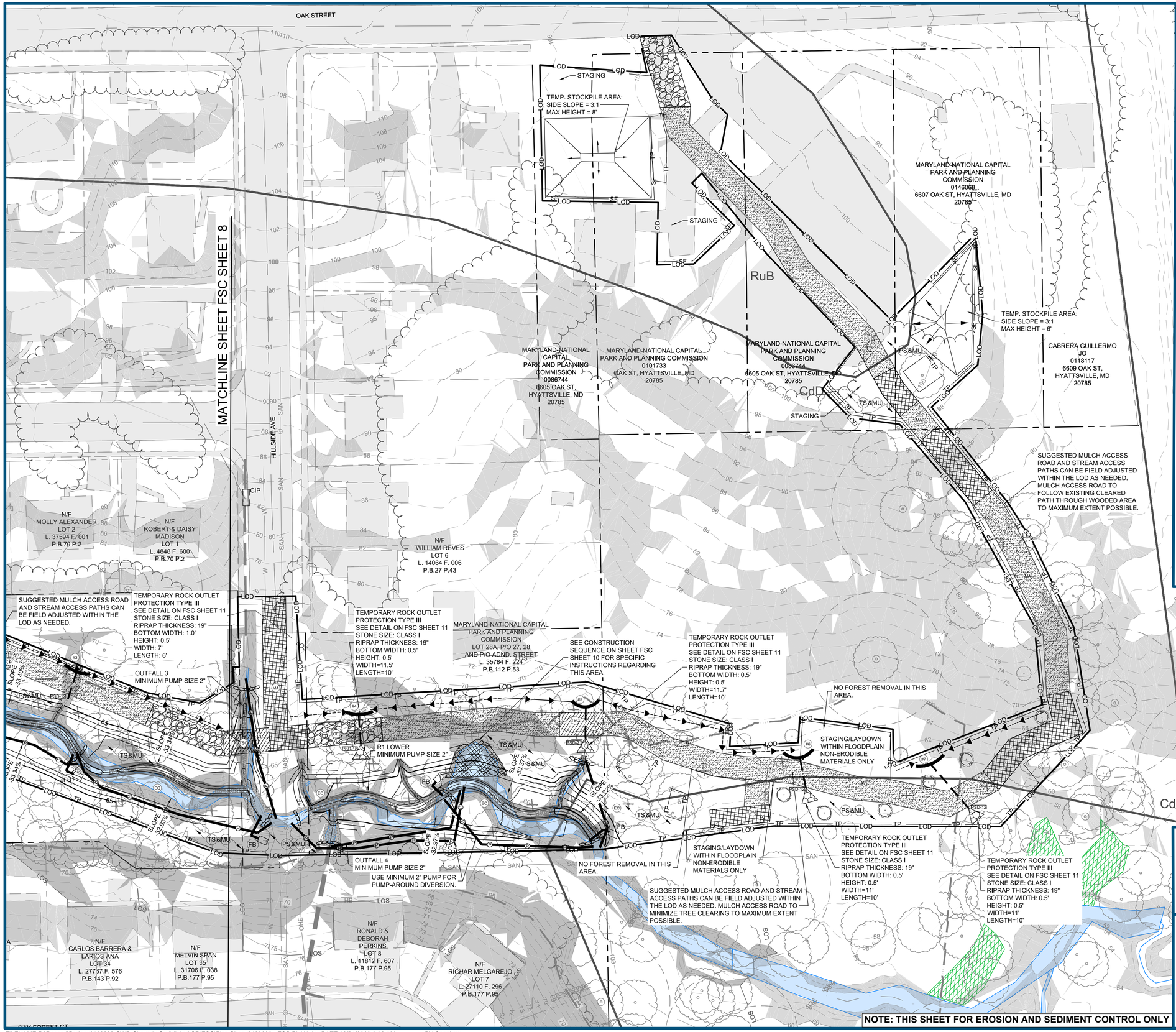
FILENAME:R:\Rescad\Projects\106683-CWP-Cheverly Outfall And SR\ESC\Plan Sheets\106683 - ESC PLAN.dwgDATE:10/31/2023 9:10 AM BY:Cpankow



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E&S NARRATIVE:

PROJECT DESCRIPTION:
THE PURPOSE OF THIS PROJECT IS TO CREATE TOTAL MAXIMUM DAILY LOAD (TMDL) CREDITS THROUGH STREAM RESTORATION. THE PROJECT SITE IS LOCATED AT 6607 OAK STREET HYATTSVILLE, MD 20785. THE CONSTRUCTION OF THIS PROJECT WILL DISTURB 3.26 ACRES.

EXISTING SITE CONDITIONS:
THE EXISTING SITE IS AN INCISED STREAM BED WITH DECIDUOUS TREES AROUND THE STREAM. THE STREAM PRIMARILY RECEIVES RUNOFF FROM A MULTIPLE STORMDRAIN SYSTEM OUTFALLS LOCATED AT THE UPSTREAM END OF THE STREAM AND THROUGHOUT THE CHANNEL.

ADJACENT AREAS:
THE PROPERTY IS SURROUNDED BY PARCELS WITH SINGLE FAMILY HOMES.

OFFSITE AREAS:
OFFSITE AREAS WILL NOT BE DISTURBED FOR THIS PROJECT.

SOILS:
REFER TO ESC PLAN SHEET FOR SOILS MAP; THE SOILS WITHIN THE LIMITS OF DISTURBANCE ARE SUMMARIZED BELOW:

CHARACTERISTICS OF SOILS FOUND IN THE LOD					
MAP UNIT SYMBOL/NAME	ERODIBILITY K-FACTOR	DRAINAGE CLASS	HYDROLOGIC SOIL GROUP	HYDRIC RATING	HIGHLY ERODIBLE SOIL
CdD, CHRISTIANA-DOWNER-URBAN LAND COMPLEX, 5-15 PERCENT SLOPES	-	MODERATELY WELL DRAINED	D	NO	NO
RuB, RUSSETT-CHRISTIANA-URBAN LAND COMPLEX, 0-5 PERCENT SLOPES	-	MODERATELY WELL DRAINED	D	NO	NO

CRITICAL AREAS:
THERE ARE CRITICAL ENVIRONMENTAL AREAS LOCATED WITHIN THE PROJECT AREA. THESE AREAS INCLUDE STREAMS, FLOODPLAIN, & STEEP SLOPES >15%. THESE AREAS WILL EXPERIENCE SERIOUS DEGRADATION IF SEDIMENT LEAVES THE SITE AND DRAINS INTO THESE FEATURES. THEREFORE, EXTRA CARE WILL BE TAKEN TO MINIMIZE THE EXPOSURE OF THESE WATER FEATURES TO SEDIMENT AND TO PREVENT EROSION OF THE ADJACENT BANK. ADDITIONALLY, THESE AREAS SHOULD BE INSPECTED MORE FREQUENTLY FOR SIGNS OF EROSION.

EROSION & SEDIMENT CONTROL MEASURES:
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. THE MINIMUM STANDARD OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. THE E&S INSPECTOR HAS THE AUTHORITY TO MAKE MINOR CHANGES TO E&S CONTROLS AS NECESSARY IN THE FIELD AS SITE CONDITIONS CHANGE. NO EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED UNTIL ALL UPSLOPE AREAS HAVE BEEN STABILIZED.

ORANGE SAFETY FENCE/TREE PROTECTION FENCING (SEE DETAIL SHEET FSC SHEET 12):
SAFETY FENCING EITHER POLYETHYLENE SECURED TO CONVENTIONAL METAL T OR U POSTS OR CHAIN LINK METAL SAFETY FENCING SHALL BE INSTALLED AS SHOWN ON THE PLANS. SIGNS NOTING POTENTIAL HAZARDS SHALL BE USED AND POSTED SUCH THAT THEY ARE EASILY VISIBLE TO ANYONE APPROACHING THE PROTECTED AREA.

STABILIZED CONSTRUCTION ENTRANCE (B-1):
A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED WHERE INDICATED ON THE PLANS. IT WILL BE NEEDED TO CLEAN THE TIRES OF VEHICLES AND EQUIPMENT DURING WET CONDITIONS IN ORDER TO PREVENT MUD/ROCKS/DEBRIS FROM BEING TRACKED OFF SITE OR INTO PUBLIC ROADWAYS.

PIPE SLOPE DRAIN (D-1):
AT THE END OF EACH SECTION OF DIVERSION FENCE IS A RIPRAP POOL TO DISSIPATE THE VELOCITY OF THE DIVERTED WATER. THAT WATER IS DIRECTED INTO A PVC PIPE AND DISCHARGES TO THE STREAM OR ROCK OUTLET PROTECTION. SEE PLAN FOR DETERMINATION OF WHICH PIPE SLOPE DRAINS AND DIVERSION FENCES ARE REQUIRED ONLY PER MANAGEMENT STRATEGY #9.

DIVERSION/PIPE SLOPE DRAIN TABLE			
ID	DA (ACRES)	PIPE LENGTH (FT)	MIN. PIPE DIAMETER (INCHES)
#1	1.5	20	18
#2	0.3	20	12
#3	0.4	20	12
#4	0.9	20	18
#5	2.0	20	21
#6	0.3	20	12
#7	0.3	40	12

DIVERSION FENCE (C-9):
A TEMPORARY DIVERSION FENCE SHALL BE INSTALLED, AS SHOWN ON THE PLAN, TO DIRECT UPLAND FLOW AWAY FROM THE WORK AREA DURING CONSTRUCTION.

SILT FENCE (E-1):
SILT FENCE SEDIMENT BARRIERS WITHOUT WIRE BACKING SHALL BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW.

CURB INLET PROTECTION (E-9-3):
CURB INLETS WILL NEED TO BE PROTECTED TO PREVENT SEDIMENT-LADEN RUNOFF FROM DRAINING INTO THE CURB INLET DURING CONSTRUCTION. CURB INLET PROTECTION SHOULD BE USED AT EACH INLET UNTIL UPLAND AREAS ARE STABILIZED.

PUMP-AROUND DIVERSION (THE MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION; MGWC 1.2):
A PUMP-AROUND DIVERSION SHALL BE INSTALLED TO TEMPORARILY DIVERT FLOW AROUND IN-STREAM CONSTRUCTION SITES. THIS FORM OF DIVERSION IS NECESSARY WHEN RESTORATION PRACTICES SPAN THE ENTIRE WIDTH OF THE STREAM CHANNEL AND/OR A LINEAR REACH OF STREAM SEGMENT IS TO BE SIMULTANEOUSLY WORKED ON. THIS PRACTICE ALSO LIMITS POTENTIAL FOR DOWNSTREAM SEDIMENTATION BECAUSE IN-STREAM WORK WILL BE COMPLETED IN THE DRY AND ALL DENUDED AREAS WILL BE STABILIZED BEFORE RE-INTRODUCTION OF WATER BACK INTO STREAM CHANNEL. THE TOTAL WORK AREA OF THE PUMP-AROUND SHOULD NOT EXCEED THE LENGTH OF AREA THAT CAN BE COMPLETED AND STABILIZED IN ONE (1) WORKING DAY. THE PUMP-AROUND LOCATIONS SHOWN ON THE PLAN ARE SCHEMATIC AND SHOULD BE PLACED IN THE FIELD BASED ON THE CONSTRUCTION SCHEDULE. THE PUMP-AROUND SHOULD BE COMPLETED AND REMOVED AT THE END OF EACH DAY. THIS PRACTICE SHOULD ALSO BE LIMITED TO BASE OR LOW FLOW CONDITIONS WERE APPLICABLE TO ENSURE ADEQUACY OF PUMP EQUIPMENT. PRACTICE IS MOST APPLICABLE IN SMALL TO MEDIUM WATERSHEDS WITH RELATIVELY SMALL BASE FLOW DISCHARGES. THIS ALLOWS FOR MULTIPLE PUMPING OPTIONS AND EQUIPMENT TO SUFFICIENTLY HANDLE NECESSARY PUMP CAPACITY. USE OF PRACTICE NOT LIMITED TO WATERSHED SIZE BUT BY CAPACITY OF PUMP AND HEIGHT OF IN-STREAM BARRIERS. PUMP SELECTION SHALL BE SIZED TO ADEQUATELY PUMP BASE FLOW AT A HEAD GREATER THAN THE IN-STREAM BARRIER HEIGHT. DOWN STREAM GEOTEXTILE LINED FLOW TRANSITION POINT MAY BE USED. THIS FEATURE ALLOWS FOR DISPERSION OF PUMP DISCHARGE TO A NON-EROSIVE VELOCITY WITHIN THE EXISTING STREAM CHANNEL. ALL OTHER APPLICABLE ESC MEASURES, AS SHOWN ON THE PLAN, SHALL BE USED IN CONJUNCTION WITH PUMP-AROUND.

	PUMP-AROUND DIVERSION						MANNING'S EQUATION INPUTS			
REACH	MIN. COFFERDAM HEIGHT (FT)	BANKFULL DEPTH (FT)	EST. BASEFLOW FLOW (GPM)	EST. BASEFLOW FLOW (CFS)	MIN. PUMP SIZE/ PIPE SIZE	DRAINAGE AREA TO REACH (AC)	BASEFLOW AREA	WETTED PERIMETER	n	SLOPE (FT/FT)
R1 UPPER	2	0.8	45	0.10	2" PUMP	58.8	0.16	2.77	0.035	0.009
R1 LOWER	2	0.9	64	0.14	2" PUMP	87.1	0.20	3.42	0.035	0.013
T1	2	0.6	18	0.04	2" PUMP	19.9	0.07	1.77	0.035	0.014
OUTFALL 1	2	0.4	22	0.05	2" PUMP	38.9	0.04	1.10	0.013	0.011
OUTFALL 2	2	0.4	5	0.01	2" PUMP	2.1	0.02	0.70	0.013	0.006
OUTFALL 3	2	0.6	6	0.01	2" PUMP	3.0	0.02	0.62	0.013	0.008
OUTFALL 4	2	0.4	9	0.02	2" PUMP	12.9	0.03	1.00	0.013	0.007

DECK MATTING (SEE DETAIL 1, FSC SHEET 14):
DECK MATS SHOULD BE UTILIZED WHERE SHOWN ON THE PLANS TO PROVIDE ACCESS FOR EQUIPMENT AND CONSTRUCTION ACTIVITIES TO PLACES WERE THE EXISTING GROUND NEEDS TO BE PROTECTED FROM THE EQUIPMENT. APPLICATIONS OF DECK MATS CAN INCLUDE UTILITY CROSSINGS, ASPHALT PROTECTION, WETLAND CROSSINGS ETC. DECK MATS SHOULD BE PUT IN FOR THE LEAST AMOUNT OF TIME NECESSARY AND REMOVED WHEN NO LONGER NEEDED. MULCH SHOULD BE USED TO FILL GAPS BETWEEN MATS AT TURNS. IF NECESSARY, TO PROVIDE DRAINAGE CONNECTIVITY, PVC PIPES CAN BE LAID BENEATH THE MATS.

FILTER BAG (F-4):
FILTER BAG SHALL BE UTILIZED WHERE SHOWN ON THE PLANS TO FILTER SEDIMENT-LADEN WATER PRIOR TO DISCHARGE. THE FILTER BAG SHALL BE PLACED IN A MANNER THAT ALLOWS FOR THE EASE OF DISPOSAL OF THE TRAPPED SEDIMENT AND HAS MINIMAL INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND PEDESTRIAN TRAFFIC.

LAND GRADING (B-3):
ALL AREAS WITHIN THE LIMITS OF GRADING BUT ABOVE BANKFULL SHALL BE NO STEEPER THAN 2:1. CUT/FILL SLOPES SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED PER THE STANDARD STABILIZATION REQUIREMENTS. CUT/FILL SLOPES SHALL BE PROTECTED FROM SURFACE WATER UNTIL THEY ARE STABILIZED PER THE REQUIREMENTS OF B-4 VEGETATIVE STABILIZATION.

VEGETATIVE STABILIZATION (B-4):
ALL DISTURBED AREAS OUTSIDE OF THE STREAM BOTTOM ARE TO BE PERMANENTLY SEEDED UPON THE REMOVAL OF TEMPORARY STABILIZATION PRACTICES. TEMPORARY STABILIZATION IS INCLUDED IN SITE-SPECIFIC MIXES AND SHALL BE INSTALLED IN ACCORDANCE WITH B-4-4 TEMPORARY STABILIZATION. PERMANENT SEEDING SHALL BE INSTALLED PER THE SITE-SPECIFIC PLANTING PLAN AND IN ACCORDANCE WITH B-4-5 PERMANENT STABILIZATION.

SOIL STABILIZATION BLANKETS & MATTING (B-4-6):
SOIL STABILIZATION BLANKETS/MATTING SHALL BE INSTALLED WHERE INDICATED ON THE PLANS TO AID IN CONTROLLING EROSION IN CRITICAL AREAS AS WELL AS AIDING IN THE ESTABLISHMENT OF VEGETATION FOR PERMANENT STABILIZATION ON PREVIOUSLY DISTURBED SLOPES. BLANKETS/MATTING SHALL BE INSTALLED PER SPECIFICATION B-4-6. UNLESS OTHERWISE NOTED ALL ESC MATTING WITHIN THE STREAM SHALL BE NEDIA KOIRMAT 700 OR EQUIVALENT.

ACCESS ROAD STABILIZATION (SEE DETAIL, FSC SHEET 14):
MULCH ACCESS ROADS SHALL BE UTILIZED WHERE INDICATED ON THE PLANS TO MINIMIZE IMPACT TO THE GROUND SURFACE AND PREVENT SOIL DISTURBANCE. MULCH ACCESS ROADS SHALL BE CONSTRUCTED OF APPROXIMATELY 12" OF MULCH. IN LIEU OF MULCH ACCESS ROAD REMOVAL, MULCH SHALL BE SPREAD THROUGHOUT ADJACENT FOREST FLOOR, WITHIN THE LOD, TO A THICKNESS NO GREATER THAN 2". TILL MULCH ACCESS ROAD TO A DEPTH OF 12" TO REDUCE COMPACTION.

TEMPORARY STOCKPILE
A TEMPORARY STOCKPILE AND ASSOCIATED EROSION AND SEDIMENT CONTROL MEASURES DO NOT NEED TO BE INSTALLED IF THE CONTRACTOR DEEMS THE STOCKPILE UNNECESSARY. THE EROSION AND SEDIMENT CONTROL MEASURES MAY BE ADJUSTED ACCORDINGLY TO TOTAL AREA BEING USED. ALL STOCKPILE ADJUSTMENTS MUST BE APPROVED BY THE ENGINEER OF RECORD.

MANAGEMENT STRATEGIES:
1. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
2. SEDIMENT TRAPPING / DIVERTING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED & MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
3. TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING WHEN DIRECTLY ADJACENT TO THE WATERCOURSE. IN ALL OTHER LOCATIONS, DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION & SEDIMENT CONTROL HANDBOOK.
4. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
5. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
6. AFTER ACHIEVING ADEQUATE STABILIZATION OF PERMANENT SEEDING, THE TEMPORARY E&S CONTROLS WILL BE CLEANED UP AND REMOVED.
7. THE FEWEST NUMBER OF TREES POSSIBLE WILL BE CLEARED FROM WITHIN THE LOD. THE SUPERINTENDENT SHALL WORK WITH THE ENGINEER OF RECORD, OR ASSIGNEE, TO DETERMINE LIMITS OF CLEARING.
8. TREES NOT BEING CLEARED WILL BE PROTECTED WITH TEMPORARY TREE PROTECTION FENCING AND MULCH/TIMBER MATS WHERE WORK MUST OCCUR WITHIN THE CRZ OF THE TREE. IF THE CRZ EXTENDS INTO THE STREAM CHANNEL/AREAS OF GRADING, ROOT PRUNING WILL BE USED TO MINIMIZE THE IMPACT TO THE SPECIMEN TREES.
9. SHOULD THE SITE BE FOUND TO BE IN A WET CONDITION BASED ON THE TIME OF YEAR, ADDITIONAL MEASURES SUCH AS INCLUDING DIVERSION FENCES & PIPE SLOPE DRAIN, TEMPORARY SWALES, TEMPORARY STONE OUTLET STRUCTURE OR OTHER STRUCTURES AS DICTATED BY THE EOR OR TPIR, MAY BE REQUIRED

TEMPORARY / PERMANENT STABILIZATION:
FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED AT A MINIMUM OF THREE (3) CALENDAR DAYS FOR PERIMETER DIKES, SWALES, DITCHES, SEDIMENT TRAPS AND ALL SLOPES STEEPER THAN 3:1, ALL OTHER DISTURBED AREAS MUST BE STABILIZED WITHIN SEVEN (7) CALENDAR DAYS. SEE MANAGEMENT STRATEGIES NOTE #3 IF DIRECTLY ADJACENT TO WATERCOURSE. ADEQUATE STABILIZATION REQUIRES 95% GROUND COVER, IF GROUND COVER IS LESS THAN 95% ADDITIONAL SEEDING/MULCH IS REQUIRED.

MAINTENANCE:
IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE SILT FENCE BARRIERS WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALFWAY TO THE TOP OF THE BARRIER. FILTERING DEVICES WILL BE INSPECTED FREQUENTLY AND REPAIRED/REPLACED ONCE THE SEDIMENT BUILD-UP PREVENTS THE STRUCTURE FROM FUNCTIONING AS DESIGNED. ALL SOIL STABILIZATION MATTING SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING THE DAMAGE TO THE SLOPE OR DITCH. SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED UNTIL 95% GROUNDCOVER IS PRESENT.

CONSTRUCTION SEQUENCE:
NOTE: ALL STREAMS ASSOCIATED WITH THIS PROJECT ARE DESIGNATED USE CLASS 1 THUS, ALL IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR. THE FOLLOWING PROCESS WILL BE DONE FOR EACH REACH ON THE PROJECT SITE. STREAMS SHOULD BE CONSTRUCTED UPSTREAM TO DOWNSTREAM. IF POSSIBLE, CONVERGING REACHES SHOULD BE CONSTRUCTED SIMULTANEOUSLY SUCH THAT CONSTRUCTION OF BOTH REACHES APPROACH THE NEW CONFLUENCE SIMULTANEOUSLY. IF SIMULTANEOUS CONSTRUCTION IS NOT POSSIBLE A TEMPORARY CONFLUENCE CAN BE CONSTRUCTED BETWEEN THE EXISTING CONVERGING REACH AND THE PROPOSED/CONSTRUCTED REACH. THE PROJECT SEQUENCING SHOULD BE EXECUTED SUCH THAT TEMPORARY CONFLUENCES ARE IN PLACE FOR THE SHORTEST AMOUNT OF TIME POSSIBLE. THE ENGINEER OF RECORD, OR ASSIGNEE, SHALL APPROVE ALL TEMPORARY CONFLUENCES THAT ARE INTENDED TO BE LEFT IN PLACE FOR MORE THAN FIVE (5) DAYS. OUTSIDE OF MINIMIZING THE DURATION OF TEMPORARY CONFLUENCES THE CONTRACTOR MAY SEQUENCE THE CONSTRUCTION OF THE REACHES/TRIBUTARIES AS THEY SEE FIT.

1. LOD STAKEOUT (DAY 0-4): THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES, GRUBBING, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES. PRIOR TO TREE CLEARING, THE ENGINEER OF RECORD AND JOB SUPERINTENDENT WILL REVIEW TREES FOR SELECTIVE CLEARING WITHIN LIMITS OF DISTURBANCE.
2. PRE-CONSTRUCTION MEETINGS (DAY 5): AFTER THE LOD IS STAKED OUT BUT PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRECONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH MARYLAND ENVIRONMENTAL SERVICE (MES; 410-729-8375) SEDIMENT CONTROL INSPECTOR (48 HOURS NOTICE), THE OWNERS REPRESENTATIVE, MNCPPC PARK PLANNING & DEVELOPMENT ENGINEERING SECTION (301-704-0918) , AND THE SITE ENGINEER. REFER TO PRINCE GEORGE'S SOIL CONSERVATION DISTRICT (PGSCD) GENERAL NOTES C1-7 FOR ADDITIONAL CONTACT STAGES)
3. CLEAR & GRUB (DAYS 5-15): CLEAR AND GRUB AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS; INCLUDING TREE PROTECTION FENCING, DIVERSION FENCE, & SILT FENCE (DAYS 15-25).
4. CONSTRUCT AND STABILIZE PERIMETER CONTROLS (DAYS 25-30): WITH INSPECTOR APPROVAL THE INSTALLATION AND STABILIZATION OF PERIMETER CONTROLS CAN BE SEQUENCED TO FOLLOW AHEAD OF THE STREAM CONSTRUCTION.
5. CLEAR, GRUB, AND GRADE FOR INSTALLATION OF SEDIMENT CONTROL DEVICES (DAYS 30-35). WITH INSPECTOR APPROVAL THE INSTALLATION AND STABILIZATION OF SEDIMENT CONTROLS CAN BE SEQUENCED TO FOLLOW AHEAD OF THE STREAM CONSTRUCTION.
6. WRITTEN APPROVAL (DAY 35): ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED PER APPROVED SEQUENCE, THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING.
7. PERFORM CLEARING AND GRUBBING (DAYS 35-40): AS NEEDED FOR RESTORATION AND TO STAY AHEAD OF CONSTRUCTION OPERATIONS WHILE MINIMIZING THE DURATION OF TIME AN AREA IS EXPOSED.
8. STAKE OUT THE PROPOSED ALIGNMENT (DAYS 40-45) OF THE CHANNEL IN THE FIELD AND REVIEW WITH THE ENGINEER PRIOR TO GROUND DISTURBANCE. THE DOWNSTREAM & UPSTREAM TIE-IN TO THE EXISTING STREAM MUST BE REVIEWED TO DETERMINE IF MODIFICATIONS ARE REQUIRED TO ADJUST THE DESIGN TO CURRENT STREAM CONDITIONS.
9. PERFORM STREAM CHANNEL/FLOODPLAIN CONSTRUCTION (DAYS 45-70): NOTE: THE FOLLOWING SEQUENCE SHOULD BE REPEATED ON A DAILY BASIS ALONG A SECTION OF STREAM THAT CAN BE COMPLETED WITHIN ONE DAY. ON AN AVERAGE PROJECT, THE ESTIMATED LENGTH OF STREAM TO BE CONSTRUCTED PER DAY CAN RANGE ANYWHERE BETWEEN 50 AND 100 FEET. HOWEVER, THE DAILY RATE OF COMPLETION CAN VARY FROM THIS RANGE DEPENDING ON THE COMPLEXITY AND SIZE OF THE PROPOSED SECTION OF STREAM.

ALL STREAM CONSTRUCTION SHOULD BEGIN UPSTREAM AND PROCEED DOWNSTREAM. THE CONSTRUCTION OF THE PROPOSED CHANNEL SHALL GENERALLY FOLLOW THE SEQUENCE BELOW:

a. SETUP PUMP-AROUND DIVERSION:IF WORKING OFF-LINE IS NOT POSSIBLE, INSTALL PUMP-AROUND DIVERSION FOR THE SECTION OF STREAM UNDER ACTIVE CONSTRUCTION. DIVERTING ONLY THE NECESSARY PORTION OF THE STREAM AS NEEDED TO EXPOSE THE CONSTRUCTION AREA. THE CLEAN WATER BYPASS SHALL OUTFALL INTO A STABILIZED SECTION OF EXISTING CHANNEL PER THE PROVIDED DETAIL AND THE BED SHALL BE TEMPORARILY LINED WITH EITHER RIPRAP, SANDBAGS OR RIFFLE MATERIAL TO PREVENT EROSION. ALL SEDIMENT LADEN WATER SHALL BE PUMPED THROUGH A FILTER BAG ONTO A SURFACE WITH A MAXIMUM 5% SLOPE, LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE. WORK SHALL BE PLANNED SUCH THAT FLOW CAN BE RETURNED TO THE CHANNEL AT THE END OF EACH WORK DAY BY REMOVING THE PORTION OF THE DAM RESTRICTING BASEFLOW THROUGH THE ACTIVE PUMP-AROUND SEGMENT. *PUMP-AROUND DIVERSIONS SHOWN ON PLANS CAN BE MINIMIZED OR ELIMINATED IF SECTIONS OF PROPOSED CHANNEL CAN BE BUILT OFFLINE WITHOUT DISTURBANCE TO THE EXISTING STREAM CHANNEL (PER DESCRIPTION ABOVE).

b. SALVAGE TOPSOIL: STRIP TOPSOIL FROM AREA TO BE GRADED AND STOCKPILE FOR REUSE ACROSS THE DISTURBED STREAM BANKS & RIPARIAN AREAS.

c. CHANNEL EXCAVATION: EXCAVATE THE CHANNEL PER THE PLANS. DURING EXCAVATION OF THE CHANNEL ANY ACCUMULATION OF GROUND WATER SHALL BE PUMPED OUT OF THE CHANNEL THROUGH A FILTER BAG ONTO A STABILIZED AREA ENSURING NO EROSION OCCURS AROUND THE OUTFALL OF THE FILTER BAG.

d. INSTALLATION OF STRUCTURES (LOG OR ROCK): USING LOGS (SALVAGED FROM SITE CLEARING IF AVAILABLE) OR ROCKS INSTALL THE STRUCTURES PER THE PLANS, ENSURING THAT THE TOP OF THE LOG/HEADER ROCK EXPOSED IN THE CHANNEL IS EVEN WITH THE INVERT OF THE STREAM CHANNEL.

e. CHANNEL STABILIZATION: STABILIZE THE STREAM BED WITH STONE AS INDICATED IN THE STREAM DESIGN PLANS, ENSURING THAT THE SURFACE OF THE STONE MATCHES THE PROFILE ELEVATION.

f. BANK STABILIZATION: INSTALL TOPSOIL, SEEDING & COIR MATTING ON THE STREAM BANKS, AS SHOWN IN THE PLANTING/STREAM DETAILS SECURING THE MATTING AS SHOWN.

g. DOWNSTREAM TIE-IN: COMPLETE THE GRADING OF THE CHANNEL ON THE DOWNSTREAM END, ENSURING A GRADUAL TRANSITION INTO THE DIMENSIONS OF THE EXISTING STREAM CHANNEL. INSTALL TOPSOIL, SEEDING, COIR MATTING & BED MATERIAL TO STABILIZE IN THE TEMPORARY TIE-IN. IF A TEMPORARY CONNECTION CHANNEL IS NECESSARY TO CONNECT THE PROPOSED CHANNEL TO THE EXISTING CHANNEL AT THE END OF THE WORKDAY, A TEMPORARY CHANNEL CAN BE EXCAVATED THAT IS THE SAME SIZE OR LARGER THAN THE DESIGN CHANNEL AND LINED WITH 10MIL POLYVINYL SHEETING. IF THERE IS A VERTICAL DROP RIFFLE MIX SHALL BE PUT ON TOP OF THE SHEETING TO STABILIZE THE DROP.

h. UPSTREAM TIE-INS: AFTER THE COMPLETION ALL OTHER DOWNSTREAM GRADING, GRADE THE STREAM CHANNEL UPSTREAM TO THE EXISTING STREAM CHANNEL (OR PREVIOUSLY COMPLETED SECTION), ENSURING A GRADUAL TRANSITION FROM THE DIMENSIONS OF THE EXISTING STREAM CHANNEL TO THE PROPOSED CHANNEL. INSTALL TOPSOIL, SEEDING, COIR MATTING & BED MATERIAL TO STABILIZE CHANNEL TIE-IN.

i. RETURNING FLOW TO CHANNEL: AFTER THE ENTIRE STREAM CHANNEL (OR SECTION) HAS BEEN CONSTRUCTED AND STABILIZED, AND ALL TIE-INS COMPLETED, OPEN THE PROPOSED SECTION OF CHANNEL TO STREAM FLOW, REMOVING STREAM DIVERSION PUMPS AND COFFERDAMS TO ALLOW PASSAGE OF CURRENT BASEFLOW.

j. GRADING OR FILLING OF EXISTING CHANNEL / FLOODPLAIN GRADING: WORK OUTSIDE OF THE PROPOSED CHANNEL, INCLUDING GRADING OR FILLING OF THE EXISTING CHANNEL AND FLOODPLAIN GRADING, CAN BE COMPLETED AFTER FLOW HAS BEEN INTRODUCED TO THE PROPOSED CHANNEL. FLOODPLAIN GRADING/GRADING OUTSIDE OF EXISTING & PROPOSED CHANNELS, CAN BE COMPLETED PRIOR TO CONSTRUCTING THE PROPOSED CHANNEL IF IT CAUSES NO DISTURBANCE TO THE EXISTING STREAM.

k. TOPSOILING AND SEEDING FLOODPLAIN: APPLY SALVAGED TOPSOIL, SPREAD SEEDING AS SPECIFIED ON THE PLANTING PLAN, AND INSTALL MATTING WHERE SHOWN TO THE DISTURBED RIPARIAN & UPLAND AREA. ALL AREAS ADJACENT TO STREAMS SHALL BE STABILIZED WITH EITHER TEMPORARY OR PERMANENT SEED AND MULCH OR MATTING THE SAME DAY AS ACHIEVING FINAL GRADE.PLANTING: IN THE APPROVED PLANTING SEASON, INSTALL ADDITIONAL TREE/SHRUB PLANTINGS AS SHOWN ON THE PLANTING PLAN

10. INSPECT AND PERFORM MAINTENANCE (DAYS 45-70) (AS REQUIRED) OF EROSION AND SEDIMENT CONTROLS ON A DAILY BASIS AND THE NEXT DAY AFTER EACH RAIN EVENT.
11. EROSION AND SEDIMENT APPROVAL (DAY 71): OBTAIN WRITTEN APPROVAL OF PRINCE GEORGE'S COUNTY SEDIMENT CONTROL INSPECTOR TO REMOVE EROSION AND SEDIMENT CONTROLS.
12. REMOVE EROSION AND SEDIMENT CONTROLS (DAYS 71-80): REMOVE EROSION AND SEDIMENT CONTROLS & INSTALL PERMANENT SEEDING AND MULCH IN DISTURBED AREAS NOT ALREADY STABILIZED. REFER TO PLANTING NOTES & DETAILS.
13. DAILY INSPECTION AND MAINTENANCE (DAYS 45-80) OF PERMANENT SEEDING AND MULCHING IS REQUIRED UNTIL PERMANENT SEEDING IS ESTABLISHED AND A GOOD STAND IS MAINTAINED. **ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION AND APPROVED BY PGSCD; PHASING OF THE WORK IS ACCEPTABLE AND RECOMMENDED. STEPS 3-10 SHOULD BE REPEATED PER PHASE.

PRINCE GEORGE'S SOIL CONSERVATION DISTRICT (PGSCD) GENERAL NOTES:

A. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENT, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE EROSION AND SEDIMENT CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THIS PLAN.

B. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1) AND B) SEVEN (7) CALENDAR DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.

C. THE OWNER/DEVELOPER OR REPRESENTATIVE SHALL REQUEST THAT THE PRINCE GEORGE'S COUNTY DEPARTMENT OF PERMITTING, INSPECTION, AND ENFORCEMENT INSPECTION AUTHORITY APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT AND SHALL OBTAIN WRITTEN INSPECTION APPROVALS BY THE INSPECTOR AT THE FOLLOWING STAGES IN THE DEVELOPMENT OF THE SITE:

1) PRIOR TO THE START OF EARTH DISTURBANCE;
2) UPON COMPLETION OF THE INSTALLATION OF TREE PROTECTION DEVICES, FOLLOWED BY THE INSTALLATION OF PERIMETER EROSION & SEDIMENT CONTROLS, PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL INITIAL APPROVAL BY THE INSPECTOR IS MADE;
3) UPON COMPLETION OF STRIPPING, THE STOCKPILING OF TOPSOIL, THE CONSTRUCTION OF TEMPORARY SEDIMENT AND EROSION CONTROL FACILITIES, DISPOSAL OF ALL WASTE MATERIAL AND PREPARATION OF THE GROUND;
4) UPON COMPLETION OF ROUGH GRADING, BUT PRIOR TO PLACING TOPSOIL,PERMANENT DRAINAGE OR OTHER SITE DEVELOPMENT IMPROVEMENTS AND GROUND COVERS;
5) PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT;
6) PRIOR TO THE REMOVAL OF SEDIMENT CONTROL PRACTICES; AND
7) UPON COMPLETION OF FINAL GRADING, REFORESTING, PERMANENT DRAINAGE AND EROSION CONTROL FACILITIES INCLUDING ESTABLISHED GROUND COVERS AND PLANTING, AND ALL OTHER WORK OF THE BUILDING PERMITS.

D. APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF TWO ACRES BEFORE REMOVAL OF CONTROLS.

E. ALL PERMITS UNDER AN EROSION AND SEDIMENT CONTROL PLAN MUST AND CAN ONLY BE ISSUED TO THE OWNER/DEVELOPER THAT SIGNS THE CERTIFICATION ON THE PLAN. THE OWNER/DEVELOPER THAT SIGNS THE CERTIFICATION ON AN EROSION AND SEDIMENT CONTROL PLAN IS THE RESPONSIBLE PARTY REGARDLESS OF ANY SALE OF THE PROPERTY OR WORK OF SUBCONTRACTORS. EROSION AND SEDIMENT CONTROL PLANS ARE APPROVED FOR ONE OWNER/DEVELOPER ONLY.

F. PGSCD APPROVAL OF A EROSION AND SEDIMENT CONTROL PLAN, PURSUANT TO MEETING LOCAL PERMIT REQUIREMENTS FOR GRADING, BUILDING OR STREET PERMITS, ETC., IS VALID ONLY WHEN THE WORK TO BE PERFORMED UNDER THE PERMIT IS THE SAME AS (NO MORE/NO LESS THAN) THAT CONTAINED IN THE PLAN AS APPROVED BY THE PGSCD.

G. ANY CHANGES OR MODIFICATIONS TO AN APPROVED EROSION AND SEDIMENT CONTROL PLAN, NOT APPROVED BY THE PGSCD, SHALL INVALIDATE THE PLAN APPROVAL.

H. OFFSITE BORROW OR SPOIL AREAS MUST HAVE AN APPROVED AND ACTIVE EROSION AND SEDIMENT CONTROL PLAN.

I. TEMPORARY DESIGNED SEDIMENT BASINS SHALL BE REMOVED WITHIN 36 MONTHS AFTER THE BEGINNING OF CONSTRUCTION OF THE BASIN. (SMALL POND NOTES DO NOT APPLY)

J. DISTURBED SURFACE AREA: 3.26 AC
VEGETATIVELY STABILIZED AREA: 3.26 AC
VOLUME OF SPOIL MATERIAL: 995.52 CY
VOLUME OF CUT: 1736.39 CY
VOLUME OF BORROW MATERIAL: 0 CY
VOLUME OF FILL: 740.87 CY

K. PREDOMINANT SOIL TYPES ARE LISTED IN THE SOILS TABLE ON THIS SHEET.

PRINCE GEORGE'S COUNTY | CORVIAS SOLUTIONS
CLEAN WATER PARTNERSHIP

res
HGS, LLC. A RES COMPANY
5367 TELEPHONE ROAD, WARRENTON, VIRGINIA 20187
P: 703.393.4844 | F: 703.393.2934
WWW.RES.US

CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL
CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

ESC NOTES

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND · BAILEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER
10/31/2023

30% DESIGN REVIEW
x N/A
Signature Date

PERMIT PLAN DESIGN REVIEW
5/11/23
Signature Date

CONSTRUCTION PLAN REVIEW
7/25/23
Signature Date

REVISIONS:

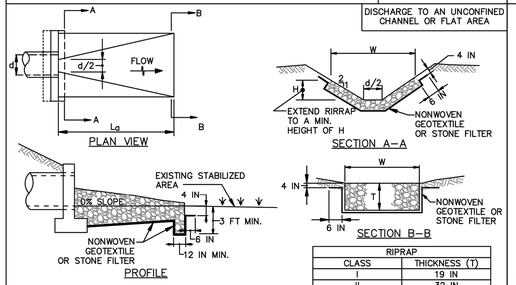
PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023

SHEET NO:
FSC SHEET 10OF16

DETAIL D-4-1-C ROCK OUTLET PROTECTION III

STANDARD SYMBOL: ROPIII

DISCHARGE TO AN UNCONFINED CHANNEL OR FLAT AREA



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

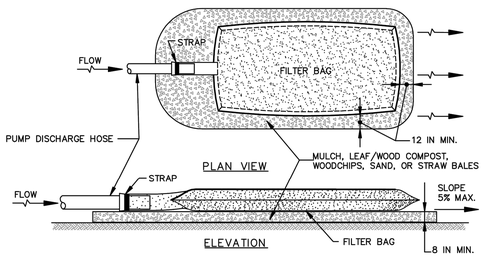
1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (⅜ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ☒FB



CONSTRUCTION SPECIFICATIONS

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

GRAB TENSILE	250 LB	ASTM D–4632
PUNCTURE	150 LB	ASTM D–4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D–4491
PERMITTIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D–4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D–4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D–4751
SEAM STRENGTH	90%	ASTM D–4632

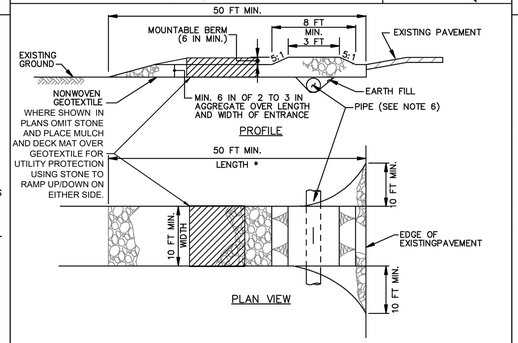
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

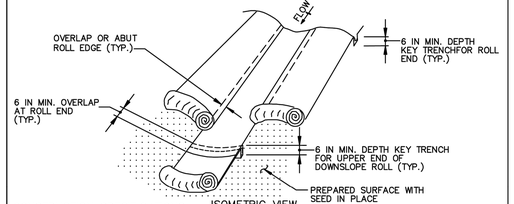
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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

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



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN–MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON–LEACHING AND NON–TOXIC TO VEGETATION AND SEED GERMINATION AND NON–INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH–SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. 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 SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. 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.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B–4 VEGETATIVE STABILIZATION.

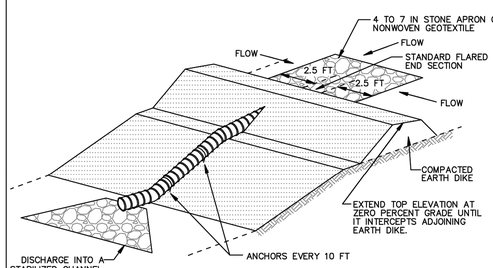
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

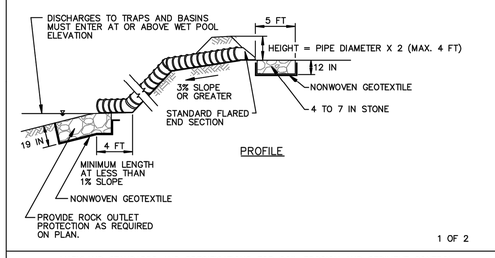
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-1 PIPE SLOPE DRAIN

STANDARD SYMBOL: PSD – 12

DESIGNATION PSD–12 REFERS TO 12 IN PIPE SLOPE DRAIN.





1 OF 2

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 D-1 PIPE SLOPE DRAIN

STANDARD SYMBOL: PSD – 12

DESIGNATION PSD–12 REFERS TO 12 IN PIPE SLOPE DRAIN.

CONSTRUCTION SPECIFICATIONS

1. THE HEIGHT OF THE EARTH DIKE MUST BE AT LEAST 2 TIMES THE PIPE DIAMETER MEASURED FROM THE INVERT OF THE PIPE. EXTEND THE TOP ELEVATION OF DIKE AT ZERO PERCENT GRADE UNTIL IT INTERCEPTS THE TOP OF THE ADJOINING EARTH DIKE.
2. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. ALL CONNECTIONS MUST BE WATERTIGHT.
3. ATTACH A FLARED END SECTION TO THE INLET END OF PIPE WITH A WATERTIGHT CONNECTION. AT THE INLET OF THE PIPE SLOPE DRAIN, INSTALL 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PLACED 12 INCHES IN DEPTH ON NONWOVEN GEOTEXTILE AND EXTEND OUT 5 FEET FROM THE INLET IN ALL DIRECTIONS.
4. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
5. SECURELY ANCHOR THE PIPE SLOPE DRAIN (PSD) TO THE SLOPE. SPACE THE ANCHORS EVERY 10 FEET.
6. HAND TAMP THE SOIL AROUND AND UNDER THE PIPE AND END SECTION IN 4 INCH LIFTS TO THE TOP OF THE EARTH DIKE.
7. UPON COMPLETING INSTALLATION OF THE PSD, STABILIZE ASSOCIATED DISTURBANCES WITH SEED, MULCH, AND TACK.
8. INSTALL OUTLET PROTECTION AS SPECIFIED ON APPROVED PLAN.
9. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REMOVE ACCUMULATED SEDIMENT AND DEBRIS.

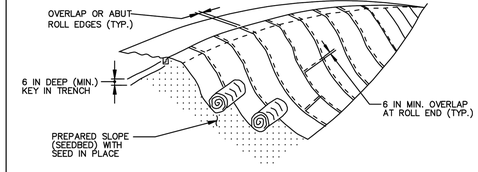
2 OF 2

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

STANDARD SYMBOL: TSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN–MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON–LEACHING AND NON–TOXIC TO VEGETATION AND SEED GERMINATION AND NON–INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH–SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B–4 VEGETATIVE STABILIZATION.

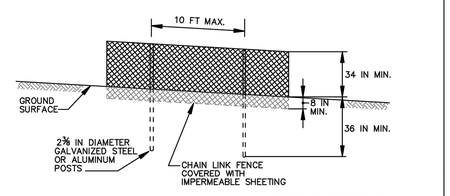
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

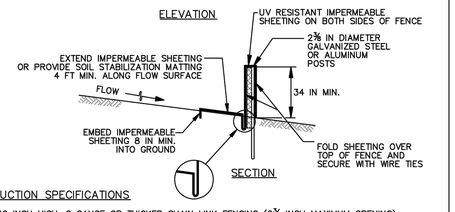
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES





CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

CLEAN WATER PARTNERSHIP

res
HGS, LLC, A RES COMPANY
5367 TELEPHONE ROAD, WARRENTON, VIRGINIA 20187
P: 703.393.4844 | F: 703.393.2934
WWW.RES.US

CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL
CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

ESC DETAILS

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND — BAILEY J. WILKINS — 52852 — PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW

x N/A
Signature Date

PERMIT PLAN DESIGN REVIEW

5/11/23
Signature Date

CONSTRUCTION PLAN REVIEW

x BRIANA STEPHENS 7/25/23
Signature Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023
SHEET NO:	FSC SHEET 11OF16

B-4-7 STANDARDS AND SPECIFICATIONS

FOR

HEAVY USE AREA PROTECTION

Definition

The stabilization of areas frequently and intensively used by surfacing with suitable materials (e.g., mulch and aggregate).

Purpose

To provide a stable, non-eroding surface for areas frequently used and to improve the water quality from the runoff of these areas.

Conditions Where Practice Applies

This practice applies to intensively used areas (e.g., equipment and material storage, staging areas, heavily used travel lanes).

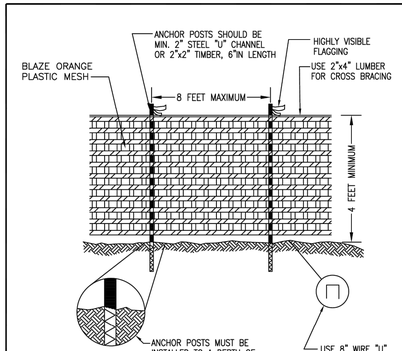
Criteria

1. A minimum 4-inch base course of crushed stone or other suitable materials including wood chips over nonwoven geotextile should be provided as specified in Section H-1 Materials.
2. Select the stabilizing material based on the intended use, desired maintenance frequency, and runoff control.
3. The transport of sediments, nutrients, oils, chemicals, particulate matter associated with vehicular traffic and equipment, and material storage needs to be considered in the selection of material. Additional control measures may be necessary to control some of these potential pollutants.
4. Surface erosion can be a problem on large heavy use areas. In these situations, measures to reduce the flow length of runoff or erosive velocities need to be considered.

Maintenance

The heavy use areas must be maintained in a condition that minimizes erosion. This may require adding suitable material, as specified on the approved plans, to maintain a clean surface.

TREE PROTECTION FENCE DETAIL/ORANGE SAFETY FENCE



NOTES: (MUST BE INCLUDED WITH DETAIL)

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. DEVICE SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION
6. ~~PROTECTIVE SIGNAGE IS ALSO REQUIRED.~~

B-3 STANDARDS AND SPECIFICATIONS

FOR

LAND GRADING

Definition

Reshaping the existing land surface to provide suitable topography for building facilities and other site improvements.

Purpose

To provide erosion control and vegetative establishment for extreme changes in grade.

Conditions Where Practice Applies

Earth disturbances or extreme grade modifications on steep or long slopes.

Design Criteria

The grading plan should be based on the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surroundings to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, adjacent properties, drainage patterns, measures for water removal, and vegetative treatment, etc.

Many jurisdictions have regulations and design procedures already established for land grading that must be followed. The plan must show existing and proposed contours for the area(s) to be graded including practices for erosion control, slope stabilization, and safe conveyance of runoff (e.g., waterways, lined channels, reverse benches, grade stabilization structures). The grading/construction plans are to include the phasing of these practices and consideration of the following:

1. Provisions to safely convey surface runoff to storm drains, protected outlets or stable water courses to ensure that surface runoff will not damage slopes or other graded areas.
2. Cut and fill slopes, stabilized with grasses, no steeper than 2:1. (Where the slope is to be mowed, the slope should be no steeper than 3:l, but 4:l is preferred because of safety factors related to mowing steep slopes.) Slopes steeper than 2:l require special design and stabilization considerations to be shown on the plans.
3. Benching per Detail B-3-1 whenever the vertical interval (height) of any 2:l slope exceeds 20 feet; for 3:l slopes, when it exceeds 30 feet; and for 4:l slopes, when it exceeds 40 feet. Locate benches to divide the slope face as equally as possible and to convey the water to a stable outlet. Soils, seeps, rock outcrops, etc. are to be taken into consideration when designing benches.
   a. Provide benches with a minimum width of six feet for ease of maintenance.
   b. Design benches with a reverse slope of 6:l or flatter to the toe of the upper slope and with a minimum of one foot in depth. Grade the longitudinal slope of the bench between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

B-4 STANDARDS AND SPECIFICATIONS

FOR

VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

   c. The maximum allowable flow length within a bench is 800 feet unless accompanied by appropriate design and computations.
4. Diversion of surface water from the face of all cut and fill slopes using earth dikes or swales. Convey surface water down slope using a designed structure, and:
   a. Protect the face of all graded slopes from surface runoff until they are stabilized.
   b. Do not subject the slope's face to any concentrated flow of surface water such as from natural drainage ways, graded swales, downspouts, etc.
   c. Protect the face of the slope by special erosion control materials to include, but not be limited to, approved vegetative stabilization practices, riprap or other approved stabilization methods.
5. Serrated slope as shown in Detail B-3-2. The steepest allowable slope for ripable rock is 1.5:1. For non rock surfaces, the slopes are to be 2:1 or flatter. These steps will weather and act to hold moisture, lime, fertilizer and seed thus producing a much quicker and longer lived vegetative cover and better slope stabilization.
6. Subsurface drainage provisions. Provide subsurface drainage where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.
7. Proximity to adjacent property. Slopes must not be created close to property lines without adequate protection against sedimentation, erosion, slippage, settlement, subsidence, or other related damages.
8. Quality of fill material. Fill material must be free of brush, rubbish, logs, stumps, building debris, and other objectionable material. Do not place frozen materials in the fill nor place the fill material on a frozen foundation.
9. Stabilization. Stabilize all disturbed areas structurally or vegetatively in compliance with Section B-4 Standards and Specifications for Stabilization Practices.

Maintenance

The line, grade, and cross section of benching and serrated slopes must be maintained. Benches and serrated slopes must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization.

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

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

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 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.

H-1 STANDARDS AND SPECIFICATIONS

FOR

MATERIALS

Table H.1: Geotextile Fabrics

		WOVEN SLIT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MINIMUM AVERAGE ROLL VALUE[1]					
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size[2]	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec^{-1}		0.28 sec^{-1}		1.1 sec^{-1}	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

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

[2] Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.

Table H.2: Stone Size

TYPE	SIZE RANGE	d_{50}	d_{100}	AASHTO	MIDSIZE WEIGHT[3]
NUMBER 57[1]	3/8 to 1 ½ inch	½ in	1 ½ in	M-43	N/A
NUMBER 1	2 to 3 inch	2 ½ in	3 in	M-43	N/A
RIPRAP[2] (CLASS 0)	4 to 7 inch	5 ½ in	7 in	N/A	N/A
CLASS I	N/A	9 ½ in	15 in	N/A	40 lb
CLASS II	N/A	16 in	24 in	N/A	200 lb
CLASS III	N/A	23 in	34 in	N/A	600 lb

[1] This classification is to be used on the upstream face of stone outlets and check dams.

[2] This classification is to be used for gabions.

[3] Optimum gradation is 50 percent of the stone being above and 50 percent below the midsize.

Stone must be composed of a well graded mixture of stone sized so that fifty (50) percent of the pieces by weight are larger than the size determined by using the charts. A well graded mixture, as used herein, is defined as a mixture composed primarily of larger stone sizes but with a sufficient mixture of other sizes to fill the smaller voids between the stones. The diameter of the largest stone in such a mixture must not exceed the respective d_{100} selected from Table H.2. The d_{50} refers to the median diameter of the stone. This is the size for which 50 percent, by weight, will be smaller and 50 percent will be larger.

Note: Recycled concrete equivalent may be substituted for all stone classifications for temporary control measures only. Concrete broken into the sizes meeting the appropriate classification, containing no steel reinforcement, and having a minimum density of 150 pounds per cubic foot may be used as an equivalent.

Table H.3: Compost

Parameters[1]	Acceptable Range
pH	5.0 - 8.5
Moisture content	30% - 60%, wet weight basis
Organic matter content	25% - 65%, dry weight basis
Particle size	% passing a selected mesh size, dry weight basis 3 in (75 mm), 100% passing 1 in (25 mm), 90 – 100% passing 0.75 in (19 mm), 70 – 100% passing 0.25 in (6.4 mm), 30 – 60% passing 0.04 in (1 mm), 30% min. passing
Physical contaminants (manmade inerts)	<1% dry weight basis

Adapted from AASHTO Standards Specs for Compost Filter Socks and EPA Example Compost Filter Parameters.

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMEC, The U.S Composting Council).

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CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL
CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

ESC DETAILS

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND · STACEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW
x N/A
Signature Date

PERMIT PLAN DESIGN REVIEW
5/11/23
Signature Date

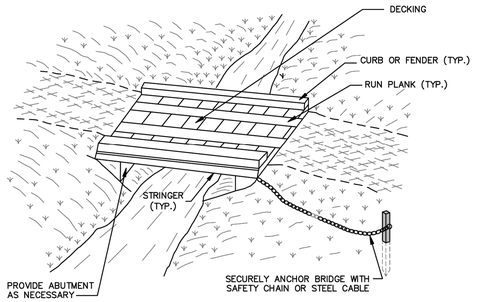
CONSTRUCTION PLAN REVIEW
x BRIANA STEPHENS 7/25/23
Signature Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023
SHEET NO:	FSC SHEET 12OF 16

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB



LOCATION PLAN

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

1 OF 2

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

MGWC 1.2: PUMP-AROUND PRACTICE

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

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

IMPLEMENTATION SEQUENCE

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

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

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

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

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

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

6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

MGWC 1.2: PUMP-AROUND PRACTICE

7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.

8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (*See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction*).

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

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

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

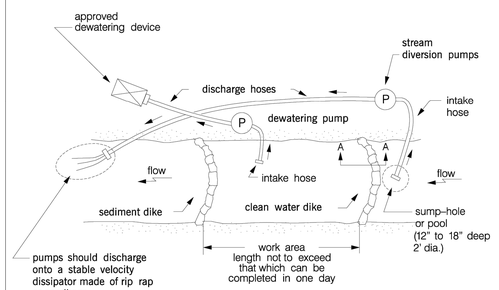
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction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

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

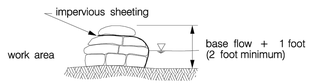
14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

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

PLAN VIEW



SECTION A–A



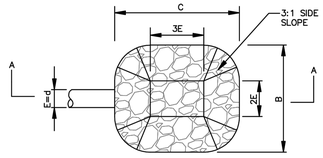
cross section of sandbag dike

OUTFALL 1		
TYPE I PLUNGE POOL CALCULATIONS		
d=	3.5	ft
Q=	128.5	cfs
Tw=	2.8	ft
F=	1.8	ft
D=	2.7	ft
E=	3.5	ft
3E=	10.5	ft
2E=	7.0	ft
Min. d50=	0.5	ft
C=	26.1	ft
B=	17.5	ft
STONE SIZE	CLASS II	RIPRAP

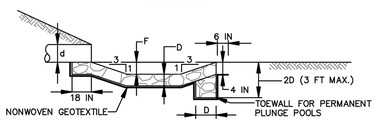
OUTFALL 2		
TYPE I PLUNGE POOL CALCUATIONS		
d=	1.5	ft
Q=	7.9	cfs
Tw=	1.2	ft
F=	0.8	ft
D=	2.7	ft
E=	1.5	ft
3E=	4.5	ft
2E=	3.0	ft
Min. d50=	0.1	ft
C=	9.0	ft
B=	7.5	ft
STONE SIZE	CLASS II	RIPRAP

DETAIL D-4-2 PLUNGE POOL

STANDARD SYMBOL: PP



PLAN VIEW



SECTION A–A

CONSTRUCTION SPECIFICATIONS

1. USE SPECIFIED CLASS OF RIPRAP.
2. 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.
3. 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.
4. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
5. 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.
6. AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT MEETS THE EXISTING GRADE.
7. 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.

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

1. CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.
2. PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
3. CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
4. USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
5. 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.
6. 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.
7. INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.
8. 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 DOWNSTREAM.
9. 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.
10. 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.
11. 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.

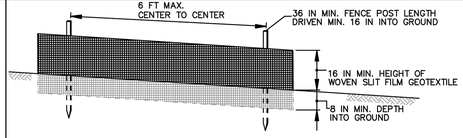
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

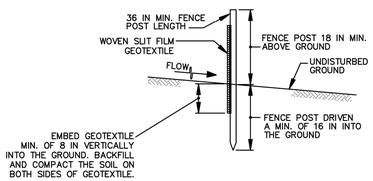
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

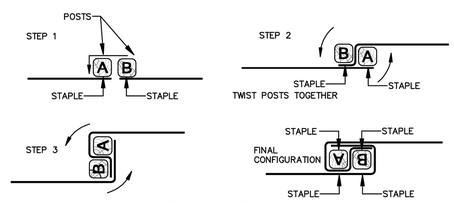
STANDARD SYMBOL: SF



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

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 E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅜ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

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

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CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL
CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

ESC DETAILS

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STATE OF MARYLAND — DAVID J. WILFONG — 52852 — PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW
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PERMIT PLAN DESIGN REVIEW
5/11/23
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x BRIANA STEPHENS 7/25/23
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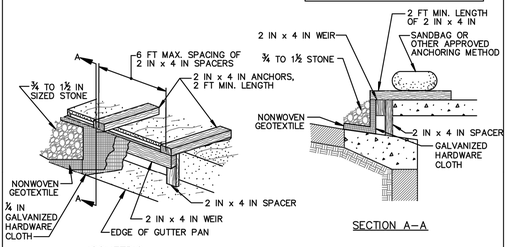
PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023
SHEET NO:	FSC SHEET 13 OF16

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP

MAXIMUM DRAINAGE AREA = ⅓ ACRE



ISOMETRIC

SECTION A–A

CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¾ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON–SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

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

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

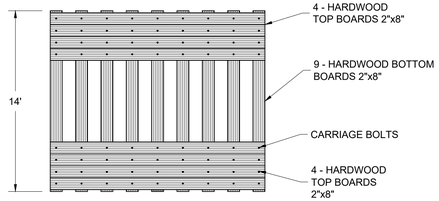
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

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.

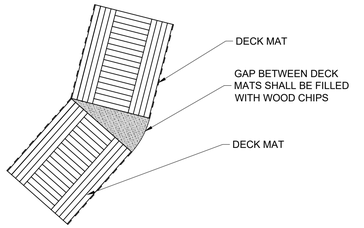
Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 6b **Seed Mixture** (from Table B.1): SEE SPECIES BELOW					**Fertilizer Rate (10-20-20)**	**Lime Rate**
No.	**Species**	**Application Rate (lb/ac)**	**Seeding Dates**	**Seeding Depths**		
	ANNUAL RYE GRASS	40	MAR 1-MAY15 AUG 1-OCT 15		436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	FOXTAIL MILLET	30	MAY 16-JUL 31			



DECK MAT
NOT TO SCALE

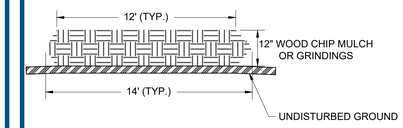
TYPE: LAMINATED 2 PLY MAT
MATERIAL: HARDWOOD
APPLICATION: STRAIGHT ROADS WITH MODERATE TURNS ON SANDY AND MUDDY ROADS
WEIGHT: 1,600 LBS EACH
WEIGHT CAPACITY: 40 TONS



DECK MAT TREATMENT OF ROAD TURNS
NOT TO SCALE

1 DECK MAT TEMPORARY ACCESS ROAD
NOT TO SCALE

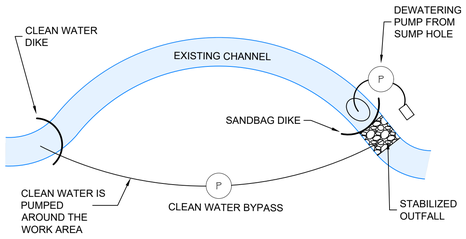
TYPICAL MULCH CONSTRUCTION ACCESS ROAD SECTION



NOTES:
1. ACCESS ROUTES SHOWN ON PLANS MAY BE FIELD ADJUSTED BY ENGINEER OR CONTRACTOR.
2. CONTRACTOR SHALL SEQUENCE CONSTRUCTION SUCH THAT NO EQUIPMENT IMPACTS AN AREA TO BE PROTECTED PRIOR TO MULCH PLACEMENT.
3. CONTRACTOR SHALL MAINTAIN MULCH CONSTRUCTION ACCESS ROAD THROUGHOUT CONSTRUCTION PERIOD. MULCH SHALL BE REPLENISHED AS NEEDED DURING THE CONSTRUCTION PERIOD.
4. IN LIEU OF MUCH ACCESS ROAD REMOVAL, MULCH TO BE SPREAD THROUGHOUT ADJACENT FOREST FLOOR, WITHIN LOD, IN A THICKNESS NO GREATER THAN 2"
5. AFTER MULCH IS SPREAD, TILL ROAD TO A DEPTH OF 12" TO REDUCE COMPACTION.
6. MULCH CONTAMINATED BY EQUIPMENT FLUIDS SHALL BE DISPOSED OF-SITE.

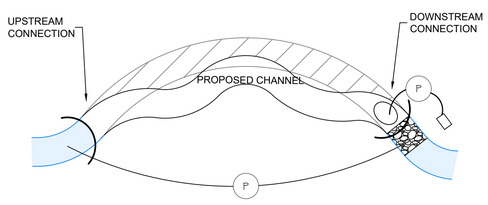
ON-LINE CONSTRUCTION

STEP 1- SET UP



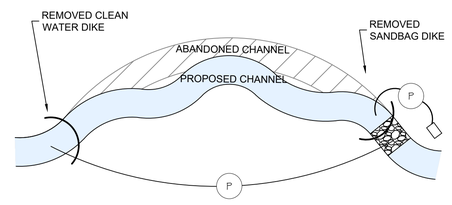
- INSTALL DIKES ABOVE AND BELOW PROPOSED WORK AREA
- SETUP CLEAN WATER BYPASS PUMP INTAKING WATER ABOVE CLEAN WATER DIKE AND THEN DISCHARGING ONTO A STABILIZED OUTFALL, MADE OF NON-ERODIBLE MATERIAL, BELOW SANDBAG DIKE.
- DIG SMALL SUMPHOLE WITHIN WORK AREA 1' DEEP. PLACE INTAKE HOSE OF DEWATERING PUMP IN SUMP HOLE. DISCHARGE SEDIMENT LADEN WATER THROUGH FILTERING DEVICE DOWNSTREAM OF WORK AREA

STEP 2- CONSTRUCT CHANNEL



- CONSTRUCT SECTION OF PROPOSED CHANNEL WITHIN WORK AREA ENSURING A TRANSITION BACK TO THE EXISTING CHANNEL DOWNSTREAM
- FILL ABANDONED CHANNEL
- STABILIZE THE PROPOSED CHANNEL AND TRANSITION PER PLAN
- CHANGE FILTER DEVICE AS NEEDED OR REMOVE ACCUMULATED SEDIMENT DEPENDING ON MAINTENANCE REQUIREMENTS OF UTILIZED FILTERING DEVICE

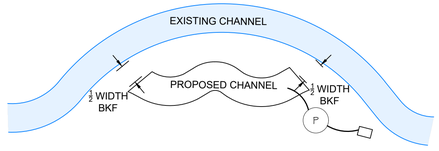
STEP 3- INTRODUCE FLOW



- REMOVE SANDBAG DIKE, CLEAN WATER DIKE, CLEAN WATER BYPASS PUMP AND DEWATERING PUMP, INTRODUCING FLOW TO THE NEW CHANNEL
- PERFORM ANY REMAINING FLOODPLAIN GRADING OUTSIDE THE STREAM CHANNEL

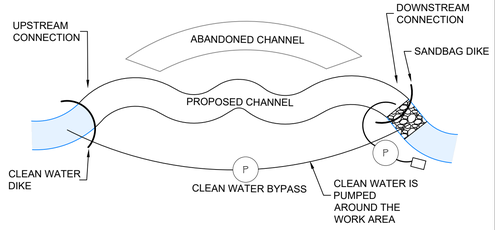
OFF-LINE CONSTRUCTION

STEP 1- CONSTRUCT CHANNEL



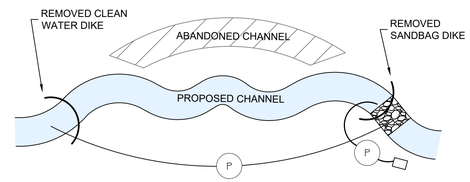
- EXCAVATE PROPOSED CHANNEL SEGMENT OFF-LINE STOPPING AT LEAST ½ BANKFULL WIDTH FROM EX. CHANNEL
- ANY GROUNDWATER IN PROPOSED CHANNEL SHOULD BE PUMPED OUT THROUGH A FILTERING DEVICE USING A DEWATERING PUMP

STEP 2- CONNECT CHANNEL



- INSTALL CLEAN WATER DIKE UPSTREAM OF THE UPSTREAM CONNECTION AND INSTALL SANDBAG DIKE DOWNSTREAM OF THE DOWNSTREAM CONNECTION
- INSTALL CLEAN WATER BYPASS PUMP SPANNING CONNECTION POINTS
- CONSTRUCT & STABILIZE DOWNSTREAM AND UPSTREAM CONNECTIONS

STEP 3- INTRODUCE FLOW



- REMOVE SANDBAG DIKE, CLEAN WATER DIKE, CLEAN WATER BYPASS, AND DEWATERING PUMP, INTRODUCING FLOW TO THE NEW CHANNEL.
- GRADE THE FLOODPLAIN AND FILL THE ABANDONED CHANNEL PER THE PLANS.

2 ONLINE/OFFLINE CONSTRUCTION
NOT TO SCALE

CLEAN WATER PRINCE GEORGE'S COUNTY
PARTNERSHIP

HGS, LLC, A RES COMPANY
5367 TELEPHONE ROAD, WARRENTON, VIRGINIA 20187
P: 703.393.4844 | F: 703.393.2934
WWW.RES.US

CHEVERLY EAST PARK OUTFALL AND STREAM RESTORATION EROSION & SEDIMENT CONTROL
CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

ESC DETAILS

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND · BRILEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW	
x	N/A
Signature	Date
PERMIT PLAN DESIGN REVIEW	
	5/11/23
Signature	Date
CONSTRUCTION PLAN REVIEW	
x BRIANA STEPHENS	7/25/23
Signature	Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023
SHEET NO:	FSC SHEET 14 OF 16

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

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

Conditions Where Practice Applies

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

Criteria

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 seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 6b **Seed Mixture** (from Table B.3): SEE SPECIES BELOW					**Fertilizer Rate (10-20-20)**			**Lime Rate**
No.	**Species**	**Application Rate (lb/ac)**	**Seeding Dates**	**Seeding Depths**	**N**	**P_2O_5**	**K_20**	
	SWITCH GRASS	10	MAR 1-MAY15 MAY 16-JUN 15	¼- ½ in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
	CREEPING RED FESCUE	15	MAR 1-MAY15 MAY 16-JUN 15	¼- ½ in				
	PARTRIDGE PEA	4	MAR 1-MAY15 MAY 16-JUN 15	½- ½ in				

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 ¾ 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 grasp on the upper 10 percent of the section.

d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by 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.

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures

Mix	**Recommended Cultivar**	**Seeding Rate** [1/]		**Soil Drainage Class** [2/]	**Max. Height (inch)**	**Maint. Level** [3/]	**Remarks**
		lb/ac	**lb/ 1000 ft²**				
WARM-SEASON/COOL-SEASON GRASS MIXES							
1. SELECT ONE WARM-SEASON GRASS:							
Switch Grass (*Panicum virgatum*)	Blackwell, Carthage, Cave-in-Rock, or Shelter	10	0.23				All species are native to Maryland.
OR							
Coastal Panic Grass (*Panicum amarum var. amarulum*)	Atlantic	10	0.23				Plant this mix with a regular grass drill. Coastal panicgrass is best adapted to Zones 7a and 7b.
AND ADD:							
Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	15	0.34	E - P	4 - 7	C - D	Creeping red fescue is a cool-season grass that will provide erosion protection while the warm-season grass (switchgrass or coastal panicgrass) is becoming established.
PLUS ONE OF THE FOLLOWING LEGUMES:							
Partridge Pea (*Chamaecrista fasciculate*)	Common	4	0.09				Switchgrass, coastal panicgrass, the 'Dawson' variety of creeping red fescue, and partridge pea are moderately salt-tolerant. Do not use bush clover or wild indigo on wet sites.
Bush Clover (*Lespedeza capitata*)	Common	2	0.05				
Wild Indigo (*Baptisia tinctoria*)	Common	2	0.05				
2. Big Bluestem (*Andropogon gerardii*)	Niagara or Rountree	6	0.14				All species are native to Maryland.
Indiangrass (*Sorghastrum nutans*)	Rumsey	6	0.14				The indiangrass and bluestems have fluffy seeds. Plant with a specialized native seed drill.
Little Bluestem (*Schizachyrium scoparium*)	Aldous or Blaze	4	0.09				
Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	15	0.34				Creeping red fescue is a cool-season grass that will provide erosion protection while the warm-season grasses are becoming established.
PLUS ONE OF THE FOLLOWING LEGUMES:				E - MW	6 - 8	C - D	
Partridge Pea (*Chamaecrista fasciculata*)	Common	4	0.09				
Bush Clover (*Lespedeza capitata*)	Common	2	0.05				
Wild Indigo (*Baptisia tinctoria*)	Common	2	0.05				
Showy Tick-Trefoil (*Desmodium canadense*)	Common	1	0.02				

Table B.5: Recommended Planting Dates for Permanent Cover in Maryland [1/]

Type of Plant Material	**Plant Hardiness Zones**		
	5b and 6a	**6b**	**7a and 7b**
Seeds - Cool-Season Grasses (includes mixes with forbs and/or legumes)	Mar 15 to May 31 Aug 1 to Sep 30	Mar 1 to May 15 Aug 1 to Oct 15	Feb 15 to Apr 30 Aug 15 to Oct 31 Nov 1 to Nov 30♦
Seeds - Warm-Season/Cool-Season Grass Mixes (includes mixes with forbs and/or legumes)	Mar 15 to May 31♦♦ Jun 1 to Jun 15*	Mar 1 to May 15♦♦ May 16 to Jun 15*	Feb 15 to Apr 30♦♦ May 1 to May 31*
Sod - Cool-Season	Mar 15 to May 31 Jun 1 to Aug 31* Sep 1 to Nov 1*✦	Mar 1 to May 15 May 16 to Sep 14* Sep 15 to Nov 15*✦	Feb 15 to Apr 30 May 1 to Sep 30* Oct 1 to Dec 1*✦
Unrooted Woody Materials; Bare-Root Plants; Bulbs, Rhizomes, Corms, and Tubers [2/]	Mar 15 to May 31 Jun 1 to Jun 30*	Mar 1 to May 15 May 16 to Jun 30*	Feb 15 to Apr 30 May 1 to Jun 30*
Containerized Stock; Balled-and-Burlapped Stock	Mar 15 to May 31 Jun 1 to Jun 30* Sep 1 to Nov 15*✦	Mar 1 to May 15 May 16 to Jun 30* Sep 15 to Nov 30*✦	Feb 15 to Apr 30 May 1 to Jun 30* Oct 1 to Dec 15*✦

Notes:

1. **The planting dates listed are averages for each zone. These dates may require adjustment to reflect local conditions, especially near the boundaries of the zones. When seeding toward the end of the listed planting dates, or when conditions are expected to be less than optimal, select an appropriate nurse crop from Table B.1 Temporary Seeding for Site Stabilization and plant together with the permanent seeding mix.**
2. **When planted during the growing season, most of these materials must be purchased and kept in a dormant condition until planting. Bare-root grasses are the exception—they may be supplied as growing (non-dormant) plants.**

♦ **Additional planting dates for the lower Coastal Plain, dependent on annual rainfall and temperature trends. Recommend adding a nurse crop, as noted above, if planting during this period.**

♦♦ **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.**

✦ **Frequent freezing and thawing of wet soils may result in frost-heaving of materials planted in late fall, if plants have not sufficiently rooted in place. Sod usually needs 4 to 6 weeks to become sufficiently rooted. Large containerized and balled-and-burlapped stock may be planted into the winter months as long as the ground is not frozen and soil moisture is adequate.**

Table B.6: Maintenance Fertilization for Permanent Seeding

Seeding Mixture	**Type**	**lb/ac**	**lb/1000 sf**	**Time**	**Mowing**
Tall fescue makes up 70 percent or more of cover.	10-10-10 or 30-10-10	500 400	11.5 9.2	Yearly or as needed. Fall	Not closer than 3 inches, if occasional mowing is desired.
Birdsfoot Trefoil.	0-20-0	400	9.2	Spring, the year following establishment, and every 4 to 5 years, thereafter.	Mow no closer than 2 inches.
Fairly uniform stand of tall fescue or birdsfoot trefoil.	5-10-10	500	11.5	Fall, the year following establishment, and every 4 to 5 years, thereafter.	Not required, no closer than 4 inches in the fall after seed has matured.
Weeping lovegrass fairly uniform plant distribution.	5-10-10	500	11.5	Spring, the year following establishment, and every 3 to 4 years, thereafter.	Not required, not closer than 4 inches in fall after seed has matured.
Red & chewings fescue, Kentucky bluegrass, hard fescue mixtures.	20-10-10	250 100	5.8 2.3	September, 30 days later. December, May 20, June 30, if needed.	Mow no closer than 2 inches for red fescue and Kentucky bluegrass, 3 inches for fescue.

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CLIENT: CORVIAS PRINCE GEORGE'S COUNTY STORMWATER PARTNERS, LCC

ESC DETAILS

PRINCE GEORGE'S COUNTY, MD

STAMP/SEAL:
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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND · BAILEY J. WILKINS · 52852 · PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW
x N/A
Signature Date

PERMIT PLAN DESIGN REVIEW
5/11/23
Signature Date

CONSTRUCTION PLAN REVIEW
x BRIANA STEPHENS 7/25/23
Signature Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023

SHEET NO:
FSC SHEET 15OF16

___ F. **B-4 VEGETATIVE STABILIZATION**

___ 1. Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

___ 2. Inspect seeded areas for vegetative establishment and make necessary repairs, replacements and reseeding within the planting season.

___ a. Adequate vegetative stabilization requires 95 percent groundcover.

___ b. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation and seeding.

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

___ d. Maintenance fertilizer rates for permanent seeding are shown below in Table B.6.

Table B.6: Maintenance Fertilization for Permanent Seeding

Seeding Mixture	Type	lb/ac	lb/100	Time	Mowing
Tall fescue makes up 70 percent or more of cover	10-10-10- Or 30-10-10	500 400	11.5 9.2	Yearly as needed. Fall	No closer than 3 inches, if occasional mowing is desired.
Red & chewing fescue, Kentucky Bluegrass, hard Fescue mixtures.	20-10-10	250 100	5.8 2.3	September, 30 days later. December, May 20, June 30, if needed.	Mow no closer than 2 inches for red fescue and Kentucky bluegrass, 3 inches for fescue.

___ 3. **B-4-1 Incremental Stabilization**

___ a. Cut Slopes

___ (1) Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.

___ (2) **Note: Once excavation has begun the operation shall be continuous from grubbing through completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or (completing the operation out of the seeding season) will necessitate the application of temporary stabilization.**

___ b. Fill Slopes

___ (1) Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.

___ (2) Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.

___ (3) At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.

___ (4) **Note: Once the placement of fill has begun the operation shall be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.**

___ 4. **B-4-2 Soil Preparation, Topsoiling and Soil Amendments**

___ a. Soil Preparation

___ (1) Temporary Stabilization

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

___ (b) Apply fertilizer and lime as prescribed on these plans.

___ (c) Incorporate lime and fertilizer into the top 3 to 5 inches of soil by discing 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 loosen 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 for 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 plants growth.

___ (d) The soil is so acidic that treatment with limestone is not feasible.

___ (4) Areas having slopes steeper than 2:1 require special consideration and design.

___ (5) Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:

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

___ (b) Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sledge, poison ivy, thistle, or others as specified.

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

___ (6) Topsoil Application

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

___ (b) Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compacted 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 analysis.

___ (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.

___ 5. **B-4-3 Seeding and Mulching**

___ a. Seeding Specifications

___ (1) All seed must 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.

___ (2) Mulch alone may be applied between the fall and spring dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.

___ (3) Inoculants: The inoculants 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 inoculants as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculants less effective.**

___ (4) 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.

___ b. Seeding Application

___ (1) Dry Seeding: This includes use of conventional drop or broadcast spreader.

___ (a) 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.

___ (b) 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.

___ (2) Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

___ (a) Cultipacking seeders are required to bury the seed in such a fashion as to provide at least ¼ inch of soil covering. Seedbed must be firm after planting.

___ (b) Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

___ (3) Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed fertilizer).

___ (a) 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; P_2O_5 (phosphorous), 200 pounds per acre; K_20 (potassium), 200 pounds per acre.

___ (b) 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.

___ (c) Mix seed and fertilizer on site and seed immediately and without interruption.

___ (d) When hydroseeding do not incorporate seed into the soil.

___ c. Mulch Materials (in order of preference)

___ (1) 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.**

___ (2) Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.

___ (a) 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.

___ (b) WCFM , including dye, must contain no germination or growth inhibiting factors.

___ (c) 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 seedings.

___ (d) WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.

___ (e) 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.

___ d. Mulch Application

___ (1) Apply mulch to all seeded areas immediately after seeding.

___ (2) 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.

___ (3) Wood cellulose fiber used as mulch must be applied at a net dry weight of 1,500 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.

___ e. Mulch Anchoring

___ (1) 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 size of the area and erosion hazard:

___ (a) 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.

___ (b) Wood cellulose fiber may be used for anchoring straw. Apply the fiber 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.

___ (c) 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.**

___ (d) Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

___ 6. **B-4-4 Temporary Stabilization**

___ a. 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.

___ (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 and maintain until the next seeding season.

___ 7. **B-4-5 Permanent Stabilization**

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

___ b. 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 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 3½ pounds per 1,000 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 mixtures(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 1,000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 25 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 1,000 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 1,000 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 1,000 square feet.

Notes:

Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendation 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
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)

___ (d) Till areas to receive seed by discing 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 seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

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

___ (1) General Specifications

___ (a) Class of turfgrass sod must be Maryland Certified. Sod labels must be made available to the job foreman and inspector.

___ (b) Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness 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 grasp on the upper 10 percent of the section.

___ (d) Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

___ (e) Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by 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 root sand 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 is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

___ d. **Note: Use of this information does not preclude meeting all of the requirements of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control – B-4 Vegetative Stabilization.**

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STAMP/SEAL:
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. 52852, EXPIRATION DATE: 6/14/2024

STATE OF MARYLAND · BAILEY J. WILFONG · 52852 · PROFESSIONAL ENGINEER

10/31/2023

30% DESIGN REVIEW
x N/A
Signature Date

PERMIT PLAN DESIGN REVIEW
5/11/23
Signature Date

CONSTRUCTION PLAN REVIEW
x BRIANA STEPHENS 7/25/23
Signature Date

REVISIONS:
1ST SUBMISSION: 7-6-2023
2ND SUBMISSION: 9-22-2023

PROJECT MANAGER:	JM
DESIGNED:	CD
DRAWN:	CD
JOB NUMBER:	106683
DESIGN TYPE:	ESC
DATE:	10/31/2023

SHEET NO:
FSC SHEET 16 OF 16