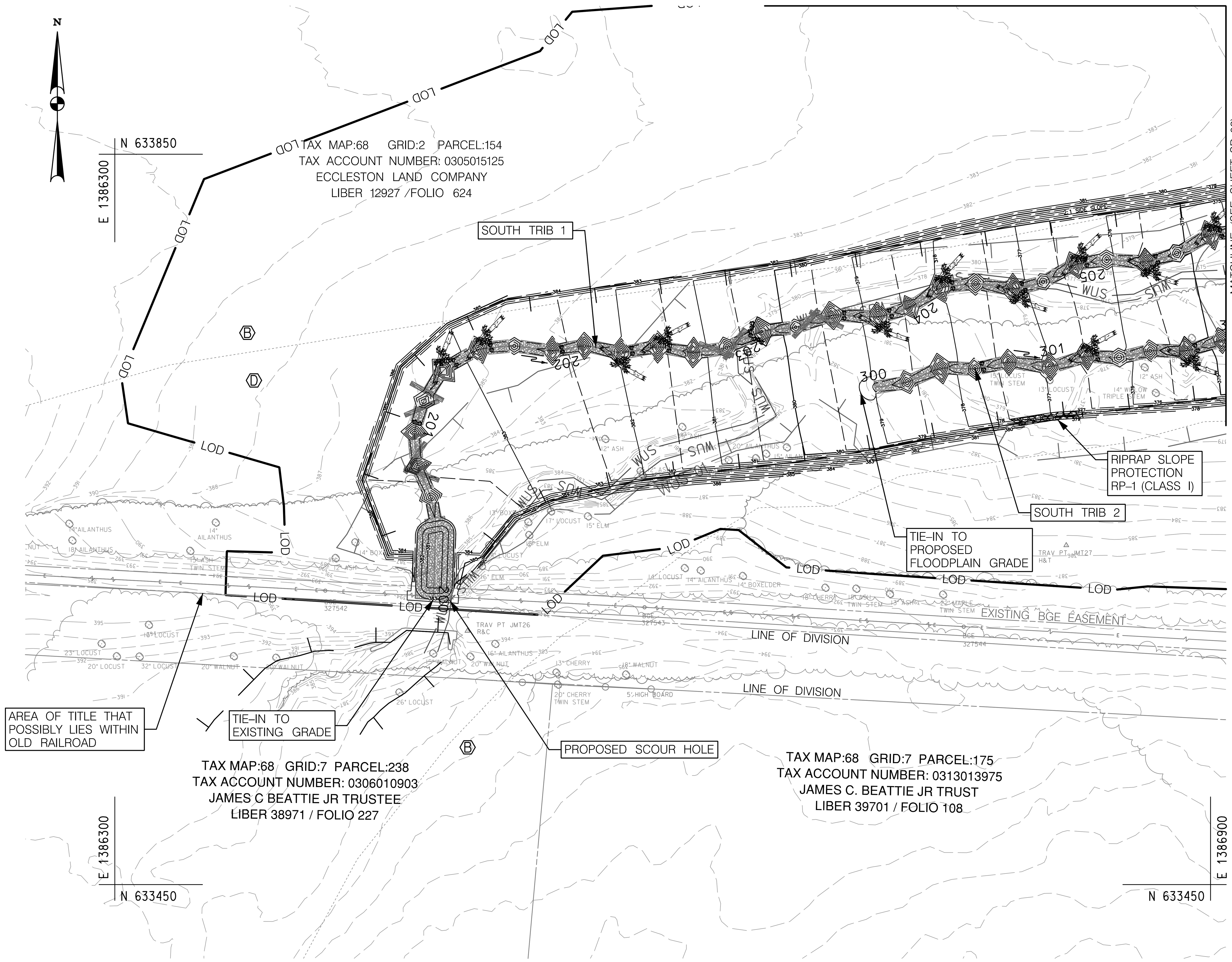

NOTE:

1. REMOVE CLAY DRAIN TILE AS ENCOUNTERED. TRACE AND REMOVE THROUGH FLOODPLAIN.

40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
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JOHNSON, MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-316-2360
EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2023.

STATE OF MARYLAND JEREMY SCOTT KOSER No. 31183 PROFESSIONAL ENGINEER

ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

NOT FOR CONSTRUCTION

STREAM RESTORATION PLAN

SCALE AS SHOWN	DATE APRIL, 2021	PROJECT NO.	17-10977-002
MDE PROJECT NO.	21-SF-0044	CONTRACT NO.	KH-3038-0000
DESIGNED BY	PVC	COUNTY	BALTIMORE COUNTY
DRAWN BY	PVC	LOGMILE	
CHECKED BY	JJM /MRG	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-3 OF 11 SHEET NO. 22 OF 86

BY: barranger –

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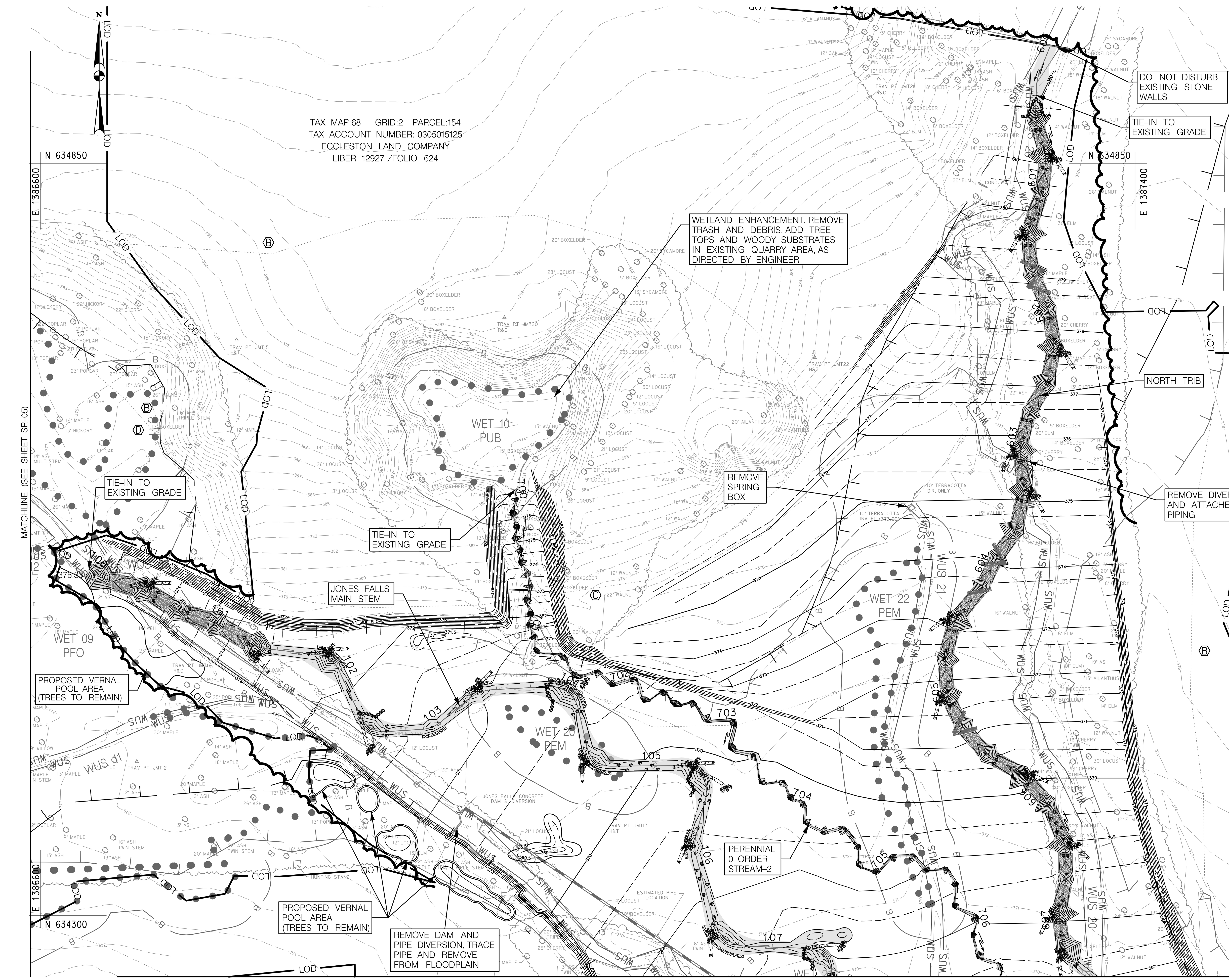
Wednesday, April 28, 2021 AT 06:51 AM



NOTE:

1. REMOVE CLAY DRAIN TILE AS ENCOUNTERED. TRACE AND REMOVE THROUGH FLOODPLAIN.

2. VERNAL POOL MICROTOPOGRAPHY TO BE INSTALLED UNDER JMT'S SUPERVISION.

40' 0 40' 80'

SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BY: KHiggins –

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STATE OF MARYLAND JEREMY SCOTT KOSER No. 31183 PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION

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ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

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STREAM RESTORATION PLAN

SCALE	AS SHOWN	DATE	ARPIL, 2021
		PROJECT NO.	17-10977-002
MDE PROJECT NO.	21-SF-0044	CONTRACT NO.	KH-3038-0000
DESIGNED BY	PVC	COUNTY	BALTIMORE COUNTY
DRAWN BY	PVC	LOGMILE	
CHECKED BY	JJM /MRG	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-4 OF 11 SHEET NO. 23 OF 86

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Wednesday, April 28, 2021 AT 11:10 AM

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

40' 0 40' 80'
SCALE: 1" = 40'

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SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

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NOTE:

1. REMOVE CLAY DRAIN TILE AS ENCOUNTERED. TRACE AND REMOVE THROUGH FLOODPLAIN.

2. NO CHANNEL WORK ON JONES FALLS, THIS SHEET.

STATE OF MARYLAND
JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON, MIRMIRAN & THOMPSON, INC.
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ECCLESTON MITIGATION SITE

REVISIONS

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STREAM RESTORATION PLAN

SCALE: AS SHOWN	DATE: APRIL, 2021	PROJECT NO.	17-10977-002
MDE PROJECT NO.	21-SF-0044	CONTRACT NO.	KH-3038-0000
DESIGNED BY	PVC	COUNTY	BALTIMORE COUNTY
DRAWN BY	PVC	LOGMILE	
CHECKED BY	JJM /MRG	HORIZONTAL SCALE	N/A
F.A.P. NO.	N/A	VERTICAL SCALE	N/A

DRAWING NO. SR-5 OF 11 SHEET NO. 24 OF 86

BY: barranger –

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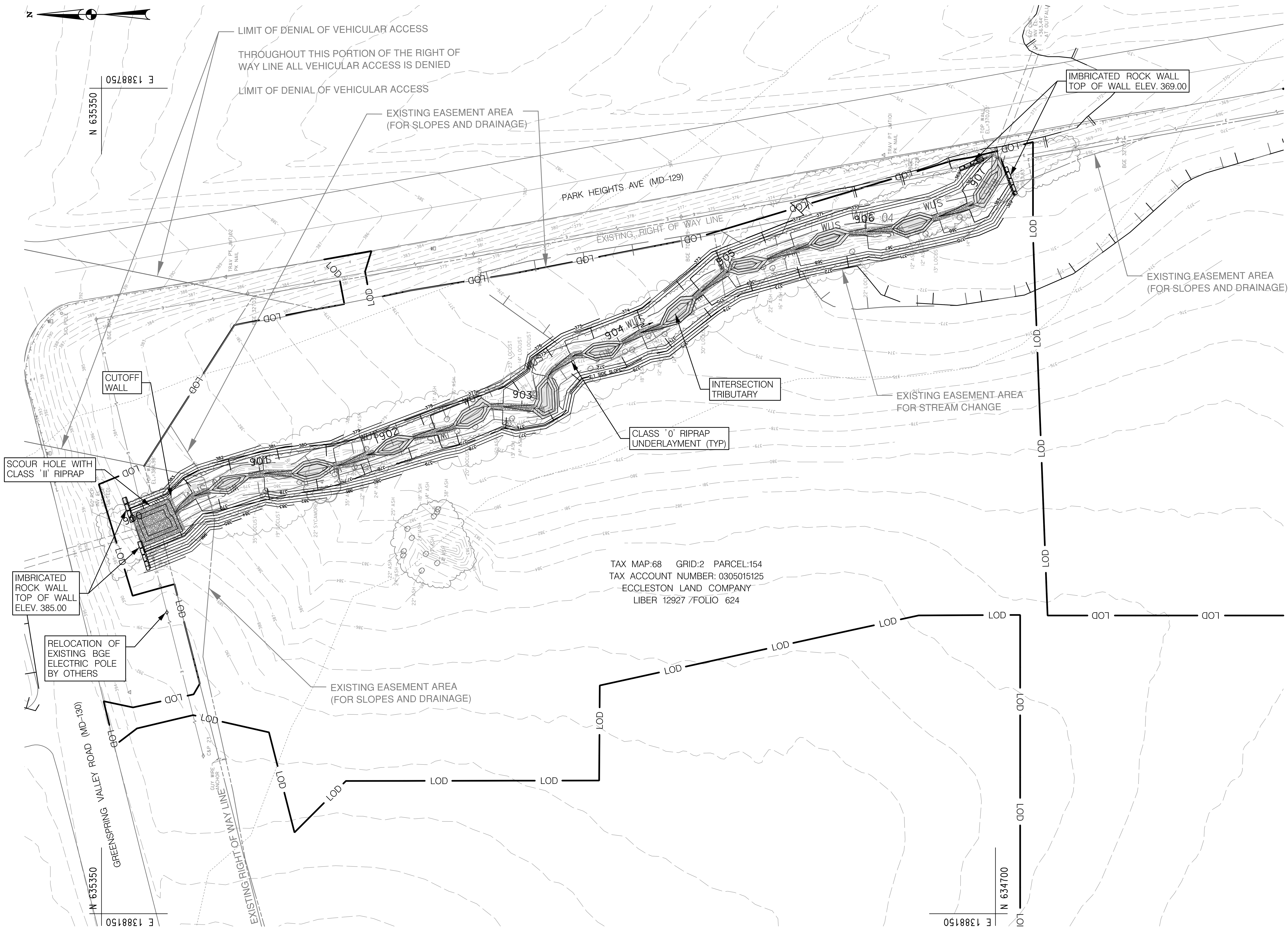
Wednesday, April 28, 2021 AT 06:32 AM



40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

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STATE OF MARYLAND JEREMY SCOTT KOSER No. 31183 PROFESSIONAL ENGINEER

ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

NOT FOR CONSTRUCTION

STREAM RESTORATION PLAN

SCALE AS SHOWN DATE ARPIL, 2021 PROJECT NO. 17–10977–002
MDE PROJECT NO. 21–SF–0044 CONTRACT NO. KH–3038–0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N /A
F.A.P. NO. N /A VERTICAL SCALE N /A

DRAWING NO. SR–6 OF 11 SHEET NO. 25 OF 86

BY: barranger –

Q:\2017\1710977_002_Eccelston_PRM_Turnke\CADD\pSR_P006_ECCELSTON_2D.dgn
Wednesday, April 28, 2021 AT 06:55 AM

PROPOSED RIFFLE SCHEDULE – PERENNIAL 0 ORDER STREAM – 1

RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–240	800+00.00	800+09.68	9.68	0.003	356.40	356.90	356.90	356.37	356.87	356.87	NO
R–241	800+15.88	800+24.97	9.09	0.005	356.37	356.87	356.87	356.33	356.83	356.83	NO
R–242	800+30.70	800+41.00	10.3	0.003	356.33	356.83	356.83	356.29	356.79	356.79	NO
R–243	800+46.93	800+54.95	8.02	0.002	356.29	356.79	356.79	356.28	356.78	356.78	NO
R–245	800+61.42	800+69.33	7.91	0.004	356.28	356.78	356.78	356.25	356.75	356.75	NO
R–246	800+73.75	800+85.74	11.99	0.001	356.25	356.75	356.75	356.23	356.73	356.73	NO
R–247	800+92.83	801+00.66	7.83	0.004	356.23	356.73	356.73	356.20	356.70	356.70	NO
R–248	801+05.77	801+15.92	10.15	0.005	356.20	356.70	356.70	356.15	356.65	356.65	NO
R–249	801+21.71	801+29.24	7.53	0.003	356.15	356.65	356.65	356.13	356.63	356.63	NO
R–250	801+33.65	801+45.24	11.59	0.004	356.13	356.63	356.63	356.08	356.58	356.58	NO
R–251	801+50.29	801+62.42	12.13	0.002	356.08	356.58	356.58	356.06	356.56	356.56	NO
R–252	801+69.90	801+76.86	6.96	0.002	356.06	356.56	356.56	356.05	356.55	356.55	NO
R–253	801+80.95	801+92.21	11.26	0.003	356.05	356.55	356.55	356.01	356.51	356.51	NO
R–254	801+99.41	802+09.43	10.02	0.004	356.01	356.51	356.51	355.97	356.47	356.47	NO
R–255	802+17.15	802+29.41	12.26	0.017	355.97	356.47	356.47	355.76	356.26	356.26	NO
R–256	802+37.60	802+48.14	10.54	0.020	355.76	356.26	356.26	355.55	356.05	356.05	NO
R–257	802+55.57	802+67.91	12.34	0.019	355.55	356.05	356.05	355.32	355.82	355.82	NO
R–258	802+75.76	802+84.38	8.62	0.009	355.32	355.82	355.82	355.24	355.74	355.74	NO
R–259	802+91.46	802+97.41	5.95	0.008	355.24	355.74	355.74	355.19	355.69	355.69	NO
R–260	803+03.26	803+08.27	5.01	0.012	355.19	355.69	355.69	355.13	355.63	355.63	NO
R–261	803+14.51	803+21.47	6.96	0.007	355.13	355.63	355.63	355.08	355.58	355.58	NO
R–262	803+28.48	803+33.80	7.44	0.011	355.08	355.58	355.58	355.00	355.50	355.50	NO

PROPOSED RIFFLE SCHEDULE – INTERSECTION TRIBUTARY

RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–263	900+32.00	900+61.03	29.03	0.047	378.84	379.84	379.84	377.48	378.48	378.48	NO
R–264	900+92.06	901+23.09	31.03	0.044	377.48	378.48	378.48	376.11	377.11	377.11	NO
R–265	901+54.12	901+85.15	31.03	0.044	376.11	377.11	377.11	374.75	375.75	375.75	NO
R–266	902+16.18	902+47.21	31.03	0.044	374.75	375.75	375.75	373.38	374.38	374.38	NO
R–267	902+78.24	903+09.27	31.03	0.044	373.38	374.38	374.38	372.02	373.02	373.02	NO
R–268	903+40.30	903+71.33	31.03	0.044	372.02	373.02	373.02	370.65	371.65	371.65	NO
R–269	904+02.36	904+33.39	31.03	0.044	370.65	371.65	371.65	369.29	370.29	370.29	NO
R–270	904+64.42	904+95.45	31.03	0.044	369.29	370.29	370.29	367.92	368.92	368.92	NO
R–271	905+26.48	905+57.51	31.03	0.044	367.92	368.92	368.92	366.56	367.56	367.56	NO
R–272	905+88.54	906+19.57	31.03	0.044	366.56	367.56	367.56	365.19	366.19	366.19	NO
R–273	906+50.60	906+81.63	31.03	0.044	365.19	366.19	366.19	363.83	364.83	364.83	NO

PROPOSED RIFFLE SCHEDULE – PERENNIAL 0 ORDER STREAM – 2

RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–186	700+00.00	700+05.40	5.40	0.093	376.71	377.21	377.21	376.21	376.71	376.71	NO
R–187	700+08.89	700+14.88	5.99	0.099	376.21	376.71	376.71	375.62	376.12	376.12	NO
R–188	700+19.98	700+25.87	5.89	0.097	375.62	376.12	376.12	375.04	375.54	375.54	NO
R–189	700+30.20	700+34.41	4.21	0.104	375.04	375.54	375.54	374.61	375.11	375.11	NO
R–190	700+38.67	700+44.19	5.53	0.101	374.61	375.11	375.11	374.05	374.55	374.55	NO
R–191	700+47.99	700+52.92	4.93	0.100	374.05	374.55	374.55	373.56	374.06	374.06	NO
R–192	700+57.65	700+62.81	5.16	0.098	373.56	374.06	374.06	373.05	373.55	373.55	NO
R–193	700+66.74	700+72.63	5.89	0.082	373.05	373.55	373.55	372.57	373.07	373.07	NO
R–194	700+76.13	700+82.11	5.99	0.088	372.57	373.07	373.07	372.04	372.54	372.54	NO
R–195	700+87.22	700+93.10	5.89	0.092	372.04	372.54	372.54	371.50	372.00	372.00	NO
R–196	700+97.44	701+01.64	4.21	0.093	371.50	372.00	372.00	371.11	371.61	371.61	NO
R–197	701+05.90	701+11.43	5.53	0.110	371.11	371.61	371.61	370.50	371.00	371.00	NO
R–198	701+15.23	701+20.84	5.61	0.007	370.50	371.00	371.00	370.46	370.96	370.96	NO
R–199	701+26.76	701+40.30	13.54	0.009	370.46	370.96	370.96	370.34	370.84	370.84	NO
R–200	701+48.05	701+57.13	9.08	0.008	370.34	370.84	370.84	370.27	370.77	370.77	NO
R–201	701+66.13	701+76.15	10.02	0.008	370.27	370.77	370.77	370.19	370.69	370.69	NO
R–202	701+81.78	701+89.70	7.92	0.009	370.19	370.69	370.69	370.11	370.61	370.61	NO
R–203	701+95.29	702+06.09	10.80	0.007	370.11	370.61	370.61	370.04	370.54	370.54	NO
R–204	702+14.22	702+23.36	9.14	0.006	370.04	370.54	370.54	369.98	370.48	370.48	NO
R–205	702+31.19	702+39.55	8.36	0.008	369.98	370.48	370.48	369.92	370.42	370.42	NO
R–206	702+46.05	702+51.51	5.45	0.007	369.92	370.42	370.42	369.88	370.38	370.38	NO
R–207	702+60.31	702+66.35	6.04	0.007	369.88	370.38	370.38	369.84	370.34	370.34	NO
R–208	702+71.49	702+81.17	9.68	0.007	369.84	370.34	370.34	369.77	370.27	370.27	NO
R–209	702+88.76	703+01.96	13.20	0.007	369.77	370.27	370.27	369.68	370.18	370.18	NO
R–210	703+09.51	703+21.61	12.10	0.009	369.68	370.18	370.18	369.57	370.07	370.07	NO
R–211	703+29.81	703+40.34	10.54	0.007	369.57	370.07	370.07	369.49	369.99	369.99	NO
R–212	703+47.77	703+60.11	12.34	0.009	369.49	369.99	369.99	369.38	369.88	369.88	NO
R–213	703+67.97	703+76.59	8.62	0.007	369.38	369.88	369.88	369.32	369.82	369.82	NO
R–214	703+83.67	703+89.62	5.95	0.009	369.32	369.82	369.82	369.27	369.77	369.77	NO
R–215	703+95.47	704+00.48	5.01	0.006	369.27	369.77	369.77	369.24	369.74	369.74	NO
R–216	704+06.72	704+14.25	7.54	0.009	369.24	369.74	369.74	369.17	369.67	369.67	NO
R–217	704+20.04	704+30.19	10.15	0.006	369.17	369.67	369.67	369.11	369.61	369.61	NO
R–218	704+35.30	704+43.13	7.83	0.007	369.11	369.61	369.61	369.06	369.56	369.56	NO
R–219	704+50.22	704+62.21	11.99	0.007	369.06	369.56	369.56	368.97	369.47	369.47	NO
R–220	704+66.63	704+74.54	7.91	0.009	368.97	369.47	369.47	368.90	369.40	369.40	NO
R–221	704+81.01	704+89.03	8.02	0.008	368.90	369.40	369.40	368.84	369.34	369.34	NO
R–222	704+94.96	705+05.26	10.30	0.008	368.84	369.34	369.34	368.75	369.25	369.25	NO
R–223	705+10.99	705+20.08	9.09	0.007	368.75	369.25	369.25	368.69	369.19	369.19	NO
R–224	705+26.28	705+35.03	8.75	0.023	368.69	369.19	369.19	368.49	368.99	368.99	NO
R–225	705+39.96	705+48.98	9.02	0.022	368.49	368.99	368.99	368.29	368.79	368.79	NO
R–226	705+54.77	705+62.30	7.54	0.024	368.29	368.79	368.79	368.11	368.61	368.61	NO
R–227	705+66.71	705+78.30	11.59	0.025	368.11	368.61	368.61	367.82	368.32	368.32	NO
R–228	705+83.35	705+95.48	12.13	0.026	367.82	368.32	368.32	367.50	368.00	368.00	NO
R–229	706+02.96	706+09.92	6.96	0.020	367.50	368.00	368.00	367.36	367.86	367.86	NO
R–230	706+14.01	706+25.27	11.26	0.019	367.36	367.86	367.86	367.15	367.65	367.65	NO
R–231	706+32.47	706+42.49	10.02	0.020	367.15	367.65	367.65	366.95	367.45	367.45	NO
R–232	706+50.21	706+62.47	12.26	0.019	366.95	367.45	367.45	366.71	367.21	367.21	NO
R–233	706+70.66	706+81.20	10.54	0.020	366.71	367.21	367.21	366.50	367.00	367.00	NO
R–234	706+88.63	707+00.97	12.34	0.012	366.50	367.00	367.00	366.35	366.85	366.85	NO
R–235	707+08.82	707+17.45	8.62	0.012	366.35	366.85	366.85	366.25	366.75	366.75	NO
R–236	707+24.52	707+30.47	5.95	0.013	366.25	366.75	366.75	366.17	366.67	366.67	NO
R–237	707+36.33	707+41.33	5.01	0.013	366.17	366.67	366.67	366.11	366.61	366.61	NO
R–238	707+47.57	707+54.53	6.96	0.015	366.11	366.61	366.61	366.00	366.50	366.50	NO
R–239	707+61.54	707+66.86	5.32	0.014	366.00	366.50	366.50	365.93	366.43	366.43	NO

BY: barranger –

www.jmt.com

STATE OF MARYLAND
JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL

JEREMY KOSER

JOHNSON, MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE. HUNT VALLEY, MD 21030

TEL: 410–316–2360
EMAIL: JKoser@jmt.com

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ECCLESTON MITIGATION SITE

REVISIONS

100%
SUBMISSION

NOT FOR
CONSTRUCTION

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

STREAM RIFFLE TABLES

SCALE AS SHOWN DATE ARPIL, 2021 PROJECT NO. 17–10977–002
MDE PROJECT NO. 21–SF–0044 CONTRACT NO. KH–3038–0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SR–7 OF 11 SHEET NO. 26 OF 86

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Wednesday, April 28, 2021 AT 06:55 AM

PROPOSED RIFFLE SCHEDULE – SOUTH TRIBUTARY – 1

RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–85	200+44.53	200+52.53	8.00	0.018	383.00	383.70	383.70	382.88	383.58	383.58	NO
R–86	200+60.15	200+70.65	10.50	0.018	382.88	383.58	383.58	382.75	383.45	383.45	NO
R–87	200+79.08	200+89.28	10.20	0.018	382.75	383.45	383.45	382.63	383.33	383.33	NO
R–88	200+97.76	201+07.26	9.50	0.018	382.63	383.33	383.33	382.52	383.22	383.22	YES
R–89	201+16.31	201+26.31	10.00	0.018	382.52	383.22	383.22	382.40	383.10	383.10	NO
R–90	201+36.11	201+48.64	12.53	0.018	382.40	383.10	383.10	382.25	382.95	382.95	YES
R–91	201+58.29	201+69.97	11.68	0.036	382.25	382.95	382.95	382.11	382.81	382.81	YES
R–92	201+76.29	201+90.14	13.86	0.037	382.11	382.81	382.81	381.94	382.64	382.64	NO
R–93	201+98.11	202+08.18	10.07	0.032	381.94	382.64	382.64	381.61	382.31	382.31	NO
R–94	202+16.23	202+27.88	11.65	0.027	381.61	382.31	382.31	381.30	382.00	382.00	NO
R–95	202+36.79	202+48.01	11.22	0.040	381.30	382.00	382.00	380.85	381.55	381.55	YES
R–96	202+57.47	202+68.37	10.90	0.040	380.85	381.55	381.55	380.42	381.12	381.12	YES
R–97	202+76.54	202+86.78	10.25	0.037	380.42	381.12	381.12	380.04	380.74	380.74	NO
R–98	202+94.49	203+07.50	13.02	0.038	380.04	380.74	380.74	379.54	380.24	380.24	NO
R–99	203+17.05	203+27.52	10.47	0.036	379.54	380.24	380.24	379.16	379.86	379.86	NO
R–100	203+33.89	203+46.70	12.82	0.033	379.16	379.86	379.86	378.74	379.44	379.44	NO
R–101	203+56.98	203+72.06	15.08	0.038	378.74	379.44	379.44	378.17	378.87	378.87	YES
R–102	203+81.96	203+91.47	9.51	0.040	378.17	378.87	378.87	377.79	378.49	378.49	YES
R–103	203+99.27	204+10.25	10.98	0.044	377.79	378.49	378.49	377.30	378.00	378.00	NO
R–104	204+20.16	204+30.36	10.26	0.037	377.30	378.00	378.00	376.92	377.62	377.62	YES
R–105	204+38.23	204+50.91	12.67	0.040	376.92	377.62	377.62	376.41	377.11	377.11	NO
R–106	204+59.31	204+68.46	9.16	0.036	376.41	377.11	377.11	376.08	376.78	376.78	YES
R–107	204+75.57	204+87.35	11.79	0.036	376.08	376.78	376.78	375.66	376.36	376.36	NO
R–108	204+95.90	205+06.02	10.12	0.036	375.66	376.36	376.36	375.30	376.00	376.00	YES
R–109	205+12.65	205+26.82	14.17	0.036	375.30	376.00	376.00	374.79	375.49	375.49	NO
R–110	205+35.21	205+45.15	9.94	0.036	374.79	375.49	375.49	374.43	375.13	375.13	YES
R–111	205+51.68	205+64.92	13.24	0.036	374.43	375.13	375.13	373.96	374.66	374.66	NO
R–112	205+73.95	205+84.48	10.53	0.030	373.96	374.66	374.66	373.64	374.34	374.34	YES
R–113	205+91.85	206+03.39	11.54	0.032	373.64	374.34	374.34	373.27	373.97	373.97	NO
R–114	206+11.46	206+23.48	12.03	0.040	373.27	373.97	373.97	372.79	373.49	373.49	YES
R–115	206+37.52	206+42.35	9.84	0.040	372.79	373.49	373.49	372.40	373.10	373.10	NO
R–116	206+49.76	206+63.71	13.95	0.032	372.40	373.10	373.10	371.95	372.65	372.65	YES
R–117	206+73.20	206+86.72	13.53	0.034	371.95	372.65	372.65	371.49	372.19	372.19	YES
R–118	206+95.25	207+08.76	13.50	0.040	371.49	372.19	372.19	370.95	371.65	371.65	NO
R–119	207+18.75	207+30.68	11.93	0.042	370.95	371.65	371.65	370.45	371.15	371.15	YES
R–120	207+38.57	207+53.34	14.77	0.029	370.45	371.15	371.15	370.02	370.72	370.72	NO
R–121	207+62.48	207+76.46	13.98	0.030	370.02	370.72	370.72	369.60	370.30	370.30	YES
R–122	207+86.43	208+05.74	19.31	0.030	369.60	370.10	370.10	369.02	369.52	369.52	YES
R–123	208+17.20	208+39.50	22.29	0.020	369.02	369.52	369.52	368.58	369.08	369.08	NO
R–124	208+54.26	208+76.56	22.30	0.021	368.58	369.08	369.08	368.11	368.61	368.61	NO
R–125	208+91.68	209+15.23	23.55	0.021	368.11	368.61	368.61	367.61	368.11	368.11	NO
R–126	209+30.37	209+43.72	13.35	0.022	367.61	368.11	368.11	367.32	367.82	367.82	NO
R–127	209+50.84	209+72.82	21.98	0.021	367.32	367.82	367.82	366.86	367.36	367.36	NO
R–128	209+87.35	210+04.63	17.27	0.021	366.86	367.36	367.36	366.50	367.00	367.00	YES
R–129	210+13.16	210+31.32	18.16	0.023	366.50	367.00	367.00	366.08	366.58	366.58	NO
R–130	210+45.36	210+62.25	16.89	0.022	366.08	366.58	366.58	365.71	366.21	366.21	NO
R–131	210+72.98	210+92.82	19.84	0.021	365.71	366.21	366.21	365.29	365.79	365.79	NO
R–132	211+06.61	211+27.35	20.74	0.018	365.29	365.79	365.79	364.92	365.42	365.42	YES
R–133	211+37.45	211+51.21	13.76	0.015	364.92	365.42	365.42	364.71	365.21	365.21	NO
R–134	211+60.55	211+75.66	15.10	0.014	364.71	365.21	365.21	364.50	365.00	365.00	NO

PROPOSED RIFFLE SCHEDULE – SOUTH TRIBUTARY – 2

RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–149	300+00.00	300+14.45	11.14	0.034	378.30	379.00	379.00	377.84	378.54	378.54	NO
R–150	300+21.55	300+32.85	10.92	0.035	377.84	378.54	378.54	377.46	378.16	378.16	NO
R–151	300+32.85	300+53.05	11.03	0.033	377.46	378.16	378.16	377.10	377.80	377.80	NO
R–152	300+60.18	300+71.40	10.20	0.037	377.10	377.80	377.80	376.72	377.42	377.42	YES
R–153	300+79.64	300+93.84	10.21	0.043	376.72	377.42	377.42	376.28	376.98	376.98	NO
R–154	301+02.83	301+14.88	12.01	0.041	376.28	376.98	376.98	375.79	376.49	376.49	NO
R–155	301+23.20	301+33.35	12.53	0.030	375.79	376.49	376.49	375.42	376.12	376.12	YES
R–156	301+40.43	301+50.83	11.68	0.032	375.42	376.12	376.12	375.05	375.75	375.75	NO
R–157	301+57.99	301+70.15	13.86	0.031	375.05	375.75	375.75	374.62	375.32	375.32	NO
R–158	301+78.52	301+89.81	10.07	0.039	374.62	375.32	375.32	374.23	374.93	374.93	YES
R–159	301+98.06	302+12.95	11.65	0.048	374.23	374.93	374.93	373.67	374.37	374.37	NO
R–160	302+22.70	302+35.39	11.22	0.041	373.67	374.37	374.37	373.21	373.91	373.91	NO
R–161	302+43.87	302+53.64	10.90	0.034	373.21	373.91	373.91	372.84	373.54	373.54	NO
R–162	302+59.99	302+69.44	10.25	0.037	372.84	373.54	373.54	372.46	373.16	373.16	YES
R–163	302+75.70	302+87.68	13.02	0.032	372.46	373.16	373.16	372.05	372.75	372.75	NO
R–164	302+96.47	303+06.26	10.48	0.035	372.05	372.75	372.75	371.68	372.38	372.38	YES
R–165	303+14.15	303+25.09	12.82	0.030	371.68	372.38	372.38	371.29	371.99	371.99	NO
R–166	303+32.32	303+44.07	15.08	0.025	371.29	371.99	371.99	370.91	371.61	371.61	YES
R–167	303+53.21	303+64.66	9.51	0.040	370.91	371.61	371.61	370.53	371.23	371.23	NO
R–168	303+73.32	303+85.16	10.98	0.036	370.53	371.23	371.23	370.13	370.83	370.83	YES
R–169	303+94.02	304+06.88	10.26	0.037	370.13	370.83	370.83	369.75	370.45	370.45	NO
R–170	304+16.88	304+39.54	22.66	0.015	369.75	370.25	370.25	369.41	369.91	369.91	YES
R–171	304+55.23	304+76.15	20.92	0.027	369.41	369.91	369.91	368.84	369.34	369.34	NO
R–172	304+90.74	305+08.01	17.27	0.022	368.84	369.34	369.34	368.46	368.96	368.96	NO
R–173	305+20.04	305+42.21	22.17	0.030	368.46	368.96	368.96	367.8	368.30	368.30	NO
R–174	305+56.45	305+69.01	12.56	0.029	367.80	368.30	368.30	367.44	367.94	367.94	NO
R–175	305+76.07	306+03.88	27.81	0.034	367.44	367.94	367.94	366.5	367.00	367.00	YES
R–176	306+20.82	306+49.18	28.36	0.021	366.50	367.00	367.00	365.9	366.40	366.40	YES
R–177	306+63.98	306+84.93	20.95	0.020	365.90	366.40	366.40	365.49	365.99	365.99	NO
R–178	306+99.04	307+20.99	21.95	0.024	365.49	365.99	365.99	364.96	365.46	365.46	NO
R–179	307+35.16	307+55.79	20.63	0.023	364.96	365.46	365.46	364.48	364.98	364.98	YES
R–180	307+71.49	308+00.44	28.95	0.019	364.48	364.98	364.98	363.93	364.43	364.43	NO
R–181	308+18.52	308+39.15	20.63	0.021	363.93	364.43	364.43	363.50	364.00	364.00	YES
R–182	308+52.05	308+75.52	23.47	0.019	363.50	364.00	364.00	363.05	363.55	363.55	NO
R–183	308+88.10	309+05.14	17.04	0.011	363.05	363.55	363.55	362.87	363.37	363.37	NO
R–184	309+18.92	309+38.15	19.23	0.012	362.87	363.37	363.37	362.64	363.14	363.14	NO
R–185	309+50.93	309+72.59	21.66	0.014	362.64	363.14	363.14	362.33	362.83	362.83	NO

PROPOSED RIFFLE SCHEDULE – SOUTH TRIBUTARY – 3

RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–135	400+11.46	400+33.42	21.96	0.021	368.58	369.08	369.08	368.11	368.61	368.61	NO
R–136	400+48.33	400+68.42	20.10	0.025	368.11	368.61	368.61	367.61	368.11	368.11	NO
R–137	400+82.91	401+04.82	21.91	0.024	367.61	368.11	368.11	367.08	367.58	367.58	NO
R–138	401+23.55	401+45.41	21.86	0.027	367.08	367.58	367.58	366.50	367.00	367.00	YES
R–139	401+60.05	401+78.09	18.04	0.021	366.50	367.00	367.00	366.12	366.62	366.62	YES
R–140	401+89.56	402+16.10	26.54	0.023	366.12	366.62	366.62	365.50	366.00	366.00	NO
R–141	402+27.14	402+45.53	18.40	0.020	365.50	366.00	366.00	365.13	365.63	365.63	NO
R–142	402+59.66	402+78.03	18.38	0.018	365.13	365.63	365.63	364.80	365.30	365.30	NO
R–143	402+89.91	403+11.68	21.77	0.014	364.80	365.30	365.30	364.50	365.00	365.00	NO

PROPOSED RIFFLE SCHEDULE – SOUTH TRIBUTARY – 4

RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–144	500+13.58	500+31.08	17.50	0.019	365.13	365.63	365.63	364.80	365.30	365.30	NO
R–145	500+48.48	500+68.09	19.61	0.017	364.80	365.30	365.30	364.47	364.97	364.97	NO
R–146	500+81.19	501+02.55	21.36	0.017	364.47	364.97	364.97	364.10	364.60	364.60	NO
R–147	501+17.28	501+32.71	15.43	0.017	364.10	364.60	364.60	363.84	364.34	364.34	YES
R–148	501+45.25	501+66.06	20.80	0.016	363.84	364.34	364.34	363.50	364.00	364.00	NO

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BY: barranger –

www.jmt.com

STATE OF MARYLAND
JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON, MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410–316–2360
EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2023.

ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

NOT FOR CONSTRUCTION

STREAM RIFFLE TABLES

SCALE AS SHOWN DATE APRIL, 2021 PROJECT NO. 17–10977–002
MDE PROJECT NO. 21–SF–0044 CONTRACT NO. KH–3038–0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SR–8 OF 11 SHEET NO. 27 OF 86

Q:\2017\1710977_002_Ecclelston_PRM_Turnke\CADD\pSR_P008_ECCELSTON_2D.dgn
Wednesday, April 28, 2021 AT 06:56 AM

PROPOSED RIFFLE SCHEDULE – NORTH TRIBUTARY											
RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–45	600 + 62.41	600 + 76.64	14.22	0.023	380.53	381.33	381.33	380.20	381.00	381.00	YES
R–46	600 + 89.26	601 + 06.32	17.06	0.032	380.20	381.00	381.00	379.65	380.45	380.45	YES
R–47	601 + 13.03	601 + 35.05	22.02	0.034	379.65	380.45	380.45	378.91	379.71	379.71	YES
R–48	601 + 48.35	601 + 65.71	17.37	0.041	378.91	379.71	379.71	378.20	379.00	379.00	YES
R–49	601 + 76.95	601 + 93.59	16.64	0.036	378.20	379.00	379.00	377.60	378.40	378.40	NO
R–50	602 + 05.15	602 + 21.61	16.46	0.037	377.60	378.40	378.40	376.99	377.79	377.79	YES
R–51	602 + 34.01	602 + 48.94	14.93	0.053	376.99	377.79	377.79	376.20	377.00	377.00	YES
R–52	602 + 60.41	602 + 75.04	14.64	0.036	376.20	377.00	377.00	375.67	376.47	376.47	NO
R–53	602 + 84.16	603 + 01.45	17.29	0.033	375.67	376.47	376.47	375.10	375.90	375.90	YES
R–54	603 + 15.14	603 + 31.80	16.66	0.048	375.10	375.90	375.90	374.30	375.10	375.10	YES
R–55	603 + 42.98	603 + 62.37	19.39	0.045	374.30	375.10	375.10	373.43	374.23	374.23	YES
R–56	603 + 74.95	603 + 87.60	12.66	0.018	373.43	374.23	374.23	373.20	374.00	374.00	NO
R–57	603 + 96.09	604 + 10.88	14.79	0.036	373.20	374.00	374.00	372.67	373.47	373.47	NO
R–58	604 + 20.14	604 + 40.27	20.12	0.023	372.67	373.47	373.47	372.20	373.00	373.00	NO
R–59	604 + 53.21	604 + 70.49	17.28	0.037	372.20	373.00	373.00	371.56	372.36	372.36	YES
R–60	604 + 82.29	604 + 97.49	15.20	0.038	371.56	372.36	372.36	370.98	371.78	371.78	NO
R–61	605 + 09.29	605 + 23.25	13.97	0.040	370.98	371.78	371.78	370.42	371.22	371.22	YES
R–62	605 + 32.88	605 + 50.53	17.65	0.036	370.42	371.22	371.22	369.79	370.59	370.59	NO
R–63	605 + 61.12	605 + 78.27	17.15	0.028	369.79	370.59	370.59	369.31	370.11	370.11	YES
R–64	605 + 90.92	606 + 07.58	16.66	0.025	369.31	370.11	370.11	368.89	369.69	369.69	YES
R–65	606 + 18.64	606 + 38.38	19.74	0.035	368.89	369.69	369.69	368.20	369.00	369.00	YES
R–66	606 + 51.80	606 + 66.18	14.38	0.036	368.20	369.00	369.00	367.68	368.48	368.48	YES
R–67	606 + 75.54	606 + 90.17	14.63	0.033	367.68	368.48	368.48	367.20	368.00	368.00	NO
R–68	607 + 02.41	607 + 14.62	12.21	0.032	367.20	368.00	368.00	366.81	367.61	367.61	YES
R–69	607 + 35.89	607 + 65.99	30.10	0.020	366.81	367.41	367.41	366.21	366.81	366.81	YES
R–70	607 + 82.13	608 + 16.83	34.69	0.011	366.21	366.81	366.81	365.83	366.43	366.43	NO
R–71	608 + 41.88	608 + 82.69	40.81	0.011	365.83	366.43	366.43	365.38	365.98	365.98	YES
R–72	609 + 09.53	609 + 29.30	19.77	0.015	365.38	365.98	365.98	365.08	365.68	365.68	YES
R–73	609 + 42.52	609 + 69.94	27.42	0.015	365.08	365.68	365.68	364.67	365.27	365.27	NO
R–74	609 + 92.51	610 + 34.23	41.71	0.017	364.67	365.27	365.27	363.96	364.56	364.56	YES
R–75	610 + 54.91	610 + 79.36	24.45	0.011	363.96	364.56	364.56	363.69	364.29	364.29	YES
R–76	610 + 98.25	611 + 24.26	26.00	0.011	363.69	364.29	364.29	363.40	364.00	364.00	NO
R–77	611 + 45.82	611 + 71.26	25.44	0.016	363.40	364.00	364.00	362.99	363.59	363.59	NO
R–78	611 + 90.56	612 + 13.16	22.60	0.015	362.99	363.59	363.59	362.65	363.25	363.25	YES
R–79	612 + 31.72	612 + 54.98	23.26	0.012	362.65	363.25	363.25	362.37	362.97	362.97	NO
R–80	612 + 73.52	613 + 01.81	28.28	0.016	362.37	362.97	362.97	361.92	362.52	362.52	NO
R–81	613 + 20.22	613 + 52.93	32.71	0.016	361.92	362.52	362.52	361.40	362.00	362.00	YES
R–82	613 + 75.49	614 + 02.67	27.19	0.018	361.40	362.00	362.00	360.91	361.51	361.51	NO
R–83	614 + 17.76	614 + 41.57	23.80	0.017	360.91	361.51	361.51	360.50	361.10	361.10	NO

PROPOSED RIFFLE SCHEDULE – MAINSTEM											
RIFFLE #	START STATION	END STATION	LENGTH	SLOPE	UPSTREAM			DOWNSTREAM			RANDOM BOULDER
					THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	THALWEG EL.	L BANKFULL EL.	R BANKFULL EL.	
R–1	100 + 16.18	100 + 34.39	18.21	0.038	374.10	375.10	375.10	373.40	374.40	374.40	NO
R–2	100 + 48.44	100 + 65.40	16.95	0.027	373.40	374.40	374.40	372.94	373.94	373.94	YES
R–3	100 + 76.73	100 + 94.68	17.95	0.034	372.94	373.94	373.94	372.33	373.33	373.33	YES
R–4	101 + 07.19	101 + 27.22	20.04	0.030	372.33	373.33	373.33	371.73	372.53	372.53	NO
R–5	101 + 43.02	101 + 78.96	35.93	0.009	371.73	372.53	372.53	371.40	372.20	372.20	YES
R–6	102 + 00.48	102 + 37.31	36.83	0.014	371.40	372.20	372.20	370.89	371.69	371.69	NO
R–7	102 + 60.09	102 + 86.40	26.31	0.012	370.89	371.69	371.69	370.58	371.38	371.38	YES
R–8	103 + 02.10	103 + 28.02	25.92	0.015	370.58	371.38	371.38	370.20	371.00	371.00	NO
R–9	103 + 47.04	103 + 88.32	41.28	0.006	370.20	371.00	371.00	369.94	370.74	370.74	NO
R–10	104 + 17.84	104 + 46.31	28.48	0.019	369.94	370.74	370.74	369.40	370.20	370.20	YES
R–11	104 + 70.74	105 + 21.41	50.66	0.008	369.40	370.20	370.20	369.00	369.80	369.80	YES
R–12	105 + 56.22	105 + 84.49	28.28	0.012	369.00	369.80	369.80	368.66	369.46	369.46	YES
R–13	106 + 00.18	106 + 49.02	48.84	0.014	368.66	369.46	369.46	367.98	368.78	368.78	YES
R–14	106 + 80.65	107 + 25.17	44.53	0.018	367.98	368.78	368.78	367.20	368.00	368.00	NO
R–15	107 + 52.45	107 + 96.94	44.49	0.008	367.20	368.00	368.00	366.84	367.64	367.64	YES
R–16	108 + 25.49	108 + 69.24	43.75	0.015	366.84	367.64	367.64	366.20	367.00	367.00	NO
R–17	109 + 07.53	109 + 50.11	42.58	0.011	366.20	367.00	367.00	365.72	366.52	366.52	YES
R–18	109 + 78.22	110 + 19.61	41.39	0.014	365.72	366.52	366.52	365.16	365.96	365.96	NO
R–19	110 + 38.53	110 + 64.37	25.84	0.012	365.16	365.96	365.96	364.84	365.64	365.64	NO
R–20	110 + 81.17	111 + 20.08	38.91	0.016	364.84	365.64	365.64	364.20	365.00	365.00	NO
R–21	111 + 54.63	112 + 13.04	58.41	0.010	364.20	365.00	365.00	363.64	364.44	364.44	YES
R–22	112 + 41.54	112 + 81.99	40.46	0.012	363.64	364.44	364.44	363.15	363.95	363.95	NO
R–23	113 + 12.52	113 + 62.01	49.49	0.013	363.15	363.95	363.95	362.51	363.31	363.31	YES
R–24	113 + 92.88	114 + 26.28	33.40	0.014	362.51	363.31	363.31	362.03	362.83	362.83	NO
R–25	114 + 55.05	115 + 01.86	46.81	0.012	362.03	362.83	362.83	361.46	362.26	362.26	YES
R–26	115 + 24.82	115 + 71.74	46.92	0.008	361.46	362.26	362.26	361.10	361.90	361.90	NO
R–27	116 + 06.43	116 + 49.45	43.02	0.019	361.10	361.90	361.90	360.30	361.10	361.10	YES
R–28	116 + 88.31	117 + 21.05	32.74	0.012	360.30	361.10	361.10	359.90	360.70	360.70	YES
R–29	117 + 38.77	117 + 79.95	41.18	0.006	359.90	360.70	360.70	359.65	360.45	360.45	NO
R–30	118 + 07.98	118 + 36.26	28.29	0.016	359.65	360.45	360.45	359.19	359.99	359.99	YES
R–31	118 + 53.20	118 + 84.96	31.76	0.008	359.19	359.99	359.99	358.93	359.73	359.73	NO
R–32	119 + 02.68	119 + 30.34	27.66	0.011	358.93	359.73	359.73	358.62	359.42	359.42	NO
R–33	119 + 57.38	119 + 89.00	31.63	0.013	358.62	359.42	359.42	358.20	359.00	359.00	NO
R–34	120 + 18.30	120 + 45.68	27.38	0.014	358.20	359.00	359.00	357.81	358.61	358.61	YES
R–35	120 + 73.00	121 + 31.29	58.29	0.010	357.81	358.61	358.61	357.20	358.00	358.00	YES
R–36	121 + 70.56	122 + 03.85	33.28	0.014	357.20	358.00	358.00	356.75	357.55	357.55	YES
R–37	122 + 27.40	122 + 60.98	33.59	0.008	356.75	357.55	357.55	356.48	357.28	357.28	NO
R–38	122 + 89.47	123 + 38.24	48.77	0.013	356.48	357.28	357.28	355.85	356.65	356.65	YES
R–39	123 + 66.94	124 + 20.53	53.59	0.012	355.85	356.65	356.65	355.20	356.00	356.00	YES
R–40	124 + 54.04	125 + 08.58	54.53	0.007	355.20	356.00	356.00	354.80	355.60	355.60	YES
R–41	125 + 37.53	125 + 79.08	41.56	0.014	354.80	355.60	355.60	354.20	355.00	355.00	YES
R–42	126 + 09.85	126 + 59.80	49.95	0.008	354.20	355.00	355.00	354.15	354.95	354.95	NO

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BY: barranger –

www.jmt.com

STATE OF MARYLAND
JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL

JEREMY KOSER

JOHNSON, MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE. HUNT VALLEY, MD 21030

TEL: 410–316–2360
EMAIL: JKoser@jmt.com

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. 31183, EXPIRATION DATE: 1/13/2023.

ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

NOT FOR CONSTRUCTION

STREAM RIFFLE TABLES

SCALE AS SHOWN DATE ARPIL, 2021 PROJECT NO. 17–10977–002
MDE PROJECT NO. 21–SF–0044 CONTRACT NO. KH–3038–0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

RIFFLE GRADE CONTROL

REACH	START STATION	END STATION	RIPRAP SIZE (CLASS)	QUANITY (SY)	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' START INVERT (US TW)	END INVERT (DS TW)
MAIN STEM	100+16.18	100+34.39	CLASS '0'	25.49	374.10	373.40
MAIN STEM	100+48.44	100+65.40	CLASS '0'	22.45	373.40	372.94
MAIN STEM	100+76.73	100+94.68	CLASS '0'	24.93	372.94	372.33
MAIN STEM	101+07.19	101+27.22	CLASS '0'	27.71	372.33	371.53
SOUTH TRIBUTARY - 1	200+44.53	200+52.53	CLASS '0'	6.24	383.00	382.88
SOUTH TRIBUTARY - 1	200+60.15	200+70.65	CLASS '0'	7.73	382.88	382.75
SOUTH TRIBUTARY - 1	200+79.08	200+89.28	CLASS '0'	7.93	382.75	382.63
SOUTH TRIBUTARY - 1	200+97.76	201+07.26	CLASS '0'	6.62	382.63	382.52
SOUTH TRIBUTARY - 1	201+16.31	201+26.31	CLASS '0'	7.15	382.52	382.40
SOUTH TRIBUTARY - 1	201+36.11	201+48.64	CLASS '0'	8.81	382.40	382.25
SOUTH TRIBUTARY - 1	201+58.29	201+69.97	CLASS '0'	8.95	382.25	382.11
SOUTH TRIBUTARY - 1	201+76.29	201+90.14	CLASS '0'	10.26	382.11	381.94
SOUTH TRIBUTARY - 1	201+98.11	202+08.18	CLASS '0'	7.83	381.94	381.62
SOUTH TRIBUTARY - 1	202+16.23	202+27.88	CLASS '0'	8.88	381.62	381.30
SOUTH TRIBUTARY - 1	202+36.79	202+48.01	CLASS '0'	8.73	381.30	380.85
SOUTH TRIBUTARY - 1	202+57.47	202+68.37	CLASS '0'	8.00	380.85	380.42
SOUTH TRIBUTARY - 1	202+76.54	202+86.78	CLASS '0'	7.97	380.42	380.04
SOUTH TRIBUTARY - 1	202+94.49	203+07.50	CLASS '0'	10.12	380.04	379.54
SOUTH TRIBUTARY - 1	203+17.05	203+27.52	CLASS '0'	8.15	379.54	379.16
SOUTH TRIBUTARY - 1	203+33.89	203+46.70	CLASS '0'	9.97	379.16	378.74
SOUTH TRIBUTARY - 1	203+56.98	203+72.06	CLASS '0'	11.73	378.74	378.17
SOUTH TRIBUTARY - 1	203+81.96	203+91.47	CLASS '0'	7.40	378.17	377.79
SOUTH TRIBUTARY - 1	203+99.27	204+10.25	CLASS '0'	8.54	377.79	377.30
SOUTH TRIBUTARY - 1	204+20.16	204+30.36	CLASS '0'	7.98	377.30	376.92
SOUTH TRIBUTARY - 1	204+38.23	204+50.91	CLASS '0'	9.86	376.92	376.41
SOUTH TRIBUTARY - 1	204+59.31	204+68.46	CLASS '0'	7.12	376.41	376.08
SOUTH TRIBUTARY - 1	204+75.57	204+87.35	CLASS '0'	9.17	376.08	375.66
SOUTH TRIBUTARY - 1	204+95.90	205+06.02	CLASS '0'	7.87	375.66	375.30
SOUTH TRIBUTARY - 1	205+12.65	205+26.82	CLASS '0'	10.88	375.30	374.79
SOUTH TRIBUTARY - 1	205+35.21	205+45.15	CLASS '0'	7.73	374.79	374.43
SOUTH TRIBUTARY - 1	205+51.68	205+64.92	CLASS '0'	10.30	374.43	373.96
SOUTH TRIBUTARY - 1	205+73.95	205+84.48	CLASS '0'	8.19	373.96	373.64
SOUTH TRIBUTARY - 1	205+91.85	206+03.39	CLASS '0'	8.98	373.64	373.27
SOUTH TRIBUTARY - 1	206+11.46	206+23.48	CLASS '0'	9.35	373.27	372.79
SOUTH TRIBUTARY - 1	206+37.52	206+42.35	CLASS '0'	7.65	372.79	372.40
SOUTH TRIBUTARY - 1	206+49.76	206+63.71	CLASS '0'	10.85	372.40	371.95
SOUTH TRIBUTARY - 1	206+73.20	206+86.72	CLASS '0'	10.52	371.95	371.49
SOUTH TRIBUTARY - 1	206+95.25	207+08.76	CLASS '0'	10.50	371.49	370.95
SOUTH TRIBUTARY - 1	207+18.75	207+30.68	CLASS '0'	9.28	370.95	370.45
SOUTH TRIBUTARY - 1	207+38.57	207+53.34	CLASS '0'	11.49	370.45	370.02
SOUTH TRIBUTARY - 1	207+62.48	207+76.46	CLASS '0'	10.87	370.02	369.60
SOUTH TRIBUTARY - 1	207+86.43	208+05.74	CLASS '0'	10.49	369.60	369.02
SOUTH TRIBUTARY - 2	300+00.00	300+14.45	CLASS '0'	11.22	378.30	377.84
SOUTH TRIBUTARY - 2	300+21.55	300+32.85	CLASS '0'	8.83	377.84	377.46
SOUTH TRIBUTARY - 2	300+32.85	300+53.05	CLASS '0'	8.38	377.46	377.10
SOUTH TRIBUTARY - 2	300+60.18	300+71.40	CLASS '0'	8.72	377.10	376.72
SOUTH TRIBUTARY - 2	300+79.64	300+93.84	CLASS '0'	11.04	376.72	376.28
SOUTH TRIBUTARY - 2	301+02.83	301+14.88	CLASS '0'	9.37	376.28	375.79
SOUTH TRIBUTARY - 2	301+23.20	301+33.35	CLASS '0'	7.89	375.79	375.42

RIFFLE GRADE CONTROL

REACH	START STATION	END STATION	RIPRAP SIZE (CLASS)	QUANITY (SY)	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' START INVERT (US TW)	END INVERT (DS TW)
SOUTH TRIBUTARY - 2	301+40.43	301+50.83	CLASS '0'	8.09	375.42	375.05
SOUTH TRIBUTARY - 2	301+57.99	301+70.15	CLASS '0'	9.46	375.05	374.62
SOUTH TRIBUTARY - 2	301+78.52	301+89.81	CLASS '0'	8.78	374.62	374.23
SOUTH TRIBUTARY - 2	301+98.06	302+12.95	CLASS '0'	11.58	374.23	373.67
SOUTH TRIBUTARY - 2	302+22.70	302+35.39	CLASS '0'	9.87	373.67	373.21
SOUTH TRIBUTARY - 2	302+43.87	302+53.64	CLASS '0'	7.60	373.21	372.84
SOUTH TRIBUTARY - 2	302+59.99	302+69.44	CLASS '0'	7.30	372.84	372.46
SOUTH TRIBUTARY - 2	302+75.70	302+87.68	CLASS '0'	9.31	372.46	372.05
SOUTH TRIBUTARY - 2	302+96.47	303+06.26	CLASS '0'	7.62	372.05	371.68
SOUTH TRIBUTARY - 2	303+14.15	303+25.09	CLASS '0'	8.51	371.68	371.29
SOUTH TRIBUTARY - 2	303+32.32	303+44.07	CLASS '0'	9.14	371.29	370.91
SOUTH TRIBUTARY - 2	303+53.21	303+64.66	CLASS '0'	8.82	370.91	370.53
SOUTH TRIBUTARY - 2	303+73.32	303+85.16	CLASS '0'	9.21	370.53	370.13
SOUTH TRIBUTARY - 2	303+94.02	304+06.88	CLASS '0'	10.00	370.13	369.75
NORTH TRIBUTARY	600+62.41	600+76.64	CLASS '0'	15.80	380.53	380.20
NORTH TRIBUTARY	600+89.26	601+06.32	CLASS '0'	19.26	380.20	379.65
NORTH TRIBUTARY	601+13.03	601+35.05	CLASS '0'	23.72	379.65	378.91
NORTH TRIBUTARY	601+48.35	601+65.71	CLASS '0'	19.21	378.91	378.20
NORTH TRIBUTARY	601+76.95	601+93.59	CLASS '0'	18.49	378.20	377.60
NORTH TRIBUTARY	602+05.15	602+21.61	CLASS '0'	18.35	377.60	376.99
NORTH TRIBUTARY	602+34.01	602+48.94	CLASS '0'	16.55	376.99	376.20
NORTH TRIBUTARY	602+60.41	602+75.04	CLASS '0'	16.29	376.20	375.67
NORTH TRIBUTARY	602+84.16	603+01.45	CLASS '0'	19.21	375.67	375.10
NORTH TRIBUTARY	603+15.14	603+31.80	CLASS '0'	18.60	375.10	374.30
NORTH TRIBUTARY	603+42.98	603+62.37	CLASS '0'	21.62	374.30	373.43
NORTH TRIBUTARY	603+74.95	603+87.60	CLASS '0'	14.26	373.43	373.20
NORTH TRIBUTARY	603+96.09	604+10.88	CLASS '0'	16.46	373.20	372.67
NORTH TRIBUTARY	604+20.14	604+40.27	CLASS '0'	22.82	372.67	372.20
NORTH TRIBUTARY	604+53.21	604+70.49	CLASS '0'	19.25	372.20	371.56
NORTH TRIBUTARY	604+82.29	604+97.49	CLASS '0'	16.96	371.56	370.98
NORTH TRIBUTARY	605+09.29	605+23.25	CLASS '0'	15.55	370.98	370.42
NORTH TRIBUTARY	605+32.88	605+50.53	CLASS '0'	20.07	370.42	369.79
NORTH TRIBUTARY	605+61.12	605+78.27	CLASS '0'	19.06	369.79	369.31
NORTH TRIBUTARY	605+90.92	606+07.58	CLASS '0'	18.51	369.31	368.89
NORTH TRIBUTARY	606+18.64	606+38.38	CLASS '0'	21.64	368.89	368.20
NORTH TRIBUTARY	606+51.80	606+66.18	CLASS '0'	16.11	368.20	367.68
NORTH TRIBUTARY	606+75.54	606+90.17	CLASS '0'	16.11	367.68	367.20
NORTH TRIBUTARY	607+02.41	607+14.62	CLASS '0'	13.57	367.20	366.81
INTERSECTION TRIBUTARY	900+32.00	900+61.03	CLASS '0'	15.67	378.84	377.48
INTERSECTION TRIBUTARY	900+92.06	901+23.09	CLASS '0'	17.24	377.48	376.11
INTERSECTION TRIBUTARY	901+54.12	901+85.15	CLASS '0'	17.24	376.11	374.75
INTERSECTION TRIBUTARY	902+16.18	902+47.21	CLASS '0'	17.24	374.75	373.38
INTERSECTION TRIBUTARY	902+78.24	903+09.27	CLASS '0'	17.24	373.38	372.02
INTERSECTION TRIBUTARY	903+40.30	903+71.33	CLASS '0'	17.24	372.02	370.65
INTERSECTION TRIBUTARY	904+02.36	904+33.39	CLASS '0'	17.24	370.65	369.29
INTERSECTION TRIBUTARY	904+64.42	904+95.45	CLASS '0'	17.24	369.29	367.92
INTERSECTION TRIBUTARY	905+26.48	905+57.51	CLASS '0'	17.24	367.92	366.56
INTERSECTION TRIBUTARY	905+88.54	906+19.57	CLASS '0'	17.24	366.56	365.19
INTERSECTION TRIBUTARY	906+50.60	906+81.63	CLASS '0'	17.24	365.19	363.83

ROCK CROSS VANE

REACH	STATION	DIMENSIONS AND CRITICAL ELEVATIONS - SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' 'AA' (RIGHT ARM LENGTH)	'BB' (LEFT ARM LENGTH)	'A'	'B' (BKF RIGHT)	'C'	'D' (TW CENTER)	'E'	'F' (BKF LEFT)	'G'	'H'
MAIN STEM	111+20.08	4 - 8	16 - 20	365.00	365.00	364.40	364.20	364.40	365.00	365.00	362.30
MAIN STEM	114+26.28	13 - 17	16 - 20	362.83	362.83	362.31	362.03	362.31	362.83	362.83	360.13
MAIN STEM	116+49.45	19 - 23	17 - 21	361.10	361.10	360.55	360.30	360.55	361.10	361.10	358.10
MAIN STEM	126+59.80	17 - 21	22 - 26	354.95	354.95	354.35	354.15	354.35	354.95	354.95	351.95
SOUTH TRIBUTARY - 1	203+07.50	7 - 11	7 - 11	380.24	380.24	379.89	379.54	379.89	380.24	380.24	376.64
SOUTH TRIBUTARY - 1	207+76.46	7 - 11	7 - 11	370.30	370.30	369.85	369.60	369.85	370.30	370.30	366.70
SOUTH TRIBUTARY - 1	211+75.66	22 - 26	4 - 8	365.00	365.00	364.45	364.20	364.45	365.00	365.00	364.00
SOUTH TRIBUTARY - 2	308+39.15	11 - 14	7 - 11	364.00	364.00	363.75	363.50	363.75	364.00	364.00	361.50
SOUTH TRIBUTARY - 2	309+72.59	6 - 10	11 - 15	362.83	362.83	362.28	362.03	362.28	362.83	362.83	360.51
SOUTH TRIBUTARY - 3	403+11.68	13 - 17	5 - 9	365.00	365.00	364.45	364.20	364.45	365.00	365.00	364.00
SOUTH TRIBUTARY - 4	501+66.06	7 - 11	13 - 17	364.00	364.00	363.75	363.50	363.75	364.00	364.00	361.70
NORTH TRIBUTARY	600+40.62	17 - 21	17 - 21	381.33	381.33	380.78	380.53	380.78	381.33	381.33	377.33
NORTH TRIBUTARY	614+41.57	9 - 13	14 - 17	361.10	361.10	360.60	360.30	360.60	361.10	361.10	359.00

LOG J HOOK VANE

REACH	STATION	DIMENSIONS AND CRITICAL ELEVATIONS - SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' 'AA' (RIGHT ARM LENGTH)	'BB' (LEFT ARM LENGTH)	'B' (12 BKF)	'C'	'D' (TW CENTER)	'E'	'F'	'G' (BKF)	'H'
MAIN STEM	102+37.31	32 - 36	18 - 22	371.29	371.09	370.89	371.09	371.29	371.69	369.54
MAIN STEM	103+88.32	32 - 36	18 - 22	370.34	370.20	369.94	370.20	370.34	370.74	367.94
MAIN STEM	105+31.23	32 - 36	20 - 24	368.21	368.06	367.81	368.06	368.21	368.61	366.80
MAIN STEM	107+25.17	32 - 36	16 - 20	367.60	367.40	367.20	367.40	367.60	368.00	365.80
MAIN STEM	108+69.24	32 - 36	15 - 19	366.60	366.50	366.20	366.50	366.60	367.00	364.00
MAIN STEM	113+62.01	32 - 36	11 - 15	362.91	362.75	362.51	362.75	362.91	363.31	360.31
MAIN STEM	115+71.74	32 - 36	16 - 20	361.50	361.30	361.10	361.30	361.50	361.90	358.90
MAIN STEM	117+79.95	32 - 36	16 - 20	360.05	359.95	359.65	359.95	360.05	360.45	357.45
MAIN STEM	119+30.34	32 - 36	15 - 19	359.02	358.82	358.62	358.82	359.02	359.42	356.42
MAIN STEM	122+60.98	32 - 36	17 - 21	356.88	356.75	356.48	356.75	356.88	357.28	354.68
MAIN STEM	124+20.53	32 - 36	18 - 22	355.60	355.45	355.20	355.45	355.60	356.00	353.00
NORTH TRIBUTARY	608+82.69	32 - 36	13 - 17	365.68	365.58	365.38	365.58	365.68	365.98	361.98
NORTH TRIBUTARY	610+34.23	32 - 36	12 - 16	364.26	364.18	363.96	364.18	364.26	364.56	360.56
NORTH TRIBUTARY	611+71.26	32 - 36	12 - 16	363.29	363.24	362.99	363.24	363.29	363.59	360.59
NORTH TRIBUTARY	613+52.93	32 - 36	10 - 14	361.70	361.60	361.40	361.60	361.70	362.00	358.00

IMBRICATED ROCK WALL

REACH	LOCATION	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' TOP ELEV.	BOTTOM ELEV.	H HEIGHT	L LENGTH
INTERSECTION TRIBUTARY	US WEST WALL	385.00	377.00	8.0	21.7
INTERSECTION TRIBUTARY	US EAST WALL	385.00	377.00	8.0	18.7
INTERSECTION TRIBUTARY	DS WEST WALL	369.00	363.00	6.0	21.2
INTERSECTION TRIBUTARY	DS EAST WALL	369.00	364.00	5.0	18.7

ROCK J HOOK VANE

REACH	STATION	DIMENSIONS AND CRITICAL ELEVATIONS - SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' 'AA' (RIGHT ARM LENGTH)	'BB' (LEFT ARM LENGTH)	'A'	'B' (BKF RIGHT)	'C'	'D' (TW CENTER)	'E'	'F'	'G' (BKF LEFT)	'H'
MAIN STEM	125+08.58	31 - 35	20 - 24	355.60	355.60	355.05	354.80	355.05	355.20	355.60	353.10

LOG SILL

REACH	STATION	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' 'AA' (RIGHT ARM LENGTH)	'BB' (LEFT ARM LENGTH)
SOUTH TRIBUTARY - 1	201+16.31	19 - 23	382.52
SOUTH TRIBUTARY - 1	210+72.98	19 - 23	365.71

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BY: barranger -

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STATE OF MARYLAND
JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
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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. 31183, EXPIRATION DATE: 1/13/2023.

ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

NOT FOR CONSTRUCTION

STREAM STRUCTURE TABLES

SCALE AS SHOWN DATE APRIL, 2021 PROJECT NO. 17-10977-002
MDE PROJECT NO. 21-SF-0044 CONTRACT NO. KH-3038-0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SR-10 OF 11 SHEET NO. 29 OF 86

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Wednesday, April 28, 2021 AT 06:58 AM

TOE WOOD

REACH	START STATION	END STATION	BANK	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +4.0' LENGTH OF TREATMENT	AREA OF TREATMENT, SF
MAIN STEM	101+78.96	102+00.48	LEFT	21.5	54.3
MAIN STEM	102+86.40	103+02.10	RIGHT	15.7	38.3
MAIN STEM	103+28.02	103+47.04	LEFT	19.0	45.0
MAIN STEM	103+88.32	104+17.84	LEFT	29.5	74.5
MAIN STEM	104+46.31	104+70.74	RIGHT	24.4	63.8
MAIN STEM	105+84.49	106+00.18	RIGHT	15.7	43.5
MAIN STEM	106+49.02	106+80.65	RIGHT	31.6	78.9
MAIN STEM	108+69.24	109+07.53	LEFT	38.3	94.1
MAIN STEM	110+19.61	110+38.53	LEFT	18.9	45.9
MAIN STEM	110+64.37	110+81.17	LEFT	16.8	34.6
MAIN STEM	112+13.04	112+41.54	LEFT	28.5	69.0
MAIN STEM	112+81.99	113+12.52	RIGHT	30.5	76.3
MAIN STEM	115+01.86	115+24.82	LEFT	23.0	57.4
MAIN STEM	117+21.05	117+38.77	LEFT	17.7	41.5
MAIN STEM	118+36.26	118+53.20	RIGHT	16.9	39.7
MAIN STEM	118+84.96	119+02.68	LEFT	17.7	41.5
MAIN STEM	121+31.29	121+70.56	RIGHT	39.3	95.8
MAIN STEM	122+03.85	122+27.40	RIGHT	23.6	40.1
MAIN STEM	122+60.98	122+89.47	LEFT	28.5	84.1
MAIN STEM	125+79.08	126+09.85	LEFT	30.8	72.1
SOUTH TRIBUTARY – 1	208+05.74	208+17.20	LEFT	11.5	29.7
SOUTH TRIBUTARY – 1	209+15.23	209+30.37	RIGHT	15.1	40.1
SOUTH TRIBUTARY – 1	209+43.72	209+50.84	LEFT	7.1	17.1
SOUTH TRIBUTARY – 1	209+72.82	209+87.35	LEFT	14.5	37.7
SOUTH TRIBUTARY – 1	210+04.63	210+13.16	RIGHT	8.5	23.2
SOUTH TRIBUTARY – 1	210+62.25	210+72.98	RIGHT	10.7	29.2
SOUTH TRIBUTARY – 1	210+92.82	211+06.61	LEFT	13.8	34.0
SOUTH TRIBUTARY – 1	211+27.35	211+37.45	RIGHT	10.1	27.5
SOUTH TRIBUTARY – 2	304+76.15	304+90.74	RIGHT	14.6	35.5
SOUTH TRIBUTARY – 2	305+08.01	305+20.04	LEFT	12.0	31.2
SOUTH TRIBUTARY – 2	305+69.01	305+76.07	LEFT	7.1	17.0
SOUTH TRIBUTARY – 2	306+03.88	306+20.82	LEFT	16.9	40.8
SOUTH TRIBUTARY – 2	306+49.18	306+63.98	RIGHT	14.8	38.3
SOUTH TRIBUTARY – 3	401+04.82	401+23.55	RIGHT	18.7	46.8
SOUTH TRIBUTARY – 3	401+45.41	401+60.05	LEFT	14.6	36.1
SOUTH TRIBUTARY – 3	401+78.09	401+89.56	RIGHT	11.5	29.7
SOUTH TRIBUTARY – 3	402+16.10	402+27.14	LEFT	11.0	26.6
SOUTH TRIBUTARY – 3	402+78.03	402+89.91	LEFT	11.9	31.5
SOUTH TRIBUTARY – 4	501+02.55	501+17.28	RIGHT	14.7	35.4
NORTH TRIBUTARY	607+65.99	607+82.13	LEFT	16.1	42.9
NORTH TRIBUTARY	609+29.30	609+42.52	RIGHT	13.2	31.3
NORTH TRIBUTARY	609+69.94	609+92.51	RIGHT	22.6	57.9
NORTH TRIBUTARY	611+24.26	611+45.82	LEFT	21.6	57.2
NORTH TRIBUTARY	612+13.16	612+31.72	LEFT	18.6	47.6
NORTH TRIBUTARY	613+52.93	613+75.49	RIGHT	22.6	55.2
NORTH TRIBUTARY	614+02.67	614+17.76	LEFT	15.1	38.7

ROCK AND ROLL LOG

REACH	STATION	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +4.0' LENGTH	TOP OF LOG (TW CENTER)
SOUTH TRIBUTARY – 1	200+70.65	19 – 23	382.75
SOUTH TRIBUTARY – 1	200+79.08	19 – 23	382.75
SOUTH TRIBUTARY – 1	201+07.26	19 – 23	382.52
SOUTH TRIBUTARY – 1	202+86.78	19 – 23	380.04
SOUTH TRIBUTARY – 1	202+94.49	19 – 23	380.04
SOUTH TRIBUTARY – 1	203+33.89	19 – 23	379.16
SOUTH TRIBUTARY – 1	203+46.70	19 – 23	378.74
SOUTH TRIBUTARY – 1	206+23.48	19 – 23	372.79
SOUTH TRIBUTARY – 1	206+37.52	19 – 23	372.79
SOUTH TRIBUTARY – 1	210+62.25	19 – 23	365.71
SOUTH TRIBUTARY – 2	302+12.95	19 – 23	373.67
SOUTH TRIBUTARY – 2	302+22.70	19 – 23	373.67
SOUTH TRIBUTARY – 2	302+43.87	19 – 23	373.21
SOUTH TRIBUTARY – 2	302+53.64	19 – 23	372.84
SOUTH TRIBUTARY – 2	305+69.01	19 – 23	367.44
SOUTH TRIBUTARY – 4	500+31.08	19 – 23	364.80
SOUTH TRIBUTARY – 4	500+48.48	19 – 23	364.80
NORTH TRIBUTARY	601+65.71	17 – 21	378.20
NORTH TRIBUTARY	601+76.95	17 – 21	378.20
NORTH TRIBUTARY	601+85.27	17 – 21	377.92
NORTH TRIBUTARY	603+87.60	17 – 21	373.20
NORTH TRIBUTARY	603+96.09	17 – 21	373.20
NORTH TRIBUTARY	604+20.14	17 – 21	372.67
NORTH TRIBUTARY	605+23.25	17 – 21	370.42
NORTH TRIBUTARY	605+32.88	17 – 21	370.42

LOG VANE

REACH	STATION	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' 'AA' (ARM LENGTH)	'D' (TW CENTER)	'F' OR 'B' (1/2 BKF)	'H'	TIE IN BANK
MAIN STEM	100+34.39	30 – 34	373.40	373.90	370.15	LEFT
MAIN STEM	101+27.22	30 – 34	371.53	372.03	368.23	RIGHT
MAIN STEM	101+78.96	30 – 34	371.40	371.80	369.12	LEFT
MAIN STEM	103+28.02	30 – 34	370.20	370.60	369.10	LEFT
MAIN STEM	104+46.31	30 – 34	369.40	369.80	367.95	RIGHT
MAIN STEM	105+21.41	30 – 34	369.00	369.40	366.80	LEFT
MAIN STEM	105+84.49	30 – 34	368.66	369.06	367.86	RIGHT
MAIN STEM	106+49.02	30 – 34	367.98	368.38	366.68	RIGHT
MAIN STEM	107+96.94	30 – 34	366.84	367.24	365.14	RIGHT
MAIN STEM	109+50.11	30 – 34	365.72	366.12	364.02	RIGHT
MAIN STEM	110+19.61	30 – 34	365.16	365.56	364.16	LEFT
MAIN STEM	110+64.37	30 – 34	364.84	365.24	364.14	LEFT
MAIN STEM	112+13.04	30 – 34	363.64	364.04	362.14	LEFT
MAIN STEM	112+81.99	30 – 34	363.15	363.55	361.45	RIGHT
MAIN STEM	115+01.86	30 – 34	361.46	361.86	360.16	LEFT
MAIN STEM	117+21.05	30 – 34	359.90	360.30	359.20	LEFT
MAIN STEM	118+36.26	30 – 34	359.19	359.59	358.49	RIGHT
MAIN STEM	118+84.96	30 – 34	358.93	359.33	358.13	LEFT
MAIN STEM	119+89.00	30 – 34	358.20	358.60	356.20	RIGHT
MAIN STEM	120+45.68	30 – 34	357.81	358.21	355.61	LEFT
MAIN STEM	121+31.29	30 – 34	357.20	357.60	355.10	RIGHT
MAIN STEM	121+42.65	30 – 34	356.03	356.43	355.10	RIGHT
MAIN STEM	122+03.85	30 – 34	356.75	357.15	355.15	RIGHT
MAIN STEM	122+76.49	30 – 34	354.88	355.28	354.68	LEFT
MAIN STEM	123+38.24	30 – 34	355.85	356.25	353.85	RIGHT
MAIN STEM	125+79.08	30 – 34	354.20	354.60	352.80	LEFT
SOUTH TRIBUTARY – 1	201+26.31	30 – 34	382.40	382.75	379.50	LEFT
SOUTH TRIBUTARY – 1	201+48.64	30 – 34	382.25	382.60	379.35	LEFT
SOUTH TRIBUTARY – 1	202+27.88	30 – 34	381.30	381.65	378.50	RIGHT
SOUTH TRIBUTARY – 1	202+48.01	30 – 34	380.85	381.20	377.95	LEFT
SOUTH TRIBUTARY – 1	203+72.06	30 – 34	378.17	378.52	375.27	RIGHT
SOUTH TRIBUTARY – 1	204+10.25	30 – 34	377.30	377.65	374.40	LEFT
SOUTH TRIBUTARY – 1	204+50.91	30 – 34	376.41	376.76	373.61	RIGHT
SOUTH TRIBUTARY – 1	204+87.35	30 – 34	375.66	376.01	372.86	LEFT
SOUTH TRIBUTARY – 1	205+26.82	30 – 34	374.79	375.14	371.99	RIGHT
SOUTH TRIBUTARY – 1	205+64.92	30 – 34	373.96	374.31	371.06	LEFT
SOUTH TRIBUTARY – 1	206+03.39	30 – 34	373.27	373.62	370.64	RIGHT
SOUTH TRIBUTARY – 1	206+63.71	30 – 34	371.95	372.30	369.05	RIGHT
SOUTH TRIBUTARY – 1	207+08.76	30 – 34	370.95	371.30	368.05	LEFT
SOUTH TRIBUTARY – 1	207+53.34	30 – 34	370.02	370.37	367.12	RIGHT

LOG VANE

REACH	STATION	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' 'AA' (ARM LENGTH)	'D' (TW CENTER)	'F' OR 'B' (1/2 BKF)	'H'	TIE IN BANK
SOUTH TRIBUTARY – 1	208+76.56	30 – 34	368.11	368.36	365.61	LEFT
SOUTH TRIBUTARY – 1	209+72.82	30 – 34	366.86	367.11	364.36	LEFT
SOUTH TRIBUTARY – 1	210+92.82	30 – 34	365.29	365.54	363.29	LEFT
SOUTH TRIBUTARY – 2	301+14.88	30 – 34	375.79	376.14	372.99	LEFT
SOUTH TRIBUTARY – 2	301+70.15	30 – 34	374.62	374.97	371.82	RIGHT
SOUTH TRIBUTARY – 2	302+87.68	30 – 34	372.05	372.40	369.15	RIGHT
SOUTH TRIBUTARY – 2	303+25.09	30 – 34	371.29	371.64	368.66	RIGHT
SOUTH TRIBUTARY – 2	304+06.88	30 – 34	369.75	370.10	366.85	RIGHT
SOUTH TRIBUTARY – 2	306+03.88	30 – 34	366.50	366.75	364.00	LEFT
SOUTH TRIBUTARY – 2	307+20.99	30 – 34	364.96	365.21	362.96	RIGHT
SOUTH TRIBUTARY – 2	308+00.44	30 – 34	363.93	364.18	361.43	RIGHT
SOUTH TRIBUTARY – 3	401+04.82	30 – 34	367.08	367.33	364.78	RIGHT
SOUTH TRIBUTARY – 3	401+45.41	30 – 34	366.50	366.75	364.70	LEFT
SOUTH TRIBUTARY – 4	501+02.55	30 – 34	364.10	364.35	361.80	RIGHT
NORTH TRIBUTARY	600+76.64	30 – 34	380.20	380.60	376.75	LEFT
NORTH TRIBUTARY	601+35.05	30 – 34	378.91	379.31	375.46	RIGHT
NORTH TRIBUTARY	602+21.61	30 – 34	376.99	377.39	373.54	LEFT
NORTH TRIBUTARY	603+01.45	30 – 34	375.10	375.50	371.65	RIGHT
NORTH TRIBUTARY	603+31.80	30 – 34	374.30	374.70	371.10	LEFT
NORTH TRIBUTARY	604+40.27	30 – 34	372.20	372.60	368.75	RIGHT
NORTH TRIBUTARY	604+97.49	30 – 34	370.98	371.38	367.78	RIGHT
NORTH TRIBUTARY	605+78.27	30 – 34	369.31	369.71	365.86	LEFT
NORTH TRIBUTARY	606+38.38	30 – 34	368.20	368.60	364.75	LEFT
NORTH TRIBUTARY	606+90.17	30 – 34	367.20	367.60	363.75	RIGHT
NORTH TRIBUTARY	607+14.62	30 – 34	366.81	367.21	363.36	RIGHT
NORTH TRIBUTARY	607+65.99	30 – 34	366.21	366.51	364.31	LEFT
NORTH TRIBUTARY	608+16.83	30 – 34	365.83	366.13	362.43	RIGHT
NORTH TRIBUTARY	609+29.30	30 – 34	365.08	365.38	363.18	RIGHT
NORTH TRIBUTARY	609+69.94	30 – 34	364.67	364.97	361.27	RIGHT
NORTH TRIBUTARY	610+79.36	30 – 34	363.69	363.99	361.29	RIGHT
NORTH TRIBUTARY	612+13.16	30 – 34	362.65	362.95	360.25	LEFT
NORTH TRIBUTARY	612+54.98	30 – 34	362.37	362.67	359.97	RIGHT
NORTH TRIBUTARY	613+01.81	30 – 34	361.92	362.22	360.02	LEFT
NORTH TRIBUTARY	614+02.67	30 – 34	360.91	361.21	359.01	LEFT

RIPRAP FOR SLOPE AND CHANNEL PROTECTION

STATION	OFFSET (TO CENTER OF RIPRAP)	RIPRAP SIZE (CLASS)	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' L LENGTH	W WIDTH	QUANITY (SY)
300+95.94	27.57, RT	I	37.2	4.2	17.1
308+78.73	67.47, RT	I	28.5	13.1	39.9

RIPRAP FOR OUTFALL PROTECTION

REACH	STATION	RIPRAP SIZE (CLASS)	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' BOTTOM ELEV.	L LENGTH	W WIDTH	D DEPTH	QUANITY (SY)
SOUTH TRIBUTARY – 1	200+00	I	381.00	42.4	20.0	2.0	2.0
INTERSECTION TRIBUTARY	900+00	II	376.34	30.0	20.75	2.5	2.5

BOTTOM CUTOFF WALL

REACH	STATION	RIPRAP SIZE (CLASS)	DIMENSIONS AND CRITICAL ELEVATIONS SEE DETAILS (FEET) ELEVATION TOLERANCE +/- 0.2' TOP ELEV.	L LENGTH	W WIDTH	D DEPTH
SOUTH TRIBUTARY – 1	200+42.53	I	383.00	11.0	2.0	3.0
INTERSECTION TRIBUTARY	900+30.16	II	378.84	25.5	2.0	3.0

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BALTIMORE, MD 21224

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JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION
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MDE PROJECT NO. 21-SF-0044 CONTRACT NO. KH-3038-0000
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DRAWING NO. SR-11 OF 11 SHEET NO. 30 OF 86

BY: barranger –

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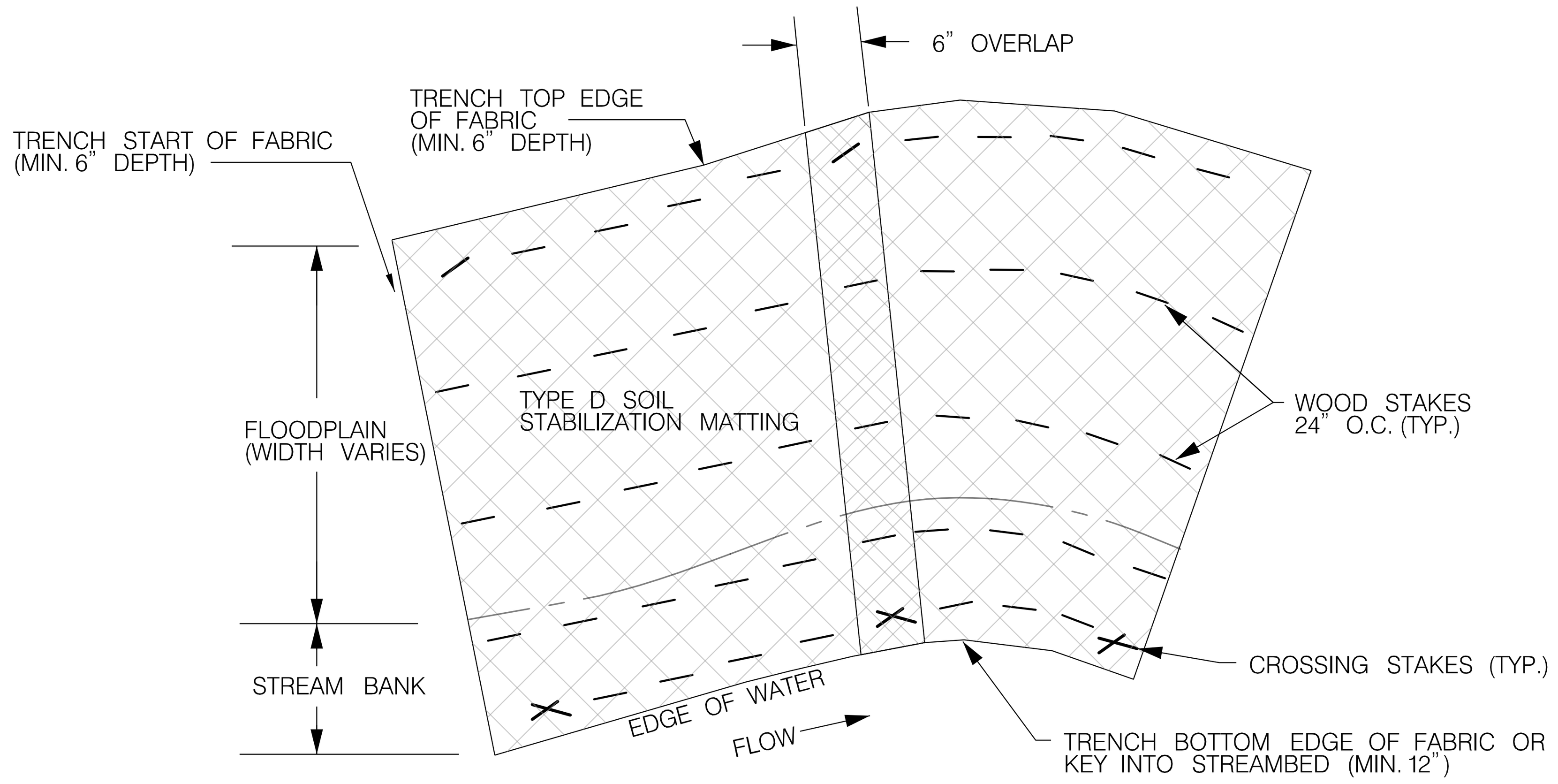
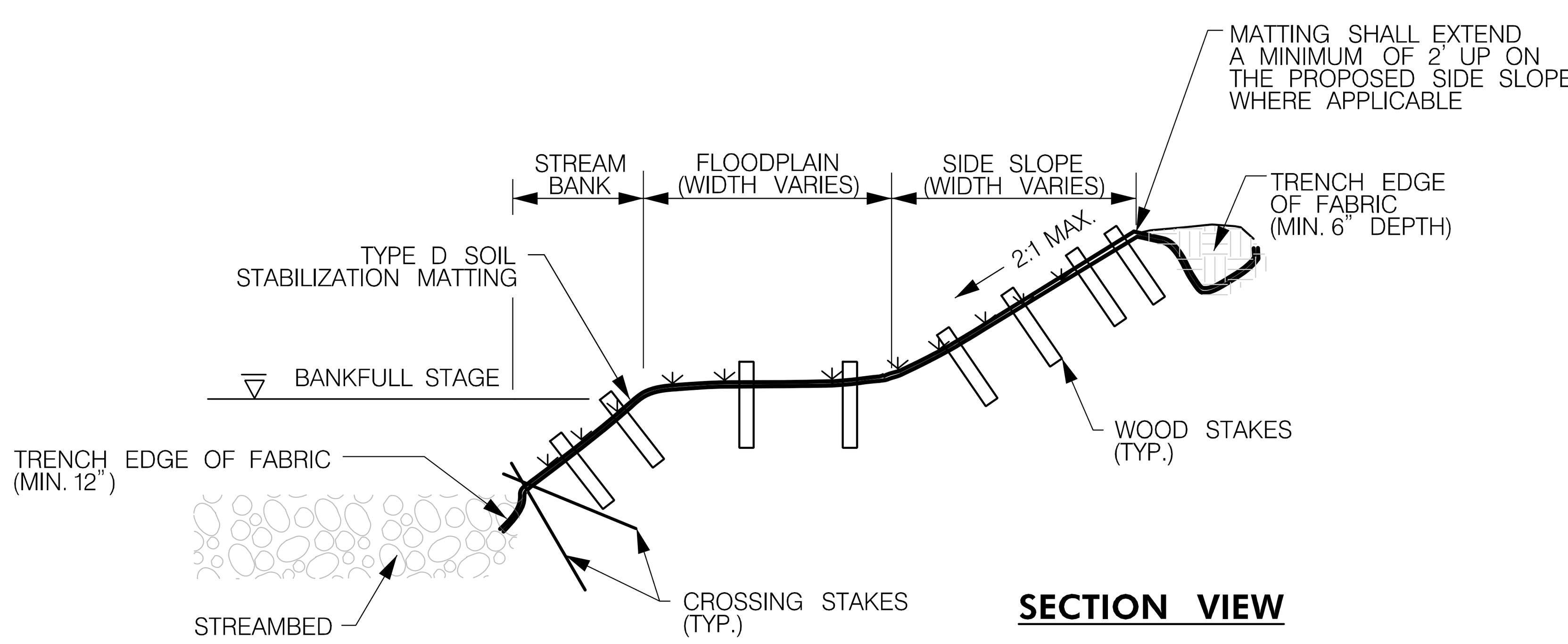
Wednesday, April 28, 2021 AT 06:59 AM

STREAMBANK/FLOODPLAIN STABILIZATION DETAILS
NOT TO SCALE



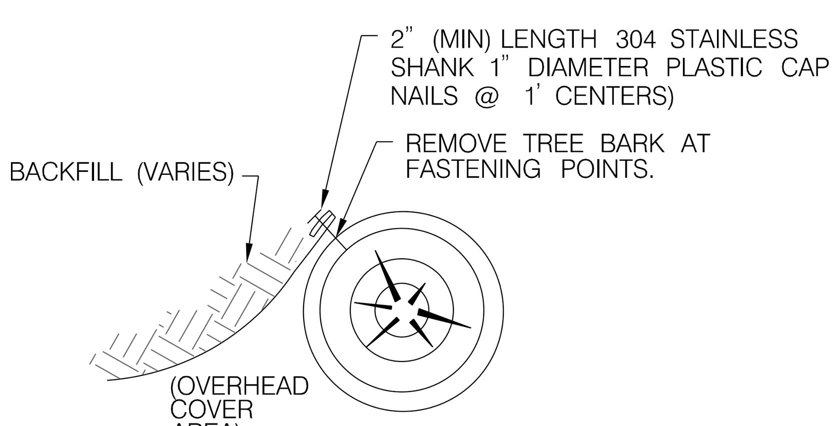
PLAN VIEW



SECTION VIEW

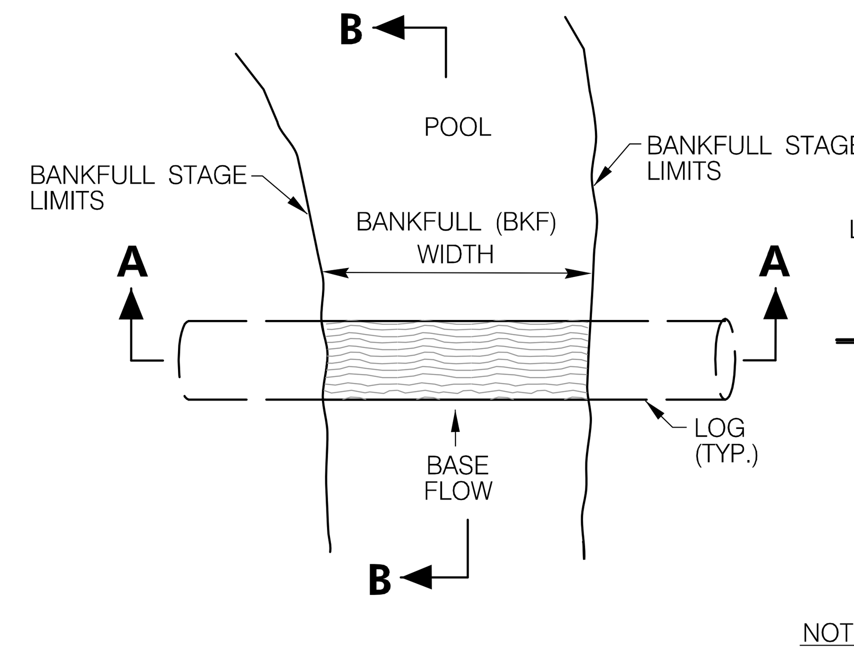
NOTES:

1. TYPE D SOIL STABILIZATION MATTING (SSM) SHALL BE OVERLAPPED 'SHINGLE' STYLE OR PERPENDICULAR TO THE CHANNEL, WITH THE UPSTREAM SECTION OF MATTING OVERLAPPING THE NEXT DOWNSTREAM SECTION OF MATTING.
2. SPECIFIED SEED MIX SHALL BE APPLIED FIRST AND IMMEDIATELY COVERED WITH THE SSM.
3. THE SSM SHALL BE 100 PERCENT BIODEGRADABLE COIR FIBER MATTING.
4. THE SSM SHALL CONFORM TO THE SPECIFICATIONS.
5. WOOD CROSSING STAKES SHALL BE UTILIZED TO SECURE ENDS OF THE SSM WHERE IT IS NOT FEASIBLE TO TRENCH OR KEY-IN THE END OF THE FABRIC.
6. WOOD STAKES SHALL BE UNTREATED HARDWOOD OR SOUTHERN YELLOW PINE WITH A SAW-FORMED POINT ON ONE END, 1 INCH BY 2 INCHES IN SIZE AND A MINIMUM OF 18 INCHES IN LENGTH.
7. STAPLES ARE NOT AN ACCEPTABLE SUBSTITUTE FOR STAKES.
8. IN THE EVENT OF LOSS OF FABRIC PRIOR TO GROWTH OF VEGETATION, THE CONTRACTOR SHALL INSTALL NEW SEED AND TOPSOIL TO PROPOSED FINISHED GRADE AND RE-MAT AREAS AT NO ADDITIONAL COST TO THE AUTHORITY.

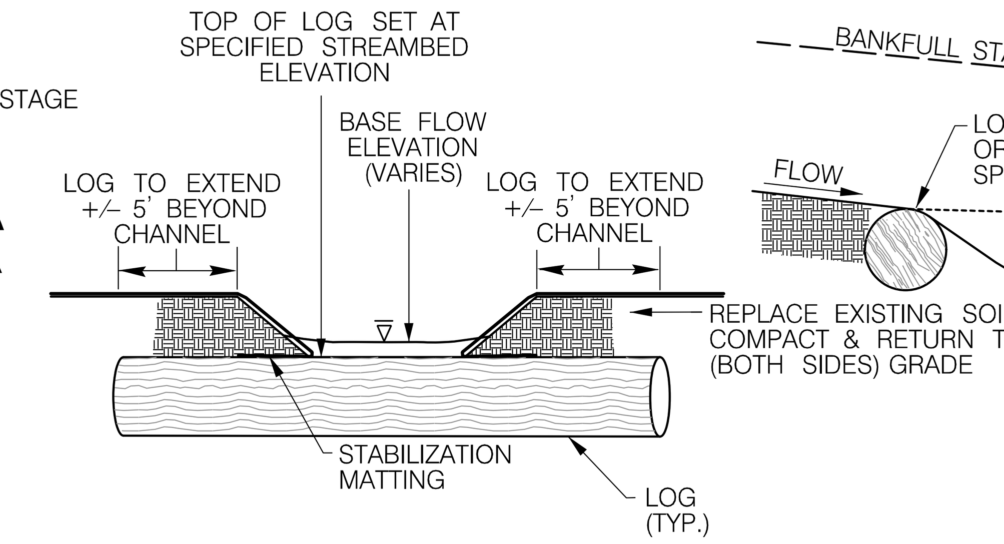


LOG GEOTEXTILE FASTENING DETAIL
NOT TO SCALE

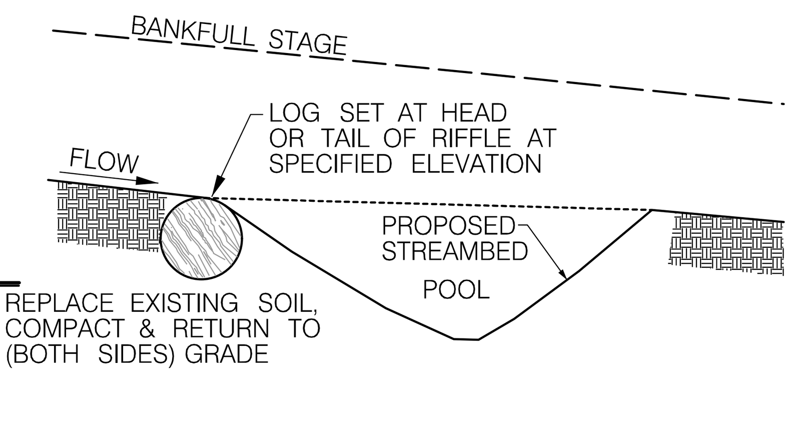
IN-CHANNEL LOG SILL PLACEMENT DETAILS
N.T.S.



PLAN VIEW



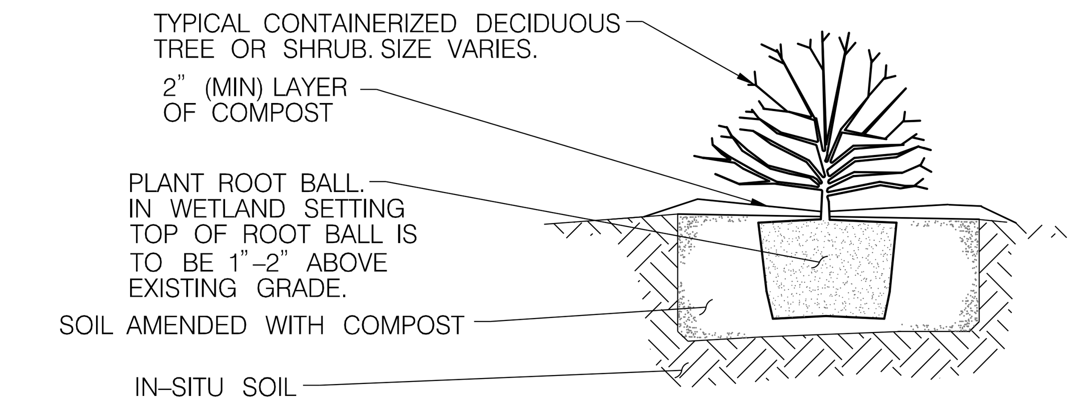
SECTION A-A



SECTION B-B

NOTES:

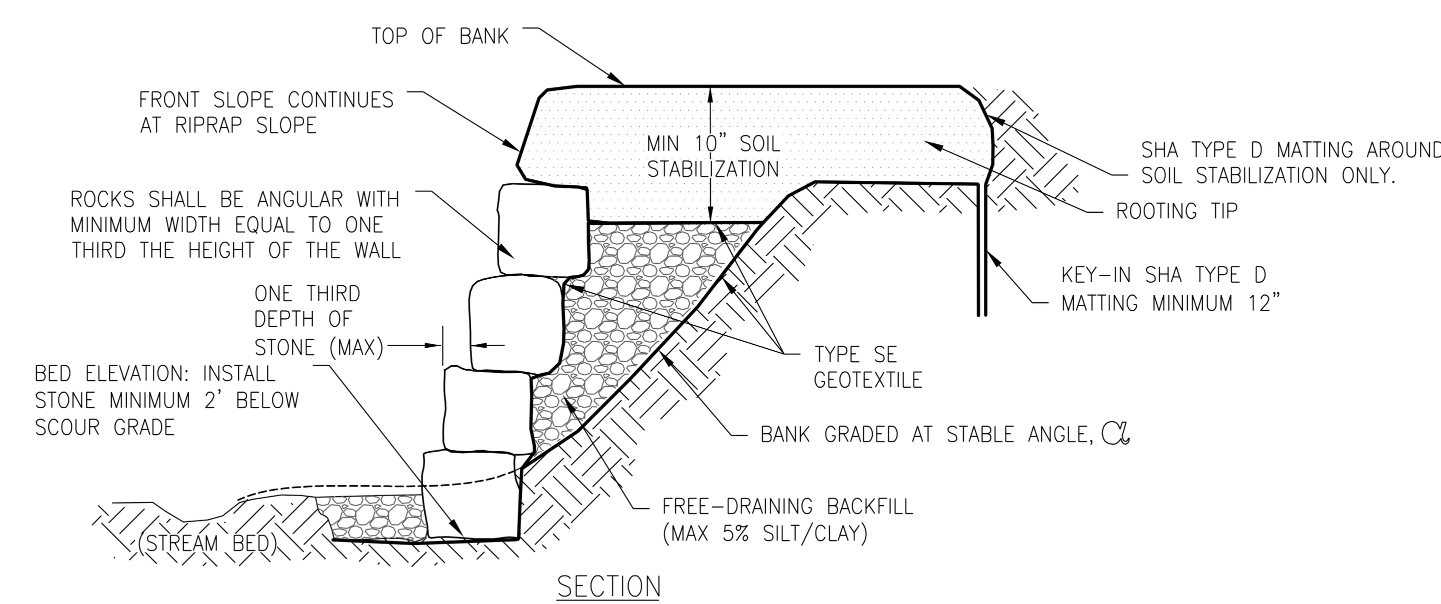
1. BURIED LOGS SHALL HAVE A MINIMUM DIAMETER OF 12".
2. TOP OF THE LOG SHALL BE FLUSH WITH THE PROPOSED STREAMBED ELEVATION.
3. SEE PLAN FOR LOCATIONS AND PROFILE FOR SPECIFIED TOP ELEVATIONS.



NOTES:

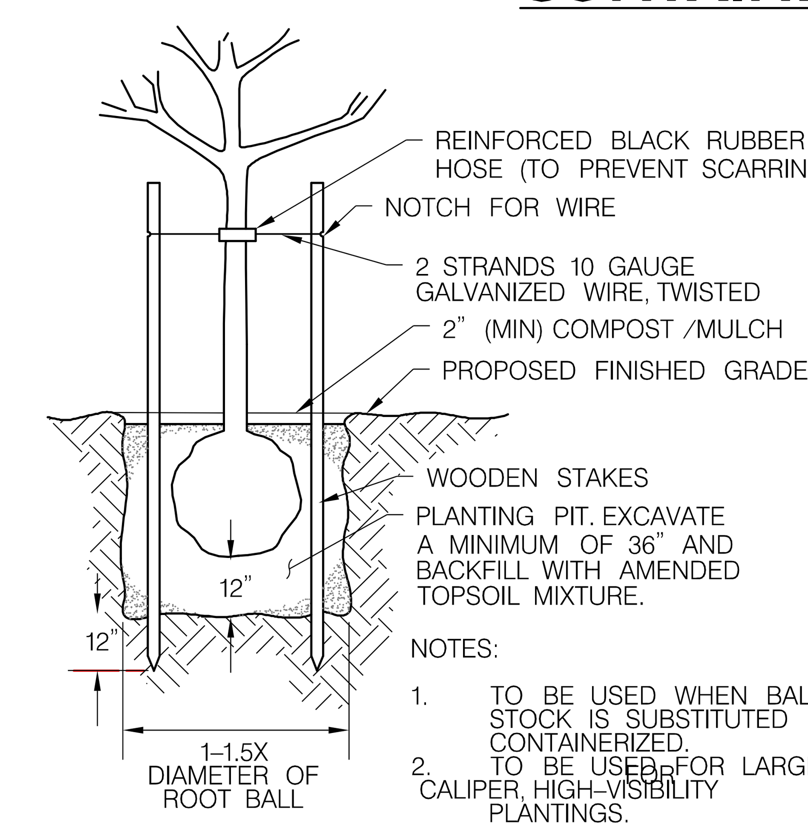
1. SHRUB PIT CONFORMS WITH DEPTHS AND WIDTHS IN SPECIFICATIONS.
2. PRUNE SHRUBS ONLY AFTER INSTALLED AND AFTER THE PLANT HAS BEEN SUFFICIENTLY WATERED.
3. MULCH DIAMETER OF PLANTING HOLE, MINIMUM 2" DEPTH, WITH COMPOST.

CONTAINER STOCK PLANTING DETAIL
NOT TO SCALE



SECTION

IMBRICATED RIPRAP DETAIL
NOT TO SCALE

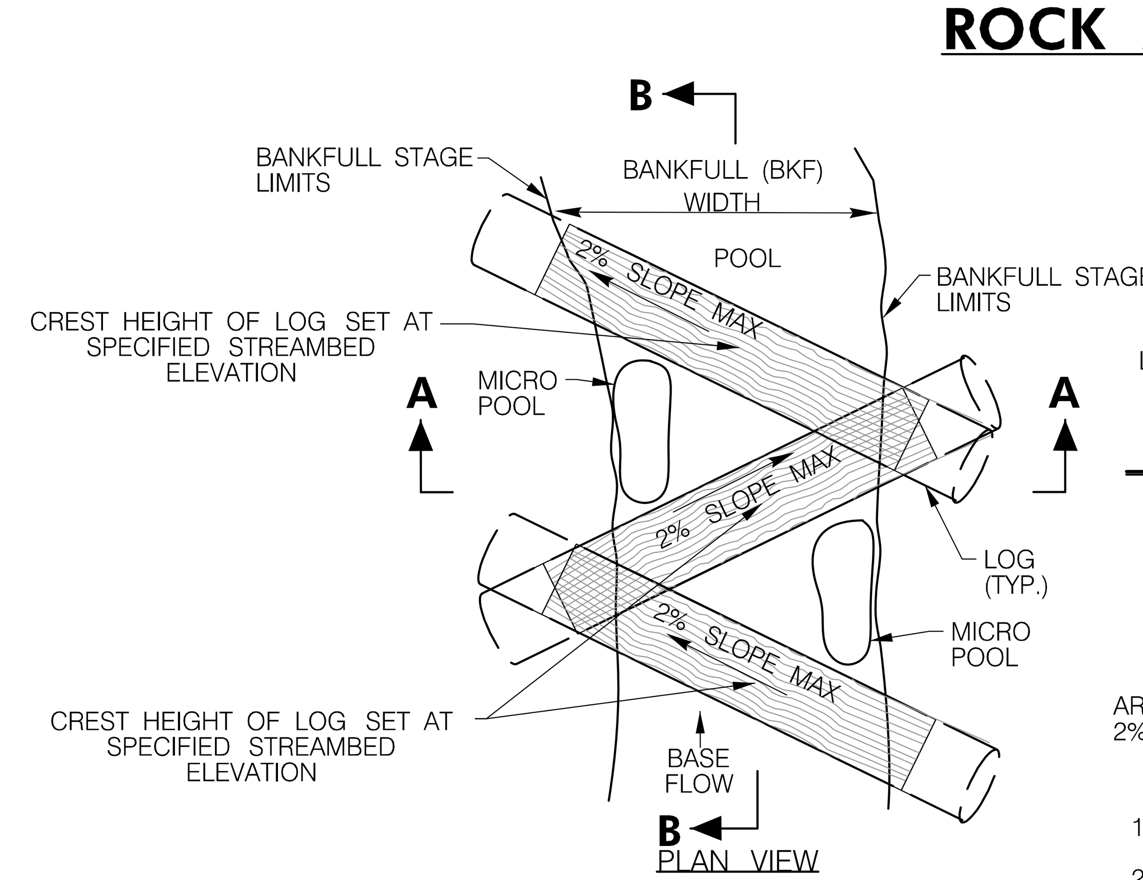


NOTES:

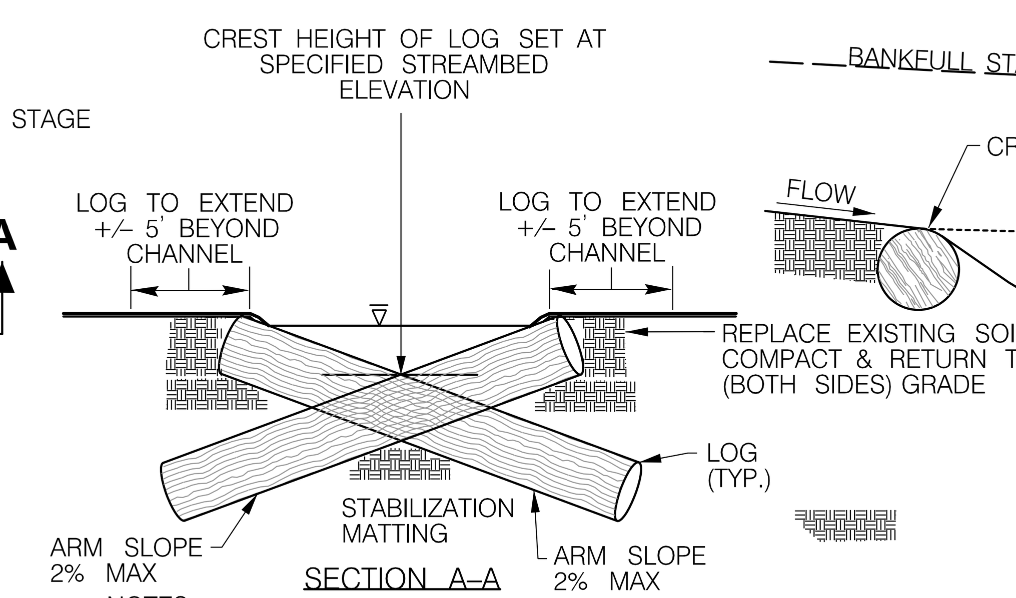
1. TO BE USED WHEN BALLED STOCK IS SUBSTITUTED CONTAINERIZED.
2. TO BE USED FOR LARGE CALIPER, HIGH-VISIBILITY PLANTINGS.

BALLED TREE PLANTING AND STAKING DETAIL
NOT TO SCALE

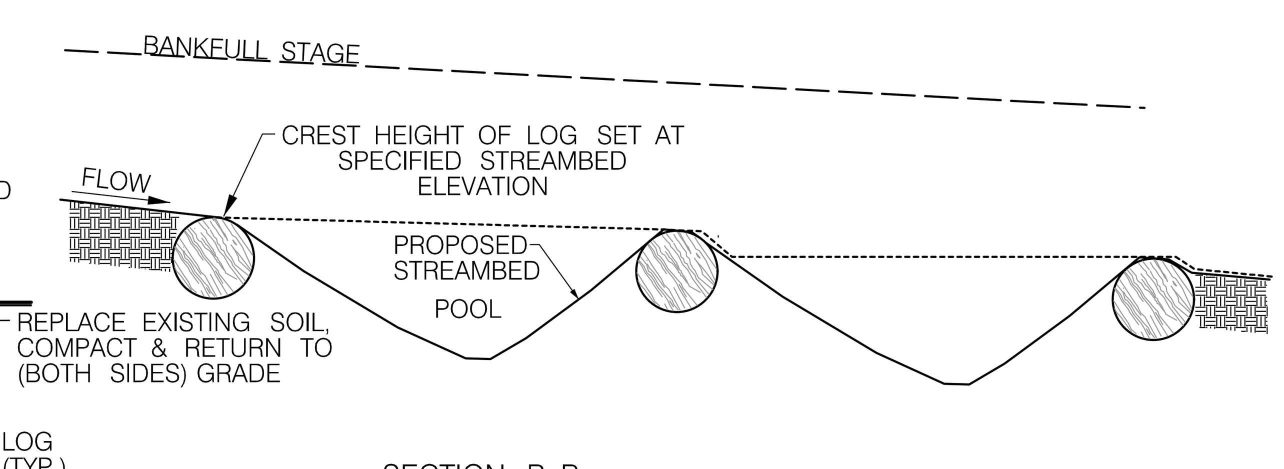
ROCK AND ROLL LOG DETAILS
N.T.S.



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

1. BURIED LOGS SHALL HAVE A MINIMUM DIAMETER OF 12".
2. TOP OF THE LOG SHALL BE FLUSH WITH THE PROPOSED STREAMBED ELEVATION.
3. SEE PLAN FOR LOCATIONS AND PROFILE FORSPECIFIED TOP ELEVATIONS.

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM - HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

BY: KHiggins -

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STATE OF MARYLAND
JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
JEREMY KOSER
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40 WIGHT AVENUE, HUNT VALLEY, MD 21030

TEL: 410-316-2360
EMAIL: JKoser@jmt.com

PROFESSIONAL CERTIFICATION

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ECCLESTON MITIGATION SITE

REVISIONS

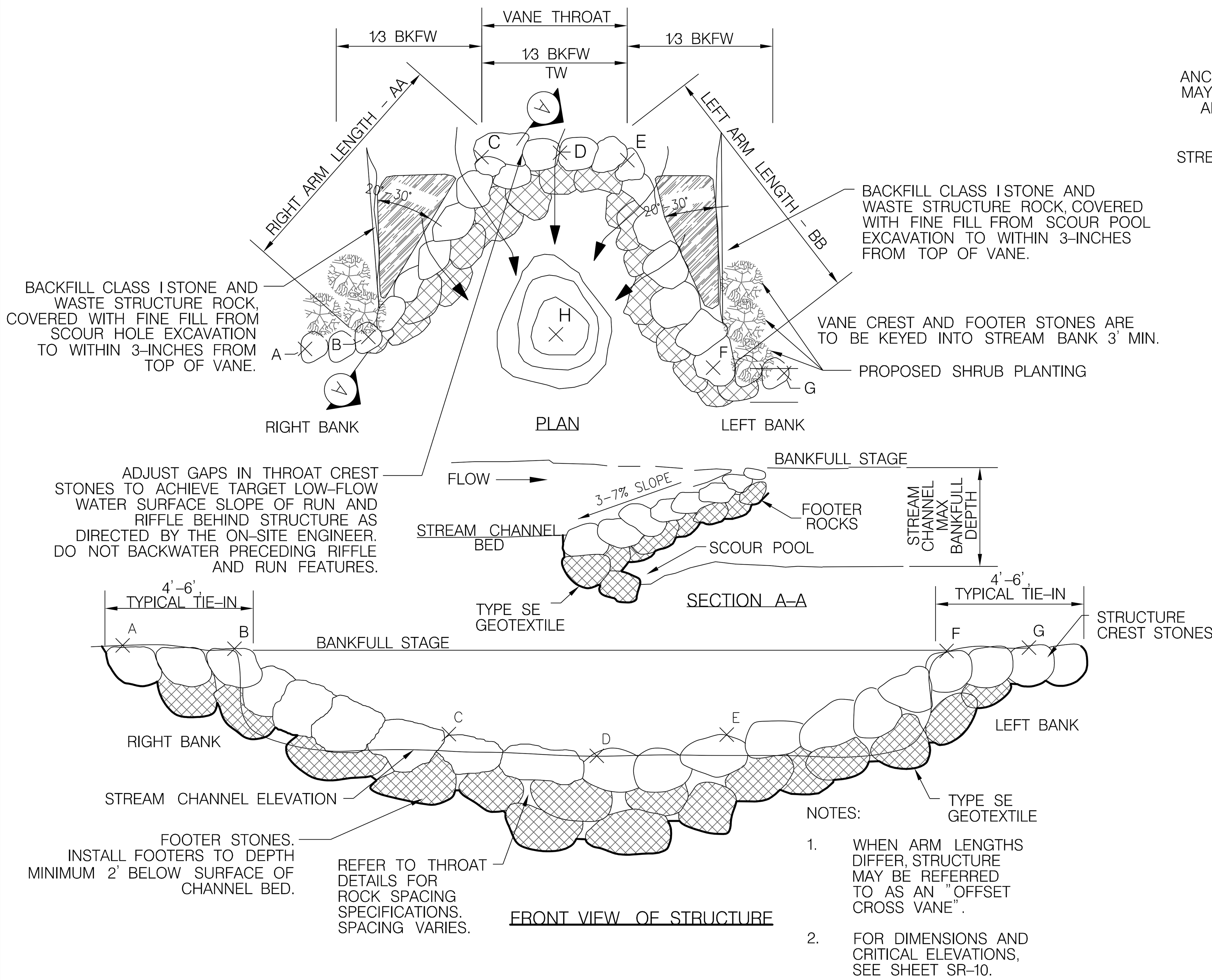
100% SUBMISSION

NOT FOR CONSTRUCTION

STREAM RESTORATION DETAILS

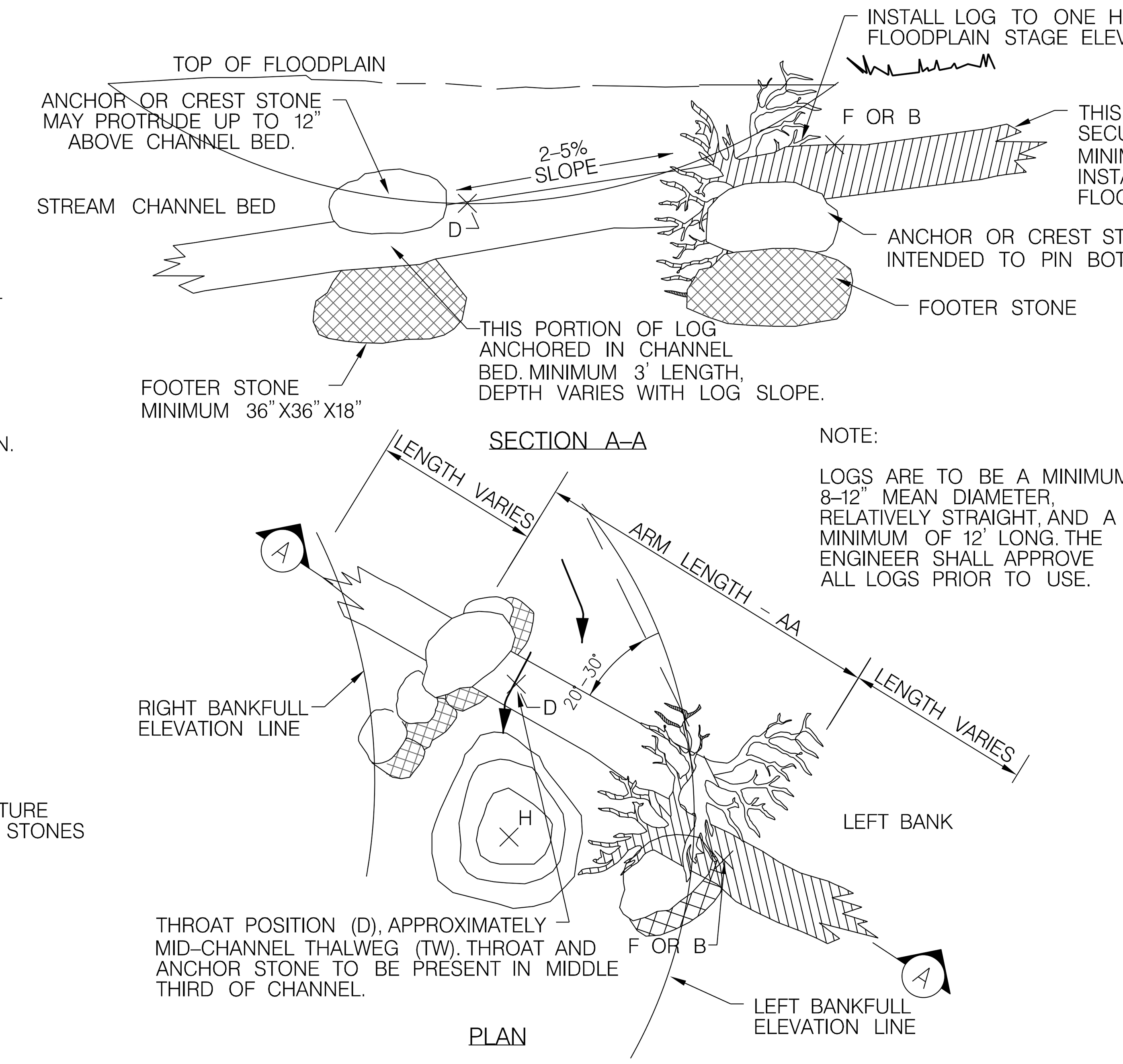
SCALE N.T.S.	DATE APRIL, 2021	PROJECT NO. 17-10977-002	
MDE PROJECT NO. 21-SF-0044		CONTRACT NO. KH-3038-0000	
DESIGNED BY PVC		COUNTY BALTIMORE COUNTY	
DRAWN BY PVC		LOGMILE	
CHECKED BY JJM /MRG		HORIZONTAL SCALE N/A	
F.A.P. NO. N/A		VERTICAL SCALE N/A	

DRAWING NO. SRD - 1 OF 4 SHEET NO. 31 OF 86



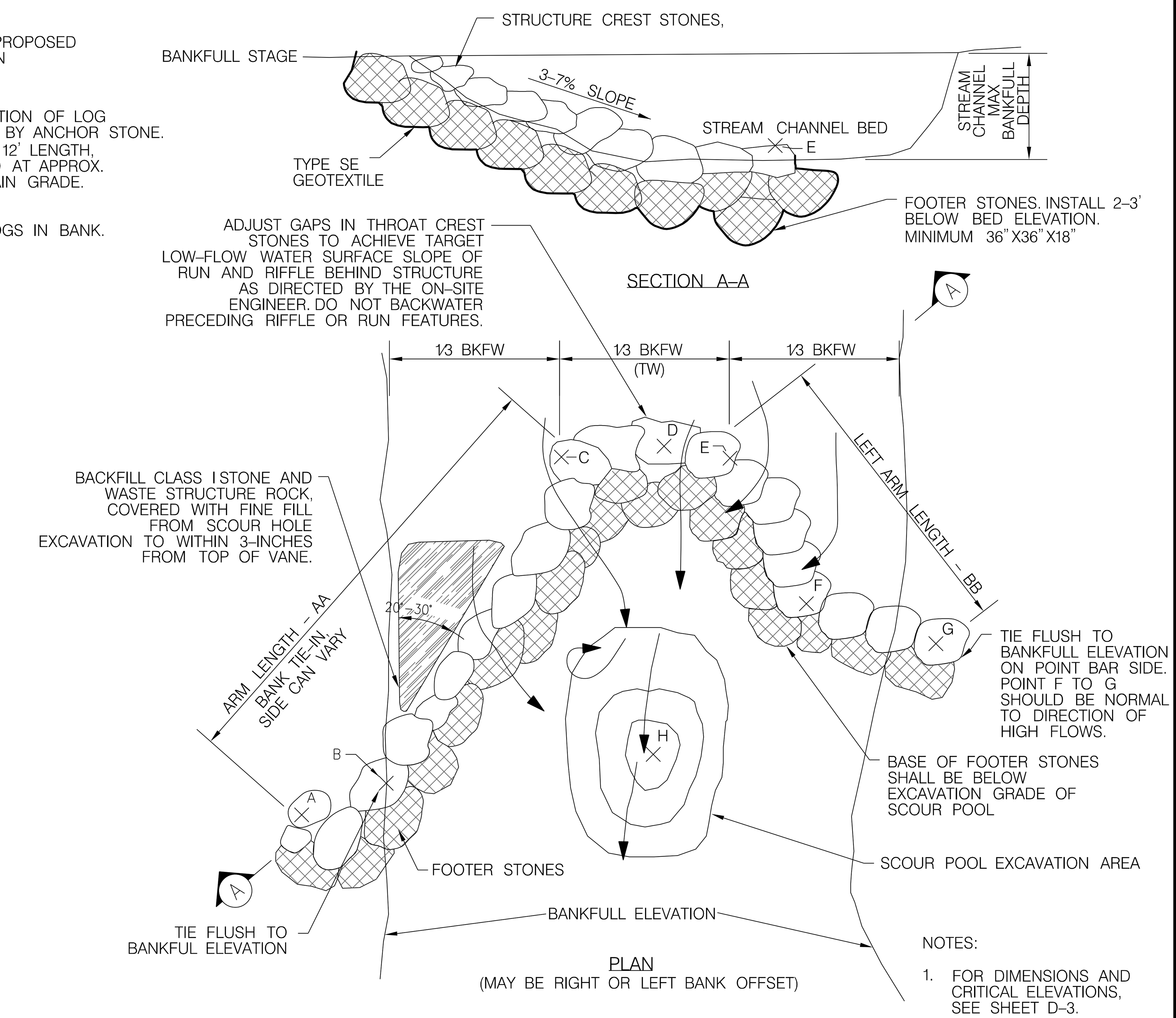
ROCK CROSS VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.



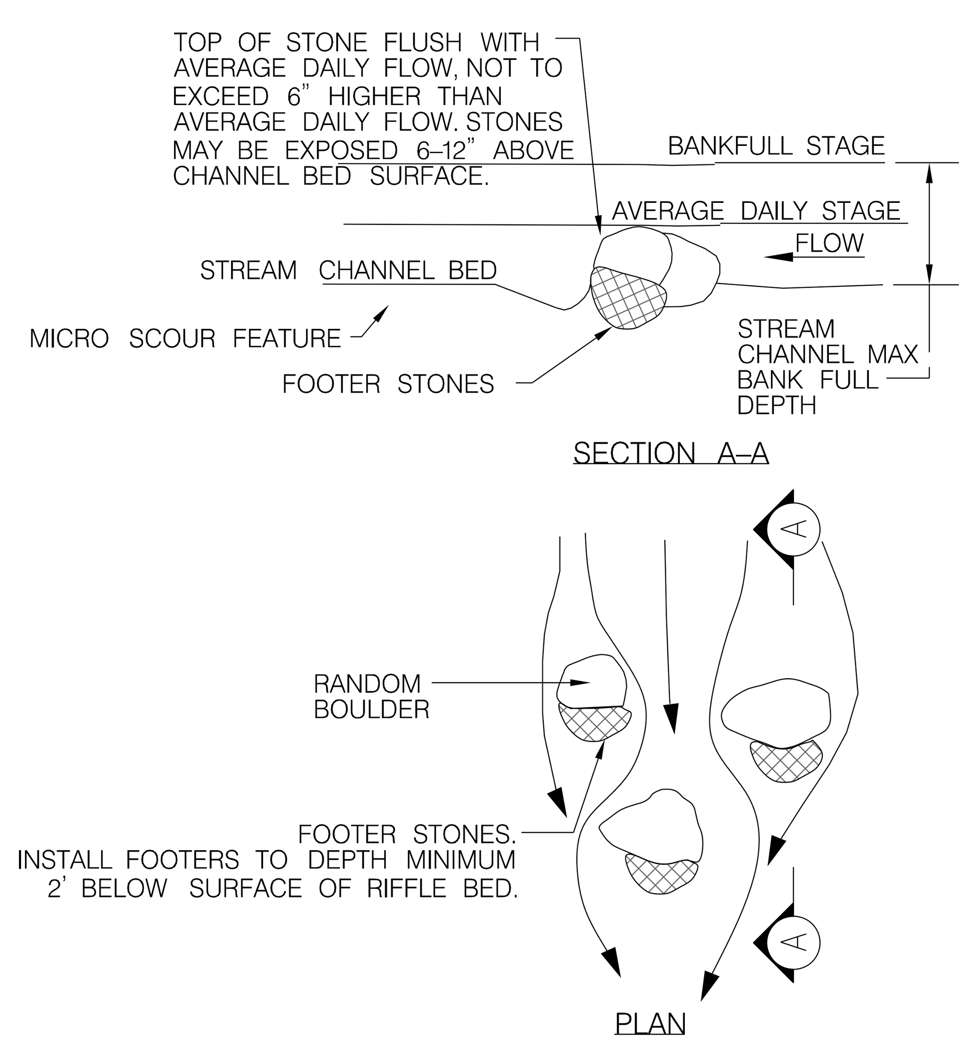
LOG VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION MAY VARY AS DIRECTED BY ENGINEER.
USED FOR SMALL-SCALE GRADE CONTROL IN THALWEG GRADING



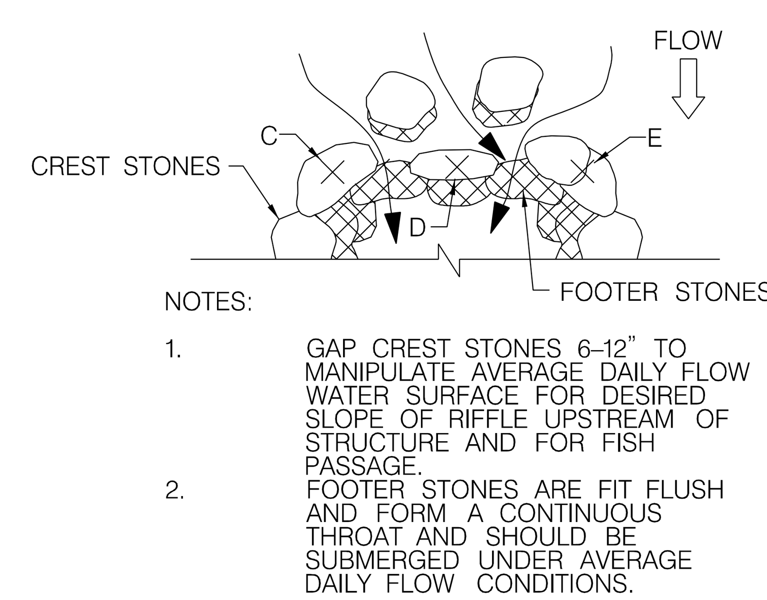
ROCK J HOOK VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.



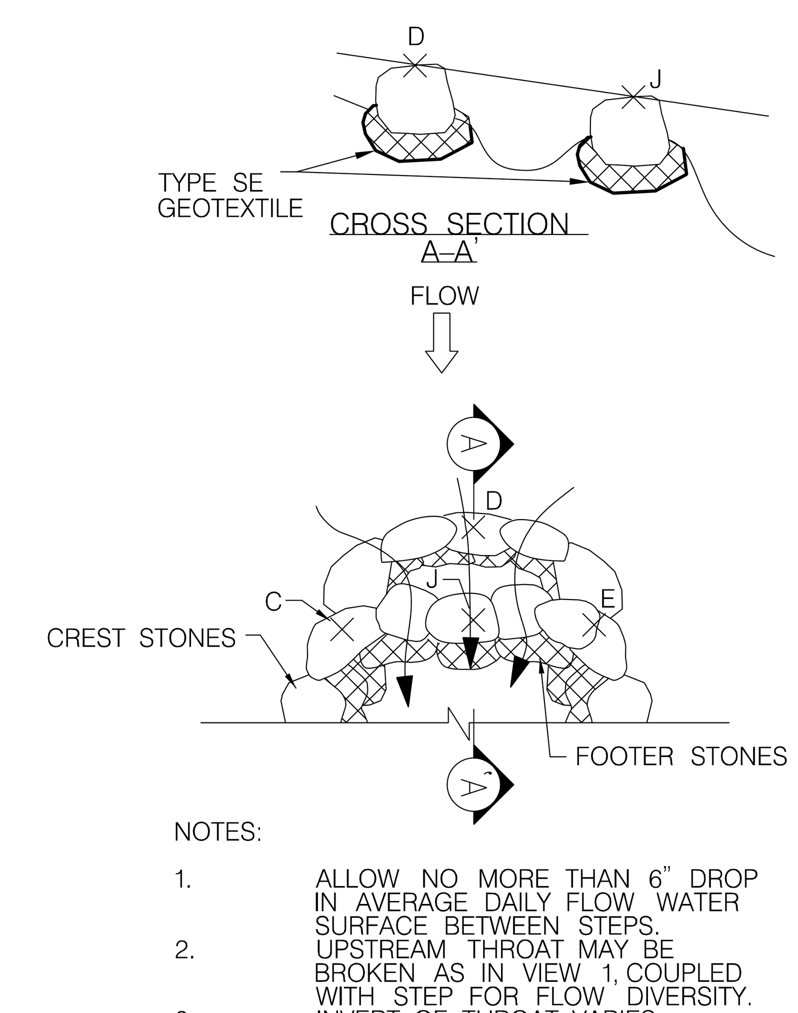
RANDOM BOULDER PLACEMENT

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.



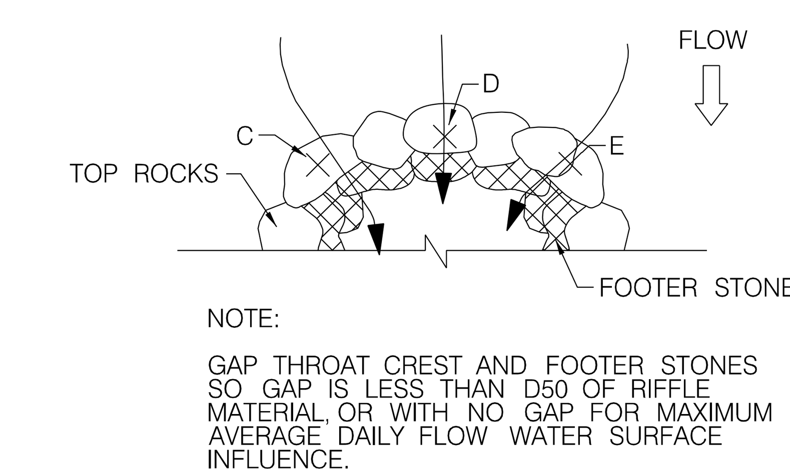
BROKEN THROAT DETAIL

NOT TO SCALE
(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES)



STEPPED THROAT DETAIL (AS DIRECTED)

NOT TO SCALE – NOT PROPOSED AT THIS TIME
(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES. NOT USED FOR THIS PROJECT, BUT AVAILABLE FOR IN-FIELD CHANGES AS REQUIRED)



CLOSED-GAP THROAT DETAIL

NOT TO SCALE
(AS APPLIED TO MIDDLE THIRD OF VANE STRUCTURES)

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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BY: KHiggins –

STATE OF MARYLAND · JEREMY SCOTT KOSER · No. 31183 · PROFESSIONAL ENGINEER

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STREAM RESTORATION DETAILS

SCALE N.T.S.	DATE APRIL, 2021	PROJECT NO. 17-10977-002	
MDE PROJECT NO. 21-SF-0044		CONTRACT NO. KH-3038-0000	
DESIGNED BY PVC		COUNTY BALTIMORE COUNTY	
DRAWN BY PVC		LOGMILE	
CHECKED BY JJM /MRG		HORIZONTAL SCALE N/A	
F.A.P. NO. N/A		VERTICAL SCALE N/A	

DRAWING NO. SRD – 2 OF 4 SHEET NO. 32 OF 86

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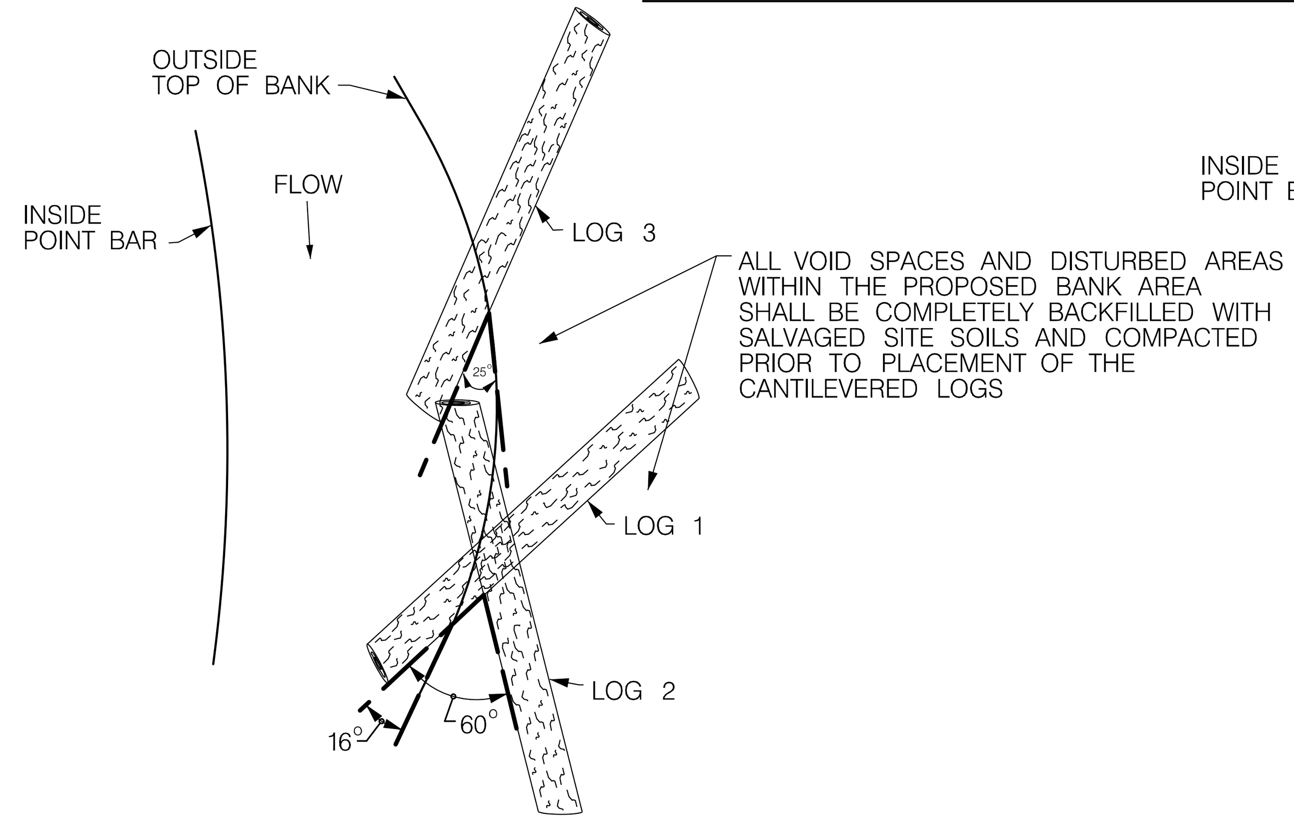
Wednesday, April 28, 2021 AT 10:40 AM

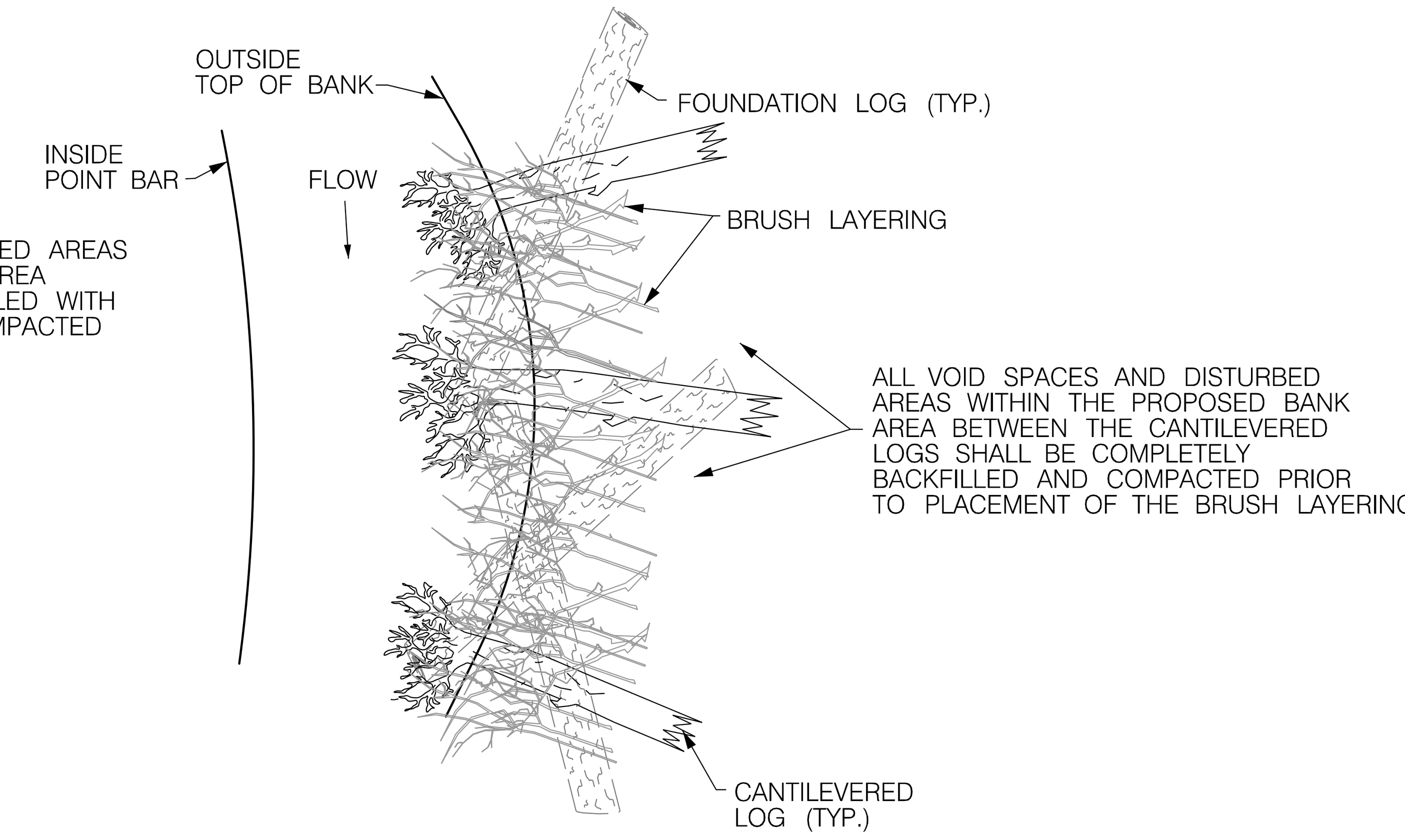
TOE WOOD STRUCTURE DETAILS



FOUNDATION LOGS – PLAN VIEW

NOTES:

1. LOGS UTILIZED SHALL HAVE A DIAMETER OF 6" TO 8" AND SHALL BE HARVESTED WITHIN THE PERMITTED LIMIT OF DISTURBANCE.
2. LOGS SHALL BE A MINIMUM OF 10 FEET IN LENGTH, WITH 60% OF THE LOG BURIED UNDER THE PROPOSED FLOODPLAIN.
3. FOUNDATION LOG 2 SHALL BE PLACED ON TOP OF FOUNDATION LOG 1.
4. EXACT ANGLES AND PLACEMENT OF THE LOGS WILL BE SITE DEPENDENT BASED ON LOCAL SITE CONDITIONS.
5. FOUNDATION LOGS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF THE CANTILEVERED LOGS.



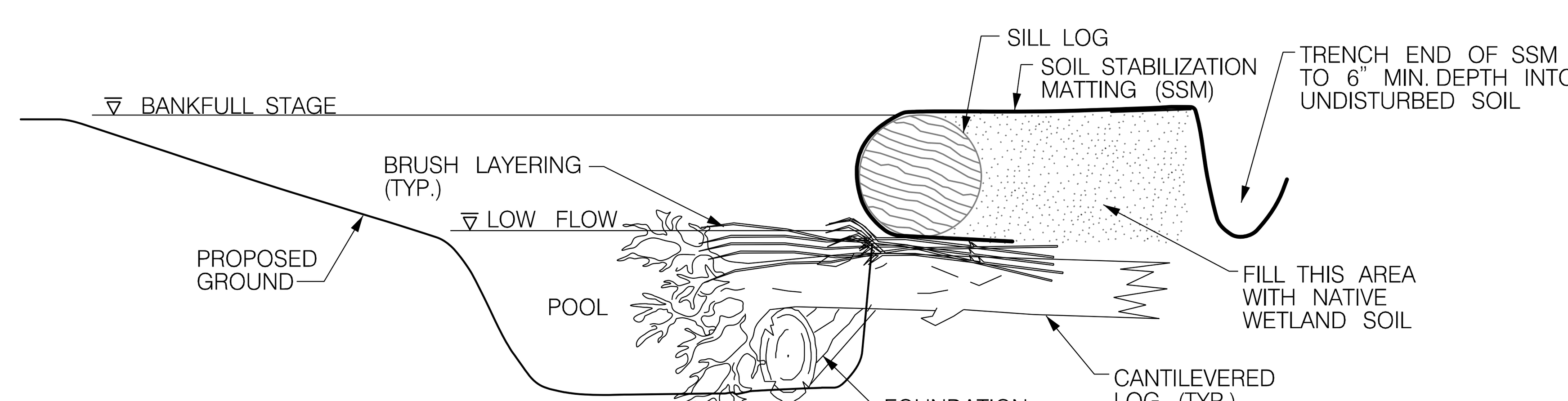
CANTILEVERED LOGS & BRUSH LAYERING
PLAN VIEW

NOTES:

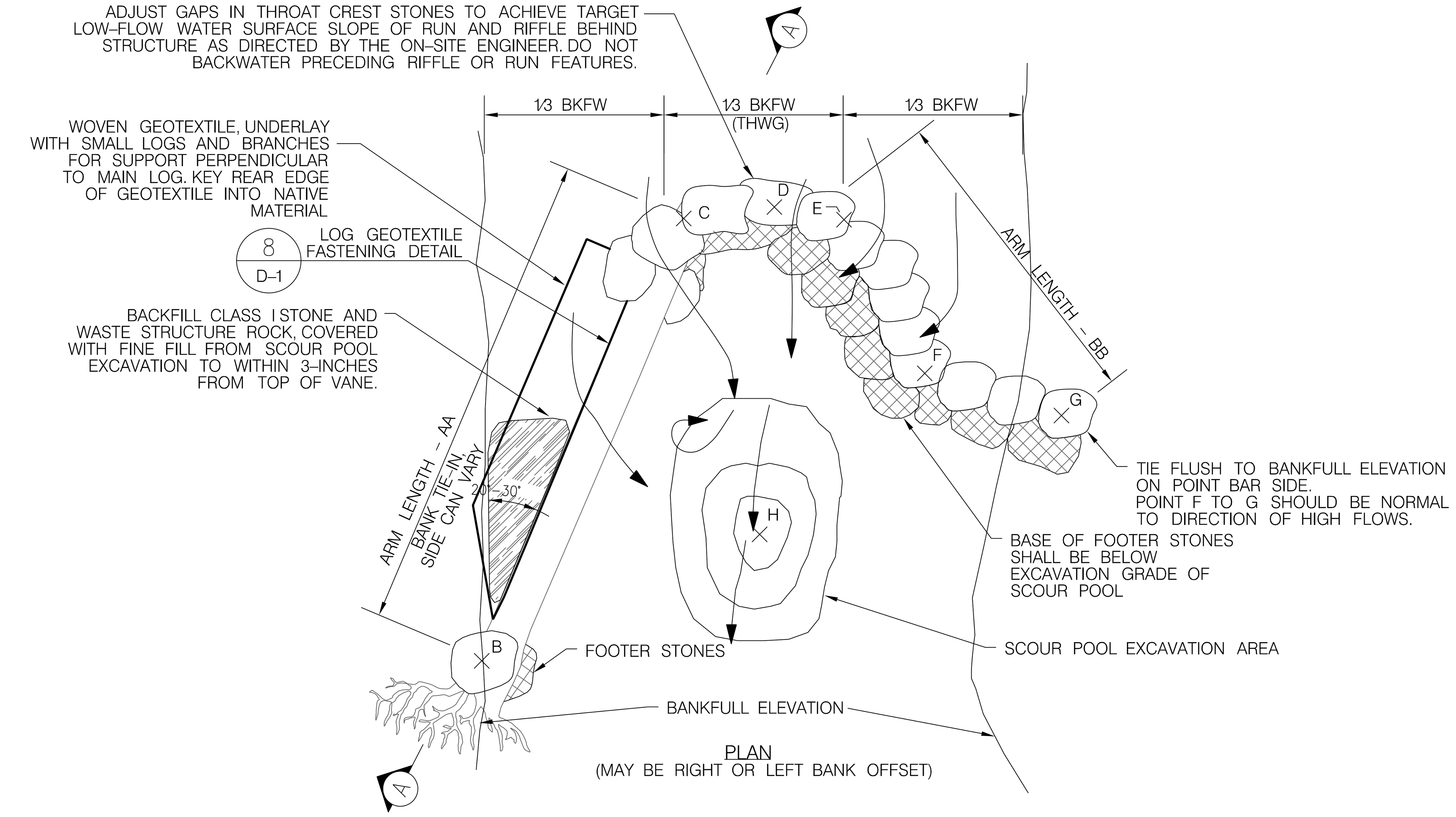
1. CANTILEVERED LOGS SHALL HAVE A DIAMETER OF 6" TO 8" WITH ROOT WAD INTACT AND SHALL BE HARVESTED WITHIN THE PERMITTED LIMIT OF DISTURBANCE.
2. CANTILEVERED LOGS SHALL BE A MINIMUM OF 10 FEET IN LENGTH AND PLACED ON TOP OF THE FOUNDATION LOGS WITH ⅔ OF THE LOG BURIED UNDER THE PROPOSED FLOODPLAIN.
3. BRUSH LAYER SHALL BE PLACED IN BETWEEN AND PARALLEL TO CANTILEVERED LOGS.
4. ALL FOUNDATION AND CANTILEVERED LOGS AND BRUSH LAYER SHALL REMAIN PERMANENTLY SUBMERGED TO PREVENT WOOD DETERIORATION.
5. FILL IN AND COMPACT ALL VOID SPACES BETWEEN CANTILEVERED LOGS PRIOR TO PLACEMENT OF THE BRUSH LAYERING.
6. BRUSH LAYER WILL CONSIST OF SCRAP TREE BRANCHES/TOPS OF TREES HARVESTED IN APPROVED LIMIT OF DISTURBANCE.

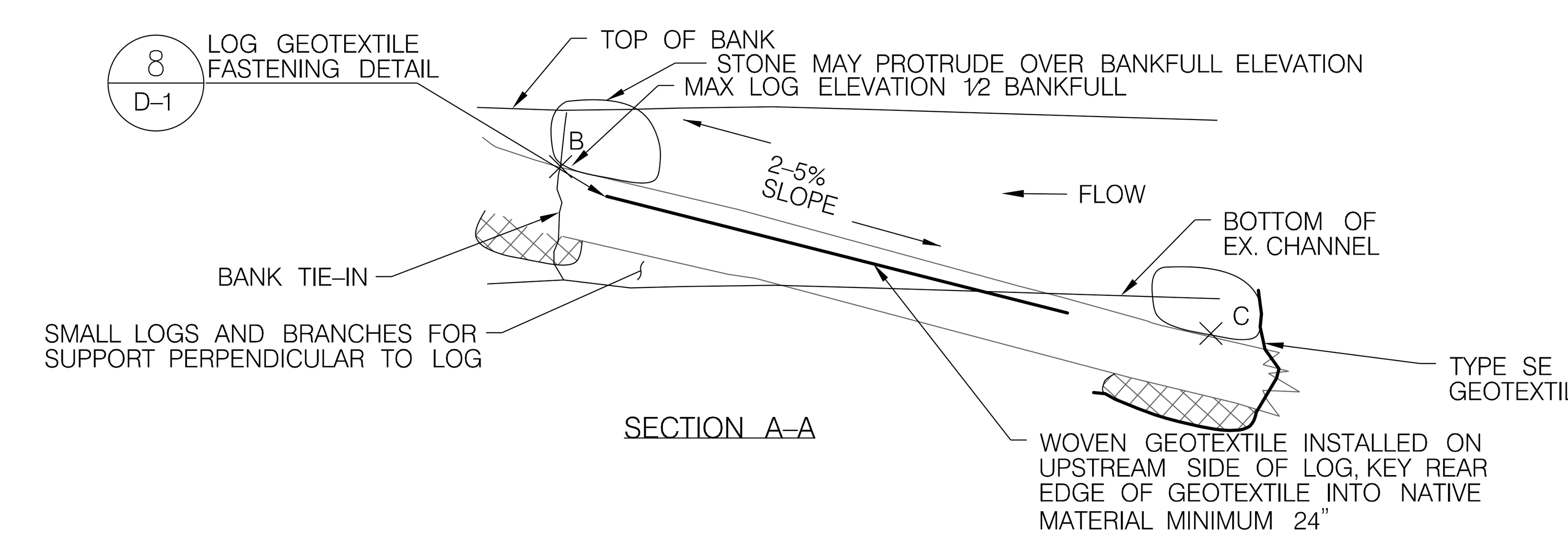
NOTES:

1. SOIL STABILIZATION MATTING SHALL BE PLACED ON TOP OF BRUSH LAYERING AND WRAPPED AROUND THE FRONT FACE OF THE INSTALLED SILL LOG ACCORDING TO THE DETAILS.
2. A SILL LOG SHALL BE INSTALLED FLUSH WITH THE PROPOSED FLOODPLAIN SURFACE, DEFINING THE UPSTREAM AND DOWNSTREAM LIMITS OF THE TOEWOOD SECTION AS SHOWN ON THE PLAN SHEETS.
3. SEE PLAN SHEETS FOR LOCATIONS.



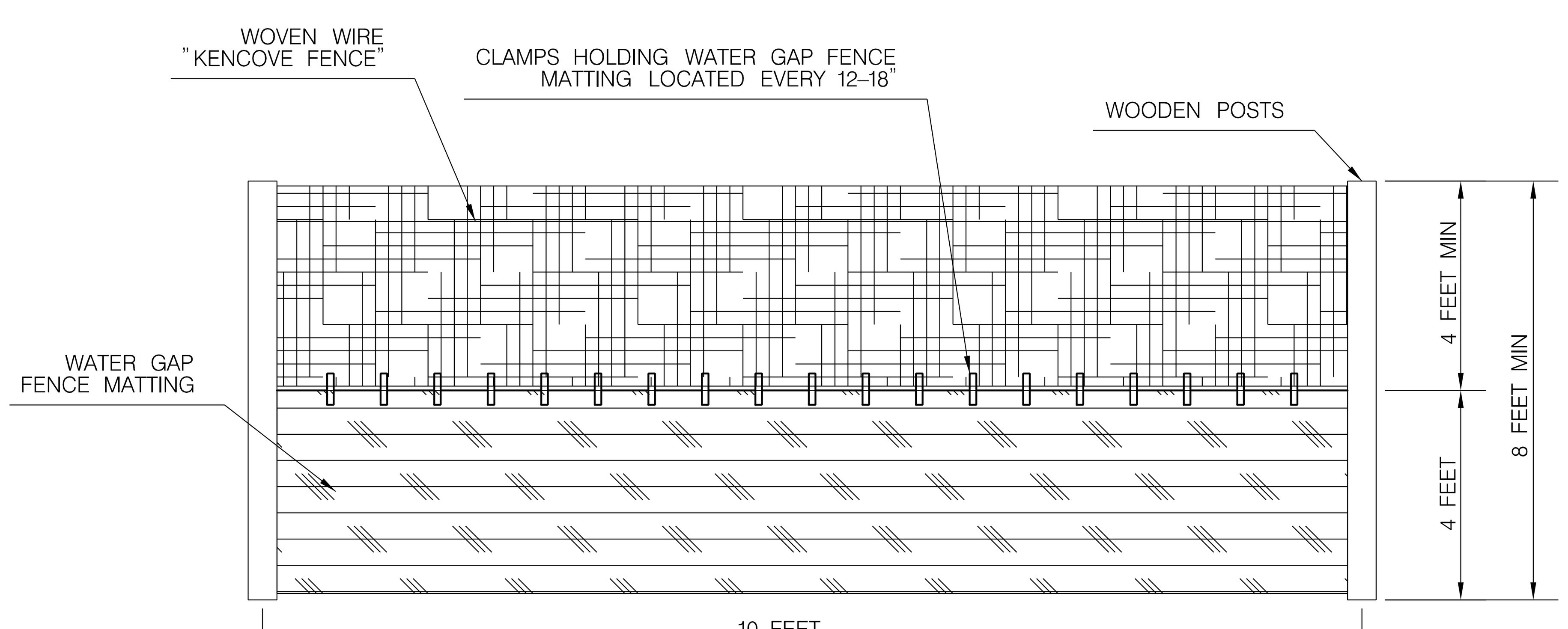
SECTION VIEW





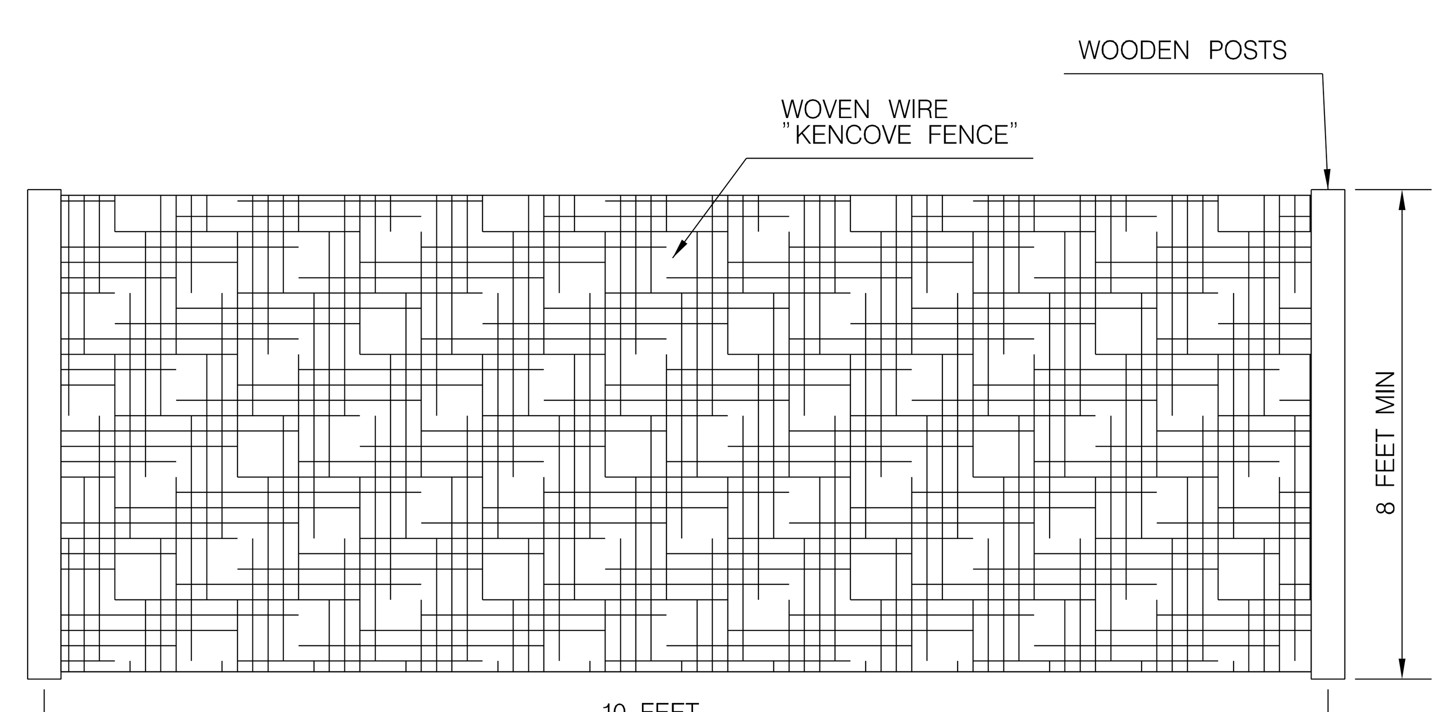
LOG J HOOK VANE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER OF ROCKS MAY VARY.



DEER FENCE STREAM CROSSING FENCE

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.



DEER FENCE DETAIL

NOT TO SCALE
MUST BE FIELD-FIT. CONFIGURATION AND NUMBER MAY VARY.

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
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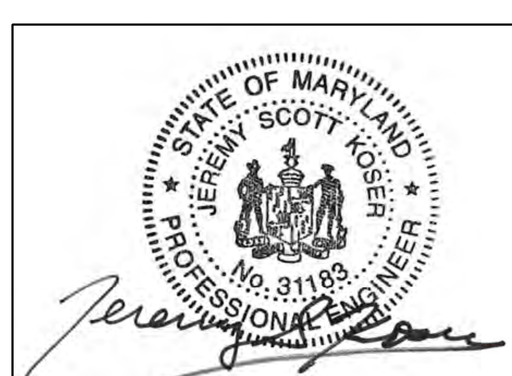

DESIGN PROFESSIONAL
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ECCLESTON MITIGATION SITE

REVISIONS

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STREAM RESTORATION DETAILS

SCALE	N.T.S.	DATE	APRIL, 2021	PROJECT NO.	17-10977-002
MDE PROJECT NO.	21-SF-0044			CONTRACT NO.	KH-3038-0000
DESIGNED BY	PVC			COUNTY	BALTIMORE COUNTY
DRAWN BY	PVC			LOGMILE	
CHECKED BY	JJM /MRG			HORIZONTAL SCALE	N /A
F.A.P. NO.	N /A			VERTICAL SCALE	N /A

DRAWING NO. SRD – 3 OF 4 SHEET NO. 33 OF 86

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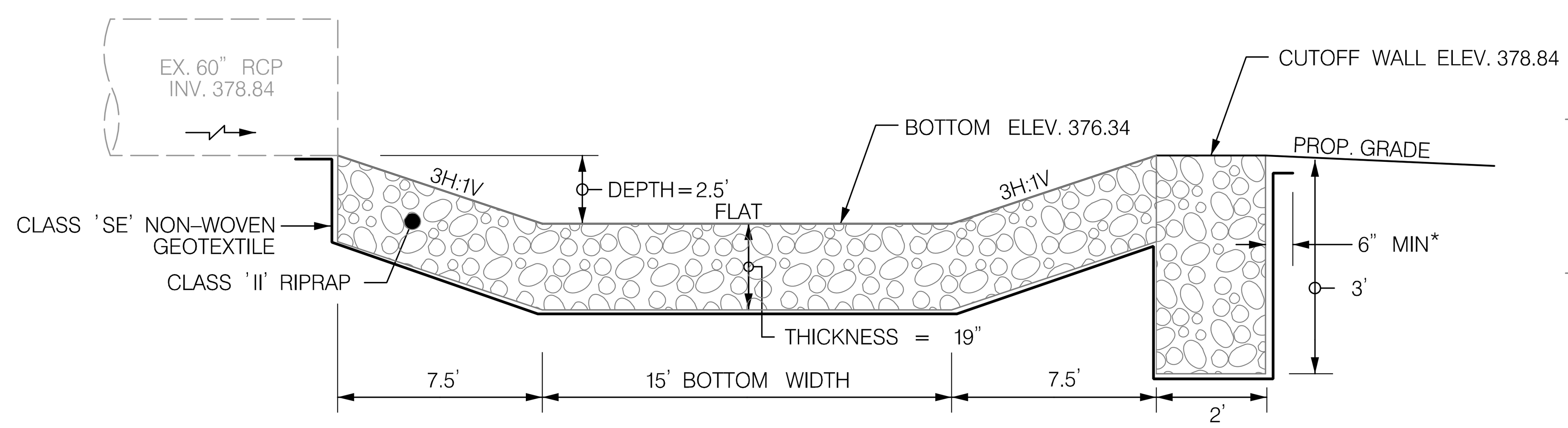
Wednesday, April 28, 2021 AT 07:01 AM

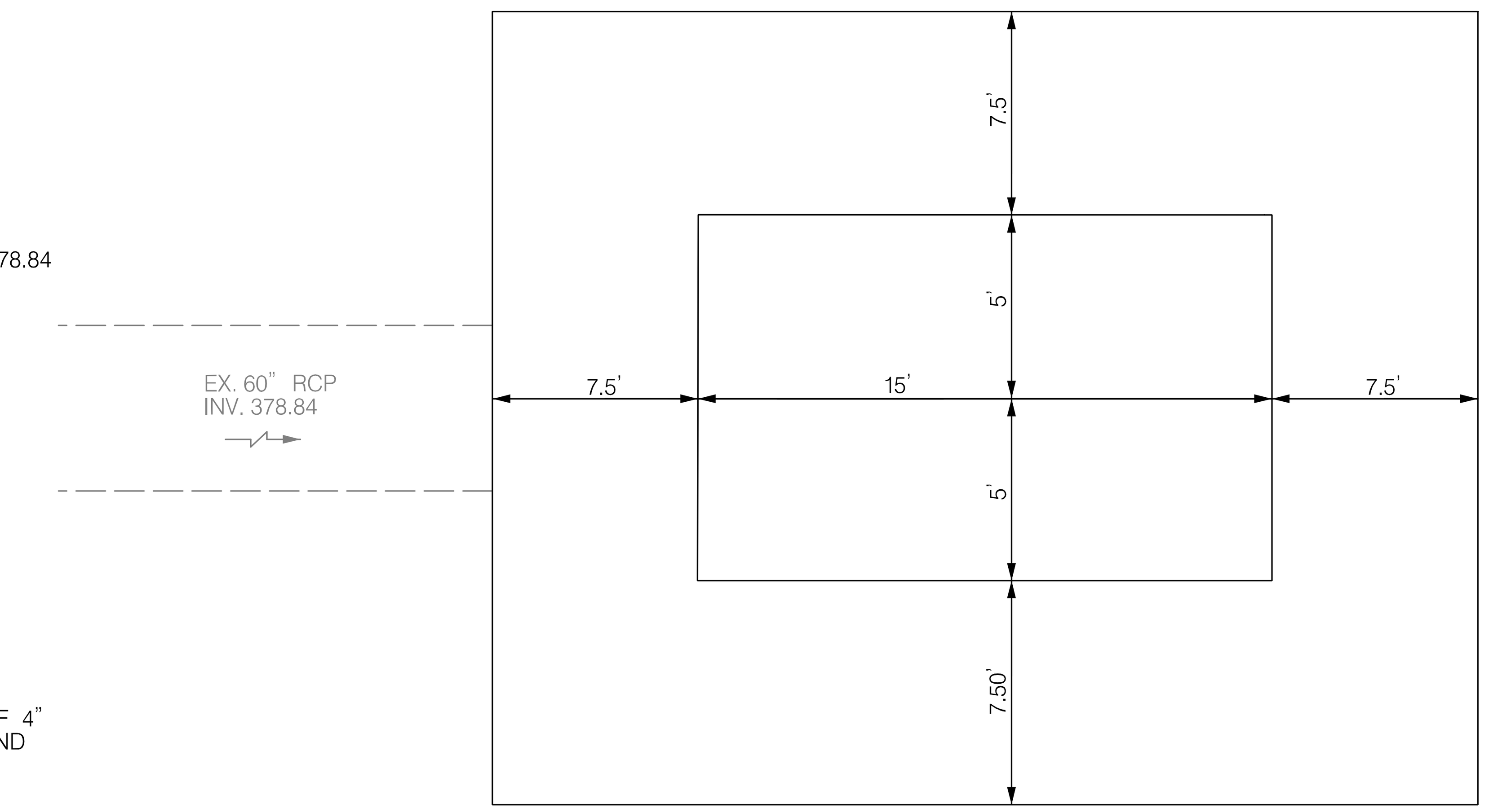
TYPE I – FREE FORM SCOUR HOLE (INTERSECTION TRIBUTARY)

N.T.S.

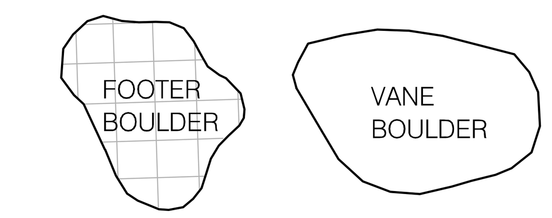


SIDE VIEW

* GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE END OF THE RIPRAP



PLAN VIEW



VANE AND FOOTER BOULDERS SHALL HAVE A MINIMUM INTERMEDIATE AXIS DIMENSION OF 2.0' (24"). MINIMUM SIZE OF THE BOULDERS WIL BE 2.5'x2.0'x3.0'.

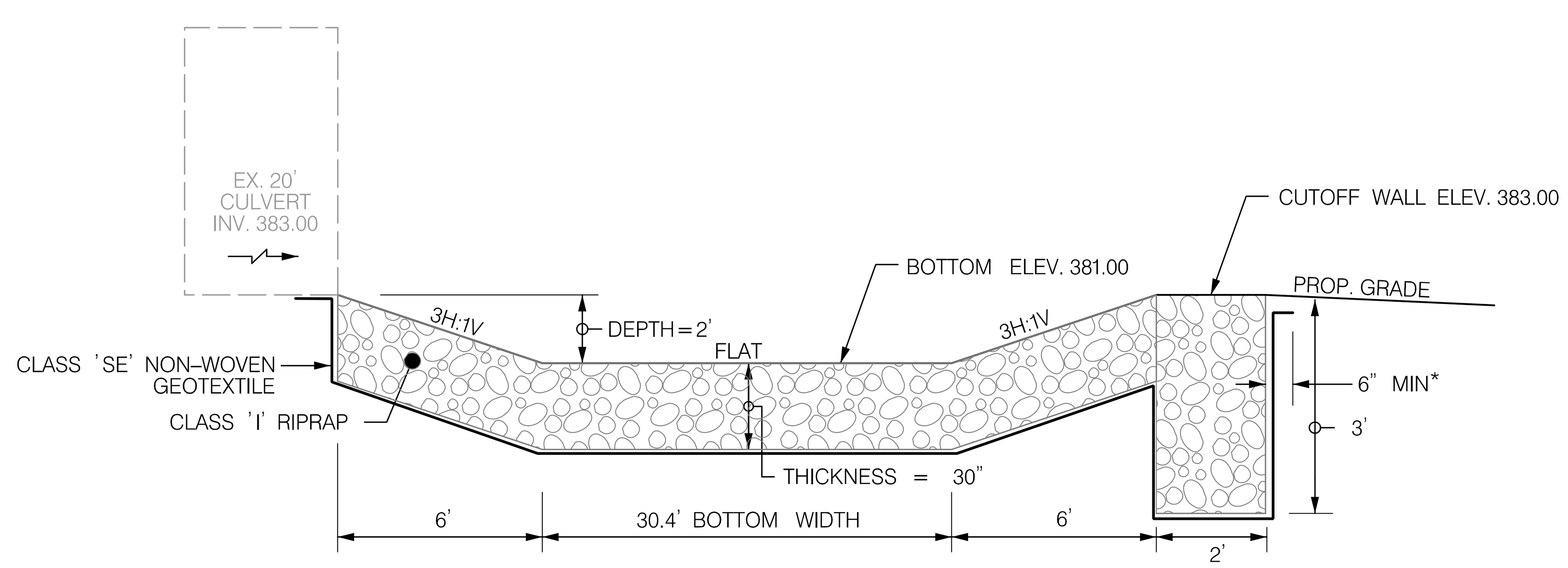
SILL STONES SHALL HAVE A MINIMUM INTERMEDIATE AXIS DIMENSION OF 1.5' (18"). MINIMUM SIZE OF THE SILL ROCKS WILL BE 2.0'x1.5'x2.0'

ALL BOULDERS USED SHALL HAVE A MINIMUM DENSITY OF 160 POUNDS PER CUBIC FOOT.

BOULDER DETAIL

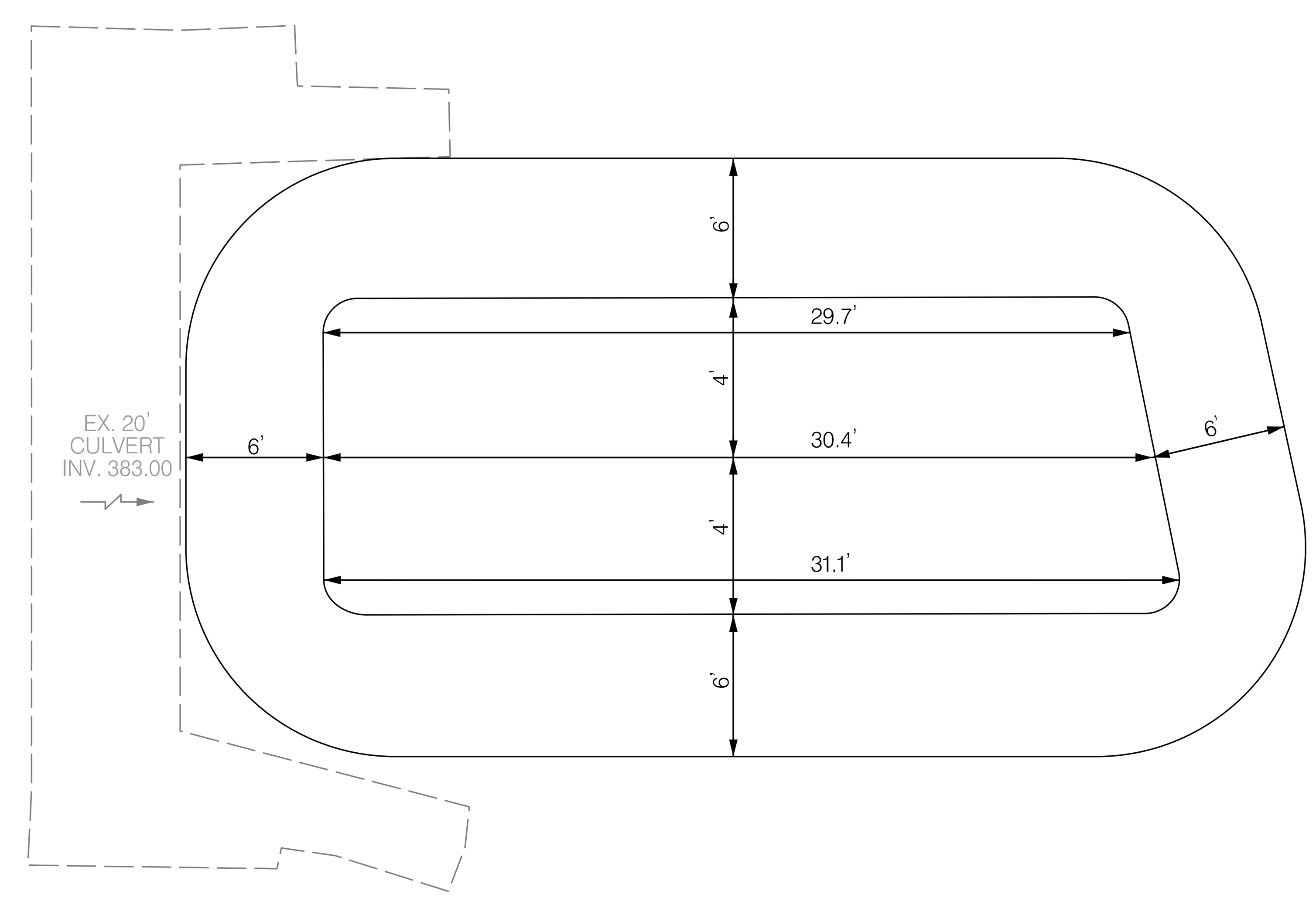
TYPE I – FREE FORM SCOUR HOLE (SOUTH TRIBUTARY 1)

N.T.S.



SIDE VIEW

* GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE END OF THE RIPRAP



PLAN VIEW

ROCK SIZING SCHEDULE

(SEE SPECIFICATIONS FOR DETAILED DESCRIPTIONS AND TOLERANCES OF FURNISHED AND SALVAGED STONE/ROCK MATERIALS)

TYPE	MINIMUM LENGTH	MINIMUM WIDTH	MINIMUM HEIGHT	TYPICAL SHAPE	TYPICAL USAGES
STRUCTURE CREST STONES / FOOTER STONES /FOUNDATION STONES / IMBRICATED RIPRAP /RANDOM BOULDERS	30"	24"	18"	TABULAR	VANE STRUCTURES, ROCK TOW, IMBRICATED RIPRAP
SILL STONES	24"	18"	12"	TABULAR	VANE STRUCTURES
SALVAGED CHANNEL BED MATERIAL	VARIES			VARIES	CHOKING IN MATERIAL FOR CHANNEL BED, BACKFILL
FURNISHED CHANNEL BED MATERIAL	SEE SPECIFICATIONS FOR PARTICLE SIZE DISTRIBUTION			MIXED	CHOKING IN MATERIAL FOR CHANNEL BED, BACKFILL
CLASS I RIPRAP UNDERLAYMENT	SEE MDE 2011 E&S SPECIFICATIONS, TABLE H.2			ANGULAR	ALL CHANNEL BED LOCATION, 1' THICKNESS AT NOTED WIDTHS, AND UNDER 6" FURNISHED TOPSOIL ON PROPOSED STREAM BANKS
CLASS 0, I, II, III RIPRAP	SEE MDE 2011 E&S SPECIFICATIONS, TABLE H.2			ANGULAR	OUTFALL PROTECTION, SLOPE AND CHANNEL PROTECTION, MISC. USES AS NOTED

OWNER /DEVELOPER INFORMATION
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BALTIMORE, MD 21224

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STATE OF MARYLAND JEREMY SCOTT KOSER No. 31183 PROFESSIONAL ENGINEER

ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

NOT FOR CONSTRUCTION

STREAM RESTORATION DETAILS

SCALE N.T.S. DATE APRIL, 2021 PROJECT NO. 17-10977-002
MDE PROJECT NO. 21-SF-0044 CONTRACT NO. KH-3038-0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. SRD – 4 OF 4 SHEET NO. 34 OF 86

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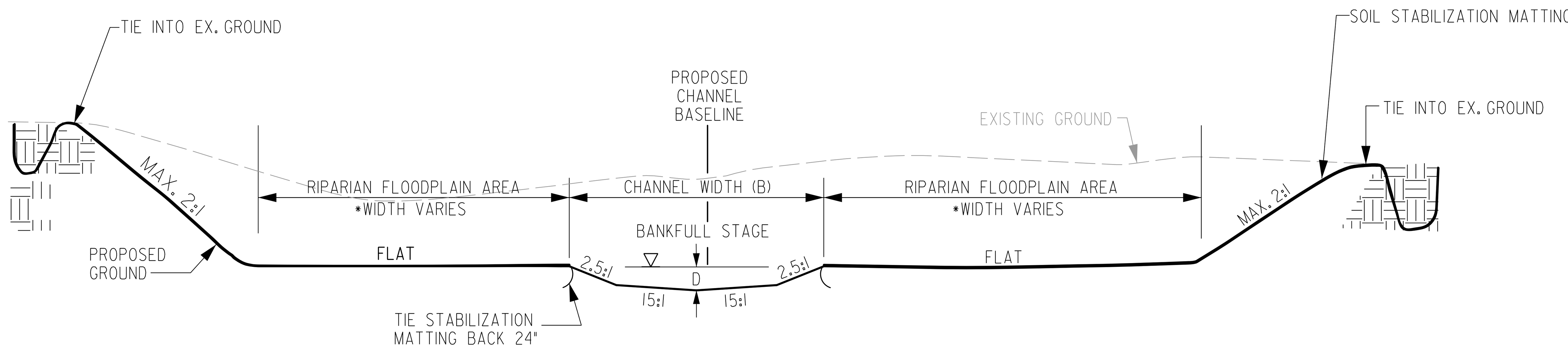
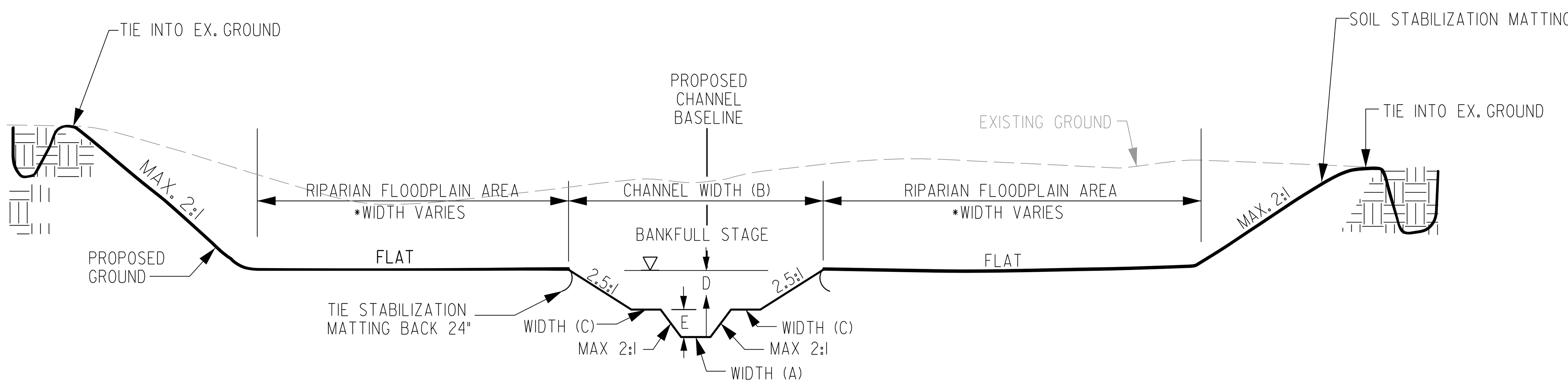
Wednesday, April 28, 2021 AT 07:03 AM



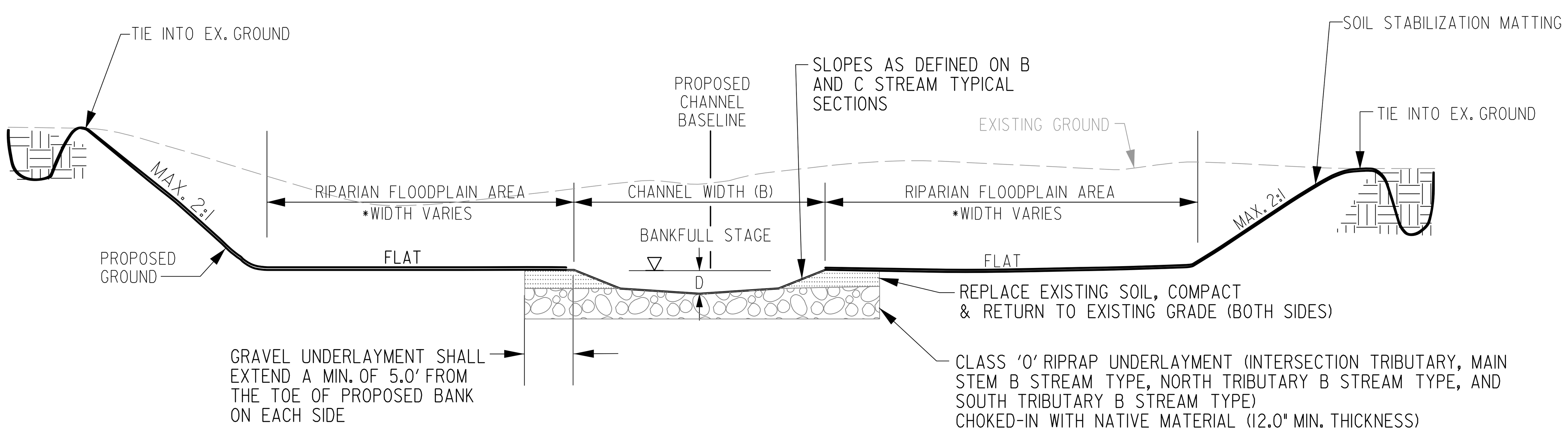
C–STREAM RIFFLE TYPICAL CROSS SECTIONS

N.T.S.



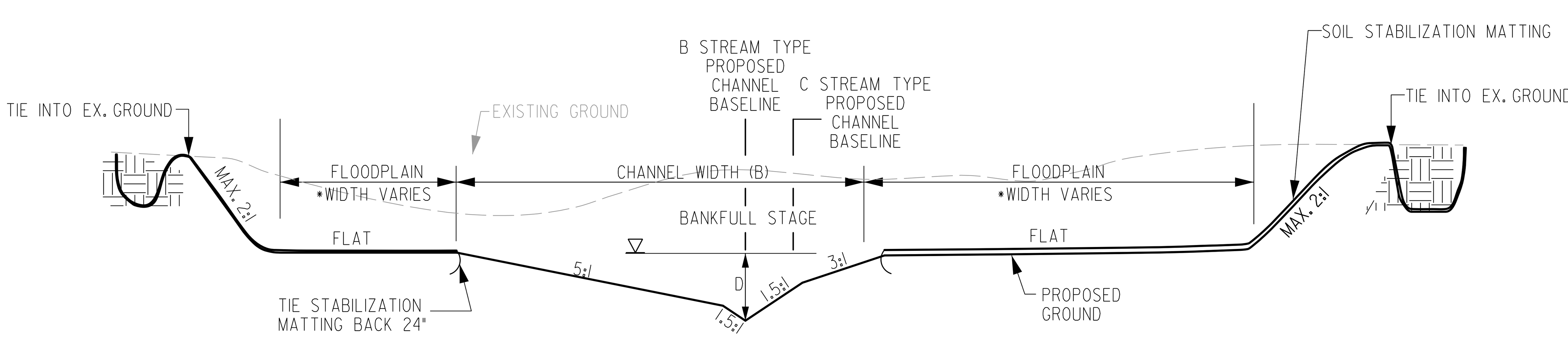
B–STREAM RIFFLE TYPICAL CROSS SECTIONS

N.T.S.



B AND C STREAM RIFFLE UNDERLAYMENT SECTION

N.T.S.



*NOTE: LEFT POOL SECTION IS MIRROR IMAGE OF RIGHT POOL SHOWN.

'C' STREAM POOL SECTION

N.T.S.

RIFFLE DIMENSION TABLE

LOCATION	STA. TO STA.	STREAM TYPE	BANKFULL DEPTH (D)	CHANNEL WIDTH (B)	WIDTH (A)	WIDTH (C)	DEPTH (E)
MAIN STEM	100+00 TO 101+43.02	B*	1.00'	12.5'	N/A	N/A	N/A
MAIN STEM	101+43.02 TO 126+76.91	C	0.80'	9.0'	N/A	N/A	N/A
NORTH TRIBUTARY	600+00 TO 607+36.42	B	0.80'	10.0'	2.0'	1.50'	0.30'
NORTH TRIBUTARY	607+36.42 TO 614+59.47	C	0.60'	6.5'	N/A	N/A	N/A
SOUTH TRIBUTARY - 1	200+00 TO 207+76.46	B	0.70'	7.0'	1.0'	1.25'	0.40'
SOUTH TRIBUTARY - 2	300+00 TO 304+16.88	B	0.70'	7.0'	1.0'	1.25'	0.40'
SOUTH TRIBUTARY - 1	207+76.46 TO 211+83.90	C	0.50'	4.5'	N/A	N/A	N/A
SOUTH TRIBUTARY - 2	304+16.88 TO 309+89.61	C	0.50'	4.5'	N/A	N/A	N/A
SOUTH TRIBUTARY - 3	400+00 TO 403+27.10	C	0.50'	4.5'	N/A	N/A	N/A
SOUTH TRIBUTARY - 4	500+00 TO 501+78.35	C	0.50'	4.5'	N/A	N/A	N/A
PERENNIAL 0 ORDER STREAM-1	800+00 TO 803+28.48	C	0.50'	3.0'	N/A	N/A	N/A
PERENNIAL 0 ORDER STREAM-2	700+00 TO 707+75.29	C	0.50'	3.0'	N/A	N/A	N/A
INTERSECTION TRIBUTARY	900+00 TO 907+22.02	B	1.00'	5.0'	1.0'	1.25'	0.40'

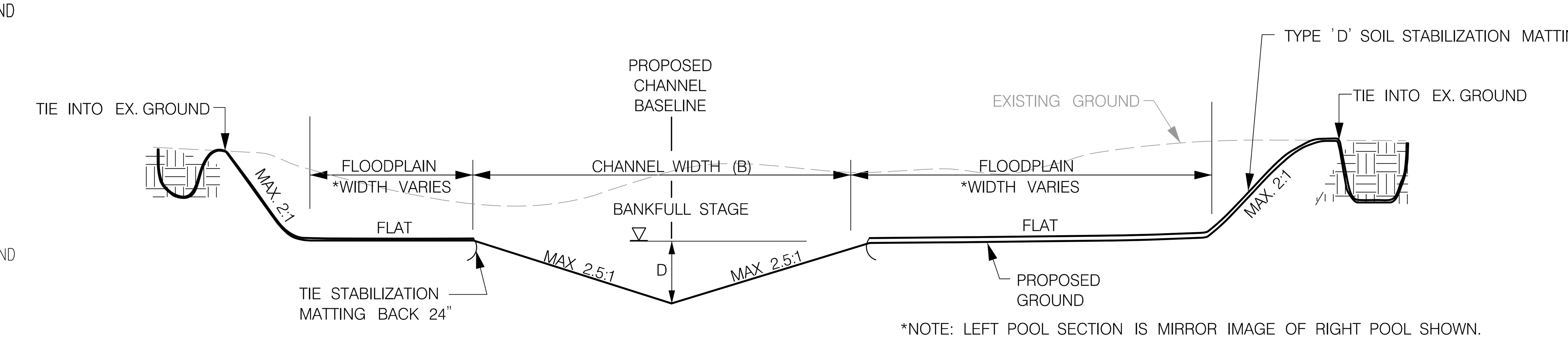
*MAIN STEM B-STREAM SECTION WILL HAVE C-STREAM RIFFLE TYPICAL CROSS SECTION DIMENSIONS

POOL DIMENSION TABLE

LOCATION	STA. TO STA.	STREAM TYPE	BANKFULL DEPTH (D)	CHANNEL WIDTH (B)
MAIN STEM	100+00 TO 101+43.02	B	1.5-3'	12.5' - 16.5'
MAIN STEM	101+43.02 TO 126+76.91	C	1.5-3'	13.8' - 20.7'
NORTH TRIBUTARY	600+00 TO 607+36.42	B	3.5'-4.25'	16.67' - 20.0'
NORTH TRIBUTARY	607+36.42 TO 614+59.47	C	2.5'-4'	11.0' - 17.0'
SOUTH TRIBUTARY	200+00 TO 207+76.46	B	2.67'-4'	11.0' - 18.0'
SOUTH TRIBUTARY	300+00 TO 304+16.88	B	2.67'-4'	11.0' - 18.0'
SOUTH TRIBUTARY	207+76.46 TO 211+83.90	C	2'-3'	7.0' - 11.0'
SOUTH TRIBUTARY	304+16.88 TO 309+89.61	C	2'-3'	7.0' - 11.0'
SOUTH TRIBUTARY	400+00 TO 403+27.10	C	2'-3'	7.0' - 11.0'
SOUTH TRIBUTARY	500+00 TO 501+78.35	C	2'-3'	7.0' - 11.0'
PERENNIAL 0 ORDER STREAM-1	800+00 TO 803+28.48	C	2.5'-3'	5.5' - 7.75'
PERENNIAL 0 ORDER STREAM-2	700+00 TO 707+75.29	C	2.5'-3'	5.5' - 7.75'
INTERSECTION TRIBUTARY	900+00 TO 907+22.02	B	4'	15.0'

NOTES:

1. POOL CROSS-SECTION REPRESENTS THE MAXIMUM POOL CONDITION. POOL CROSS-SECTION WILL NEED TO TRANSITION INTO RIFFLE CROSS-SECTION.
2. THE FLOODPLAIN AREAS SHOWN AS FLAT ON THE TYPICAL SECTIONS, WILL ACTUALLY CONTAINED VARIED MICROTOPOGRAPHY TO BE CREATED DURING CONSTRUCTION UNDER THE GUIDANCE OF THE DESIGNATED SPECIALIST.
3. SEE PLANTING PLANS FOR PLACEMENT OF TOPSOIL. NO TOPSOIL IS ANTICIPATED FOR THIS PROJECT.



*NOTE: LEFT POOL SECTION IS MIRROR IMAGE OF RIGHT POOL SHOWN.

'B' STREAM POOL SECTION

N.T.S.

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

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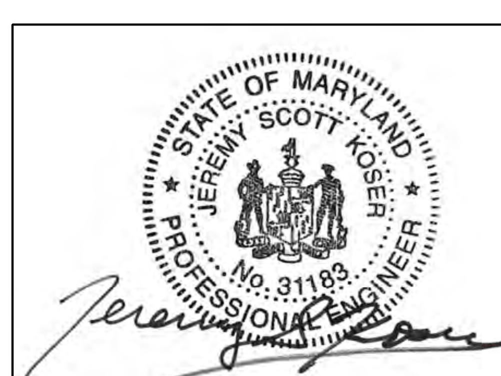

DESIGN PROFESSIONAL
JEREMY KOSER
JOHNSON, MIRMIRAN & THOMPSON, INC.
40 WIGHT AVENUE, HUNT VALLEY, MD 21030
TEL: 410-316-2360
EMAIL: JKoser@jmt.com

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. 31183 , EXPIRATION DATE: 1/13/2023 .

ECCLESTON MITIGATION SITE

REVISIONS

100% SUBMISSION

NOT FOR CONSTRUCTION

TYPICAL SECTIONS

SCALE N.T.S.	DATE APRIL, 2021	PROJECT NO. 17-10977-002	
MDE PROJECT NO. 21-SF-0044		CONTRACT NO. KH-3038-0000	
DESIGNED BY PVC		COUNTY BALTIMORE COUNTY	
DRAWN BY PVC		LOGMILE	
CHECKED BY JJM /MRG		HORIZONTAL SCALE N/A	
F.A.P. NO. N/A		VERTICAL SCALE N/A	

DRAWING NO. TS– 1 OF 1 SHEET NO. 35 OF 86

BY: barranger –

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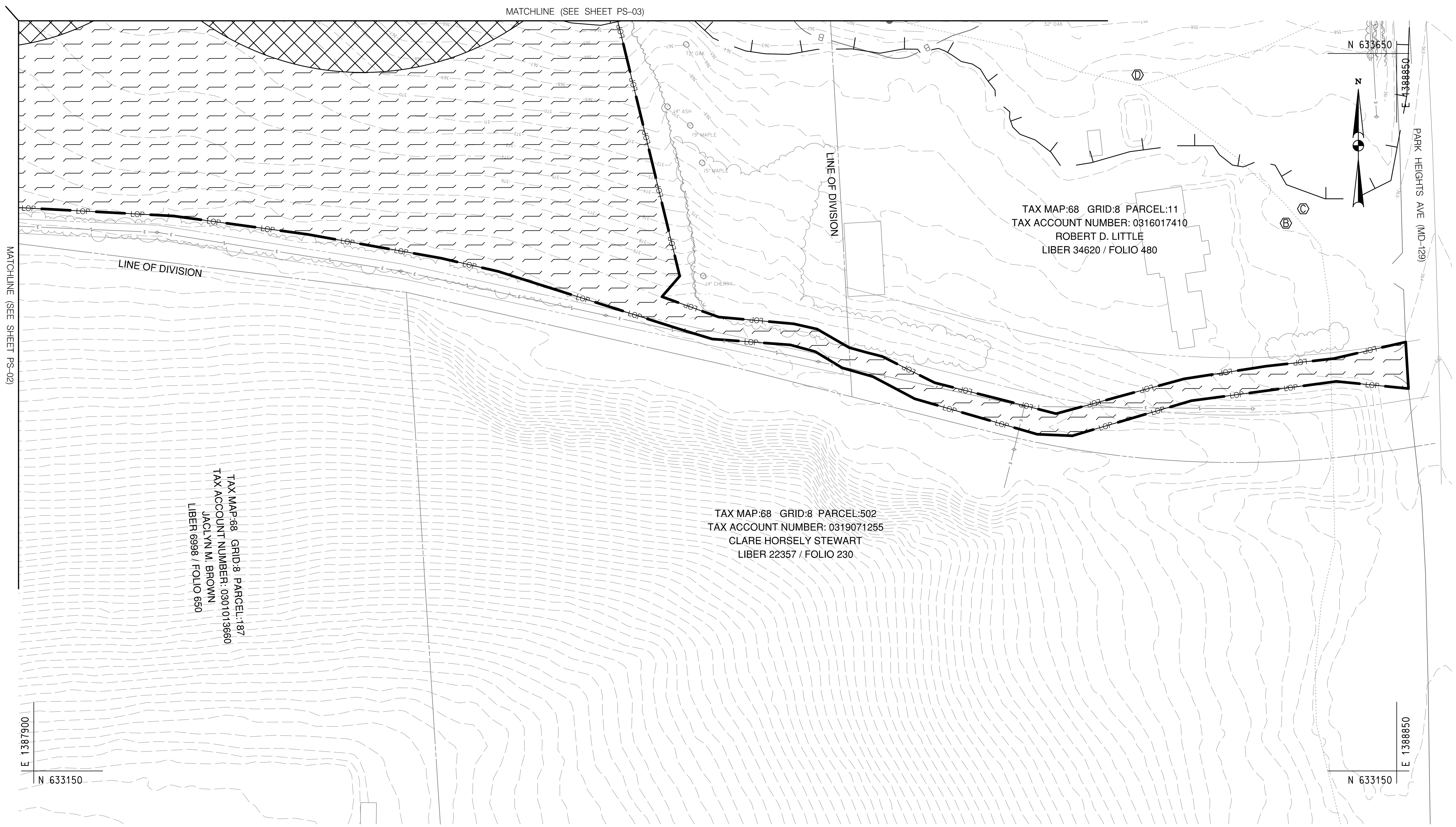
Wednesday, April 28, 2021 AT 07:03 AM



LEGEND

WETLAND PLANTING AREA

UPLAND PLANTING AREA

COOL SEASON PASTURE MIX

NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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STATE OF MARYLAND JEREMY SCOTT KOSER No. 31183 PROFESSIONAL ENGINEER

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PLANTING PLAN

SCALE AS SHOWN	DATE APRIL, 2021	PROJECT NO.	17-10977-002
MDE PROJECT NO. 21-SF-0044		CONTRACT NO.	KH-3038-0000
DESIGNED BY PVC		COUNTY	BALTIMORE COUNTY
DRAWN BY PVC		LOGMILE	
CHECKED BY JJM /MRG		HORIZONTAL SCALE	N/A
F.A.P. NO. N/A		VERTICAL SCALE	N/A

DRAWING NO. PS – 1 OF 9 SHEET NO. 36 OF 86

BY: barranger –

LEGEND

WETLAND PLANTING AREA

UPLAND PLANTING AREA

COOL SEASON PASTURE MIX

NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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OWINGS MILLS, MD 21117

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STATE OF MARYLAND JEREMY SCOTT KOSER No. 31183 PROFESSIONAL ENGINEER

ECCLESTON MITIGATION SITE

REVISIONS

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PLANTING PLAN

SCALE AS SHOWN	DATE APRIL, 2021	PROJECT NO. 17-10977-002	
MDE PROJECT NO. 21-SF-0044		CONTRACT NO. KH-3038-0000	
DESIGNED BY PVC		COUNTY BALTIMORE COUNTY	
DRAWN BY PVC		LOGMILE	
CHECKED BY JJM /MRG		HORIZONTAL SCALE N/A	
F.A.P. NO. N/A		VERTICAL SCALE N/A	

DRAWING NO. PS – 2 OF 9 SHEET NO. 37 OF 86

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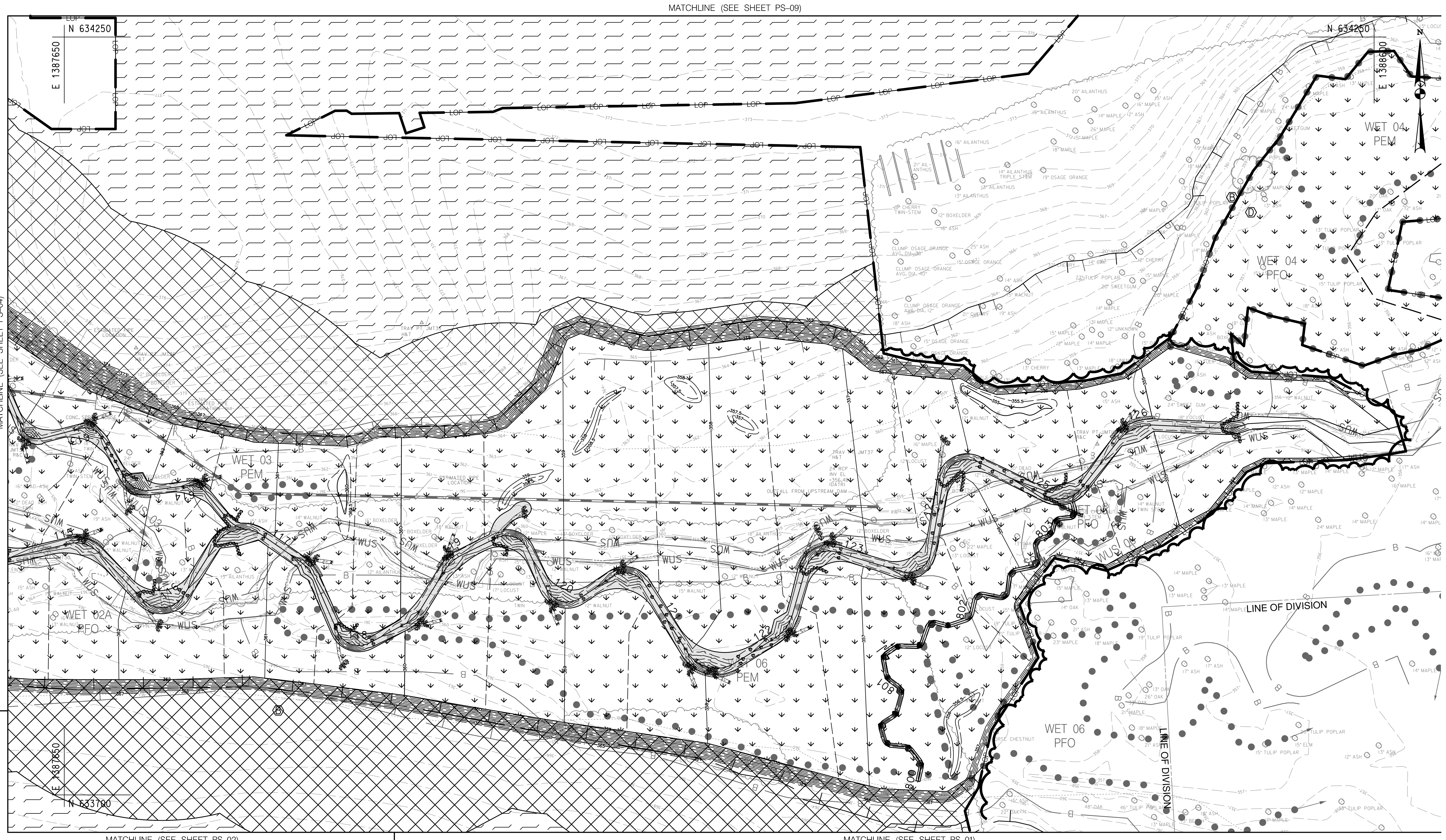

LEGEND

	WETLAND PLANTING AREA
	UPLAND PLANTING AREA
	COOL SEASON PASTURE MIX

NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
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STATE OF MARYLAND
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PROFESSIONAL ENGINEER

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REVISIONS

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PLANTING PLAN

SCALE AS SHOWN DATE APRIL, 2021 PROJECT NO. 17-10977-002
MDE PROJECT NO. 21-SF-0044 CONTRACT NO. KH-3038-0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. PS – 3 OF 9 SHEET NO. 38 OF 86

BY: barranger –

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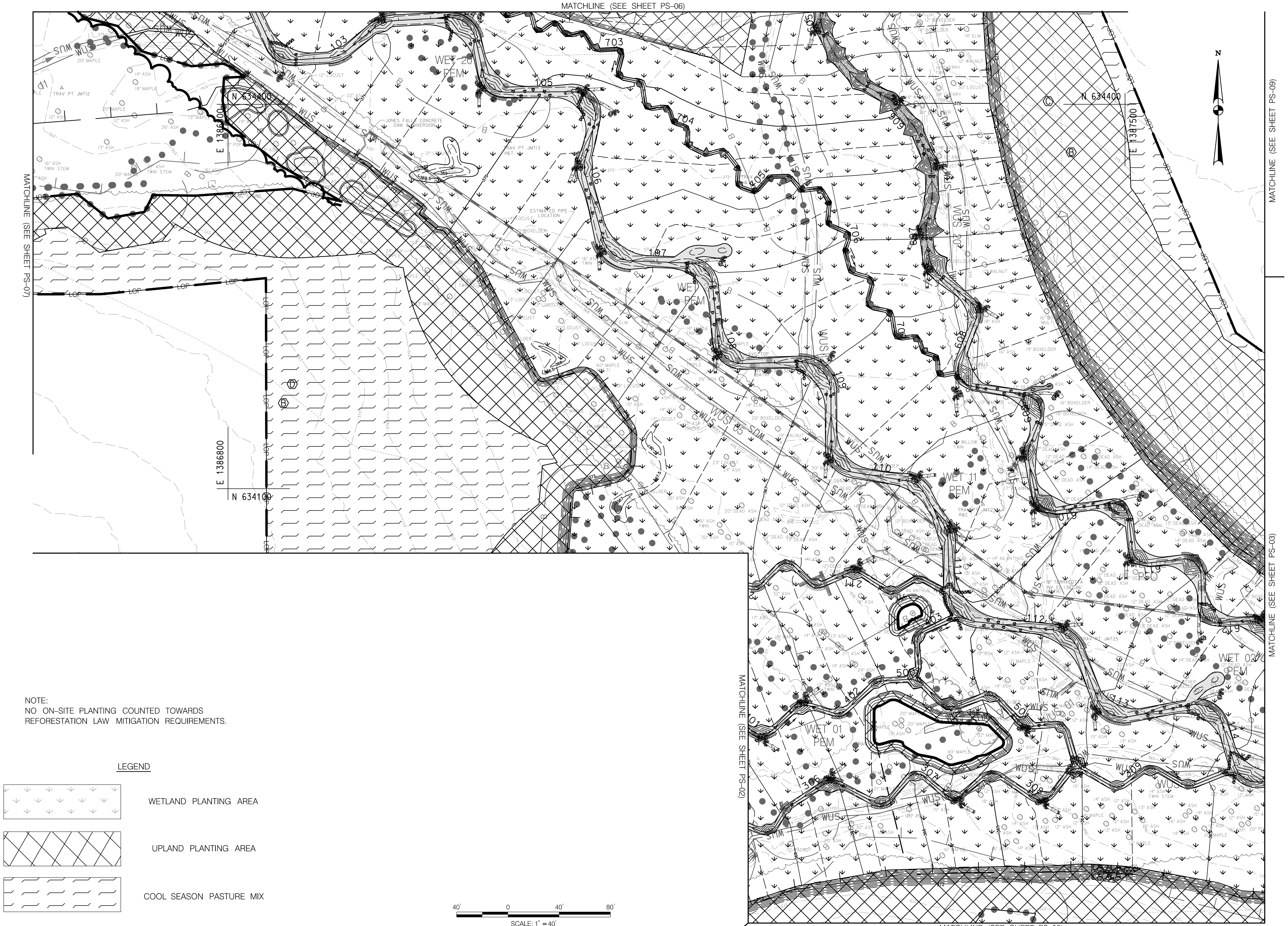
Wednesday, April 28, 2021 AT 07:06 AM



NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

LEGEND

WETLAND PLANTING AREA

UPLAND PLANTING AREA

COOL SEASON PASTURE MIX

40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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REVISIONS

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PLANTING PLAN

SCALE AS SHOWN DATE APRIL, 2021 PROJECT NO. 17-10977-002
MDE PROJECT NO. 21-SF-0044 CONTRACT NO. KH-3038-0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. PS – 4 OF 9 SHEET NO. 39 OF 86

BY: KHiggins –

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Wednesday, April 28, 2021 AT 11:11 AM

NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

LEGEND

WETLAND PLANTING AREA

UPLAND PLANTING AREA

COOL SEASON PASTURE MIX

40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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PLANTING PLAN

SCALE AS SHOWN DATE APRIL, 2021 PROJECT NO. 17-10977-002
MDE PROJECT NO. 21-SF-0044 CONTRACT NO. KH-3038-0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM /MRG HORIZONTAL SCALE N/A
F.A.P. NO. N/A VERTICAL SCALE N/A

DRAWING NO. PS – 5 OF 9 SHEET NO. 40 OF 86

BY: barranger –

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Wednesday, April 28, 2021 AT 07:07 AM

MATCHLINE (SEE SHEET PS-07)

MATCHLINE (SEE SHEET PS-04)

LEGEND

WETLAND PLANTING AREA

UPLAND PLANTING AREA

COOL SEASON PASTURE MIX

NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

OWNER /DEVELOPER INFORMATION

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

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SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

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40' 0 40' 80'
SCALE: 1" = 40'

DESIGN PROFESSIONAL

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STATE OF MARYLAND JEREMY SCOTT KOSER No. 31183 PROFESSIONAL ENGINEER

ECCLESTON MITIGATION SITE

REVISIONS

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PLANTING PLAN

SCALE AS SHOWN — DATE ARPIL, 2021 — PROJECT NO. 17–10977–002
MDE PROJECT NO. 21–SF–0044 — CONTRACT NO. KH–3038–0000
DESIGNED BY PVC — COUNTY BALTIMORE COUNTY
DRAWN BY PVC — LOGMILE
CHECKED BY JJM /MRG — HORIZONTAL SCALE N/A
F.A.P. NO. N/A — VERTICAL SCALE N/A

DRAWING NO. **PS – 6** OF **9** — SHEET NO. 41 OF 86

BY: barranger –

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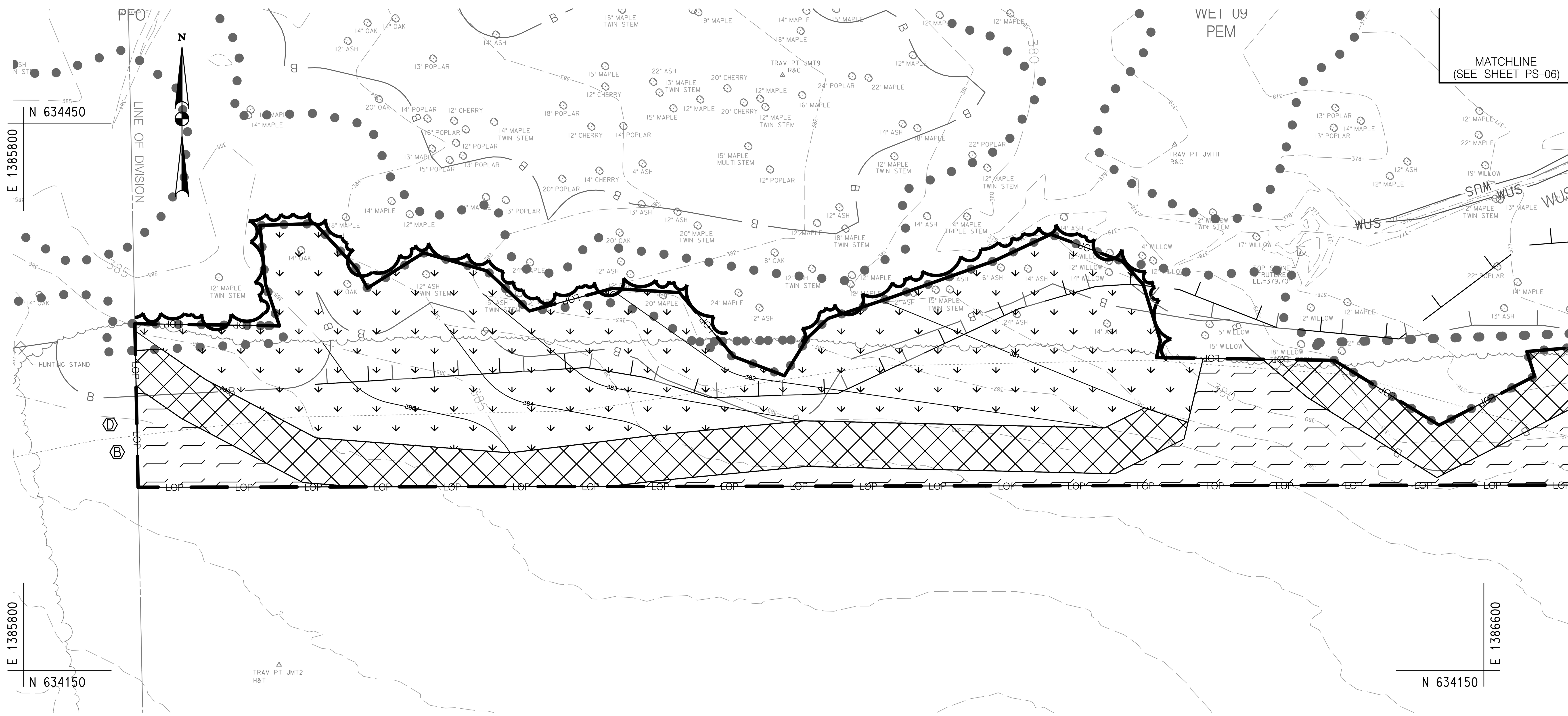
Wednesday, April 28, 2021 AT 07:08 AM



LEGEND

	WETLAND PLANTING AREA
	UPLAND PLANTING AREA
	COOL SEASON PASTURE MIX

NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

40' 0 40' 80'
SCALE: 1" = 40'

OWNER / DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
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STATE OF MARYLAND
JEREMY SCOTT KOSER
No. 31183
PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL
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ECCLESTON MITIGATION SITE

REVISIONS
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PLANTING PLAN

SCALE AS SHOWN DATE ARPIL, 2021 PROJECT NO. 17–10977–002
MDE PROJECT NO. 21–SF–0044 CONTRACT NO. KH–3038–0000
DESIGNED BY PVC COUNTY BALTIMORE COUNTY
DRAWN BY PVC LOGMILE
CHECKED BY JJM / MRG HORIZONTAL SCALE N / A
F.A.P. NO. N / A VERTICAL SCALE N / A

DRAWING NO. PS – 7 OF 9 SHEET NO. 42 OF 86

BY: barranger –

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Wednesday, April 28, 2021 AT 07:09 AM

LEGEND

WETLAND PLANTING AREA

UPLAND PLANTING AREA

UPLAND COOL SEASON PASTURE MIX

WETLAND COOL SEASON PASTURE MIX

NOTE:
NO ON-SITE PLANTING COUNTED TOWARDS REFORESTATION LAW MITIGATION REQUIREMENTS.

40' 0 40' 80'
SCALE: 1" = 40'

OWNER /DEVELOPER INFORMATION
MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND COORDINATE SYSTEM – HOR. NAD 83/91 MD STATE PLANE VERT. NAVD 88

GREENSPRING VALLEY ROAD
SW CORNER PARK HEIGHTS AVE
OWINGS MILLS, MD 21117

PLANTING PLAN

ECCLESTON MITIGATION SITE

REVISIONS

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SCALE: AS SHOWN	DATE: ARPIL, 2021
PROJECT NO.: 17–10977–002	
MDE PROJECT NO.: 21–SF–0044	CONTRACT NO.: KH–3038–0000
DESIGNED BY: PVC	COUNTY: BALTIMORE COUNTY
DRAWN BY: PVC	LOGMILE:
CHECKED BY: JJM /MRG	HORIZONTAL SCALE: N/A
F.A.P. NO.: N/A	VERTICAL SCALE: N/A
DRAWING NO. PS–8 OF 9	SHEET NO. 43 OF 86

DESIGN PROFESSIONAL
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BY: barranger –

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