

# HARFORD COMMUNITY COLLEGE

## STREAM RESTORATION

### 60% PRELIMINARY DESIGN

#### INDEX OF SHEETS

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22-23	TYPICAL SECTIONS	TS-01 TO TS-02
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48	DRAINAGE AREA MAP	DA-01

#### PROJECT SUMMARY

TOTAL LENGTH OF EXISTING STREAM RESTORED: 2,600 LINEAR FEET  
 TOTAL LENGTH OF PROPOSED STREAM RESTORED: 2,600 LINEAR FEET  
 STREAM USE CLASS: IV-P  
 STREAM CLOSURE PERIOD: MARCH 1" - JUNE 15"  
 LOAD REDUCTIONS AND IA CREDIT SUMMARY:

IA CREDIT	TSS REDUCTION	TN REDUCTION	TP REDUCTION
108.31 AC	538.24 TON/YR	714.29 LB/YR	338.14 LB/YR

NOTE: CREDIT CALCULATED VIA PROTOCOL 1 BANCS METHODOLOGY, PROTOCOL 5, AND THE 2021 MOE WASTELOAD ALLOCATIONS DOCUMENT.

#### SITE ANALYSIS

1. TOTAL SITE AREA:	4.34 AC
2. TOTAL DISTURBED AREA:	4.34 AC
3. TOTAL IMPERVIOUS AREA WITHIN THE LOD:	0.01 AC
4. TOTAL AREA TO BE VEGETATIVELY STABILIZED:	3.93 AC
5. PROPOSED IMPERVIOUS AREA:	0 AC
6. IMPERVIOUS AREA TREATED (MS4 CREDIT):	108.31
7. ESTIMATED CUT:	4,275 CY
8. ESTIMATED FILL:	1,595 CY
9. NET EXPORT:	2,680 CY

#### AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

PRINTED NAME \_\_\_\_\_

#### FIELD VERIFICATION

I HEREBY CERTIFY THAT I COMPLETED A FIELD VERIFICATION TO THE INFORMATION SHOWN ON THE PLANS ON JUNE 15, 2021 AND THAT THE INFORMATION SHOWN ON THE PLANS IS IN AGREEMENT WITH THE ACTUAL FIELD CONDITIONS.

PRINTED NAME \_\_\_\_\_

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_

#### DEVELOPER'S/LANDOWNER'S CERTIFICATION

I/WE CERTIFY THAT ALL PROPOSED WORK SHOWN ON THESE CONSTRUCTION DRAWING(S) WILL BE ACCOMPLISHED PURSUANT TO THESE PLANS. I/WE ALSO UNDERSTAND THAT IT IS MY/OUR RESPONSIBILITY TO HAVE THE CONSTRUCTION SUPERVISED AND CERTIFIED, INCLUDING THE SUBMITTAL OF "AS-BUILT" PLANS WITHIN 30 DAYS OF COMPLETION, BY A REGISTERED PROFESSIONAL ENGINEER.

SIGNED \_\_\_\_\_ DATE \_\_\_\_\_

PRINTED NAME \_\_\_\_\_

OWNER: HARFORD COUNTY  
 212 SOUTH BOND STREET,  
 1ST FLOOR  
 BEL AIR, MD 21014  
 (410) 638 - 3217

Prepared By :



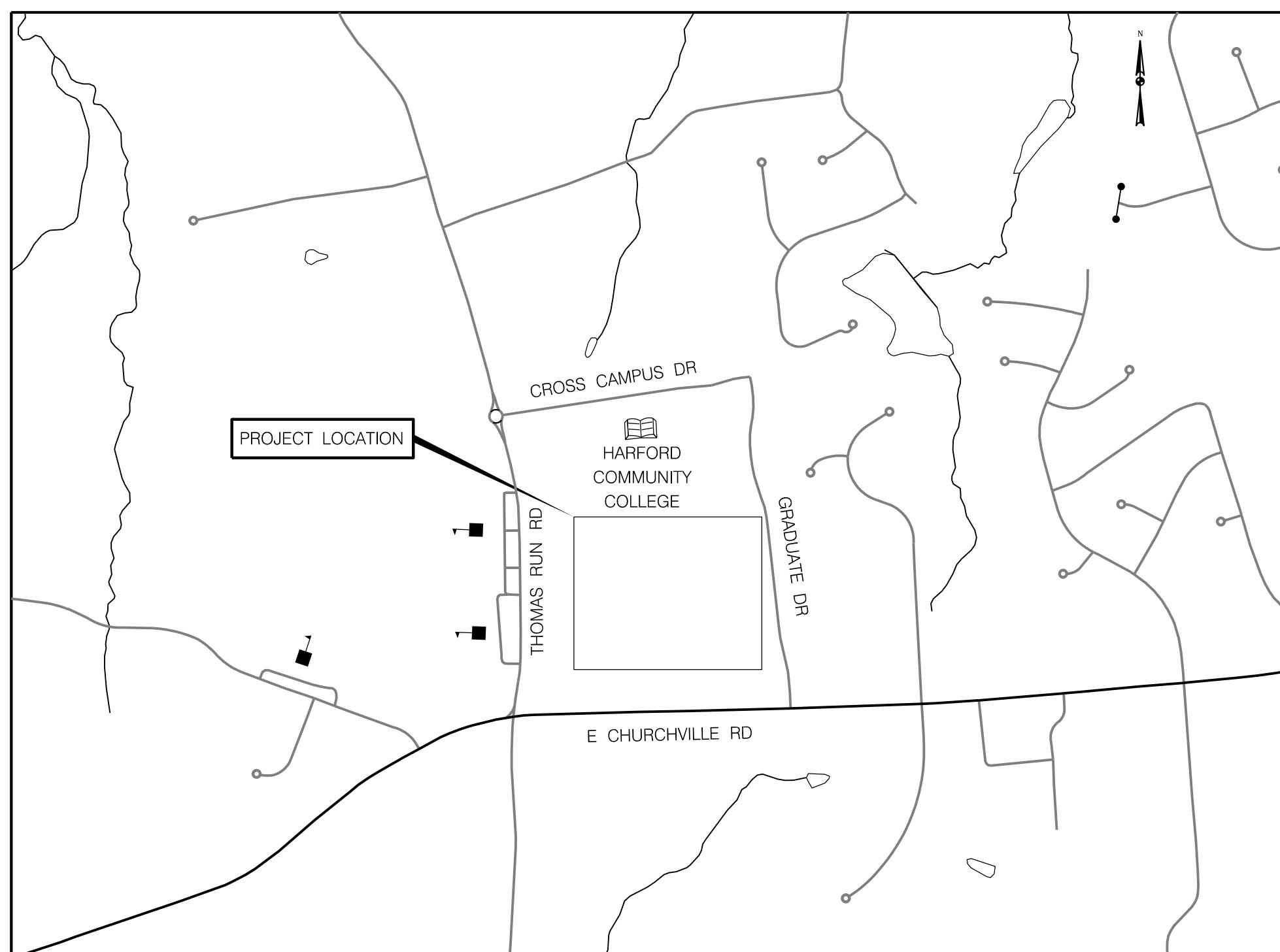
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PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME,  
 AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF  
 THE STATE OF MARYLAND, LICENSE NO. 200370, EXPIRATION DATE: 2025/03/19.

### BID NO. XXXXX

### WATERSHED PROTECTION AND RESTORATION OFFICE

### HARFORD COUNTY, MARYLAND

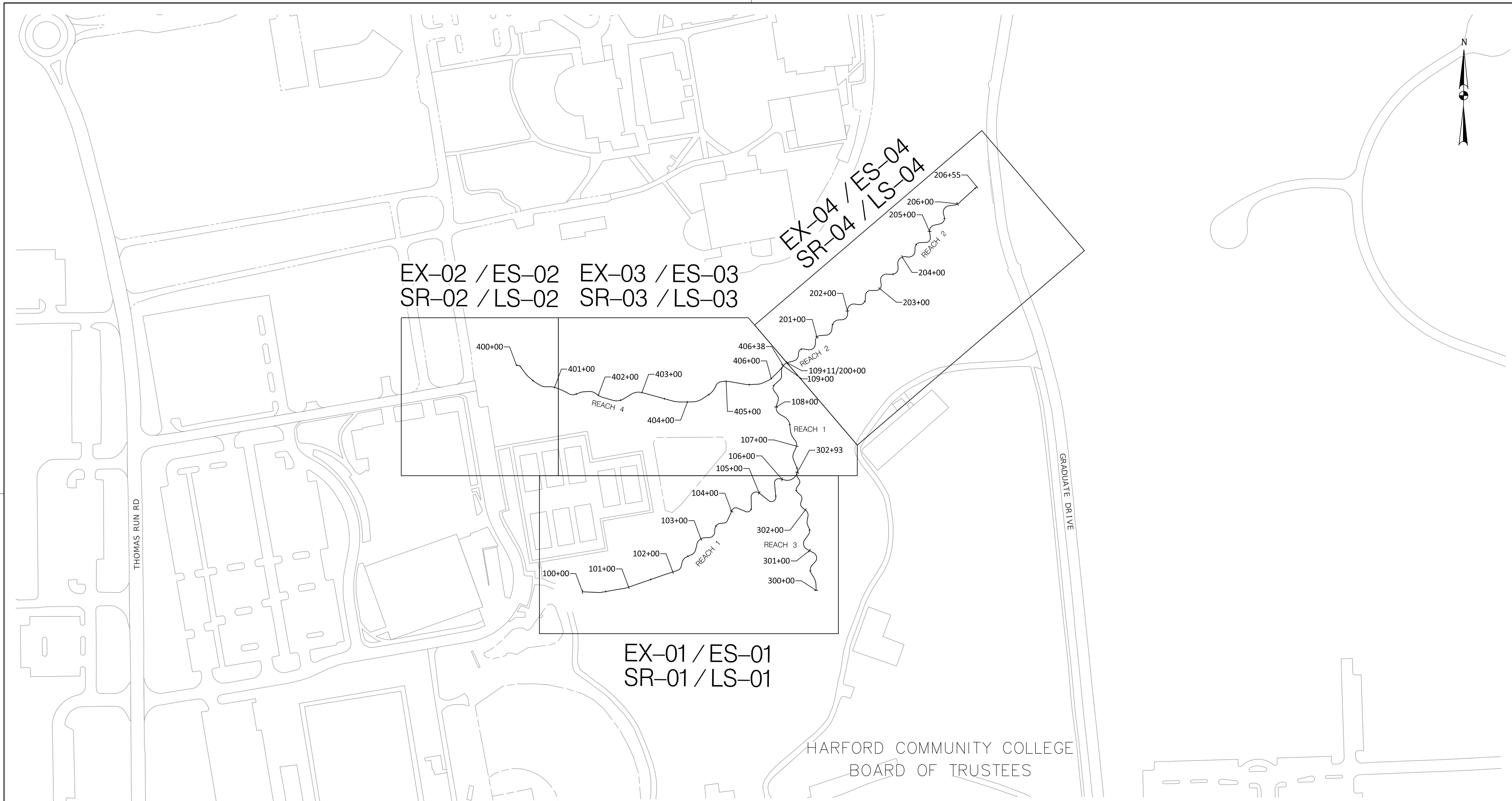


LOCATION MAP

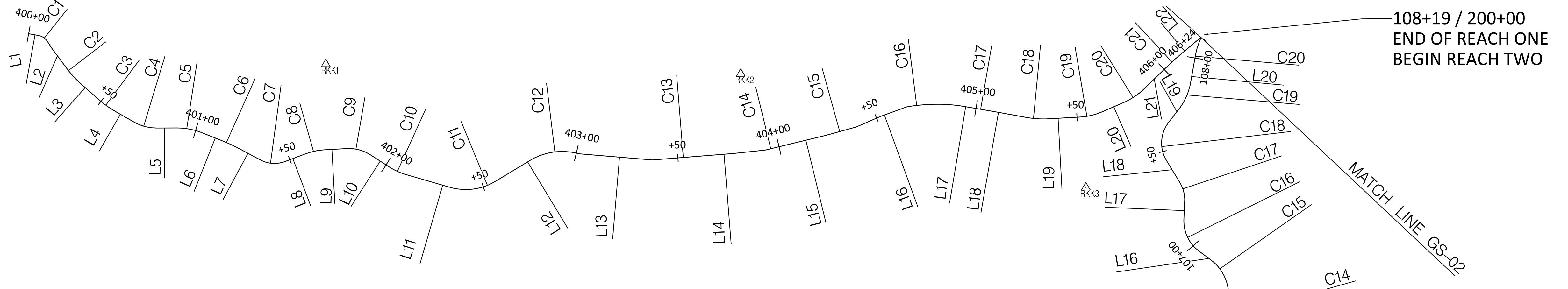
SCALE 1" = 1,000'

PROJECT CONTRACT: 21-097 TO #25	Revisions	HARFORD COUNTY, MARYLAND			
GP #XXXX-XXXXXX-XXXX	HARFORD COMMUNITY COLLEGE STREAM RESTORATION		TITLE SHEET		
SIGN AND SEAL					
Drawn By : _____ AG			Scale : _____ N/A		
Designed By : _____ NH, JZ			Date : _____ SEPTEMBER 2025		
Reviewed By : _____ RO					
Drawing No. GN-01 of GN-01			Sheet No. 1 of 48		

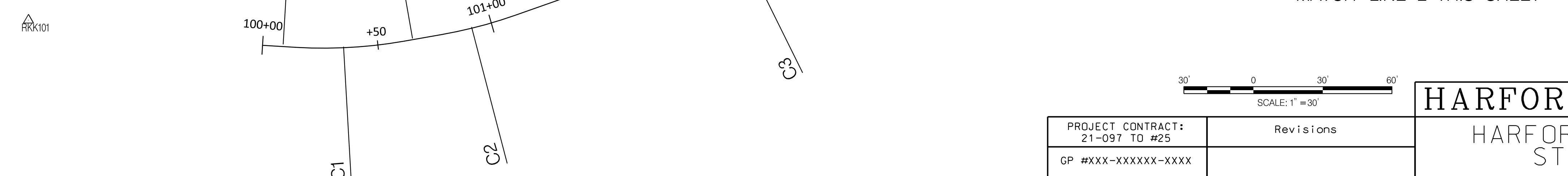
HCC DWG ID No. : GN-01  
 SCALE : 1"=1000'



HARFORD COUNTY, MARYLAND	
HARFORD COMMUNITY COLLEGE STREAM RESTORATION KEY SHEET	
PROJECT CONTRACT: 21-097 TO #25 GP #XXXX-XXXXXX-XXXX	Revisions
SIGN AND SEAL	
Drawn By : AG Designed By : NH, JZ Reviewed By : RO Drawing No. KS-01 of KS-01	Scale : 1"=100' Date : SEPTEMBER 2025 Sheet No. 2 of 48



TRAVERSE POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
RKK100	690239.1387	1514281.8937	382.05	MAG NAIL
RKK101	689754.8222	1514419.4962	372.21	MAG NAIL
RKK103	690244.3783	1515484.1183	357.11	MAG NAIL
RKK104	689538.3525	1515077.1714	372.87	MAG NAIL
RKK1	690213.9677	1514525.1424	362.96	R&C
RKK2	690209.2223	1514728.7342	352.25	R&C
RKK3	690153.3908	1514898.0575	344.16	R&C
RKK4	690004.8155	1514832.0105	359.24	R&C
RKK5	689868.2988	1514637.9204	364.45	R&C
RKK10	690064.6606	1515108.3112	361.44	R&C



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

HARFORD COUNTY, MARYLAND

HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
GEOMETRY SHEET

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXXX-XXXXXX-XXXX	
SIGN AND SEAL	
Drawn By : AG	Scale : 1"=30'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. GS-01 of GS-03	Sheet No. 3 of 48

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. 200370, EXPIRATION DATE: 2025/03/19.

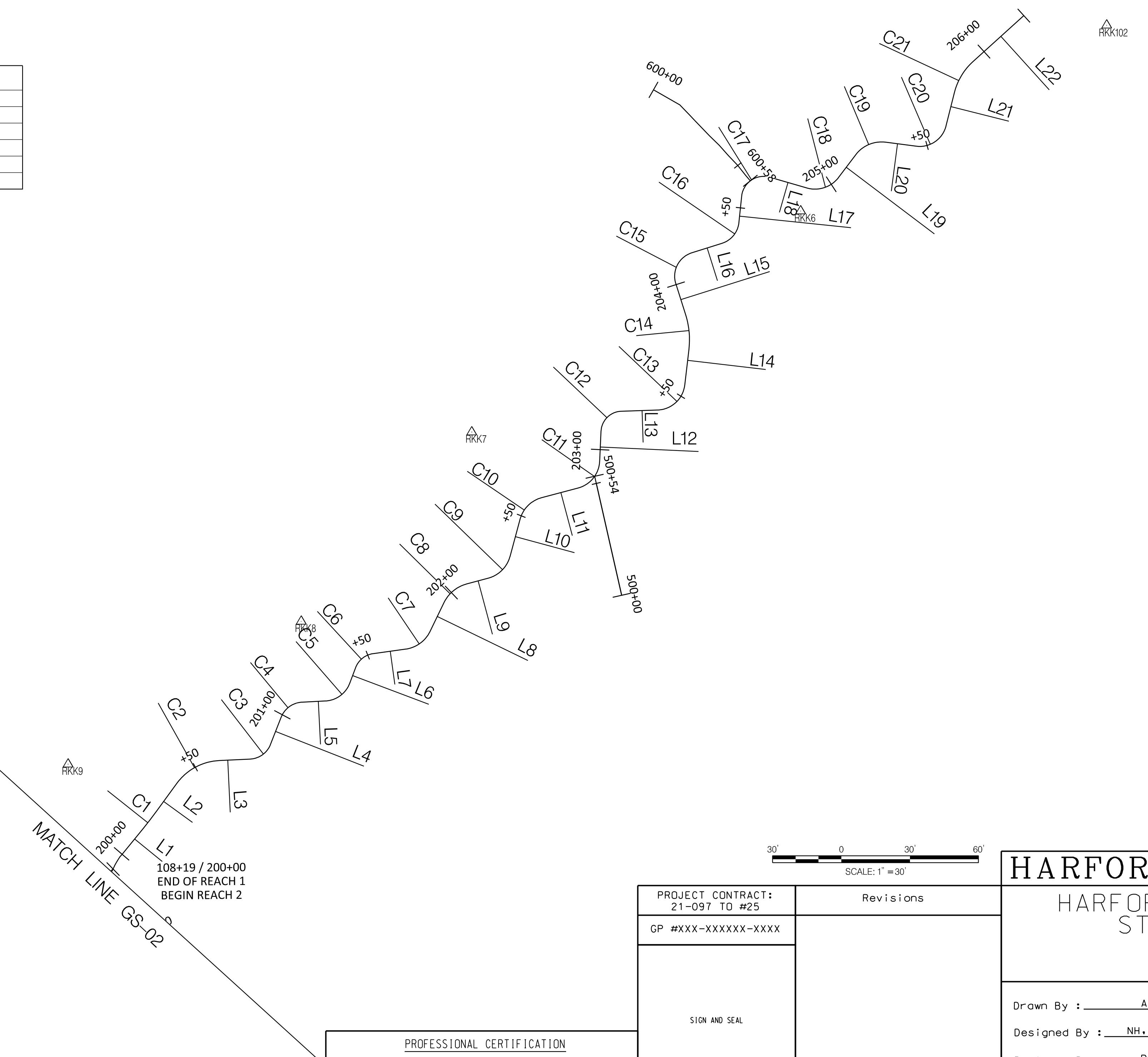
N

B10 No.:

HCC DWG ID No.:

SCALE: 1"

TRAVERSE POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
RRK102	690596.0888	1515389.2377	342.94	X-OUT
RRK6	690514.8713	1515255.4338	328.39	R&C
RRK6	690418.2742	1515111.6285	338.79	R&C
RRK6	690335.5501	1515037.0449	342.78	R&C
RRK6	690273.1276	1514935.1178	345.27	R&C

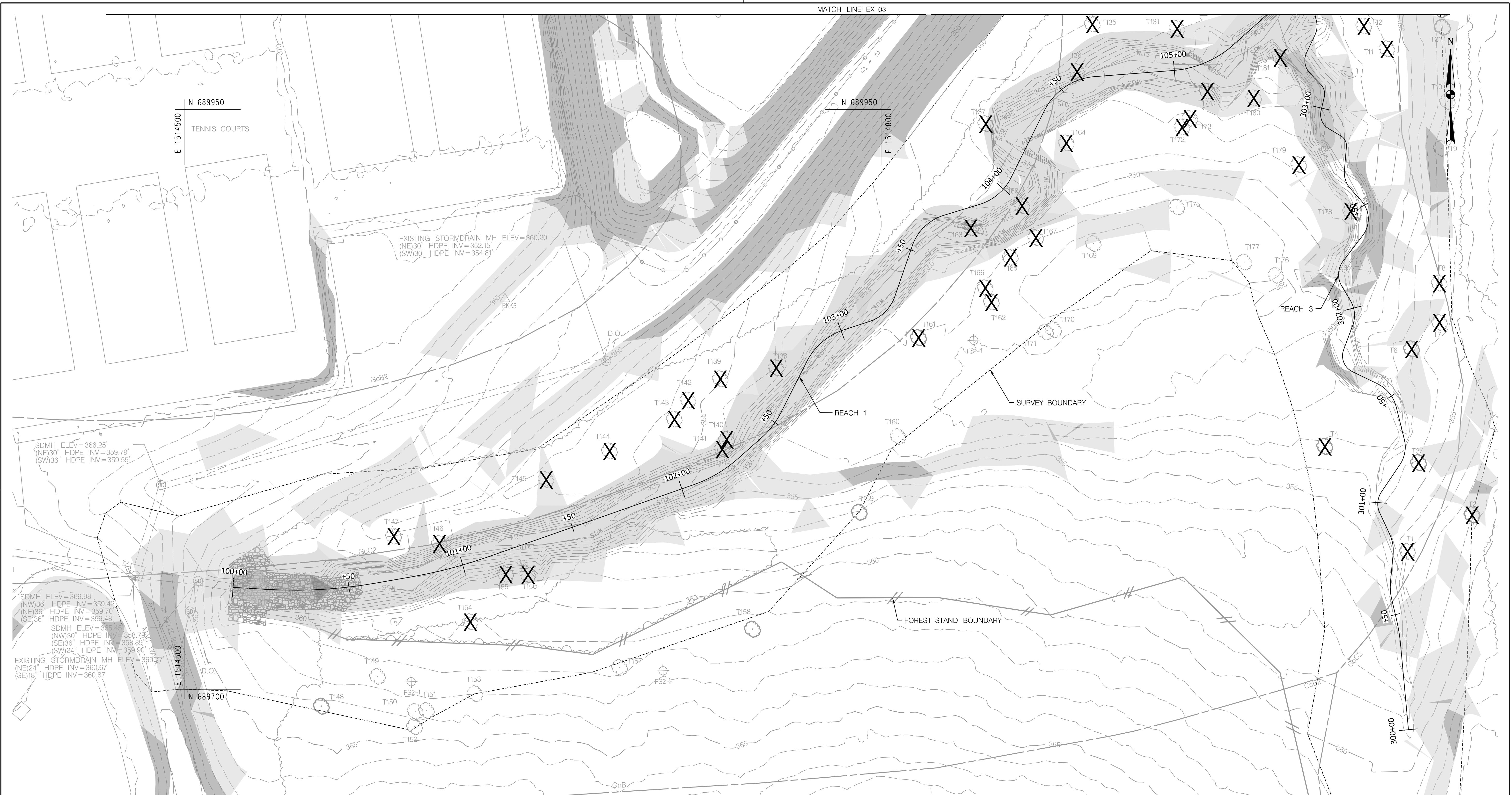


PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXXX-XXXXXX-XXXX	SIGN AND SEAL

Drawn By : _____ AG	Scale : 1"=30'
Designed By : _____ NH, JZ	Date : SEPTEMBER 2025
Reviewed By : _____ RO	
Drawing No. GS-02 of GS-03	Sheet No. 4 of 48

Reach 1 Baseline Data							
NUMBER	STATION	NORTHING	EASTING	RADIUS	DELTA ANGLE	LENGTH FT	TANGENT FT
L1	0+00.00	689743.9395	1514520.772		14.66'		
C1	0+14.66	689743.0254	1514558.769	200.00'	13.3942	46.75'	23.48'
L2	0+61.41	689741.6536	1514558.847		16.62'		
C2	0+78.04	689752.0803	1514614.353	200.00'	9.3878	32.77'	16.42'
L3	1+10.81	689751.4292	1514614.524		94.64'		
C3	2+05.45	689792.8535	1514729.297	56.90'	22.1904	22.04'	11.16'
L4	2+27.49	689791.9191	1514729.846		13.81'		
C4	2+41.30	689813.4446	1514753.181	36.13'	21.5896	13.61'	6.89'
L5	2+54.92	689813.0468	1514753.696		24.72'		
C5	2+79.64	689849.7081	1514774.632	27.54'	45.0748	21.66'	11.43'
L6	3+01.30	689851.4371	1514773.151		11.39'		
C6	3+12.70	689862.6805	1514801.712	17.53'	52.9638	16.21'	8.73'
L7	3+28.90	689861.2154	1514803.154		22.95'		
C7	3+51.85	689899.4273	1514818.719	20.93'	54.085	19.75'	10.68'
L8	3+71.61	689901.276	1514816.936		15.93'		
C8	3+87.53	689913.4	1514850.417	22.61'	46.6623	18.41'	9.75'
L9	4+05.94	689911.8638	1514851.718		32.29'		
C9	4+38.24	689959.6947	1514879.321	26.49'	59.1302	27.34'	15.03'
L10	4+65.58	689962.9815	1514877.102		33.92'		
C10	4+99.50	689970.2151	1514939.838	44.16'	37.3939	28.82'	14.94'
L11	5+28.32	689967.9531	1514940.806		34.47'		
C11	5+62.79	690007.957	1514982.633	19.81'	50.4043	17.43'	9.32'
L12	5+80.22	690007.1446	1514984.552		9.28'		
C12	5+89.50	690033.397	1514983.823	95.85'	9.1648	15.33'	7.68'
L13	6+04.83	690033.4094	1514983.516		14.14'		
C13	6+18.96	690062.318	1514985.725	20.57'	40.6598	14.60'	7.62'
L14	6+33.56	690062.6353	1514987.054		14.54'		
C14	6+48.10	690086.4711	1514971.856	30.93'	22.7615	12.29'	6.23'
L15	6+60.39	690086.2349	1514971.282		12.50'		
C15	6+72.89	690111.9905	1514964.794	21.58'	42.3617	15.95'	8.36'
L16	6+88.84	690112.8229	1514966.117		7.29'		
C16	6+96.12	690129.0126	1514947.935	18.38'	55.8256	17.91'	9.74'
L17	7+14.03	690127.9731	1514945.75		8.89'		
C17	7+22.92	690151.4027	1514946.047	16.50'	33.8176	9.74'	5.01'
L18	7+32.66	690151.5886	1514946.769		12.51'		
C18	7+45.17	690176.1127	1514935.254	16.59'	69.0713	20.00'	11.42'
L19	7+65.17	690176.3101	1514931.71		8.01'		
C19	7+73.18	690198.016	1514947.371	30.47'	27.8116	14.79'	7.54'
L20	7+87.97	690197.6444	1514948.213		12.65'		
C20	8+00.62	690226.0267	1514954.186	39.24'	25.9083	17.74'	9.03'
L21	8+18.36	690226.4249	1514953.242		0.30'		

Reach 2 Baseline Data							
NUMBER	STATION	NORTHING	EASTING	RADIUS	DELTA ANGLE	LENGTH FT	TANGENT FT
L1	0+00.00	690233.7294	1514958.771		14.48'		
C1	0+14.48	690248.7097	1514970.88	180.57'	3.0338	9.56'	4.78'
L2	0+24.04	690248.671	1514970.93		15.05'		
C2	0+39.10	690271.8051	1514990.763	24.42'	51.1412	21.80'	11.69'
L3	0+60.90	690274.1395	1514989.505		13.54'		
C3	0+74.43	690277.2351	1515020.102	10.10'	65.8364	11.60'	6.54'
L4	0+86.04	690275.666	1515021.229		12.77'		
C4	0+98.81	690298.2821	1515031.878	10.38'	65.6954	11.90'	6.70'
L5	1+07.71	690299.8854	1515030.724		10.22'		
C5	1+20.93	690303.0377	1515054.105	12.03'	66.4684	13.95'	7.88'
L6	1+34.88	690301.1382	1515055.491		7.22'		
C6	1+42.10	690319.4159	1515063.827	9.68'	61.471	10.38'	5.75'
L7	1+52.48	690320.6511	1515062.84		14.36'		
C7	1+66.84	690325.938	1515089.024	13.90'	56.2354	13.65'	7.43'
L8	1+80.48	690324.4329	1515090.118		13.98'		
C8	1+94.46	690348.8626	1515103.519	15.44'	49.1365	13.24'	7.06'
L9	2+07.71	690350.0477	1515102.54		9.73'		
C9	2+17.44	690357.8918	1515124.833	13.58'	59.8522	14.18'	7.82'
L10	2+31.62	690356.4127	1515126.307		16.82'		
C10	2+48.44	690386.1654	1515136.22	13.35'	60.0031	13.98'	7.71'
L11	2+62.42	690387.6303	1515134.763		16.45'		
C11	2+78.87	690398.1154	1515164.738	12.69'	72.5347	16.06'	9.31'
L12	2+94.93	690396.2016	1515167.11		13.11'		
C12	3+08.03	690424.7248	1515170.865	9.21'	85.4704	13.74'	8.51'
L13	3+21.77	690427.0933	1515168.526		15.84'		
C13	3+37.61	690431.164	1515200.827	12.38'	81.4094	17.59'	10.65'
L14	3+55.20	690428.2569	1515203.501		15.73'		
C14	3+70.93	690462.025	1515206.656	35.89'	24.2043	15.16'	7.70'
L15	3+86.09	690462.102	1515207.468		14.37'		
C15	4+00.47	690491.3288	1515201.54	10.72'	90.0732	16.85'	10.73'
L16	4+17.32	690493.385	1515197.593		13.79'		
C16	4+31.11	690504.1822	1515226.074	10.71'	66.6498	12.46'	7.04'
L17	4+43.57	690502.8489	1515227.707		11.54'		
C17	4+55.11	690528.3672	1515233.841	9.68'	100.2771	16.94'	11.60'
L18	4+72.05	690532.8661	1515230.812		16.80'		
C18	4+88.85	690525.0993	1515265.773	12.96'	69.086	15.62'	8.92'
L19	5+04.47	690522.4677	1515266.647		12.41'		
C19	5+16.88	690543.9676	1515285.292	14.06'	60.3272	14.81'	8.17'
L							



LEGEND

EXISTING MAJOR CONTOUR	—	EXISTING RIPRAP	██████████
EXISTING MINOR CONTOUR	— — —	EXISTING WETLAND	██████████
EXISTING STREAM CENTERLINE	— — —	EXISTING WETLAND BUFFER	— B —
EXISTING STORMDRAIN	SD	SOIL BOUNDARY	— — —
EXISTING TREE	●	FOREST STAND	⊕
EXISTING TREELINE	~~~~~	WATERS OF THE U.S.	— WUS —
TRaverse POINT	△	SURVEY BOUNDARY	— — —
15% TO 25% SLOPES	░░░	SPLIT RAIL FENCE	○○○
25%+ SLOPES	███		

PROFESSIONAL CERTIFICATION

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PROJECT CONTRACT:  
21-097 TO #25

GP #XXX-XXXXXX-XXXX

Revisions

SIGN AND SEAL

HARFORD COUNTY, MARYLAND

HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
EXISTING CONDITIONS

Drawn By : AG

Scale : 1"=20'

Designed By : NH, JZ

Date : SEPTEMBER 2025

Reviewed By : RO

Drawing No. EX-01 of EX-04

Sheet No. 6 of 48



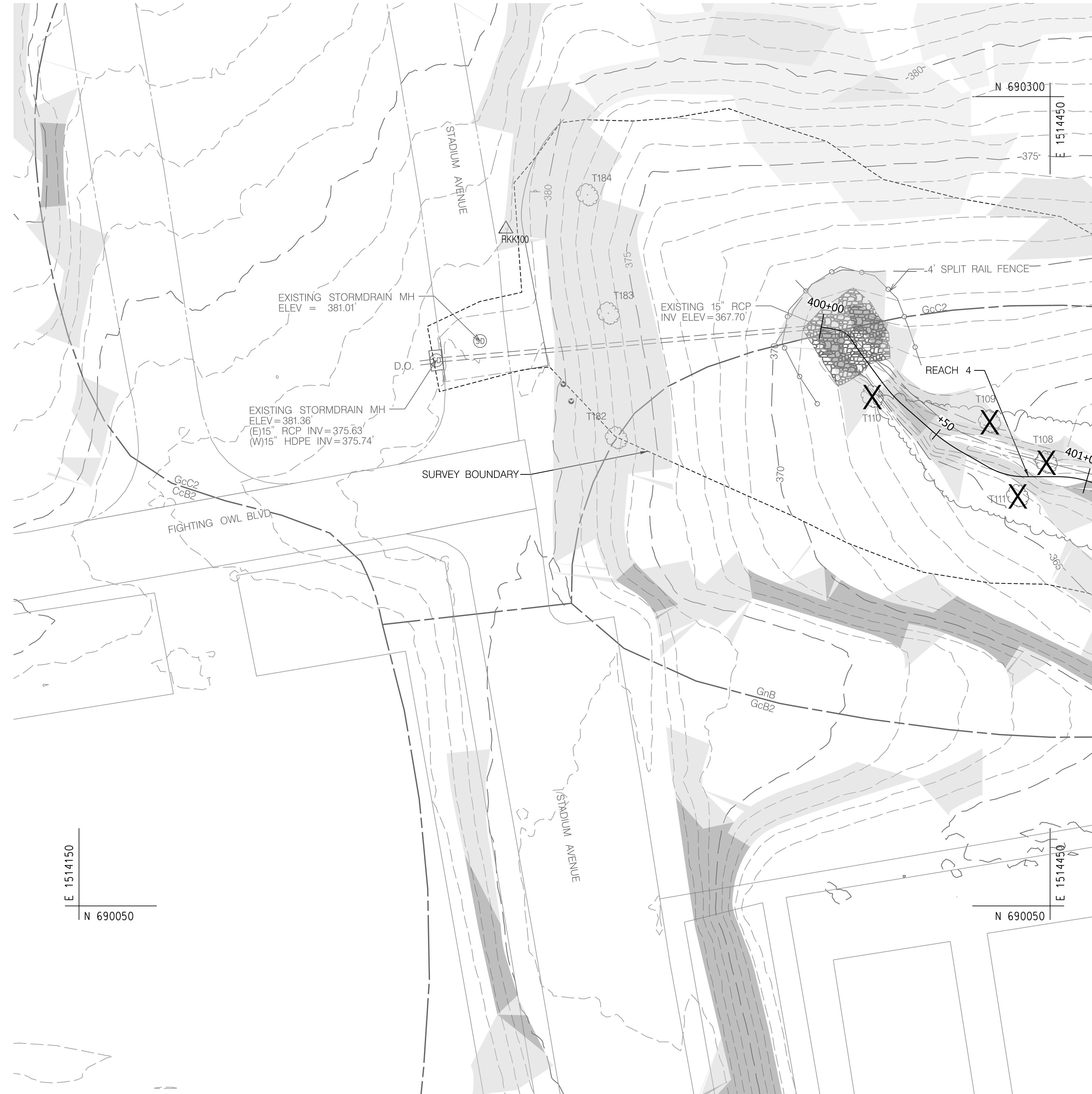
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MATCH LINE EX-03



LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING STREAM CENTERLINE
- EXISTING STORMDRAIN
- EXISTING TREE
- EXISTING TREELINE
- TRAVERSE POINT
- 15% TO 25% SLOPES
- 25%+ SLOPES
- EXISTING RIPRAP
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- SOIL BOUNDARY
- FOREST STAND
- WATERS OF THE U.S.
- SURVEY BOUNDARY
- SPLIT RAIL FENCE



EXISTING RIPRAP



EXISTING WETLAND



EXISTING WETLAND BUFFER



SOIL BOUNDARY



FOREST STAND



WATERS OF THE U.S.



SURVEY BOUNDARY



SPLIT RAIL FENCE

20' 0 20' 40'  
SCALE: 1"=20'

PROFESSIONAL CERTIFICATION

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PROJECT CONTRACT:  
21-097 TO #25

GP #XXX-XXXXXX-XXXX

SIGN AND SEAL

Revisions

**HARFORD COUNTY, MARYLAND**

**HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
EXISTING CONDITIONS**

Drawn By : AG

Scale : 1"=20'

Designed By : NH, JZ

Date : SEPTEMBER 2025

Reviewed By : RO

Drawing No. EX-02 of EX-04

Sheet No. 7 of 48



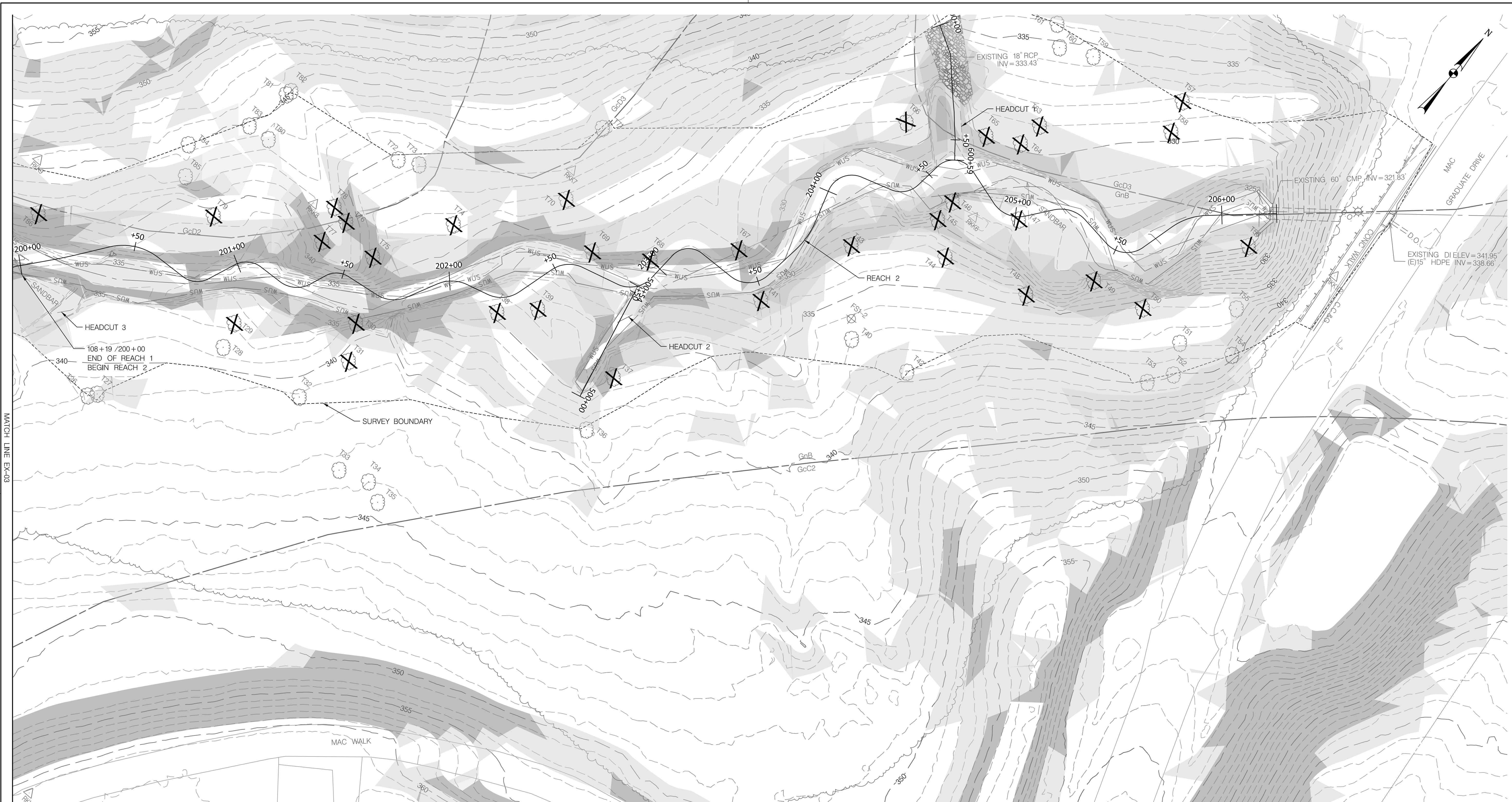
BY: *[Signature]*

FILE PATH: [https://ad.rk.com/Cloud/Projects/202121155\\_HARCO/Task 025\\_Harford Community College Stream Restoration/CADD60%Plans/07 - pEX-0002\\_HCC.dgn](https://ad.rk.com/Cloud/Projects/202121155_HARCO/Task 025_Harford Community College Stream Restoration/CADD60%Plans/07 - pEX-0002_HCC.dgn)

PLOTTED: 9/12/2025

SCALE : 1"=20'  
HCC DWG ID No. :  
BID No. :




**LEGEND**

EXISTING MAJOR CONTOUR	—	EXISTING RIPRAP	—
EXISTING MINOR CONTOUR	—	EXISTING WETLAND	—
EXISTING STREAM CENTERLINE	—	EXISTING WETLAND BUFFER	—
EXISTING STORMDRAIN	SD	SOIL BOUNDARY	—
EXISTING TREE	●	FOREST STAND	●
EXISTING TREELINE	—	WATERS OF THE U.S.	—
TRAVERSE POINT	△	SURVEY BOUNDARY	—
15% TO 25% SLOPES	—	SPLIT RAIL FENCE	—
25%+ SLOPES	—		

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PROJECT CONTRACT:  
21-097 TO #25

Revisions

GP #XXXX-XXXXXX-XXXX

SIGN AND SEAL

# HARFORD COUNTY, MARYLAND

## HARFORD COMMUNITY COLLEGE STREAM RESTORATION EXISTING CONDITIONS

Drawn By : AG

Scale : 1"=20'

Designed By : NH, JZ

Date : SEPTEMBER 2025

Reviewed By : RO

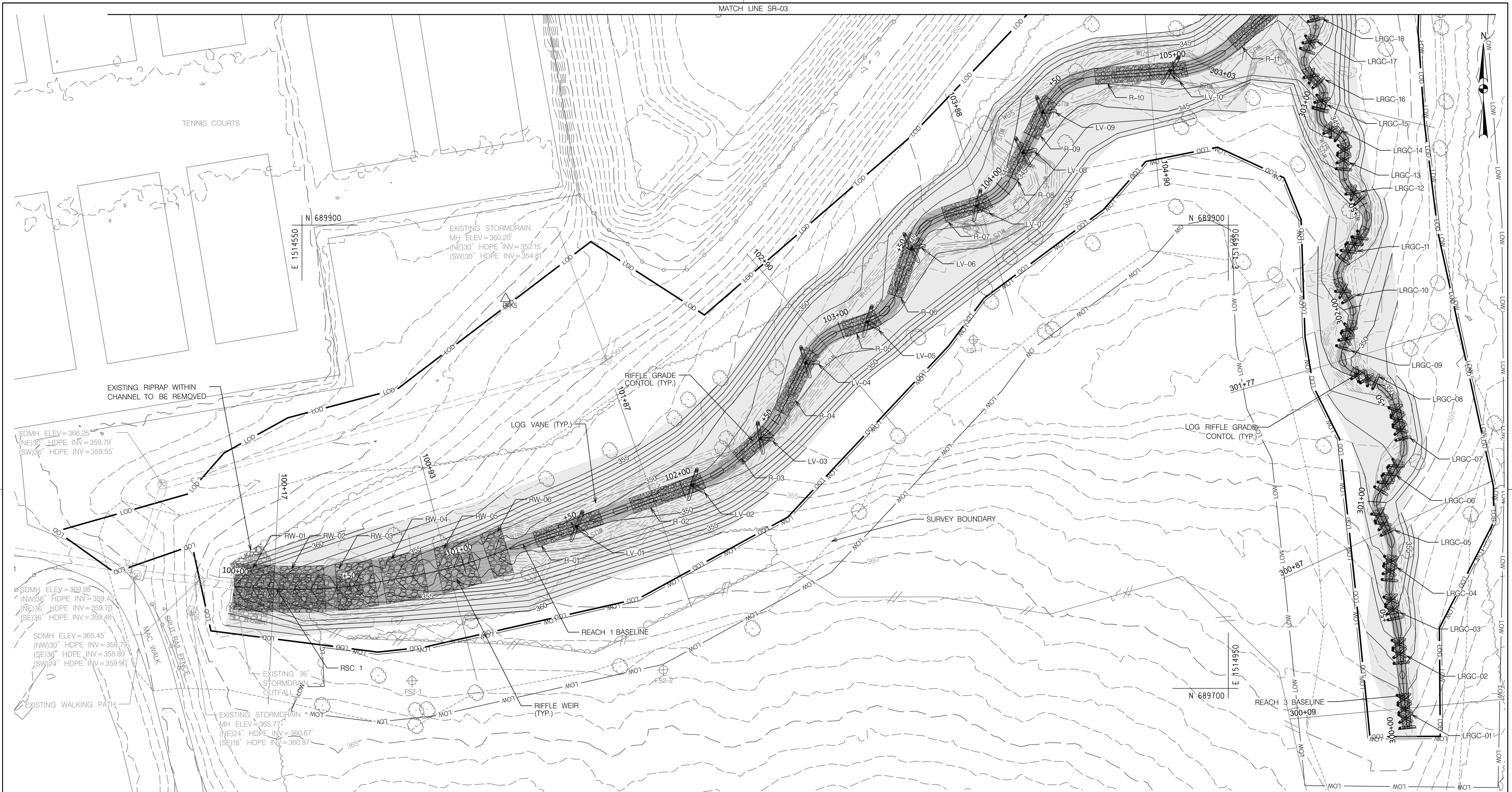
Drawing No. EX-04 of EX-04

Sheet No. 9 of 48



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# HARFORD COUNTY, MARYLAND

# HARFORD COMMUNITY COLLEGE STREAM RESTORATION DESIGN PLAN

PROJECT CONTRACT: 21-097 TO #25	Revisions	<h1>HARFORD COMMUNITY COLLEGE STREAM RESTORATION DESIGN PLAN</h1>	
SIGN AND SEAL		Drawn By : <u>AG</u>	Scale : <u>1"=20'</u>
		Designed By : <u>NH, JZ</u>	Date : <u>SEPTEMBER 2025</u>
		Reviewed By : <u>RO</u>	
		Drawing No. <u>SR-01</u> of <u>SR-04</u>	Sheet No. <u>10</u> of <u>48</u>




**LEGEND**

EXISTING MAJOR CONTOUR	—	EXISTING RIPRAP	████████
EXISTING MINOR CONTOUR	— — —	EXISTING WETLAND	████████
EXISTING STREAM CENTERLINE	— — — —	EXISTING WETLAND BUFFER	— — — —
EXISTING STORMDRAIN	— — — — —	EXISTING WATERS OF THE US	— — — — —
EXISTING TREE	•	PROPOSED LOG VANE	— — — — —
EXISTING TREELINE	— — — — —	PROPOSED MAJOR CONTOUR	— — — — —
TRAVERSE POINT	△	PROPOSED MINOR CONTOUR	— — — — —
PROPOSED CHANNEL BOTTOM	— — — — —	TEMPORARY ORANGE CONTROL FENCE	— — — — —
SURVEY BOUNDARY	— — — — —	TOCF	— — — — —
SOIL BOUNDARY	— — — — —	LIMIT OF WORK	— — — — —

PROPOSED RIFFLE GRADE CONTROL MIX

IMBRICATED RIPRAP FOR CASCADE WEIR

CLASS I RIPRAP

PROPOSED LOG RIFFLE GRADE CONTROL

SOIL STABILIZATION MATTING

**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. 200370, EXPIRATION DATE: 2025/03/19.

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	

SIGN AND SEAL

**HARFORD COUNTY, MARYLAND**
**HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
DESIGN PLAN**

Drawn By : AG

Scale : 1" = 20'

Designed By : NH, JZ

Date : SEPTEMBER 2025

Reviewed By : RO

Drawing No. SR-02 of SR-04

Sheet No. 11 of 48



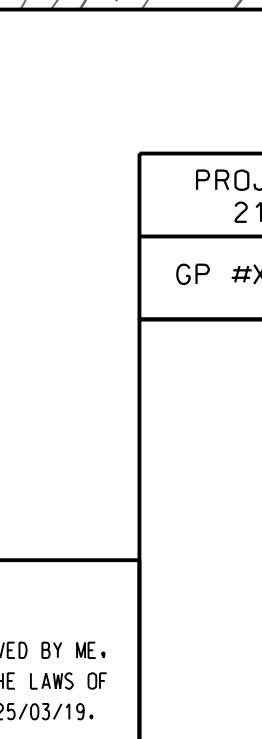
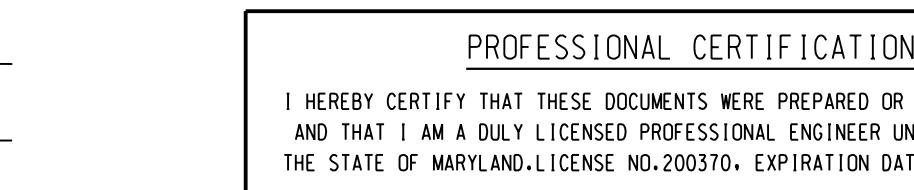
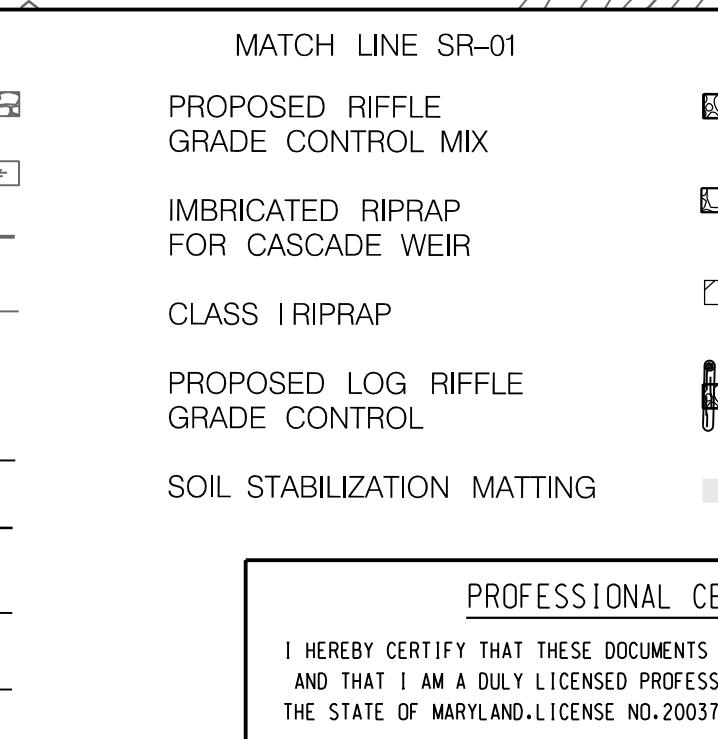
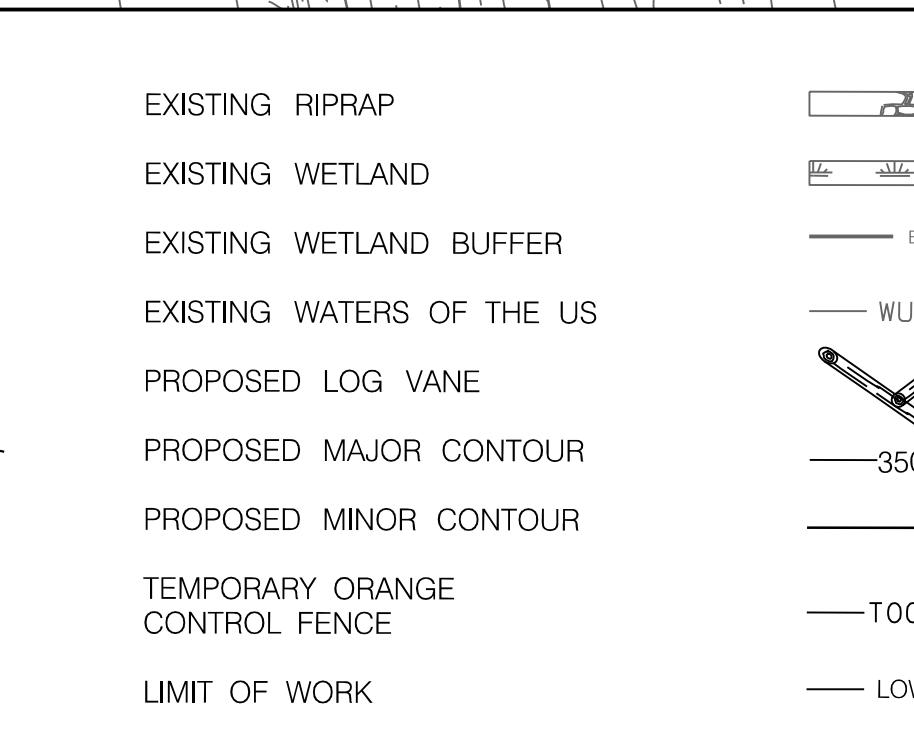
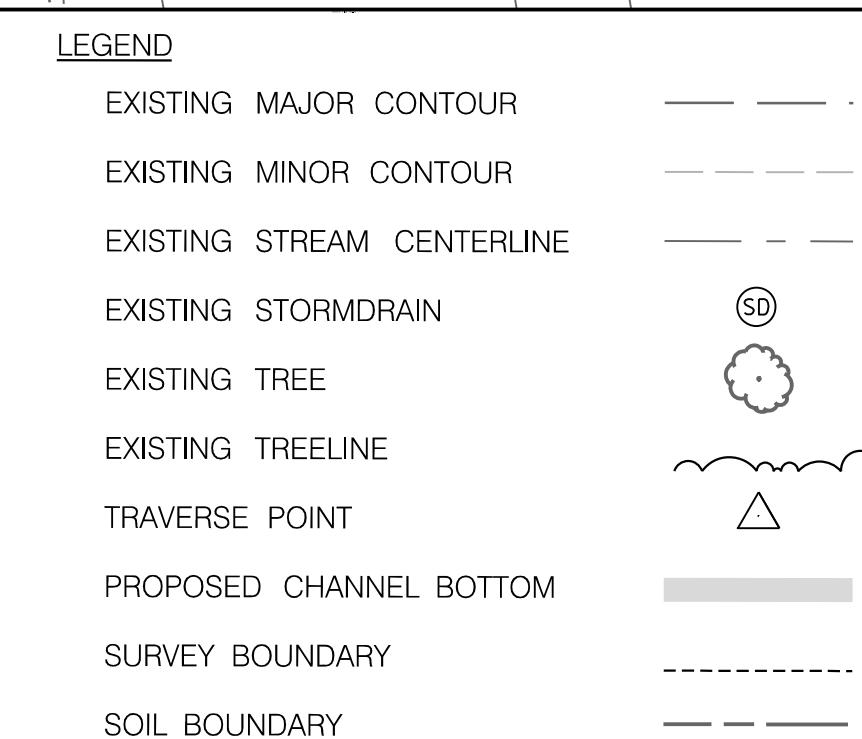
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BID No. :

HCC DWG ID No. :

SCALE : 1"=20'



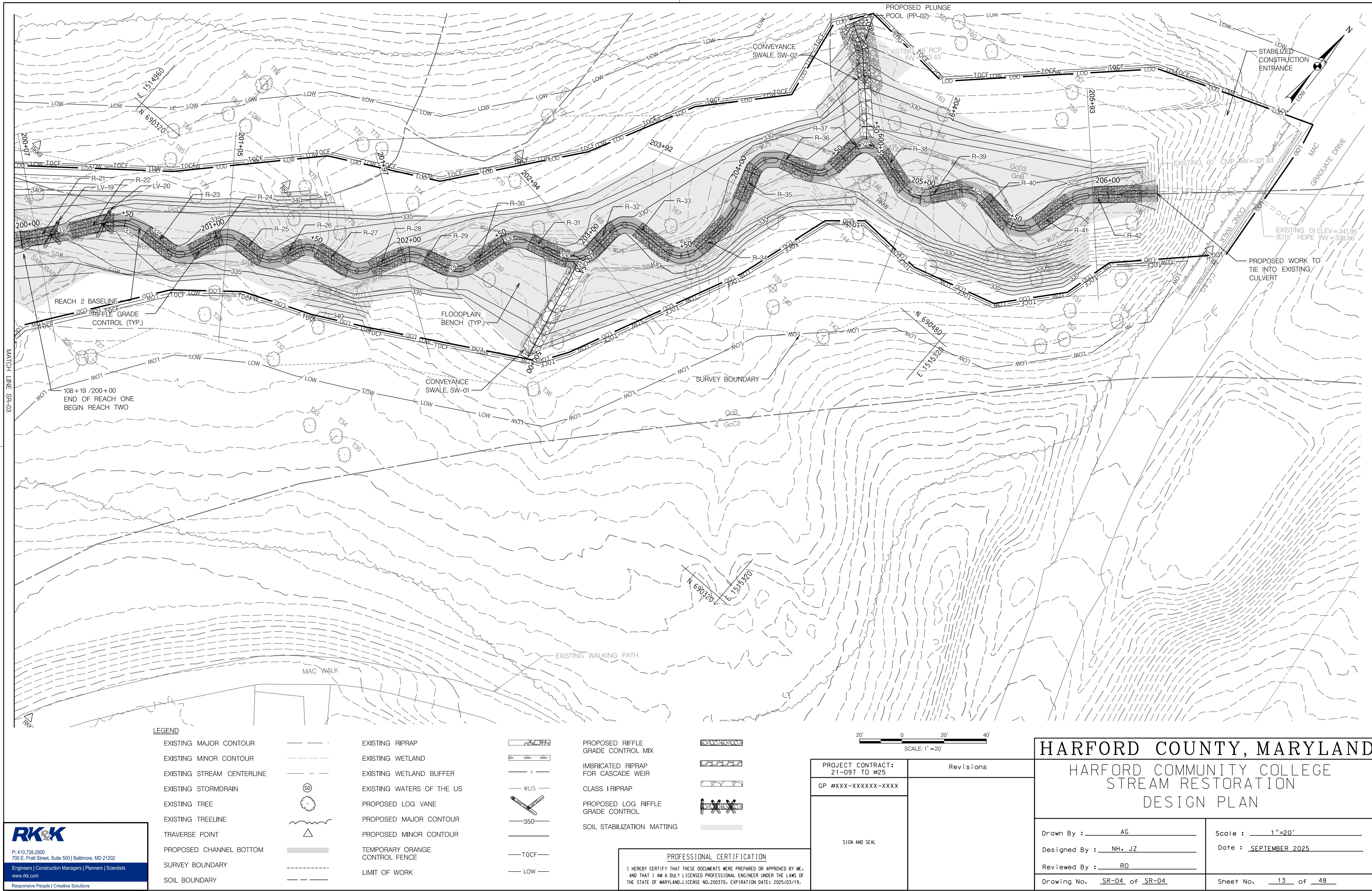
**HARFORD COUNTY, MARYLAND**

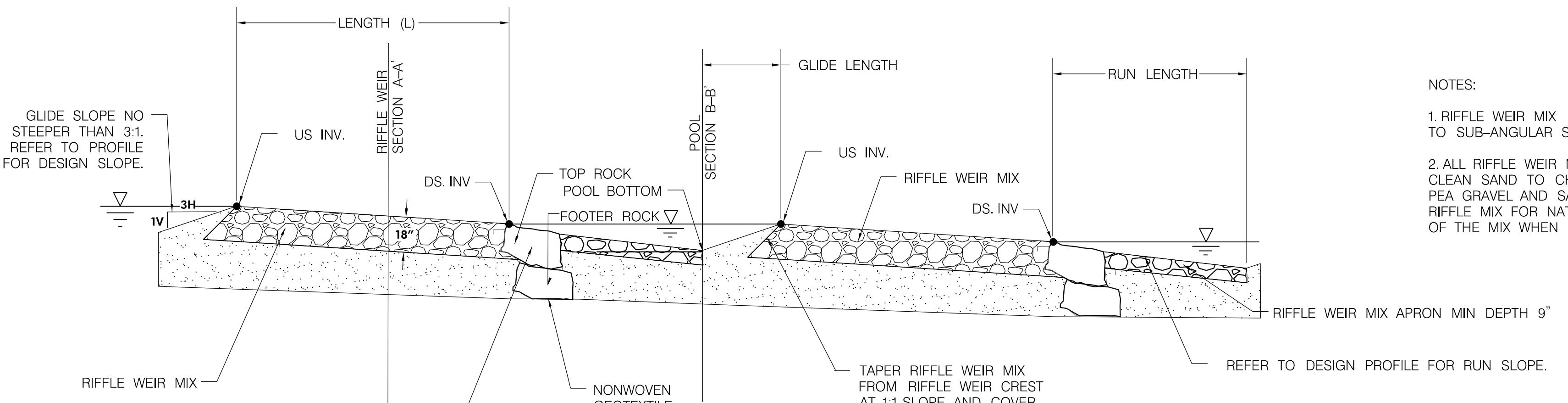
**HARFORD COMMUNITY COLLEGE**

**STREAM RESTORATION**

**DESIGN PLAN**

Drawn By : AG	Scale : 1" = 20'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. SR-03 of SR-04	Sheet No. 12 of 48

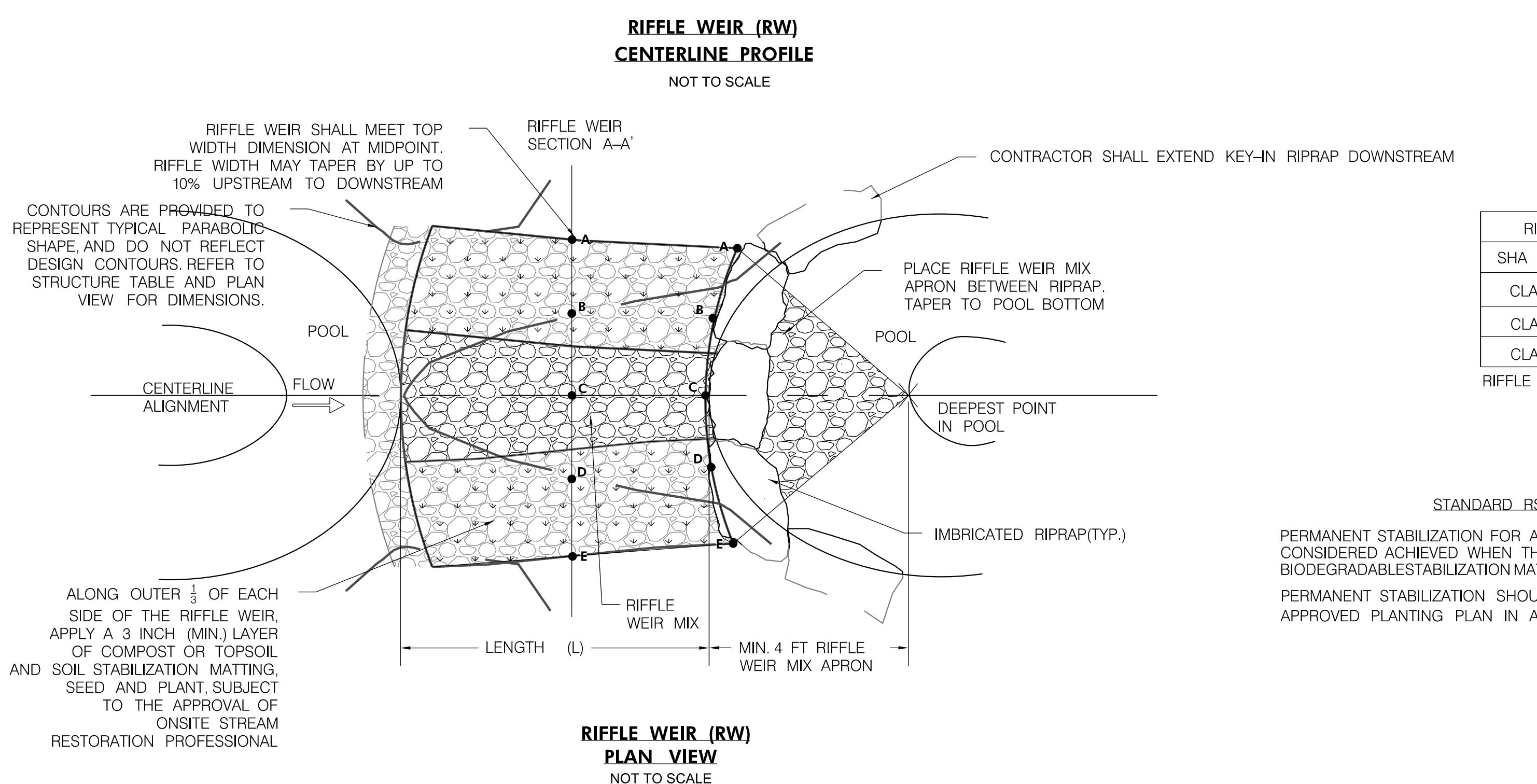
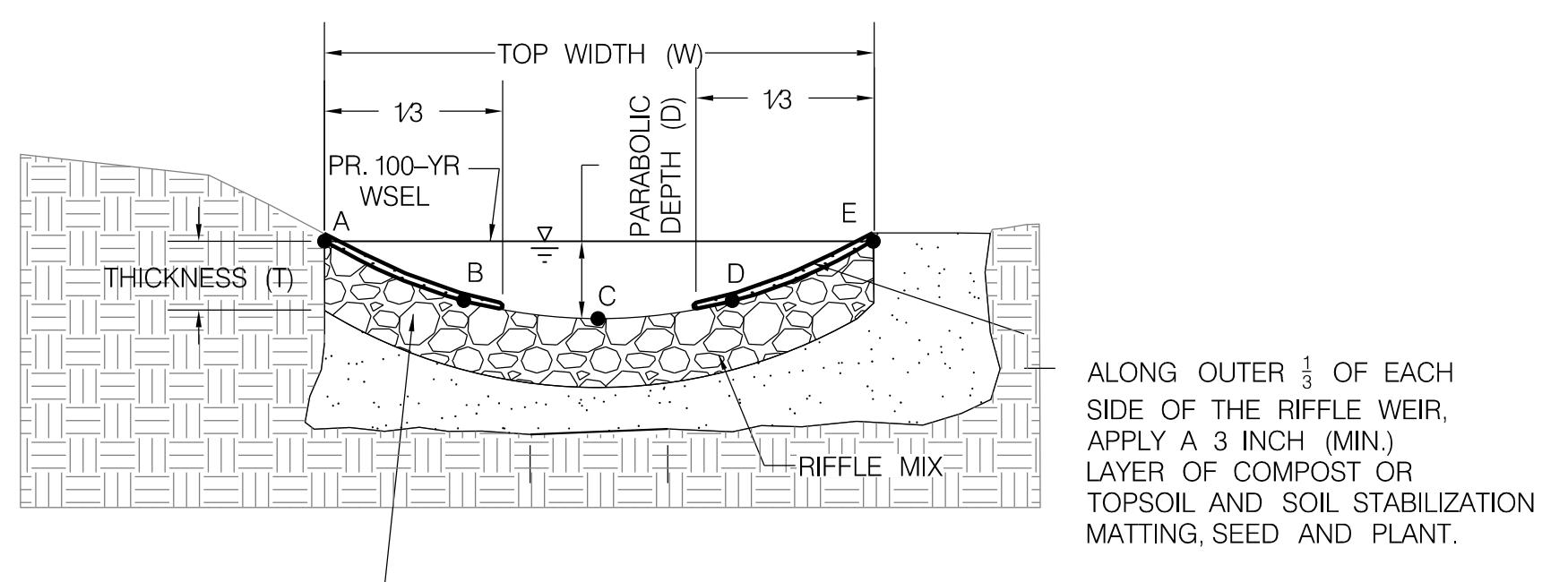




NOTES:

1. RIFFLE WEIR MIX SHALL BE RIPRAP RANGING FROM ROUNDED TO SUB-ANGULAR SHAPE.
2. ALL RIFFLE WEIR MIX SHALL BE WASHED WITH PEA GRAVEL AND CLEAN SAND TO CHOKE Voids PRIOR TO FINAL STABILIZATION. THE PEA GRAVEL AND SAND ARE AN INCIDENTAL SUPPLEMENT TO THE RIFFLE MIX FOR NATURALIZATION AND ARE NOT CONSIDERED PART OF THE MIX WHEN CALCULATING  $D_{50}$ .

RIFFLE WEIR (RW) SECTION DIMENSIONS				
REACH	WIDTH (FT)	DEPTH AT B (FT)	DEPTH AT C (FT)	DEPTH AT D (FT)
RSC1	20	1.5	2.0	1.5
RSC4A	11	0.8	1.0	0.8
RSC4B	11	0.8	1.0	0.8



RIFFLE WEIR MIX	
SHA RIPRAP	MIX %
CLASS 0	35%
CLASS I	55%
CLASS II	10%
RIFFLE WEIR MIX $d_{50} = 9''$	

#### STANDARD RSC STABILIZATION NOTES

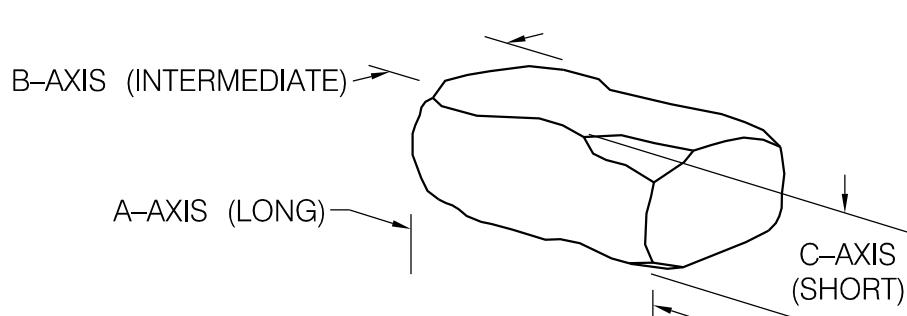
PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A RSC SHALL BE CONSIDERED ACHIEVED WHEN THE BANKS AND FLOODPLAIN ARE COVERED WITH FULLY BIODEGRADABLE STABILIZATION MATTING INSTALLED PER MANUFACTURER'S INSTRUCTIONS. PERMANENT STABILIZATION SHOULD BE FOLLOWED BY IMPLEMENTATION OF THE APPROVED PLANTING PLAN IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION.

RIFFLE WEIR DIMENSION TABLE									
NAME	US STA.	DS STA.	US INV.	DS INV.	L (FT)	W (FT)	H (FT)	D (FT)	DOFFSET (FT)

\*RIFFLE WEIR HEIGHT (H) IS EQUAL TO THE UPSTREAM INVERT MINUS THE DOWNSTREAM INVERT

#### RIFFLE WEIR NOTES :

1. THE CROSS SECTION SHALL BE CONSTRUCTED IN A PARABOLIC SHAPE BETWEEN GIVEN NODES.
2. NATURAL CHANNEL MATERIAL MAY BE HARVESTED ON-SITE PRIOR TO INSTALLATION OF RIFFLE WEIR IF IT MEETS THE SPECIFICATIONS FOR USE AS WASH-IN OR RIFFLE MIX.
3. THE NUMBER OF BOULDERS VARIES DEPENDING ON TYPICAL SECTION WIDTH AND BOULDER DIMENSIONS.
4. THE BOULDERS SHALL BE TILTED DOWNSTREAM AS SHOWN ON THE DETAIL AND NOT STACKED.
5. TIE-OUT BOULDER SHALL EXTEND PAST THE DOWNSTREAM CORNER NODES A & E A MIN. OF ONE BOULDER LENGTH (B-AXIS) INTO EXISTING BANK. WHERE THIS CONFLICTS WITH EXISTING TREE ROOTS OR BEDROCK, TIE-OUT BOULDER MAY BE ELIMINATED OR ADJUSTED AT DIRECTION OF ENGINEER.
6. CHANNEL WASH-IN MATERIAL SHALL BE REPEATEDLY WORKED INTO FULL DEPTH OF THE RIFFLE MIX TO FILL Voids.
7. TRIM ALL GEOTEXTILE AT OR BELOW FINISHED GRADE, IF USED.
8. ONCE RIFFLE WEIR IS CONSTRUCTED, STABILIZE ALL DISTURBED LOCATIONS AS SPECIFIED.
9. CONTOURS ARE PROVIDED TO REPRESENT TYPICAL PARABOLIC SHAPE, AND DO NOT REFLECT DESIGN CONTOURS. REFER TO STRUCTURE TABLE AND PLAN VIEW FOR DIMENSIONS.



IMBRICATED RIPRAP AXIS  
NOT TO SCALE

NOTES:

1. THE MEDIAN A-AXIS DIMENSION AVERAGED ACROSS THE FULL STRUCTURE SHALL EQUAL A MINIMUM OF 30''
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SELECT MATERIAL THAT IS APPROPRIATELY SIZED TO ALLOW FOR ECONOMICAL CONSTRUCTION OF CASCADE WEIR STRUCTURES MEETING THE DESIGN DIMENSIONS DESCRIBED IN THIS PLAN.

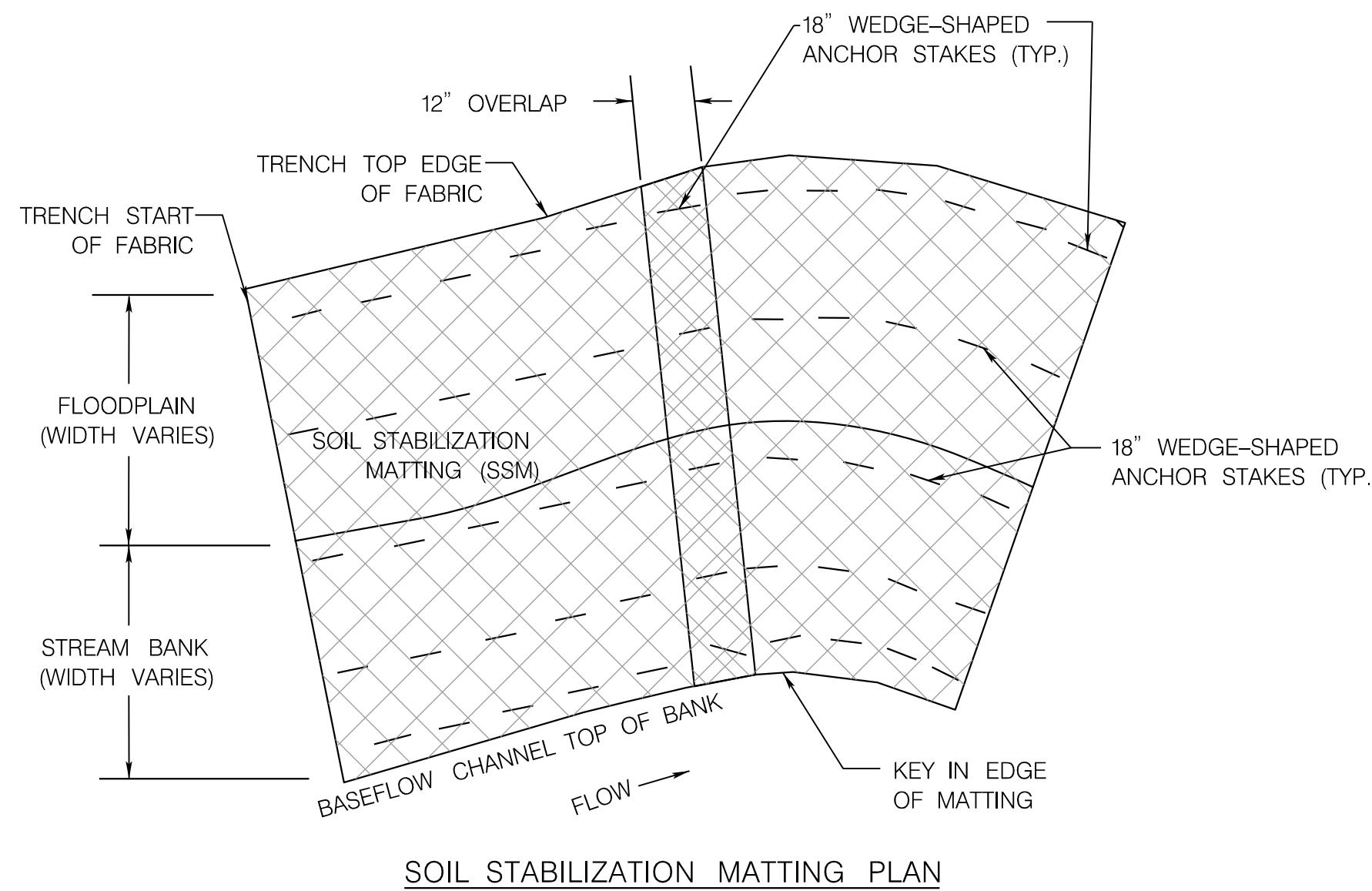
IMBRICATED RIPRAP DIMENSIONS (IN)				
	A-AXIS	B-AXIS	C-AXIS	UNIT WEIGHT, LBS/FT <sup>3</sup> **
TOP ROCKS	24-36"	24-36"	12-24"	
FOOTER ROCKS	24-36"	24-36"	12-24"	

\*DESIGNER TO PROVIDE ALLOWABLE UNIT WEIGHT, TYPICAL UNIT WEIGHT FOR GRANITE IS 165 LBS/FT<sup>3</sup>, AND SANDSTONE IS 145 LBS/FT<sup>3</sup>

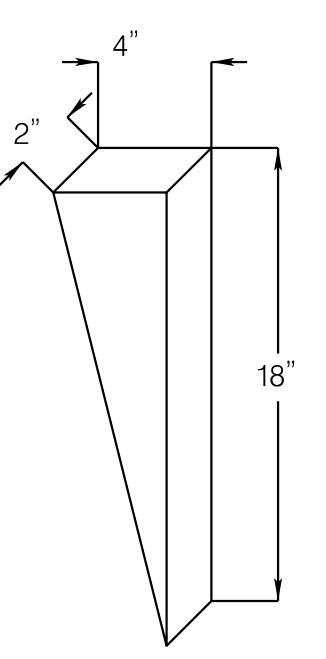
PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXXX-XXXXXX-XXXX	
SIGN AND SEAL	
PROFESSIONAL CERTIFICATION	

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Drawn By : AG	Scale : NOT TO SCALE
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. DE-01 of DE-03	Sheet No. 14 of 48



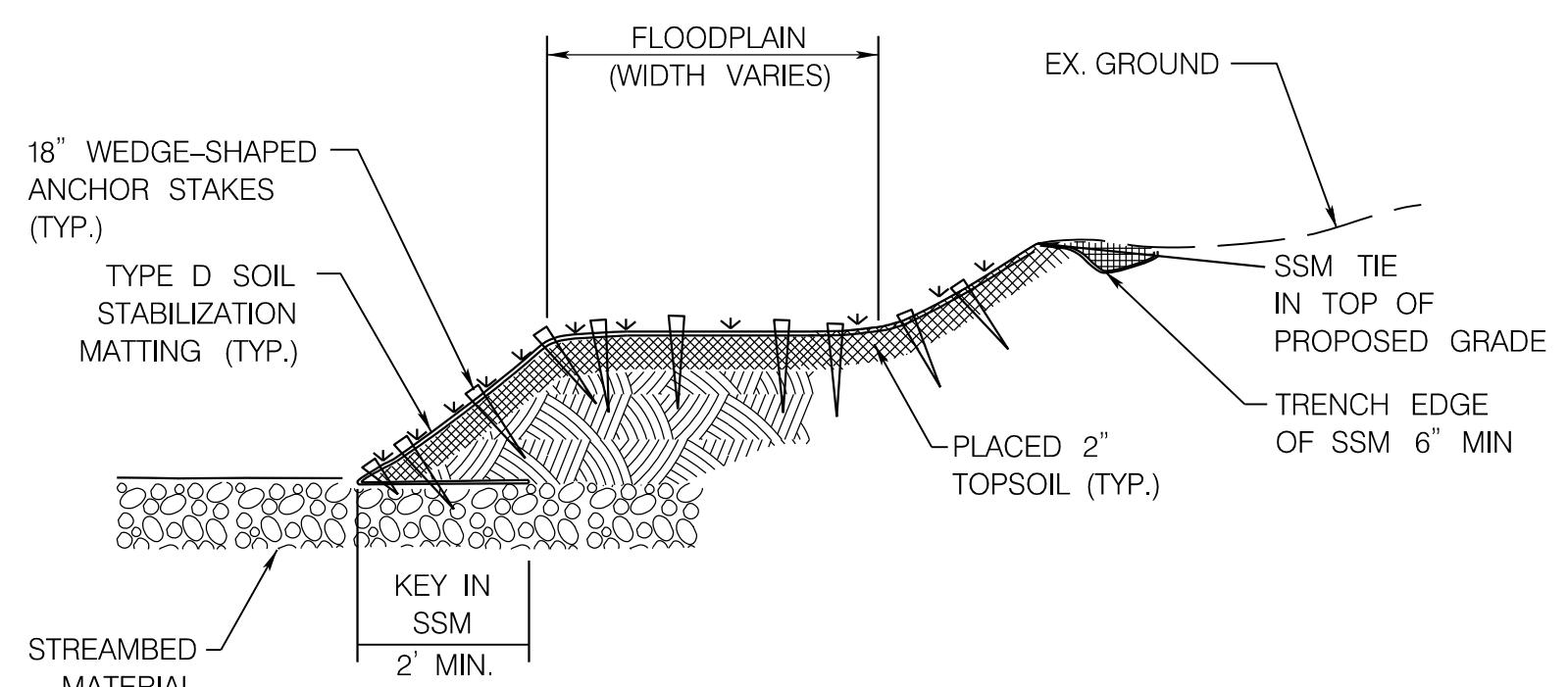
SOIL STABILIZATION MATTING PLAN



ANCHOR STAKE

NOTES:

1. STAKES SHALL BE INSTALLED 24-INCHES APART ALONG THE UPSTREAM AND DOWNSTREAM EDGES OF MATTING WITH THE KEY-IN TRENCH AT THE TOP OF SLOPE AND ON VERTICAL AND HORIZONTAL OVERLAPPING EDGES.
2. ON SLOPES 2:1 OR STEEPER, STAKES SHALL BE INSTALLED 3-FOOT ON CENTER.
3. ON SLOPES 3:1 OF GENTLER, STAKES SHALL BE INSTALLED 4-FOOT ON CENTER.

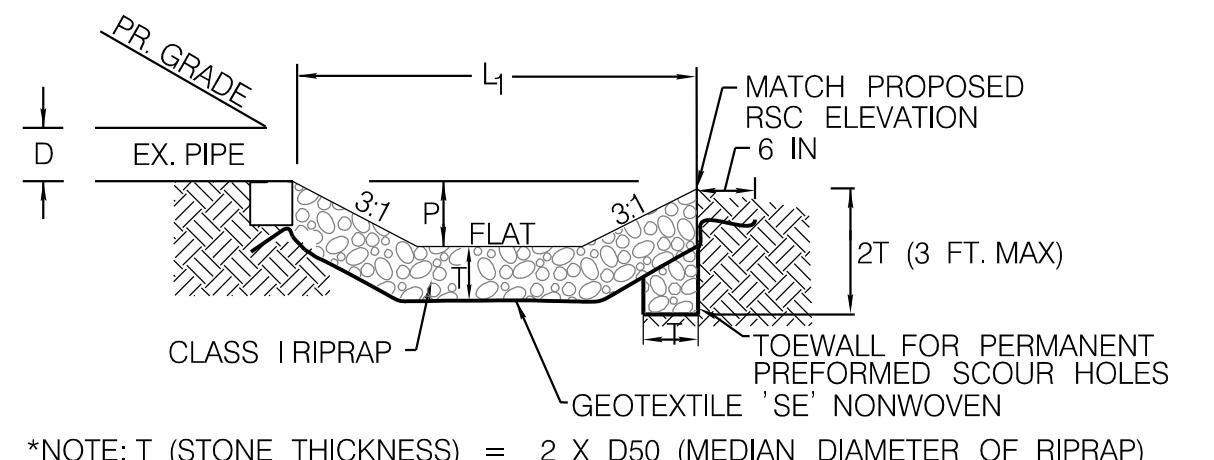


SOIL STABILIZATION MATTING SECTION

SOIL STABILIZATION DETAILS

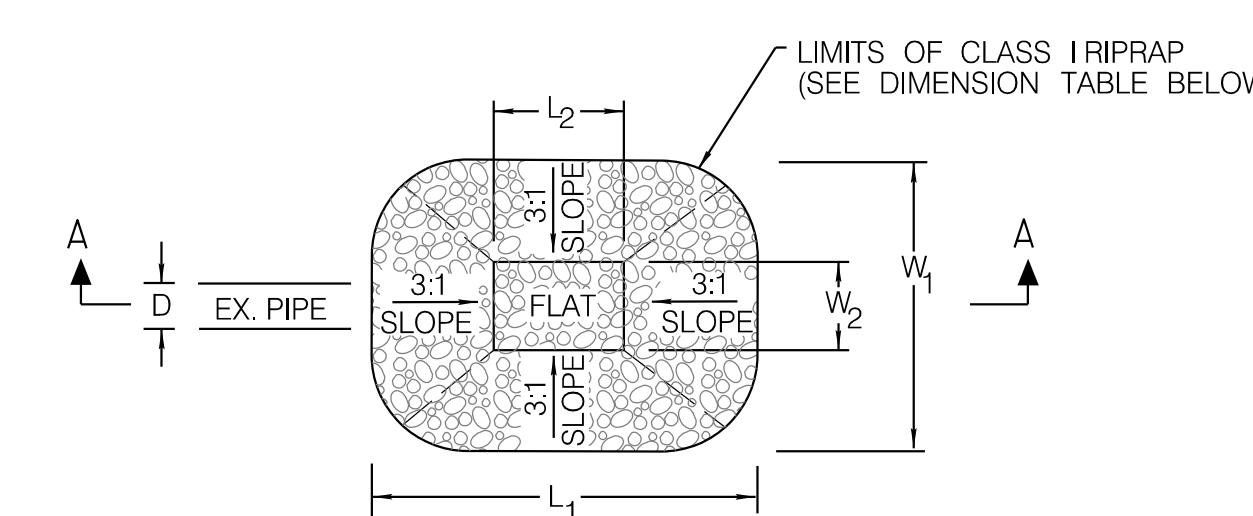
NOT TO SCALE

SOIL STABILIZATION MATTING DETAIL			
REACH	SSM (SY)	2" TOPSOIL (SY)	4" TOPSOIL (SY)
1			
2			
3			
4			



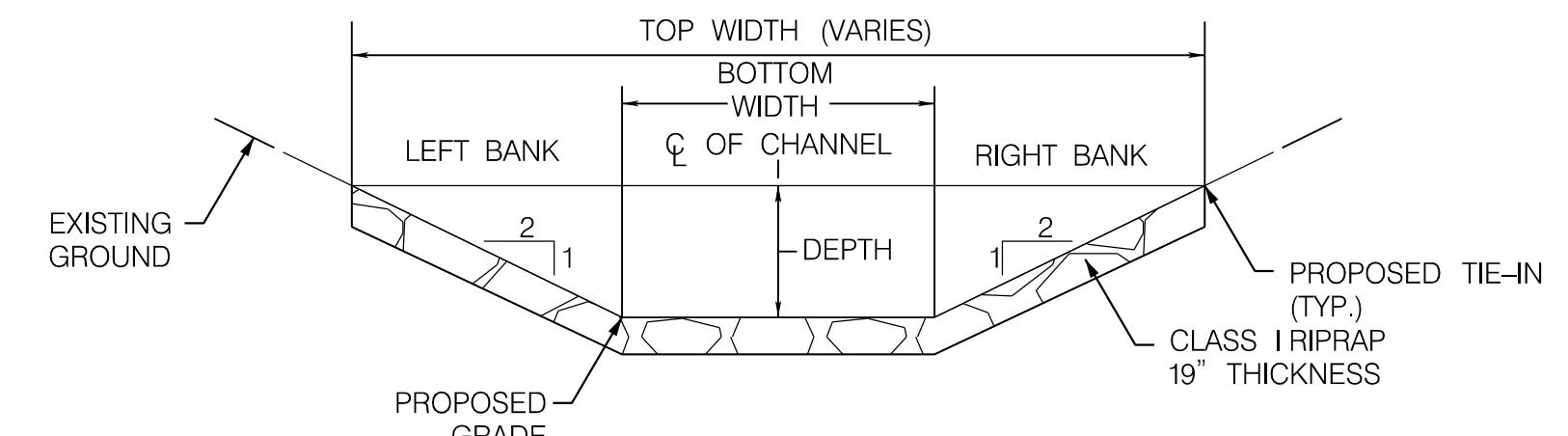
\*NOTE: T (STONE THICKNESS) =  $2 \times D_{50}$  (MEDIAN DIAMETER OF RIPRAP)

SECTION A-A  
NOT TO SCALE



I.D.	D (IN.)	L <sub>1</sub> (FT.)	L <sub>2</sub> (FT.)	W <sub>1</sub> (FT.)	W <sub>2</sub> (FT.)	P (FT.)	D <sub>50</sub> (IN.)	T (IN.)	CLASS I RIPRAP (SY)
PP-1									
PP-2									

PLUNGE POOL CONSTRUCTION DETAILS  
NOT TO SCALE



CONVEYANCE SWALE TYPICAL SECTION  
NOT TO SCALE

CONVEYANCE SWALE DESIGN									
REACH	START STA.	END STA.	LENGTH (FT)	DEPTH (FT)	BOTTOM WIDTH (FT)	SLOPE	shear stress (LB/FT <sup>2</sup> )	RIPRAP D <sub>50</sub> (IN)	Q (CFS)
SW-01									
SW-02									

**HARFORD COUNTY, MARYLAND**

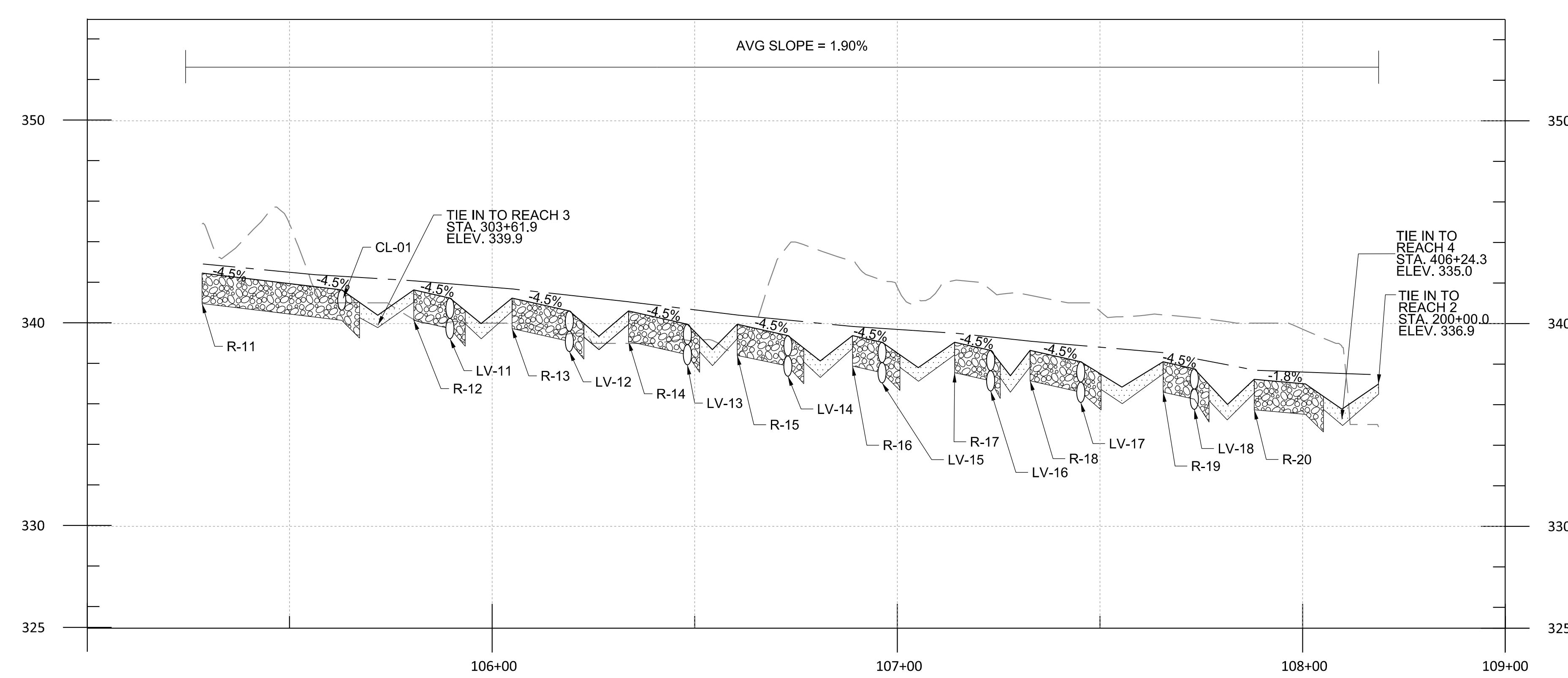
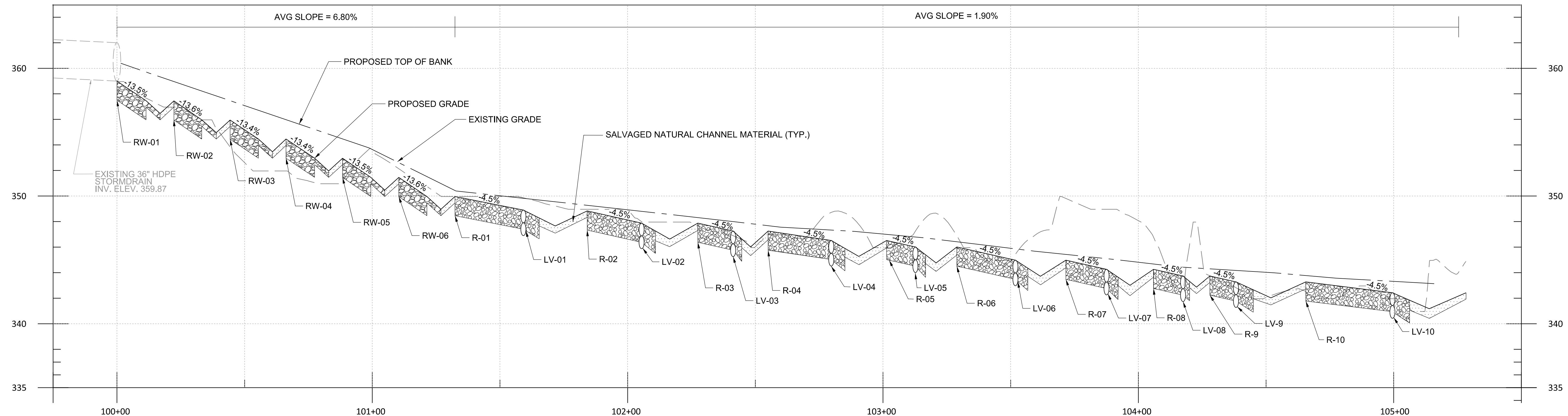
**HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
STREAM DETAILS**

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXXX-XXXXXX-XXXX	
SIGN AND SEAL	
Drawn By : AG	Scale : NOT TO SCALE
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. DE-02 of DE-03	Sheet No. 15 of 48

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LEGEND

EXISTING GROUND SURFACE



EXISTING PIPE



PROPOSED GROUND SURFACE



PROPOSED RIFFLE GRADE CONTROL



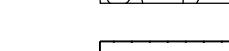
PROPOSED RIFFLE WEIR



PROPOSED CLASS I RIPRAP



SALVAGED NATURAL CHANNEL MATERIAL



PROPOSED LOG VANE



STREAM PROFILE: REACH 1

SCALE  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4"

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PROJECT CONTRACT:  
21-097 TO #25

GP #XXX-XXXXXX-XXXX

Revisions  
SIGN AND SEAL

HARFORD COUNTY, MARYLAND

HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
PROFILE

Drawn By : AG

Scale : 1"=20'

Designed By : NH, JZ

Date : SEPTEMBER 2025

Reviewed By : RO

Sheet No. 17 of 48

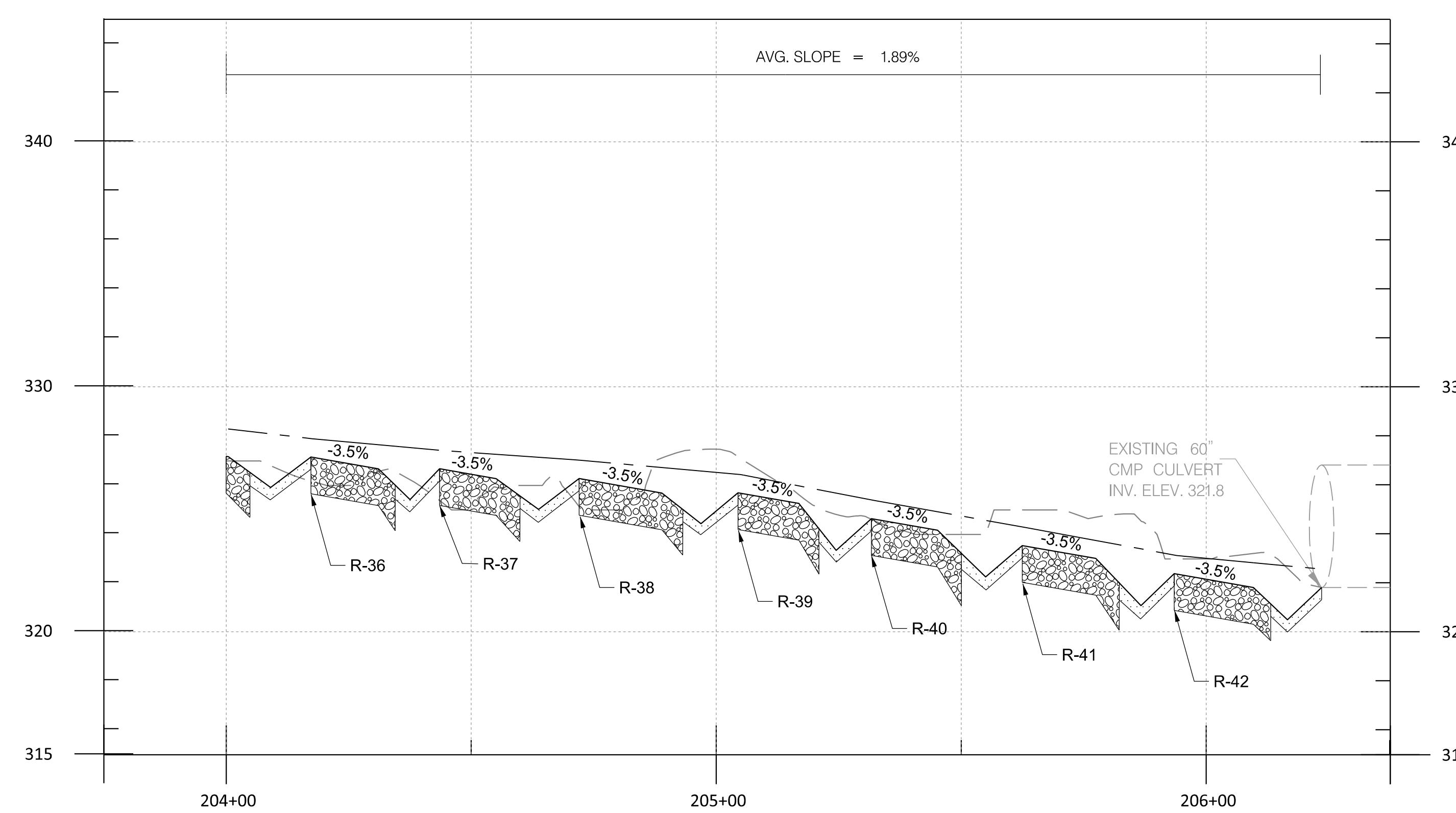
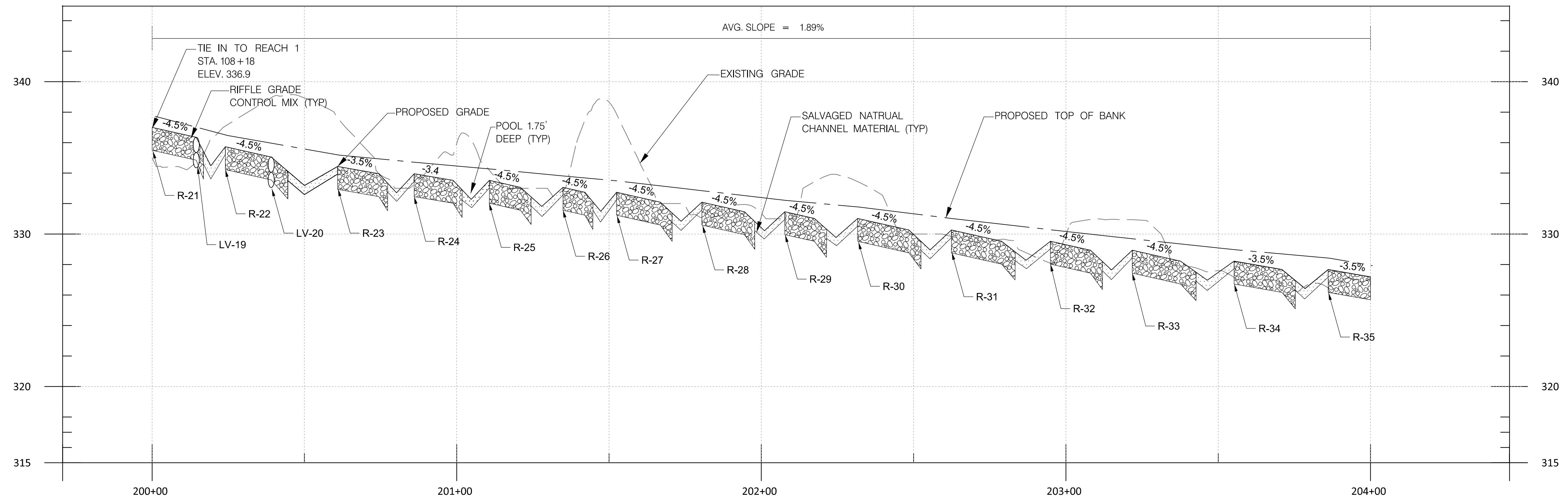
Drawing No. PR-01 of PR-05



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**LEGEND**

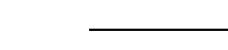
EXISTING GROUND SURFACE



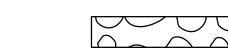
EXISTING PIPE



PROPOSED GROUND SURFACE



PROPOSED RIFFLE GRADE CONTROL



PROPOSED RIFFLE WEIR



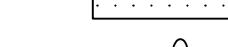
PROPOSED CLASS I RIPRAP



SALVAGED NATURAL CHANNEL MATERIAL



PROPOSED LOG VANE



**STREAM PROFILE: REACH 2**

SCALE  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'

**PROFESSIONAL CERTIFICATION**

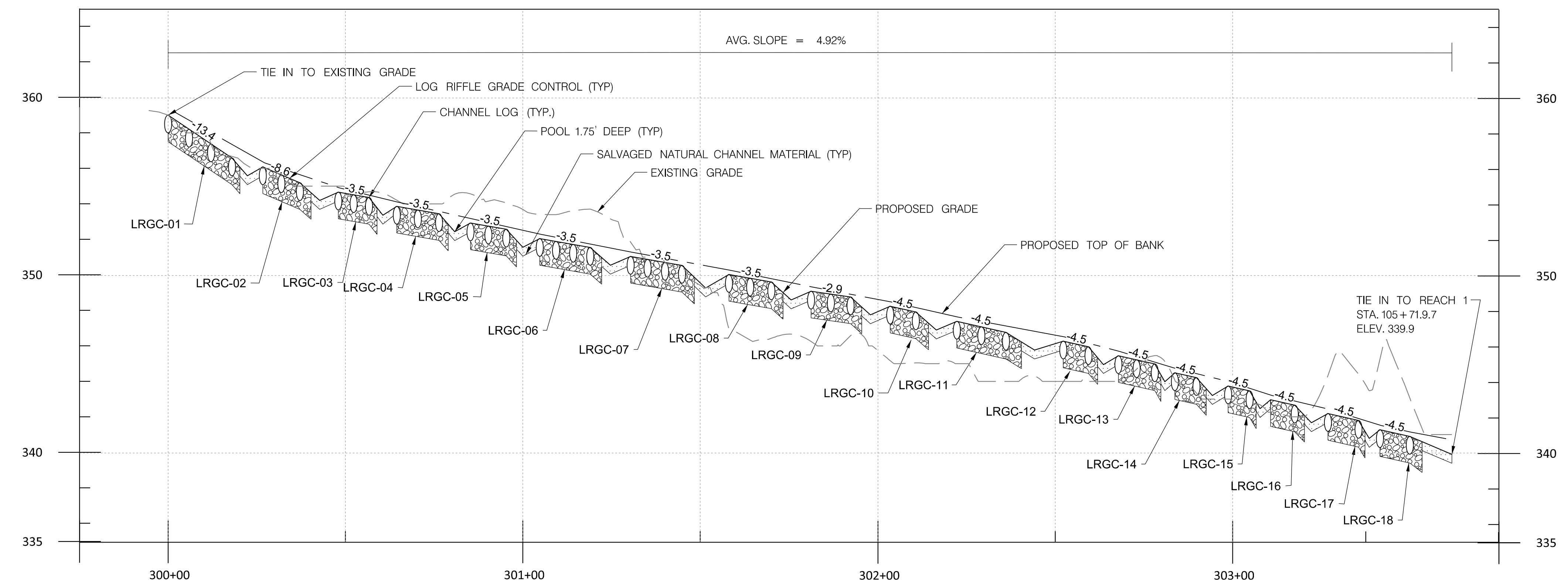
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PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	
SIGN AND SEAL	
Drawn By : _____ AG	Scale : 1"=20'
Designed By : _____ NH, JZ	Date : SEPTEMBER 2025
Reviewed By : _____ RO	
Drawing No. PR-02 of PR-05	Sheet No. 18 of 48

**HARFORD COUNTY, MARYLAND**

**HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
PROFILE**



#### STREAM PROFILE: REACH 3

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'

LEGEND	
EXISTING GROUND SURFACE	—
EXISTING PIPE	— — —
PROPOSED GROUND SURFACE	—
PROPOSED RIFFLE GRADE CONTROL	████████
PROPOSED RIFFLE WEIR	██████
PROPOSED CLASS I RIPRAP	○○○○
SALVAGED NATURAL CHANNEL MATERIAL	.....
PROPOSED LOG VANE	8

BID NO.:

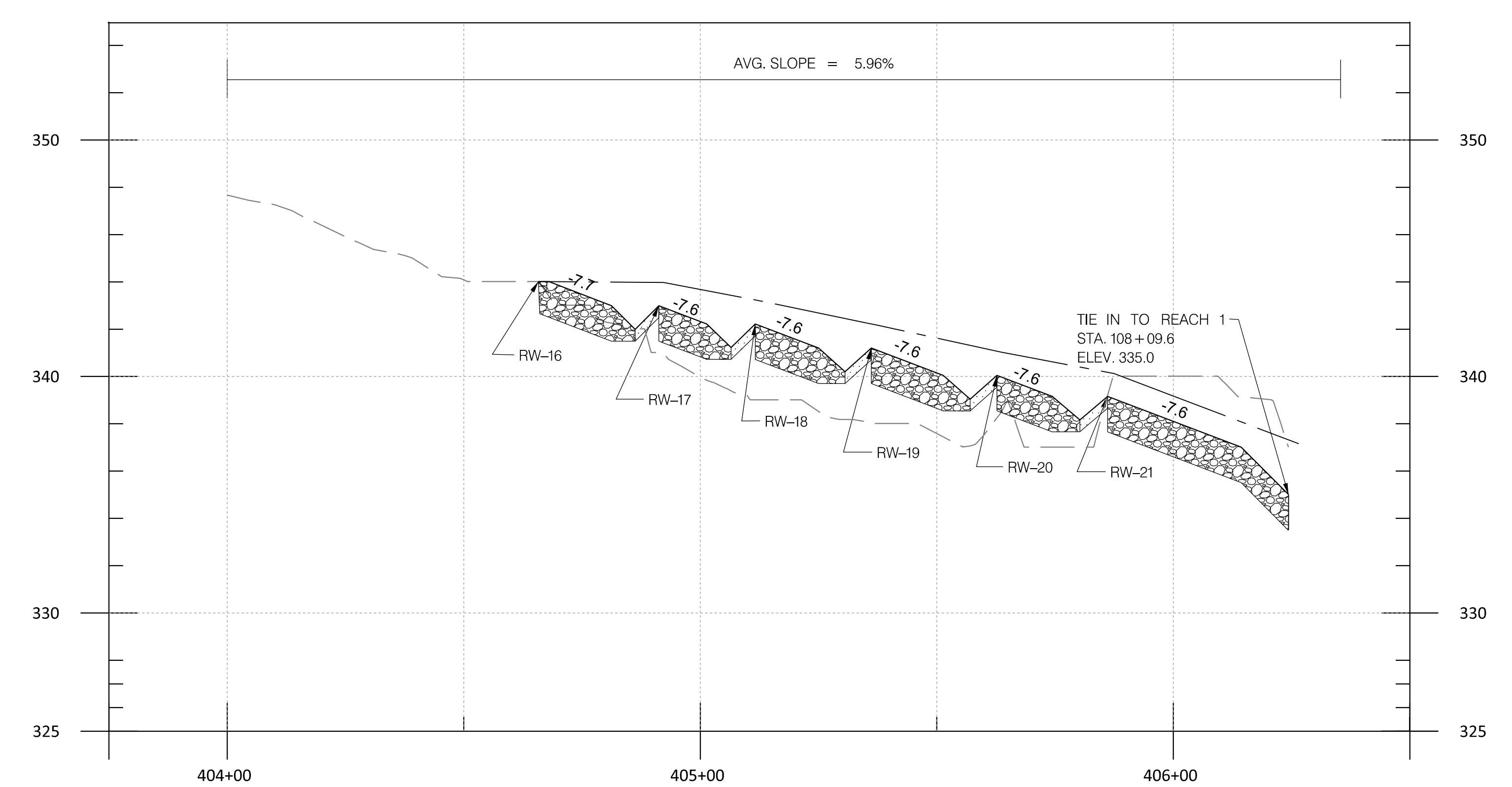
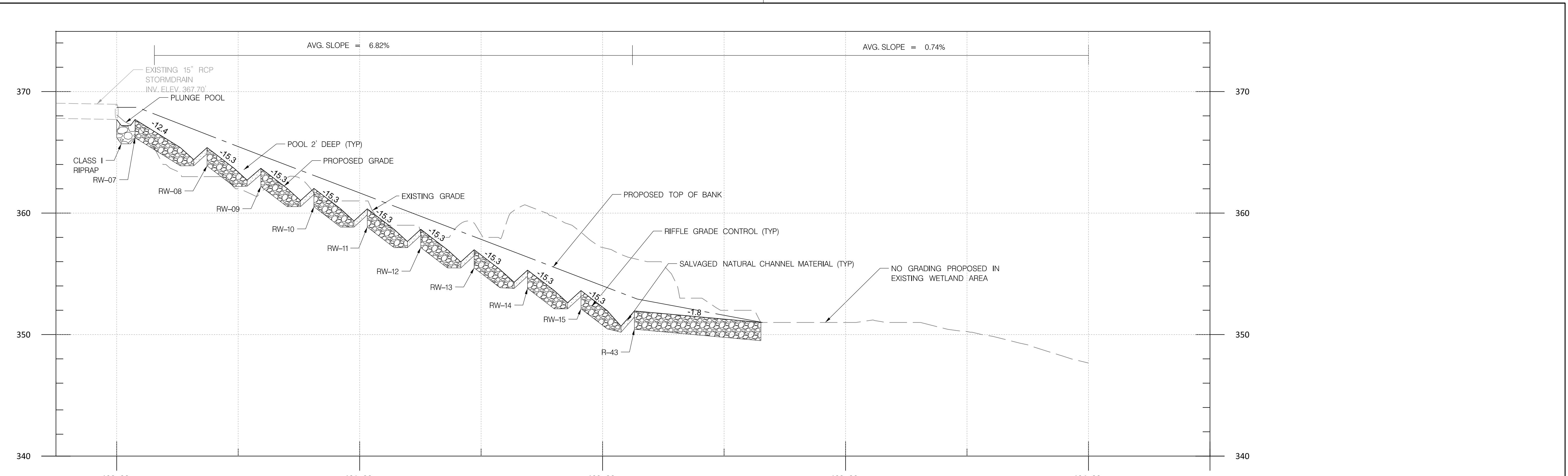
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SCALE: 1"=20' HCC DWG ID No.: 8

HARFORD COUNTY, MARYLAND		HARFORD COMMUNITY COLLEGE STREAM RESTORATION PROFILE	
PROJECT CONTRACT: 21-097 TO #25	Revisions		
GP #XXX-XXXXXX-XXXX			
SIGN AND SEAL			
Drawn By : AG	Scale : 1"=20'		
Designed By : NH, JZ	Date : SEPTEMBER 2025		
Reviewed By : RO			
Drawing No. PR-03 of PR-05	Sheet No. 19 of 48		

#### PROFESSIONAL CERTIFICATION

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STREAM PROFILE: REACH 4

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'



PROFESSIONAL CERTIFICATION

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PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	
SIGN AND SEAL	

Drawn By : AG	Scale : 1"=20'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. PR-04 of PR-05	Sheet No. 20 of 48

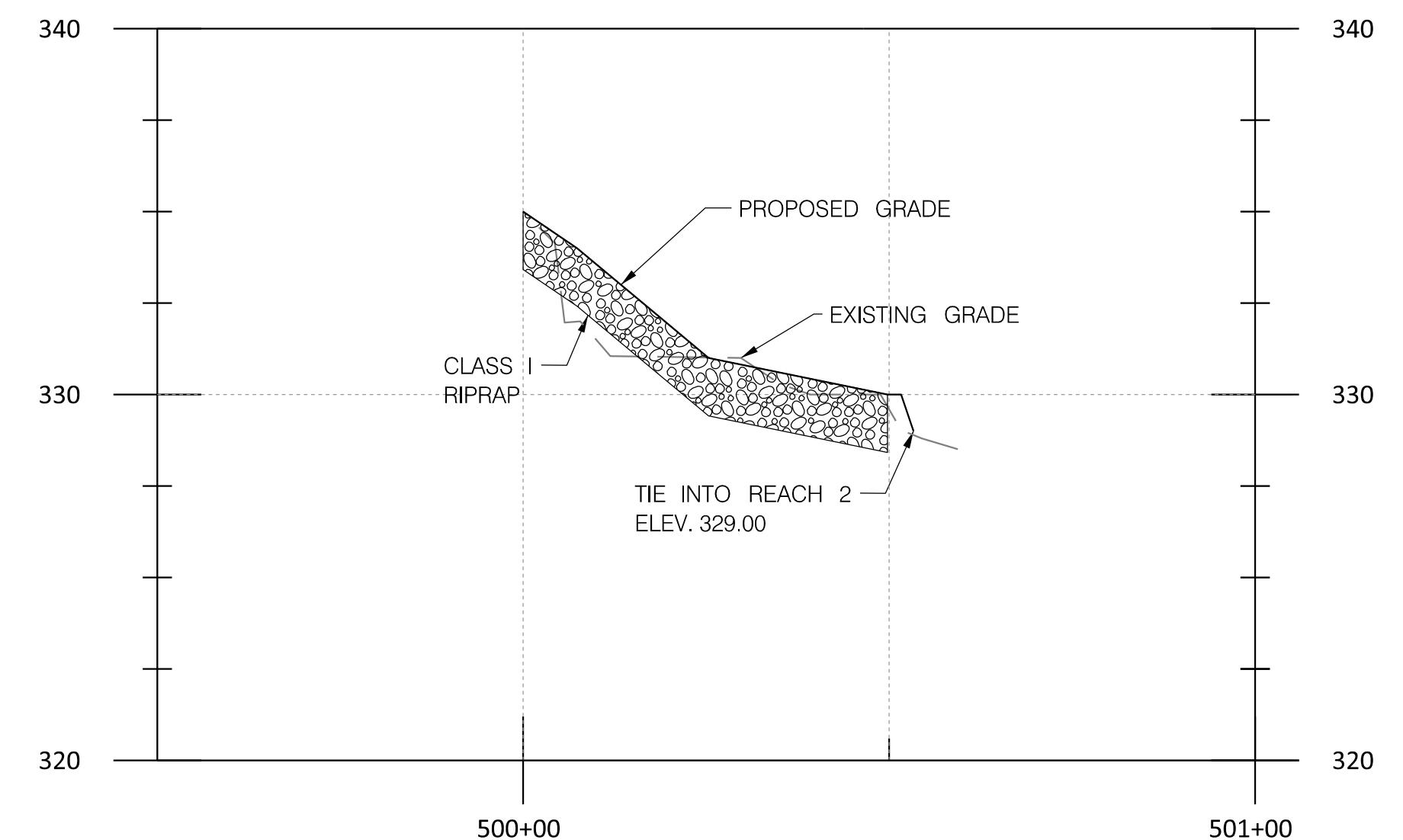
HARFORD COUNTY, MARYLAND

HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
PROFILE

BID NO.:

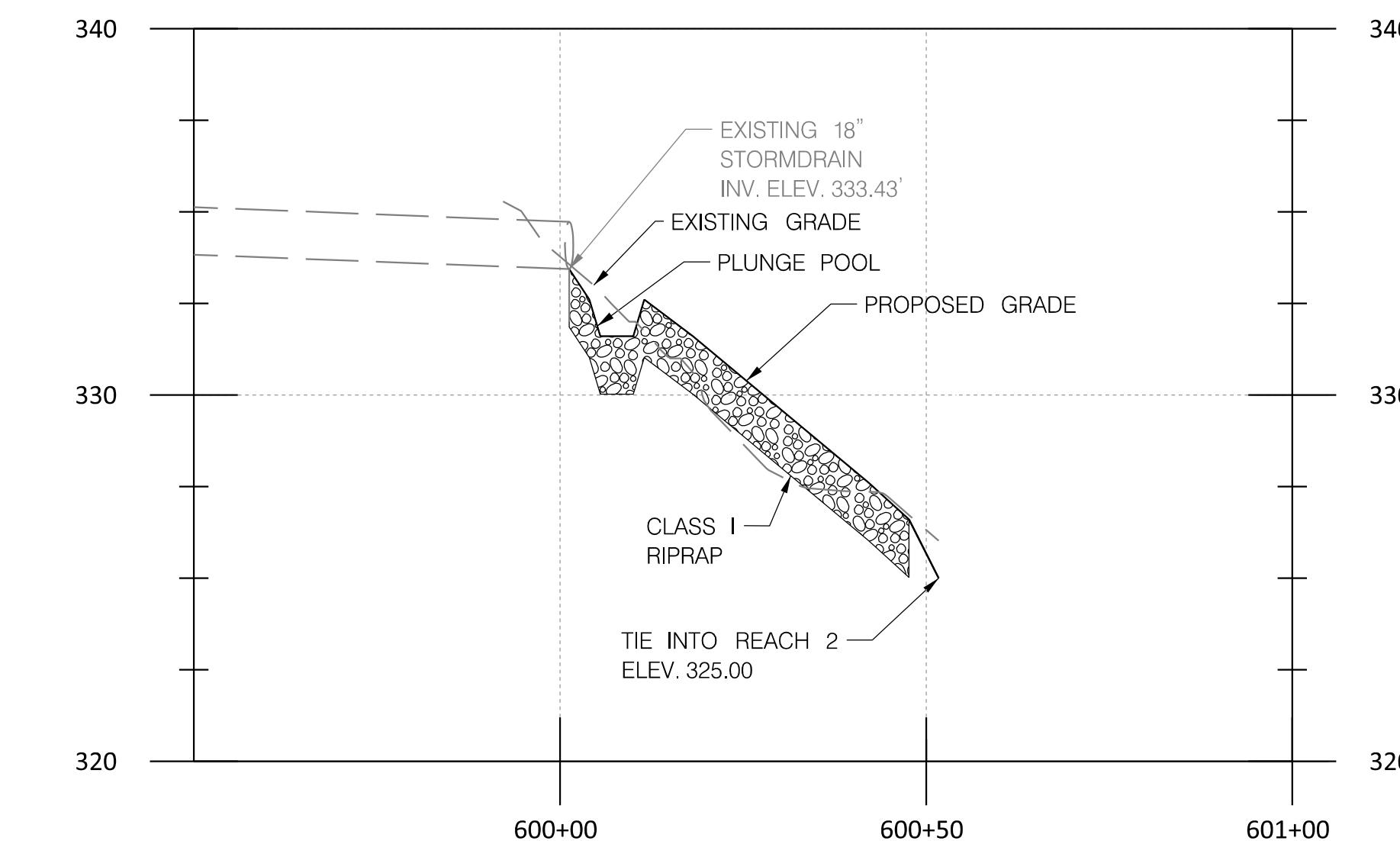
HCG DWG ID No.:

SCALE : 1"=20'



**CONVEYANCE SWALE PROFILE: SW-01**

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'



**CONVEYANCE SWALE PROFILE: SW-02**

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'

**LEGEND**

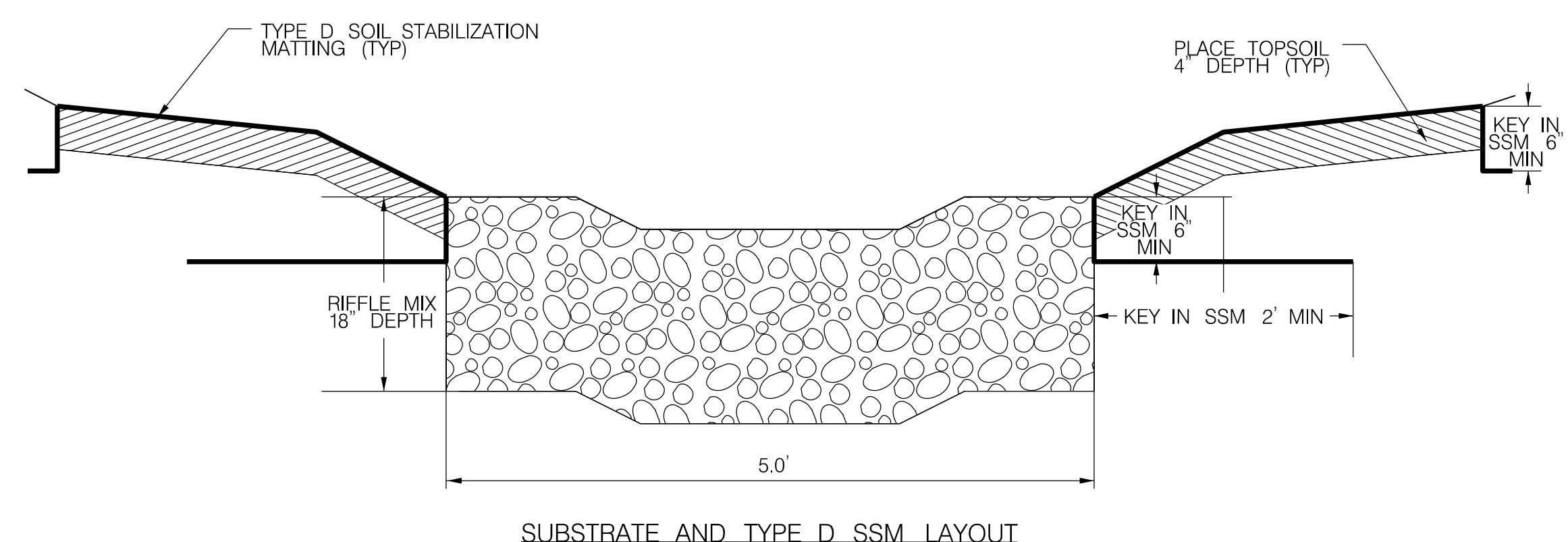
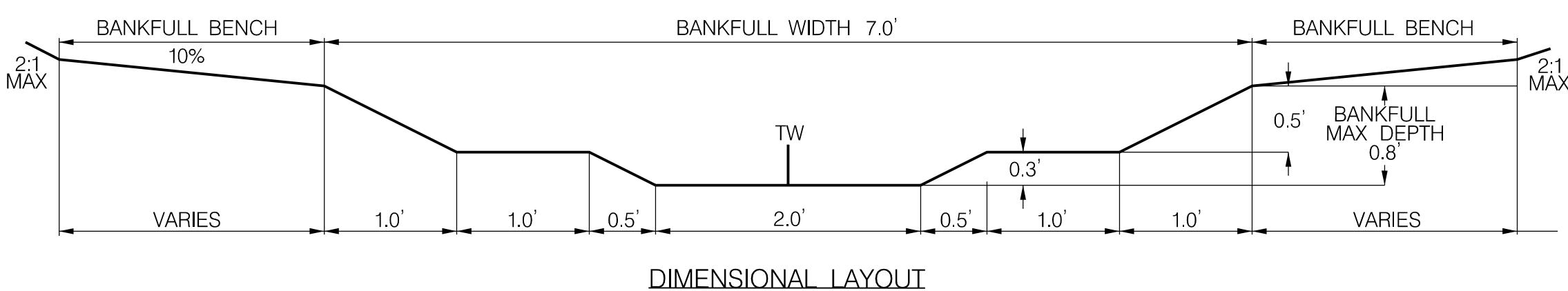
EXISTING GROUND SURFACE	— — —
EXISTING PIPE	— — — 3
PROPOSED GROUND SURFACE	— — —
PROPOSED CLASS I RIPRAP	□ □ □

**HARFORD COUNTY, MARYLAND**  
**HARFORD COMMUNITY COLLEGE**  
**STREAM RESTORATION**  
**PROFILE**

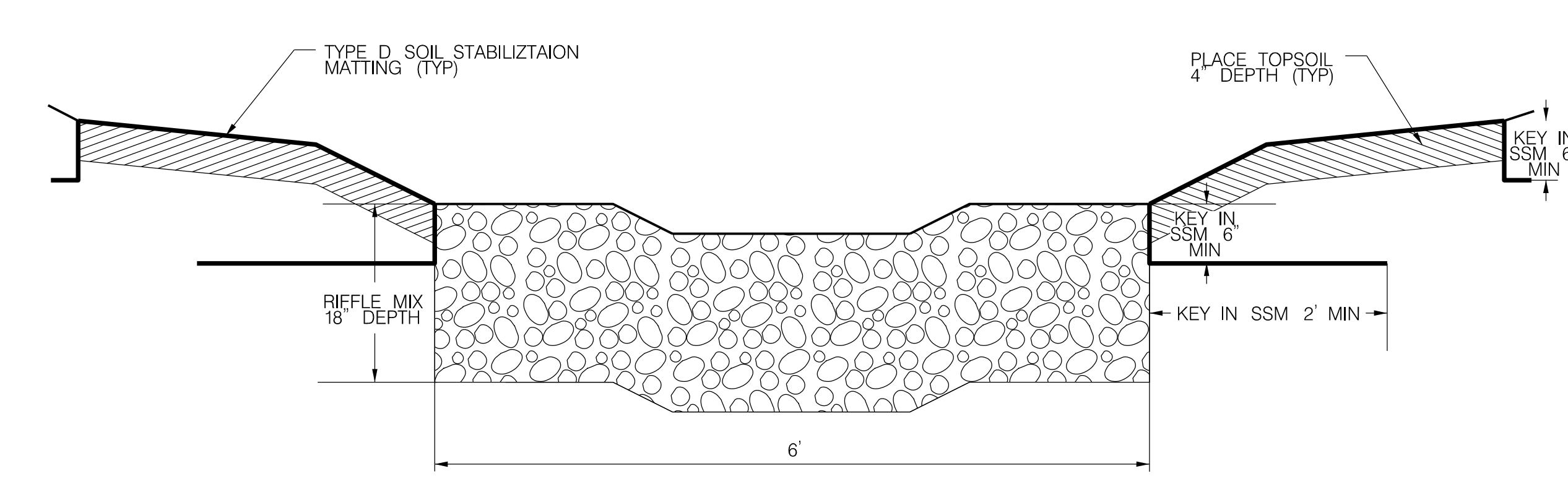
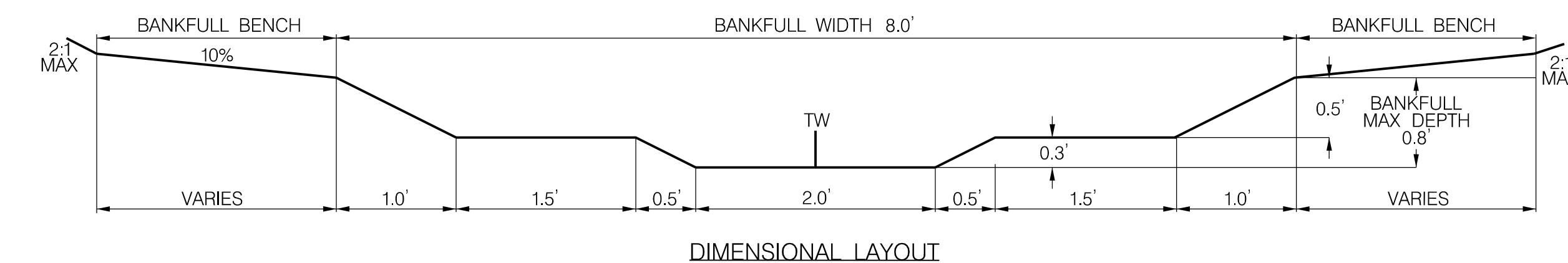
PROJECT CONTRACT: 21-097 TO #25	Revisions	
GP #XXX-XXXXXX-XXXX		
SIGN AND SEAL		
Drawn By : <u>AG</u>	Scale : <u>1"=20'</u>	
Designed By : <u>NH, JZ</u>	Date : <u>SEPTEMBER 2025</u>	
Reviewed By : <u>RO</u>		
Drawing No. <u>PR-05</u> of <u>PR-05</u>	Sheet No. <u>21</u> of <u>48</u>	

**PROFESSIONAL CERTIFICATION**

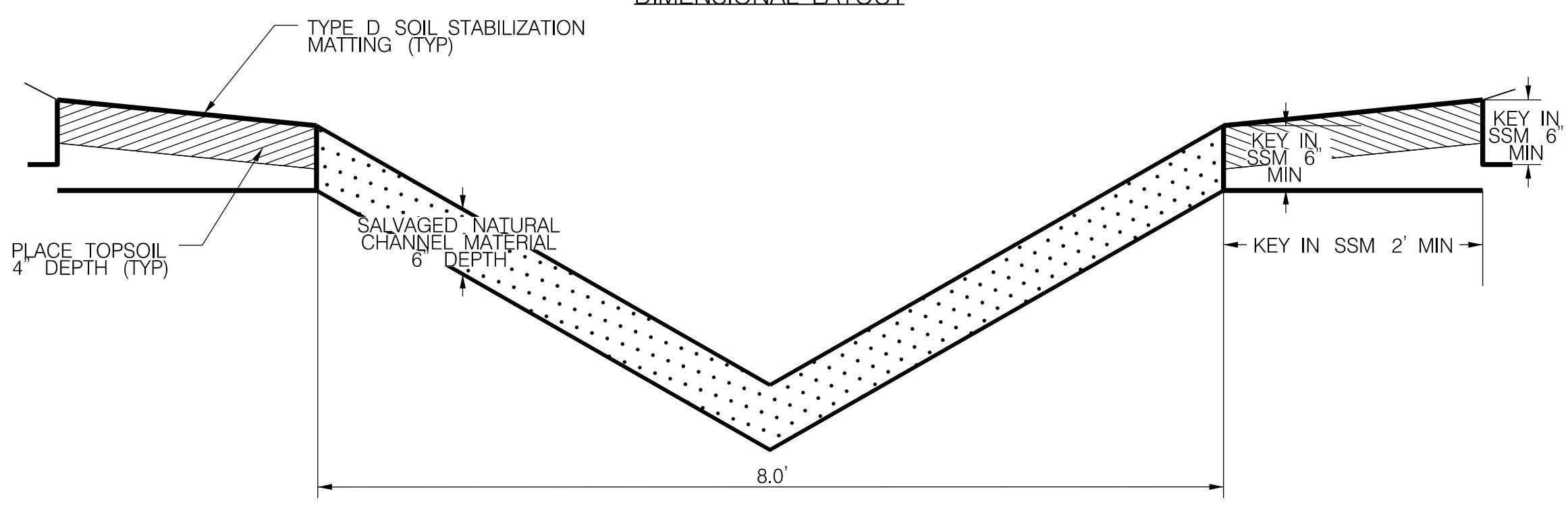
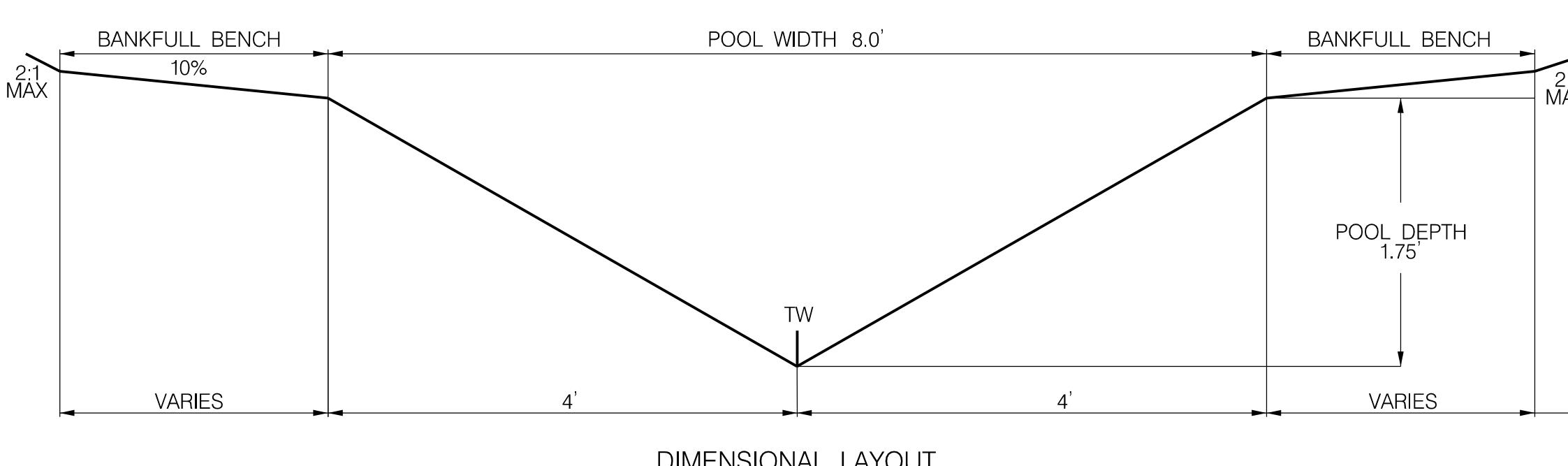
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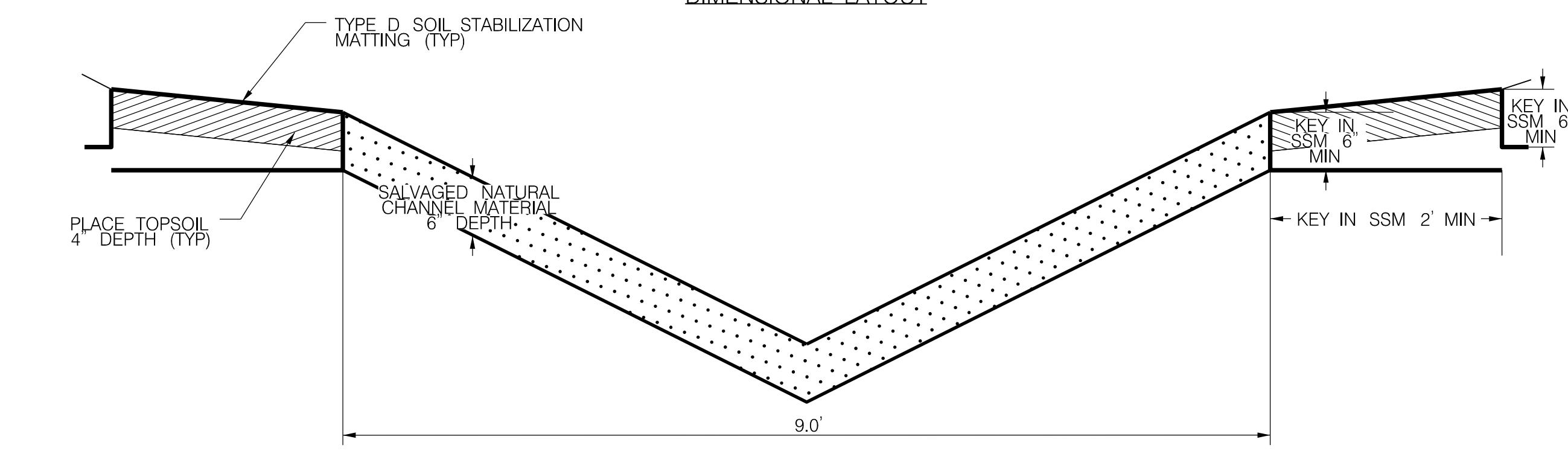
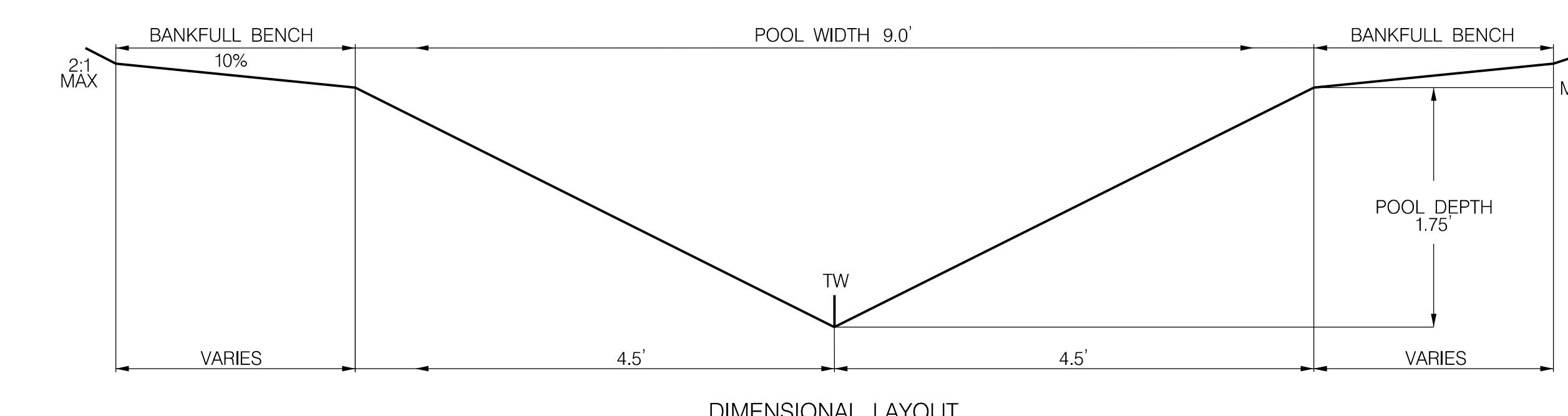
**TYPICAL SECTION REACH 1 – RIFFLE**



**TYPICAL SECTION REACH 2 – RIFFLE**



**TYPICAL SECTION REACH 1 – POOL**



**TYPICAL SECTION REACH 2 – POOL**

**HARFORD COUNTY, MARYLAND**

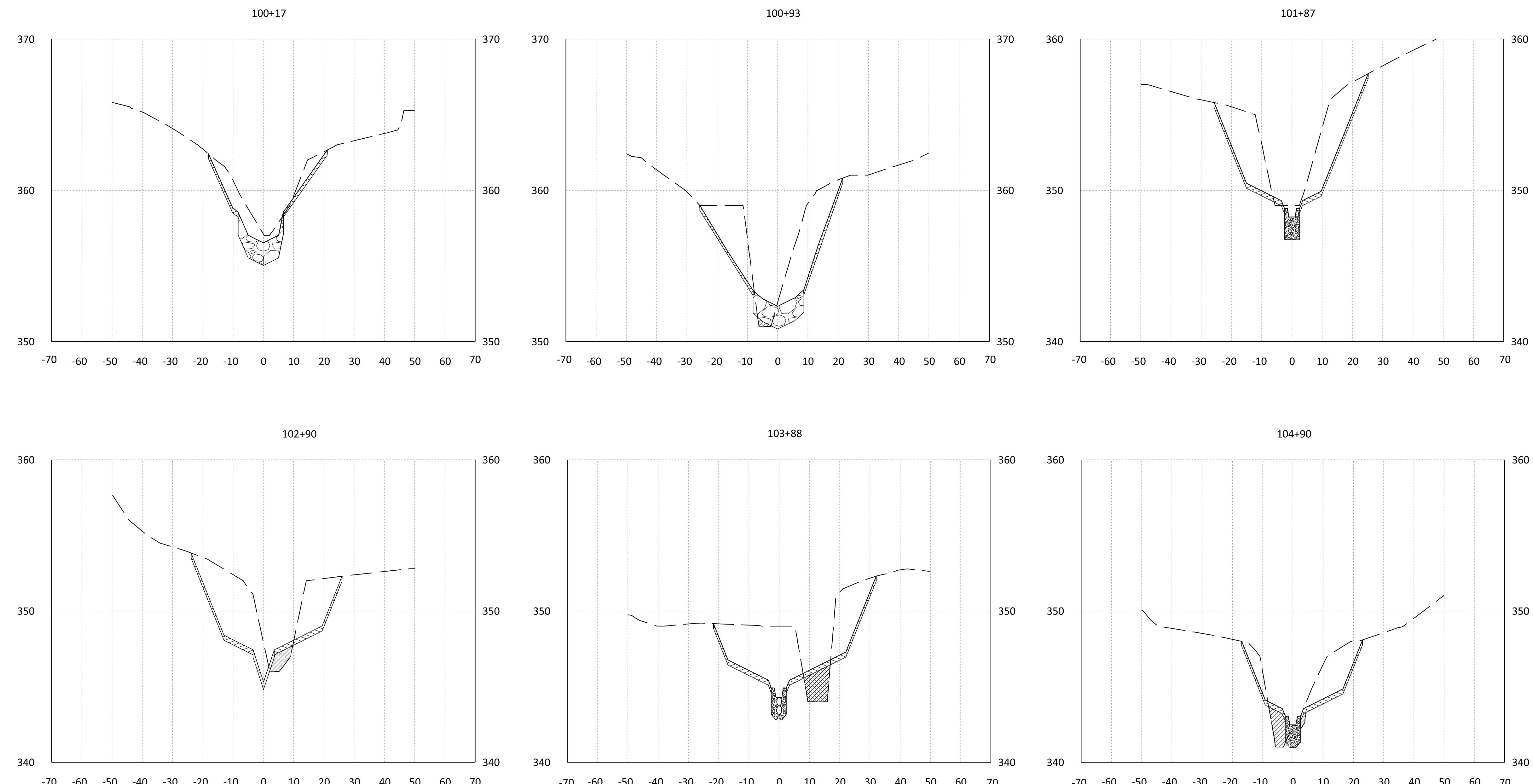
**HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
TYPICAL SECTIONS**

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	
SIGN AND SEAL	
Drawn By : AG	Scale : <u>NOT TO SCALE</u>
Designed By : NH, JZ	Date : <u>SEPTEMBER 2025</u>
Reviewed By : RO	
Drawing No. TS-01 of TS-02	Sheet No. 22 of 48

**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. 200370, EXPIRATION DATE: 2025/03/19.





#### LEGEND

EXISTING GROUND SURFACE	— — —
EXISTING PIPE	— — — 3
PROPOSED GROUND SURFACE	— — —
PROPOSED RIFFLE GRADE CONTROL MIX	☒☒☒☒
PROPOSED RIFFLE WEIR MIX	☒☒☒☒
SALVAGED NATURAL CHANNEL MATERIAL	☒☒☒☒
PROPOSED TOPSOIL	☒☒☒☒
PROPOSED COMMON BORROW	☒☒☒☒
PROPOSED LOG VANE	○
PROPOSED CHANNEL LOG	○

#### STREAM CROSS SECTIONS

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'

#### PROFESSIONAL CERTIFICATION

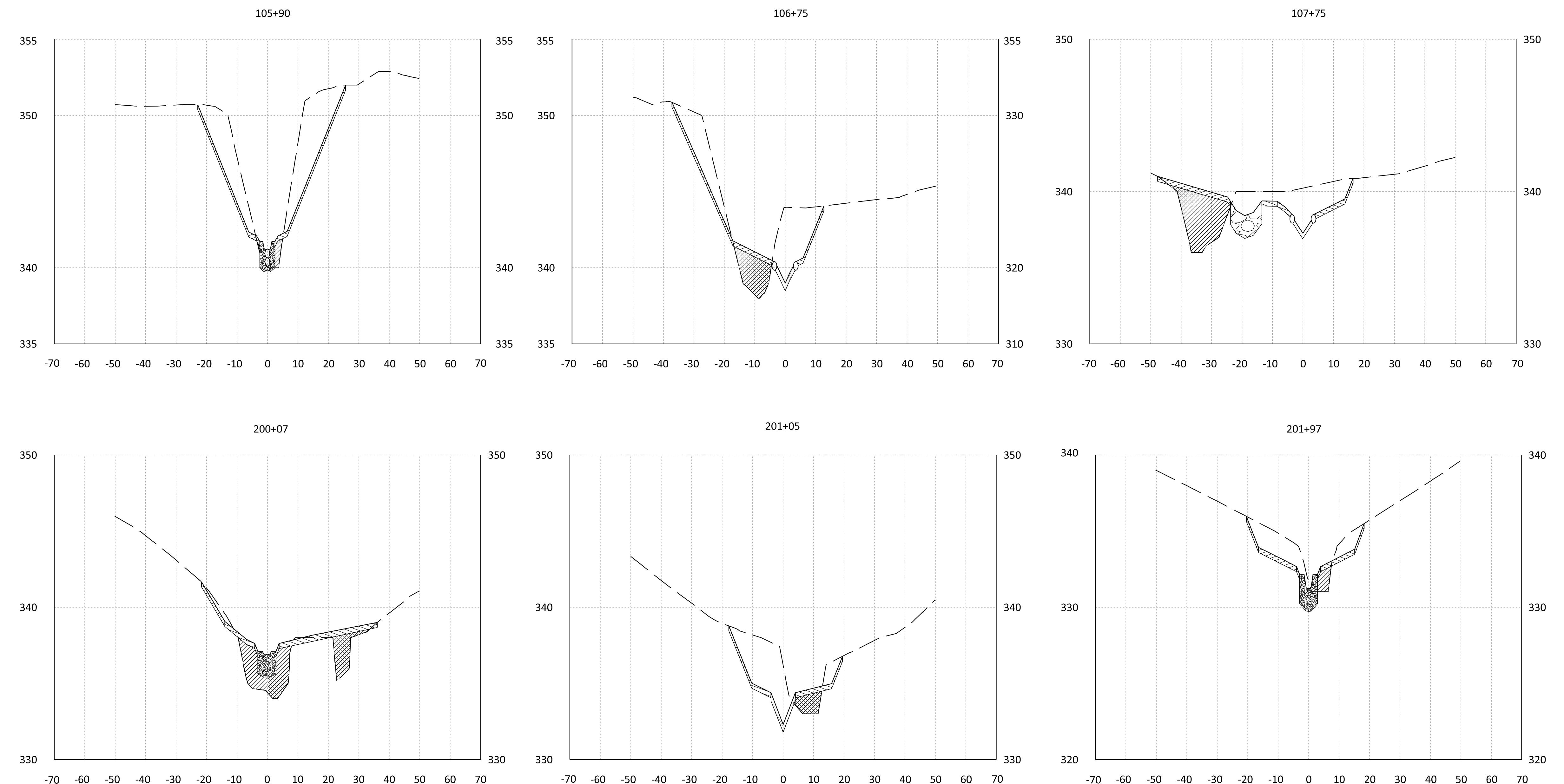
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THE STATE OF MARYLAND, LICENSE NO. 200370, EXPIRATION DATE: 2025/03/19.

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	
SIGN AND SEAL	

#### HARFORD COUNTY, MARYLAND

#### HARFORD COMMUNITY COLLEGE STREAM RESTORATION CROSS SECTIONS

Drawn By : AG	Scale : 1"=20'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. XS-01 of XS-04	Sheet No. 24 of 48



#### LEGEND

EXISTING GROUND SURFACE	— — —
EXISTING PIPE	— — — 3
PROPOSED GROUND SURFACE	— — —
PROPOSED RIFFLE GRADE CONTROL MIX	XXXX
PROPOSED RIFFLE WEIR MIX	OOOO
RESCUED NATURAL CHANNEL MATERIAL	.....
PROPOSED TOPSOIL	///
PROPOSED COMMON BORROW	///
PROPOSED LOG VANE	0
PROPOSED CHANNEL LOG	0

#### STREAM CROSS SECTIONS

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'

#### PROFESSIONAL CERTIFICATION

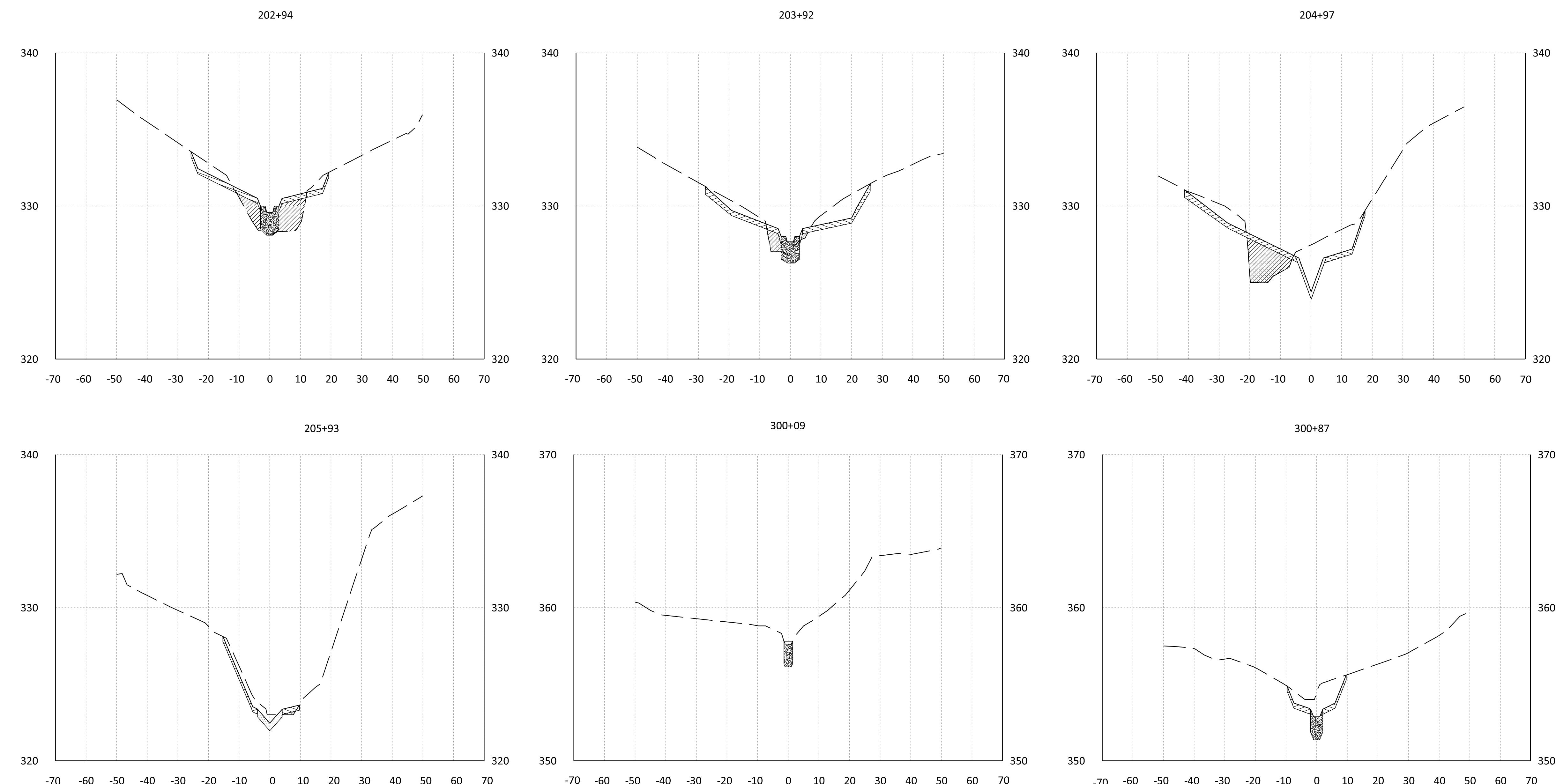
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THE STATE OF MARYLAND, LICENSE NO. 200370, EXPIRATION DATE: 2025/03/19.

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	
SIGN AND SEAL	

#### HARFORD COUNTY, MARYLAND

#### HARFORD COMMUNITY COLLEGE STREAM RESTORATION CROSS SECTIONS

Drawn By : AG	Scale : 1"=20'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. XS-02 of XS-04	Sheet No. 25 of 48



## LEGEND

- EXISTING GROUND SURFACE
- EXISTING PIPE
- PROPOSED GROUND SURFACE
- PROPOSED RIFFLE GRADE CONTROL MIX
- PROPOSED RIFFLE WEIR MIX
- RESCUED NATURAL CHANNEL MATERIAL
- PROPOSED TOPSOIL
- PROPOSED COMMON BORROW
- PROPOSED LOG VANE
- PROPOSED CHANNEL LOG



## STREAM CROSS SECTIONS

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'

## PROFESSIONAL CERTIFICATION

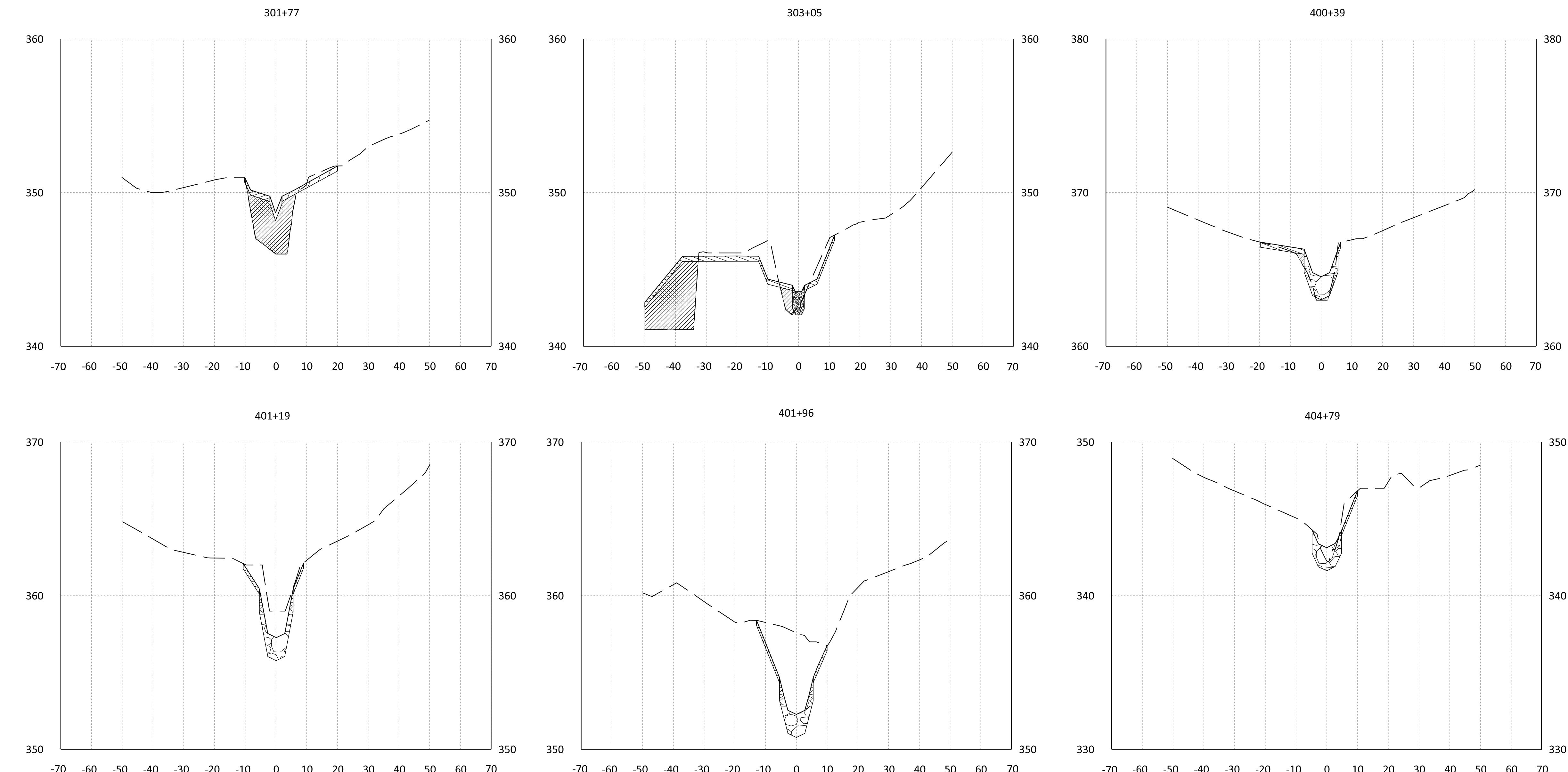
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THE STATE OF MARYLAND, LICENSE NO. 200370, EXPIRATION DATE: 2025/03/19.

PROJECT CONTRACT:  
21-097 TO #25  
GP #XXXX-XXXXXX-XXXX

Revisions

SIGN AND SEAL

HARFORD COUNTY, MARYLAND	
HARFORD COMMUNITY COLLEGE STREAM RESTORATION CROSS SECTIONS	
Drawn By : _____ AG	Scale : 1"=20'
Designed By : _____ NH, JZ	Date : SEPTEMBER 2025
Reviewed By : _____ RO	
Drawing No. XS-03 of XS-04	Sheet No. 26 of 48



#### LEGEND

- EXISTING GROUND SURFACE
- EXISTING PIPE
- PROPOSED GROUND SURFACE
- PROPOSED RIFFLE GRADE CONTROL MIX
- PROPOSED RIFFLE WEIR MIX
- RESCUED NATURAL CHANNEL MATERIAL
- PROPOSED TOPSOIL
- PROPOSED COMMON BORROW
- PROPOSED LOG VANE
- PROPOSED CHANNEL LOG



BY: [Redacted]

FILE PATH: /ad/rk.com/Cloud/Projects/2021/21155\_HARCO/Task 025\_Harford Community College Stream Restoration/CADD60%Plans/27 - pXS-0004\_HCC.dgn

PLOTTED: 9/12/2025

#### STREAM CROSS SECTIONS

SCALE:  
HORIZONTAL 1" = 20'  
VERTICAL 1" = 4'

#### PROFESSIONAL CERTIFICATION

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THE STATE OF MARYLAND, LICENSE NO. 200370, EXPIRATION DATE: 2025/03/19.

PROJECT CONTRACT:  
21-097 TO #25

GP #XXX-XXXXXX-XXXX

Revisions

SIGN AND SEAL

#### HARFORD COUNTY, MARYLAND

HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
CROSS SECTIONS

Drawn By : AG

Scale : 1"=20'

Designed By : NH, JZ

Date : SEPTEMBER 2025

Reviewed By : RO

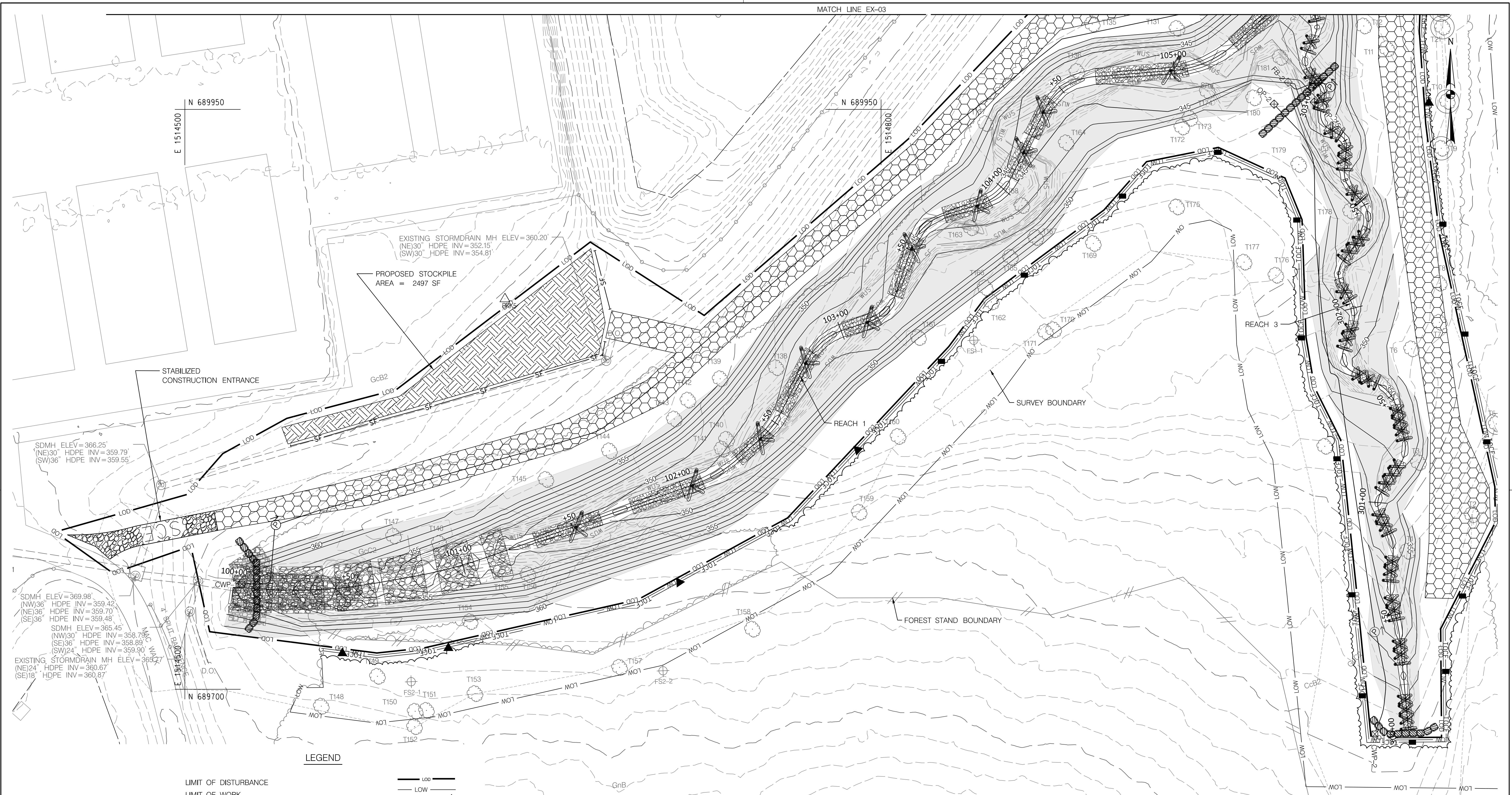
Drawing No. XS-04 of XS-04

Sheet No. 27 of 48

BID NO. :

HCC DWG ID No. :

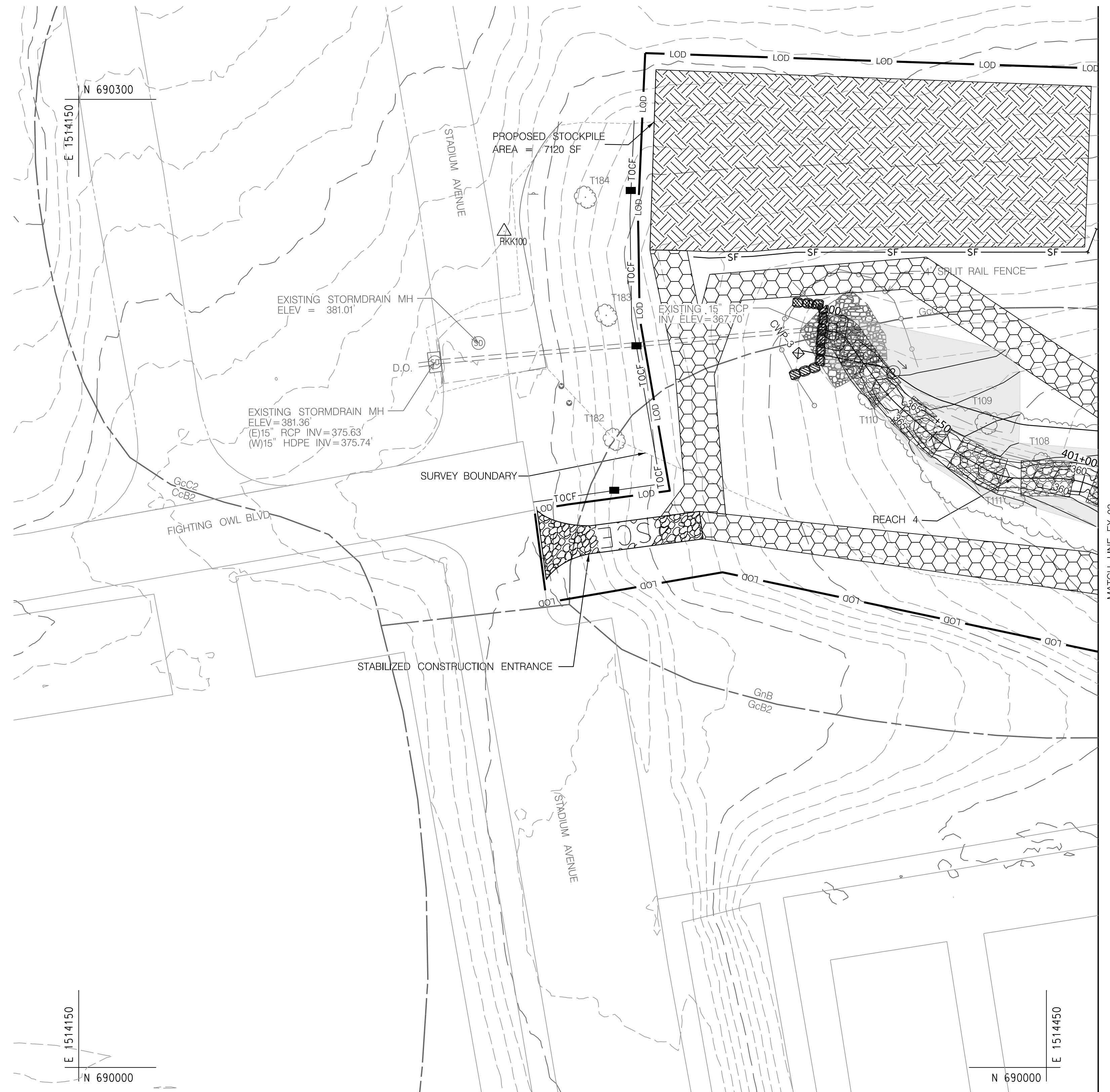
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HARFORD COUNTY, MARYLAND

HARFORD COMMUNITY COLLEGE  
STREAM RESTORATION  
EROSION & SEDIMENT CONTROL

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	
SIGN AND SEAL	
Drawn By : AG	Scale : 1"=20'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. ES-01 of ES-07	Sheet No. 28 of 48

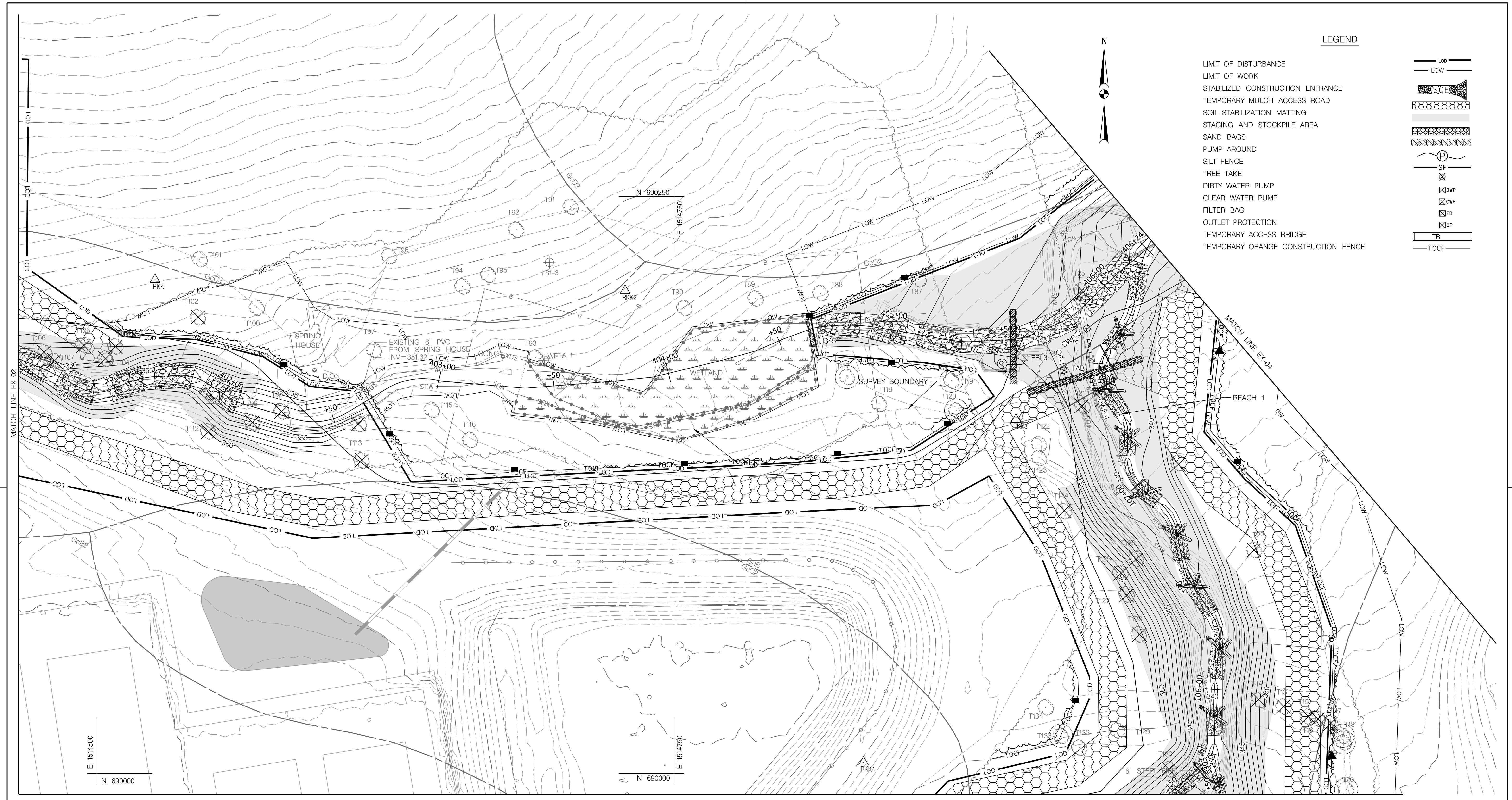


## HARFORD COUNTY, MARYLAND

### HARFORD COMMUNITY COLLEGE STREAM RESTORATION EROSION & SEDIMENT CONTROL

PROJECT CONTRACT: 21-097 TO #25 GP #XXXX-XXXXXX-XXXX	Revisions
SIGN AND SEAL	

Drawn By : AG	Scale : 1"=20'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. ES-02 of ES-07	Sheet No. 29 of 48



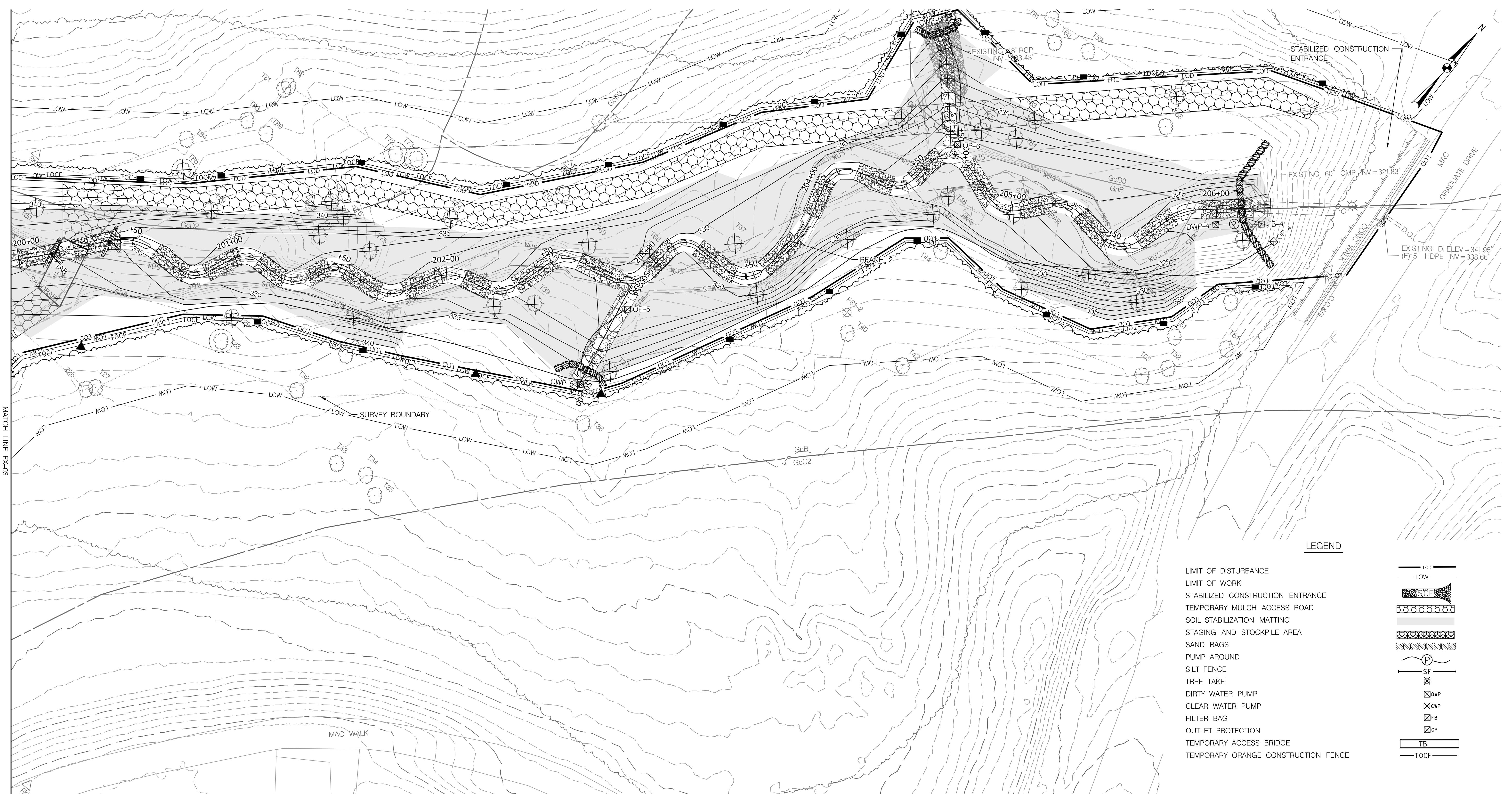
NOTES:  
1. TEMPORARY ORANGE CONSTRUCTION FENCE SHOWN OUTSIDE OF LOD FOR VISUAL PURPOSES ONLY.

20' 0 20' 40'  
SCALE: 1"=20'

PROFESSIONAL CERTIFICATION

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PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXXX-XXXXXX-XXXX	
SIGN AND SEAL	
Drawn By : AG	Scale : 1"=20'
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. ES-03 of ES-07	Sheet No. 30 of 48

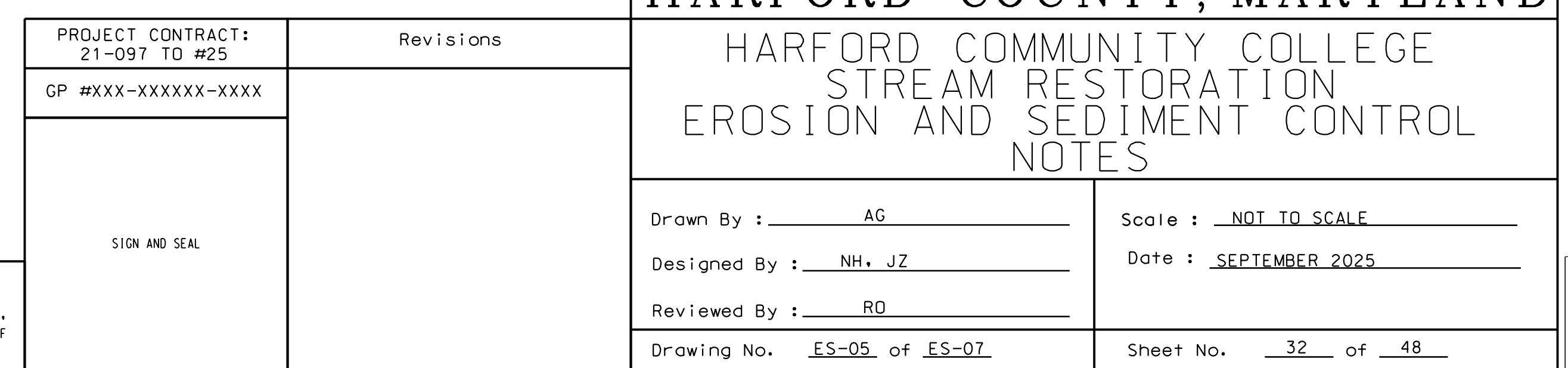
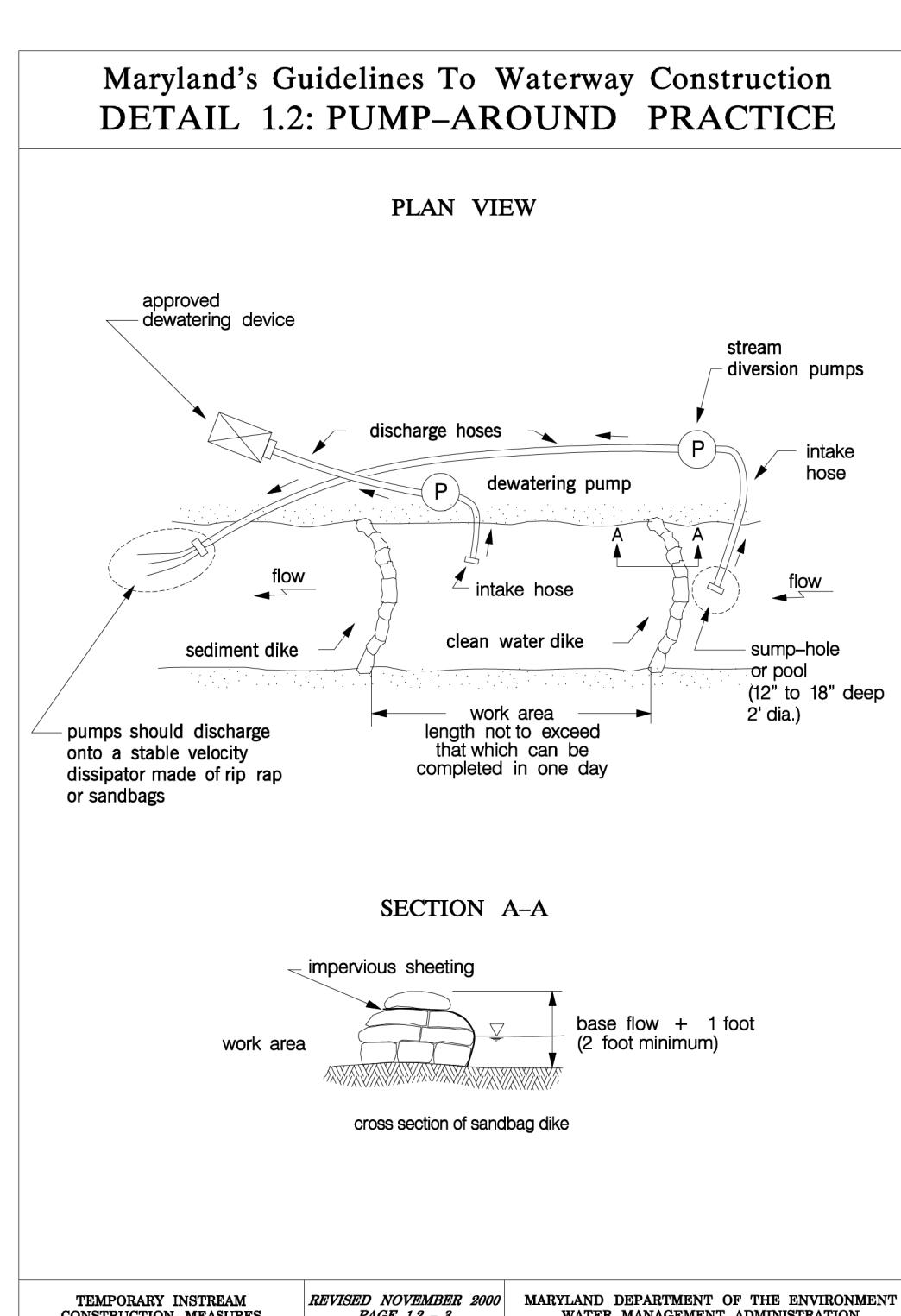
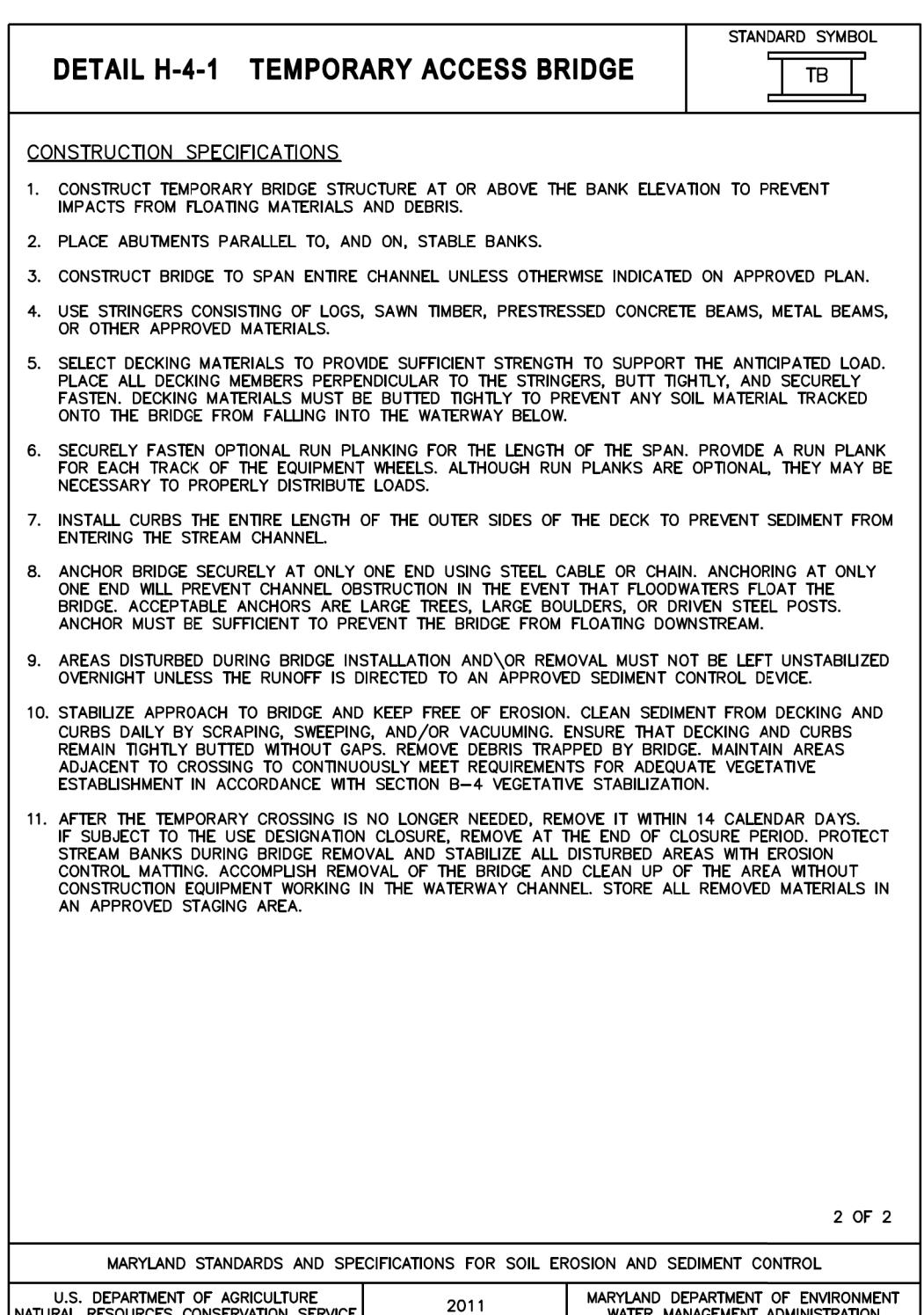
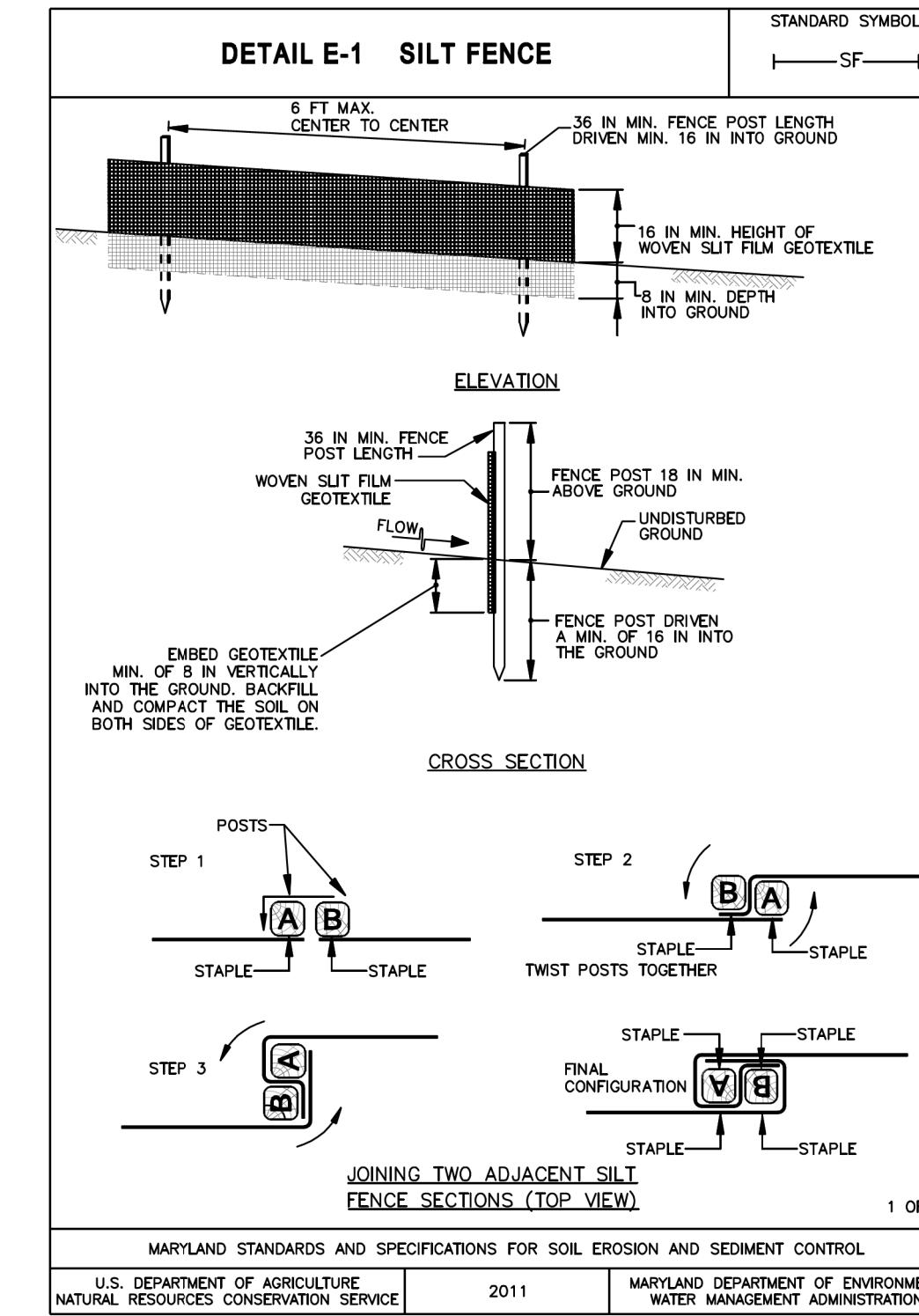
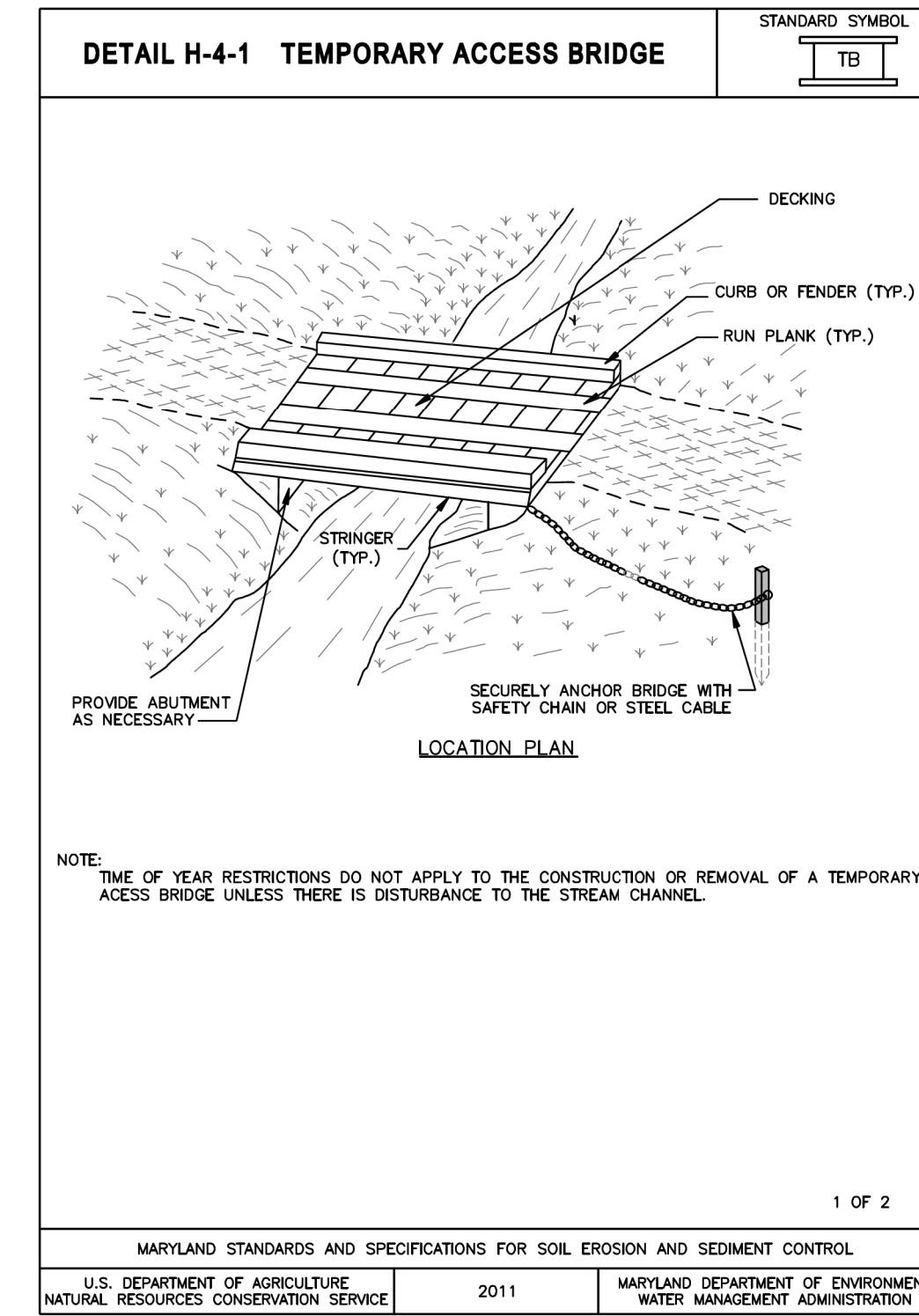
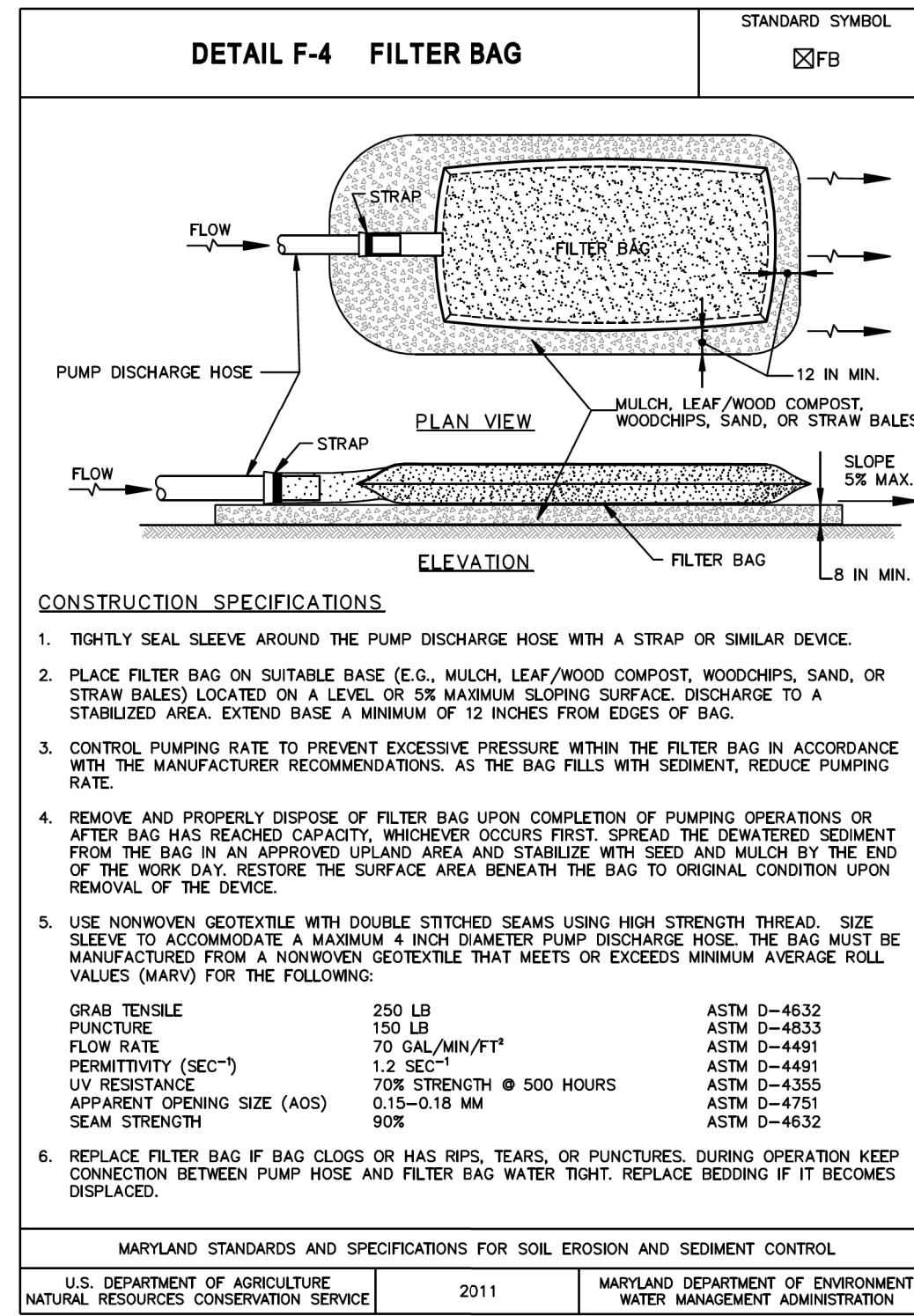
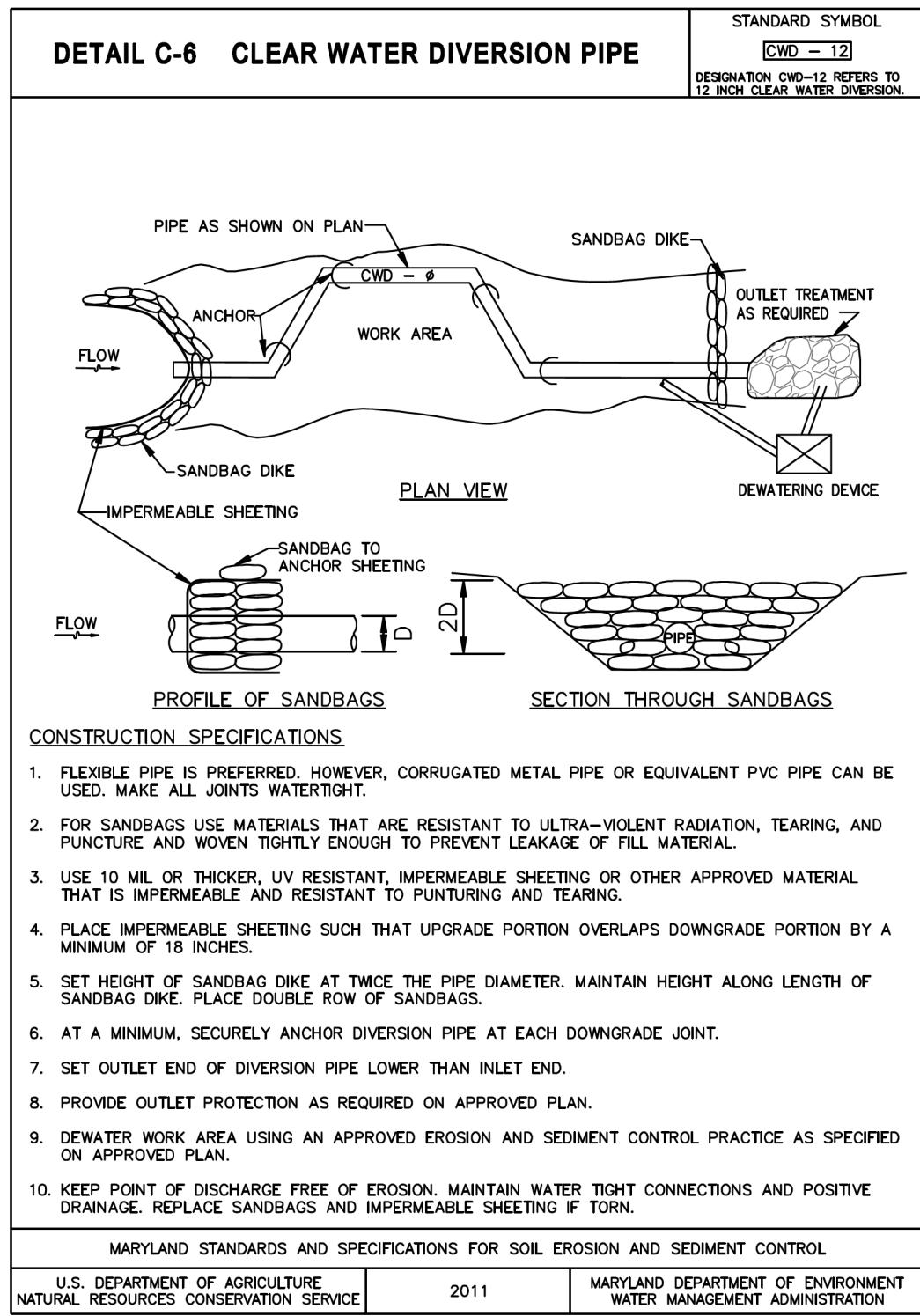
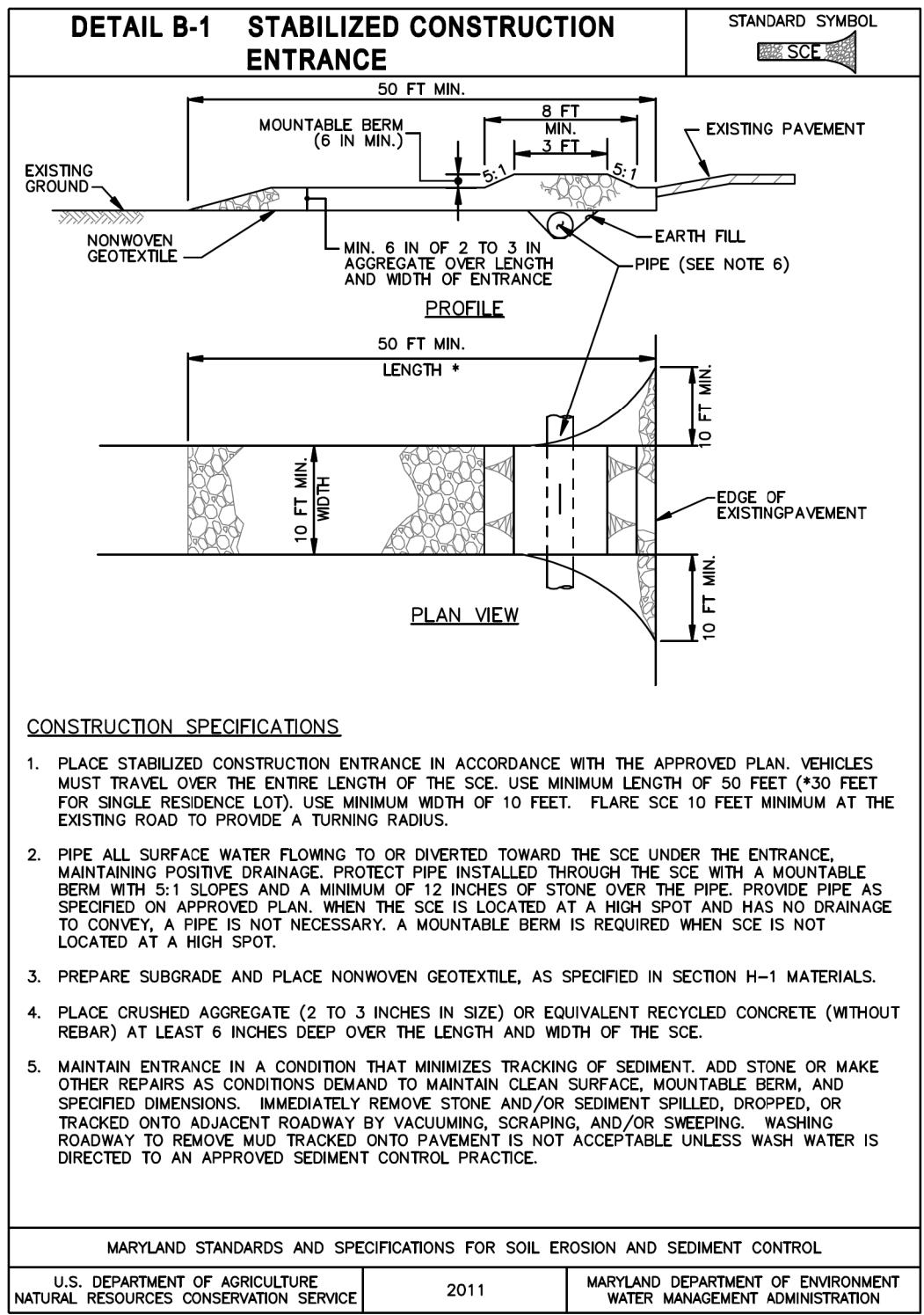


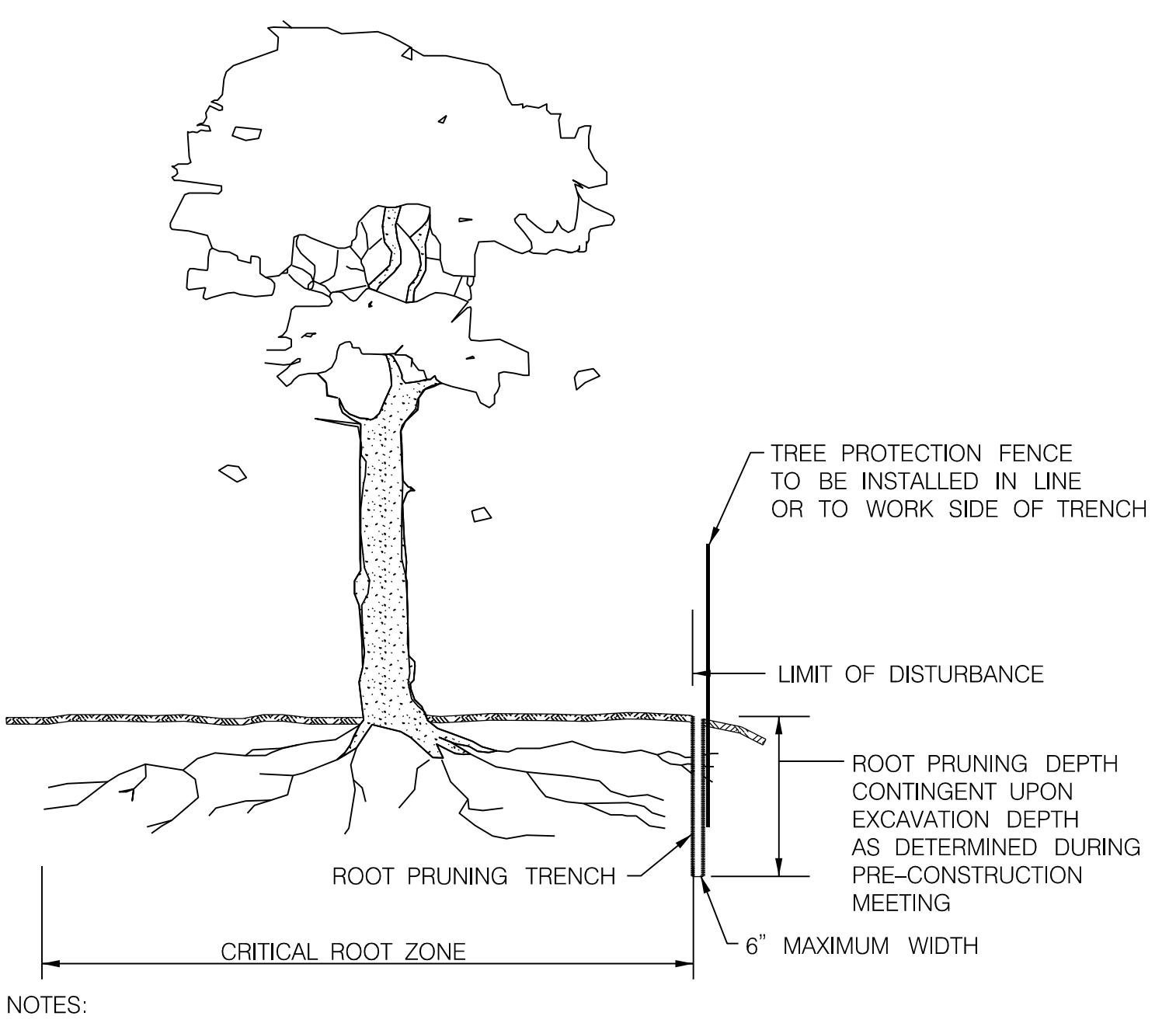
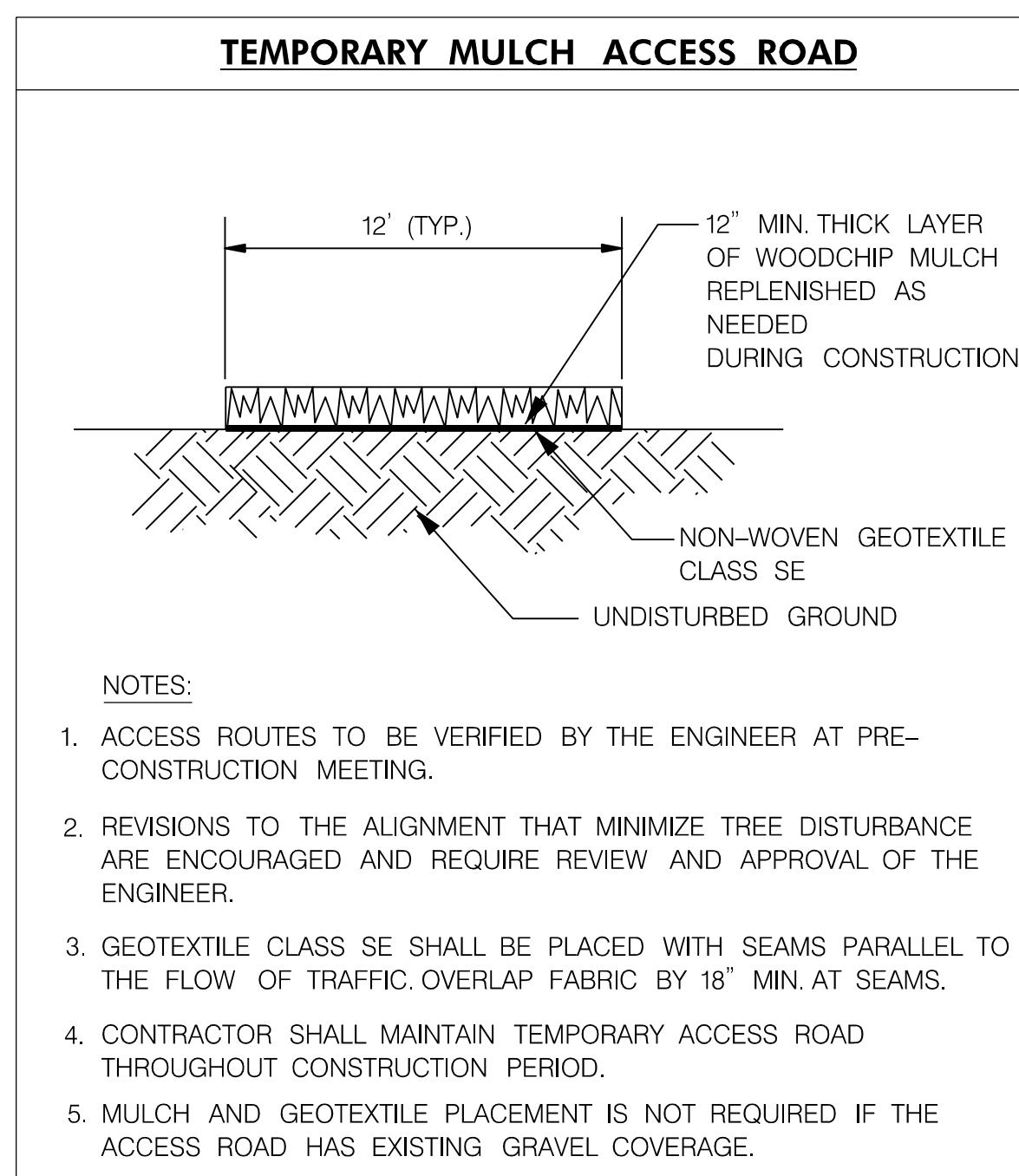
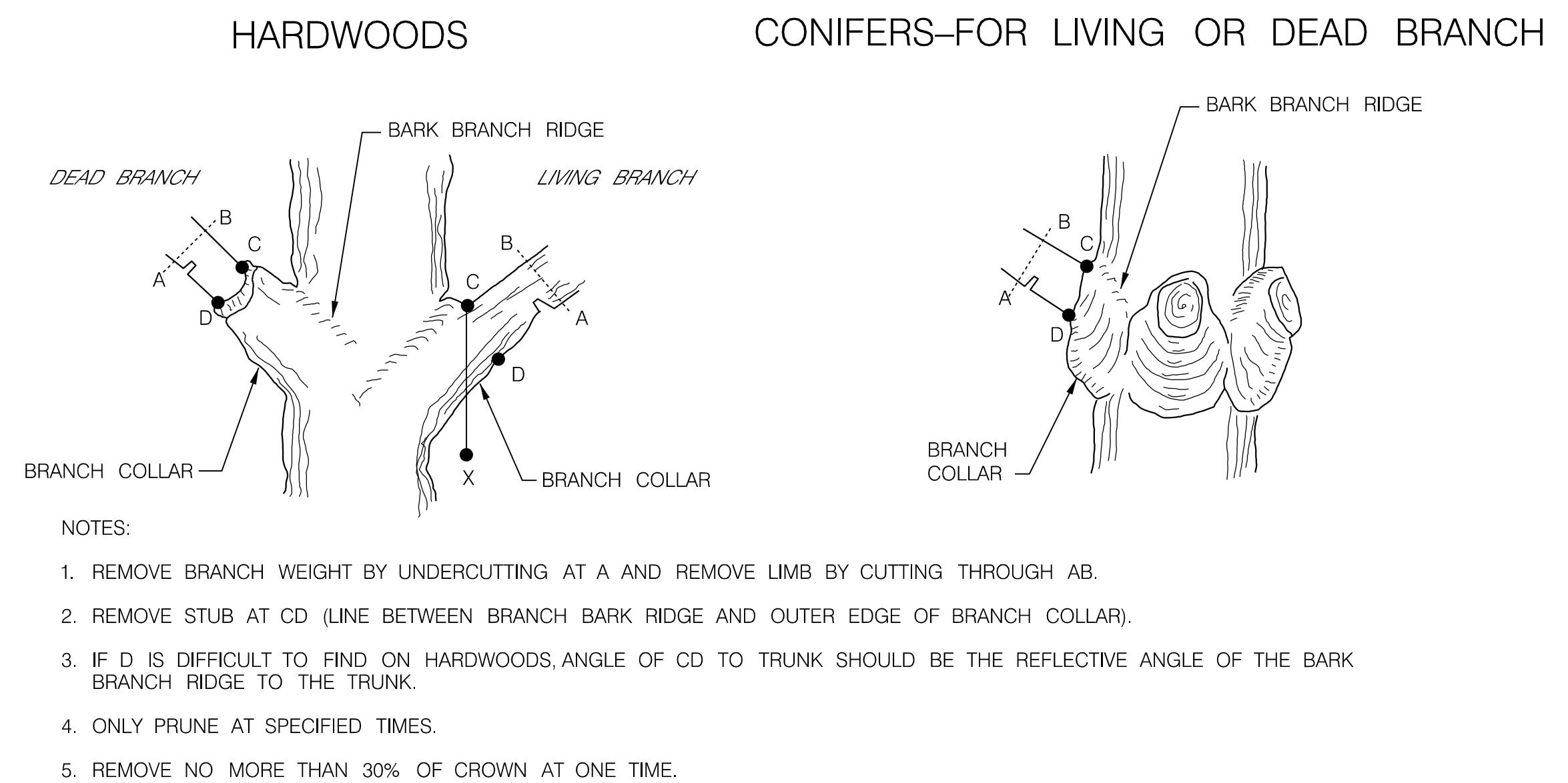
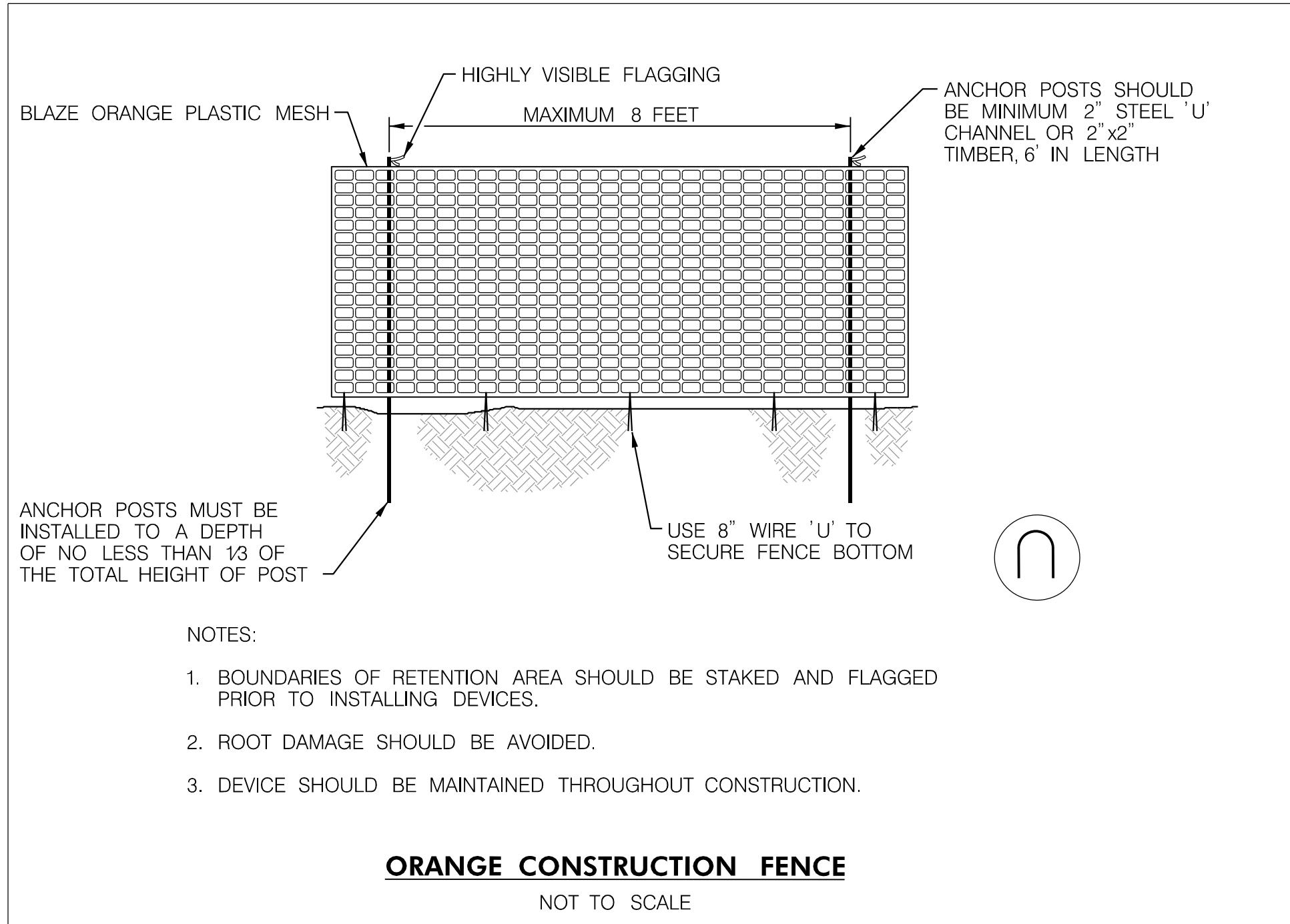
NOTES:  
1. TEMPORARY ORANGE CONSTRUCTION FENCE SHOWN OUTSIDE OF LOD FOR VISUAL PURPOSES ONLY.

A horizontal scale bar diagram. It features three vertical tick marks labeled '0'' at the left end, '20'' in the middle, and '40'' at the right end. Between the '0'' and '20'' marks is a thick black horizontal bar. Below this bar is a thin white horizontal bar. The text 'SCALE: 1" = 20'' is centered below the scale bar.

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PROJECT CONTRACT: 21-097 TO #25	Revisions	<b>HARFORD COMMUNITY COLLEGE</b> <b>STREAM RESTORATION</b> <b>EROSION &amp; SEDIMENT CONTROL</b>	
GP #XXX-XXXXXX-XXXX		Drawn By : <u>AG</u> Designed By : <u>NH, JZ</u> Reviewed By : <u>RO</u>	Scale : <u>1"=20'</u> Date : <u>SEPTEMBER 2025</u>
SIGN AND SEAL		Drawing No. <u>ES-04</u> of <u>ES-07</u>	Sheet No. <u>31</u> of <u>48</u>





**ROOT PRUNING DETAIL**

NOT TO SCALE

**PROFESSIONAL CERTIFICATION**

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PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXX-XXXXXX-XXXX	SIGN AND SEAL

**HARFORD COUNTY, MARYLAND**  
**HARFORD COMMUNITY COLLEGE**  
**STREAM RESTORATION**  
**EROSION AND SEDIMENT CONTROL**  
**NOTES**

Drawn By : _____ AG	Scale : <u>NOT TO SCALE</u>
Designed By : _____ NH, JZ	Date : <u>SEPTEMBER 2025</u>
Reviewed By : _____ RO	
Drawing No. <u>ES-06</u> of <u>ES-07</u>	Sheet No. <u>33</u> of <u>48</u>

## STANDARD EROSION & SEDIMENT CONTROL NOTES

- THE CONTRACTOR SHALL NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) SEDIMENT CONTROL INSPECTOR AT 410-901-4020 AND THE HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) AT LEAST 48 HOURS PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES AND, UNLESS WAIVED BY THE SEDIMENT CONTROL INSPECTOR, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING AT THE PROJECT SITE. THE CONTRACTOR MUST PROVIDE THE NAME OF THE PERSON ON THE SITE WHO IS RESPONSIBLE FOR INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES AND A COPY OF THEIR GREEN CARD TO THE SEDIMENT CONTROL INSPECTOR.
- ALL PROJECTS WITH CONSTRUCTION ACTIVITIES DISTURBING ACRE OR MORE ARE REQUIRED TO SUBMIT A GENERAL PERMIT (NOI) TO MDE TO COMPLY WITH THE GENERAL PERMIT FOR CONSTRUCTION ACTIVITY FOR STORMWATER DISCHARGES. THE GENERAL PERMIT (NOI) MUST BE APPROVED PRIOR TO DISTURBANCE ACTIVITIES. TO OBTAIN A GENERAL PERMIT (NOI) FORM, CONTACT THE PERMITS COORDINATOR AT THE MDE COMPLIANCE PROGRAM AT 410-537-3510.
- THE LIMIT OF DISTURBANCE SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO THE PRE-CONSTRUCTION MEETING AND ANY GRADING ACTIVITIES TO ENSURE COMPLIANCE WITH THE APPROVED PLAN.
- THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE KEPT AT THE PROJECT SITE.
- THE SOIL CONSERVATION DISTRICT (SCD) RESERVES THE RIGHT TO MODIFY THE EROSION AND SEDIMENT CONTROL PLANS.
- THE SCD MAY REVOKE THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL PLAN IF WORK PERFORMED AT THE PROJECT SITE DOES NOT CONFORM TO THE PROVISIONS OF THE GRADING PERMIT, TO THE APPROVED PLAN OR TO ANY WRITTEN INSTRUCTIONS FROM MDE, FREDERICK COUNTY DPW OR THE SCD.
- THE CONTRACTOR MUST REQUEST THAT THE SEDIMENT CONTROL INSPECTOR APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT AND THE FREDERICK COUNTY EROSION AND SEDIMENT CONTROL ORDINANCE AT THE FOLLOWING POINTS OF PROJECT DEVELOPMENT:
  - UPON COMPLETION OF THE INSTALLATION OF ERMETER EROSION AND SEDIMENT CONTROL MEASURES BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY MDE IS MADE.
  - PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
  - UPON FINAL STABILIZATION OF THE SITE AND PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL MEASURES.
- THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND SHALL HAVE THEM INSPECTED AND APPROVED BY THE SEDIMENT CONTROL INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES.
- THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR.
- THE FOLLOWING MINOR PLAN MODIFICATIONS MAY BE APPROVED BY THE SEDIMENT CONTROL INSPECTOR IN THE FIELD:
  - SEDIMENT CONTROL STRUCTURES (EXCEPT BASINS AND TRAPS) MAY BE MOVED TO MEET THE EXISTING CONTOURS AND FIELD CONDITIONS. WHEN MOVING THESE STRUCTURES WOULD HAVE NO IMPACT ON THEIR FUNCTION OR DESIGN CRITERIA.
  - SUBSTITUTION OF PERIMETER CONTROL MEASURES MAY BE MADE PROVIDED THE MEASURE SUBSTITUTED IS EQUIVALENT (I.E., SILT FENCE FOR STRAW BALES) OR IS AN UPGRADE OF THE ORIGINAL MEASURE (I.E., SILT FENCE TO A PERIMETER BERM WITH PROPERLY SIZED OUTLET).
  - ADDITION AND EXTENSION OF PERIMETER CONTROLS (INCLUDING STONE CONSTRUCTION ENTRANCES) MAY BE MADE TO MEET FIELD CONDITIONS. ANY MODIFICATIONS TO THE PLAN WHICH ARE NOT LISTED ABOVE REQUIRE THE PLAN TO BE SUBMITTED TO THE SCD FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO ROADWAYS. ALL MATERIALS DEPOSITED ONTO ROADWAYS SHALL BE REMOVED IMMEDIATELY. THE CONTRACTOR SHALL RESTORE AND/OR REPAIR ROADWAY DAMAGED CAUSED BY CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE COUNTY.
- ON-SITE TEMPORARY STOCKPILE AREAS MUST BE PLACED AS SHOWN ON THE APPROVED PLAN. IF THE CONSTRUCTION SCHEDULE IS TO EXCEED 3 DAYS, THE STOCKPILE AREAS MUST BE STABILIZED. STOCKPILE AREAS SHOULD NOT EXCEED FIFTEEN FEET IN HEIGHT. IF A STOCKPILE IS TO EXCEED FIFTEEN FEET IN HEIGHT, IT MUST BE SHOWN ON THE PLAN TO BE TERRACED WITH PIPE SLOPE DRAINS INSTALLED AND APPROVED BY SCD. UPON THE COMPLETION OF THE USE OF THE STOCKPILE AREA, EXISTING GROUND SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS AND PERMANENTLY STABILIZED.
- VARIOUS STEPS IN THE SEQUENCE OF CONSTRUCTION MAY REQUIRE THE CONTRACTOR TO REMOVE EXCESS EXCAVATED MATERIAL TO AN APPROVED LOCATION OR TO IMPORT MATERIAL FROM AN APPROVED LOCATION. FOR PURPOSES OF THIS PLAN, AN APPROVED LOCATION SHALL BE ONE WHICH IS OPERATING UNDER AN APPROVED EROSION AND SEDIMENT CONTROL PLAN AND AN ACTIVE GRADING PERMIT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR. ADDITIONALLY, REPLACEMENT OF FILTER BAGS IS INCIDENTAL TO THE INITIAL INSTALLATION AND PAYMENT.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, 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 EQUAL TO OR GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
  - THE ABOVE REQUIREMENTS DO NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED OR TO INTERIOR AREAS OF A SURFACE MINE SITE WHERE THE STABILIZATION MATERIAL WOULD CONTAMINATE THE RECOVERABLE RESOURCE. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT THE STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED UNTIL THE ENTIRE CONTRIBUTING AREA TO THE PRACTICE HAS BEEN PERMANENTLY STABILIZED AND MEETS THE SATISFACTION OF THE SEDIMENT CONTROL INSPECTOR. SEDIMENT CONTROLS MAY ONLY BE REMOVED WITH THE AUTHORIZATION OF THE SEDIMENT CONTROL INSPECTOR.
- ALL AREAS DISTURBED BY THE REMOVAL OF SEDIMENT CONTROL DEVICES MUST BE IMMEDIATELY STABILIZED.
- SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO CONVEY THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED. AT WHICH TIME THE DIKES MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. EROSION CONTROL MEASURES MUST BE IMPLEMENTED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
- NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLANS WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATION STABILIZATION.
- ALL FLOW LINES ARE TO BE STABILIZED WITH SOD OR SEED WITH EROSION CONTROL MATTING TO A DEPTH OF FLOW OF 1 FOOT.
- SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION WHICH IS EXISTING OR UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.
- TEMPORARY SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE HALF (1/2) THE WET STORAGE DEPTH OF THE TRAP OR BASIN.
- SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR FOREST RETENTION AREA. WHEN PUMPING SEDIMENT-LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE.
- FOR APPROVED DEWATERING STRATEGIES FOR TRAPS AND BASINS, SEE SECTION F OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. PUMPING SEDIMENT-LADEN WATER INTO THE WATERS OF THE STATE WITHOUT FILTRATION IS STRICTLY FORBIDDEN.
- SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISHED GRADE ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING A SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO ANY CONSTRUCTION ACTIVITIES.
- FURTHER, THE ISSUANCE OF A GRADING PERMIT DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO OBTAIN ANY ADDITIONAL LOCAL, STATE OR FEDERAL PERMITS.

### SEQUENCE OF CONSTRUCTION GENERAL NOTES

- NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE. ALL AREAS DESIGNATED AS SAME DAY STABILIZATION MUST BE STABILIZED AT THE END OF EACH WORK DAY. DITCH/SWALE CONSTRUCTION SHALL BE COMPLETED DURING A 3-DAY DRY PERIOD.
- POSITIVE DRAINAGE SHALL BE MAINTAINED AT THE END OF EACH WORK DAY. IF IT RAINS OVERNIGHT, THE WORK AREA SHALL BE DEWATERED USING AN APPROPRIATE SEDIMENT CONTROL DEVICE AND THE CLEAN WATER SHALL BE DISCHARGED TO A STABLE OUTLET.
- EROSION AND SEDIMENT CONTROL DEVICES AND/OR MEASURES ARE TO BE INSTALLED PRIOR TO ANY EXCAVATION OR DISTURBANCE WITHIN THE PROJECT LIMITS, AS NEEDED TO CONTROL WATER, AT NO ADDITIONAL COST TO THE COUNTY.
- ROOT AND BRANCH PRUNING TO OCCUR BEFORE EXCAVATION AND WITH COORDINATION OF MD LTE.
- EROSION AND SEDIMENT CONTROL DEVICES AND/OR MEASURES ARE TO REMAIN IN PLACE UNTIL THEIR REMOVAL IS APPROVED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT SEDIMENT CONTROL INSPECTOR.
- UNLESS NEW, ALL HEAVY EQUIPMENT AND CONSTRUCTION MATS SHALL BE POWER WASHED PRIOR TO BEING BROUGHT ON SITE.

### 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. 200370, EXPIRATION DATE: 2025/03/19.

### CARE OF WATER DURING CONSTRUCTION

- ALL SIGNIFICANT RAINFALL EVENTS SHALL BE DEWATERED THROUGH THE SUMP PIT/FILTER BAG.
- PIPES, PUMPS, SUMP PITS, AND ASSOCIATED SEDIMENT FILTRATION DEVICES SHALL BE FIELD LOCATED BY THE CONTRACTOR AND ARE SHOWN ON THE PLANS TO ILLUSTRATE POTENTIAL ALIGNMENTS AND PLACEMENT. CONTRACTOR MAY ADJUST AS NEEDED.
- WITH THE SEDIMENT CONTROL INSPECTOR'S APPROVAL, ANY PIPES, PUMPS, SUMP PITS, AND ASSOCIATED SEDIMENT FILTRATION DEVICES MAY BE RELOCATED WITHIN THE LIMITS OF DISTURBANCE TO ACCOMMODATE CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL SUFFICIENTLY DEWATER THE WORK AREA BEFORE COMMENCING ANY GRADING OPERATIONS.
- ANY FUEL SHALL BE STORED ABOVE THE 100-YEAR FLOOD ELEVATION. THE CONTRACTOR SHALL ENSURE THAT ALL SEDIMENT CONTROLS ARE IN WORKING CONDITION AT THE END OF EACH WORKING DAY TO PREVENT SEDIMENT-LADEN MATERIAL FROM DISCHARGING FROM THE WORK AREA.

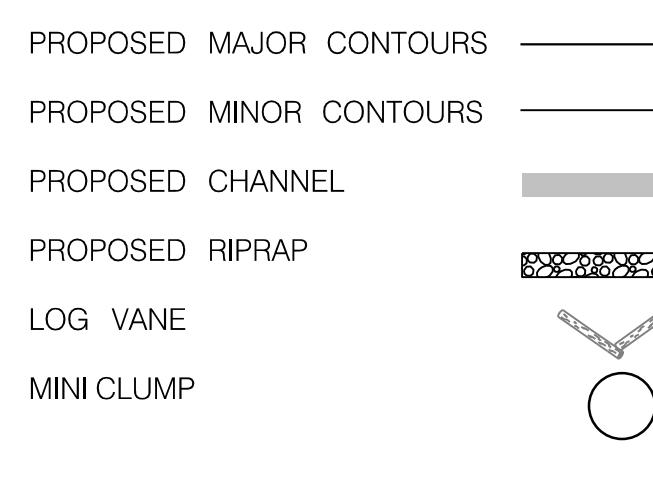
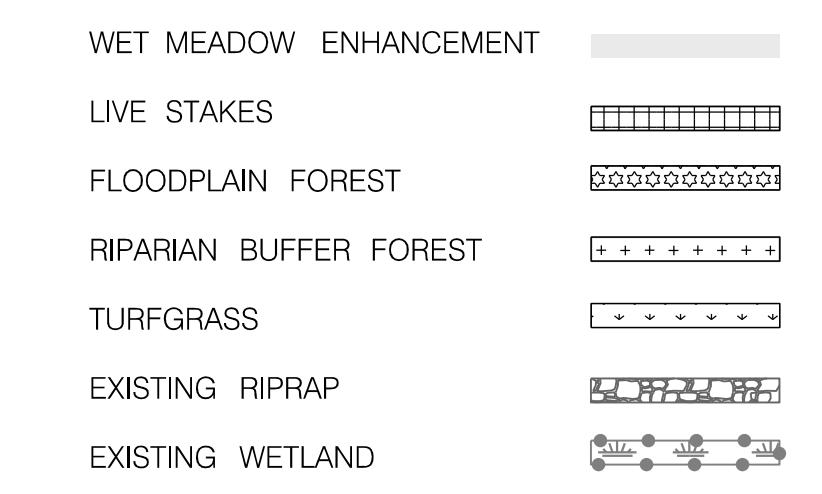
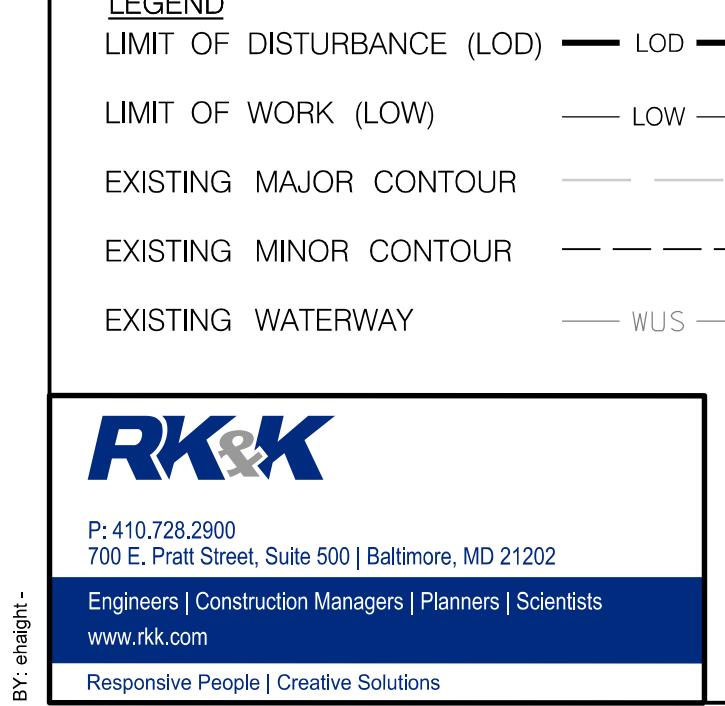
### SITE ANALYSIS DATA

- APPROX. TOTAL SITE AREA: 4.34 SQ-FT
- APPROX. TOTAL DISTURBED AREA: 4.34 SQ-FT
- APPROX. TOTAL AREA TO BE STABILIZED: 3.93 SQ-FT
- APPROX. PROPOSED IMPERVIOUS AREA: 0.00 SQ-FT
- APPROX. IMPERVIOUS AREA TO BE TREATED: 108.31 SQ-FT
- APPROX. TOTAL EXCAVATION AND FILL: -4,275 / +1,595 CU-YDS

## HARFORD COUNTY, MARYLAND

### HARFORD COMMUNITY COLLEGE STREAM RESTORATION EROSION AND SEDIMENT CONTROL NOTES

PROJECT CONTRACT: 21-097 TO #25	Revisions
GP #XXXX-XXXXXX-XXXX	
SIGN AND SEAL	
Drawn By : AG	Scale : NOT TO SCALE
Designed By : NH, JZ	Date : SEPTEMBER 2025
Reviewed By : RO	
Drawing No. ES-07 of ES-07	Sheet No. 34 of 48



NOTES:

- SEE SHEET LD-01 AND LD-02 FOR PLANTING SCHEDULES AND DETAILS.
- PLACEMENT AND SPACING OF PLANTS SHALL BE FIELD ADJUSTED TO ACCOMODATE PLACED WOODY DEBRIS, LOG VANES, AND ROOT WADS.
- TREES AND SHRUBS SHALL NOT BE PLANTED WITHIN 10 FEET OF EITHER SIDE OF EXISTING SANITARY SEWER LINE.
- REQUEST A MISS UTILITY STAKEOUT AND POSSESS A VALID MISS UTILITY CLEARANCE TICKET NUMBER PRIOR TO PLANTING. 1-800-257-7777.
- ONCE THE TEMPORARY ACCESS ROAD IS REMOVED, NO EQUIPMENT OR MOTORIZED VEHICLES MAY ACCESS THE SITE. LANDSCAPING INSTALLATION SHALL BE COMPLETED BY HAND.
- TREAT INVASIVE SPECIES WITHIN THE LIMIT OF WORK PER THE VEGETATION MANAGEMENT CREW SPECIFICATION.

20' 0 20' 40'  
SCALE: 1" = 20'

Alex Nussbaum  
09/12/2025  
MARYLAND DNR QUALIFIED PROFESSIONAL  
NAME: ALEX NUSSBAUM  
ADDRESS: 700 EAST PRATT ST, SUITE 500  
BALTIMORE MD, 21202  
PHONE: (443) 996-4068  
EMAIL: ANUSSBAUM@RKK.COM

Drawn By : EH	Scale : 1" = 20'
Designed By : GC, AN	Date : SEPTEMBER 2025
Reviewed By : KJH, AN	
Drawing No. LS-01 of LS-04	Sheet No. 35 of 48

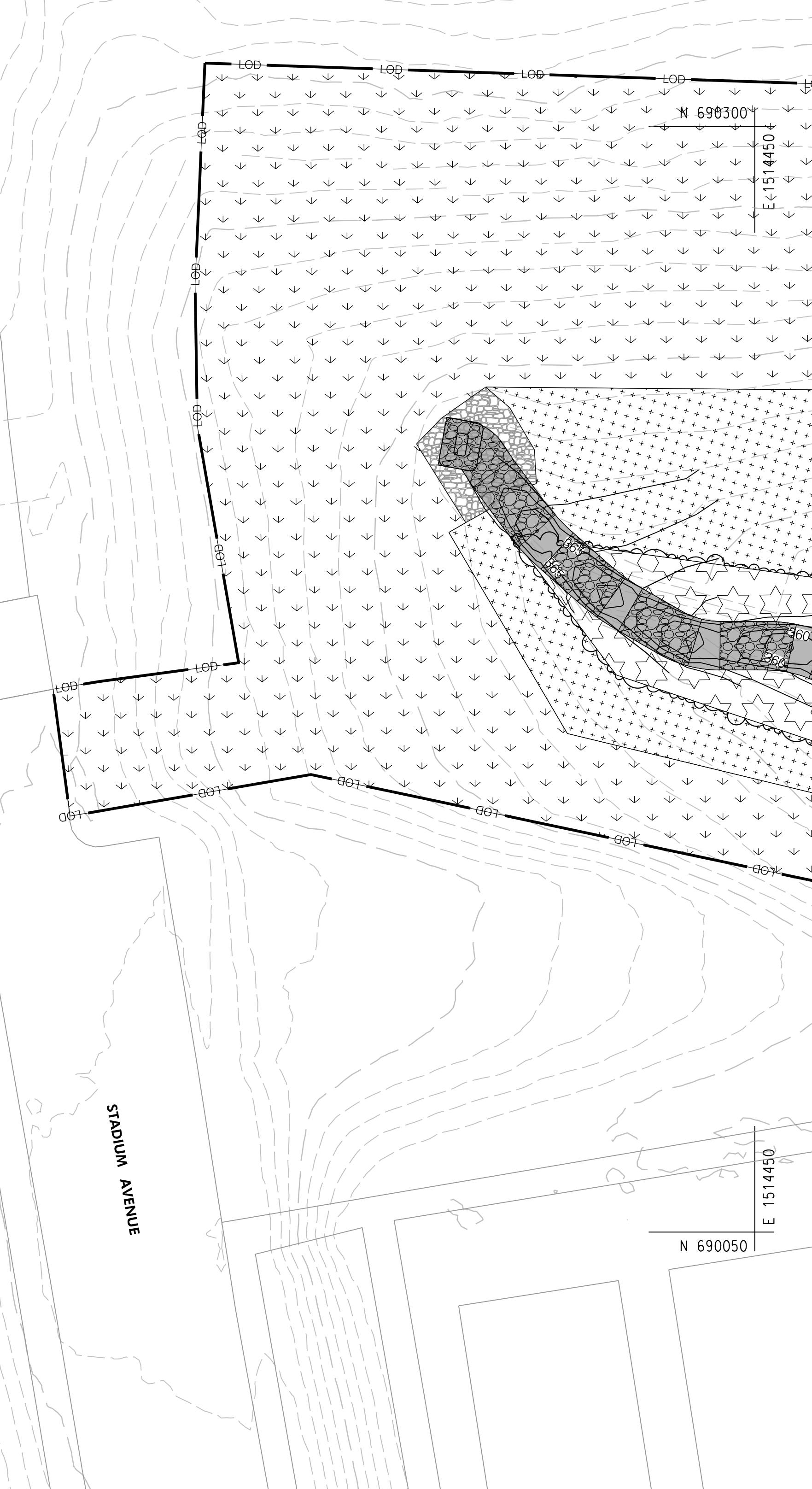
**HARFORD COUNTY, MARYLAND**  
**HARFORD COMMUNITY COLLEGE**  
**STREAM RESTORATION**  
**LANDSCAPING PLAN**

N

BID No. : #221-097BBB

SCALE : 1:1000

MATCH LINE LS-03



## NOTES:

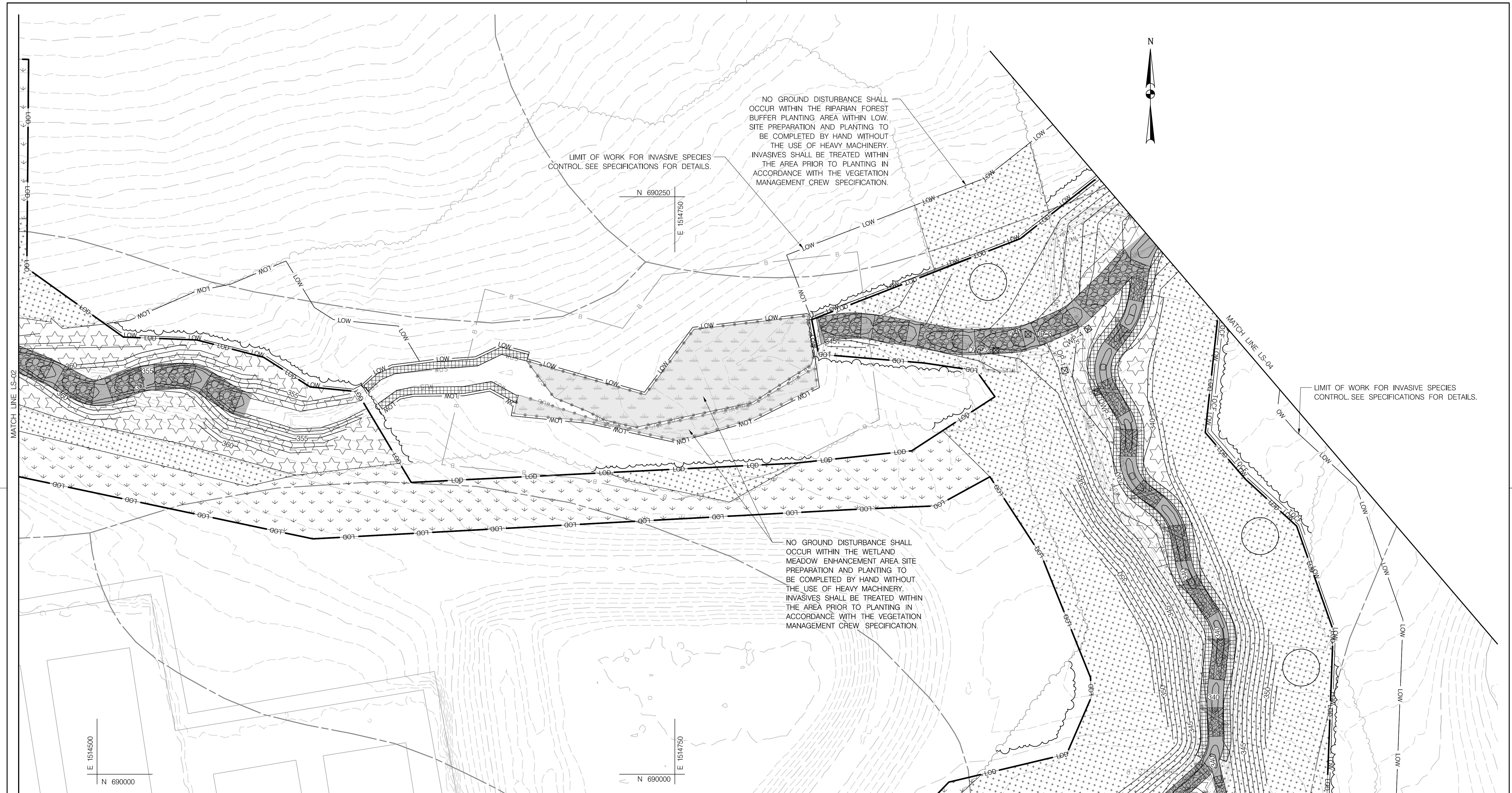
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SCALE: 1" = 20'

*Alex Nussbaum*  
09/12/2025  
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Drawn By : EH	Scale : 1"=20'
Designed By : GC, AN	Date : SEPTEMBER 2025
Reviewed By : KJH, AN	
Drawing No. LS-02 of LS-04	Sheet No. 36 of 48





LEGEND

LIMIT OF DISTURBANCE (LOD) — LOD —

LIMIT OF WORK (LOW) — LOW —

EXISTING MAJOR CONTOUR — — —

EXISTING MINOR CONTOUR — — —

EXISTING WATERWAY — WUS —

WET MEADOW ENHANCEMENT

LIVE STAKES

FLOODPLAIN FOREST

RIPARIAN BUFFER FOREST

TURFGRASS

EXISTING RIPRAP

EXISTING WETLAND

PROPOSED MAJOR CONTOURS

PROPOSED MINOR CONTOURS

PROPOSED CHANNEL

PROPOSED RIPRAP

LOG VANE

MINI CLUMP

MATCH LINE LS-01

NOTES:

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SCALE: 1"=20'

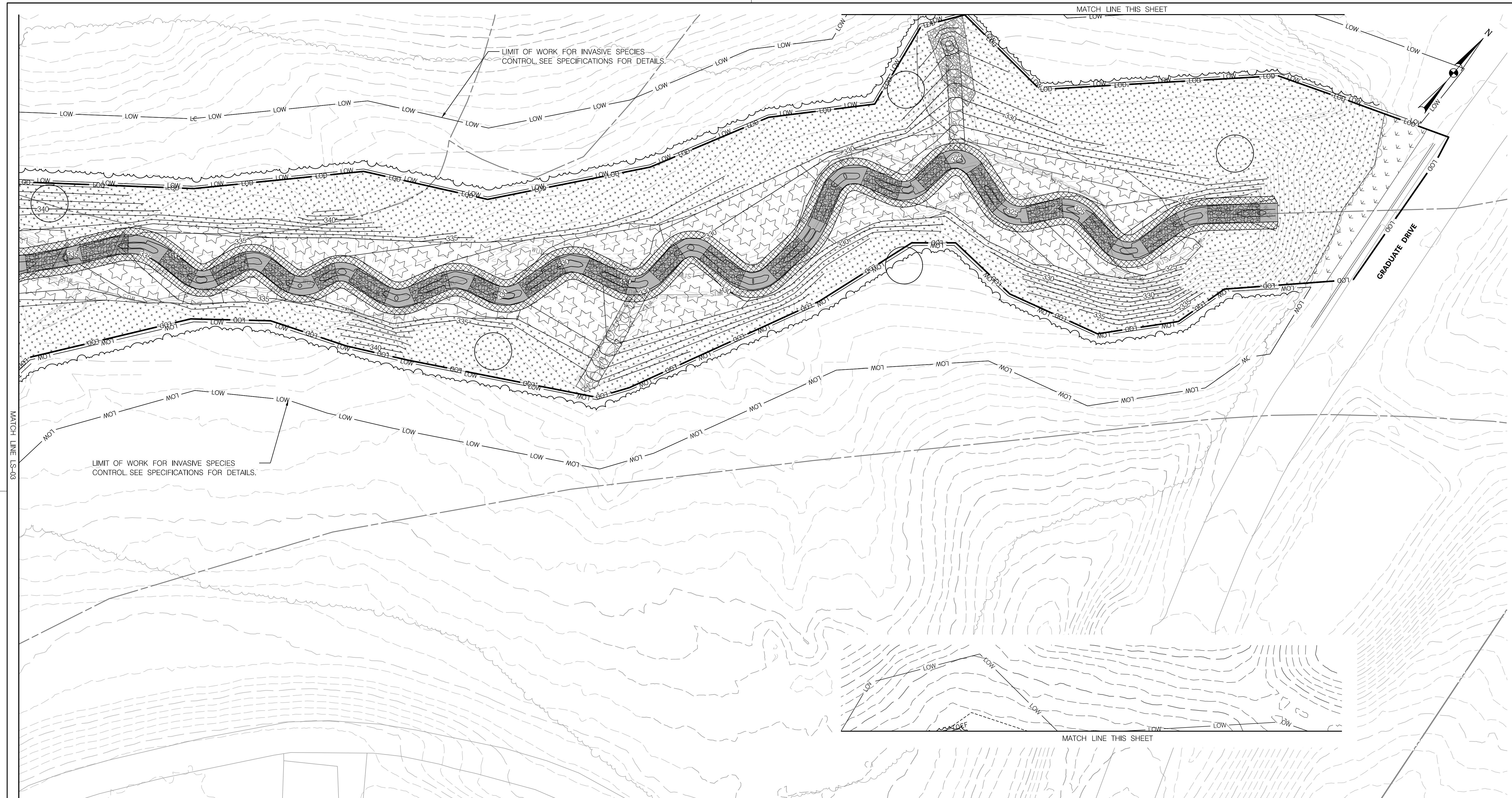
## HARFORD COUNTY, MARYLAND

### HARFORD COMMUNITY COLLEGE STREAM RESTORATION LANDSCAPING PLAN

*Alex Nussbaum*  
09/12/2025  
MARYLAND DNR QUALIFIED PROFESSIONAL  
NAME: ALEX NUSSBAUM  
ADDRESS: 700 EAST PRATT ST., SUITE 500  
BALTIMORE MD, 21202  
PHONE: (443) 996-4068  
EMAIL: ANUSSBAUM@RK.COM

Drawn By : EH  
Designed By : GC, AN  
Reviewed By : KJH, AN  
Drawing No. LS-03 of LS-04

Scale : 1"=20'  
Date : SEPTEMBER 2025  
Sheet No. 37 of 48

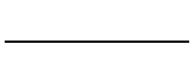


LEGEND  
 LIMIT OF DISTURBANCE (LOD) — LOD —  
 LIMIT OF WORK (LOW) — LOW —  
 EXISTING MAJOR CONTOUR — — —  
 EXISTING MINOR CONTOUR — — — —  
 EXISTING WATERWAY — WUS —

WET MEADOW ENHANCEMENT



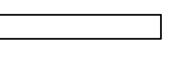
PROPOSED MAJOR CONTOURS



LIVE STAKES



FLOODPLAIN FOREST



PROPOSED MINOR CONTOURS



RIPARIAN BUFFER FOREST



PROPOSED CHANNEL



TURFGRASS



PROPOSED RIPRAP



EXISTING RIPRAP



LOG VANE



EXISTING WETLAND



MINI CLUMP



NOTES:

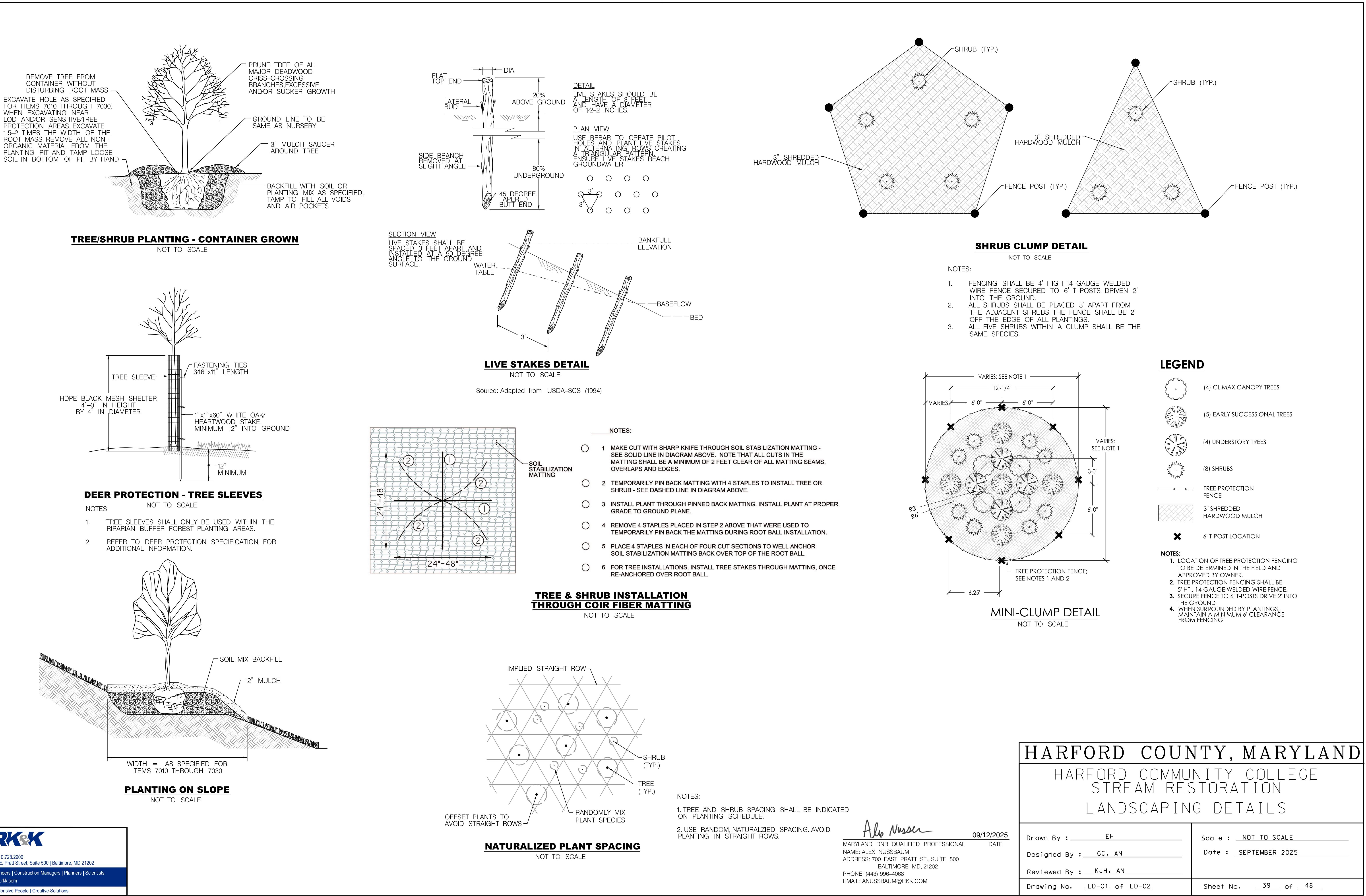
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20' 0 20' 40'  
SCALE: 1"=20'

**RK&K**  
 P: 410.728.2900  
 700 E. Pratt Street, Suite 500 | Baltimore, MD 21202  
 Engineers | Construction Managers | Planners | Scientists  
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Drawn By : EH	Scale : 1"=20'
Designed By : GC, AN	Date : SEPTEMBER 2025
Reviewed By : KJH, AN	
Drawing No. LS-04 of LS-04	Sheet No. 38 of 48

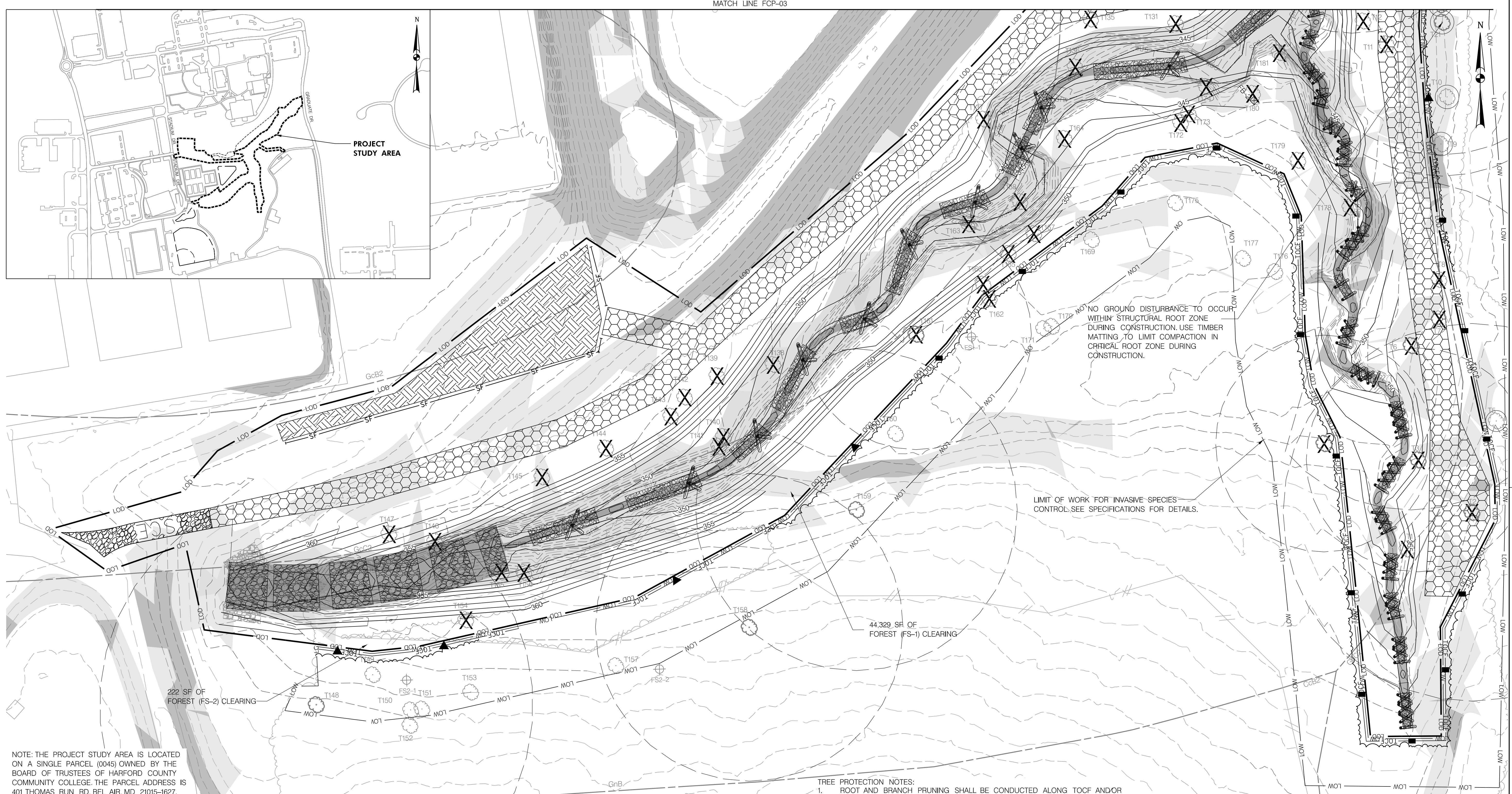


FLOODPLAIN FOREST PLANTING SCHEDULE										
		ACRES: 0.68		SQUARE FEET: 29,541						
Quantity Per Acre	Frequency (%)	Species Quantity	Vegetation Strata/Species Name	Common Name	Wetland Indicator Status	Size	Type	Placement		
250			TREES							
15	26	Acer rubrum	Red maple	FAC	3/4" cal.	#7 container		Naturalized at 15' O.C.		
15	26	Acer saccharinum	Silver Maple	FACW	3/4" cal.	#7 container		Naturalized at 15' O.C.		
15	25	Magnolia virginiana	Sweetbay magnolia	FACW	3/4" cal.	#7 container		Naturalized at 15' O.C.		
15	25	Platanus occidentalis	American sycamore	FACW	3/4" cal.	#7 container		Naturalized at 15' O.C.		
15	25	Quercus bicolor	Swamp white oak	FACW	3/4" cal.	#7 container		Naturalized at 15' O.C.		
15	26	Quercus palustris	Pin oak	FACW	3/4" cal.	#7 container		Naturalized at 15' O.C.		
10	17	Populus deltoides	Eastern cottonwood	FAC	3/4" cal.	#7 container		Naturalized at 15' O.C.		
100	170	=total								
150			SHRUBS							
15	16	Salix sericea	Silky willow	OBL	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC		
15	15	Ilex verticillata	Winterberry	FACW	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC		
15	15	Clethra alnifolia	Sweet pepperbush	FACW	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC		
15	15	Alnus serrulata	Hazel alder	OBL	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC		
15	15	Vaccinium corymbosum	Highbush blueberry	FACW	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC		
15	15	Viburnum dentatum	Arrowwood	FAC	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC		
10	11	Sambucus nigra	Black elderberry	FAC	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC		
100	102	=total								
SEEDING										
WET MEADOW ESTABLISHMENT (SY): 3,283				Refer to SHA Section 707 - Wet Meadow Establishment						

WET MEADOW ENHANCEMENT PLANTING SCHEDULE									
		ACRES: 0.08		SQUARE FEET: 3,475					
Quantity Per Acre	Frequency (%)	Species Quantity	Vegetation Strata/Species Name	Common Name	Wetland Indicator Status	Type	Placement		
5000			HERBACEOUS CONTAINERS						
10	40	Asclepias incarnata	Swamp milkweed	OBL	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
10	40	Aster novae-angliae	New England aster	FACW	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
10	40	Conoclinium coelestinum	Blue mistflower	FAC	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
10	40	Hibiscus moscheutos	Crimsoned rosemallow	OBL	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
7	27	Juncus effusus	Softrush	FACW	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
7	28	Onoclea sensibilis	Sensitive fern	FACW	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
8	32	Rudbeckia laciniata	Cutleaf coneflower	FACW	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
10	40	Solidago rugosa	Wrinkleleaf goldenrod	FAC	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
10	40	Physostegia virginiana	Obedient plant	FAC	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
10	40	Pycnanthemum tenuifolium	Narrowleaf Mountainmint	FACW	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
8	32	Pycnanthemum virginianum	Virginia mountainmint	FAC	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
100	399	=total							
5000			GRASSES/SEDGES						
20	80	Carex lurida	Lurid sedge	OBL	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
20	79	Carex stricta	Tussock sedge	OBL	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
20	80	Carex vulpinoidea	Fox sedge	OBL	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
20	80	Leersia oryzoides	Rice cutgrass	OBL	1-qt. Container	Cluster in groups of 3, 5 or 7, 3' OC			
40	399	=total							
SEEDING									
WET MEADOW ESTABLISHMENT (SY): 387				Refer to SHA Section 707 - Wet Meadow Establishment					

SEEDING SCHEDULE	
Seed Mix	Area (SY)
Total Wet Meadow Establishment	4,575
Total Lowland Meadow Establishment	9,963
Turfgrass Establishment	4,868

RIPARIAN BUFFER FOREST PLANTING SCHEDULE								
		ACRES: 2.06		SQUARE FEET: 89,665				
Quantity Per Acre	Frequency (%)	Species Quantity	Vegetation Strata/Species Name	Common Name	Wetland Indicator Status	Size	Type	Placement
215			TREES					
10	45	Acer rubrum	Red maple	FAC	3/4" cal.	#7 container		Naturalized at 15' O.C.
10	45	Nyssa sylvatica	Blackgum	FAC	3/4" cal.	#7 container		Naturalized at 15' O.C.
10	45	Quercus rubra	Northern red oak	FACU	3/4" cal.	#7 container		Naturalized at 15' O.C.
10	44	Prunus serotina	Black Cherry	FACU	3/4" cal.	#7 container		Naturalized at 15' O.C.
10	44	Liquidambar styraciflua	Sweetgum	FAC	3/4" cal.	#7 container		Naturalized at 15' O.C.
10	44	Quercus alba	White oak	FACU	3/4" cal.	#7 container		Naturalized at 15' O.C.
10	44	Liriodendron tulipifera	Tulip poplar	FACU	3/4" cal.	#7 container		Naturalized at 15' O.C.
10	44	Understory Trees						
10	44	Cercis canadensis	Eastern redbud	FACU	3/4" cal.	#7 container - Single-stem		Naturalized at 12' O.C.
10	44	Amelanchier canadensis	Canadian serviceberry	FAC	3/4" cal.	#7 container - Single-stem		Naturalized at 12' O.C.
10	44	Rhus typhina	Staghorn sumac	UPL	3/4" cal.	#7 container - Single-stem		Naturalized at 12' O.C.
100	443	=total						
150			SHRUBS					
20	62	Ilex glabra	Inkberry	FAC	2' ht.	#3 container		Cluster in groups of 3 or 5, 6' OC
20	62	Morella pensylvanica	Northern bayberry	FAC	2' ht.	#3 container	</	



NOTE: THE PROJECT STUDY AREA IS LOCATED ON A SINGLE PARCEL (0045) OWNED BY THE BOARD OF TRUSTEES OF HARFORD COUNTY COMMUNITY COLLEGE. THE PARCEL ADDRESS IS 401 THOMAS RUN RD, BEL AIR, MD 21015-1627.

LEGEND

LIMIT OF DISTURBANCE (LOD) — LOD —

LIMIT OF WORK (LOW) — LOW —

EXISTING MAJOR CONTOUR — — —

EXISTING RIPRAP — — — — —

EXISTING MINOR CONTOUR — — — — —

15% TO 25% SLOPES — — — — —

25%+ SLOPES — — — — —

EXISTING FOREST LINE — — — — —

PROPOSED TREELINE — — — — —

EXISTING MAJOR CONTOUR — — —

SOIL BOUNDARY — — — — —

WATERS OF THE U.S. — — — — —

SPECIMEN TREE PROTECTION SIGN ▲

FOREST CONSERVATION SIGN ■

FOREST STAND BREAK LINE — — —

FOREST STAND PLOT POINT ○ FS2-1

SURVEYED TREE LABEL T100

PROPERTY LINE — — — — —

PROPOSED MAJOR CONTOURS — — —

PROPOSED MINOR CONTOURS — — — — —

INDIVIDUAL TREE (12"-29" DBH) ○

SPECIMEN TREE (≥30" DBH) ○○

INDIVIDUAL TREE TO BE REMOVED X

SPECIMEN TREE WITH CRITICAL ROOT ZONE ○○○

EXISTING WETLAND ○○○○○

25 FT. WETLAND BUFFER B

STABILIZED CONSTRUCTION ENTRANCE (SCE) ■

TEMPORARY ORANGE CONSTRUCTION FENCE — TOCF —

TEMPORARY ACCESS BRIDGE TABI

TEMPORARY MULCH ACCESS ROAD ○○○○○

STAGING AND STOCKPILE AREA ■■■■■

LOG VANE V

SILT FENCE — — — — —

PROPOSED CHANNEL — — — — —

PROPOSED RIPRAP ○○○○○

TREE PROTECTION PLANKING ○○○○○

**TREE PROTECTION NOTES:**

1. ROOT AND BRANCH PRUNING SHALL BE CONDUCTED ALONG TOCF AND/OR ALONG EDGE OF GRADING ADJACENT TO TREES AS DIRECTED BY MD LTE.
2. SEE FCN-01 TO FCN-03 FOR TREE INVENTORY TABLE, TREE PROTECTION NOTES, SEQUENCE OF TREE CONSERVATION PROCEDURES, AND TREE PROTECTION DETAILS.
3. THE NET TRACT AREA IS CONSIDERED THE LIMIT OF DISTURBANCE (LOD) AND TOTALS 4.34 AC.
4. TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF) IS SHOWN OUTSIDE LOD FOR GRAPHICAL PURPOSES ONLY. SEE ROOT PRUNING DETAIL ON FCN-03 FOR PROPER TOCF PLACEMENT.

Alex Nussbaum

09/12/2025

MARYLAND DNR QUALIFIED PROFESSIONAL

NAME: ALEX NUSSBAUM

ADDRESS: 700 EAST PRATT ST., SUITE 500

BALTIMORE MD, 21202

PHONE: (443) 996-4068

EMAIL: ANUSSBAUM@RKK.COM

DATE 20' 0 20' 40'

SCALE: 1" = 20'

## HARFORD COUNTY, MARYLAND

### HARFORD COMMUNITY COLLEGE STREAM RESTORATION FOREST CONSERVATION PLAN

Drawn By : EH

Scale : 1"=20'

Designed By : GC, AN

Date : SEPTEMBER 2025

Reviewed By : KJH, AN

Drawing No. FCP-01 of FCP-04

Sheet No. 41 of 48

N

BID No. : #21-097BBB

SCALE : 1"=20'

HCC DWG ID No. :

1"=20'



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LEGEND

LIMIT OF DISTURBANCE (LOD)	— LOD —	EXISTING FOREST LINE
LIMIT OF WORK (LOW)	— LOW —	PROPOSED TREELINE
EXISTING MAJOR CONTOUR	— — — —	EXISTING RIPRAP
EXISTING MINOR CONTOUR	— — — —	SOIL BOUNDARY
15% TO 25% SLOPES	— — — —	WATERS OF THE U.S.
25%+ SLOPES	— — — —	SPECIMEN TREE PROTECTION SIGN ▲
		FOREST CONSERVATION SIGN ■
		FOREST STAND BREAK LINE
		FOREST STAND PLOT POINT
		SURVEYED TREE LABEL
		T100
		PROPERTY LINE
		PROPOSED MAJOR CONTOURS
		PROPOSED MINOR CONTOURS
		INDIVIDUAL TREE (12"-29" DBH)
		SPECIMEN TREE (≥30" DBH)
		INDIVIDUAL TREE TO BE REMOVED X
		SPECIMEN TREE WITH CRITICAL ROOT ZONE
		EXISTING WETLAND
		25 FT. WETLAND BUFFER



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BY: enight

FILE PATH: /ad/rkk.com/Cloud/Projects/202121155\_HARCO/Task 025\_Harford Community College Stream Restoration/CADD60%Plans42 - pFCP-0002\_HCC.dgn

PLOTTED: 9/12/2025

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*Ale Nussbaum*

09/12/2025

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DATE

20' 0' 20' 40'

SCALE: 1"=20'

## HARFORD COUNTY, MARYLAND

### HARFORD COMMUNITY COLLEGE STREAM RESTORATION FOREST CONSERVATION PLAN

Drawn By : EH

Scale : 1"=20'

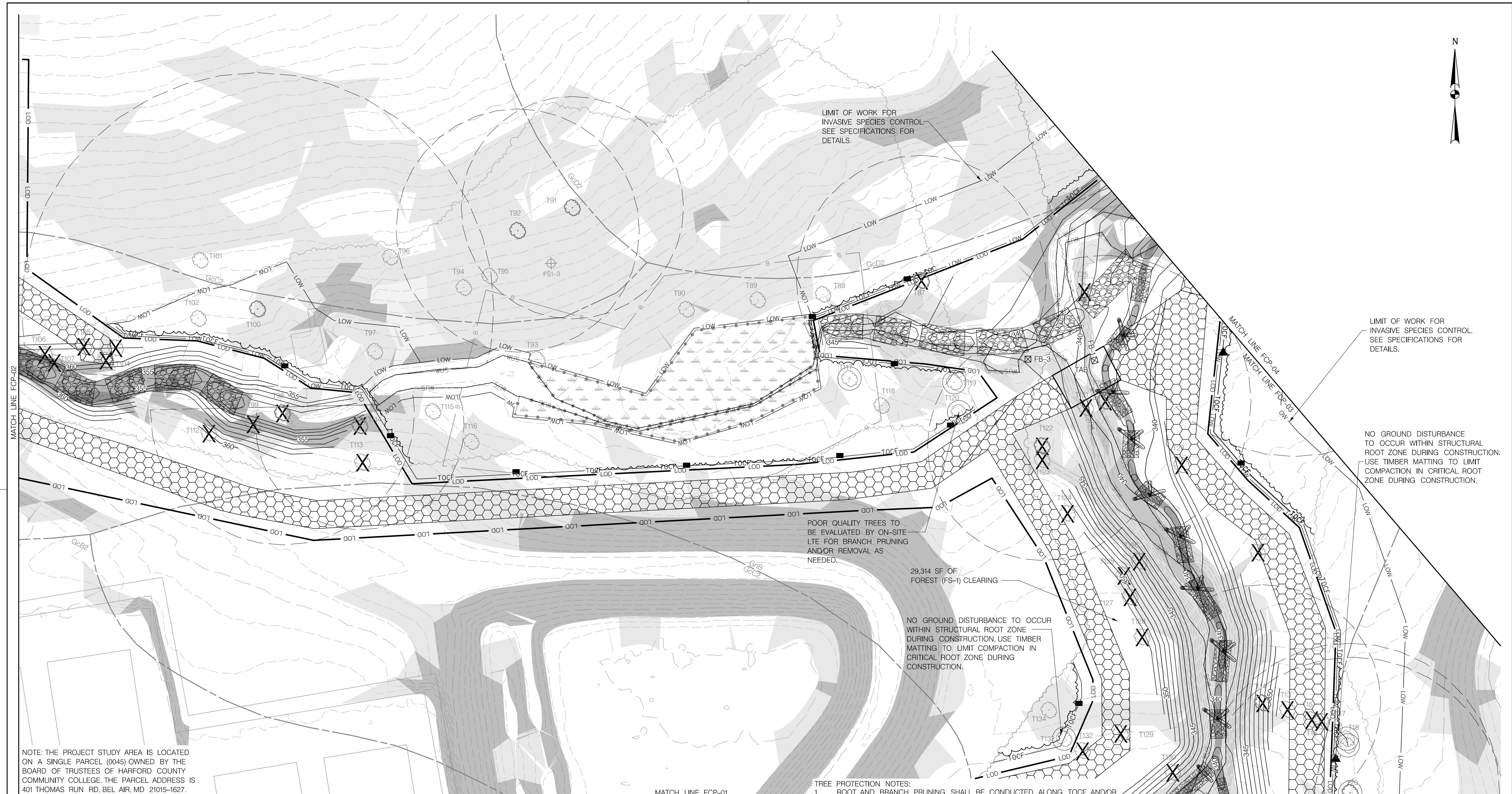
Designed By : GC, AN

Date : SEPTEMBER 2025

Reviewed By : KJH, AN

Drawing No. FCP-02 of FCP-04

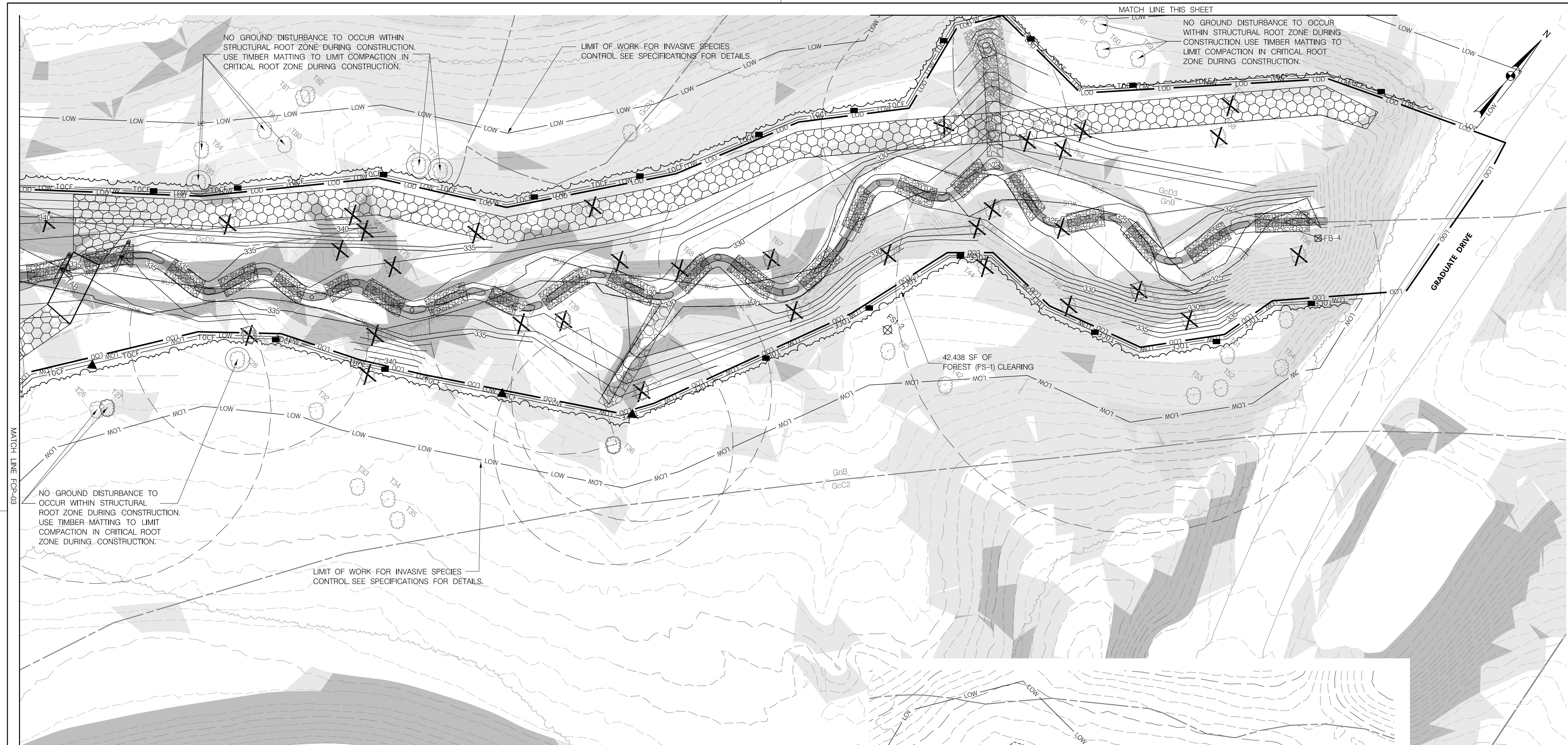
Sheet No. 42 of 48



## HARFORD COUNTY, MARYLAND

### HARFORD COMMUNITY COLLEGE STREAM RESTORATION FOREST CONSERVATION PLAN

Drawn By : EH	Scale : 1"=20'
Designed By : GC, AN	Date : SEPTEMBER 2025
Reviewed By : KJH, AN	
Drawing No. FCP-03 of FCP-04	Sheet No. 43 of 48



NOTE: THE PROJECT STUDY AREA IS LOCATED ON A SINGLE PARCEL (0045) OWNED BY THE BOARD OF TRUSTEES OF HARFORD COMMUNITY COLLEGE. THE PARCEL ADDRESS IS 401 THOMAS RUN RD, BEL AIR, MD 21015-1627.

LEGEND

LIMIT OF DISTURBANCE (LOD)	— LOD —	EXISTING FOREST LINE	~~~~~
LIMIT OF WORK (LOW)	— LOW —	PROPOSED TREELINE	~~~~~
EXISTING MAJOR CONTOUR	— — — —	PROPOSED MAJOR CONTOURS	— — — —
EXISTING MINOR CONTOUR	— — — —	PROPOSED MINOR CONTOURS	— — — —
15% TO 25% SLOPES	— — — —	INDIVIDUAL TREE (12"-29" DBH)	●
25%+ SLOPES	— — — —	SPECIMEN TREE (≥30" DBH)	●
		INDIVIDUAL TREE TO BE REMOVED	●
		SPECIMEN TREE WITH CRITICAL ROOT ZONE	●
		EXISTING WETLAND	●
		25 FT. WETLAND BUFFER	— B —
		FOREST CONSERVATION SIGN	■
		FOREST STAND BREAK LINE	— # —
		FOREST STAND PLOT POINT	● FS2-1
		SURVEYED TREE LABEL	T100

**RK&K**

P: 410.728.2900  
700 E. Pratt Street, Suite 500 | Baltimore, MD 21202  
Engineers | Construction Managers | Planners | Scientists  
www.rk.com  
Responsive People | Creative Solutions

BY: enight

FILE PATH: [https://ad.rk.com/Cloud/Projects/202121155\\_HARCO/Task 025\\_Harfard Community College Stream Restoration/CADD60%Plans44 - pFCP-0004\\_HCC.dgn](https://ad.rk.com/Cloud/Projects/202121155_HARCO/Task 025_Harfard Community College Stream Restoration/CADD60%Plans44 - pFCP-0004_HCC.dgn)

PLOTTED: 9/12/2025

STABILIZED CONSTRUCTION ENTRANCE (SCE)	— SCE —
TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF)	— TOCF —
TEMPORARY ACCESS BRIDGE (TAB)	— TAB —
TEMPORARY MULCH ACCESS ROAD (SF)	— SF —
STAGING AND STOCKPILE AREA	— — — —
LOG VANE	— — — —
SILT FENCE	— — — —
PROPOSED CHANNEL	— — — —
PROPOSED RIPRAP	— — — —
TREE PROTECTION PLANKING	— — — —

TREE PROTECTION NOTES:

1. ROOT PRUNING SHALL BE CONDUCTED ALONG TOCF AND/OR ALONG EDGE OF GRADING ADJACENT TO TREES AS DIRECTED BY MD LTE.
2. SEE FCN-01 TO FCN-03 FOR TREE INVENTORY TABLE, TREE PROTECTION NOTES, SEQUENCE OF TREE CONSERVATION PROCEDURES, AND TREE PROTECTION DETAILS.
3. THE NET TRACT AREA IS CONSIDERED THE LIMIT OF DISTURBANCE (LOD) AND TOTALS 4.34 AC.
4. TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF) IS SHOWN OUTSIDE LOD FOR GRAPHICAL PURPOSES ONLY. SEE ROOT PRUNING DETAIL ON FCN-03 FOR PROPER TOCF PLACEMENT.

*Alex Nussbaum*

09/12/2025

MARYLAND DNR QUALIFIED PROFESSIONAL  
NAME: ALEX NUSSBAUM  
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BALTIMORE MD, 21202  
PHONE: (443) 996-0688  
EMAIL: [ANUSSBAUM@RKK.COM](mailto:ANUSSBAUM@RKK.COM)

DATE  
20' 0 20' 40'  
SCALE: 1" = 20'

Drawn By : EH	Scale : 1" = 20'
Designed By : GC, AN	Date : SEPTEMBER 2025
Reviewed By : KJH, AN	
Drawing No. FCP-04 of FCP-04	
Sheet No. 44 of 48	

**HARFORD COUNTY, MARYLAND**  
**HARFORD COMMUNITY COLLEGE**  
**STREAM RESTORATION**  
**FOREST CONSERVATION PLAN**

TREE INVENTORY TABLE						
Tree ID	Scientific Name	Common Name	DBH	Condition	Comments	Removal
T1	<i>Juglans nigra</i>	Black walnut	14	Fair	Vines on trunk into canopy, deadwood, slight lean	Yes
T2*	<i>Acer saccharinum</i>	Silver maple	54	Fair	Heavy vines on trunk into canopy, deadwood, imbricated bark	Yes
T3*	<i>Acer saccharinum</i>	Silver maple	32	Poor	Significant lean, extensive deadwood, heavy vines on trunk into crown	Yes
T4*	<i>Acer saccharinum</i>	Silver maple	31	Fair/Poor	Split below DBH, exposed roots, multi stemmed, minor deadwood, lower dead leaders, vines into crown	Yes
T5	<i>Acer rubrum</i>	Red maple	13	Fair	Split below DBH, 13x1, lean, old healed over trunk wounds	No
T6*	<i>Acer saccharinum</i>	Silver maple	47	Poor	Extensive deadwood, multiple dead leaders, decaying bark	Yes
T7	<i>Acer rubrum</i>	Red maple	15	Fair/Poor	Minor exposed roots, significant lean, sparse growth	Yes
T8	<i>Acer rubrum</i>	Red maple	26	Fair	Sapsucker damage, split at DBH, imbricated bark, deadwood	Yes
T9	<i>Acer rubrum</i>	Red maple	17	Fair/Poor	Extensive deadwood, woodpecker damage, sparse growth, sap sucker holes	No
T10	<i>Acer rubrum</i>	Red maple	12	Fair	Split below DBH, multi stemmed, one dead leader, one-sided growth	No
T11	<i>Prunus serotina</i>	Black cherry	17	Fair/Poor	Extensive deadwood	Yes
T12	<i>Prunus serotina</i>	Black cherry	17	Fair/Poor	Split below DBH, multi stem, one dead leader, extensive deadwood	Yes
T13	<i>Acer rubrum</i>	Red maple	13	Fair	Split above DBH, one decaying leader, significant lean	Yes
T14*	<i>Acer saccharinum</i>	Silver maple	34	Good/Fair	Split above DBH, imbricated bark	Yes
T15	<i>Acer rubrum</i>	Red maple	27	Fair	Split below DBH, multi stem, imbricated bark, minor deadwood	Yes
T16	<i>Acer rubrum</i>	Red maple	18	Fair/Poor	Trunk decay, extensive deadwood	Yes
T17	<i>Acer rubrum</i>	Red maple	14	Poor	Severe lean and extensive deadwood	No
T18	<i>Prunus serotina</i>	Black cherry	27	Poor	Extensive vines on trunk into canopy, extensive deadwood	No
T19	<i>Acer rubrum</i>	Red maple	27	Fair	Sapsucker damage, slight lean	No
T20*	<i>Acer saccharinum</i>	Silver maple	43	Fair/Poor	Split above DBH, imbricated bark, one dead leader lean, irregular growth	No
T21*	<i>Acer saccharinum</i>	Silver maple	44	Fair/Poor	Split above DBH, one dead leader, heavy vines on trunk into canopy	No
T22	<i>Prunus serotina</i>	Black cherry	20	Poor	Significant lean, heavy vines on trunk into canopy, extensive deadwood	Yes
T23	<i>Acer rubrum</i>	Red maple	24	Fair	Minor vines on trunk into canopy, minor deadwood	Yes
T24*	<i>Acer rubrum</i>	Red maple	42	Fair	Split above DBH, imbricated bark, exposed roots in stream bank, dead branches	Yes
T25	<i>Prunus serotina</i>	Black cherry	23	Fair	Split below DBH, dead leader, extensive vines into canopy	Yes
T26*	<i>Acer saccharinum</i>	Silver maple	48	Fair/Poor	Split above DBH, fused trunk, lean, deadwood, exposed roots	No
T27	<i>Acer saccharinum</i>	Silver maple	28	Fair/Poor	Split at DBH, 26" twin, large trunk wound	No
T28	<i>Acer rubrum</i>	Red maple	25	Fair	Exposed roots, irregular growth, vines climbing trunk	No
T29*	<i>Acer rubrum</i>	Red maple	33	Fair/Poor	Exposed roots, imbricated bark, sparse growth, vines on trunk	Yes
T30	<i>Prunus serotina</i>	Black cherry	13	Poor	Sloughing into streambank, exposed roots, heavy lean	Yes
T31	<i>Liriodendron tulipifera</i>	Tulip poplar	28	Poor	Extensive deadwood, extensive crown decay	Yes
T32	<i>Juglans nigra</i>	Black walnut	15	Fair	Heavy vines on trunk into crown, deadwood	No
T33	<i>Robinia pseudoacacia</i>	Black locust	13	Fair/Poor	Broken leader, extensive deadwood	No
T34	<i>Liriodendron tulipifera</i>	Tulip poplar	15	Fair	Lean, irregular growth, deadwood	No
T35	<i>Robinia pseudoacacia</i>	Black locust	13	Fair/Poor	Lean, deadwood, heavy debris on lower trunk	No
T36*	<i>Acer rubrum</i>	Red maple	33	Poor	Extensive exposed roots, heavy lean, extensive deadwood, vines in canopy	No
T37*	<i>Acer rubrum</i>	Red maple	36	Poor	Split above DBH, imbricated bark, large decaying trunk wound, vines into canopy	Yes
T38	<i>Acer rubrum</i>	Red maple	23	Good	Exposed roots flare, minor vines	Yes
T39*	<i>Acer saccharinum</i>	Silver maple	37	Fair	Split above DBH, one broken leader, lean in canopy, irregular growth	Yes
T40	<i>Liriodendron tulipifera</i>	Tulip poplar	26	Fair/Poor	Lean, extensive deadwood	No
T41	<i>Liriodendron tulipifera</i>	Tulip poplar	15	Fair/Poor	Exposed roots growing into stream banks, irregular growth	Yes
T42	<i>Liriodendron tulipifera</i>	Tulip poplar	17	Fair	Lean, heavy vines on trunk into crown, extensive deadwood	No
T43	<i>Liriodendron tulipifera</i>	Tulip poplar	17	Fair/Poor	Extensive heavy vines in canopy, deadwood	Yes
T44	<i>Prunus serotina</i>	Black cherry	21	Good/Fair	Minor vines on trunk, exposed roots, deadwood	No
T45	<i>Liriodendron tulipifera</i>	Tulip poplar	13	Good/Fair	Trunk wounds on upper trunk healed over, exposed roots growing into streambank	Yes
T46	<i>Acer rubrum</i>	Red maple	21	Fair/Poor	Exposed roots into stream banks, heavy vines on trunk, lead, deadwood	Yes
T47	<i>Acer rubrum</i>	Red maple	23	Fair	Exposed roots, lean, deadwood	Yes
T48	<i>Liriodendron tulipifera</i>	Tulip poplar	28	Good/Fair	Vines into canopy, exposed roots, growing on slope	Yes
T49*	<i>Quercus alba</i>	White oak	67	Fair	Dead branches, growing out of hillside, lean	Yes
T50	<i>Liriodendron tulipifera</i>	Tulip poplar	13	Good	Lean, vines on trunk into canopy	Yes
T51	<i>Juglans nigra</i>	Black walnut	15	Fair	Deadwood, lean	No
T52	<i>Liriodendron tulipifera</i>	Tulip poplar	29	Good/Fair	Exposed roots, minor vines on trunk into canopy	No
T53	<i>Liriodendron tulipifera</i>	Tulip poplar	21	Fair/Poor	Heavy vines on trunk into canopy, irregular growth, deadwood	No
T54	<i>Juglans nigra</i>	Black walnut	17	Fair/Poor	Irregular growth, extensive deadwood, debris leaning on lower trunk	No
T55	<i>Liriodendron tulipifera</i>	Tulip poplar	24	Fair	Lean, heavy vines, growing into slope, deadwood	No
T56	<i>Platanus occidentalis</i>	American sycamore	12	Good/Fair	Lean, vines on trunk into canopy	Yes
T57	<i>Juglans nigra</i>	Black walnut	13	Fair/Poor	Exposed roots, deadwood, vines on trunk into crown	Yes
T58	<i>Juglans nigra</i>	Black walnut	23	Fair/Poor	Heavy vines on trunk into canopy, extensive deadwood	Yes
T59	<i>Juglans nigra</i>	Black walnut	19	Fair/Poor	Twisting trunk, heavy vines on trunk into canopy	No
T60	<i>Juglans nigra</i>	Black walnut	17	Fair	Heavy vines on trunk into canopy, extensive deadwood	No
T61	<i>Juglans nigra</i>	Black walnut	19	Fair/Poor	Heavy vines on trunk into canopy, extensive deadwood	No
T62	<i>Prunus serotina</i>	Black cherry	16	Poor	Lean, heavy vines on trunk into canopy, extensive deadwood	Yes
T63	<i>Prunus serotina</i>	Black cherry	13	Poor	Lean, extensive deadwood, trunk decay	Yes
T64	<i>Prunus serotina</i>	Black cherry	17	Fair	Sprouting at base, twisting trunk, lean	Yes
T65	<i>Liriodendron tulipifera</i>	Tulip poplar	17	Fair	Sprouting at base, twisting trunk, lean	Yes
T66*	<i>Liriodendron tulipifera</i>	Tulip poplar	34	Good	Lean, vines on trunk into canopy, split above DBH, dead leader, moderate deadwood	Yes
T67*	<i>Acer rubrum</i>	Red maple	31	Fair	Heavy vines on trunk into canopy, split above DBH, dead leader, moderate deadwood	Yes
T68	<i>Acer rubrum</i>	Red maple	21	Poor	Extensive trunk decay and rot, extensive deadwood	Yes
T69	<i>Acer rubrum</i>	Red maple	24	Poor	Split below DBH, 24x18, heavy vines on trunk into canopy, lean, sapsucker damage, extensive deadwood	Yes
T70	<i>Acer saccharinum</i>	Silver maple	24	Poor	Extensive debris on lower trunk, heavy vines on trunk into canopy	Yes
T71	<i>Acer rubrum</i>	Red maple	18	Good/Fair	Split below DBH, 18x7", lean	No
T72	<i>Juglans nigra</i>	Black walnut	13	Good/Fair	Dead tree snagged in canopy, vines on trunk	No
T73	<i>Acer rubrum</i>	Red maple	21	Fair/Poor	Severe lean, irregular growth, exposed roots	No
T74	<i>Acer rubrum</i>	Red maple	15	Fair	Extensive sprouting, bark decay	Yes
T75	<i>Prunus serotina</i>	Black cherry	19	Poor	Extensive deadwood	Yes
T76	<i>Robinia pseudoacacia</i>	Black locust	14	Poor	Lean, extensive deadwood	Yes
T77	<i>Prunus serotina</i>	Black cherry	18	Good/Fair	Moderate deadwood	Yes
T78	<i>Prunus serotina</i>	Black cherry	13	Fair	Lean and twisting trunk, vines on trunk into canopy	Yes
T79	<i>Prunus serotina</i>	Black cherry	19	Fair	Lean, deadwood in canopy	Yes
T80	<i>Prunus serotina</i>	Black cherry	25	Fair	Competing and fused trunks, deadwood	No
T81	<i>Prunus serotina</i>	Black cherry	23	Fair	Split below DBH, multi stem, lean, deadwood	No
T82	<i>Prunus serotina</i>	Black cherry	12	Fair/Poor	Heavy vines on trunk into canopy, sparse growth	No
T83	<i>Acer rubrum</i>	Red maple	15	Fair/Poor	Sapsucker damage, exposed roots and root flare, deadwood	No
T84	<i>Acer rubrum</i>	Red maple	12	Good/Fair	Sapsucker damage, minor deadwood	No
T85	<i>Acer rubrum</i>	Red maple	24	Fair/Poor	Bend in leader at canopy, heavy vines into canopy, deadwood	Yes
T86	<i>Nyssa sylvatica</i>	Black gum	24	Fair/Poor	Bend in leader at canopy, heavy vines into canopy, deadwood	Yes
T87*	<i>Acer rubrum</i>	Red maple	36	Fair/Poor	Split above DBH, imbricated bark, one dead leader, lean, heavy vines on trunk into canopy	Yes
T88	<i>Acer rubrum</i>	Red maple	20	Fair	Twisting trunk	No
T89	<i>Acer rubrum</i>	Red maple	14	Good/Fair	Sapsucker damage, minor deadwood	No
T90	<i>Juglans nigra</i>	Black walnut	20	Fair	Heavy vines on trunk into canopy	No

Tree ID	Scientific Name	Common Name	DBH	Condition	Comments	Removal
T91*	<i>Liriodendron tulipifera</i>	Tulip poplar	32	Good/Fair	Heavy vines into canopy, deadwood	No
T92*	<i>Liriodendron tulipifera</i>	Tulip poplar	35	Good	Minor exposed roots, minor deadwood	No
T93	<i>Acer rubrum</i>	Red maple	15	Fair	Exposed roots, extensive sapsucker damage	No
T94	<i>Acer rubrum</i>	Red maple	13	Fair	Minor exposed and girdling roots, sapsucker damage, deadwood	No
T95	<i>Acer rubrum</i>	Red maple	15	Fair	Exposed roots, extensive sapsucker damage, healed over trunk wound	No
T96	<i>Prunus serotina</i>	Black cherry	12	Fair	Lean, sparse growth	No
T97	<i>Prunus serotina</i>	Black cherry	16	Fair/Fair	Exposed roots, twisting trunk, deadwood in canopy	No
T98*	<i>Acer rubrum</i>	Red maple	38	Fair	Split above DBH, imbricated bark, exposed roots, growing on bank of ephemeral channel, deadwood	Yes
T99	<i>Acer rubrum</i>	Red maple	22	Poor	Extensive deadwood, trunk decay, exposed roots, growing on bank of ephemeral channel	Yes
T100*	<i>Liriodendron tulipifera</i>	Tulip poplar	68	Fair	Girdling roots, decay at base of trunk, twisting trunk	No
T101	<i>Prunus serotina</i>	Black cherry	21	Poor	Exposed and damaged roots, extensive deadwood, water sprouting	No
T102	<i>Castanea mollissima</i>	Chinese chestnut	12	Fair/Fair		

Forest Stand Summary Sheet		
Property: Harford Community College		
Location: Bel Air, Harford County, ADC Map # 17 H10 (Town, County ADC Map #, and Grid Coordinates)		
Prepared By: AJN, LP	Date: 03/20/2025	
Stand Variable	Stand # FS1	Stand # FS2
1. Dominant species/ Co-dominant species	Tulip poplar, silver maple, red maple, sweetgum	White pine, tulip poplar
2. Forest Association	Tulip Poplar	White Pine
3. Successional stage	Mid	Mid
4. Basal Area in SF per acre	83	135
5. Size class of dominant species	20-30"	12-20"
6. Percent of canopy coverage	57%	56%
7. Number of tree species per acre	4	2
8. Common understory species	Spicebush, red maple, sweetgum	Spicebush
9. Percent of understory cover 3' to 20' tall	68%	41%
10. Number of understory species 3' to 20' tall	3	1
11. Common herbaceous species	Japanese stiltgrass, Japanese honeysuckle, wild onion, wineberry, multiflora rose, lesser celandine	Wineberry, multiflora rose, Japanese stiltgrass, Japanese honeysuckle, garlic mustard
12. Percent of herbaceous & woody plant cover 0' to 3' tall	53%	54%
13. List of major invasive plant species and percent of cover	Japanese stiltgrass, Japanese honeysuckle, multiflora rose & 10%	Japanese stiltgrass, Japanese honeysuckle, multiflora rose & 5%
14. Number of standing dead trees 6" DBH or greater	3	6
15. Comments	Dominated by red maple and tulip poplar, understory consists of spicebush and red maple saplings, canopy gaps exist throughout, extensive standing dead and downed woody debris, heavy wineberry and Japanese stiltgrass present in herbaceous layer	Canopy dominated by white pine with inclusions of tulip poplar, medium vine load including grapevine, Japanese honeysuckle, high levels of downed woody debris, understory consists of spicebush and vines, high levels of standing dead
Sheet 1 of 1		
April 2025		

SOILS TABLE					
Map Unit Symbol	Map Unit Name	K-Factor (Whole Soil)*	Drainage Class	Hydric Rating**	
CcB2	Chester silt loam, 3 to 8 percent slopes	0.32	Well drained	0	Non-hydric
GcB2	Glenelg loam, 3 to 8 percent slopes	0.24	Well drained	0	Non-hydric
GcC	Glenelg loam, 8 to 15 percent slopes	0.24	Well drained	0	Non-hydric
GcD	Glenelg loam, 15 to 25 percent slopes	0.24	Well drained	0	Non-hydric
GcD3	Glenelg loam, 15 to 25 percent slopes	0.24	Well drained	0	Non-hydric
GnB	Glenville silt loam, 3 to 8 percent slopes	0.37 (HE)	Moderately well drained	10	Partially Hydric

\*K-Factor \* Erodibility value assigned to soil types by NRCS. K > 0.35 are considered to be highly erodible soils

\*\*Hydric Rating \* Value is based on the percentage of hydric soils within the soil type. Non-hydric soils have a value of 0, predominantly non-hydric soils have a value between 0 and 33, partially hydric soils have a value between 33 and 66, predominantly hydric soils have a value between 66 and 99, and hydric soils have a value of 100.

IMPACT/MITIGATION SUMMARY TABLE		
FEATURE	ACREAGE	SF
TOTAL NET TRACT AREA	4.34	189,050
FOREST WITHIN LOD	2.71	118,192
FOREST TO BE REMOVED	2.71	118,192
PROPOSED FOREST PLANTING	2.74	119,206

## TREE CONDITION ASSESSMENT GUIDELINES

*Excellent* – healthy tree with exceptional growth form; no visible defects; well-formed crown; few minor dead branches acceptable; this tree condition is rare.

*Good* – healthy tree; very minor defects/decay acceptable with callous forming/complete; well-formed crown; minor lean and/or few minor/major dead branches acceptable; vines may be growing along trunk but not present within crown.

*Fair* – health questionable/stress evident; structurally sound tree; defects present that do not affect structural integrity; moderate lean; minor/major dead branches may be present; crown not broken out but not necessarily well formed or even; vines may be growing along trunk and within crown.

*Ex. Fair tree could be experiencing insect damage, or exhibit a growth form that makes it very susceptible to wind damage in an open setting.*

*Poor* – significant health problems; may be structurally unsound; may be dead or dying; may contain significant decay; may have broken or missing top/crown; may have heavy lean; vines may be significantly affecting tree health.

*Note: These guidelines were developed by RK&K based on the professional judgment of our Certified Arborists and other senior environmental staff.*

These tree species may commonly exhibit dead branches and/or ratty growth form/structure, which should be taken into account when assessing tree condition:

- Mulberry (*Morus spp.*)
- Pin Oak (*Quercus palustris*)
- Silver Maple (*Acer saccharinum*)
- Virginia Pine (*Pinus virginiana*)
- Scarlet Oak (*Quercus coccinea*)
- Black Locust (*Robinia pseudoacacia*)
- Osage Orange (*Maclura pomifera*)
- Willow Oak (*Quercus phellos*)
- Black Willow (*Salix nigra*)

### FOREST CONSERVATION NOTES:

1. BRANCH PRUNE ALONG THE LOD FOR EQUIPMENT CLEARANCE PER THE DETAIL PROVIDED ON SHEET FCN-03. BRANCH PRUNING TO BE COMPLETED UNDER THE SUPERVISION OF AN LTE.
2. ONLY REMOVE TREES  $>= 12"$  DBH AS MARKED FOR REMOVAL ON THE PLAN. ALL OTHER TREES  $>= 12"$  DBH SHALL REMAIN UNDAMAGED.
3. REMOVAL OF TREES NOTED FOR REMOVAL ON THE PLAN AND OUTSIDE OF THE LOD SHALL BE PERFORMED BY HAND, WITHOUT GROUND DISTURBANCE, OR DISTURBANCE TO NEARBY PRESERVED TREES. TREES IN THESE AREAS SHALL BE CUT FLUSH TO THE GROUND, WITHOUT STUMP GRINDING.
4. CUT NON-NATIVE/INVASIVE VINES GROWING ON TREES TO REMAIN WITHIN THE LOD.
5. AVOID UNNECESSARY COMPACTION TO THE GREATEST EXTENT PRACTICABLE WITHIN THE CRZ OF ANY SPECIMEN TREE TO REMAIN.
6. USE TIMBER MATTING AS DETAILED ON SHEET FCN-03 FOR THE ENTIRE TEMPORARY ACCESS ROAD INSTALLATION AND FOR STOCKPILE AREAS OVER VEGETATION.
7. THE MITIGATION REQUIREMENT IS FULFILLED THROUGH THE ON-SITE PLANTING AREAS. ALL AVAILABLE AREAS WILL BE REFORESTED AND THE REFORESTATION DENSITY IS EQUAL TO OR GREATER THAN THE DENSITY OF THE EXISTING FOREST. REFER TO THE LANDSCAPE PLANS FOR LOCATIONS OF THE PLANTING AREAS.
12. A LETTER WAS RECEIVED FROM THE MARYLAND HISTORIC TRUST (MHT) ON MAY 9, 2025, INDICATING THAT THE PROJECT WILL HAVE NO ADVERSE EFFECT ON HISTORIC PROPERTIES.

### GENERAL NOTES:

1. FOREST CONSERVATION PLANS WERE PREPARED BY ALEX NUSSBAUM, QP, OF RK&K AT 700 E. PRATT STREET, SUITE 500, BALTIMORE, MD 21202 USING FIELD DATA COLLECTED BY ALEX NUSSBAUM AND LAUREN PALMieri IN FEBRUARY AND MARCH 2025.
2. HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) IS PROPOSING TO RESTORE A STREAM LOCATED ON HARFORD COMMUNITY COLLEGE'S CAMPUS, RESTORING APPROXIMATELY 2,600 LF OF UNNAMED TRIBUTARIES FROM STADIUM AVENUE TO GRADUATE DRIVE HARFORD COUNTY, MARYLAND.
3. THE PROJECT IS ENTIRELY LOCATED ON HARFORD COMMUNITY COLLEGE PROPERTY (TAX ACCOUNT ID 1303043177). THE TAX MAP ID IS 03031381 (MAP 0042, PARCEL 0011). THE DEED REFERENCE NUMBER IS 00830/00574. THE PARCEL IS 202.79 ACRES.
4. THE PROJECT STUDY AREA IS CLASSIFIED AS AN AGRICULTURAL ZONE.
5. THE ADJACENT PROPERTIES TO THE PROJECT STUDY AREA ARE DESIGNATED AS MEDIUM DENSITY RURAL RESIDENTIAL ZONES.
6. THE PROJECT STUDY AREA IS NOT LOCATED WITHIN THE FEMA 100-YEAR FLOODPLAIN.
7. THE PROJECT STUDY AREA IS NOT LOCATED WITHIN THE CHESAPEAKE BAY CRITICAL AREA.
8. THE PROJECT STUDY AREA DOES NOT CONTAIN WETLANDS OF SPECIAL STATE CONCERN AS DEFINED IN COMAR 26.23.06.01.
9. THE PROJECT STUDY AREA IS LOCATED WITHIN FOREST INTERIOR DWELLING SPECIES (FIDS) HABITAT.
10. THE PROJECT IS LOCATED WITHIN THE DEER CREEK WATERSHED, MDE 8-DIGIT WATERSHED NUMBER 02120202, ONE PERENNIAL WATERS OF THE U.S., THREE INTERMITTENT WATERS OF THE U.S., AND ONE PALUSTRINE EMERGENT WETLAND (PEM) WERE IDENTIFIED WITHIN THE PROJECT STUDY AREA. ALL WATERWAYS WITHIN THE PROJECT STUDY AREA ARE CATEGORIZED AS USE CLASS IV STREAMS.
11. TWO FOREST STANDS AND 184 INDIVIDUAL TREES ( $>= 12"$  DBH), INCLUDING 27 SPECIMEN TREES ( $>= 30"$  DBH) WERE IDENTIFIED WITHIN THE PROJECT STUDY AREA. 18 SPECIMEN TREES WILL BE IMPACTED BY THE PROJECT. TREES WERE LOCATED USING TRADITIONAL SURVEY METHODS.
12. A LETTER WAS RECEIVED FROM THE MARYLAND DEPARTMENT OF NATURAL RESOURCES (MDNR) ON MAY 6, 2025, STATING THAT THERE ARE NO OFFICIAL RECORDS FOR LISTED PLANT OR ANIMAL SPECIES WITHIN THE PROJECT STUDY AREA. HOWEVER, DNR'S REMOTE ANALYSIS SUGGESTS THAT THE FORESTED AREA ON THIS PROPERTY CONTAINS FOREST INTERIOR DWELLING SPECIES (FIDS) HABITAT, ESPECIALLY FOR BIRDS. AN UPDATED EVALUATION MUST BE REQUESTED IF THE PROJECT CHANGES IN THE FUTURE SUCH THAT THE LIMITS OF PROPOSED DISTURBANCE OR OVERALL SITE BOUNDARIES ARE MODIFIED. THE U.S. FISH AND WILDLIFE SERVICE (USFWS) IPAC TOOL WAS USED TO GENERATE A SPECIES LIST FOR THE PROJECT ON APRIL 17, 2025. SPECIES IDENTIFIED ON THE LIST THAT MAY OCCUR THE STUDY AREA INCLUDE THE PROPOSED ENDANGERED TRICOLORED BAT (*PERIMYOTIS SUBFLAVUS*), PROPOSED THREATENED MONARCH BUTTERFLY (*DANAS PLEXIPPUS*), THREATENED BOO TURTLE (*GLYPTEMYS MUHLENBERGII*), AND ENDANGERED MARYLAND DARTER (*ETHEOSTOMA SELLARE*). THE NORTHERN LONG-EARED BAT AND TRICOLORED BAT RANGE-WIDE DETERMINATION KEY WAS COMPLETED FOR THE PROJECT ON MAY 20, 2025, RESULTING IN A DETERMINATION OF "MAY AFFECT, BUT NOT LIKELY TO AFFECT" FOR THE TRICOLORED BAT. COORDINATION WITH USFWS REGARDING THESE SPECIES IS ONGOING. HOWEVER SECTION 7 REQUIREMENTS ARE NOT ANTICIPATED DUE TO THE DEGRADED SITE CONDITIONS AND LACK OF SUITABLE HABITAT.
13. A LETTER WAS RECEIVED FROM THE MARYLAND HISTORIC TRUST (MHT) ON MAY 9, 2025, INDICATING THAT THE PROJECT WILL HAVE NO ADVERSE EFFECT ON HISTORIC PROPERTIES.

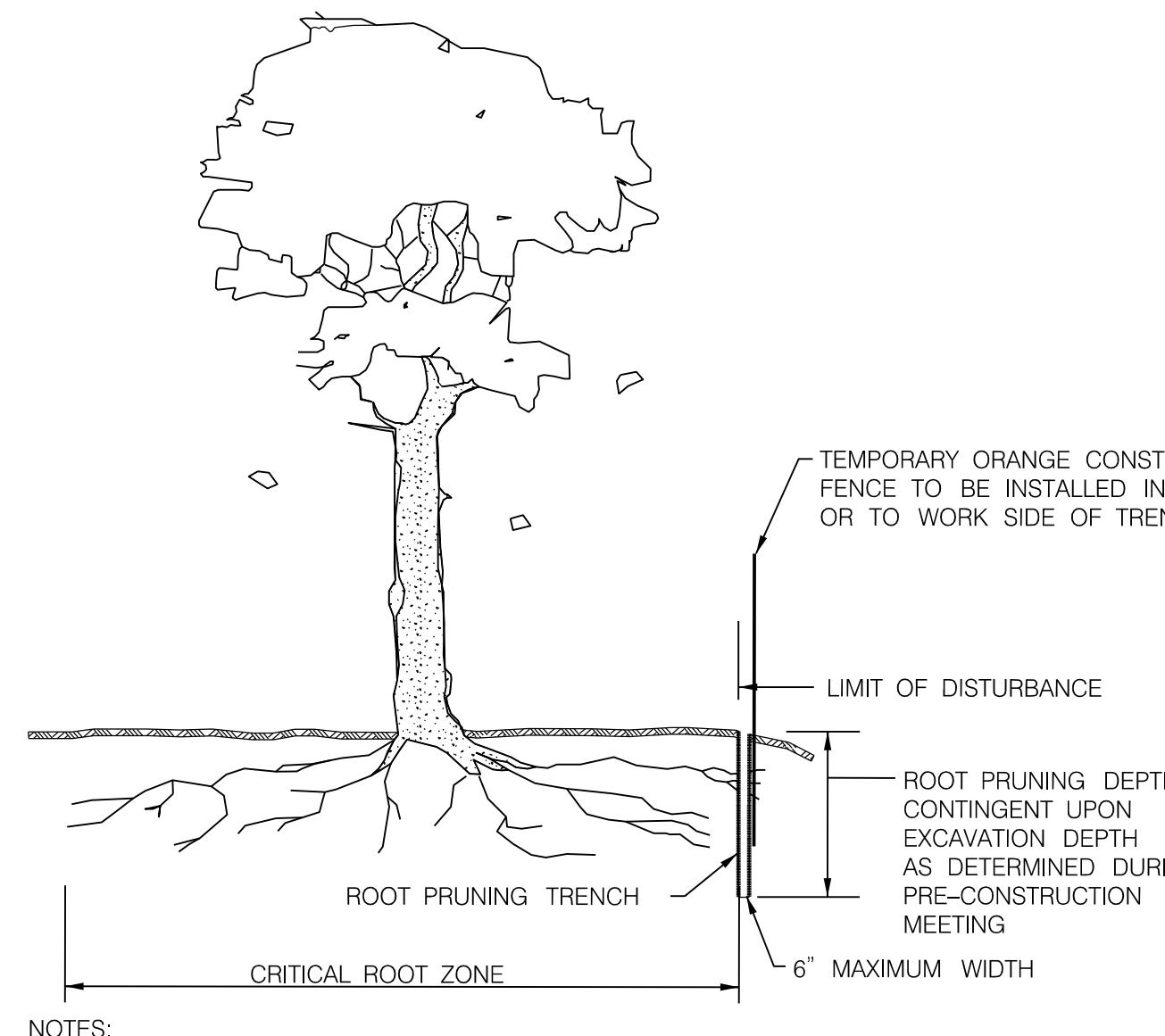
### SEQUENCE FOR TREE CONSERVATION PROCEDURES

1. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES.
2. AFTER THE LIMITS OF DISTURBANCE HAVE BEEN LOCATED IN THE FIELD, TREE PROTECTION FENCE WILL BE INSTALLED MANUALLY ALONG THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLAN. SPECIMEN TREE PROTECTION SIGNS AND FOREST CONSERVATION AREA SIGNS SHALL ALSO BE INSTALLED AS SHOWN ON THE PLAN. HARFORD COUNTY DEPARTMENT OF PLANNING AND ZONING (DPZ, 410-638-3013) SHALL BE NOTIFIED FOR A PRE-CONSTRUCTION INSPECTION OF TREE PROTECTION DEVICES.
3. AT THE TIME OF THE PRECONSTRUCTION MEETING FOR THE PROJECT, THE TREE PROTECTION MEASURES SHALL BE IN PLACE, AND ANY REQUIRED STRESS REDUCTION TECHNIQUES (ROOT PRUNING, BRANCH PRUNING, ETC.) WILL BE DISCUSSED. A STAFF MEMBER FROM DPZ SHALL INSPECT AND APPROVE THE INSTALLATION OF ALL PROTECTION DEVICES BEFORE ANY GRADING SHALL BE PERMITTED.
4. THE STRESS REDUCTION MEASURES SHALL BE PERFORMED PRIOR TO COMMENCEMENT OF GRADING/BUILDING ACTIVITIES IN THE AFFECTED AREA. STRESS REDUCTION MEASURES SHALL BE PERFORMED UNDER THE SUPERVISION OF A MARYLAND LICENSED TREE EXPERT (LTE) AND MUST BE DOCUMENTED.
5. ALL PROTECTION DEVICES SHALL BE IN PLACE PRIOR TO ANY LAND CLEARING OR GRADING THAT OCCURS WITHIN 100 FEET OF A SPECIMEN TREE TO REMAIN.
6. NOTIFY DPZ (410-638-3013) 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
7. DURING CONSTRUCTION, TREE PROTECTION DEVICES SHALL BE MAINTAINED, AND A MARYLAND LICENSED TREE EXPERT (PROVIDED BY THE CONTRACTOR) SHALL CONDUCT PERIODIC INSPECTIONS TO DETERMINE THE HEALTH OF THE TREES, AND ANY ADDITIONAL MEASURES THAT MUST BE TAKEN AS IT RELATES TO THE HEALTH OF THE TREES. ANY CHANGES TO THE PLANS, OR ADDITIONAL PROBLEMS CONCERNING THE TREES, MUST BE BROUGHT TO THE ATTENTION OF DPZ (410-638-3013) PRIOR TO IMPLEMENTATION OF ANY CHANGES. FIELD ADJUSTMENTS MAY BE SUBJECT TO APPROVAL OF AN AMENDED FOREST CONSERVATION PLAN.
8. FOREST PROTECTION DEVICES SHALL BE MONITORED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PHASE OF THE PROJECT. WHEN THE CONSTRUCTION PHASE OF THE PROJECT IS COMPLETE AND THE SEDIMENT DEVICES SHALL BE REMOVED.
9. AT THE COMPLETION OF THE CONSTRUCTION PROJECT, AN INSPECTION OF THE TREES SHALL BE CONDUCTED BY A MARYLAND LTE (PROVIDED BY THE CONTRACTOR). ADDITIONAL STRESS REDUCTION MEASURES OR MITIGATION MAY BE REQUIRED. THE TREE PROTECTION FENCE AND ANY OTHER TREE PROTECTION DEVICES CAN BE REMOVED WHEN APPROVED BY THE MARYLAND LTE.
10. ANTICIPATED CONSTRUCTION TIMETABLE

BID AND PROCUREMENT: MAY 2026  
CONSTRUCTION START: AUGUST 2026  
CONSTRUCTION COMPLETION: FEBRUARY 2027

HARFORD COUNTY, MARYLAND	
HARFORD COMMUNITY COLLEGE	
STREAM RESTORATION	
NOTES, TABLES & DETAILS	
Drawn By : <u>Alex Nussbaumer</u>	EH
Designed By : <u>KJH, AN</u>	CC, AN
Reviewed By : <u>KJH, AN</u>	
Drawing No. FCN-02 of FCN-03	Sheet No. 46 of 48

09/12/2025  
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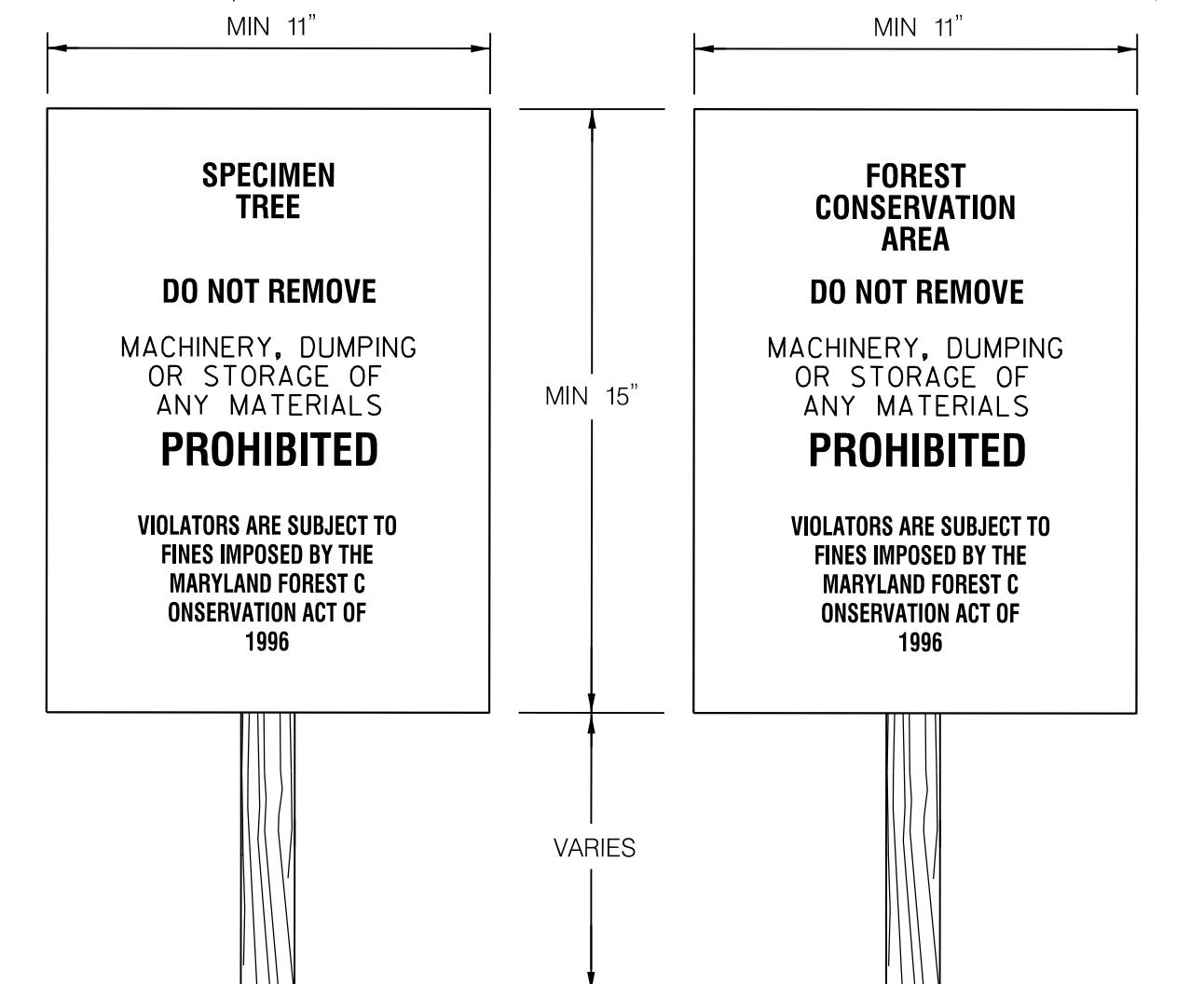
NOTES:

1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND OR FENCED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
6. IN SOME INSTANCES, IT MAY BE BENEFICIAL TO PERFORM ROOT PRUNING AT THE EDGE OF EXCAVATION RATHER THAN AT THE LOD, PROVIDED THE ROOTS BETWEEN THE EXCAVATION AND THE LOD ARE PROTECTED DURING CONSTRUCTION.

#### ROOT PRUNING DETAIL

NOT TO SCALE

Source: Adapted from Steve Clark & Associates/ACRT, Inc. and Forest Conservation Manual, 1991



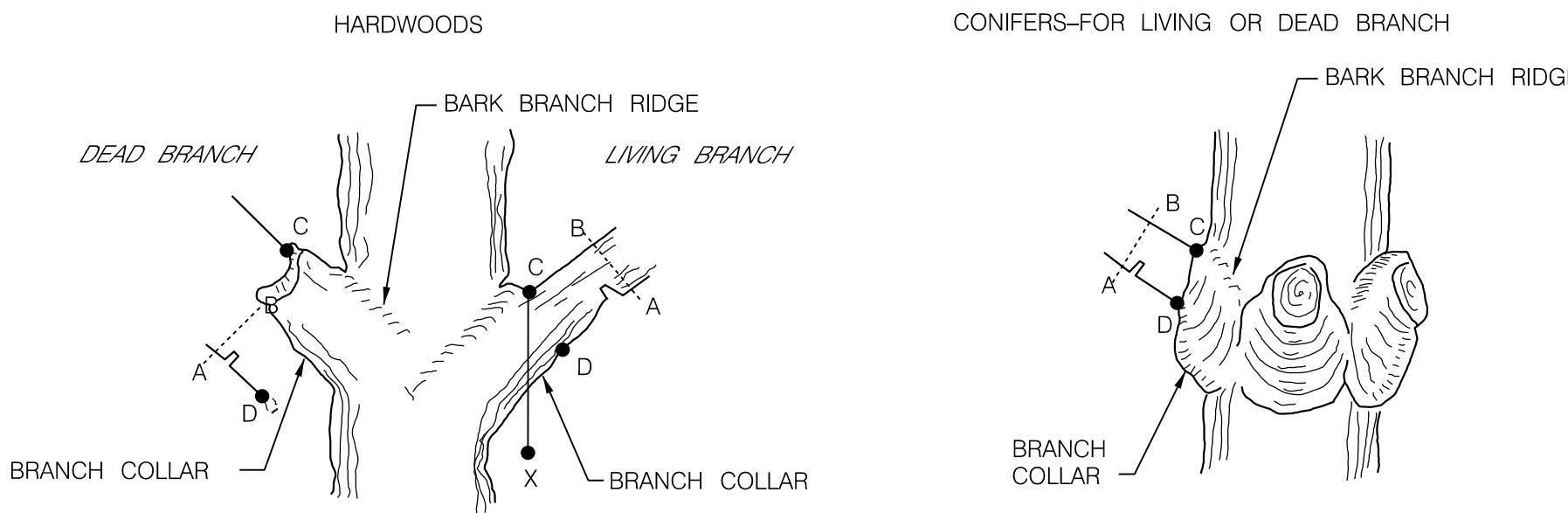
#### TREE PROTECTION SIGN DETAIL

NOT TO SCALE

NOTES:

1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED APPROXIMATELY 50 FEET APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
3. ATTACHMENT OF SIGNS TO TREE IS PROHIBITED.

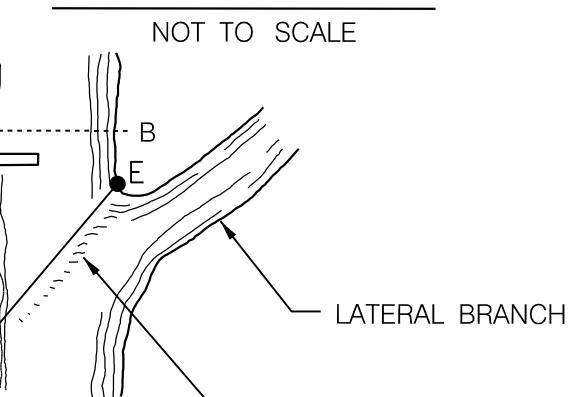
Source: Ericson, T and Howell, G.P., eds. (1997) State Forest Conservation Technical Manual, Maryland Department of Natural Resources



NOTES:

1. REMOVE BRANCH WEIGHT BY UNDERCUTTING AT A AND REMOVE LIMB BY CUTTING THROUGH AB.
2. REMOVE STUB AT CD (LINE BETWEEN BARK BRANCH RIDGE AND OUTER EDGE OF BRANCH COLLAR).
3. IF D IS DIFFICULT TO FIND ON HARDWOODS, ANGLE OF CD TO TRUNK SHOULD BE THE REFLECTIVE ANGLE OF THE BARK BRANCH RIDGE TO THE TRUNK.
4. ONLY PRUNE AT SPECIFIED TIMES.
5. REMOVE NO MORE THAN 30% OF CROWN AT ONE TIME.

#### PRUNING A BRANCH



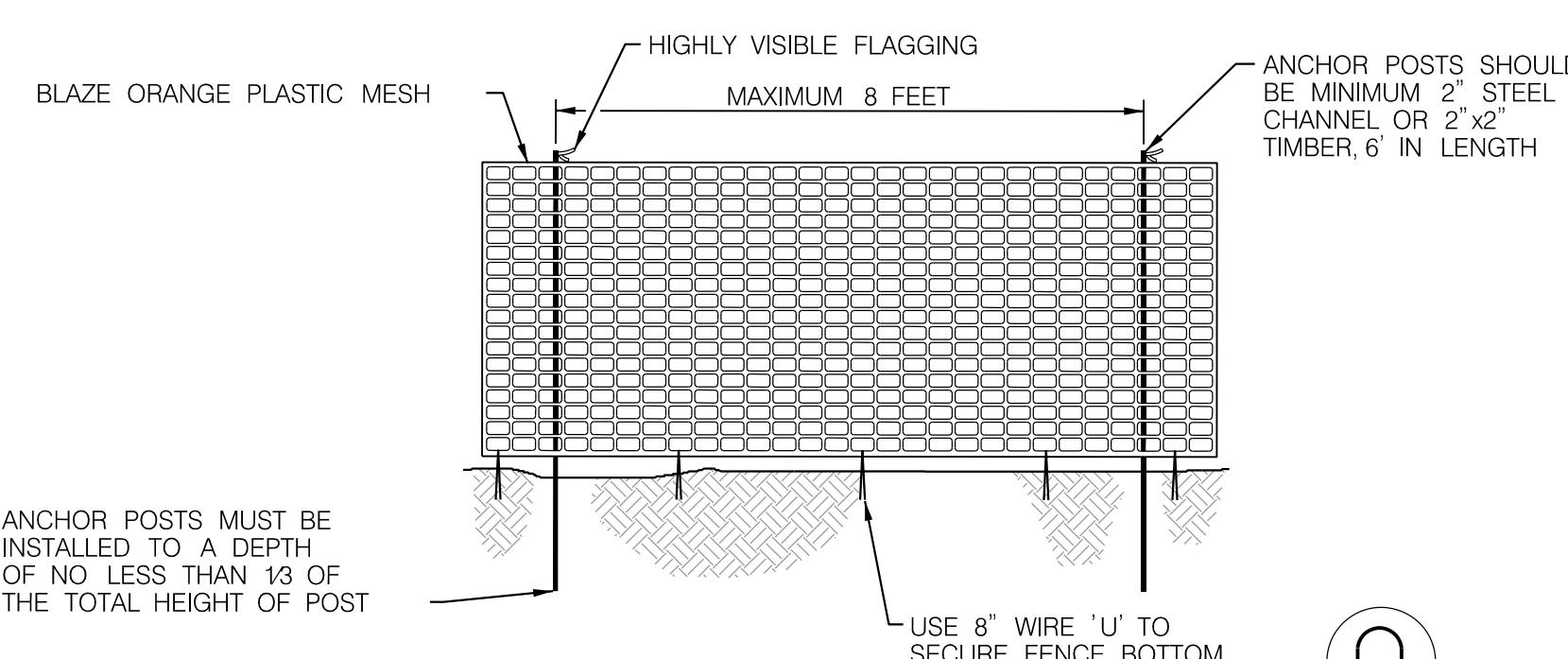
NOTES:

1. REMOVE TOP WEIGHT BY UNDERCUTTING AT A AND REMOVE LIMB BY CUTTING THROUGH AB.
2. REMOVE STUB AT EF PARALLEL TO THE BARK BRANCH RIDGE.
3. ONLY PRUNE AT SPECIFIED TIMES.
4. NO MORE THAN 30% OF THE CROWN TO BE REMOVED AT ONE TIME.
5. DIAMETER OF LATERAL BRANCH SHOULD BE NO LESS THAN 30% OF THE DIAMETER OF THE LEADER.

#### PRUNING A LEADER TO REDUCE SIZE

NOT TO SCALE

Source: Adapted from Steve Clark & Associates/ACRT, Inc.

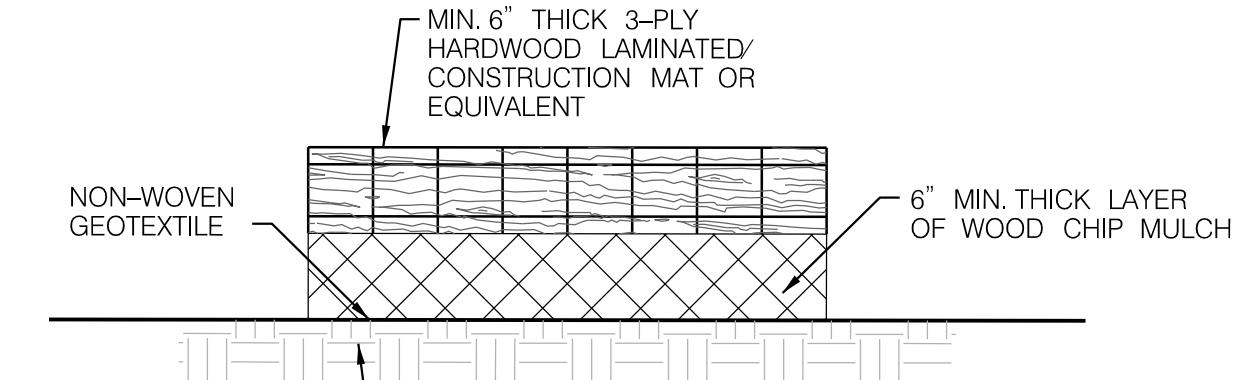


NOTES:

1. THE LOCATION OF TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF) SHALL BE STAKED AND FLAGGED PRIOR TO INSTALLING THE TOCF. ALL AREAS OUTSIDE OF THE TOCF SHALL BE DESIGNATED AS TREE PRESERVATION AREA (TPA). NO DISTURBANCE SHALL OCCUR WITHIN THE TPA.
2. ROOT DAMAGE SHOULD BE AVOIDED.
3. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

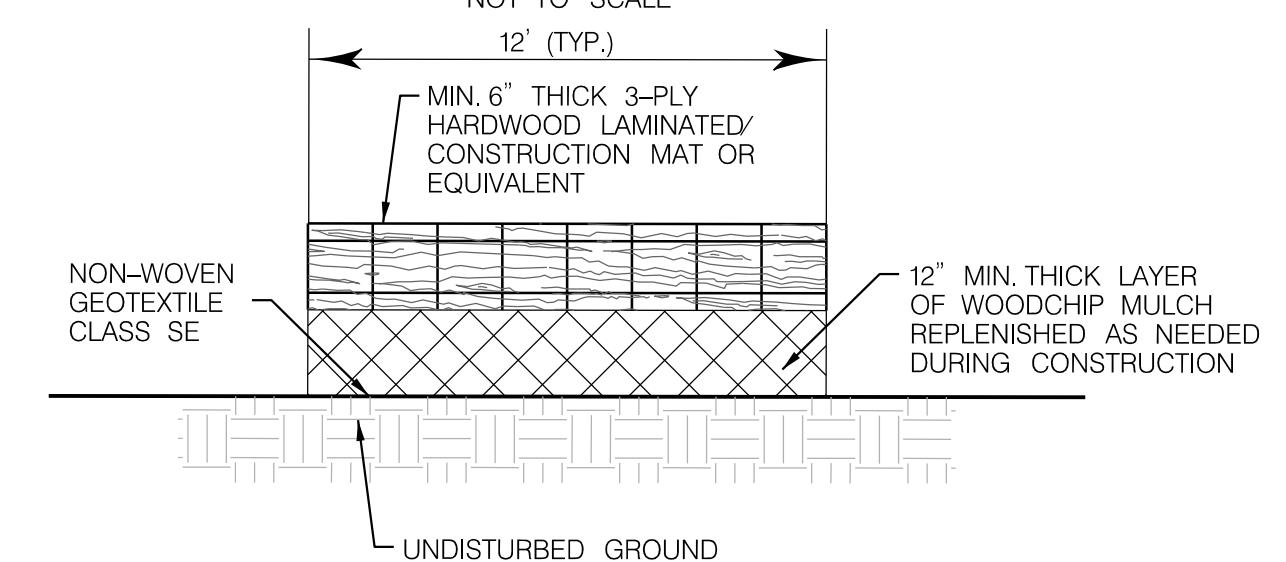
#### TEMPORARY ORANGE CONSTRUCTION FENCE

NOT TO SCALE



#### TIMBER MATTING FOR STOCKPILES

NOT TO SCALE



#### TEMPORARY MULCH ACCESS ROAD WITH TIMBER MATTING

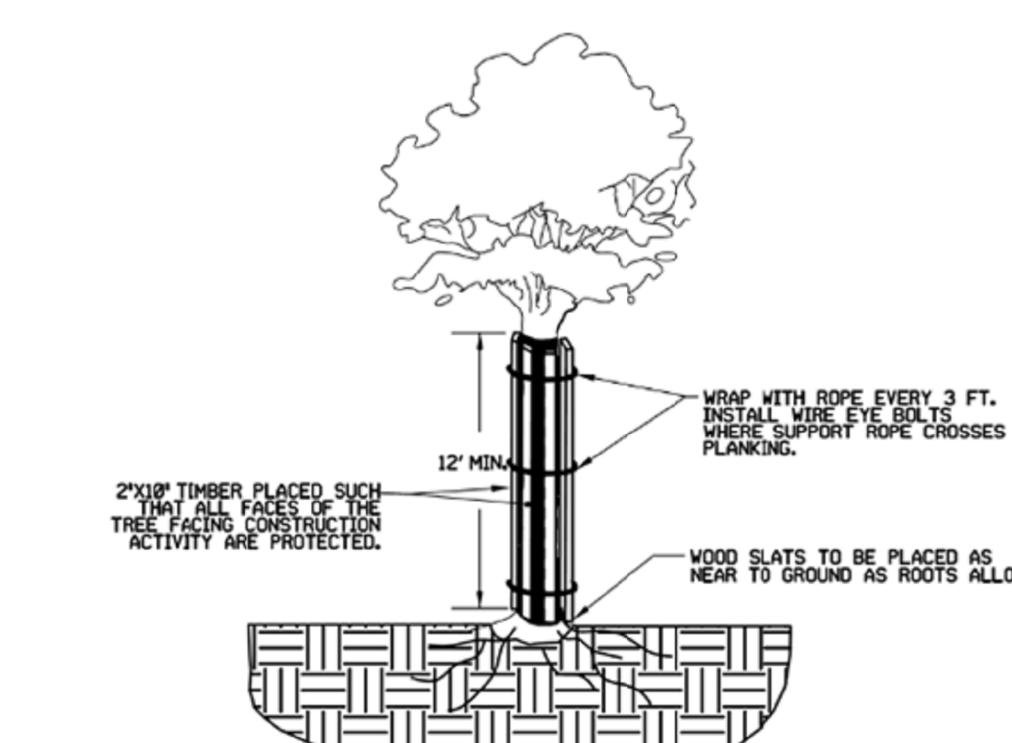
NOT TO SCALE

NOTES:

1. ACCESS ROUTES TO BE VERIFIED BY THE ENGINEER AT PRE-CONSTRUCTION MEETING.
2. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL OF THE ENGINEER.
3. GEOTEXTILE CLASS SE SHALL BE PLACED WITH SEAMS PARALLEL TO FLOW OF TRAFFIC. OVERLAP FABRIC BY 18" MIN. AT SEAMS.
4. CONTRACTOR SHALL MAINTAIN TEMPORARY ACCESS ROAD THROUGHOUT CONSTRUCTION PERIOD.
5. MULCH AND GEOTEXTILE PLACEMENT IS NOT REQUIRED IF THE ACCESS ROAD HAS EXISTING GRAVEL COVERAGE.

#### TREE PROTECTION PLANKING

NOT TO SCALE



NOTES:  
PROTECTIVE PLANKING SHALL BE ERECTED PRIOR TO CLEARING, GRAZING OR CONSTRUCTION BEGINS. PROTECTIVE PLANKING SHALL REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION.

## HARFORD COUNTY, MARYLAND

### HARFORD COMMUNITY COLLEGE STREAM RESTORATION

#### NOTES, TABLES & DETAILS

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Designed By : GC, AN  
Reviewed By : KJH, AN

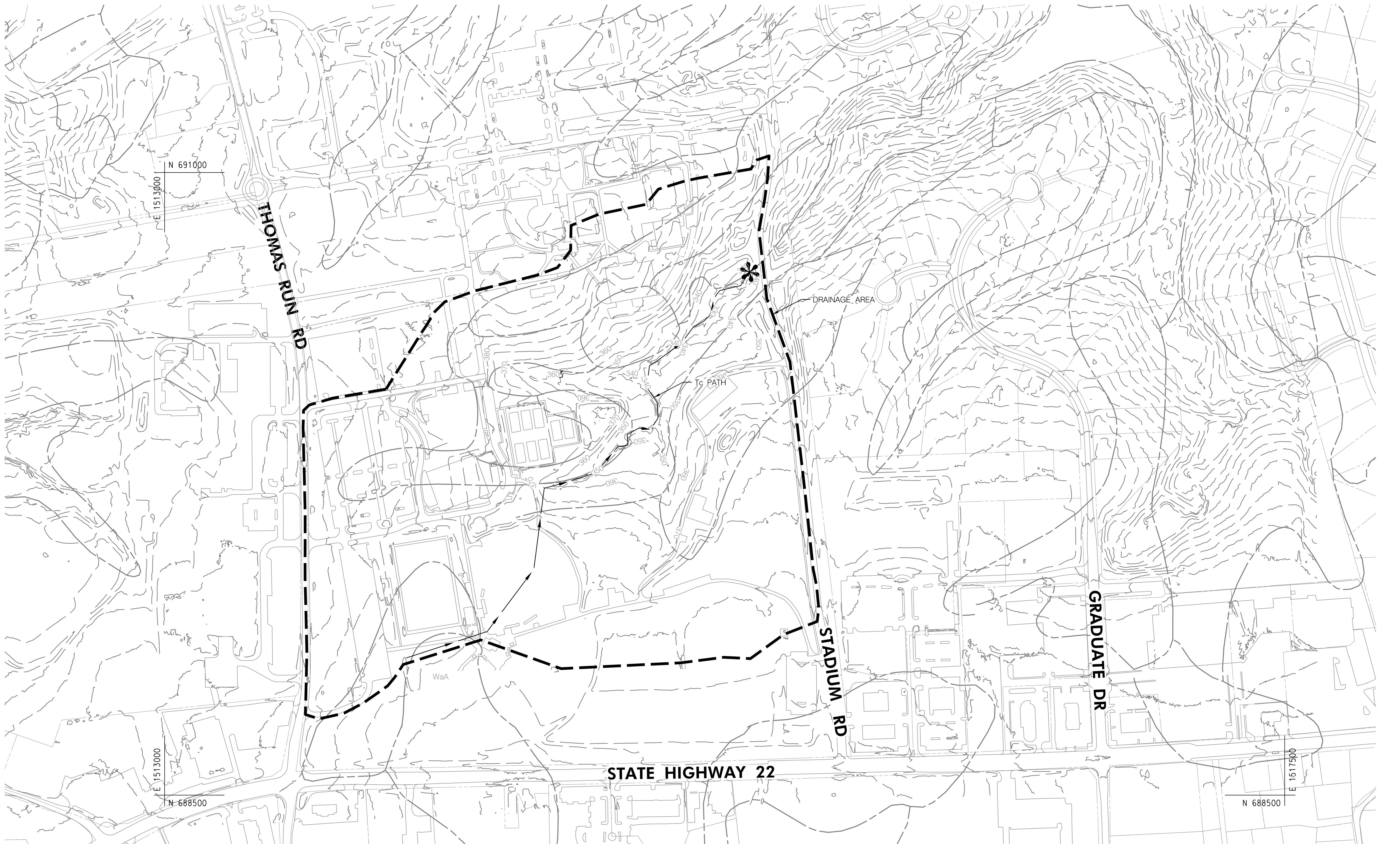
Drawing No. FCN-03 of FCN-03

Scale : 1"=20'  
Date : SEPTEMBER 2025

Reviewed By : KJH, AN

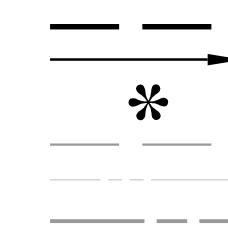
Drawing No. FCN-03 of FCN-03

Sheet No. 47 of 48



LEGEND

DRAINAGE AREA TO POI  
 Tc PATH  
 POI  
 EXISTING MAJOR CONTOUR  
 PROPERTY BOUNDARY  
 SOIL BOUNDARY



RUNOFF CONDITIONS	
	POI 1
DRAINAGE AREA (AC)	74.75
IMPERVIOUS AREA (AC)	23.48
TIME OF CONCENTRATION (HR)	0.41
CURVE NUMBER	74

200' 0 200' 400'  
 SCALE: 1"=200'

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. 200370, EXPIRATION DATE: 2025/03/19.

PROJECT CONTRACT: 21-097 TO #25	Revisions	HARFORD COUNTY, MARYLAND	
GP #XXXX-XXXXXX-XXXX	HARFORD COMMUNITY COLLEGE STREAM RESTORATION DRAINAGE AREA MAP		
SIGN AND SEAL			
Drawn By : AG	Scale : 1" = 200'		
Designed By : NH, JZ	Date : SEPTEMBER 2025		
Reviewed By : RO			
Drawing No. DA-01 of DA-01	Sheet No. 48 of 48		