MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF STRUCTURES
TS & L/ PI SUBMITTAL
JANUARY, 2022

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION

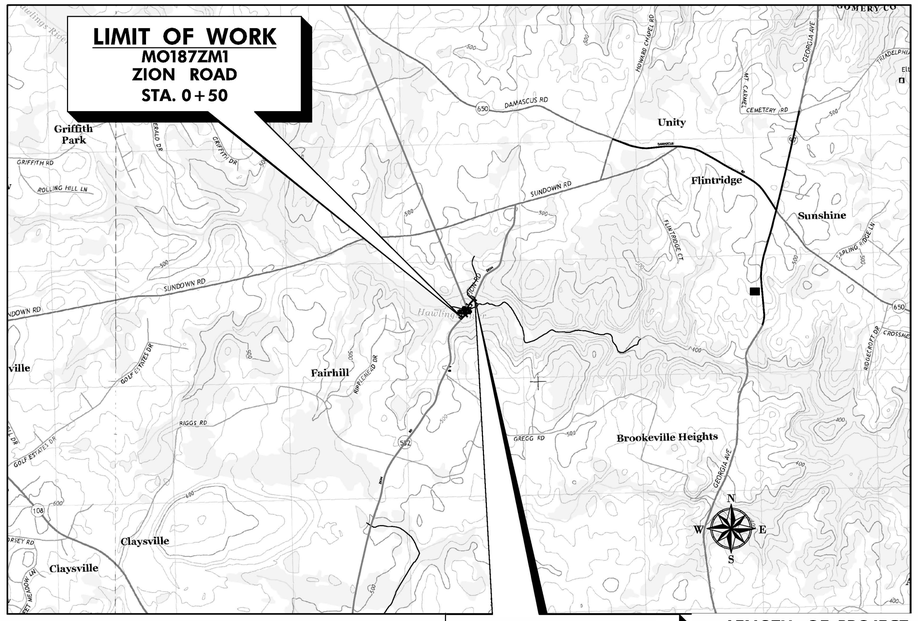
REPLACEMENT OF BRIDGE NO. M-0121 ZION ROAD OVER HAWLINGS RIVER

FAP NO. XXXXXXXXXXX
SHA CONTRACT NO. M0187ZM1
C.I.P. PROJECT 509132

SHEET INDEX

LEGEND

- EXISTING ASPHALT CURB
- EXISTING CONCRETE CURB @ GUTTER
- EXISTING EDGE OF PAVING
- EXISTING SIGN
- EXISTING CONCRETE WALK
- EXISTING SLOPE
- EXISTING MANHOLES
- EXISTING GUARDRAIL
- EXISTING STORMDRAIN PIPE
- EXISTING GAS METER
- EXISTING GAS BOX
- EXISTING TRAFFIC CONTROL BOX
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING SANITARY SEWER LINE
- EXISTING TREE
- EXISTING BUSH
- TRAVERSE CONTROL POINT
- PROPERTY LINE
- PROPOSED RIGHT OF WAY LINE
- BASELINE OF CONSTRUCTION
- PROPOSED SLOPE EASEMENT
- PROPOSED CONCRETE WALK
- PROPOSED FEE TAKING AREA
- PROPOSED CURB @ GUTTER
- PROPOSED SIDEWALK RAMP
- PROPOSED STORMDRAIN PIPE
- PROPOSED FULL DEPTH PAVING
- PROPOSED BUTT JOINT
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING TELEPHONE LINE
- LIMIT OF GRADING
- PEPCO POLE
- EXISTING GUY WIRE
- PROPOSED BRIDGE
- PROPOSED GUARDRAIL



MONTGOMERY COUNTY

HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88

LENGTH OF PROJECT:
ZION RD. = 0.13 MILES

2000' 0 2000' 4000'
SCALE: 1" = 2000'

IT IS THE RESPONSIBILITY OF PERMITTEE/OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ISSUANCE OF APPROVED SEDIMENT CONTROL PERMIT.

TYPE OF PERMIT	REQD	NOT REQD	PERMIT NO.	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS Floodplain Delineation Study	x		TBD		
MCDPS Floodplain District	x		TBD		
WATERWAYS/WETLAND(S):	x				
a. Corps of Engineers	x				
b. MDE	x				
c. MDE Water Quality Certification	x				
MDE Dam Safety		x			
DPS Roadside Trees Protection Plan	x			Approval Date	
N.P.D.E.S. NOTICE OF INTENT	x				DATE FILED
FEMA LOMR (Required Post Construction)		x			
MNCPPC Tree Save Plan	x				

GENERAL NOTES

1. THE SPECIFICATIONS FOR THIS CONTRACT WILL BE THOSE OF THE MARYLAND STATE HIGHWAY ADMINISTRATION DATED JANUARY 2020, ALL ERATA AND ADDENDA THERETO. THE MARYLAND STATE HIGHWAY ADMINISTRATION BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES, WASHINGTON SUBURBAN SANITARY COMMISSION (W.S.S.C.) STANDARDS, MONTGOMERY COUNTY DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION STANDARDS, AND SOIL CONSERVATION SERVICE POND CONSTRUCTION SPECIFICATIONS FOR MARYLAND.
2. FOR CONSTRUCTION, ALL HORIZONTAL SHALL BE BASED ON NAD 83/91, NAVD 88 DATUM.
3. TYPES OF STORM DRAIN STRUCTURES REFER TO THE "DESIGN STANDARDS" OF MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION, UNLESS OTHERWISE NOTED.
4. WHEN THE DROP ON THE MAIN LINE THROUGH A STORM DRAIN STRUCTURE CAN BE ACCOMMODATED BY AN INVERT SLOPE OF 1.5:1 OR FLATTER, A ROUNDED CHANNEL LINED WITH SEWER BRICK ON EDGE SHALL BE BUILT TO THE CROWN OF THE PIPES. WHEN THE INVERT SLOPES WOULD BE GREATER THAN 1.5:1 A SPECIAL INVERT SHALL BE CONSTRUCTED AS NOTED.
5. ALL STORM DRAIN PIPE SHALL BE INSTALLED WITH CLASS "C" BEDDING UNLESS OTHERWISE SPECIFIED.
6. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO STORM DRAIN STRUCTURES, WHEN NECESSARY, TO MEET EXISTING CONDITIONS, AS APPROVED BY MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION'S PROJECT INSPECTOR.
7. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF THE LINES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING. IF CLEARANCES ARE LESS THAN SHOWN OR SIX (6) INCHES, WHICHEVER IS LESS, CONTACT MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION'S PROJECT INSPECTOR AND THE APPROPRIATE UTILITY OWNER BEFORE PROCEEDING WITH CONSTRUCTION.
8. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.
9. CALL "MISS UTILITY" AT 1-800-257-7777 FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES.
10. CLEARING IS TO BE LIMITED TO THE "LIMIT OF GRADING" AS SHOWN ON THE PLANS.
11. ALL GRADING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE POSITIVE DRAINAGE.
12. DISTURBED AREAS ADJACENT TO ESTABLISHED LAWNS SHALL BE SODDED. OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED.
13. THE CONTRACTOR SHALL OBTAIN A ROADSIDE TREE PERMIT FOR ANY MAINTENANCE, TREATMENT, PLANTING, REMOVAL, OR ROOT CUTTING ON TREES WITHIN THE PUBLIC RIGHT OF WAY. PERMIT REQUIREMENTS MAY BE OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES, MARYLAND FOREST, PARK AND WILDLIFE SERVICE, TELEPHONE 301-854-6060
14. CONTACT THE WASHINGTON SUBURBAN SANITARY COMMISSION SYSTEM MAINTENANCE ENGINEER BEFORE EXCAVATING BENEATH OR IN THE VICINITY OF EXISTING WATER OR SEWER LINES. BACKFILL TO BE DONE UNDER SUPERVISION OF W.S.S.C. CALL 699-4420
15. ALL UTILITY POLES NOTED FOR RELOCATION SHALL BE PERFORMED BY OTHERS.

MR2025026

DESIGN DESIGNATION			
ROADWAY	ZION RD.		
ROADWAY LENGTH (MILES)	0.13 MILES		
CONTROLS YEARS	2018	2037	
AVERAGE DAILY TRAFFIC (A.D.T.)	2,053	3,100	
DESIGN HOURLY VOLUME (D.H.V.)	-	-	
DIRECTIONAL DISTRIBUTION	-	-	
% TRUCKS (A.D.T.)	%	%	
% TRUCKS (D.H.V.)	%	%	
FUNCTIONAL CLASSIFICATION	COUNTRY ROAD		
CONTROL OF ACCESS	OPEN SECTION		
INTENSITY OF DEVELOPMENT	RURAL		
TERRAIN	ROLLING		
DESIGN SPEED (M. P. H.)	30 MPH		
ANTICIPATED POSTED SPEED (M. P. H.)	30 MPH		
MDOT SHA CONTEXT ZONE			

OWNER/CONTACT/ADDRESS:

TIMOTHY H. CUPPLES, PE, DBIA
MONTGOMERY COUNTY DEPARTMENT
OF TRANSPORTATION
100 EDISON PARK DRIVE, 4TH FLOOR
GAITHERSBURG, MARYLAND 20878
240-777-7220

NO.	REVISION	DATE	BY

MONTGOMERY CO. DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management:	Sediment Control Technical Requirements:	Administrative Requirements:
Reviewed Date	Reviewed Date	Reviewed Date
Approved Date	Approved Date	

S.M.FILE NO.

NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MCDPS APPROVAL OF THIS PLAN WILL EXPIRE ONE YEAR FROM THE DATE OF APPROVAL, IF THE PROJECT HAS NOT STARTED UNLESS THE PERMIT HAS BEEN EXTENDED

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Transportation Planning and Design Section — Date
APPROVED
Chief, Division of Transportation Engineering — Date

Designed by : JF Drawn by : CQW Checked by : CJ

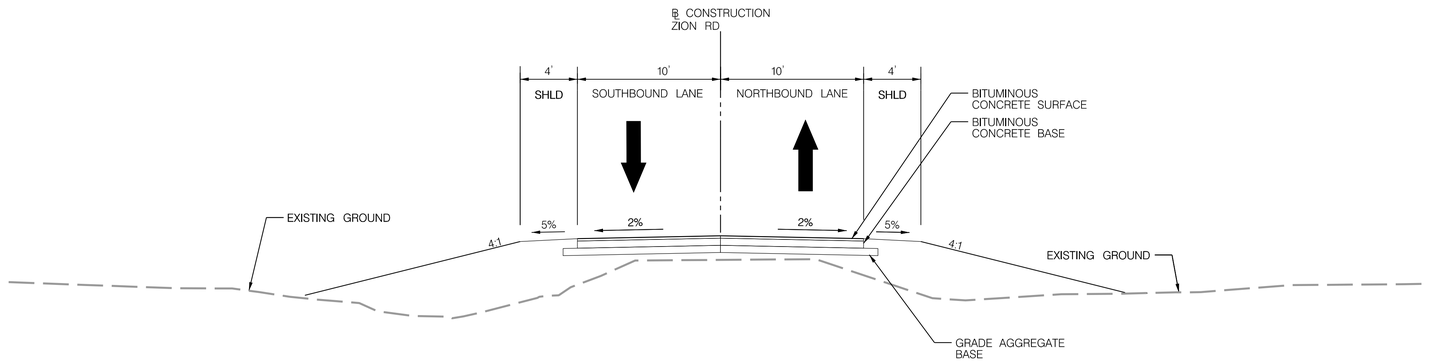
TITLE SHEET

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

Project No. : XXXXXX SHEET 1 of 21

03-MRPLAN-1-TITLE- MR2025026

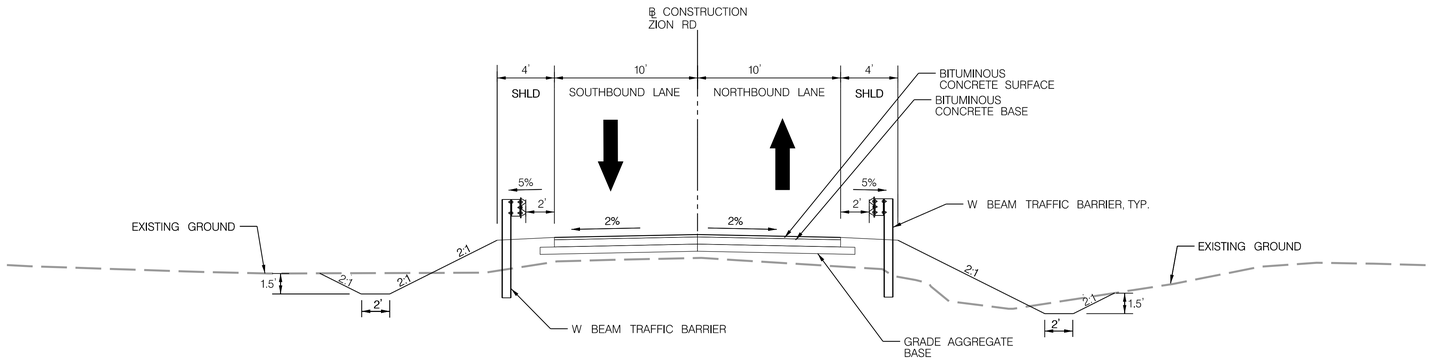
Attachment A: Project Design Plans



ZION RD TYPICAL SECTION

N.T.S.

FROM STA. 04+25 TO STA. 04+92



ZION RD TYPICAL SECTION

N.T.S.

FROM STA. 0+85 TO STA. 02+43 AND
FROM STA. 02+82 TO STA. 04+25

MR2025026

03-MRPLAN-2-TYP SECTION- MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

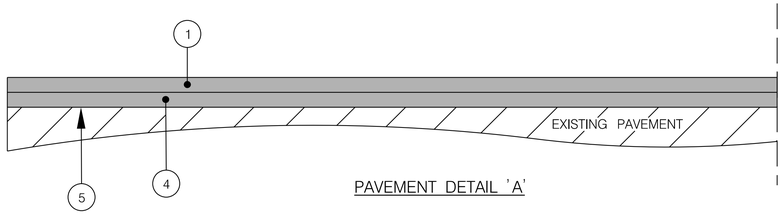
ROADWAY TYPICAL SECTION

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : N.T.S.

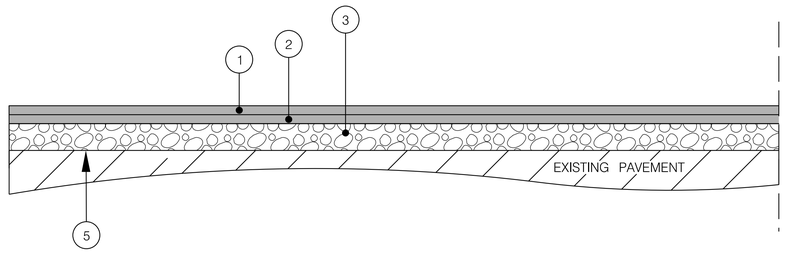
PROJECT NO. : XXXXXX SHEET 2 OF 21 DATE: JAN 2022

PAVEMENT DETAILS



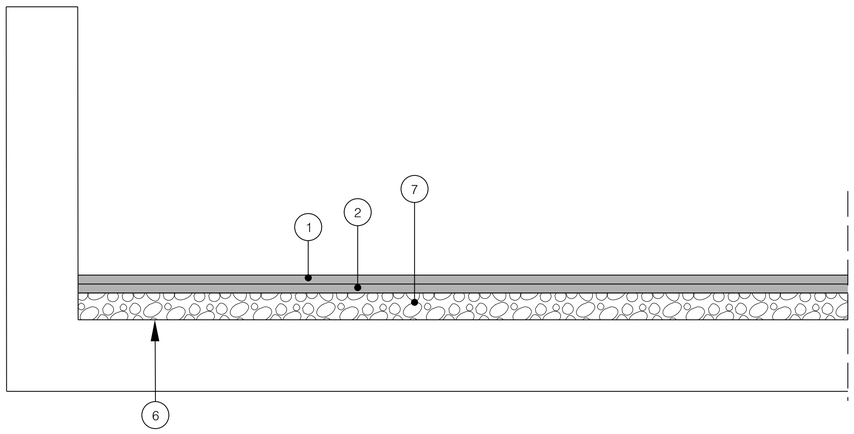
PAVEMENT DETAIL 'A'

WEDGE/LEVEL WITH ASPHALT AND RESURFACING
AREAS WHERE THE ROADWAY PROFILE WILL BE INCREASED LESS THAN 9"



PAVEMENT DETAIL 'B'

FULL DEPTH PAVEMENT
AREAS WHERE THE ROADWAY PROFILE WILL BE INCREASED AT LEAST 9"



PAVEMENT DETAIL 'C'

FULL DEPTH PAVEMENT SECTION
OVER BRIDGE STRUCTURE

PAVEMENT LEGEND

1	3"	SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S–22, LEVEL 2
2	3"	SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S–22, LEVEL 2
3	VARIABLE DEPTH	GRADED AGGREGATE BASE (3" MINIMUM AND 6" MAXIMUM LIFT THICKNESS)
4	VARIABLE DEPTH	WEDGE LEVEL – (SEE NOTE 1)
5		TOP OF EXISTING PAVEMENT AFTER 1" MILLING
6		TOP OF PROPOSED BRIDGE STRUCTURE
7	4"	GRADED AGGREGATE BASE

NOTES:

1. USE THE FOLLOWING ITEMS FOR WEDGE/LEVEL IF NEEDED OR AS DIRECTED BY THE ENGINEER.
   IN CASES WHERE UP TO 2" OF WEDGE/LEVELING IS REQUIRED, USE THE FOLLOWING MATERIAL:
   VARIABLE DEPTH SUPERPAVE ASPHALT MIX 9.5 MM FOR WEDGE/LEVEL, PG 64S–22, LEVEL 2
   (1" MINIMUM AND 2" MAXIMUM LIFTS).

   IN CASES WHERE THE TOTAL REQUIRED WEDGE/LEVEL THICKNESS IS GREATER THAN 2" USE THE FOLLOWING:
   VARIABLE DEPTH SUPERPAVE ASPHALT MIX 19.0 MM FOR WEDGE/LEVEL, PG 64S–22, LEVEL 2
   (2" MINIMUM AND 4" MAXIMUM LIFT THICKNESS).

2. PATCHING SHOULD BE PERFORMED PRIOR TO FINE MILLING AND RESURFACING OPERATIONS.

MR2025026

03-MRPLAN-3-PVMT DETAIL- MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

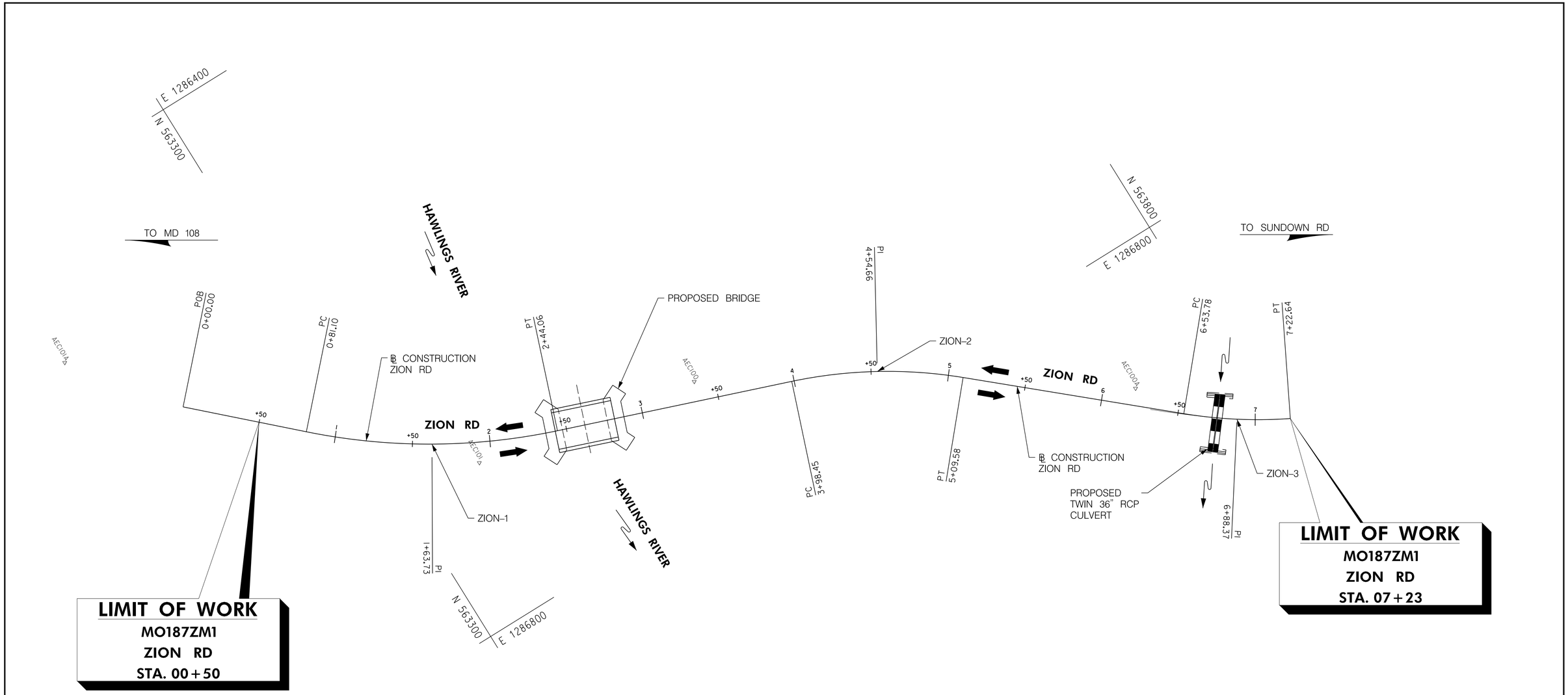
PAVEMENT DETAIL

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : N.T.S.

PROJECT NO. : XXXXXX SHEET 3 OF 21 DATE: JAN 2022

Attachment A: Project Design Plans



CURVE	POINT	STATION	NORTH	EAST	BEARING
	POB	0+00.00	563209.7354	1286569.5547	N 43°17'19.99" E
ZION-1	PC	0+81.10	563268.7678	1286625.1625	
	PI	1+63.73	563328.9136	1286681.8190	
	PT	2+44.06	563406.5857	1286710.0062	N 19°56'45.18" E
ZION-2	PC	3+98.45	563551.7097	1286762.6719	
	PI	4+54.66	563604.5484	1286781.8471	
	PT	5+09.58	563646.8610	1286818.8507	N 41°10'14.19" E
ZION-3	PC	6+53.78	563755.4048	1286913.7752	
	PI	6+88.37	563781.4438	1286936.5470	
	PT	7+22.64	563812.0581	1286952.6513	

CURVE DATA						
CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
ZION-1	23°20'34.81"	14°19'26.20"	400	82.6286	162.9649	8.4452
ZION-2	21°13'29.01"	19°05'54.94"	300	56.2105	111.1324	5.2206
ZION-3	13°25'28.58"	19°29'37.10"	293.9204	34.5917	68.8666	2.0286

TRAVERSE POINTS			
POINT	NORTH	EAST	ELEVATION
AEC101A	563159.9950	1286505.0810	441.47
AEC101	563352.9250	1286700.9950	438.86
AEC100	563498.2300	1286729.6230	438.36
AEC100A	563737.5920	1286883.4650	438.59

MR2025026

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

03-MRPLAN-4-GEOMETRY- MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

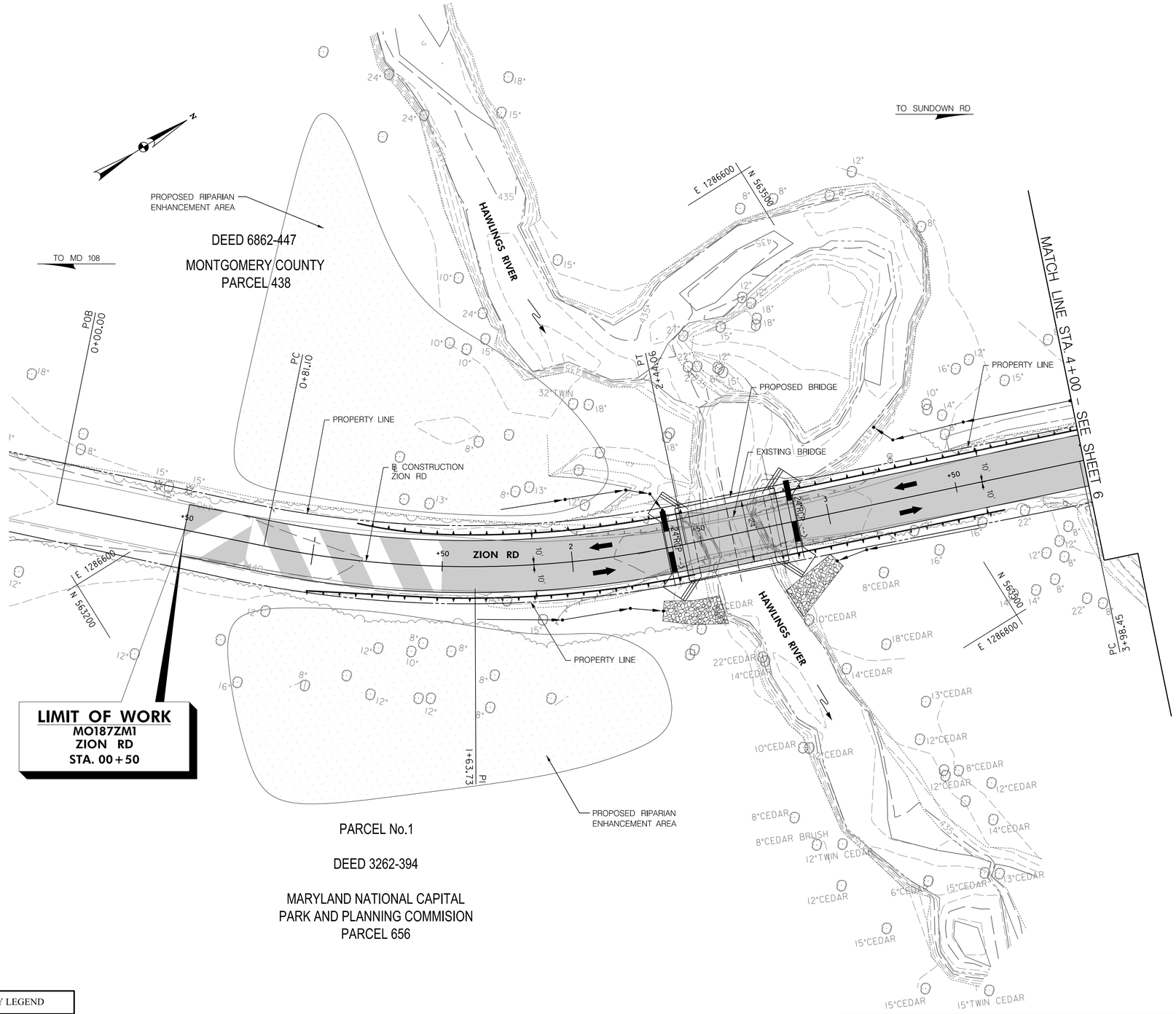
GEOMETRY SHEET

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : 1"=30'

PROJECT NO. : XXXXXX SHEET 4 OF 21 DATE: JAN 2022

Attachment A: Project Design Plans



NOTES:

1. REFER TO STREAM RESTORATION PLANS ON SHEETS 18–21 FOR MODIFICATIONS TO THE STREAM CHANNEL.

ROADWAY LEGEND

- FULL DEPTH PAVEMENT
- WEDGE & LEVEL
- MILL & OVERLAY
- RIP RAP
- DITCH LINE
- TRAFFIC FLOW ARROW

MR2025026

SCALE: 1" = 20'

03-MRPLAN-5-ROADWAY PLAN- MR2025026-001

RJM ENGINEERING

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

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APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

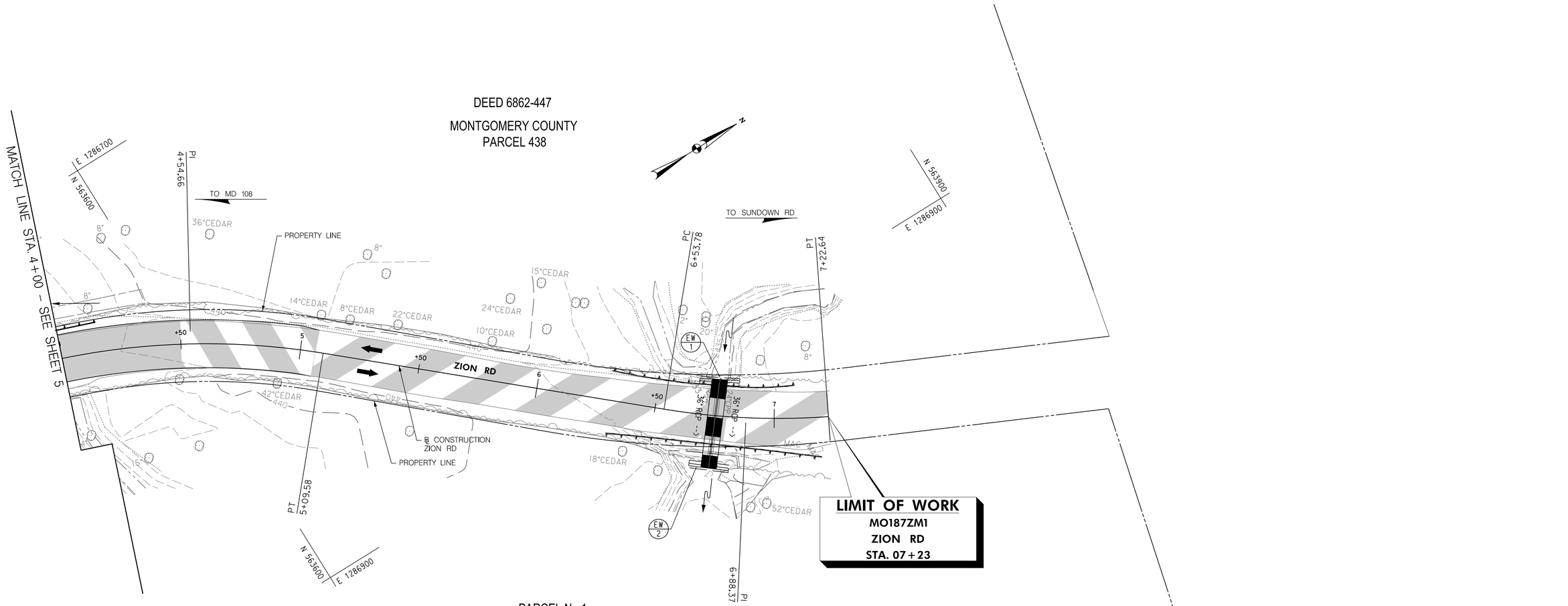
DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

ROADWAY PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : 1"=20'

PROJECT NO. : XXXXXX SHEET 5 OF 21 DATE: JAN 2022



ROADWAY LEGEND

- FULL DEPTH PAVEMENT
- WEDGE & LEVEL
- MILL & OVERLAY
- RIP RAP
- DITCH LINE
- TRAFFIC FLOW ARROW

03-MRPLAN-6-ROADWAY PLAN- MR2025026-002

RJM ENGINEERING

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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

ROADWAY PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

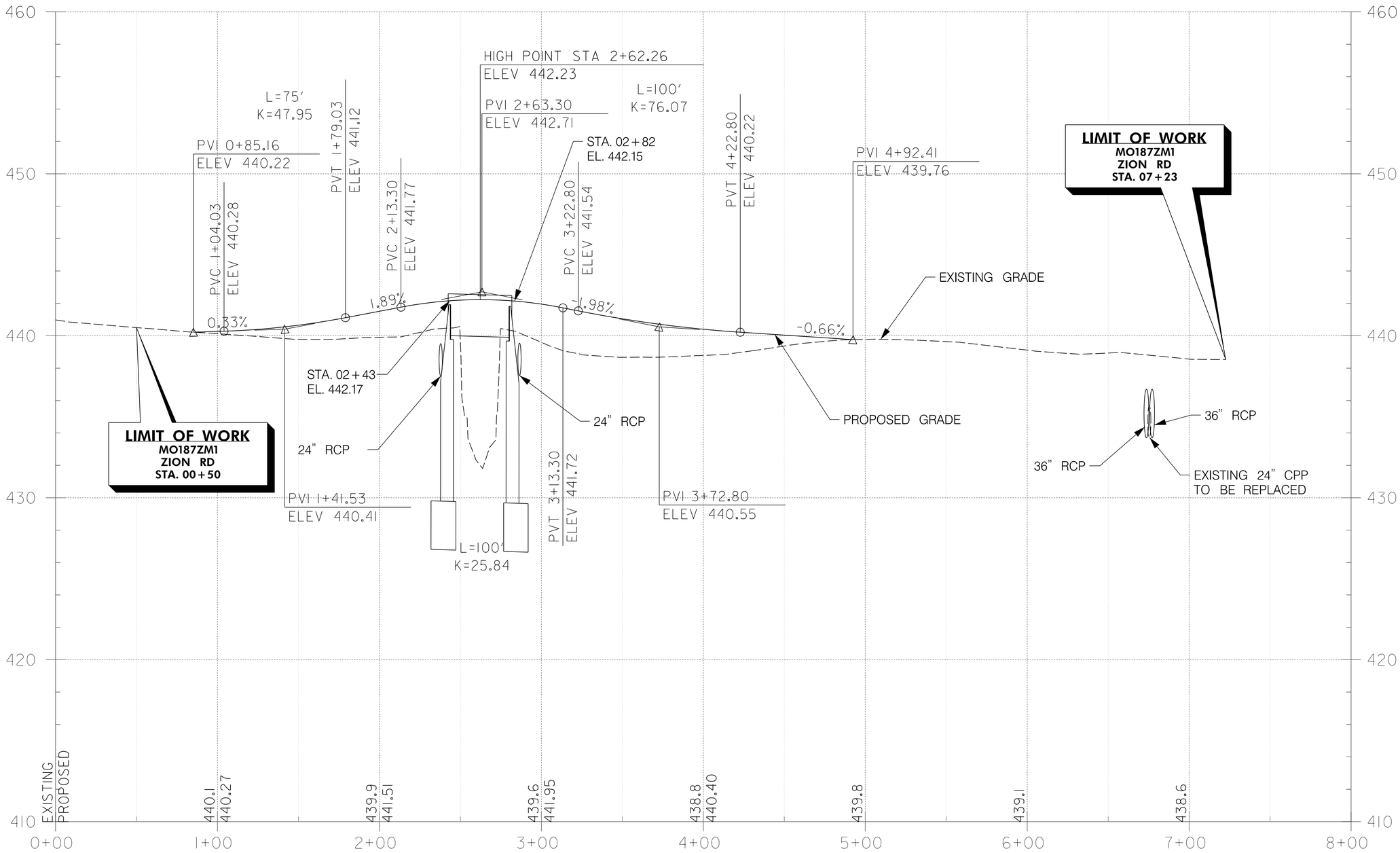
SCALE : 1"=20'

PROJECT NO. : XXXXXX SHEET 6 OF 21 DATE: JAN 2022

MR2025026

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

Attachment A: Project Design Plans



ZION RD OVER HAWLINGS RIVER

SCALE: HORIZ. 1" = 30'
VERT. 1: = 3'

MR2025026

03-MRPLAN-7-ROADWAY PROFILE- MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

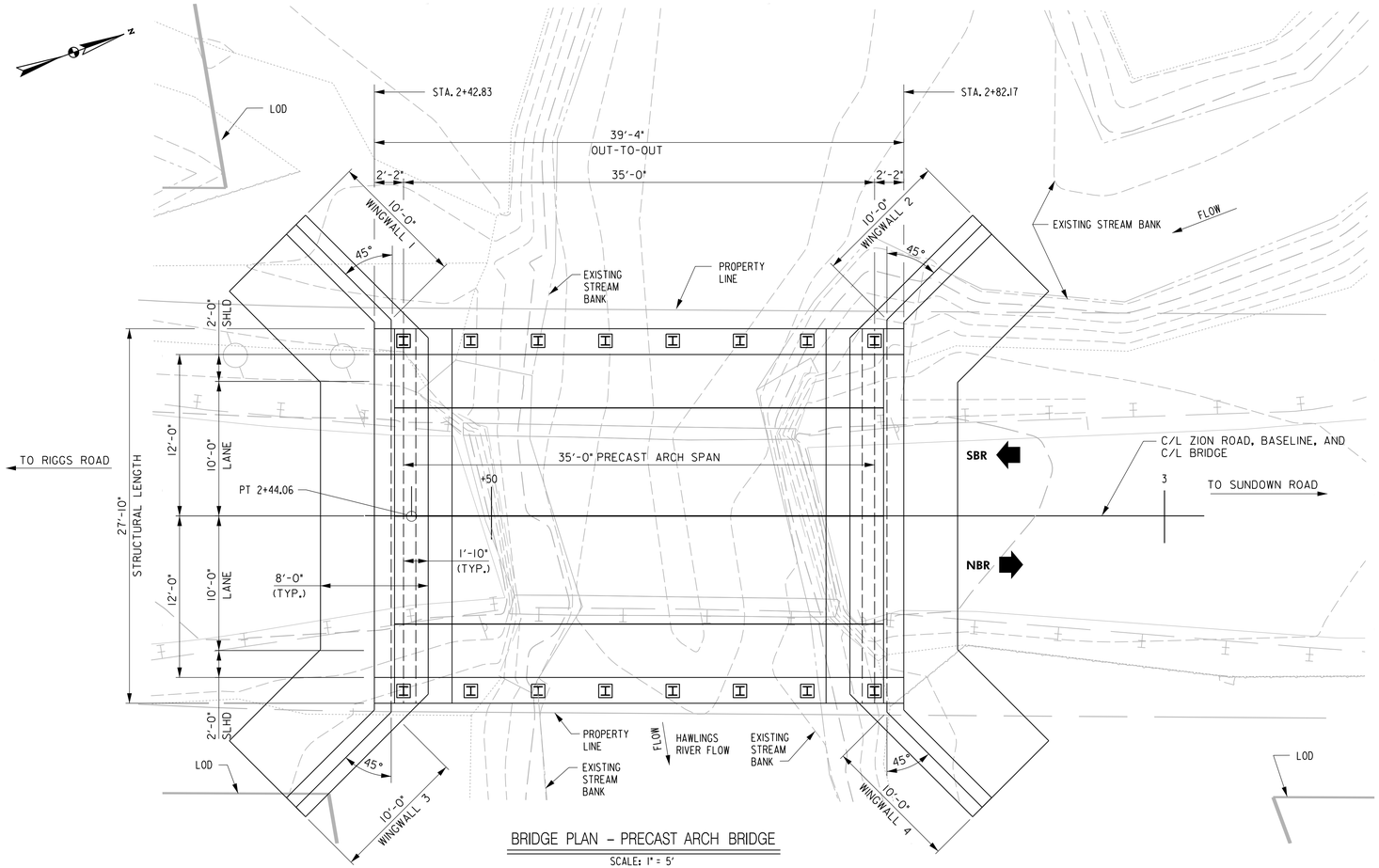
ROADWAY PROFILE

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : AS NOTED

PROJECT NO. : XXXXXX SHEET 7 OF 21 DATE: JAN 2022

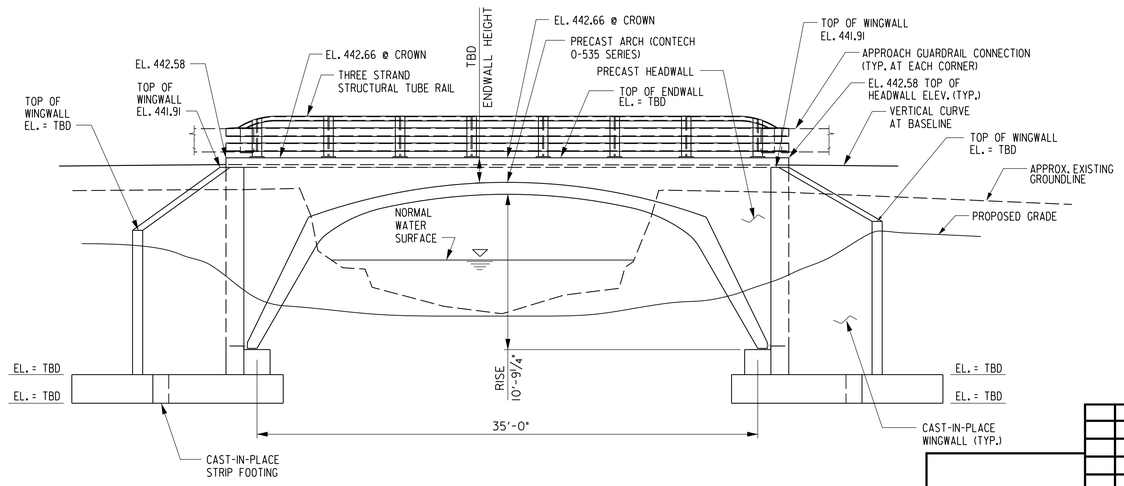
Attachment A: Project Design Plans



BRIDGE PLAN – PRECAST ARCH BRIDGE

SCALE: 1" = 5'

PROPOSED BRIDGE RAILS AND APPROACH ROADWAY GUARDRAILS NOT SHOWN FOR CLARITY



TYPICAL END ELEVATION

SCALE: 1" = 5'

03-MRPLAN-8-GENERAL PLAN & ELEV- MR2025026

GENERAL NOTES:

SPECIFICATIONS:	MDOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED JULY 1, 2021
DESIGN:	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2017
LOADING:	HL-93
LOAD RESTRICTIONS:	THERE ARE RESTRICTIONS FOR PLACING EQUIPMENT AND MATERIALS ON EXISTING AND NEW STRUCTURES. REFER TO SECTION TC 6.14.
CONCRETE:	CONCRETE COMPRESSIVE STRENGTH FOR DESIGN SHALL BE: f'c = 3000 psi FOR ELEMENTS USING MIX NO. 3 f'c = 4000 psi FOR ELEMENTS USING MIX NO. 6 CONCRETE FOR PRECAST ARCH AND HEADWALLS SHALL BE MIX NO. 6 (4500 psi). CONCRETE FOR FOOTINGS, WINGWALLS AND PEDESTALS SHALL BE MIX NO. 3 (3500 psi).
REINFORCING STEEL:	REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60, WITH A YIELD STRENGTH FOR DESIGN OF fy = 60000 psi
EXISTING STRUCTURES:	MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE 2" EXCEPT 3" AT BOTTOM AND SIDES OF CAST-IN-PLACE FOOTINGS. ALL DIMENSIONS AFFECTED BY THE GEOMETRY AND/OR LOCATION OF THE EXISTING STRUCTURES; EXISTING STRUCTUTRE SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR BEFORE ANY MATERIAL IS ORDERED OR FABRICATED OR CONSTRUCTION BEGINS.

THE PROPOSED STREAM RESTORATION AND REALIGNMENT CONCEPT ARE NOT SHOWN.

DESIGN DATA

DESIGN LOADING:
BRIDGE UNITS: HL-93
HEADWALLS: EARTH PRESSURE + LIVE LOAD IMPACT (TL-2)
WINGWALLS: EARTH PRESURE + LIVE

TS & L SUBMITTAL MR2025026

AECOM

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: TBC DRAWN BY: RL CHECKED BY: CJL

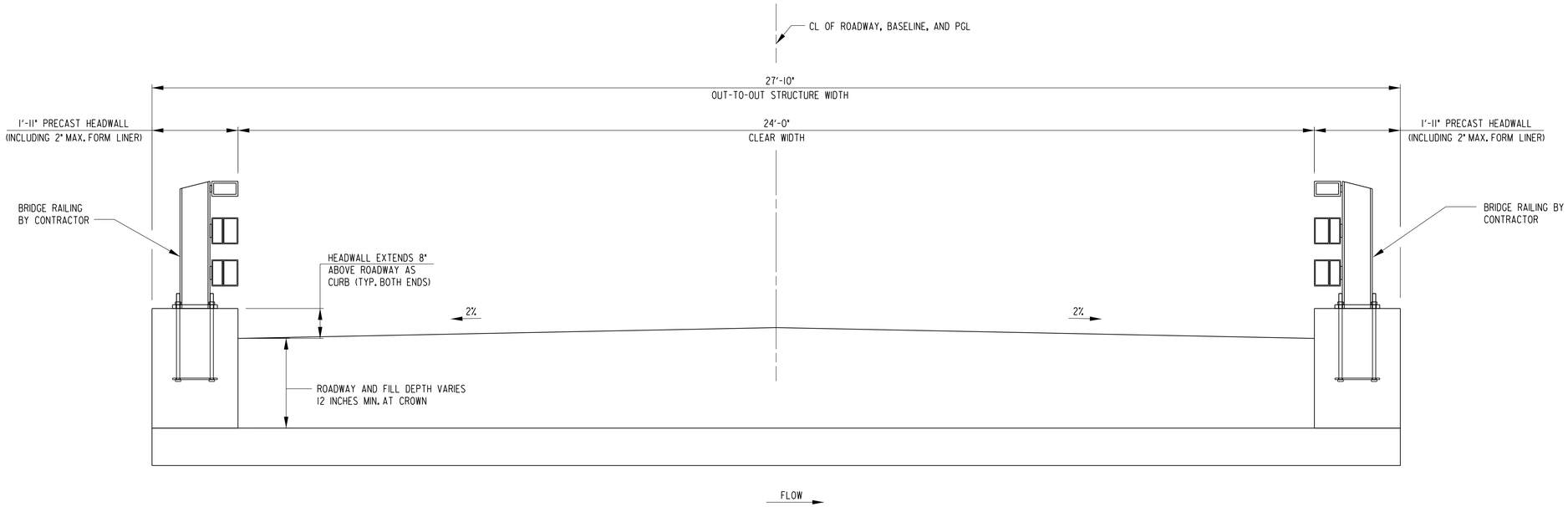
GENERAL PLAN AND ELEVATION
PRECAST ARCH BRIDGE

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

SCALE : AS SHOWN

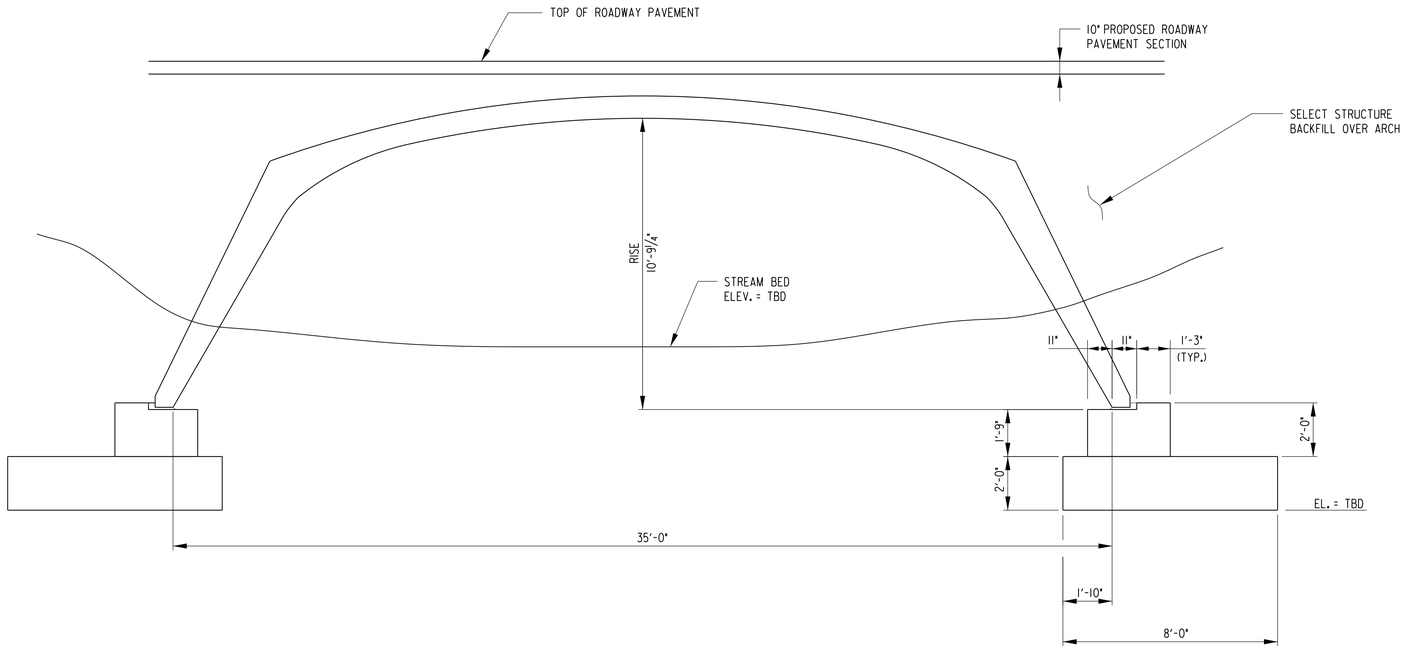
PROJECT NO. : XXXXXX SHEET 8 OF 21 DATE: JAN. 2022

Attachment A: Project Design Plans



TYPICAL SECTION – PRECAST ARCH BRIDGE

SCALE: 3/4" = 1'-0"



TYPICAL BRIDGE SECTION

SCALE: 3/4" = 1'-0"

TS & L SUBMITTAL MR2025026

03-MRPLAN-9-BRIDGE TYP SECTIONS- MR2025026

AECOM

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: TBC DRAWN BY: RL CHECKED BY: CJL

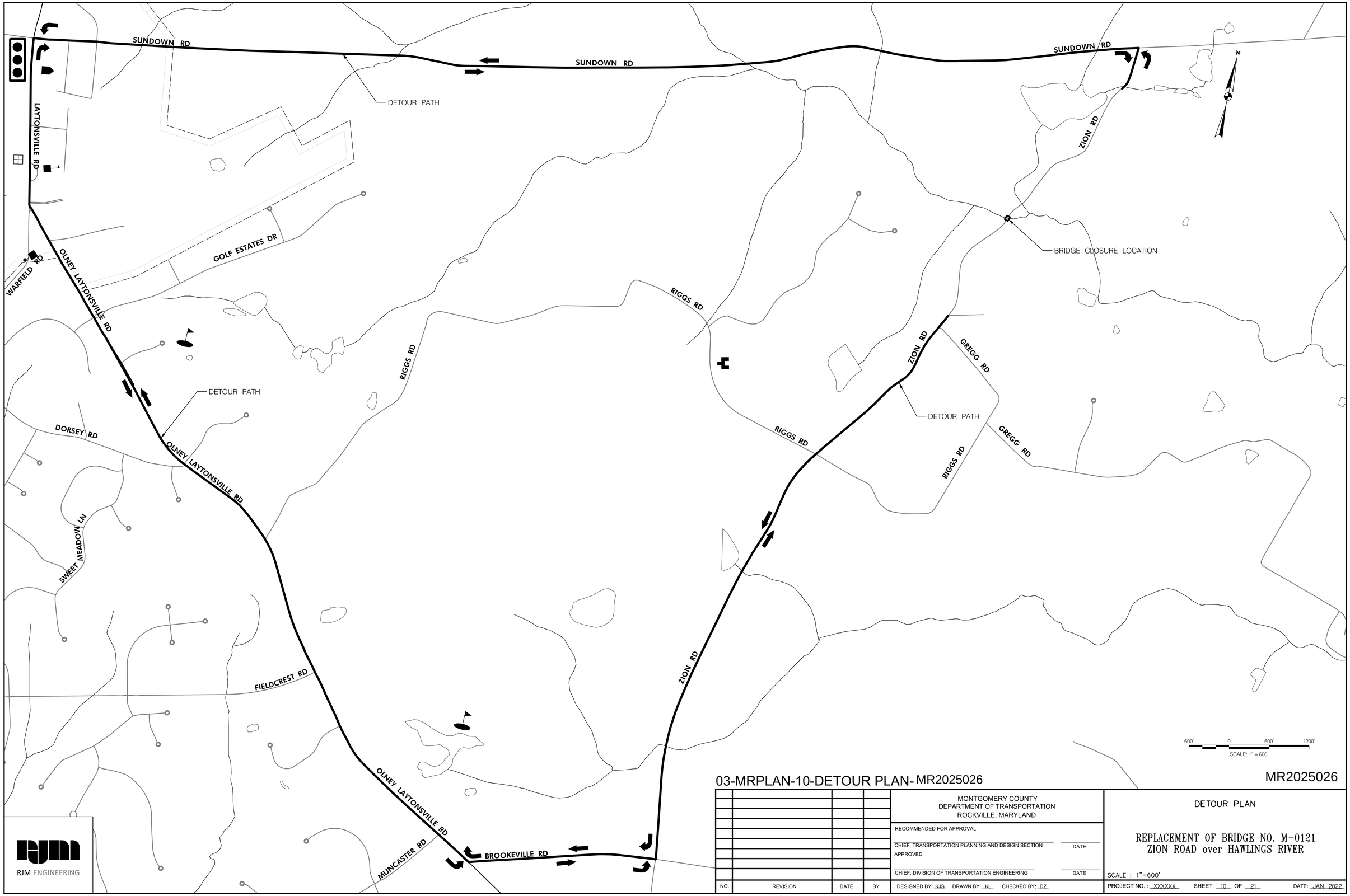
BRIDGE TYPICAL SECTION

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

SCALE : AS SHOWN

PROJECT NO. : XXXXXX SHEET 9 OF 21 DATE: JAN. 2022

Attachment A: Project Design Plans



03-MRPLAN-10-DETOUR PLAN- MR2025026

MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

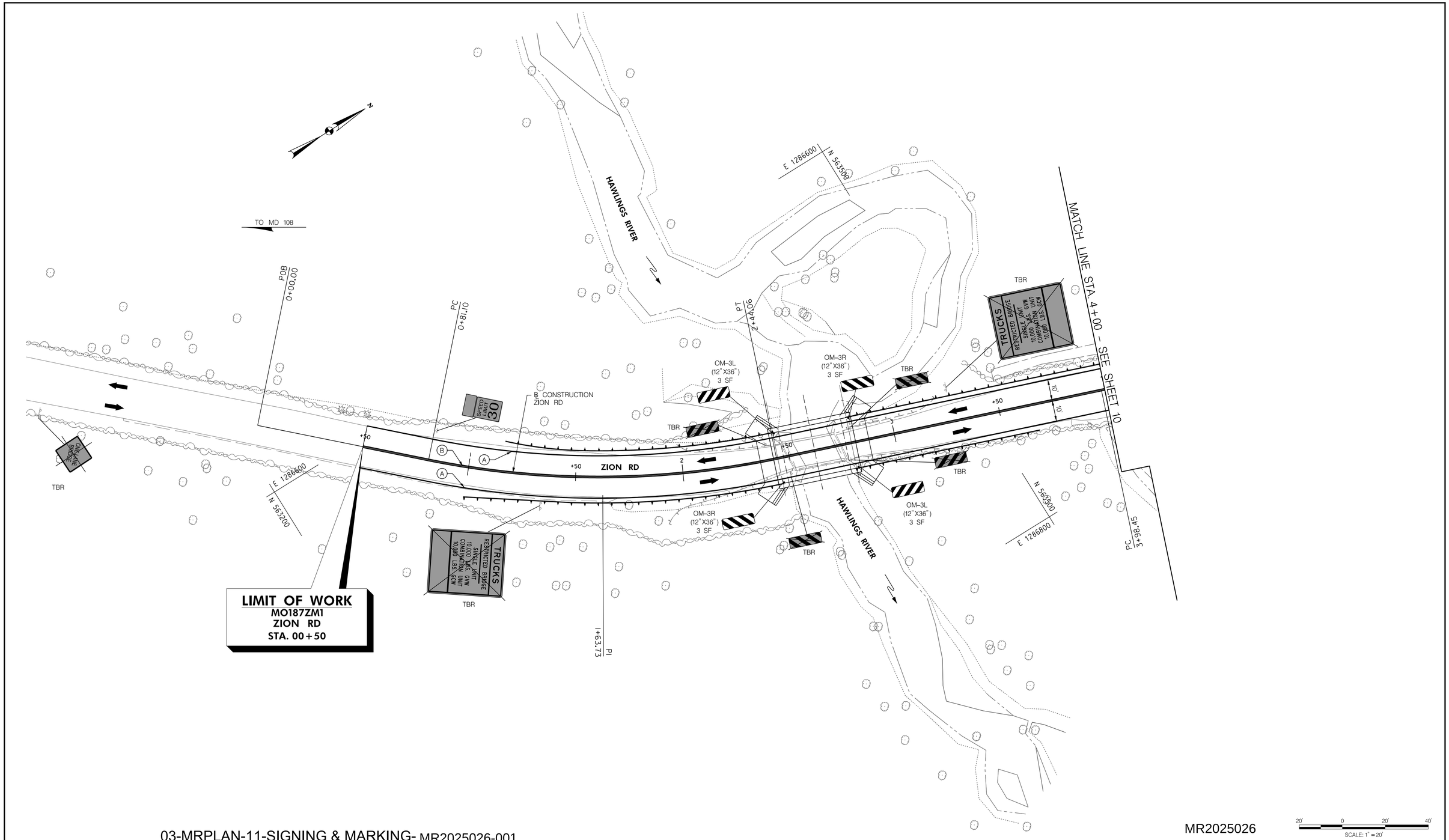
DETOUR PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : 1"=600'

PROJECT NO. : XXXXXX SHEET 10 OF 21 DATE: JAN 2022

Attachment A: Project Design Plans



MR2025026

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

03-MRPLAN-11-SIGNING & MARKING- MR2025026-001

SYMBOL LEGEND	
○-○ OR ○-○	EXISTING SIGN AND POST
●-● OR ●-●	PROPOSED SIGN AND POST
	PROPOSED TRAFFIC SIGN
	EXISTING TRAFFIC SIGN TO REMAIN
	EXISTING TRAFFIC SIGN TO BE REMOVED
TBR	TO BE REMOVED
	TRAFFIC FLOW ARROW (NOT A PAVEMENT MARKING)

PAVEMENT DETAIL LEGEND	
(A)	5 IN WHITE THERMOPLASTIC PAVEMENT MARKINGS – SOLID
(B)	5 IN YELLOW THERMOPLASTIC PAVEMENT MARKINGS – DOUBLE SOLID

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

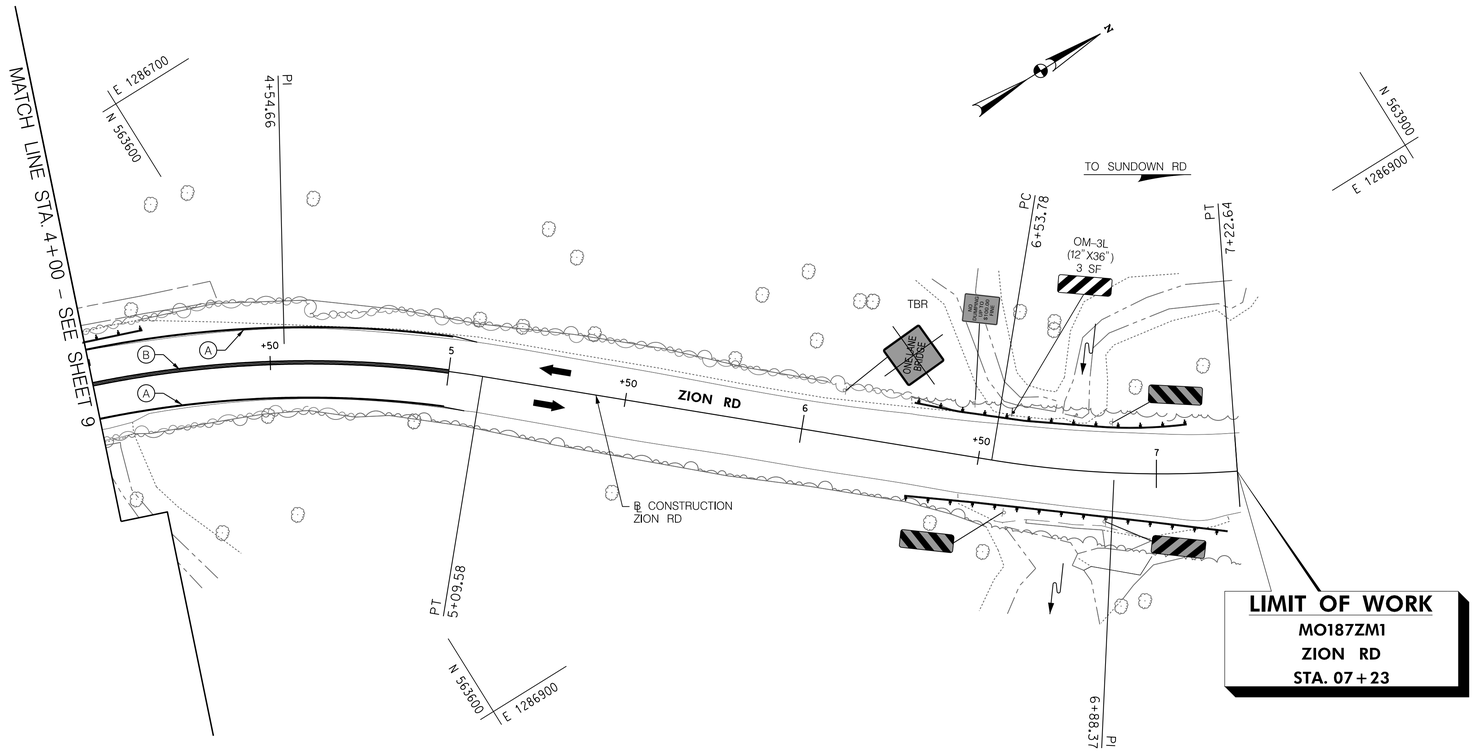
SIGNING AND MARKING PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : 1"=20'

PROJECT NO. : XXXXXX SHEET 11 OF 21 DATE: JAN 2022

Attachment A: Project Design Plans



SYMBOL LEGEND	
OR	EXISTING SIGN AND POST
OR	PROPOSED SIGN AND POST
	PROPOSED TRAFFIC SIGN
	EXISTING TRAFFIC SIGN TO REMAIN
	EXISTING TRAFFIC SIGN TO BE REMOVED
TBR	TO BE REMOVED
	TRAFFIC FLOW ARROW (NOT A PAVEMENT MARKING)

PAVEMENT DETAIL LEGEND	
(A)	5 IN WHITE THERMOPLASTIC PAVEMENT MARKINGS – SOLID
(B)	5 IN YELLOW THERMOPLASTIC PAVEMENT MARKINGS – DOUBLE SOLID

MR2025026

03-MRPLAN-12-SIGNING & MARKING- MR2025026-002

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

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

SIGNING AND MARKING PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : 1"=20'

PROJECT NO. : XXXXXX SHEET 12 OF 21 DATE: JAN 2022

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. The permittee shall notify the Department of Permitting Services (DPS) forty–eight (48) hours before commencing any land disturbing activity and, unless waived by the Department, shall be required to hold a pre–construction meeting between them or their representative, their engineer and an authorized representative of the Department.
2. The permittee must obtain inspection and approval by DPS at the following points:
   A. At the required pre–construction meeting.
   B. Following installation of sediment control measures and prior to any other land disturbing activity.
   C. During the installation of a sediment basin or stormwater management structure at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction is mandatory.
   D. Prior to removal or modification of any sediment control structure(s).
   E. Prior to final acceptance.
3. The permittee shall construct all erosion and sediment control measures per the approved plan and construction sequence, shall have them inspected and approved by the Department prior to beginning any other land disturbances, 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 Department.
4. The permittee shall protect all points of construction ingress and egress to prevent the deposition of materials onto traversed public thoroughfare(s). All materials deposited onto public thoroughfare(s) shall be removed immediately.
5. The permittee shall inspect periodically and maintain continuously in effective operating condition, all erosion and sediment control measures until such time as they are removed with prior permission from the Department. The permittee is responsible for immediately repairing or replacing any sediment control measures which have been damaged or removed by the permittee or any other person.
6. Following initial soil disturbance or re–disturbance, permanent or temporary stabilization must be completed within:
   a) Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes and all slopes steeper than 3 horizontal to 1 vertical (3:1); and
   b) Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading.

   All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance must be performed as necessary to ensure continued stabilization.
7. The permittee shall apply sod, seed and anchored straw mulch, or other approved stabilization measures to all disturbed areas within seven (7) calendar days after stripping and grading activities have ceased on that area. Maintenance shall be performed as necessary to ensure continued stabilization. Active construction areas such as borrow or stockpile areas, roadway improvements, and areas within fifty (50) feet of a building under construction may be exempt from this requirement, provided that erosion and sediment control measures are installed and maintained to protect those areas.
8. Prior to removal of sediment control measures, the permittee shall stabilize all contributory disturbed areas with required soil amendments and topsoil, using sod or an approved permanent seed mixture and an approved anchored mulch. Wood fiber mulch may only be used in seeding season when the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized within seven (7) calendar days of establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, an approved temporary seed and straw anchored mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be completed prior to the following April 15.
9. The site permit, work, materials, approved SC/SM plans, and test reports shall be available at the site for inspection by duly authorized officials of Montgomery County.
10. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing mechanical devices to lower the water down slope 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 they must be removed and final grading done to promote sheet flow drainage. Mechanical devices must be provided at points of concentrated flow where erosion is likely to occur.
11. Permanent swales or other points of concentrated water flow shall be stabilized within 3 calendar days of establishment with sod or seed with an approved erosion control matting or by other approved stabilization measures.
12. Sediment control devices shall be removed, with permission of the Department, within thirty (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.
13. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas or on residential lots. 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 plan with a low–maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.
14. The permittee shall install a splashblock at the bottom of each downspout unless the downspout is connected by a drain line to an acceptable outlet.
15. For finished grading, the permittee shall provide adequate gradients so as to prevent water from standing on the surface of lawns more than twenty–four (24) hours after the end of a rainfall, except in designated drainage courses and swale flow areas, which may drain as long as forty–eight (48) hours after the end of a rainfall.
16. Sediment traps or basins are not permitted within 20 feet of a building which is existing or under construction. No building may be constructed within 20 feet of a sediment trap or basin.
17. All inlets in non–sump areas shall have asphalt berms installed at the time of base paving establishment.
18. The sediment control inspector has the option of requiring additional sediment control measures, as deemed necessary.
19. All trap elevations are relative to the outlet elevation, which must be on existing undisturbed ground.
20. Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control.
21. Sediment trap(s)/basin(s) shall be cleaned out and restored to the original dimensions when sediment has accumulated to the point of one–half (1/2) the wet storage depth of the trap/basin (1/4 the wet storage depth for ST–III) or when required by the sediment control inspector.
22. Sediment removed from traps/basins shall be placed and stabilized in approved areas, but not within a floodplain.
23. All sediment basins and traps must be surrounded with a welded wire safety fence. The fence must be at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater the two inches in width and four inches in height, with a minimum of 14 gauge wire. Safety fence must be maintained in good condition at all times.
24. No excavation in the areas of existing utilities is permitted unless their location has been determined. Call "Miss Utility" at 1–800–257–7777, 48 hours prior to the start of work.
25. Off–site spoil or borrow areas must have prior approval by DPS.
26. Sediment trap/basin dewatering for cleanout or repair may only be done with the DPS inspector's permission. The inspector must approve the dewatering method for each application. The following methods may be considered:
   A. Pump discharge may be directed to another on–site sediment trap or basin, provided it is of sufficient volume and the pump intake is floated to prevent agitation or suction of deposited sediments; or
   B. the pump intake may utilize a Removable Pumping Station and must discharge into an undisturbed area through a non–erosive outlet; or
   C. the pump intake may be floated and discharge into a Dirt Bag (12 oz. non–woven fabric), or approved equivalent, located in an undisturbed buffer area.
   Remember: Dewatering operation and method must have prior approval by the DPS inspector.
27. The permittee must notify the Department of all utility construction activities within the permitted limits of disturbance prior to the commencement of those activities.
28. Topsoil must be applied to all pervious areas within the limits of disturbance prior to permanent stabilization in accordance with MDE "Standards and Specifications for Soil Preparation, Topsoiling, and Soil Amendments".

STANDARD SYMBOLS

AT–GRADE INLET PROTECTION	AGIP	REMOVABLE PUMPING STATION	RPS
BAFFLE BOARDS	BB	RIPRAP INFLOW PROTECTION	RRP
BENCHING	BENCHING	RIPRAP OUTLET SEDIMENT TRAP ST III	ST–III
CATCH BASIN INSERT		ROCK OUTLET PROTECTION 1	ROP1
CLEAR WATER DIVERSION PIPE		ROCK OUTLET PROTECTION II	ROPII
CLEAR WATER PIPE	CWP	ROCK OUTLET PROTECTION III	ROPIII
COMBINATION INLET PROTECTION	COIP	SILT FENCE	SF
CONCRETE WASHOUT STRUCTURE	CWS	SILT FENCE ON PAVEMENT	SFOP
CURB INLET PROTECTION	CIP	SOD	
DIVERSION FENCE	DF	STABILIZED CONSTRUCTION ENTRANCE	SCE
EARTH DIKE	A–1 PLACE DESIGNATION (A1, A–2, etc.) ON FLOW CHANNEL SIDE OF DIKE	STANDARD INLET PROTECTION	SIP
EMERGENCY SPILLWAY	ES	STOCKPILE AREA	
FILTER BAG	FB	STONE CHECK DAM	CD
FILTER BERM		STONE/RIPRAP OUTLET SEDIMENT TRAP ST II	ST–II
FILTER LOG	FL	SUBSURFACE DRAINS	SSD
GABION INFLOW PROTECTION	GP	SUMP PIT	SP
GABION INLET PROTECTION		SUPER SILT FENCE	SSF
HORIZONTAL DRAW–DOWN DEVICE	HDDD	TEMPORARY ACCESS BRIDGE	TB
LIMIT OF DISTURBANCE	LOD	TEMPORARY ACCESS CULVERT	
MEDIAN INLET PROTECTION	MIP	TEMPORARY ASPHALT BERM	AB
MEDIAN SUMP INLET PROTECTION	MSIP	TEMPORARY BARRIER DIVERSION	TBD
MOUNTABLE BERM	MB	TEMPORARY GABION OUTLET STRUCTURE	TGOS
PERIMETER DIKE/SWALE	PDS–1	TEMP. SOIL STABILIZATION MATTING–TYPE A	
PERM. SOIL STABILIZATION MATTING–TYPE B		TEMP. SOIL STABILIZATION MATTING–TYPE E	
PERM. SOIL STABILIZATION MATTING–TYPE C		TEMP. SOIL STABILIZATION MATTING–TYPE D	
PIPE OUTLET SEDIMENT TRAP ST I	ST–I	TEMPORARY STONE OUTLET STRUCTURE	TSOS
PIPE SLOPE DRAIN	PSD – 12 DESIGNATION INDICATES 12 INCH PIPE SLOPE DRAIN	TEMPORARY SWALE	A–1 PLACE DESIGNATION (A1, A–2, etc.) ON FLOW CHANNEL SIDE OF SWALE
PLUNGE POOL	PP	WASH RACK OPTION	WR
PORTABLE SEDIMENT TANK	PST	CHESAPEAKE BAY CRITICAL AREA	
DRAINAGE BOUNDARY		TREE PROTECTION FENCE	TPF
EXISTING CONTOURS	100	WETLAND	
PROPOSED CONTOURS	100	WETLAND BUFFER	
		100–YEAR FLOODPLAIN	

STANDARD NOTES

1. The contractor will immediately inform the county of any discrepancies found between the project plans and contract specifications.
2. For construction, all horizontal control shall be NAD 83/2011 and vertical control NAVD 88.
3. Types of storm drain structures refer to the 'Design Standards' of Montgomery County Department of Transportation, unless otherwise noted.
4. Information concerning underground utilities was obtained from available records, The contractor must determine the exact location and elevations of the lines by digging test pits by hand at all utility crossings well in advance of trenching. If clearances are less than shown on this plan or six inches, whichever is less, the contractor shall contact the county.
5. Repairs to utilities or property damaged as a result of the contractor's negligence or method of operation must be made at the contractor's expense before proceeding with construction.
6. Call "Miss Utility" at 1–800–257–7777 fourty–eight (48) hours prior to beginning excavation to determine the exact location of existing utilities.
7. Clearing to be limited to the "limit of disturbance" as shown on the plans.
8. All grading shall be done in such a manner as to provide positive drainage.
9. Disturbed areas adjacent to established lawns shall be sodded. Other disturbed areas shall be seeded and mulched.
10. The contractor shall obtain a roadside tree permit for any maintenance, treatment, planting, removal or root cutting on trees within the public right–of–way before starting a job. Permit requirements may be obtained from the Department of Natural Resources – Maryland Forest, Park and Wildlife service whose telephone number is (301) 854–6060.
11. Contact the Washington Suburban Sanitary Commission system maintenance engineer before excavating beneath or in the vicinity of existing water or sewer lines. Backfill to be done under the supervision of W.S.S.C. call 301–699–4420.
12. Contact Washington gas dispatch officer at (703) 750–4831 before excavating beneath or in the vicinity of existing gas main and service laterals.
13. Prior to vegetative stabilization, all disturbed areas must be topsoiled per the Montgomery County "Specifications for topsoil".

STANDARD SEQUENCE OF CONSTRUCTION NOTES

1. Prior to clearing trees, installing sediment control measures, or grading, a preconstruction meeting must be conducted on–site with the Montgomery County Department of Permitting Services (MCDPS) sediment control inspector (240) 777–6210 (48 hours notice) and the MNCPPC, Planning Department, Plans Enforcement inspector (301) 495–4571 (48 hours notice), the Owners representative, and the site Engineer.
   In order for the meeting to occur, the applicant must provide one paper set of approved sediment control plans to the MCDPS sediment control inspector at the preconstruction meeting. If no plans are provided, the meeting shall not occur and will need to be rescheduled prior to commencing any work.
2. The limits of disturbance shall be field marked prior to clearing of trees, installation of sediment control measures, construction, or other land disturbing activities.
3. The permittee must obtain written approval form the MNCPPC inspector, certifying that the limits of disturbance and tree protection measures are correctly marked and installed prior to commencing any clearing.
4. Clear and grade for installation of sediment control devices.
5. Install sediment control devices. Traps and basins shall be constructed prior to construction of any earth dikes that convey drainage to a trap and/or basin.
6. Once the sediment control devices are installed, the permittee must obtain written approval from the MCDPS inspector before proceeding with any additional clearing, grubbing or grading.

   NOTE 1: The permittee shall obtain written approval from MCDPS inspector, prior to the removal of any sediment control devices.

7. Following the completion of construction, obtain Stormwater Management As–Built Plan approval.

OFFSITE GRADING NOTE:
Offsite grading requires documentation of permission from owner (letter of permission on plan or recorded grading easement document submitted). Written approval for grading outside of the Right–of–Way shall be provided to the Inspector before construction is authorized to proceed.

STOCKPILE NOTE:
The Contractor shall establish staging and stockpile areas at locations approved by the Engineer. These areas shall be established such that environmentally sensitive areas are not impacted. Erosion sediment control measures such as silt fence shall be installed downgrade of the staging and stockpile areas and as directed by the Engineer, and diversions such as sandbags shall be placed upstream to prevent stormwater run–on from contacting the stockpile.

SITE INFORMATION		
DISTURBED AREA (LOD)	CUT (CY)	FILL (CY)
2.09 ac	TBD	TBD

MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

EROSION AND SEDIMENT CONTROL NOTES

REPLACEMENT OF BRIDGE NO. M–0121
ZION ROAD over HAWLINGS RIVER

SCALE : N.T.S.

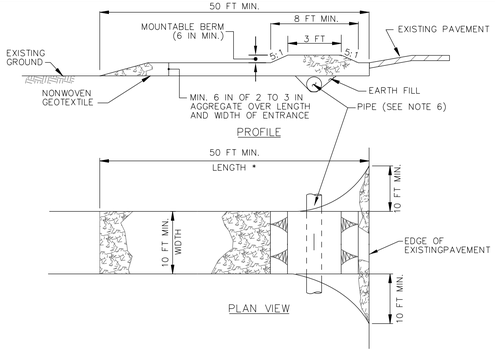
PROJECT NO. : XXXXXX SHEET 13 OF 21 DATE: JAN 2022

03-MRPLAN-13-E&SC- MR2025026-001

Attachment A: Project Design Plans

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

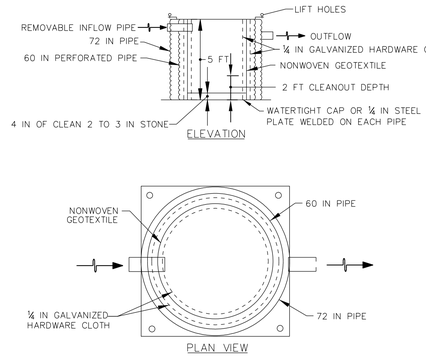
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-3 PORTABLE SEDIMENT TANK

STANDARD SYMBOL: PST



CONSTRUCTION SPECIFICATIONS

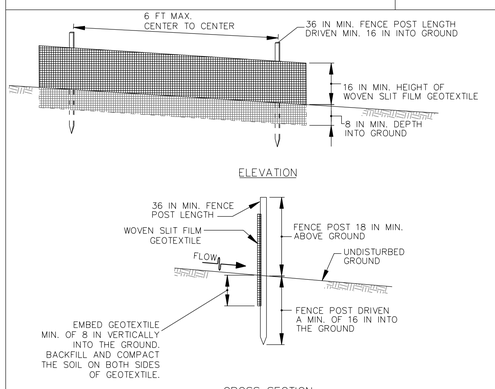
1. PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERTOPPING OF TANKS IS NOT PERMITTED.
2. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, ¼ INCH HARDWARE CLOTH.
3. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
4. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
5. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE
6. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
7. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

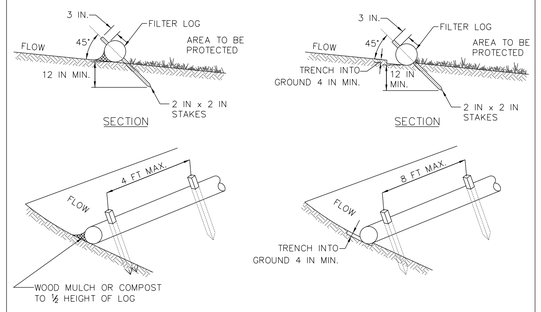
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18

DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.



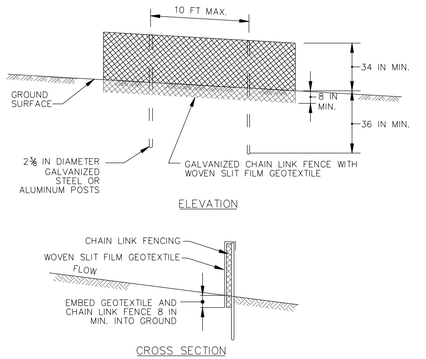
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

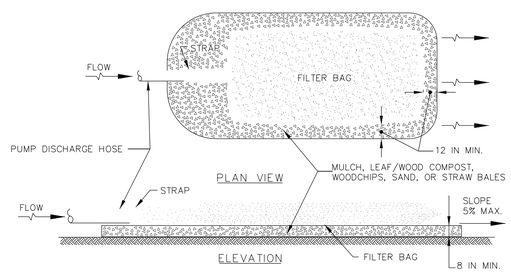
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: FB



CONSTRUCTION SPECIFICATIONS

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

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

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

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

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18

DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.

CONSTRUCTION SPECIFICATIONS

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

03-MRPLAN-14-E&SC- MR2025026-002

MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

EROSION AND SEDIMENT CONTROL DETAILS

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

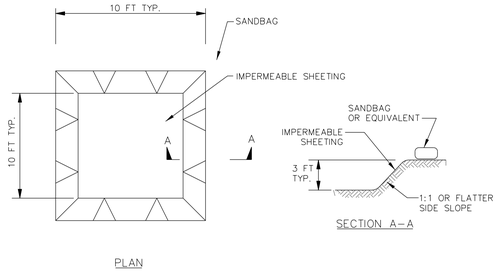
SCALE : N.T.S.

PROJECT NO. : XXXXXX SHEET 14 OF 21 DATE: JAN 2022

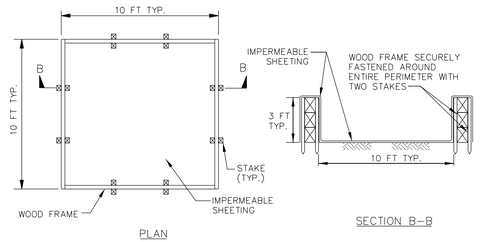
Attachment A: Project Design Plans

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS



EXCAVATED WASHOUT STRUCTURE



WASHOUT STRUCTURE WITH WOOD PLANKS

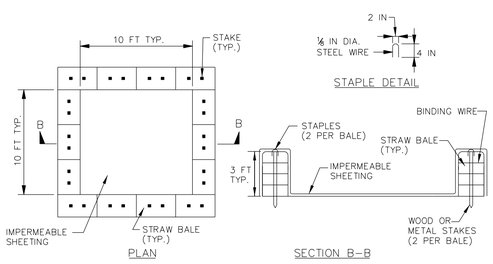
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS



NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

WASHOUT STRUCTURE WITH STRAW BALES

CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

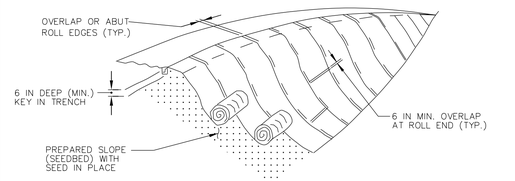
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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

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



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

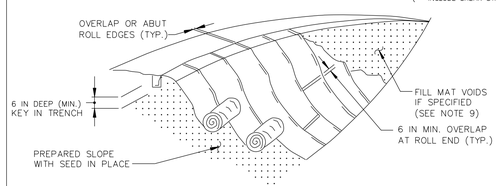
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

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



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

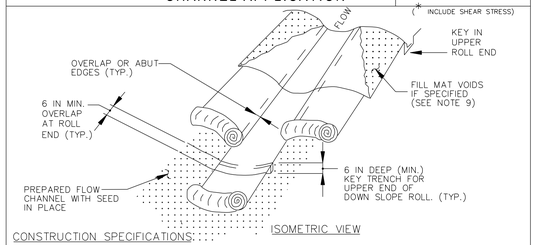
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

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



CONSTRUCTION SPECIFICATIONS ISOMETRIC VIEW

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 ½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

MR2025026

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

EROSION AND SEDIMENT CONTROL DETAILS

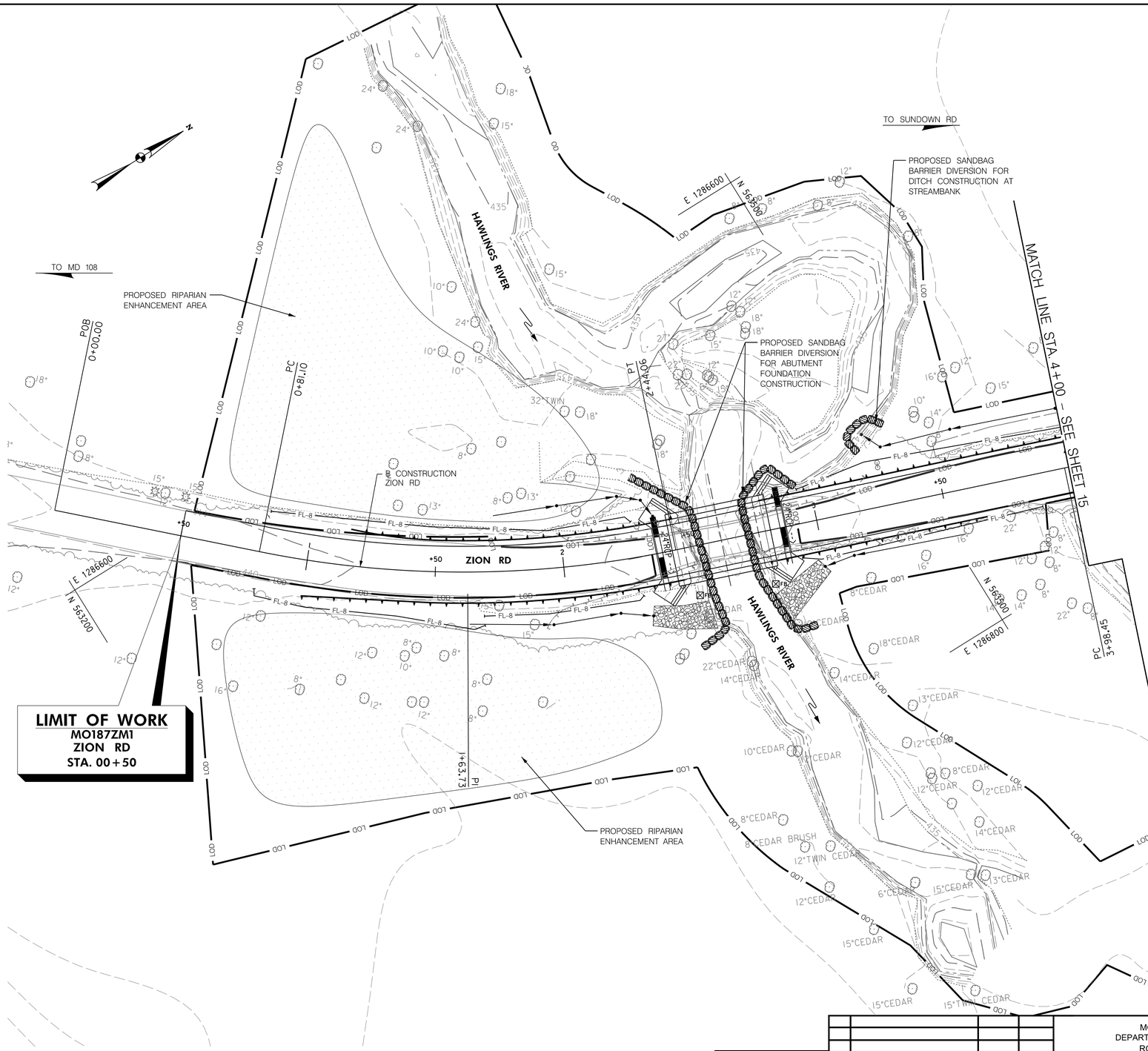
REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : N.T.S.

PROJECT NO. : XXXXXX SHEET 15 OF 21 DATE: JAN 2022

03-MRPLAN-15-E&SC-MR2025026-003

Attachment A: Project Design Plans



SEQUENCE OF CONSTRUCTION (IN-STREAM WORK):

1. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN 3 CALENDAR DAYS FOR ANY DISTURBED AREA.
2. WORK SHOULD NOT BE CONDUCTED IN THE CHANNEL DURING RAIN EVENTS.
3. FLOWS MUST BE DIVERTED FROM THE WORK AREA USING SANDBAG DIKES, FILTER BAGS, PUMP AROUND DIVERSIONS, OR A COMBINATION THEREOF.
4. CONTRACTOR WILL ABIDE BY ALL TIME-OF-YEAR RESTRICTIONS SET FOR WORK IN STREAM.
5. INSTALL SANDBAG BARRIER DIVERSIONS FOR WORK ALONG THE STREAMBANK (I.E., ABUTMENT FOUNDATION AND DITCH CONSTRUCTION). DEWATERING SHALL BE THROUGH A FILTER BAG OR OTHER DPS-APPROVED SEDIMENT CONTROL DEVICE.

GENERAL NOTES:

1. FOLLOWING THE INSTALLATION OF SEDIMENT CONTROLS, WRITTEN APPROVAL MUST BE OBTAINED FROM THE MCDPS INSPECTOR PRIOR TO PROCEEDING WITH WORK.

2. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MCDPS-APPROVED SEDIMENT CONTROL DEVICE.

3. THE DEPOSITION OF ANY EARTH, GRAVEL, AND/OR OTHER MATERIAL OUTSIDE OF THE WORK AREA IS STRICTLY PROHIBITED. ALL SEDIMENT TRACKED ONTO PUBLIC RIGHT-OF-WAYS, OUTSIDE OF THE WORK AREA, MUST BE IMMEDIATELY REMOVED IF NOT DIVERTED TO A MCDPS-APPROVED SEDIMENT CONTROL DEVICE.

4. EROSION AND SEDIMENT CONTROL DEVICES AND/OR MEASURES ARE TO REMAIN IN PLACE UNTIL THEIR REMOVAL IS APPROVED IN WRITING BY THE MCDPS INSPECTOR. STABILIZE ANY DISTURBED AREAS RESULTING FROM REMOVAL OF THE SEDIMENT CONTROL DEVICES.

6. AREAS OF SAME DAY STABILIZATION SHALL BE STABILIZED AS FOLLOWS: GRADED AGGREGATE BASE (OR PAVEMENT) FOR AREAS TO BE PAVED; SOIL STABILIZATION MATTING (SSM) FOR DITCHES WITHOUT BASEFLOW; AND SEED & MULCH FOR SOIL AREAS NOT IN DITCHES OR STREAMS.

7. SAME DAY STABILIZATION TO BE STRICTLY ENFORCED IN THIS AREA.

8. WHERE NO STABILIZED CONSTRUCTION ENTRANCE TO THE LOD IS PROPOSED, THE CONTRACTOR SHALL DESIGNATE CONSTRUCTION EQUIPMENT ALLOWED WITHIN THE LOD. THIS EQUIPMENT SHALL REMAIN WITHIN THE LOD UNTIL PROPOSED WORK IS COMPLETED. PRIOR TO VEHICLES LEAVING THE LOD, WHEELS OR TRACKS SHALL BE CLEANED TO REMOVE SEDIMENT. VEHICLE CLEANING SHALL BE PERFORMED ON A STABILIZED AREA THAT DRAINS TO A DPS-APPROVED SEDIMENT CONTROL DEVICE. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ON TO THE ROAD OR PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING, OR SWEEPING.

MR2025026

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

03-MRPLAN-16-E&SC-MR2025026-004

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL
CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE
APPROVED
CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

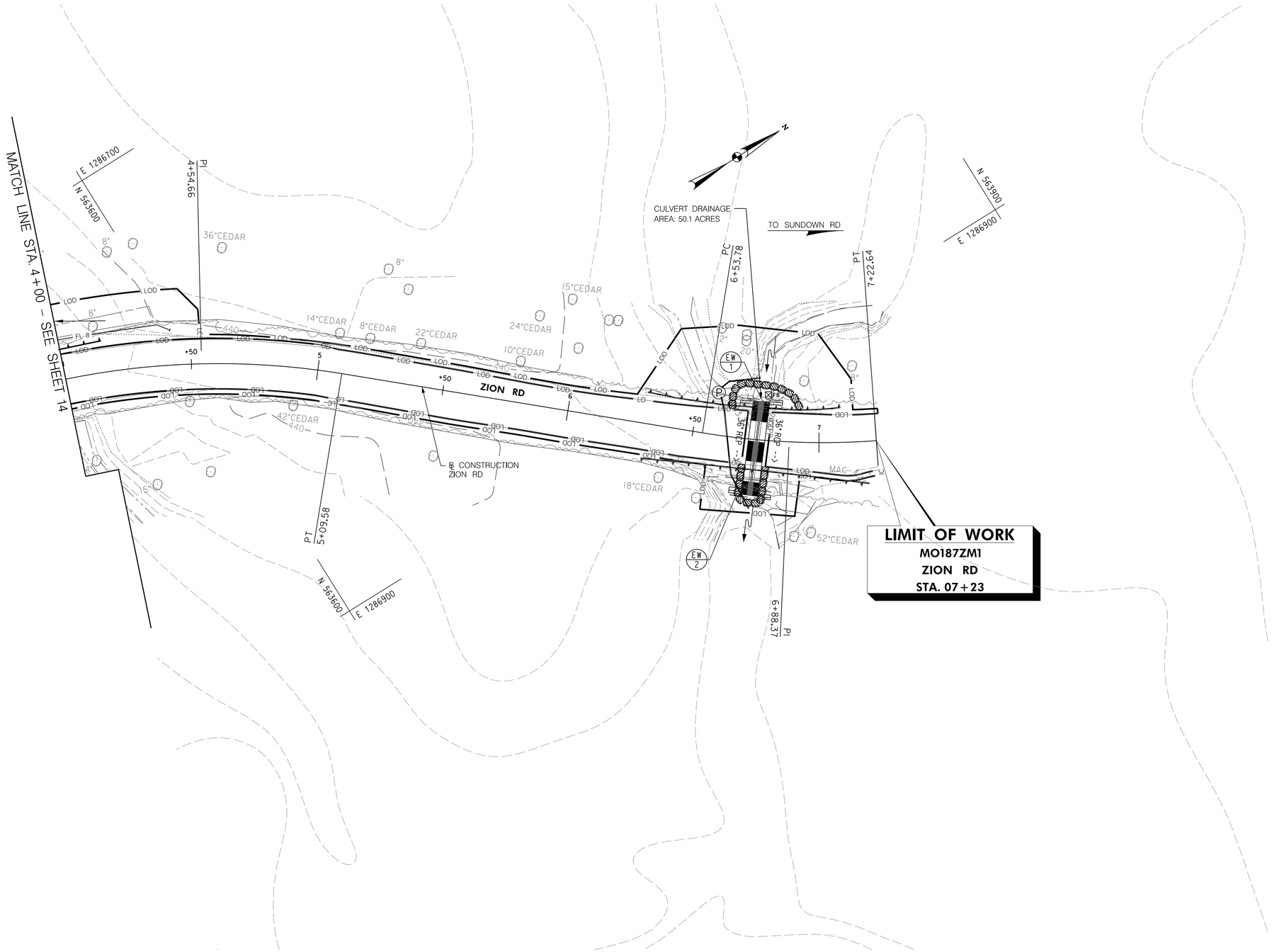
EROSION AND SEDIMENT CONTROL PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : 1"=20'

PROJECT NO. : XXXXXX SHEET 16 OF 21 DATE: JAN 2022

Attachment A: Project Design Plans



LIMIT OF WORK
MO187ZM1
ZION RD
STA. 07+23

GENERAL NOTES:

1. FOLLOWING THE INSTALLATION OF SEDIMENT CONTROLS, WRITTEN APPROVAL MUST BE OBTAINED FROM THE MCDPS INSPECTOR PRIOR TO PROCEEDING WITH WORK.

2. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO A MCDPS–APPROVED SEDIMENT CONTROL DEVICE.

3. THE DEPOSITION OF ANY EARTH, GRAVEL, AND/OR OTHER MATERIAL OUTSIDE OF THE WORK AREA IS STRICTLY PROHIBITED. ALL SEDIMENT TRACKED ONTO PUBLIC RIGHT–OF–WAYS, OUTSIDE OF THE WORK AREA, MUST BE IMMEDIATELY REMOVED IF NOT DIVERTED TO A MCDPS–APPROVED SEDIMENT CONTROL DEVICE.

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6. AREAS OF SAME DAY STABILIZATION SHALL BE STABILIZED AS FOLLOWS: GRADED AGGREGATE BASE (OR PAVEMENT) FOR AREAS TO BE PAVED; SOIL STABILIZATION MATTING (SSM) FOR DITCHES WITHOUT BASEFLOW; AND SEED & MULCH FOR SOIL AREAS NOT IN DITCHES OR STREAMS.

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MR2025026

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

03-MRPLAN-17-E&SC- MR2025026-005

RJM ENGINEERING

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: KJS DRAWN BY: KL CHECKED BY: DZ

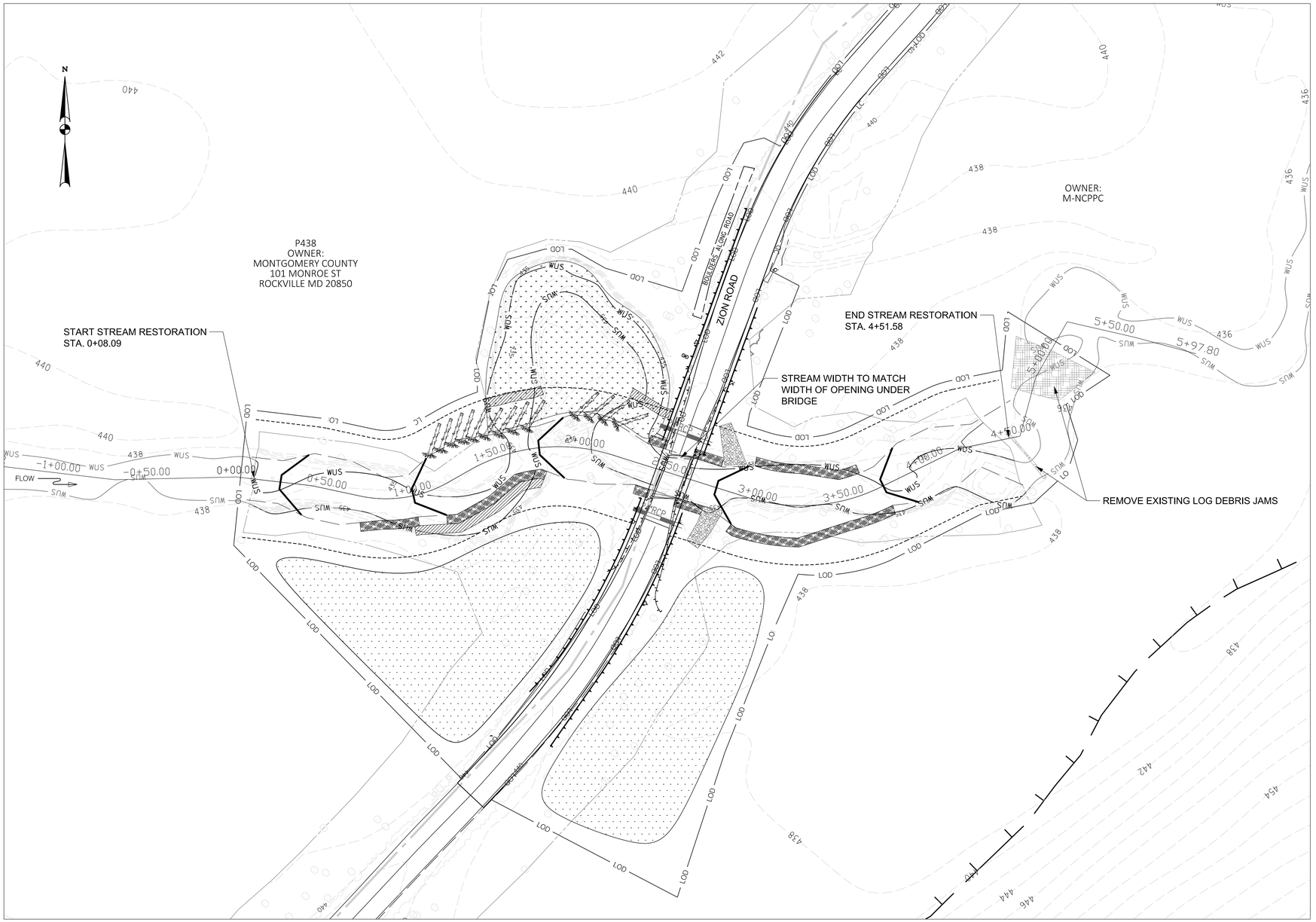
EROSION AND SEDIMENT CONTROL PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD over HAWLINGS RIVER

SCALE : 1"=20'

PROJECT NO. : XXXXXX SHEET 17 OF 21 DATE: JAN 2022

Attachment A: Project Design Plans



LEGEND

- EXISTING CONTOUR
- EXISTING LOG JAM
- EXISTING WATER EDGE
- EXISTING TREE LINE
- EXISTING SURVEYED TREE
- EXISTING GUARDRAIL
- EXISTING ROAD SIGN
- LIMIT OF SURVEY
- BENCH MARK
- FLOW DIRECTION
- 100 YEAR FLOODPLAIN
- PARCEL BOUNDARY
- PROPOSED THALWEG
- PROPOSED BANKFULL
- PROPOSED FLOODPLAIN
- PROPOSED GRADE CONTROL
- PROPOSED TOE WOOD
- PROPOSED CLAY FILL
- PROPOSED SOIL LIFTS
- LOD — LIMIT OF DISTURBANCE
- LOW — LIMIT OF WORK
- PROPOSED WETLAND
- PROPOSED STORM DRAIN
- PROPOSED RIPRAP
- PROPOSED RIPARIAN ENHANCEMENT

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

MR2025026

AECOM

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: ___ DRAWN BY: ___ CHECKED BY: ___

STREAM RESTORATION PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

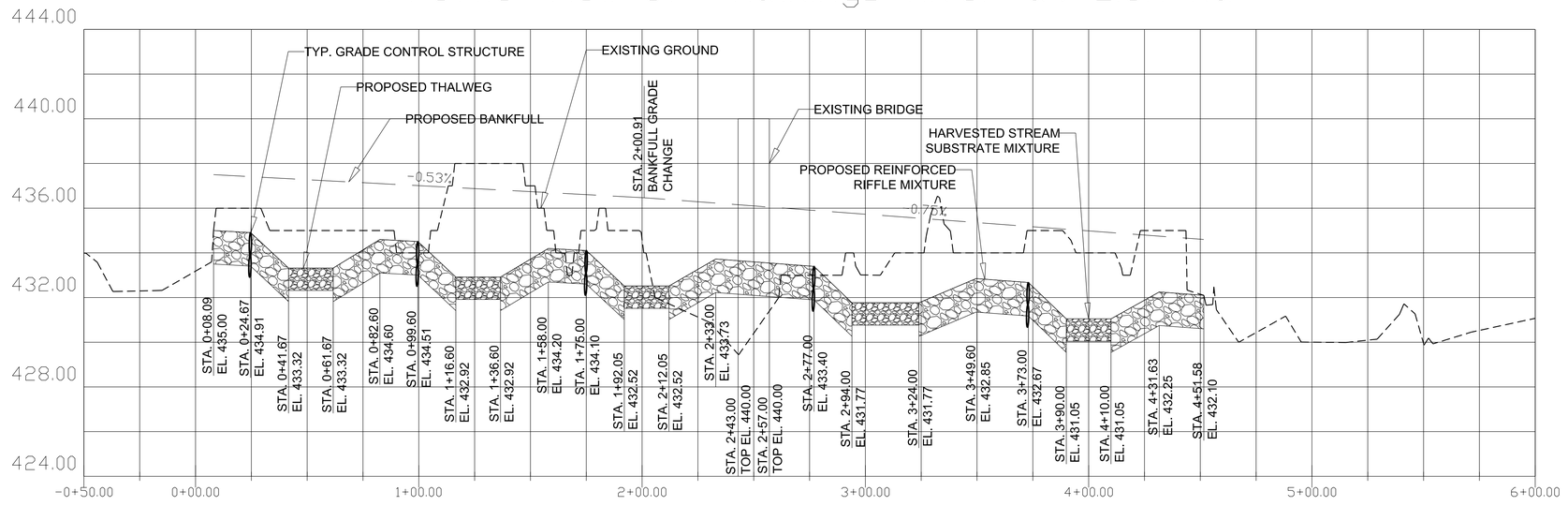
SCALE: 1"=30'

PROJECT NO. : XXXXXX SHEET 18 OF 21 DATE: JAN 2022

03-MRPLAN-18-STREAM- MR2025026-001

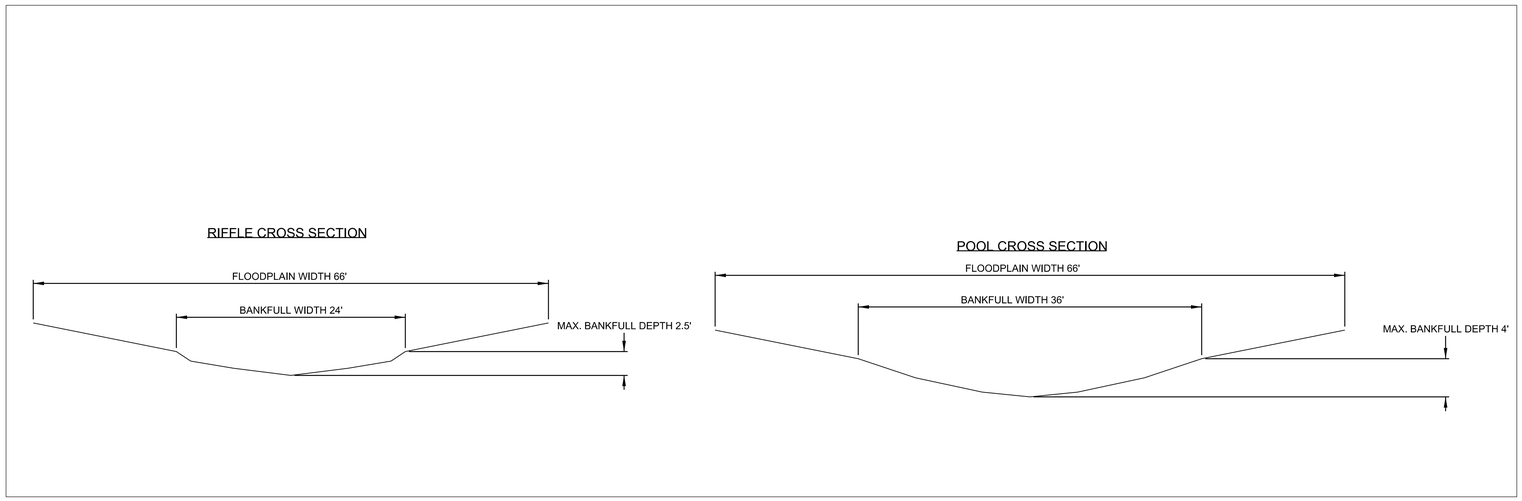
Attachment A: Project Design Plans

Profile View of Hawlings River at Zion Rd



HORIZONTAL SCALE 1"=30'
VERTICAL SCALE 1"=3'

NOTE:
1. GEOMORPHIC AND FIELD SURVEY DATA WAS TAKEN BY AECOM IN NOVEMBER 2020. ELEVATION DATA FROM STATIONS -0+50 - 0+08 AND 4+41 - 6+00 WAS RECORDED DURING THE GEOMORPHIC SURVEY. ELEVATION DATA FROM STATIONS 0+08 - 4+41 WAS TAKEN FROM THE FIELD SURVEY.



MR2025026

NO.	REVISION	DATE	BY

AECOM

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: ___ DRAWN BY: ___ CHECKED BY: ___

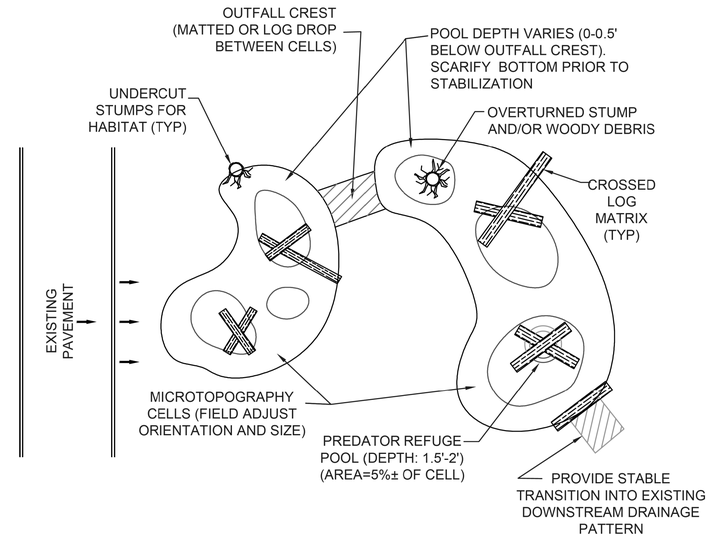
STREAM RESTORATION PLAN

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

SCALE: AS SHOWN

PROJECT NO. : XXXXXX SHEET 19 OF 21 DATE: JAN 2022

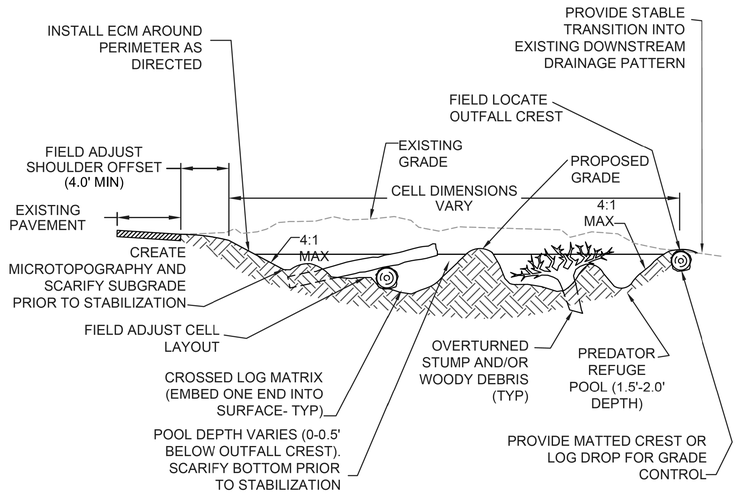
03-MRPLAN-19-STREAM- MR2025026-002



630/1 **RIPARIAN ENHANCEMENTS DETAIL (RE) (SHEET 1 OF 3)**
PLAN VIEW

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks

MARCH 2020



630/2 **RIPARIAN ENHANCEMENTS DETAIL (RE) (SHEET 2 OF 3)**
CROSS SECTION

The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks

MARCH 2020

RE NOTES:

1. CONTRACTOR SHALL LAY OUT CRITICAL POINTS OF STRUCTURE TO REVIEW WITH CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION. ALL DIMENSIONS AND ELEVATIONS SHALL BE FIELD ADJUSTED IN COORDINATION WITH THE CONSTRUCTION MANAGER TO ENSURE PROPER DIMENSIONS, STABLE INSTALLATION, MINIMIZATION OF NATURAL RESOURCE IMPACTS, AND SMOOTH TIE-IN TO ADJACENT FEATURES.
2. INSTALL TOPSOIL AND NATIVE RIPARIAN SEED MIX (WITH ANNUAL RYE) WITH WEED-FREE STRAW MULCH. IF SEED MIX IS UNSUCCESSFUL IN TAKING FROM INITIAL APPLICATION, SEED MIX TO BE REAPPLIED UNTIL SUCCESSFUL (GERMINATION) TAKES PLACE.
3. COORDINATE PLANTINGS WITH CONSTRUCTION MANAGER AND GRADE PLANTING AREAS TO VARYING DEPTHS.
4. FIELD ADJUST CELL GRADING AND WOODY MATERIAL PLACEMENT TO ENHANCE HABITAT VALUE AS DIRECTED BY THE CONSTRUCTION MANAGER.
5. UTILIZE ON-SITE WOODY MATERIAL TO CREATE LOG MATRIX.
6. LOCATE PREDATOR REFUGE POOL AS FAR FROM ACTIVE USE AREAS AS FEASIBLE.
7. WHEN ROCKS (LARGER THAN 6" ACROSS) ARE AVAILABLE ONSITE, INCORPORATE INTO SURFACE AND IN SMALL PILES.

MR2025026

AECOM

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL
CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED
CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: ___ DRAWN BY: ___ CHECKED BY: ___

STREAM RESTORATION PLAN

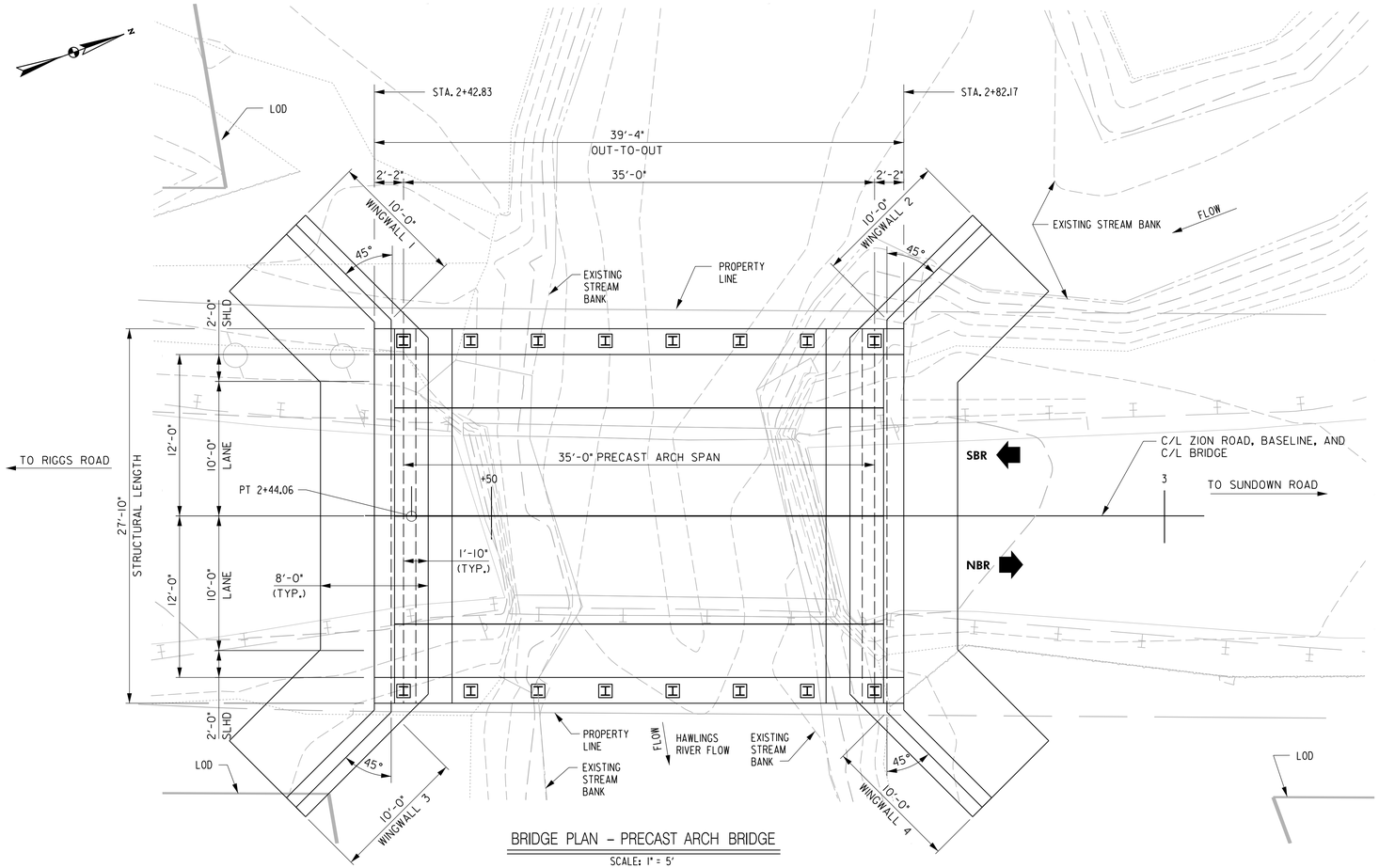
REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

SCALE: AS SHOWN

PROJECT NO. : XXXXXX SHEET 20 OF 21 DATE: JAN 2022

03-MRPLAN-20-STREAM- MR2025026-003

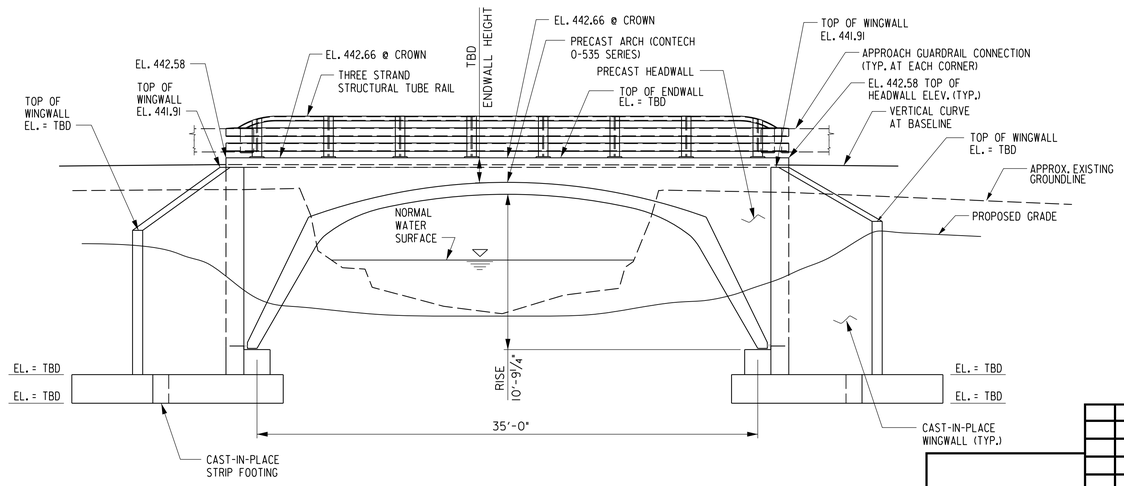
Attachment A: Project Design Plans



BRIDGE PLAN – PRECAST ARCH BRIDGE

SCALE: 1" = 5'

PROPOSED BRIDGE RAILS AND APPROACH ROADWAY GUARDRAILS NOT SHOWN FOR CLARITY



TYPICAL END ELEVATION

SCALE: 1" = 5'

12-ARCH-MR2025026-001

GENERAL NOTES:

SPECIFICATIONS:	MDOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED JULY 1, 2021
DESIGN:	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2017
LOADING:	HL-93
LOAD RESTRICTIONS:	THERE ARE RESTRICTIONS FOR PLACING EQUIPMENT AND MATERIALS ON EXISTING AND NEW STRUCTURES. REFER TO SECTION TC 6.14.
CONCRETE:	CONCRETE COMPRESSIVE STRENGTH FOR DESIGN SHALL BE: f'c = 3000 psi FOR ELEMENTS USING MIX NO. 3 f'c = 4000 psi FOR ELEMENTS USING MIX NO. 6 CONCRETE FOR PRECAST ARCH AND HEADWALLS SHALL BE MIX NO. 6 (4500 psi). CONCRETE FOR FOOTINGS, WINGWALLS AND PEDESTALS SHALL BE MIX NO. 3 (3500 psi).
REINFORCING STEEL:	REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60, WITH A YIELD STRENGTH FOR DESIGN OF fy = 60000 psi
EXISTING STRUCTURES:	MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE 2" EXCEPT 3" AT BOTTOM AND SIDES OF CAST-IN-PLACE FOOTINGS. ALL DIMENSIONS AFFECTED BY THE GEOMETRY AND/OR LOCATION OF THE EXISTING STRUCTURES: EXISTING STRUCTUTRE SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR BEFORE ANY MATERIAL IS ORDERED OR FABRICATED OR CONSTRUCTION BEGINS.

THE PROPOSED STREAM RESTORATION AND REALIGNMENT CONCEPT ARE NOT SHOWN.

DESIGN DATA

DESIGN LOADING:
BRIDGE UNITS: HL-93
HEADWALLS: EARTH PRESSURE + LIVE LOAD IMPACT (TL-2)
WINGWALLS: EARTH PRESURE + LIVE

TS & L SUBMITTAL

MR2025026

NO.	REVISION	DATE	BY

AECOM

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: TBC DRAWN BY: RL CHECKED BY: CJL

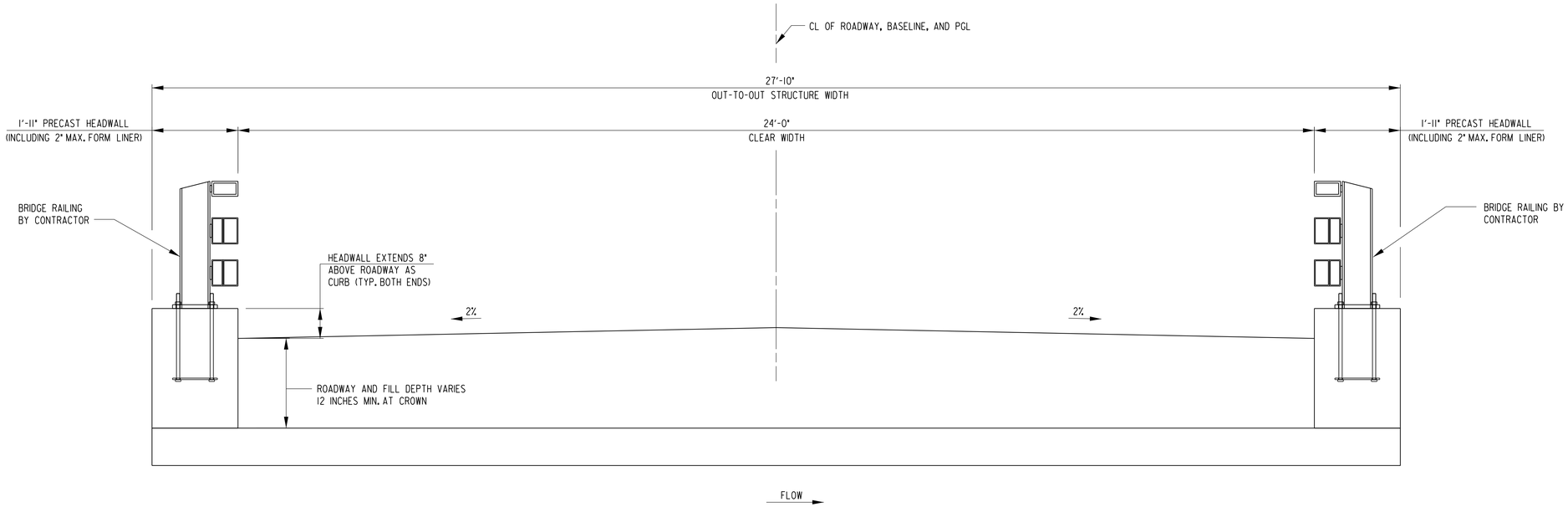
GENERAL PLAN AND ELEVATION
PRECAST ARCH BRIDGE

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

SCALE : AS SHOWN

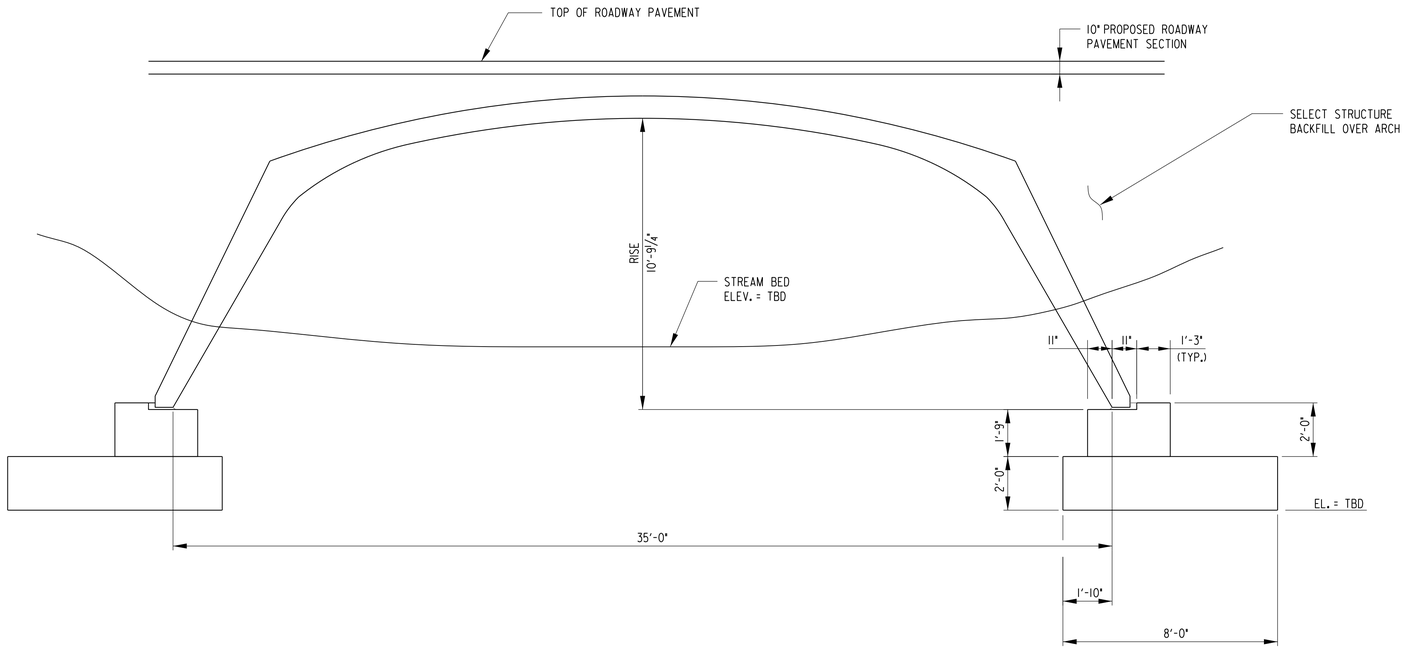
PROJECT NO. : XXXXXX SHEET 8 OF 21 DATE: JAN. 2022

Attachment A: Project Design Plans



TYPICAL SECTION – PRECAST ARCH BRIDGE

SCALE: 3/4" = 1'-0"



TYPICAL BRIDGE SECTION

SCALE: 3/4" = 1'-0"

MR2025026

TS & L SUBMITTAL

12-ARCH- MR2025026-002

AECOM

NO.	REVISION	DATE	BY

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
ROCKVILLE, MARYLAND

RECOMMENDED FOR APPROVAL

CHIEF, TRANSPORTATION PLANNING AND DESIGN SECTION — DATE

APPROVED

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING — DATE

DESIGNED BY: TBC DRAWN BY: RL CHECKED BY: CJL

BRIDGE TYPICAL SECTION

REPLACEMENT OF BRIDGE NO. M-0121
ZION ROAD OVER HAWLINGS RIVER

SCALE : AS SHOWN

PROJECT NO. : XXXXXX SHEET 9 OF 21 DATE: JAN. 2022