

TYPICAL CROSS SECTION DETAIL

NOTES:

1. SLOPED CULVERT ENDS IF /AS SPECIFIED IN CONTRACT
2. GBC-I, GBC-II, GBC-M OR CULVERT GRAVEL
3. CULVERT EMBEDMENT (DEPTH OF CULVERT INVERT) SHALL MEET THE SITE SPECIFIC ENVIRONMENTAL OR CONTRACT REQUIREMENTS, MIN. 100
4. BACKFILL TYPE AS SPECIFIED IN CONTRACT. IF NOT SPECIFIED, BACKFILL SHALL BE GBC-I, GBC-II, GBC-M, GSB-C, GSB-F, CR-M50, CR-M100 OR CR-M125.
5. PAVEMENT STRUCTURE DIMENSIONS, MATERIALS, AND DEPTHS ARE TO MATCH EXISTING OR AS SPECIFIED IN CONTRACT / DESIGN. CR-M50 SHALL BE USED AS SUBBASE IF CR-M100 OR CR-M125 IS USED AS UNDERLYING BACKFILL MATERIAL.
6. STONE RIP-RAP CLASS/SIZE SHALL BE AS SHOWN ON SHEET 3 OR AS SPECIFIED IN CONTRACT
7. PLACE RIP-RAP AT THE END OF CULVERT SUCH THAT THE SURFACE OF THE RIP-RAP IS EVEN WITH THE GRADE OF EMBANKMENT SIDE SLOPE

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFIED OTHERWISE

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ORIGINAL SEALED BY:

JEFF E. TALLIN, P.Eng.
October 28, 2025

APPROVALS

ORIGINAL SIGNED BY:

DUSTIN BOOY

EXECUTIVE DIRECTOR OF
HIGHWAY ENGINEERING SERVICES

ORIGINAL SIGNED BY:


TARA LISKE

EXECUTIVE DIRECTOR OF
REGIONAL OPERATIONS

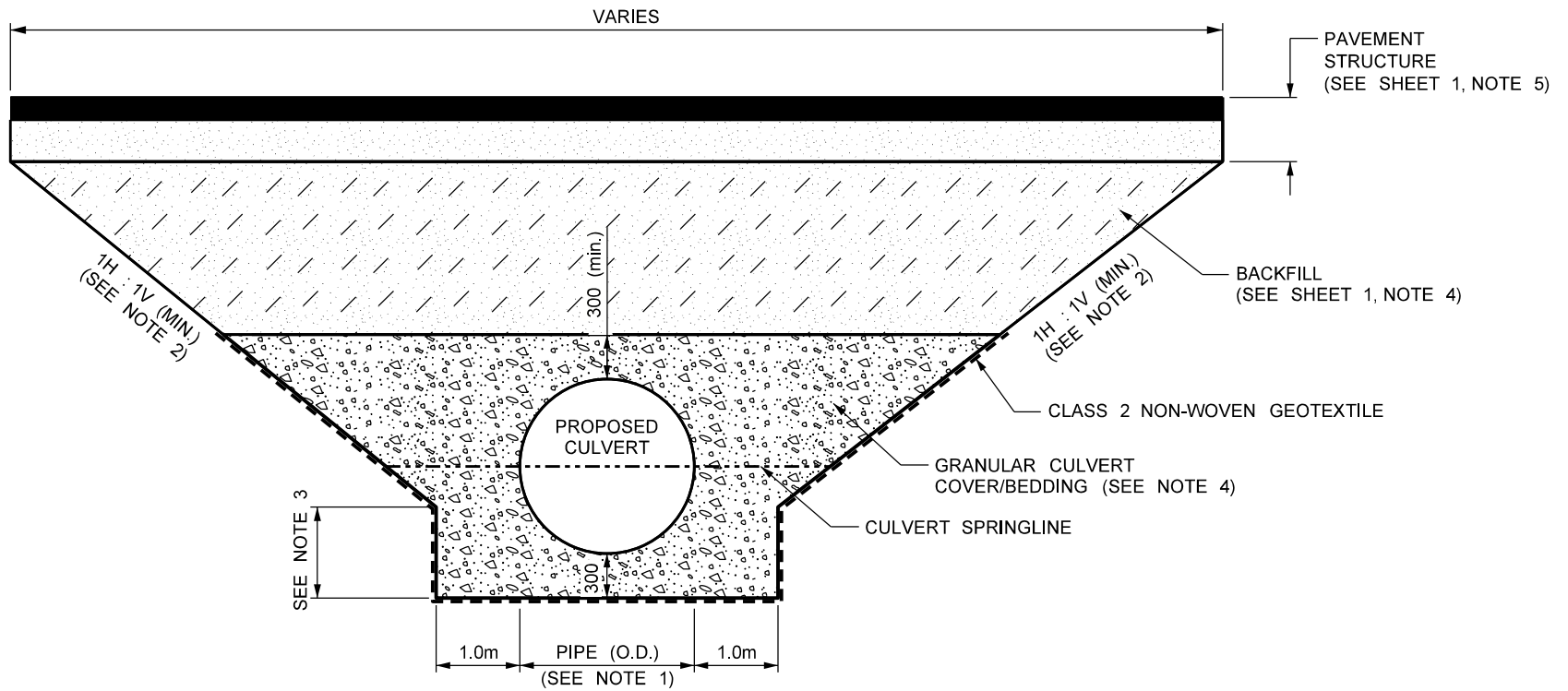
REVISIONS

No.	DESCRIPTION	BY	DATE
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MANITOBA STANDARD DRAWING

DATE		OPEN CUT INSTALLATION DETAILS FOR SINGLE CSC, PCC, AND HDPE CULVERTS, ≤1800 DIA.
OCTOBER 2025		
SCALE	SHEET	
N.T.S.	1 OF 3	
MSD - 400.1		<div>Manitoba</div> <div>Transportation and Infrastructure</div>

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SINGLE CULVERT INSTALLATION DETAIL

NOTES:

GENERAL: ALL TRENCHING AND EXCAVATION SHALL COMPLY WITH MANITOBA'S WORKPLACE HEALTH AND SAFETY REGULATIONS

1. CULVERT DIAMETER AND TYPE AS SPECIFIED IN CONTRACT
2. FOR FROST SUSCEPTIBLE SOILS, REFER TO MSD 400.5
3. DEPTH OF VERTICAL CUT SHALL NOT EXCEED 1.0m
4. GBC-I, GBC-II, GBC-M OR CULVERT GRAVEL

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFIED OTHERWISE

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ORIGINAL SEALED BY:

BRENT P.D. SELLERS P.Eng.
DECEMBER 16, 2025

APPROVALS


ORIGINAL SIGNED BY:
DUSTIN BOOY
EXECUTIVE DIRECTOR OF
HIGHWAY ENGINEERING SERVICES

ORIGINAL SIGNED BY:
TARA LISKE
EXECUTIVE DIRECTOR OF
REGIONAL OPERATIONS

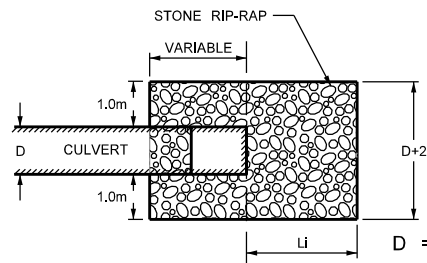
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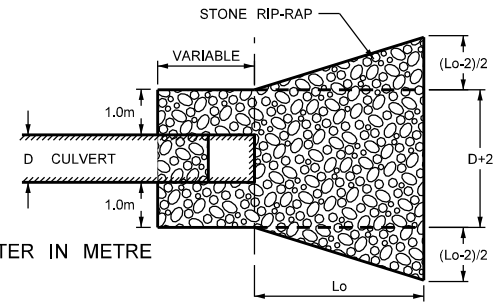
MANITOBA STANDARD DRAWING

DATE		OPEN CUT INSTALLATION DETAILS FOR SINGLE CSC, PCC, AND HDPE CULVERTS, ≤1800 DIA.
OCTOBER 2025		
SCALE	SHEET	
N.T.S.	2 OF 3	
MSD - 400.1		<div>Manitoba</div> <div>Transportation and Infrastructure</div>

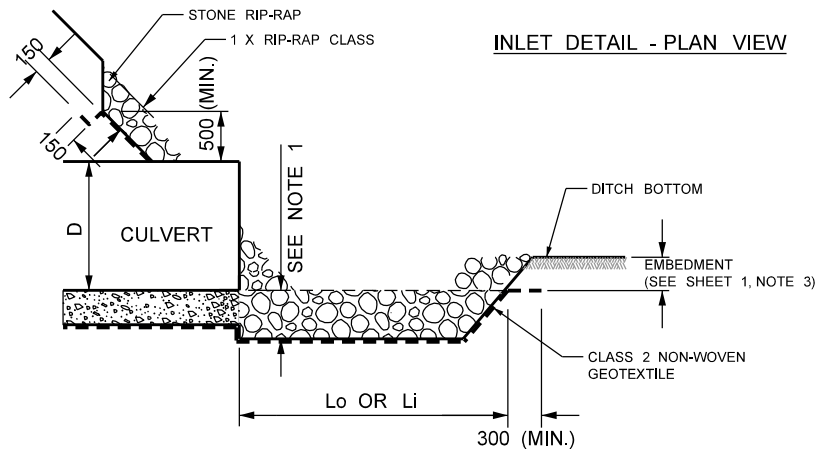
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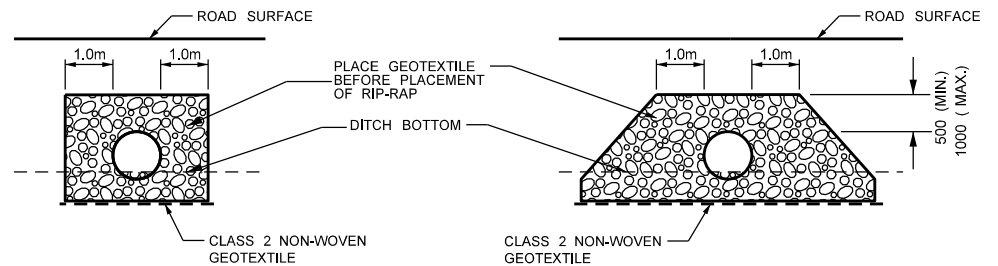
INLET DETAIL - PLAN VIEW



OUTLET DETAIL - PLAN VIEW



INLET & OUTLET - SIDE VIEW FOR EMBEDDED CULVERTS



INLET END VIEW FOR EMBEDDED CULVERTS

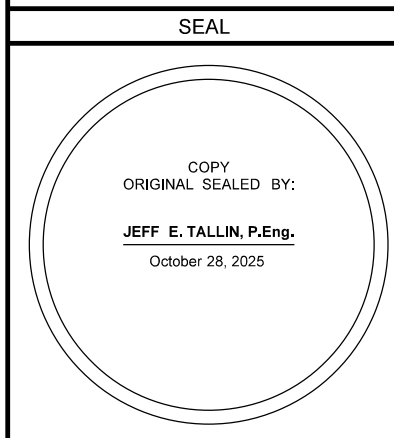
OUTLET END VIEW FOR EMBEDDED CULVERTS

INLET AND OUTLET APRON DIMENSIONS EXTENDED - HIGH FLOW VELOCITY AND EROSION SUSCEPTIBLE SITES				
Culvert Nominal Diameter D (mm)	Rip-Rap Class (mm)	Inlet Length Li (m)	Outlet Length Lo (m)	
<800	350	2	4	
800 to 1200	350	3	6	
1200 to 1800	450	7	14	

INLET AND OUTLET APRON DIMENSIONS LOW FLOW VELOCITY SITES (SEE NOTE 2)				
Culvert Nominal Diameter D (mm)	Rip-Rap Class (mm)	Inlet Length Li (m)	Outlet Length Lo (m)	
<1200	350	2	3	
1200 to 1800	350	4	6	

- NOTE:
1. RIP-RAP THICKNESS SHALL BE THE GREATER OF 500 OR 1.5x RIP-RAP MAXIMUM SIZE
 2. MAY BE USED WHERE EXIT FLOW VELOCITY IS LESS THAN 1.2m/sec.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFIED OTHERWISE



APPROVALS		REVISIONS				MANITOBA STANDARD DRAWING	
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		1				OCTOBER 2025	
		2				SCALE	SHEET
		3				N.T.S.	3 OF 3
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