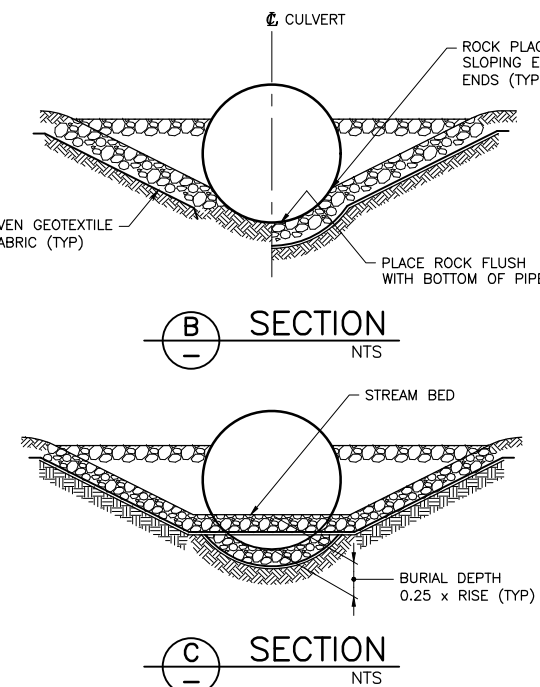
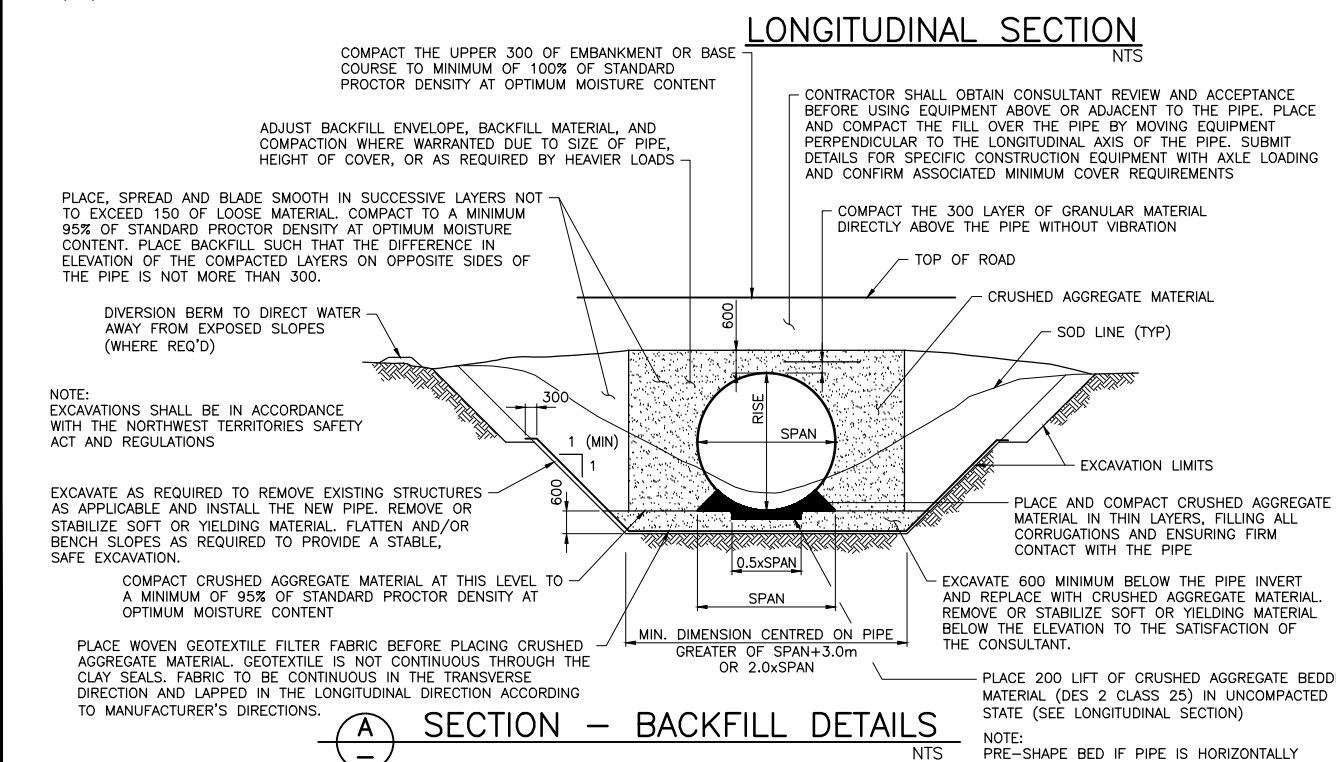
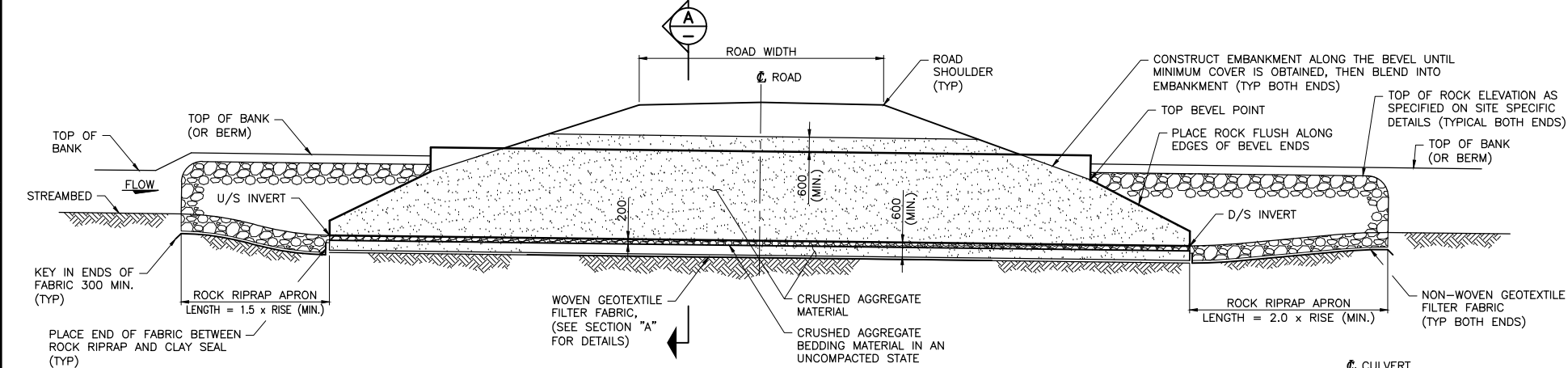
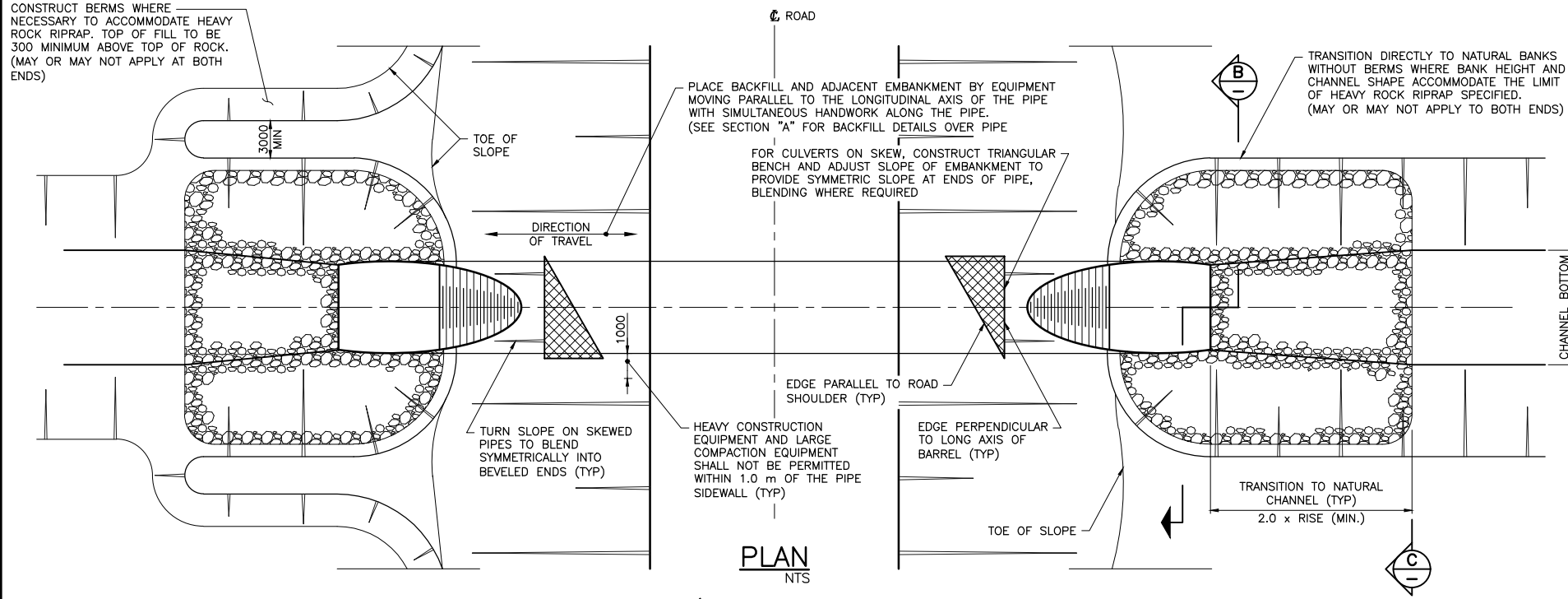


CONSTRUCT BERMS WHERE NECESSARY TO ACCOMMODATE HEAVY ROCK RIPRAP. TOP OF FILL TO BE 300 MINIMUM ABOVE TOP OF ROCK. (MAY OR MAY NOT APPLY TO BOTH ENDS)



GENERAL NOTES

- ALL DIMENSIONS ARE GIVEN IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION SECTION 18 - CMP AND SPCMP STRUCTURES AND TRENCHLESS INSTALLATION OF STEEL PIPE.
- THIS DRAWING PROVIDES GENERAL INFORMATION ONLY AND IS APPLICABLE TO CULVERTS WITH A DIAMETER OF 3.0 METRES OR LESS. SITE SPECIFIC DETAILS ARE REQUIRED FOR CULVERTS WITH A DIAMETER GREATER THAN 3.0 METRES.
- THIS DRAWING WILL BE SUPPLEMENTED OR SUPERSEDED BY THE SITE SPECIFIC DESIGN DRAWING(S), ASSEMBLY DRAWINGS, SPECIAL PROVISIONS, AND ENVIRONMENTAL REQUIREMENTS WHERE APPLICABLE.
- ADDITIONAL NON-STANDARD NOTES (NOTES-) HAVE ALSO BEEN PROVIDED ON THE DRAWING TO SERVE AS REMINDERS WHERE A SPECIFIC DETAIL MAY NEED TO BE DEVELOPED FOR THE DESIGN DRAWINGS.
- THE SHAPE OF CMP AND SPCMP STRUCTURES SHALL BE WITHIN 2% OF DESIGN DIMENSIONS DURING ALL PHASES OF THE WORK.
- SLOPES FOR CHANNEL AND BERMS SHALL BE DETERMINED ON A SITE SPECIFIC BASIS. SLOPES FOR CHANNELS AND BERMS SHALL NOT BE STEEPER THAN 2H:1V.

ASSEMBLY

- CMP SECTIONS SHALL BE POSITIONED SO THAT THE ENDS ARE IN CLOSE CONTACT. COUPLERS SHALL BE WELL FITTED AND EVENLY TIGHTENED ALL AROUND THE PIPE. COUPLERS SHALL BE COMPLETELY WRAPPED WITH A 2 000 WIDE LAYER OF NON-WOVEN GEOTEXTILE CENTERED ON THE JOINT.
- SPCMP SHALL BE ASSEMBLED AS SHOWN ON THE ASSEMBLY DRAWINGS AND AS OUTLINED BELOW:
 - ASSEMBLY, LOOSE BOLTING AND RING CLOSURE SHALL PROGRESS FROM ONE END WITH EACH RING CHECKED AND ADJUSTED TO DESIGN GEOMETRY WITH FULLY NESTED PLATES IMMEDIATELY UPON CLOSURE OF INDIVIDUAL RINGS. WHERE TEMPORARY SUPPORTS OR THE CABLES ARE USED, ADEQUATE MEANS SHALL BE TAKEN TO DISTRIBUTE LOADS ALONG THE PIPE WALL, TO PREVENT LOCAL DISTORTION AND MAINTAIN DESIGN SHAPE.
 - ALL BOLTED SEAMS SHALL BE PROPERLY LAPPED AND PLATES SHALL BE IN CONTACT FOR THE FULL WIDTH AND LENGTH OF THE LAP. THE BOLTS IN THE VALLEY OF EACH LONGITUDINAL SEAM SHALL BE NEAREST TO THE VISIBLE EDGE OF THE PLATE.
 - THE VERTICAL AXIS SHALL BE UPRIGHT AND THE LONGITUDINAL SEAMS SHALL BE STRAIGHT. ROTATION OF THE PIPE AND/OR SPIRALING OF THE LONGITUDINAL SEAMS SHALL NOT BE PERMITTED.
 - BOLTS SHALL BE TORQUED TO AND MAINTAINED AT NOT LESS THAN 200 N•m AND NOT MORE THAN 340 N•m.
 - DISTORTION OF BOLT HOLES CAUSED BY OVER-TORQUING OR POOR ASSEMBLY METHODS WILL NOT BE PERMITTED. WHERE ADDITIONAL HOLES ARE REQUIRED, THEY SHALL BE DRILLED.
- USE SOFT SLINGS AND HANDLE WITH CARE TO AVOID SCRATCHING, BRUISING, AND DISTORTION OF THE PIPE.

HEAVY ROCK RIPRAP

- HEAVY ROCK RIPRAP SHALL COVER THE AREA SHOWN AND SHALL BE PLACED TO THE FOLLOWING MINIMUM THICKNESS.
- HEAVY ROCK RIPRAP SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION SECTION 10 - HEAVY ROCK RIPRAP.
- PLACE NON-WOVEN GEOTEXTILE FILTER FABRIC UNDER ALL HEAVY ROCK RIPRAP.

CLASS OF ROCK	IM	1	2	3
THICKNESS	300	450	800	1000

WOVEN GEOTEXTILE FILTER FABRIC

SPECIFICATIONS AND PHYSICAL PROPERTIES

GRAB STRENGTH	1275 N
ELONGATION (FAILURE)	15%
CBR PUNCTURE STRENGTH	275 N
TRAPEZOIDAL TEAR	475 N
MINIMUM FABRIC LAP TO BE	1 000

NON-WOVEN GEOTEXTILE FILTER FABRIC

SPECIFICATIONS AND PHYSICAL PROPERTIES

RIPPRAP CLASS	CLASS IM, 1, 2, 3
GRAB STRENGTH	900 N
ELONGATION (FAILURE)	50%
CBR PUNCTURE STRENGTH	550 N
TRAPEZOIDAL TEAR	350 N
MINIMUM FABRIC LAP TO BE	400

DETAILS SHOWN ARE CONCEPTUAL AND REPRESENT DEPARTMENT PRACTICES AS REFERENCED IN THE STRUCTURES (BRIDGES) DESIGN GUIDELINES CONSULTANT IS FULLY RESPONSIBLE FOR DESIGNING THE DETAILS AND SHALL INCORPORATE THE DETAILS ON THE SITE SPECIFIC DRAWINGS AS APPROPRIATE

BACKFILL

- BACKFILL SHALL CONSIST OF CRUSHED AGGREGATE MATERIAL.
- CRUSHED AGGREGATE MATERIAL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

DES 2 CLASS 25 CRUSHED AGGREGATE MATERIAL

µm SIEVE SIZE	% BY WEIGHT PASSING
25000	100
20000	82-97
16000	70-94
10000	52-79
5000	35-64
1250	18-43
630	12-34
315	8-26
160	5-18
80	2-10
% FRACTURES BY WEIGHT (2 FACES)	60+
PLASTICITY INDEX	NP-6
LA ABRASION LOSS PERCENT MAXIMUM	50

DES 2 CLASS 40 CRUSHED AGGREGATE MATERIAL

µm SIEVE SIZE	% BY WEIGHT PASSING
40000	100
25000	70-94
16000	55-85
10000	44-74
5000	32-62
1250	17-43
630	13-34
315	8-26
160	5-18
80	2-10
% FRACTURES BY WEIGHT (2 FACES)	50+
PLASTICITY INDEX	NP-6
LA ABRASION LOSS PERCENT MAXIMUM	50

Government of Northwest Territories

Consultant Logo

Rev	Date	Description	Init

REVISIONS

Government of Northwest Territories

TYPICAL DETAILS DRAWING

INSTALLATION OF CMP AND SPCMP STRUCTURES

DESIGNED	M. BOWEN	DATE	OCTOBER 25, 2024
CHECKED	K. HABEL	DATE	OCTOBER 25, 2024
DRAWN	T. CHIU	DATE	OCTOBER 25, 2024
SCALE	AS SHOWN		

PROJECT No.	PREPARED UNDER THE DIRECTION OF
	M. BOWEN
	ENGINEER OF RECORD
	DATE OCTOBER 25, 2024
	DRAWING No.
	T-001

NOT FOR CONSTRUCTION