

MINIMUM FABRIC LAP TO BE 400

DIRECTION ACCORDING TO MANUFACTURER'S DIRECTIONS

SECTION - BACKFILL DETAILS

NTS

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
- 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- THIS DRAWING WILL BE SUPPLEMENTED OR SUPERSEDED BY THE SITE SPECIFIC DESIGN DRAWING(S), ASSEMBLY DRAWINGS, SPECIAL PROVISIONS, AND ENVIRONMENTAL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 SHAPE OF CSP AND SPCSP STRUCTURES SHALL BE WITHIN 2% OF DESIGN DIMENSIONS DURING ALL PHASES OF THE WORK

ASSEMBLY

- CSP 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
- SPCSP SHALL BE ASSEMBLED AS SHOWN ON THE ASSEMBLY DRAWINGS AND AS OUTLINED
 - 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 TIE 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
 - DISTORTION OF BOLT HOLES CAUSED BY OVER-TORQUING, OR POOR ASSEMBLY METHODS WILL NOT BE PERMITTED. WHERE ADDITIONAL HOLES ARE REQUIRED. THEY SHALL BE
 - BOLTS ON PEDESTRIAN OR STOCK UNDERPASSES SHALL BE INSTALLED WITH THE BOLT HEADS INSIDE THE STRUCTURE
- USE SOFT SLINGS AND HANDLE WITH CARE TO AVOID SCRATCHING, BRUISING, AND DISTORTION OF THE PIPE

BACKFILL

- BACKFILL SHALL CONSIST OF CRUSHED AGGREGATE MATERIAL. NON-ORGANIC CLAY
- SHALL BE USED FOR THE CLAY SEALS AT EACH END OF THE PIPE. CRUSHED AGGREGATE MATERIAL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

CRUSHED AGGREGATE MATERIAL DESIGNATION 2, CLASS 25							
μm SIEVE SIZE	% B	Y WEIGHT	PASSING				
25 000	100						
20 000	82 – 97						
I 6 000	70 – 94						
10 000	52 – 79						
5 000	35 – 64						
l 250	18 – 43 12 – 34						
630							
315	8 – 26						
160	5-18						
80		2-10					
% FRACTURES B WEIGHT (2 FACE	6/14						
PLASTICITY INDE	X NP-6						
LA ABRASION LO	oss	SS 50					

MORE THAT 340 N·m

DESIGNATION 2, CLASS 40						
μm SIEVE SIZE	% BY WEIGHT PASSING					
40 000	100					
25 000	70 – 94					
16 000	55 – 85					
10 000	44 – 74					
5 000	32 – 62					
1 250	17 – 43					
630	12 – 34					
315	8 – 26					
160	5-18					
80	2-10					
% FRACTURES B WEIGHT (2 FACE	201					
PLASTICITY INDE	X NP-6					
LA ABRASION LO PERCENT MAXIM	1 : N /					

CRUSHED AGGREGATE MATERIAL

HEAVY ROCK RIPRAP

• HEAVY ROCK RIPRAP SHALL COVER THE AREA SHOWN AND SHALL BE PLACED TO THE FOLLOWING MINIMUM THICKNESS:

CLASS OF ROCK	I M	l	2	3
THICKNESS (mm)	300	450	800	1 000

50

- HEAVY ROCK RIPRAP SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION SECTION 10
- PLACE NON-WOVEN GEOTEXTILE FILTER FABRIC UNDER ALL HEAVY ROCK RIPRAP
- **UNDERPASSES**
- CRUSHED AGGREGATE MATERIAL SHALL BE PLACED TO A THICKNESS OF 200 ON THE APPROACHES FROM THE PIPE TO THE EDGE OF RIGHT OF WAY. DO NOT USE HEAVY ROCK RIPRAP UNLESS SPECIFIED
- CONCRETE FLOOR WITH ROUGH TEXTURED SURFACE OR COMPACTED CRUSHED AGGREGATE
- FLOOR SHALL BE PLACED TO A DEPTH OF 150 AT THE INVERT. ACP FLOORS MAY BE CONSIDERED FOR PEDESTRIAN OR VEHICLE UNDERPASSES
- CLAY SEALS ARE NOT REQUIRED FOR UNDERPASS STRUCTURES
 LOCATE AND SLOPE UNDERPASS STRUCTURES TO PROVIDE POSITIVE DRAINAGE AND TO PREVENT PONDING OF WATER

<u>\$</u>			-		RECOMMENDED DIRECTOR BRIDGE ENGINEERING	INSTALLATION OF CSP AND SPCSP STRUCTURES		
★★★					APPROVED EXECUTIVE DIRECTOR TECHNICAL STANDARDS BRANCH			
REV DATE		REVISION		BY	D Williamson			
DESIGNER	A. La JT	CHECKER	Gar	EM	DATE 2017.04.06	DATE 2017-03-09	SHEET I OF I	S-1418-17