ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

ROCK CONSTRUCTION NOTES

1. SIZE B ROCKS ARE TO BE USED FOR ALL CRITICAL POINTS IN STRUCTURE ie. BED CONTROLS AND STRUCTURE OUTLETS.
2. 100 TO 300mm ROCKS ARE TO BE HAND PACKED INTO VOIDS WITHIN ROCK STRUCTURE BETWEEN SIZE A AND B ROCKS.
3. ROCK PLACED BETWEEN OUTLET OF PIPE IS TO EXTEND A MINIMUM OF 200mm EITHER SIDE OF PIPE.
4. ROCK SELECTION AND PLACEMENT FOR PIPE HEADWALL TO ENSURE NO LOAD BEARING WEIGHT IS PLACED ON PIPE.
5. SIDE SUPPORT ROCKS AT HEADWALL FOR DIAMETERS UP TO 525mm ARE TO BE THE SAME OR SIMILAR TO PIPE DIAMETER. FOR PIPE DIAMETERS ABOVE 525mm TWO SIDE SUPPORT ROCKS CAN BE USED

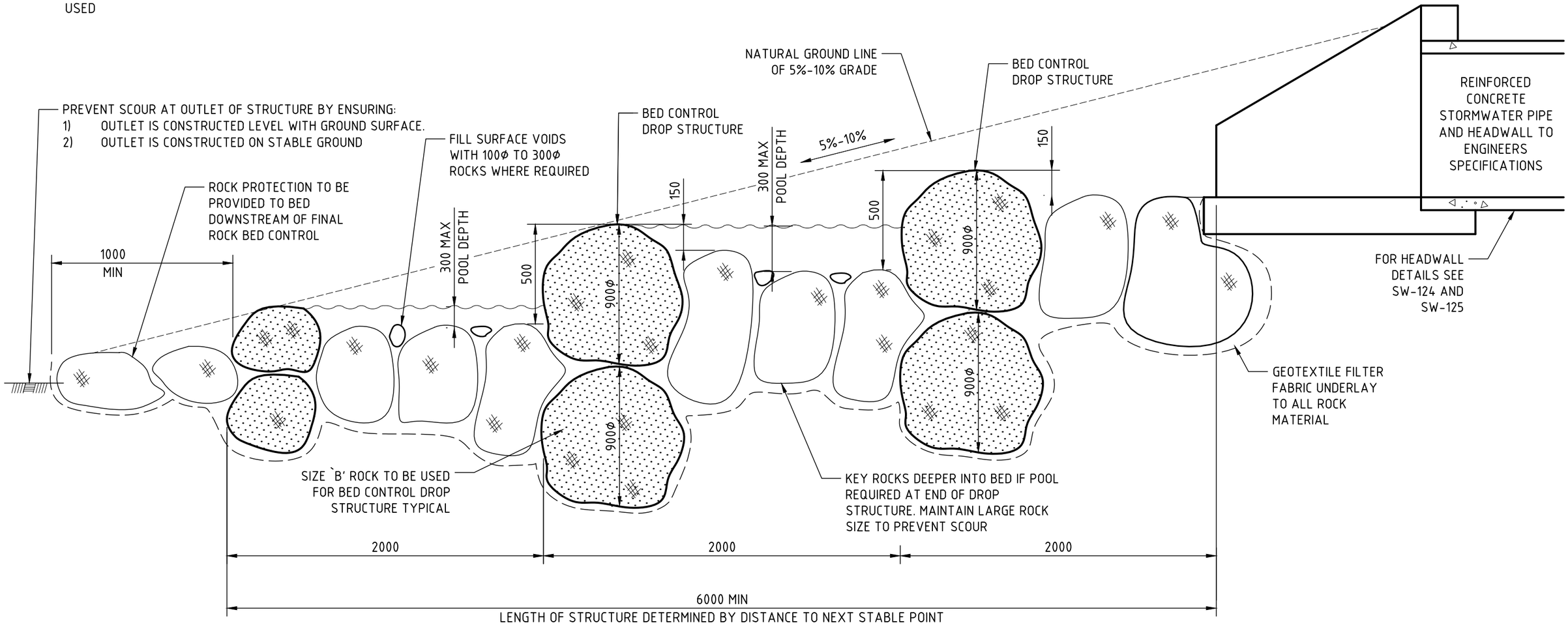
ROCK SIZING		
PIPE Ø (mm)	0-5%	>5%
375 to 600	A	B
> 600	B	B

A - 500Ø TO 700Ø SANDSTONE
B - 700Ø TO 1200Ø SANDSTONE

APPLICATION OF THESE STANDARD DRAWINGS
THIS STANDARD APPLIES TO SINGLE PIPE OUTLETS; WHERE DOWNSTREAM GRADES (BETWEEN PIPE AND STABLE POINT) RANGE FROM 0% TO 10%.
THIS STANDARD IS UNSUITABLE IF:
- PIPE DIAMETER IS GREATER THAN 750mm; OR
- GRADE FROM PIPE END TO STABLE POINT IS GREATER THAN 10%; OR
- SPACE FOR ROCKWORK IS LESS THAN 8.5 METRES; OR
- DISTANCE TO STABLE POINT IS MORE THAN 18 METRES.

IN THESE CASES, THE STANDARD MUST BE ADOPTED TO THE SITE BY SUITABLY QUALIFIED GEOMORPHOLOGIST. ROCKWORK IS TO END AT A STABLE POINT: FOR EXAMPLE WHERE GRADE REDUCES; OR AT THE BANK TOE OF THE RECEIVING WATERWAY. STABLE POINT MUST BE SPECIFIED ON PLANS.
IF A LONGER LENGTH OF ROCKWORK IS NEEDED TO MEET THE STABLE POINT, BUILD ADDITIONAL WEIRS AND PONDS IN SERIES. NO WEIR DROP TO BE MORE THAN 400MM. ALWAYS END WITH ROW OF LEVEL SPREADER ROCKS.
OUTFLOWS TO JOIN WATERWAY FLOWS IN SAME DIRECTION. IF DISCHARGING TO NARROW WATERWAY (CHANNEL FLOOR <4M WIDE); ROCKWORK CENTRELINE SHOULD BE BETWEEN 45 TO 60 <DEG> TO WATERWAY CENTRELINE.

ALTERNATIVELY, SITE-SPECIFIC CULVERT OUTLET SCOUR PROTECTION DESIGN MAY BE PREPARED IN ACCORDANCE WITH AUSTROADS GUIDE TO ROAD DESIGN PART 5B (AGRD 05B) AND CONSISTENT WITH THE DESIGN INTENT OF THESE STANDARD DRAWINGS.



LONGITUDINAL DETAIL

SCALE 1:25

ACKNOWLEDGEMENT:
PORT STEPHENS COUNCIL ACKNOWLEDGES THE ASSISTANCE OF THE CITY OF NEWCASTLE IN THE DEVELOPMENT OF THIS DRAWING.

SR PCG - STANDARDS REVIEW PROJECT CONTROL GROUP
ASM - ASSET SECTION MANAGER

Date	Amendment	Rev	By	Approved
12.05.26	ISSUED FOR CONSTRUCTION	0	SR PCG	ASM

PORT STEPHENS COUNCIL

Project: STANDARD DETAILS
EDRMS No: PSC2016-01993-005
Drawing Title: ROCK PITCHED OUTLET FOR NATURAL GRADE >5% ≤10% - SHT 2 OF 2

APPROVED
SHEET No: SW-131

Revision: 0
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