

**INSTALLATION**

- REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

- PLACE PIPES ON UNDISTURBED SOIL OR WELL-COMPACTED FILL AT LOCATIONS SHOWN ON THE APPROVED PLAN.

- EXCAVATE SUITABLE BEDDING FOR THE SLOPE DRAIN INLET. IF IT IS NECESSARY TO CUT THROUGH A FLOW DIVERSION BANK AT THE TOP OF THE SLOPE, THEN LIMIT THE DISTURBANCE TO THE ABSOLUTE MINIMUM.

- SLIGHTLY GRADE (MINIMUM 3% SLOPE IN THE DIRECTION OF FLOW) THE SECTION OF PIPE UP-SLOPE OF THE CREST OF THE EMBANKMENT.

- RE-ESTABLISH THE FLOW DIVERSION BANK SO AS TO FIRMLY ANCHOR THE INLET OF THE SLOPE DRAIN. FIRMLY HAND-TAMP THE SOIL UNDER AND AROUND THE INLET SECTION OF PIPE IN LIFTS NOT TO EXCEED 100mm. IF NECESSARY, DRIVE STAKES ON BOTH SIDES OF THE INLET A MINIMUM OF 450mm INTO THE GROUND. SECURE THE PIPE TO THE STAKES WITH WIRE OR CORD.

- ENSURE THAT THE EMBANKMENT (FLOW DIVERSION BANK) FORMED OVER THE INLET OF THE PIPE HAS MINIMUM DIMENSIONS OF 500mm HEIGHT, 300mm CLEARANCE OVER PIPE OBVERT, AND MAXIMUM 2:1(H:V) SIDE SLOPES.

- EXTEND THE SLOPE DRAIN DOWN THE SLOPE ENSURING THAT IT IS PLACED PERPENDICULAR TO THE SLOPE CONTOURS.

- ENSURE THAT ALL PIPE CONNECTIONS ARE WATERTIGHT.

- ENSURE THAT ALL FILL MATERIAL IS WELL-COMPACTED.

- SECURELY FASTEN THE PIPE DOWN THE SLOPE WITH ANCHORS SPACED NO MORE THAN 3m APART.

- EXTEND THE PIPE BEYOND THE TOE OF THE SLOPE AND ADEQUATELY PROTECT THE OUTLET OF THE PIPE FROM EROSION. DO NOT DIRECT THE OUTLET TO A FILL SLOPE OR UNSTABLE GROUND.

- CONSTRUCT A STABILISED OUTLET STRUCTURE, SUCH AS A ROCK PAD (AS DETAILED ON THE PLANS), TO CONTROL SOIL SCOUR.

- IMMEDIATELY STABILISE ALL DISTURBED AREAS FOLLOWING INSTALLATION OF THE SLOPE DRAIN.

**MAINTENANCE**

- WHILE CONSTRUCTION WORKS CONTINUE ON THE SITE, INSPECT ALL SLOPE DRAINS PRIOR TO FORECAST RAINFALL. DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF PRODUCING RAINFALL, AND ON A WEEKLY BASIS.

- INSPECT FOR:

- (i) SOIL EROSION AT THE INLET AND OUTLET;
- (ii) SEDIMENT OR DEBRIS BLOCKAGE OF THE INLET;
- (iii) WATER DAMAGE CAUSED BY LEAKAGE FROM PIPE JOINTS;
- (iv) DAMAGE OR SLUMPING OF THE ASSOCIATED INLET CONTROL FLOW DIVERSION BANK;
- (v) LEAKAGE OF WATER THROUGH THE FLOW DIVERSION BANK ALONG THE OUTER SURFACE OF THE PIPE.

- PROMPTLY MAKE ALL NECESSARY REPAIRS.

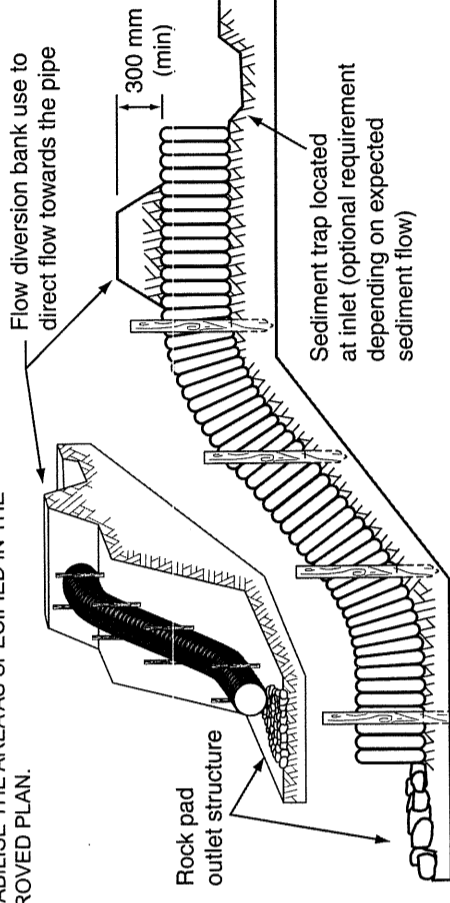
**REMOVAL**

- SLOPE DRAINS SHOULD BE REMOVED ONLY WHEN AN ALTERNATIVE, STABLE, DRAINAGE PATH IS AVAILABLE.

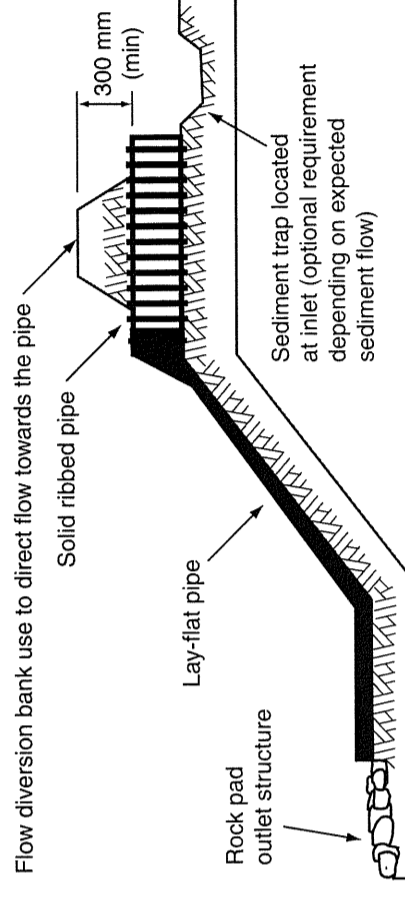
- REMOVE ALL MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

- GRADE THE AREA AND SMOOTH IT OUT IN PREPARATION FOR STABILISATION.

- STABILISE THE AREA AS SPECIFIED IN THE APPROVED PLAN.



**(a) Installation of flexible, solid-wall slope drain**



**(b) Installation of lay-flat pipe slope drain**

NOTE: LIMIT LAY-FLAT PIPE USE TO MAXIMUM 300mm DIAMETER.

NO.	DATE	DESCRIPTION	APPVD
A	18/11/11	ISSUE FOR CONSTRUCTION	
AMENDMENTS AND REVISIONS			
FILE NAME DESIGN DOCUMENTS\SESC STD DRAWINGS\...			

DRAWN	SIGNED	DATE	DIRECTOR
PDG	PDG	12/12/14	ENGINEERING SERVICES
DESIGNED	SIGNED	DATE	
PDG	PDG	12/12/14	S.M. Holley
CHECKED	SIGNED	DATE	STUART HOLLEY RPEQ 8949
MANAGER TECHNICAL SERVICES			DATE
G. Hawes			13.12.14
G. HAWES RPEQ 5693			DATE
			12/12/11

**Mackay**  
REGIONAL COUNCIL