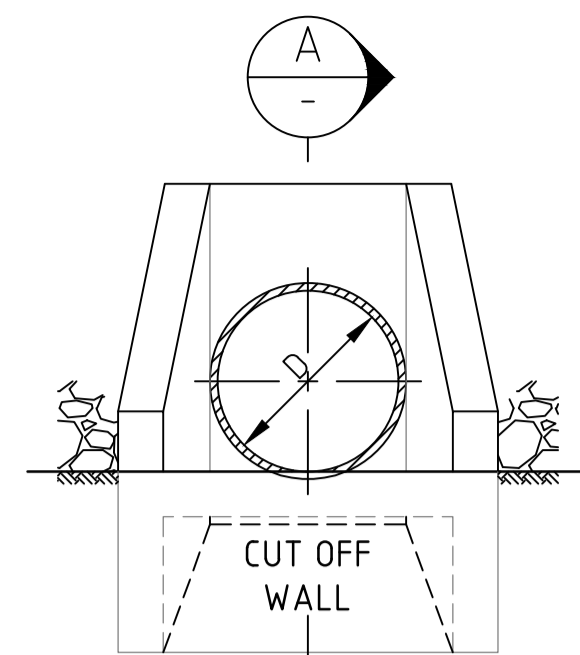
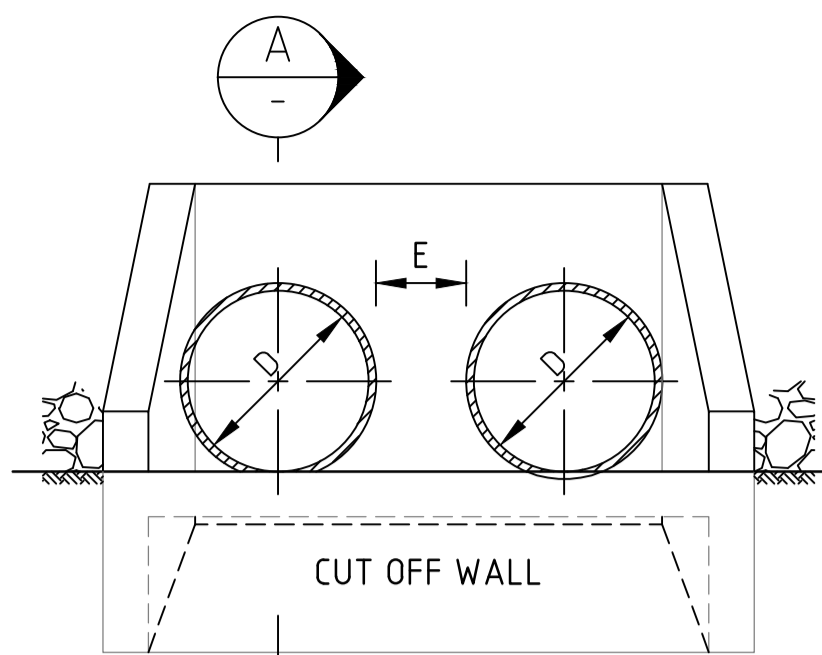


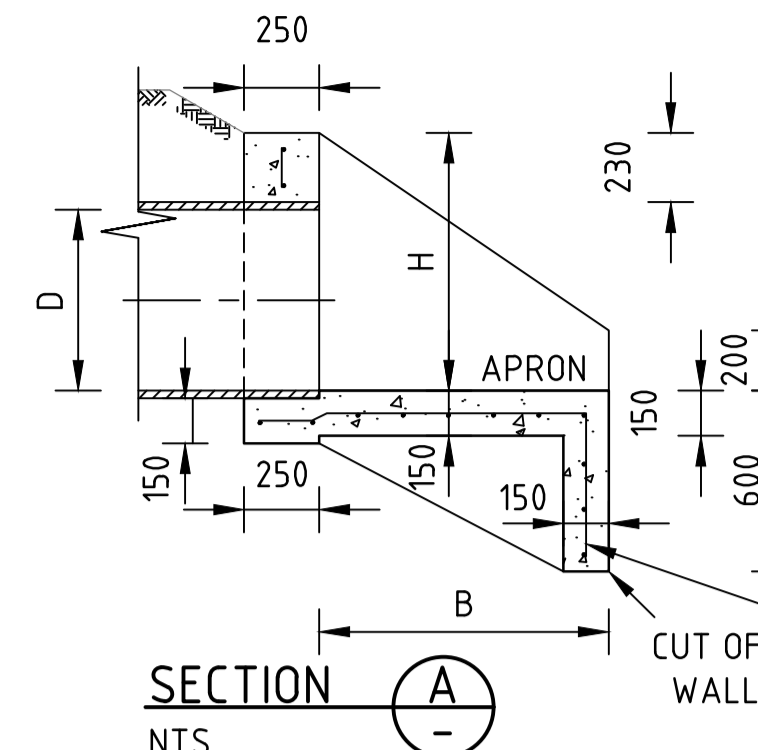
PLAN
NTS



ELEVATION - SINGLE WINGWALL
NTS



ELEVATION - DOUBLE WINGWALL
NTS



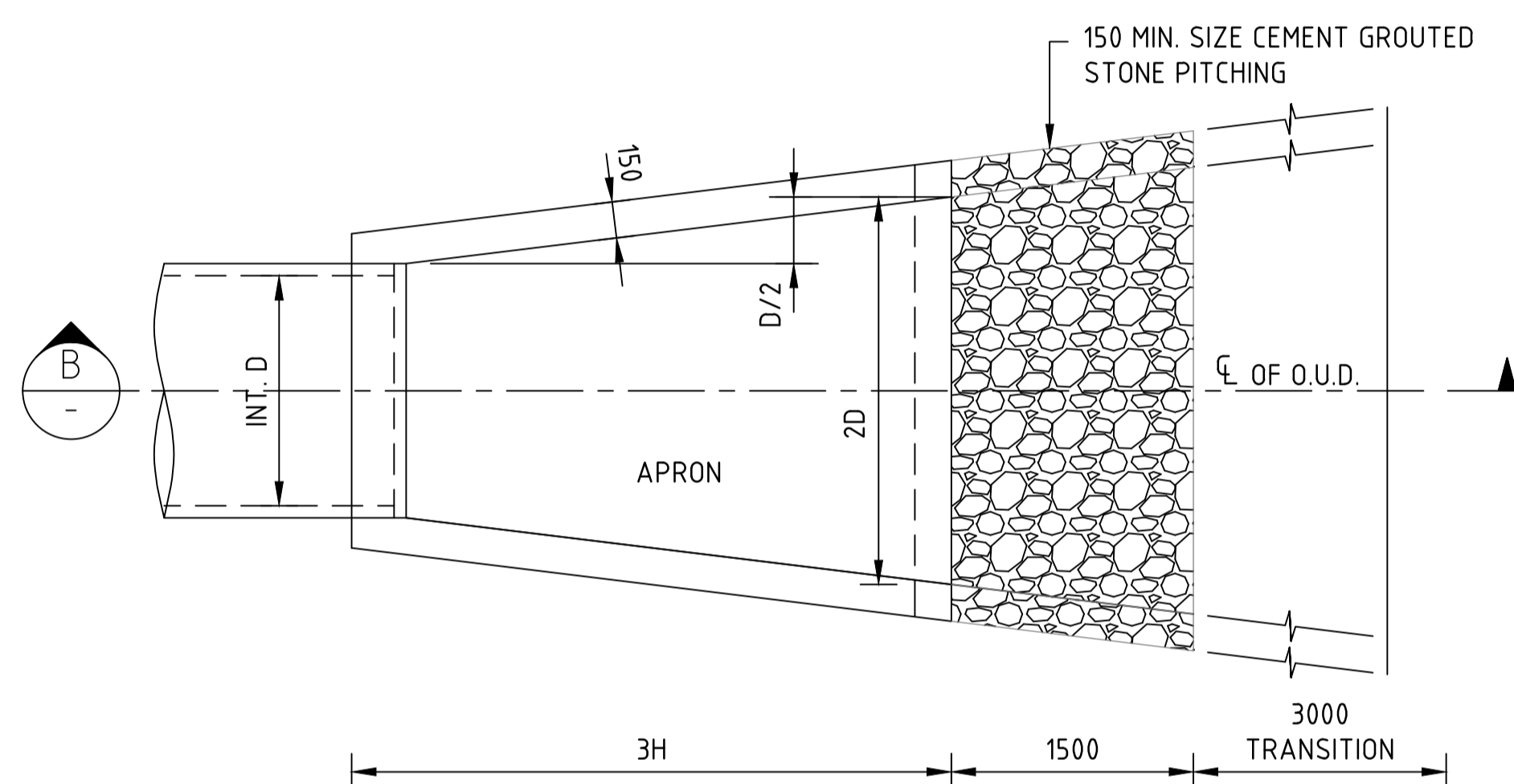
SECTION
NTS

PROVIDE SL82 TO APRON AND HEADWALL, CENTRALLY PLACED

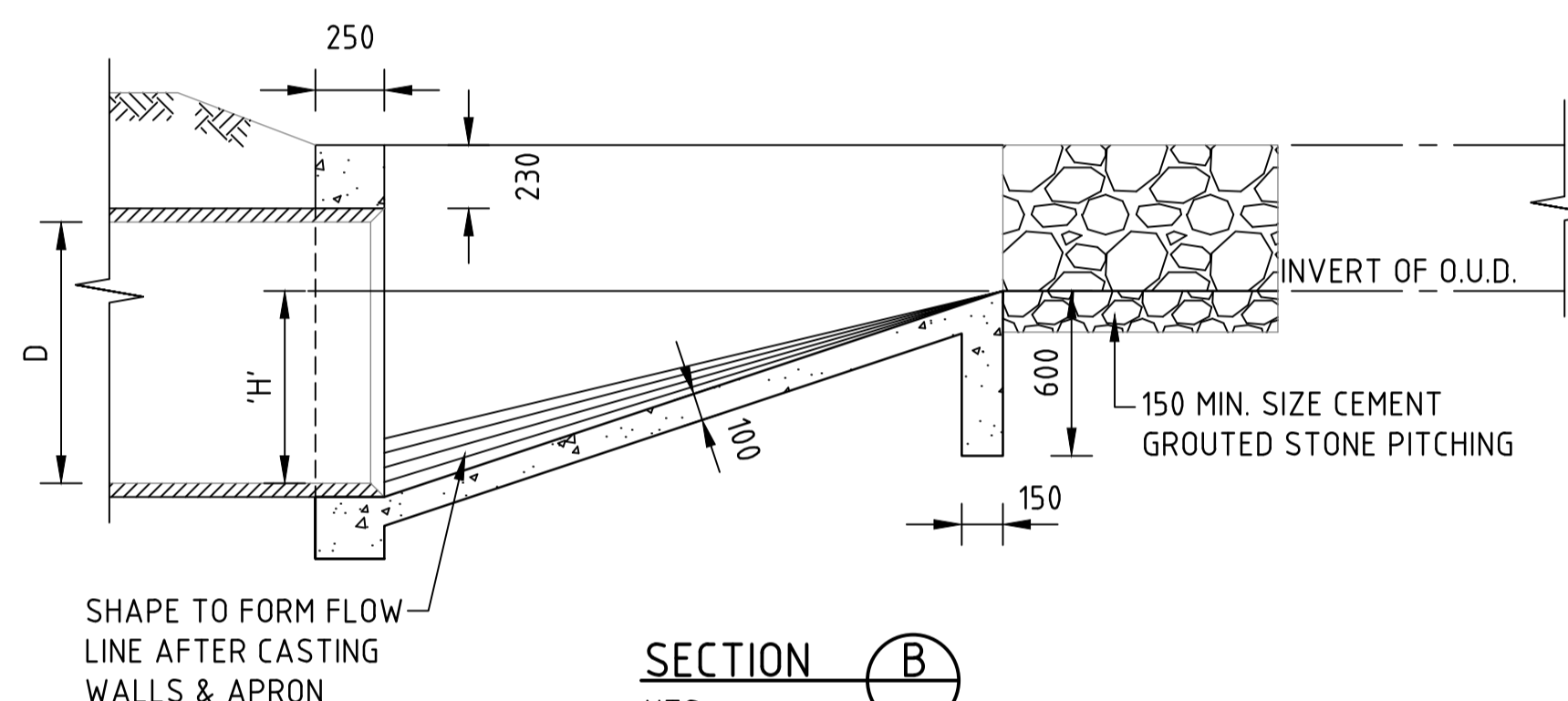
TABLE OF DIMENSIONS FOR R.C. PIPES - WINGWALLS

INTERNAL DIA. OF PIPE (D)	B	H	SINGLE WINGWALL		DOUBLE WINGWALL	
			A	A	E	
375	600	740	600	1345	300	
450	720	820	720	1550	300	
525	840	900	840	1755	300	
600	960	980	960	1960	300	
675	1080	1040	1080	2240	375	

NOTE:
USE OF PRECAST ENDWALLS REQUIRES APPROVAL FROM THE SUPERINTENDENT.



PLAN
CULVERT HEADWALL - SLOPING INLET
NTS



SECTION
NTS

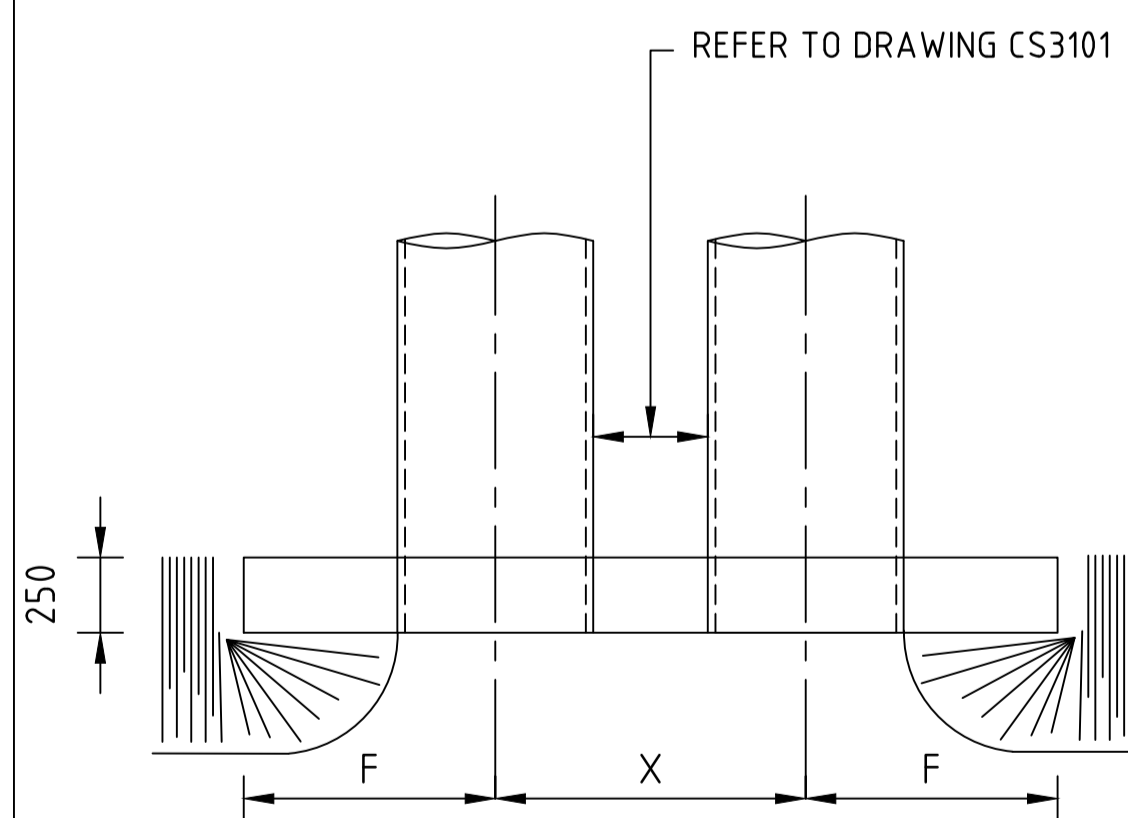
**WINGWALL FOR R.C. PIPES (375 TO 450mm DIA. ONLY)
(NARROW CHANNELS)**

NOTES:

- FOR APRON DETAILS REFER DRAWING CS3100.
- USE OF PRECAST ENDWALLS REQUIRES APPROVAL FROM SUPERINTENDENT.
- REFER TO STANDARD DRAWING CS3100 FOR GENERAL NOTES.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL CONCRETE SHALL BE STRENGTH GRADE N20 TO AS3600.
 - Q = CUBIC METRES OF CONCRETE REQUIRED FOR TWO HEADWALLS FOR FIRST CELL.
 - AC = CUBIC METRES OF CONCRETE REQUIRED FOR EACH ADDITIONAL CELL.
- STABILISE ALL BACKFILL IN ACCORDANCE WITH DEPARTMENTAL SPECIFICATION REQUIREMENTS.

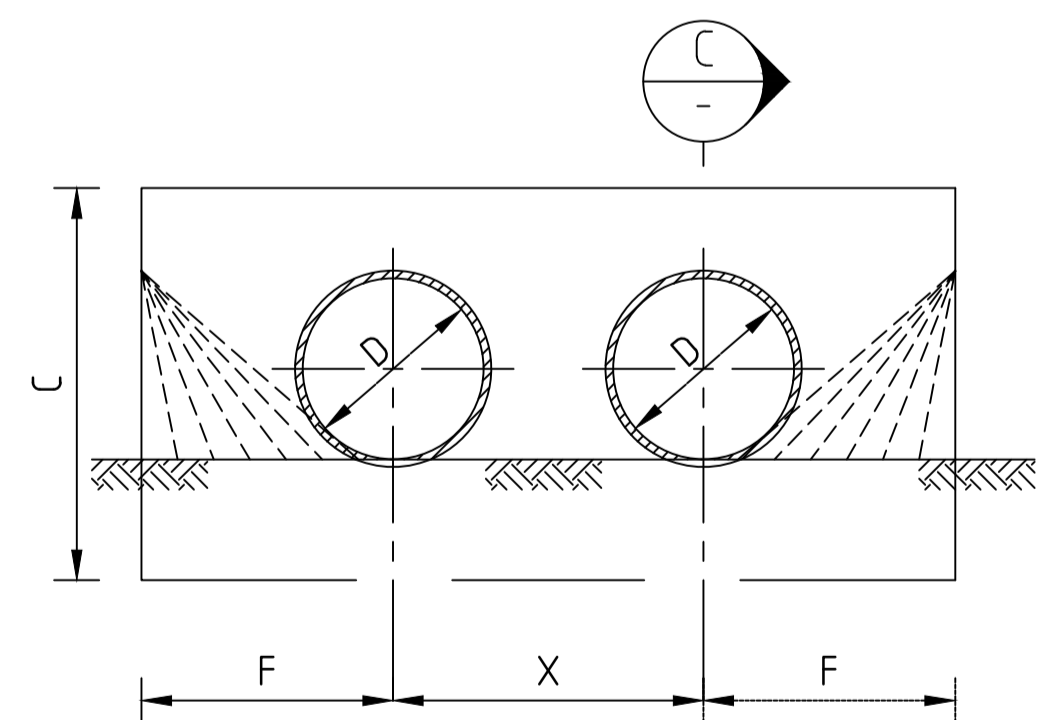
TABLE OF DIMENSIONS FOR R.C. PIPES - HEADWALLS

NOMINAL PIPE SIZE D	SKEW 0°				
	C	F	X	Q	AC
375	969	653	745	0.56	0.32
450	1058	788	833	0.72	0.37
525	1141	918	916	0.90	0.42
600	1224	1049	999	1.09	0.47
675	1306	1181	1381	1.30	0.52
NOMINAL PIPE SIZE D	SKEW 15°				
	H	A	X	Q	AC
375	AS FOR 0°	656	774	0.56	0.33
450		790	865	0.72	0.38
525		921	951	0.90	0.43
600		1052	1037	1.09	0.49
675		1185	1422	1.30	0.54
NOMINAL PIPE SIZE D	SKEW 30°				
	H	A	X	Q	AC
375	AS FOR 0°	662	873	0.55	0.37
450		799	974	0.72	0.43
525		931	1070	0.89	0.48
600		1063	1166	1.08	0.54
675		1197	1561	1.29	0.60
NOMINAL PIPE SIZE D	SKEW 45°				
	H	A	X	Q	AC
375	AS FOR 0°	677	1087	0.54	0.46
450		817	1211	0.71	0.53
525		952	1328	0.88	0.59
600		1087	1446	1.06	0.66
675		1224	1862	1.26	0.73

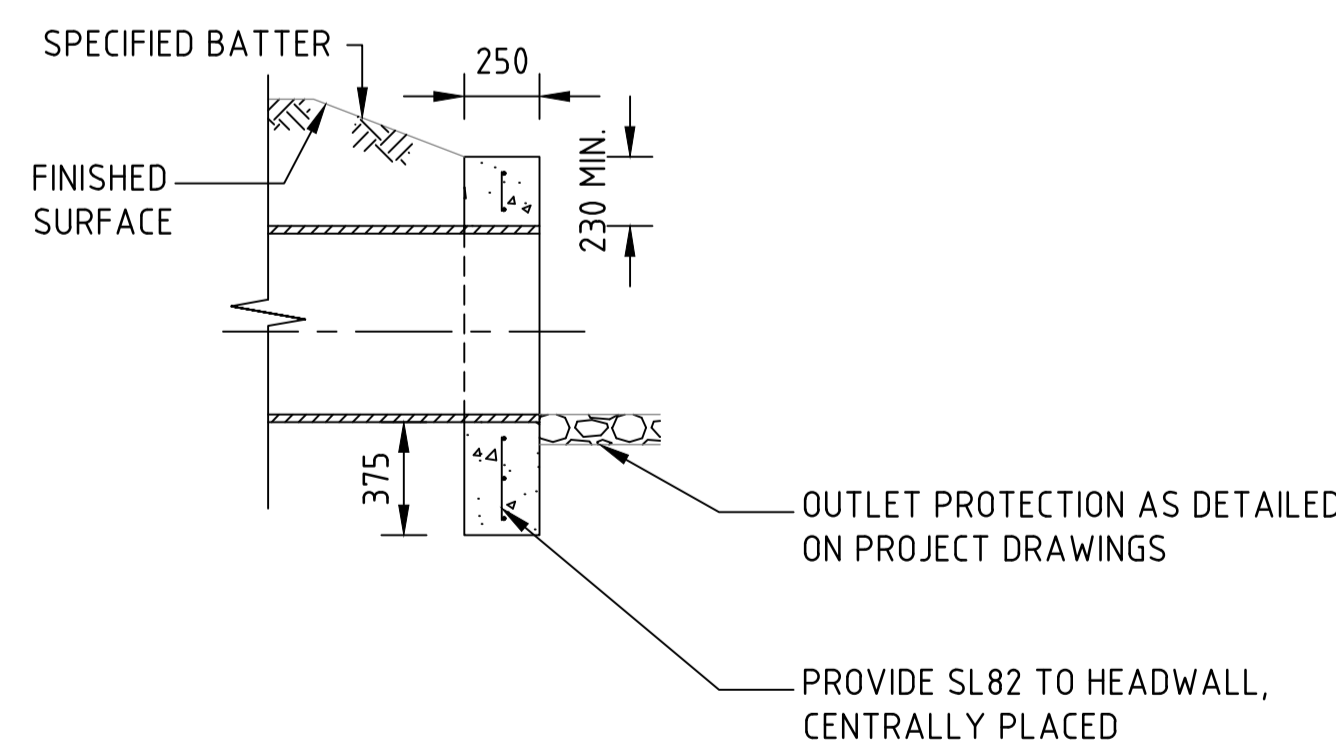


PLAN
NTS

HEADWALL FOR R.C. PIPES (375 TO 675mm DIA. ONLY)



ELEVATION
NTS



SECTION
NTS

OUTLET PROTECTION AS DETAILED ON PROJECT DRAWINGS

PROVIDE SL82 TO HEADWALL, CENTRALLY PLACED

WARNING

BEWARE OF UNDERGROUND SERVICES. THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DRAWN A.R.	CHECKED L.Mc
DATE DEC 2012	DATE DEC 2012
DESIGNED	CHECKED
DATE	DATE
DESIGN LEADER S.HATZI	DESIGN DIRECTOR S.JACKSON
DATE 1/09/2017	DATE 1/09/2017



STANDARD DRAWINGS
DRAINAGE

RCP 375mm DIA. TO 675mm DIA
HEADWALL & WINGWALL DETAIL - NARROW CHANNELS

No.	DESCRIPTION	DATE	NAME	DEPT./COMPANY
1	HEADWALL DETAILS ADDED	DEC 2017	J.S	EES/DIPL
0	ISSUED AS A STANDARD DRAWING	SEPT 2017	J.LEESON	EES/DIPL
AMENDMENTS				

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
-	-	1 OF 1	CS3102	1	A1