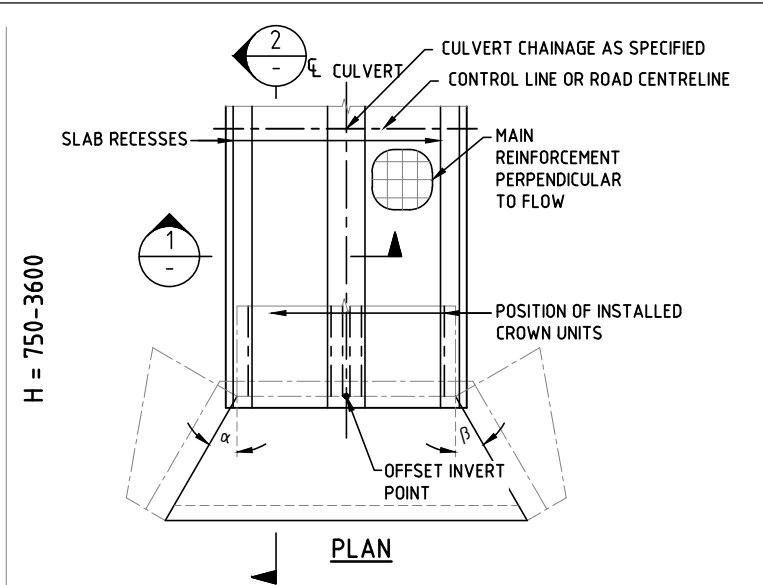


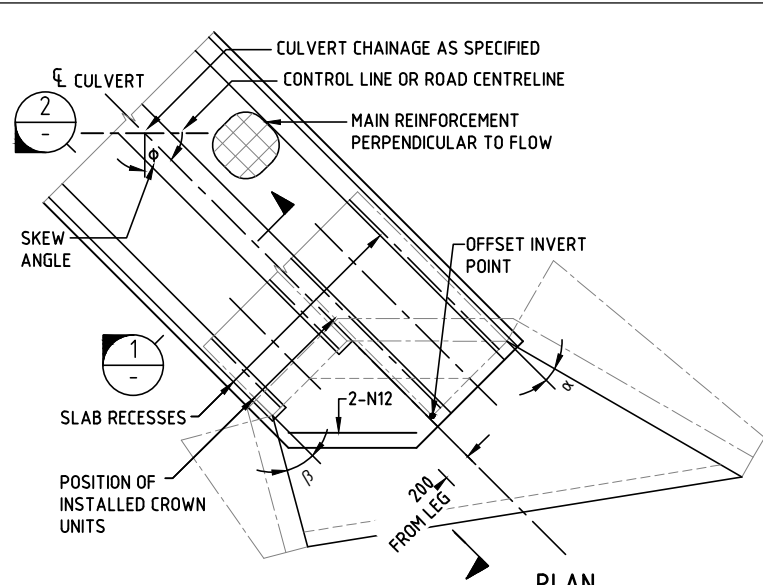
SLAB & APRON DETAILS FOR CULVERTS WITHOUT WINGWALLS

FOR HEADWALL & WINGWALL DETAILS REFER STANDARD DRAWINGS CS3107 AND CS3108

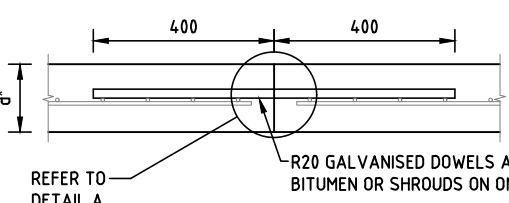


SLAB & APRON DETAILS FOR CULVERTS WITH WINGWALLS

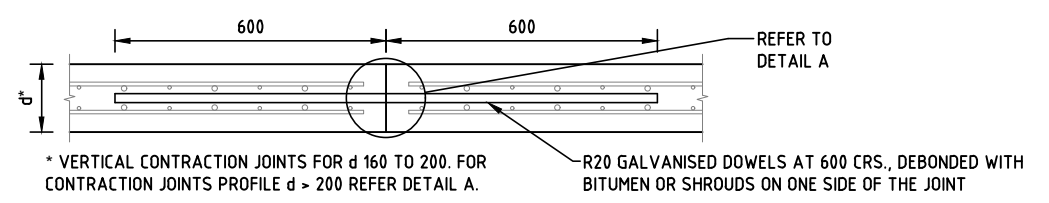
FOR HEADWALL & WINGWALL DETAILS REFER STANDARD DRAWINGS CS3107 AND CS3108



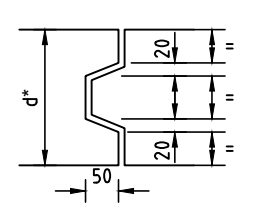
SLAB & APRON DETAILS FOR CULVERTS WITH WINGWALLS (STAGGERED CELLS)



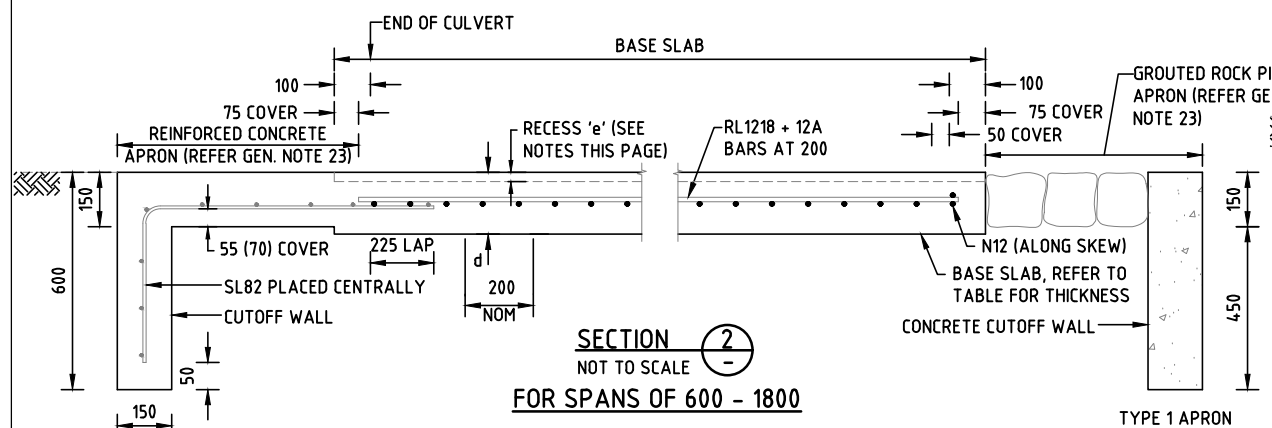
CONTRACTION JOINT
(SINGLE REINFORCEMENT LAYER) REFER NOTE 1 THIS PAGE FOR SPANS OF 600 TO 1800 FOR ALL APRONS



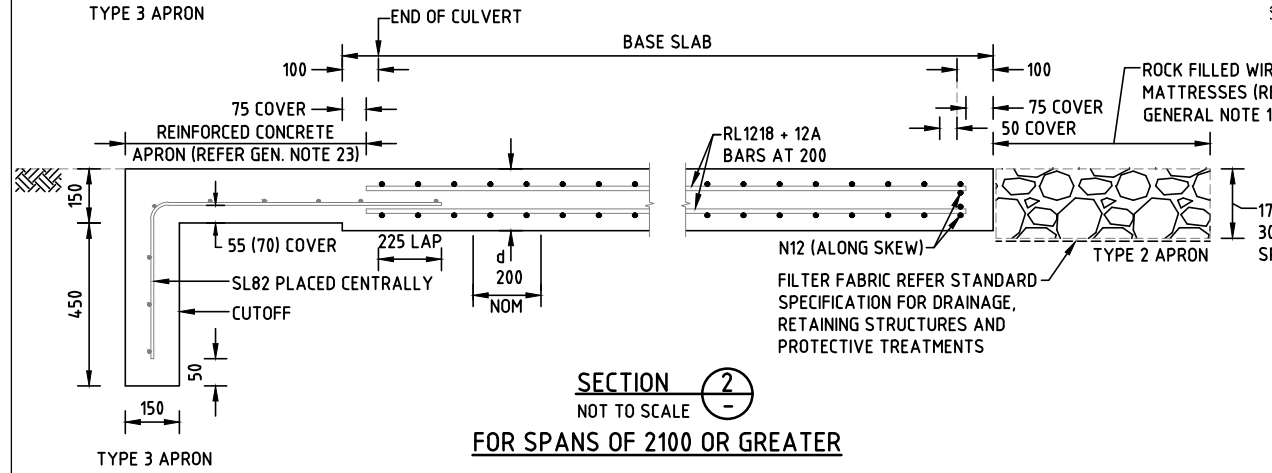
CONTRACTION JOINT
(DOUBLE REINFORCEMENT LAYER) REFER NOTE 1 THIS PAGE FOR SPANS OF 2100 OR GREATER



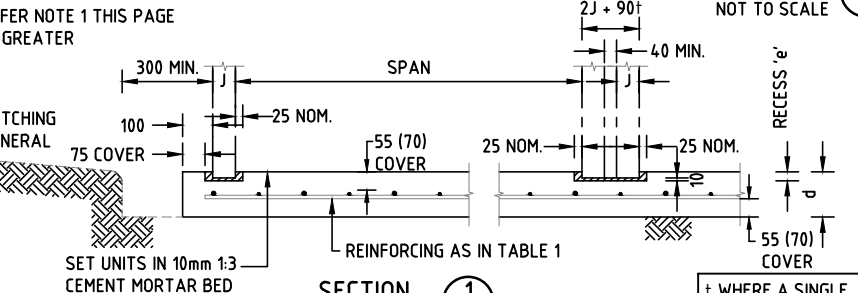
DETAIL A
NOT TO SCALE



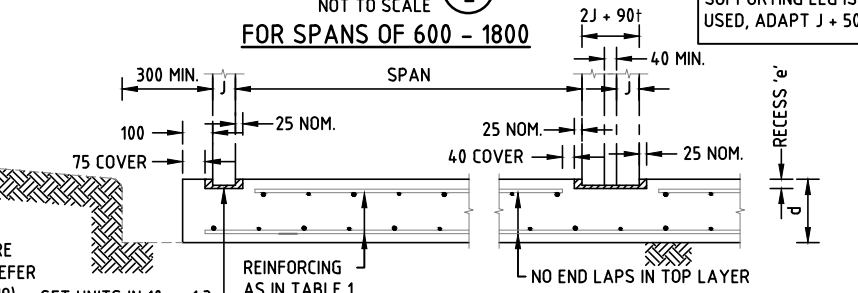
SECTION 2
NOT TO SCALE
FOR SPANS OF 600 - 1800



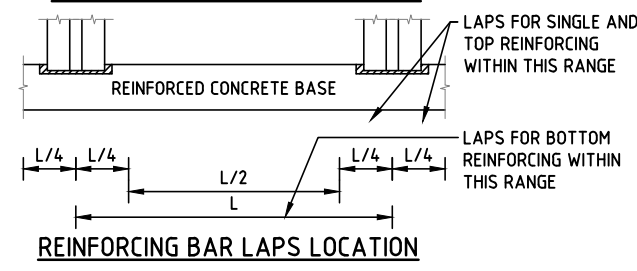
SECTION 2
NOT TO SCALE
FOR SPANS OF 2100 OR GREATER



SECTION 1
NOT TO SCALE
FOR SPANS OF 600 - 1800



SECTION 1
NOT TO SCALE
FOR SPANS OF 2100 OR GREATER



REINFORCING BAR LAPS LOCATION

NOTES:

- CONTRACTION JOINTS ARE TO BE PROVIDED WHERE (a) THE LENGTH OF THE BASE SLAB AND/OR (b) THE WIDTH OF THE BASE SLAB EXCEED 20 METRES. WHEN CONTRACTION JOINTS ARE REQUIRED ACROSS THE WIDTH OF THE BASE SLAB, THEY ARE TO BE LOCATED AT 1/4 SPAN POINTS OF CROWN UNITS. CONTRACTION JOINTS ACROSS THE WIDTH OF THE BASE SLAB ARE TO BE CONTINUED ACROSS THE APRONS. FOR APRON CONTRACTION JOINTS REFER TO THE DETAIL FOR SINGLE REINFORCEMENT LAYER. 24 HOURS MINIMUM IS TO BE ALLOWED BETWEEN POURS.
- FOR CULVERTS WITH A BASE > 10 METRES ALONG ROAD CENTRELINE, THIS DESIGN SHOULD NOT BE USED IN:
 - HIGHLY REACTIVE OR EXPANSIVE CLAY SOILS (LINEAR SHRINKAGE >8%)
 - WHERE LARGE DIFFERENTIAL SETTLEMENTS ARE EXPECTED TO OCCUR. SPECIAL DESIGN ADVICE SHOULD BE OBTAINED IN THESE CIRCUMSTANCES.
- REFER TO STANDARD DRAWING CS3100 FOR GENERAL NOTES, W1 & W2 CALCULATIONS AND WINGWALLS ANGLES α AND β .
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- REFER TO CS3109, CS3110 AND CS3111 FOR SHEET 1 TO SHEET 3, CS3113 FOR SHEET 5
- RECESS DETAILS ARE AS FOLLOWS:

FOR H = 600	- 'e' = 0, NO RECESSES
FOR H > 600 TO 750	- 'e' = 20mm
FOR H > 750 TO 1200	- 'e' = 30mm
FOR H > 1200	- 'e' = 40mm

SPAN	THICKNESS OF SLAB, d	MAIN REINFORCEMENT	SECONDARY REINFORCEMENT	POSITION	LENGTH OF NIB BARS
600	180 (210)	RL1218	12 AT 200	SINGLE MAT ON CENTRE LINE	N/A
750	180 (210)	RL1218	12 AT 200		630
900	180 (210)	RL1218	12 AT 200		630
1200	180 (210)	RL1218	12 AT 200		630
1500	190 (210)	RL1218	12 AT 200		650
1800	190 (210)	RL1218	12 AT 200		650
2100	210 (240)	RL1218	12 AT 200	TOP MAT 55 (70) & BOTTOM MAT 75 (90) COVER	690
2400	220 (240)	RL1218	12 AT 200		710
2700	240 (280)	RL1218	12 AT 200		750
3000	240 (280)	RL1218	12 AT 200		750
3300	250 (290)	RL1218	12 AT 200		770
3600	260 (300)	RL1218	12 AT 200		790

TABLE 1 - SLAB DETAILS
REFER TO STANDARD DRAWING CS3100 FOR GENERAL NOTES 1, 2, 3 & 4

THIS DRAWING IS DERIVED FROM QUEENSLAND MAIN ROADS STANDARD DRAWING 1318 AND ADOPTED FOR THE NT CONDITIONS.

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED AS A STANDARD DRAWING	SEPT 2017	J. LEESON	EES/DIPL
AMENDMENTS				

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



STANDARD DRAWINGS DRAINAGE				
RCBC & LINK SLABS CONSTRUCTION OF BASES WITH RECESSES & APRONS				
FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.
-	-	4 OF 5	CS3112	0
				SHEET SIZE A1