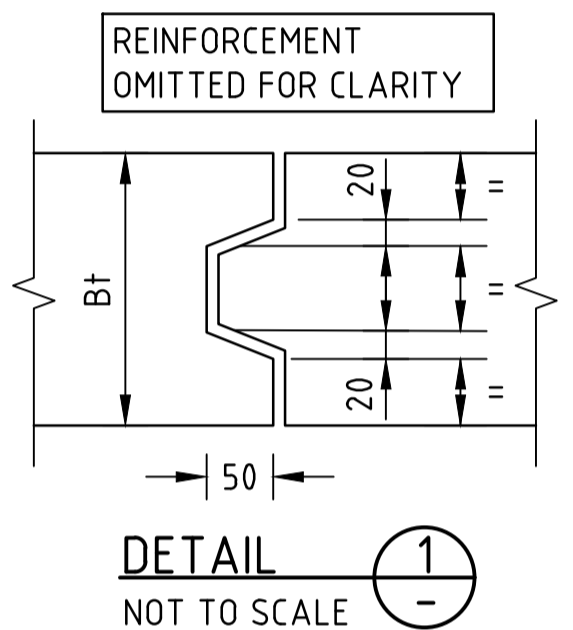
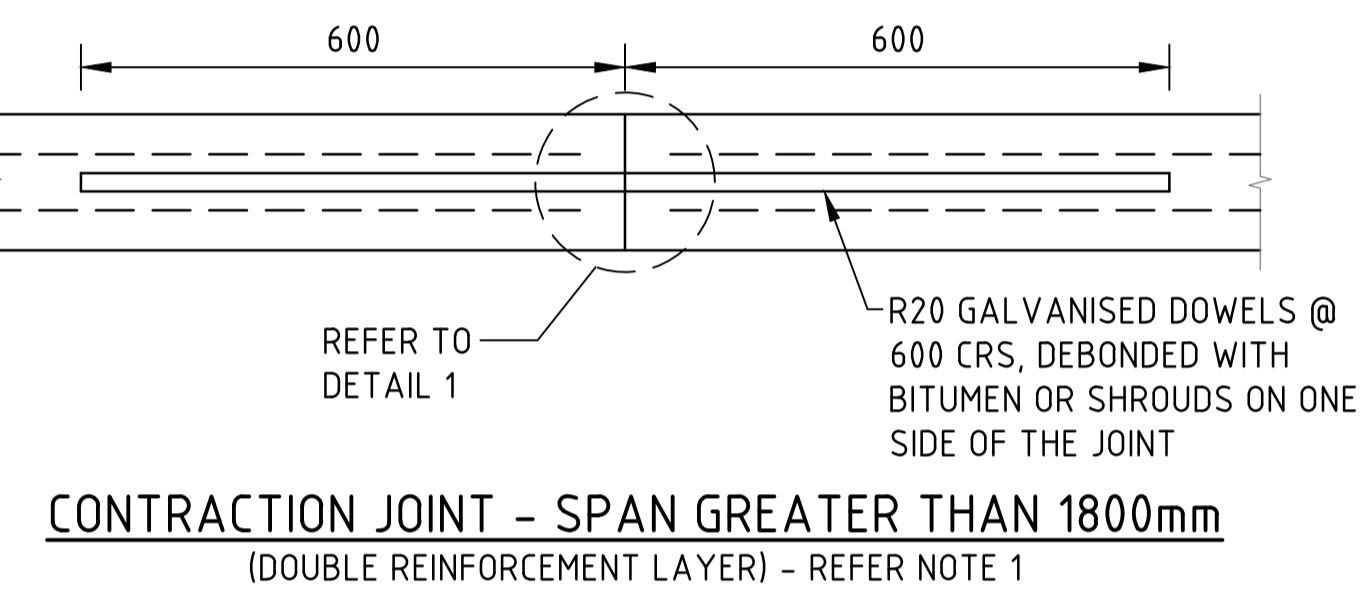
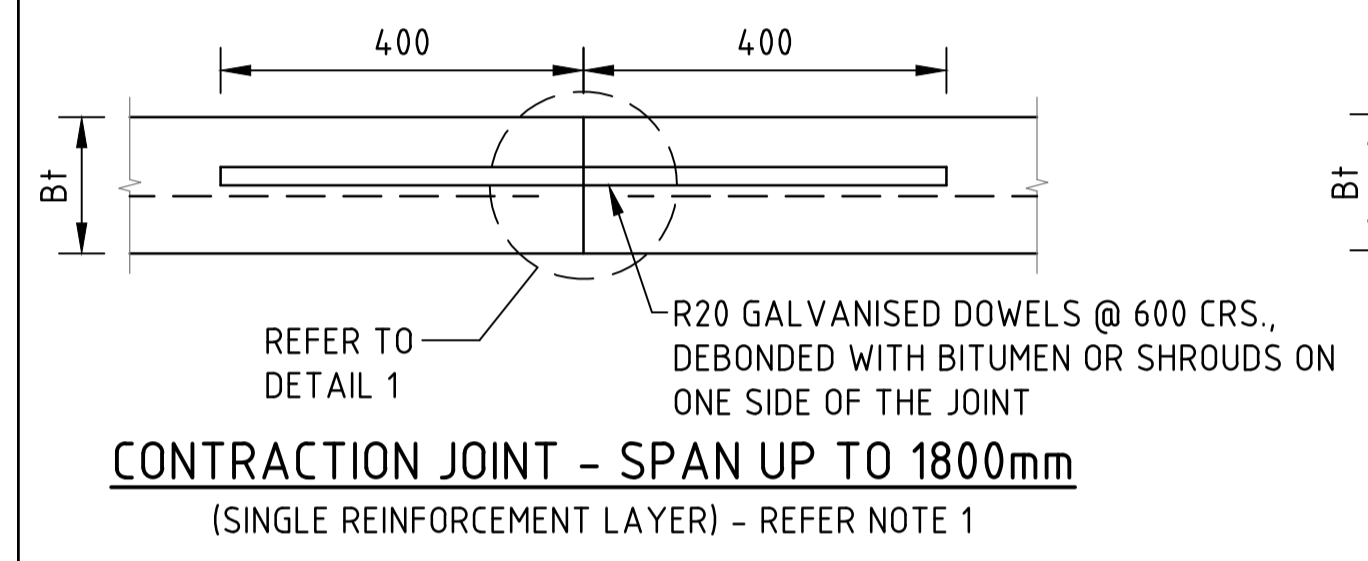


SLAB & APRON DETAILS FOR CULVERTS WITHOUT WINGWALLS
FOR HEADWALL DETAILS REFER STANDARD DRAWINGS CS3107

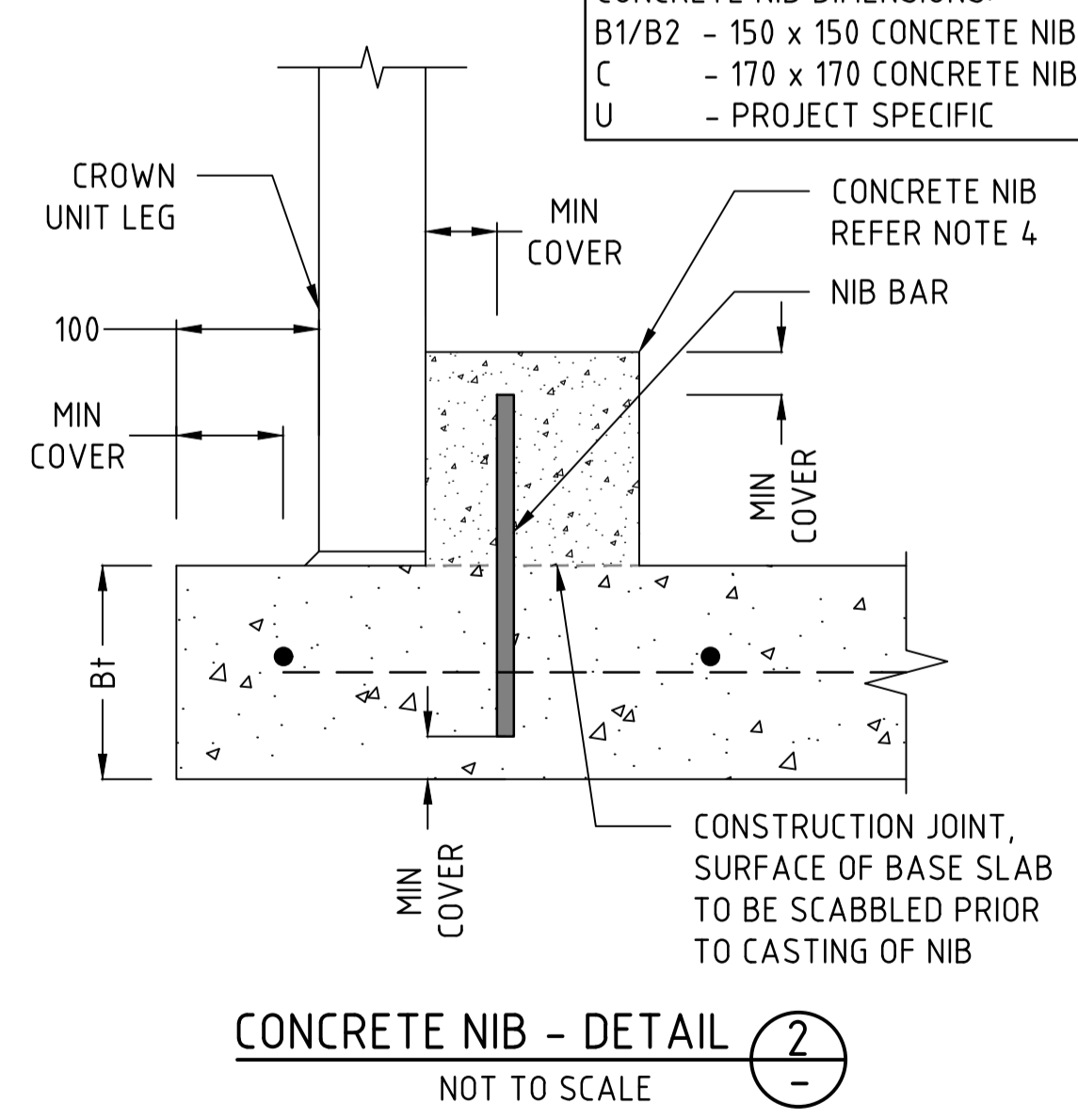
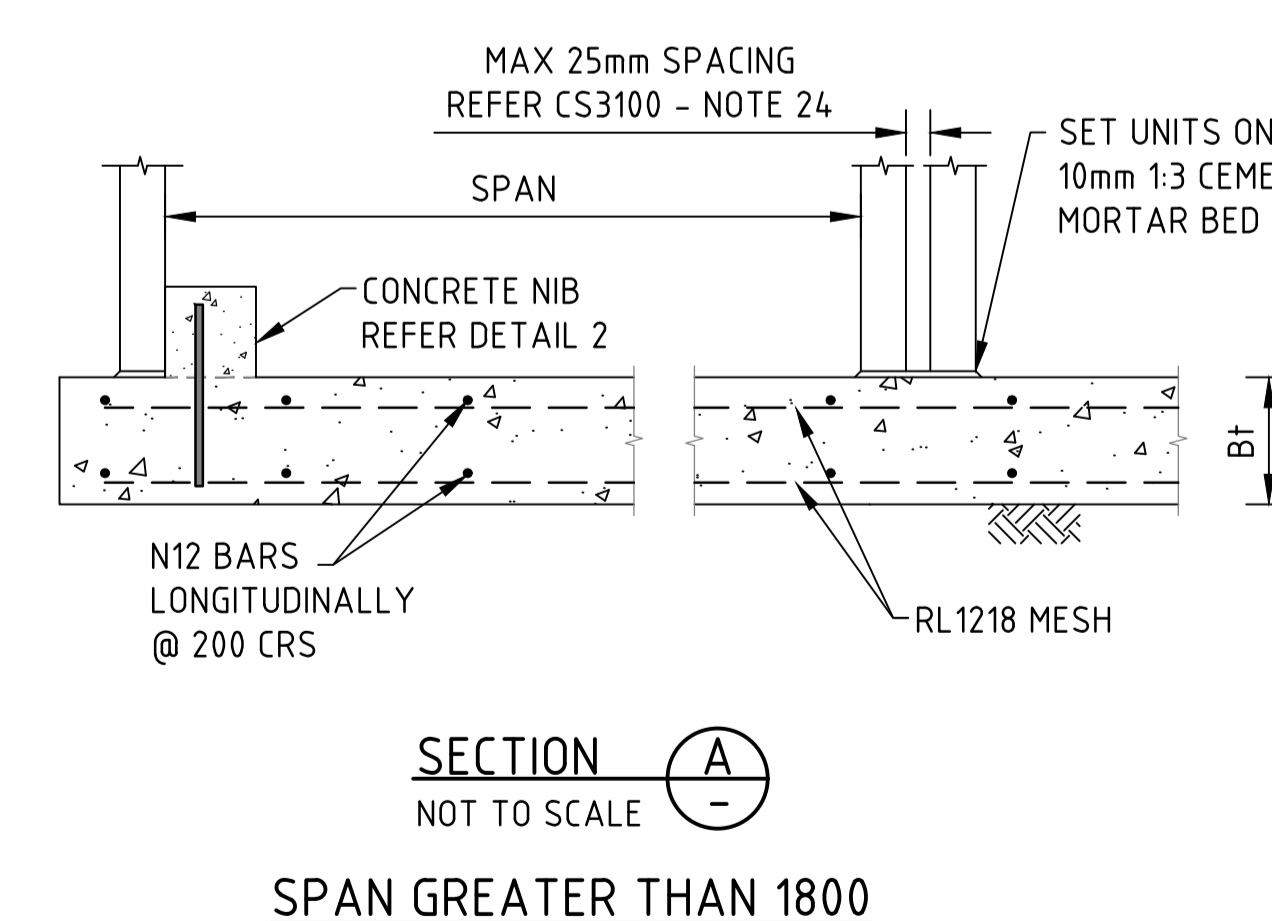
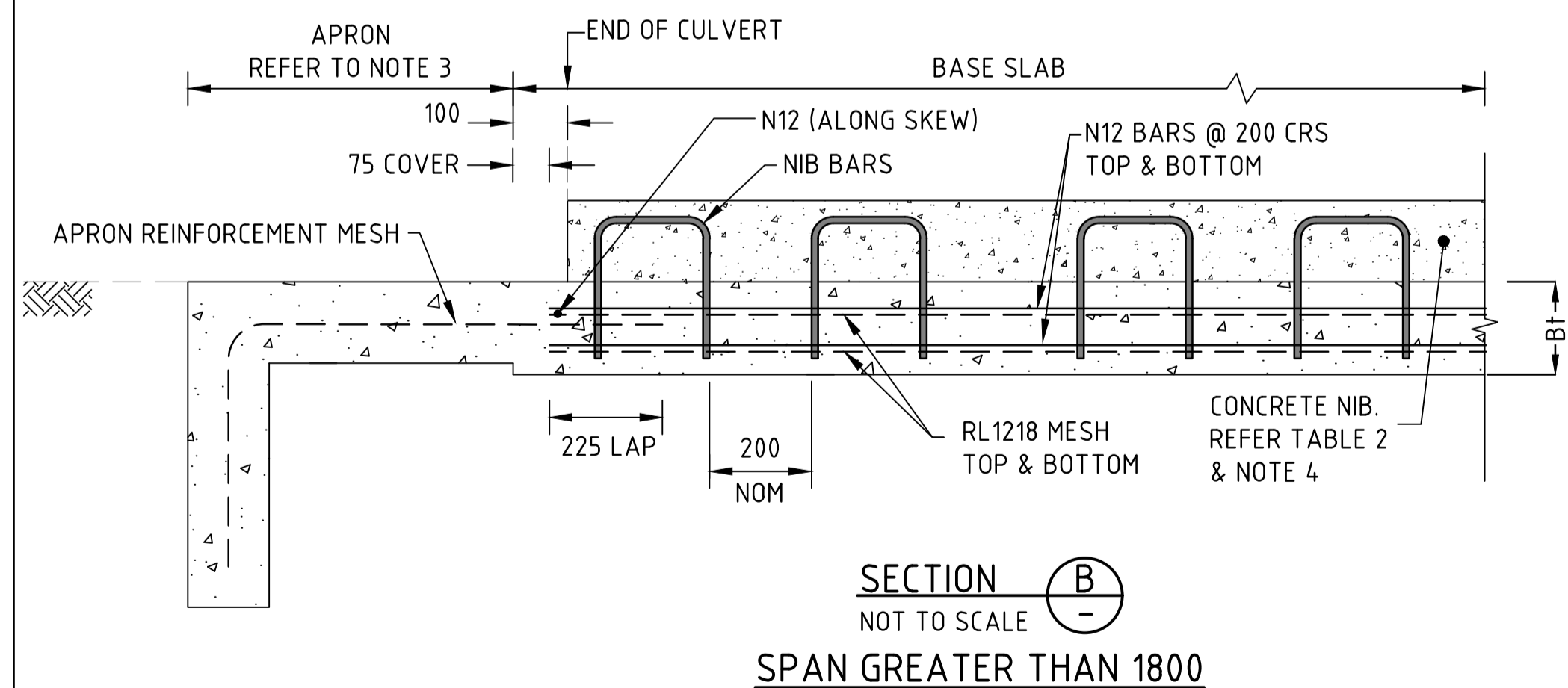
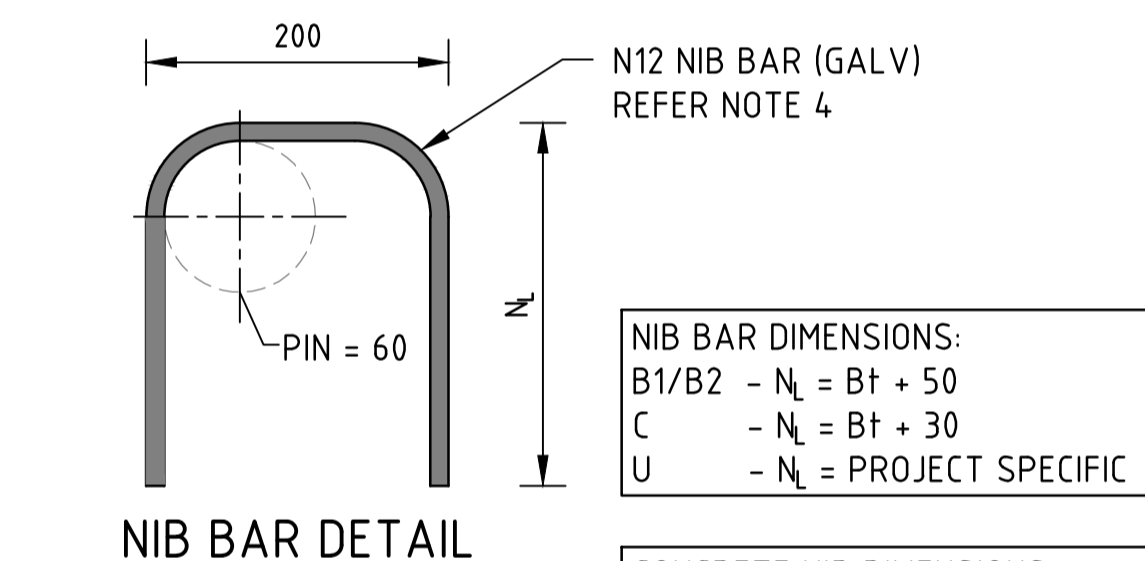
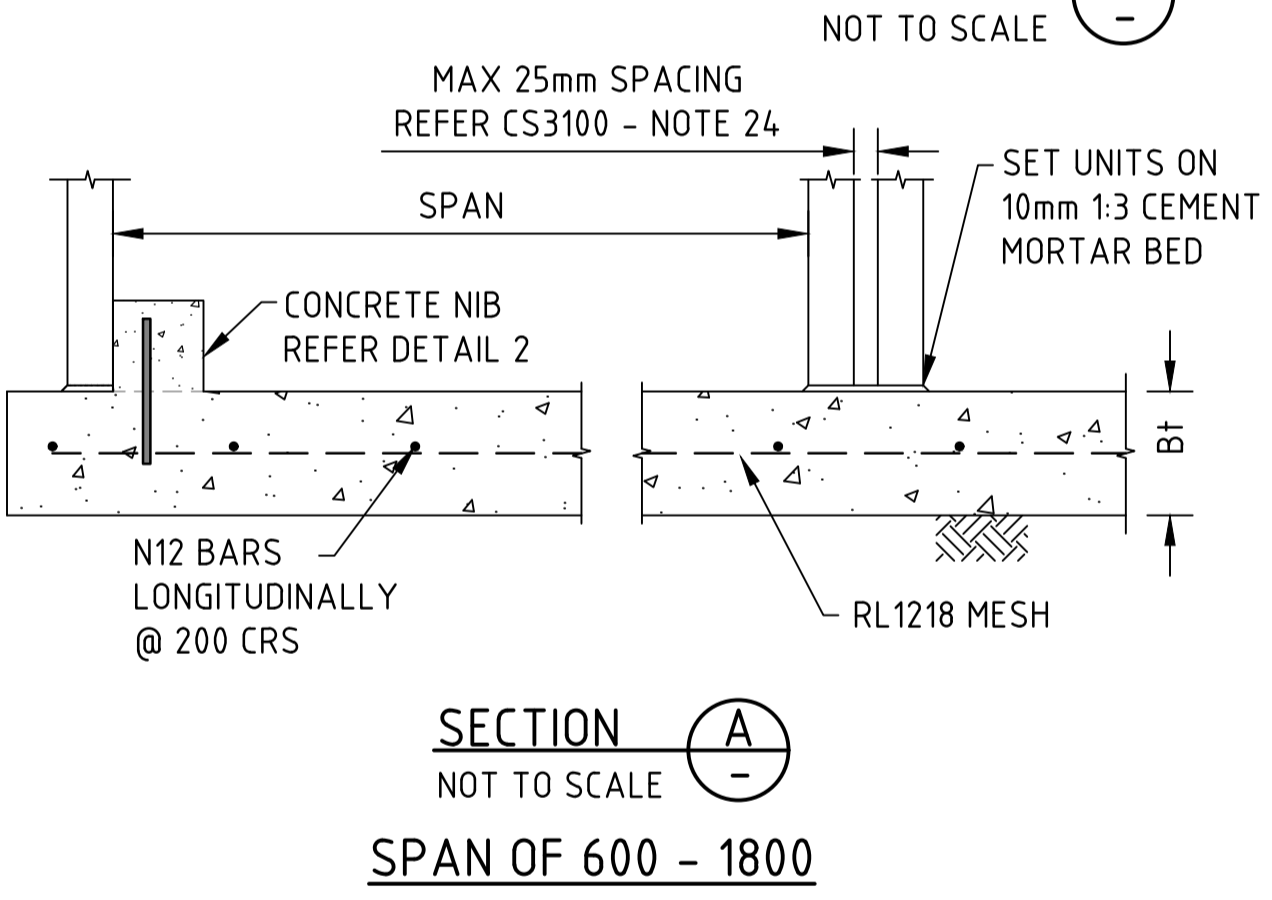
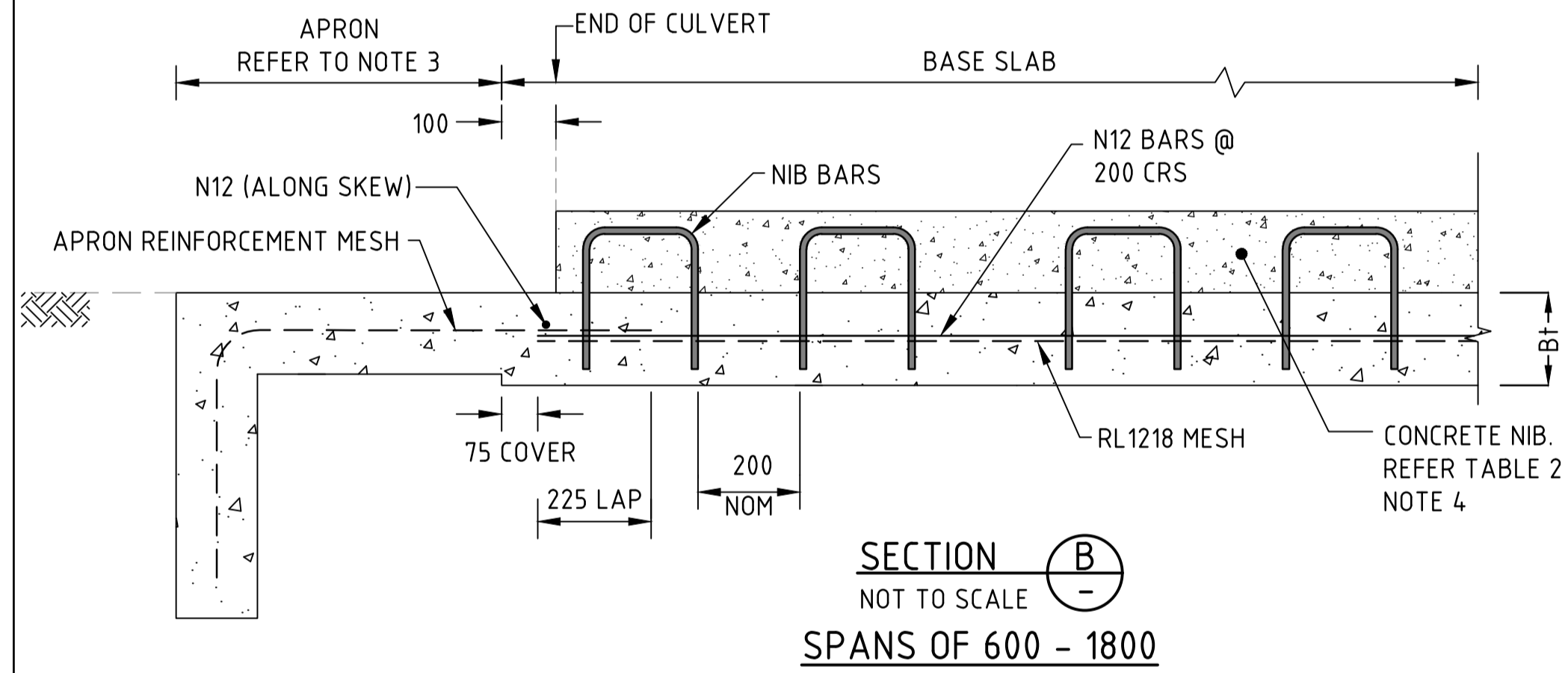
SLAB & APRON DETAILS FOR CULVERTS WITH WINGWALLS
FOR HEADWALL & WINGWALL DETAILS REFER STANDARD DRAWINGS CS3107, CS3109 & CS3110



SPAN OF CROWN UNIT	BASE SLAB THICKNESS (Bt)	PRIMARY REINFORCEMENT	SECONDARY REINFORCEMENT
600 - 1800	200	RL1218 CENTRALLY PLACED	N12 BARS @ 200 CRS
>1800	250	RL1218 TOP & BOTTOM	N12 BARS @ 200 CRS

CULVERT TYPE	ARRANGEMENT
RCBC D < 600	NO NIBS
RCBC D > 600	NIBS SUPPORTING EXTERNAL LEGS OF EXTERNAL CELLS
SLBC 600 < D < 900	NIBS SUPPORTING EXTERNAL LEGS OF EXTERNAL CELLS
SLBC D > 600	NIBS SUPPORTING BOTH LEGS OF EXTERNAL CELLS

INSTALLATION:
H < 1500, NIBS CAST BEFORE PLACEMENT OF UNITS
H > 1500, NIBS CAST AFTER PLACEMENT OF UNITS



- NOTES:**
- CONTRACTION JOINTS ARE TO BE PROVIDED WHERE:
 - THE LENGTH OF THE BASE SLAB EXCEEDS 20 METRES
 - THE WIDTH OF THE BASE SLAB EXCEEDS 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.
 - WHERE THE ABOVE HAS BEEN IDENTIFIED, SPECIAL DESIGN ADVICE IS REQUIRED
 - STANDARD DRAWING REFERENCES:
 - CS3100 - GENERAL NOTES, APRON DETAILS, DEFINITION OF SYMBOLS, & BASE SLAB EXTENSION DETAILS
 - CS3107 - CS3113 - SHEET 1 TO SHEET 7 OF THIS SET
 - NIB BAR LENGTHS ARE DEPENDENT ON THE THICKNESS OF BASE SLAB & MINIMUM COVER REQUIREMENTS. REFER CS3100 - NOTE 1 FOR MINIMUM COVER AND CONCRETE EXPOSURE CLASSIFICATIONS
 - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

THIS DRAWING IS DERIVED FROM QUEENSLAND MAIN ROADS STANDARD DRAWING SET 1250 AND ADOPTED FOR THE NT CONDITIONS.

No.	DESCRIPTION	DATE	NAME	DEPT./COMPANY
2	DESIGN DETAILS AMENDED	APR 2023	J. COOK	TCS / DIPL
1	MINOR AMENDMENT	OCT 2022	N.V	TCS/DIPL
0	ISSUED AS A STANDARD DRAWING	SEPT 2017	J.LEESON	EES/DIPL

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	QLD	CHECKED	QLD
DATE		DATE	
DESIGN LEADER	S.HATZI	DESIGN DIRECTOR	S.JACKSON
DATE	1/09/2017	DATE	1/09/2017



STANDARD DRAWINGS				
DRAINAGE				
REINFORCED CONCRETE BOX CULVERT (RCBC) CONSTRUCTION OF BASES WITH NIBS AND APRONS				
FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.
-	-	5 OF 7	CS3111	2
				SHEET SIZE A1