

SETTING OUT OF BOX CULVERTS
NOT TO SCALE

NOTES

DESIGN LOADS

- IN ACCORDANCE WITH AUSTRALIAN BRIDGE DESIGN CODE 1996.
- HEADWALLS ARE NOT DESIGNED FOR GUARDRAIL IMPACT FORCES.

SETTING OUT

- THE SETTING OUT DIMENSIONS ARE BASED ON INCREASING THE BATTER LOCALLY TO 2:1 BEYOND THE HEADWALLS, EXCEPT AS INDICATED FOR SINGLE CULVERTS.

CONCRETE

- GRADE S40

COVER

- MINIMUM CLEAR COVER TO BE 50mm.

CONCRETE EXPOSURE CLASSIFICATION

- IN ACCORDANCE WITH REQUIREMENTS IN AUSTRALIAN BRIDGE DESIGN CODE 1996 FOR CONCRETE EXPOSURE CLASSIFICATION.
- COVER AND CONCRETE STRENGTH SHOWN ON DRAWINGS SATISFY REQUIREMENTS FOR EXPOSURE CLASSIFICATIONS B1 AND B2.
- FOR EXPOSURE CLASSIFICATIONS C AND U, THE FOLLOWING SHALL APPLY.

EXPOSURE CLASSIFICATION	MINIMUM CLEAR COVER (mm)	
	40MPa CONCRETE	50 MPa CONCRETE
C (SALT-RICH ARID AREAS OR IN SEA WATER)	60	50
U (IN SOFT OR RUNNING WATER OR AGGRESSIVE SOILS - SULPHATE IONS - pH < 4.0)	-	70

REINFORCEMENT

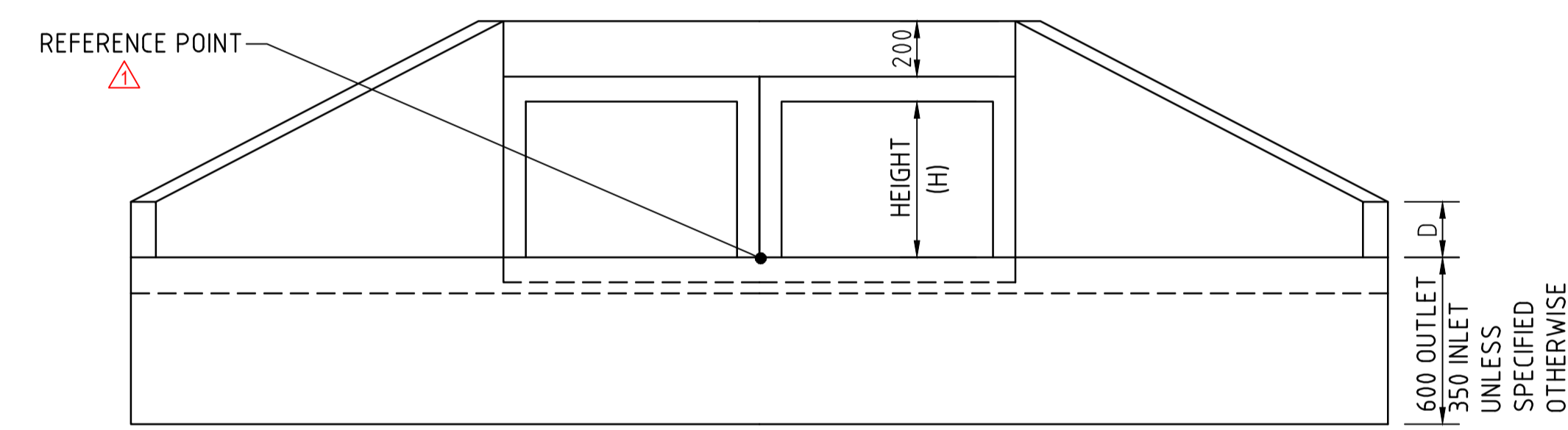
- REINFORCING BAR SHALL BE D500N AND MESH SHALL BE D500L IN ACCORDANCE WITH AS/NZS4671.
- MINIMUM LAPS, UNLESS SHOWN OTHERWISE: BARS 300mm, FABRIC 100mm.

CHAMFERS

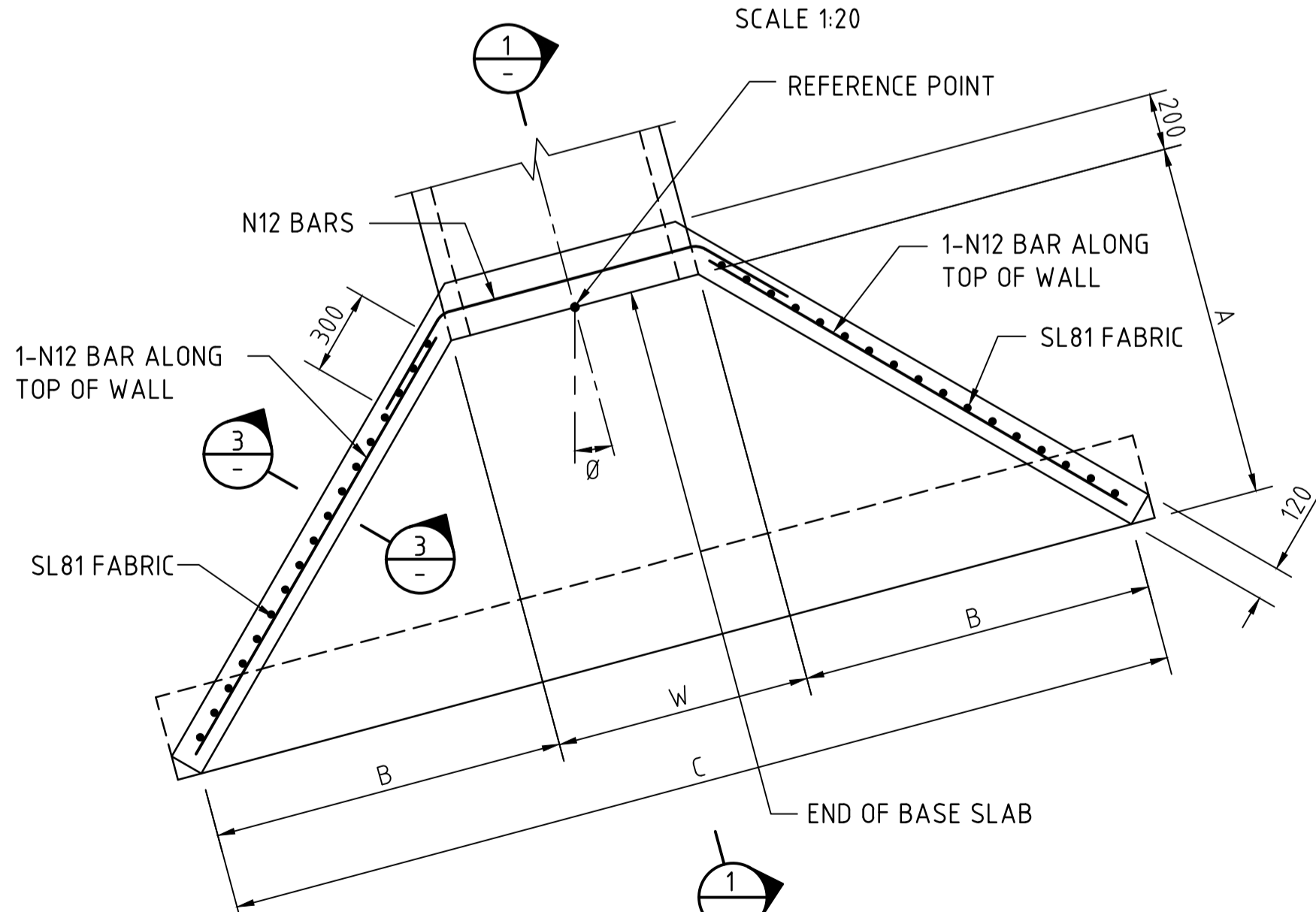
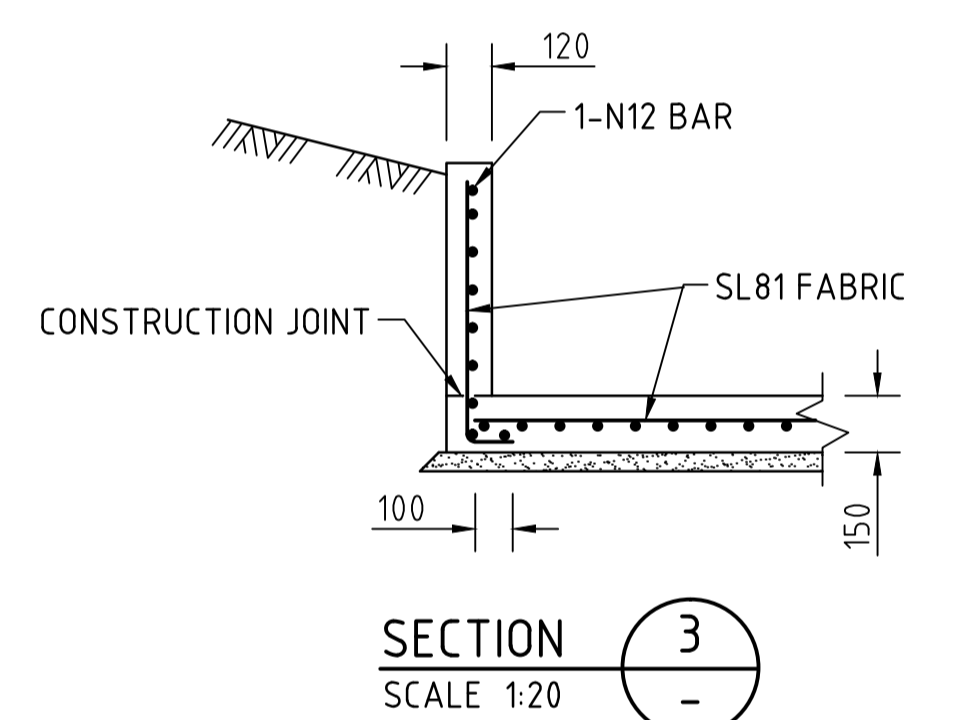
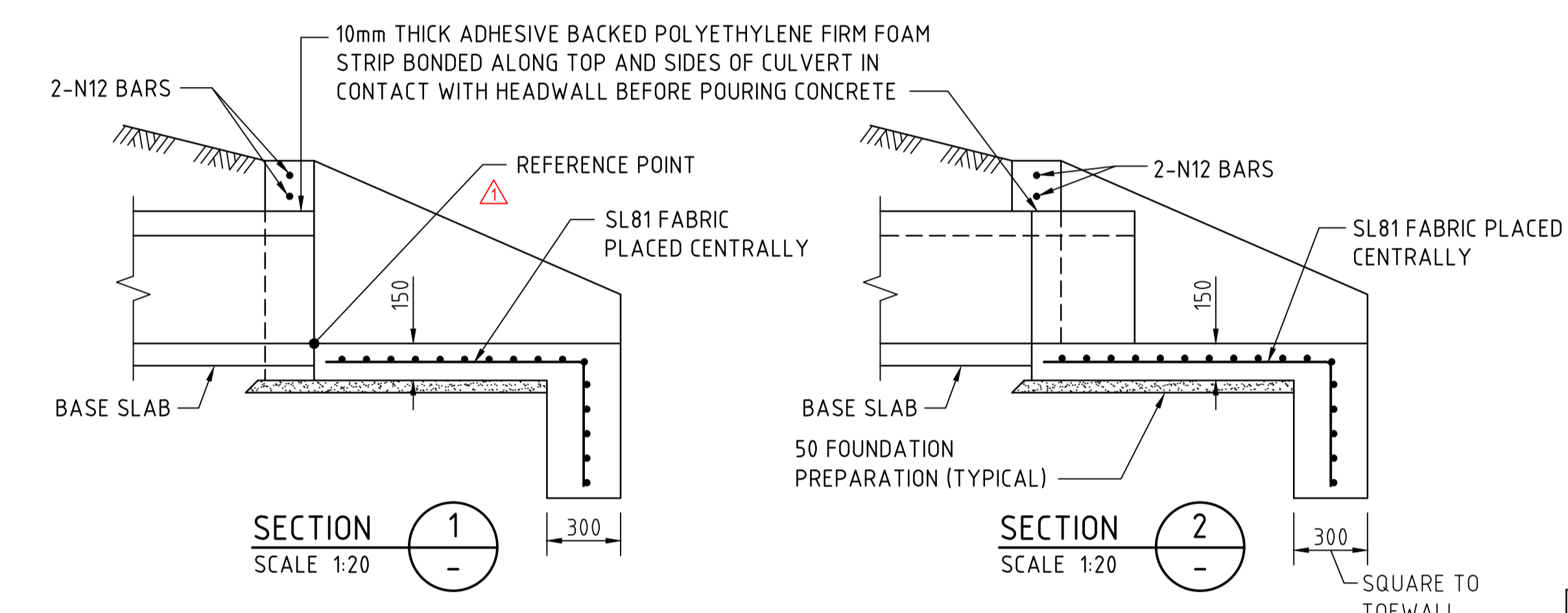
- ALL EXPOSED EDGES TO BE PROVIDED WITH 20mm CHAMFERS.

FOUNDATION PREPARATION

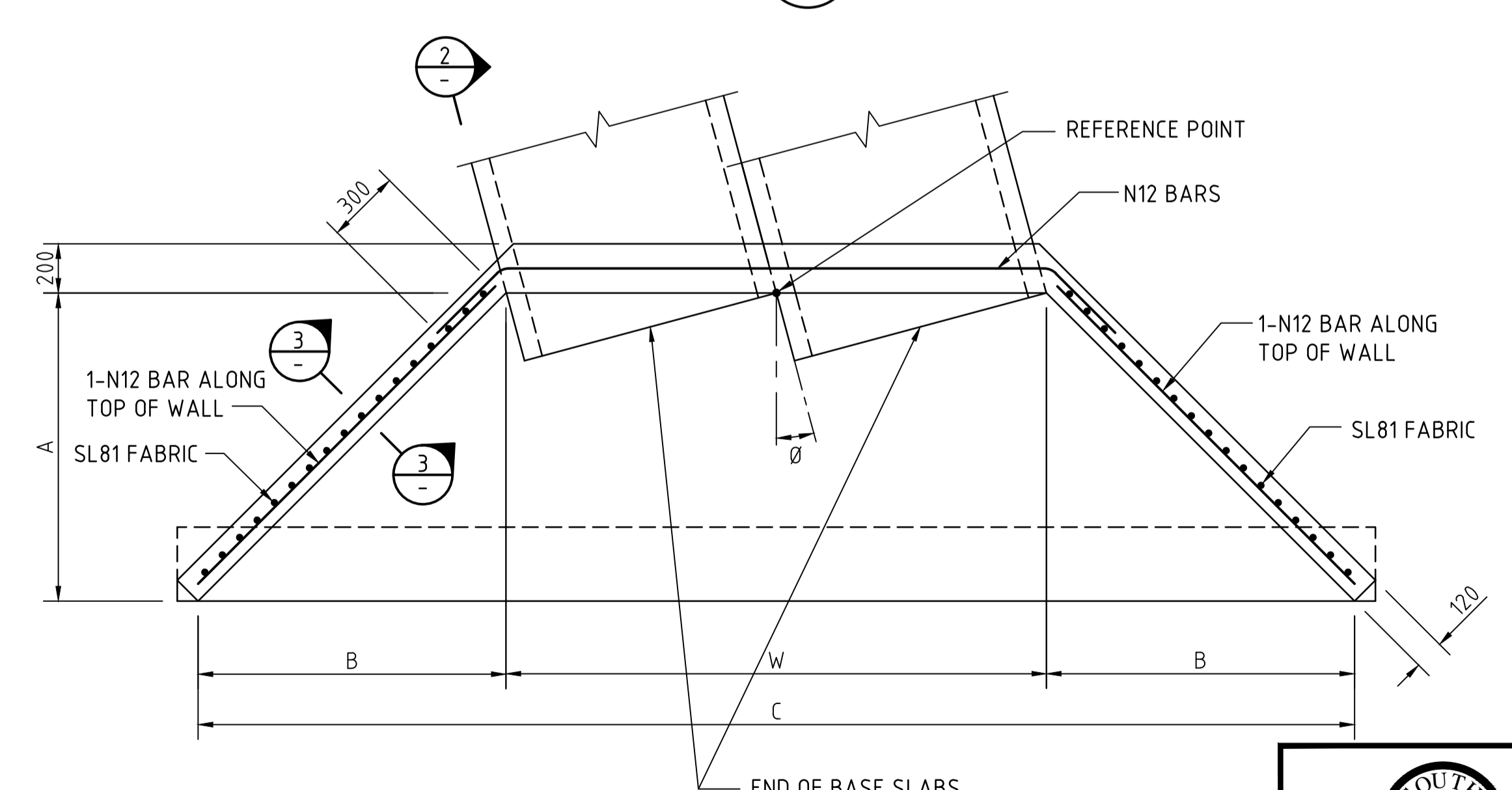
- 50mm GRADE 10 CONCRETE OR 50mm COMPACTED SAND.



ELEVATION
TYPICAL FOR SINGLE AND MULTIPLE CULVERTS
SCALE 1:20



SECTIONAL PLAN
REINFORCEMENT FOR SINGLE CULVERT
SCALE 1:20



SECTIONAL PLAN
REINFORCEMENT FOR MULTIPLE CULVERTS
SCALE 1:20

SETTING OUT DIMENSIONS FOR SINGLE CULVERTS

H	A	D	SKEW ANGLE θ LESS THAN 20°	
			B	C
450	1000	250	1000	W+2000
600	1250	300	1250	W+2500
750	1500	350	1500	W+3000
900	1750	400	1750	W+3500
1050	2000	450	2000	W+4000
1200	2250	500	2250	W+4500

SETTING OUT DIMENSIONS FOR MULTIPLE CULVERTS

H	A	D	SKEW ANGLE θ LESS THAN 20°	
			B	C
450	1000	250	1000	W+2000
600	1200	300	1200	W+2400
750	1400	350	1400	W+2800
900	1600	400	1600	W+3200
1050	1800	450	1800	W+3600
1200	2000	500	2000	W+4000

THIS SHEET SUPERSEDES DRG S-4002, SHEETS 8 AND 10

Government of South Australia

Department of Planning, Transport and Infrastructure

STANDARD DRAWING

HEADWALL, WINGWALL AND APRON DETAILS

BOX CULVERTS WITH A SKEW ANGLE 0° TO 20°

DESIGNED: DU	DRAFTED: DU	ACCEPTED FOR USE: STEPHEN PASCALE	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
CHECKED: TN/GN	REVIEWED: GWC	MGR. TECHNICAL SERVICES DATE: 03/08/2015	9722937	4002	19	1

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