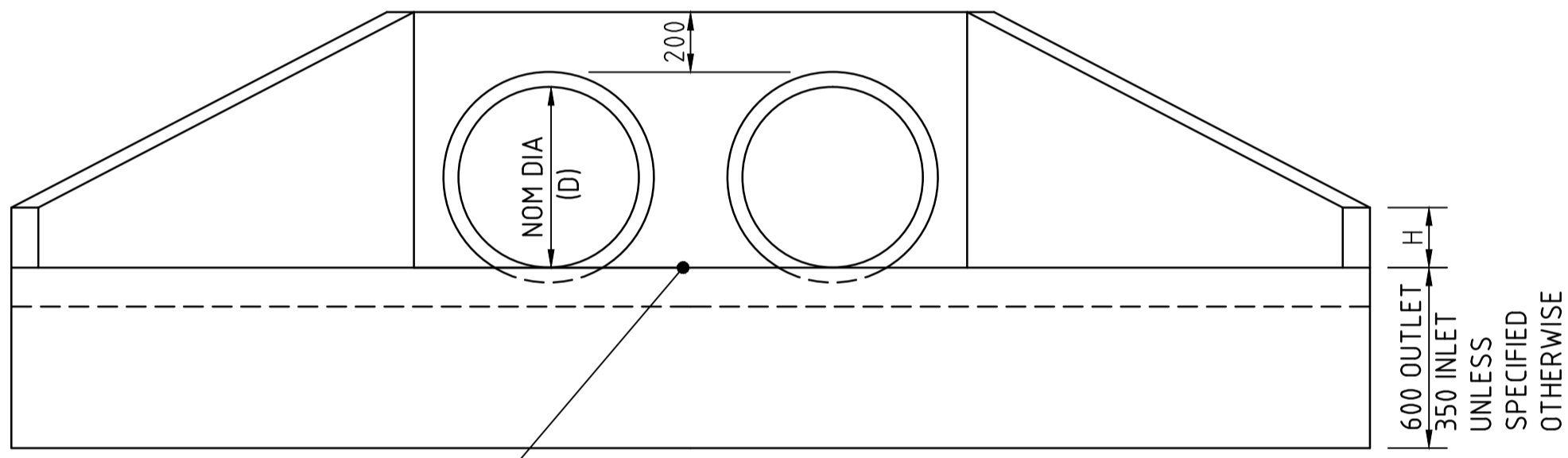


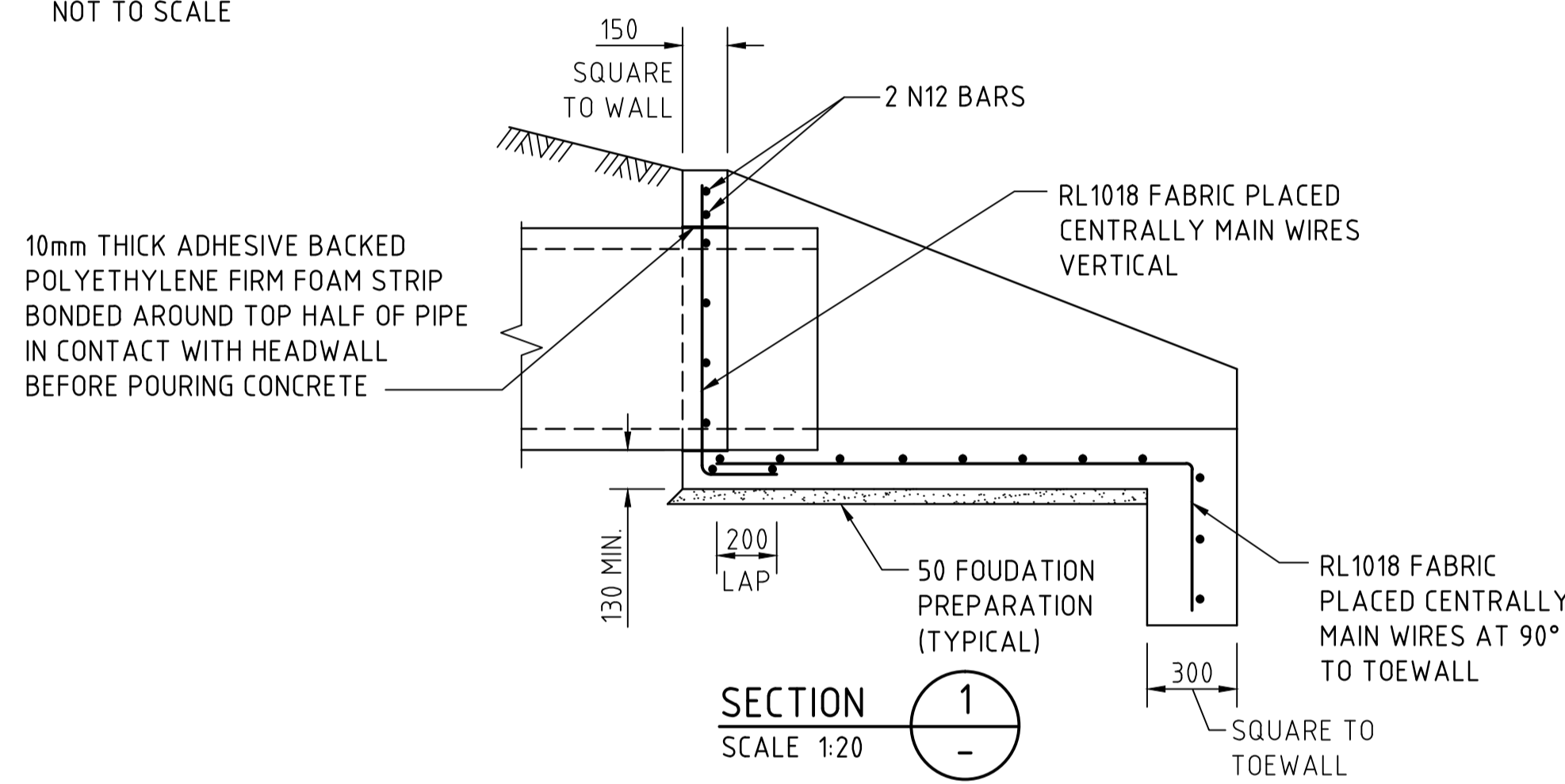
SINGLE PIPE

MULTIPLE PIPES - EVEN NUMBER
SETTING OUT OF PIPES
NOT TO SCALE

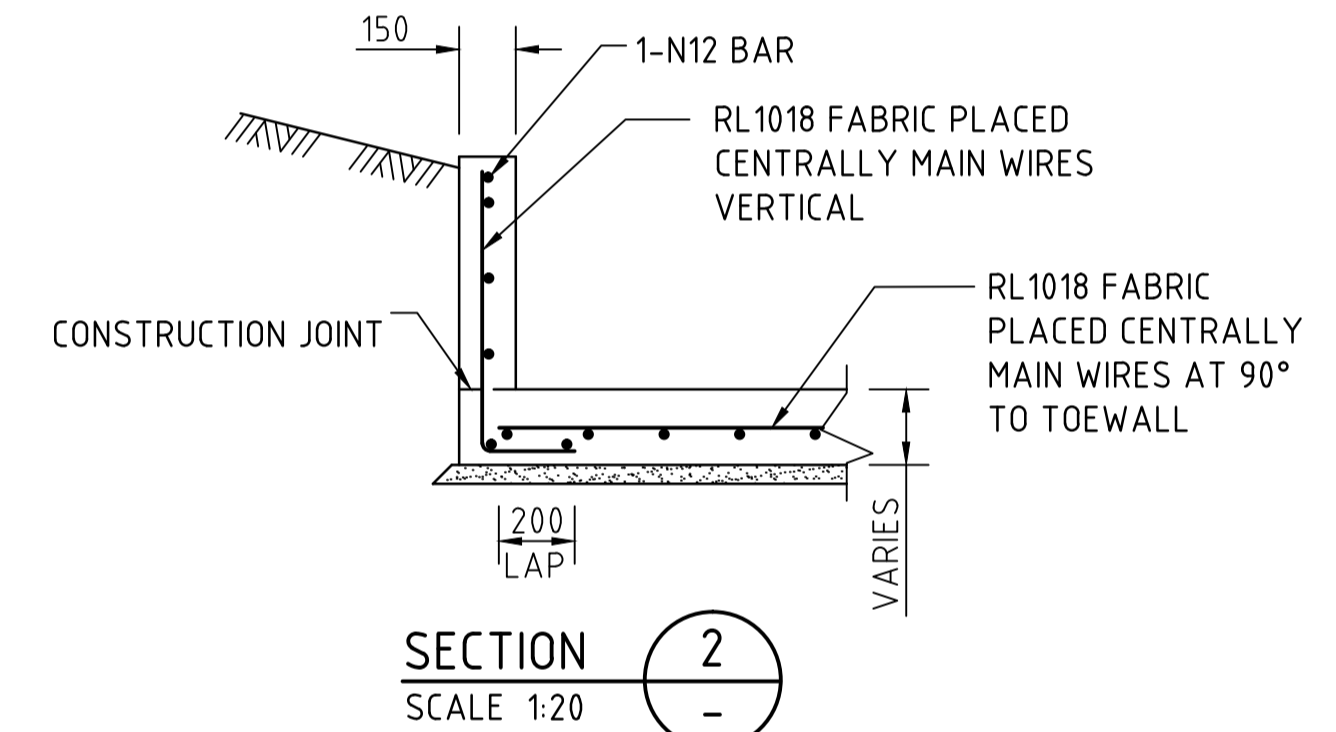
MULTIPLE PIPES - ODD NUMBER



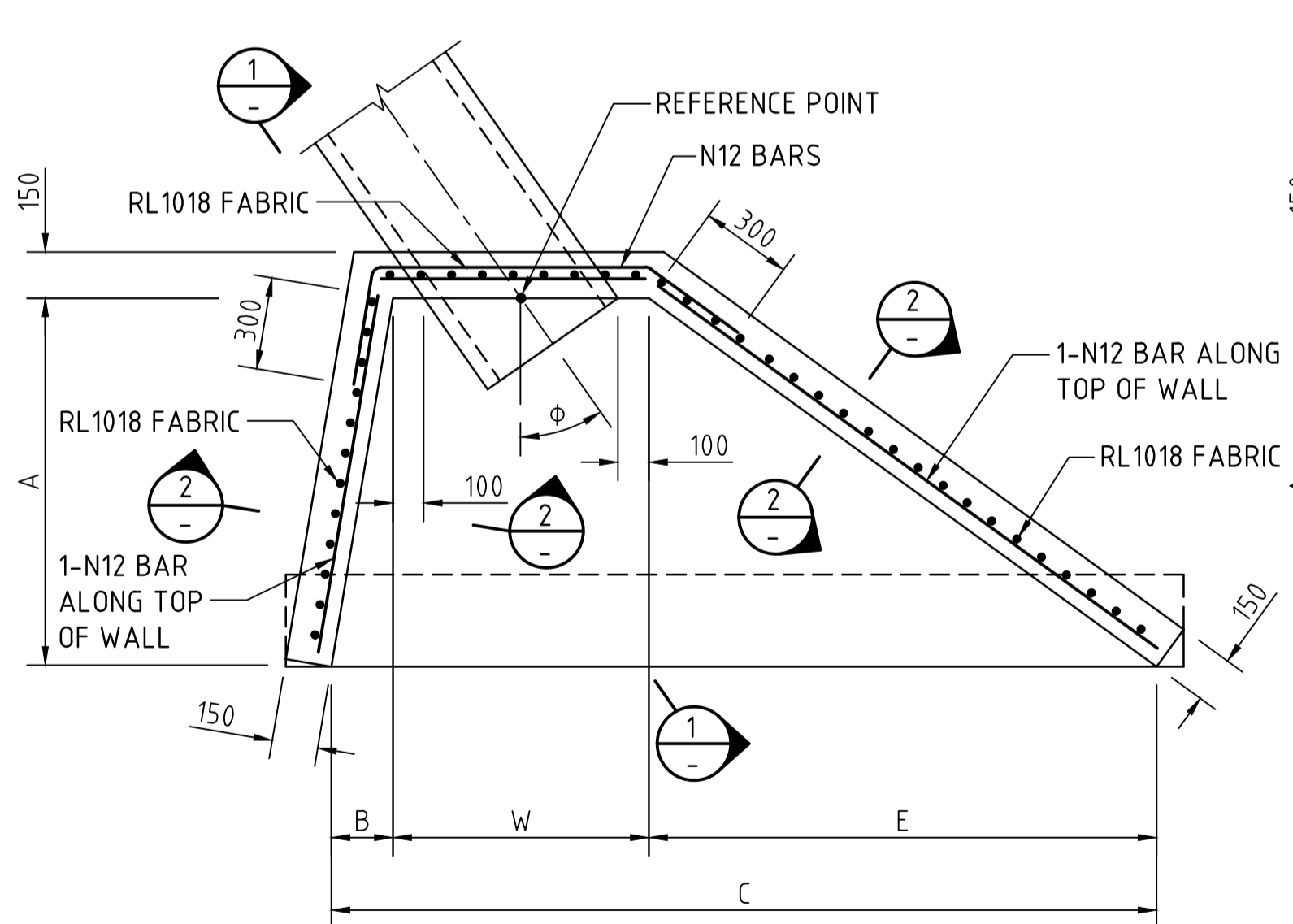
ELEVATION
TYPICAL FOR SINGLE AND MULTIPLE PIPES
SCALE 1:20



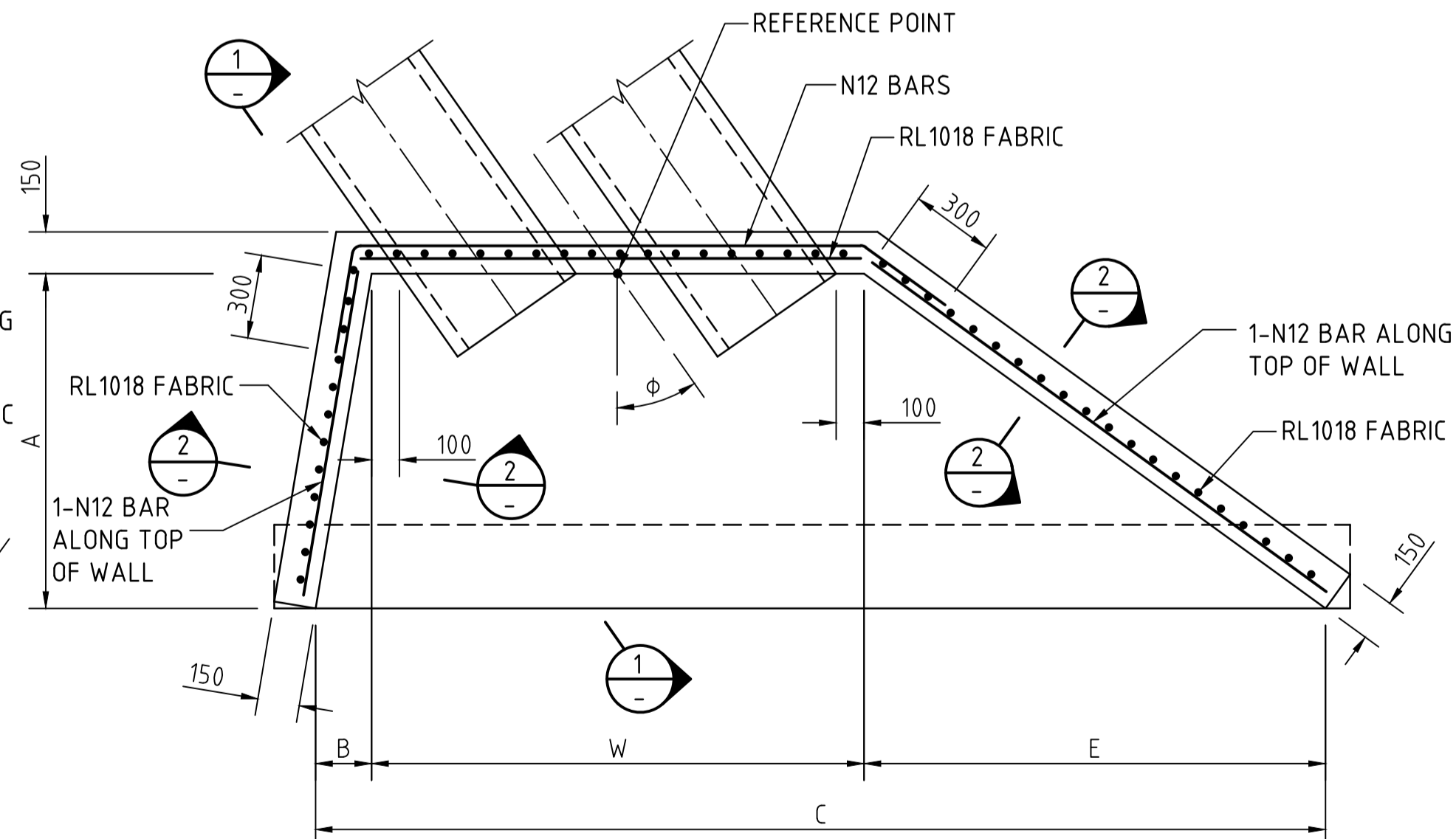
SECTION 1
SCALE 1:20



SECTION 2
SCALE 1:20



SECTIONAL PLAN
REINFORCEMENT FOR SINGLE PIPE
SCALE 1:20



SECTIONAL PLAN
REINFORCEMENT FOR MULTIPLE PIPES
SCALE 1:20

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.

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.
- 1.1 COVER AND CONCRETE STRENGTH SHOWN ON DRAWINGS SATISFY REQUIREMENTS FOR EXPOSURE CLASSIFICATIONS B1 AND B2.
- 1.2 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.

SETTING OUT DIMENSIONS

D	A	H	SKEW ANGLE θ					
			21° TO 30°			31° TO 35°		
			B	E	C	B	E	C
1050	1700	450	300	2075	W+2375	275	2350	W+2625
1200	1900	500	350	2325	W+2675	325	2625	W+2950
1350	2100	550	400	2550	W+2950	350	2900	W+3250
1500	2300	600	425	2800	W+3225	375	3175	W+3550
1650	2500	650	450	3050	W+3500	425	3450	W+3875
1800	2700	700	500	3300	W+3800	450	3725	W+4175

D	A	H	SKEW ANGLE θ					
			36° TO 40°			41° TO 45°		
			B	E	C	B	E	C
1050	1700	450	250	2675	W+2925	0	3025	W+3025
1200	1900	500	300	2975	W+3275	0	3400	W+3400
1350	2100	550	325	3300	W+3625	0	3750	W+3750
1500	2300	600	350	3600	W+3950	0	4100	W+4100
1650	2500	650	375	3900	W+4275	0	4475	W+4475
1800	2700	700	400	4225	W+4625	0	4825	W+4825

* BEYOND 45° REQUIRES SPECIAL DESIGN

THIS SHEET SUPERSEDES DRG S-4002, SHEET 15

Government of South Australia

Department of Planning, Transport and Infrastructure

STANDARD DRAWING

HEADWALL, WINGWALL AND APRON DETAILS

RC PIPES 1050 TO 1800 DIA., SKEW ANGLE 21° TO 45°

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	24	1
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