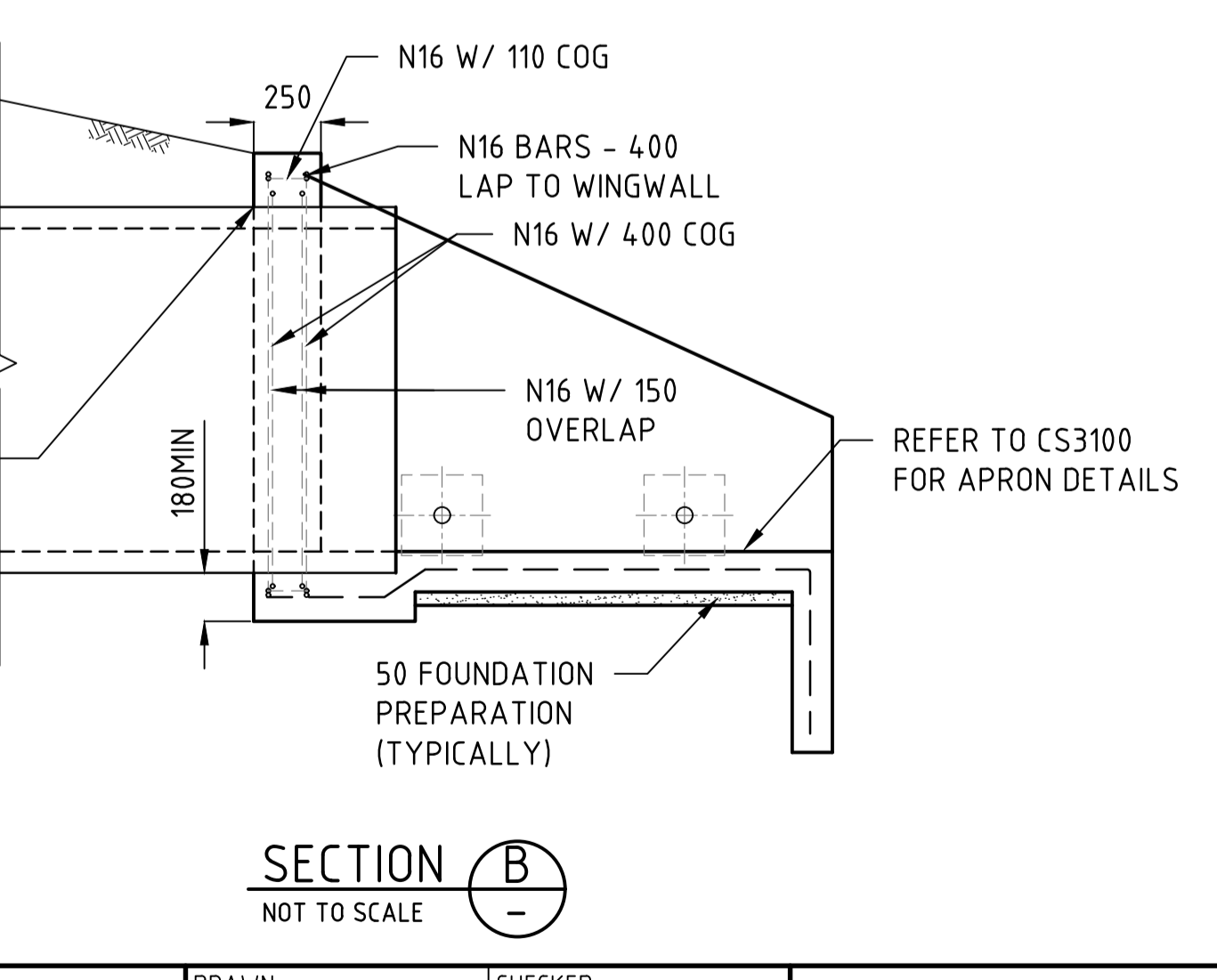
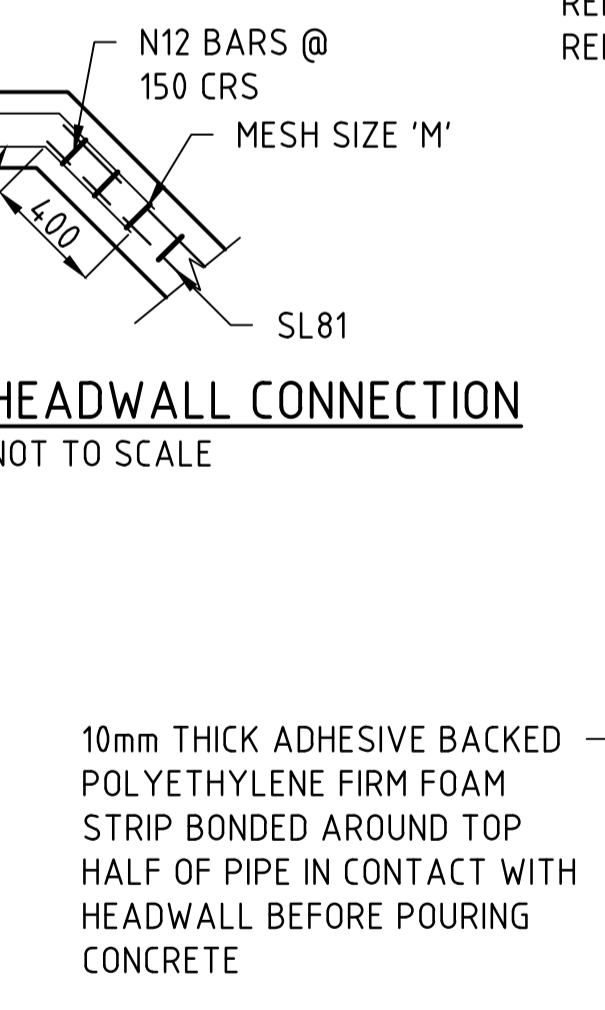
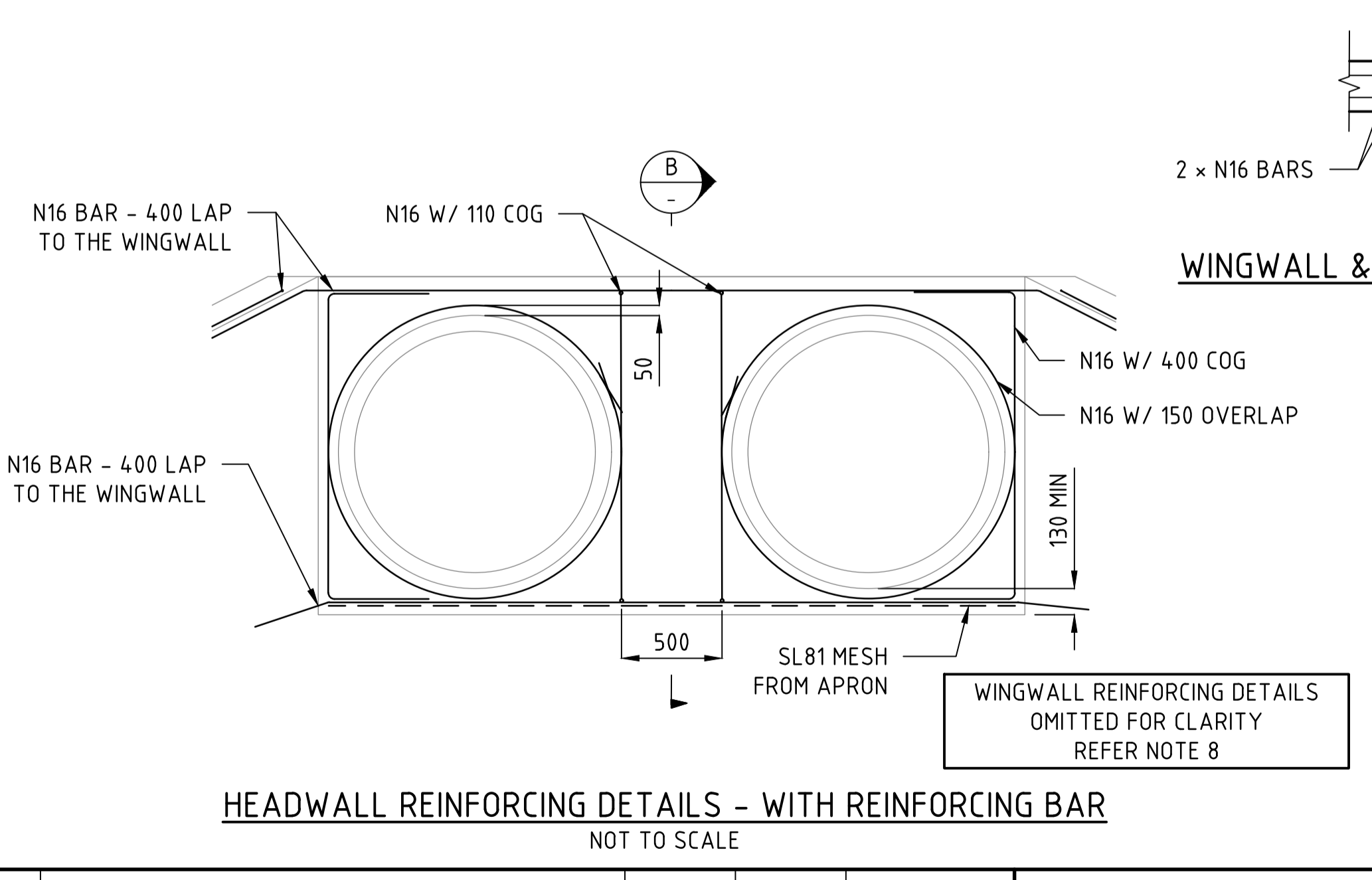


**TABLE 1: MINIMUM REINFORCEMENT REQUIREMENTS**

H	MESH SIZE [M]	L1 BARS			L2 BARS [N12]	
		φ	X1	X2	G	X3
0 - 1500	SL81	12	550	400	200	550
1501 - 2000	RL1018	12	550		200	600
2001 - 2500	RL1018	12	600		100	650
2501 - 3000	RL1218	20	750		100	650
>3000	PROJECT SPECIFIC DESIGN REQUIRED					

H = MAXIMUM HEIGHT OF WINGWALL, MEASURED FROM APRON TO TOP OF WINGWALL WHERE IT MEETS THE HEADWALL



- NOTES:**
- DESIGN LOADS ARE IN ACCORDANCE WITH AUSTRALIAN BRIDGE DESIGN CODE ASS100-2017.
  - HEADWALLS ARE NOT DESIGNED FOR GUARDRAIL IMPACT FORCES.
  - THE SETTING OUT DIMENSIONS IN THIS DRAWINGS ARE BASED ON A SET ROAD BATTER & CULVERT BATTER BEHIND THE WINGWALLS. THIS SHALL BE MAXIMUM OF 1V:2H.
  - STANDARD DRAWING REFERENCES:
    - CS3100 - RECOMMENDED REINFORCEMENT COVER THICKNESS AND STRENGTH OF CONCRETE UNDER DIFFERENT EXPOSURE CLASS AND FOR WEEPHOLE AND APRON DETAILS.
    - CS3101 - TABLE 1 FOR SPACING BETWEEN PIPES, S\*.
    - CS3127 - WINGWALL SETOUT DIMENSIONS & QUANTITIES [A], [B], [C], [H]
  - REINFORCING BAR SHALL BE D500N AND MESH SHALL BE D500L IN ACCORDANCE WITH AS/NZS 4671-2019.
  - MINIMUM LAP SHALL BE 300mm FOR REINFORCING BARS AND 100mm FOR MESH.
  - ALL EXPOSED EDGES TO BE PROVIDED WITH 20mm CHAMFERS.
  - HEADWALL CAN BE REINFORCED WITH EQUIVALENT MESH. THE DESIGN SHALL BE APPROVED BY A CERTIFIED STRUCTURAL ENGINEER.
  - LAY 50mm COMPACTED SAND AS FOUNDATION PREPARATION.
  - DESIRABLE HEADWALLS/WINGWALLS THICKNESS (T) IS 250mm. ANY PROJECT SPECIFIC THICKNESS SHALL BE DESIGNED TO OBTAIN AN ADEQUATE CONCRETE COVER AS PER STANDARD DRAWING CS3100 NOTE 1.
  - DEPTH OF HEADWALL MAY VARY, DEPENDING ON BATTER SLOPE. LOCALLY INCREASE HEADWALL HEIGHT TO ENSURE TOP OF HEADWALL MEETS FLUSH WITH BATTER HINGE.
  - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

THIS DRAWING IS DERIVED FROM TRANSPORT SOUTH AUSTRALIA STANDARD DRAWING S-4002, SHEET 22 AND ADOPTED FOR NT CONDITIONS.

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
2	DESIGN DETAILS AMENDED	APR 2023	J. COOK	TCS / DIPL
1	HEAD WALL ANGLE MODIFIED FOR SINGLE PIPE	JUNE 2018	S.JALIL	EES/DIPL
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	CHECKED
J.LEESON	S.HATZI
DATE SEPT 2017	DATE SEPT 2017
DESIGNED S.A.	CHECKED S.A.
DATE	DATE
DESIGN LEADER S.HATZI	DESIGN DIRECTOR S.JACKSON
DATE 1/09/2017	DATE 1/09/2017



STANDARD DRAWINGS DRAINAGE				
RCP 1050mm DIA. TO 1800mm DIA, HEADWALL & WINGWALL DETAILS 0° TO 20° SKEW ANGLE				
FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.
-	-	4 OF 5	CS3105	2
				SHEET SIZE A1