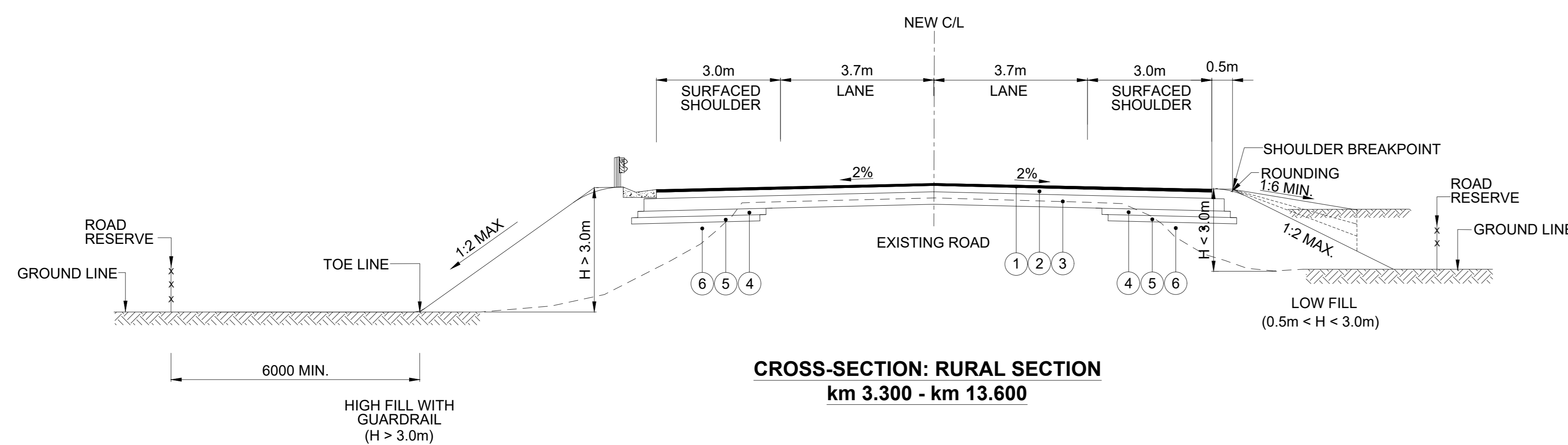
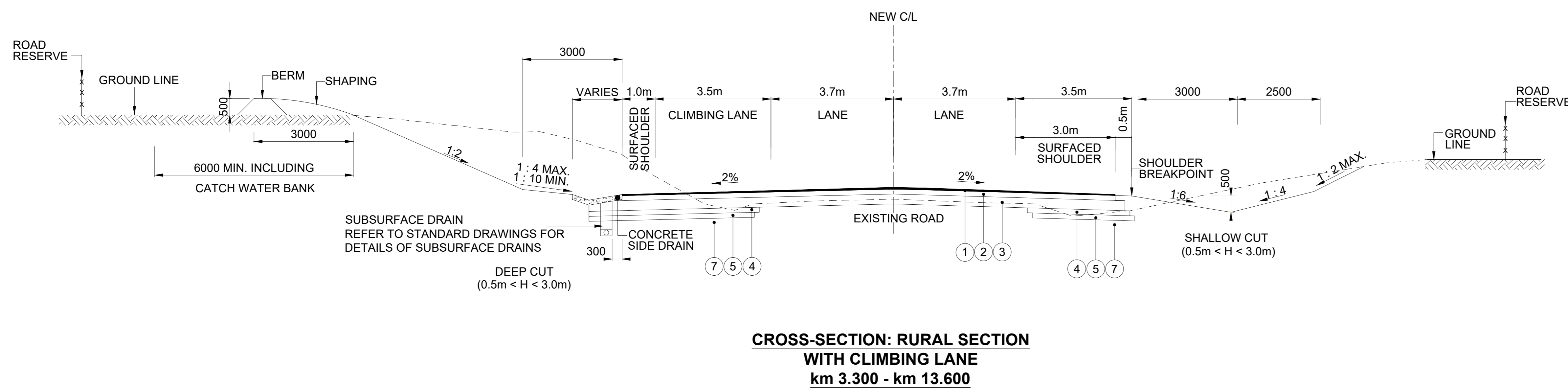


**CROSS SECTION: URBAN SECTION  
R33-13 (4-LANE DUAL CARRIAGEWAY)**



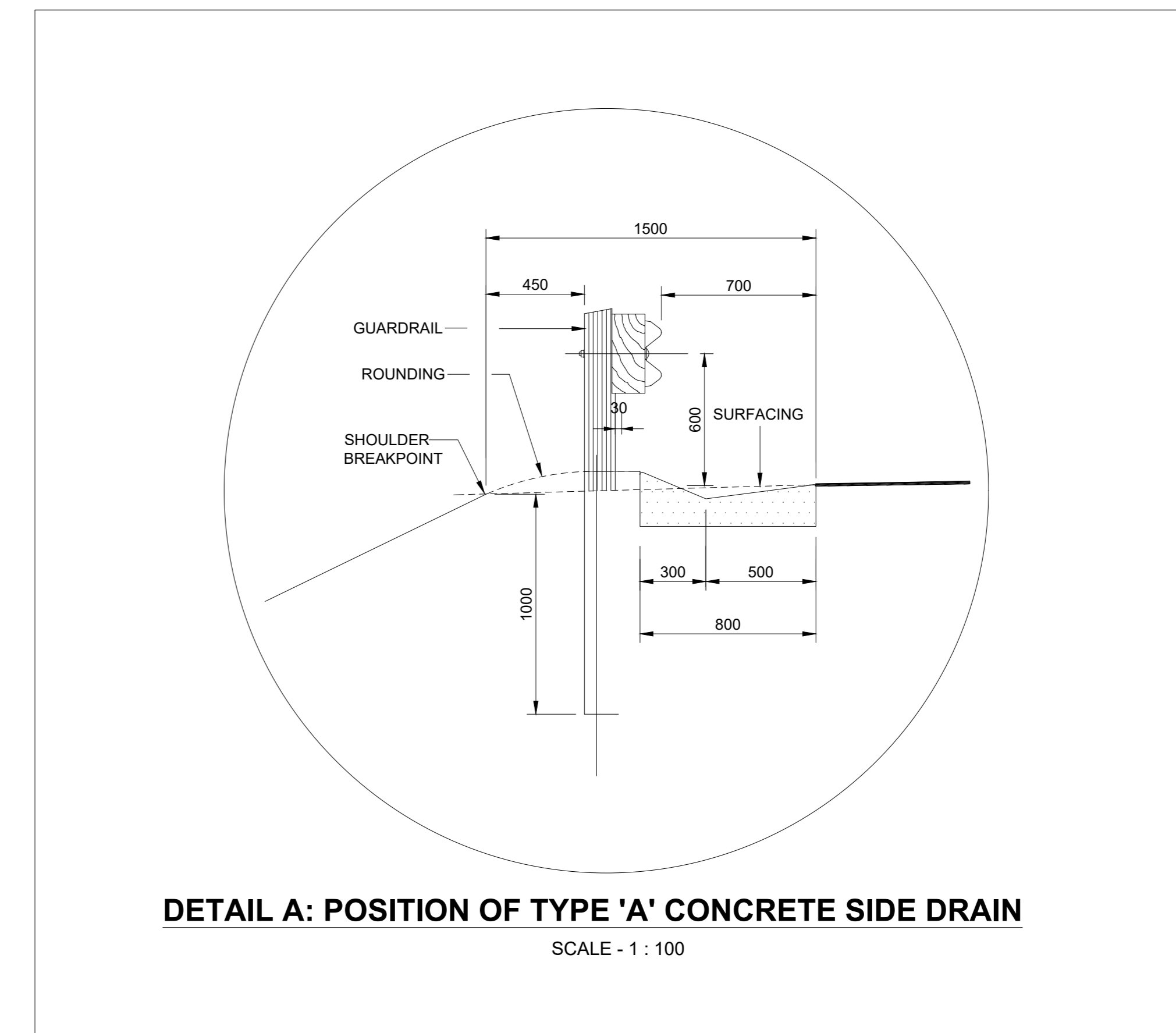
**CROSS-SECTION: RURAL SECTION  
km 3.300 - km 13.600**



**CROSS-SECTION: RURAL SECTION  
WITH CLIMBING LANE  
km 3.300 - km 13.600**

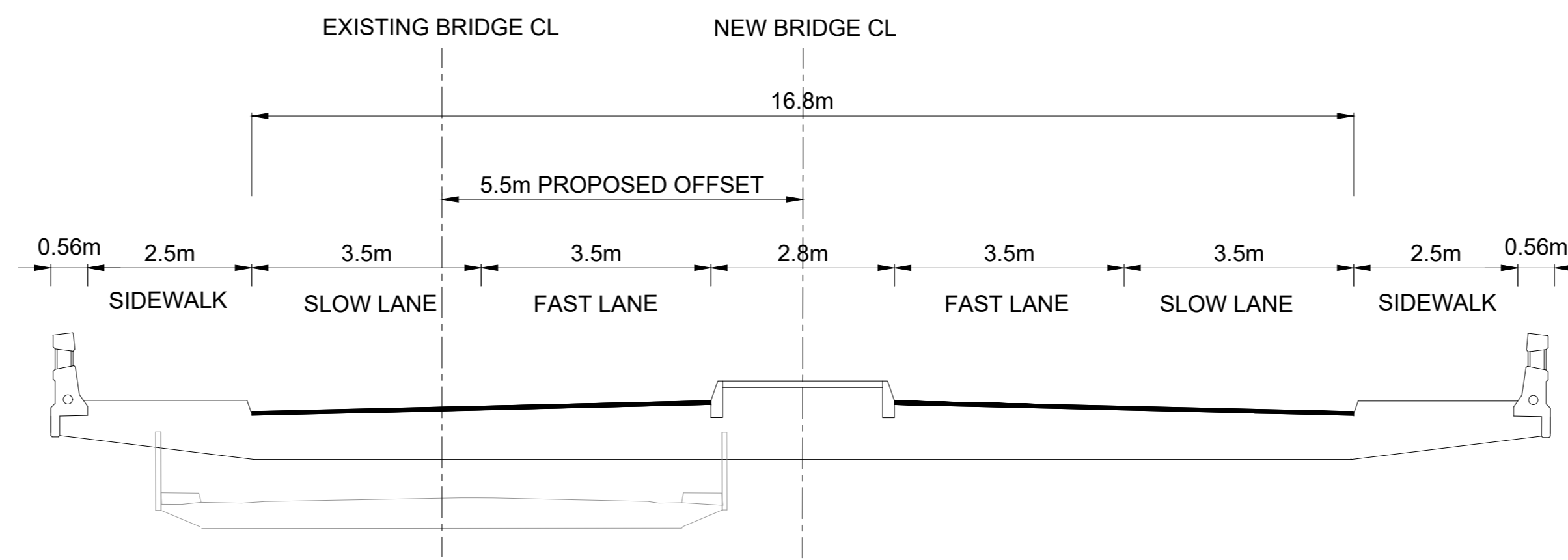
MATERIAL STANDARDS								
No.	THICKNESS mm	DESCRIPTION	% COMP. AASHTO	MAX. PL	GM MIN	MIN CBR AT % MOD. AASHTO	U.C.S. MPa	TRH CLASS
1	40	DOUBLE SEAL (20/7/7)	-	-	-	-	-	S2
2	150	CRUSHED STONE BASE LAYER	85% OF BRD	5(-0.425)	-	-	-	G1
3	300	STABILIZED NATURAL GRAVEL SUB-BASE	97%	6(NOTE 1)	-	-	1.5 - 3.0 AT 100%	C3
4	150	SELECTED NATURAL GRAVEL	95%	12(NOTE 3)	0.75	15 AT 93%	-	G7
5	150	SELECTED NATURAL GRAVEL	93%	12(NOTE 3)	0.75	15 AT 93%	-	G7
6	VARIES	FILL	93%	12(NOTE 3)	0.75	7 AT 93%	-	G9
7	150	ROADBED: IN SITU RIP AND RECOMPACT	93%	12(NOTE 3)	0.75	7 AT 93%	-	G9

NOTE:  
1. PI AFTER STABILIZATION 6  
2. PI SHALL NOT EXCEED 12 OR A VALUE EQUAL TO 2 TIMES THE GM PLUS 10, WHICHEVER IS THE HIGHER VALUE  
3. PI SHALL NOT EXCEED 12 OR A VALUE EQUAL TO 2 TIMES THE GM PLUS 10, WHICHEVER IS THE HIGHER VALUE

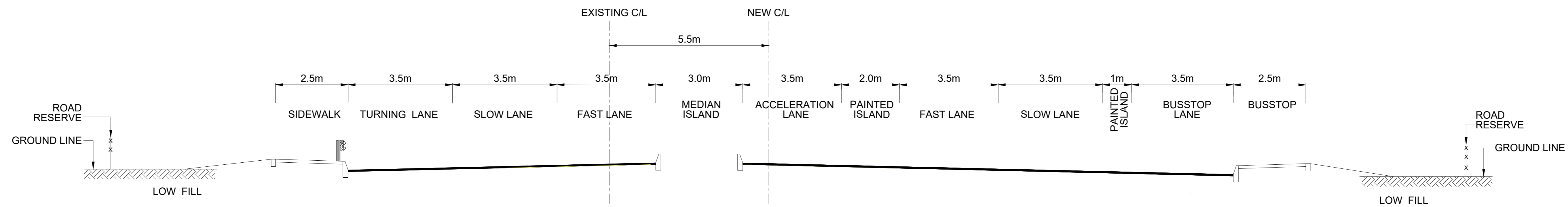


**DETAIL A: POSITION OF TYPE 'A' CONCRETE SIDE DRAIN**  
SCALE - 1 : 100

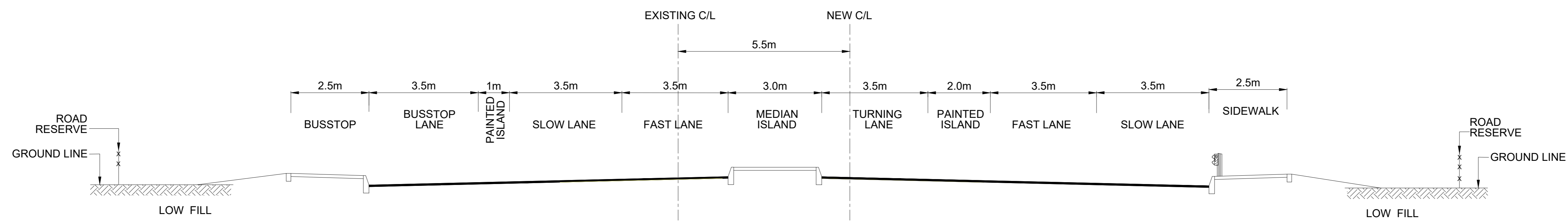
CONSTRUCTION RECORD (AS-BUILT) WORKS CONTRACT ENGINEER Name: _____ Prof. Reg. No.: _____ Date: _____ SANRAL PROJECT MANAGER Name: _____ Date: _____		 39 SELATI STREET CORPORATE PLACE BUILDING B ASHLEA GARDENS PRETORIA, 0081	 PRIVATE BAG 104 MENLO PARK, 0102 TEL: (012) 045 0200 FAX: (087) 405 9403	DESIGNED BY NAME: D. DU TOIT Prof. Reg. No.: 201170110 CHECKED BY NAME: F. BOSHOFF Prof. Reg. No.: 870387 DRAWN BY NAME: M. KRUGER	CONSULTANT APPROVAL Name: F. Boshoff Prof. Reg. No.: 870387 Date: MARCH 2023	HEAD OFFICE 48 Tambotie Avenue Val de Grace Pretoria 0184 PO Box 415 Pretoria 0001 South Africa Tel: (012) 844 8000	 BUILDING SOUTH AFRICA THROUGH BETTER ROADS	NORTHERN REGION 38 Ida Street Menlo Park Pretoria 0081 Private Bag X17 Lynnwood Ridge 0040 Tel: (012) 426 6200	ACCEPTANCE THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING for the SA NATIONAL ROADS AGENCY SOC.LTD. Date: _____	PROJECT DESCRIPTION <b>THE IMPROVEMENT OF NATIONAL ROAD R33 SECTION 13 FROM MODIMOLLE KM 0.6 TO WITKLIJPM KM 13.6</b> DRAWING NAME <b>TYPICAL CROSS-SECTIONS</b>	PROJECT NUMBER <b>NRA R.033-130-2019/1F</b> DRAWING LOCATION DATA ROUTE: R33 SECTION 13 DRAWING km DISTANCE: 0.6 DRAWING TYPE: ROADS - X SECTIONS BRIDGE/STRUCTURE No.: _____ CONSULTANT DRAWING No.: 10314000-TC-01-00 SANRAL DOCUMENT # _____	SCALE: 1 : 1000 SHEET 1 OF 2 VER V1
V1 MAR 2023 ORIGINAL VERSION F. BOSHOFF CONSULT. ENG.												
No.	DATE	REVISION										



**PROPOSED BRIDGE B1272 CROSS SECTION**  
km 1.120



**CROSS-SECTION AT PROPOSED BUTTERFLY INTERSECTION**  
PEDESTRIAN CROSSING AT km 1.390



**CROSS-SECTION AT PROPOSED BUTTERFLY INTERSECTION**  
AT km 1.500

CONSTRUCTION RECORD (AS-BUILT) WORKS CONTRACT ENGINEER		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		PROJECT DESCRIPTION		PROJECT NUMBER	
Name : Prof. Reg. No. : Date :		NAME : D. DU TOIT Prof. Reg. No. : 201170110 CHECKED BY :		Name : F. Boshoff Prof. Reg. No. : 870387 Date : MARCH 2023		48 Tambotie Avenue Val de Grace Pretoria 0184 PO Box 415 Pretoria 0001 South Africa Tel: (012) 844 8000		38 Ida Street Menlo Park Pretoria 0081 Private Bag X17 Lynnwood Ridge 0040 Tel: (012) 426 6200		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING for the SA NATIONAL ROADS AGENCY SOC LTD. Date:		THE IMPROVEMENT OF NATIONAL ROAD R33 SECTION 13 FROM MODIMOLLE KM 0.6 TO WITKLIP KM 13.6		NRA R.033-130-2019/1F	
SANRAL PROJECT MANAGER		NAME : F. BOSHOFF Prof. Reg. No. : 870387 Date :		NAME : M. KRUGER		SANRAL		SANRAL PROJECT MANAGER		DRAWING LOCATION DATA		ROUTE		DRAWING TYPE	
39 SELATI STREET CORPORATE PLACE BUILDING B ASHLEA GARDENS PRETORIA, 0081		POSTNET SUITE 189 PRIVATE BAG 104 MENLO PARK, 0102 TEL. (012) 045 0200 FAX. (087) 405 0403		MERCHELLES COLLECTIVE YOUR ENGINEERING NEEDS OUR PASSION BUILDING 1 MAXWELL OFFICE PARK WATERFALL CITY MIDRAND, 1685		SANRAL PROJECT MANAGER		SANRAL PROJECT MANAGER		KM 0.6		R33		ROADS - X SECTIONS	
V1 MAR 2023 ORIGINAL VERSION		Name : F. BOSHOFF Date :		Name : M. KRUGER		SANRAL PROJECT MANAGER		SANRAL PROJECT MANAGER		0.6		13		13.6	
No. DATE REVISION		Name : F. BOSHOFF Date :		Name : M. KRUGER		SANRAL PROJECT MANAGER		SANRAL PROJECT MANAGER		13.6		13		13.6	
		Name : F. BOSHOFF Date :		Name : M. KRUGER		SANRAL PROJECT MANAGER		SANRAL PROJECT MANAGER		ROADS - X SECTIONS		BRIDGE/STRUCTURE No.		CONSULTANT DRAWING No.	
		Name : F. BOSHOFF Date :		Name : M. KRUGER		SANRAL PROJECT MANAGER		SANRAL PROJECT MANAGER		10314000-TC-02-00		VER		V1	
		Name : F. BOSHOFF Date :		Name : M. KRUGER		SANRAL PROJECT MANAGER		SANRAL PROJECT MANAGER		SCALE : 1 : 1000		SHEET 2 OF 2		SANRAL DOCUMENT #	