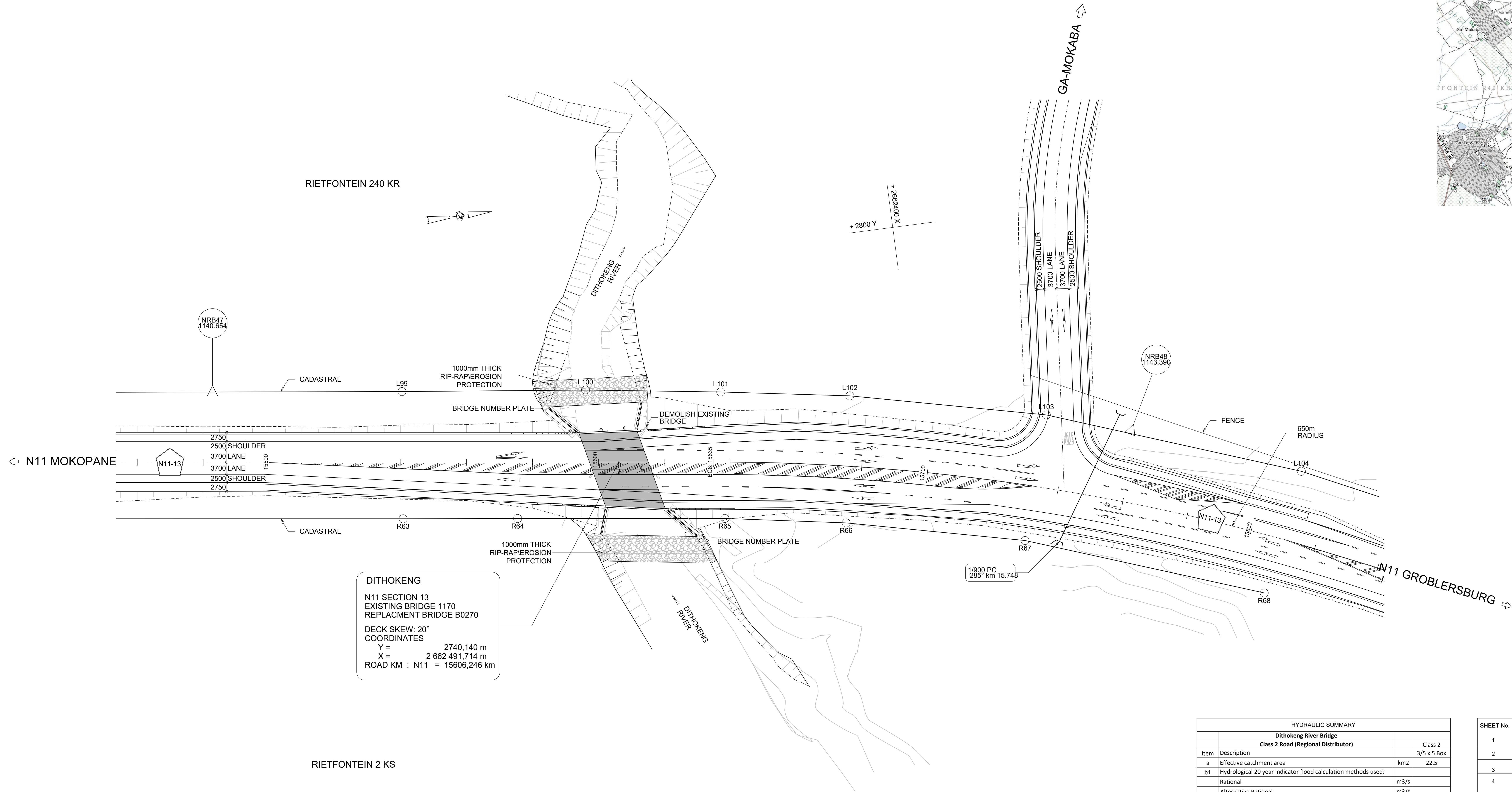


KEY PLAN
SCALE 1:50 000



DITHOKENG
N11 SECTION 13
EXISTING BRIDGE 1170
REPLACEMENT BRIDGE B0270
DECK SKEW: 20°
COORDINATES
Y = 2740.140 m
X = 2 662 491.714 m
ROAD KM : N11 = 15606.246 km

CONTOURED LOCALITY PLAN
SCALE 1:500

HYDRAULIC SUMMARY		
Dithokeng River Bridge		
Class 2 Road (Regional Distributor)		
Item	Description	Class 2 3/5 x 5 Box
a	Effective catchment area	km2 22.5
b1	Hydrological 20 year indicator flood calculation methods used:	
	Rational	m3/s
	Alternative Rational	m3/s
	Unit Hydrograph	m3/s
	Standard Design Flood	m3/s 106.0
	Empirical	m3/s
b	20 year indicator flood used	m3/s 106.0
c	Design flood recurrence T (for decks soffit freeboard criterion)	YRS 40
d1	Design flood QT (for deck soffit freeboard criterion)	m3/s 150.0
d2	Design flood Q2T for shoulder breakpoint freeboard	m3/s 190.0
e	Regional Maximum Flood RMF	m3/s 352.0
	Regional Maximum Flood RMF level (without bridge)	m 1140.010
	Regional Maximum Flood RMF level (with bridge)	m 1141.220
f	Average slope of stream bed at structure	m/m 0.0039
g	Natural design flood level (without bridge, with QT)	m 1138.930
h	Highest flood level to date	m unknown
	Date of highest flood level	yr unknown
i	Natural design flow depth (without bridge, with QT)	m 2.960
j	Natural design flow velocity (without bridge, with QT)	m/s 3.05
k	Backwater caused by the bridge	m 0.510
l1	Design high flood level for QT	m 1139.130
	Minimum bridge upstream soffit level	m 1140.200
l2	Design high flood level for Q2T	m 1139.800
m	Design flow velocity through bridge	m/s 2.83
n	Required freeboard to deck soffit	m 0.500
o	Design freeboard to deck soffit	m 1.070
	Freeboard excess	0.570
p	Shoulder breakpoint (SBP) level	m 1141.410
	Shoulder breakpoint excess	m 1.610
q	Freeboard dictated by bridge geometry	V/N Y
r	Design Flood Levels influenced by dams	V/N N

SHEET No.	LIST OF PLANS	PLAN No.
1	SITE PLAN 1 OF 2	BCD/B0270/01
2	SITE PLAN 2 OF 2	BCD/B0270/02
3	GENERAL ARRANGEMENT	BCD/B0270/03
4	FOUNDATION LAYOUT	BCD/B0270/04
5	CULVERT CONCRETE DETAIL	BCD/B0270/05
6	CULVERT REBAR DETAIL 1 OF 2	BCD/B0270/06
7	CULVERT REBAR DETAIL 2 OF 2	BCD/B0270/07
8	SE & NE WINGWALLS CONCRETE DETAIL	BCD/B0270/08
9	NE WINGWALLS REBAR DETAIL	BCD/B0270/09
10	SE WINGWALLS REBAR DETAIL	BCD/B0270/10
11	SW & NW WINGWALLS CONCRETE DETAIL	BCD/B0270/11
12	SW WINGWALLS REBAR DETAIL	BCD/B0270/12
13	NW WINGWALLS REBAR DETAIL	BCD/B0270/13
14	CONSTRUCTION SEQUENCE	BCD/B0270/14
15	PARAPET LAYOUT AND FIXING DETAIL	BCD/B0270/15
16	PARAPET CONCRETE AND REBAR DETAIL 1 OF 2	BCD/B0270/16
17	PARAPET CONCRETE AND REBAR DETAIL 2 OF 2	BCD/B0270/17
18	END BLOCK CONCRETE DETAIL	BCD/B0270/18
19	END BLOCK REBAR DETAIL	BCD/B0270/19
20	BENDING SCHEDULES 1 OF 3	BCD/B0270/20
21	BENDING SCHEDULES 2 OF 3	BCD/B0270/21
22	BENDING SCHEDULES 3 OF 3	BCD/B0270/22



CONSTRUCTION RECORD (AS-BUILT)			DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		EASTERN REGION		ACCEPTANCE		REHABILITATION OF NATIONAL ROUTE N11 SECTION 13 FROM R518 INTERSECTION(km 8.340) TO GROOTSANDSLOOT RIVER(km 24.280)		PROJECT NUMBER		NRA N.011-130-2010/1	
WORKS CONTRACT ENGINEER			NAME		Name		48 Tambotie Avenue		58 van Eck Place		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		DITHOKENG RIVER BRIDGE B0270 AT km 15.606 SITE PLAN 1 OF 2		DRAWING LOCATION DATA		ROUTE	
Name			Prof. Reg. No.		Prof. Reg. No.		Val de Grace		Pietermaritzburg		SECTION				N11		N11	
Date			CHECKED BY		Date		0184		3201		Date		DRAWING km DISTANCE		15.58		15.62	
SANRAL PROJECT MANAGER			NAME		Name		PO Box 415		PO Box 100410		for the SA NATIONAL ROADS AGENCY SOC LTD.		DRAWING TYPE		STRUCTURES-BRIDGES		BRIDGE/STRUCTURE No.	
Name			Prof. Reg. No.		Prof. Reg. No.		South Africa		Scottsville		Date		CONSULTANT DRAWING No.		BCD/B0270/01		B0270	
Date			DRAWN BY		Date		Tel: (012) 844 8000		Tel: (033) 392 8100		Scale		SANRAL DOCUMENT #		V0		V0	
No.			NAME		NAME		Tel: (012) 844 8000		Tel: (033) 392 8100		Scale		SHEET 01 OF 22		SCALE : AS SHOWN		SCALE FOR REDUCED PLAN	
11/03/2021			ORIGINAL VERSION		CONSULT. ENG.		All dimensions to be checked on site before any work is put in hand. Refer any discrepancies to the engineer.		Copyright reserved		Scale		100mm ON ORIGINAL PLAN		SCALE FOR REDUCED PLAN		SCALE FOR REDUCED PLAN	

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PURPOSES ONLY