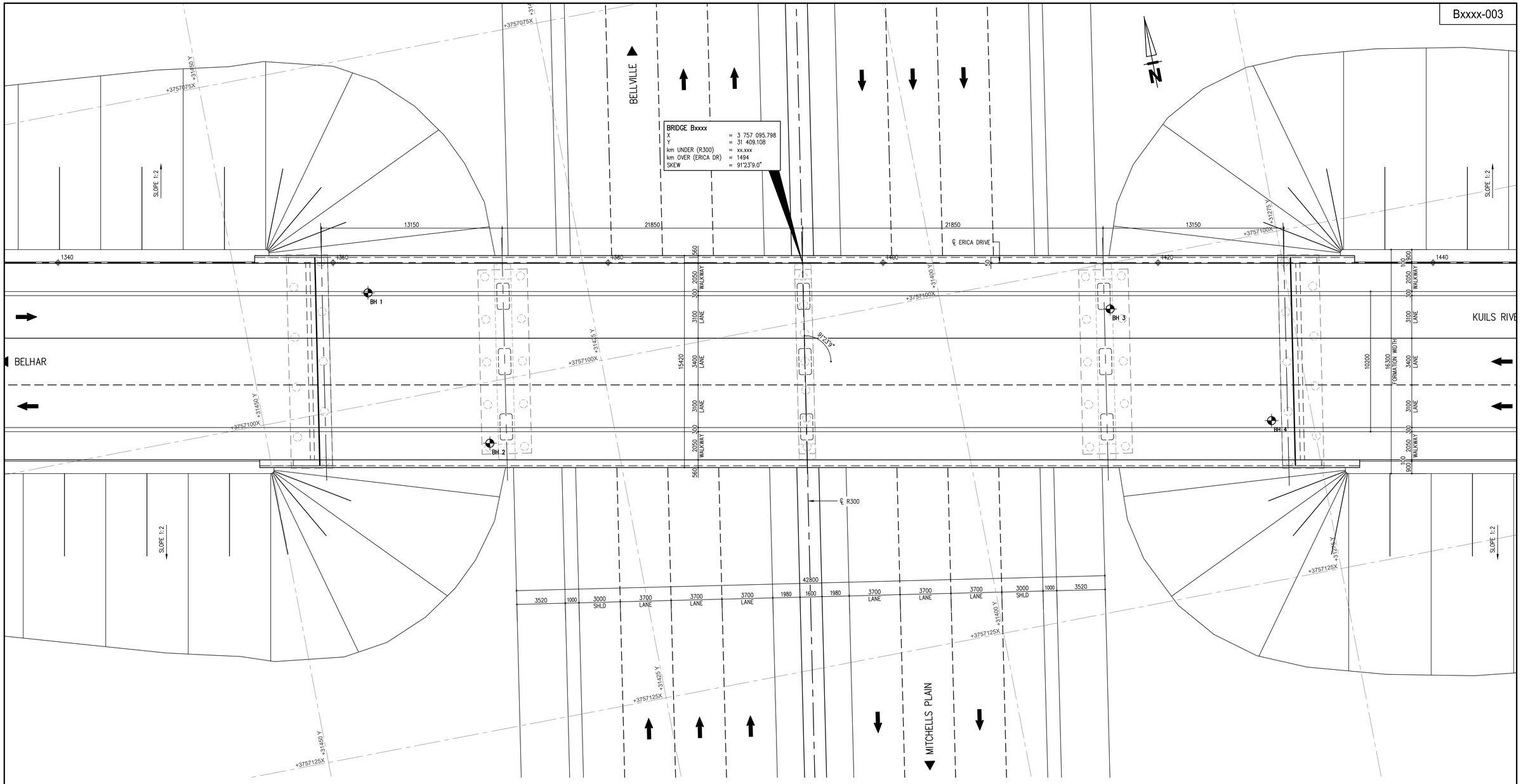


DESIGN NOTES

1. GENERAL DESIGN NOTES

1.1 DESCRIPTION OF STRUCTURE:–
FOUR SPAN, PRETENSIONED PRECAST PSUEDO BOX SECTION CONCRETE BEAMS WITH CAST IN–SITU DECK SLAB. SPANS MADE CONTINUOUS. SUPPORTED ON PIER CAPPING BEAMS ON MULTIPLE COLUMNS AND PILES.

1.2 THE BRIDGE HAS BEEN DESIGNED BY ELASTIC METHODS AND CHECKED AT LIMIT STATES.

1.3 THE BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH TMH7 PARTS 1 AND 2 1981 REVISED 1988 AND TMH PART 3 1989.

1.4 THE PARAPETS HAVE BEEN DESIGNED TO TMH7 PART 2 CLAUSE 3.5.

2. DESIGN LOADINGS

2.1 LIVE LOADS:
a. NA
b. NB 36
c. NC

2.2 UNIT WEIGHTS:
a. FILL MATERIAL = 19,6 kN/m^3
b. REINFORCED AND PRESTRESSED CONCRETE = 25,5kN/m^3
c. ASPHALT = 21 kN/m^3

2.3 EARTH PRESSURE ON RETAINING STRUCTURES:
a. EARTH PRESSURE = 6.6 kN/m^2 PER METRE DEPTH
b. NA, NB 36 AND NC SURCHARGE
c. INTERNAL ANGLE OF FRICTION OF BACKFILL MATERIAL = 30°

2.4 SUPPLEMENTARY ACTIONS WHERE APPLICABLE ARE IN ACCORDANCE WITH TMH7 (PARTS 1 & 2)

2.5 PARAPET IMPACT LOAD = 100kN

3. DESIGN PARAMETERS

3.1 YOUNG'S MODULUS FOR CLASS 30/19 CONCRETE = 28GPa.

3.2 YOUNG'S MODULUS: STEEL = 200 GPa.

3.3 COEFFICIENT OF CONCRETE EXPANSION = $12x10^{-6}$

4. CHARACTERISTIC STRENGTH OF MATERIALS

4.1 CONCRETE:

ELEMENT DESCRIPTION	CHARACTERISTIC STRENGTH (MPa)	CONCRETE CLASS
BLINDING	15	15/19
ABUTMENTS	30	W30/19
PIERS	30	W30/19
DECK	40	W40/19
PRECAST BEAMS	50	W50/19
PRECAST PLANKS	30	W30/19
PARAPETS	30	W30/19

4.2 REINFORCEMENT:

DESCRIPTION	CHARACTERISTIC STRENGTH (MPa)
MILD STEEL	250
HIGH TENSILE STEEL	450

5. FORMWORK AND CONCRETE SURFACE FINISH

5.1 FOUNDATIONS: F1, U1

5.2 CONCEALED SURFACES: F1, U1

5.3 EXPOSED SURFACES: F2, U2

5.4 PRECAST BEAMS: F2, F3

5.5 PARAPETS: F3, U3

5.6 ALL SHARP EDGES TO HAVE A 25mm x 25mm CHAMFER.

6. CONCRETE COVER TO REINFORCEMENT

6.1 MEMBERS IN CONTACT WITH SOIL: 50mm

6.2 ALL OTHER MEMBERS: 40mm MIN.

7. FOUNDING

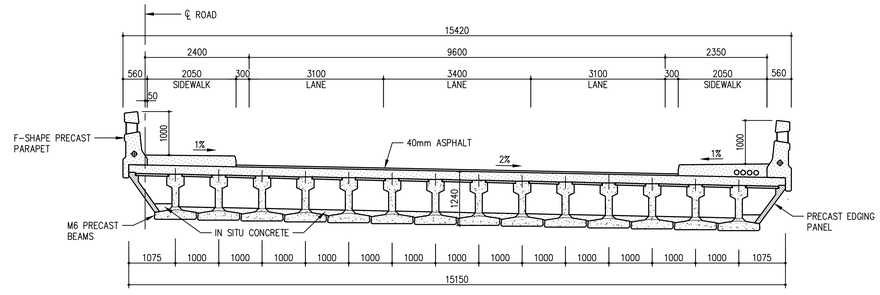
7.1 FOUNDING IS BY MEANS OF PILES.

8. GENERAL NOTES

8.1 MAXIMUM ANTICIPATED DECK DEFLECTIONS AT MIDSPAN OF MAINSPAN
a. AT TRANSFER =
b. TOTAL DEAD LOAD (LONG TERM) =
c. INSTANTANEOUS LIVE LOAD DEFLECTION =

8.2 DECK EXPANSION JOINTS – ARMOURED NOSING WITH CLAW AND SEAL.

8.3 BEARINGS = LAMINATED ELASTOMERIC.



TYPICAL CROSS SECTION THROUGH BRIDGE

SCALE 1:50

No.	DATE	REVISION	CONSULT. ENG.
V1	18/09/2018	ORIGINAL VERSION	RGM

CONSTRUCTION RECORD (AS-BUILT)
WORKS CONTRACT ENGINEER
Name :
Prof. Reg. No. :
Date
SANRAL PROJECT MANAGER
Name :
Prof. Reg. No. :
Date

CONSULTANT:
its INNOVATIVE TRANSPORT SOLUTIONS
29 De Havilland Crescent
Pro Park, Building 1
Persequor Technopark
Pretoria
0020
Tel: (012) 349 1664
gauteng@itsglobal.co.za
www.itsglobal.co.za

BRIDGE ENGINNER
ARQ (PTY) LTD
PO Box 76379
LYNNWOOD RIDGE
0040 RSA
TEL : 012 348 6668
FAX : 012 348 6669

DESIGNED BY	
NAME	RG MILLER
Prof. Reg. No.	840176
CHECKED BY	
NAME	
Prof. Reg. No.	
DRAWN BY	
NAME	G COOMBE

CONSULTANT APPROVAL
Name : RG MILLER
Prof. Reg. No. : 840176
Date : 18/09/2018
BRIDGE ENGINEER
Name : RG MILLER
Prof. Reg. No. : 840176
Date : 18/09/2018

HEAD OFFICE
48 Tambotie Avenue
Val de Grace
Pretoria
0184
PO Box 415
Pretoria 0001
South Africa
Tel: (012) 844 8000

SANRAL
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD
Reg No. 1998/00906/30
BUILDING SOUTH AFRICA THROUGH BETTER ROADS

WESTERN REGION
1 Havenga Street
Oakdale
Bellville
7530
Private Bag X19
Bellville
7535
Tel: (021) 957 4600

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
3785.4 CITY OF CAPE TOWN EASTERN REGION
ERICA DRIVE ACROSS THE R300 BETWEEN BELHARD DR AND HIGHBURY RD

DRAWING DESCRIPTION
M71 ERICA DRIVE - PHASE 1
GENERAL ARRANGEMENT 1 - PLAN AND NOTES

SCALE : AS SHOWN | SHEET . OF 20

PROJECT NUMBER	xxxxxxxxx	
DRAWING LOCATION DATA	START	END
ROUTE	R300	R300
SECTION	xx	xxx
DRAWING km DISTANCE	19.8	04.000
DRAWING TYPE	STRUCTURES-BRIDGES	
BRIDGE/STRUCTURE No.	Bxxxx-003	
CONSULTANT DRAWING No.	Bxxxx-003	VER
SANRAL DOC #	.....	V1