

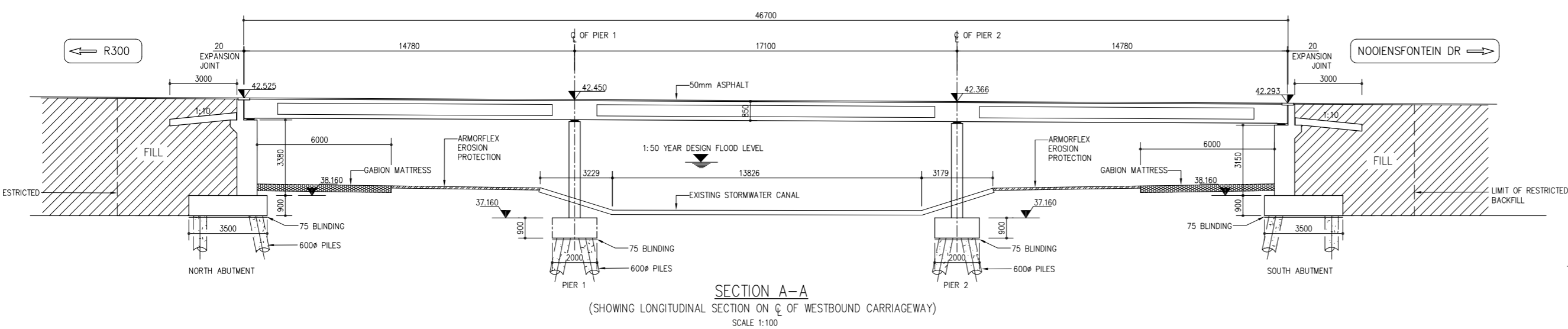
PLAN OF BRIDGE
SCALE 1:100

GENERAL NOTES

- DESCRIPTION OF BRIDGE**
THE PROPOSED NEW BRIDGE COMPRISES OF A 3-SPAN CONTINUOUS CAST IN-SITU, REINFORCED CONCRETE VOIDED DECK SLAB WITH CANTILEVERS. THE SUBSTRUCTURE CONSISTS OF CLOSED CANTILEVER TYPE ABUTMENTS WITH RETURN WALLS AND SOLID WALL TYPE PIERS WITH ROUNDED CUTWATERS.
ALL SUBSTRUCTURE ELEMENTS SUPPORTED ON SPREAD FOOTINGS IN COMBINATION WITH PILES.
- DESIGN LOADING AND PARAMETERS**
2.1 THE DESIGN VALUES AS FOLLOWS:
SUPERIMPOSED DEAD: REINFORCED CONCRETE DEAD LOAD: 25 kN/m²
BITUMINOUS SURFACING: 24 kN/m²
DENSITY OF FILL MATERIAL: 20 kN/m³
LIVE LOAD: NA, NB-36 AND NC
EARTH PRESSURE ON RETAINING STRUCTURES: DENSITY OF SOIL: 20 kN/m³
NA AND NB SURCHARGE: 5 kN/m²
ANGLE OF INTERNAL FRICTION: 30°
COEFFICIENT OF CONCRETE EXPANSION = 12x10⁻⁶/°C
2.2 BALUSTRADE DESIGNED TO "CODE OF PROCEDURE FOR THE PLANNING AND DESIGN OF HIGHWAY AND ROAD STRUCTURES IN SOUTH AFRICA" (FEBRUARY 2002) THE BALUSTRADE GEOMETRY CONFORMS TO THE CITY OF CAPE TOWN REQUIREMENTS
- MATERIALS**
3.1 CONCRETE CLASSES (CHARACTERISTIC STRENGTH)

ELEMENT	CLASS (MPa/mm)	MODULUS (GPa)
BLINDING LAYER	15/20	24
MASS CONCRETE	20/26	25
FOOTINGS	30/20	30
ABUTMENTS, RETURN, RETAIN, WALLS & APPROACH SLAB	W30/20	30
PIERS	W30/20	31
DECK SLAB	W35/20	32
PARAPETS	W35/20	32
PILES	W35/20	32

3.2 REINFORCEMENT TO BE HOT ROLLED AND TO COMPLY WITH THE STANDARD SPECIFICATIONS FOR STEEL BARS FOR CONCRETE REINFORCEMENT SABS 920-1985 MINIMUM CHARACTERISTIC STRENGTH:
MILD STEEL BARS (PREFIX 'R') 250 MPa
HIGH YIELD STEEL BARS (PREFIX 'Y') 450 MPa
3.3 MODULUS OF ELASTICITY OF REINFORCING STEEL 200GPa
- BEARINGS**
4.1 LAMINATED ELASTOMERIC BEARINGS TO PIERS AND ABUTMENTS.
- DECK EXPANSION JOINTS**
5.1 E80 "SP" EXPANSION JOINTS OR SIMILAR APPROVED AT BOTH ABUTMENTS.
- HYDRAULIC DATA**
6.1 CATCHMENT AREA: 150km²
6.2 1:50 YEAR DESIGN FLOOD: 250m³/s
6.3 SLOPE OF RIVERBED AT BRIDGE: 1:1400
6.4 CALCULATED MAXIMUM FLOOD LEVEL IN EXISTING RIVER: RL 41.7 (BANKS OVERTOPPED)
6.5 BACKING UP AS RESULT OF BRIDGE AFTER CANALIZATION: 150mm
6.6 CALCULATED MAXIMUM FLOOD LEVEL WITH BRIDGE AFTER CANALIZATION RL 39.65
6.7 MAXIMUM OBSERVED FLOOD LEVEL: NOT KNOWN
6.8 CALCULATED FLOW VELOCITY IN NATURAL CHANNEL: 2.6m/s
6.9 CALCULATED FLOW VELOCITY UNDER BRIDGE AFTER CANALIZATION: 3.75m/s
6.10 REQUIRED FREEBOARD FOR DESIGN FLOOD: 1.008m
6.11 MINIMUM DECK SOFFIT LEVEL: RL 40.947 DESIGN: RL 41.340
6.12 MINIMUM ROAD SHOULDER LEVEL: RL 40.950 DESIGN: RL 42.350
- GENERAL**
7.1 ALL EDGES TO THE PARAPET TO BE ROUNDED 20mm OR 20mm x 20mm CHAMFER. ELSEWHERE TO BE 25mm x 25mm.
7.2 CONCRETE FINISH TO FORMED SURFACES (REFER TO COLTO):
PARAPETS AND END BLOCKS CLASS F3
ALL OTHER EXPOSED SURFACES CLASS F2
UNEXPOSED SURFACES CLASS F1
7.3 CONCRETE FINISH TO UNFORMED SURFACES (REFER TO COLTO):
TOP OF PARAPETS AND END BLOCKS CLASS U3
TOP OF DECK SLAB CLASS U1
ALL OTHER SURFACES CLASS U2
7.4 MINIMUM CONCRETE COVER TO REINFORCEMENT:
FOUNDATIONS 75mm
SUBSTRUCTURE 50mm
DECK 50mm
BALUSTRADES 40mm
7.5 BRIDGE NUMBER PLATE TO BE OF POLYCRETE OR NON-METALLIC MATERIAL



SECTION A-A
(SHOWING LONGITUDINAL SECTION ON C/L OF WESTBOUND CARRIAGEWAY)
SCALE 1:100

its INNOVATIVE TRANSPORT SOLUTIONS
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CLIENT: CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

APPROVED - AS BUILTS
Name: _____
Prof. Reg. No.: _____
Date: _____

APPROVED - CONSTRUCTION
Name: _____
Prof. Reg. No.: _____
Date: _____

NO.	DATE	ISSUED FOR INFORMATION	REVISION
A	28/05/18	ISSUED FOR INFORMATION	

DESIGNED:	NAME:	REVISED:	DATE:
S DARRIES			
DRAWN:			
CHECKED:			
SIGNED:			

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PROJECT: 3785.4 CITY OF CAPE TOWN EASTERN REGION
ERICA DRIVE ACROSS THE R300 BETWEEN BELHAR DR AND Highbury RD
DRAWING TITLE: PROPOSED NEW KULS RIVER BRIDGE B5941B AT Km 2.615
PRELIMINARY GENERAL ARRANGEMENT - SHEET 1 OF 2

SCALE: AS SHOWN
REV: A
DATE: 2018/07/01
DRAWING NUMBER: C013R5111