



- NOTES**
- GENERAL**
 - STRUCTURAL SYSTEM: THREE-SPAN BRIDGE (SIMPLY SUPPORTED).
 - DESIGN METHOD: LIMIT STATES DESIGN IN ACCORDANCE WITH TMH7 CODE OF PRACTICE FOR THE DESIGN OF HIGHWAY BRIDGES AND CULVERTS IN SOUTH AFRICA
 - SOFTWARE USED:
 - HEC-RAS HYDRAULIC SOFTWARE
 - PROKON SUITE OF STRUCTURAL ANALYSIS SOFTWARE
 - DESIGN LOADINGS**
 - SELF WEIGHT: 25 kN/m²
 - IMPOSED DEAD LOADS
 - BITUMINOUS SURFACING (50mm) = 24 kN/m²
 - GUARDRAIL ON STEEL POSTS
 - LIVE LOADS (TMH7 PART 2 (1988))
 - N/A
 - NB34
 - TEMPERATURE EXPANSION COEFFICIENT = 12x10⁻⁶ mm/m°C
 - EARTH PRESSURE = 5.8 kN/m²m
 - FLOOD ACTION, VEHICLE BRAKING AND OTHER SECONDARY LOADING AS SPECIFIED IN TMH7 BARRIER IMPACT LOADING : GUARDRAILS 25KN
 - MATERIAL SPECIFICATION**

CONCRETE IN:	CLASS	CHARACTERISTIC STRENGTH	YOUNG'S MODULUS
(a) DECK	C25/30-20	30 MPa	28 GPa
(b) PIERS & ABUTMENTS	C25/30-20	30 MPa	28 GPa
(c) FOOTINGS	C25/30-20	30 MPa	28 GPa
(d) BLINDING	C12/15-20	15 MPa	23 GPa
(e) BEAMS	C32/40-20	40 MPa	28 GPa

REINFORCEMENT (SANS 202-2011)	YIELD STRENGTH	YOUNG'S MODULUS
(a) MILD STEEL BARS (R)	250 MPa	200 GPa
(b) HIGH TENSILE BARS (Y)	450 MPa	200 GPa
 - FOUNDING MATERIAL - MEDIUM HARD ROCK**
 - REQUIRED BEARING CAPACITY = 1000kPa
 - CONSTRUCTION DETAILS**
 - ALL VISIBLE CORNERS MUST BE CHAMFERED 25mm x 25mm UNLESS SHOWN OTHERWISE
 - CONCRETE COVER: 40mm MIN
 - CONCRETE FINISH:
 - VISIBLE SURFACES - F2 (SMOOTH)
 - NON-VISIBLE SURFACES - F1 (ROUGH) OR AS INDICATED ON DRAWINGS
 - HEALTH AND SAFETY**
 - HEALTH AND SAFETY ON SITE IS GOVERNED BY THE OCCUPATIONAL HEALTH AND SAFETY ACT NO 85 OF 1993 AND THE CONSTRUCTION REGULATIONS OF 2003.
 - A HEALTH AND SAFETY PLAN SHALL BE COMPILED, INCORPORATING A RISK ASSESSMENT, IDENTIFICATION OF ALL SITE-SPECIFIC RISKS, THE PROVISION OF SUITABLE SAFETY EQUIPMENT AND A SAFE WORKING ENVIRONMENT.
 - FALSEWORK AND TEMPORARY EMBANKMENT SUPPORT SHALL BE APPROVED BY THE ENGINEER PRIOR TO ERECTION AND IMPLEMENTATION
 - HYDROLOGY AND HYDRAULICS**
 - DEPARTMENT OF WATER AND SANITATION PERFORMED REPORT NO. B900-H002-2017.02 WITH FLOOD STUDY
 - CATCHMENT AREA - 392 km²
 - LONGEST WATER COARSE = 63km
 - CONCENTRATION TIME 16 HOURS
 - MAP IS 5689m
 - PEAK FLOOD:
 - 1:50 YEAR = 430m³/s - DESIGN LEVEL = 430.75
 - 1:100 YEAR = 530m³/s - DESIGN LEVEL = 431.38
 - 1:200 YEAR = 645m³/s - DESIGN LEVEL = 432.00
 - DESIGN BACKWATER LEVEL FOR Q50 = 431.05
 - DESIGN FLOW VELOCITY = 4m/s
 - REQUIRED BACKWATER/OFFSET FREEBOARD = 1.0m
 - ACTUAL CALCULATED FREEBOARD = 1.75m
 - DECK LEVEL DETERMINED BY ROAD GEOMETRIC REQUIREMENTS

NO	DESCRIPTION	DRAWING NO
1	GENERAL LAYOUT PLAN	KNP-B1-01
2	FOUNDATION PLAN AND PIER DETAILS	KNP-B1-02
3	ABUTMENT CONCRETE DETAILS	KNP-B1-03
4	DECK CONCRETE DETAILS	KNP-B1-04
5	ABUTMENT A REINFORCEMENT DETAILS	KNP-B1-05
6	ABUTMENT D REINFORCEMENT DETAILS	KNP-B1-06
7	PIER REINFORCEMENT DETAILS	KNP-B1-07
8	DECK REINFORCEMENT DETAILS	KNP-B1-08
9	BEAM REINFORCEMENT DETAILS	KNP-B1-09
10	BRIDGING SCHEDULE	KNP-B1-10

No.	Date	Revision	Initial
01	AUG 24	FOR TENDER	LH



Project: SHANGONI - ROAD PROJECT

Client: KRUGER NATIONAL PARK

Drawing: BRIDGE B1 GENERAL LAYOUT PLAN

Scale: AS SHOWN Drawn: D.VENTER/L.HEPKEMA

Checked: A. NYAMBI Date: MAY 2020

Drawing No: KNP-B1-01 Rev: 01

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