

SANRAL RRM WORKSHOP

STRUCTURAL SAFETY INSPECTIONS

18TH FEBRUARY 2020

SESSION 3 - PRACTICAL EXAMPLES



EXAMPLE 1: BRIDGE STRUCTURE




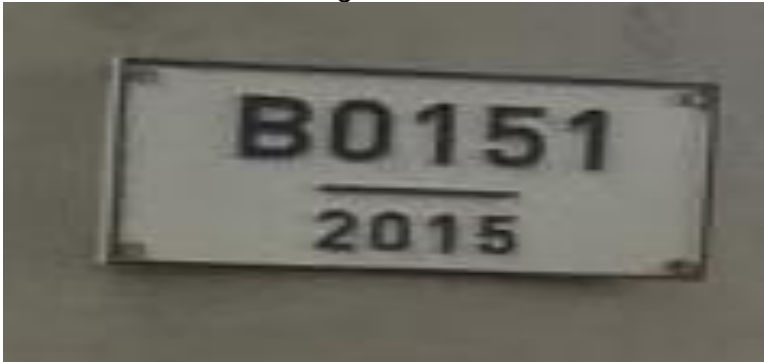
The Droer River bridge is located in the Eastern Cape on the National Route R75, Section 4 at km36.02. For this example, you are required to complete a Safety Inspection Sheet and Summary Sheet using the information and photograph log provided below.







Figure 1.1 Locality of Droer River Bridge

<u>Type of structure:</u>	Reinforced Concrete (Simply supported)
<u>Number of spans:</u>	4
<u>Start Longitude:</u>	32d 38m 25.2s
<u>Start Latitude:</u>	24d 41m 30.5s
<u>End Longitude:</u>	32d 38m 23.9s
<u>End Latitude:</u>	24d 41m 30.5s

PHOTOGRAPH LOG : INVENTORY

<p><i>Bridge Approaches</i></p> 	<p><u><i>Insert Picture Reference:</i></u></p> <p><u>P01</u></p>
<p><i>Elevation</i></p> 	<p><u><i>Insert Picture Reference:</i></u></p> <p><u>P02</u></p>
<p><i>Underside of Deck</i></p> 	<p><u><i>Insert Picture Reference:</i></u></p> <p><u>P03</u></p>
<p><i>Bridge Number</i></p> 	<p><u><i>Insert Picture Reference:</i></u></p> <p><u>P04</u></p>

PHOTOGRAPH LOG : OBSERVED DEFECTS

<p><i>Bridge Approaches (South and North Bound)</i></p> 	<p><u>Insert Picture Reference:</u></p> <p><u>P11</u></p>
<p><i>Bridge Piers</i></p> 	<p><u>Insert Picture Reference:</u></p> <p><u>P12</u></p>
<p><i>Top of Deck</i></p> 	<p><u>Insert Picture Reference:</u></p> <p><u>P13</u></p>
<p><i>Parapets</i></p> 	<p><u>Insert Picture Reference:</u></p> <p><u>P14</u></p>

Expansion Joints



Insert Picture Reference:

P15

Flood Damage



Insert Picture Reference:

P16

EXAMPLE 1: SAFETY SHEET

SANRAL		EDMS # 4578657/6	SAFETY INSPECTION FORM i.t.o. Occupational Health and Safety Act (1993) and Construction Regulations (2014)				BRIDGES												
Route	R75	Section	4				Road km	36.02											
Structure No.	B0151	Start Latitude (south)	3	2	3	8	2	5	.	2	Start Longitude (east)	3	2	3	8	2	3	.	9
No of Spans	4	End Latitude (south)	2	4	4	1	3	0	.	5	End Longitude (east)	2	4	4	1	3	0	.	5
Structure Name	Droer River Bridge																		
<p>The purpose of this Safety Inspection, to be undertaken by a competent person, is to identify safety related defects that require urgent attention to ensure the structure is safe for continued use. It is not required to record routine maintenance defects. These inspections are to be captured and hard copy and electronic records kept. Data shall also be captured in SANRAL ITIS system. For existing structures inspections shall at 12 months maximum intervals. For new structures they shall be done every 6 months for the first 24 months and at 12 months maximum intervals thereafter.</p>																			
INSPECTION (mark with an X as applicable for Defect and Degree)																			
Item	Description	Defect?			If Yes Degree Rating				Photo No's.										
		Yes	No	N/A	1	2	3	4											
1	Upper approaches (incl. guardrails)	X						X	P11										
2	Abutments (incl. retaining walls)		X																
3	Piers	X			X				P12										
4	Top of deck	X						X	P13										
5	Underside of deck		X																
6	Handrails/parapets (incl. sidewalks)	X				X			P14										
7	Expansion joints	X				X			P15										
8	Flood damage?	X				X			P16										
9	Impact damage?		X																
10	Other defects?		X																
PHOTOGRAPHS																			
Photo No.	Inventory Description	Photo No.	Location	Defect Description															
P01	Upper approach showing parapets	P11	Bridge Approaches	Guardrail not connected to parapet end block.															
P02	Bridge elevation	P12	Piers	Weathering of concrete on pier faces.															
P03	Underside of deck	P13	Top of Deck	Blocked scuppers.															
P04	Bridge number	P14	Parapets	Spalling of concrete on post and rail type parapets.															
P05		P15	Expansion joints	Leaking expansion joints.															
P06		P16	Upstream waterway	Debris accumulated at bridge pier/opening.															
P07		P17																	
P08		P18																	
P09		P19																	
P10		P20																	
Urgent Action or Attention required?		Yes	X	No		If Yes, Urgency?	Immediate	X	Within 2 months		Within 6 months								
If Yes, specify details:		The guardrail is not connected to the parapet end block and thus poses an immediate safety risk to road users. This defect in particular must be immediately addressed.																	
Inspector's comments: The overall structure is generally in good to fair condition with a few localised defects.																			
Inspected by		A. Man					Date		10/1/2019										
Signature							Firm		A. Company										
Degree Rating Description		No Defect	0	Minor	1	Moderate	2	Warning	3	Severe	4								

EXAMPLE 1: SUMMARY SHEET

[illegible]