SANRAL
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD
Reg.No.1998/009584/30
BUILDING SOUTH AFRICA THROUGH BETTER ROADS

Physical Address: 48 Tambotie Avenue,
Val de Grace Pretoria
Po Box 415, Pretoria, 0001

Tel: +27(0)12 844 8000
Fax: +27(0)12 844 8200
Reg No: 1998/009584/30

# Bridge Management System CULVERT Inventory Sheet

| | |
|---|---|
| **Structure No** | R072_02E_C4047 |
| **Structure Name** | Bokness River Tributary 2 |

## Location Details

| | | | |
|---|---|---|---|
| **N-Route No. :** | R072 | **Primary Feature :** | River or Stream |
| **Section No. :** | 02E | **Feature Name :** | Tributary to Boknes River |
| **Route Description :** | | **Feature Road No. :** | |
| **Route km :** | 0.22 | **Featue Road km :** | |
| **N-Route Over/Under :** | Over | **Farm :** | |
| **Province :** | | **Secondary Feature :** | N/A |
| **Magisterial District :** | | **Secondary Feature Name :** | |
| **Other Authority :** | Not Applicable | **Other Bridge No. :** | IDC4047 |
| **Orientation :** | North/South | **Elevation (m) :** | |
| | | **Direction of River Flow :** | South |

**1:50,000 TOPOGRAPHICAL MAP**

| | |
|---|---|
| **Map Name :** | |
| **Map No. :** | |
| **Survey System :** | |

**GIS Coordinates**

| | Latitude (South) | Longitude (East) |
|---|---|---|
| **Start :** | 33d 39m 13.50s | 26d 24m 53.00s |
| **End :** | 33d 39m 12.90s | 26d 24m 53.30s |

## Contract Details

| | | | |
|---|---|---|---|
| **Design Engineers :** | | **Contract Number :** | |
| **Contractors :** | | **Year Built :** | 2016 |
| **Contract Price :** | | **Completion Time :** | |
| **Escalated Cost :** | | | |
| **Total Cost (Design & Construct) :** | | | |

## Structural Features

| | | | | |
|---|---|---|---|---|
| **No. of Cells :** | 3 | **fcu Cells - Precast :** | | |
| **Culvert Type :** | Concrete pipe | **fcu Cells - Insitu :** | | |
| **Culvert Description :** | Stream-River-Stormwater Culvert | **fcu Apron Slabs & Cut Walls :** | | |
| **Purpose of Culvert :** | | **fcu Wing/Ret Walls :** | | **MPa** |
| **Parapet/Handrail Type :** | Guardrail | **fcu Road Slabs :** | | **MPa** |
| **Culvert Road Slabs :** | | | | |
| **Approach Road Slabs :** | | | | |
| **In/Outlet Walls :** | | | | |
| **Causeway :** | | | | |
| **Burried Structure :** | | | | |
| **Floor Slope :** | | degrees | | |

## Cell

| Position | Material (Walls) | Material (Top Slab) | Foundation Type | Founding Material | Internal Width (m) | Internal Height (m) |
|---|---|---|---|---|---|---|
| C1 to C4 | Reinforced Concrete | Reinforced Concrete | | | 1.60 | 1.60 |

## Invert Slabs

| Position | Type | Material | Thickness |
|---|---|---|---|
| C1 to C4 | Monolithic slab | Reinforced Concrete | 0.10 |

## Apron Slabs

| Position | Material | Thickness |
|---|---|---|
| E1,E2 | Reinforced Concrete | 0.20 |

## Cut-off Walls

| Position | Material | Width | Depth |
|---|---|---|---|

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## Embankment Protection

| Position | Material | Thickness | Slope |
|---|---|---|---|
| E1,E2 | Vegetation | 0.10 | |

## Dissipators

| Position | Type | Material |
|---|---|---|

## Wing/Retaining Walls

| Position | Type | Material | Foundation Type | Founding Material | Hmax | Dmax |
|---|---|---|---|---|---|---|
| E1,E2 | Cantilever wall | Reinforced Concrete | Spread footings | Engineered Fill | 1.90 | 0.40 |

## Design Characteristics

| | | | |
|---|---|---|---|
| **Design Live Loading :** | | **Warrant History :** | |
| **Design Code(s) :** | | **% Inc. Due to Overloading :** | **%** |

## Hydraulic Data

| | | | | | |
|---|---|---|---|---|---|
| **Catchment Area :** | | **km2** | **Peak Discharge Year :** | | |
| **Design Return Period :** | | **years** | **Scour Protection :** | None | |
| **Design Discharge :** | | **m3/sec** | **Risk of Scour :** | No | |
| **Design Flood Level :** | | **m above msl** | **Max Scour Depth :** | | **m** |
| **Design Freeboard :** | | **m** | **Design Scour Depth :** | | **m** |
| **Soffit Level :** | | **m above msl** | **Angle Cell/River Flow :** | | **degrees** |
| **Peak Flood Level :** | | **m above msl** | | | |
| **Ht above/below Soffit :** | | **m** | | | |

## Drainage

| | |
|---|---|
| **Road Surface :** | |
| **Cell/s :** | |
| **Wing/Ret. Walls :** | |
| **Sub-surface Seepage Drains :** | |

## Dimensions, Geometry and Road Clearances

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Overall Length :** | 9.9 | **m** | | **Vertical Alignment :** | | |
| **Overall Width :** | 19.3 | **m** | | **Horizontal Alignment :** | | |
| **Min Clear Width :** | | **m** | | **Camber/Crossfall :** | | |
| **Overall Cell Length :** | 22.3 | | | **Angle of Skew :** | | **degrees** |
| **Carriageway :** | | | | **Max Fill Height :** | 0.3 | **m** |
| **Direction Trafic :** | | | | **Slope of Invert Slab :** | | **%** |
| **Min Road Width :** | 11.8 | **m** | **m** | **Min Vert. Clearance :** | 1.6 | **m** |
| **Approach Width :** | 11.8 | **m** | **m** | **Max Cell Size - Width :** | 1.6 | **m** |
| **Opening Area :** | 7.68 | **m2** | | **Max Cell Size - Height :** | 1.6 | **m** |
| | | | | **Min Depth of Fill Over :** | 0.3 | **m** |

## Services

| Type | Description | Location | Authority |
|---|---|---|---|

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## Road Type, Traffic Volumes and Surfacing

| | Road Over | Road |
|---|---|---|
| Class of Road : | | |
| No. of Carriageways : | | |
| Names of Carriageways : | | |
| No./Dimensions of Lanes (m) : | | |
| No./Dimensions of Shoulders (m) : | | |
| No./Dimensions of Sidewalks (m) : | | |
| Average Daily Traffic : | | |
| Year ADT Recorded : | | |
| Truck Factor (%) : | | |
| Detour Length (km) : | | |
| Minimum Class of Detour : | | |
| Surface Slab : | | |
| Surface Approach : | | |

## Archive Details

Project No. : Correspondence File : Strip Map :

| Drawing No. | Title | Location | Type |
|---|---|---|---|
| Microfilm No. | Title | Location | |

## Maintenance Agreements and Responsibilities

| | |
|---|---|
| Responsibilities : | |
| Agreement No. : | |
| Share of Costs : | |
| Agreement Location : | |

## Maintenance History

| Details | Design Engineer | Contractor | Completion Date | Cost |
|---|---|---|---|---|

## Widening, Strengthening, Retrofitting

| Details | Design Engineer | Contractor | Completion Date | Cost |
|---|---|---|---|---|

## Additional Remarks

Remarks :

## Factors Influencing Field Inspection

Access : Require bush clearing
Availability of Drawings :
Effective Cell Opening : m2

General Info :