THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL X.003-050-2019/1

CONSULTING ENGINEERING SERVICES FOR THE ROUTINE ROAD MAINTENANCE OF NATIONAL ROUTE R67 SECTION 2 (KM 36,19) TO SECTION 4 (KM 43,43) AND NATIONAL ROUTE R63 SECTION 12 (KM 16,34) TO SECTION 13 (KM 59,40)

ROAD CONDITION REPORT

FEBRUARY 2025

ISSUED TO:

SANRAL
Southern Region
20 Shoreward Drive
Bay West
Port Elizabeth
6025

ISSUED BY:

AVX Consulting Engineers cc
58 Wesley Street
Mthatha

Tel: 047 532 4942
Fax: 086 599 4067
E-mail: info@avx.co.za

DOCUMENT CONTROL RECORD	
Report Title	Routine Road Maintenance of National Route R67 Section 2 km 36,19 to Section 4 km 43,43 and National Route R63 Section 12 km 16,34 to Section 13 km 59,40
Contract no.	X.003-050-2019/1
Document Name	Road Condition Report
Author	AVX CONSULTING ENGINEERING
Revision Status	Rev – 01
Date Issued	31 March 2023

CHANGE HISTORY			
Version	**Revised By**	**Revision Date**	**Description**
Rev-2	Mzoxolo Ntebe	08 February 2025	

DISTRIBUTION LIST	
Employer	SANRAL Southern Region
Date Received	

APPROVALS			
Designation	Name	Signature	Date
AVX Consulting Engineers	Rian lLse		15 February 2025
SANRAL	Malesiba Mabe		

TABLE OF CONTENTS

1. INTRODUCTION 4

2. SCOPE 4 -.....5

3. DETAILED DESCRIPTION 5

3.1 General 5
3.2 Interchanges and Intersections 6 -..... 8
3.3 Road Furniture and Concrete Drains Information 9 -..... 12
3.4 Rest Areas and Taxi / Bus Stops 12 - 14

4. **PAVEMENT MANAGEMENT SYSTEM** 14

4.1 Description of Information 14 -..... 23
4.2 Definition of codes used 23 -.....24
4.3 PMS – Road Information 24

5. TRAFFIC INFORMATION 24

6. **HISTORIC ROAD MAINTENANACE INFORMATION** 24

6.1 General 24
6.2 Description of Information 24 -..... 34
6.3 Maintenance Information.....34

7. SUB CONTRACTORS..... 35

8. CURRENT MAINTENANCE AND REHABILITATION PROJECTS 36

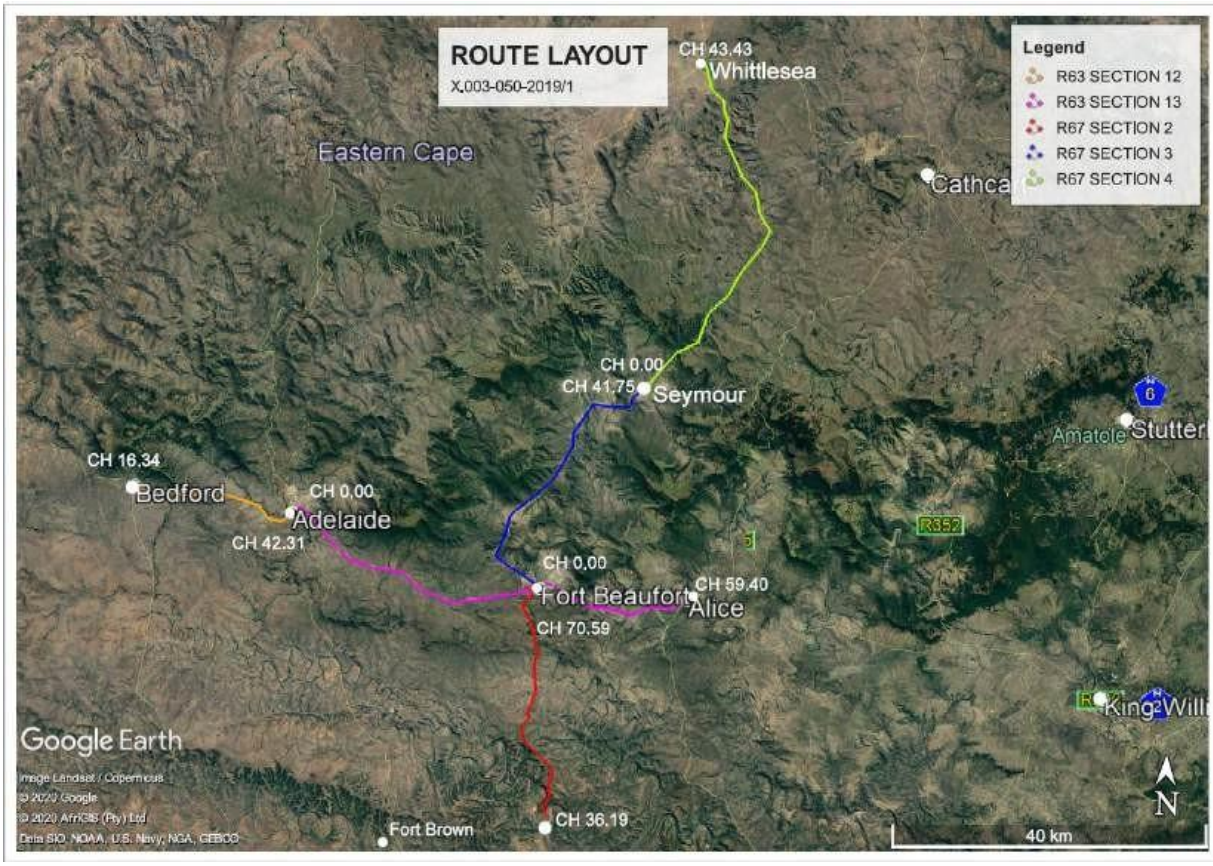
9. MATERIAL 36

ANNEXURE A: Locality Plan.....37

ANNEXURE B: Road Logs 38-50

1. INTRODUCTION

The intention of this report is to provide information to suitably qualified bidders who are interested in tendering for rendering of Routine Road Maintenance services on the National Route R67 Section 2 (km 36.19 to km 70,59), Section 3 (km 0.00 to km 41,75), Section 4 (km 0,00 to km 43,43) and Route R63 Section 12 (km 16,34 to km 42,31) and Route R63 Section 13 (km 0,00 to km 59,40)



ROUTE LAYOUT (SEE ANNEXURE A)

The information is based on actual available maintenance data from the previous and current SANRAL RRM contracts and information obtained from site visits during 31st March 2023 to February 2025. The information should assist the prospective bidders in the tendering process and the successful bidder in executing the routine road maintenance under the contract.

2. SCOPE

The primary aim of this report is to provide general and historic routine road maintenance data to the respective bidders.

The road assessments information covers the following broad categories:

- General information
- General as-built information
- Traffic information
- Road furniture information

- Historic routine road maintenance information
- Proposed future rehabilitation projects.
- Subcontractors and BEs involved with routine road maintenance.

3. DETAIL DESCRIPTION

3.1. GENERAL

The routes consist of:

- National Route R63 Section 12 (km 16,34 to km 42.31) from Bedford to Adelaide
- National Route R63 Section 13 (km 0,00 to km 59.49) from Adelaide, through Fort Beaufort to Alice
- National Route R67 Sections 2 to 4 which stretches between Koonap River (km 36,19) and Long Draai (km 43.43).

The roads and related responsibilities were taken over by SANRAL from the Department of Roads and Public works in 2012.

The contract is divided into two routes and five sections as described in the following table.

ROUTE DESCRIPTION					
Route	**Section**	**From km**	**To km**	**Length**	**Approximate Road Pavement Area**
R63	12	Bedford km 16.34	Adelaide km 42.31	25.97km	298 655m^2
R67	13	Adelaide km 0.00	Alice km 59.49	59.49km	594 135m^2
R67	2	km 36.19	Fort Beaufort km 70.65 (T-Junction of R67 and R63)	34.39km	247 610m^2
R67	3	Fort Beaufort km 0.00 (T-Junction of R67 and R63)	Seymour km 41.80	41.80km	309 320m^2
R67	4	Seymour km 0.00	Long Draai km 43.43	43.43km	312 700m^2

TABLE 1: ROUTE DESCRIPTION

3.2 INTERCHANGES AND INTERSECTIONS

There are no major interchanges present along the route as it traverses primarily through a rural environment with small towns situated along the way. The following table lists the main intersections along the route per section.

INTERSERCHANGES AND INTERSECTIONS			
R63 SECTION 12: BEDFORD (km 16.34) TO ADELAIDE (km 42.31)			
km Distance	**Left Description (+Side)**	**Right Description (-Side)**	**Feature Type**
20.70	MUN MR477 Donkin Street	Donkin Street	Intersection
20.81		Newcastle Street	Intersection
20.92		Caledon	Intersection
21.03	Somerset Street	Somerset Street	Intersection
21.14	Cradock Street	Cradock	Intersection
21.25	Hope Street	Hope Street	Intersection
21.31	Adderley Street	Adderley Street	Intersection
21.41	J.V Riebeek Street	J.V Riebeek Street	Intersection
21.49	Unknown	Unknown	Intersection
21.55	Cole Street	Cole Street	Intersection
21.75	Napier Street	Napier Street	Intersection
21.95	Bourke Street	Bourke Street	Intersection
22.14	Field Street	Field Street	Intersection
22.45	Unknown		Intersection
22.53	Abattoirs		Intersection
22.62 Intersection			
26.43	Intersection	Malagskraal	Intersection
29.85	Cowie		Intersection
35.10	Tarkastad		Intersection
35,40		TR05703	Intersection
35.45	TR05702		Intersection
36.60	OP35 Primestown		Intersection
40.00	Intersection	Intersection	Intersection
42.80	Kaga		Intersection

TABLE 2: R63 SECTION 12 – INTERCHANGES AND INTERSECTIONS

INTERCHANGES AND INTERSECTIONS			
R63 SECTION 13: ADELAIDE (km 0.00) TO ALICE (km 59.49)			
km Distance	**Left Description (+ Side)**	**Right Description (-Side)**	**Feature Type**
2.12	DR07232 Lingelethu		Intersection
3,20		Intersection	Intersection
4.80		MR00480 Grahamstown	Intersection
6.83	Intersection		Intersection
16.59	MN10053 Unknown		Intersection
17.36	MN10046 Unknown		
22.59		Gardner's Drift	Intersection
36.68		R67 Adelaide / Grahamstown	Intersection
40.78		Waterberg TB Hospital	Intersection
47.23	Calderwood		
47.56	Esingeni		Intersection
49.83	DR07116 Joji		Intersection
50.54		DR07219 Kwamamela	Intersection
51.29	DR07232 Unknown		Intersection
54.35	DR0722 Peddie	Roxeni	Intersection

TABLE 3: R63 SECTION 13 – INTERCHANGES AND INTERSECTIONS

INTERCHANGES AND INTERSECTIONS			
R67 SECTION 2: KOONAP RIVER (km 36.19) TO FORT BEAUFORT (km 70.59)			
km Distance	**Left Description (+Side)**	**Right Description (-Side)**	**Feature Type**
42.20	DR92044	Prieel DR02059	Intersection
50.60		Edenvale	Intersection
55.80		DR 02475	Intersection
63.40			Intersection
67.00	DR02461	Katvlei School	
67.05			Intersection
70.35	R63		Intersection
70.35		R63	Intersection

TABLE 4: R67 SECTION 2 – INTERCHANGES AND INTERSECTIONS

INTERCHANGES AND INTERSECTIONS			
R67 SECTION 3: FORT BEAUFORT (km 0.00) TO SEYMOUR (km 41.75)			
km Distance	**Left Description (+Side)**	**Right Description (-Side)**	**Feature Type**
3.40		Milbank	Intersection
5.00		Rev Williams	Intersection
7.80		Badaford	Intersection
10.20	Fort Fordyce		Intersection
10.70		DR07732	Intersection
11.60	Piet Retief / Blinkwater		Intersection
21.80		DR02709	Intersection
23.50		DR02702	Intersection
28.30	Balfour / Katberg MR0680		
30.10	Upsher	Mphofu Training Centre	Intersection
32.10			Intersection
33.50	Balfour / Katberg	Kat River Dam	Intersection
37.60			Intersection
40.40		Seymour	Intersection
41.15	Seymour DR02720		

TABLE 5: R67 SECTION 3 – INTERCHANGES AND INTERSECTIONS

INTERCHANGES AND INTERSECTIONS			
SECTION 4: SEYMOUR (km 0.00) TO LONG DRAAI (km 43.43)			
km Distance	**Left Description (+Side)**	**Right Description (-Side)**	**Feature Type**
2.00	DR 02718		Intersection
27.00	Kromrivier		Intersection
27.50		Cathcart R351	Intersection
41.20	Waterdown Dam		Intersection
43.30	Township		Intersection

TABLE 6: R67 SECTION 4 – INTERCHANGES AND INTERSECTIONS

3.3 ROAD FURNITURE AND CONCRETE DRAINS INFORMATION

This section provides information regarding the road reserve, concrete drains, barriers, and traffic signs in tabular form.

The information in the Tables has been sourced from the Department of Roads and Public Works Road Logs (Included as Annexure B), through a site visit that was undertaken on to 31st March 2023 to February 2025.

3.3.1 Road Reserve and Median

‘

The road reserve was found to vary between 25 and 40m wide with close to 30m being the most prevalent width.

ROAD RESERVE AND MEDIAN						
Route	**Section**	**km Start**	**km End**	**Length**	**Average Road Reserve Width**	**Approximate Road Reserve Area**
R63	12	16.34	42.31	25.97km	25m	65ha
R63	13	0.00	59.49	59.49km	30m	179ha
R67	2	36.19	70.59	34.40km	30m	104ha
R67	3	0.00	41.80	41.80km	25m-varies	104ha
R67	4	0.00	43.43	43.30km	30m-varies	122ha

TABLE 7: ROAD RESERVE AND MEDIAN

3.3.2 Concrete drains

Concrete drains are as indicated in the following table.
The Concrete and stone pitched drains were generally in a good condition.

CONCRETE DRAINS (Positive & Negative)		
Description	**Concrete V-drain**	**Stone pitched drains**
R63 Section 12	6300m	10m
R63 Section 13	14890m	10m
R67 Section 2	4190m	0m
R67 Section 3	4070m	7820m
R67 Section 4	170m	19850m

TABLE 8: CONCRETE DRAINS

3.3.3 Barriers

The approximate total length of barriers on site is indicated in the following table for each section.

BARRIERS (Positive & Negative)	
Section	**Total**
R63 Section 12	26690m
R63 Section 13	43560m
R63 Section 2	39100m
R63 Section 3	42800m
R63 Section 4	57996m

TABLE 9: BARRIERS

3.3.4 Traffic signs

In general, all signs were in good condition. The signs on the route are as indicated in the following table for each section.

TRAFFIC SIGNS	
R63 Section 12	
Description	**Total**
Large Information	17
Medium Information	46
Small Information	31
Large Regulatory	
Medium Regulatory	18
Small Regulatory	16
Larger Warning	
Medium Warning	16
Small Warning	35

TABLE 10: TRAFFIC SIGNS – R63 SECTION 12

TRAFFIC SIGNS	
R63 Section 13	
Description	**Total**
Large Information	8
Medium Information	29
Small Information	37
Large Regulatory	39
Medium Regulatory	17
Small Regulatory	54
Larger Warning	
Medium Warning	8
Small Warning	72

TABLE 11: TRAFFIC SIGNS – R63 SECTION 13

TRAFFIC SIGNS	
R67 Section 2	
Description	**Total**
Large Information	2
Medium Information	24
Small Information	12
Large Regulatory	6
Medium Regulatory	30
Small Regulatory	6
Larger Warning	
Medium Warning	3
Small Warning	85

TABLE 12: TRAFFIC SIGNS – R67 SECTION 2

TRAFFIC SIGNS	
R67 Section 3	
Description	**Total**
Large Information	8
Medium Information	34
Small Information	15
Large Regulatory	29
Medium Regulatory	
Small Regulatory	5
Larger Warning	
Medium Warning	7
Small Warning	44

TABLE 12: TRAFFIC SIGNS – R67 SECTION 3

TRAFFIC SIGNS	
R67 Section 4	
Description	**Total**
Large Information	10
Medium Information	23
Small Information	22
Large Regulatory	
Medium Regulatory	24
Small Regulatory	
Larger Warning	2
Medium Warning	
Small Warning	64

TABLE 13: TRAFFIC SIGNS – R67 SECTION 4

Illegal Traffic signs:

Illegal traffic signs found are attended to by Route patrol

3.3.5 Bridges and Special Structures

The following table details the number of Bridges and special structures along the route per section.

BRIDGES AND SPECIAL STRUCTURES	
Section	**Total**
R63 Section 12	5
R63 Section 13	8
R67 Section 2	3
R67 Section 3	7
R67 Section 4	4

TABLE 14: BRIDGES AND SPECIAL STRUCTURES

3.4 REST AREAS AND TAXI / BUS STOPS

R63 Section 12

There are no rest areas in this section of the road.

R63 Section 13

There are bus stops at km 36.20 on either side of the road before entering Fort Beaufort.



IMAGE1: R63 SECTION 13 BUS STOP

This section of the road has street hawkers selling goods during the day in winter season.

R67 Section 2

There are 3 No. Rest Areas along this section, they are fair condition.
The rest area at km 70.40 requires new bins, chairs, and concrete tables.

REST AREAS			
Route	**Section**	**Km**	**LHS/RHS**
R67	2	40.80	LHS
R67	2	62.40	RHS
R67	2	70.30	RHS

TABLE 15: REST AREAS – R67 SECTION 2



IMAGE 2: REST AREA AT km 70.40

R67 Section 3

There are 6 rest areas along this section. New tables and benches are required at all the rest areas.

REST AREAS			
Route	**Section**	**Km**	**LHS/RHS**
R67	3	16.90	RHS
R67	3	20.40	RHS
R67	3	32.10	LHS
R67	3	34.60	LHS
R67	3	38.40	LHS
R67	3	39.80	LHS

TABLE 16: REST AREAS – R67 SECTION 3

There are surfaced and paved bus stops at km 0.40 (LHS & RHS), km 11.60 (LHS) & 11.53 (RHS),
km 33.60 (LHS), km 41.00 (LHS) & 40.60 (RHS). Signs to be erected.

R67 Section 4

There are 7 rest areas along this section which are well maintained. New Concrete tables, benches and bins have been recently erected. There are surfaced and paved bus stops at Km 27.40 (RHS) and Km 2.60 (LHS) at the R351 intersection.

REST AREAS			
Route	**Section**	**Km**	**LHS/RHS**
R67	4	9.70	LHS
R67	4	12.00	LHS
R67	4	14.50	LHS
R67	4	21.10	LHS
R67	4	24.70	LHS
R67	4	39.70	LHS

TABLE 17: REST AREAS – R67 SECTION 4

4. PAVEMENT MANAGEMENT SYSTEM INFORMATION

4.1. DESCRIPTION OF INFORMATION

4.1.1. R 63 Section 12: Bedford (km 16.38) to Adelaide (km 42.31)

4.1.1.1. Information

The Road Condition Report is based on available maintenance data from the previous and current SANRAL RRM contracts and information obtained from road condition assessment conducted on 31st March 2023 to February 2025

4.1.1.2. Features

Prominent features are included in the tables earlier on in this report under sections 3.2 and 3.3. An updated Road Log, based on that obtained from the DRPW are available for this section as included in Annexure A.

4.1.1.3. Road type

This section of the R63 consists of an Undivided (N) Single (S) carriageway and Paved Shoulders (P), (N, S, P) with one (1) lane per direction.

4.1.1.4. Reserve/Median

The average road reserve width was found to be 25m.

4.1.1.5. Cross Section

The lane width was 3.2m with 1.8m paved shoulders which varied. From approximately km 16.8 up to Bedford the lane width reduced to 3.0m wide with gravel shoulders. After Bedford the lane widths are measured at approximately 3.7m wide with 2.0m surfaced shoulders.

4.1.1.6. Topography/Climate

The topography of the section is flat with some rolling terrain between Bedford and Adelaide. The climate of this section of road is Dry to Moderate according to Weinert's classification system.

4.1.1.7. Road Renewal

Maintenance activities on this section are indicated in the table below:

ROAD RENEWAL				
Section	**Maintenance Activities**	**Period**	**Engineer**	**Contractor**
R63 Section 12	SANRAL Routine Road Maintenance	2022 to date	AVX Consulting Engineers	Qtc Civils (Pty) Ltd

TABLE 18: ROAD RENEWAL – R63 SECTION 12

4.1.1.8. Pavement

The road structure and surface between km 17.0 and km 20.0 is in a good condition as it was recently rehabilitated. The rest of the road is in fair condition, which is from km 20.0 to km 42.31. Some pavement repairs were performed under RRM in September 2024 between km 22.40 and km 38.70

4.1.1.9. Notes

- There is an existing railway bridge situated at Km 38.60.
- There is a high-pressure water line running parallel to the R63, from Bedford (km 16,34) to Adelaide (km 42.31).

4.1.2 R63 Section 13: Adelaide (km 0.00) to Alice (km 59.49)

4.1.2.1 Updating

The Road Condition Report is based on available maintenance data from the previous and current SANRAL RRM contracts and information obtained from road condition assessment conducted on 31st March 2023 to February 2025

4.1.2.2 Features

Prominent Features are included in the tables earlier on in this report under sections 3.2 and 3.3. Road Logs of the DRPW are available for this section as included in Annexure A.

4.1.2.3 Road type

The first portion of Section 13 consists of an Undivided (N) Single (S) Carriageway and Paved Shoulders (P), (N, S, P) with one (1) lane per direction up to approximately km 36.4 at Fort Beaufort.
From km 39, outside of Fort Beaufort, the section consists of an Undivided (N) Single (S) Carriageway and Unpaved Shoulders (U), (N, S, U) with one (1) lane per direction.

Climbing lanes are provided along this section at the following approximate locations: km 3.80, km 6.30, km 7.10, km 14.50, km 20.00, km 27.30, km 28.60 and km 32.90.

4.1.2.4 Reserve/Median

The road reserve width is generally 30.0m.

4.1.2.5 Cross Sections

This section of the R63 has a lane width of 3.70m with 2m paved shoulders up to km 36.40. From km 39 the road width reduced, and the lane widths was between 3m and 3.5m wide with unpaved shoulders.

4.1.2.6 Topography/Climate

The topography of the section is rolling with limited major cut and fills noted along the route. The climate of this section of road is dry to moderate according to Weinert's Classification System.

4.1.2.7 Road Renewal

Recent maintenance activities on this section are indicated in the table below:

ROAD RENEWAL				
Section	**Maintenance Activities**	**Period**	**Engineer**	**Contractor**
R63 Section 13	SANRAL Routine Road Maintenance	2019 to date	AVX Consulting Engineers	Qtc Civils (Pty) Ltd

TABLE 18: ROAD RENEWAL – R63 SECTION 13

4.1.2.8 Pavement

The pavement condition for the section between Adelaide and Fort Beaufort is in a poor condition as it was re-sealed in 2018 mostly part of the road is deteriorated some areas which need attention are attended to especially in areas with moderate pumping and surface failure from km 3.0 to km 32,40. The section between Fort Beaufort and Alice is in a good condition as it undergone rehab from km 35.77 to km 58.86



IMAGE 5: PAVEMENT REPAIR'S– R63 SECTION 13 (from 3km to 32,4km)



IMAGE 6: PAVEMENT REPAIR'S – R63 SECTION 13 (from 3km to 32.4km)

4.1.3 R67 Section 2: (km 36.19) to Fort Beaufort (km 70.59)

4.1.3.1 Updating

The Road Condition Report is based on available maintenance data from the previous and current SANRAL RRM contracts and information obtained from road condition assessment conducted on 31st March 2023 to February 2025

4.1.3.2 Features

Prominent Features are included in the tables earlier on in this report under sections 3.2 and 3.3. Road Logs of the DRPW are available for this section as included in Annexure B

4.1.3.3 Road type

This section of the R67 consists of an Undivided (N) Single (S) Carriageway and Unpaved Shoulders (U), (N, S, U) with one (1) lane per direction

4.1.3.4 Reserve/Median

The average road reserve found to be 30.0m.

4.1.3.5 Cross Sections

The road is approximately 7.40m wide.

4.1.3.6 Topography/Climate

The topography of the section is rolling with moderate cut and fills. The climate of this section of road is dry to moderate per Weinert's Classification System.

4.1.3.7 Road Renewal

Maintenance activities on this section are indicated in the table below:

ROAD RENEWAL				
Section	**Maintenance Activities**	**Period**	**Engineer**	**Contractor**
R67 Section 2	SANRAL Routine Road Maintenance	2022 to date	AVX Consulting Engineers	QTC civils

TABLE 19: ROAD RENEWAL – R67 SECTION 2

4.1.3.8 Pavement

The road pavement and surface are in this section is in a fair condition with few areas showing signs of bleeding.

4.1.4. R67 Section 3 Fort Beaufort: (km 0.00) to Seymour (km 41.80)

4.1.4.1 Updating

The Road Condition Report is based on available maintenance data from the previous and current SANRAL RRM contracts and information obtained from road condition assessment conducted on 31st March 2023 to February 2025

4.1.4.2 Features

Prominent Features are included in the tables earlier on in this report under sections 3.2 and 3.3. Road Logs of the DRPW are available for this section as included in Annexure.

4.1.4.3 Road type

This sections of the R67 consists of an Undivided Single (S) Carriageway and Unpaved Shoulders (U), (N, S, U) with one (1) lane per direction. Between km 23 to km 42.00 the route becomes an undivided (N) Single (S) Carriageway and Paved Shoulders (P), (N, S, P) with one (1) lane per direction.

4.1.4.4 Reserve/Median

The average road reserve width was found to be 30.0m. In certain cases, the road reserve varies in width.

4.1.4.5 Cross Sections

This section of the R67/3 has a lane width of 3.7 m and 2 m shoulder between km 23.30 – km 42.00.

4.1.4.6 Topography/Climate

The topography of the section is rolling with moderate cuts and fills. The climate of this section of road is dry to moderate, per Weinert's classification system.

4.1.4.7 Road Renewal

Maintenance activities on this section are indicated in the table below:

ROAD RENEWAL				
Section	**Maintenance Activities**	**Period**	**Engineer**	**Contractor**
R67 Section 3	SANRAL Routine Road Maintenance	2022 to date	AVX Consulting Engineers	QTC Civils (Pty) Ltd

TABLE 20: ROAD RENEWAL – R67 SECTION 3

4.1.4.8 Pavement

The condition of this section is fair with few surface failures that needs attention around Seymour between km 41.40 and 41.60

4.1.5. R67 Section 4: Seymour (km 0.00) to Long Draai (km 41.80)

4.1.5.1 Updating

The Road Condition Report is based on available maintenance data from the previous and current SANRAL RRM contracts and information obtained from road condition assessment conducted on 31st March 2023.to 31 October 2024

4.1.5.2 Features

Prominent Features are included in the tables earlier on in this report under sections 3.2 and 3.3. Road Logs of the DRPW are available for this section as included in Annexure B

4.1.5.3 Road type

This section of the R67 consists of an Undivided
(N) Single (S) Carriageway and Unpaved Shoulders (U), (N, S, U) with one (1) lane per direction. Between km 2-14.80, 27.80 – 29.00, 30.00 – 32.90 and 36.80 – 40.30, the route becomes an undivided (N) Single (S) Carriageway and Paved Shoulders (P), (N, S, P) with one (1) lane per direction.

4.1.5.4 Reserve/Median

The average road reserve width was found to be 30.0m. In certain cases, the road reserve varies in width.

4.1.5.5 Cross Sections

This section of the R67 has a lane width of 3.70 m, with 2.0m shoulder at

specific areas as noted in 4.1.5.3

4.1.5.6 Topography/ Climate

The topography of the section is rolling with moderate cut and fills. The climate of this section of road is wet per Weinert's classification system.

4.1.5.7 Road Renewal

Maintenance activities on this section are indicated in the table below:

ROAD RENEWAL				
Section	**Maintenance Activities**	**Period**	**Engineer**	**Contractor**
R67 Section 4	SANRAL Routine Road Maintenance	2020 to date	AVX Consulting Engineers	QTC Civils (Pty) Ltd

TABLE 21: ROAD RENEWAL – R67 SECTION 4

4.1.5.8 Pavement

The road pavement between km 0.00 and 14.00 is still in a fair condition with isolated base failures.

Between km 14.00 and 17.80 the condition of the pavement is poor with isolated areas of concern where rutting occurs, surface cracks and pumping is evident.

Due to budget constraints these failures could not be all attended to under RRM contract as this portion is beyond RRM capacity, however the visual assessment took place and quantities were estimated and reported to the Client.

In October 2024, approximately 1000 tons of pavement repairs were attended to by the RRM team between km 14.00 and 17.80.

The road pavement between km 17.80 to 43.43 is still in a fair condition with very few failures needs attention.



IMAGE 7: PAVEMENT FAILURE – R67 SECTION 4 km 16.70



IMAGE 8: PAVEMENT REPAIR – R67 SECTION 4 km 17.20

4.2 DEFINITIONS OF CODES USED

Code	Material	Abbreviated Specification
G1	Graded crushed stone.	86-88% of apparent density; PI < 4.5
G2	Graded crushed stone.	100-102 % mod. AASHTO; PI < 6
G3	Graded crushed stone.	Min.98% mod. AASHTO; PI < 6
G4	Natural Gravel	CBR > 80; PI < 6
G5	Natural Gravel	CBR > 45; PI < 10
G6	Natural Gravel	CBR > 25; PI < 10
G7	Gravel - Soil	CBR > 15
G8	Gravel - Soil	CBR > 10, in-situ
G9	Gravel - Soil	CBR > 7, in-situ
G10	Gravel – Soil	CBR > 3, in-situ
BC	Hot-mix Asphalt	Continuously graded
BS	Hot-mix Asphalt	Semi-gap graded
TC	Tar hot-mix	Continuously graded
TS	Tar hot-mix	Semi-gap graded
PCC	Portland cement concrete	Mod.rupture > 4.5Mpa
CRC	Continuously reinforced concrete	
C1	Cemented crushed stone or gravel	UCS 6 – 12 Mpa at 100 % mod. AASHTO
C2	Cemented crushed stone or gravel	UCS 3 – 6 Mpa at 100 % mod. AASHTO
C3	Cemented natural gravel	UCS 1.5 – 3 Mpa at 100 % mod. AASHTO
C4	Cemented natural gravel	UCS 0.75 – 1.5 Mpa at 100 % mod. AASHTO
AG	Asphalt Surfacing	Gap-graded
AC	Asphalt Surfacing	Continuously graded
AS	Asphalt Surfacing	Semi-gap graded
AO	Asphalt Surfacing	Open-graded
AP	Asphalt Surfacing	Porous

S1	Surface Treatment	Single Seal
S2	Surface Treatment	Multiple Seal
S3	Sand Seal	
S4	Cape Seal	
S5	Slurry	Fine grading
S6	Slurry	Coarse grading
S7	Surface Renewal	Rejuvenator
S8	Surface Renewal	Diluted emulsion
WM1	Water-bound macadam	PI < 6, 88-90 % of apparent density
WM2	Water-bound macadam	PI < 6, 86-88 % of apparent density
PM	Penetration macadam	Coarse stone with bitumen or tar
DR	Dump rock	Ungraded waste rock

TABLE 22: CODES AND DEFINITIONS

4.3 PMS – ROAD INFORMATION

PMS to be provided by SANRAL.

5. TRAFFIC INFORMATION

Traffic Information to be provided by SANRAL.

6. HISTORIC ROAD MAINTENANCE INFORMATION

6.1. GENERAL

The maintenance information is from actual data obtained from previous and current Routine Road maintenance contracts.

6.2. DESCRIPTION OF INFORMATION

6.2.1 General information

6.2.1.1 Cut

The road is situated in rolling topography with several cuts and fills along the route. There are two problematic cuttings (km.40.80 and 61.00 on R67 section 2) over the length of the road. There are rolling stones from face of the cut onto the road and concrete drains. The area was addressed by debarring the slope failure to help stabilise the slope.

6.2.1.2 Illegal signs

There were no illegal signs noticed on the routes.

6.2.2 Pavement condition information

For each of the pavement conditions mentioned below, uniform sections, which behave the same, have been identified and noted during the site visit on 31st March 2023 to February 2025

Surface failures, potholes, pavement failures and crack sealing

(a) *Extent (past behaviour)*

Indicates the behaviour of the failures accordingly:

- Isolated: Failures have tendency to be localised in one or two places
- Intermittent: The tendency is several failures at close spacings
- Extensive: The tendency is extensively failed sections

R63 Section 12: Bedford (km 16.34) to Adelaide (km 42.31)

- The road was recently resealed and in good condition.

R63 Section 13: Adelaide (km 0.00) to Alice (km 59.40)

- Between km 35.00 (Fort Beaufort) to km 56 isolated base failure, rutting, pumping and crocodile cracking were observed.

R67 Section 2: km 36.19 to Fort Beaufort (km 70.59)

- Isolated cases of surface failure noted. There is an RRM contractor (Qtc Civils (Pty) Ltd) on site attending to the failed areas.

R67 Section 3: Fort Beaufort (km 0.00) to Seymour (km41.75)

- The road surface is still in good condition.

R67 Section 4: Seymour (km 0.00) to Long Draai (km 42.43)

- Isolated cases of surface failure noted. There is an RRM contractor (Qtc Civils (Pty) Ltd) on site attending to the failed areas.

6.2.3 Drainage information

6.2.3.1 Culverts

- Number culverts identified in R63 Section 12 from Bedford (km 16.34) to Adelaide (km 42.31) is 126
- Number of culverts identified in R63 Section 13 from Adelaide (km 0.00) to Alice (km 59.4) is 274
- Number of culverts identified in R67 Section 2 from km 36.19 to Fort Beaufort (km 70.59) is 116

- Number of culverts identified in R67 Section 3 from Fort Beaufort (km 0.00) to Seymour (km41.75) is 178

- Number of culverts identified in R67 Section 4 from Seymour (km 0.00) to Long Draai (km 43.43) is 196

(b) Size

This section indicates the average size of the culverts per section. Please refer to Annexure B for more details of the culverts on each Section.

R63 Section 12: Bedford (km 16.34) to Adelaide (km 42.31)

- 0.6m diameter average for pipe Culverts and between 0.9m and 7.01 m diameter for box culverts



IMAGE 9: TYPICAL BOX CULVERT – R63 SECTION 12 km 24.44

R63 Section 13: Adelaide (km 0.00) to Alice (km 59.40)

- 0.45m diameter average for pipe Culverts and between 0.45m and 6m dia. Box culverts

R67 Section 2: km 36.19 to Fort Beaufort (km 70.59)

- 0.6m diameter average for pipe Culverts and 28 x Box culverts between 0.45m and 6m dia.

R67 Section 3: Fort Beaufort (km 0.00) to Seymour (km 41.75)

- 0.6m diameter average for pipe Culverts and 71 X Box culverts between 0.6m and 4.5m.

- 0.6m diameter average for pipe Culverts and between

(c) Frequency of cleaning

- The current RRM contract requires this to be done monthly, therefor 12 times per year.

6.2.3.2 Gabions

(a) Condition of inspection

Indicates the condition of the gabions during inspection as follows:

- Good : No need for any repair works in the immediate future
- Warning : Still functional but will need attention in the next 2 to 3 years
- Severe : Need of replacement or extensive repair work

There were no gabion problems identified on any of the sections, hence they can be rated as good.

6.2.3.3 Concrete channels

(a) V-drains

- V-drains are cleaned once a month, and 2 times a month on some portions of section 2 and section 4 where there are slope failures with silt and stone falling into the drain causing the drains to be dirty regularly



IMAGE 10: CONCRETE V-DRAIN - R63 SECTION 12 km 31.20

(b) Catch water drains.

- Cleaning out of catch water drains are carried out only if and when required.

(c) Median drains

There were no median drains present.

6.2.3.4 Earth channels

Cleaning of earth channels are carried out only if required.

6.2.3.5 Subsoil drains

All existing subsoil drains are functional.

6.2.4 Fencing

6.2.4.1 The following types of fences are present along the R63 and R67

- Vermin proof fencing
- Stock proof fencing (9 Str)
- Game farm Security fence (Sec)
- Combination of Vermin proof and Game fencing

6.2.4.2 Frequency of repair

Fencing repairs (stock proof fencing) were done as is required, with a challenge of fencing material that get stolen especially around residential areas

6.2.4.3 Debris and litter

General litter picking on the entire route was done once a month. Under the current RRM contract, Litter picking packages have been allocated where litter will be collected 5km outside of each town once on a weekly basis.

6.2.5 Shoulders

6.2.5.1 Type

The type and width of the shoulders are indicated earlier in the report under section 4.

6.2.5.2 Edge breaks

Indicates the behaviour of the edge breaks according to the following:

(a) *Extent (past behaviour)*

Indicates the behaviour of the failures. accordingly:

- Isolated : Failures have the tendency to be localised in one or two Places
- Intermittent : The tendency is several failures at close spacing
- Extensive : The tendency is extensively failed sections

R63 Section 12: Bedford (km 16.34) to Adelaide (km 42.31) - Extensive between km 17.00 to km 20.00

R63 Section 13: Adelaide (km 55.0) to Alice (km 59.4) - Intermittent



IMAGE 11: EDGE BREAK - R63 SECTION 12 km 16.84

R67 Section 2: km 36.19 to Fort Beaufort (km 70.59) - Isolated

R 67 Section 3: Fort Beaufort (km 0.00) to Seymour (km 41.75) - Isolated

R67 Section 4: Seymour to Whittlesea (km 0.00) to (km 42.43) - Isolated

6.2.6.3 Gravel loss

(a) Extent (Past behaviour)

- Isolated : Loss of gravel where vehicles turn on and off
- Extensive : Long lengths on steep grades or where road surfacing is Narrow

R63 Section 12: Bedford (km 16.34) to Adelaide (km 42.31) - None

R63 Section 13: Adelaide (km 0.00) to Alice (km 59.4) - None

R67 Section 2: Grahamstown to Fort Beaufort (km 70.59) - None

R67 Section 3: Fort Beaufort (km 0.00) to Seymour (km 41.75) - None

R67 Section 4: Seymour (km 0.00) to Whittlesea (km 43.43) - None

6.2.6.4 Edge build-up

(a) Type of repair

All edge build-up work is labour intensively (done by hand on the route).

(b) Frequency of repair

Removal of edge build up is carried out if and when required.

6.2.7 Road studs

Existing road stud along route are still in a good condition.

6.2.7.1 Type and condition at inspection

R63 Section 12: Bedford (km 16.34) to Adelaide (km 42.31)

- There is an adequate amount of road studs on the road. Some road studs are missing between km 17.00 to km 20.00. There's a rehab team currently working in the area rectifying this matter.

R63 Section 13: Adelaide (km 0.00) to Alice (km 59.49)

- There is an adequate amount of road studs between Adelaide and Fort Beaufort.

R67 Section 2: Koonap River (km 36.19) to Fort Beaufort (km 70.59)

- Road studs are still in fair condition.

R67 Section 3: Fort Beaufort (km 0.00) to Seymour (km 41.75)

- Road studs are still in fair condition.

R67 Section 4: Seymour (km 0.00) to Long Draai (km 43.43)

- Road studs are in a poor condition, especially between km 10.00 and km 17.80.

6.2.7.2 Frequency of replacement

No info available

6.2.8 Road markings

R63 Section 12: Bedford (km 16.34) to Adelaide (km 42.31)

- Road marking is fair and in a very good condition between km 16.00 to km 20.00.



IMAGE 12: TYPICAL ROAD MARKING - R63 SECTION 12 km 30.4

R63 Section 13: Adelaide (km 0.00) to Fort Beaufort (km 36.60)

- Road marking is fair between Adelaide and Fort Beaufort. The section between Fort Beaufort and Alice is in a good condition with rehab recently took place by Rumdel Construction Cape (Pty) Ltd.

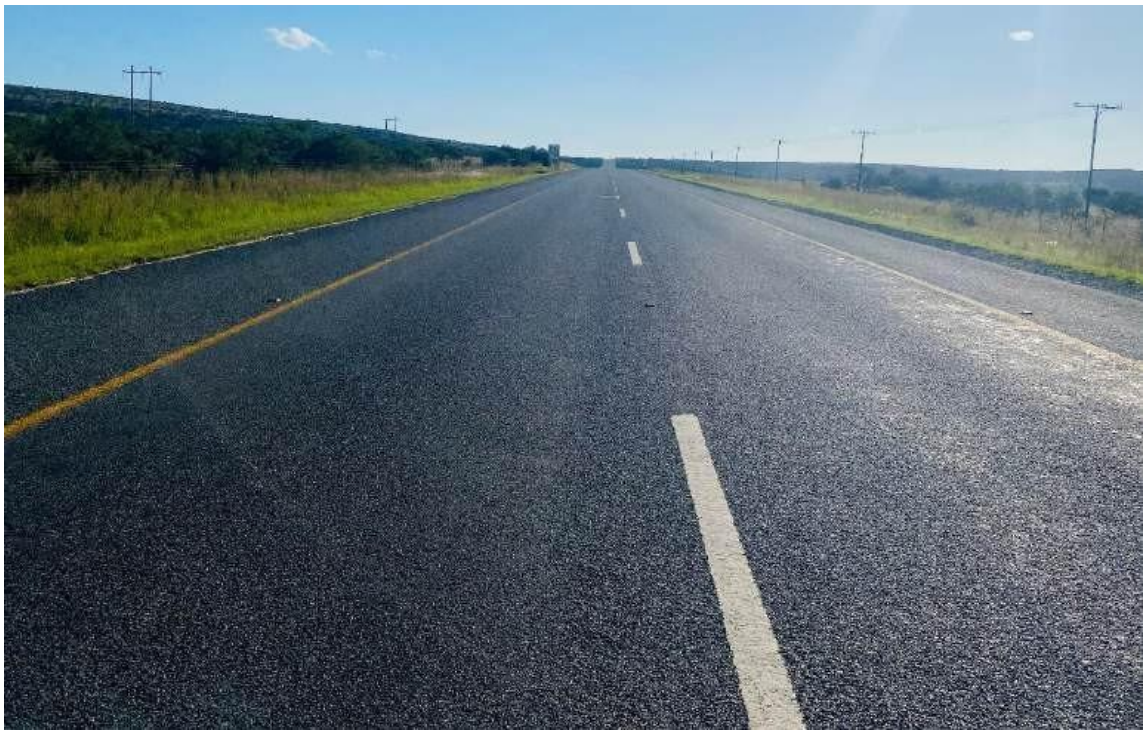


IMAGE 13: TYPICAL ROAD MARKING - R63 SECTION 13 km 35.4

R67 Section 2: Koonap River (km 36.19) to Fort Beaufort (km 70.59)

- Road marking is still fair.

R67 Section 3: Fort Beaufort (km 0.00) to Seymour (km 41.75)

- Road marking is fair. Road marking training was done from km 0.00 to km 27.00 in 2022 by Roadmac Surfacing Cape (Pty)Ltd.

R67 Section 4: Seymour (km 0.00) – Long Draai (km 43.43)

- Road marking is in a poor condition in this section especially between km 0.00 and km 17.80.



IMAGE 14: TYPICAL ROAD MARKING - R67 SECTION 4 km 42.00

6.2.9 Guardrails

- Guardrails are not erected according to the new SANRAL Specification, all existing guardrails to be erected to the new SANRAL Specification. JIs were issued to SMME's on site for the alignment of guardrails to the new SANRAL Specification, however due to budget constraints this activity had to be stopped.



IMAGE 15: GUARD RAIL R63 SECTION 13 km 25.56

6.2.10 Vegetation

6.2.10.1 Grass

(a) *Type*

The exact type of grass is unknown.

(b) *% Brush cutting*

All mowing in future will be done by hand powered tools as required by SANRAL to promote the use of SMME's.

(c) Frequency of mowing

Current shoulder mowing activities are approximately 12 per annum.

(d) *Frequency of baling*

(e) *Frequency of applying herbicide*

Not done to date

6.2.10.2 Trees

(a) *Frequency of pruning*

There were invaders observed along the route and some pruning would be required. General clearing of vegetation and daylighting for sight distances was done on R67 section 4 km 3.00 to 14.80 (Nico Malan Pass) and km 15.20 to 43.43.

(b) *% Invaders*

The percentage invaders were generally less than 5%.

The following trees were observed in the Road reserve.

- Thorn Tree
- Syringa Tree
- Prickly Pear
- Gum tree
- American bramble
- Black wattle
- Rooikrans
- Scottish thistle
- Castor oil

6.3 MAINTENANCE INFORMATION

As from 9th February 2022 to 08 February 2025 all data is up to date and uploaded onto ITIS.

7. SUBCONTRACTORS / SMMES

The table below is indicating all the SMMEs that were appointed and got involved in this contract:

NAME	TYPE OF WORK	OWNERSHIP		CIDB GRADING	SUBCONTRACT PERIOD		EXPENDITURE
		%BP OWNERSHIP	BBBEE CONTRIBUTOR STATUS LEVEL		FROM	TO	SUBCONTRACT VALUE (incl. VAT)
Sikichu General trading	SC11(1CE)	100.00%	BEE Level 1	CIDB1	01 July 2024	08 February 2025	R481638.40
Altocap cc	SC12(1CE)	100.00%	BEE Level1	CIDB1	01 July 2024	08 February 2025	R442577.50
Gary's Holdings (Pty)(Ltd)	SC13(1CE)	100.00%	BEE Level1	CIDB1	01 July 2024	08 February 2025	R449696.00
Isango suppliers (Pty)(Ltd)	SC14(1CE)	100.00%	BEE Level1	CIDB1	01 July 2024	08 February 2025	R386204.20
Limikhaya Trading (Pty)(Ltd)	SC15(1CE)	100.00%	BEE Level1	CIDB1	01 June 2024	08 February 2025	R423004.50
Dlokwayi (Pty)(Ltd)	SC16(1CE)	100.00%	BEE Level1	CIDB1	01 June 2024	08 February 2025	R404961.00
Skeelo Holdings (Pty)(Ltd)	SC17(1CE)	100.00%	BEE Level1	CIDB1	01 June 2024	08 February 2025	R489628.60
Venture Multi Services(Pty)(Ltd)	SC18(1CE)	100.00%	BEE Level1	CIDB1	01 June 2024	08 February 2025	R411001.38
Chizama trading (PTY)LTD	SC19(2CE)	100.00%	BEE Level1	CIDB2	01 June 2024	08 February 2025	R678544.85
Bonas Isakhi Sizwe General Traders	SC9(4CEPE)	100.00%	BEE Level1	4CEPE	01 February 2023	08 February 2025	R5912948.63
SSK Cleaning Services and General Trading	SC10(4CEPE)	100.00%	BEE Level1	4CEPE	01 February 2023	08 February 2025	R5878367.60
Ukhanyiso	SC01(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R626117.50
XS Nqolo	SC02(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R696573.98
Imvusa	SC03(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R687900.10
Sithuthuzele	SC04(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R742511.30
Ponie	SC05(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R662612.75
Ubukhakha	SC06(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R659947.05
Dekaydo	SC07(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R655766.14
Ranoz	SC08.(1CE)	100.00%	BEE Level1	CIDB1	09 February 2023	31 May 2024	R1472452.53

8. CURRENT MAINTENANCE AND REHABILITATION PROJECTS

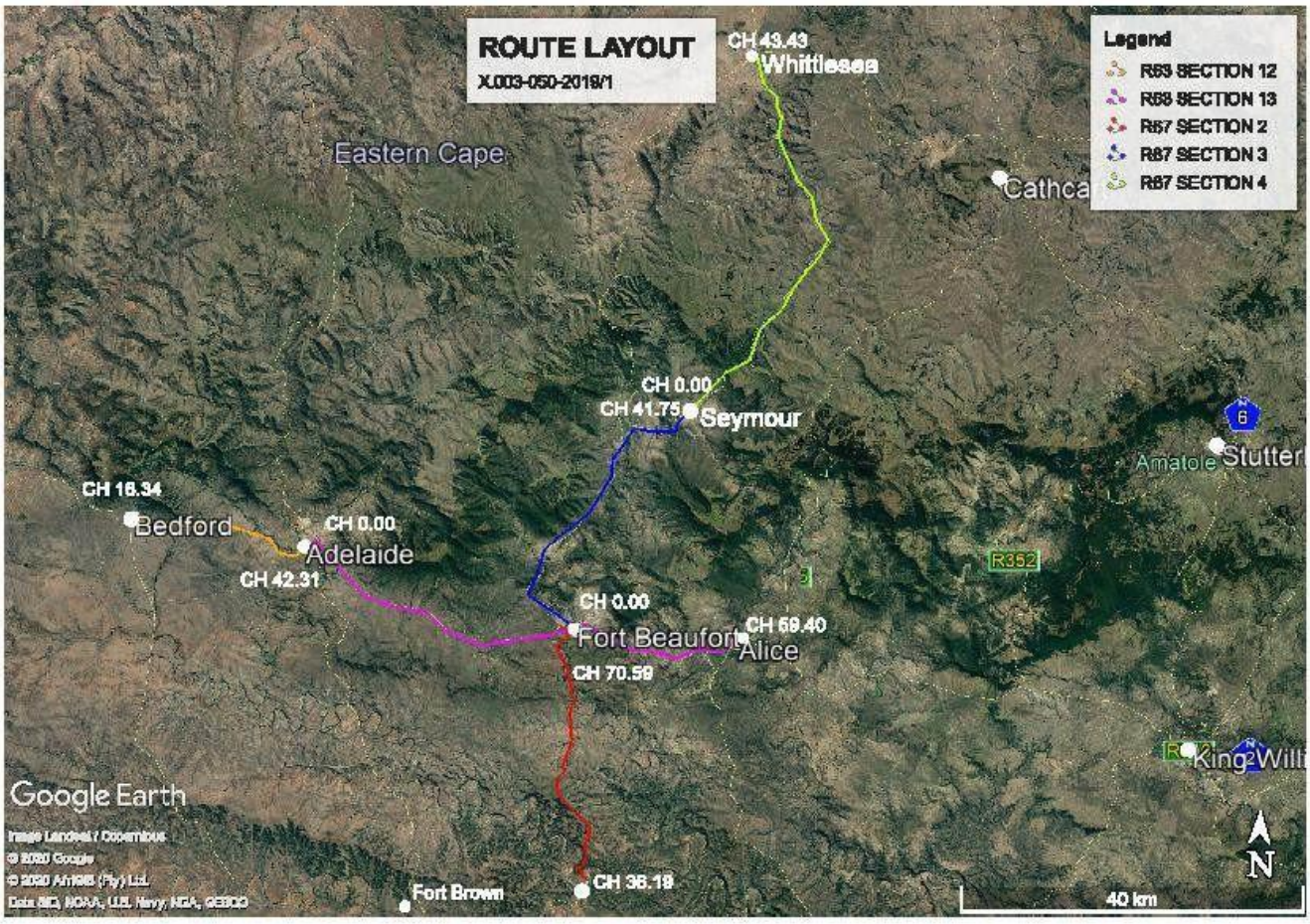
- None

9. MATERIAL

The typical material utilised on site during the previous and existing RRM contracts included the following:

- Cold Mix Asphalt
- Hot mix
- Asphalt
- Anionic stable mix
- Cement
- Sand
- Aggregates

ANNEXURE A: ROUTE LAYOUT



ANNEXURE B: ROAD LOGS

GUARDRAILS R63 section 12

KM Distance	End Positive	End Negative	Position (-/+)
23.77	23.83	23.83	Both
25.10	25.18		Positive
25.40		25.48	Negative
26.00		26.11	negative
27.80	27.96		Positive
27.92		28.18	Positive
30.05	30.31	30.31	Both
38.20	38.98		Positive
38.31		38.94	Negative
40.30	40.55		positive
40.30		40.47	negative

CONCRETE DRAINS R63 section 12

Km Distance (To & From)	Distance (m)	Type	Position
22.4 – 22.8	400	concrete v-drain	Negative
27.89 – 28.40	510	concrete v-drain	Positive
28.80 – 30.00	1200	concrete v-drain	Negative
30.48 – 31.00	520	concrete v-drain	Negative
31.36 – 31.40	40	concrete v-drain	Negative
31.76 – 31.90	140	concrete v-drain	Negative
32.64 – 33.00	360	concrete v-drain	Negative
33.76 – 33.44	280	concrete v-drain	Negative
33.60 – 34.00	400	concrete v-drain	Negative
35.40 – 36.40	1000	concrete v-drain	Negative
37.24 – 37.80	560	concrete v-drain	Negative
39.22 – 39.50	280	concrete v-drain	Negative
40.54 – 41.03	490	concrete v-drain	Negative
41.01 – 41.80	790	concrete v-drain	Negative

Barrier line assessment R63 Section 12 Positive

Section	Start	End	Length	Direction	Conclusion	Arrows
12	22,64	23,21	0,58	Positive	Complying	√
12	23,87	24,45	0,58	Positive	Complying	√
12	23,68	24,21	0,53	Positive	Complying	√
12	25,26	25,69	0,43	Positive	Complying	√
12	26,23	26,45	0,22	Positive	DR Road	√
12	27,49	31,0	3,51	Positive	Complying	√
12	31,30	32,6	1,30	Positive	Complying	√
12	33,4	34,0	0,60	Positive	Complying	√
12	34,82	35,03	0,21	Positive	DR Road	√
12	35,29	36,22	0,93	Positive	Complying	√
12	36,44	36,78	0,34	Positive	DR Road	√
12	37,14	37,8	0,66	Positive	Complying	√
12	38,2	39,38	1,18	Positive	Complying	√

12	39,55	40,62	1,06	Positive	Complying	√
12	41,37	42,5	1,13	Positive	Complying	√

Barrier line assessment R63 Section 12 Negative

Section	Start	End	Length	Direction	Conclusion	Arrows
12	42,08	39,69	2,39	Negative	Complying	√
12	39,38	38,45	0,93	Negative	Complying	√
12	38,16	36,92	1,24	Negative	Complying	√
12	36,76	35,87	0,89	Negative	Complying	√
12	35,66	35,28	0,38	Negative	Complying	√
12	35,28	35,20	0,08	Negative	DR Road	√
12	34,45	33,4	1,05	Negative	Complying	√
12	32,84	28,0	4,84	Negative	Complying	√
12	26,73	26,44	0,29	Negative	DR Road	√
12	25,80	25,48	0,32	Negative	DR Road	√
12	24,03	23,81	0,22	Negative	DR Road	√
12	23,34	22,54	0,80	Negative	Complying	√

GUARDRAILS R63 SECTION 13

KM Distance	End Positive	End Negative	Position (-/+)
2.69	3.02		Positive
2.88		3.04	Negative
3.43	3.58	3.58	Both
5.37	5.50	5.50	Both
6.69	7	7	Both
12.71	12.85	12.85	Both
15.78	16.00	16.00	Both
22.90	23.10		Positive
26.10	26.27	26.27	Both
26.77	26.93	26.93	Both
27.2	27.70	27.70	Both
35.67	36.4	36.4	Both

CONCRETE DRAINS R63 SECTION 13

Km Distance (To & From)	Distance (m)	Type	Position
1.92 – 2.14	220	concrete v-drain	Positive
2.30 – 2.60	300	concrete v-drain	Positive
250 – 2.52	20	concrete v-drain	Positive
2.52 – 2.70	180	concrete v-drain	Negative
3.80 – 3.90	100	concrete v-drain	Negative
4.10 – 4.30	200	concrete v-drain	Negative
4.50 – 4.88	380	concrete v-drain	Negative
6.06 – 6.38	320	concrete v-drain	Negative
6.10 – 6.34	240	concrete v-drain	Positive
7.00 – 7.80	800	concrete v-drain	Negative
7.10 – 7.20	100	concrete v-drain	Positive

7.65 – 8.00	350	concrete v-drain	Negative
10.20 – 10.60	400	concrete v-drain	Positive
12.94 – 13.80	860	concrete v-drain	Positive
14.20 – 14.88	680	concrete v-drain	Positive
16.20 – 16.60	340	concrete v-drain	Positive
16.26 – 16.50	240	concrete v-drain	Negative
17.10 – 17.46	360	concrete v-drain	Positive
21.10 – 22.40	1300	concrete v-drain	Positive
25.50 – 25.80	300	concrete v-drain	Positive
26.20 – 26.50	300	concrete v-drain	Negative
27.00 – 27.20	200	concrete v-drain	Positive
27.20 – 27.40	200	concrete v-drain	Negative
27.80 – 28.00	200	concrete v-drain	Negative
28.40 – 28.60	200	concrete v-drain	Negative
28.90– 29.40	500	concrete v-drain	Negative
30.40 – 31.00	600	concrete v-drain	Negative

Barrier line assessment R63 Section 13 Positive

Section	Start	End	Length	Direction	Conclusion	Arrows
13	1,67	3,02	1,34	Positive	complying	√
13	3,04	3,25	0,21	Positive	DR Road	√
13	3,38	6,4	3,02	Positive	complying	√
13	6,6	6,71	0,11	Positive	DR Road	√
13	7,09	9,4	2,31	Positive	complying	√
13	9,81	10,7	0,90	Positive	Complying	√
13	11,7	12,3	0,64	Positive	Complying	√
13	12,8	13,2	0,38	Positive	Complying	√
13	13,6	14,3	0,71	Positive	Complying	√
13	14,6	15,0	0,37	Positive	DR Road	√
13	15,2	15,5	0,26	Positive	DR Road	√
13	15,9	17,4	1,51	Positive	complying	√
13	17,7	17,9	0,19	Positive	DR Road	√
13	19,4	19,9	0,50	Positive	complying	√
13	20,2	20,5	0,30	Positive	DR Road	√
13	20,7	21,1	0,39	Positive	DR Road	√
13	21,2	21,6	0,38	Positive	DR Road	√
13	21,8	22,8	1,00	Positive	complying	√
13	23,4	23,8	0,40	Positive	complying	√
13	24,8	25,0	0,20	Positive	DR Road	√
13	25,2	25,8	0,60	Positive	Complying	√
13	26,3	28,6	2,28	Positive	Complying	√
13	29,2	29,9	0,74	Positive	Complying	√
13	30,3	30,8	0,53	Positive	Complying	√
13	32,4	33,0	0,60	Positive	Complying	√
13	34,0	34,6	0,60	Positive	Complying	√

Barrier line assessment R63 Section 13 Negative

Section	Start	End	Length	Direction	Conclusion	Arrows
13	34,6	32,4	2,2	negative	Complying	√
13	31,0	30,6	0,4	negative	Complying	√
13	30,0	24,8	5,2	negative	Complying	√
13	24,1	23,7	0,4	negative	Complying	√
13	23,0	22,8	0,2	negative	DR Road	√
13	22,6	22,0	0,6	negative	Complying	√
13	21,8	21,6	0,2	negative	Dr Road	√
13	21,1	19,5	1,5	negative	Complying	√
13	18,0	17,9	1,5	negative	Dr Road	√
13	17,6	16,2	1,4	negative	complying	√
13	15,8	14,0	1,8	negative	complying	√
13	13,4	13,1	0,3	negative	Dr Road	√
13	12,6	11,9	0,7	negative	Complying	√
13	10,6	9,8	0,8	negative	Complying	√
13	9,4	9,0	0,4	negative	Complying	√
13	8,6	7,6	1,0	negative	Complying	√
13	7,4	4,2	3,2	negative	Complying	√
13	3,2	2,2	1,0	negative	Complying	√

CONCRETE DRAINS R67 SECTION 2

Km Distance (To & From)	Distance (m)	Type	Position
37.6 – 38.2	600	concrete v-drain	Positive
40.29 – 41.09	800	concrete v-drain	Negative
57.31 – 57.63	320	concrete v-drain	Negative
57.34 – 57.63	290	concrete v-drain	Positive
60.0 – 61.32	1320	concrete v-drain	Positive
61.48 – 62.34	860	concrete v-drain	Positive

GUARDRAILS R67 SECTION 2

KM Distance	End Positive	End Negative	Position (-/+)
36.84	37.11	37.11	Both
37.12	37.6	38.0	Both
38.25		38.38	Negative
38.3	38.38		Positive
38.66	38.88	38.8	Both
38.8		38.88	Positive
39.15		39.27	
39.5	39.63	39.63	Both
40.04	40.22		Positive
40.24	40.56		Positive
40.61	40.98		Positive
41.128	41.12	41.12	Both
43.93		44.23	Negative
46.66	46.88		Positive
47.08	47.21		Positive
50.6	50.82	50.82	Both
52.23	?		Positive

52.55	53.04		Positive
55.23	55.46	55.46	Both
56.83	56.85		Positive
57.1	57.32	57.32	Both
59.37		59.47	Negative
59.84	59.92	60.04	Both
60.26		60.32	Negative
60.49		60.66	Negative
60.96		61.48	Negative
61.34	61.48		Positive
61.78		62.19	Negative
63.48	64.02	64.02	Both
64.48		64.6	Negative
64.94		65.08	Negative
64.93	65.05		Positive
65.54	65.74	65.74	Both
67.25		67.57	Negative
67.38	67.37		Positive
67.92	68.15	68.15	Both
68.56	68.6		Positive
68.51		69.4	Negative
69.77	70.16	70.32	Both

Barrier line assessment R67 Section 2 Positive

Section	Start	End	Length	Direction	Conclusion	Arrows
2	35,9	36,8	0,9	Positive	Complying	√
2	37,4	38,6	1,2	Positive	Complying	√
2	38,8	39,5	0,7	Positive	Complying	√
2	40,3	41,5	1,2	Positive	Complying	√
2	43,4	44,7	1,3	Positive	Complying	√
2	45,1	45,4	0,3	Positive	complying	√
2	45,7	46,0	0,3	Positive	complying	√
2	46,6	46,9	0,3	Positive	DR Road	√
2	47,3	47,6	0,3	Positive	DR Road	√
2	47,8	48,2	0,4	Positive	Complying	√
2	49,3	49,7	0,4	Positive	Complying	√
2	49,9	51,2	1,2	Positive	Complying	√
2	51,3	51,9	0,6	Positive	Complying	√
2	52,1	52,9	0,7	Positive	Complying	√
2	55,4	56,6	1,2	Positive	Complying	√
2	57,2	57,6	0,4	Positive	Complying	√
2	58,2	58,4	0,2	Positive	DR Road	√
2	59,2	62,4	3,2	Positive	Complying	√
2	63,8	64,6	0,8	Positive	Complying	√
2	65,0	65,4	0,4	Positive	Complying	√
2	66,0	66,4	0,4	Positive	Complying	√
2	66,8	67,0	0,2	Positive	DR Road	√
2	67,4	67,7	0,4	Positive	Complying	√
2	68,6	69,4	0,8	Positive	Complying	√
2	69,7	70,8	1,1	Positive	Complying	√

Barrier line assessment R67 Section 2 Negative

Section	Start	End	Length	Direction	Conclusion	Arrows
2	70,8	70,6	0,2	Negative	DR Road	√
2	69,8	68,9	0,8	Negative	Complying	√
2	68,0	67,7	0,3	Negative	DR Road	√
2	67,4	67,0	0,4	Negative	Complying	√
2	66,6	66,2	0,5	Negative	Complying	√
2	65,6	65,3	0,3	Negative	DR Road	√
2	64,9	63,9	1,0	Negative	Complying	√
2	63,0	59,4	3,6	Negative	Complying	√
2	58,6	58,4	0,3	Negative	DR Road	√
2	57,8	57,6	0,2	Negative	DR Road	√
2	56,0	55,8	0,3	Negative	DR Road	√
2	54,4	54,1	0,3	Negative	DR Road	√
2	53,6	53,3	0,3	Negative	DR Road	√
2	53,2	52,0	1,2	Negative	Complying	√
2	52,2	51,7	0,5	Negative	Complying	√
2	51,6	51,0	0,7	Negative	Complying	√
2	50,7	49,6	1,1	Negative	Complying	√
2	50,0	49,6	0,4	Negative	Complying	√
2	48,2	47,5	0,7	Negative	Complying	√
2	47,2	46,9	0,2	Negative	Not complying	√
2	46,2	45,9	0,3	Negative	Not complying	√
2	45,8	45,4	0,4	Negative	Not complying	√
2	45,0	43,8	1,2	Negative	Complying	√
2	41,6	41,0	0,6	Negative	Complying	√
2	40,4	40,2	0,2	Negative	DR Road	√
2	39,8	37,6	2,2	Negative	Complying	√
2	38,8	37,6	1,2	Negative	Complying	√
2	37,0	36,0	1,0	Negative	Complying	√

CONCRETE DRAINS R67 SECTION 3

KM Distance (To and from)	Distance (m)	Type	Position
0.29 - 0.94	650	Concrete	Positive
2.52 - 2.79	270	Stone-pitching	Positive
2.52 - 2.68	60	Stone-pitching	Negative
3.89 - 4.03	140	Stone-pitching	Positive
3.89 - 4.03	140	Stone-pitching	Negative
4.43 - 4.8	370	Stone-pitching	Positive
7.34 - 7.42	80	Stone-pitching	Positive
7.11 - 7.90	790	Concrete & Stone-pitching	Positive
7.45 – 7.4	50	Stone-pitching	Negative
14.46 - 14.99	530	Concrete	Positive
15.2 - 15.68	480	Concrete	Positive
17.2 - 17.92	720	Concrete	Negative
20.58 – 20.82	240	Concrete	Positive
20.58 – 20.82	240	Concrete	Negative

21.87 - 22.10	230	Stone-pitching	Positive
23.19 -23.50	760	Concrete	Positive
23.63 - 23.95	320	Stone-pitching	Positive
24.90 - 25.0	100	Stone-pitching	Positive
25.48 - 25.70	220	Stone-pitching	Positive
27.24 - 27.80	560	Stone-pitching	Negative
29.50 - 29.88	380	Stone-pitching	Negative
30.88 - 31.63	750	Stone-pitching	Negative
34.17 – 34.34	170	Concrete	Positive
34.17 – 34.34	170	Concrete	Negative
34.64 – 34.66	20	Stone-pitching	Positive
35.06 - 35.2	140	Stone-pitching	Positive
35.17 - 35.22	140	Stone-pitching	Negative
36.0 - 36.12	120	Stone-pitching	Positive
36.33 - 37.4	1070	Stone-pitching	Positive
38.46 - 38.67	210	Stone-pitching	Positive
38.90 – 39.05	150	Stone-pitching	Positive
38.90 – 39.05	150	Stone-pitching	Negative
39.32 - 40.0	680	Stone-pitching	Positive
39.32 – 40.0	680	Stone-pitching	Negative
41.69 – 41.8	110	Concrete	Positive

GUARDRAILS R67 SECTION 3

Km Distance	End Positive	End Negative	Position +/-
0.77		1.02	Negative
1.24	1.4		Positive
1.19		1.35	Negative
1.45		1.63	Negative
1.48	1.63		Positive
1.66	2.26	2.2	Both
2.28	2.53		Positive
2.66		2.94	Negative
3.04		3.30	Negative
4.74	4.98		Positive
4.77		4.98	Negative
4.89	5.23	5.23	Both
6.89		7.14	Negative
7.0	7.12		Positive
7.4		7.55	Negative
7.43	7.55		Positive
7.78	8.26		Positive
8.85	9.4	9.4	Both
10.26	10.66	10.66	Both
10.70	11.1	11.1	Both
14.06	14.2	14.23	Both
14.26		14.48	Negative
14.31	14.45		Positive
14.64		15.18	Negative
14.99	15.17	15.17	Both

15.39		15.74	Negative
16.88	17.29		Positive
16.91		17.29	Negative
18.02	18.4		Positive
18.15		18.4	Negative
18.6	19.34		Positive
19.26	19.6	19.66	Both
20.6	20.77		Positive
21.4	21.63	21.63	Both
22.94	23.31	23.31	Both
23.43	23.84	23.82	Both
23.5	24.49	24.49	Both
24.31	24.55	24.6	Both
25.03	25.25	25.25	Both
25.46		25.8	Negative
27.88	28.0		Positive
27.91		28.0	Negative
28.85	29.4	29.4	Both
29.38	29.46		Positive
29.46	29.97		Positive
32.17	32.54		Positive
32.14		32.48	Negative
32.6	31.0		Positive
31.26	31.4		Positive
32.15	32.4	32.05	Both
33.50	33.72	33.72	Both
33.88	34.15	34.15	Both
34.37	34.54	34.54	Both
34.88	35.06	35.17	Both
35.49		35.6	Negative
35.68	36.0	36.0	Both
36.28	36.34	36.4	Both
36.8		37.15	Negative
37.4		37.68	Negative
37.6	38.30		Positive
38.69	38.94		Positive
38.67		38.94	Negative
39.06		39.32	Negative
39.08	39.32		Positive
40.0	40.36		Positive
40.0		40.39	Negative
41.0	41.34		Positive
41.0		41.34	Negative

Barrier line assessment R67 Section 3 Negative

Section	Start	End	Length	Direction	Conclusion	Arrows
3	40,3	39,4	0,9	Negative	Complying	√

3	39,0	38,0	1,0	Negative	Complying	√
3	37,8	37,7	0,1	Negative	DR Road	√
3	35,4	34,4	1,0	Negative	Complying	√
3	33,6	32,8	0,7	Negative	DR Road	√
3	32,1	30,8	1,3	Negative	Complying	√
3	30,3	29,8	0,5	Negative	DR Road	√
3	29,6	29,3	0,3	Negative	DR Road	√
3	29,1	28,3	0,7	Negative	DR Road	√
3	27,8	27,0	0,8	Negative	Complying	√
3	26,4	26,3	0,1	Negative	DR Road	√
3	25,1	22,6	2,5	Negative	DR Road	√
3	21,4	20,5	0,9	Negative	Complying	√
3	20,2	19,6	0,5	Negative	Complying	√
3	19,2	17,7	1,5	Negative	Complying	√
3	17,5	17,2	0,3	Negative	DR Road	√
3	16,6	16,5	0,1	Negative	DR Road	√
3	15,6	15,3	0,3	Negative	DR Road	√
3	14,1	13,2	0,9	Negative	Complying	√
3	12,3	12,2	0,1	Negative	DR Road	√
3	10,8	10,7	0,1	Negative	DR Road	√
3	10,2	9,8	0,4	Negative	Complying	√
3	9,0	8,6	0,4	Negative	Complying	√
3	8,0	7,2	0,8	Negative	Complying	√
3	6,4	5,8	0,6	Negative	Complying	√
3	4,4	4,0	0,4	Negative	Complying	√
3	3,8	3,0	0,8	Negative	Complying	√
3	2,2	2,0	0,2	Negative	DR Road	√

CONCRETE LINE DRAIN R67CSECTION 4

Km distance (to and from)	Distance	Type	Position +/-
2.6 – 3.03	430	Stone-pitching	Positive
2.8 – 3.66	860	Stone-pitching	Negative
3.2 – 3.34	140	Stone-pitching	Positive
3.52 – 3.6	80	Stone-pitching	Positive
3.95 – 4.06	110	Stone-pitching	Positive
3.95 – 4.4	450	Stone-pitching	Negative
4.68 – 4.74	60	Stone-pitching	Negative
4.8 – 5.18	380	Stone-pitching	Positive
4.97 – 6.48	1510	Stone-pitching	Negative
6.57 – 6.68	110	Stone-pitching	Positive
6.57 – 6.84	270	Stone-pitching	Negative
6.94 – 7.46	520	Stone-pitching	Negative
7.0 – 7.26	260	Stone-pitching	Positive
7.34 – 7.74	400	Stone-pitching	Positive
7.28 – 7.74	460	Stone-pitching	Negative
7.77 – 8.0	230	Stone-pitching	Positive
7.77 – 8.17	400	Stone-pitching	Negative
8.2 – 8.89	690	Stone-pitching	Negative
8.57 – 8.70	130	Stone-pitching	Positive
9.06 – 9.43	370	Stone-pitching	Positive
9.06 – 9.43	370	Stone-pitching	Negative
9.42 – 9.52	100	Stone-pitching	Negative

9.6 – 10.06	460	Stone-pitching	Positive
9.72 – 10.06	340	Stone-pitching	Negative
10.2 – 10.49	290	Stone-pitching	Negative
10.32 – 10.5	180	Stone-pitching	Positive
10.66 – 10.72	60	Concrete	Positive
10.66 – 10.77	110	Concrete	Negative
10.81 – 11.05	240	Stone-pitching	Positive
10.97 – 11.14	170	Stone-pitching	Negative
11.33 – 11.41	80	Stone-pitching	Positive
11.33 – 11.76	430	Stone-pitching	Negative
11.50 – 11.68	180	Stone-pitching	Positive
11.92 – 12.32	400	Stone-pitching	Negative
11.92 – 12.0	80	Stone-pitching	Positive
12.19 – 12.39	20	Stone-pitching	Positive
12.4 – 12.8	400	Stone-pitching	Negative
12.52 – 14.8	2280	Stone-pitching	Negative
12.92 – 13.10	180	Stone-pitching	Positive
13.2 – 13.6	400	Stone-pitching	Negative
13.70 – 13.88	180	Stone-pitching	Positive
14.50 – 14.6	100	Stone-pitching	Positive
14.6 – 14.77	170	Stone-pitching	Positive
15.97 – 16.23	260	Stone-pitching	Positive
15.97 – 16.23	260	Stone-pitching	Negative
18.2 – 18.4	200	Stone-pitching	Negative
22.4 – 22.8	400	Stone-pitching	Negative
22.63 – 22.8	170	Stone-pitching	Positive
24.2 – 24.6	400	Stone-pitching	Positive
24.2 -24.6	400	Stone-pitching	Negative
26.0 – 26.19	190	Stone-pitching	Positive
28.32 – 28.66	340	Stone-pitching	Positive
37.61 – 38.0	390	Stone-pitching	Negative
38.6 – 38.8	200	Stone-pitching	Negative
40.0 – 40.4	400	Stone-pitching	Negative
40.8 – 41.08	1000	Stone-pitching	Negative
43.1 – 43.43	330	Stone-pitching	Negative

GUARDRAIL R67 SECTION 4

Km Distance	End Positive	End Negative	Position +/-
1.03	1.21		Positive
0.96		1.21	Negative
1.3	1.48		Positive
1.28		1.48	Negative
2.23	2.45		Positive
2.25		2.58	Negative
2.6		2.74	Negative
3.02	3.2		Positive
3.17	3.27		Positive
3.6	3.73	4.06	Both
3.78	3.94		Positive
4.1	4.34		Positive
4.4	4.61		Positive
4.42		4.56	Negative
4.54	4.6		Positive
4.55		4.71	Negative
5.2	6.4		Positive
5.49	5.55		Positive
6.35	6.6		Positive
6.34		6.55	Negative
6.66	7.0		Positive
7.25	7.3		Positive

7.70	7.83	7.83	Both
8.0	8.37		Positive
8.53	8.58		Positive
8.65	9.06		Positive
8.88	9.0		Positive
9.43	9.6	9.5	Both
9.52		9.6	Negative
10.06	10.34		Positive
10.08		10.2	Negative
10.48	10.66	10.66	Both
10.77	10.94	10.83	Both
11.02	11.33		Positive
11.07		11.33	Negative
11.46	11.54		Positive
11.71	11.93		Positive
11.77		11.93	Negative
12.06	12.3		Positive
12.34	12.92		Positive
13.08	13.2		Positive
13.22	13.7		Positive
13.85	14.51		Positive
15.0	15.4	15.36	Both
15.52	15.68		Positive
15.57		15.73	Negative
16.24	16.83		Positive
16.36		16.76	Negative
17.26	17.8		Positive
17.33		17.8	Negative
17.82	17.91		Positive
18.4	18.78		Positive
18.46		18.77	Negative
19.0	19.50		Positive
19.42		19.50	Negative
19.82	20.03		Positive
20.2	21.02		Positive
20.74	20.82		Positive
21.0	21.3		Positive
21.2	21.46		Positive
21.85	22.17	22.05	Both
22.15	22.07		Positive
22.8	23.23		Positive
22.74		23.0	Negative
23.01		23.23	Negative
23.54	23.65	23.54	Both
23.82	24.23		Positive
24.08		24.23	Negative
24.46	24.69	24.66	Both
24.99	25.06		Positive
25.08	25.12		Positive
25.34	25.73	25.55	Both
26.18	26.46	26.65	Both
26.89		27.10	Negative
28.0	28.34	28.34	Both
28.66		28.91	Negative
29.4	29.65		Positive
29.34		29.65	Negative
29.7		30.16	Negative
30.51	30.83	30.83	Both
31.28	32.42		Positive
32.6	32.83	32.78	Both
33.71	33.88		Positive

34.08	34.2	34.8	Both
34.63	34.8		Positive
35.43	35.78		Positive
36.03	36.43	36.28	Both
36.50	36.67		Positive
36.94	37.55	37.34	Both
38.03	38.2	38.2	Both
38.23	38.85		Positive
39.2	40.82		Positive
39.37		39.6	Negative
41.02	41.4	41.4	Both
41.88	42.14	42.07	Both
42.85	43.11		Positive

Barrier line assessment R67 section 4 positive side

Section	Start	End	Length	Direction	Conclusion	Arrows
4	0,1	0,2	144	Positive	DR Road	√
4	1,2	15,0	1380	Positive	DR Road	√
4	15,2	16,4	1176	Positive	Complying	√
4	17,2	17,8	600	Positive	Complying	√
4	17,7	19,4	1728	Positive	Complying	√
4	19,2	19,8	600	Positive	Complying	√
4	20,4	22,6	2208	Positive	Complying	√
4	23,0	26,0	3000	Positive	Complying	√
4	27,0	27,4	400	Positive	Complying	√
4	27,6	27,4	200	Positive	DR Road	√
4	27,6	29,2	1600	Positive	Complying	√
4	29,6	30,0	376	Positive	DR Road	√
4	30,6	31,6	1000	Positive	Complying	√
4	32,5	33,2	744	Positive	Complying	√
4	33,8	34,2	400	Positive	Complying	√
4	35,3	36,0	680	Positive	Complying	√
4	36,2	37,0	800	Positive	Complying	√
4	37,2	37,6	368	Positive	DR Road	√
4	38,0	40,0	2000	Positive	Complying	√
4	40,6	41,2	600	Positive	Complying	√
4	41,4	41,6	200	Positive	DR Road	√
4	42,0	43,6	1600	Positive	Complying	√

Barrier line assessment R67 section 4 negative side

Section	Start	End	Length	Direction	Conclusion	Arrows
4	43,2	42,3	892	Negative	Complying	√
4	42,0	41,6	376	Negative	DR Road	√

4	41,4	40,8	600	Negative	Complying	√
4	40,2	30.7	9500	Negative	Complying	√
4	36,2	35,6	600	Negative	Complying	√
4	35,2	34,8	400	Negative	Complying	√
4	34,6	35,0	424	Negative	Complying	√
4	33,6	32,0	1600	Negative	Complying	√
4	29,2	27,2	2000	Negative	Complying	√
4	26,4	23,6	2800	Negative	Complying	√
4	23,0	20,6	2400	Negative	Complying	√
4	20,4	19,6	800	Negative	Complying	√
4	18,6	18,0	600	Negative	Complying	√
4	17,4	17,0	400	Negative	Complying	√
4	16,6	15,4	1200	Negative	Complying	√
4	15,0	14,2	800	Negative	Complying	√
4	12,8	5,8	7000	Negative	Complying	√
4	5,6	1,8	3800	Negative	Complying	√