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THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT NO. NRA X.002-071-2018/1

FOR ROUTINE ROAD MAINTENANCE OF NATIONAL ROAD R49 FROM MAHIKENG MUNICIPAL BORDER TO KOPFONTEIN BORDER GATE

ROAD CONDITION REPORT

DATE: APRIL 2026

CHIEF EXECUTIVE OFFICER
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ROAD CONDITION REPORT

DATE: APRIL 2026

THIS DOCUMENT WAS COMPILED

UNDER THE DIRECTION OF:

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DISCLAIMER

This report has been compiled by the South African National Roads Agency SOC Limited for the use of its routine road maintenance contracts on the National Road network.

The information provided in this report is based on data that has been collected on national routes included in this routine road maintenance contract.

The South African National Roads Agency SOC Limited takes no responsibility for the accuracy or adequacy of each item, which is offered in good faith.

1. INTRODUCTION

This report is to keep SANRAL informed on the road conditions and to supply information to contractors interested in bidding on regular maintenance contracts. The information provided is based on real maintenance data and knowledge gathered from maintenance completed over the most recent six months, starting in November 2020.

The operations for carrying out the necessary routine road repair are described, together with the current state of the roads.

The nature of work to be carried out under this contract includes, inter alia:

- Establishment of camps on-site
- Inspection of the road and night inspections
- Accommodation of traffic
- Pavement layer repairs
- Edge build-up removal
- Repair of potholes, edge breaks, and surface failures
- Crack sealing and patching asphalt pavements
- Repair of slope failures and washaways
- Stabilisation of cuttings
- Cleaning of all drainage structures, including removal of grass and debris from grids, as well as clearing bridge drainage ports and scuppers
- Repairing damaged fencing
- Shoulder repairs
- Clearing refuse from the road reserve, lay-bys and interchanges.
- Repairing damaged road signs
- Cleaning of road signs
- Installation and replacement of road studs
- Repairing damaged guardrails
- Road marking
- Gabion protection
- Regular mowing of grass in the road reserve, including the median, and the removal of grass cuttings
- Application of herbicide on road edges and around road signs
- Eradication of weeds and undesirable plant growth
- Emergency assistance
- Minor road works done under dayworks.

The full scope of work is presented as a bill of quantities in Volume 3 (Contract Documentation).

2. SCOPE

The primary aim of this report is to provide general and historical routine maintenance data to the Client, SANRAL.

The topics covered fall under 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 involved in Routine Road Maintenance.

3. DETAIL DESCRIPTION

3.1 GENERAL

The following National Routes are included in this Contract:

- R49 Sections 1 and 2 from the Mahikeng and Ramotshere Moiloa border to the Kopfontein Border gate.

The site comprises the following routes with a total length of approximately 110.5 kilometers:

Table 3.1: Route Information

Route	Kilometer		Length (km)	Road pavement area (m^2) **	Road reserve area (ha)
	Start	End			
R49 Section 1	52.50	61.6	9.10	80 543	53
R49 Section 2	0	101.4	101.4	750,950	482

The contract period for the construction monitoring was 3 years, from November 2020 to October 2023. The contract was further extended to November 2025. It is currently estimated to run from month to month until SANRAL SCM has completed their procurement processes. The site office is currently established on the outskirts of Zeerust town in the northern direction of the R49 Section on Fontein Street, Zeerust.

3.2 INTERCHANGES AND INTERSECTIONS

3.2.1 Interchanges

There are no interchanges on the routes covered by this contract.

3.2.2 Intersections

The following intersections occur on the project routes:

Table 3.2: Intersection information

Description	Destination	Co-ordinates	
		Latitude	Longitude
R49 Section 1			
Side-junction - Right	Jacobsdal	25°38'00.89"S	26° 2'20.51"E
Side-junction - Left	Jagersfontein	25°37'06.40"S	26°01'54.90"E
Side-junction - Left	Jagersfontein	25°34'30.11"S	26°02'56.61"E
Side-junction - Left	N4 Skilpadhek	25°33'37.96"S	26°03'45.20"E
R49 Section 2			
Junction	N4/President Street	25°32'42.85"S	26°04'44.58"E
Junction	N4/Gerrit Maritz Street	25°32'42.01"S	26°04'48.38"E
Junction	Voortrekker Street/President Street	25°32'39.28"S	26°04'43.52"E
Junction	Voortrekker Street/Gerrit Maritz Street	25°32'38.47"S	26°04'47.42"E
Junction	Koningin Street/President Street	25°32'35.90"S	26°04'42.61"E
Junction	Koningin Street/Gerrit Maritz Street	25°32'35.02"S	26°04'46.46"E
Junction	Reid Street/President Street	25°32'32.49"S	26°04'41.60"E
Junction	Reid Street/Gerrit Maritz Street	25°32'31.55"S	26°04'45.39"E
Junction	Hendrik Potgieter Street/President Street	25°32'29.05"S	26°04'40.63"E
Junction	Hendrik Potgieter Street/Gerrit Maritz Street	25°32'28.18"S	26°04'44.39"E

Description	Destination	Co-ordinates	
		Latitude	Longitude
Junction	Park Street/President Street	25°32'25.59"S	26°04'39.64"E
Junction	Park Street/Gerrit Maritz Street	25°32'24.77"S	26°04'43.36"E
Junction	Van Riebeeck Street/President Street	25°32'22.27"S	26°04'38.65"E
Junction	Van Riebeeck Street/Gerrit Maritz Street	25°32'21.28"S	26°04'42.28"E
Junction	Jean Street	25°32'12.24"S	26°04'37.74"E
Junction	Joubert Street	25°32'04.27"S	26°04'35.93"E
Junction	Smook Street	25°31'56.29"S	26°04'34.13"E
Junction	Schut Street	25°31'48.11"S	26°04'32.08"E
Junction	Fontein Street	25°31'40.06"S	26°04'30.21"E
Junction	Berg Street	25°31'32.12"S	26°04'28.44"E
Side-junction - Left	Palmietfontein	25°28'10.34"S	26°04'52.41"E
Side-junction - Right	Doornrivier	25°24'10.34"S	26°05'02.52"E
Junction	Mosoeu/Braklaagte	25°23'24.83"S	26°05'04.08"E
Side-junction - Left	Unknown	25°22'24.41"S	26°05'09.70"E
Side-junction - Right	Enselsberg	25°18'55.44"S	26°07'22.57"E
Side-junction - Left	Nyetse	25°18'27.31"S	26°07'22.85"E
Side-junction - Right	Silkaatskop	25°18'18.21"S	26°07'23.07"E
Side-junction - Right	Groot-Marico	25°07'21.42"S	26°09'11.04"E
Side-junction - Left	Zwartfontein	25°02'14.63"S	26°09'21.04"E
Side-junction - Right	Ophir	25°01'18.28"S	26°09'19.78"E
Side-junction - Right	Brakfontein	24°54'49.29"S	26°08'23.35"E
Side-junction - Left	Witkleigat	24°54'01.36"S	26°08'23.42"E
Side-junction - Left	Supingstad	24°46'03.68"S	26°09'42.78"E
Side-junction - Right	R47 Derdepoort	24°42'38.80"S	26°05'59.07"E

3.2.3 Road Furniture and Concrete Drains Information

3.2.3.1 Concrete drains

The table below provides a summary of concrete drains on this project.

Table 3.3: Concrete drain information

Route	Concrete Side Drains					Length	Comments
	From KM	To KM	Directions	Latitude	Longitude	M	
R49 Section 1	52.5	52.54	South			43.8	Stone pitch drain
R49 Section 1	52.5	52.54	North			44	Stone pitch drain
R49 Section 1	53.8	54.12	North			336	Concrete V drain
R49 Section 1	53.78	54.1	South			288	Concrete V drain
R49 Section 1	54.1	54.12	South			29.9	Stone pitch drain
R49 Section 1	54.12	54.2	North			61.5	Stone pitch drain
R49 Section 1	58.3	58.5	South			207	Concrete V drain
R49 Section 1	58.5	58.57	South			29.5	Stone pitch drain
R49 Section 2	24.85	25.2	North			335.6	Concrete V drain
R49 Section 2	26.4	27.4	North			1052.2	Concrete V drain
R49 Section 2	27.6	27.8	South			144.7	Concrete V drain
R49 Section 2	29.8	30.95	North			377.7	Concrete V drain
R49 Section 2	29.85	30.07	South			296.8	Concrete V drain
R49 Section 2	30.2	30.3	North			119.6	Concrete V drain

Route	Concrete Side Drains					Length	Comments
	From KM	To KM	Directions	Latitude	Longitude	M	
R49 Section 2	74.3	74.5	North			171	Concrete V drain
R49 Section 2	74.43	74.5	South			108	Concrete V drain
R49 Section 2	76.25	76.35	North			126	Concrete V drain
R49 Section 2	85.4	85.63	North			195	Concrete V drain
R49 Section 2	85.4	86	South			555	Concrete V drain
R49 Section 2	89.56	90	South			156	Concrete V drain
R49 Section 2	89.83	90	North			207	Concrete V drain
R49 Section 2	90.15	90.4	North			60	Concrete V drain
R49 Section 2	90.3	90.5	South			171	Concrete V drain
R49 Section 2	90.6	90.9	South			375	Concrete V drain
R49 Section 2	91.04	91.1	South			93	Concrete V drain
R49 Section 2	91.35	91.4	South			111	Concrete V drain
R49 Section 2	91.6	91.85	North			228	Concrete V drain
R49 Section 2	91.87	92.23	North			390	Concrete V drain
R49 Section 2	101	101.4	North			294	Curb channel
R49 Section 2	101.35	101.4	South			39	Curb channel
					Total	**5095**	

3.2.3.2 Guardrails

A summary of the guardrails occurring on the project routes is provided below.

Table 3.4: Guardrail information

Route	Guardrails		Length	Comment
	Latitude	Longitude	M	
R49 Section 1	26°03’37’’ E	25°62’42’’ S	286	Armco guardrails
R49 Section 1	26°03’5’’ E	25°60’62’’ S	100	Armco guardrails
R49 Section 2	26°06’31’’ E	25°51’59’’ S	408.3	Armco guardrails
R49 Section 2	26°06’30’’ E	25°51’54’’ S	397.7	Armco guardrails
R49 Section 2	26°06’44’’ E	25°50’93’’ S	110	Armco guardrails
R49 Section 2	26°06’44’’ E	25°50’93’’ S	374.77	Armco guardrails
R49 Section 2	26°06’33’’ E	25°50’99’’ S	83.82	Armco guardrails
R49 Section 2	26°06’57’’ E	25°50’70’’ S	133.35	Armco guardrails
R49 Section 2	26°06’71’’ E	25°50’52’’ S	710.49	Armco guardrails
R49 Section 2	26°07’67’’ E	25°48’46’’ S	300	Armco guardrails
R49 Section 2	26°08’27’’ E	25°46’46’’ S	95	Armco guardrails
R49 Section 2	26°08’42’’ E	25°45’96’’ S	200	Armco guardrails
R49 Section 2	26°08’42’ ’E	25°45’96’’ S	86	Armco guardrails
R49 Section 2	26°08’45’’ E	25°44’60’’ S	160	Armco guardrails
R49 Section 2	26°08’40’’ E	25°43’09’’ S	49.53	Armco guardrails
R49 Section 2	26°08’41’’ E	25°39’93’’ S	152.4	Armco guardrails
R49 Section 2	26°11’91’’ E	25°32’90” S	160	Armco guardrails
R49 Section 2	26°13’58’’ E	25°20’63’’ S	400	Armco guardrails
R49 Section 2	26°14’63’’ E	25°17’20’’ S	100	Armco guardrails

Route	Guardrails		Length	Comment
	Latitude	Longitude	M	
R49 Section 2	26°15°18'' E	25°01'50'' S	100	Armco guardrails
R49 Section 2	26°14'66'' E	25°00'55'' S	100	Armco guardrails
R49 Section 2	26°14'28'' E	24°94'33'' S	100	Armco guardrails
R49 Section 2	26°13'97'' E	24°89'73'' S	100	Armco guardrails
R49 Section 2	26°13'90'' E	24°88'77'' S	260	Armco guardrails
R49 Section 2	26°14'81'' E	24°87'64'' S	150	Armco guardrails
R49 Section 2	26°15'54'' E	24°87'13'' S	180	Armco guardrails
R49 Section 2	26°16'20'' E	24°78'43'' S	300	Armco guardrails
R49 Section 2	26°16'11'' E	24°78'06'' S	200	Armco guardrails
R49 Section 2	26°16'15'' E	24°77'45'' S	200	Armco guardrails
R49 Section 2	25°51'14'' E	26°06'22'' S	450	Armco guardrails
R49 Section 2	25°32'52'' E	26°12'19'' S	100	Armco guardrails
R49 Section 2	25°48'88'' E	26°07'55'' S	260	Armco guardrails
R49 Section 2	25°18'11'' E	26°07'23'' S	46	Armco guardrails
R49 Section 2	25°04'43'' E	26°9'48'' S	324	Armco guardrails
		Total	**7177.36**	

4. PAVEMENT MANAGEMENT SYSTEM INFORMATION

Up to the extent of the South African National Roads Agency's jurisdiction, all on-- and off-ramps, overpasses, and underpasses located inside the national road reserve are covered by the data provided in the ensuing description. Provincial, municipal, and private intersections that are not a part of the project or that cannot be accessed from the national road's road reserve are excluded.

The total distance is approximately 110.5 kilometers.

A Locality Plan is included in **Annexure 1**.

4.1 ROUTE DESCRIPTION

Route layouts and elevation profiles are included in **Annexure 2.**

The following is a description of the routes along the national routes for which this Contract will conduct routine road maintenance.

4.1.1 National Route R49 Section 1

Route R49, also known as Provincial Road P2 Section 1, is a section of road that begins at the Mahikeng and Ramotshere Moiloa Municipal border, Zeerust and ends at the location specified by Government Notice No. 751 of 2007 and all Administrator's Notices that may be relevant to this section of road.

(i) Commences at km 52.5 (Mahikeng & Ramotshere Moiloa municipal border) and ends at km 61.60 before Lobatse and Lehurutse intersection (Zeerust).

Type of carriageway	Single
Surfacing	Multiple seals
Intersections	Four
Shoulders	Paved & Unpaved
Toll Plazas	Nil
Carriage width	Varies
Road reserve width	Varies
Median description	Nil
Topography	Rolling
Climate (Weinert)	Moderate

4.1.2 National Route R49 Section 2

From km 0.00 in Zeerust town, as declared by Government Notice No. 752 of 2007, the section of Route R49, also known as Provincial Road P87 Section 2, is known by all Administrators' Notices that may be relevant to this section of road. From there, it proceeds through Zeerust in a general northerly direction along with the existing Provincial Road P87 Section 2 up to the entrance of the Kopfontein Border Post operational area on Portion 1 of the farm Kopfontein 78-KP at the North-West/Botswana International Border, where it terminates as a National Road.

(ii) Commences at km 0.0 (Zeerust) and ends at km 101.4 (North-West/ Botswana International Border)

Type of carriageway	Single
Surfacing	Multiple seals
Intersections	Thirty-Four (34)
Shoulders	Paved & Unpaved
Toll Plazas	Nil
Carriage width	Varies
Road reserve width	Varies
Median description	Nil
Topography	Rolling/Mountainous
Climate (Weinert)	Dry

4.2 DEFINITION OF CODES USED

The table below provides details on pavement material descriptions and abbreviated specifications.

Table 4.5: Material descriptions and specifications

Code	Material	Abbreviated Specification
G1 G2 G3 G4 G5 G6 G7 G8 G9 G10	Graded crushed stone Graded crushed stone Graded crushed stone Natural gravel Natural gravel Natural gravel Gravel–soil Gravel–soil Gravel–soil Gravel–soil	86 – 88 % of apparent density; PI < 4.5 100 – 102 % mod. AASHTO; PI < 6 Min. 98 % mod. AASHTO; PI < 6 CBR > 80; PI < 6 CBR > 45; PI < 10 CBR > 25; PI < 10 CBR > 15 CBR > 10, in-situ CBR > 7, in-situ CBR > 3, in-situ
BC BS TC TS	Hot-mix Asphalt Hot-mix Asphalt Tar hot mix Tar hot mix	Continuously graded Semi-gap graded. Continuously graded. Semi-gap graded
PCC CRC	Portland cement concrete Continuously reinforced concrete	Mod. rupture > 4,5 MPa
C1 C2 C3 C4	Cemented crushed stone or gravel. Cemented crushed stone or gravel. Cemented natural gravel. Cemented natural gravel	UCS 6 – 12 MPa at 100 % mod. AASHTO UCS 3 – 6 MPa at 100 % mod. AASHTO UCS 1.5 – 3 MPa at 100 % mod. AASHTO UCS 0.75 – 1.5 MPa at 100 % mod. AASHTO

AG AC AS AO AP	Asphalt surfacing Asphalt surfacing Asphalt surfacing Asphalt surfacing Asphalt surfacing	 Gap-graded Continuously graded. Semi-gap-graded Open-graded Porous
S1 S2 S3 S4 S5 S6 S7 S8	Surface treatment Surface treatment Sand seal Cape seal Slurry Slurry Surface renewal	Single seal Multiple seals Fine grading Coarse grading Rejuvenator
WM1 WM2 PM DR	Water-bound macadam Water-bound macadam Penetration macadam Dump rock	PI < 6, 88 – 90 % of apparent density PI < 6, 86 – 88 % of apparent density Coarse stone with bitumen or tar Ungraded waste rock

4.3 PMS – ROAD INFORMATION

SANRAL will provide the latest PMS information.

5. TRAFFIC INFORMATION

Traffic information was obtained from numerous counting stations along the project routes as summarised in the table below.

Table 5.6: Available CTO information

Route	Section	Station	Km	ADT	ADTT	Daily E80 kN Axle Loads	Year	Counted (T) or Estimated (B)
R49	1	19731	3.09	1874	135	642	2016	T
R49	2	19046	3.37	1261	247	1626	2016	T
R49	2	19047	72.52	1486	454	2948	2021	T

6. HISTORIC ROAD MAINTENANCE INFORMATION

6.1 GENERAL

The maintenance data comes from observations made in November 2020 during the road survey. As directed by SANRAL in D1000, the subcontractors conducted the majority of the tasks using the CPG plan. This plan came to an end in October 2023.

6.1.1 National Route R49 Section 1

The National Route is in good riding condition, the route does not show any signs of distress yet, except for the 15m of an existing patch that has deteriorated at R49/1 km 59 positive side. The shoulders are both paved and gravel and are in good to fair condition.

The route patrol team service the route every day, taking care of minor repairs and safety issues.

Potholes, surface failures, base failures, and edge breaks will all be rectified in severely damaged pavement locations. A slurry seal was recently done from km 59 to km 61.2 on both sides. Road markings along the center line were reinstated between December 2024 and January 2025. The North-West Province's contractor, Mega Roads & Civil Performance-Based Road Marking Contract. Mega Roads has restored all road line markings and reinstalled the road studs. Busy with the establishment, Mega Civils will prioritize slurried sections before the December shutdown on both sections. The guardrails are in place on deep slope areas and are in good condition.

The Ramotshere Moiloa Municipality water department removed or hacked eighteen meters of the stock-proof fence on the R49/1 km 56.4 S to fix a water leak that ran parallel to the fence line. The fence is still mostly intact. Rather than continuously inflicting harm to the brand-new fence, the barrier was temporarily mended so they could simply remedy the leak whenever it occurred. Stray animals had less access to the road from the community because of this barrier. Regretfully, theft and neglected cattle in the community cause a rise in accidents.

Every week and every month, trash and litter are gathered from the road's urban reserve and peri-urban area, and all culverts and concrete side drains are routinely cleaned. While the W401 danger plates are installed at most culverts, the W405 hazard plates have been installed around gentle curves. Due to inadequate reflection, section 1 now has the new W401 signage. At kilometre 54.7 North side, there is an occasional flooding problem due to the grave road to Jagersfontein and the high slope level towards the national road, eroding a lot of material, posing a high safety risk to the road users. Numerous cleanings were conducted, and the route patrol is regularly monitoring it and advising on the required urgency. The eroded soil caused a head-on accident at night, fortunately, with no fatalities. An earth channel that had existed prior but was covered overtime due silt and soil material due to the flooding and erosion of the gravel road has been reopened, as well as the bell mouth that was heavily silted has been cleared and that section has been in good condition since and well maintained.

Mowing the grass is a regular way to keep it from getting out of control and reduce the risk of fire in the road reserve. In January–February 2021, April–May 2021, and April–May 2022, general mowing was completed. For this project, there have been several cuts: the first in November 2020, the second in February 2021, the third in April–May 2022, the fourth in August 2022, and the fifth in August 2023. December 2023 saw the completion of the seventh cut. The eighth cut was done in April 2024. The ninth was in July 2024. Due to the lack of necessary growth, the tenth cut was postponed from its original October 2024 scheduled date. It was performed in January 2025. The eleventh cut is delayed by the current rains. The eleventh cut was later performed and completed in the months of June-July 2025. The twelfth cut was recently completed end of November 2025.

In the impacted regions, physical removal of unwanted vegetation (tree felling/cutting) was done to increase safety and visibility inside the road reserve, particularly along the shoulder. Plant and tree species were trimmed as recommended by the environmental officer's report. However, once chopped or trimmed, syringa, marula trees, and reed grass grow more widely and could become problematic if not well-watched.

When alerted, the emergency standby squad is dispatched to incidents along the route on short notice to protect accident scenes and restore them. The group is available around the clock.

6.1.2 National Route R49 Section 2

The National Route displays cracks, surface failure, deformation, and developing potholes. Patchwork was completed in areas of severely damaged pavement. Recently, the patching team completed some patchwork at kilometre 64 to km 85 using a bitumen-treated base (40 mm to 190 mm). The patchwork region between km 69 and 70 is the trouble spot. Because the underlying layer was too damp, stabilising the foundation layer boosted soil strength and lowered permeability. Bitumen is used to treat the top layer. Significant crocodile cracks are emerging at an alarming rate from km 0.0 and 2.2 as well as from km 4 to km 5 on both lanes, which require maintenance. Milling and repaving would be the best solutions. Around May or June of 2023, a slurry seal was applied; however, it did not turn out well, therefore, base patches will be used instead. A slurry seal was also applied from km 16.9 - 20 to seal the minor cracks and stable sections. Route Patrol uses cold asphalt mix to temporarily patch potholes smaller than 0.5 m². In section 2, where there is a fresh formation of the surface/base failure and where previous patches have failed, potholes and patch repairs are now being completed.

On the 19th of February, we observed that a piece of the road surface on R49 section 2, right before the intersection of km 0.0, Southbound, the road had water gushing from underneath the surface, requiring investigations. Following an inspection and excavation, the concrete slabs covering a maintenance hole were discovered just beneath the asphalt surfacing, which had flooded due to severe rainfall and debris, forcing the concrete slab to push up from underneath, resulting in deformations on the road. We also saw that the stormwater system was highly silted from deep within the pipes and required daylighting, which we could not achieve from the external inlets. The segment underwent the necessary remedial work, including desilting the stormwater pipes and backfilling and resurfacing the excavations.

The route patrol team services the route every day, taking care of minor repairs and safety issues. They also notify RRM of any necessary repairs by recording flaws and damages daily. From km 66 to km 74, the stockproof fence repair was re-erected on both sides. From R49/2 km 89 to km 92, the fence is loose, and rusty and needs to be replaced. Weekly and monthly heaps of trash and debris on the road reserve are cleaned. Along the route, all of the concrete side drains and culverts are cleaned as needed. The culverts' only problem was that the natural ground level was higher than the pipe's invert level, which prevented water from discharging and instead retained it in place.

Every 200 meters, route marker boards are displayed; some were replaced after being burned or stolen from nearby towns and villages. Most culverts have danger plates (W401s) signs installed, and hazard plates (W405s) installed along gentle/sharp curves. The majority of these W401s and W405s have already been replaced due to faded reflectivity. Various night drive inspections were conducted in October 2025 where numerous W401 and W402 signs were found to be none reflective at night, resulting in a need for them to be replaced which has been carried out and is still on going with the remaining set to be replaced.

In August 2022, the RRM reinstated the center road marking lines. The North-West Province's Performance-Based Road Marking Contractor (Mega Civil) restored the yellow (85%) and white lines (75%) and replaced 55% of the road studs.

New guardrails have been constructed on fills taller than 3 meters at km 29.2 and km 54.7. The contractor will erect two (2) 154-meter-long lined guardrails to protect against falling rocks from a cut that runs from Northside kilometer 7.21 to 7.44. New guardrails get erected as and when 3m deep areas are identified.

To lessen the risk of fire in the road reserve, vegetation is mowed based on its growth and the hazard it poses to other road users' safety. The sixth and seventh cuts were completed in May and June 2023, and in November of the same year, respectively. In March 2024, the eighth cut was completed. The ninth cut was finished in August 2024. The tenth cut occurred in October 2024. The eleventh cut is underway, having started in February 2025. It is yet to be completed due to high rainfall and financial difficulties among subcontractors, which were later resolved. The eleventh cut was later performed and completed in the months of June-July 2025. The twelfth cut is currently on hold due to subcontractors' financial issues which are still being resolved and tended to.

Although more has to be trimmed or removed, undesirable vegetation (such as reed grass and syringa tree felling) was physically removed from the affected areas to improve safety and visibility in the road reserve. The designated environmental officer's monthly contractor environmental report recommends pruning specific species.

The emergency standby team is constantly sent to incidents under the project's jurisdiction to safeguard accident sites and restoration efforts. The team is available at all times. This crew has only responded to ninety-four (94) incidents or accidents since the start of the project. Coordination and communication between the emergency response institutions/EMS in Ramotshere Moiloa Municipality are gradually getting better with a sustained focus on teamwork at RIMS meetings and WhatsApp group interventions. In response to requests for effective event and record management that adhere to the same standards to save lives as soon as possible, meetings for the Road Incident Management System (RIMS) are held at Mahikeng.

A site instruction had been issued to the main contractor for Gabion structure installation on the R49/2 km 5.1 and 7.3 Northbound. Currently the instruction is 50% completed with the section of km 5.1 completed and the section of Km 7.3 yet to commence, scheduled for January 2026. As the project is currently under extension, the completion of the Gabion structure installations is subject to completion based on this contract's extension being granted.

6.2 DESCRIPTION OF INFORMATION

6.2.1 General Information

6.2.1.1 Area classification

The National Routes included in this Contract run through many areas with different area classifications.

Each national route was assigned a carriageway description (single or double) passing through an area with classification as rural, urban, or peri-urban.

Refer to the tables below for the description and area classification of the different national routes:

Table 6.7: Peri-Urban – Single Carriageway

Route	Peri-Urban – Single Carriageway				Length
	Start		End		
	Latitude	Longitude	Latitude	Longitude	Km
R49 Section 2	25°32'42.85"S	26° 4'44.58"E	25°32'12.24"S	26° 4'37.74"E	1.10
	25°32'42.01"S	26° 4'48.38"E	25°32'12.24"S	26° 4'37.74"E	1.10
	25°32'12.24"S	26° 4'37.74"E	25°31'32.12"S	26° 4'28.44"E	1.30
	25°24'10.34"S	26° 5'2.52"E	25°22'24.41"S	26° 5'9.70"E	3.40
	25°20'26.90"S	26° 6'24.68"E	25°18'27.31"S	26° 7'22.85"E	4.30

Table 6-8: Rural - Single Carriageway

Route	Rural – Single Carriageway				Length
	Start		End		
	Latitude	Longitude	Latitude	Longitude	Km
R49 Section 1	25°51'2.32"S	25°40'53.78"E	25°33'37.94"S	26° 3'44.98"E	57.80
R49 Section 2	25°31'32.12"S	26° 4'28.44"E	25°24'10.34"S	26° 5'2.52"E	14.80
	25°22'24.41"S	26° 5'9.70"E	25°20'26.90"S	26° 6'24.68"E	4.20
	25°18'27.31"S	26° 7'22.85"E	24°42'27.16"S	26° 5'43.72"E	71.20

6.2.1.2 Cutting along the routes

Cut scenarios are apparent in local areas along the R49 sections 1 and 2 National routes.

To effectively manage stormwater, the sections with cuttings typically include side drains made of concrete or stone-pitch. Usually clogged with dirt, rubble, pavement chips, or other materials, the side drains are regularly cleaned as needed by the designated subcontractor. On Section 2 km 7.4 Northbound, two lined guardrails will be erected to prevent boulders from falling into the road.

Refer to the table below for information regarding road sections which are in cut:

Route	Cuttings		Length
	Latitude	Longitude	m
R49 Section 1	25°37'24.44"S	26° 1'59.65"E	250
	25°38'13.92"S	26° 2'31.32"E	620
	25°35'6.13"S	26° 2'33.66"E	200
R49 Section 2	25°30'35.78"S	26° 3'47.96"E	380
	25°30'22.94"S	26° 3'58.41"E	230
	25°30'16.01"S	26° 4'3.83"E	320
	25°19'1.04"S	26° 7'22.39"E	150
	25°17'49.00"S	26° 7'23.34"E	320
	24°54'18.75"S	26° 8'22.92"E	150
	24°53'18.19"S	26° 8'20.57"E	60
	24°52'59.62"S	26° 8'23.58"E	250
	24°49'11.68"S	26°10'37.40"E	580
		Total	**3510.00**

Table 6.9: Cutting information.

6.2.1.3 Illegal signs and illegal access

At the start of the contract, an unlawful sign study was done to determine which illegal signs still exist or need to be removed; as of today, none do. When a sign was to be taken down, the SANRAL illegal sign stickers were affixed, and the removals were done after the sticker's expiration date. The SANRAL SCM notice letter notifies the owners of unauthorised signs.

We reported two illegal accesses in R49/1 to SANRAL statutory control, and SCM advised that the Botfield weighbridge's illegal entry at km 61.6 should be closed, and a formal application with required documentation should be presented for approval. JR Poultry at km 52.5 has to apply for the use of the Jacobsdale crossroads. JR Poultry has submitted an application with SANRAL statutory for the use of the Jagersfontein Junction for both entry to and exit from their farm operations located in the surrounding area on the 13th of August 2025. Feedback from Sanral Statutory has yet to be received.

6.2.2 Pavement condition information

Pavement condition surveys were conducted at several locations along the national routes, which are included in this Contract.

Failure and distress mechanisms that were observed along the National Routes included the following:

- Rutting
- Loss of chips
- Surface failures
- Base failures
- Edge breaks
- Crocodile cracking
- General fatigue

Water can infiltrate into the pavement layers due to the distress processes mentioned above, which speeds up the pavement structure's deterioration. Using cold-mix asphalt for potholes smaller than 0.5m² is constantly filled throughout all project routes. Potholes with cold asphalt mix are the current problem areas that have been recognised and fixed.

There are surface failures, deformation indicators, fractures, and potholes occurring on the National Route. For extreme pavement deterioration, patchwork is now underway. Patchwork (Bitumen Treated Base of +-140mm) was recently completed by the patching team at km 0.95 up to km 1.6 and km 64.0 up to km 85.4. Although it is not yet pumping, the surface between km 0.0 and 2.2 is progressively breaking. They will be constantly watched over and dealt with once the critical sections are complete. In section 2, where the surface/base failure has formed a new formation and the old patches have failed, pothole and patch repairs are presently being conducted from km 60 to km 96. Km 29.1 to km 29.2 indicates longitudinal cracks (3mm to 15mm wide) that are slowly growing wider and deeper. Crack sealing will be used as a remedial action for these cracks.







Figure 6.1 Patching in progress

The problematic area between km 69 and 70 is repaired. The top layer is treated with bitumen (53 -250mm). The pavement at km 3.8 up to km 5.2 on both lanes shows rutting and crocodile cracks. The remedial plan was the application of a slurry seal, but the crack kept on showing up in the long run. The next option is base patches that will advise on the condition of the base if more is needed to address the cause. More slurry seals will be needed as well to further protect the pavement from losing the chips and to extend the road life span. Currently slurry seal applications are ongoing from Km 73 to Km 77.



Figure 6.2 Slurry seal in progress



Figure 6.3 Pavement bonding agent is minimal, and losing chips.



Figure 6.4 Pavement with longitudinal cracks



Figure 6.5 Pavement with a manhole opening underneath



Figure 6.6 The stormwater inlet is heavily silted and blocked



Figure 6- 7 Stormwater inlet excavated and daylighted



Figure 6.8 Stormwater inlet resurfaced and patched.

Table 6.10: Cutting information.

Route	Rutting	Surface/Base Failure	Chips lose	Cracks
R49 section 1	Km 53 to 58.4			
R49 section 2	Km 3.8 to 5.2			Km 3.8 to 5.2
R49 section 2	Km 7.2 to 9		Km 7.2 to 9	
R49 section 2	Km 32 to 37.4			
R49 section 2	Km 40 to 46.1			
R49 section 2		Km 63 to 77	Km 63 to 90	

6.2.3 Drainage information

6.2.3.1 Culverts

Culverts can be found in both sections 1 and 2 of the R49 at regular intervals. The only issue we have with the culverts is that the outlets are holding water instead of releasing it because the natural ground level is higher than the pipe's inverted level. At R49 section 1 at km 54.6 positive side, there is a present problem with water draining into the road and leaving the soil, which could cause accidents.

The table below contains information relating to the number of culverts along each route, culvert size, and frequency of required cleaning.

Table 6.11: Culvert information (R49 Section 1)

Route	Number of Culverts Pipes Boxes (600x500 mm)	Number of Culverts Pipes Boxes (5x1.4m)	Frequency of cleaning (Per year)
R49 Section 1	70	2	2

Table 6.12: Culvert information (R49 Section 2)

Route	Culverts dimensions	No culvert pipe boxes	Frequency of cleaning (Per year)
R49 section 2	500mm	418	2
R49 section 2	600mm	258	2
R49 section 2	900mm	22	2
R49 section 2	500x1200	10	2
R49 section 2	600x1200	18	2
R49 section 2	900x1200	10	2
R49 section 2	1200x1200	6	2
R49 section 2	1200x1800	16	2

Route	Culverts dimensions	No culvert pipe boxes	Frequency of cleaning (Per year)
R49 section 2	1500x600	76	2
R49 section 2	900x3600	12	2
R49 section 2	600x2400	56	2
R49 section 2	600x900	88	2
R49 section 2	750x600	2	2
R49 section 2	600x450	2	2
R49 section 2	2100x600	8	2
R49 section 2	4000x2400	2	2
R49 section 2	900x450	30	2
R49 section 2	1800x1500	8	2
R49 section 2	1200x600	52	2
R49 section 2	2400x1800	2	2
R49 section 2	3600x1800	4	2
R49 section 2	900x900	14	2
R49 section 2	750x750	8	2
R49 section 2	4000x900	20	2
R49 section 2	1500x900	6	2
R49 section 2	3600x1200	8	2
R49 section 2	750x450	4	2
R49 section 2	1200x900	16	2
R49 section 2	450x450	8	2
R49 section 2	3600x500	4	2
R49 section 2	4000x900	20	2
R49 section 2	1500x600	106	2
R49 section 2	2400x900	8	2
R49 section 2	750x600	2	2
R49 section 2	3600x900	10	2
R49 section 2	1200x1200	6	2
R49 section 2	1500x1200	2	2
R49 section 2	2400x900	8	2
	Total number of culverts	**1350**	

Because of a high farm's ground level and a low pipe invert level, certain culverts are not entirely functional. To improve functionality, appointed subcontractors clean them regularly. Other culverts have wing walls that are broken or cracked; these need to be fixed right away to prevent further damage. The earth channels and culvert inlets and

outlets have some eroded places, and stone pitching would prevent further erosion. Since October 2021, culverts have been cleaned, allowing them to operate at a higher capacity and guard against road overtopping during wet seasons. As a result, everyone using the R49 will drive more safely. Every year, all of the structures—including major and minor culverts and bridges—are inspected, and SANRAL receives a report of the findings. July 2024 was the deadline for the structural evaluation report.



Figure 6.9 Damaged or cracked box culvert

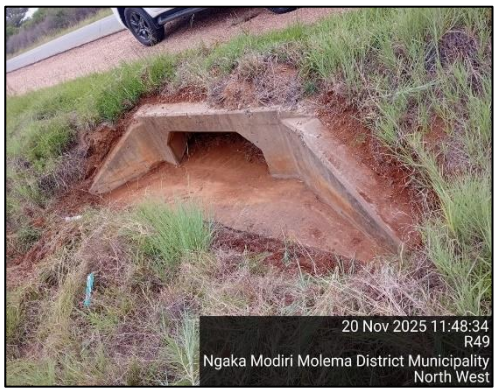







Figure 6.10 Cleaning of culverts

6.2.3.2 Gabions

There were two sections identified which needed Gabion protection due to erosion problems. The sections were on the R49 section 2, Km 5.0, and Km 7.1. A site instruction was issued for the installation of Gabion structures for both sections. The site instruction is 50% completed with having the section on Km 5.0 of 200m completed and the remaining Km 7.1 of 200m yet to be completed and scheduled to commence in January 2026.



6.2.3.3 Concrete Channels and Kerbs

Along the project paths are several concrete channels and kerbs. To effectively manage stormwater, concrete channels are typically found when the roadway is cut. In regions with rolling or mountainous terrain and rather significant stormwater velocities, concrete channels are also present. For information on where the kerbs and concrete channels are located, see Table 3 3. Concrete channels need to be routinely cleaned of trash and dirt. Every kerb that is currently in place at the bellmouth needs to be cleaned and painted. At the border with Kopfontein, kerbs (km 101.4) are partially destroyed and will be rebuilt in the next project. Between kilometre's 91 and 92.3, there is a damaged concrete drain that is currently being reconstructed. The concrete drain has been reconstructed and completed in November 2025. Rubble removal has also been done along the concrete drain to remove debris and

lose concrete.

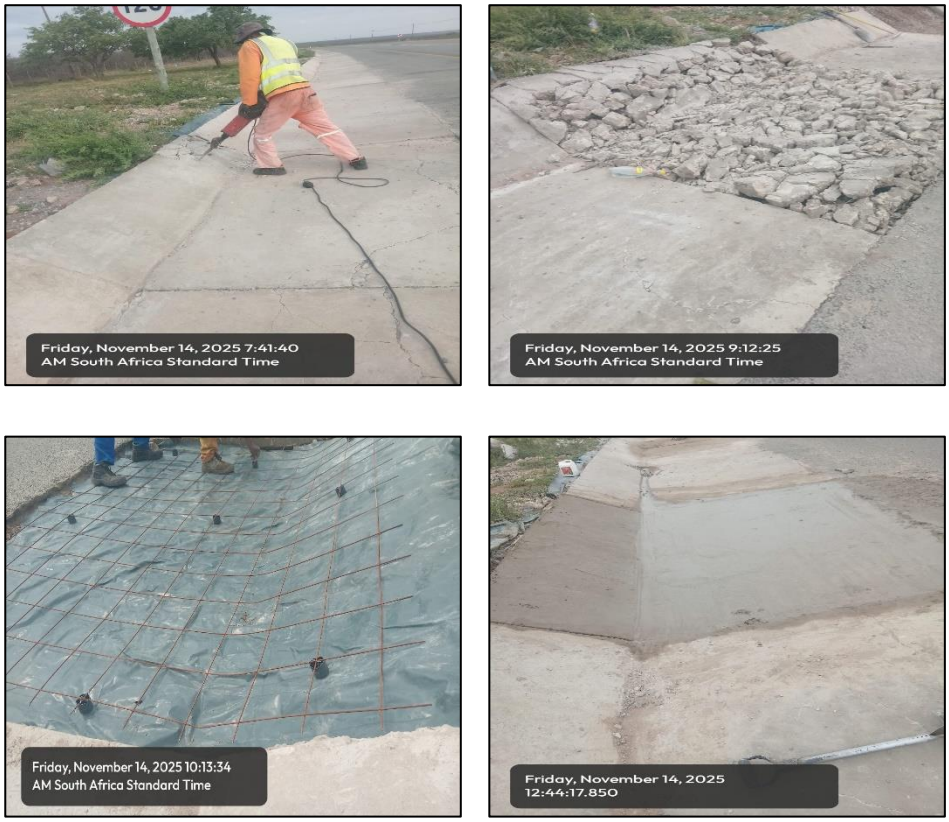

Figure 6- 11 Construction of the concrete drain in progress

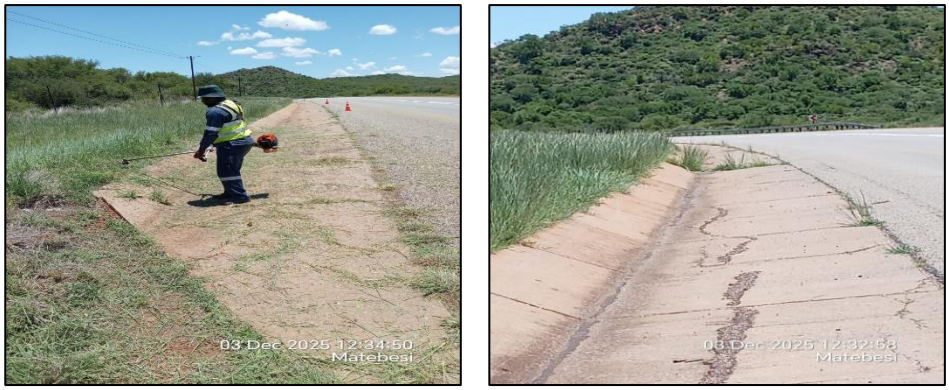

Figure 6.12 Cleaning of concrete channels in progress

6.2.3.4 Earth channels

Along the R49 routes covered by this Contract are several earth channels. In places with relatively level terrain, earth channels are an efficient way to manage stormwater. Where there is little chance of erosion and modest water runoff velocities, they are also effective.

Since the beginning of this contract, the principal/subcontractor has periodically cleansed and removed earth channels of all foreign objects. During certain phases of the project, many of the earth channels experienced significant degradation and required reconstruction.

6.2.3.5 Subsoil drains

No subsoil drains were noted along the National Routes included in this Contract.

6.2.4 Fencing

Only a small portion of project route section 2 is unfenced due to theft, especially in the vicinity of the communities; the route patrol promptly repairs any short sections that are accidentally damaged; fencing is currently on hold because the previous contractor's contract has ended and the main contractor has not yet appointed a replacement; therefore, fence work is on hold.

The table below contains information relating to the type of fencing along the project.

Table 6.13: Fencing information

Route	Type of Fencing	Frequency of Repair	Date of Last Erection
R49 Section 1	Stock proof (6-strand)	As and when required	2017
	Stock proof (9-strand)	As and when required	
	Game fences	As and when required	
	Palisade fences	As and when required	
R49 Section 2	Stock proof (6-strand)	As and when required	2022
	Stock proof (9-strand)	As and when required	
	Game fences	As and when required	

6.2.5 Debris and Litter

The table below shows information relating to the frequency of debris and litter collection along the project roads. Table 6.14: Debris and litter information

Route	Frequency of Cleaning (Per Month)	Problem Areas
R49 Section 1	1	Rest areas and urban areas are cleaned weekly
R49 Section 2	1	Rest areas and urban areas are cleaned weekly

6.2.5.1 Shoulder Type

The routes included in this Contract have mainly unpaved (gravel) shoulders. The widths of the shoulders vary between 1m and 3m in most cases. There are a few areas with paved shoulders, but they are observed less frequently than unpaved (gravel) shoulders. Paved shoulders are usually located at bridge structures and within the municipal boundary of towns or cities.

6.2.5.2 Edge breaks

Erosion, driving on the road shoulder, and traffic close to the shoulder on the surface edge can all result in edge breaks. Section 2's surface edge break-up failure up to a maximum width of 300 mm was fixed in January 2021; however, as the edge breaks are still in decent shape, none were fixed for this reporting. However, some portions are already exhibiting signs of erosion, and we expect more after rain and road users using the shoulders. The table below indicates the extent and frequency of edge break repair along the project routes.

Table 6.1: Edge break information

Route	Extent (Isolated / Intermittent / Extensive)	Frequency of Repair (No. Repairs Per Year)
R49 Section 1	Isolated	1s or as and when required
R49 Section 2	Isolated	1s or as and when required

6.2.5.3 Edge build-up

The edge build-up survey was done at the commencement of the contract to determine the edge build-up extent since the completion of the previous RRM contract, and excessive material/growth was found on some surface edges. It has been removed in most areas and shall continuously be addressed to ensure adequate water flow.

The table below shows information relating to the edge build-up method of removal and the frequency of removal along project routes.

Table 6.2: Edge build-up information

Route	Type of Repair (Grader / Hand)	Frequency of Repair (No. Repairs Per Year)
R49 Section 1	Hand	3
R49 Section 2	Hand	6

6.2.6 Road Studs

New plastic stick-on road studs have been installed on the following National Routes under SANRAL's Performance-Based Road Marking Contract in the North-West Province by Mega Civil:

- R49 Section 1
- R49 Section 2

Road studs are now reflecting on the routes. They generally improve road safety, especially for road users travelling during the night. Road users can navigate better during the night as the road studs provide an illuminating effect on

the roadway. Mega Civil is currently carrying out their contractual obligations on-site, and hopefully, to be completed before the end of May 2025. Ninety-five (95%) of road studs are installed and reflective at night.

6.2.7 Road Signs

A survey was conducted of all road signs along the contract routes. All regulatory and warning signs that are missing or sub-standard have been replaced to improve safety for all road users.

Most danger signs located along the routes are not reflective, especially during the night. They seem to be old signs from the previous contract.

The following issues have been observed concerning the directional/guidance signs:

- Faded road signs face.
- Not erected at the required height
- Not erected at the correct lateral positions
- Materials used for erection (Posts, brackets, etc.) are not to the required standard.

SANRAL is aware of the risks to public safety posed by this inadequate signage, and the main contractor ensures that these are replaced regularly as directed. On R49 section 1, all of the W401 hazard warning signs have been replaced, spanning from km 52.5 to 61.9. Due to the expansion of the communities along R49 section 2, the speed reduction signs had to be moved in the direction of the villages. In the coming months, the RRM will replace non-reflective warning signs when required.

6.2.8 Road Markings

The Centre Road marking lines were reinstated in August 2022. The yellow lines and road studs were reinstated under the Performance-Based Road Marking Contract in the North-West Province. Mega Civil is currently on-site, yet to complete the 5% outstanding.

- R49 Section 1
- R49 Section 2

After the application of the slurry seal as previously reported, the line markings were not visible, so the contractor was instructed to do a pre-marking on the centerline for visibility of respective lanes. The pre-marking is not visible at night and needs urgent line marking reinstatement for safety reasons.

6.2.9 Guardrails

Guardrails are located in areas where the road fill height is higher than 3m, as well as at bridges, large culverts, along slopes/cuts for falling rocks and protected pedestrian walkways along the National Routes.

New guardrails have been installed after a long wait due to countrywide pole shortages. We have had a few accidents, which led to guardrail repairs being required, and they are being tended to as and when required. Currently, all guardrails have been replaced that had been damaged and have been repaired in sections that required realigning.

Refer to **Table 6.3** and **Table 6.4** for the positions of all guardrails located along the routes included in this Contract.

Table 6.3: R49 Section 1-Guardrails

Km	Positive side length (m)	Negative side length (m)
53.95	137	148
56.1	100	100

Table 6.4: R49 Section 2 Guardrails

Km	Positive side length (m)	Negative side length (m)
4.2	400	400
4.4	450	
4.8	80	500
5.0	160	
5.8		700
7.2		230
7.4		360
10	80	80
10.6	220	60
12	90	90
26.6		200
29.2	23	23
40.6	400	400
44.2	100	100
54.7	137	187
62.2	120	120
63.4	100	100
70	100	100
75.4	100	100
76.4	250	200
79	100	100
90.2	250	250
90.6	200	200
91.2	170	200
94.3	180	180
101	400	200

6.2.10 Vegetation

At the commencement of the Contract, some vegetation along the road reserve obscures the view of road traffic signs along the National Route. Invasive vegetation was also present in some areas within the road reserve. Maintenance teams have controlled the vegetation through cutting.

Regular mowing of the road reserve's vegetation helps to control overgrowth and lower the risk of fire. General mowing was finished in January–February 2021, April–May 2021, and April–May 2022. November 2020 was the

start of the first cut in this project; February 2021 was the second, and April–May 2022 was the third. August 2022 saw the completion of the fourth cut. The contractor made the seventh cut on section 1 in November 2023. While Section 2 was completed in March 2024, Section 1 is still undergoing the eighth cut by the contractor. Section 2 was completed in August 2024, and the ninth cut of Section 1 was completed in July 2024. In October 2024, the tenth cut was made. The eleventh cut, which started in February 2025, is now in progress. Due to the intense rainfall and subcontractors' financial issues, which were eventually resolved, it has not yet been finished. The eleventh cut was later performed and completed in June-July 2025. The twelfth cut is currently on hold due to subcontractors' financial issues which are currently still being resolved and tended to.

6.2.10.1 Grass

General mowing operations are done by the appointed subcontractor. The table below shows intervals regarding the maintenance of grass along the project routes.

Table 6.5: Grass information

Route	Type	Brush Cutting (%)	Frequency of Mowing (Per Year)	Frequency of Chemical Control (Per Year)
R49 Section 1	General	0	3-4	1-2
R49 Section 2	General	0	3-4	1-2

6.2.10.2 Trees and Shrubs

Undesirable vegetation (i.e., foreign trees and shrubs) in the road reserve may be considered unsafe to road users because it obstructs sight distances, particularly near horizontal curves. The principal contractor has physically removed undesired plants from the road reserve. However, there are still sections of unwanted vegetation in the road reserve that grow randomly (i.e., syringa trees, reed grass.



Figure 6.13 R49 section 1 km 54.4 South-side reed grass cutting



Figure 6.14 R49 Section 1 & 2 – Removal of Syringa trees



Figure 6.15 R49 section 1 & 2 Trimming of trees for a clear view

The table below contains information relating to the physical eradication of undesirable vegetation.

Table 6.6: Trees and shrubs information

Route	Frequency of Pruning (Per Year)	Invasive Vegetation (%)
R49 Section 1	As and when required	3
R49 Section 2	As and when required	5

6.4 DESCRIPTION OF SECTIONS

M0100 Definitions and terms

M0200 General requirements and provisions

M0300 Contractor's establishment on-site and general obligations M0500 Accommodation of traffic

M0400

M0600 Overhaul

M1100 Pavement layers and surface repair M1200 Surface patching and surfaced roads M1300 Crack sealing

M1400 Bleeding repair

M1500 Surface repairs of concrete pavements

M1600 Surface treatment of surfaced roads

M2100 Prefabricated culvert installation and maintenance of existing culverts

M2200 Construction and maintenance of inlet, outlet and other structures. M2300 Subsoil drain installation and maintenance.

M2400 Cleaning of waterway structures

M2500 Cleaning of prefabricated culverts

M2600 Cleaning of concrete drains and channels

M2700 Cleaning and maintenance of existing earth channels

M2800 Concrete channel construction and maintenance of existing channels M3100 Fencing

M3200 Collection and removal of debris and litter M3300 Shoulder repairs and edge build-up removal

M4100 Erection and repair of permanent road traffic signs M4200 Road sign cleaning and removal of illegal signs

M4300 Road studs

M4400 Guard-rail erection and maintenance M4500 Dazzle screen erection and replacement M4600 Road markings

M5100 General erosion protection M5200 Gabion protection

M6100 Controlling vegetation growth: mowing and cutting.

M6200 Chemical control of vegetation and eradication of undesirable vegetation M6300 Removal of undesirable vegetation: physical eradication

M6400 Maintenance and establishment of plants, trees, and shrubs

M6500 Establishment of grass

M7100 Emergency standby team M7200 All-emergency normalisation

M7200 Emergency earth and layer work repairs

M9100 Day works schedule

ANNEXURE 1

LOCALITY PLAN

LOCALITY MAP

NRA X.002-071-2018/1
ROUTINE ROAD MAINTENANCE OF NATIONAL ROAD R49 FROM
MAHIKENG MUNICIPAL BORDER TO KOPFONTEIN BORDER POST



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

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Legend

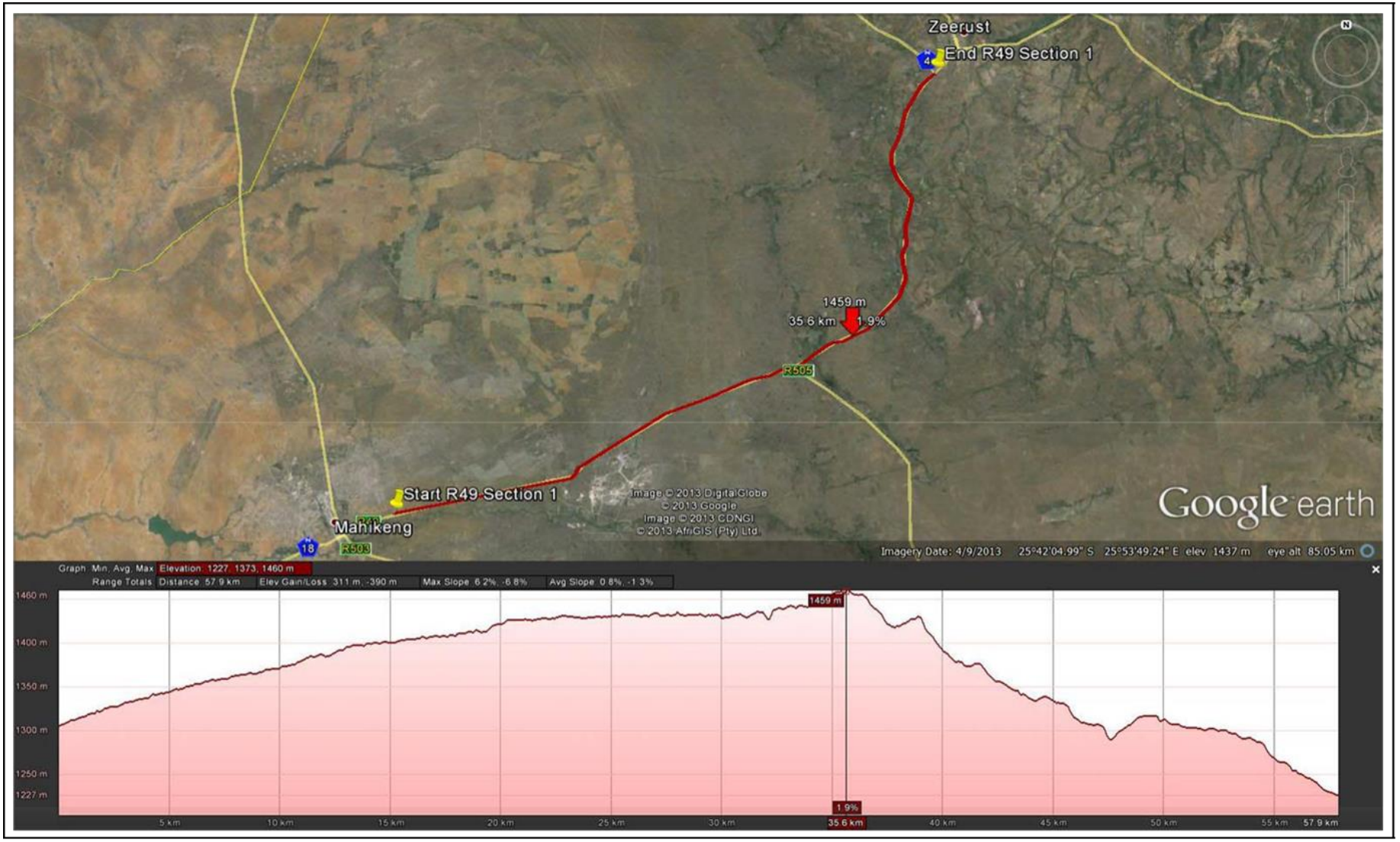
- PROJECT SECTION(S)
- SANRAL ROAD NETWORK
- OTHER ROADS
- PROVINCIAL BOUNDARIES
- DISTRICT MUNICIPALITIES
- LOCAL MUNICIPALITIES
- TOWNS

Disclaimer: SANRAL shall not be responsible for the accuracy and/or completeness of the data presented on this map.

The MAJV | WRP | Aug 2019 | S14614_84 SANRAL PROJECT X.002-071-2018_1.mxd

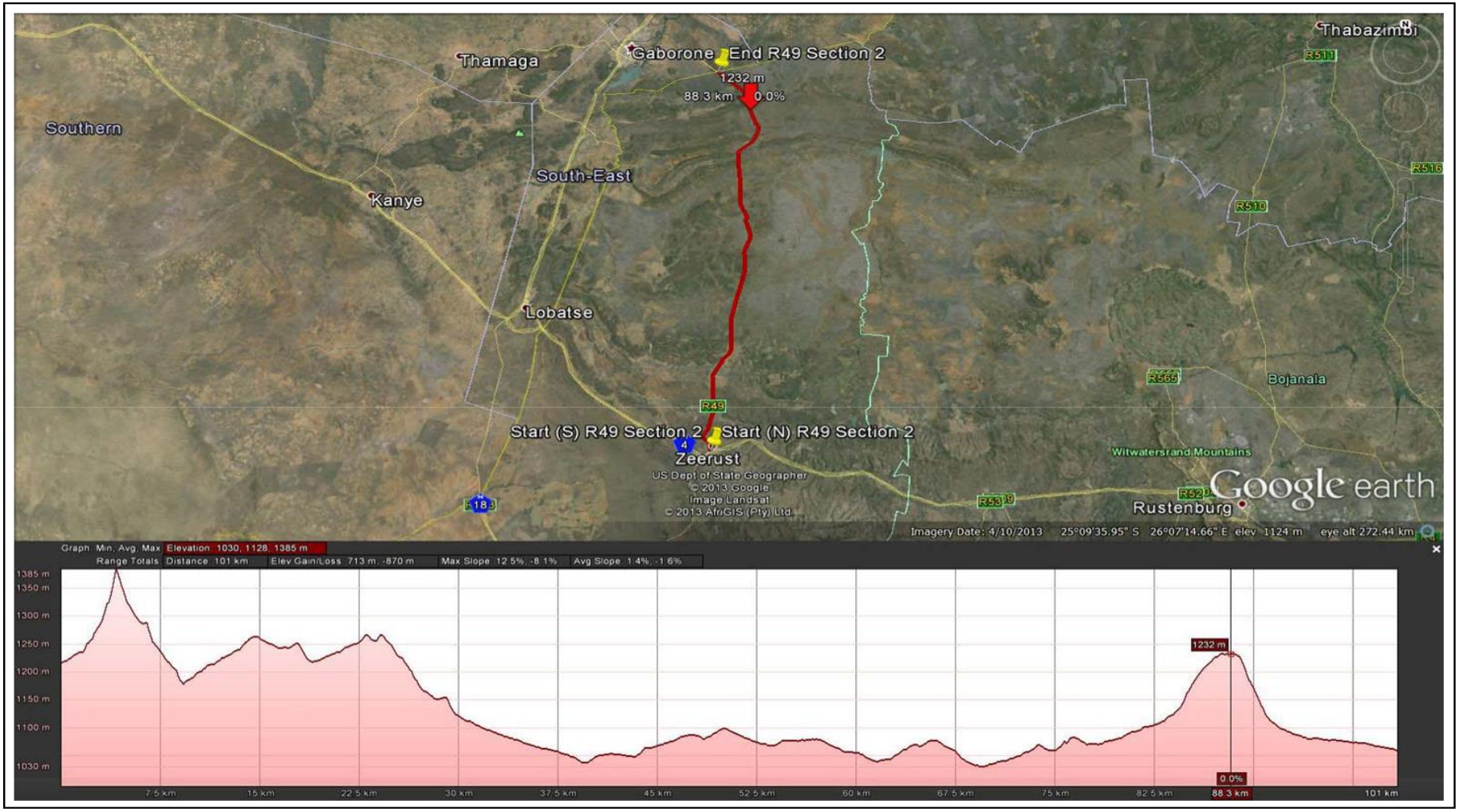
ANNEXURE 2

ROUTE LAYOUTS AND ELEVATIONS



National Route R49 Section 1: Mafikeng (km52.5) to Zeerust (km61.6)

NRA X.002-071-2018/1



National Route R49 Section 2: Zeerust (km0.0) to Kopfontein Border Post.

NRA X.002-071-2018/1