HERITAGE IMPACT ASSESSMENT

(REQUIRED UNDER SECTION 38(8) OF THE NHRA (No. 25 OF 1999)

FOR THE PROPOSED UPGRADING OF ROAD D1814, GAUTENG PROVINCE

Type of development:

Road Upgrade

Client:

TGM Environmental Services CC

Client info:

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Project Reference:
HCAC Project number 217803
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August 2017

APPROVAL PAGE

Project Name	D1814 Road Upgrade
Report Title	Heritage Impact Assessment D1814 Road Upgrade
Authority Reference Number	TBC
Report Status	Draft Report
Applicant Name	Gauteng Department of Roads and Transport

	Name	Signature	Qualifications and Certifications	Date
Document Compilation	Jaco van der Walt		MA Archaeology ASAPA #159	August 2017

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Date	Report Reference Number	Description of Amendment

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REPORT OUTLINE

Appendix 6 of the GNR 326 EIA Regulations published on 7 April 2017 provides the requirements for specialist reports undertaken as part of the environmental authorisation process. In line with this, Table 1 provides an overview of Appendix 6 together with information on how these requirements have been met.

Table 1. Specialist Report Requirements.

Requirement from Appendix 6 of GN 326 EIA Regulation 2017	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae	Section a Section 12
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority	*Declaration of Independence*
(c) Indication of the scope of, and the purpose for which, the report was prepared	Section 1
(cA)an indication of the quality and age of base data used for the specialist report	Section 3.4 and 7.1.
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 8
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 3.4
(e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 3
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 8 and 9
(g) Identification of any areas to be avoided, including buffers	Section 8 and 9
(h) Map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	Section 8
(I) Description of any assumptions made and any uncertainties or gaps in knowledge	Section 3.7
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity **including identified alternatives on the environment** or activities;	Section 8
(k) Mitigation measures for inclusion in the EMPr	Section 9
(I) Conditions for inclusion in the environmental authorisation	Section 9
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 9
(n) Reasoned opinion - (i) as to whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Section 9.2
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report	Section 6
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Refer to EIA report
(q) Any other information requested by the competent authority	Section 9

Executive Summary

TGM Environmental Services CC were appointed to conduct an Environmental Impact Assessment for the proposed construction of the D1814 Road Upgrade. The project is located in the vicinity of Cullinan, where the existing Road D1814 will be upgraded and extends from the R513 in a south-eastern direction. The existing road to be upgraded is situated approximately 4 km east of Mamelodi, 4.5 km north-west of Rayton and 6 km south-west of Cullinan.

HCAC was appointed to conduct a Heritage Impact Assessment of the proposed project to determine the presence of cultural heritage sites and the impact of the proposed development on these non-renewable resources. The study area was assessed both on desktop level and by a field survey. The field survey was conducted as a non-intrusive pedestrian survey to cover the extent of the current road reserve.

No archaeological sites or material was recorded during the survey. Therefore, no further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 for the proposed development to proceed. The paleontological component was addressed in an independent study conducted by Dr Lloyd Rossouw (2017). He recommended exemption from further studies. Please refer to Rossouw (2017).

In terms of the built environment (Section 34), no standing structures older than 60 years occur within the development footprint. In terms of Section 36 of the Act no burial sites were recorded. However, if any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area. The study area consists of an existing dirt road and the area is characterised by electrical infrastructure developments and the proposed development will not impact negatively on significant cultural landscapes or viewscapes. During the Public Participation conducted for this project no heritage concerns was raised.

The impact of the proposed project on heritage resources is considered low and it is recommended that from a heritage perspective the proposed project can commence on the condition that the recommendations made in this report are implemented as part of the EMPr and based on approval from SAHRA. Please refer to Section 10 for the proposed management measures.

DECLARATION OF INDEPENDENCE

Specialist Name	Jaco van der Walt
Declaration of Independence	I declare, as a specialist appointed in terms of the National Environmental Management Act (Act No 108 of 1998) and the associated 2014 Environmental Impact Assessment (EIA) Regulations, that I: • I act as the independent specialist in this application; • I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant; • I declare that there are no circumstances that may compromise my objectivity in performing such work; • I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity; • I will comply with the Act, Regulations and all other applicable legislation; • I have no, and will not engage in, conflicting interests in the undertaking of the activity; • I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority; • All the particulars furnished by me in this form are true and correct; and • I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.
Signature	
Date	18/08/2017

a) Expertise of the specialist

Jaco van der Walt has been practising as a CRM archaeologist for 15 years. He obtained an MA degree in Archaeology from the University of the Witwatersrand focussing on the Iron Age in 2012 and is a PhD candidate at the University of Johannesburg focussing on Stone Age Archaeology with specific interest in the Middle Stone Age (MSA) and Later Stone Age (LSA). Jaco is an accredited member of ASAPA (#159) and have conducted more than 500 impact assessments in Limpopo, Mpumalanga, North West, Free State, Gauteng, KZN as well as he Northern and Eastern Cape Provinces in South Africa.

Jaco has worked on various international projects in Zimbabwe, Botswana, Mozambique, Lesotho, DRC Zambia and Tanzania. Through this he has a sound understanding of the IFC Performance Standard requirements, with specific reference to Performance Standard 8 – Cultural Heritage.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BGG Burial Ground and Graves
BIA: Basic Impact Assessment
CFPs: Chance Find Procedures
CMP: Conservation Management Plan
CRR: Comments and Response Report
CRM: Cultural Resource Management
DEA: Department of Environmental Affairs
EA: Environmental Authorisation
EAP: Environmental Assessment Practitioner
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Programme
ESA: Early Stone Age
ESIA: Environmental and Social Impact Assessment
GIS Geographical Information System
GPS: Global Positioning System
GRP Grave Relocation Plan
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA National Environmental Management Act, 1998 (Act No. 107 of 1998)
NHRA National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID Notification of Intent to Develop
NoK Next-of-Kin
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)
Early Stone Age (~ 2.6 million to 250 000 years ago)
Middle Stone Age (~ 250 000 to 40-25 000 years ago)
Later Stone Age (~ 40-25 000, to recently, 100 years ago)
The Iron Age (~ AD 400 to 1840)
Historic (~ AD 1840 to 1950)
Historic building (over 60 years old)

1 Introduction and Terms of Reference:

Heritage Contracts and Archaeological Consulting CC (**HCAC)** has been contracted by TGM Environmental Services CC to conduct a Heritage Impact Assessment of the proposed infrastructure for the proposed road upgrade. The report forms part of the Environmental Impact Assessment (EIA) Report and Environmental Management Programme Report (EMPR) for the proposed road upgrade, Gauteng Province (Figure 1 & 2)**.**

The aim of the study is to survey the proposed development footprint to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999). The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, review of relevant literature; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey, no heritage sites were identified. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report. SAHRA as a commenting authority under section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) require all environmental documents, complied in support of an Environmental Authorisation application as defined by NEMA EIA Regs section 40 (1) and (2), to be submitted to SAHRA. As such the EIA report and its appendices must be submitted to the case as well as the EMPr, once it's completed, by the Environmental Assessment Practitioner (EAP).

1.1 Terms of Reference

Field study

Conduct a field study to: (a) locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources affected by the proposed towers.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation, SAHRA minimum standards and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999).

Table 2: Project Description

Size of impact area	Approximately 5 km
Magisterial District	Tshwane Local Municipality
1: 50 000 map sheet number	2528 CB
Co-ordinates of the development	25° 43' 26.4052" S, 28° 29' 11.7507" E to 25° 41' 00.2358" S, 28° 27' 36.3346" E

Table 3: Infrastructure and project activities

Type of development: Road Upgrade

Project size: Length of road 4.92km

Project Components:

D1814 Dual Carriageway
Current width of the road Approx. 6-7m (varies)
Width of the upgraded road (including lane, shoulder and pavement width if applicable) 36.2m (including medians)
Current road reserve Approx. 38 45 m (varies)

Existing Storm water infrastructure (All will be replaced)

Chainage:	Converted Coordinates:	Pipe Descriptions:
Ch 0+487	25°41'17.50"S 28°27'41.45"E	3 x 900mm Ø Pipe Culvert
Ch 1+566	25°41'45.95"S 28°28'3.76"E	3 x 900mm Ø Pipe Culvert
Ch 1+744	25°41'50.78"S 28°28'7.68"E	4 x 1050mm Ø Pipe Culvert
Ch 1+794	25°41'52.25"S 28°28'8.72"E	1200mm Ø Pipe Culvert
Ch 3+464	25°42'37.48"S 28°28'42.05"E	900mm Ø Pipe Culvert
Ch 3+927	25°42'50.25"S 28°28'50.37"E	3 x 1050mm Ø Pipe Culvert

Existing Stormwater (All will be extended and additional barrels will be added)

Chainage:	Converted Coordinates:	Pipe Descriptions:
Ch 4+796	25°43'15.04"S 28°29'5.26"E	5 x 1800 x 1200 BC
Ch 4+838	25°43'16.27"S 28°29'6.01"E	4 x 600mm Ø Pipe Culvert
Ch 4+930	25°43'19.11"S 28°29'7.54"E	5 x 600mm Ø Pipe Culvert

New Stormwater

Chainage:	Converted Coordinates:	Pipe Descriptions:
Ch 0+095	25°41'5.85"S 28°27'36.47"E	600mm Ø Pipe Culvert
Ch 0+751	25°41'23.54"S 28°27'46.19"E	600mmØ Pipe Culvert
Ch 2+116	25°42'0.64"S 28°28'15.33"E	600mm Ø Pipe Culvert
Ch 2+716	25°42'16.52"S 28°28'27.81"E	600mm Ø Pipe Culvert
Ch 4+590	25°43'9.01"S 28°29'1.88"E	600mm Ø Pipe Culvert

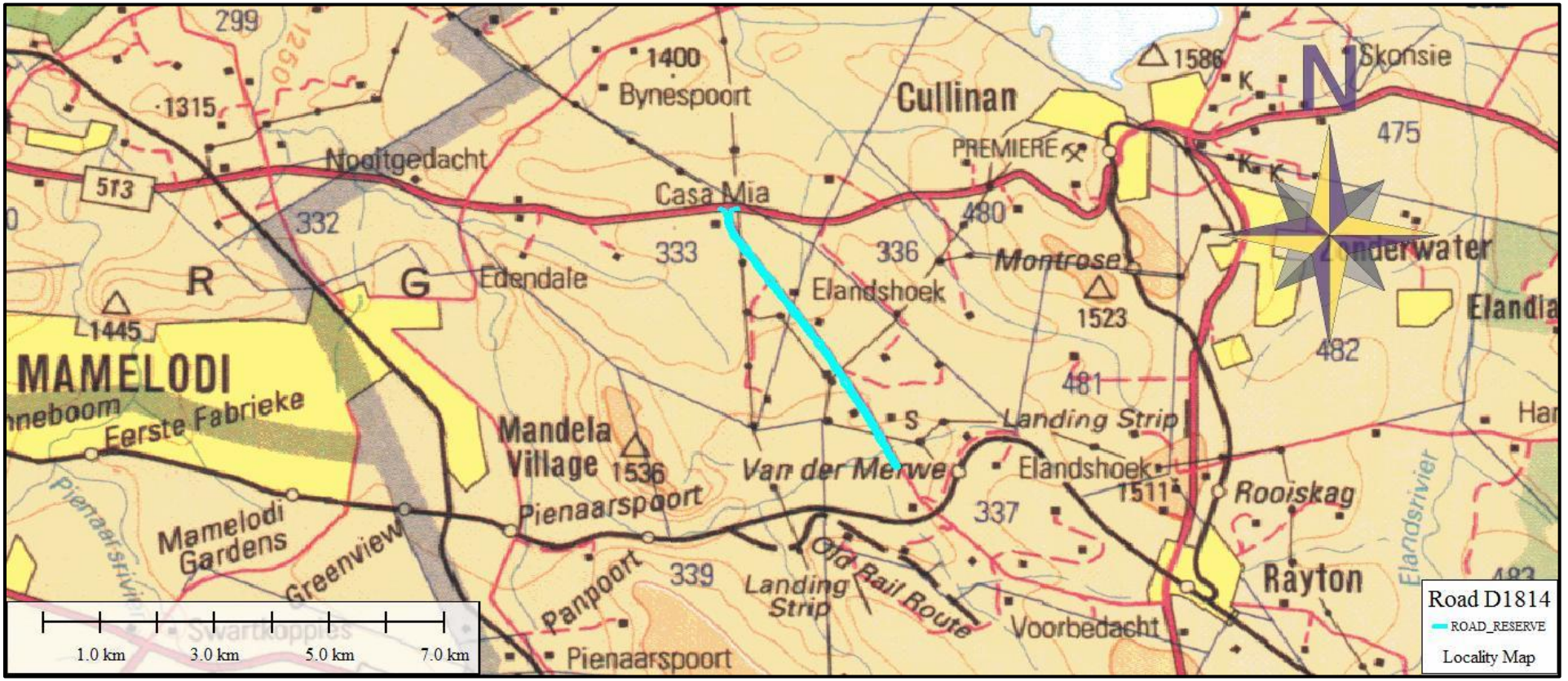

Figure 1. Provincial locality map (1: 250 000 topographical map)

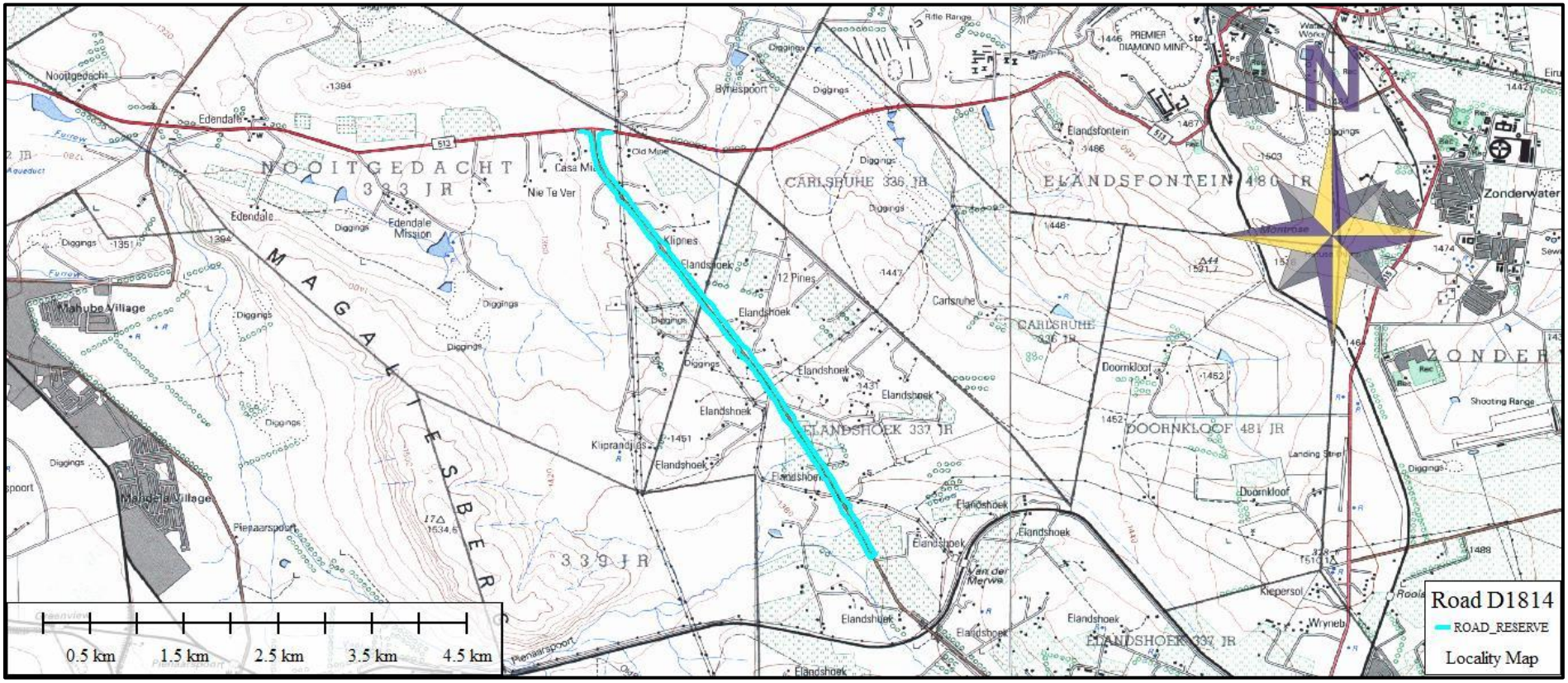

Figure 2: Regional locality map (1:50 000 topographical map).

2 Legislative Requirements

The HIA, as a specialist sub-section of the EIA, is required under the following legislation:

- National Heritage Resources Act (NHRA), Act No. 25 of 1999)
- National Environmental Management Act (NEMA), Act No. 107 of 1998 - Section 23(2)(b)
- Mineral and Petroleum Resources Development Act (MPRDA), Act No. 28 of 2002 - Section 39(3)(b)(iii)

A Phase 1 HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of heritage specialist input is to:

- Identify any heritage resources, which may be affected;
- Assess the nature and degree of significance of such resources;
- Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- Assess the negative and positive impact of the development on these resources; and
- Make recommendations for the appropriate heritage management of these impacts.

The HIA should be submitted, as part of the impact assessment report or EMPr, to the PHRA if established in the province or to SAHRA. SAHRA will ultimately be responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the impact assessment report and/or EMPr, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years' post-university CRM experience (field supervisor level). Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIA's are primarily concerned with the location and identification of heritage sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision-making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for with SAHRA by the applicant before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance No. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

3 METHODOLOGY

3.1 Literature Review

A brief survey of available literature was conducted to extract data and information on the area in question to provide general heritage context into which the development would be set. This literature included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS).

3.2 Genealogical Society and Google Earth Monuments

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located; these locations were marked and visited during the field work phase. The database of the Genealogical Society was consulted to collect data on any known graves in the area.

3.3 Public Consultation and Stakeholder Engagement:

Stakeholder engagement is a key component of any BAR process, it involves stakeholders interested in, or affected by the proposed development. Stakeholders are provided with an opportunity to raise issues of concern (for the purposes of this report only heritage related issues will be included). The aim of the public consultation process was to capture and address any issues raised by community members and other stakeholders during key stakeholder, land owner, village and public meetings. The process involved:

- Placement of advertisements and site notices
- Stakeholder notification (through the dissemination of information and meeting invitations);
- Stakeholder meetings undertaken with I&APs;
- Authority Consultation
- The compilation of a EIA Report.
- The compilation of a Comments and Response Report (CRR).

3.4 Site Investigation

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of sites/areas identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

Table 4: Site Investigation Details

	Site Investigation
Date	August 2017
Season	Winter –vegetation in the study area is low and archaeological visibility is high. The impact area was sufficiently covered (Figure 3) to adequately record the presence of heritage resources.

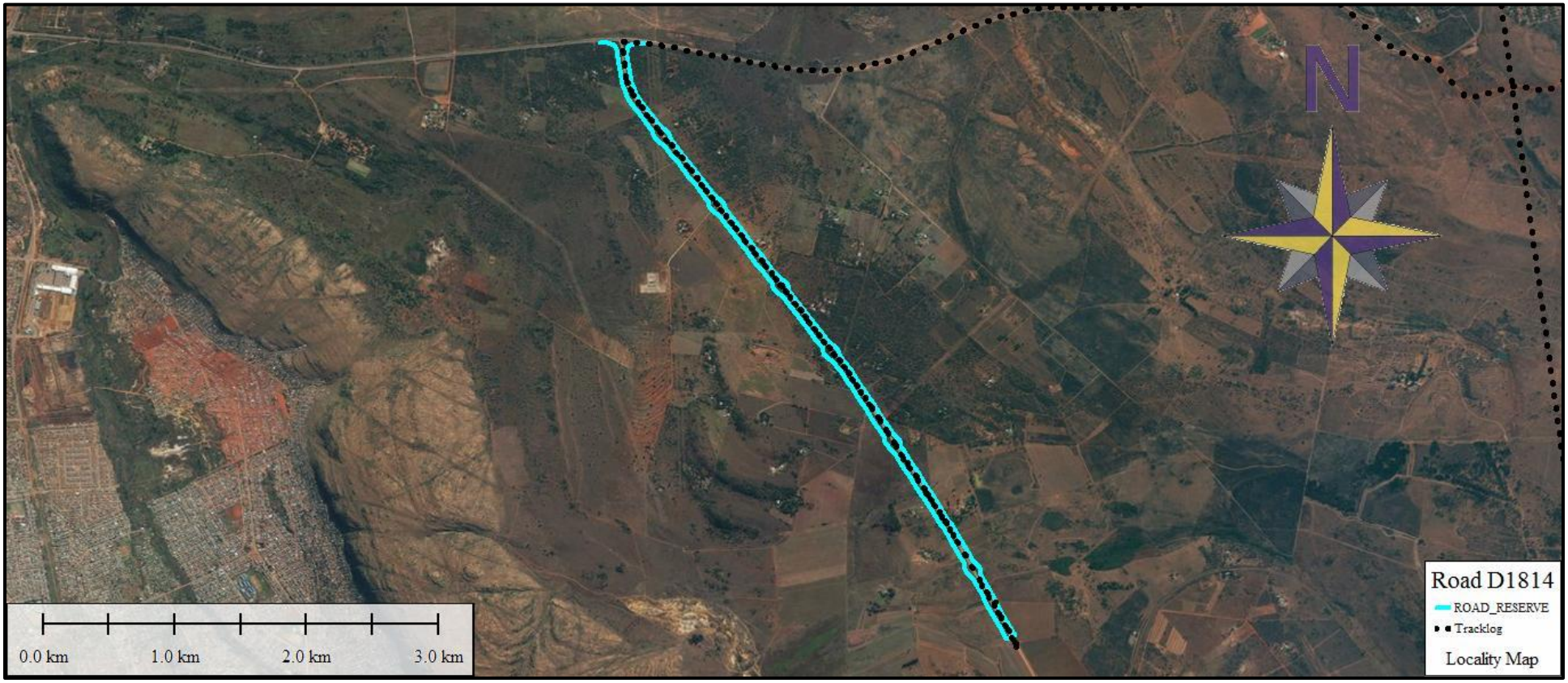

Figure 3:Track logs of the survey in black.

3.5 Site Significance and Field Rating

Section 3 of the NHRA distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- Its importance in/to the community, or pattern of South Africa's history;
- Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- Sites of significance relating to the history of slavery in South Africa.

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface. This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance with cognisance of Section 3 of the NHRA:

- The unique nature of a site;
- The integrity of the archaeological/cultural heritage deposits;
- The wider historic, archaeological and geographic context of the site;
- The location of the site in relation to other similar sites or features;
- The depth of the archaeological deposit (when it can be determined/is known);
- The preservation condition of the sites; and
- Potential to answer present research questions.

In addition to this criteria field ratings prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 10 of this report.

FIELD RATING	***GRADE***	***SIGNIFICANCE***	***RECOMMENDED MITIGATION***
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP. A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP. B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

3.6 Impact Assessment Methodology

The criteria below are used to establish the impact rating on sites:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
  - the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
  - the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
  - medium-term (5-15 years), assigned a score of 3;
  - long term (> 15 years), assigned a score of 4; or
  - permanent, assigned a score of 5;
  - The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
  - The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
  - The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
  - the **status**, which will be described as either positive, negative or neutral.
  - the degree to which the impact can be reversed.
  - the degree to which the impact may cause irreplaceable loss of resources.
  - the *degree* to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:
S=(E+D+M) P
S = Significance weighting
E = Extent
D = Duration
M = Magnitude
P = Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

3.7 Limitations and Constraints of the study

The authors acknowledge that the brief literature review is not exhaustive on the literature of the area. Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. Similarly, the depth of the deposit of heritage sites cannot be accurately determined due its subsurface nature. This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process if relevant. It is possible that new information could come to light, which might change the results of this Impact Assessment. It should be noted that access outside of the road reserve was restricted as the landowners indicated that the road upgrade will be limited to the road reserve.

4 Description of Socio Economic Environmental

The Tshwane IDP (2006 – 2011) indicated that: "*From a socio-economic demographic perspective Tshwane has seen some improvements, despite the fact that it continues to face serious challenges. The City's population has grown slower than the national average, and in 2004 was estimated to be around 2,2 million people, of which 40,6% of the population fell within the 15-34 year age bracket. Compared to the national average, the City's residents are better skilled, reflect high levels of literacy, the City provides employment for a larger percentage of its residents, its human development ranking is high and it has a per capita income above the national average. These figures have resulted in employment, and wage per capita value added improvements, although, poverty and unemployment remain problematic. In 2003 Tshwane's Economically Active Population (EAP) amounted to 48% of the total population which was higher than the national but lower than the provincial average. While this is positive, employment opportunities were lagging behind, which led to a high level of unemployment. Many people were absorbed into the informal market, but the latter is believed to have levelled off since 2001. Statistics have further shown that 15,3% of households had no income in 2001 (a doubling from 1996), the number of people living in poverty has increased and the group hardest hit in respect of unemployment are the youth (20-24 years).*" Priorities of the IDP included economic development and job creation

5 Description of the Physical Environment:

The project is located in the vicinity of Cullinan. The existing Road D1814 will be upgraded and extends from the R513 in a south-eastern direction. The existing road to be upgraded is situated approximately 4 km east of Mamelodi, 4.5 km north-west of Rayton and 6 km south-west of Cullinan. The current road reserve is clearly marked by property fences some of which is electrified and game fences. The area is characterised by numerous powerlines and some properties are used for agricultural purposes. The current road reserve is highly overgrown in some areas with invader species while the grass have been cut in other areas (Figure 4 -7). The vegetation is predominantly Marikana Thornveld in the Savannah biome (Mucina & Rutherford 2006). Historical imagery on Google earth indicates that the land has been fallow for a number of years.

Figure 4. General view of study area.

Figure 5. General site conditions

Figure 6. Overgrown section of the road reserve.

Figure 7. Areas used for agricultural purposes next to road reserve.

6 Results of Public Consultation and Stakeholder Engagement:

Adjacent landowners and the public at large were informed of the proposed activity as part of the EIA process. Site notices and advertisements notifying interested and affected parties were placed at strategic points and in local newspapers as part of the process. Interested and affected parties were given an opportunity to register and comment on the project.

7 Literature / Background Study:

7.1 Literature Review

CRM studies close to the study area include:

Author	Year	Project	Findings
Birkholtz, P.	2007	Phase 1 Heritage Impact Assessment Proposed Mining Activities On Portion 47 (A Portion Of Portion 45) Of The Farm Nooitgedacht 333 JR Cullinan Magisterial District, Gauteng.	Five sites were located which can be classified into three different types, namely two cemeteries, two historic military sites and one Late Iron Age site.
Van Schalkwyk, J. A.	2012	Heritage Impact Assessment For The Proposed Upgrade Of A Section Of The R513 (P2-5), Cullinan Region, Gauteng Province.	No sites, features or objects of cultural heritage significance were found in the study area
Muhomba, C. J.	2015	Heritage Impact Assessment For The Proposed Poultry Breeder In Portion 6 Of The Farm Kafferskraal 475 JR In Cullinan, Gauteng Province (GDARD REF: 002/14-15/0239)	Graves

7.2 General History of the area

7.2.1 Archaeological Background

South Africa has a long and complex Stone Age sequence of more than 2 million years. The broad sequence includes the Later Stone Age, the Middle Stone Age and the Earlier Stone Age. Each of these phases contain sub-phases or industrial complexes, and within these we can expect regional variation regarding characteristics and time ranges. For Cultural Resources Management (CRM) purposes it is often only expected/ possible to identify the presence of the three main phases.

Yet sometimes the recognition of cultural groups, affinities or trends in technology and/or subsistence practices, as represented by the sub-phases or industrial complexes, is achievable. The three main phases can be divided as follows;

- Later Stone Age; associated with Khoi and San societies and their immediate predecessors. Recently to ~30 thousand years ago

- Middle Stone Age; associated with Homo sapiens and archaic modern humans. 30-300 thousand years ago.

- Earlier Stone Age; associated with early Homo groups such as Homo habilis and Homo erectus. 400 000-> 2 million years ago.

A single Later Stone Age site is on record in the greater study area (called Ford Troye) (Bergh 1999).

According to Bergh (1999) there are also 125 Late Iron sites on record in the greater study area. Several Stone Walled Settlements is found in the general study area associated with the Manala Ndebele. These Southern Ndebele speaking people occupied the area between the 1600's up to the 1800's.

7.2.2 Historical Background

The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's (Bergh 1999: 10). It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes. (Bergh 1999: 14; 116-119) It seems that, in 1827, Mzilikazi's Ndebele started moving through the area where Johannesburg is located today. This group went on raids to various other areas in order to expand their area of influence. (Bergh 1999: 11)

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720's.

It was however only by the late 1820's that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39) By 1939 to 1940, farm boundaries were drawn up in an area that includes the present-day Johannesburg and Krugersdorp (Bergh 1999: 15).

7.2.3 Battles close to the Study area

The Battle of Diamond Hill (or the Battle of Donkerhoek) was fought close to the proposed development area on 11 June 1900. The Boers under leadership of General Louis Botha suffered a loss of around 30 men, of whom 11 were killed in this battle. The battle took place after Lord Roberts occupied Pretoria and the Boers moved their capital to Machadodorp. General Botha established a line of defence about 30 kilometres east of Pretoria on both sides of the railway line to prevent the British army moving east towards Machadodorp. The frontline stretched over 40 km (Bergh 1999). The British advanced against the Boers to clear the Boers from the areas close to Pretoria. The British suffered 180 casualties in the battle and on the 12th of June Botha led his men into the cover of darkness with a sense of victory. This battle boosted the Boers morale and the war continued for two more years (Von der Heyde 2013).

7.2.4 Cullinan and Rayton

The village of Cullinan was named after Sir Thomas Cullinan. The village is known as of being the site of discovery of the world's largest diamond.

Premier Mine was originally part of the farm owned by Cornelis Minnaar, namely Elandsfontein no. 85. It was registered on the 7th of November 1859. A portion of the farm was sold to his brother Roelof Minnaar in 1861, who in turn sold the northern part of the farm to Willem Prinsloo for £570 on the 7th December 1896 (http://www.cullinan-conservancy.org/cultural-heritage.php).

Thomas Major Cullinan, a building contractor wanted to obtain an option on the Prinsloo farm but could not. When Willem Prinsloo died in 1898, Maria Prinsloo became the new owner just before the Anglo Boer War (1898-1902) broke out. After the war Maria Prinsloo's brothers returned to the farm. The Prinsloo family were in need of money. When Thomas Cullinan started new negotiations with the family, they agreed to the sale of the farm for the sum £52,000 .

'Rayton Junction', as it was first known, started out as a tin shack mining town on the farm Elandshoek. During its boom days the town served the needs of thousands of diggers and prospectors working for the Schiller, Montrose and Dunmore mining companies. The original Rayton Junction was laid out along a spur of the main NZASM railway line, which was completed in 1895 to connect the Republic of Transvaal's capital, Pretoria to the port in Delagoabay, Mozambique. Officials in the Montrose Diamond Mining Company did the town planning and named the hamlet after Lady Rachel Ray Williston, wife of the company's first manager, Colonel Balliston.

The town's first—and then only—brick building was the original magistrate's office, which dates from this early time. Between 1900 and 1910 a railroad was constructed between Rayton and Cullinan. Thomas Cullinan's company was initially registered as the Premier Syndicate on November 6, 1902. They reregistered on 1 December 1902 as The Premier (Transvaal) Diamond Mining Company LTD (http://www.cullinan-conservancy.org/cultural-heritage.php).

Prospecting started immediately. In April 1903 William McHardy became the first general manager. Production began on 24th April 1903. By 1904 the mine already employed more than 2000 people. On the 25th January 1905 a diamond with the mass of 3,106 carats in its uncut state was found in the side-wall of the open pit. The Cullinan Diamond is still the largest gemstone ever found. Two of the stones cut from the Cullinan Diamond are now found in the British Crown Jewels; the 530-carat "Star of Africa", which is set in the septre and the 317-carat "Lesser Star of Africa" which is set in the Imperial State Crown (http://www.cullinan-conservancy.org/cultural-heritage.php).

1914 proved to be the start of difficult times. Three hundred and eighty one European employees were discharged for provoking industrial disturbances at the mine. During the outbreak of World War 1 in Europe in August 1914, diamond prices tumbled and subsequently all operations at the Premier mine were suspended.

Premier Mine resumed production on the 16th January 1916. The De Beers Consolidated Mines acquired a controlling interest in the mine in 1917. In 1918 almost every family in the Cullinan community lost a member to the flu epidemic (http://www.cullinan-conservancy.org/cultural-heritage.php).

The great depression in 1929 affected the rest of the world and in 1932 operations at the Premier mine were suspended again. By 1933 deprivation and hunger were experienced not only in Cullinan in the entire country. The retrenched employees were permitted to remain in occupation of the company's houses rent free. They were also provided with water, lights, sanitary and medical services free of charge. The nearby Zonderwater farm came to the rescue by providing soup kitchens for the hungry children. By the time World War 2 started in 1939, the village was nearly deserted.

From 1941 to 1945 the biggest concentration of Italian Prisoners of War (over 90 000), who were captured in North Africa, were housed in South Africa at Zonderwater Prison. During this period the army took over the village, even the golf course was used to pitch tents on.

Among these prisoners of war were musicians, craftsman and artists who painted eight murals in 1942 in the old Recreation Club Hall. The 3 m x 4 m mural paintings depicted historical scenes from South Africa and Britain. The paintings were probably copied from photographs or post cards, as most are copies of well-known artists like Erich Mayer and W.H. Coetzer (http://www.cullinan-conservancy.org/cultural-heritage.php).

During 1948 the Recreational Hall was converted into a cinema. Unfortunately most of the murals were damaged when boards were placed over them to improve the acoustics. The pressed steel ceiling, which dated back from 1912 - when the Recreational Hall was rebuilt after a fire - was also covered by a false acoustic ceiling. Nearly fifty years later in 1993 the hidden murals were again uncovered. Great effort was made to restore the murals and this was completed in 1998.

After the end of the war in 1945, numerous prisoners chose to remain in South Africa. Only 30,000 were permitted to remain. Around 264 prisoners were buried in the Italian military cemetery just outside Cullinan. Many descendants of the Italian POW's have been making an annual pilgrimage to the Italian War Cemetery ever since.

In 1945 all the rain water that accumulated during the twelve years the mine had been closed, was pumped out of the big hole and the mine resumed production. The mine is still producing some of the world's finest diamonds today (http://www.cullinan-conservancy.org/cultural-heritage.php).

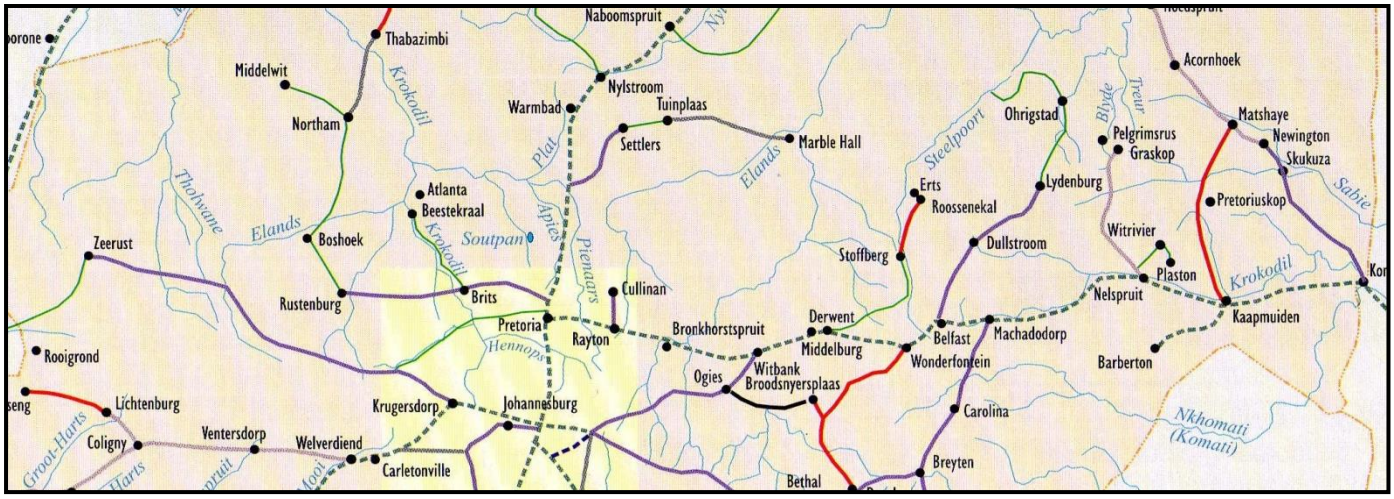

Figure 8: Enlarged section of the railroad development map from Bergh 1999.

7.2.5 Cultural Landscape

The cultural landscape of the surrounding area is characterized by game farming and the existing gravel road development as well as power lines.

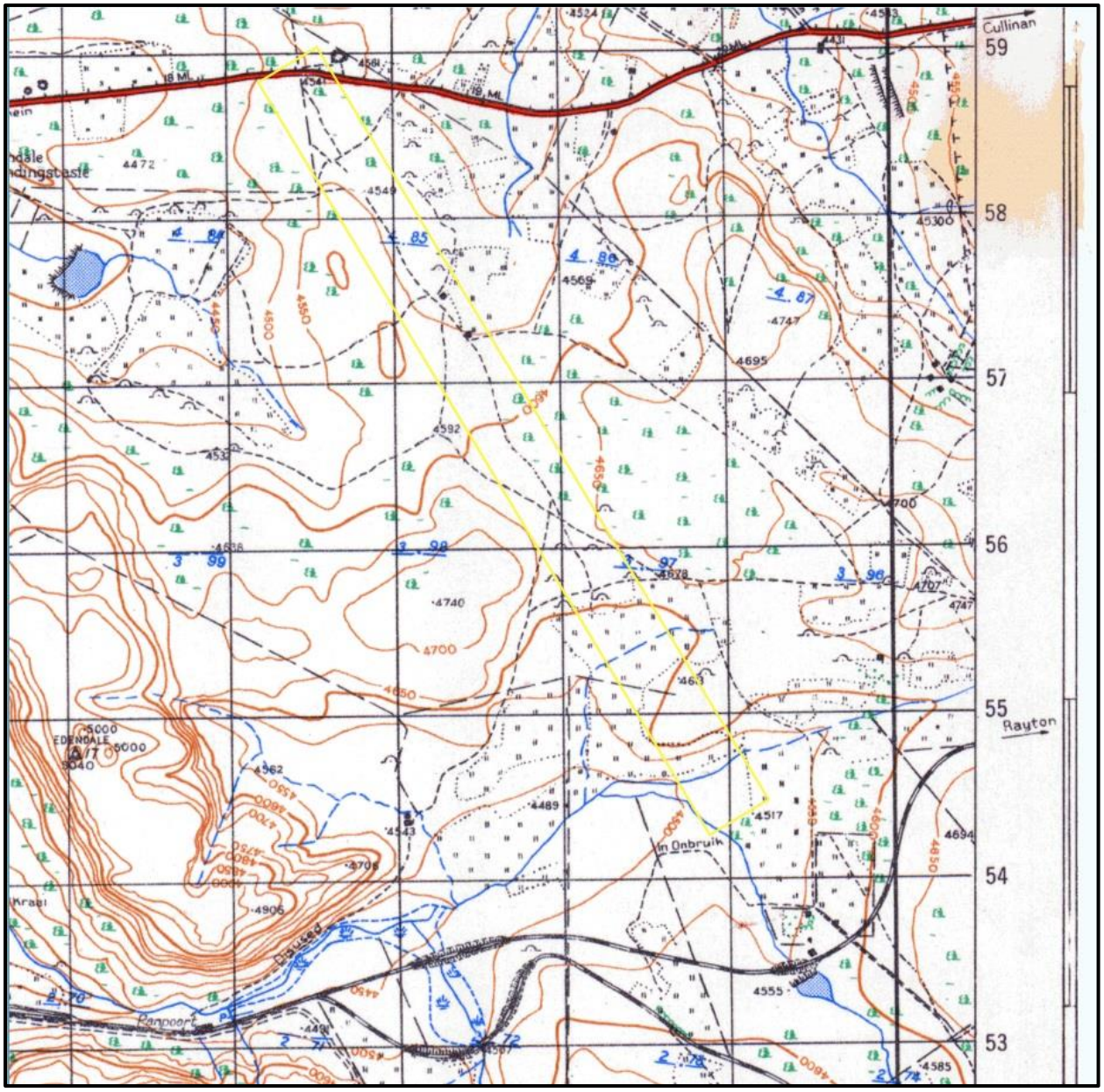

Figure 9. 1943 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. A farm road can be seen running along approximately the same route as the modern road. A number of buildings and huts can be seen in the study area, and plantations and cultivated lands are also visible. (Topographical Map 1943)

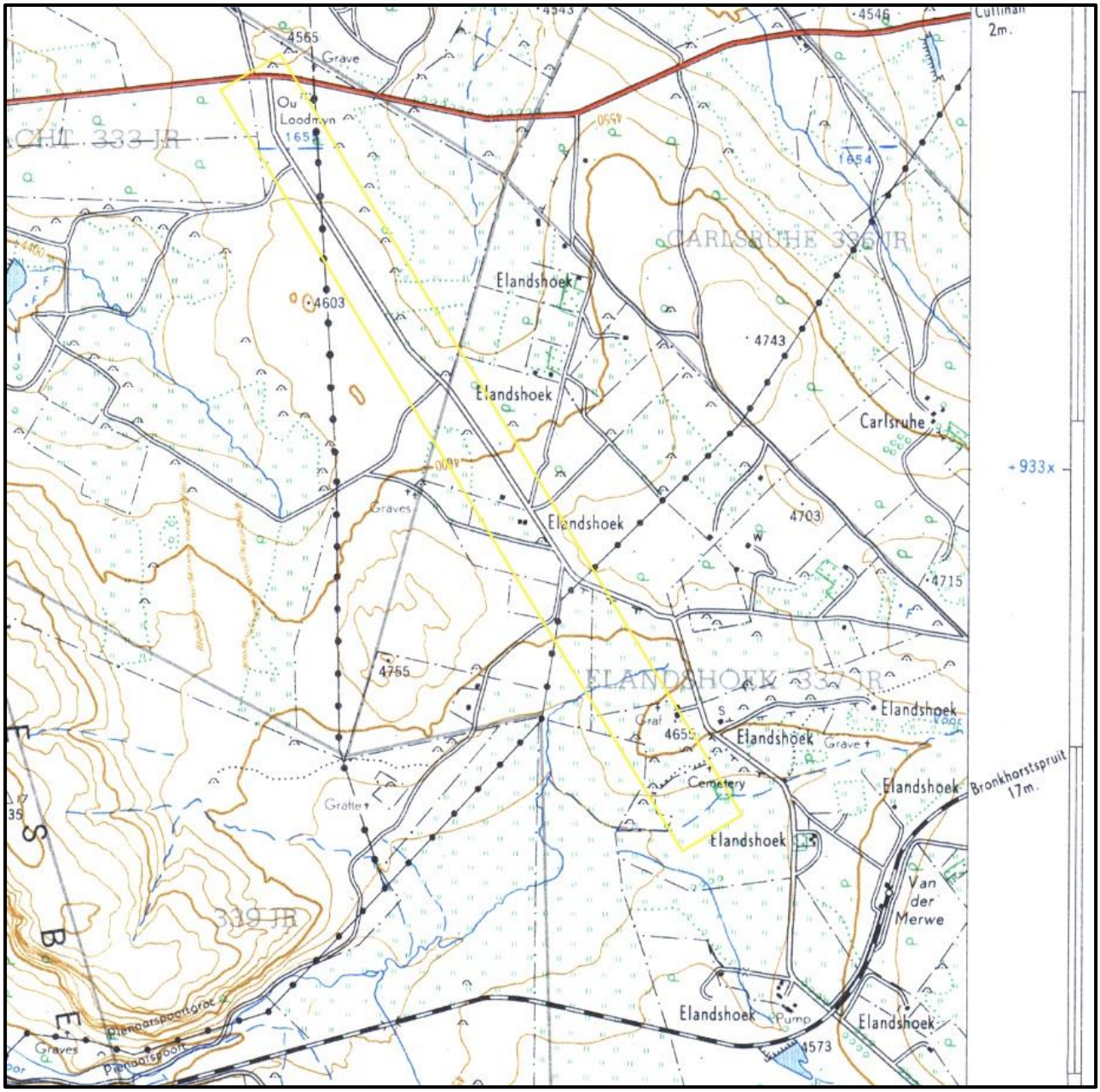

Figure 10. 1965 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. A secondary road ran along this route. An old lead mine can be seen in the northern part of the study area, near the main road. Several huts and a number of buildings can be seen further to the south. Two cemeteries and more huts are visible in the most southern part of the study area. Power lines and a number of farm roads intersected the area of study, and cultivated fields are also visible in this area. (Topographical Map 1965)

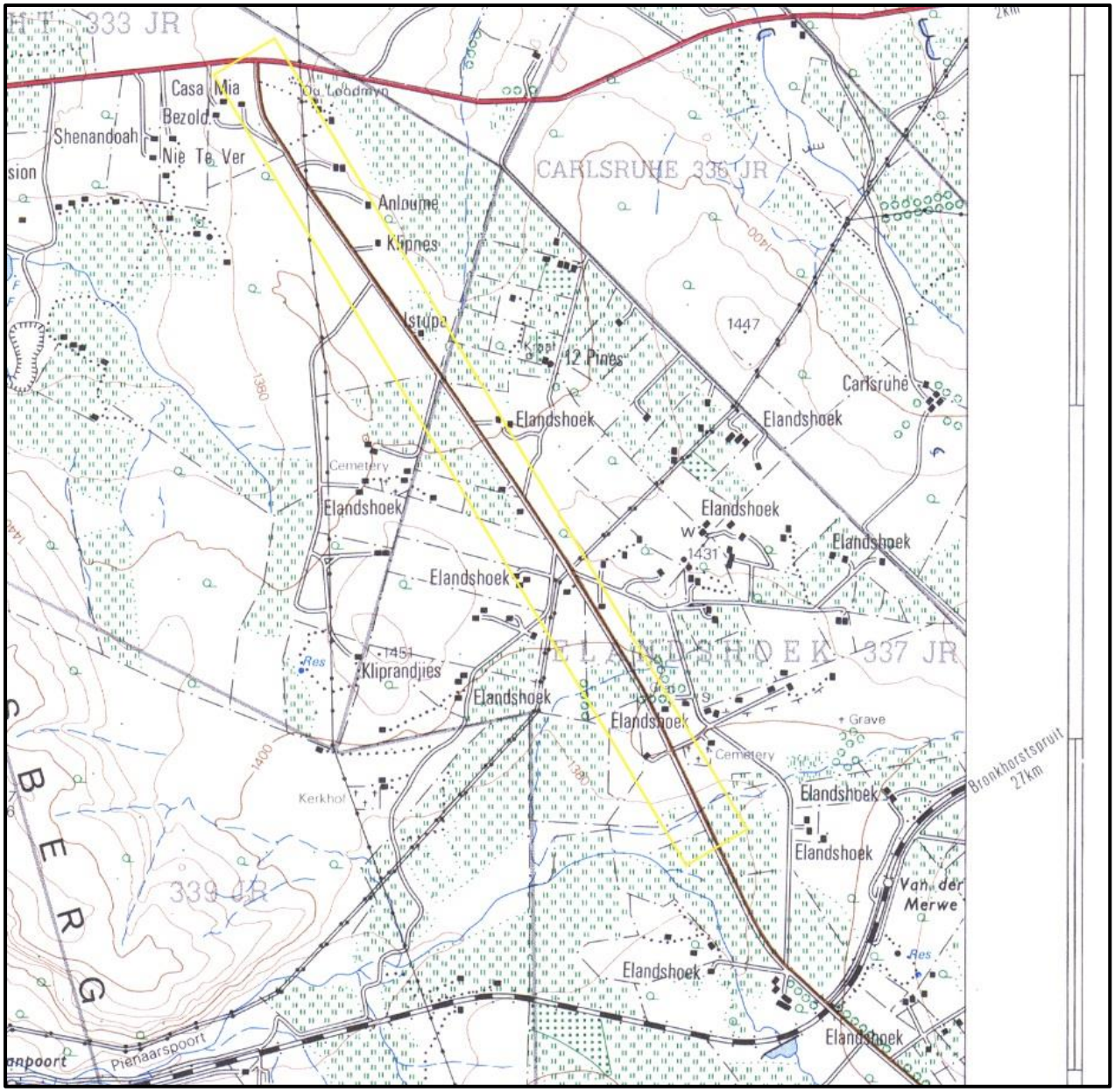

Figure 11. 1975 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. A secondary road ran along this route. An old lead mine can be seen in the northern part of the study area, near the main road. Power lines and a number of farm roads intersected the area of study, and cultivated fields are also visible in this area. A number of buildings can be seen within the study area, but no huts are visible. (Topographical Map 1975)

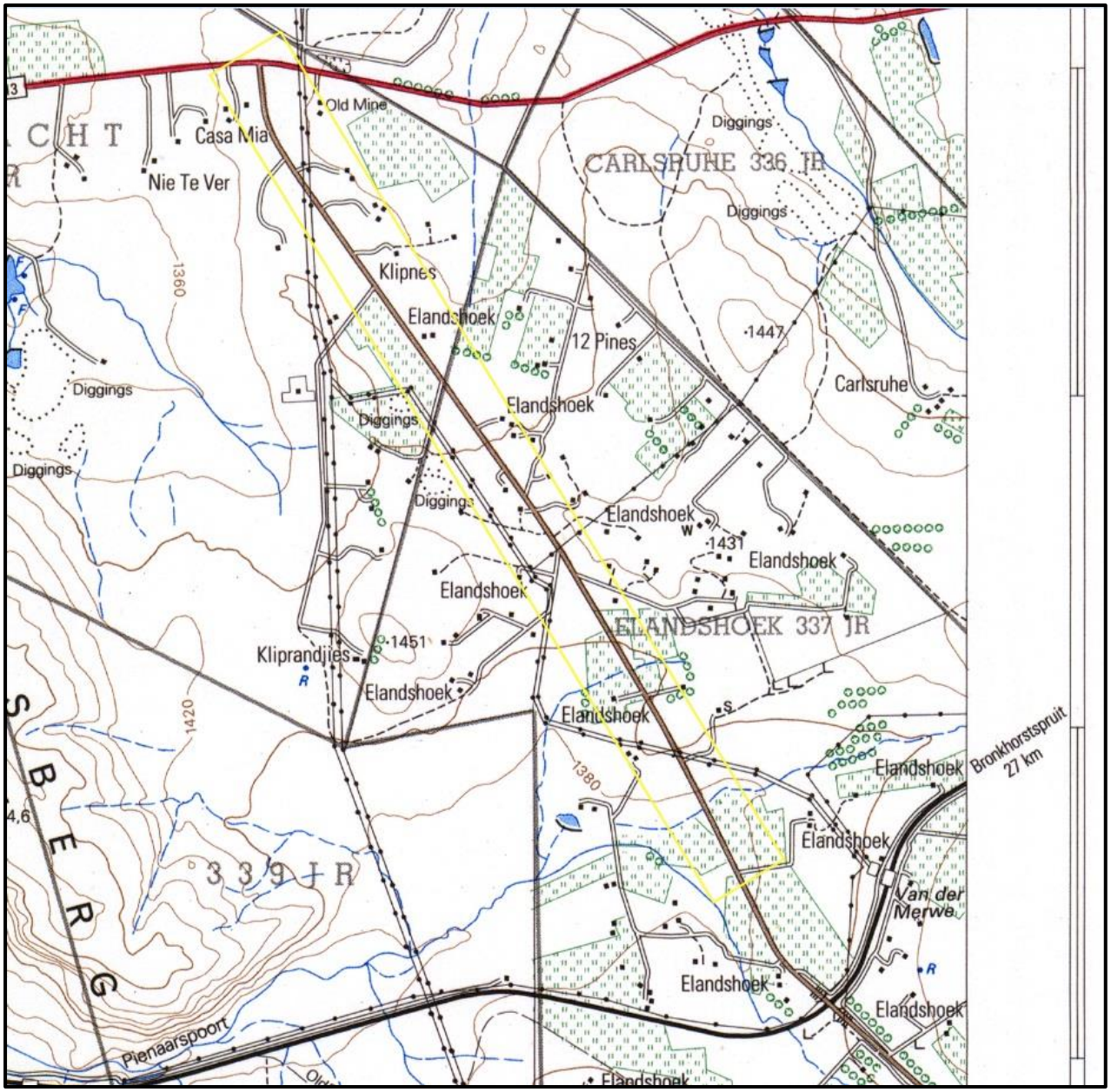

Figure 12. 1995 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. Not much had changed since 1975. (Topographical Map 1995)

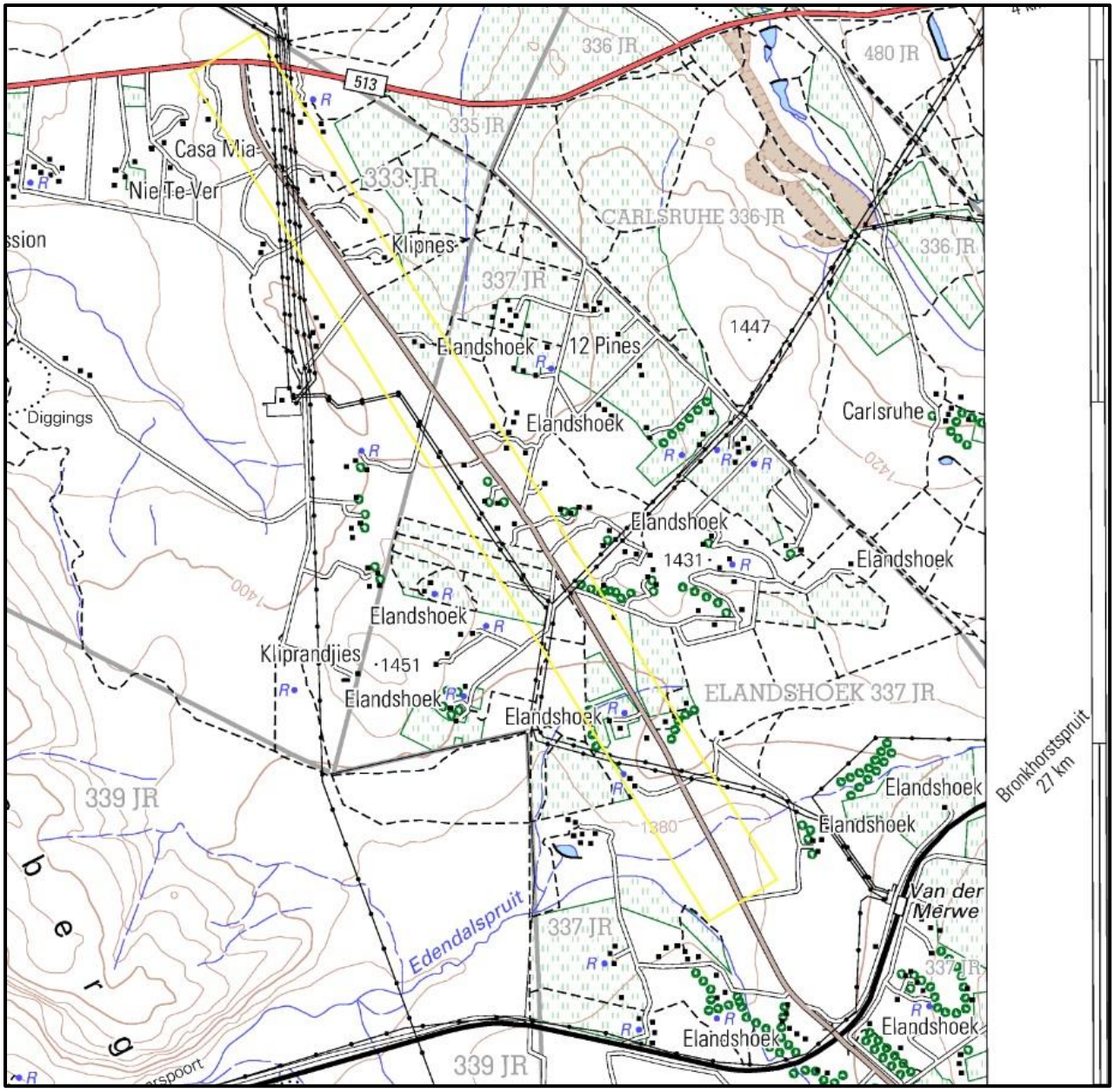

Figure 13. 2001 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. Not much had changed since 1995. (Topographical Map 2001)

8 Findings of the Survey

It is important to note that only the current road reserve was surveyed in detail. Where access was possible areas outside of the road reserve was also assessed. These areas have however been impacted on by agricultural activities. The current road reserve is highly disturbed by the construction of the existing road and would have destroyed any surface indicators of heritage sites.

Two wooden crosses have been recorded at 25° 42' 42.0121" S, 28° 28' 44.9291" E possibly in memory of someone who passed away here. The site was mapped as Feature 1 (Figure 15 & 16). No one is tending to these crosses and one has fallen over while the other has been broken in half. Following Section 37 of the Act (Public monuments and memorials) and the HWC guideline on Monuments and Memorials, this would likely not qualify as a heritage resource, because it does not "contribute to an understanding of South Africa's cultural heritage" and does not have "particular aesthetic characteristics valued by a community or cultural group", or a "strong or special association with the life and work of a person, group or organization of importance in the history of South Africa" .

Figure 14. Wooden crosses in the study area.

Figure 15: Location of Feature 1 in relation to the project footprint.

Figure 16: Location of Feature 1 within the road reserve.

In terms of the Act no sites or finds of any heritage value or significance were identified with in the road reserve as described below.

8.1 Built Environment (Section 34)
No standing structures older than 60 years occur in the study area.

8.2 Archaeology and Palaeontology (Section 35)
No Stone Age artefacts or stone walled structures were recorded in the study area. The paleontological component was addressed in an independent study conducted by Dr Lloyd Rossouw (2017). He recommended exemption from further studies.

8.3 Grave and burial sites (Section 36)
No graves or burial sites were identified in the study area.

8.4 Cultural Landscapes, Intangible and Living Heritage.

Long term impact on the cultural landscape is considered to be negligible as the development consist of the upgrade of an existing road. The surrounding area is characterised by rural areas with agricultural elements. Visual impacts to scenic routes and sense of place are also considered to be low due to the existing developments in the area.

8.5 Battlefields and Concentration Camps

There are no battlefields or related concentration camp sites located in the study area.

8.6 Potential Impact
8.6.1 Pre-Construction phase:
It is assumed that the pre-construction phase involves the removal of topsoil and vegetation as well as the establishment of road infrastructure needed for the construction phase. These activities can have a negative and irreversible impact on any heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources. For this development, no sites were recorded and no impacted is expected.

8.6.2 Construction Phase
During this phase, the impacts and effects are similar in nature but more extensive than the pre-construction phase. These activities can have a negative and irreversible impact on any recorded heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

8.6.3 Operation Phase:
No impact is envisaged for the recorded heritage resources during this phase.

Cumulative impacts occur from the combination of effects of various impacts on heritage resources. The importance of identifying and assessing cumulative impacts is that the whole is greater than the sum of its parts. In the case of the development the project will, with the recommended mitigation measures and management actions, not impact any heritage resources directly. However, this and other projects in the area could have an indirect impact on the heritage landscape. The lack of any heritage resources in the immediate area minimises additional impact on the landscape.

Impact evaluation of the proposed project on heritage resources

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological and paleontological material or objects.		
	Without mitigation	**With mitigation (Preservation/ excavation of site)**
Extent	Regional (4)	Regional (4)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (4)	Low (3)
Probability	Not probable (2)	Not Probable (2)
Significance	**26 (Low)**	**24 (Low)**
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes unless sites can be preserved.
Can impacts be mitigated?	Yes	Through preservation or excavation of sites.
Mitigation: Due to the lack of apparent significant heritage resources no further mitigation is required prior to construction.		
Cumulative impacts: A Chance Find Procedure should be incorporated into the EMPr should any sites be identified during the construction process.		
Residual Impacts: If sites are destroyed this results in the depletion of archaeological record of the area. However, if sites are recorded and preserved or mitigated this adds to the record of the area.		

8.7 Evaluation of Impacts Relative to Sustainable Social and Economic Benefits

In terms of Section 38(3)(d) the impacts on heritage resources relative to the sustainable social and economic benefits to be derived from the development must be assessed. For this project, there is a clear economic benefit to be derived from the proposed development and no significant heritage resources will be impacted.

9 Recommendations and conclusion

No archaeological sites were recorded during the survey. Therefore, no further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 for the proposed development to proceed. The paleontological component was addressed in an independent study by Rossouw (2017). He recommended no further studies but that a protocol for finds should be included. In terms of the built environment of the area (Section 34), no standing structures older than 60 years occur within the study area. Similarly, no burial sites (Section 36) were recorded. No public monuments are located within or close to the study area. Long term impact on the cultural landscape is considered to be negligible as the development consist of an existing road that will be upgraded. The surrounding area is characterised by rural areas with agricultural elements and the wider area has been subjected to extensive mining activities. Visual impacts to scenic routes and sense of place are also considered to be low due to the existing developments in the area. During the public participation process no heritage concerns were raised.

The impacts to heritage resources are considered low and it is recommended that from a heritage perspective the proposed project can commence on the condition that the following recommendations are implemented as part of the EMPr and based on approval from SAHRA

- A paleontological protocol for finds should be implemented. .
- If any graves are located in future, they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation.
- The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below.

9.1 Chance Find Procedures

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or rock engraving, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.

- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.

The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

9.2 Reasoned Opinion

The impact of the proposed project on heritage resources is considered low and no further pre-construction mitigation is required. Furthermore, the socio-economic benefits also outweigh the possible impacts of the development if the correct mitigation measures are employed; the project will ensure employment opportunities both during the construction and operational phases of the project.

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11 Appendices:

Curriculum Vitae of Specialist

Jaco van der Walt
Archaeologist

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Education:

Particulars of degrees/diplomas and/or other qualifications:

Name of University or Institution:		University of Pretoria
Degree obtained	**:**	BA Heritage Tourism & Archaeology
Year of graduation	**:**	2001
Name of University or Institution:		University of the Witwatersrand
Degree obtained	**:**	BA Hons Archaeology
Year of graduation	**:**	2002
Name of University or Institution	**:**	University of the Witwatersrand
Degree Obtained	**:**	MA (Archaeology)
Year of Graduation	:	2012
Name of University or Institution	**:**	University of Johannesburg
Degree	**:**	PhD
Year	:	Currently Enrolled

EMPLOYMENT HISTORY:

2011 – Present:	**Owner – HCAC (Heritage Contracts and Archaeological Consulting CC)**.
2007 – 2010 :	**CRM Archaeologist,** Managed the Heritage Contracts Unit at the University of the Witwatersrand.
2005 - 2007:	**CRM Archaeologist**, Director of Matakoma Heritage Consultants
2004:	**Technical Assistant**, Department of Anatomy University of Pretoria
2003:	**Archaeologist**, Mapungubwe World Heritage Site
2001 - 2002:	**CRM Archaeologists,** For R & R Cultural Resource Consultants, Polokwane
2000:	**Museum Assistant**, Fort Klapperkop.

Countries of work experience include:

Republic of South Africa, Botswana, Zimbabwe, Mozambique, Tanzania, The Democratic Republic of the Congo, Lesotho and Zambia.

SELECTED PROJECTS INCLUDE:

Archaeological Impact Assessments (Phase 1)

Heritage Impact Assessment Proposed Discharge Of Treated Mine Water Via The Wonderfontein Spruit Receiving Water Body Specialist as part of team conducting an Archaeological Assessment for the Mmamabula mining project and power supply, Botswana

Archaeological Impact Assessment Mmamethlake Landfill

Archaeological Impact Assessment Libangeni Landfill

Linear Developments

Archaeological Impact Assessment Link Northern Waterline Project At The Suikerbosrand Nature Reserve

Archaeological Impact Assessment Medupi – Spitskop Power Line,

Archaeological Impact Assessment Nelspruit Road Development

Renewable Energy developments

Archaeological Impact Assessment Karoshoek Solar Project

Grave Relocation Projects

Relocation of graves and site monitoring at Chloorkop as well as permit application and liaison with local authorities and social processes with local stakeholders, Gauteng Province.

Relocation of the grave of Rifle Man Maritz as well as permit application and liaison with local authorities and social processes with local stakeholders, Ndumo, Kwa Zulu Natal.

Relocation of the Magolwane graves for the office of the premier, Kwa Zulu Natal

Relocation of the OSuthu Royal Graves office of the premier, Kwa Zulu Natal

Phase 2 Mitigation Projects

Field Director for the Archaeological Mitigation For Booysendal Platinum Mine, Steelpoort, Limpopo Province. Principle investigator Prof. T. Huffman

Monitoring of heritage sites affected by the ARUP Transnet Multipurpose Pipeline under directorship of Gavin Anderson.

Field Director for the Phase 2 mapping of a late Iron Age site located on the farm Kameelbult, Zeerust, North West Province. Under directorship of Prof T. Huffman.

Field Director for the Phase 2 surface sampling of Stone Age sites effected by the Medupi – Spitskop Power Line, Limpopo Province

Heritage management projects

Platreef Mitigation project – mitigation of heritage sites and compilation of conservation management plan.

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS:

- Association of Southern African Professional Archaeologists. Member number 159

  Accreditation:
  - Field Director Iron Age Archaeology
  - Field Supervisor Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation
- Accredited CRM Archaeologist with SAHRA
- Accredited CRM Archaeologist with AMAFA
- Co-opted council member for the CRM Section of the Association of Southern African Association Professional Archaeologists (2011 – 2012)

PUBLICATIONS AND PRESENTATIONS

- A Culture Historical Interpretation, Aimed at Site Visitors, of the Exposed Eastern Profile of K8 on the Southern terrace at Mapungubwe.
  - J van der Walt, A Meyer, WC Nienaber
  - Poster presented at Faculty day, Faculty of Medicine University of Pretoria 2003
- 'n Reddingsondersoek na Anglo-Boereoorlog-ammunisie, gevind by Ifafi, Noordwes-Provinsie. South-African Journal for Cultural History 16(1) June 2002, with A. van Vollenhoven as co-writer.
- Fieldwork Report: Mapungubwe Stabilization Project.
  - WC Nienaber, M Hutten, S Gaigher, J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2004
- A War Uncovered: Human Remains from Thabantšho Hill (South Africa), 10 May 1864.
  - M. Steyn, WS Boshoff, WC Nienaber, J van der Walt
  - Paper read at the 12th Congress of the Pan-African Archaeological Association for Prehistory and Related Studies 2005
- Field Report on the mitigation measures conducted on the farm Bokfontein, Brits, North West Province .
  - J van der Walt, P Birkholtz, W. Fourie
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2007
- Field report on the mitigation measures employed at Early Farmer sites threatened by development in the Greater Sekhukhune area, Limpopo Province. J van der Walt
  - Paper read at the Southern African Association of Archaeologists Biennial Conference 2008
- Ceramic analysis of an Early Iron Age Site with vitrified dung, Limpopo Province South Africa.
  - J van der Walt. Poster presented at SAFA, Frankfurt Germany 2008

- Bantu Speaker Rock Engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga (*In Prep)*
    - J van der Walt and J.P Celliers
- Sterkspruit: Micro-layout of late Iron Age stone walling, Lydenburg, Mpumalanga. W. Fourie and J van der Walt. A Poster presented at the Southern African Association of Archaeologists Biennial Conference 2011
- Detailed mapping of LIA stone-walled settlements' in Lydenburg, Mpumalanga. J van der Walt and J.P Celliers
    - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Bantu-Speaker Rock engravings in the Schoemanskloof Valley, Lydenburg District, Mpumalanga. J.P Celliers and J van der Walt
    - Paper read at the Southern African Association of Archaeologists Biennial Conference 2011
- Pleistocene hominin land use on the western trans-Vaal Highveld ecoregion, South Africa, Jaco van der Walt.
    - J van der Walt. Poster presented at SAFA, Toulouse, France. Biennial Conference 2016

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