

## Archaeological Impact Assessment

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For the proposed K97 Road in Bon Accord, Pretoria North, Gauteng Province.

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### DRAFT REPORT

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Prepared For

**Envirolution consulting**

By



# HERITAGE

Contracts and Archaeological Consulting

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**SIGNATURE:** \_\_\_\_\_

## EXECUTIVE SUMMARY

**Site name and location:** The proposed K97 northbound road upgrade project, between the N4 and the P1/3 (R101) is located in Bon Accord, Pretoria, Gauteng. The road will be designed as a dual carriage way, but will initially be constructed as a single lane in both directions. The study area is located to the north of the N4 highway and east of the R101.

**Purpose of the study:** Phase 1 Archaeological Impact Assessment to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the area demarcated for the proposed road upgrade

**1:50 000 Topographic Map:** 2528 CA

**Environmental Consultant:** Envirolution Consulting

**Developer:** Gauteng Department of Roads and Transport Holdings SOC Ltd.

**Heritage Consultant:** Heritage Contracts and Archaeological Consulting CC (HCAC).

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**Date of Report:** Draft report 13 November 2014, Final report 19 November 2014.

### Findings of the Assessment:

The study area is located within the Bon Accord commercial node that includes large industrial activities such as Nova Feeds, Steel and Pipes, the Wastegroup, Enzele Bricks and so forth. Apart from these large industrial businesses, several other smaller industries focusing mainly on the automotive and steel industries operate in the area. Several quarries also occur in the area and all of these activities would have impacted on any surface indications of archaeological sites.

The study area was assessed in terms of the archaeological component of Section 35 of the NHRA and although the area is known for LIA stone walled sites the extensive industrial developments in the area would have obliterated any possible surface indications of archaeological sites. This was confirmed during the survey and no surface indicators of archaeological (Stone or Iron Age) material was identified in the study area.

In terms of the built environment of the area (Section 34), various structures occur in the study area. The structures are in different stages of disrepair and some of these buildings might possibly be older than 60 years and would then be protected under the NHRA and a demolition permit will be required for these structures. Some of these are currently being used for residential purposes.

In terms of the archaeology of the area no mitigation will be required prior to construction. However in terms of the built environment the buildings will have to be assessed and buildings older than 60 years documented by a heritage architect after which a demolition permit can be applied for these structures prior to construction.

If the recommendations in this report are adhered to from an archaeological point of view no reason why the development cannot commence work based on approval from SAHRA.

If during construction, any archaeological finds are made (e.g. stone tools, skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds.

### **General**

Due to the subsurface nature of archaeological material and unmarked graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded. 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.

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- The technology described in any report;
- Recommendations delivered to the Client.

## CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>GLOSSARY .....</b>	<b>7</b>
<b>1 BACKGROUND INFORMATION.....</b>	<b>8</b>
1.1 Terms of Reference.....	9
1.2. Archaeological Legislation and Best Practice .....	9
1.3 Description of Study Area .....	11
1.3.1 <i>Location Data</i> .....	11
1.3.2. <i>Location Map</i> .....	12
<b>2. APPROACH AND METHODOLOGY .....</b>	<b>13</b>
2.1 Phase 1 - Desktop Study .....	13
2.1.1 <i>Literature Search</i> .....	13
2.1.2 <i>Information Collection</i> .....	13
2.1.3 <i>Consultation</i> .....	13
2.1.4 <i>Google Earth and Mapping Survey</i> .....	13
2.1.5 <i>Genealogical Society of South Africa</i> .....	13
2.2 Phase 2 - Physical Surveying.....	13
2.3. Restrictions.....	13
<b>3. NATURE OF THE DEVELOPMENT .....</b>	<b>14</b>
<b>4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA.....</b>	<b>15</b>
4.1 Databases Consulted.....	15
4.2 Background Information for the study Area.....	15
<b>5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES.....</b>	<b>16</b>
5.1. Field Rating of Sites .....	17
<b>6. BASELINE STUDY-DESCRIPTION OF SITES .....</b>	<b>18</b>
<b>7. RECOMMENDATIONS AND CONCLUSIONS .....</b>	<b>22</b>
<b>8. PROJECT TEAM .....</b>	<b>25</b>
<b>9. STATEMENT OF COMPETENCY .....</b>	<b>25</b>
<b>10. REFERENCES.....</b>	<b>26</b>

**FIGURES**

Figure 1: Location map showing the study area in blue. ....	12
Figure 2: Enlarged section of the 2528 CA sheet that was drawn in 1943. ....	18
Figure 3: Site distribution map.....	20
Figure 4: Graves in Cemetery. ....	21
Figure 5: General site conditions at the cemetery.....	21
Figure 6: Cemetery viewed from the north east. ....	21
Figure 7: Cemetery viewed from the east. ....	21
Figure 8: General Site conditions in the study area.....	22
Figure 9: Various structures in the study area.....	23

**ABBREVIATIONS**

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
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
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 BACKGROUND INFORMATION

<b><i>Kind of study</i></b>	Archaeological Impact Assessment
<b><i>Type of development</i></b>	Road upgrade
<b><i>Consultant:</i></b>	Envirolution Consulting

The Archaeological Impact Assessment report forms part of the EIA for the proposed project.

The aim of the study is 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 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a desktop study that includes collection from various published and unpublished sources; 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 archaeological sites were identified within the proposed development footprint although some buildings possibly older than 60 was recorded as well as a cemetery. 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.

This report must also be submitted to the SAHRA for review.



## 1.1 Terms of Reference

### Desktop study

Conducting a brief desktop study where information on the area is collected to provide a background setting of the archaeology that can be expected in the area.

### Field study

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 identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

### 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 Heritage legislation 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 25 of 1999).

## 1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a 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;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2)(b) of the NEMA and section s.39(3)(b)(iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately 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 EIA, BIA/EMP, 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 a legal body, 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 AIAs are primarily concerned with the location and identification of 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 from SAHRA by the client 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 reinterment 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).

## **1.3 Description of Study Area**

### ***1.3.1 Location Data***

The proposed K97 northbound project, between the N4 and P1/3 (R101) is planned as a 62 meter wide road reserve. The road will be designed as a dual carriage way, but will initially be constructed as a single lane in both directions. The study area is located to the north of the N4 highway in Bon Accord. Pretoria North, Annlin, Montana and Wonderboom are situated to the south of the N4 and the proposed study area. The R101 / Lavender Road forms part of the study area, but is situated to the west of the proposed alignment. The Cynthiavale Agricultural Holdings and the Wonderboom Airport is also situated to the south of the study area. The Pyramid and Bon Accord Agricultural Holdings are situated to the north of the proposed alignment.

The study area is situated within a Savanna Biome. The Savanna Biome is the largest Biome in southern Africa, occupying over one-third of the surface area of South Africa (Mucina & Rutherford, 2006). It is characterised by a grassy ground layer and a distinct upper layer of woody plants. Where this upper layer is near the ground the vegetation may be referred to as Shrubveld, where it is dense, as Woodland, and the intermediate stages are locally known as Bushveld (Mucina & Rutherford, 2006).

### 1.3.2. Location Map

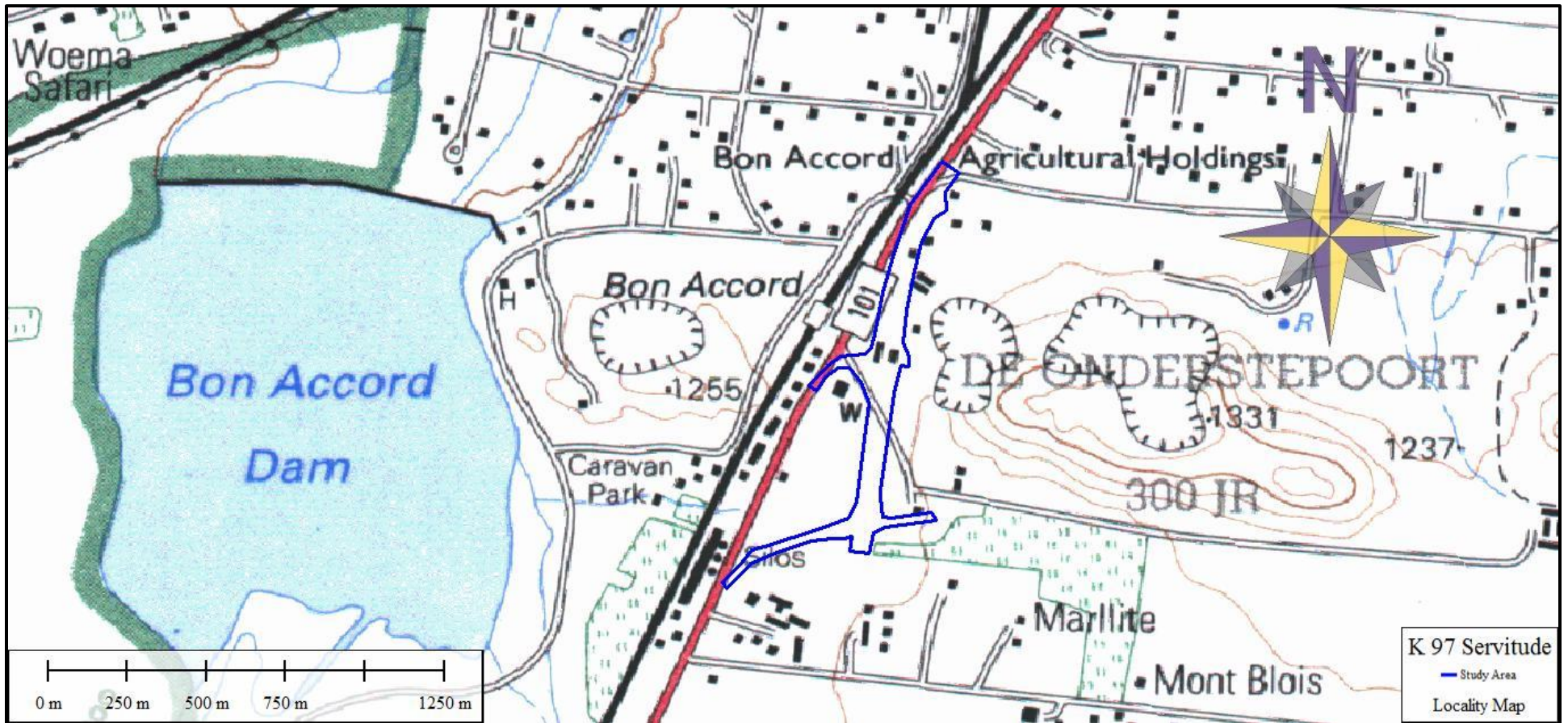


Figure 1: Location map showing the study area in blue.

## **2. APPROACH AND METHODOLOGY**

The aim of the study is to cover archaeological databases to compile a background of the archaeology that can be expected in the study area followed by field verification; this was accomplished by means of the following phases.

### **2.1 Phase 1 - Desktop Study**

The first phase comprised a desktop study scanning existing records for archaeological sites, historical sites, graves, architecture (structures older than 60 years) of the area.

#### **2.1.1 Literature Search**

Utilising data for information gathering stored in the archaeological database at Wits and previous CRM reports done in the area. The aim of this is to extract data and information on the area in question.

#### **2.1.2 Information Collection**

The SAHRA report mapping project (Version 1.0) and SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

#### **2.1.3 Consultation**

An independent consultation process is conducted by Batho Earth and no heritage concerns were raised.

#### **2.1.4 Google Earth and Mapping Survey**

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located.

#### **2.1.5 Genealogical Society of South Africa**

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

### **2.2 Phase 2 - Physical Surveying**

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the study area was conducted. The study area was surveyed by means of vehicle and extensive surveys on foot by a professional archaeologist on the 13<sup>th</sup> of November 2014.

### **2.3. Restrictions**

Due to the fact that most cultural remains may occur below surface, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey. Due to the extensive industrial modification of the study area there is low archaeological visibility and the possible occurrence of unmarked graves and other cultural material cannot be excluded.

Only the surface infrastructure footprint area was surveyed as indicated in the location map, and not the entire surrounding area. Although HCAC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

### **3. NATURE OF THE DEVELOPMENT**

The proposed K97 northbound, between N4 and P1/3 (R101) is planned as a 62 meter wide road reserve. The road will be designed as a dual carriage way, but it will initially be constructed as a single lane in both directions.

Typical construction activities could include the following:

- Disposal of construction rubble
- Establishment and use of concrete batching equipment and/or a concrete batching facility
- Potential removal of vegetation
- Refuelling and maintenance of construction vehicles and plant machinery
- Resourcing, introduction, storage and use of construction material such as water, concrete, brick, fuel, oils, steel structures, equipment, construction wastes and litter.
- Setting up of a construction camp site at and/or close to the proposed site
- Storm water management on the construction site which could result in erosion and soil loss
- Use of available roads and tracks for transportation of equipment materials and for construction site access

Once construction has been completed activities for the proposed development will consist of the following:

- Public use of the road system, including public transport, pedestrians, cycles
- Commercial (heavy duty vehicles) use of the road
- Storm water discharged from the road
- Occasional maintenance of road surfaces and structures.

## **4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA**

### **4.1 Databases Consulted**

Several previous CRM surveys are on record for the larger study area e.g, van Huffman 2001, van Schalkwyk 2002, van Schalkwyk *et al* (2002), van der Walt (2004, 2008 & 2014). These studies recorded MSA, Late Iron Age stone walled sites as well as graves. Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological and historical sites might be located. A Palaeontological Impact Assessment was not included in the study as it was not part of the scope of work. The palaeontological sensitivity map on SAHRIS indicated that the area is of no palaeontological significance.

### ***Genealogical Society and Google Earth Monuments***

Neither the Genealogical Society nor the monuments database at Google Earth (Google Earth also include some archaeological sites and historical battlefields) have any recorded sites in the study area.

### **4.2 Background Information for the study Area**

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional histories. Interestingly, the study area is located in the vicinity of an Early Stone Age Terrain, known as the Wonderboompoort. This area was also important to Iron Age communities, as it was located within an area where many Late Iron Age terrains were found. (Bergh 1999: 4, 7)

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. 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. At the beginning of the nineteenth century, the predominant black tribe in the area north of Pretoria was the Manala-Ndebele. The Kgatla were also present to the north of where Pretoria is located today. It seems that, in 1832, Shaka's Zulu tribe passed by the south of Pretoria from the southeast in a westerly direction. This was in order to attack Mzilikazi's Ndebele. This group also went on raids in various other areas in order to expand their area of influence. (Bergh 1999: 11, 14,109-119).

Pyramid Koppies to the west and the mountain range to the east of the study area on the farm Onderstepoort is renowned for the LIA stone walled sites. Just to the east of the study area is the well-known stone walled complex of KwaMnyamana.

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 as early as the 1720's.

The Scottish travellers Robert Scoon and William McLuckie passed through, or close by the area where the study area was located in 1829. In the same year, Robert Moffat and James Archbell also travelled through this area. In the mid 1830's, several travellers made their way from the Pretoria area inland. These included the travellers Robert Scoon, Dr Andrew Smith and Captain William Cornwallis Harris. (Bergh 1999: 12-13)

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)

Pretoria was founded in 1855 and became the capital of South Africa, then known as the Zuid-Afrikaanse Republiek (ZAR), in 1860. By 1900, Pretoria was a thriving Transvaal town, with shaded streets, well-kept gardens and a lively economy. In mid-1899, the Pretoria district had a white population of 21 000 men and 19 000 women, while the black, coloured and Indian population totalled 38 618. (Theron 1984: 1-3)

The Anglo-Boer War was the greatest conflict that had taken place in South Africa up to date, and also affected the Pretoria district. The white concentration camp closest to the study area was situated a small distance to the northeast of Pretoria. A white and a black concentration camp are located to the southwest of Pretoria, in the Irene area. One battle took place at Silkaatsnek, to the northwest of Pretoria, some distance from the project area. Here, General De la Rey's Boer troops defeated the British army on 11 July 1900. The Boer side however generally lost ground against the British as the war continued, and in June 1900 the Boer military leaders decided that Pretoria would have to be surrendered to the British forces. This decision was inevitable if the war was to be continued. The town was very susceptible to a siege, and its defence would have gravely endangered the lives of its inhabitants. More importantly, the defence of the town would involve such a great number of Boers that the capture of these men would have surely meant the end of the war. Pretoria was therefore occupied by British forces on Tuesday 5 June 1900. (Bergh 1999: 54, 250; Theron 1984: 273-279). Between 1939 and 1940, farm boundaries were drawn up in an area that includes the present-day Pretoria. (Bergh 1999: 15). The koppies to the west of the study area at the Cleveland quarry site has a small fort located on the highest point of the hill, that was built during the Second Anglo-Boer War to defend the railway line going north.

## **5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES**

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 road upgrade 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:

- » 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;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) 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.

### 5.1. Field Rating of Sites

Site significance classification standards 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 7 of this report.

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
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

## 6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that only the footprint of the proposed road upgrade was surveyed as indicated in Figure 1. The study area is extensively disturbed (Figure 8) by industrial developments and although the area is known for LIA stone walled sites, the extensive industrial developments in the area would have obliterated any possible surface indications of archaeological sites. This was confirmed during the survey and no surface indicators of archaeological (Stone or Iron Age) material was identified in the study area.

In terms of the built environment of the area (Section 34), various structures occur in the study area. The structures are in different stages of disrepair (Figure 9) and some of these buildings might possibly be older than 60 years although most of the buildings are modern. At least two clusters of structures located in the study area (marked as Structure 1 & 2) could possibly be older than 60 years and several structures located just outside of the project area might be older than 60 years.

From the archival maps (Figure 2) the area was also densely inhabited and several "huts" is marked in the study area. None of these still exist but sites like these are associate with graves, and unmarked graves might occur throughout the study area. A Single cemetery is located just south of "Graf" road on the periphery of the proposed road upgrade project. The existing road probably impacted on some of the graves in the northern portion of the cemetery. The graves are aligned east – west and of various ages with some possibly older than 60 years. A detailed count of the graves was not done but the cemetery consists of more than 50 graves. Grave dressings consist of soil mounds, oval/rectangular packed stones with granite and stone headstones (Figure 4 -7).

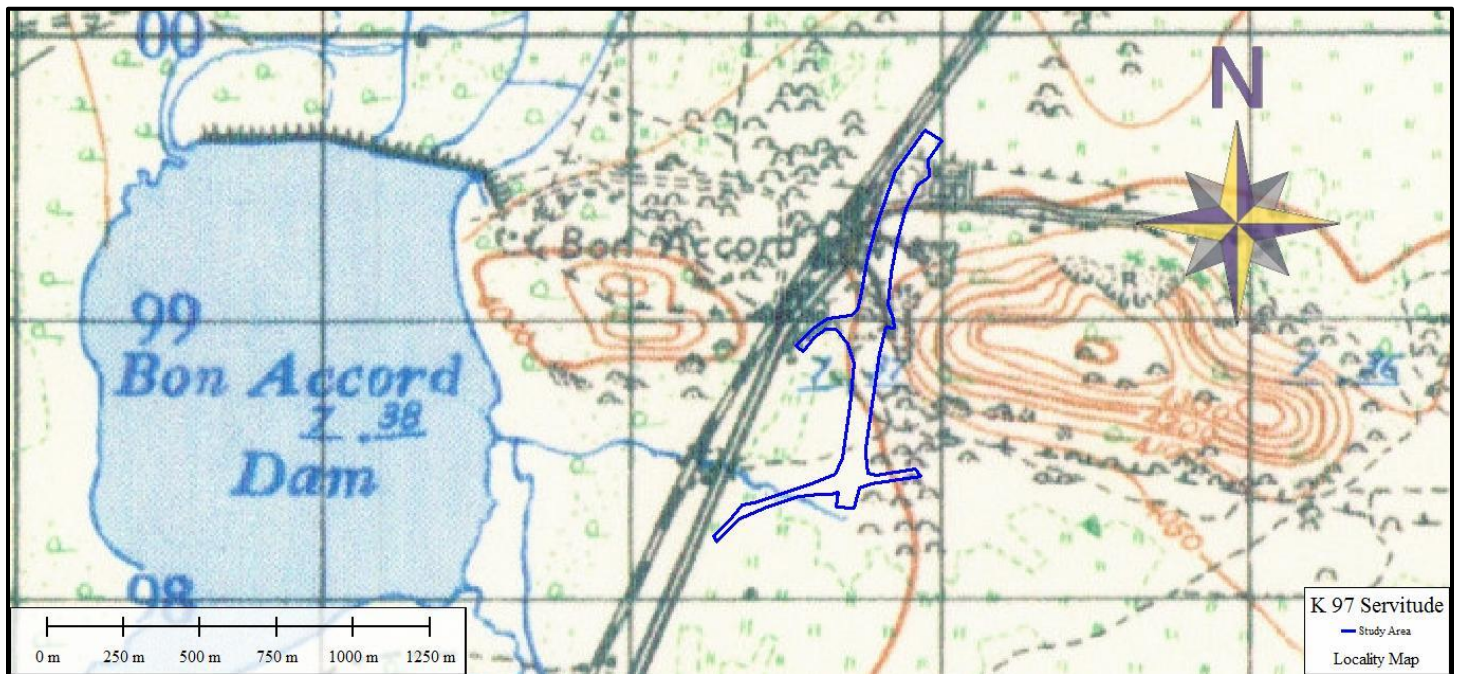


Figure 2: Enlarged section of the 2528 CA sheet that was drawn in 1943.

<b>Feature name</b>	<b>Co ordinate</b>	<b>Description</b>	<b>Significance</b>	<b>Mitigation measures</b>
Cemetery	S25 37 39.6 E28 12 15.9	Small cemetery	High Significance	Demarcate area and preserve <i>in-situ</i>
Structure 1 (Splintech Complex)	S25 37 38.0 E28 12 17.9	Cluster of several buildings. Some possibly older than others in various stages of disrepair.	Needs confirmation if these area older than 60 years	Assessment by a heritage architect prior to construction
Structure 2 (Shop and possible other buildings)	S25 37 32.8 E28 12 19.5	Cluster of buildings currently used as a small shop next to the R101	Needs confirmation if these area older than 60 years	Assessment by a heritage architect prior to construction



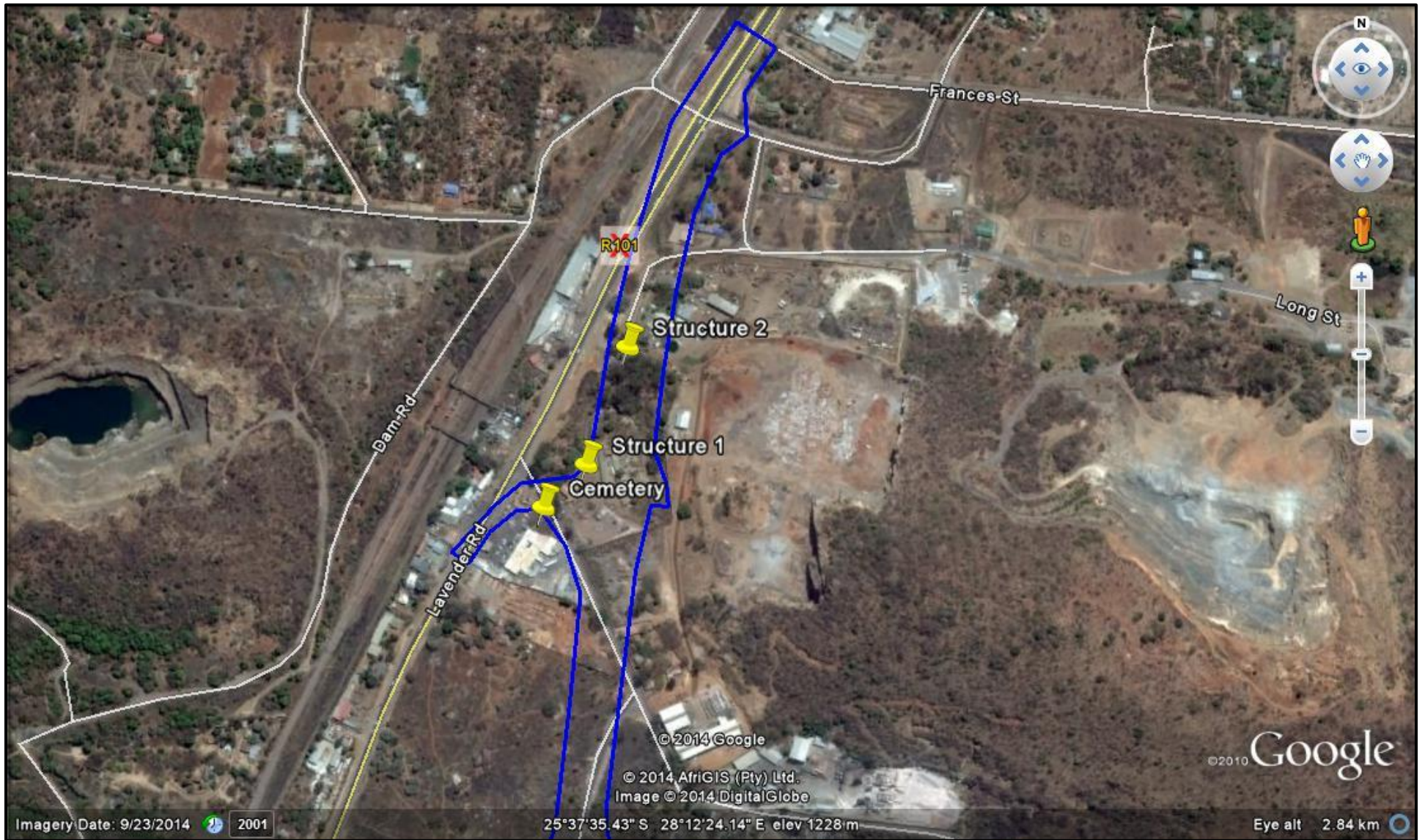


Figure 3: Site distribution map





Figure 4: Graves in Cemetery.



Figure 5: General site conditions at the cemetery.



Figure 6: Cemetery viewed from the north east.



Figure 7: Cemetery viewed from the east.





Figure 8: General Site conditions in the study area.



Figure 9: Various structures in the study area.



## 7. RECOMMENDATIONS AND CONCLUSIONS

The study area is located within the Bon Accord commercial node that includes large industrial activities such as Nova Feeds, Steel and Pipes, the Wastegroup, Enzele Bricks and so forth. Apart from these large industrial businesses, several other smaller industries focusing mainly on the automotive and steel industries operate in the area. Several quarries also occur in the area and all of these activities would have impacted on any surface indications of archaeological sites.

The study area was assessed in terms of the archaeological component of Section 35 of the NHRA and although the area is known for LIA stone walled sites the extensive industrial developments in the area would have obliterated any possible surface indications of archaeological sites. This was confirmed during the survey and no surface indicators of archaeological (Stone or Iron Age) material was identified in the study area. According to the palaeontological sensitivity map (SAHRIS) the area is also of no palaeontological significance.

In terms of the archaeology of the area no mitigation will be required prior to construction. However it is recommended that chance find procedures put in place during the construction period to mitigate any accidental finds as described below.

### Chance finds procedure

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, 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.

However in terms of the built environment several buildings occur in the study area and will have to be assessed (especially the buildings at Structure 1 and 2) and buildings older than 60 years documented by a heritage architect after which a demolition permit can be applied for these structures prior to construction

It is recommended that the recorded cemetery on the periphery of the road reserve is demarcated and fenced off with a buffer zone of 20 m as well as an access gate for family members. The following measures must be taken to ensure that the site is preserved in situ:



**OBJECTIVE:** Prevent disturbance and/or destruction of recorded cemetery.

Project component/s	All phases of construction.		
Potential impact	Damage/disturbance to cemetery (headstones, grave dressings etc).		
Activity risk/source	Construction workers and staff might unknowingly damage the site.		
Mitigation: target/objective	To retain cemetery in undisturbed condition.		
Mitigation: Action/control	Responsibility	Timeframe	
Ensure that workers and construction vehicles remain away from the cemetery on the current access road by demarcating the sites with danger tape and by fencing the sites.	Developer and ECO	Construction and Operation	
Performance indicator	Cemetery remains undamaged.		
Monitoring	No pedestrians or construction vehicles allowed inside the demarcated area.		

If the recommendations in this report are adhered to from an archaeological point of view no reason why the development cannot commence work based on approval from SAHRA.

If during construction, any archaeological finds are made (e.g. stone tools, skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds.

## 8. PROJECT TEAM

Jaco van der Walt, Project Manager

## 9. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also valid for/acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique, Tanzania and the DRC; having conducted more than 400 AIAs since 2000.

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