

HERITAGE IMPACT ASSESSMENT

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

FOR THE PROPOSED IVYDALE PRIVATE HOSPITAL, POLOKWANE, LIMPOPO PROVINCE

Type of development:

Private Hospital

Client:

Kamekho Consulting

Client info:

Leander Potgieter

E – mail: leander@kamekho.co.za

Developer: Phelang Bonolo Healthcare Group



HCAC - Heritage Consultants

Private Bag X 1049

Suite 34

Modimolle

0510

Tel: 082 373 8491

Fax: 086 691 6461

E-Mail: jaco.heritage@gmail.com

Report Author:

Mr. J. van der Walt

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APPROVAL PAGE

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Report Title	Heritage Impact Assessment for the for the Proposed Ivydale Private Hospital, Polokwane, Limpopo Province
Authority Reference Number	TBC
Report Status	Draft Report
Applicant Name	Phelang Bonolo Healthcare Group

	Name	Qualifications and Certifications	Date
Archaeologist	Jaco van der Walt	MA Archaeology ASAPA #159	September 2019
Archival Specialist	Liesl Bester	BHCS Honours	September 2019

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REPORT OUTLINE

Appendix 6 of GNR 326 EIA Regulations (7 April 2017) as amended 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 GNR 326 EIA Regulations (7 April 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	<i>Declaration of Independence</i>
(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 1, 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;	9
(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 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 9
(k) Mitigation measures for inclusion in the EMPr	Section 9 and 10
(l) Conditions for inclusion in the environmental authorisation	Section 9 and 10
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 9 and 10
(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 10.2
(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 BA report
(q) Any other information requested by the competent authority	Section 10

Executive Summary

Kamekho Consulting were appointed to conduct a Basic Assessment for the proposed development of the Ivydale Private Hospital, located on Holding 92, Ivydale AH, Polokwane, Limpopo Province. The site for the hospital is approximately 4.3820 ha in extent.

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 study area as development layouts were not available at the time of the survey.

The study area consists of an agricultural holding that is mostly derelict apart from a modern residential dwelling and outbuildings on the northeastern portion of the study area. Access to the study area is open, resulting in dumping and littering across the site.

The background study highlighted that the general area under investigation has a wealth of heritage sites particularly dating to the Later Iron Age (Loubser 1994, Roodt 2006 and Murimbika 2014). During the survey of the study area, it was confirmed that the remains of a stone-walled Iron Age settlement are located on Holding 92 extending into the partially developed Holding 91. The settlement is characterised by middens, enclosures and scatters of ceramics. The proposed development will impact directly on the Iron Age site and in order for the proposed development to proceed, Phase 2 archaeological mitigation is required.

According to the SAHRIS paleontological sensitivity map, the area is of low paleontological sensitivity, and no further palaeontological studies are required. In terms of the built environment of the area (Section 34) the residential dwelling and associated outbuildings are not older than 60 years and their potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and is therefore of no heritage significance.

In terms of Section 36 of the Act no formal burial sites were recorded. 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.

Commercial, residential and road infrastructure developments surround the study area and the proposed development will not impact negatively on significant cultural landscapes or views. During the Public Participation process conducted for this project, no heritage concerns were raised.

The proposed project will impact directly on heritage resources. Therefore will require archaeological mitigation as a condition of authorisation prior to construction as part of the EMP and based on approval from SAHRA.

Recommendations:

- Phase 2 archaeological mitigation of the site that includes mapping, excavation and dating of the site;
- Implementation of a chance find procedure for the project.

DECLARATION OF INDEPENDENCE

Specialist Name	Jaco van der Walt
Declaration of Independence	<p>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:</p> <ul style="list-style-type: none"> • 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	3/10/2019

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 Kamekho Consulting to conduct a heritage impact assessment for the proposed Ivydale Private Hospital comprising approximately 4.3820 ha in extent. The report forms part of the Basic Assessment Report (BAR) and Environmental Management Programme Report (EMPR) for the project located on Holding 92 Ivydale Agricultural Holdings, Extension 1, Polokwane, Limpopo (Figure 1 – 3). The survey covered the project area as development plans were not yet available at the time of the survey.

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 base data is of high quality and relevant dates are included in section 3.4 and 7.1. 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 a Late Iron Age stone-walled settlement 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, compiled in support of an Environmental Authorisation application as defined by NEMA EIA Regulations section 40 (1) and (2), to be submitted to SAHRA. As such the Basic Assessment 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 development footprint.

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 farm and portions	Approximately 4 hectares on Holding 92 Ivydale, Agricultural Holdings
Magisterial District	Polokwane Local Municipality
1: 50 000 map sheet number	2329 CD

Table 3: Infrastructure and project activities

Type of development	Private Hospital
Project size	Approximately 25,029m ²
Project Components	<p>The development will consist of two (2) large building complexes, each consisting out of three (3) floors. Each of these building complexes will have their own entrance with an admin/reception area. Furthermore, each building complex will host different medical fields with consulting rooms, staff facilities and stores. The proposed new private hospital development (250 beds) will be a specialised hospital, to be known as the Phenang Bonolo HUB of Excellence, which will consist of four (4) components, namely:</p> <ul style="list-style-type: none"> • Heart and Kidney Hospital; • Surgical Day Hospital; • Psychiatric hospital; and a • Stepdown hospital.

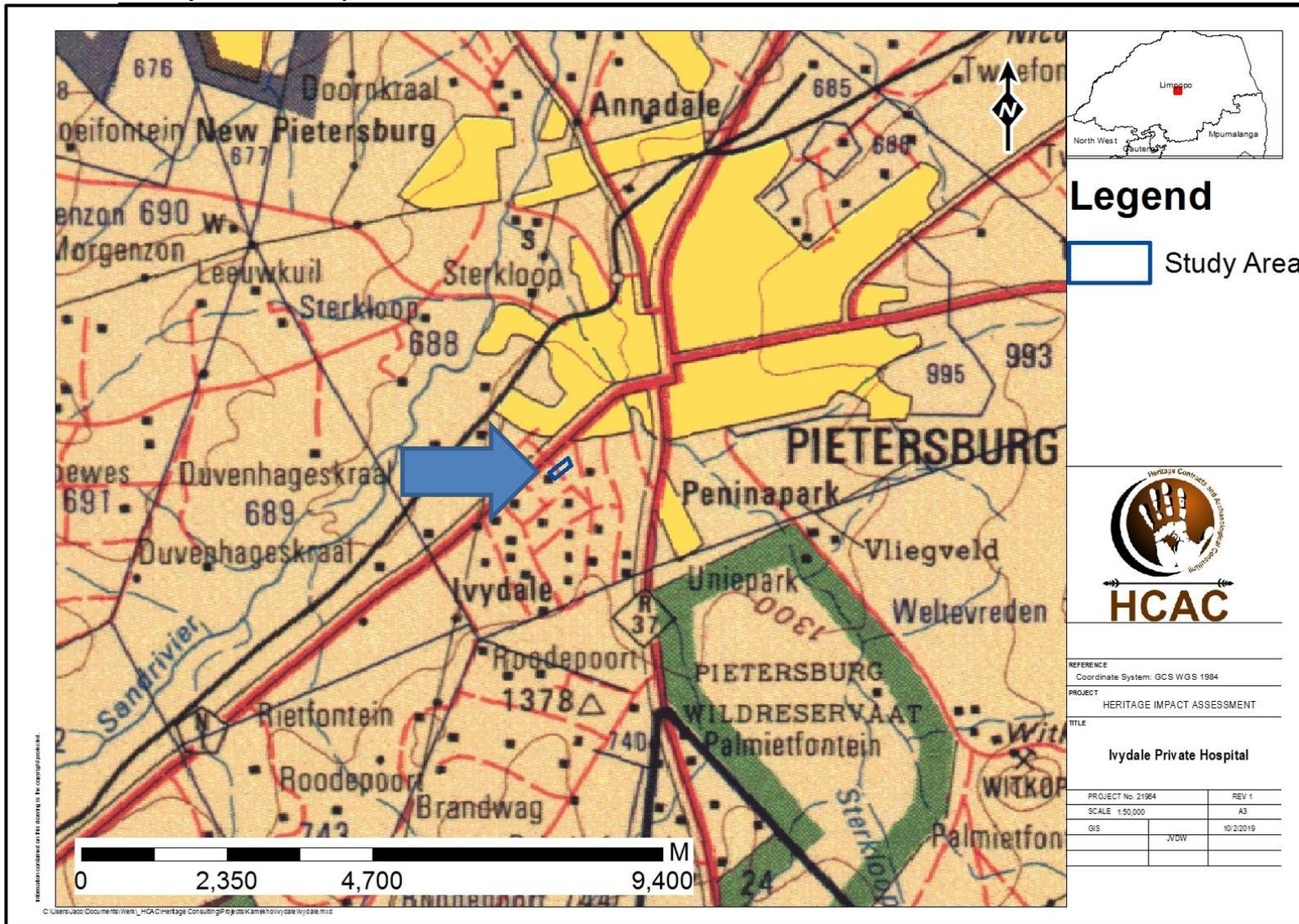


Figure 1. Provincial map (1: 250 000 topographical map).

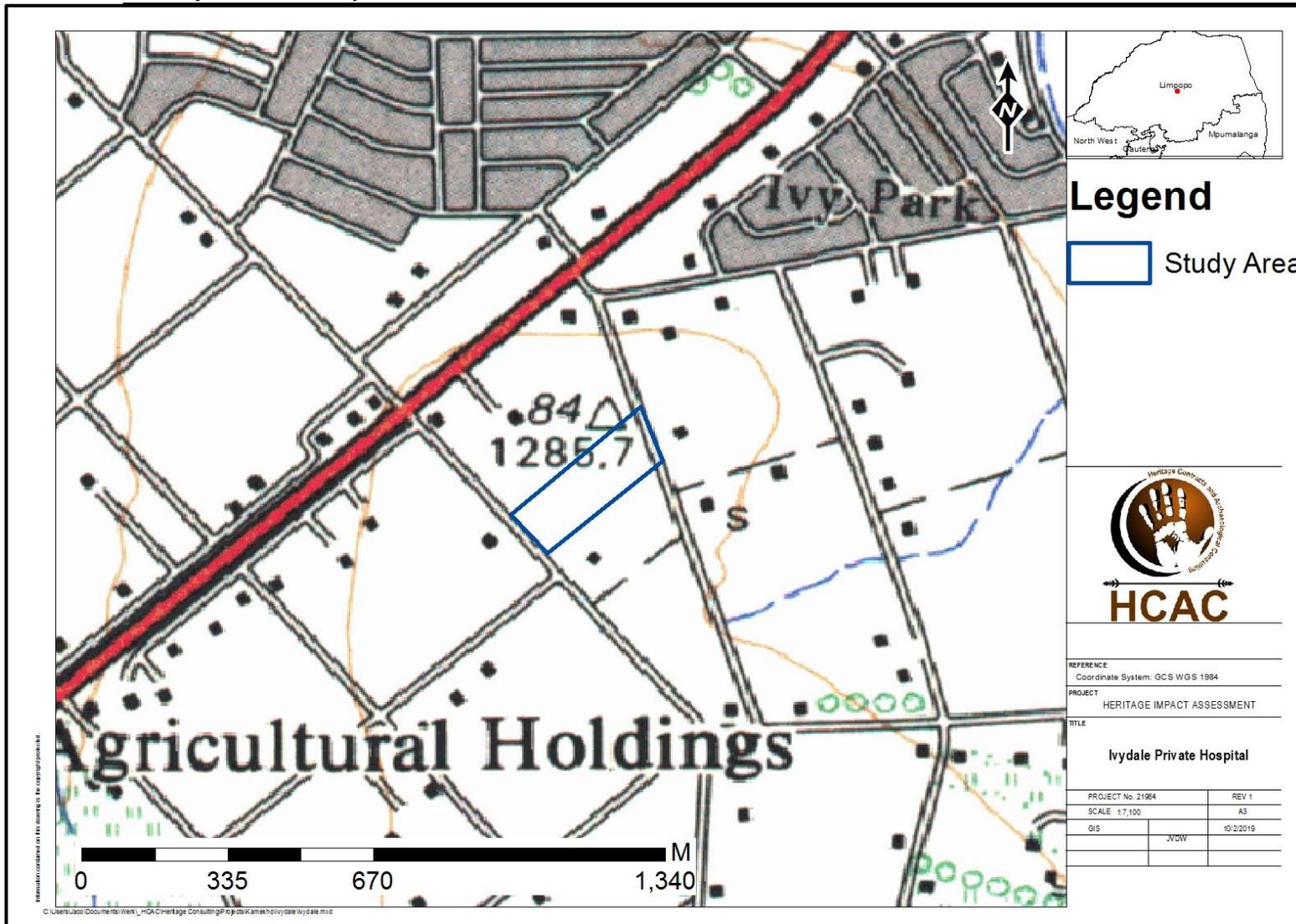


Figure 2: Regional map (1:50 000 topographical map).

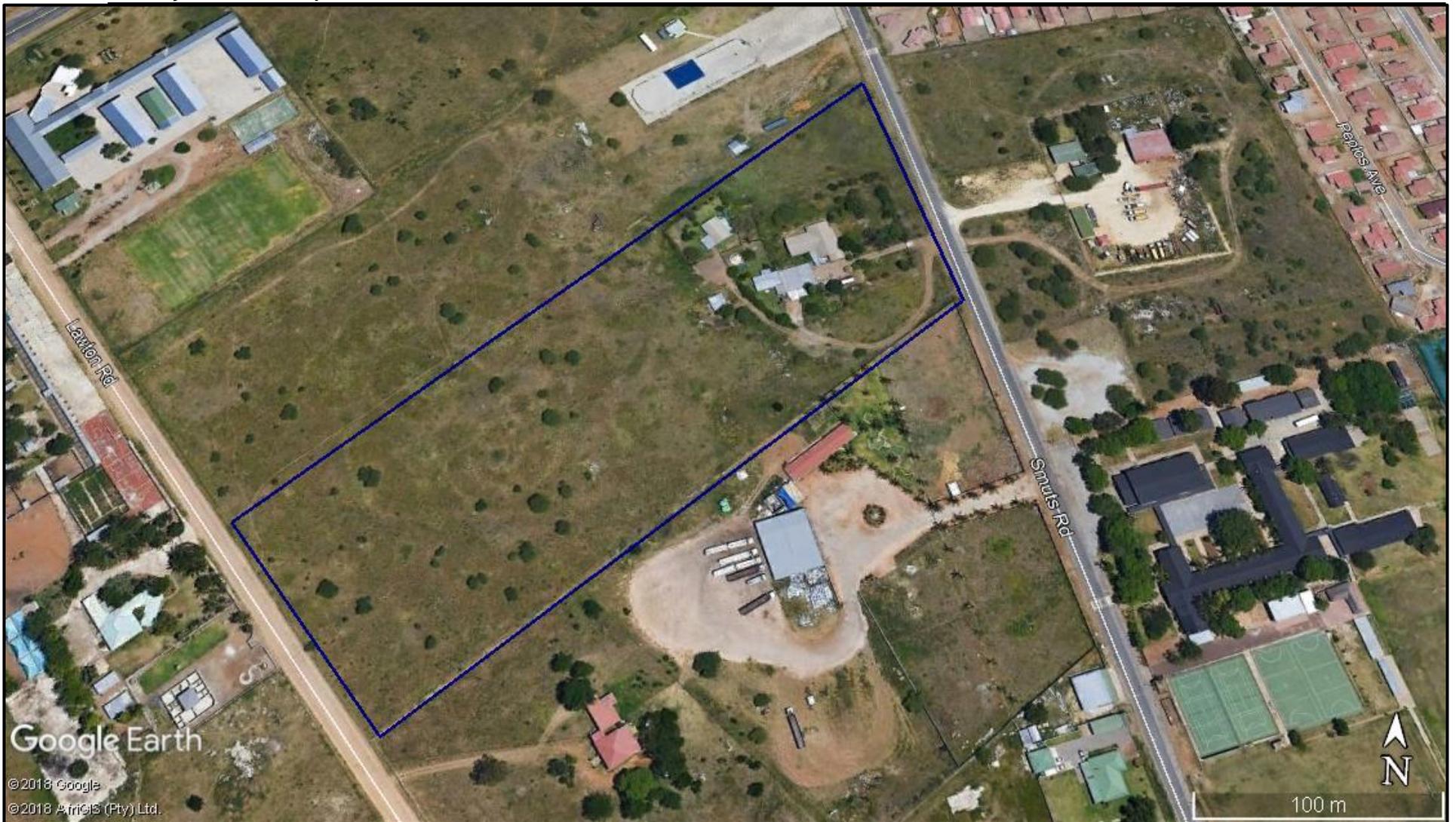


Figure 3. Google Earth Image of the study area.

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 the 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 Basic Assessment Report (BAR).
- 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	19 September 2019
Season	Spring /Summer –vegetation in the study area is low with high archaeological visibility. Access issues resulted that the area with the residential dwelling was not physically assessed but only visually. The impact area was however sufficiently covered (Figure 4) to adequately record the range of heritage resources.

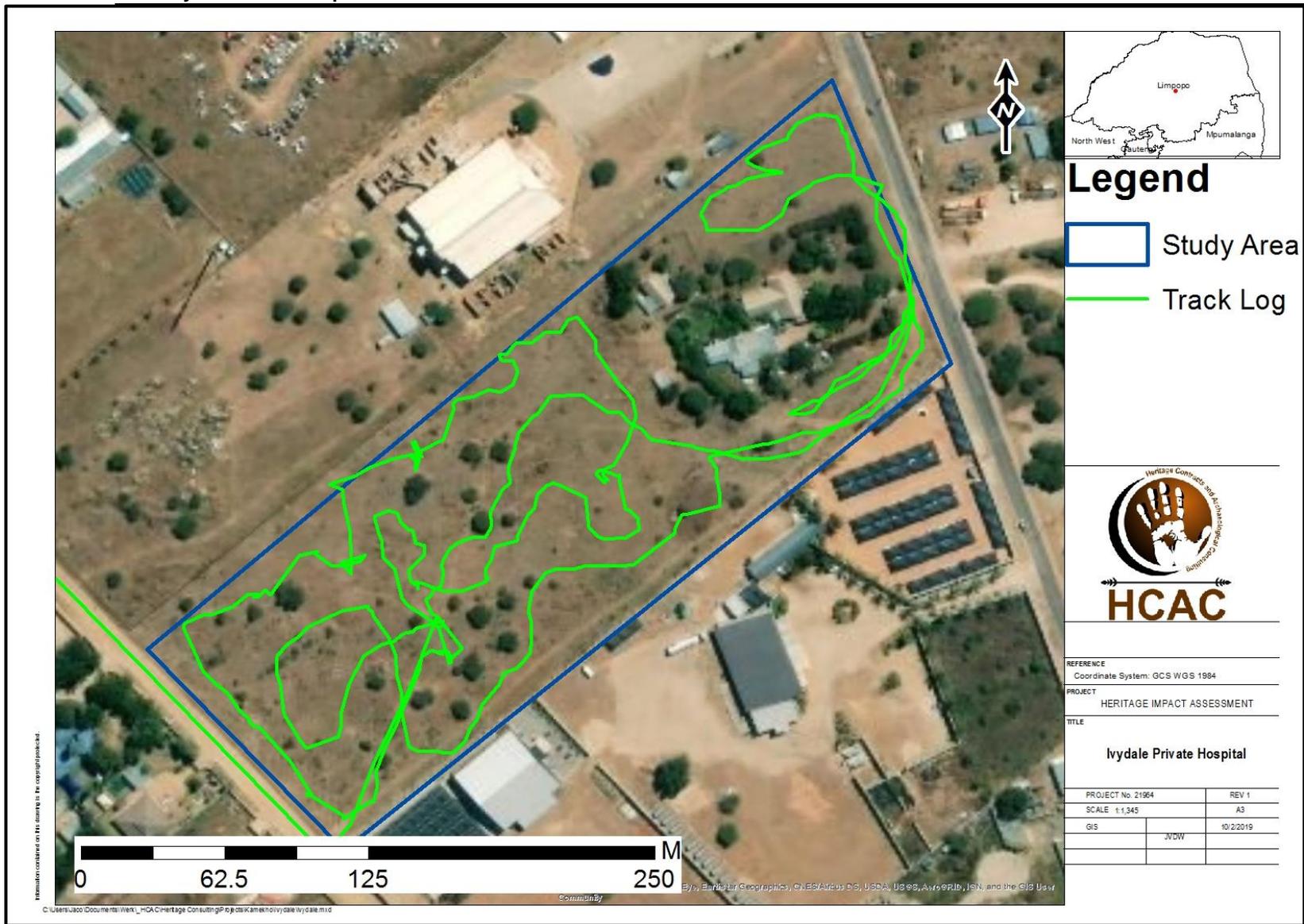


Figure 4: Track logs of the survey in green.

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 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 in future, which might change the results of this impact assessment.

4 Description of Socio-Economic Environment

The Polokwane Municipality IDP 2017 -2018 indicated that: The average strict unemployment rate for the Municipality was 32.4% in 2011, which was better than the provincial unemployment rate of 39%. Most of the people in Polokwane Municipality fall within the middle-income groups, which is a reflection of the developing economy. The incidence of household in income categories between R600 and R30000 per year has decreased. These households have moved up the income spectrum with increases recorded in all the income categories above R30000 per year.

5. Description of the Physical Environment:

The site is situated to the south of Ivy Park and to the south west of Polokwane close to Mypark, Nirvana and Westenburg residential areas, within Ilypark AH Ext 1, at 23°55'21.53"S 29° 26'20.27"E. The site is ± 1286m above sea level and will be accessed by the following roads:

- Smuts Road to the north east;
- Holding 91 Ivydale Ext. 1 to the north west;
- Holding 93 Ivydale Ext. 1 to the south east; and
- Lawton Road to the south west.

The prevailing vegetation type of the area form part of the Polokwane Plateau Bushveld. It is described as moderately undulating plains and low hills supporting tall, usually *Hyparrhenia hirta*-grassland (Thatching grass), with some woody species on rocky outcrops or rock sheets (Mucina & Rutherford, 2006). The site shows very little of the original prevailing vegetation types as it has been altered over an extended period of time and is characterised by dumping of household refuse and building rubble (Figure 5 – 8).



Figure 5. General site conditions.



Figure 6. General site conditions.



Figure 7. General site conditions.



Figure 8. General site conditions.

5 Results of Public Consultation and Stakeholder Engagement:

Adjacent landowners and the public at large were informed of the proposed activity as part of the BA process. Site notices and advertisements notifying interested and affected parties were placed at strategic points and in local newspapers as part of the process.

6 Literature / Background Study:

6.1 Literature Review

The most comprehensive account of the archaeology is done by Loubser (1994) that recorded several settlements related to the Ledwaba Ndebele who built similar walling. In addition Murimbika (2004) conducted mitigation of stone walled sites and ash middens on the adjacent property (Holding 91) and subsequently Frans Roodt (2006) compiled a letter stating that an Iron Age site has been identified on Plot 92 (the area currently under investigation). The letter concluded that Phase 2 mitigation will have to be completed prior to development of the property.

SAHRA Report Mapping Project

CRM reports conducted in the greater area were consulted for this project and include the following:

Author	Year	Project	Findings
Van Vollenhoven, A. J.	2008	A Report on Two Grave Sites on The Farm Doornkraal 680 LS, Polokwane In the Limpopo Province	Graves
Van Schalkwyk. J.	2007	Heritage Impact Assessment for The Planned Tabor Witkop Powerline, Limpopo Province	No sites were identified.
Van Schalkwyk, J.	2007	Phase 1 Heritage Resource Impact Assessment (Scoping & Evaluation) Doornkraal, Portion 76 Polokwane, Limpopo Statement with Regard to Heritage Resources Management	Graves.
Birkholtz, P. D.	2006	Phase 1 Heritage Impact Assessment for the proposed development portion 13, 23, 52 and 75 of the farm Doornkraal 680 LS Polokwane, Limpopo Province.	Graves

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.

6.2 General History of the area

Few Afrikaner people visited the Zoutpansberg Region before the first Voortrekker Leaders, Louis Tregardt (1783–1838) and Lang Hans van Rensburg crossed the Pietersburg Plateau during 1836. They were merely travelling through the area and only during 1848 did Andries Hendrik Potgieter (1792-1852) arrive to establish a permanent Afrikaner settlement in this part of the world. This was agreed with Tregardt ten years earlier.

Andries Hendrik Potgieter set up the first Afrikaner settlement in Ohrigstad in 1845, some distance from Pietersburg. Later some Voortrekkers moved with Potgieter late in 1848 and settled in a town they called Zoutpansberg-dorp, about 100 km North West of the current town of Polokwane. This was later changed to Schoemansdal.

When gold was discovered on the farm Eersteling in 1871, the first gold rush in the Transvaal followed. An influx of uitlanders (foreigners) began to pose a political problem. President Burgers sought to end the isolation of the Transvaal by developing relations with non-English colonial powers, and in 1875 began a round of negotiations with Portugal to secure access to the sea via a rail link to Delagoa Bay.

The British annexed the Transvaal in 1877, rendering the Boers British subjects. The increasingly hostile relations with the Zulu and Pedi became a problem for both the Boers and the British. A bloody war between the Boers, British and Pedi broke out on 28 November 1879, lasting until 2 December of the same year. A white army in alliance with a 12000-strong Swazi contingent defeated the Pedi standing army of 10000, with King Sekhukhune I losing his brothers and sons.

The Boers, unhappy with British domination, rallied and the first Anglo-Boer War broke out from 1880 to 1881. The victory of the Boers, sealed after the Battle of Majuba, led to the granting of self-government – under the suzerainty of the Queen. The victory was celebrated in the Zoutpansberg district on 16 December 1881 initiated a renewed gold rush, with prospectors converging on the village of Marabastad.

By this time Potgietersrus and Schoemansdal was abandoned and the Boers had to decide where to establish a new capital. In 1883 General Petrus Jacobus (Piet) Joubert was appointed to find a site to compensate the Boers who had been forced to leave Schoemansdal 16 years earlier, and the farm Sterkloop was chosen as an appropriate site. Joubert presented his findings to the Executive Council in Pretoria and a land surveyor was appointed to map out the new town, which was called Pietersburg.

The site, the property of BJ Vorster and Gert Emmenis, was bought by the government on 29 January 1884, and land surveyor GR von Wielligh set out 150 plots, 94 of which were given free of charge to people who had lost land in Schoemansdal. The remainder was sold for six pounds each.

According to most records Pietersburg was named after a well-known General, Petrus (Piet) Jacobus Joubert. According to www.sahistory.co.za, however the town was named after of a respected pioneer and elder, one P.J.L. (Pieter) Venter (1811–1894). He was appointed the first Elder of the Hervormde Church, the then State Church of the Z.A.R., in the Ward Zoutpansberg, two years before the Church inaugurated him.

The secretary to the Executive recorded that the new town was to be called Pietersburg, and wrote in the records that it was the Commandant General who had been honoured in this way. Up to today the official records still claim Piet Joubert to be the one whose name was given to this frontier town.

Regarding names of the area and settlement, some more information is available - On the banks of the Sand River, about eight kilometers west of the present-day town, the Pedi people practiced an initiation school, named Polokwane. When ox wagons started moving along the Sand River regularly as from 1848, this institution was moved to maintain the required cloistral placement, but the name for the area was kept alive up to the present day. In February 2002, the city was renamed Polokwane – the Northern Sotho word which means “Place of Safety.”

(http://www.polokwane.gov.za/index.php?view_page+493)

The name Upsala (from *Opsaal*, meaning “Saddle Up”) was also used, due to the fact that, just north of the present-day town on the banks of the Sand River the farm Doornkraal was used as gathering point for the Commando when they were needed for military operations. Fred Jeppe, the Government cartographer, wrote in the Journal of the Royal Geographic Society that this place was formerly called Upsala by a landowner who was of Swedish descent. This might have been a reflection on the well-known Oscar Dahl, who originated from Scandinavia, Upsala being a well-known Swedish university town. However, the name Pietersburg was given and as such the village became a town and grew to a city, at present the capital of the Limpopo Province (www.sahistory.co.za).

On the 31st of July 1886 Landdroos (Magistrate) Dietlof Siegfred Mare wrote his first official letter from the magistrate's court and the town was officially recognized. The main street through the city centre is known as “Landdroos Mare Street” to this day (www.polokwane.gov.za). He died during 1890 and was laid to rest on his nearby farm at Marabastad. His descendants still farm here. The very next day G.G. Munnik, the later Senator, was named his successor but was only inaugurated on 30 May 1892 *inter alia* as a result of the remoteness of the northern region of the old Transvaal.

By 1888, the railway from Pietersburg to Pretoria was completed.

The inhabitants of New Smitsdorp moved en masse to Pietersburg in 1888, and the population began to increase at a faster rate. In 1889 there were 200 whites, and by 1893 the white population quadrupled to 800.

The Pretoria-Pietersburg Railway Company was founded on 13 May 1896 in London, and on 31 May 1899 the official opening of the railroad was celebrated as the first locomotive steamed into the newly developed Pietersburg Station. Daily service, leaving Pietersburg at 6:50 every morning to arrive at Pretoria at 17:50 the afternoon was installed on 2 June and became so popular that on 13 October the same year the Company declared that they were profitable.

The discovery of gold on the Witwatersrand proved to be the undoing of the Boer Republic. It intensified the influx of uitlanders and the subsequent political problems of the Republic. The homogeneity of the Boers was destroyed by the influx, and British influence increased, not least with the influx of foreign capital and a new class of British capitalists. President Kruger was greatly threatened by this development, and refused to make concessions to the British in his midst. The Volksraad tightened the franchise qualifications to limit the number of British voters, while the British Colonial Office began to sponsor the uitlanders, the tensions resulting in the abortive Jameson Raid in 1895.

The development of rail links to Cape Town, Durban and Delagoa Bay also saw a heightening of tensions, bringing tariff and customs rivalries.

When Alfred Milner met Kruger at a June 1899 conference in Bloemfontein, his terms were so uncompromising that no agreement could be reached, and war became inevitable. The South African War broke out in October 1899. Sadly, the outbreak of the Anglo Boer War ended the first chapter of the history of Pietersburg. The British built a concentration camp at Pietersburg during the Boer War to house almost 4,000 Boer women and children.

The capitulation of the Boers came on 31 May 1902. Sixty representatives of the two Boer states had met to discuss the terms of surrender offered by Britain. (<http://www.sahistory.org.za/pietersburg/colonial-history-polokwane>)

The Anglo-Boer War was the greatest conflict that had taken place in South Africa up to date, and also affected the Polokwane district. The British built a concentration camp at the then called Pietersburg during the Boer War to house almost 4,000 Boer women and children. Pietersburg was the northernmost camp in the Transvaal system, isolated and difficult to service (www2.lib.uct.ac.za/mss/bccd/Histories/Pietersburg/).

6.3 Archaeology of the greater study area

There is several well-known Stone Age sites located in the general area providing evidence of the use of the larger area by Stone Age communities from the ESA (McNabb 2009) and MSA (Thackeray 1992) (Peña & Val 2018). No major LSA sites are known close to the study area

Regarding the Iron Age, Changiun (1986) describes mainly 5 groups who resided in the area where the town of Polokwane would later be established, namely Maletzie, Maraba, Zebediela, Ramagoepoe and Chuenie. Bergh (1999) also indicates a number of tribes who resided in the Polokwane area in the 1800's namely the Moletsi/ Kwena, Koni of Matlala, Koni of Dikgale, Koni of Mmamabolo, Koni of Mothiba and also the Ndebele of Langa and Kgaga of Mothapo. Huffman (2007) indicated that the Ledwaba settled in the Polokwane (Pietersburg) district in about AD 1840 and found that the Sebietela (Musi) to the south and the Bakoni ba Matala (Langa) to the north had preceded them. The Matala had also followed the Langa route.

Stone walled settlements built by the Ledwaba Ndebele, sometime after AD 1650, is found around Polokwane (Huffman & Steel 1996; Loubser 1994). These type sites are called Group II, a good example stands at the base of Bambo Hill, at the present site of the BaKoni-Malapo Museum. Huffman (2007) use the term Badfontein for this type of walling.

6.4 Cultural Landscape

This site forms part of Ivydale Agricultural Holdings, and is situated in the south western part of Polokwane in Limpopo Province.

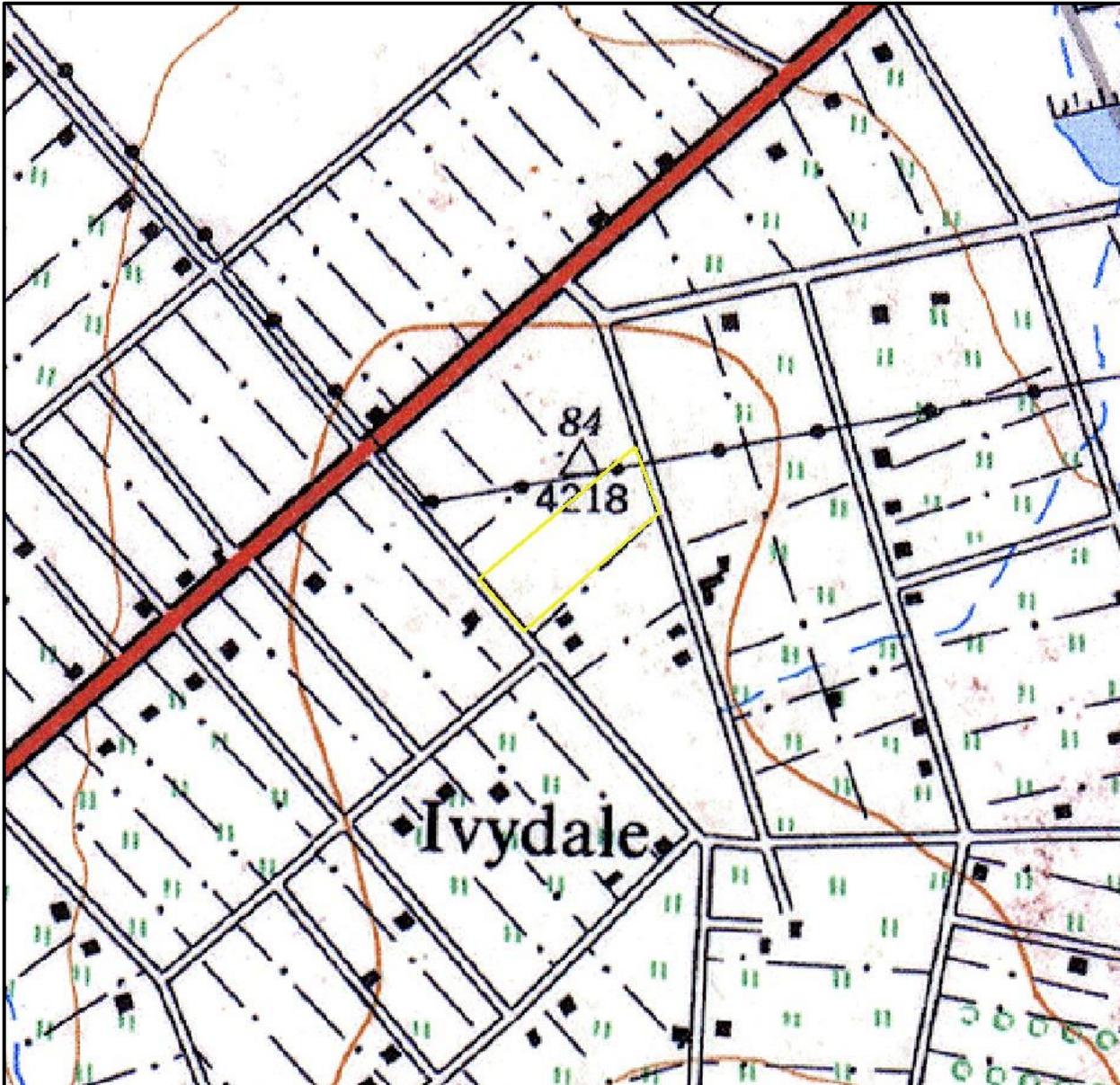


Figure 9. 1968 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. A power line went through the property, and minor roads formed its western and eastern boundaries. No further developments are visible. (Topographical Map 1968)

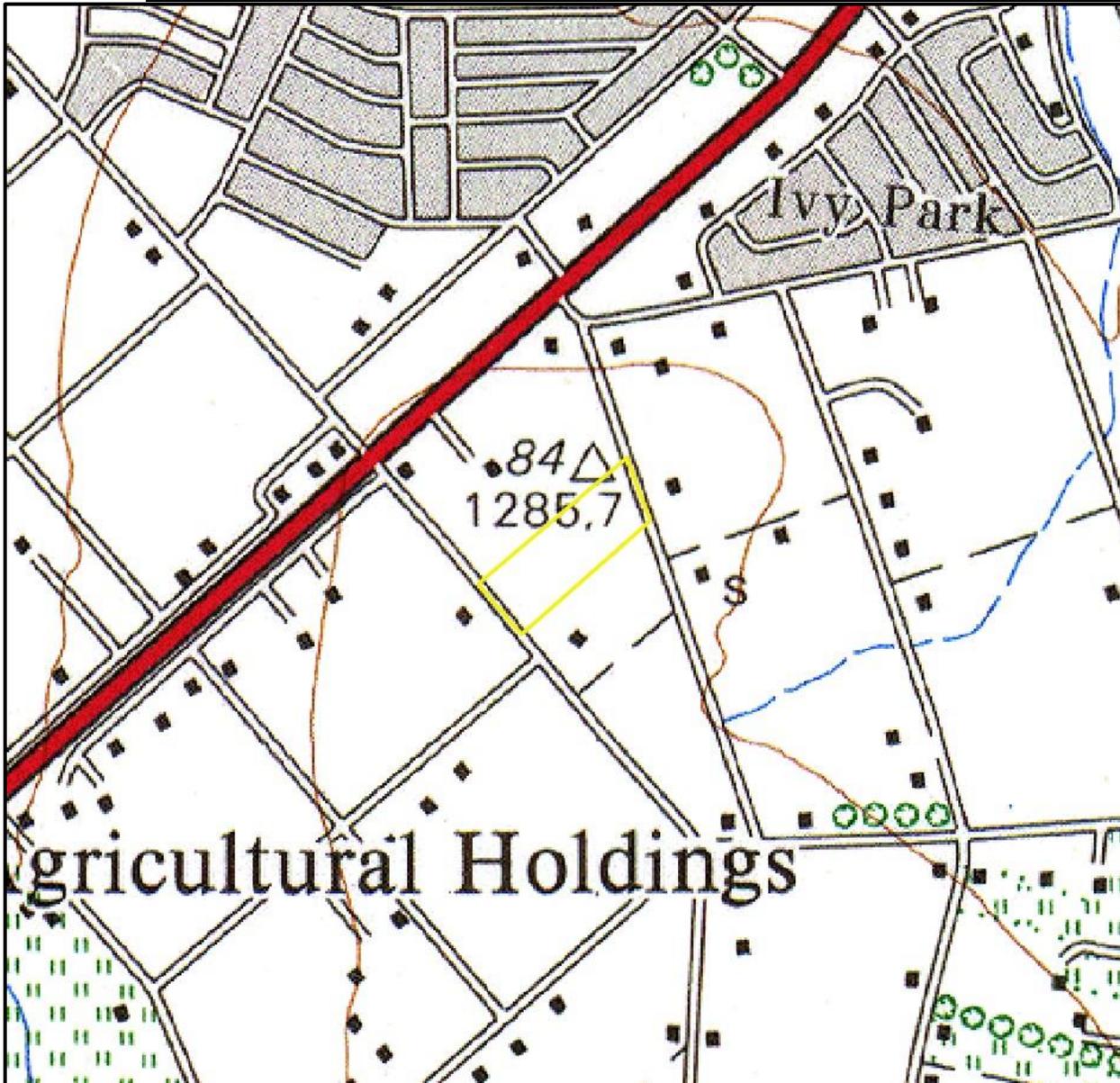


Figure 10. 1997 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. Minor roads formed the western and eastern boundaries of the property. No further developments are visible. (Topographical Map 1997)

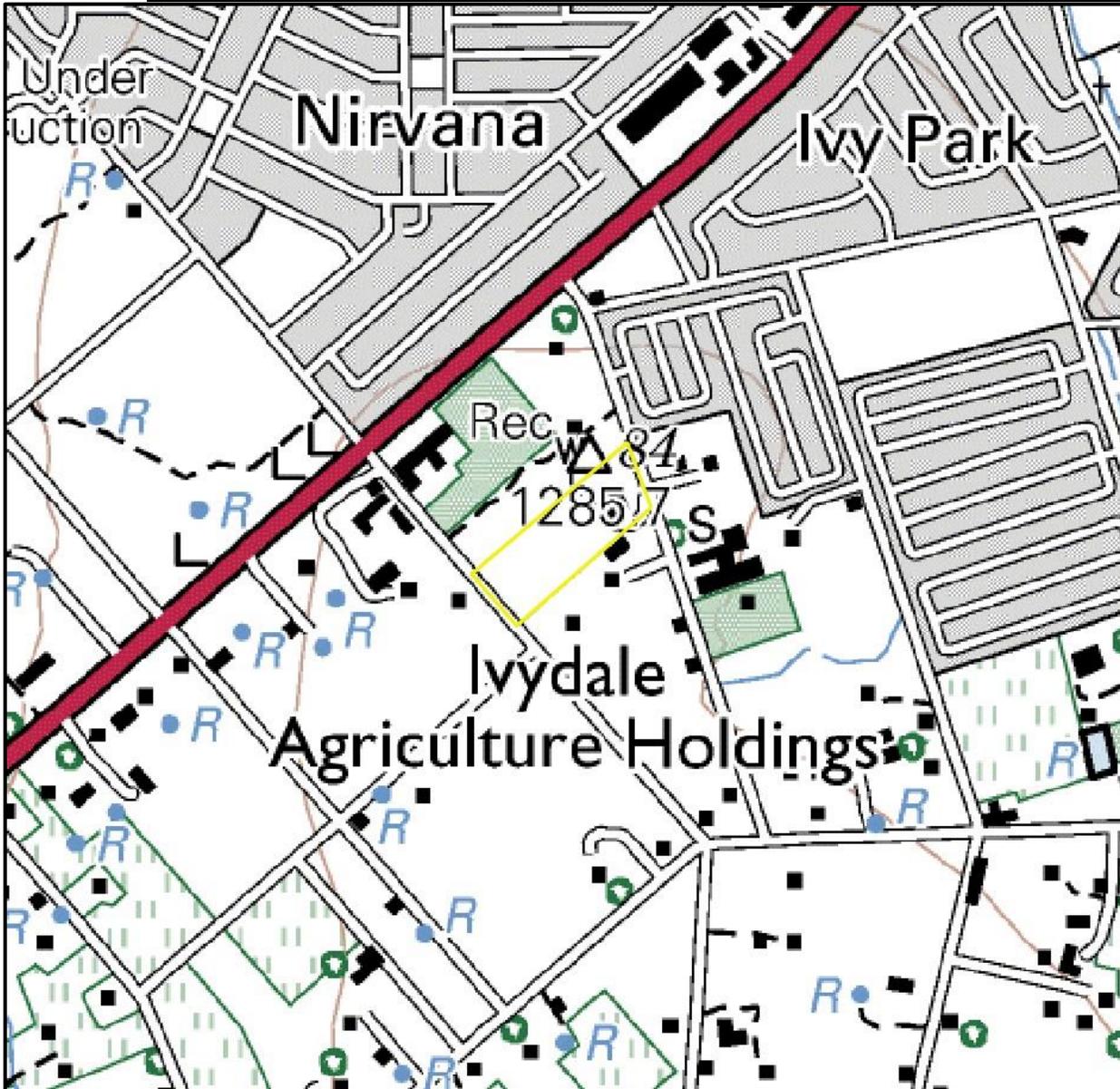


Figure 11. 2008 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. Minor roads formed the western and eastern boundaries of the property. One building is visible in the study area. (Topographical 2008)



Figure 12. 2018 Google Earth image showing the study area in relation to Lawton Road, Ivydale AH Extension 1, Polokwane Central and other sites. (Google Earth 2018)

7 Findings of the Survey

The majority of the study area has been fallow for a number of years and is in a derelict state. Access to the study area is open resulting in dumping and littering on the site. The study area is characterised by an extensive Late Iron Age settlement located on the south western portion of Plot 92 extending northwards into the partially developed Plot 91, and is clearly visible on Aerial images of the area (Figure 22). Here a church was built impacting on the Iron Age site, and was mitigated in 2004 (Murinbika 2004).

Developments on and surrounding the study area resulted that the archaeological site is partially impacted on by construction, dumping, movement of people and earthworks relating to the construction of adjacent buildings. However, the remainder of the site is in a fair condition and the foundations of several large stone walled enclosures, possibly outer walls with several smaller enclosures in the middle is still visible with various middens found across the study area, artefacts noted across the site include bone fragments, a soap stone salt maker, and undiagnostic ceramics (Figure 14 – 21).

Heritage Significance: A Section of the Iron Age Settlement is located in the study area marked by various surface features like kraals' enclosures and middens and are therefore given a field rating of Generally Protected A (GP.A) - Medium to High heritage significance

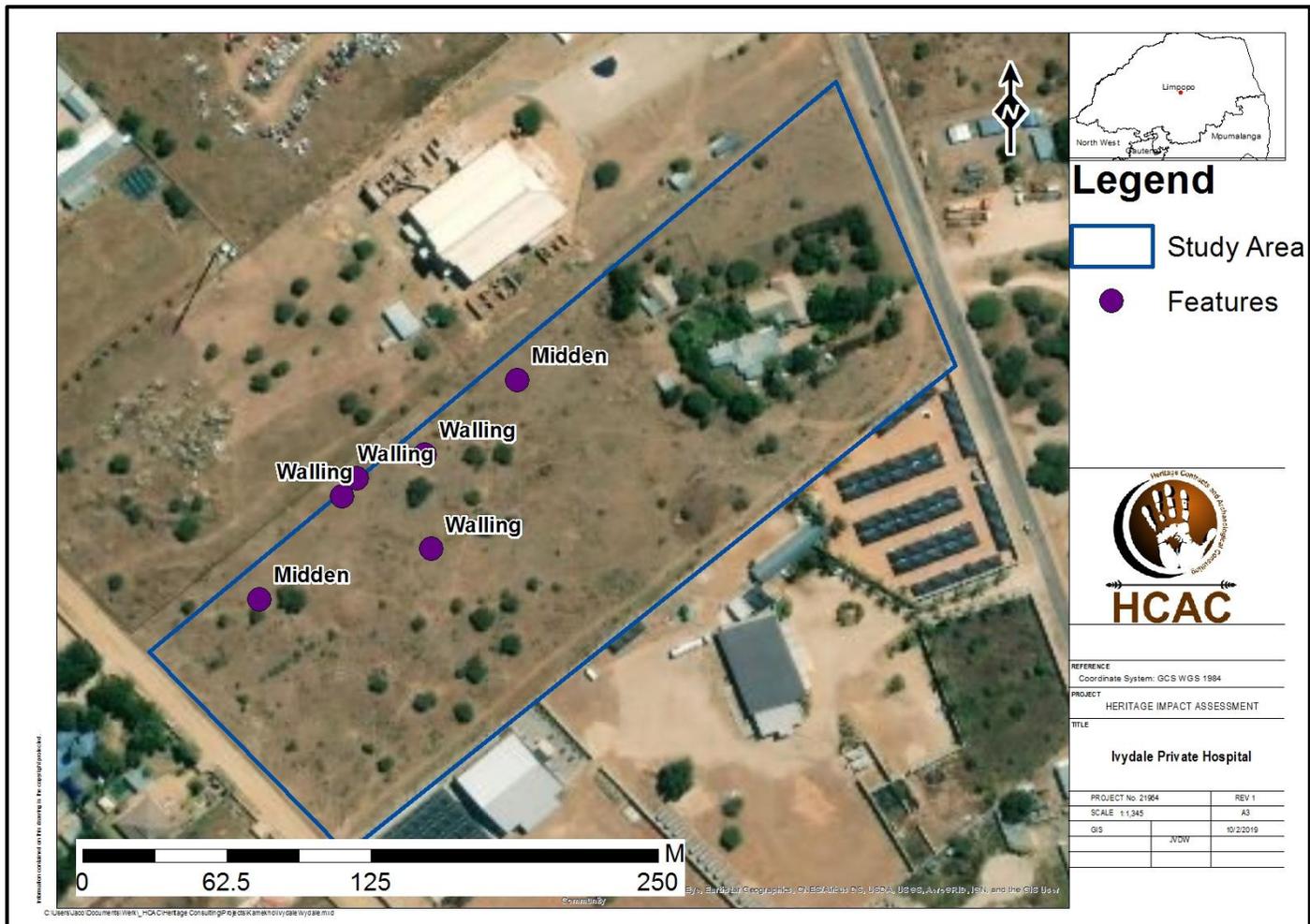


Figure 13. Features mentioned in the text.



Figure 14. Stone wall foundations.



Figure 15. Midden deposit.



Figure 16. View of large enclosure.



Figure 17. Stone wall foundation.



Figure 18. Stone wall foundations.



Figure 19. Stone wall foundations.



Figure 20. Midden deposit.



Figure 21: Undecorated ceramics.



Figure 22: Study area (blue polygon) with the stone walled settlement demarcated by a yellow polygon.

Based on the SAHRA Paleontological sensitivity map the area is of low paleontological sensitivity (Figure 23) and no further studies are required.



Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 23. Study area (yellow polygon) indicated as of low paleontological sensitivity on the SAHRIS Paleontological map.

Long term impact on the cultural landscape is considered to be negligible as the surrounding area consists of a densely-developed zone. Visual impacts to scenic routes and sense of place are also considered to be low due to the extensive developments in the area.

8 Potential Impact

The proposed project will impact directly an Iron Age settlement. Impacts will be during the construction phase only and would be of medium significance, but can be mitigated to an acceptable level. 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, impacts can be mitigated to an acceptable level. However, this and other projects in the area had a negative impact on Iron Age sites in the area, but the impact can be mitigated to an acceptable level as the sites will then be documented and recorded.

8.1.1 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 all of the recorded heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

8.1.2 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 all of the recorded heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

8.1.3 Operation Phase:

No impact is envisaged to heritage resources during this phase.

8.1.4 Impact Assessment

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	Local (3)	Local (3)
Duration	Permanent (5)	Permanent (5)
Magnitude	Moderate (6)	Low (4)
Probability	Very Probable (4)	Not probable (2)
Significance	56 (Medium)	24 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes, a chance find procedure should be implemented.	Yes
Mitigation:		
<ul style="list-style-type: none"> Phase 2 archaeological mitigation of the site that includes mapping, excavation and dating of the site. Implementation of a chance find procedure for the project. 		
Cumulative impacts:		
The study area has already been disturbed and the development will not cause a whole scale change to the environment. This and other projects in the area has a negative impact on Iron Age sites in the area, but the impact can be mitigated to an acceptable level as the sites will then be documented and recorded adding to the archaeological record of the area.		
Residual Impacts:		
Although surface sites can be avoided or mitigated, there is a chance that completely buried sites would still be impacted on but this cannot be quantified.		

9 Recommendations and conclusion

The study area consists of an agricultural holding that is mostly derelict apart from a residential dwelling and outbuildings on the northeastern portion of the study area. Access to the study area is open, resulting in dumping and littering across the site.

The background study highlighted that the general area under investigation has a wealth of heritage sites particularly dating to the Later Iron Age (Loubser 1994, Roodt 2006 and Murimbika 2014). During the survey of the study area, it was confirmed that the remains of a stone-walled Iron Age settlement are located on Holding 92 extending into the partially developed Holding 91. The section of the settlement located on Holding 91 has been mitigated (Murimbika 2004). The settlement is characterised by middens, enclosures and ceramics. The proposed development will impact directly on the remainder of the Iron Age site and in order for the proposed development to proceed Phase 2 archaeological mitigation is required. It is not feasible to preserve what is left of the Iron Age site (only foundation walls) on Holding 92 and the data generated through mitigation of the site will help to interpret the finds from the Murimbika mitigation that was inconclusive, according to the authors.

According to the SAHRIS paleontological sensitivity map, the area is of low paleontological sensitivity, and no further palaeontological studies are required. In terms of the built environment of the area (Section 34) a residential dwelling and associated outbuildings is located in the study area. These structures are not older than 60 years and their potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and they are therefore of no heritage significance.

In terms of Section 36 of the Act no formal burial sites were recorded. 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.

Commercial, residential and road infrastructure developments surround the study area and the proposed development will not impact negatively on significant cultural landscapes or views. During the Public Participation process conducted for this project, no heritage concerns were raised.

The proposed project will impact directly on heritage resources. Therefore will require archaeological mitigation as a condition of authorisation prior to construction as part of the EMP and based on approval from SAHRA.

Recommendations:

- Phase 2 archaeological mitigation of the site that includes mapping, excavation and dating of the site.
- Implementation of a chance find procedure for the project as outlined 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 can be mitigated to an acceptable level with the correct mitigation measures in place. Furthermore, the socio-economic benefits of a light industrial development and employment opportunities also outweigh the possible impacts to heritage resources.

9.3 Potential Risk

Potential risks to the proposed project are the occurrence of unknown and unmarked graves. There is a possibility that the study area could contain graves of which surface indicators have been destroyed. Subsurface material could be uncovered during earth works. These risks can be mitigated to an acceptable level with monitoring and the implementation of a chance find procedure as outlined in Section 9.1.

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11 Appendices:**Curriculum Vitae of Specialist**

Jaco van der Walt
Archaeologist

jaco.heritage@gmail.com
+27 82 373 8491
+27 86 691 6461

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 Chlookop 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 Booyendal 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

REFERENCES:

1. Prof Marlize Lombard Senior Lecturer, University of Johannesburg, South Africa
E-mail: mlombard@uj.ac.za
2. Prof TN Huffman Department of Archaeology Tel: (011) 717 6040
University of the Witwatersrand
3. Alex Schoeman University of the Witwatersrand
E-mail: Alex.Schoeman@wits.ac.za