

HERITAGE IMPACT ASSESSMENT

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

FOR THE PROPOSED ALLEN'S NEK LIGHT INDUSTRIAL DEVELOPMENT, GAUTENG PROVINCE

Type of development:

Light industrial land use

Client:

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Project Reference:

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APPROVAL PAGE

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Report Title	Heritage Impact Assessment for the Proposed Allen's Nek Light Industrial Development, Gauteng Province
Authority Reference Number	GAUT002/19 - 20/E0174
Report Status	Final Report
Applicant Name	Tommie Roodt Family Trust,

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Date	Report Reference Number	Description of Amendment

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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

Eco Assessments were appointed to conduct a Basic Assessment for the proposed development of a light industrial development, located on Allen's Nek Holding 8 located in Roodepoort Johannesburg, Gauteng province.

The proposed development will comprise approximately 2,1 hectares of land. 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 the development lay out was not available at the time of the survey.

The study area consists of an agricultural holding that is mostly derelict with vacant residential dwellings. During the survey no archaeological sites were recorded, according to the SAHRIS paleontological sensitivity map the area is of low paleontological sensitivity and no further studies are required in terms of Section 35 for the proposed development to proceed. In terms of the built environment of the area (Section 34) foundations of a ruin and two residential dwellings were recorded during the study. These structures 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, it should be kept in mind that although unlikely the ruin identified could be associated with unmarked graves. There is no evidence to suggest that the identified stone cairns could represent graves but it is recommended that the ruin and stone cairns should be monitored during construction. If any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area.


The study area is surrounded by commercial and road infrastructure developments 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 was raised.

The impact of the proposed project on heritage resources is considered low and it is recommended that from a heritage perspective the proposed project can commence on the condition that the recommendations as made in this report are implemented as part of the EMP and based on approval from SAHRA.

Recommendations:

- Monitoring of ruin and stone cairns during construction;
- Implementation of a Chance find procedure.

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	23/09/2019

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 Eco Assessments to conduct a heritage impact assessment of a light industrial development comprising approximately 2,1 hectares. The report forms part of the Basic Assessment Report (BAR) and Environmental Management Programme Report (EMPR) for the Allen's Nek Holding 8 development located in Roodepoort Gauteng (Figure 1 – 3). The survey covered the project area as development plans were not yet available.

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 ruin, two residential dwellings and stone cairns 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	2,1 hectares located Allen's Nek Holding 8
Magisterial District	Johannesburg Metropolitan Municipality, Gauteng Province.
1: 50 000 map sheet number	2627BB

Table 3: Infrastructure and project activities

Type of development	Light industrial Development
Project size	2,1 Hectare
Project Components	The applicant wishes to establish a light industrial development with associated infrastructure on the entire property.

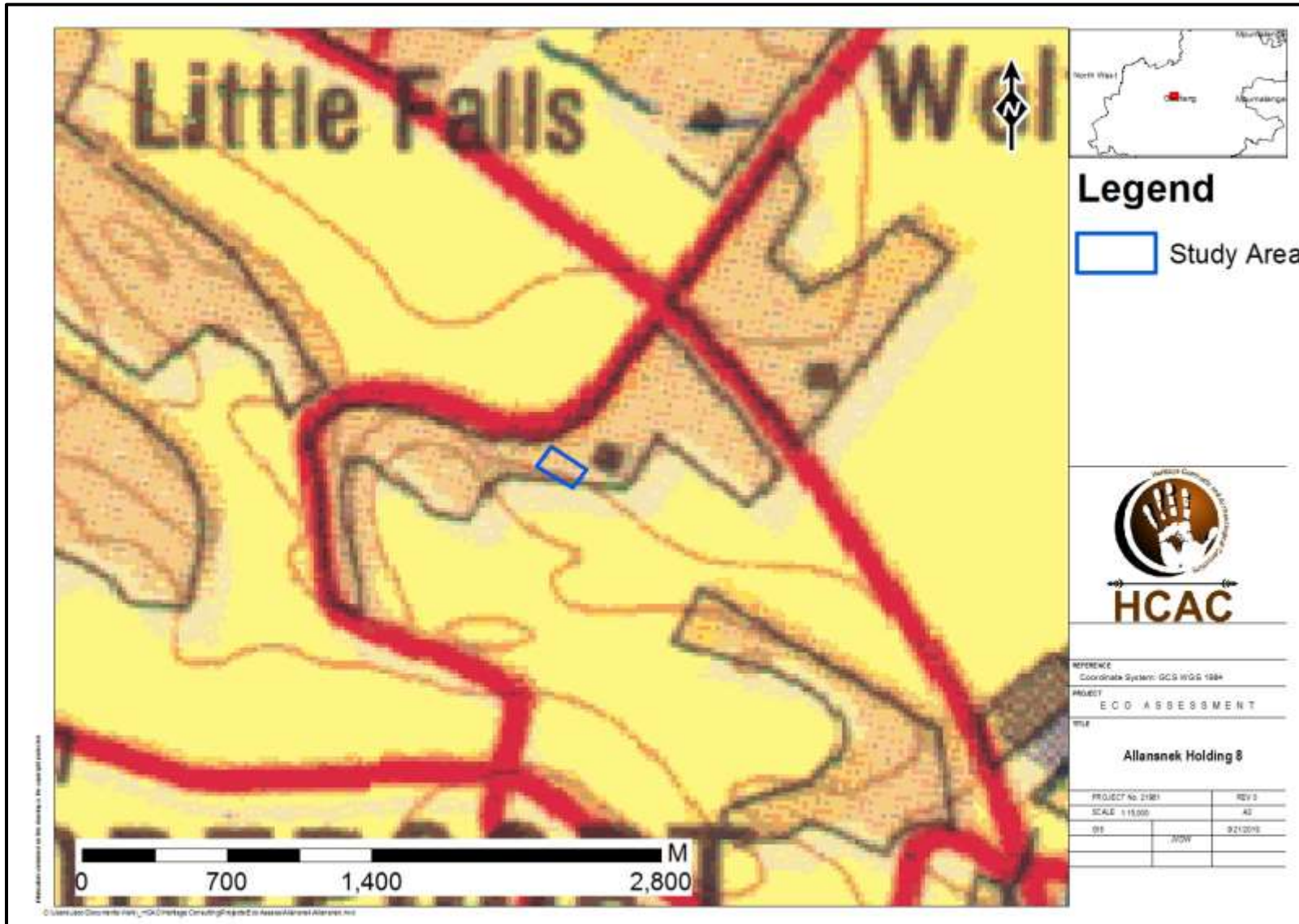


Figure 1. Provincial map (1: 250 000 topographical map).

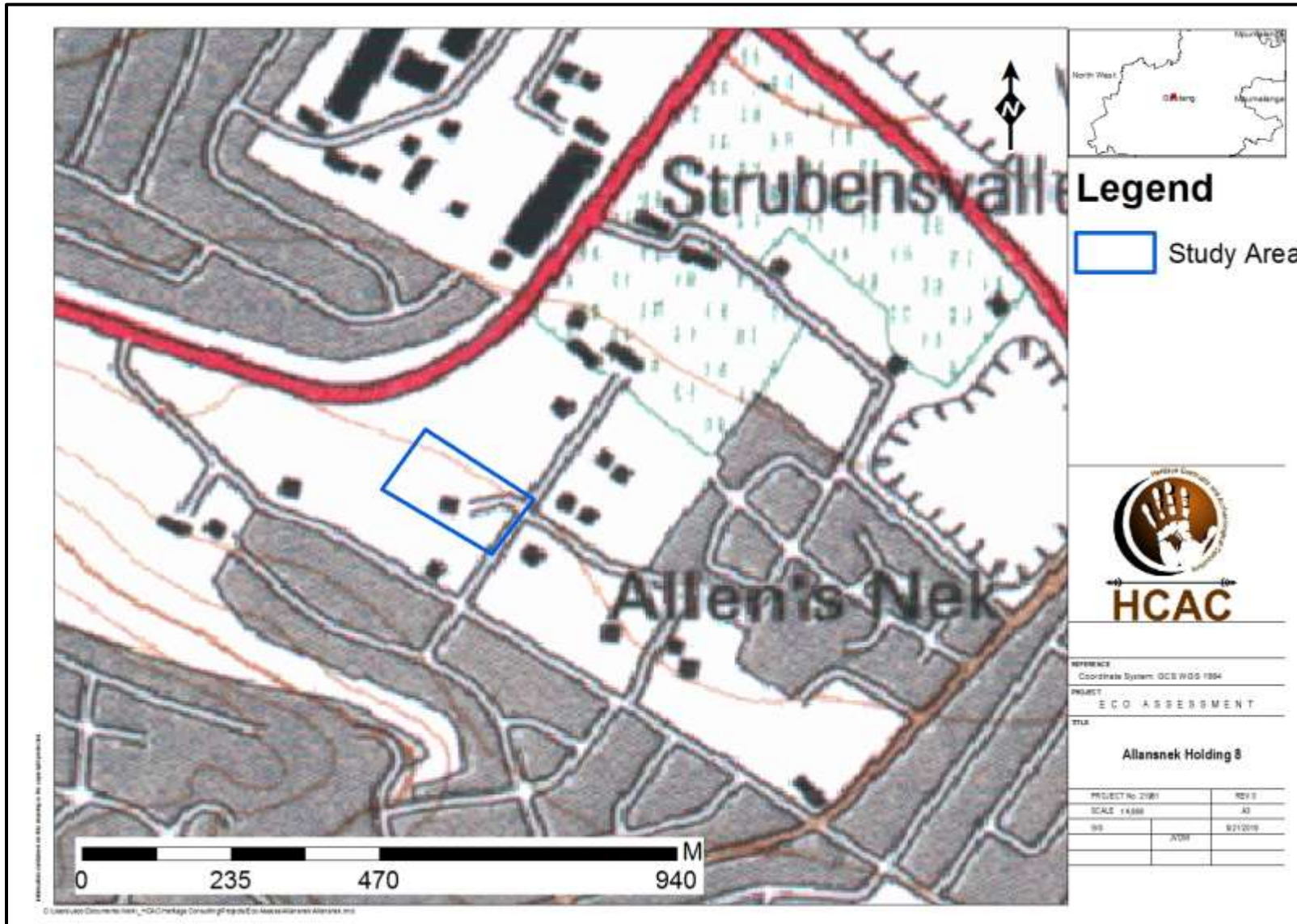


Figure 2: Regional map (1:50 000 topographical map).



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	18 September 2019
Season	Spring/Summer –vegetation in the study area is low with high archaeological visibility. The impact area was sufficiently covered (Figure 4) to adequately record the presence of heritage resources.

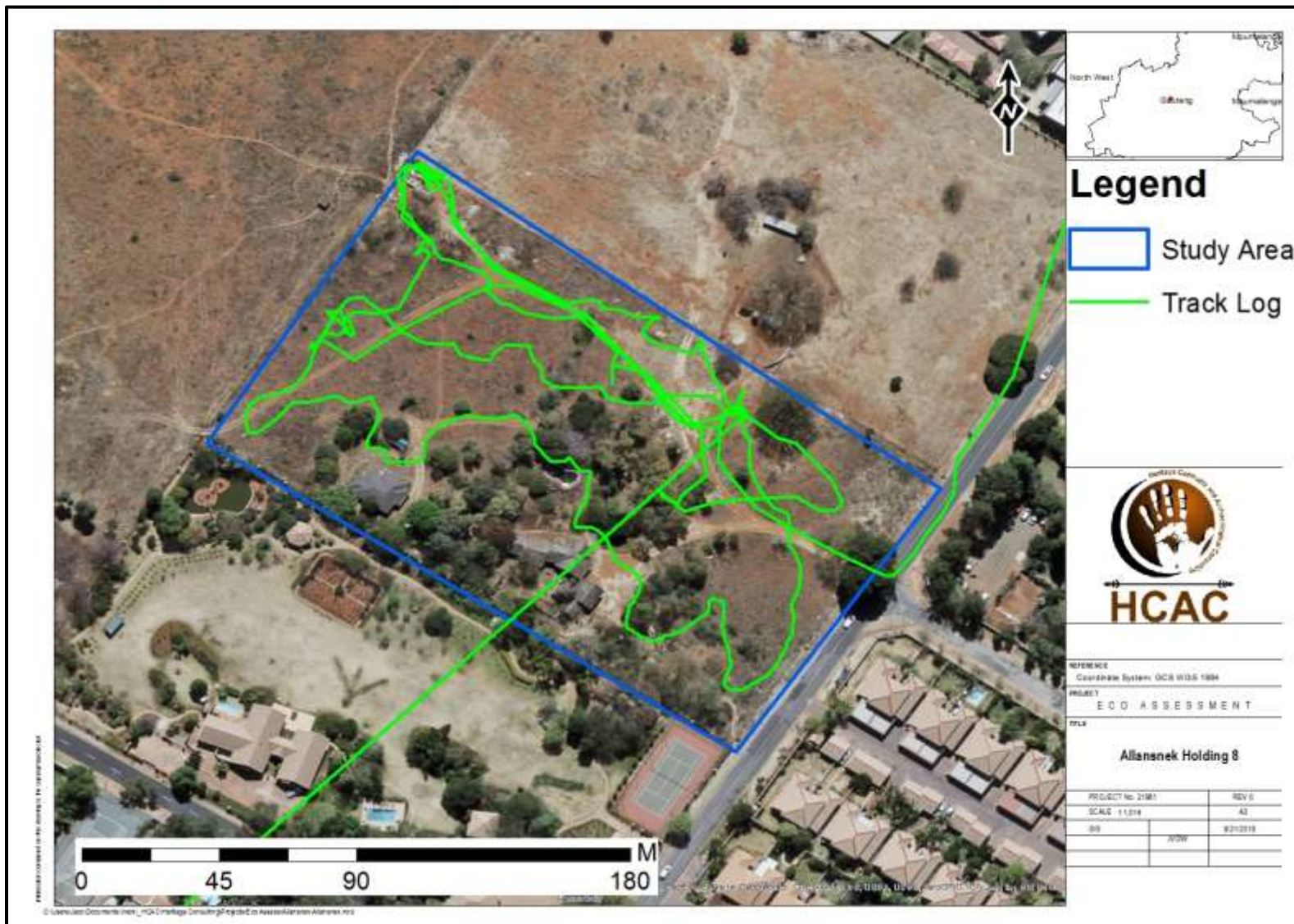


Figure 4: Track logs of the survey in green.

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

Stats SA provides the following information: According to 2011 census the City of Johannesburg Local Municipality has a total population of 4,4 million of which 76,4% are black African, 12,3% are white people, 5,6% are coloured people, and 4,9% are Indian/Asian. Of those 20 years and older 3,4% have completed primary school, 32,4% have some secondary education, 34,9% have completed matric, 19,2% have some form of higher education, and 2.9% of those aged 20 years and older have no form of schooling. There are 2 261 490 economically active (employed or unemployed but looking for work) people in the City of Johannesburg; of these 25,0% are unemployed. Of the 1 228 666 economically active youth (15–35 years) in the area, 31,5% are unemployed.

5. Description of the Physical Environment:

The proposed Allen's Nek development will be situated on Holding 8 Allen's Nek, Roodepoort. Farms in this area used to be commercial farms with their main focus on the production of crops and the raising of live-stock. Most of these farms were later sub-divided into small holdings which supports a wide range of businesses and activities. The study area is located approximately 65 meters to the south of Christiaan de Wet road with Van Vuuren Street forming the south-eastern boundary of the study area. To the north, west and south are agricultural holdings.

The prevailing vegetation type and landscape features of the area form part of the Egoli Granite Grassland. 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. The rocky habitats show a high diversity of woody species, which occur in the form of scattered shrub groups or solitary small trees (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.



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

Wits Archaeological Data Bases

32 Previously recorded sites are on record for the 2627 BB 1: 50 000 sheet at the Wits database. These sites consist of Stone Age (ESA & LSA), Late Iron Age, Anglo Boer War remains and Historic mining remains. None of these sites are located within or close to the project area but provide a background to the history of the area.

SAHRA Report Mapping Project

CRM studies conducted in the general vicinity of the study area and were consulted below:

Author	Year	Project	Findings
Schoeman, M.H.	2004	Archaeological assessment of the mound on Honeydew Manor Extension 5	Graves
Pistorius, J.C.C.	2005	A Heritage impact Assessment study for Portion 30 and 31 in the Little Falls suburb of Roodepoort in the Gauteng Province of South Africa.	No sites
Van Schalkwyk, J.	2007	Heritage survey of Holding 21, Alsef Agricultural Holdings, Roodepoort Magisterial District, Gauteng Province	No sites
Fourie, W.	2008	AIA for the Proposed rezoning of Holding 2 Ambot A.H. Johannesburg, Gauteng Province	No sites
Van der Walt, J.	2008	Cultural Heritage Impact Assessment on the remaining extent of the farm Wilgespruit 190 IQ, Honeydew, Gauteng Province	Two historical structures.

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

J. S. Bergh’s historical atlas of the four northern provinces of South Africa provides local and regional history. An important heritage site in the greater Johannesburg area is the Melville Koppies, which is a Middle Stone Age (MSA) site. (Bergh 1999: 4) This area was also important to Iron Age communities, these people smelted and worked iron ore at the Melville Koppies site since the year 1060, by approximation. (Bergh 1999: 7, 87)

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

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers went on expeditions to the northern areas in South Africa, some already as early as the 1720’s. It was however only by the late 1820’s that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39) By 1939 to 1940, farm boundaries were drawn up in an area that includes the present-day Johannesburg and Krugersdorp (Bergh 1999: 15).

6.3 Archaeology of the greater study area

Although there are no well-known Stone Age sites located on or around the study area there is evidence of the use of the larger area by Stone Age communities for example along the Kliprivier where ESA and MSA tools were recorded. LSA material is recorded along ridges to the south of the current study area (Huffman 2008). Petroglyphs (also called rock engravings) occur at Redan as well as along the Vaal River (Bergh 1999).

Regarding the Iron Age, the well-known Smelting Site at Melville Koppies requires further mention. The site was excavated by Professor Mason from the Department of Archaeology of Wits in the 1980’s. Extensive stone walled sites are also recorded at Klipriviers Berg Nature reserve belonging to the LIA period. A large body of research is available on this area. These sites (Taylor’s Type N, Mason’s Class 2 & 5) are now collectively referred to as Klipriviersberg (Huffman 2007). These settlements are complex in that aggregated settlements are common, the outer wall sometimes includes scallops to mark back courtyards, there are more small stock kraals, and straight walls separate households in the residential zone. These sites date to the 18th and 19th centuries and were built by people in the Fokeng cluster.

In this area, the Klipriviersberg walling would have ended in about AD 1823, when Mzilikazi entered the area (Rasmussen 1978). This settlement type may have lasted longer in other areas because of the positive interaction between Fokeng and Mzilikazi.

6.4 Cultural Landscape

The area under investigation is located to the west of Van Vuuren Street in Allen's Nek, Roodepoort, Gauteng Province. The surrounding area is characterised by industrial developments.

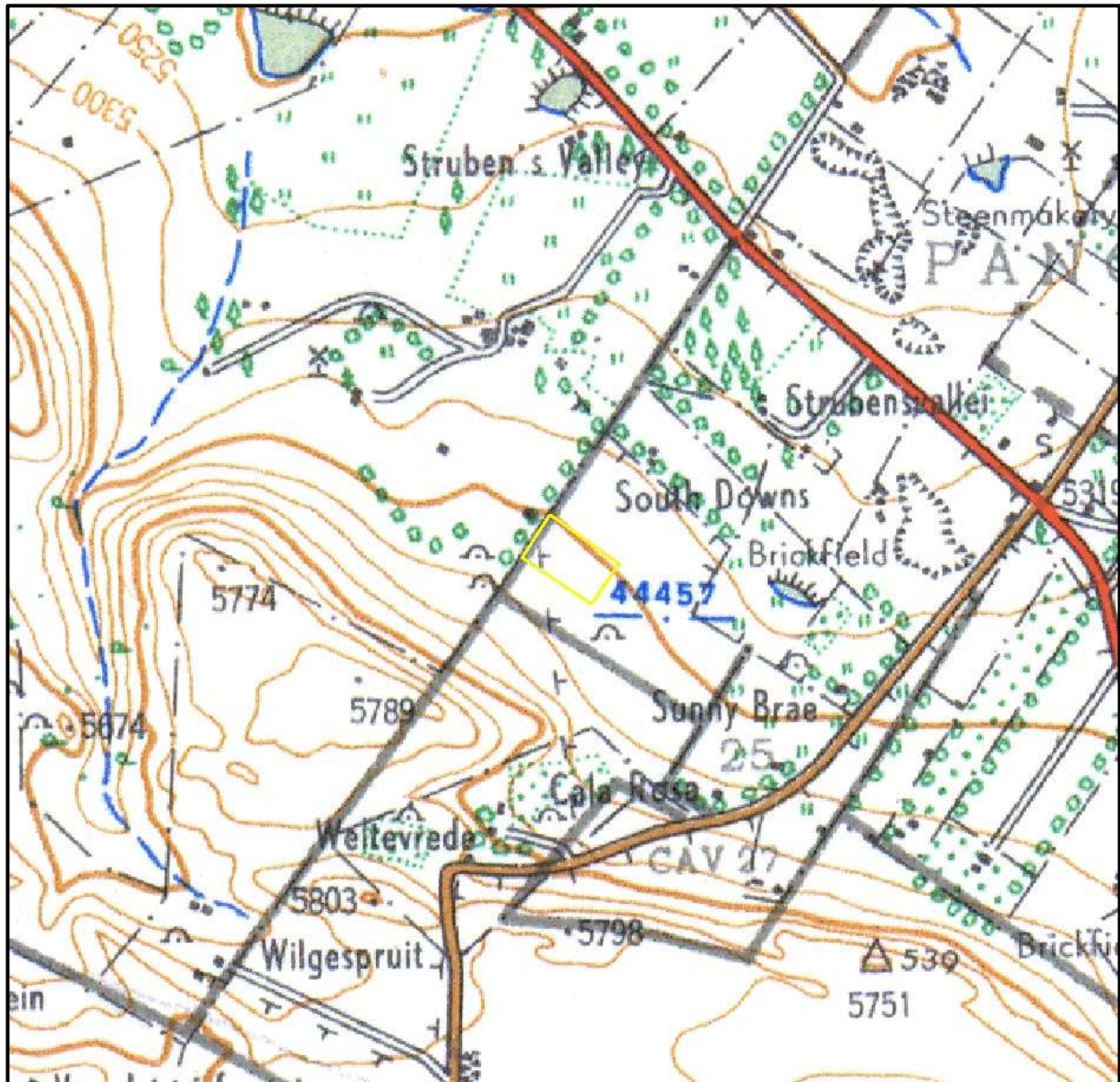


Figure 9. 1954 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. A telephone line went through the property. No other developments are visible. (Topographical Map 1954).

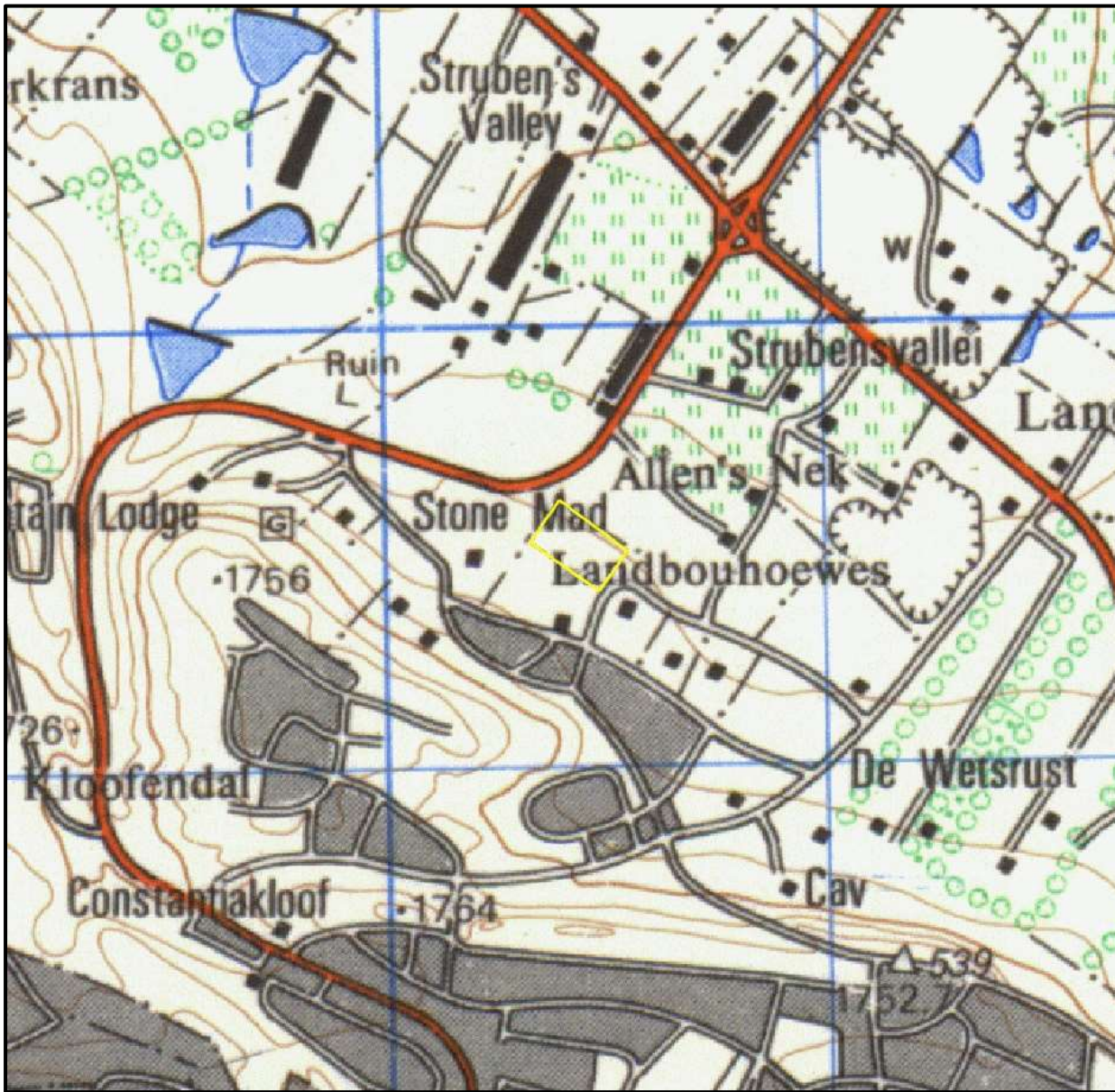


Figure 10. 1977 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. No developments are visible in the study area. This site formed part of Allen's Nek Agricultural Holdings. (Topographical Map 1977).

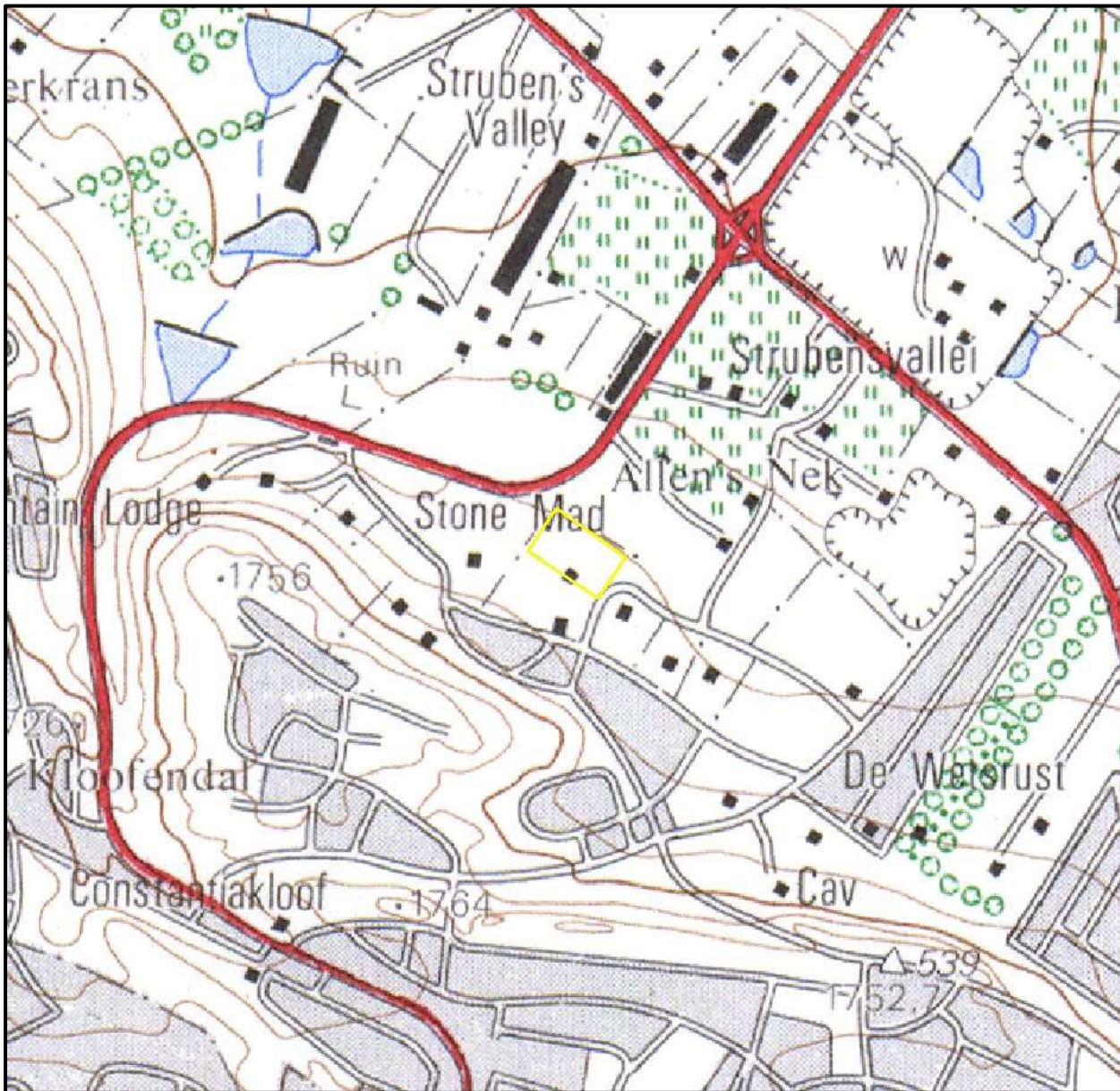


Figure 11. 1983 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. One building is visible in the study area. (Topographical Map 1983).

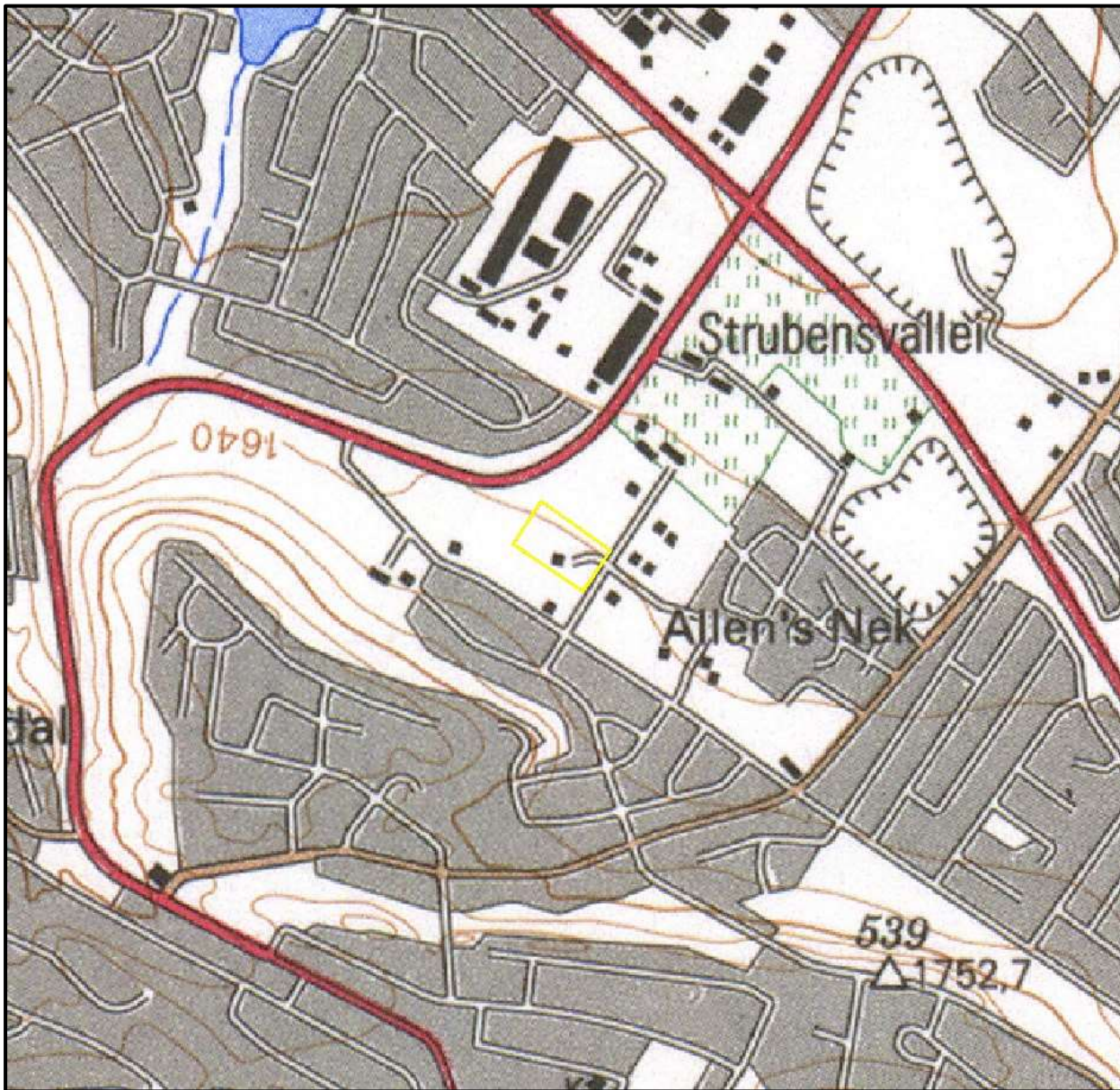


Figure 12. 1995 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. One building is visible in the study area, and a minor road went through the site. A minor road also formed the south eastern boundary of the property. (Topographical Map 1995).

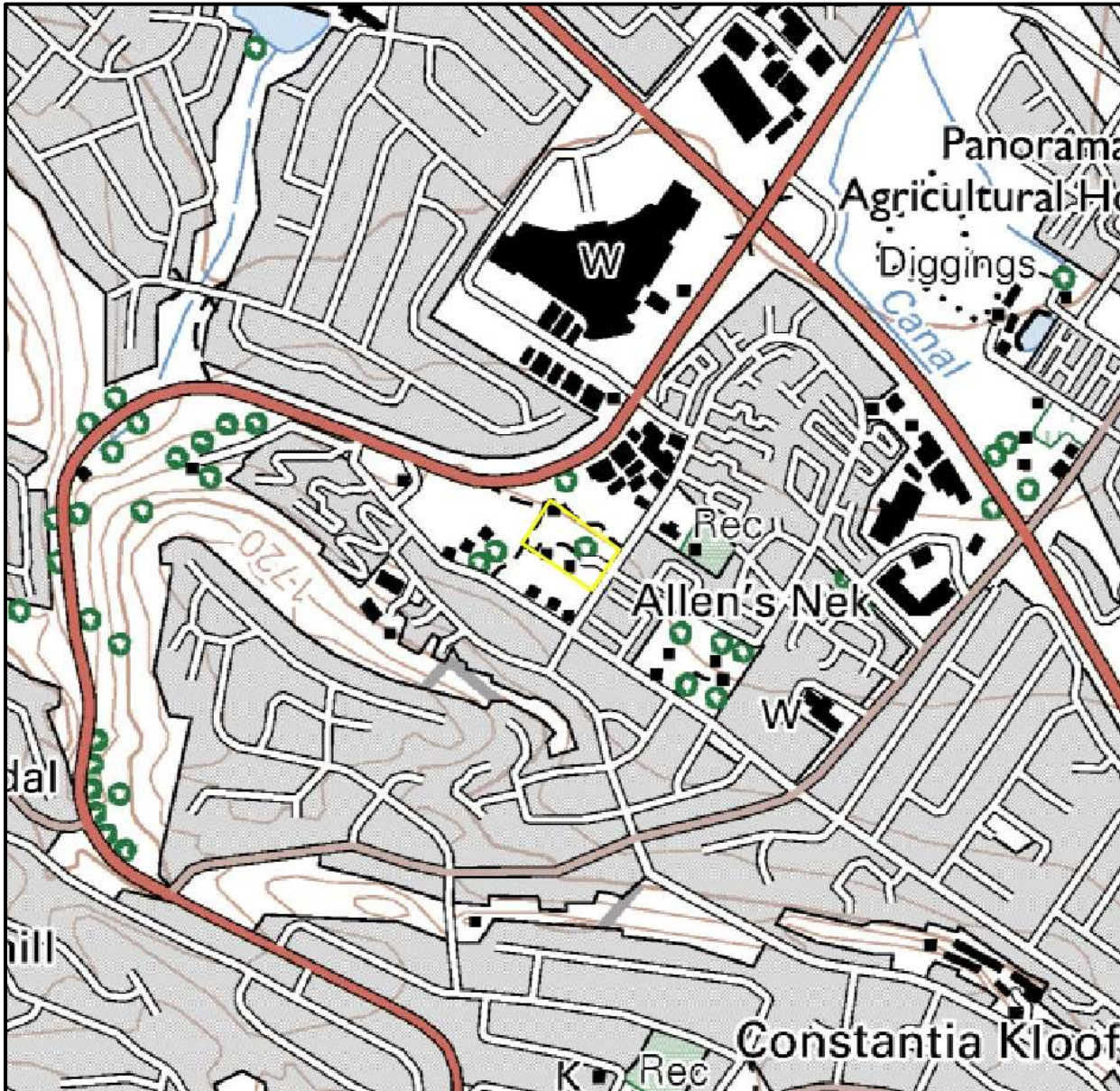


Figure 13. 2007 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. Three buildings are visible in the study area, and a minor road went through the site. A minor road formed the south eastern boundary of the property, and tracks / footpaths are visible along the north western and eastern boundaries of the site. (Topographical Map 2007).

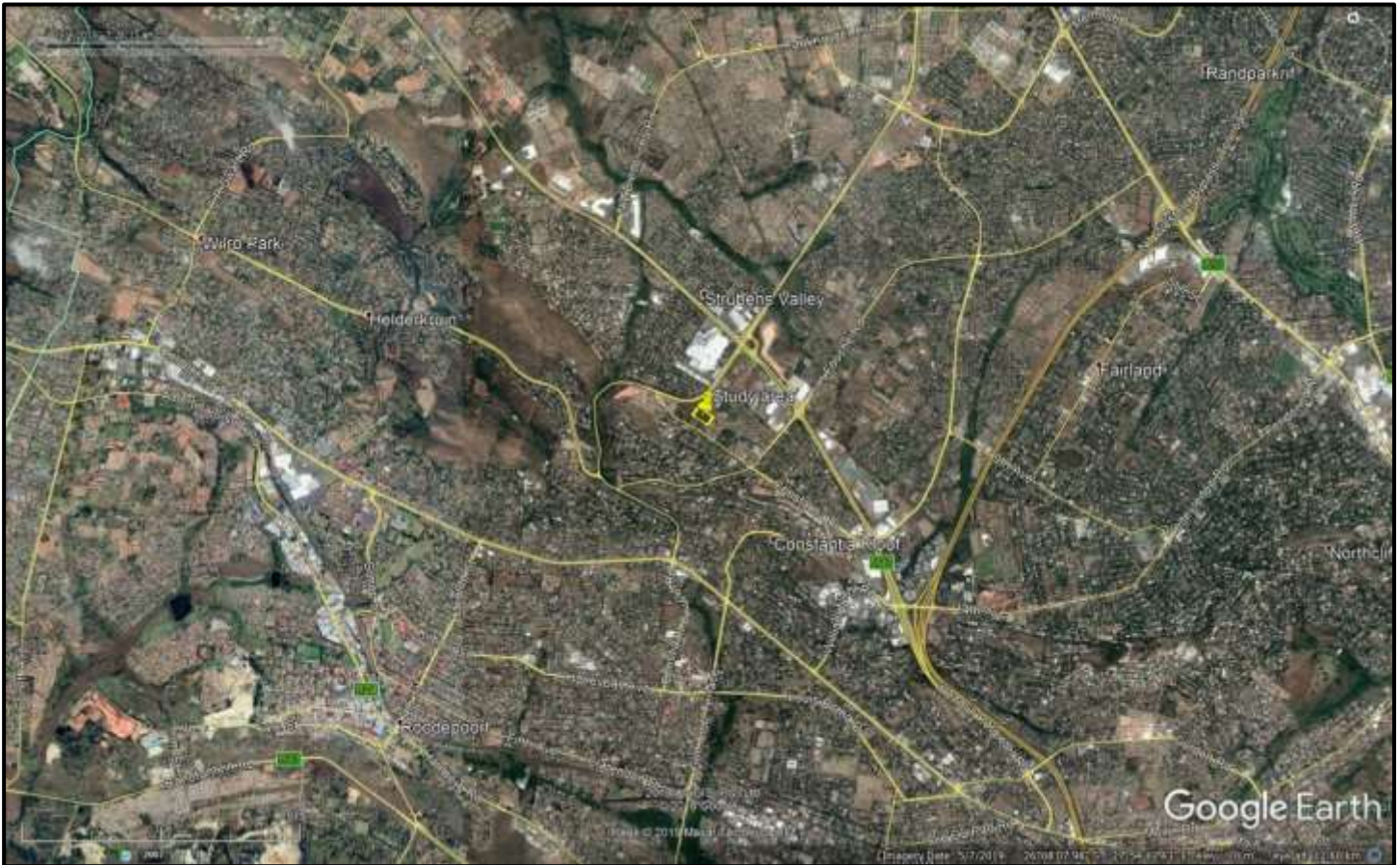


Figure 14. 2019 Google Earth image showing the study area in relation to Strubens Valley, Constantia Kloof, Roodepoort and other sites. (Google Earth 2019).

7 Findings of the Survey

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. Stone cairns and cairns (Figure 16 – 19) with building rubble are found throughout the study area with a cluster of stone cairns found in the north western section (27.9035829753 -26.1332759913) probably related to previous agricultural activities. The stone cairns are random; of varying sizes resembling clearing of fields or dumping. Here a linear stone packed line (approximately 10 meters) similar to stones packed under a fence was noted. This cluster of stone cairns and linear stone feature does not resemble a cemetery as the site is located on a rocky area, the stone features are not aligned east to west or forming any pattern. In addition, according to the current tenant Mr Patric Canepa who resides in the area from the 1950's, he is not aware of any graves on the property. These cairns are therefore of no heritage significance.

Heritage Significance: Generally Protected C (GP.C) Low heritage significance

Two vacant modern residential dwellings recorded as House 1 (27.9042240161 -26.1339972955 and House 2 (27.9036726367 -26.1338008270) were recorded as well as ruin possibly a farm labourer dwelling (27.9038230330 - 26.1328660324) and is described under section 8.1.

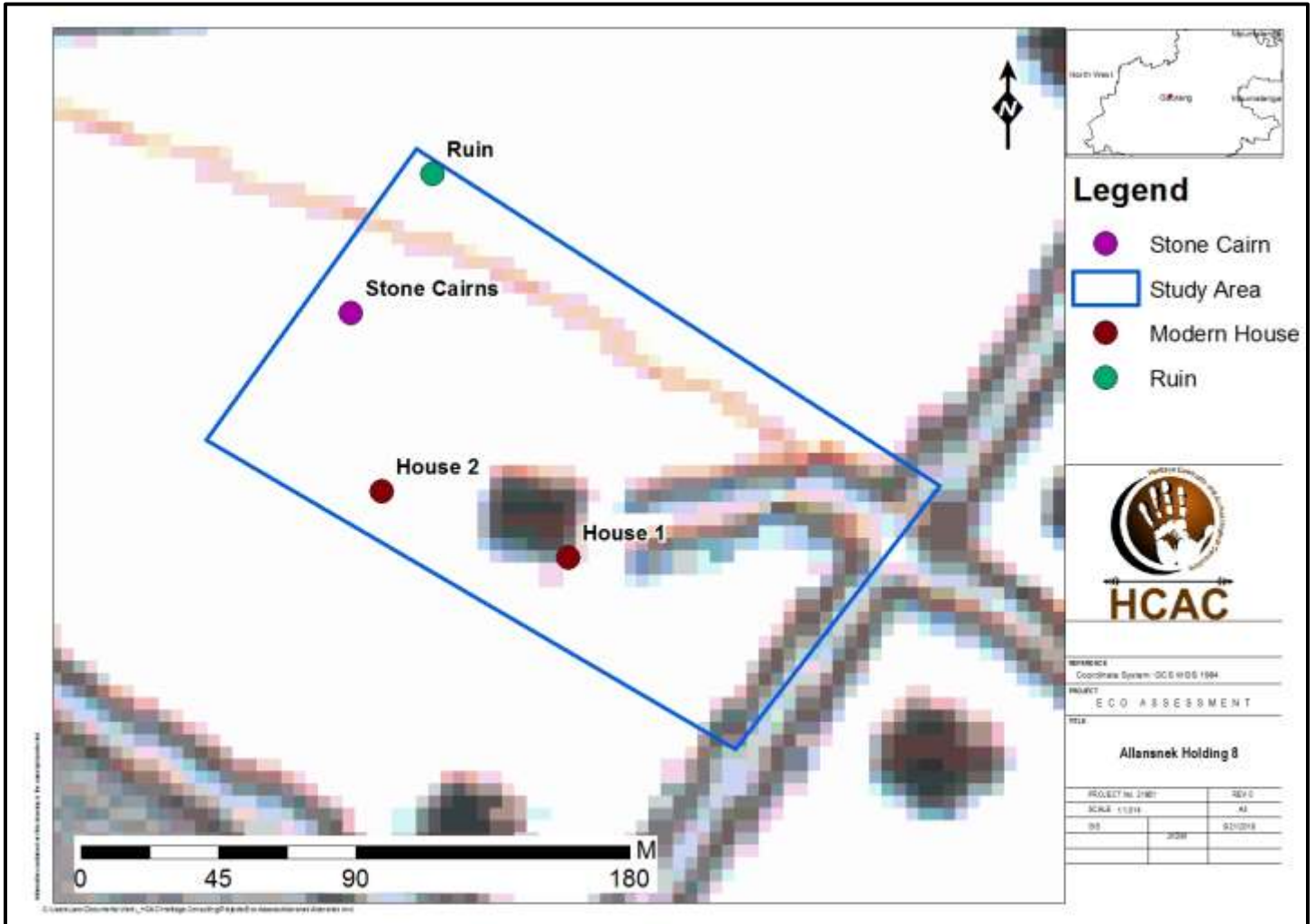


Figure 15. Features mentioned in the text.



Figure 16. Dumping.



Figure 17. Dumping.



Figure 18. Linear packed stones.



Figure 19. Stone cairn.

8 Description of Identified Heritage Resources (NHRA Section 34 -36):

8.1 Built Environment (Section 34 of the NHRA)

Two vacant residential dwellings occur on site, but based on archival maps these structures date to around 1983 and 2007 respectively (Figure 11 and 13). These structures are of no heritage significance.



Figure 20. Vacant residential dwelling (House 1).



Figure 21. Vacant residential dwelling (House1).



Figure 22. Vacant residential dwelling (House 2).

A ruin was also recorded (Ruin) that is only indicated on the 2007 archival map (Figure 13) and is therefore not older than 60 years. The ruin measures approximately 4 x 3 meters with glass and metal fragments scattered around the area and are interpreted as farm labourer housing. The foundations of an ephemeral stone wall associated with the ruin were also noted here. The recorded buildings potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and it is therefore of no heritage significance. Features such as the recorded ruin can be associated with unmarked graves and this area should be monitored during construction.

Heritage Significance: Generally Protected C (GP.C)
Low heritage significance



Figure 23. Foundations of ruin.



Figure 24. Foundations of ruin.



Figure 25. General site conditions.

8.2 Archaeological and Palaeontological resources (Section 35 of the NHRA)

8.2.1 Archaeological Resources

No archaeological sites or material was recorded during the survey. Therefore, no further mitigation prior to construction is recommended in terms of the archaeological component of Section 35 of the NHRA for the proposed development to proceed.

8.2.2 Paleontological Resources

Based on the SAHRA Paleontological sensitivity map the area is of low paleontological sensitivity (Figure 27) 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 26. Study area (yellow polygon) indicated as of low paleontological sensitivity on the SAHRIS Paleontological map.

8.3 Burial Grounds and Graves (Section 36 of the NHRA)

No formal burial sites or graves were recorded.

8.4 Battlefields and Concentration Camps

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

8.5 Cultural Landscapes, Intangible and Living Heritage.

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.

9 Potential Impact

The site has been extensively impacted on by surrounding developments and illegal dumping. From a heritage point of view the site has been extensively impacted and the level of additional impacts by the development is considered to be acceptable as there are no surface indicators of significant heritage resources in the study area.

9.1.1 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.

9.1.2 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.

9.1.3 Operation Phase:

No impact is envisaged to heritage resources during this phase.

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

9.1.4 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	Low (2)	Low (2)
Probability	Not probable (2)	Not probable (2)
Significance	20 (Low)	20 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	No significance heritage resources were recorded	No significance heritage resources were recorded.
Can impacts be mitigated?	Yes, a chance find procedure should be implemented.	Yes
Mitigation: The stone cairns and ruin should be monitored during construction. A chance find procedure must be implemented during construction.		
Cumulative impacts: The study area has already been disturbed and the development will not cause a whole scale change to the environment.		
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.		

10 Recommendations and conclusion

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. Stone cairns and cairns with building rubble are found throughout the study area with a cluster of stone cairns found in the north western section probably related to previous agricultural activities. The stone cairns are random; of varying sizes resembling clearing of fields or dumping. Here a linear stone packed line (approximately 10 meters) similar to stones packed under a fence was also noted. This cluster of stone cairns and linear stone feature does not resemble a cemetery as the site is located on a rocky area; the stone features are not aligned east to west or forming any pattern. In addition, according to the current tenant Mr Patric Canepa who resides in the area from the 1950’s, he is not aware of any graves on the property.

During the survey no archaeological sites were recorded, according to the SAHRIS paleontological sensitivity map the area is of low paleontological sensitivity and no further studies are required in terms of Section 35 for the proposed development to proceed. In terms of the built environment of the area (Section 34) foundations of a ruin and two residential dwellings (House 1 & 2) were recorded. The houses are vacant and based on archival maps these structures date to around 1983 and 2007 respectively. A ruin was also recorded that is only indicated on the 2007 archival map (Figure 13) and is therefore not older than 60 years. The recorded structures 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 and no further action is required for this aspect.

In terms of the built environment of the area (Section 34) two houses, as well as the remaining foundations of building are located in the study area. Construction activity caused some disturbances and damage across several parts of the proposed site. The ruin’s potential to contribute to aesthetic, historic, scientific and social aspects are non-existent and it is therefore of no heritage significance. No further actions are recommended based on approval from SAHRA.

In terms of Section 36 of the Act no formal burial sites were recorded, it should be kept in mind that although unlikely the ruin identified could be associated with unmarked graves. There is no evidence to suggest that the identified stone cairns could represent graves but it is recommended that the ruin and stone cairns should be monitored during construction. If any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation. No public monuments are located within or close to the study area.

The study area is surrounded by commercial and road infrastructure developments and the proposed development will not impact negatively on significant cultural landscapes or viewsapes. During the Public Participation process conducted for this project no heritage concerns was raised.

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

Recommendations:

- Monitoring of ruin and stone cairns during construction;
- Implementation of a Chance find procedure as outlined below.

10.1 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.

10.2 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.

10.3 Potential Risks

Potential risks to the proposed project are the occurrence of graves that could be uncovered during earth works especially at the recorded ruin and stone cairns. These risks can be mitigated to an acceptable level with monitoring and the implementation of a chance find procedure as outlined in Section 10.1.

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Google Earth. 2019. 26°08'07.98" S 27°54'13.43" E eye alt 12.60 km. [Online]. [Cited 19 September 2019].

Maps

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12 Appendices:**Curriculum Vitae of Specialist**

Jaco van der Walt
Archaeologist

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Education:

Particulars of degrees/diplomas and/or other qualifications:

Name of University or Institution: University of Pretoria
Degree obtained : BA Heritage Tourism & Archaeology
Year of graduation : 2001

Name of University or Institution: University of the Witwatersrand
Degree obtained : BA Hons Archaeology
Year of graduation : 2002

Name of University or Institution : University of the Witwatersrand
Degree Obtained : MA (Archaeology)
Year of Graduation : 2012

Name of University or Institution : University of Johannesburg
Degree : PhD
Year : Currently Enrolled

EMPLOYMENT HISTORY:

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

Countries of work experience include:

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

SELECTED PROJECTS INCLUDE:

Archaeological Impact Assessments (Phase 1)

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

Archaeological Impact Assessment Mmamethlake Landfill

Archaeological Impact Assessment Libangeni Landfill

Linear Developments

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

Archaeological Impact Assessment Medupi – Spitskop Power Line,

Archaeological Impact Assessment Nelspruit Road Development

Renewable Energy developments

Archaeological Impact Assessment Karoshoek Solar Project

Grave Relocation Projects

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

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

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

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

Phase 2 Mitigation Projects

Field Director for the Archaeological Mitigation For 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:

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