PHASE I CULTURAL HERITAGE IMPACT ASSESSMENT (HIA) FOR THE PROPOSED DEVIATION OF THE PLUTO-MAHIKENG 400 KV POWERLINE WITHIN THE JB MARKS (DR KENNETH KAUNDA DISTRICT) AND MAHIKENG (NGAKA MODIRI MOLEMA DISTRICT) LOCAL MUNICIPALITIES IN THE NORTH-WEST.

05 April 2026

©COPYRIGHT

This Phase 1 Archaeological Report contains intellectual information that is protected by copyright in favour of Afro Conserva Integration. Thus, it may not be reproduced or edited without prior written consent of Afro Conserva Integration; it has been exclusively prepared for National Transmission Company of South Africa (NTCSA).

DECLARATION

ABILITY TO CONDUCT THE PROJECT

Authors

Philisiwe Phillip is a qualified archaeologist, having obtained a BA degree in Archaeology and Anthropology at the University of Pretoria (UP), an Honours degree in Archaeology at the University of Pretoria (UP) focusing on testing the reliability of microfauna analysis as a proxy in paleoenvironmental reconstruction using barn owl pellets. Philisiwe has experience in Heritage Management, involving Heritage Research and has volunteered as an archaeological Field and Lab Technician at the University of Pretoria, which further developed her technical skills. She has undertaken Archaeological Impact Assessments and relocation of graves project and is a member of the Association for southern African Professional Archaeologists (ASAPA).

Alvord Nhundu is a professional archaeologist. He completed his Bachelor of Science with Honours degree in archaeology with the University of the Witwatersrand (Wits) and Masters in Archaeology with the University of Pretoria (UP). His research interest lies in old and new world archaeology, palaeoenvironmental and climatology, archaeological theory, Later Stone Age, rock art, hunter-gatherers, hunter-gatherer interactions, several aspects of Southern African Iron Age and Indigenous archaeologies. Alvord is an accredited Cultural Resource Management (CRM) member of the Association of southern African Professional Archaeologists (ASAPA #338) with Field Director status in Stone Age and Iron Age, and Field Supervisor status in Rock Art. He is also affiliated to Society of South Africanist Archaeologists (SAfA) and the International Council of Archaeozoology (ICAZ). He has been practising CRM for more than 10 years and has completed over 100 Archaeological Impact Assessments (AIA) for developmental projects in the Limpopo, Mpumalanga, North-West, Eastern Cape, Free State and KwaZulu Natal provinces of South Africa. The projects include establishment and upgrade of power substations, road construction, and establishment and expansion of mines. He has also conducted the relocation of graves. His detailed CV is available on request

INDEPENDENCE

We, Philisiwe Phillip and Alvord Nhundu declare that this report has been prepared independently of any influence as may be specified by all relevant departments, institutions and organizations. We act as independent specialists in this application and will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant. We declare that there are no circumstances that may compromise my objectivity in performing such work, we vow to comply with all relevant Act, Regulations and applicable Legislation. Furthermore, Afro, which is a company we represent in this application, is an independent service provider and apart from fair remuneration for services rendered, it has no financial interest or vested interest in the proposed project.

AUTHORS AND CONTACT DETAILS:

Alvord Nhundu,



Cell: 082 408 9276
E-mail: info@afroci.co.za

Acknowledgements

The author and the team of Afro Conserva Integration would like to acknowledge NTCSA for their assistance in relation to the undertaking of this project, also Deeds of Office and Google Earth.

Report Outline

Appendix 6 of GN R. 326 of the EIA Regulations (2017) sets out the requirements for specialist reports as part of the environmental authorisation process. In addition, this report was prepared in accordance with SAHRA's Minimum Standards for Archaeological and Palaeontological Impact Assessment Reports. Table 1 below shows how the Appendix 6 requirements have been addressed in this report.

Requirement from Appendix 6 of GN 326 EIA Regulation 2017	Chapter
(a) Details of - (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae	Section A
(b) Declaration that the specialist is independent in a form as may be specified by the competent authority	Declaration of Independence
(c) Indication of the scope of, and the purpose for which, the report was prepared	Section 4
(cA) an indication of the quality and age of base data used for the specialist report	Section 5
(d) Duration, Date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 5
(e) Description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 5
(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 site plan identifying site alternatives	Section 8
(g) Identification of any areas to be avoided, including buffers	Section 10
(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 10
(I) Description of any assumptions made and any uncertainties or gaps in knowledge	Section 5
(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 10
(I) Conditions for inclusion in the environmental authorisation	Section 10
(m) Monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 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
(o) Description of any consultation process that was undertaken during the course of preparing the specialist report	Section 5
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Refer to the EIA report
(q) Any other information requested by the competent authority	No other information is requested at this time

EXECUTIVE SUMMARY

Introduction

Afro Conserva Integration has been appointed by Vhubvo Consultancy CC on behalf of National Transmission Company South Africa to conduct a Phase I Cultural Heritage Impact Assessment (HIA) for an approximately 14 km deviation between Towers 491–521 and a 45 m deviation between Towers 110–111 of the proposed 400 kV Pluto–Mahikeng powerline. The deviation forms part of the broader project, which traverses the North West and Gauteng Provinces, and relates to sections of the alignment that fall outside the originally approved Environmental Impact Assessment (EIA) corridor. The study was conducted with the main objective of investigating the availability of archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structures of historical significance that may be affected by the proposed construction. Furthermore, the study aims to recommend mitigation measures should any sites be impacted, these mitigations will, in turn, assist the developer in making decisions on the most appropriate option (s) in line with the National Heritage Resources Act, 1999 (Act 25 of 1999). To reach a defensible recommendation, both a desktop study and a field survey were conducted. The desktop study was undertaken through the South African Heritage Resources Information System (SAHRIS) for previous Archaeological Impact Assessments conducted in the region of the proposed development, and for research that has been carried out in the wider area over past years. The field survey was conducted to verify and supplement the findings of the desktop assessment.

Need the for Project

The proposed Pluto–Mahikeng 400 kV powerline deviations, consist of approximately 14 km deviation between Towers 491–521 and a 45 m deviation between Towers 110–111, are required to accommodate environmental constraints identified along the original alignment. These deviations form part of the broader Pluto–Mahikeng 400 kV transmission infrastructure project aimed at strengthening the electricity transmission network within the North West and Gauteng Provinces. As the proposed deviations exceed the threshold stipulated under Section 38(1) of the National Heritage Resources Act (Act No. 25 of 1999), a Heritage Impact Assessment is required to identify and assess potential impacts on archaeological and cultural heritage resources within the proposed development areas.

Restrictions and Assumptions

The assessment was completed successfully, and sufficient information was obtained to compile this report. It is important to note that the assessment was limited to a cultural heritage assessment and did not include any form of subsurface investigation. As with any surface survey, archaeological materials may exist below ground level and therefore remain undetected during the assessment process. Such materials may, however, be exposed during construction activities. Consequently, should any archaeological material and/or grave sites

be uncovered during the construction phase, a heritage specialist and/or the relevant Provincial Heritage Resources Authority (PHRA) must be notified immediately. It remains the responsibility of the contractor to ensure that the site is protected from unnecessary publicity (e.g., media exposure) until the required assessments and investigations have been completed.

Methodology and Approach

The study method refers to the SAHRA Policy Guidelines for impact assessment, 2012. As part of this impact assessment, the following processes were followed:

- Literature Review: To understand the background of the area, a background study was undertaken, and relevant institutions were consulted. These studies entail review of archaeological and heritage impact assessment studies that have been conducted around the proposed area thorough SAHRIS. In addition, E-journal platforms such as J-stor, Google scholars and History Resource Centre were searched.
- Oral Interview: The determination of heritage values relies mostly on direct consultation with individuals in the community. Individuals with knowledge of heritage resources (graves) in the study area where contacted. Consultation was designed to elicit information which may facilitate understanding of heritage values and identification of character-defining elements on the site; and
- The final step involved the recording and documentation of relevant heritage resources, as well as the assessment of resources in terms of the heritage impact assessment criteria and report writing, mapping and constructive recommendations.

The applicable maps, tables, and figures, are included as stipulated in the NHRA (no 25 of 1999), the National Environmental Management Act (NEMA) (no 107 of 1998) and the Minerals and Petroleum Resources Development Act (MPRDA) (28 of 2002).

Impact Statement

The impact of the proposed development on archaeological material and graves is rated as low.

Survey Findings

The primary aim of the study was to identify heritage resources located within the deviation sections of the proposed transmission line servitude corridor between Towers T110 and T111, and Towers T491 to T521, for the construction of the Pluto–Mahikeng 400 kV powerline project. These resources included sites associated with oral histories, graves, cultural landscapes, and structures of historical and cultural significance. The Phase I Heritage Impact Assessment did not identify any significant archaeological or heritage resources within the proposed development footprint that would require mitigation measures prior to the commencement of construction activities.

Recommendations

Although no archaeological materials or objects were identified during the survey, the absence of visible evidence does not necessarily confirm the absence of archaeological resources, as such materials may remain buried below the ground surface. Furthermore, considering the nature of the proposed powerline development, the client is therefore advised to ensure that contractors and construction personnel are informed of the potential presence of subsurface archaeological materials and fossils that may be encountered during excavation and construction activities. These may include, but are not limited to, pottery fragments, stone tools, remnants of stone walling, graves, and fossil-bearing material. In the event that any heritage resources are uncovered during construction, all work in the immediate area should cease immediately, and a qualified heritage specialist and/or the relevant Provincial Heritage Resources Authority (PHRA) must be notified for further assessment and guidance. The client and contractors are encouraged to exercise due caution throughout all phases of construction.

Pre-construction education and awareness training

Prior to construction, workers should be given training on how to identify and protect archaeological remains that may be discovered during project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological sites that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone.
- Ash and charcoal.
- Bones and shell fragments.
- Artefacts (e.g., beads or hearths).
- Packed stones which might be uncounted underground and might indicate a grave or collapsed stone walling.

If any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist, PHRA or SAHRA officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. It is noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by SAHRA or PHRA.

Conclusions

A comprehensive desktop study and field survey were undertaken for the proposed approximately 14 km deviation between Towers 491–521 and the 45 m deviation between Towers 110–111of the 400 kV Pluto–

Mahikeng powerline, in accordance with the guidelines of the South African Heritage Resources Agency (SAHRA). Based on the findings of this assessment, no archaeological or cultural heritage resources of significance were identified within the footprint of the surveyed deviated alignment. The study area is therefore considered to possess low heritage sensitivity, and no significant heritage-related constraints were identified that would preclude the proposed deviated alignment from proceeding. It is therefore recommended that the proposed development be allowed to proceed, subject to compliance with the recommendations and mitigation measures outlined in this report. Furthermore, the following conditions of authorisation, as highlighted in this report, must be strictly adhered to throughout all phases of the project:

- Implementation of Chance Find Procedure during construction.

Table of Contents

Report Outline v

EXECUTIVE SUMMARY vi

GLOSSARY OF TERMS xiii

1.Introduction and Background 1

2.Site Location and Description 3

3.Nature of the Proposed Project 5

4. Methodology and Approach 6

4.1 Background study introduction 6

4.1.1 Literature Review 6

4.1.2 Physical survey 6

4.1.3 Documentation 6

4.2 Restrictions and Assumptions 6

5.Applicable Heritage Legislation 9

7.Degree of Significance 13

8.Findings and Discussions 16

9.Recommendations 19

10.Conclusions 20

References 21

Appendix I: Site Significance 24

Appendix II: Chance Find Procedure 26

Introduction 26

Purpose of ACFP 26

ACFP for Heritage Resources 26

Appendix III: Specialist CVs 28

List of Figures

Figure 1: Locality map of the study area proposed for construction of the powerline....4
Figure 2: Low sensitivity regarding the Pluto-Watershed Deviation....8

List of Tables

Table 1: Summary of Tower Positions by Landscape Character. 5
Table 2 : Sensitivity verification 9
Table 3: Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999). 13
Table 4: Rating and evaluating criteria of impact assessment. 15
Table 5: Legend for Impact Significance 16
Table 6: Anticipating impact rating on cultural sites. 18

ABBREVIATIONS

AIA	Archaeological Impact Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESA	Early Stone Age
HIA	Heritage Impact Assessment
HMP	Heritage Management Plan
LIA	Late Iron Age
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
NTCSA	National Transmission Company South Africa
SAHRA	South African Heritage Resources Agency

GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act No. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies, as well as the Australia ICOMOS Charter *(Burra Charter)*:

Archaeological Material: remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures.

Artefact: Any movable object that has been used, modified, or manufactured by humans.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This includes intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: "the combined works of nature and man" and demonstrate "the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external".

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilisation and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Chance Finds: Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Compatible use: means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Grave: A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

Heritage impact assessment (HIA): Refers to the process of identifying, predicting and assessing the potential positive and negative cultural, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Historic Material: remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains and artificial features and structures.

Impact: the positive or negative effects on human well-being and / or on the environment.

***In situ* material** means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Interested and affected parties Individuals: communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

Late Iron Age: this period is associated with the development of complex societies and state systems in southern Africa.

Material culture means buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place: means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers.

Public participation process: A process of involving the public in order to identify issues and concerns and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical, cultural, social and economic).

Site: a spatial cluster of artefacts, structures, and organic and environmental remains, as residues of past human activity.

1. Introduction and Background

Afro Conserva Integration has been appointed by Vhubvo Consultancy CC on behalf of National Transmission Company South Africa to conduct a Phase I Cultural Heritage Impact Assessment (HIA) for an approximately 14 km deviation between Towers 491–521 and a 45 m deviation between Towers 110–111 of the proposed 400 kV Pluto–Mahikeng powerline. The deviation forms part of the broader project, which traverses the North West and Gauteng Provinces, and relates to sections of the alignment that fall outside the originally approved Environmental Impact Assessment (EIA) corridor. The study was undertaken with the primary objective of identifying and assessing any archaeological sites, cultural heritage resources, sites associated with oral histories, graves, cultural landscapes, and structures of historical significance that may be affected by the proposed development. The specific aims of the study were to:

- Identify archaeological sites and cultural heritage resources within the proposed deviation footprint;
- Assess sites associated with oral histories, graves, cultural landscapes, and structures of historical significance that may be impacted by the proposed deviation-construction activities; and
- Provide appropriate mitigation measures where heritage resources may be affected.

The findings and recommendations of this study are intended to assist the developer in selecting the most appropriate development alternatives and implementing mitigation measures in accordance with the provisions of the National Heritage Resources Act, 1999 (Act No. 25 of 1999). According to Section 38 (1) of the NHRA, an Impact Assessment is undertaken in case a listed activity is triggered. Such activities include:

(a) the construction of a linear development exceeding 300m in length.

(b) the construction of a bridge exceeding 50 m in length; and

(c) any development or other activity which will change the character of an area of land, or water -

(i) exceeding 5 000 m² in extent.

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a Provincial Heritage Resources Authority.

(d) the re-zoning of a site exceeding 10 000 m2 in extent; or

(e) any other category of development provided for in regulations by SAHRA or PHRA

The proposal triggered the undertaking of an impact Assessment because the proposed 14 km deviation from the approved alignment of the Pluto–Mahikeng powerline exceeds 300 m in length. The findings of this Assessment have been informed by desktop studies and field surveys. The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and for research that has been carried out in the area over the past years. The survey was conducted in accordance with the SAHRA Minimum Standards for Archaeology and Paleontology. The minimum standards specify the required contents of this report. The management and protection of heritage resources is a requirement of the National Environmental Management Act No.107 of 1998 (NEMA) as amended in terms of the NEMA 2010 regulations and Section 38 of the National Heritage Resources Act (NHRA - Act No. 25 of 1999). The purpose of the HIA procedures is to identify and describe the following:

- Description of the activity and its location.
- Description of affected environment.
- Identify heritage sites.
- Identify archaeological sites.
- Determine whether the heritage or archaeological remains will be affected by the proposed development.
- Methods used to assess risk.
- Summary of heritage risk assessment; and
- Mitigation and/or precautionary measures.

The purpose of the report is to inform the applicant/client about the heritage resources and their significance, while making appropriate recommendations regarding the management thereof. It is also essential that it provides SAHRA with the necessary information to make an informed decision regarding the following:

- Whether it has objections about the development.
- The conditions upon which such developments might proceed.
- The sites to which permits for destruction are required are required.
- Whether the sites require mitigation and what it should comprise of; and
- The measures that should/can be put in place to protect sites that should be conserved.

2. Site Location and Description

The proposed Pluto–Watershed 400 kV powerline deviations are located within the North West Province and forms part of the broader Pluto–Mahikeng 400 kV powerline project. The proposed deviations include an approximately 14 km section between Towers 491–521 and a 45 m section between Towers 110–111, which deviate from the originally approved alignment. The study area is situated within a predominantly rural landscape in the vicinity of the settlements of Magageng, Makgophong, Magukubjane and Uitvlugt. Access to the site is primarily obtained via the R555 and a network of existing farm and service roads. Land use within and surrounding the study area is characterised by natural vegetation, grazing land, scattered agricultural fields, farmsteads, existing powerline infrastructure and associated access roads. The locations and extent of the proposed deviations are illustrated in the accompanying maps included in this report.

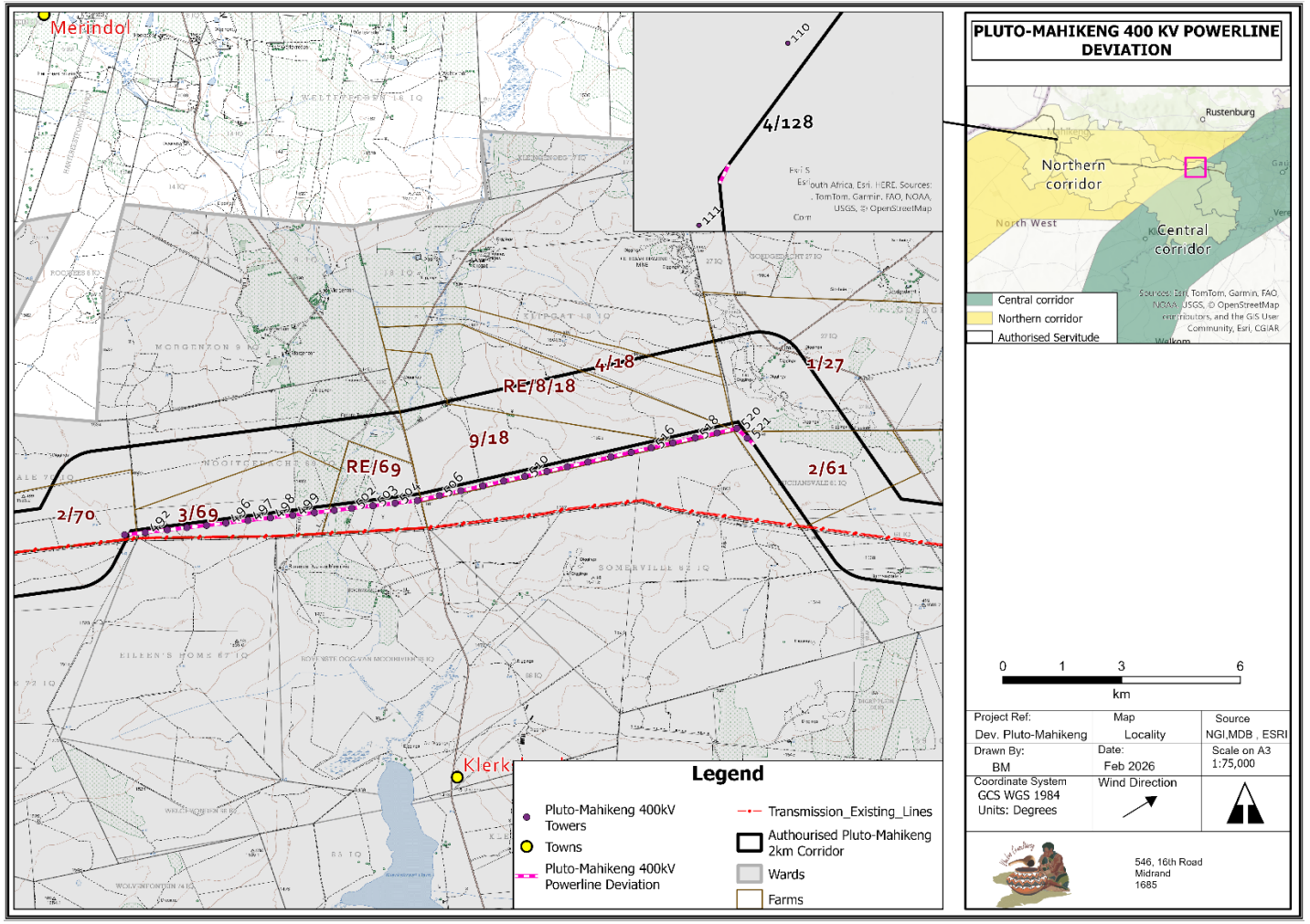


Figure 1: Locality map of the study area proposed for construction of the powerline

Table 1: Summary of Tower Positions by Landscape Character.

Landscape Type	Tower Range	Description	Depiction
Open Grassland (Dominant)	T110-T111	The proposed pylon positions are located within disturbed and modified grassland areas associated with nearby infrastructure and substation developments.	
	T497-T519	The proposed pylon positions are located on a long stretch of fairly flat grassland characterised by short grass, scattered shrubs and thorn trees.	
Disturbed Land	T491–T496	The proposed pylon positions are located within disturbed and modified grassland areas associated with nearby infrastructure and substation developments.	
Bushveld / Dense Vegetation	T520-T521	The proposed pylon positions are located within areas characterised by dense bushes and grassland vegetation.	

3. Nature of the Proposed Project

The proposed project involves the construction of deviations to the approved corridor of the 1 × 400 kV Pluto–Mahikeng powerline. These include an approximately 14 km deviation between Towers 491–521 and a 45 m deviation between Towers 110–111. The deviations are part of a revised alignment resulting from servitude acquisition negotiations.

4. Methodology and Approach

4.1 Background study introduction

The methodological approach is informed by the 2012 SAHRA Policy Guidelines for impact assessment. As part of this study, the following tasks were conducted:

1) Literature review.

2) Consultations with community members.

3) Completion of a field survey; and

4) Documentation and analysis of the acquired data, leading to the production of this report.

4.1.1 Literature Review

The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and for research that has been carried out in the area over the past years, as well as historical aerial maps located in the Deeds Office. These literatures were used to screen the proposed area and to understand the baseline of heritage sensitivities.

4.1.2 Physical survey

The field survey was undertaken between the 19 of March 2026. An archaeologist from Afro Conserva Integration conducted the survey.

4.1.3 Documentation

The general project area was documented. This documentation included taking photographs using cameras, a 10.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

4.2 Restrictions and Assumptions

The assessment was completed successfully, and adequate information was captured to successful complete the report. It is important to note that this assessment was only limited to cultural heritage assessment and did not include any form of subsurface analysis. As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor and may be exposed

during the course of construction. As a result, should any archaeological/ or grave site be observed during construction stage, a heritage specialist monitoring the development/ and or SAHRA official must immediately be notified. It is the responsibility of the contractor to protect the site from publicity (i.e., media) until all assessments are made. Several heritage impact assessments have previously been conducted within and around the broader study area. These studies provide important contextual information regarding the types of heritage resources that may occur within the region. Some of the studies consulted are referenced below:

- Trust Mlilo, 2018. *Phase 1 Archaeological and Heritage Impact Assessment Report for the Proposed Mahikeng Main Transmission Substation and 1 × 400 kV Pluto–Mahikeng Powerline within the Merafong City Local Municipality of Gauteng Province and the Ditsobotla, Ramotshere Moiloa, JB Marks and Mahikeng Local Municipalities of the North West Province*. Unpublished HIA Phase 1 Report.
- Eric Ndivhuho Mathoho, 2012. *Phase 1 Heritage Scoping Study: Proposed Danville Park on Farm Mafikeng Commonage ZRF 428 within Mafikeng Local Municipality of Ngaka Modiri Molema District, North West Province, South Africa*. Unpublished Heritage Scoping Report. Vhufa Hashu Heritage Consultants. Commissioned by Mafikeng Local Municipality.
- Francois P. Coetzee, 2013. *Cultural Heritage Assessment for the Proposed Establishment of a Solar Energy Facility and Associated Infrastructure, PPC Slurry, Mafikeng Local Municipality, Central District Municipality, North West Province*. Unpublished Heritage Impact Assessment Report. University of South Africa Department of Anthropology and Archaeology. Commissioned by Savannah Environmental (Pty) Ltd.
- Munyadziwa Magoma, 2012. *Heritage Investigation for the Proposed 10 MW Solar Power Plant on Stand 16066 of Farm Mmabatho Town and Townlands 301 in Mafikeng Local Municipality of Ngaka Modiri Molema District, North West Province*. Unpublished HIA Phase 1 Report. Vhubvo Archaeo-Heritage Consultants. Commissioned by Phaki Phakanani.
- Heidi Fourie, 2026. *Phase 1 Impact Assessment for the Establishment of Three Integrated and Sustainable Human Settlement Developments in the Grimbeek Park Area, JB Marks Local Municipality, Dr Kenneth Kaunda District Municipality, North West Province (Farm Elandsheuwel 436-IQ)*. Unpublished PIA Phase 1 Report. RUINS Archaeo Heritage Consulting (Pty) Ltd. Commissioned by Vhuluvhi Group (Pty) Ltd.
- Alvord Nhundu, 2025. *Heritage Exemption Letter for the Proposed Construction of a Telecommunication Mast on Remaining Extent of the Farm Buffelshoek 471 IQ, JB Marks Local Municipality, North West Province*. Unpublished HIA Letter of Exemption. RUINS Archaeo Heritage Consulting (Pty) Ltd. Commissioned by Lushika Services.

Site Sensitivity Verification

Subregulation 16(1)(v) of the Environmental Impact Assessment Regulations (EIA), Government Notice R982 of 2014 (as amended), indicates that an application for an Environmental Authorisation must be accompanied by a report generated by the national web-based environmental screening tool. This tool is a geospatial, web-enabled application that screens sites for environmental sensitivity and places proposed developments in accordance with the impact avoidance hierarchy. In addition, the report recommends the specialist studies that must be undertaken and submitted with the application. The Screening Tool Reports for the powerline generated by Vhubvo Consultancy rated the sensitivity of the archaeological and cultural heritage themes as low for the powerline servitude. The site sensitivity undertaken per the Protocol, Government Notice No. 320 of March 2020, validates the low rating as the probability of finding any archaeological resources is low due to the previous land uses. This has also been confirmed by the several studies done in the area.

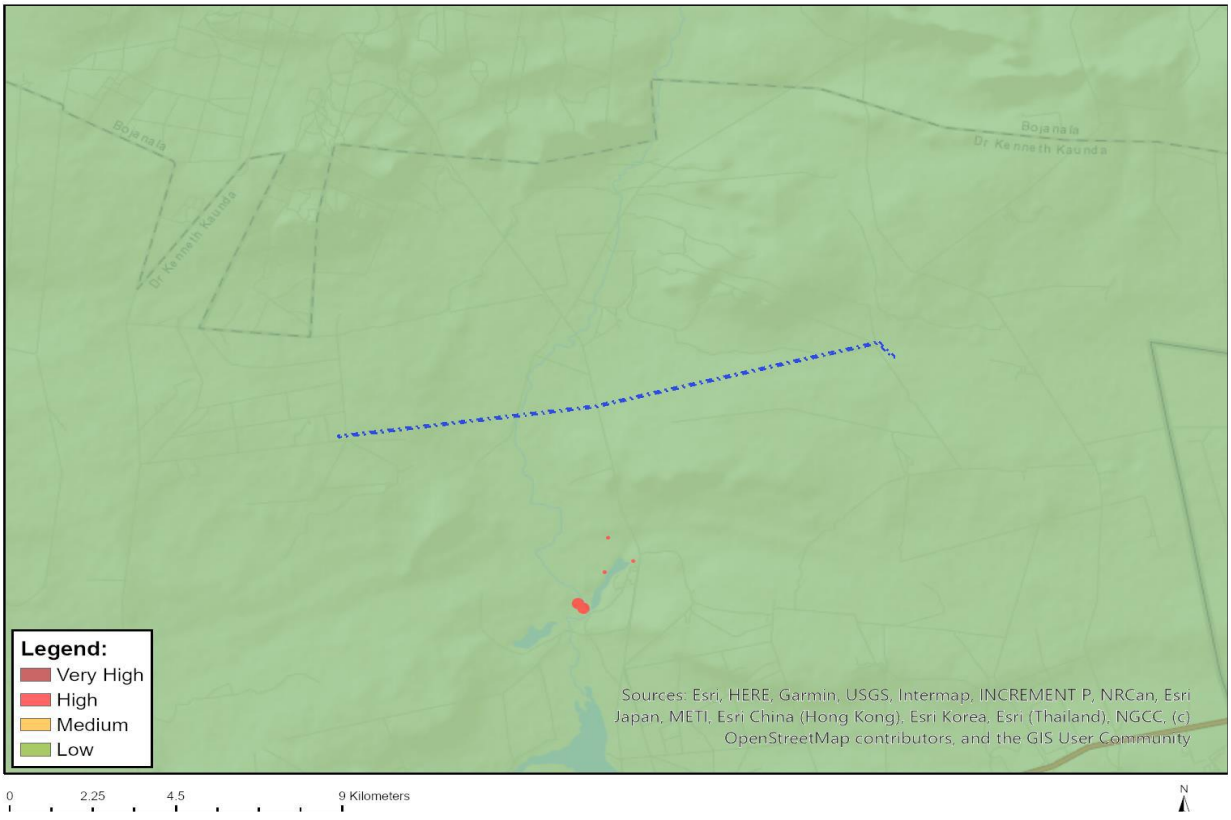


Figure 2: Low sensitivity regarding the Pluto-Mahikeng 400kV Deviation

It must be noted that though the sensitivity is low, an Impact Assessment has been done as per section 38(3) and 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA) as required by section 24(4)b(iii) of NEMA. The summary of the verification is indicated in the Table below.

Table 2 : Sensitivity verification

Aspect	Screening tool sensitivity	Verified sensitivity	Outcome statement	Relevant section
Archaeology	Low	Low	Archaeological Impact Assessment	Section 7.2. SAHRA Requirements

5. Applicable Heritage Legislation

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the Tourism Act (No. 72 of 1993); Cultural Institution Act (No. 119 of 1998). However, there are two legislations which are most relevant regarding the conduction of Phase 1 Heritage Impact Assessment, and these are the following:

- National Heritage Resources Act (NHRA), Act No. 25 of 1999); and
- National Environmental Management Act (NEMA), Act No. 107 of 1998.

A Phase 1 HIA is an obligatory 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.
- Evaluate the nature and degree of significance of such resources.
- Assess the negative and positive impact of the development on these resources; and
- Propose recommendations for the appropriate heritage management of these impacts.

Other sections of the National Heritage Resource Act with direct relevance to the Heritage Assessment are the following:

- **Section 34(1)** No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.
- **Section 35(4)** No person may, without a permit issued by the responsible heritage resources authority : destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite

- **Section 36 (3)** No person may, without a permit issued by SAHRA or a provincial heritage resources authority : destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside formal cemetery administered by a local authority ; or bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

Section 3 of the National Heritage Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting Heritage Impact Assessment (HIA) the following heritage resources have to be identified:

(a) Places, buildings, structures and equipment of cultural significance
(b) Places to which oral traditions are attached, or which are associated with living heritage
(c) Historical settlements and townscapes
(d) Landscapes and natural features of cultural significance
(e) Geological sites of scientific or cultural importance
(f) Archaeological and paleontological sites
(g) Graves and burial grounds including-
(i) ancestral graves
(ii) royal graves and graves of traditional leaders
(iii) graves of victims of conflict
(iv) graves of individuals designated by the Minister by notice in the Gazette
(v) historical graves and cemeteries; and
(vi) other human remains which are not covered by in terms of the Human Tissue Act,1983 (Act No. 65 of 1983)
(h) Sites of significance relating to the history of slavery in South Africa
(i) moveable objects, including -
(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens
(ii) objects to which oral traditions are attached, or which are associated with living heritage
(iii) ethnographic art and objects
(iv) military objects
(v) objects of decorative or fine art
(vi) objects of scientific or technological interest; and
(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

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).

6. Discussion of (Pre) History of the Study Area

The proposed Pluto–Mahikeng 400 kV powerline deviation is located within the North West Province and forms part of the broader Pluto–Mahikeng 400 kV transmission powerline project. Archaeological surveys conducted in the region indicate evidence of human occupation dating to the Early Stone Age, Middle Stone Age, Later Stone Age, Iron Age, and Historical Period.

The Early Stone Age (ESA)

The Early Stone Age dates back to approximately 1.7 million and 300 000 years ago. This period is associated with early hominins such as Homo erectus and Homo ergaster, who were among the first communities to produce systematically shaped stone tools, such as the handaxes, cleavers, picks, and large flakes. The Stone Age in southern Africa represents the earliest known phase of human occupation and cultural development, spanning over two million years. The earliest evidence of human occupation in North West Province is found at the Taung Fossil Site, located within the Buxton Quarry. In 1924, the skull and mandible of a juvenile hominin, later named the Taung Child, were recovered and described by Dart as *Australopithecus africanus*. This specimen, dating to approximately 2.58 million years ago, provides direct evidence of bipedal locomotion in early hominins and confirms southern Africa as a key region in early human evolution (Weij et al., 2025; Madupe et al., 2025).

The Middle Stone Age (MSA)

The Middle Stone Age dates back to approximately 200 000 to 40 000 years ago, and is represented by blades, points and flakes marking the emergence of human evolution and technological innovation. This period followed the Acheulian tradition of the Early Stone Age but introduced more technology advanced stone tools techniques, thus showing the cognitive and cultural development of modern humans (Homo sapiens). Therefore, we can conclude that the technological and behavioural advances of the MSA laid the foundation for later innovations of the Later Stone Age, whereby tool manufacturing increased symbolic expression, and regional cultural diversity became more pronounced.

Most of the MSA sites in South Africa are classified as open (surface) sites, where artefacts occur out of context, which reduces their heritage significance compared to those in closed stratigraphic layers. These MSA communities were mobile, exploiting riverine resources and seasonal vegetation. They preferred elevated or sheltered locations, such as caves and rock shelters, for temporary settlements (Inskeep 1978). However, MSA deposits have not yet been documented in the province itself.

The Later Stone Age (LSA)

The Later Stone Age dates back to between 40 000 and 2 000 years ago, marking the final phase of Stone Age Occupation in Southern Africa and is closely associated with the ancestor of the San (Bushman). In contrast to the Early and Middle Stone Age large stone tools, LSA communities manufactured more specialised small tools, such small scrapers and finely crafted arrowheads. These were often mounted on wooden shafts or handles so you could hunt and process small and medium game more efficiently. The subsistence strategies combined hunting of small and large game with collecting wild plants, bulbs and fruits, showing a deep understanding of the local ecosystem. The introduction of the bow and arrow, was a technological innovation that made hunting much more efficient than earlier Stone Age ways. Evidence of the LSA in the province is represented through microlithic tool scatters and symbolic expressions. Most notable through the rock art and engravings at the Gestoptefontein-Driekuil (G-D) Complex. These demonstrates the Khoi-San cultural activities during the Holecene period, indicating how the landscape was used by these groups and the ceremonial activities by the LSA hunter-gatherers.

The Iron Age

The Iron Age communities practiced agro-pastoralism, pottery production, and ironworking, generally occupying river valleys and elevated ridges suitable for farming and livestock. This is a big

shift in cultural and economic systems, from hunter-gatherer to agropastoral way of life. The earliest farming communities were the Bantu-speaking agropastoralists who migrated from southwards central Africa. These agropastoral communities introduced the knowledge of crop cultivation, livestock management, and iron metallurgy, thus established permanent settlements along fertile rivers with keen preference in alluvial or colluvial soils below the 1000 m contour due to their suitability for both farming and grazing (Maggs 1989; Huffman 2007). The distinct ceramic traditions define these communities and serve as key chronological markers for archaeologists. The pottery styles such as the Msuluzi (AD 500–700), Ndondondwane (AD 700–800), and Ntshekane (AD 800–900) pottery styles reflect not only functional utility but also complex social organisation, including initiation rituals, community hierarchies, and cattle-centered economies. The cattle in particular were central to wealth, status, and ritual life, forming the foundation of social and economic systems that structured Early Iron Age society. Building on these Early Iron Age foundations, the Tswana groups constructed extensive stone-walled settlements from the 17th to 19th centuries. Evidence for this can been seen through sites such as the Molokwane, Boitsemagano, and Marothodi represents centralised settlement planning characterised by the Central Cattle Pattern, with cattle enclosures positioned at the core and surrounded by homesteads. This spatial organisation reflects deliberate social structuring, centralised authority, and the integration of economic, political, and ritual functions (Pistorius 2007; Anderson 2009; Jordaan 2016).

7. Degree of Significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. It must be borne in mind that the significance of a site from an archaeological perspective does not necessarily depend on the size of the site but more on the uniqueness of the site within a region. The following table is used to grade heritage resources.

Table 3: Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999).

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage

Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium	Mitigation necessary before destruction
General Protected Area B	Medium Value	Recording before destruction
General Protected Area C	Low Value	No action required before destruction

Significance rating of sites

(i) High (ii) Medium (iii) Low

These categories relate to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, and will thus be considered to be of high regional significance, however; should there be heavy erosion of the greater part of the site, its significance rating would be medium to low. The following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

This is a 'do not touch' situation, alternatives must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.

Certain sites or features may be exceptionally important, but do not guarantee leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be made to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

Medium

Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios, permits will be required from the South African Heritage Resources Agency (SAHRA) or the appropriate PHRA as per the legislation (the National Heritage Resources Act, no. 25 of 1999). Destruction of any heritage site may only take place when the appropriate heritage authority has issued a permit. The following table is used to determine rating system on the receiving environment.

Table 4: Rating and evaluating criteria of impact assessment.

THE STATUS OF THE IMPACT
The impacts are assessed as either having a: negative effect (i.e., at a `cost' to the environment), positive effect (i.e., a `benefit' to the environment), or Neutral effect on the environment.
Extent of the Impact (1) Site (site only), (2) Local (site boundary and immediate surrounds), (3) Regional (within the three local municipalities), (4) National, or (5) International.
Duration of the Impact The length that the impact will last for is described as either: (1) Immediate (<1 year) (2) Short term (1-5 years), (3) Medium term (5-15 years), (4) Long term (ceases after the operational life span of the project), (5) Permanent.
Magnitude of the Impact The intensity or severity of the impacts is indicated as either: (0) None, (2) Minor, (4) Low, (6) Moderate (environmental functions altered but continue), (8) High (environmental functions temporarily cease), or (10) Very high / Unsure (environmental functions permanently cease).
Probability of Occurrence The likelihood of the impact actually occurring is indicated as either: (0) None (the impact will not occur), (1) Improbable (probability very low due to design or experience) (2) Low probability (unlikely to occur), (3) Medium probability (distinct probability that the impact will occur), (4) High probability (most likely to occur), or (5) Definite.
Reversibility The degree to which an impact is reversible:

(1) Completely reversible (2) Partly reversible (3) Barely reversible (4) Irreversible

Significance of the Impact

This rating is formulated by adding the sum of the numbers assigned to extent (E), duration. (D) and magnitude (M) and multiplying this sum by the probability (P) of the impact. S=(E+D+M)

The significance ratings are given below.

Table 5: Legend for Impact Significance

	Significance	Description of Significance
(<30)	Low	The activity will have a low impact in the environment. This impact would not have a direct influence on the decision to develop in the area.
(30-60)	Medium	Medium Impact – the activity will have a medium impact on the environment. The impact could influence the decision to develop in the area unless it is effectively mitigated.
(>60)	High	The activity will have a high impact on the environment. The impact must have an influence on the decision process to develop in the area.

8. Findings and Discussions

The primary aim of the survey was to assess whether any heritage resources occur within the proposed development area and to determine if these could affect the proposed development. Archaeological sites from the Stone Age, Iron Age, and Historical periods are known to occur in the broader surrounding area. However, the Phase I Heritage Impact Assessment for the proposed deviation of the 400 kV Pluto–Mahikeng powerline, which includes the deviation sections between Towers 491–521(14 km) and Towers 110–111 (45 m), together with the servitude and surrounding tower locations, did not identify any archaeological or cultural heritage resources within the surveyed area. No significant heritage constraints were identified for the proposed development.

8.1 Impact Assessment

This section provides a description of the project area and the associated impact ratings. These ratings consider archaeological and cultural heritage resources that may potentially occur in the proposed area, including materials from the Stone Age, Iron Age, and Historical periods. The impact assessment has been conducted in accordance with the criteria outlined in Table 2. The study area is

located within a rural landscape characterised by gently undulating plains. Vegetation within the area consists predominantly of grassland, with scattered trees occurring in certain sections of the project servitude.

8.1.1 Cumulative impacts

These impacts are considered as an effect caused by the proposed action that results from the incremental impact of an action when added to other past, present, or reasonably foreseeable future actions. (Cornell Law School Information Institute, 2020). 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, impacts can be mitigated to an acceptable level. However, this and other projects in the area can have a negative impact on heritage sites in the area where these sites have been destroyed unknowingly.

8.1.2 Construction Phase

The construction phase will involve activities such as vegetation clearing, removal of topsoil, excavation for foundations, and the establishment of associated infrastructure for the transmission line. These activities have the potential to negatively impact the landscape and may result in the disturbance or destruction of previously unidentified subsurface heritage resources, should such materials be present. Although no heritage resources were identified during the field survey, the possibility remains that buried archaeological material, graves, or fossil remains may be encountered during ground-disturbing activities.

8.1.3 Operation Phase

No direct impacts on heritage resources are anticipated during the operational phase of the proposed development, as this phase will not involve significant ground disturbance.

8.1.4 Decommissioning Phase

No significant impacts on heritage resources are anticipated during the decommissioning phase. Should decommissioning activities involve ground disturbance, appropriate heritage management procedures should be followed.

Table 6: Anticipating impact rating on cultural sites.

Issue	Mitigation Measures	Impact Rating Criteria					Significance
		Nature	Extent	Duration	Magnitude	Probability	
Archaeology (without mitigation)	No mitigation measures applied	Negative	1	2	4	2	Low
Archaeology (with mitigation)	Implementation of mitigation measures	Negative	1	2	2	2	Low
Cumulative impact	Implementation of mitigation measures and Chance Find Procedure	Negative	1	2	4	2	Low
Mitigation measures	• In the event that any archaeological material is accidentally discovered during the construction phase, PHRA must be notified immediately, and all construction activities within a minimum radius of 10 metres of the find must cease until further assessment is conducted. • Prior to the commencement of construction, contractors and site personnel should undergo heritage awareness training to enable them to identify and appropriately respond to potential archaeological remains encountered during construction. • No heritage resources were found in the study area. With mitigation measures and the Chance Find Procedure in place, cumulative impacts are expected to remain low.						

9. Recommendations

Although no archaeological or cultural heritage resources were identified during the survey, and the study area is considered to be significantly disturbed, it is important to emphasise that the absence of visible heritage material does not necessarily indicate the absence of subsurface resources. Archaeological materials, including graves remains, may still be present below ground and could be uncovered during construction activities. It is therefore recommended that the developer ensure all contractors and site personnel are made aware of the potential for encountering buried heritage resources. This includes, but is not limited to, artefacts such as pottery, stone tools, remnants of stone walling, human remains, and fossil material. Appropriate precautionary measures must be implemented throughout the construction phase to safeguard any such discoveries.

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;
- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads or hearths);
- Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

In the event that any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or PHRA officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by PHRA.

10. Conclusions

A comprehensive desktop study and field survey were undertaken for the proposed approximately 14 km deviation between Towers 491–521 and the 45 m deviation between Towers 110–111of the 400 kV Pluto–Mahikeng powerline, in accordance with the guidelines of the South African Heritage Resources Agency (SAHRA). Based on the findings of this assessment, no archaeological or cultural heritage resources of significance were identified within the footprint of the surveyed deviated alignment. The study area is considered to have low heritage sensitivity. There are therefore no significant heritage-related constraints that would preclude the proposed deviated alignment from proceeding. It is recommended that the development be allowed to proceed, subject to compliance with the recommendations outlined in this report. The following conditions of authorisation as highlighted in this report must be strictly adhered to:

- Implementation of Chance Find Procedure during construction.

References

Anderson G., 2009. *[Details of publication on Tswana settlement systems]*.

Dart R.A., 1925. *Australopithecus africanus: The man-ape of South Africa*. *Nature*, 115, pp.195–199.

Huffman T.N., 2007. *Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa*. Scottsville: University of KwaZulu-Natal Press.

Inskeep R.R., 1978. *The Archaeology of Southern Africa*. Cape Town: David Philip.

Jordaan A., 2016. *[Details of publication on Tswana settlements and stone-walled sites]*.

Maggs T.M.O'C., 1989. *The Iron Age farming communities of southern Africa*. In: *Southern African Prehistory and Paleoenvironments*. Rotterdam: Balkema.

Madupe et al., 2025. *[Recent study on early hominin occupation in southern Africa]*.

Pistorius J.C.C., 2007. *[Work on Tswana stone-walled settlements]*.

Weij et al., 2025. *[Recent study on Taung Child and early hominins]*.

Trust Mlilo, 2018. *Phase 1 Archaeological and Heritage Impact Assessment Report for the Proposed Mahikeng Main Transmission Substation and 1 × 400 kV Pluto–Mahikeng Powerline within the Merafong City Local Municipality of Gauteng Province and the Ditsobotla, Ramotshere Moiloa, JB Marks and Mahikeng Local Municipalities of the North West Province*. Unpublished HIA Phase 1 Report.

Eric Ndivhuho Mathoho, 2012. *Phase 1 Heritage Scoping Study: Proposed Danville Park on Farm Mafikeng Commonage ZRF 428 within Mafikeng Local Municipality of Ngaka Modiri Molema District, North West Province, South Africa*. Unpublished Heritage Scoping Report. Vhufa Hashu Heritage Consultants. Commissioned by Mafikeng Local Municipality.

Francois P. Coetzee, 2013. *Cultural Heritage Assessment for the Proposed Establishment of a Solar Energy Facility and Associated Infrastructure, PPC Slurry, Mafikeng Local Municipality, Central District Municipality, North West Province*. Unpublished Heritage Impact Assessment Report. University of South Africa Department of Anthropology and Archaeology. Commissioned by Savannah Environmental (Pty) Ltd.

Munyadziwa Magoma, 2012. *Heritage Investigation for the Proposed 10 MW Solar Power Plant on Stand 16066 of Farm Mmabatho Town and Townlands 301 in Mafikeng Local Municipality of Ngaka Modiri Molema District, North West Province*. Unpublished HIA Phase 1 Report. Vhubvo Archaeo-Heritage Consultants. Commissioned by Phaki Phakanani.

Heidi Fourie, 2026. *Phase 1 Impact Assessment for the Establishment of Three Integrated and Sustainable Human Settlement Developments in the Grimbeek Park Area, JB Marks Local Municipality, Dr Kenneth Kaunda District Municipality, North West Province (Farm Elandsheuwel 436-IQ)*. Unpublished PIA Phase 1 Report. RUINS Archaeo Heritage Consulting (Pty) Ltd. Commissioned by Vhuluvhi Group (Pty) Ltd.

Alvord Nhundu, 2025. *Heritage Exemption Letter for the Proposed Construction of a Telecommunication Mast on Remaining Extent of the Farm Buffelshoek 471 IQ, JB Marks Local Municipality, North West Province*. Unpublished HIA Letter of Exemption. RUINS Archaeo Heritage Consulting (Pty) Ltd. Commissioned by Lushika Services.

Data bases

Chief Surveyor General

Environmental Potential Atlas, Department of Environmental Affairs and Tourism. Heritage Atlas Database, Pretoria.

National Archives of South Africa

Appendix I: Site Significance

The following guidelines for determining site *significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

(a) Historic value

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?
- **(c) Scientific value**
- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class?
- Is it important in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or localit

- Immediately report the chance finds to the supervisor/site manager or if they are unavailable, report to the project Environmental Officer (EO) who will provide further instructions.
- Record (note taking, photograph with a scale, GPS coordinates) of all the chance find exposed during the activity.
- All remains are to be stabilised in situ.
- Secure (e.g., barricade) the area to prevent further disturbance on heritage resources.
- The EO must contact the qualified archaeologist registered with the association for Association for Southern African Professional Archaeologist (ASAPA) or Free State Heritage Resource Authority.
- The project archaeologist will conduct the inspection and assess the significance of the chance finds under SAHRA guidelines, give recommendation and mitigation measures.

Appendix II: Chance Find Procedure

Introduction

The purpose of this document is to provide NTCSA and their contractors with the appropriate response guidelines (extracted and adapted from the National Heritage Resources Act (Act No. 25 of 1999) Regulations Reg No. 6820, GN: 548, taking into consideration international best practice based on World Bank, Equator Principles and the International Finance Corporation Performance Standards, 1972 UNESCO Convention on the Protection of World Cultural and Natural Heritage (World Heritage Convention), that should be implemented in the event of chance discovery of heritage resources. These guidelines or chance find procedures (CFPs) can be incorporated into Eskom's policies that may have relevance during construction and operational phases. The CFPs aim to avoid and/or reduce project risks that may result due to chance finds, whilst considering international best practice.

Purpose of ACFP

The aim of this Archaeological Chance Find Procedure (ACFP) are to protect previously unexposed heritage resources that are yet unknown although might be encountered during the project operation or construction phase. This document serves to provide best practices to manage accidental exposed heritage resource during the development. The procedures are given to the client/applicant/contracts in order to prevent and minimize negative impact on heritage resources encountered by accident. Thus, the heritage specialist(s) compiled this chance find document with a purpose to give instructions based on relevant and appropriate actions in line with the NHRA and best guidelines to protect the chance finds on the proposed site. In significant, the ACFP stand in place to promote the preservation of heritage resources and present mitigation measure to avoid disturbance on heritage resources.

ACFP for Heritage Resources

The following procedures must be followed when heritage resources are encountered during the operational or construction phase:

- All construction/clearance activities in the vicinity of the heritage resources found by accident on site must cease immediately to avoid further damage to the chance finds
- Immediately report the chance finds to the supervisor/site manager or if they are unavailable, report to the project Environmental Officer (EO) who will provide further instructions.

- Record (note taking, photograph with a scale, GPS coordinates) of all the chance find exposed during the activity.
- All remains are to be stabilised in situ.
- Secure (e.g., barricade) the area to prevent further disturbance on heritage resources.
- The EO must contact the qualified archaeologist registered with the association for Association for Southern African Professional Archaeologist (ASAPA) or South African Heritage Resources Agency (SAHRA).
- The project archaeologist will conduct the inspection and assess the significance of the chance finds under SAHRA guidelines, give recommendation and mitigation measures.

Appendix III: Specialist CVs

Curriculum Vitae of Alvord Nhundu
Cell No: 0782126740
Email: alvord@afroci.co.za

PERSONAL DETAILS

Full Names	: Alvord Nhundu
Birth date	: 15 November 1978
Nationality	: Zimbabwe
Gender	: Male

ACADEMIC ACHIEVEMENTS

Qualification	: Masters of Arts in Archaeology
Institution	: University of Pretoria
Obtained	: 2018
Qualification	: Honours in Archaeology (cum laude)
Institution	: Wits University
Obtained	: 2009
Qualification	: Bachelor of Geography & Archaeology
Institution	: University of Zimbabwe
Obtained	: 2002

CURRENT EMPLOYMENT

Organization	: AfroConserva Intergration
Position held	: Heritage Practitioner
Duration	: 2024 - present
Duties	:Conducting archaeological and cultural heritage impact assessment Facilitating social impact assessment and public participation Overseeing resettlement action plan

PAST WORK EXPERIENCE

From: January 2020 to March 2024. **Employer:** Vhubvo Consultancy cc. **Position held**: Archaeologist
Duties

(1) Conducting archaeological and cultural heritage impact assessment.
(2) Construction monitoring
(3) Permit applications

From: May 2017 to June 2019. **Employer:** National Museums and Monuments of Zimbabwe-Zimbabwe Museum of Human Sciences (Harare).**Position held**: Curator in Archaeology
Duties

(1) Archaeology Department-documentation and retrieval of data
(2) National surveys-documents analysis
(3) Historical buildings-assessment, inspection, condition reports
(4) Monuments-inspection and reports

(5) Ethnography-documentation, and inventory analysis
(6) Heritage education-gallery interpretation
(7) Fieldwork-assist in impact assessments and exhumations

From: 2016 to April 2017. **Employer:** Probe Market Research (part time) **Position held**: Field researcher. Have conducted 7 projects for the past 2 years.
From: February 2014 to November 2014. **Employer**: University of Pretoria. **Position held:** Teaching assistant for 3rd year archaeology students.
From: January 2010 to February 2013. **Employer**: Cornway College. **Position held:** High school teacher, teaching Form 1 to 6 Geography, teacher in charge of girls' hockey.
From: February 2009 to November 2009. **Employer**: University of Witwatersrand. Position held: Tutor for 1st year students (as part of a postgraduate merit award).
From: January 2007 to December 2008. **Employer**: Cornway College. **Position held:** High school teacher taught Geography and Science, Form 1 to 4, teacher in charge of girls' hockey.
From: January 2003 to December 2006. **Employer**: Government. **Position held**: High school teacher, taught Geography Form 1 to 6, trained hockey and soccer.

ACCREDITATION

- Association of Southern African Professional Archaeologists (Member No: 466)

FIELD AND SKILLS BASED EXPERIENCE

	NAME	PROVINCE	YEAR	TIME	TYPE OF SITE	FIELD WORK UNDERTAKEN
RESEARCH PROJECTS	Drakensberg	KwaZulu-Natal	2008	7 days	RA	Mapping of rock art
	Cederberg	Western cape	2009	14 days	RA	Conservation and intervention
	Mapungubwe	Limpopo	2009	30 days	MIA and LIA	Survey, and Excavation
	Giyani	Limpopo	2014	1day	CRM	Exhumation/Reburial

PUBLICATIONS

- Published a paper: Nhundu, A. 2015. The effects of global warming on the rock art in the uKhahlamba-Drakensburg Park World Heritage Site (UDP) in South Africa. In J. Runge (ed.) Changing climates, Ecosystems and Environments within Arid Southern Africa and Adjoining regions: **Palaeoecology of Africa volume** 33: 191-208. London: Routledge.
- An unpublished report: Mokwena, G & Nhundu, A. **The state of Kridouwkrans rock art site in Cederberg in the Western Cape Province**, South Africa