

MUDZUNGA CONSULTING & ICT (PTY) LTD

Constantia Park, Building 16-2, 546, 16th Road, Midrand, 1685

Cell: 0716859247 Tel: 011 037 1565

E-mail: trust.mlilo@gmail.com

PHASE 1: HERITAGE/ARCHAEOLOGICAL IMPACT ASSESSMENT THE PROPOSED INSTALLATION OF NEW SYNCHRONOUS CONDENSERS AT THE GROMIS SUBSTATION IN THE NAMA KHOI LOCAL MUNICIPALITY OF NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.

10 APRIL 2026



Author: Trust Mlilo

DOCUMENT SYNOPSIS

ITEM	DESCRIPTION
PROPOSED DEVELOPMENT AND LOCATION	Proposed installation of new synchronous condensers at the Gromis Substation within the Nama Khoi Local Municipality of the Namakwa District Municipality of the Northern Cape Province.
PURPOSE OF THE STUDY	The Phase 1 Archaeological Impact Assessment for the proposed installation of new synchronous condensers at the Gromis Substation within Nama Khoi Local Municipality of the Namakwa District Municipality of the Northern Cape Province.
1:50 000 TOPOGRAPHIC MAP	See Figures 1 and 2
MUNICIPALITIES	Nama Khoi Local Municipality of Namakwa District Municipality
PREDOMINANT LAND USE OF THE SURROUNDING AREA	Substation and associated infrastructure and farming
APPLICANT	National Transmission Company South Africa (NTCSA)
PROJECT ENGINEERS	Asceng Thabile Joint Venture 4 Homestead, Bryanston, Johannesburg, 2191 P.O. Box 1811, Gallo Manor 2052 Republic of South Africa T: +27 (0)11 234 3009 E: info@asceng.co.za
REF	
EAP	QEMS Management and Business Solutions CC 7 Munnik Avenue, Polokwane, 0700 Cel: 062 808 1818 Email: sitholetp@qems.co.za
HERITAGE PRACTITIONER	Mudzunga Consulting & ICT (Pty) Ltd Constantia Park, Building 16-2, 546, 16th Road, Midrand, 1685 Cell: 0716859247 Tel: 011 037 1565 E-mail: trust.mlilo@gmail.com
AUTHOR	Trust Mlilo, PhD, MA. BA Hons, PGDE, BA (Archaeology)
DATE OF REPORT	10 April 2026

EXECUTIVE SUMMARY

This report informs and guides the applicant and contractors on the potential impacts of the proposed installation of new synchronous condensers at the Gromis Substation on heritage resources (if any) located in the study area. In addition, this heritage report must also inform the South African Heritage Resources Agency (SAHRA) about the presence, absence and significance of heritage resources located within the proposed development site. Eskom requires an environmental authorisation for the proposed installation of new synchronous condensers at the Gromis Substation. Before environmental authorisation is granted, the applicant must undertake an EIA and WML application process in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) and National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM: WA). This report is submitted in terms of Section 38 (8) of the National Heritage Resources Act 25 of 1999 as part of the environmental authorisation process for the proposed development. The purpose of this study is to identify, record, and, if necessary, salvage the irreplaceable heritage resources that may be impacted by the proposed development. In compliance with Section 38 (8) of the NHRA, QEMS Management and Business Solutions cc tasked Mudzunga Consulting & ICT (Pty) Ltd on behalf of the applicant to conduct a Phase 1 Archaeological and Heritage Impact Assessment (AIA/HIA) for the proposed installation of new synchronous condensers at the Gromis Substation within Nama Khoi Local Municipality of Namakwa District Municipality of the Northern Cape Province. Desktop studies, drive-throughs and consultations were conducted in order to identify heritage sites within the proposed development sites. The proposed development site has been previously disturbed by previous and current land use activities such as the construction of the Gromis Substation and associated powerline, as well as agriculture. The Northern Cape is known for the occurrence of archaeological and historical sites; however, the study did not identify any significant archaeological remains within the proposed development site. In terms of the built environment, the study did not identify any historical buildings and structures which qualify for protection in terms of Section 34 of the National Heritage Resources Act (Act 25 of 1999). The study did not identify any graves or burial grounds within the proposed alternative sites. However, it should be noted that archaeological remains and unmarked graves may exist in the area and when encountered during development, work must be stopped forthwith, and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner. This report must be submitted to the SAHRA for review in terms of Section 38 (4) of the NHRA.

The report makes the following observations:

- The findings of this report have been informed by desktop review and consultations with residents and impact assessment reporting, which include recommendations to guide heritage authorities in making decisions regarding the proposed installation of new synchronous condensers at the Gromis Substation
- The immediate project area is predominantly agriculture and mining.

-
- Some sections of the proposed development site are severely degraded from previous and current agricultural activities.

The report sets out the potential impacts of the proposed installation of new synchronous condensers at the Gromis Substation on heritage matters and recommends appropriate safeguard and mitigation measures that are designed to reduce the impacts where appropriate. The Report makes the following recommendations:

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA requirements.
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed installation of new synchronous condensers at the Gromis Substation.
3. From a heritage perspective supported by the findings of this study, the proposed installation of new synchronous condensers at the Gromis Substation is supported. Any of the three alternatives is viable. However, the proposed development should be approved under the observation that construction activities do not extend beyond the area considered in this report/affect the identified heritage sites.
4. Should chance archaeological materials or human remains be exposed during construction on any section of the site, work should cease on the affected area, and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
5. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resource barriers to the proposed installation of new synchronous condensers at the Gromis Substation. SAHRA may approve the proposed installation of new synchronous condensers at the Gromis Substation as planned without any further investigation and mitigation in terms of Section 38(8) of the NHRA.

This report concludes that the impacts of the proposed installation of new synchronous condensers at the Gromis Substation on the cultural environmental values are not likely to be significant on the entire site if the EMP includes recommended safeguard and mitigation measures identified in this report.

NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014.

DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998, specialists involved in Impact Assessment processes must declare their independence.

I, **Trust Mlilo**, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, even though I have received fair remuneration from the client for the preparation of this report.

Expertise:

Trust Mlilo, PhD, MA, BA Hons, PDGE, BA (Archaeology), ASAPA (Professional affiliation member) and more than 15 years of experience in archaeological and heritage impact assessment and management. Mlilo is an accredited member of the Association for Southern African Professional Archaeologists (ASAPA), Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than a hundred AIA/HIA Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, parastatals (Eskom), and several private companies such as BHP Billiton and Rhino Minerals.

Independence

The views expressed in this document are the objective, independent views of Dr Trust Mlilo and the survey was carried out under Mudzunga Consulting & ICT (Pty) Ltd. The company has no business, personal, financial, or other interest in the proposed development apart from fair remuneration for the work performed.

Conditions relating to this report.

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Mudzunga Consulting & ICT (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from ongoing research or further work in this field or about this investigation.

This report must not be altered or added to without the prior written consent of the author and Mudzunga Consulting & ICT (Pty) Ltd. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn

from or based on this report must refer to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Authorship: This AIA/HIA Report has been prepared by Dr Trust Mlilo (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (PHRA).

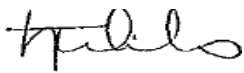
Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines, in relation to the approval of the proposed installation of new synchronous condensers at the Gromis Substation, being proposed by NTCSA.

Signed by



10/ 04/ 2026

ACKNOWLEDGEMENTS

The author acknowledges QEMS Management and Business Solutions cc for their assistance with the project details and for responding to technical queries related to the project.

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ABBREVIATIONS

AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
EIA	Environmental Impact Assessment
EIA	Early Iron Age (<i>EIA refers to both Environmental Impact Assessment and the Early Iron Age but in both cases the acronym is internationally accepted.</i>)
EIAR	Environmental Impact Assessment Report
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
ICOMOS	International Council of Monuments and Sites
LIA	Late Iron Age
LFC	Late Farming Community
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act 107 of 1998
NHRA	National Heritage Resources Act 25 of 1999
PHRA	Provincial Heritage Resource Agency
SAHRA	South African Heritage Resources Agency
ToR	Terms of Reference

KEY CONCEPTS AND TERMS

Periodization

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below.

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)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD 1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions

Definitions . Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases, the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, they do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example, an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

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

Chance finds means archaeological artefacts, features, structures, or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others, where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project which requires authorisation or permission by law, and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimising or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

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

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistoric, historical or the relatively recent past.

Study area or '**project area**' refers to the area where the developer wants to focus its development activities (refer to the plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area.

Assumptions and disclaimer

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be exposed during development activities, such activities should be halted immediately, and a competent heritage practitioner and SAHRA must be notified for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Mudzunga Consulting & ICT (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

1. INTRODUCTION

QEMS Management and Business Solutions cc tasked Mudzunga Consulting & ICT (Pty) Ltd on behalf of Toelane UJV (Pty) Ltd to undertake a Phase 1 AIA/ HIA for the proposed installation of new synchronous condensers at the Gromis Substation within Nama Khoi Local Municipality of Namakwa District Municipality of the Northern Cape Province. This study was conducted to fulfil the requirements of Section 38 (8) of the NHRA. The purpose of this heritage study is to identify and assess any heritage resources that may be located within the proposed development site to make recommendations for their appropriate management. To achieve this, we conducted background research of published literature, maps, and databases (desktop studies), which was then followed by ground-truthing by means of drive-through surveys and field walking. Desktop studies revealed that the general project area is rich in Late Stone Age (LSA) and historical sites. It should be noted that while heritage resources may have been located in the entire study area, current substation developments, previous agriculture, road and boundary fence lines have either obliterated these materials or reduced them to isolated finds that can only be identifiable as chance finds during construction. The proposed installation of new synchronous condensers at the Gromis Substation may be approved subject to adopting recommendations and mitigation measures proposed in this report. Based on the findings, there are no archaeological or heritage reasons why the proposed development cannot be approved, taking full cognisance of clear procedures to follow in the event of chance findings.

Terms of Reference (ToR)

Mudzunga Consulting & ICT (Pty) Ltd was requested by QEMS Management and Business Solutions cc to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the proposed installation of new synchronous condensers at the Gromis Substation, including any known data on affected areas.
- Provide details on methods of study; potential and recommendations to guide the SAHRA to make an informed decision with respect to authorisation of the proposed installation of new synchronous condensers at the Gromis Substation.
- Identify all objects, sites, occurrences and structures of archaeological or historical nature (cultural heritage sites) located within the proposed development site.
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.
- Describe the possible impact of the proposed installation of new synchronous condensers at the Gromis Substation on these cultural remains, according to a standard set of conventions.
- Propose suitable mitigation measures to minimise possible negative impacts on the cultural resources; and
- Review applicable legislative requirements.

Project Location

Gromis Substation is situated on Portion 15 of Farm DIKGAT No. 195. It is located within the jurisdiction of Nama Khoi Local Municipality of Nama Khoi Local Municipality in Northern Cape Province.

Table 1: Locality Details of the proposed installation of new synchronous condensers at the Gromis Substation

ITEM	DESCRIPTION
Farm Name	Farm Dikgat No. 195.
Portion	Portion 15
Province	Northern Cape
Local Municipality	Nama Khoi Local Municipality
District Municipality	Nama Khoi Local Municipality

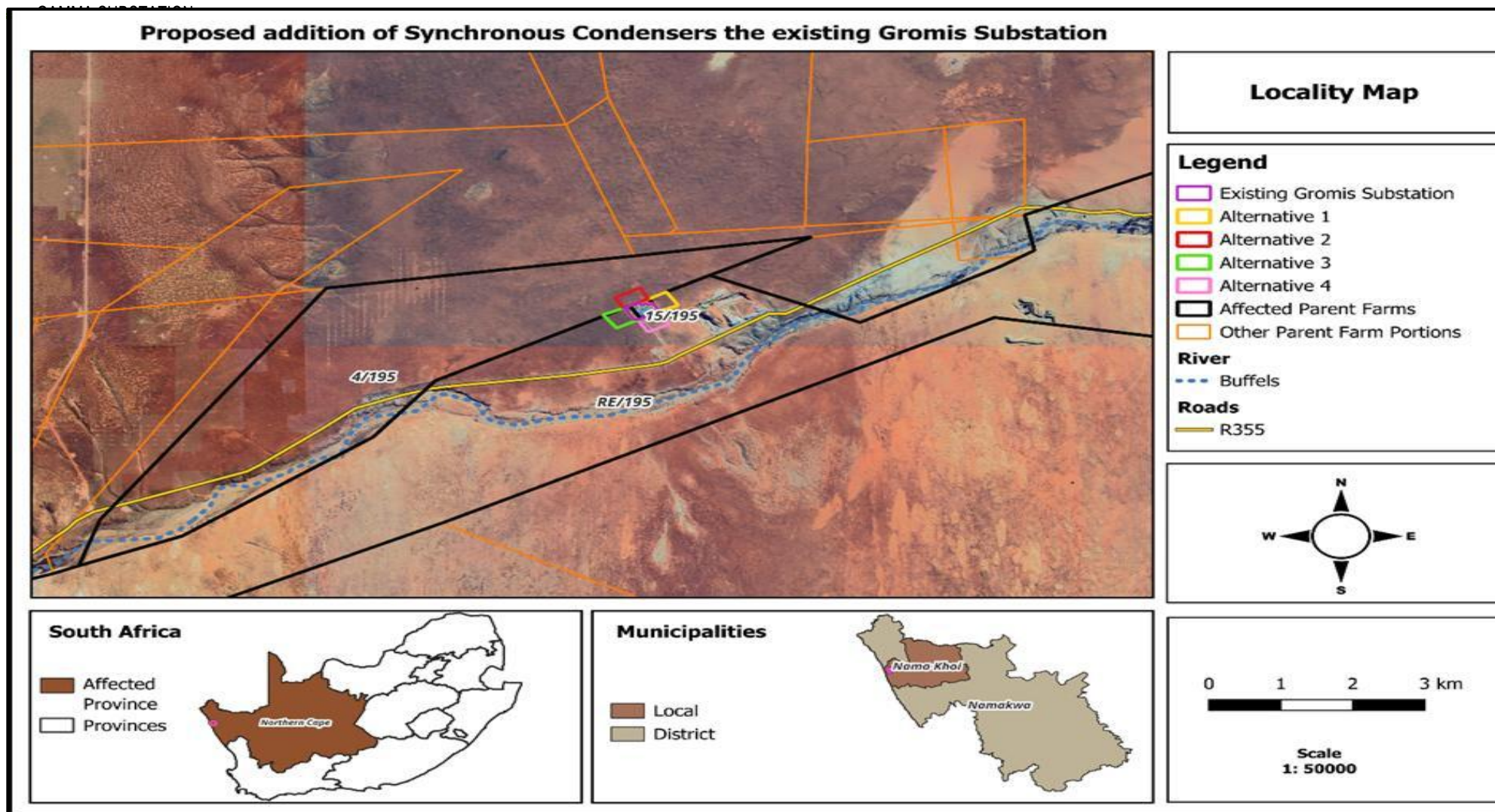


Figure 1: Location of the proposed project site (QEMS, 2026)

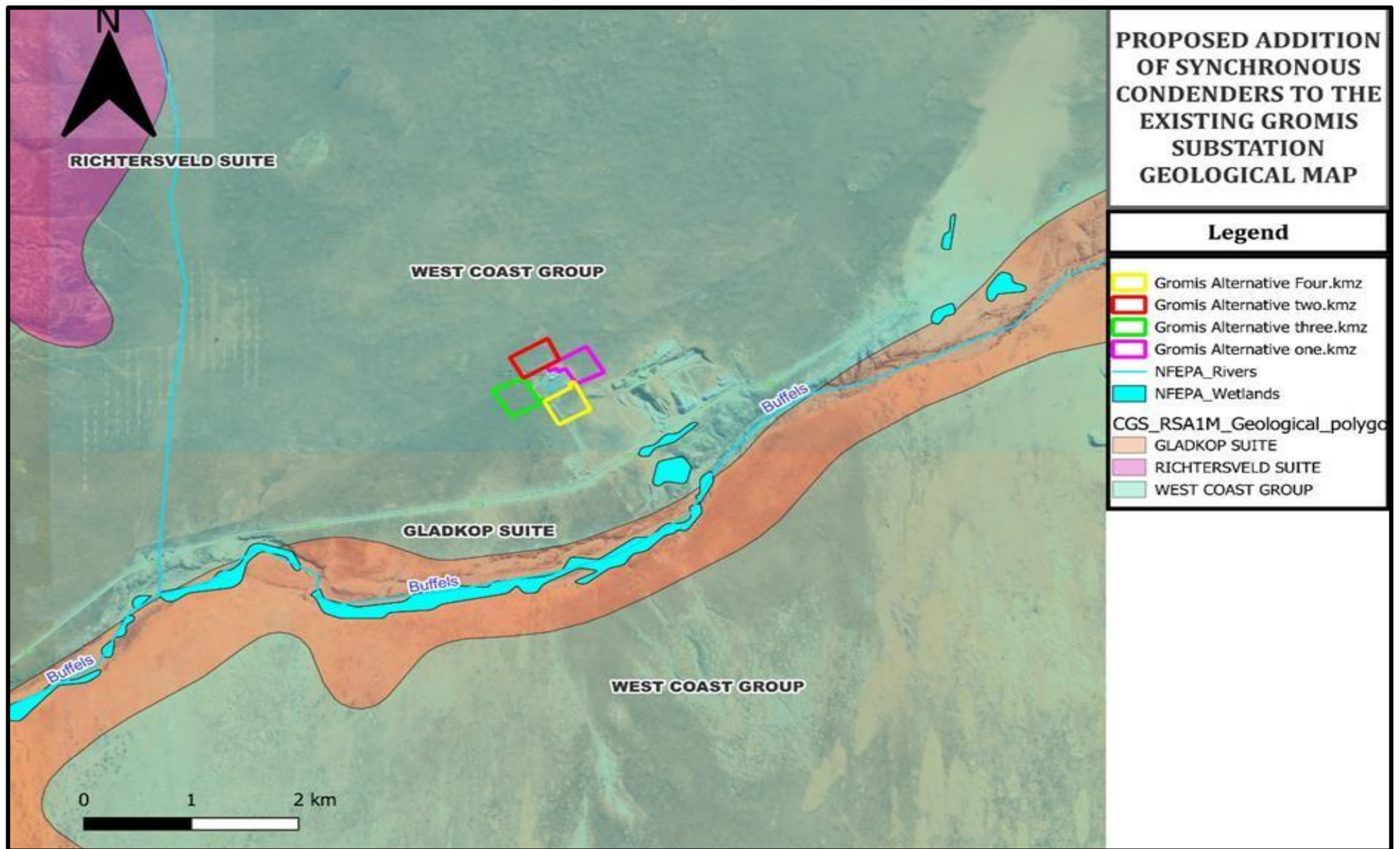
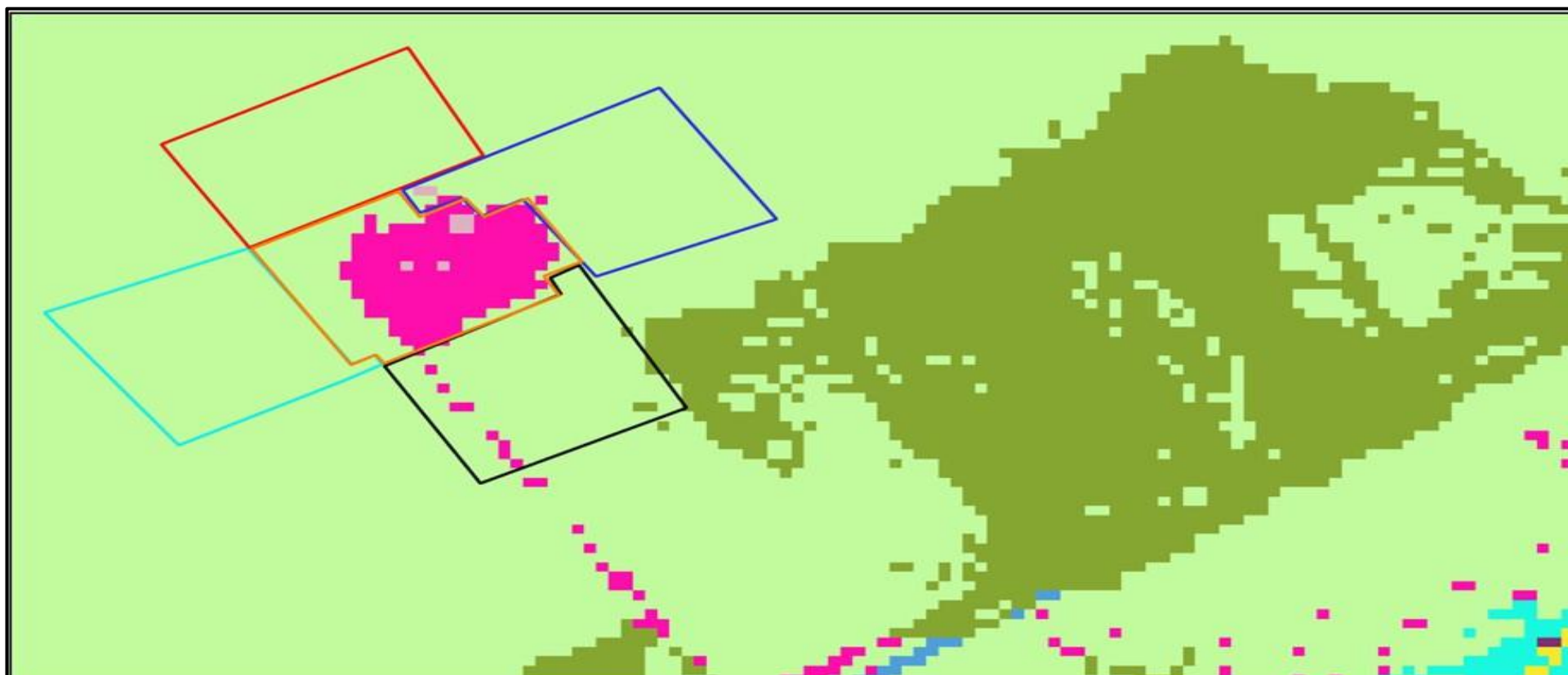


Figure 2: Locality map (QEMS, 2026)



Proposed addition of Synchronous Condensers the Existing Gromis Substation

Legend

- Existing Gromis Substation
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4

Land Use and Land Cover (DFFE, 2022)

- Proposed Site
- low shrubland (other)

Land Use and Land Cover Map

- low shrubland (succulent karoo)
- natural grassland
- bare riverbed material
- other bare
- village scattered (bare & low veg/ grass combo)
- roads & rails (major linear)
- mines: extraction pits, quarries



0 0,1 0,2 0,3 km



Figure 3: Locality map (QEMS, 2026)



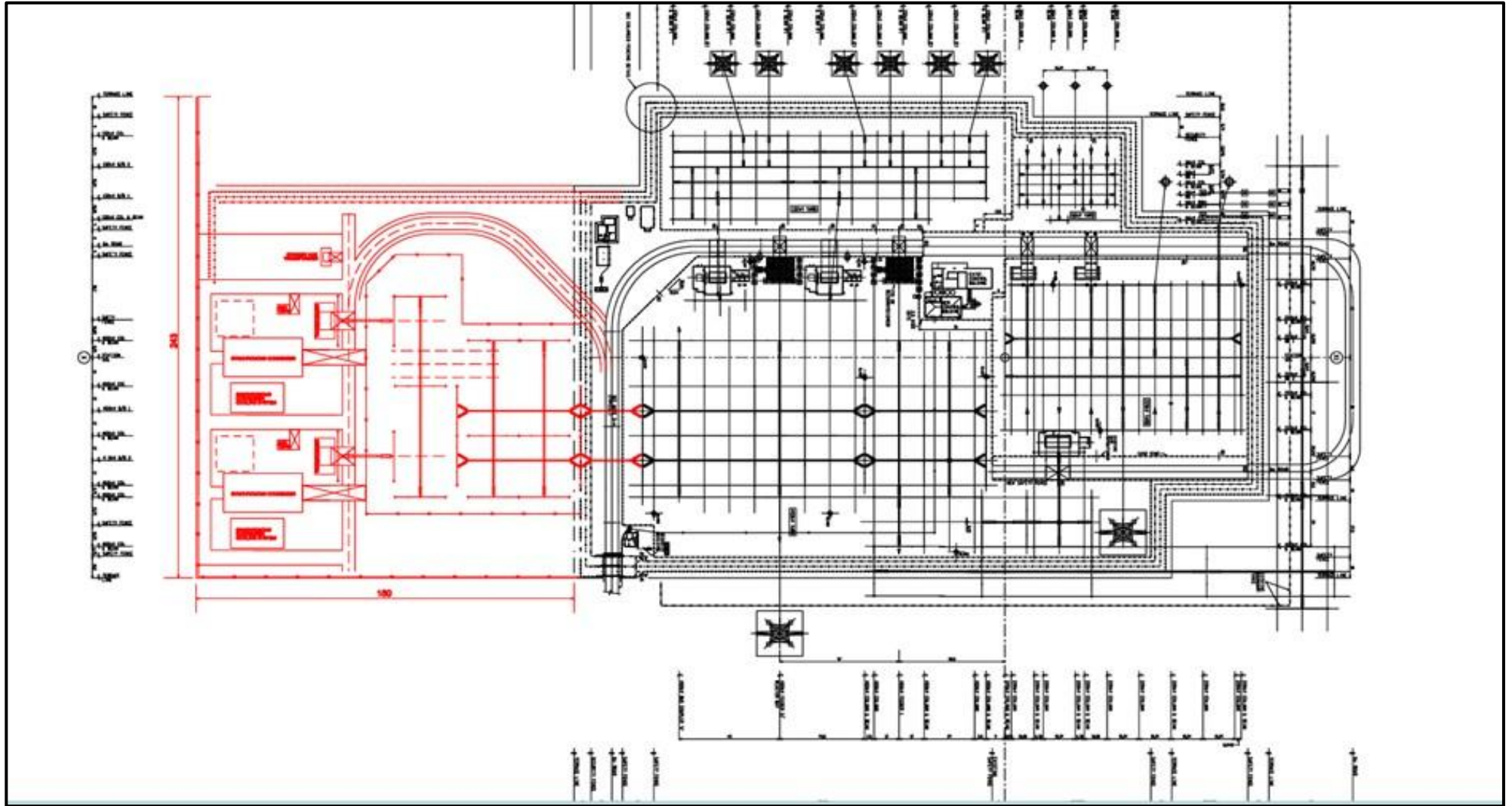


Figure 6 Layout Plan

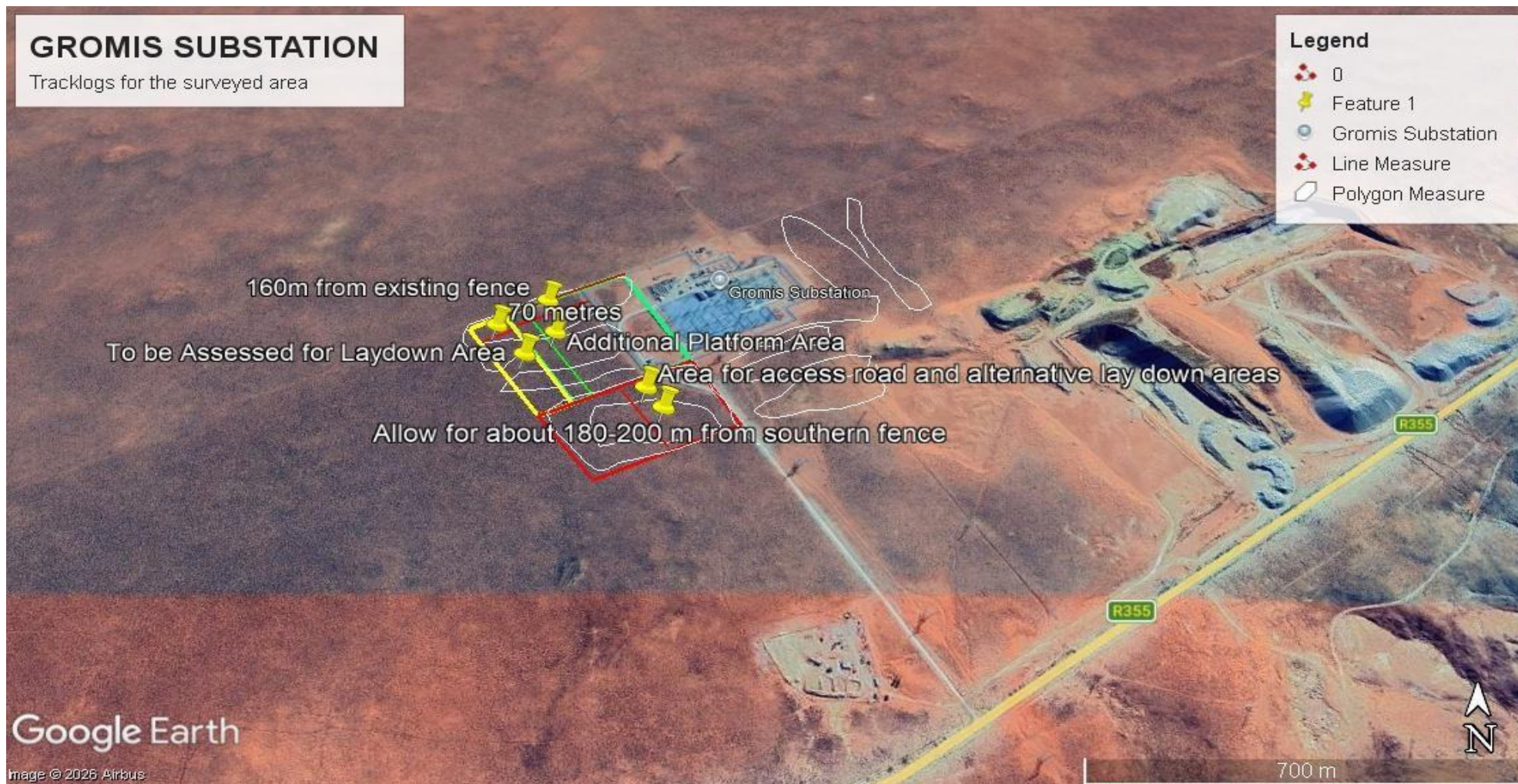


Figure 7 Tracklogs for the surveyed area

Project Background

Gromis Substation

To achieve the grid code ancillary service requirements, the SynCons need to be integrated onto the 400 kV busbar at the Gromis Substation. As the SynCons are to be integrated at 400kV they should be located within a reasonable proximity to the 400 kV busbars. If the Gromis Substation does not prove to be a feasible host substation for all or some of the required SynCon capacity a nearby transmission substation may be used.

SynCons have large, heavy components, often weighing more than several hundred tons. For constructability and maintainability requirements, these components need to be brought onto and off-site with reasonable ease. This requires a certain proximity to heavy vehicle access roads with required turning radii.

Possible SynCon Layouts

The OE team has developed possible layouts for the SynCons based on the current substation layout. The two most feasible options are locating the SynCons either on the north-western side (Option 1 Layout) of the substation or the western side (Option 2 Layout) of the substation. Based on the revised servitude area obtained by Eskom in 2021, the option siting the SynCons on the northwestern side of the substation is the most feasible. The two most feasible options considered are illustrated in the figures below.

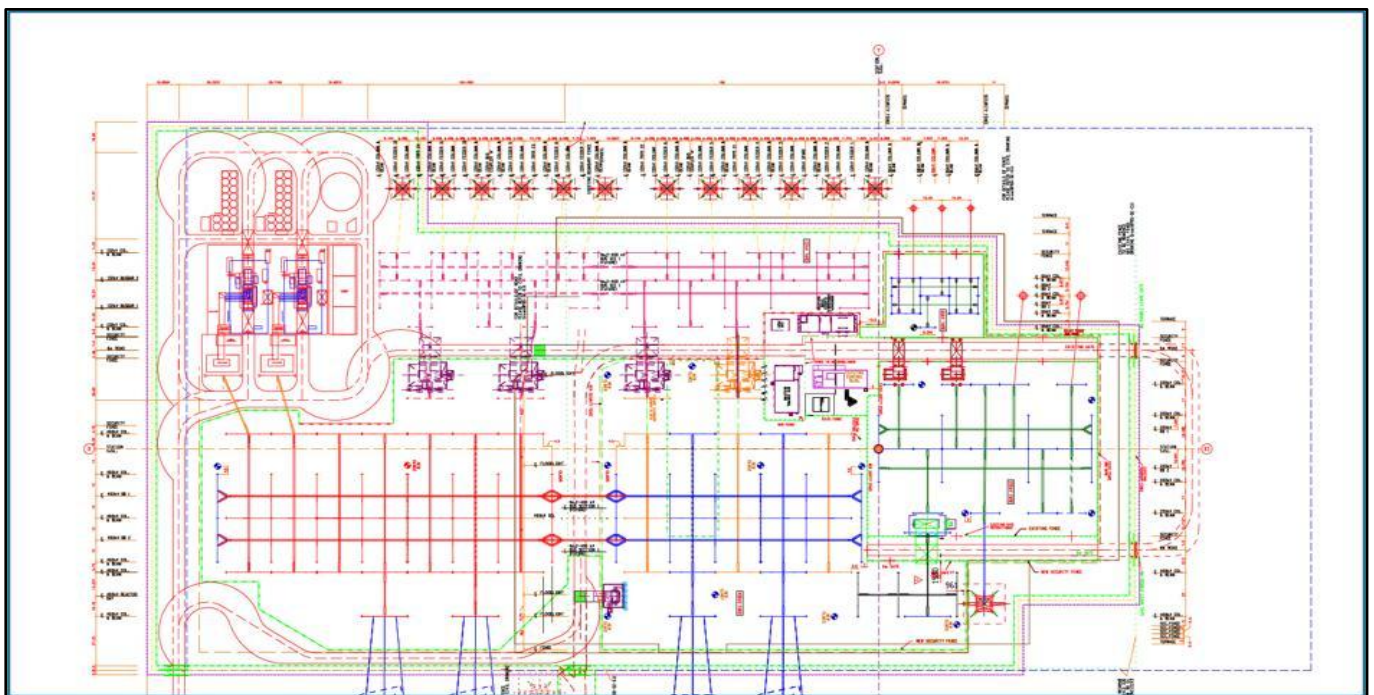


Figure 8: Two SynCons positioned on the northwestern side of the substation

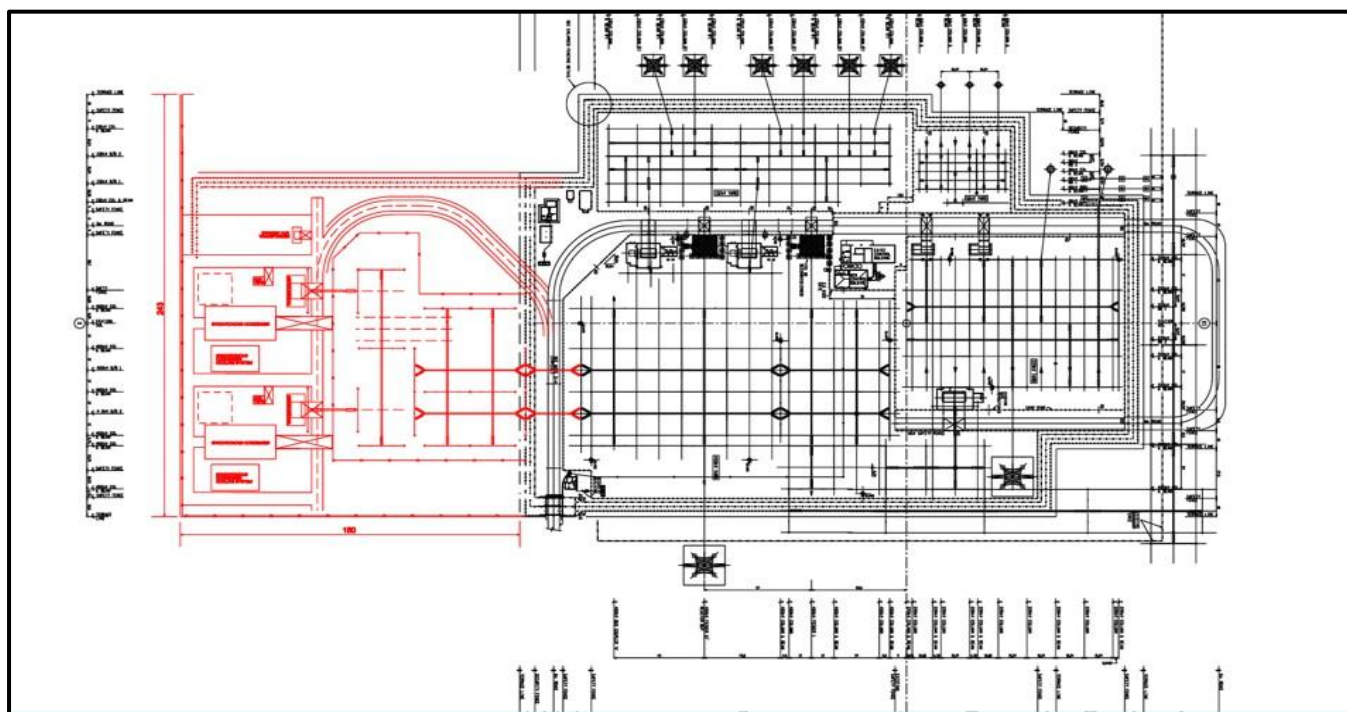


Figure 9: Two SynCons positioned on the western side of the substation.

Typical SynCon Environmental Parameters

The typical parameters for the SynCons based on the various options provided by Original Equipment Manufacturers (OEMs) are tabulated below.

Table 2: Typical SynCon Environmental Parameters

Parameter	Unit of Measure	Quantum
Emissions	Tons CO ₂ emitted	0
Footprint /Area	Hectares	1.5 – 2.1 (2 units)
Noise	Decibels	85 dB@ 1 metres
Temperature	Degrees Centigrade	Min: 15 °C Max: 40 °C
Water Use	Kilolitres	Closed Circuit Cooling-

2. LEGISLATIVE CONTEXT

Three main pieces of legislation are relevant to the present study. The proposed installation of new synchronous condensers at the Gromis Substation is submitted in terms of the National Environmental Management Act, 1998 (NEMA). Therefore, this is in fulfilment of the assessment of the impact on heritage resources as required by section 24(4)(b)(iii) of NEMA and section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA). An AIA or HIA is required as a specialist sub-section of the environmental authorisation process. This study was conducted in terms of Section 38(8) as part of environmental authorisation. The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority about such development have been taken into account before the granting of the consent.

Thus, any person undertaking any development in the above categories must, at the very earliest stages of initiating such a development, notify the heritage resources authority responsible and furnish it with details regarding the location, nature and extent of the proposed development. Section 38 (2) (a) of the same act also requires the submission of a heritage impact assessment report for authorisation purposes to the responsible heritage resources agencies (SAHRA/PHRAs). Because the proposed development will change the character of a site exceeding 5000 m², an HIA is required according to this section of the Act.

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 27. Section 34 stipulates that no person may alter, damage, destroy, or relocate any building or structure older than 60 years without a permit issued by SAHRA or a provincial heritage resources authority. This section may not apply to the present study since none were identified. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, excavate, alter, or remove from its original position, or collect any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to the heritage practitioner or SAHRA/PHRA, who will assist in investigating the extent and significance of the finds and inform the applicant about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the South African Heritage Resources Agency (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the unlikely discovery

of burials or graves by the applicant or his contractors. Section 37 of the NHRA deals with public monuments and memorials, but this may not apply to this study because no protected monument will be physically affected by the proposed development.

In addition, the EIA Regulations of 2014 (as amended in 2017) promulgated in terms of NEMA (Act 107 of 1998) stated that environmental assessment reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The purpose of such a report is to alert the applicant (Eskom Transmission National Company), SAHRA/ PHRA, and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.

3. METHODOLOGY

Our HIA study was structured in five phases: field survey, consultation, report compilation and report review. The methodology is informed by the SAHRA Guidelines on Impact Assessment for development projects, as well as the relevant provisions of the local heritage and environmental legislation. We conducted desktop studies, field surveys, consultations, report compilation and report review.

Phase I: Desktop studies

Desktop studies are very crucial for the success of any project because they determine not just what is known but also can identify gaps which must be closed during the study to meet the aims and objectives of the project. Literature on the archaeology and heritage character of the project was reviewed. A review of SAHRIS and other databases was conducted online. Further review of the relevant local and international legal frameworks was also done. Furthermore, relevant documents, databases such as Google Earth and any other available information were consulted. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied.

The desktop studies were carried out at university libraries, national libraries, local municipality libraries and archives. Electronic databases such as Google Earth, Google Maps, and Google Images were consulted as well. Special attention was given to provincial and local authority development plans so that the HIA contributes to the attainment of local objectives.

Phase ii: Fieldwork

The project aims to provide the client with an HIA that will support decision-making in order to ensure the protection of the heritage resource base of the project area. The heritage resources must be identified, assessed, and ranked. This enables a proper definition of the resource and its boundaries. This requires the participation of a multi-disciplinary team with experience in heritage management, heritage, palaeontology, planning and risk management fields. This fieldwork aimed at adding to fill the gaps identified during the review of the existing documentation. The field survey was undertaken on the 10th of April 2026 by a team of two archaeologists. The study team covered the entire study site because it is clear and there are powerlines and access roads. The focus of the survey involved a pedestrian survey, which was conducted across the proposed study site. The pedestrian survey focused on parts of the project area where it seemed as if disturbances may have occurred in the past, for example, bald spots in the grass veld; stands of grass which are taller than the surrounding grass veld; the presence of exotic trees; evidence for building rubble, and ecological indicators such as invasive weeds.

Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the proposed development in order to suggest further action. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed installation of new synchronous condensers at Gromis Substation

Phase iii: Consultation

The EIA Public Participation process will be conducted by the EAP. The EIA Public Participation Process will invite and address comments from affected communities and any registered heritage bodies on any matter related to the proposed development, including heritage concerns that may arise as a result of the project.

Phase iv: Report compilation

Report compilation and impact assessment.

Phase v: Report review, finalisation and submission

Before the final draft of the HIA is submitted to the client, the report will be reviewed internally. The client will be provided with the opportunity to make some input before the report is finalised.

Visibility and Constraints

Most sections of the site are accessible, and the study team conducted the field survey with limited constraints. However, surface visibility was compromised due to dense grass cover in some sections. It is conceded that, due to the subterranean nature of cultural remains, this report should not be construed as a record of all archaeological and historic sites in the area.

The following photographs illuminate the nature and character of the Project Area.



Plate 1: Showing the proposed development site.



Plate 2: Showing the proposed development site.



Plate 3: Showing the proposed development site.



Plate 4: Showing the site earmarked for development.



Plate 5: Showing the proposed installation site for new synchronous condensers at the Gromis Substation site.



Plate 6: Showing the proposed development site.



Plate 7: Showing the proposed development site.



Plate 8: Showing proposed development site.



Plate 9: Showing proposed development site.



Plate 10: Showing the proposed development site.



Plate 11: Showing the proposed development site.



Plate 12: Showing the proposed development site.



Plate 13: Showing the proposed development site

4. ARCHAEOLOGICAL/HISTORICAL CONTEXT

The Northern Cape Province is rich in archaeological heritage, mostly dominated by Stone Age occurrences. Numerous sites, bearing Earlier, Middle and Later Stone Age habitation, occur across the province, mostly in open-air locales or in sediments alongside rivers or pans. In addition, a wealth of Later Stone Age rock art sites, most of which are in the form of rock engravings, are found in the region. These LSA sites occur on hilltops, slopes, rock outcrops and occasionally in riverbeds. Sites dating to the Iron Age occur in the northeastern part of the province, but environmental factors suggest that the spread of Iron Age farming westwards from the 17th century was constrained mainly to the area east of the Langeberg Mountains. However, evidence of an Iron Age presence as far as the Upington area in the eighteenth century occurs in this area. The Northern Cape also boast of colonial and mining heritage. Moving into recent times, the archaeological record reflects the development of a rich colonial influence, characterised by mostly isolated farmsteads, missionary establishments (Kuruman Mission) and mining developments at Kimberley and other smaller towns. This proposed project is situated in the Karoo Region.

The Karoo region generally contains sparse archaeological traces from the Early (ESA), Middle (MSA) and Later Stone Ages (LSA). There are widespread isolated artefacts whose distribution results from either primary or secondary causes (Orton 2016). In this dry landscape, LSA archaeological sites are well-known to occur near water sources, but the density of sites was found to be quite low. These sites are usually scatters of stone artefacts, often accompanied by ostrich eggshell fragments and sometimes pottery, but may also include fragments of bone and even archaeological deposits. Sampson (1984, 2010; Sampson *et al.* 2015) recorded vast numbers of Stone Age sites, with many of them being Kheokhoe sites, including kraals. ESA and MSA sites were also found to occur. Hart's (2016) study located many LSA sites in the southeast but found ESA and MSA occurrences to be very rare. The LSA sites were mostly stone artefact scatters, but some included pottery and a few circular stone-walled features were also recorded.

Early Stone Age

Although a long history of research on the Early Stone Age period of southern Africa has been conducted (Mason 1962, Sampson 1974, Klein 2000, Chazan 2003), it remains a period about which little is known. These may be due to many factors, which include, though not limited to, retrieval techniques used, reliance on secondary, at times unknown sources and the fact that few faunal remains from this period have been analysed (Chazan 2003). According to Robbins *et al.* (1998), the Stone Age is the period in human history when stone was mainly used to produce tools. This period began approximately 2.5 million years ago and ended around 20 000 years ago. During this period, human beings became the creators of culture and were basically hunters and gatherers. This era is identified by large stone artefacts.

Stone tools are the principal ESA material to have been found in the area under study. These include crude choppers and other unifacial tools that belong to the Oldowan industry, as well as the characteristic Acheulian hand axes and cleavers (Goodwin & Van Riet Louw 1926; Humphreys 1979; Sampson 1972, 1984). However, as noted by Kaplan (2001), the majority of these tools have now lost their sharp edges, and their flake scars are barely recognizable. As such, their identification demands careful inspection, especially because most of them appear to have been subsequently modified during either the Middle or Later Stone Age. This section of the Karoo is endowed with dolerite dykes, which host hornfels/indurated shale, which was used for making these tools (Parkington 1984). The ESA tools in the study area mostly occur in open sites, next to dry riverbeds, pans, vleis, ancient river valleys and mountains are rarely associated with organic remains such as bone (Kaplan 2001, Hart and Webley 2011a), periods (Nilssen 2011). The overall significance of these sites is low, but researchers have cautioned that they should not be dismissed outright because of their potential to inform research on the distribution of the ESA in the dry interior (Kaplan 2001).

The Middle Stone Age possibly began around 100 000 to about 200 000 years ago and extends up to around 35 000 years ago. This period is marked by smaller tools than in ESA and characterized by the production of food and the introduction of domestication of animals. Many MSA sites have evidence for control of fire; before this, rock shelters and caves would have been dangerous for human habitation due to predators. MSA people made a wide range of stone tools from both coarse- and fine-grained rock types. Sometimes the rocks used for tools were transported considerable distances, presumably in bags or other containers; as such, tool assemblages from some MSA sites tend to lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces.

The MSA is a cultural period which in southern Africa is associated with the emergence of archaic Homo sapiens, thought to be responsible for changes in the stone tool technology as well as the beginning of art and symbolic expression – the so-called modernity (Hensilhood and Marean 2003). Unlike the ESA lithics that were mostly core tools (Sampson 1974), the MSA tools are characterised by flakes and blades, which are relatively smaller when compared to those used in the preceding ESA. MSA sites found in the research area are often defined by clusters of tools or isolated occurrences of stone implements that include cores, hammer stones, flakes, chunks, blades, convergent flakes, unifacial and bifacial points, adzes and several retouched pieces (Prins 2011, Kaplan 2001). Of all the Stone Age periods, the MSA sites occur more frequently in the area under study, but just like the ESA, they rarely occur in their original contexts (Kaplan 2001). While this does not necessarily render the sites insignificant, it means threats to their integrity and preservation can be mitigated.

The Microlithic Later Stone Age period began around 35 000 and extended to the later 1800 AD. According to Deacon (1984), LSA is a period when human beings refined small blade tools, conversely abandoning the prepared-core technique. Thus, refined artefacts such as convex-edge scrapers, borers and segments are associated with

this period. Moreover, a large quantity of art and ornaments were made during this period.

More technological and behavioural changes than those witnessed in the MSA occurred during the LSA, which is also associated with *Homo Sapiens* (Barham & Mitchell 2008). Comparatively, lithics became much smaller, specialised and with more retouch than those of the MSA. More organic tools, art and symbolic expressions were also recorded in the LSA of southern Africa in general, but the LSA expression in the area under study is limited to lithics and isolated occurrences of Rock Art (both rock paintings and engravings). With regards to lithics, various core types, including bladelet cores, hammer stones, flakes, chips, chunks, blades, bladelets, adzes and retouched pieces, have been reported in isolated clusters (Prins 2011, Kaplan 2001). These lithics were overwhelmingly made with hornfels, though some appear in quartzite, sandstone and mud rock. Closer to Beaufort West, Prins (2011) reports the occurrence of production sites where the reduction sequence can be reconstructed through refitting of flake debris to cores.

Other organic materials associated with lithics in this area included ostrich eggshells. A previous study by Kaplan (2001) noted the occurrence of a low-density scatter of LSA tools and some ostrich eggshell on the farm La-De-Da, just to south of the Karoo National Park. The last 10 000 years have been associated with the San groups who produced most of the Rock Art. Parkington *et al* (2008) have reported on the occurrence of rock engravings in this area, of which the best-known sites occur at Nelspoort near Beaufort West. Kaplan (2001) red-flagged the mountainous portions in this area because of the occurrence of such Rock Art sites, amongst other sites. The animals depicted in the Rock Art include sheep, which, together with goats and cattle, were introduced in this area by the Khoe Khoe herders (Deacon & Deacon 1999; Sampson 1985). The latter are also associated with the introduction of ceramic vessels, but these have not been widely reported in the area under study. At about 1200 – 1400AD, a global climatic fluctuation (known as the Little Ice Age) is thought to have caused an increased rainfall in the now dry Karoo, resulting in the area being more suitable for grazing by cattle and occupation by Khoe Khoe pastoralists. Prins (2011) argues that the archaeology of pastoralist occupation of the Karoo is indicated by various stone kraal complexes similar to several hundred that have been recorded by Sampson (1985) in the Seacow River Valley. It is now known that stone walling in this part of the world began during the Stone Age (Sadr 2012). A proper identification of these stone walling is important because similar structures are also associated with the 19th-century AD Xhosa speaking communities (Zachariou 2011).

Historical Period

The archaeology of this area, dating after 1770 AD, also reflects the cohesion and interactions that relate to the Trekboers and other LSA cultural groups, as well as some Iron Age groups (Prins, 2011). Being pastoralists themselves, the Trekboers settled on the escarpment where most of the springs were found, and they were also mobile (Penn 2005). As a result of conflict with both pastoral groups and the San, who raided their livestock was

imminent. Not surprisingly, a period of conflict ensued until the 1880s when San resistance to colonial expansion in the Karoo came to an end, but the previous military contact resulted in several marked and unmarked graves that should be noted (Penn 2005; Adhikari 2010; Gall 2002). During the period of conflict, some Khoe Khoe groups aided the Trekboers in exterminating the San groups, and thus their archaeological signature during this period was slightly modified through the introduction of European goods (Prins 2011; Smith et al 2000)

The appearance of the Xhosa speaking communities in this part of the Karoo dates back to the 1790s (Anderson 1985). These Bantu-speaking communities were moved into this area in order to participate in the ivory trade, which initially included the Khoisan and the Trekboers (Zachariou 2011). They also settled in stone-walled settlements, most of which will appear similar to those of the Khoisan groups, at first glance. Indeed, in most of the previous literature, no such distinctions were made, and stone-walled sites were merely mentioned as isolated features or structures. Most of these Xhosa sites occur in the Pramberg area, closer to Victoria West, but this may as well be a reflection of a lack of dedicated research into this type of archaeology.

SAHRIS Database and Impact Assessment Reports in the proposed project area

Archaeological and heritage research in the Namaqualand was mainly triggered by infrastructure development such as powerlines, substations, solar farms and wind farms, as well as mining. The Namaqualand is an arid landscape that receives less than 150mm of rain a year. The dry inland did not attract past communities to settle (Beaumont *et al*, 1995; Kaplan, 2001; Morris, 2007). Morris (2010) notes that previous studies have indicated that substantial MSA scatters are uncommon in the Bushmanland/Namaqualand areas. Herder sites were more limited to rock shelters and dune areas close to water sources such as pans and rivers. Overall, Stone Age materials are scattered thinly over the surface in the project area. The Stone Age finds are considered to be of low to no archaeological significance (Morris 2009a, 2009b, 2010, 2011, 2012). This is due to the low frequencies of occurrences, temporally mixed assemblages, and the fact that artefacts are found in disturbed, derived and unstratified contexts. However, the rocky coastline has an abundance of shellfish, crayfish, marine birds and mammals, which attracted past communities (Archaeological and heritage research in the area was mainly triggered by infrastructure development such as powerlines, substations, solar farms and wind farms, as well as mining. The shoreline area attracted pre-colonial Stone Age hunter-gatherers, as it offered opportunities to exploit marine foods and a variety of terrestrial animals available for human subsistence (Beaumont *et al*. (1995).

Kaplan (1993) asserts that more than 1500 archaeological sites have been recorded on the Namaqualand coast. The work by the Archaeology Contract Office (ACO) exposed that there is an almost continuous distribution of shell middens along the rocky shoreline, adjacent to dune ridges and sandy beaches. Most of these sites have been identified while conducting AIAs for mining operations on land owned by De Beers, and Namakwa Sands/Exxaro (Halkett 1998, 2001, 2002, 2003, 2006; Halkett & Hart 1987; Hart & Halkett 1993, 1994a, 1994b 1999; Hart &

Lanham 1997; Parkington & Hart 1993; Parkington & Poggenpoel 1990; Orton 2005, 2007a; Orton & Halkett 2005; Orton & Halkett 2006). Archaeological Impact Assessment for the expansion of the Diamond Coast Aquaculture Farm near Kleinsee, Northern Cape. Additional work after the discovery of offshore gas deposits and strategic mineral sands in the vicinity of the mouth of the Groenrivier exposed numerous coastal shell middens and interior campsites (Kaplan 2014, 2007; Orton & Hart 2011). Numerous Later Stone Age (LSA) sites were also recorded during an AIA for one of the proposed nuclear power stations near Kleinsee (Parkington & Hart 1991a, 1991b), while shell middens, stone flakes and pottery were recently documented at Rooiklippe (Kaplan 2018 in prep). Well-preserved LSA sites have been recorded at the Kleinsee Golf Course (Hart & Halkett 1997), and a collection of Early Stone Age (ESA) tools was also made by Halkett (2002) from the Sandkop mining area in Kleinsee1. Several rock shelters with archaeological deposits, shellfish, stone tools, pottery, ostrich eggshell and even rock art have been recorded near Kotzesrus by Orton & Hart (2011). Webley & Halkett (2010) recorded an LSA site with stone tools, pottery, ostrich eggshell fragments and some 19th-century British refined earthenware on the banks of the Swartdoring River, as well as large scatters of Middle Stone Age (MSA) LSA and ESA lithics approximately 30 km south of Garies.

Research by Dewar (2006, 2007) exposed that parts of Namaqualand were occupied by ESA people more than a million years ago, but the greatest number of archaeological sites (i. e., coastal shell middens), are those which relate to the ancestors of modern San (hunter-gatherers) and Khoekhoen (Herders) which date to the last 4-5000 years (Webley 1992). However, Orton (2007b) suggests there is variety in age, with some sites being only a few hundred years old. Archaeological sites with pottery post-dating 2000 years are also reported from several sites in Namaqualand. These ceramic LSA sites are believed to be associated with the introduction of pastoralism to the region about 2000 years ago, and Webley (2001) has obtained some of the earliest dates for sheep from Spoegrivier Cave, about 1900 years ago. Excavations at several locations between Brandsebaai and the Orange River mouth have shown that MSA people have also been exploiting coastal resources since the Last interglacial period about 120 000 years ago (Hart 2006; Parkington 2006), and scatters of ESA handaxes more than 500 000 years old have also been found amongst dunes on the coastal plains and around pans in a survey of the Namaqua National Park (Morris & Webley 2004).

Historically, the interior of Namaqualand was occupied by the Little Namaqua, a nomadic Khoekhoen pastoralist group, who herded sheep and cattle. They are known to have moved seasonally with their livestock. Archival reports suggest that Little Namaqua may have followed a transhumance cycle between the Kamiesberg in the summer months and the Sandveld in the winter months (Webley 1992). For instance, Governor Simon van der Stel, who travelled to Namaqualand in 1685, gives insights into Little Namaqua. The colonial Trekboers settled in the area in the late 1700s. The earliest loan farms were granted after 1750. The Little Namaqua eventually retreated to so-called “reserves” such as Leliefontein, Steinkopf, Kommaggas, Concordia and the Richtersveld (Webley & Halkett

2010).

5. RESULTS OF THE FIELD STUDY

Archaeology

The study did not identify any significant archaeological remains within the proposed development site. Morris (2010) notes that previous studies have indicated that substantial MSA scatters are uncommon in the Bushmanland/Namaqualand areas. Herder sites were more limited to rock shelters and dune areas close to water sources such as pans and rivers. Based on the field study results and field observations, it is the considered opinion of the author that the receiving environment for the proposed development has low potential to yield previously unidentified archaeological sites during construction work. The most important observation is that the dryer inland has yielded low-density scatters of lithic tools, while the rocky coastal area is rich in archaeological remains (see Kaplan 2001, Prins 2011, Morris 2013). In terms of Archaeology, there are no fatal flaws or NO GO Areas. No significant sites were identified within the proposed development site.

Burial grounds and Graves

The field survey did not identify any burial sites within the proposed site. It should be noted that burial grounds and gravesites are accorded with the highest social significance threshold (see Appendix 3). Graves must be protected because they have both historical and social significance and are considered sacred. Whether they exist or not, they may not be tampered with or interfered with without a permit from SAHRA. The possibility of encountering human remains during subsurface earth-moving works anywhere in the landscape is ever-present. However, the possibility of encountering previously unidentified burial sites within the proposed development site is low; should such sites be identified during construction, they are still protected in terms of Section 36 of NHRA.

Graves and burial grounds can be encountered in most areas; however, the chances of encountering them in the project site are very limited. Farm graveyards are generally located near farmsteads and farmworker dwellings, which means they can be easily identified and avoided. However, the main concern of this study is the potential of encountering isolated and unmarked archaeological/historical graves and burial grounds. These are commonly found close to archaeological sites and abandoned settlements; however, since the site did not yield any archaeological remains, the chances of encountering archaeological graves are very low. It is often difficult to detect the presence of archaeological human burials on the landscape, as these burials, in most cases, are not marked at the surface and are concealed by dense vegetation cover.

If any human remains are exposed during the course of construction work, then they should be reported to an archaeologist and work in the immediate vicinity should cease until the appropriate actions have been carried out

by the archaeologist. Where human remains are part of a burial, they would need to be exhumed under a permit from either SAHRA (for pre-colonial burials as well as burials later than about AD 1500) or the Department of Health for graves younger than 60 years.

Public Monuments and Memorials

The study did not record any public memorials or monuments within the proposed development site. As such, the proposed installation of new synchronous condensers at the Gromis Substation may be approved without any further investigation and mitigation in terms of Section 37 of the NHRA.

Buildings and Structures

In terms of the built environment, the study did not identify any buildings and structures that qualify for protection in terms of Section 34 of the NHRA.

6. IMPACTS ASSESSMENT

An impact can be defined as any change in the physical, chemical, biological, cultural, and/or socio-economic environmental system that can be attributed to human activities related to the project site under study for meeting a project need. A quantitative impact assessment will be conducted for the project. The method to be used makes use of the basic risk assessment approach of deriving an expression for risk from the product of likelihood (probability) and consequences.

The main objective of the impact assessment is to identify the negative impacts that can be avoided and/or mitigated and the benefits of the positive impacts during the planning, operation, decommissioning and rehabilitation phases of the development project on the environment. The impact assessment is aimed at predicting the potential impacts of the proposed project. Impact assessment strives to avoid damage, loss of ecosystem services, and, where they cannot be avoided, to reduce and mitigate these impacts (DEA, 2013). Offsets to compensate for loss of habitat are regarded as a last resort, after all efforts have been made to avoid, reduce and mitigate. The mitigation hierarchy is represented in **Table 11**.

The significance of the impacts will be assessed considering the following descriptors:

Impact Identification

The study identified impacts (positive and negative) associated with the project. The study includes an assessment of cumulative impacts that may occur because of the proposed installation of new synchronous condensers at the Gromis Substation.

Impact Assessment Methodology

All the identified potential impacts were assessed according to the following Impact Assessment Methodology, as described below. This methodology has been utilised for the assessment of heritage impacts where the consequence (severity of impact, spatial scope of impact and duration of impact) and likelihood (frequency of activity and frequency of impact) have been considered in parallel to provide an impact rating and hence an interpretation in terms of the level of environmental management required for each impact.

The first stage of any impact assessment is the identification of potential heritage activities, aspects and impacts which may occur during the commencement and implementation of a project. This is supported by the identification of receptors and resources which allows for an understanding of the impact pathway and an assessment of the sensitivity to change. Heritage impacts (social and biophysical) are then identified based on the potential interaction between the aspects and the receptors/resources.

The significance of the impact is then assessed by rating each variable numerically according to defined criteria as outlined in **Table 7**. The purpose of the rating is to develop a clear understanding of influences and processes associated with each impact. The severity, spatial scope and duration of the impact together comprise the consequence of the impact, and when summed, can obtain a maximum value of 15. The frequency of the activity and the frequency of the impact together comprise the likelihood of the impact occurring and can obtain a maximum value of 10. The values for likelihood and consequence of the impact are then read off a significance rating matrix table. This matrix thus provides a rating on a scale of 1 to 150 (low, medium low, medium high or high) based on the consequence and likelihood of a heritage impact occurring.

Natural and existing mitigation measures, including built-in engineering designs, are included in the pre-mitigation assessment of significance. Measures such as the demolition of infrastructure and reburial of graves are considered post-mitigation.

SEVERITY OF IMPACT	RATING
Insignificant / non-harmful	1
Small / potentially harmful	2
Significant / slightly harmful	3
Great / harmful	4
Disastrous / extremely harmful	5

SPATIAL SCOPE OF IMPACT	RATING
Activity specific	1
Project area specific (within the construction site)	2
Local area (within the construction boundary)	3
Regional (Municipal area)	4
National	5

DURATION OF IMPACT	RATING
One day to one month	1
One month to one year	2
One year to ten years	3
Life of operation	4
Post closure / permanent	5

FREQUENCY OF ACTIVITY / DURATION OF ASPECT	RATING
Annually or less / low	1
6 monthly / temporary	2
Monthly / infrequent	3
Weekly / life of operation / regularly / likely	4

FREQUENCY OF IMPACT	RATING
Almost never / almost impossible	1
Very seldom / highly unlikely	2
Infrequent / unlikely / seldom	3
Often / regularly / likely / possible	4
Daily / highly likely / definitely	5

CONSEQUENCE

LIKELIHOOD

Table 3: Impact Assessment Parameter Ratings

Loss of Heritage/Impact Statement

The main cause of impacts on archaeological sites is direct physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that, even though, for example, deep excavation for foundations may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The primary impacts are likely to occur during clearance and earth-moving activities, such as building foundations and development (bulk sampling). Indirect impacts may occur during the movement of heavy construction vehicles. Any additional excavation for foundations will result in the relocation or destruction of all existing surface heritage material (if any is present).

Similarly, the clearing of access roads will impact on the material that lies buried in the topsoil. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified and their significance assessed before construction. It is important to note that due to the localised nature of archaeological resources, individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed development site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during surface clearance. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed developments by means of mitigation measures (see appended Chance Find Procedure). It is the considered opinion of the author that the chances of recovering significant archaeological materials is present within the proposed development site, although the potential is very low.

Pre & Development /operational phase

Table 4: Loss of heritage during development phase.

Loss of Heritage					
Phase	Development				
Criteria	Details / Discussion				
Description of impact	- Stamping of archaeological remains by the movement of vehicles. - Accidental exposure of buried archaeological remains. - Destruction of an identified heritage resource				
Mitigation required	- Minimise the impact area and clear only what is required. - Use existing roads to access the site. - Use a chance find procedure to manage accidental archaeological finds				
Parameters	Intensity	Spatial scale	Duration	Probability	Significance
Pre-Mitigation	Serious (3)	Limited (3)	Short-term (3-5 years) (4)	Likely (4)	Major (negative) (40)
Post Mitigation	Limited (2)	Minor (2)	Short-term (3-5 years) (3)	Likely (4)	Minor (negative) (36)

Decommissioning/post development/closure phase

No direct loss of heritage resources is expected during this phase of the project. However, indirect impacts may occur during movement of vehicles.

Table 5 Loss of heritage during the decommissioning/closure phase.

Loss of heritage					
Phase	Decommissioning (Removal of infrastructure and equipment)				
Criteria	Details / Discussion				
Description of impact	- Stamping of archaeological remains by moving vehicles. - Accidental damage to graves by moving vehicles				
Mitigation required	- Using existing tracks and roads to remove infrastructure and equipment. - Use a chance find procedure to manage any accidental exposure /damage of heritage resources. - Removing barricades from recorded heritage resources				
Parameters	Intensity	Spatial scale	Duration	Probability	Significance
Pre-Mitigation	Serious (2)	Limited (2)	Short-term (3-5 years) (3)	Likely (4)	Major (negative) (36)
Post Mitigation	Limited (2)	Minor (2)	Short-term (3-5 years) (3)	Likely (4)	Minor (negative) (36)

Table 7: Mitigation hierarchy of impacts

	Avoid or prevent	Refers to considering options in project location, siting, scale, layout, technology and phasing to avoid impacts on heritage. This is the best option, but it is not always possible. Where environmental and social factors give rise to unacceptable negative impacts, the proposed installation of new synchronous condensers at the Gromis Substation should not take place. In such cases, it is unlikely to be possible or appropriate to rely on the other steps in the mitigation.
	Minimise	Refers to considering alternatives in the project location, siting, scale, layout, technology and phasing that would minimise impacts on heritage. In cases where there are heritage constraints, every effort should be made to minimise impacts.
	Rehabilitate	Refers to rehabilitation of areas where impacts are unavoidable, and measures are provided to return impacted areas to a near-natural state or an agreed land use after mine closure. Rehabilitation can, however, fall short of replicating the diversity and complexity of natural systems.
	Offset	Refers to measures over and above rehabilitation to compensate for the residual negative impacts on heritage after every effort has been made to minimise and then rehabilitate the impacts. Heritage offsets can provide a mechanism to compensate for significant residual impacts on biodiversity.

A small portion of the property with the remaining cultural landscape is anticipated to be lost due to the proposed developments and associated activities. The impact of the proposed activity will involve the loss of heritage.

Cumulative Impacts

Cumulative impacts are defined as impacts that result from incremental changes caused by other past, present, or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the proposed developments is considered the total impact associated with the proposed project when combined with other past, present, and reasonably foreseeable future development projects. The impacts of the proposed development were assessed by comparing the post-project situation to a pre-existing baseline. This section considers the cumulative impacts that would result from the combination of the proposed installation of new synchronous condensers at the Gromis Substation.

These proposed development activities, combined with other proposed project activities, will eventually transform the landscape should the proposed development proceed to the construction phase. The cumulative impact is very minimal. The frequency of development proposals in the area has the potential to collectively change the character of the landscape. In the long run the accumulative impact will be of low to medium significance in terms of its potential to change the characteristics and quality of the landscape in the long run. The field survey focused on the potential of LSA lithic tools that are known to occur in the study area.

Mitigation

Heritage mitigation for the proposed development site is not required because the study did not identify any significant heritage sites. However, the potential of encountering buried archaeological remains during construction is ever-present. A copy of the appended chance finds procedure must be kept at the site office to ensure appropriate management of any accidental finds during construction work.

7. DISCUSSION

Several Phase 1 Heritage studies for various infrastructure developments and mining developments have been conducted since 2006 in the general project area. Although these studies recorded sites of significance, for example, Morris (2010), Orton and Webley (2013), Pelser (2011), Kaplan (2012) and Orton (2013), the recorded sites of varying significance. The archaeology of the Northern Cape is rich and varied, covering long spans of human history (Morris 2006). In the Northern Cape, ESA assemblages, including the Fauresmith, tend to occur on the margins of seasonal rivers, semi-permanent water holes or pans (Pelser 2010; see Kusel *et al* 2009). The significance of sites so far recorded in the study indicates that they are of lesser importance because they are small scatters and confined to pans and foothills of mountains (Rossouw 2021). The proposed project area has been exposed to exploration and infrastructure development, and this may be a reason for the lack of archaeological research in the area. The lack of confirmable archaeological sites recorded during the current survey is thought to be a result of two primary interrelated factors:

1. That proposed development site is located within a degraded landscape and has reduced sensitivity for the presence of high-significance physical cultural sites, be they archaeological, historical or burial sites, due to previous and current land use activities
2. Limited ground surface visibility on sections of the proposed development site may have impeded the detection of other physical cultural heritage site remains or archaeological signatures within the development site. This factor is exacerbated by the fact that the study was limited to a general survey without necessarily conducting any detailed inspection of specific locations that will be affected by the proposed installation of new synchronous condensers at the Gromis Substation. The absence of a confirmable and significant archaeological cultural heritage site is not evidence that such sites do not exist in the proposed site. The significance of the sites of Interest (development sites) is not limited to the presence or absence of physical archaeological sites. Based on the results of the field study, the proposed installation of new synchronous condensers at the Gromis Substation may be approved to proceed without any further investigation in terms of Section 38 (8) of the NHRA.

8. CONCLUSION

Mudzunga Consulting & ICT (Pty) Ltd was tasked by QEMS Management and Business Solutions cc to conduct a Heritage Impact Assessment for the proposed installation of new synchronous condensers at the Gromis Substation in the Nama Khoi Local Municipality of Namakwa District Municipality of the Northern Cape Province. Desktop research revealed that the rocky coastline is rich in archaeological sites ranging from ESA, MSA, to LIA and the inland has low archaeological sensitivity. The field study did not identify any significant archaeological remains within the proposed development site. In terms of archaeology, there are no obvious 'Fatal Flaws' or 'No-Go' areas. In terms of Section 36 of the NHRA, the study did not identify any burial sites within the proposed development site. The study did not identify any buildings and structures that qualify for protection in terms of Section 34 of the NHRA. Based on the study results, the potential of encountering chance finds during construction is very limited, although the contractors must be watchful during construction. The procedure for reporting chance finds has clearly been laid out, and if this report is adopted by SAHRA, then there are no archaeological reasons why the proposed installation of new synchronous condensers at the Gromis Substation cannot be approved.

9. RECOMENDATIONS

The report makes the following recommendations:

1. It is recommended that SAHRA endorse the report as having satisfied the requirements of Section 38 (8) of the NHRA.
2. It is recommended that SAHRA make a decision in terms of Section 38 (4) of the NHRA to approve the proposed installation of new synchronous condensers at the Gromis Substation.
3. From a heritage perspective, supported by the findings of this study, the proposed installation of new synchronous condensers at the Gromis Substation is supported. However, the proposed developments should be approved under the observation that activities do not extend beyond the area considered in this report/affect the identified heritage sites.
4. Should chance archaeological materials or human remains be exposed during construction on any section of the site, work should cease on the affected area, and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
5. Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no significant cultural heritage resource barriers to the proposed installation of new synchronous condensers at the Gromis Substation. SAHRA may approve the proposed installation of new synchronous condensers at the Gromis Substation as planned without any further investigation in terms of Section 38 (8) of the NHRA.

10. REFERENCES

Adhikari, M. 2010. *The Anatomy of a South African Genocide: The Extermination of the Cape San Peoples*. Cape Town: UCT Press

Almond, J. & Pether, D. (2009). *Palaeontological heritage of the Northern Cape*. SAHRA Palaeotechnical Report.

Aurecon, 2011. *Environmental Impact Assessment Process: Proposed Wind Energy Facility Near Copperton, Northern Cape*. aurecon.webfoundryza.com/./Copperton%20Windfarm

Bandama, M. Chirikure, S. & Mohapi, M. 2014. *An Archaeological Scoping and Assessment report for the proposed Gromis (Victoria West, Northern Cape) - Kappa (Ceres – Western Cape) 765Kv (2) Eskom power transmission line*

Barham, L. & Mitchell, P. 2008. *The first Africans: African archaeology from the earliest toolmakers to the most recent foragers*. Cambridge: Cambridge University Press

Barham, L. & Mitchell, P. 2008. *The first Africans: African archaeology from the earliest toolmakers to the most recent foragers*. Cambridge: Cambridge University Press

Beaumont, P. B. & Vogel, J. C. 2006. On a timescale for the past million years of human history in central South Africa. *South African Journal of Science* 102: 217-228.

Beaumont, P.B. & Vogel, J.C. 1984. Spatial patterning of the ceramic Later Stone Age in the Northern Cape Province, South Africa. In Hall, M., Avery, G., Avery, D.M., Wilson, M.L. & Humphreys, A.J.B. *Frontiers: Southern African Archaeology Today*. Cambridge.

Beaumont, P.B. 2008. *Phase 1 Archaeological Impact Assessment Report on Portions of the Farm Green Valley Nuts near Prieska, Karoo District Municipality, Northern Cape Province*

Beaumont, P.B. 2009. *Phase 1 Archaeological Impact Assessment Report: A 50 Ha Portion of the Farm Middelwater 18 near Prieska, Karoo District Municipality, Northern Cape*.

Beaumont, P.B. & Morris, D. 1990. *Guide to archaeological sites in the Northern Cape*. Kimberley: McGregor

Museum.

Bergh, J.S. (ed.) 1999. *Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies*. Pretoria: J.L. van Schaik.

De Cock, S & G Narainne. 2016. *Integrated Heritage Impact Assessment in terms of section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) for the proposed development of Humansrus Solar PV Facility 3 on the Farm Humansrus 147, Prieska District and Pixley Ka Seme District, Northern Cape Province*

De Cock, S & G Narainne. 2016. *Integrated Heritage Impact Assessment in terms of section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) for the proposed development of Humansrus Solar PV Facility 3 on the Farm Humansrus 147, Prieska District and Pixley Ka Seme District*

Deacon, H.J. & Deacon, J. 1999. *Human beginnings in South Africa: Uncovering the secrets of the Stone Age*. Cape Town: David Philip

Deacon, H.J. & Deacon, J. 1999. *Human beginnings in South Africa: Uncovering the secrets of the Stone Age*. Cape Town: David Philip

Fourie, W. 2010. *Gamma-Omega Transmission. Section 1: Gamma-Kappa*. Unpublished Archaeological Walk-Down Report Prepared for Nature Conservation Corporation

Gaill, S, 2002. *The Bushmen of Southern Africa: Slaughter of the Innocent*. Pimlico: Great Britain

Goodwin, A.J.H. & Van Riet Lowe, C. 1929. The Stone Age cultures of South Africa. *Annals of the South African Museum* 27, 1–276.

Hart, D. & Webley, L. 2011. Heritage Impact Assessment: Proposed Perdekraal wind and solar energy facility, Western Cape Province. Prepared for Mainstream Renewable Power South Africa

Henshilwood, C.S. & C.W. Marean. 2003. The origin of modern human behaviour: critique of their models and test implications. *Current Anthropology* 44:627-652.

Huffman, T.N. 2007 *Handbook to the Iron Age: The archaeology of pre-colonial farming societies in southern*

Africa. Scottville: University of KwaZulu Natal Press.

Humphreys, A. J. B. 1979. The Holocene Sequence of Northern Cape and its position in the prehistory of South Africa. Unpublished PhD. Thesis University of Cape Town

Kaplan, J. 2001. Gamma-Omega 765 Kv Transmission Line Heritage Management Plan. Unpublished report prepared for PD Naidoo & Associates & PBA International Ltd

Kaplan, J. 2008a. Phase1 Archaeological Impact Assessment Proposed development remainder of farm 185 (Now called Plot 8419) Beaufort West, Western Cape Province

Kaplan, J. 2008b. Archaeological Impact Assessment proposed airstrip on portion 4 of Bergplaats 296, Beaufort West, Central Karoo

Kiberd, P. 2002. Bundu Farm Pan, Northern Cape. *The Digging Stick* 19 (3):5-8. South African Archaeological Society.

Kiberd, P. 2006. Bundu Farm: A report on archaeological and palaeoenvironmental assemblages from a pan site in Bushmanland, Northern Cape, South Africa. *South African Archaeological Bulletin* 61 (184):189-201.

Matenga, E. 2018. *Phase I Heritage Impact assessment (including Palaeontological Assessment) requested in terms of section 38 of the National Heritage Resources Act No 25/1999 for the proposed mine development on the remainder of the farm Schmidtsdrift 248, Pixley Ka Seme District Municipality, Northern Cape Province.*

Morris, D. 2012. *Rock art in the Northern Cape: the implications of variability in engravings and paintings relative to issues of social context and change in the precolonial past.* PhD, University of the Western Cape.

National Environmental Management Act 107 of 1998

National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)

Nilssen, P. 2011. *Proposed Beaufort West Photovoltaic Power Station (Solar), southern portion of properties; 2/158 Lemoenkloof, RE 9/161 Kuilspoor, RE 162 Suid-Lemoensfontein and RE 1/163*

Oberholster, J. J., 1972. *The Historical Monuments of South Africa*. Cape Town: Rembrandt van Rijn Foundation

Orton, J. 2008. *Heritage Impact Assessment of three sites for the proposed Kappa substation, Ceres Magisterial District, Western Cape*. Unpublished report for Zitholele Consulting

Parkington, J, Morris, D, & Rusch, N. 2008. *Karoo Rock Engravings: Follow the San*. Cape Town: Creda Communications.

Parkington, J, Morris, D, & Rusch, N. 2008. *Karoo Rock Engravings: Follow the San*. Creda Communications: Cape Town.

Parkington, J.1984. *Changing views of the Later Stone Age of South Africa*. Advances in World Archaeology

Patrick, M. 2009. *Final scoping heritage impact assessment: Gamma-Omega 765kV transmission line. Vols 1&2. Prepared for P.D. Naidoo on behalf of Eskom Holdings*. Cape Archaeological Survey cc.

Penn, N. 2005. *The Forgotten Frontier: Colonists and Khoisan on the Cape's Northern Frontier in the 18th century*. Athens: Ohio University Press

Prins, F. 2011. *Shell International Exploration and Production B.V. Technical Report in support of the EMP of the Southwestern Karoo Basin Gas Exploration Application Project*. Unpublished report for Active Heritage c.c.

Ross, R. 2002. *A concise history of South Africa*. Cambridge: Cambridge University Press.

Sadr, K. 2008. An ageless view of First Millennium AD Southern African Ceramics. *Journal of African Archaeology* 6 (1): 103-129

Sadr, K. 2012. The origins and spread of dry-laid stone-walled architecture in pre-colonial Southern Africa. *Journal of Southern African Studies* 38(2): 257-263

Sampson, C. G. 1972. The Stone Age industries of the Orange River Scheme and South Africa. *Memoirs of the National Museum of Bloemfontein* 6: 1-283

Sampson, C. G. 1974. *The Stone Age Archaeology of Southern Africa*. Academic Press, New York and London.

Sampson, C.G. 1984. Site cluster in the Smithfield Settlement pattern. *South African Archaeological Bulletin* 39: 5-23

Smith, A, Malherbe, C, Guenther, M, & Berens, P. 2000. *The Bushmen of Southern Africa: a foraging society in transition*. Clyson Printers: Cape Town

Smith, A.B. 2008. *Eskom Gamma-Omega 765Kv Transmission Line*: Archaeological Desktop Survey.

Van de Merwe, P.J., 1949. *Pioniers van die Dorsland*, Kaapstad: Nasionale Pers.

Webley, L., & Hart, T. 2010 (a). *Scoping archaeological impact assessment: proposed prospecting on Quaggasfontein 166 and Oude Volks Kraal 164 (Site 29), Beaufort West District, Western Cape*. Prepared for Tasman Pacific Minerals Limited. Archaeology Contracts Office, UCT

APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED INSTALLATION OF NEW SYNCHRONOUS CONDENSERS AT THE GROMIS SUBSTATION NEAR VICTORIA WEST, NAMA KHOI LOCAL MUNICIPALITY OF NAMAKWA DISTRICT MUNICIPALITY OF THE NORTHERN CAPE PROVINCE.

APRIL 2026

ACRONYMS

BGG	Burial Grounds and Graves
CFPs	Chance Find Procedures
ECO	Environmental Control Officer
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA	South African Heritage Resources Authority
SAPS	South African Police Service
UNESCO	United Nations Educational, Scientific and Cultural Organization

11. CHANCE FIND PROCEDURE

Introduction

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during construction. The main purpose of a CFP is to raise awareness of all construction workers and management on site regarding the potential for accidental discovery of cultural heritage resources and establish a procedure for the protection of these resources. Chance Finds are defined as potential cultural heritage (or paleontological) objects, features, or sites that are identified outside of or after Heritage Impact studies, normally as a result of construction monitoring. Chance Finds may be made by any member of the project team, who may not necessarily be an archaeologist or even visitors. Appropriate application of a CFP on development projects has led to the discovery of cultural heritage resources that were not identified during archaeological and heritage impact assessments. As such, it is considered to be a valuable instrument when properly implemented. For the CFP to be effective, the site manager must ensure that all personnel on the proposed development sites understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction in cultural heritage resources that might potentially be found on site should be provided. In short, the Chance find procedure details the necessary steps to be taken if any culturally significant artefacts are found during construction.

Definitions

In short, the term 'heritage resource' includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37. Procedures specific to burial grounds and graves (BGG), as defined under NHRA Section 36, will be discussed separately, as this requires the implementation of separate criteria for CFPs.

Background

The proposed installation of new synchronous condensers at the Gromis Substation near Victoria West within Nama Khoi Local Municipality of Namakwa District Municipality of the Northern Cape Province. The proposed development is subject to a heritage survey and assessment at the planning stage, and the archaeological and heritage impact assessment report is submitted to fulfill requirements of Section 38(8) of NHRA. These surveys are based on surface indications alone and it is therefore possible that sites or significant archaeological remains can be missed during surveys because they occur beneath the surface. These are

often accidentally exposed in the course of development or any associated construction work, and hence the need for a Chance Find Procedure to deal with accidental finds. In this case, an extensive Archaeological Impact Assessment was completed by Mlilo (2026) on the development site. The AIA was very comprehensive, covering the entire site. The current study (Mlilo 2026) did not record any significant heritage within the proposed development site. The survey recorded the remains of a historical farmhouse.

Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources within the proposed development site. This Chance Find Procedure intends to provide the applicant and contractors with an appropriate response in accordance with the NHRA and international best practice. This CFP aims to avoid or reduce project risks that may occur as a result of accidental finds whilst considering international best practice. In addition, this document seeks to address the probability of archaeological remains being accidentally exposed during construction and the movement of construction equipment. The proposed development activities have the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by dense grass cover. Mudzunga Consulting & ICT (Pty) Ltd developed this Chance Find Procedure to define the process which governs the management of Chance Finds during construction. This ensures that appropriate treatment of chance finds is achieved while also minimising disruption of the construction schedule. It also enables compliance with the NHRA and all relevant regulations. Archaeological Chance Find Procedures are to promote the preservation of archaeological remains while minimising disruption of construction scheduling. It is recommended that, due to the moderate archaeological potential of the project area, all site personnel and contractors be informed of the Archaeological Chance Find procedure and have access to a copy while on site. This document has been prepared to define the avoidance, minimisation, and mitigation measures necessary to ensure that negative impacts to known and unknown archaeological remains as a result of project activities are prevented or where this is not possible, reduced to as low as reasonably practicable during construction.

Thus, this Chance Finds Procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a professional archaeologist or other appropriately qualified person to its rescue or salvage.

GENERAL CHANCE FIND PROCEDURE

General

The following procedure is to be executed in the event that archaeological material is discovered:

- All construction/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.
- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.
- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and SAHRA.
- Delineate the discovered find/ feature/ site and provide 30m buffer zone from all sides of the find any other project and 100m buffer zone for mining projects.
- Record the find GPS location, if able.
- All remains are to be stabilised *in situ*.
- Secure the area to prevent any damage or loss of removable objects.
- Photograph the exposed materials, preferably with a scale (a yellow plastic field binder will suffice).
- The project archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.
- **Finds rescue strategy:** All investigation of archaeological soils will be undertaken by hand, all finds, remains and samples will be kept and submitted to a museum as required by the heritage legislation. In the event that any artefacts need to be conserved, the relevant permit will be sought from the SAHRA.
- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.
- In the case of human remains, in addition to the above, the SAHRA Burial Ground Unit will be contacted and the guidelines for the treatment of human remains will be adhered to. If skeletal remains are identified, an archaeologist will be available to examine the remains.

- The archaeologist will complete a report on the findings as part of the proposed development.
- Once authorization has been given by SAHRA, the Applicant will be informed when construction activities can resume.

Management of chance finds

Should the Heritage specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), Mudzunga Consulting & ICT (Pty) Ltd will notify SAHRA and/or PHRA on behalf of the applicant. SAHRA/PHRA may require that a search and rescue exercise be conducted in terms of NHRA Section 38, this may include rescue excavations, for which Mudzunga Consulting & ICT (Pty) Ltd will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidentally exposed, SAHRA Burial Ground Unit or ISS Heritage Specialist must immediately be notified of the discovery in order to take the required further steps:

- a. Heritage Specialist to inspect, evaluate and document the exposed burial or skeletal remains and determine further action in consultation with the SAPS and Traditional authorities:
- b. Heritage specialists will investigate the age of the accidental exposure in order to determine whether the find is a burial older than 60 years under the jurisdiction of SAHRA or that the exposed burial is younger than 60 years under the jurisdiction of the Department of Health in terms of the Human Tissue Act.
- c. The local SAPS will be notified to inspect the accidental exposure in order to determine whether the site is a scene of crime or not.
- d. Having inspected and evaluated the accidental exposure of human remains, the project Archaeologist will then track and consult the potential descendants or custodians of the affected burial.
- e. The project archaeologist will consult with the traditional authorities, local municipality, and SAPS to seek endorsement for the rescue of the remains. Consultation must be done in terms of NHRA (1999) Regulations 39, 40, and 42.

- f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit it to the SAHRA Burial Ground and Graves Unit.
- g. As soon as the project archaeologist receives the rescue permit from SAHRA, he will, in collaboration with the company/contractor, arrange for the relocation in terms of logistics and appoint an experienced undertaker to conduct the relocation process.
- h. The rescue process will be done under the supervision of the archaeologist, the site representative and affected family members. Retrieval of the remains shall be undertaken in such a manner as to reveal the stratigraphic and spatial relationship of the human skeletal remains with other archaeological features in the excavation (e.g., grave goods, hearths, burial pits, etc.). A catalogue and bagging system shall be utilised that will allow ready reassembly and relational analysis of all elements in a laboratory. The remains will not be touched with the naked hand; all Contractor personnel working on the excavation must wear clean cotton or non-powdered latex gloves when handling remains in order to minimise contamination of the remains with modern human DNA. The project archaeologist will document the process from exhumation to reburial.
- i. Having fulfilled the requirements of the rescue/burial permit, the project archaeologist will compile a mitigation report which details the whole process from discovery to relocation. The report will be submitted to SAHRA and to the client.

Note that the relocation process will be informed by SAHRA Regulations and the wishes of the descendants of the affected burial.

APPENDIX 2: HERITAGE MANAGEMENT PLAN INPUT INTO THE PROPOSED INSTALLATION OF NEW SYNCHRONOUS CONDENSERS AT THE GROMIS SUBSTATION

Objective	- Protection of archaeological sites and land considered to be of cultural value. - Protection of known physical cultural property sites against vandalism, destruction and theft; and - The preservation and appropriate management of new archaeological finds should be discovered during construction.							
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre- Development Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Construction Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction in the vicinity of the findings should be stopped until the heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on a development site, a registered heritage specialist or SAHRA official must be called to the site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from the site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected, and the Contractor will immediately inform the Site Manager, who in turn will inform SAHRA		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the SAHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as Construction phase.						
Operational Phase								
		Same as the Construction phase.						

APPENDIX 4: LEGAL PRINCIPLES OF HERITAGE RESOURCES MANAGEMENT IN SOUTH AFRICA

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999 (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

(a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival.

(b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans.

(c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and

(d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed

(a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and

(b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must

(a) be clear and generally available to those affected thereby.

(b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and

(c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

- (5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.
- (6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.
- (7) The identification, assessment and management of the heritage resources of South Africa must—
 - (a) take account of all relevant cultural values and indigenous knowledge systems.
 - (b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;
 - (c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs.
 - (d) contribute to social and economic development.
 - (e) safeguard the options of present and future generations; and
 - (f) be fully researched, documented and recorded.

Burial grounds and graves

36. (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.
- (2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.
- (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority
- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves.
 - (b) 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 a formal cemetery administered by a local authority; or
 - (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- (4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible

heritage resources

authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

General policy

47. (1) SAHRA and a provincial heritage resources authority—

- (a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and
 - (b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and
 - (c) must review any such statement within 10 years after its adoption.
- (2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.
- (3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.
- (4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organizations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.
- (5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.
- (6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.