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**CULTURAL AND ARCHAEOLOGICAL HERITAGE ASSESSMENT SPECIALIST STUDY
FOR THE PROPOSED CONSTRUCTION OF 3KM OF 132KV MATSULU POWER-LINE
AND SUBSTATION IN THE MBOMBELA LOCAL MUNICIPALITY OF ENHLANZENI
DISTRICT, MPUMALANGA PROVINCE**

MAY 2008

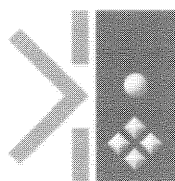
PREPARED FOR

LIMPOPO WATER INITIATIVE

P.O. Box 55594, Polokwane 0700
87 General Martitz Street, Bendor. Polokwane 0699
Tel: 015 297 4653
Fax: 05 297 4716

PREPARED BY

Nzumbululo Heritage Solutions
Suite#345, Postnet Library Gardens;
P. Bag X9307, Polokwane; 0700;
Tel: +27 15 297 8066; Fax: +27 15 297 0059
E-mail: hessa5@telkomsa.net



Nzumbululo
heritage solutions south africa

www.hessa.co.za

REPORT DETAILS

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AND A SUBSTATION

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ASSESSMENT SPECIALIST STUDY

AUTHOR: Dr. McEdward Murimbika

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STUDY LEADER **Dr. McEdward Murimbika**
Qualifications: (PhD. [Archaeology] 2006, Univ. of
Witwatersrand; **M.Phil.** [Archaeology] 1999, Univ. Of Bergen,
Norway; **Graduate International Certificate in African
Archaeology**, 1998, Univ. of Brussels, Belgium; **BA Hons. & BA
Gen.** [Archaeology] 1995 & 1994, UZ).
Contacts: Mobile Phone: 083 6136530

FIELD STUDY TEAM **Principal Investigator:** McEdward Murimbika
Assistant Archaeologist: Mr. Mabuda M. Moses (BA
Hons, 2003, Univ. of Venda)

**PROFESSIONAL SERVICE
PROVIDER (PSP)** Nzumbululo Heritage Solutions (South Africa) cc.

MANAGEMENT SUMMARY

BACKGROUND

Nzumbululo Heritage Solutions (South Africa) (HeSSA) has been appointed by LWI (PTY) LTD to conduct an Archaeological and Cultural Heritage Impact Assessment study for the proposed construction of the a 3km 132kV power-line and a substation in Matsulu area in the Mbombela Local Municipality, Enhlanzeni District, Mpumalanga Province. This Heritage Impact Assessment (HIA) study focus on potential impacts on archaeological, cultural, and historical heritage resources associated with the proposed construction of the power-line and substation's receiving environment.

SUMMARY RESULTS

The field survey was conducted on the 15th and 16th of May 2008. The survey covered the proposed powerline servitude route and the substation site. The field survey also covered three alternative sites for the substation and alternative powerline routes. By nature, the proposed powerline development's potential impact footprint is limited to individual powerline pole positions. Furthermore, the proposed substation site and Alternative 1 are situated on land currently developed with residential properties. No significant archaeological sites or material remains were identified on the direct path of neither the powerline nor the substation sites. There were no other physical cultural properties of any significance threshold that were identified along the powerline route 1 and 2 and substation sites. We record a grave yard next to the servitude along the proposed Route 3 west of the tarred road from N4 to Matsulu.

SUMMARY RECOMMENDATIONS

There are no archaeological or cultural heritage resources barriers to the proposed construction of a power-line and a substation. From a heritage perspective, the alternative routes and sites offer same opportunities and would not make any difference. As such, we recommend that the preferred sites be accepted for the proposed development. We further recommend that a heritage-monitoring program be designed to deal with potential chance finds should archaeological or historical finds be found accidentally during digging of a pole foundations or the substation development. We concluded that the proposed development may proceed subject to the following:

- There being no significant archaeological material of significance on powerline route and on proposed substation site, the development may proceed as planned.
- A monitoring programme is essential during the excavation of pole foundation as we can not rule out the possibilities of encountering subsurface chance archaeological remains. Should archaeological materials be identified in during powerline development, particular in association with pole footprints, heritage authorities should be informed.
- No grave or burial ground should be disturbed under any circumstance during the proposed development. Should any grave be identified accidentally during development, work should stop on affected land portion and heritage authorities be informed immediately.
- Communities living close to the proposed power line route should be consulted and kept informed about the development. The local communities may come forward with relevant information on heritage resources such as previously unidentified graves, as well as sites that do not show any structures, but have emotional significance, such as battlefields, etc.

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ABBREVIATIONS

HIA	Heritage Impact Assessment
EIA	Environmental Impact Assessment
HeSSA	Nzumbululo Heritage Solutions (South Africa)
SAHRA	South African Heritage Resources Agency

DEFINITIONS

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

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

Cultural Heritage Resources same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance the complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Excavation principal method of extracting data in archaeology, involving systematic recovery of archaeological remains and their context by removing soil and any other material covering them.

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

Historic material 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.

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

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

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

**ARCHAEOLOGICAL AND CULTURAL HERITAGE ASSESSMENT STUDY FOR
THE PROPOSED CONSTRUCTION OF 3KM MATSULU 132KV POWER-LINE
AND A SUBSTATION IN MATSULU AREA OF MBOMBELA LOCAL
MUNICIPALITY, ENHLANZENI DISTRICT**

1 INTRODUCTION

Eskom Distribution, (Northern Region) proposes to develop a demand increase-related power-line and substation to supplement the current energy supply for the commercial and domestic consumption in Matsulu Residential area. In order to obtain environmental clearance from the Department of Environmental Affairs and Tourism (DEAT), Eskom through their Environmental Practitioner, conducted environmental impact assessment for the proposed power-line and substation construction project. In turn, Nzumbululo Heritage Solutions was appointed to undertake the Cultural Heritage Assessment specialist study for the proposed development. This Heritage Impact Assessment (HIA) study was conducted to fulfil the requirements of the National Heritage Resources Act, Act 25 of 1999 Section 36 and 38. The HIA study focus on identifying and assessing archaeological, cultural, and historical heritage resources associated with the proposed power-line and substation construction project's receiving environment. Aims and terms of reference of the HIA study are summarised in Table 1 below.

Table 1: Terms of Reference for the HIA Study associated with the construction of 3km 132kV power-line and 132kV/11kV substation in Matsulu, Mbombela, Mpumalanga Province.

PURPOSE	ACTIVITIES
<ul style="list-style-type: none"> <input type="checkbox"/> Fulfil the statutory requirements of the National Heritage Resources Act, Act 25 of 1999, Section 38. <input type="checkbox"/> To identify and describe (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed power-line and substation construction. This study should include the identification of gravesites. <input type="checkbox"/> Identify and describe impacts to archaeological and cultural resources. <input type="checkbox"/> Make recommendations on mitigation measures. <input type="checkbox"/> Identify and describe management measures. 	<ul style="list-style-type: none"> <input type="checkbox"/> Identify, describe and map sites of archaeological, historical or cultural interest affected by the proposed development. <input type="checkbox"/> Identify, where possible, the gravesites affected by the development. <input type="checkbox"/> Liaise with the local communities (if applicable) with regards to the impact of the development on the heritage resources. <input type="checkbox"/> Describe the importance or significance of these sites and whether these sites need to be conserved, protected or relocated. <input type="checkbox"/> Describe the procedures for mitigation or relocation of sites and provide an indication of time required for these management measures to be implemented. <input type="checkbox"/> Document findings and recommendations.

This HIA study primarily seeks to:

- Identifying heritage resources affected by the proposed power-line, substation and the associated infrastructural development.

- Assess the significance of the resources.
- Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed power-line.
- Consult with the affected and other interested parties in regard to the impact on the heritage resources in the project's receiving environment.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- Identify and discuss with local communities (where applicable) on potential impacts of the proposed powerline construction on graves and burials sites within the affected area and make the necessary recommendations on how to handle the matter.
- Take responsibility for communicating with the Mpumalanga Heritage, SAHRA and other related authorities in order to obtain the heritage relevant permits and authorization.

□

In terms of Section 35 (4) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)

...no person may, without a permit issued by the relevant heritage resources authority, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material or any meteorite; or bring onto, or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

Clearly, archaeological and palaeontological sites, materials, and meteorites are seen in the NHRA as "the source of our understanding of the evolution of the earth, life on earth and the history of people." In this context, the law emphasize that the management of heritage resources is integrated with environmental resources and this means that heritage resources should be assessed and, if necessary, rescued before development is allowed to take place.

In areas where there has not yet been systematic survey to identify conservation-worthy places, a permit is required to alter or demolish any historic structure older than 60 years or military installation of over 75 years old. This will apply until a survey is done and identified heritage resources are formally protected.

2 BRIEF BACKGROUND

The proposed powerline and associated substation will be developed in the Matsulu area in the Mbombela Local Municipality, Greater Enhlanzeni District, Mpumalanga Province. The project area is situated north of the road from the N4 to Matsulu. The line will terminate at a new proposed Matsulu Substation which will be the extension of the existing one.

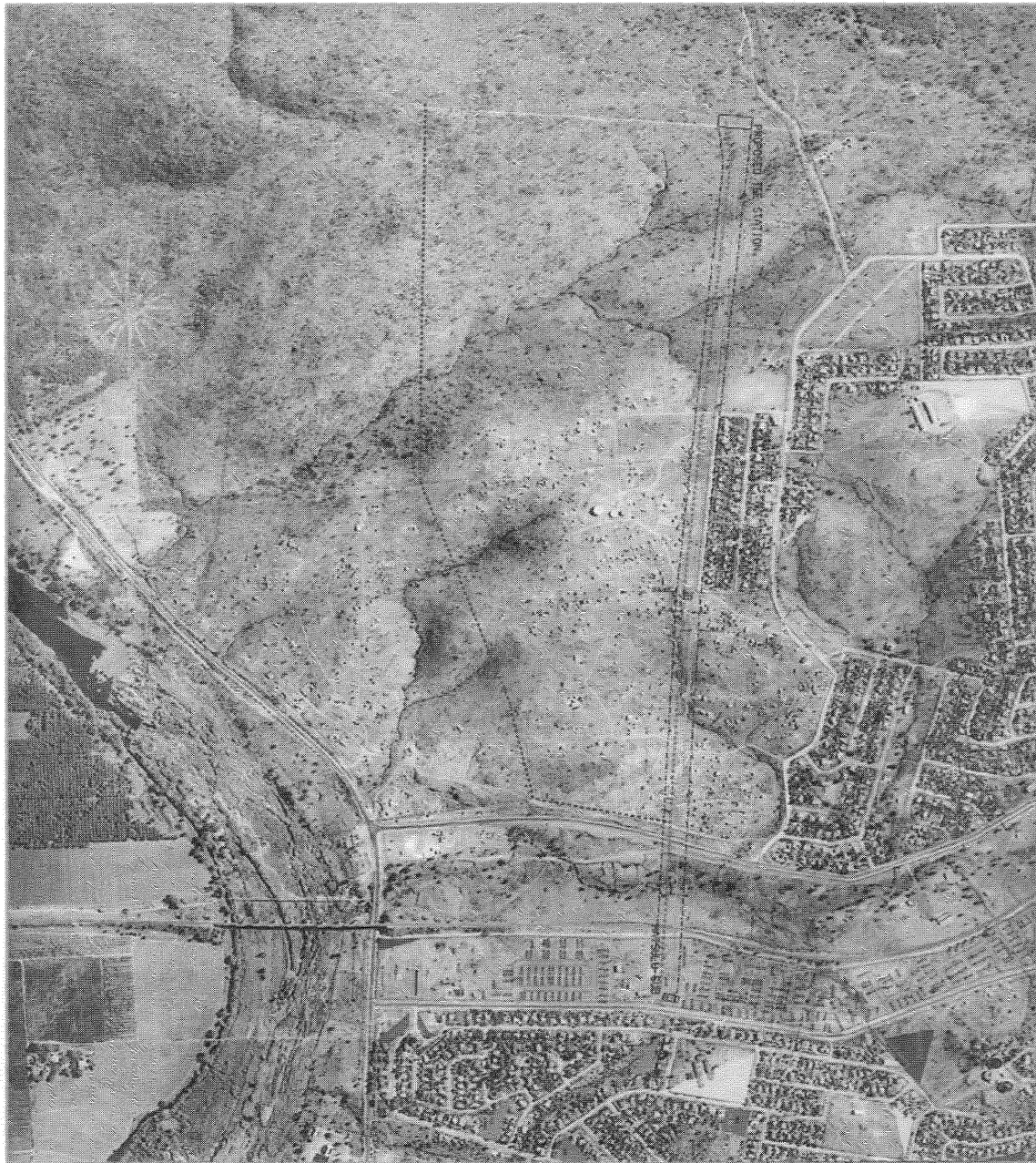


Fig. 1: Proposed Matsulu powerline route and substation alternate sites aerial map.

From a culture geography and history perspective, the Matsulu area falls within the Mpumalanga Escapement. This area was historically occupied by predominantly Ndebele Nguni-speaking groups before it was partitioned into commercial settler farms during the colonial period. Archaeologically, the areas associated with Nguni communities have yielded three ceramic sequences: Blackburn (AD 1050-1500) Moor Park (AD 1350-1700) and Nqabeni (AD 1700-1850) [Huffman 2007: 443].

Throughout the mid-18th century AD, the region formed part of the new Anglo-Dutch Delagoa Bay coastal trade (Huffman 2007). Around the 1830s, the region also witnessed the massive movements associated with the *mfencane* ('wandering hordes'). The causes and consequences of the *mfencane* are well documented elsewhere (e.g. Hamilton 1995; Cobbing 1988).

Prior to the Mpumalanga Escapement being incorporated into the colonial administration of the Transvaal, the region experienced several episodes of white settler migration and settler settlements as well as the associated colonial wars such as the Anglo-Boer War which ended in 1901. As part of the colonial and settler historic heritage, the region is dotted with several historic towns such as Nelspruit.

3 METHODS

The study consisted of standard field survey covering the proposed power-line route, alternative routes and their respective servitudes. The survey also covered the substation site (Plate 1). In practice, most archaeological and historical sites are found through systematic survey of the target landscapes. The survey therefore, sought to identify cultural heritage sites including graves, burial grounds and contemporary religious or sacred ceremonial sites associated with power line routes and proposed extension of power station site.



Plate 1: Propose Matsulu Substation site. There is an existing substation that will be upgraded to suite the new capacity.

On the 15th of May, HeSSA heritage specialists conducted the reconnaissance survey in the company of the project's Environmental Practitioner in order to familiarise themselves with the proposed power-line route and an area earmarked for the proposed extension of a substation. On the 16th of May, Hessa specialist conducted the field survey and impact assessment by transecting the affected landscape on foot looking for indicators of archaeological and any other cultural materials in the affected areas. In part the field officer also inspected soil profiles for potential archaeological materials that may still be trapped *in situ* in an area already disturbed by previous earthmoving activities such as agricultural practices and construction works.

Identification of archaeological or historical sites during surveying depends on visibility and accessibility. The project areas of the proposed power-line routes are accessible. The proposed power-line Route 1 is running through the already disturbed area, alternative routes 2 and 3 are running through the existing and old agricultural lands and portions with existing development such as residential properties. During field investigations, the proposed site for the construction of a substation was covered by grass, which has limited the view of the ground surface to determine the existence or resemblance of any archaeological material that might exist. By looking at the nature of the area, the area is presumably dormant in terms of the existence or availability of archaeological or historical resources that can be classified as of high or medium in terms of significance. None the less, the proposed development would consist of extending the existing substation on site.

4. RESULTS

LOCATION DETAILS

Province: Mpumalanga

Magisterial District: Greater Enhlanzeni

Nearest Major Town: Nelspruit

Name of Properties affected: Matsulu

Proposed development: Linear construction of 3km power-line and extension of a substation.

Route Description: Figure 1 above shows the proposed line route and alternative route as well as area earmarked for the substation. The proposed line will run parallel to the existing power line until it connect at the proposed T-Station at S25.5131° E31.31683°. The proposed route 1 will cross the railway line at 300m western side of the substation and the tarred road at S25.51440° E31.33485°. These power line routes identified as Alternatives 1, 2 and 3.

The location details and the field survey findings are presented in Table 2 below.

Table 2: Results of CHA study for power-line route.


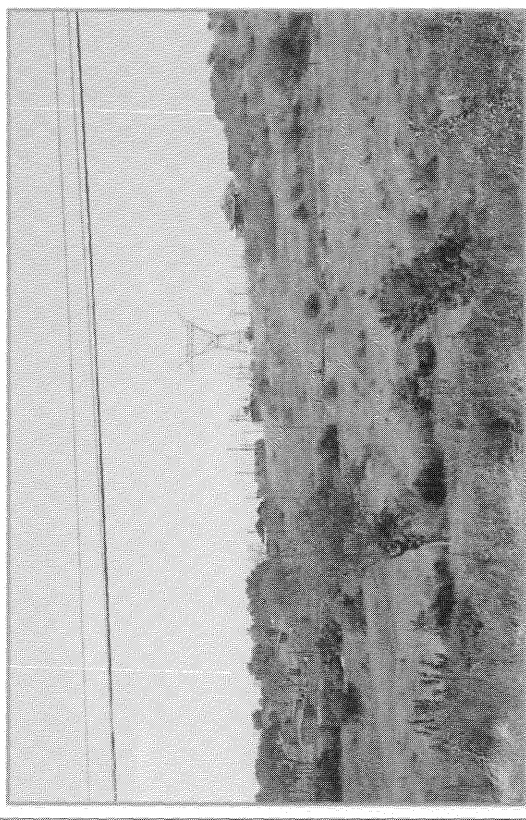
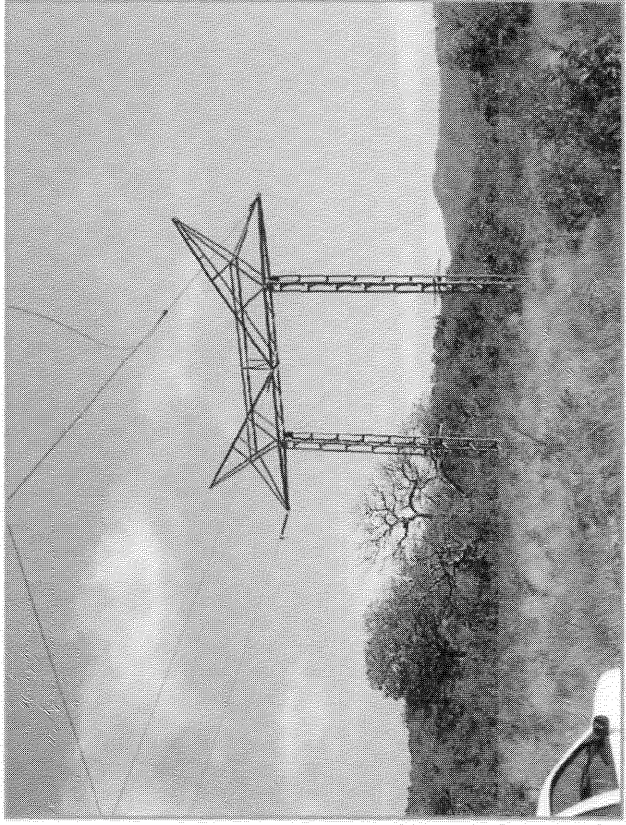
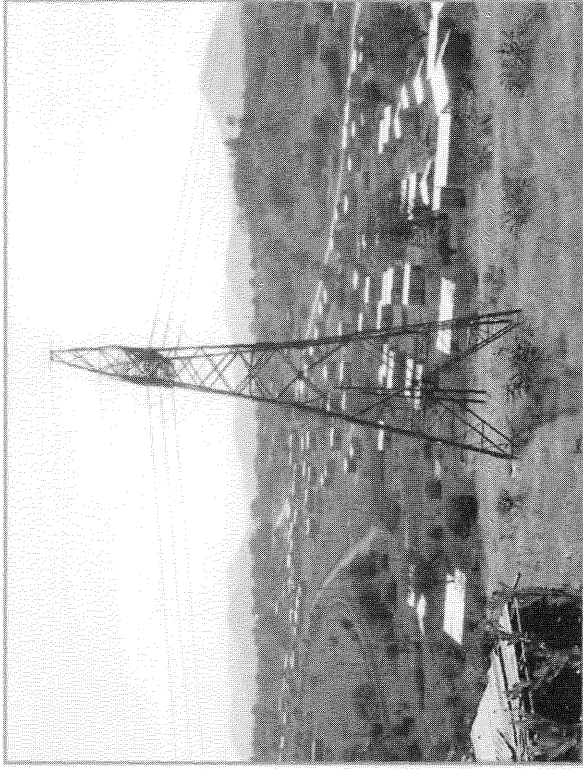

Location and Description	Cultural Heritage Site Type Found	Cultural Heritage Significance	Recommendations
<p>The area earmarked for extension of Matsulu substation is situated in Matsulu B. This site is marked by the following co-ordinates.</p> <p>S25.51441° E31.33844°</p> <p>S25.51526° E31.33821°</p> <p>S25.51485° E31.33778° S25.51468° E31.33784°</p>	<p>No Cultural Heritage sites were identified in the affected area</p> 	<p>None</p>	<p>Place site under heritage monitoring program during development.</p>

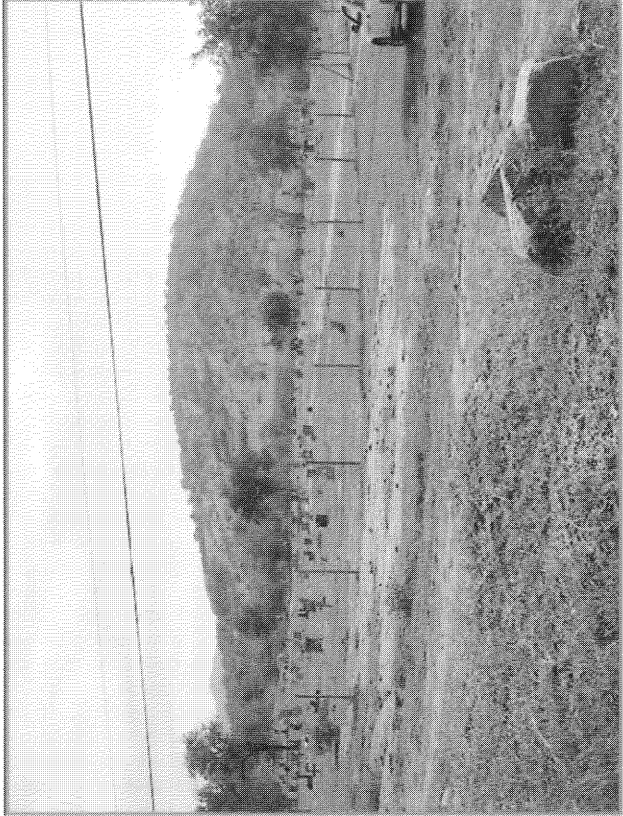
Plate 2: The substation earmarked for extension.

Location and Description	Cultural Heritage Site Type Found	Cultural Heritage Significance	Recommendations
<p>The preferred route for the proposed power-line will run parallel to this existing power-line running from Matsulu substation to propose T-station.</p>	<p>No Cultural Heritage sites were identified in the affected area</p>  <p>Plate 3: View of the existing pylons along the proposed alternative powerline route.</p>	<p>None</p>	<p>Place heritage program powerline foundation construction.</p> <p>site monitoring during pole</p>

Location and Description	Cultural Heritage Site Type Found	Cultural Heritage Significance	Recommendations
<p>The proposed power-line will end at this pylon, were the T-station will be built. GPS Co-ordinates S25.51312° E31.31683°</p>	<p>No Cultural Heritage sites were identified in the affected area</p>  <p>Plate 4: View of the proposed T-Station where the new line will commence.</p>	<p>None</p>	<p>Place power line route under monitoring program during powerline pole foundation construction.</p>

Location and Description	Cultural Heritage Site Type Found	Cultural Heritage Significance	Recommendations
<p>The part of the proposed power-line route and site for Matsulu substation is flanked by residential properties.</p>	<p>No Cultural Heritage sites were identified in the affected area</p> 	<p>None</p>	<p>Place power line route under heritage program monitoring during powerline pole foundation construction.</p>
<p>Plate 5: View of the Matsulu area where the powerline will traverse through the terminate at the substation site also surrounded by residential properties.</p>			

Location and Description	Cultural Heritage Site Type Found	Cultural Heritage Significance	Recommendations
<p>The proposed power-line route will run along this road to the south and turn southwest along the Matsulu road and Crocodile river.</p>	<p>No Cultural Heritage sites were identified in the affected area</p>  <p>Plate 6: View of portion of land affected by the proposed power-line route 3. Note existing road and other powerline development already on the area.</p>	<p>None</p>	<p>Place power line route under monitoring program during powerline pole foundation construction.</p>

Location and Description	Cultural Heritage Site Type Found	Cultural Heritage Significance	Recommendations
<p>The proposed power-line route runs through previously disturbed areas including existing residential and associated properties. Portion of route traverse through an area where a contemporary Grave yard was recorded. However, the line route will not interfere with the graveyard.</p>	 <p>Plate 7: View of the graveyard identified along the road to Matsulu from N4 toll road. The powerline route will traverse in the vicinity of this grave yard but will not interfere with the graveyard property.</p>	<p>None</p>	<p>Place power line route under heritage monitoring program during powerline pole foundation construction.</p>

Archaeological and Cultural Sites

No archaeological sites or materials were identified in association with the powerline route or any of its alternative routes. The site earmarked for the substation development is already developed with an existing substation. As such it makes no difference from a heritage perspective which route or substation site is chosen from the alternatives indicated on the plan (Fig. 1). The proposed power-line runs through already disturbed areas, along the gravel roads, through agricultural fields and parallel to existing linear developments such as Telkom lines and farm boundary lines (see Plate 1 to Plate 7). The T-station alternative sites are situated on agricultural land seriously disturbed by long history of ploughing. The nature and extent of the ground surface disturbance in some sections made it unlikely for archaeological sites to have survived *in situ*. Furthermore, although the grass height was low, the cover was dense and prevented effective ground surface inspection.

Historic Monuments

Historical and Recent sites - these sites are associated with white settlers, colonial wars, industrialization, African population settlements, contemporary ritual sites and settler farming communities are the most common and visible. The more common functions of places of cultural historical significance include:

- Domestic
- Recreation & culture
- Commerce & trade
- Agriculture & subsistence
- Social
- Health care
- Religion
- Designed landscape
- Funeral (cemeteries, graves and burial grounds)
- Civil and Structural Engineering
- Education
- Defence /Military

There is no listed monument in the area affected by the proposed power-line route. No historical sites of significance were identified on route of powerline or substation development. However, it should be noted that the general area has a long history of human occupation, making the entire landscape a cultural landscape.

Burial grounds and graves

In terms of the Section 36 (3) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) no person may, without a permit issued by the relevant 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 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; 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.

Therefore, in addition to the formal protection of culturally significance graves, all graves which are older than 60 years and which are not already located in a cemetery (such as ancestral graves in rural areas), are protected. Communities, which have an interest in the graves, must be consulted before any disturbance can take place. The graves of victims of conflict and those associated with the liberation struggle will have to be included, cared for, protected and memorials erected in their honour where practical. Regarding graves and burial grounds, the NHRA distinguishes between the following:

- Ancestral graves
- Royal graves and graves of traditional leaders
- Graves of victims of conflict
- Graves of individuals designated by the Minister by notice in the Gazette
- Historical graves and cemeteries
- Other human remains, which are not covered in terms of the Human Tissue Act, 1983 (Act No.65 of 1983).

Significance valuation Burial Ground, Historic Cemeteries and Graves

The significance of burial grounds and gravesites is closely tied to their age and historical, cultural and social context. Nonetheless, every burial should be considered as of high significance. Should any grave previously unknown be identified during construction, every effort should be made not disturb them. Pole position should be shifted to ensure the grave or burial ground is not disturbed.

Grave yards

Formal grave yard was identified was identified along the route 3 of the powerline.

Previously unidentified burial sites/graves –

Although the possibilities of this occurring are very limited along the powerline routes and the for the substation, during the proposed development, should burial sites outside the NHRA be accidentally found, they must be reported to the nearest police station to ascertain whether or not a crime has been committed. If there is no evidence for a crime having been committed, and if the person cannot be identified so that their relatives can be contacted, the remains may be kept in an institution where certain conditions are fulfilled. These conditions are laid down in the Human

Tissue Act (Act No. 65 of 1983). In contexts where the local traditional authorities give their consent to the unknown remains to be re-buried in their area, such re-interment may be conducted under the same regulations as would apply for known human remains.

5. STATEMENT OF OVERALL IMPACTS

From a cultural heritage point of view, any development that alters the ground surface status quo will potentially destroy any archaeological resources in its direct path, and the impact will be permanent in nature, extent and duration. Archaeological resources are fixed in space and are non-renewable. Any activities that threatens to alter the status quo is, therefore an immediate and direct threat to the heritage resources (Bickford and Sullivan, 1977) However, since there were no archaeological or cultural heritage sites that was identified on the direct path of power-line route or the substation alternate sites, the overall impact of the proposed power-line is considered to be low.

Generally speaking, the proposed power-line construction project will have minimal impact upon any cultural heritage resources given the fact that the survey did not encounter any such sites with any significance threshold.

However, this study can not rule out the existence of archaeological materials subsurface. The project area falls within a region with long history of human occupation stretching back into Early Iron Age and even Stone Age period. As such, there is a real possibility of identifying previously unknown archaeological site during the proposed development.

6. OVERALL RECOMMENDATIONS

- By nature, the development of powerline will have limited impact footprint since the actual physical interference with the existing landscape will be limited to individual pole foundations. As such, should a significant chance archaeological site be found on any location along the powerline route, such a site can be saved by simply relocation the affected pole position to a safe distance of , for example, 20m from the boundary of the archaeological site. As such we recommend that should any archaeological site be identified when development commence, every effort should be made to preserve the site *in situ* by shifting the pole position to a safer distance of at least 20m from the archaeological site.
- No further predevelopment study associated with the powerline routes and substation site is necessary for the archaeological and cultural heritage resources with regards to the proposed construction of a 7km power-line development project. However, there is

always a probability of discovering archaeological sites during sub-surface earth moving activities such as digging the pole foundations or any other trenches. The same applies to the powerline substation. The preferred powerline route and the associated substation site are acceptable. Nonetheless, it would not make a difference for the affected cultural landscape should the alternative site be selected for the final development.

- The foot print impact of each pole should be kept to minimal to limit the possibility of encountering chance finds.
- This study recommends that a heritage monitoring plan (as part of the EMP) be put in place during construction period to ensure that no chance finds are encountered.
- Furthermore, the construction team should be informed about the value of archaeological and other cultural heritage resources in general so as to ensure that they do not destroy them whenever they encounter such resources during working on the power-line and substation construction sites.
- Should the construction team identify sites where they will establish construction camp sites or create access roads, Phase 1 HIA should be conducted on such sites.

7. CONCLUDING REMARKS

From a heritage perspective, in the absence of any known archaeological and heritage resources and taking into consideration the socio-economic and other values of the proposed powerline development, there are no barriers to the proposed development. The cultural landscape affected by the powerline does not have significance threshold to call for total protection of the landscape. Nonetheless, detailed monitoring procedures should be scheduled into the project EMP in order to adequately respond to chance finds that may be found accidentally during the power-line and substation development. The proposed project may proceed as planned subject to a heritage monitoring programme. With the constraints herein discussed and appropriate monitoring measures adopted, there are no objections to the proposed development project and we recommend to the heritage authorities to approve the project accordingly.

8. REFERENCES

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