

**COMPILATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT
PROGRAMMES FOR THE STEELPOORT TO MARBELHALL 400KV POWER-
LINE AND THE STEELPOORT INTEGRATION PROJECT:
HERITAGE RESOURCES ASSESSMENT**

COMPILATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMMES FOR THE STEELPOORT TO MARBELHALL 400KV POWER-LINE AND THE STEELPOORT INTEGRATION PROJECT: HERITAGE RESOURCES ASSESSMENT

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Declaration:

I, J.A. van Schalkwyk, declare that I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services.



J A van Schalkwyk (D Litt et Phil)
Heritage Consultant
January 2013

EXECUTIVE SUMMARY

COMPILATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMMES FOR THE STEELPOORT TO MARBELHALL 400KV POWER-LINE AND THE STEELPOORT INTEGRATION PROJECT: HERITAGE RESOURCES ASSESSMENT

Eskom propose the development of the Steelpoort-Tubatse-Marblehall 400kV integration transmission line in order to strengthen the electricity supply in the region of Limpopo and Mpumalanga Provinces.

Previous impact assessments were done for sections of these routes (Schalkwyk 2007a, 2007b, 2009). In order for a final route to be selected, it was determined that a “walk down” of the route should be done to inspect the location of every tower structure that would be erected for the power line. Consequently an independent heritage consultant was appointed by **Iliso Consulting** to conduct this “walk down”. In December 2012 a team of various specialists set out and over a period of five days the total route was surveyed.

The aim of this survey was to analyse and recommend heritage management mitigation measures and monitoring programmes for sites, features and objects within the corridor of the proposed power line. Information on the identified sites is presented in Section 3.

The following was found:

- A number of stone walled sites dating to the Late Iron Age were identified. On some the line just crosses over, whereas on others a tower structure will be erected (Section 3).
 - It is recommended that these sites are excavated by a suitably qualified archaeologist prior to the development taking place.
 - It is also recommended that an archaeologist is in attendance when construction takes place on the sites.
- One old farmstead was identified and is viewed to have a low significance on a regional level. However, in many cases graves are found in the vicinity of such old homesteads. However, due to the dense vegetation surrounding the buildings, it was difficult to determine if there are any graves located here.
 - It is recommended that these features are isolated by demarcating a 50m buffer zone around it, taking the outside of the buildings as starting point for determining the buffer.
- A number of informal cemeteries and burial places of differing size were identified. They are viewed to have a high significance on a local level (Section 3).
 - All cemeteries/burial places are located inside the corridor for the power line, or very close to it. These features should be left in place and isolated by demarcating a 10m buffer around them starting from the outermost graves that can be located.

As a result of the large number of heritage sites that might be impacted on, as well as some issues with the construction of the Steelpoort substation on the originally selected site, Eskom has decided to move the substation to a new location a few hundred metres north of the original position. Consequently, this new site was surveyed on 29 January 2013, resulting in an amendment being added to the original report.

- Although some stone walling occurs in the region of the new substation, there seems to be much less of it than on the previous site, most occurring to the west of the substation site. Consequently, this position presents a much better proposition for the development of the substation. As indicated on the map in Fig. 3, it is only feature no. 1 that is in close vicinity of the substation site. Most features occur west, higher up-slope and seem to

concentrate in the region of features no. 3 & 4, which is located well outside the development area.

- It is recommended that the area is cleared by hand in order to determine the full extent of the stone walling and that it is documented (mapped and photographed) before construction takes place.



J A van Schalkwyk
Heritage Consultant
January 2013

TECHNICAL SUMMARY

Property details	
Province	Mpumalanga & Limpopo Province
Magisterial district	Groblersdal, Nebo & Lydenburg
Topo-cadastral map	
Closest town	Groblersdal
Farm name & no.	Various
Portions/Holdings	Various

Development criteria in terms of Section 38(1) of the NHR Act	Yes/No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	Yes
Construction of bridge or similar structure exceeding 50m in length	
Development exceeding 5000 sq m	
Development involving three or more existing erven or subdivisions	
Development involving three or more erven or divisions that have been consolidated within past five years	
Rezoning of site exceeding 10 000 sq m	
Any other development category, public open space, squares, parks, recreation grounds	

Development	
Description	Development of a 400kV electricity transmission line
Project name	Steelpoort – Marblehall (Tubatse Silimela) line

Land use	
Previous land use	Agriculture/Urban
Current land use	Agriculture/Urban

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GLOSSARY OF TERMS AND ABBREVIATIONS

STONE AGE

Early Stone Age	2 000 000 - 150 000 Before Present (BP)
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

IRON AGE

Early Iron Age	AD 200 - AD 900
Middle Iron Age	AD 900 - AD 1300
Late Iron Age	AD 1300 - AD 1830

HISTORIC PERIOD

Since the arrival of the white settlers - c. AD 1840 in this part of the country

ASAPA	Association of Southern African Professional Archaeologists
C S-G	Chief Surveyor-General
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

COMPILATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMMES FOR THE STEELPOORT TO MARBELHALL 400KV POWER-LINE AND THE STEELPOORT INTEGRATION PROJECT: HERITAGE RESOURCES ASSESSMENT

1. INTRODUCTION

Eskom propose the development of the Steelpoort-Tubatse-Marblehall 400kV integration transmission line in order to strengthen the electricity supply in the region of Limpopo and Mpumalanga Provinces.

Previous impact assessments were done for sections of these routes (Schalkwyk 2007a, 2007b, 2009). In order for a final route to be selected, it was determined that a “walk down” of the route should be done to inspect the location of every tower structure that would be erected for the power line. Consequently an independent heritage consultant was appointed by **Iliso Consulting** to conduct this “walk down”. In December 2012 a team of various specialists set out and over a period of five days the total route was surveyed.

The aim of this survey was to analyse and recommend heritage management mitigation measures and monitoring programmes for sites, features and objects within the corridor of the proposed power line. Information on the identified sites is presented in Section 3.

2. HERITAGE RESOURCES

2.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
 - 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; and
 - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
 - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;

- objects to which oral traditions are attached or which are associated with living heritage;
- ethnographic art and objects;
- military objects;
- objects of decorative or fine art;
- objects of scientific or technological interest; and
- books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

2.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature’s uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- sites of significance relating to the history of slavery in South Africa.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 Site location and description

The study area involves two sections of power line corridors, most of which follows existing corridors. The longest line runs eastwards from south of Marblehall, across the Nebo plateau, across the Lulu Mountains and down into the Steelpoort River valley, where it is proposed to develop a substation. The second line runs from this substation in a north-westerly direction to the farm Syferfontein 136JS, where a new substation will be constructed.

As can be expected with a study area ranging across such a large area, the environment changes drastically from west to east. The west forms part of a highveld area typified by an undulating landscape. Going down the escarpment to the middle veld, the area is typified by mountains. In contrast, the eastern section is marked by mountains and hills, creating a broken type of environment.

Most of the region has been subjected to agricultural activities, with ploughing in the highveld and central regions changing the environment drastically. One example is the Loskop Dam Irrigation Scheme, in which irrigation, based on 480km of canals, is practiced.

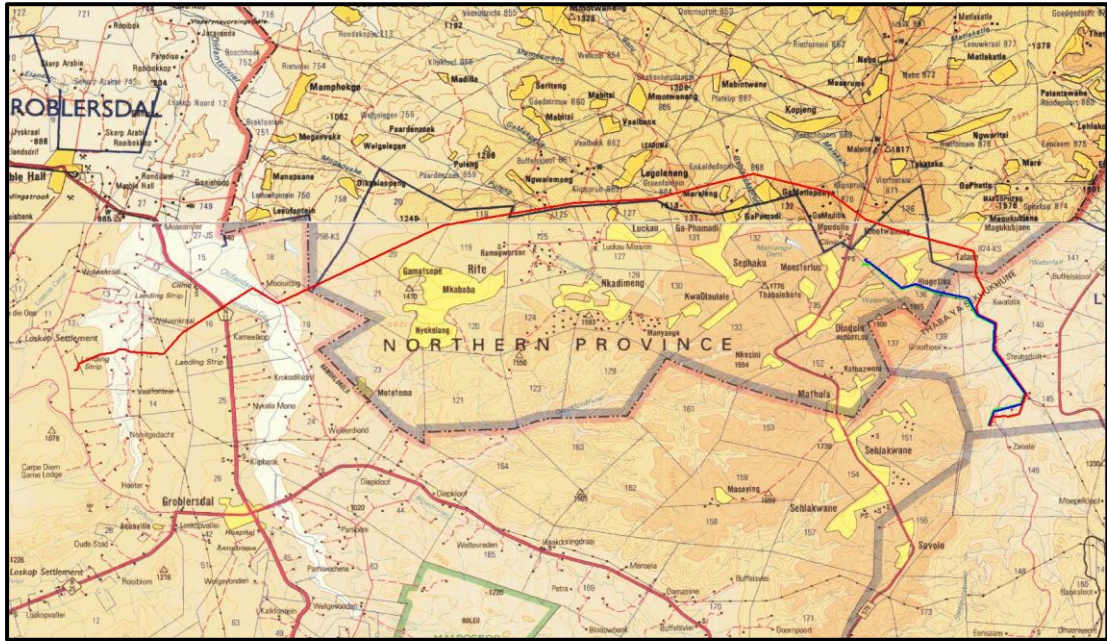
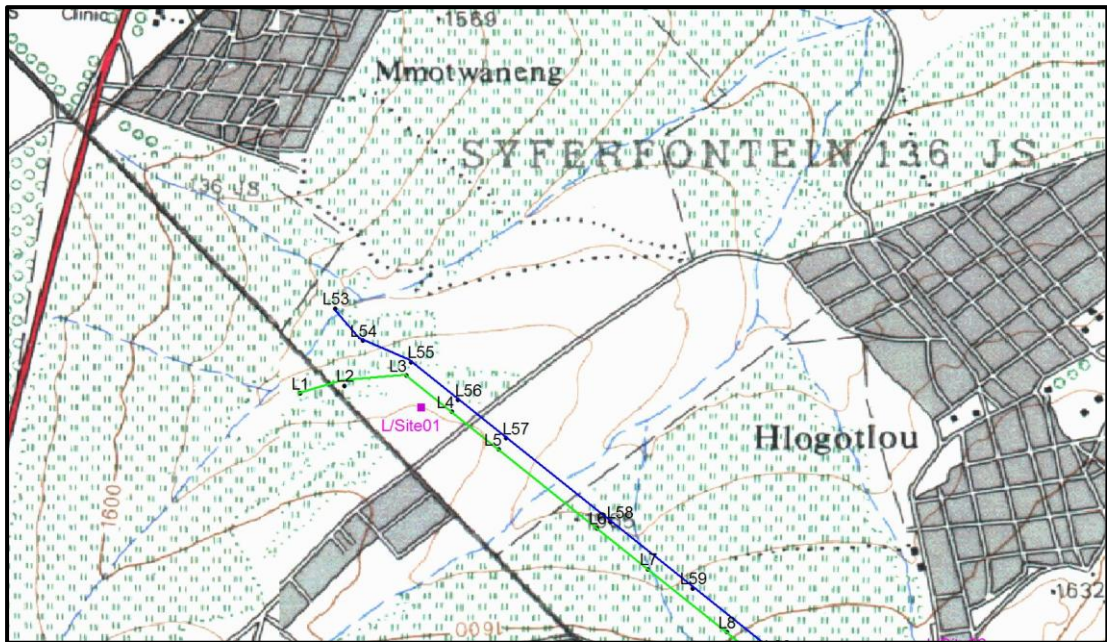


Fig. 1. Location of the study area in regional context.
(Map 2428, 2528: Chief Surveyor-General)

For ease of presentation, the different lines are presented in a number of maps below, following the route from west to east for the Marble Hall – Steelpoort line and east to west for the Steelpoort – Tubatse route.

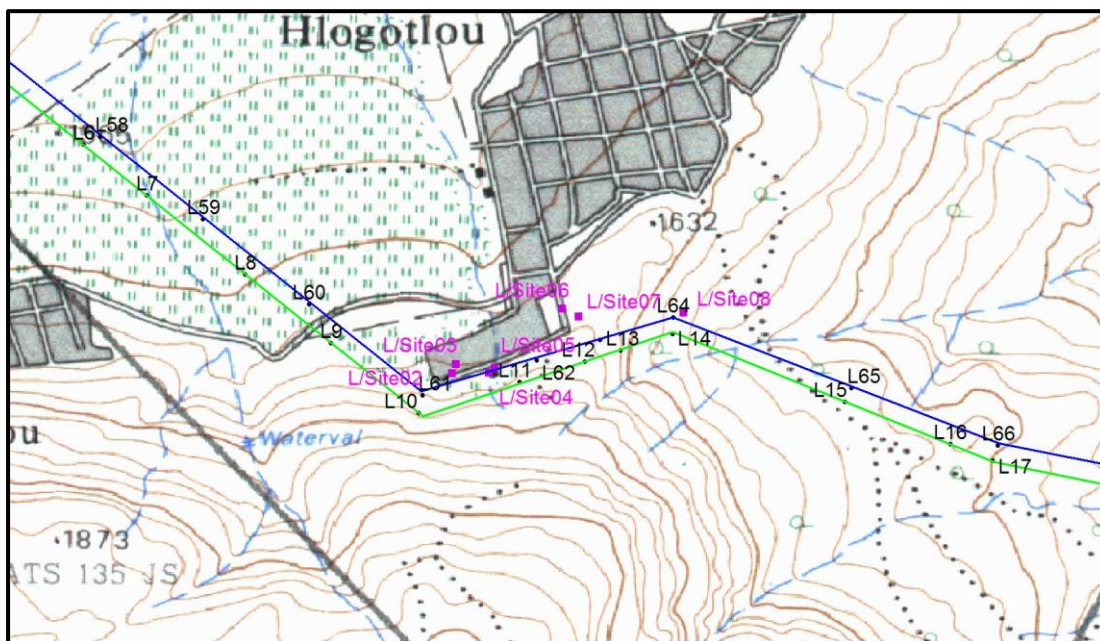
Map 1



- Graves & Cemeteries

Location	No. L/Site01	S 25.02626	E 29.75533
Description			
A formal community cemetery with probably more than 200 graves. Most have gravestones, but some are only marked with stone cairns.			
Significance	High on a local level – Grade III		
Mitigation			
As this is a large and well fenced cemetery, it is unlikely that the power line development would have an impact on it.			
Recommendation:			
Although the current alignment by-pass the cemetery, it is recommended that the site is fenced off with danger tape for the duration of the construction period.			



Map 2

- Graves & Cemeteries

Location	No. L/Site02	S 25.03825	E 29.77394
	No. L/Site03	S 25.03796	E 29.77405
	No. L/Site04	S 25.03796	E 29.77511
	No. L/Site05	S 25.03808	E 29.77529
	No. L/Site06	S 25.03622	E 29.77741
	No. L/Site07	S 25.03647	E 29.77793
Description	<p>L/Site02: Three small graves, probably of three children. Very old, but still fenced off. L/Site03: A number of well-marked graves inside the yard of a house. L/Site04: A single marked grave next to some sisal plants. L/Site05: A single marked grave under a tree. L/Site06: A single marked grave adjacent to a house. L/Site07: A large community cemetery, developed in two different sections.</p>		
Significance	High on a local level – Grade III		
Mitigation	<p>L/Site02: This site is probably inside the power line reserve. Recommendation: It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.</p> <p>L/Site03: As this site is inside the boundary of a homestead, the chances of it being impacted on by the power line is very unlikely.</p> <p>L/Site04: This site is inside the power line reserve. Recommendation: It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.</p> <p>L/Site05: This site is inside the power line reserve. Recommendation: It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.</p>		

L/Site06: This site is probably outside the power line reserve, but close to a possible access route.

Recommendation:

It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.

L/Site07: As this is a large and well fenced cemetery, it is unlikely that the power line development would have an impact on it.

Recommendation:

Although the current alignment by-pass the cemetery, it is recommended that the site is fenced off with danger tape for the duration of the construction period.



L/Site02



L/Site03



L/Site04



L/Site05



L/Site05

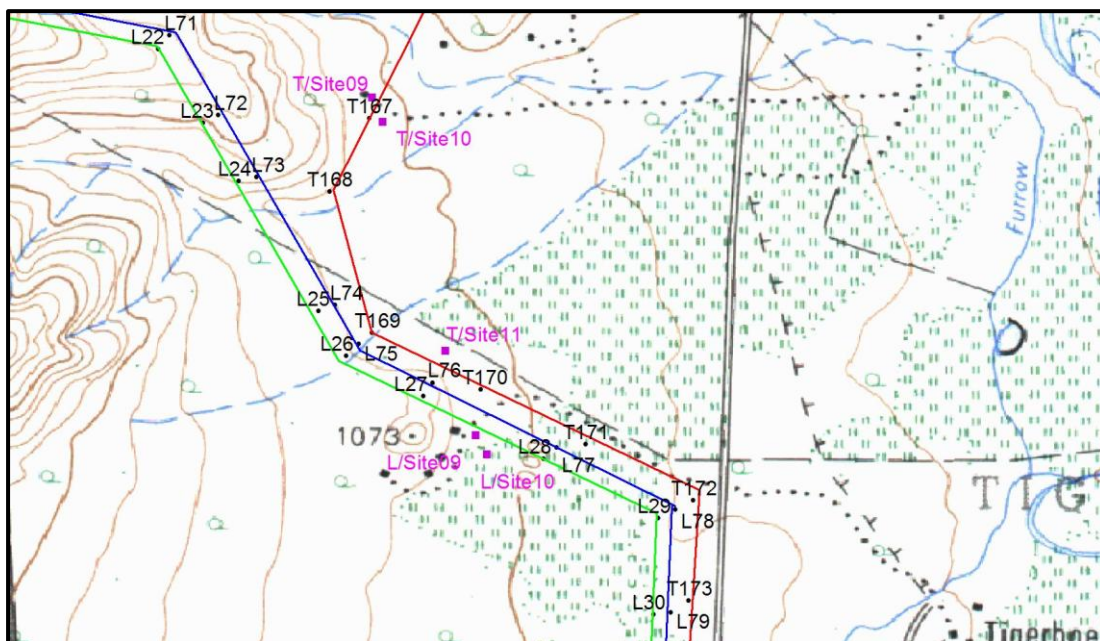


L/Site06

- Archaeological sites

Location	No. L/Site08	S 25.03647	E 29.78124
Description			
A heap of stones commonly referred to as an <i>isivivane</i> . It probably date to the Late Iron Age or early historic period and was a way in which boundaries were identified, especially where people crossed of a mountain range.			
Significance	High on a local level – Grade III		
Mitigation			
This site is very close to tower L64 as well as probably located inside the power line reserve.			
Recommendation:			
It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.			



Map 3

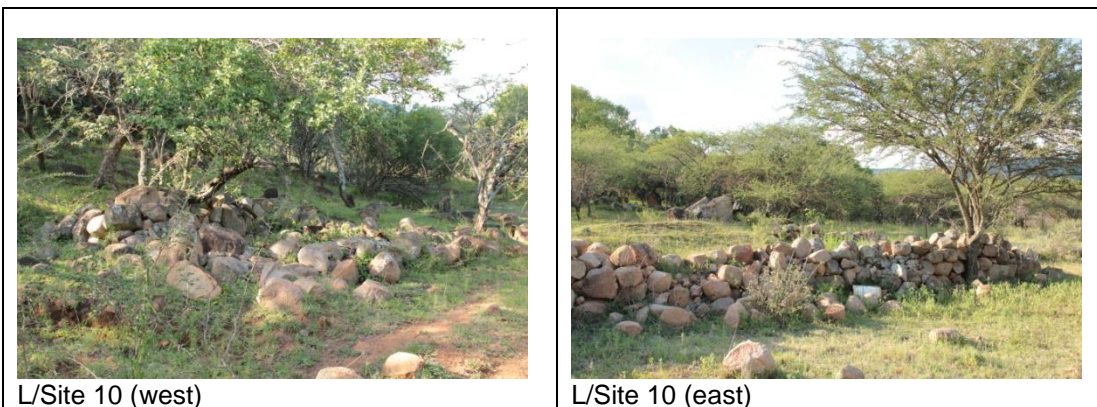
- Graves & Cemeteries

Location	No. T/Site09	S 25.04634	E 29.81697
	No. T/Site10	S 25.04711	E 29.81732
	No. T/Site11	S 25.05435	E 29.81929
	No. L/Site09	S 25.05702	E 29.82026
Description			
T/Site09: A number of well-marked graves, fenced off with wire.			
T/Site10: A single marked grave next to a homestead.			
T/Site11: A single marked grave fenced off with a metal fence			
L/Site09: A small cemetery with graves dating to the recent past.			
Significance	High on a local level – Grade III		
Mitigation			
T/Site09: This site is probably inside the power line reserve.			
Recommendation:			
It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.			
T/Site10: This site is probably inside the power line reserve.			
Recommendation:			
It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.			
T/Site11: This site is probably inside the power line reserve.			
Recommendation:			
It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.			
L/Site09: This site is probably inside the power line reserve.			
Recommendation:			
It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.			

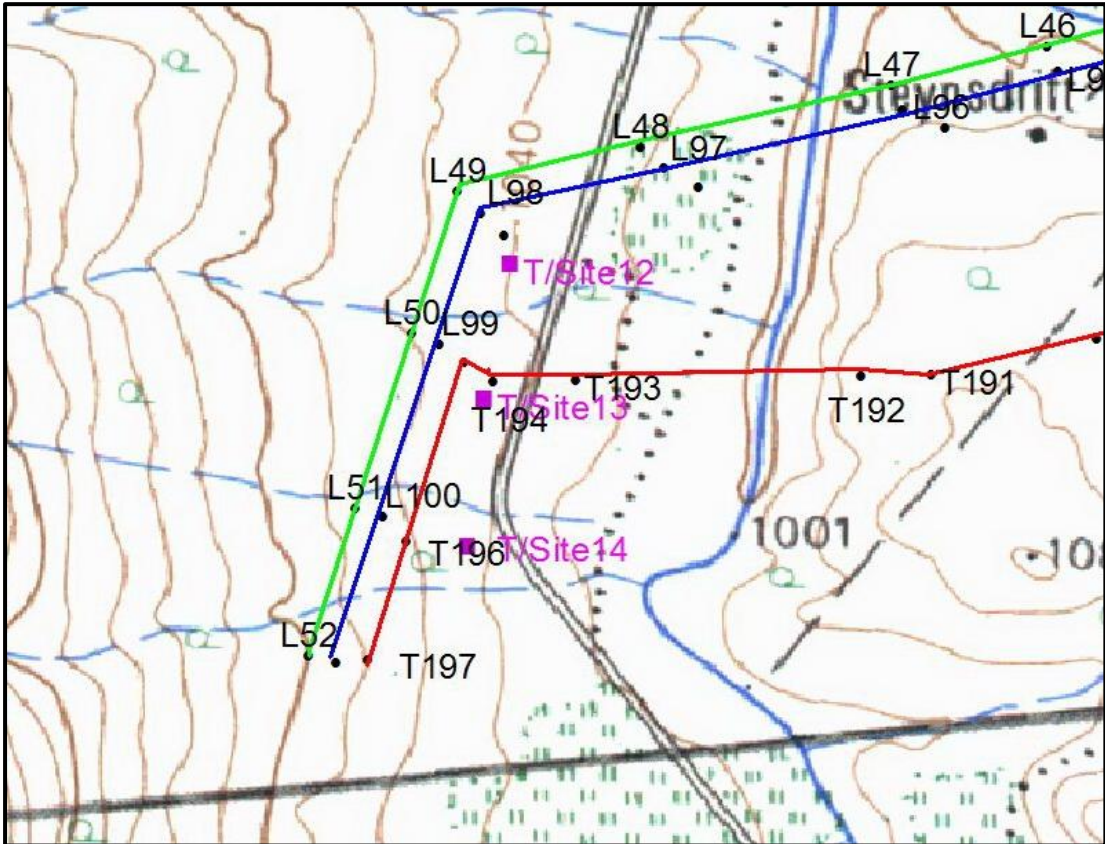


- Archaeological sites

Location	No. L/Site10	S 25.05762	E 29.82061
Description			
Stone walling occur all along the foot of the two hills. It probably dates to the recent past and formed part of homesteads, cattle enclosures and agricultural fields.			
Significance	High on a regional level – Grade III		
Mitigation			
These features are close to the power line reserve. Due to the dense vegetation currently on the site, it is difficult to determine the exact layout and position of the walls.			
Recommendation:			
It should be fenced off with danger tape, leaving a buffer of at least 10 metres around it.			



Map 4



- Archaeological sites

Location	No. T/Site12-14	S 25.11248	E 29.82557
Description			
T/Site 13 & 14 indicate an area where a large settlement site occurs. It dates to the Late Iron Age and consists of homestead area, public areas such as a male gathering place and stock pens. It measures approximately 500 X 400 metres (north/south by east/west), with a small section on the western side of the road.			
The section identified as T/Site 12 represents the agricultural terracing and fields of the former, although some homestead areas can also be identified. It is approximately the same size as the previous section			
Significance	High on a regional level – Grade III		
Mitigation			
Both of these sites will be traversed by the power lines. In addition, it is planned to construct the substation on the settlement site.			
Recommendation:			
If the substation location cannot be move away from the archaeological site, the site should be excavated in full by an archaeologist. This would involve the documentation (mapping and photographing) of all features, as well as the archaeological excavation of sufficient features to fulfil requirements as laid down by SAHRA.			
Requirements			
A permit should be obtained from SAHRA for the possible impact on the site prior to the development taking place.			

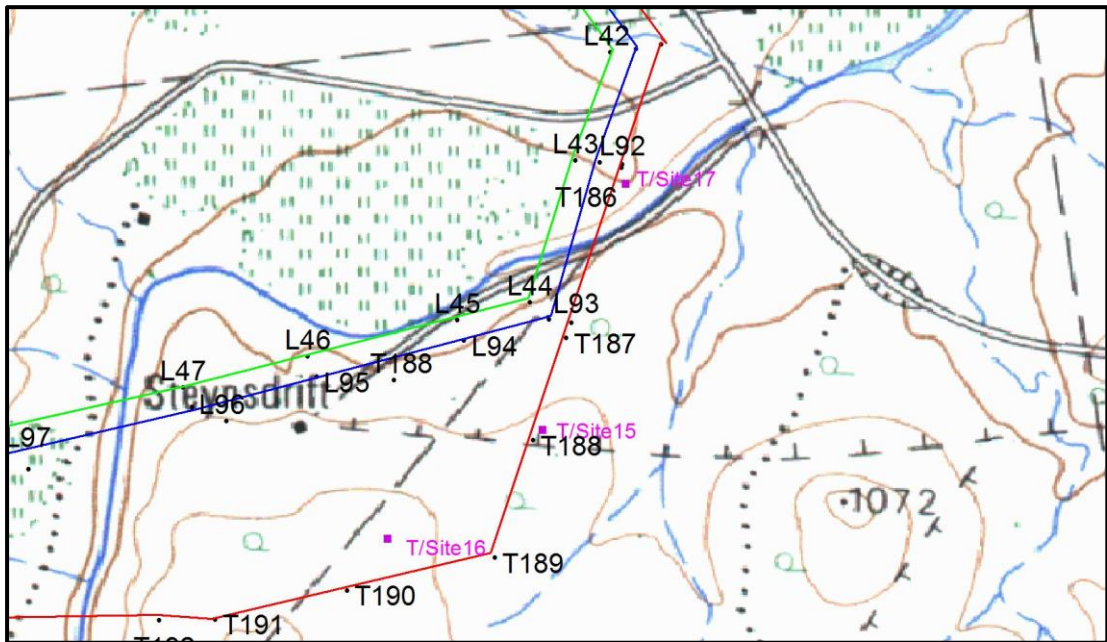


T/Site 13-14



T/Site 12

Map 5



- Archaeological sites

Location	No. T/Site 15 No. T/Site 16 No. T/Site 17	S 25.10819 S 25.11071 S 25.10253	E 29.84185 E 29.83828 E 29.84378
Description	<p>T/Site 15: Stone walling which probably formed part of a homestead with a cattle kraal. It is estimate to be approximately 80 x 50 metres in size</p> <p>T/Site 16: Ephemeral stone walling with no distinctive layout. Due to the difficulty in determining the stone walling, its size could not be determined.</p> <p>T/Site 17: Strategic located stone walled site on ridge overlooking Steelpoort River, consisting of a large cattle kraal and smaller stone circles on the periphery. It is estimate to be 150 by 80 metres in size</p>		
Significance	High on a regional level – Grade III		
Mitigation	<p>T/Site 15: This site is close to Tower 188 and also below the power line.</p> <p>Recommendation: If the tower cannot be moved, an archaeologist should be present when work is taking place in the vicinity. During the site visit the vegetation was very high and dense, making it difficult to determine the boundaries of the site. It is recommended that prior to construction taking place that the area surrounding the site is cleared by hand in order to determine the full extent of the site.</p> <p>T/Site 16: As this site is located some distance from the power line, it is unlikely that it would be impacted on by the development of the power line.</p> <p>T/Site 17: Tower numbers T186 and L92 are located on this site as well as being located below the line.</p> <p>Recommendation: It is strongly recommended that the line and the position of the towers are moved away from this site. If it cannot be moved, an archaeologist should be present when work is taking place in the vicinity. During the site visit the vegetation was very high and dense,</p>		

making it difficult to determine the boundaries of the site. It is recommended that prior to construction taking place that the area surrounding the site is cleared by hand in order to determine the full extent of the site.

Requirements

A permit should be obtained from SAHRA for the possible impact on the site prior to the development taking place.



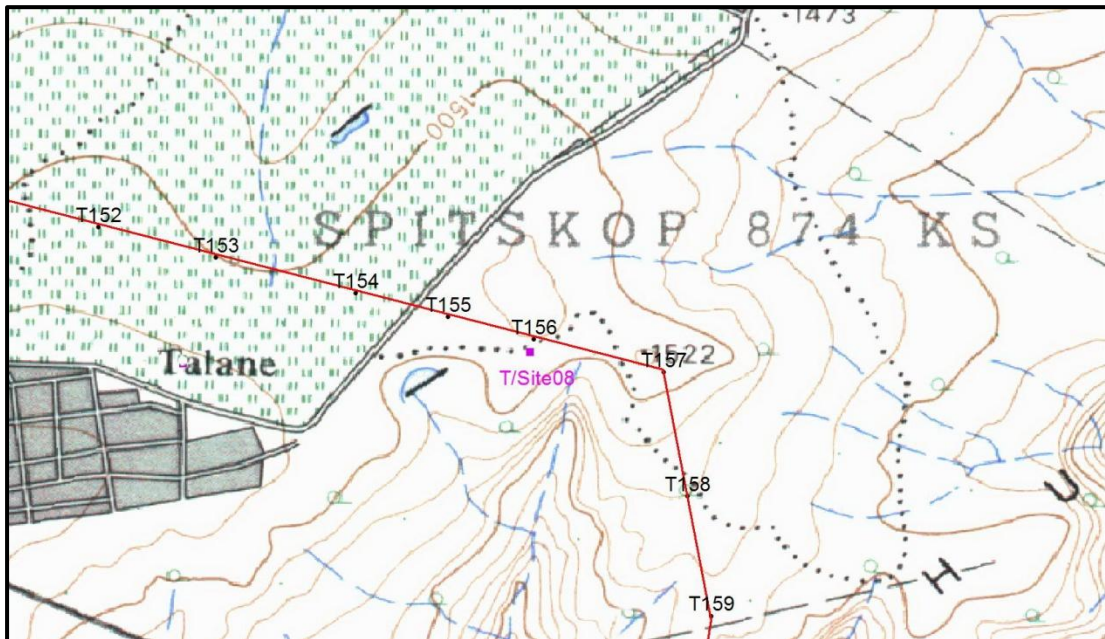
T/Site 15



T/Site 16



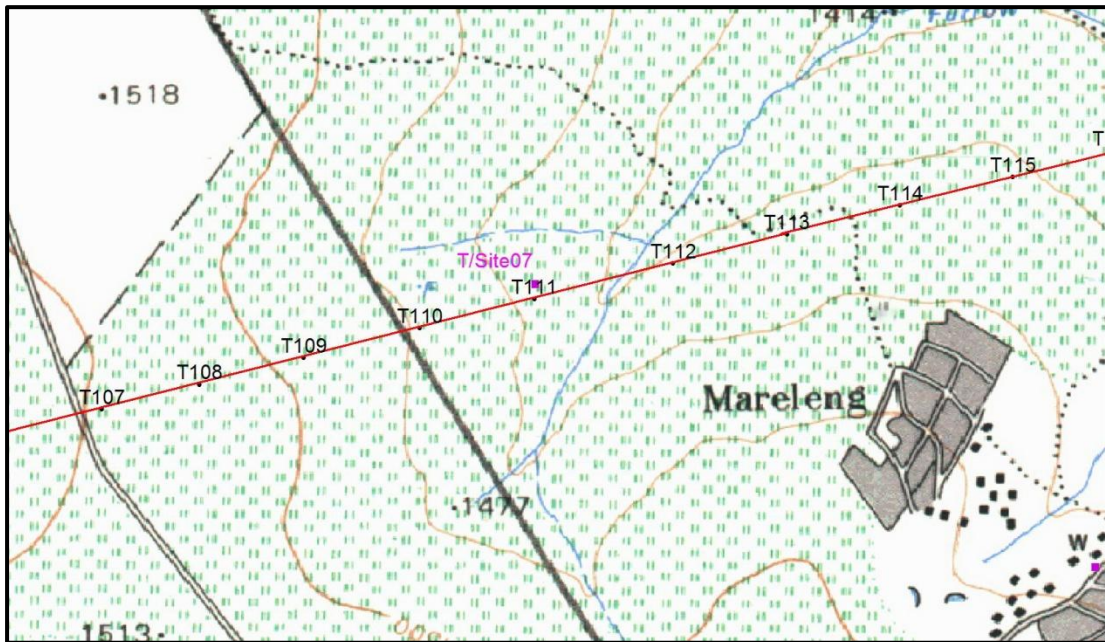
T/Site 17

Map 6

- Graves & Cemeteries

Location	No. T/Site08	S 25.01692	E 29.81023
Description			
A formal community cemetery with probably more than 100 graves. Most have gravestones, but some are only marked with stone cairns.			
Significance	High on a local level – Grade III		
Mitigation			
As this is a large and well fenced cemetery, it is unlikely that the power line development would have an impact on it.			
Recommendation:			
Although the current alignment by-pass the cemetery, it is recommended that the site is fenced off with danger tape for the duration of the construction period.			

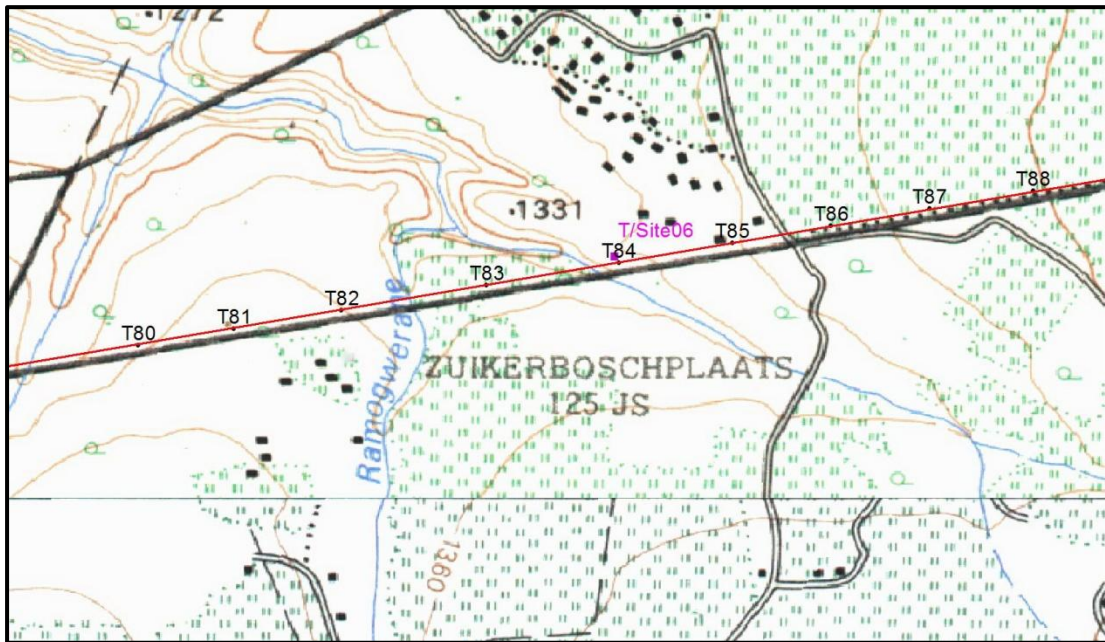


Map 7

- Graves & Cemeteries

Location	No. T/Site07	S 24.98028	E 29.65839
Description			
An informal burial place with an unknown number of graves marked only with stone cairns, located under a large tree.			
Significance	High on a local level – Grade III		
Mitigation			
This site is located close to the power line reserve as well as tower T111.			
Recommendation:			
Although the current alignment by-pass the burial place, it is recommended that the site is fenced off with danger tape for the duration of the construction period.			



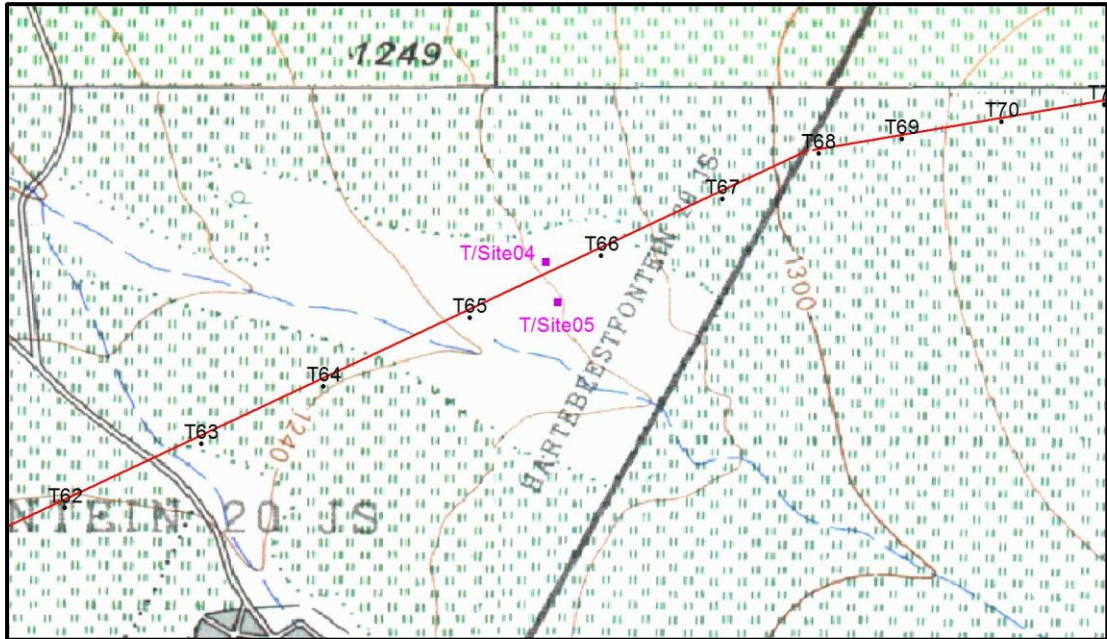
Map 8

- Archaeological sites

Location	No. T/Site06	S 24.99308	E 29.56529
Description			
A stone walled site that are used for the initiation of young boys. The various elements such as the central fire place, accommodation structures, etc. are clearly identifiable and also indicates that the site has been used in the recent past.			
Significance	High on a regional level – Grade III		
Mitigation			
Tower T 84 will be located on this site and the power line will cross it as well.			
Recommendation:			
It is recommended that the tower is moved to a location off the site. In addition it is recommended that the local community is briefed about the line crossing the site and that their consent is gained for the line to pass over it.			



Map 9

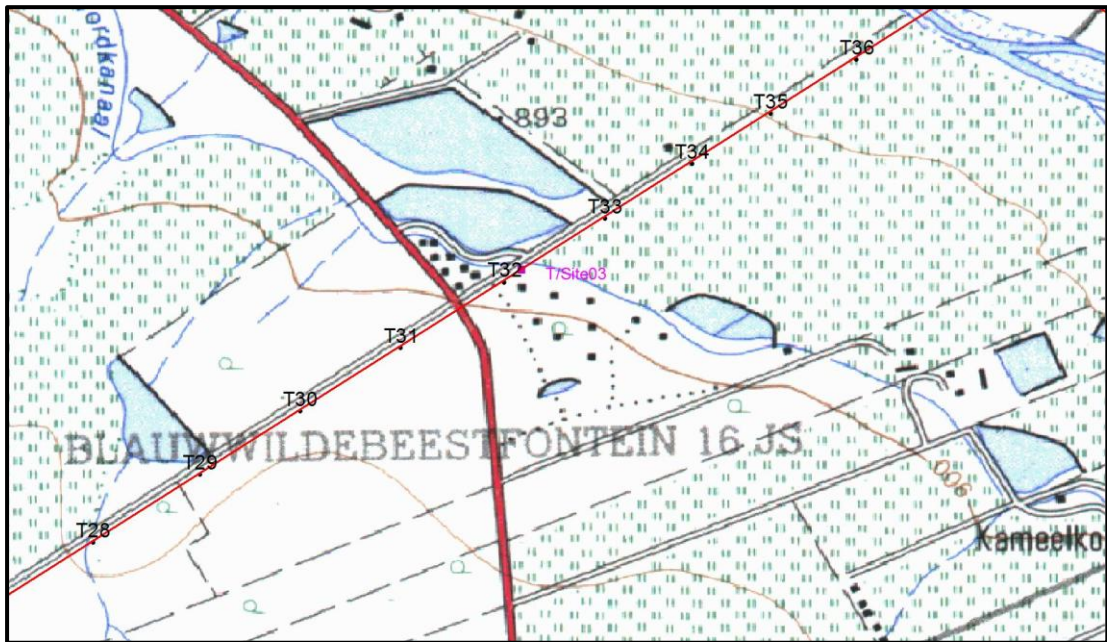


- Graves & Cemeteries

Location	No. T/ Site04 No. T/ Site05	S 25.00625 S 25.00754	E 29.50139 E 29.50175
Description			
T/ Site04: An informal burial place with three graves, two of which are marked with headstones.			
T/ Site05: A single grave with a headstone, but with no inscription.			
Significance	High on a local level – Grade III		
Mitigation			
These two sites are located close to the power line reserve.			
Recommendation:			
Although the current alignment by-pass both, it is recommended that the sites are fenced off with danger tape for the duration of the construction period.			



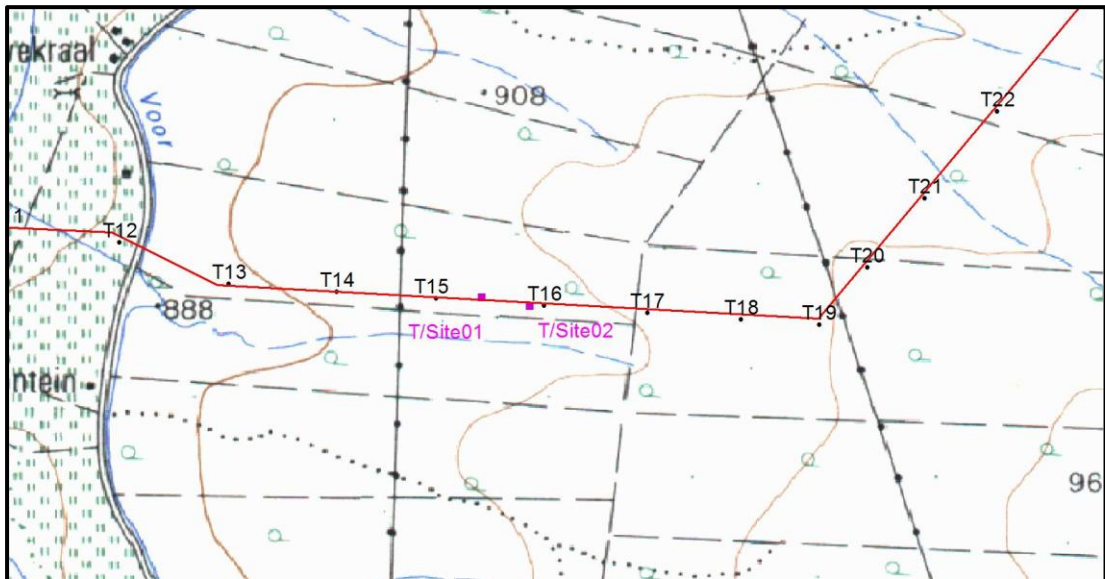
Map 10



- Archaeological sites

Location	No. T/Site03	S 25.04876	E 29.38458
Description			
The remains of a typical farm labourer homestead built with clay bricks. Due to the dense vegetation it is difficult to determine its size and layout			
Significance	High on a regional level – Grade III		
Mitigation			
This site is inside the power line reserve. Tower T 32 will be located close to this site and the power line will cross it as well.			
Recommendation:			
The site should be fenced off with danger tape, leaving a buffer of at least 50 metres, from the outermost visible remains of the structure, around it.			
During the site visit the vegetation was very high and dense, making it difficult to determine the boundaries of the site. It is recommended that prior to construction taking place that the area surrounding the site is cleared by hand in order to determine the full extent of the site.			



Map 11

- Graves & Cemeteries

Location	No. T/Site01 No. T/Site02	S 25.07610 S 25.07637	E 29.33858 E 29.34009
Description			
T/Site01: An informal burial place with an unknown number of graves, only a few of which are marked with headstones. T/Site02: A single grave with a headstone.			
Significance	High on a local level – Grade III		
Mitigation			
Both sites are located between towers T15 and T16 and are located inside the power line reserve.			
Recommendation:			
Although the current alignment by-pass both, it is recommended that the sites are fenced off with danger tape for the duration of the construction period.			
During the site visit the vegetation was very high and dense, making it difficult to determine the boundaries of the sites. It is recommended that prior to construction taking place that these areas are cleared by hand in order to determine the full extent of the burial sites.			



4. AMENDMENT TO THE SUBSTATION SITE

As a result of the large number of heritage sites that might be impacted on, as well as some issues with the construction of the Steelpoort substation on the originally selected site, Eskom has decided to move the substation to a new location a few hundred metres north of the original position. Consequently, this new site was surveyed on 29 January 2013, resulting in this amendment being added to the original report.

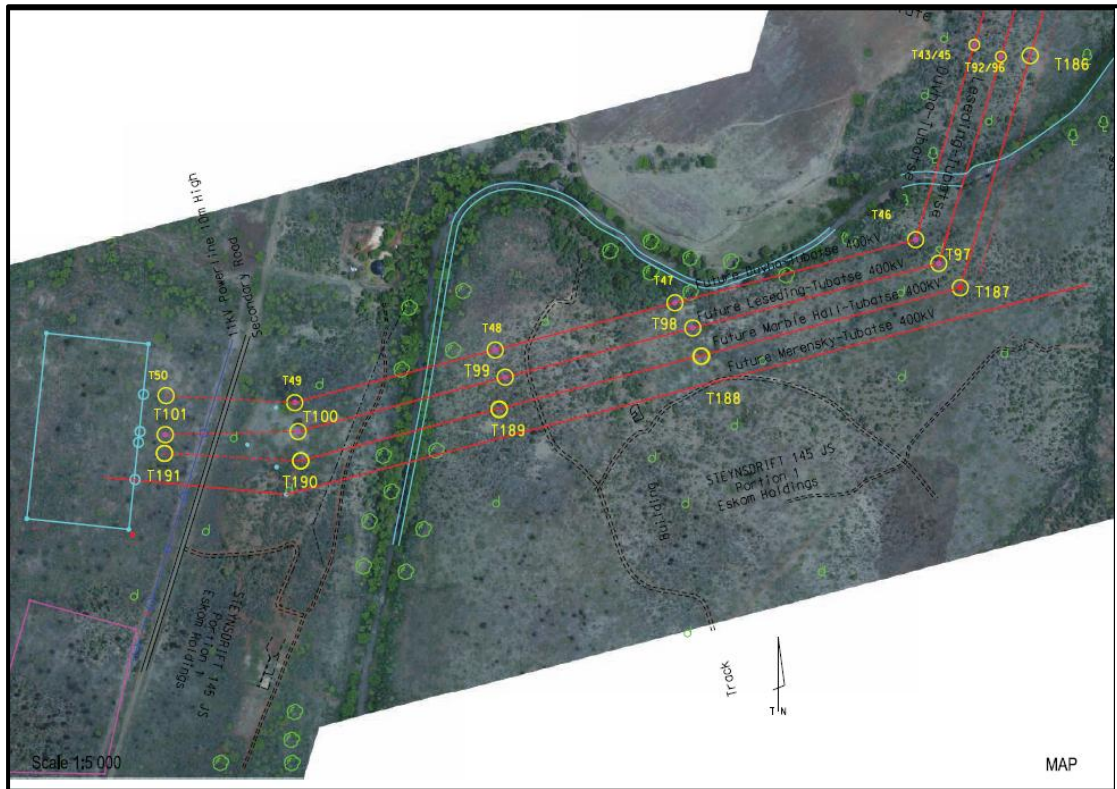


Fig. 2. New position and layout of the proposed substation.

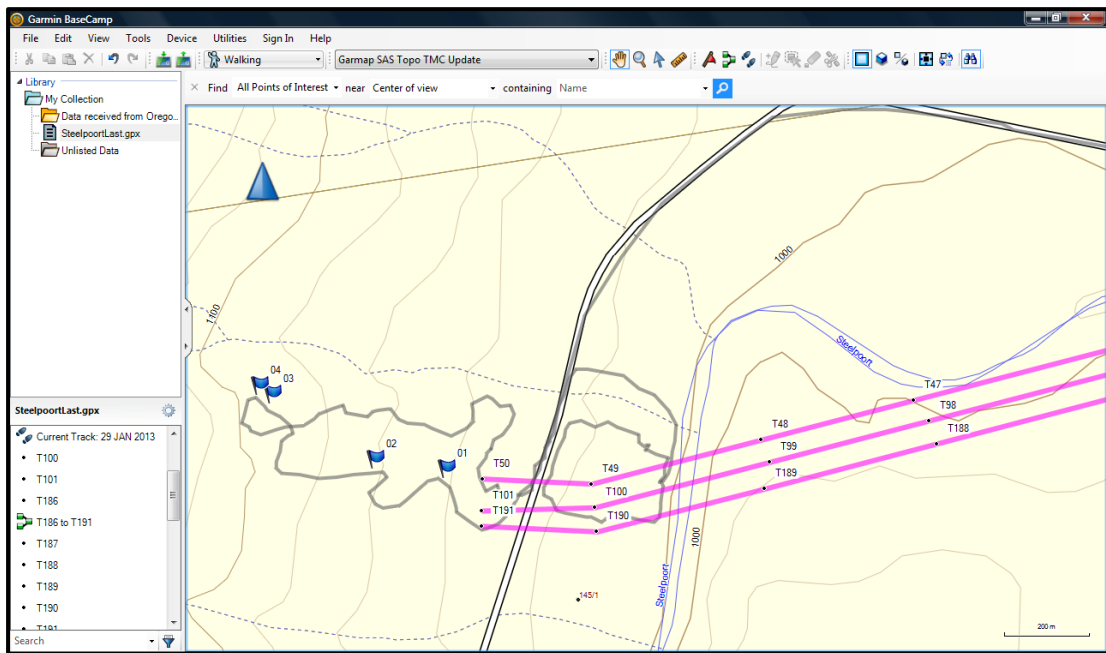


Fig. 3. Results of the survey for the new substation site.

- Archaeological sites

Location	No. 1	S 25.10779	E 29.82665
	No. 2	S 25.10759	E 29.82507
	No. 3	S25.10622	E 29.82278
	No. 4	S25.10604	E 29.82249
Description			
Ephemeral stone walling with no distinctive layout. Due to the tall grass cover it was difficult to determine the exact nature and extent of the stone walling. It date to the Late Iron Age and can probably be related to the type of sites identified on the old substation site. However, there seems to be much less of it than on the previous site, most occurring to the west of the substation site. Consequently, this position presents a much better proposition for the development of the substation. As indicated on the map in Fig. 3, it is only feature no. 1 that is in close vicinity of the substation site. Most features occur west, higher up-slope and seem to concentrate in the region of features no. 3 & 4, which is located well outside the development area.			
Significance		High on a regional level – Grade III	
Mitigation			
It seems as if some stone walling occur on the site or just outside the boundary of the substation site. During the site visit the vegetation was very high and dense, making it difficult to determine the boundaries of the features.			
Recommendation:			
It is recommended that the area is cleared by hand in order to determine the full extent of the stone walling and that it is documented (mapped and photographed) before construction takes place.			
Requirements			
A permit should be obtained from SAHRA for the possible impact on the site prior to the development taking place.			



5. RECOMMENDED MANAGEMENT MEASURES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

5.1 Objectives

- Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.
- The preservation and appropriate management of new discoveries in accordance with the National Heritage Resources Act (Act No. 25 of 1999), should these be discovered during construction.

5.1.2 Construction phase

General management objectives and commitments:

- To avoid disturbing sites of heritage importance; and
- To avoid disturbing burial sites.

The following shall apply:

- Known sites should be clearly demarcated in order that they can be avoided during construction activities.
- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

5.1.2 Operation phase

General management objectives and commitments:

- To avoid disturbing sites of heritage importance.

The following shall apply:

- Continued care should be taken to observe discovery of any sites of heritage significance during operation. Should any archaeological artifacts and palaeontological remains be exposed during operations, work on the area where the artefacts were found, shall cease immediately and the appropriate person shall be notified as soon as possible;
- Upon receipt of such notification, an Archaeologist or Palaeontologist shall investigate the site as soon as practicable. Acting upon advice from these specialists, the necessary actions shall be taken;
- Under no circumstances shall archaeological or palaeontological artefacts be removed, destroyed or interfered with by anyone on the site during operations; and
- The operator shall advise its workers of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51(1).

6. MITIGATION MEASURES

The aim of this survey was to analyse and recommend heritage management mitigation measures and monitoring programmes for sites, features and objects within the corridor of the proposed power line. Information on the identified sites is presented in Section 3. The significance of each feature was determined by application of the matrix presented in Appendix 1. This allows that similar features can be rated in similar manner. The following was found:

- A number of stone walled sites dating to the Late Iron Age were identified. On some the line just crosses over, whereas on others a tower structure will be erected (Section 3).
 - It is recommended that these sites are excavated by a suitably qualified archaeologist prior to the development taking place.

- It is also recommended that an archaeologist is in attendance when construction takes place on the sites.
- One old farmstead was identified and is viewed to have a low significance on a regional level. However, in many cases graves are found in the vicinity of such old homesteads. However, due to the dense vegetation surrounding the buildings, it was difficult to determine if there are any graves located here.
 - It is recommended that these features are isolated by demarcating a 50m buffer zone around it, taking the outside of the buildings as starting point for determining the buffer.
- A number of informal cemeteries and burial places of differing size were identified. They are viewed to have a high significance on a local level (Section 3).
 - All cemeteries/burial places are located inside the corridor for the power line, or very close to it. These features should be left in place and isolated by demarcating a 10m buffer around them starting from the outermost graves that can be located.

As a result of the large number of heritage sites that might be impacted on, as well as some issues with the construction of the Steelpoort substation on the originally selected site, Eskom has decided to move the substation to a new location a few hundred metres north of the original position. Consequently, this new site was surveyed on 29 January 2013, resulting in an amendment being added to the original report.

- Although some stone walling occurs in the region of the new substation, there seems to be much less of it than on the previous site, most occurring to the west of the substation site. Consequently, this position presents a much better proposition for the development of the substation. As indicated on the map in Fig. 3, it is only feature no. 1 that is in close vicinity of the substation site. Most features occur west, higher up-slope and seem to concentrate in the region of features no. 3 & 4, which is located well outside the development area.
 - It is recommended that the area is cleared by hand in order to determine the full extent of the stone walling and that it is documented (mapped and photographed) before construction takes place.

7. REFERENCES

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Maps

1: 50 000 Topocadastral maps

APPENDIX 1: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES

Significance

According to the NHRA, Section 2(vi) the **significance** of a heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value				
Is it important in the community, or pattern of history				
Does it have strong or special association with the life or work of a person, group or organisation of importance in history				
Does it have significance relating to the history of slavery				
2. Aesthetic value				
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group				
3. Scientific value				
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage				
Is it important in demonstrating a high degree of creative or technical achievement at a particular period				
4. Social value				
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons				
5. Rarity				
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage				
6. Representivity				
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects				
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class				
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.				
7. Sphere of Significance		High	Medium	Low
International				
National				
Provincial				
Regional				
Local				
Specific community				
8. Significance rating of feature				
1.	Low			
2.	Medium			
3.	High			

APPENDIX 2. RELEVANT LEGISLATION

All archaeological and palaeontological sites and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 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) 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.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Presenting archaeological sites as part of tourism attraction requires, in terms 44 of the Act, a Conservation Management Plan as well as a permit from SAHRA.

(1) Heritage resources authorities and local authorities must, wherever appropriate, co-ordinate and promote the presentation and use of places of cultural significance and heritage resources which form part of the national estate and for which they are responsible in terms of section 5 for public enjoyment, education, research and tourism, including-

- (a) the erection of explanatory plaques and interpretive facilities, including interpretive centres and visitor facilities;
- (b) the training and provision of guides;
- (c) the mounting of exhibitions;
- (d) the erection of memorials; and
- (e) any other means necessary for the effective presentation of the national estate.

(2) Where a heritage resource which is formally protected in terms of Part I of this Chapter is to be presented, the person wishing to undertake such presentation must, at least 60 days prior to the institution of interpretive measures or manufacture of associated material, consult with the heritage resources authority which is responsible for the protection of such heritage resource regarding the contents of interpretive material or programmes.

(3) A person may only erect a plaque or other permanent display or structure associated with such presentation in the vicinity of a place protected in terms of this Act in consultation with the heritage resources authority responsible for the protection of the place.