

**CULTURAL HERITAGE IMPACT ASSESSMENT OF
THE PROPOSED ISWEPE (MADLANZI/ERMELO),
COAL-LINK PROJECT, INCLUDING SUBSTATION
AND POWERLINE ALTERNATIVES,
MPUMALANGA PROVINCE.**



ACTIVE HERITAGE CC.

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LIST OF ABBREVIATIONS AND ACRONYMS

EIA	Early Iron Age
ESA	Early Stone Age
HISTORIC PERIOD	Since the arrival of the white settlers - c. AD 1836 in this part of the country
IRON AGE	Early Iron Age AD 200 - AD 1000 Late Iron Age AD 1000 - AD 1830
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998 and associated regulations (2006).
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999) and associated regulations (2000)
SAHRA	South African Heritage Resources Agency
STONE AGE	Early Stone Age 2 000 000 - 250 000 BP Middle Stone Age 250 000 - 25 000 BP Late Stone Age 30 000 - until c. AD 200

EXECUTIVE SUMMARY

A cultural heritage survey of the proposed Coal-Link Project at Iswepe (Madlanzi/Ermelo) Mpumalanga Province, including the various substation and powerline alternatives, identified four heritage features on the identified footprint. These include three Cemeteries and one Grave Yard. It is suggested that the developer maintains a buffer zone of 30m around Cemetery 1. The proposed powerlines at Cemetery 2 and the Grave Yard should be shifted at least 20m south of its present trajectories. Cemetery 3 occurs in the environs of Alternative 3. It would be easy to maintain a buffer zone of 35m around this informal Cemetery as it is situated more than 80m from the nearest communication line. Mitigation would be impractical and it is not supported by this study. There is no archaeological reason why the proposed development may not proceed on the remainder of the footprint as planned. However, attention is drawn to the South African National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) which requires that operations that expose archaeological or historical remains should cease immediately, pending evaluation by the provincial heritage agency in the Mpumalanga Province.

1 BACKGROUND INFORMATION ON THE PROJECT

The consultants were approached by Sivest to conduct a heritage impact assessment (HIA) of the proposed Coal-Link Project at Iswepe (Madlanzi/Ermelo), Mpumalanga Province.

According to the National Heritage Resources Act, 1999 (NHRA) (Act No. 25 of 1999), the heritage resources of South Africa include:

- a. places, buildings, structures and equipment of cultural significance;
- b. places to which oral traditions are attached or which are associated with living heritage;
- c. historical settlements and townscapes;
- d. landscapes and natural features of cultural significance;
- e. geological sites of scientific or cultural importance;
- f. archaeological and palaeontological sites;
- g. graves and burial grounds, including-
 - i. ancestral graves;
 - ii. royal graves and graves of traditional leaders;
 - iii. graves of victims of conflict;
 - iv. graves of individuals designated by the Minister by notice in the Gazette;

- v. historical graves and cemeteries; and
- vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- h. sites of significance relating to the history of slavery in South Africa;
- i. movable objects, including-
 - i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - ii. objects to which oral traditions are attached or which are associated with living heritage;
 - iii. ethnographic art and objects;
 - iv. military objects;
 - v. objects of decorative or fine art;
 - vi. objects of scientific or technological interest; and
 - vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

2 SCOPE OF WORK

This study aims to identify and assess the significance of any heritage and archaeological resources occurring on the site. Based on the significance, the impact of the development on the heritage resources will be determined and appropriate actions to reduce the impact on the heritage resources put forward. In terms 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:

- a. its importance in the community, or pattern of South Africa's history;
- b. its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- c. its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- d. its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- e. its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;

- f. its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- g. its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- h. 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
- i. sites of significance relating to the history of slavery in South Africa.

Table 1. Background information

Consultants:	Active Heritage cc (Frans Prins & Sidney Miller) for Sivest
Type of development:	<p>Construction of powerlines leading from Iswepe to the Duma and Nzalo substations for a distance of approximately 10km. Eskom has confirmed the need to add a 3rd substation and associated line alternative.</p> <p>Technical information: The substation site will be the same as for the other 2 Tx Substations (Duma and Nzalo). This option will have:</p> <ul style="list-style-type: none"> Refurbish approx. 14km of existing 88kv Line to Iswepe substation. (The same 3 construction strategies apply) Construct 1 km new 88 kV Line Construct 400m new 400kV Line. <p>The following power line alternative changes has been proposed:</p> <p><u>Substation Alternative 1 to Existing Iswepe Substation</u></p> <ol style="list-style-type: none"> 1. Power Line Alternative 1A (new build from Substation Alternative 1 until the connection of existing 88kv Line - given in Figs 1a, 1b and 1c as Power Line Alternative 3 Refurb - , from there onwards refurbish existing line up to Existing Iswepe Substation.) 2 .Power Line Alternative 1C (new build from Substation Alternative 1 until the connection of existing 88kv Line - given in the Figs 1a, 1b and 1c as Power Line Alternative 3 Refurb - , from there onwards refurbish existing line up to Existing Iswepe Substation.) 3. Power Line Alternative 2A (new build from Substation Alternative 1 until the connection of existing 88kv Line - given in the Figs 1a , 1b, and 1c as Power Line Alternative 3 Refurb - ,

	<p>from there onwards refurbish existing line up to Existing Iswepe Substation.)</p> <p>For all three of the Substation 1 alternatives it will be a new build from Substation Alternative 1 until the connection of existing 88kv Line - given in Figs 1a, 1b. and 1c as Power Line Alternative 3 Refurb - , from there onwards refurbish existing line up to Existing Iswepe Substation.</p> <p>There are no routes that are entirely new, they are all made up of partly new power line and some refurbished power line.</p> <p><u>Substation Alternative 3 to Existing Iswepe Substation</u></p> <p>1. Power Line Alternative 3 (new section and existing section to be refurbished) Power Line Alternative 3 has a very small section of new build and then it follows the existing line all the way to the existing Iswepe Substation, this portion of the line would be refurbished.</p>
Rezoning or subdivision:	Not applicable
Terms of reference	To carry out a Heritage Impact Assessment
Legislative requirements:	The Heritage Impact Assessment was carried out in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and following the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA).

1.1. Details of the area surveyed:

Footprint: Iswepe is a small village located approximately 60km to the south of Ermelo adjacent to the N2 in Mpumalanga. The substation is situated approximately 5km to the north west of Iswepe. The proposed powerlines run from the substation for approximately 10km in a southern direction (Alternative Routes 1 & 2). Alternative Route 3 runs from Iswepe in a western direction for approximately 10km (Fig 1).

Current land use: Open veld and commercial farms. In general the area has been farmed extensively by dry-field crop production for a long period as can be illustrated by Google Earth images dating to 2011, as well as by Pine species plantation farming by Mondi for many years (Fig 10).

3 BACKGROUND TO ARCHAEOLOGICAL HISTORY OF AREA

Definition

As defined in Article 1 of the World Heritage Convention Act No. 49 of 1999: Cultural heritage is considered a monuments, architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science, groups of buildings, groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science, sites, works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.”

The project area including the greater Ermelo region has been poorly surveyed for heritage sites in the past. The SAHRA national register of heritage sites list no sites for the region. The majority of archaeological research has taken place to the immediate east and north of the study area – an area which is exceptionally rich in Stone Age, Iron Age sites, and historical features. Nevertheless it is known from historical literature that San hunter-gatherers as well as Nguni and Sotho-speaking farmers occupied the area in the recent past. The area was also heavily affected during the Boer War of 1899-1901 and it is to be expected that many old farmsteads and associated grave yards may occur on farms in the region.

Archaeology and the prehistoric past

Archaeological sites in Mpumalanga provide evidence for the existence of humanity going back 1, 7 million years. These sites offer insights into different phases of stone-age society, including Early, Middle, and Later Stone Age societies. It also provides a rich record of the settlement of the region by iron-age agro-pastoralists around 1600 years ago. The majority of the known sites, however, occur to the immediate north and east of the project area. Some of the sites provide tantalising clues about the relationship between these African farmers and the San hunter-gatherers of the region. The enormously evocative and internationally renowned Lydenburg Heads, which has been found to the north east of the project area and dating from approximately 900AD, have been linked to elaborate initiation ceremonies amongst people whose descendants

became known as the Shona. Four centuries later the Shona also produced the spectacular Zimbabwe-styled citadels of the Limpopo Province and Zimbabwe.

Abandoned mineshafts, moribund metal workings and excavated trade goods reveal a thriving industry in iron, tin, copper bronze and ochre. The presence of myriad exotic beads and marine shells testify to thriving trade networks that linked regional patterns of trade to the coast and to the far interior. Mpumalanga has, for a thousand years and more, been a vital trading channel; the archaeological record suggests that it was also a vibrant zone of interaction where diverse communities collided and co-operated and experienced forms of osmosis which indicate that the idea of fixed cultural or linguistic boundaries is incorrect. Terms like Nguni and Sotho, for example, present at best outer points on a continuum of social forms rather than discrete cultural groups. Cultural and economic interaction and exchange also gave rise to new forms of social division and political organisation including the emergence of powerful states which long preceded and probably contributed to the processes which fed into the later rise of the Zulu kingdom. Scores of elaborate stone-walled settlements, numerous terraced hillsides, and huts built from stone which cover the countryside to the immediate north and east of the project area and date back hundreds of years, bear witness to an extraordinary past of which little is known outside of the academia (Esterhuysen & Smith 2007).

Rock Art

A particularly significant and visually impressive aspect of Mpumalanga's heritage is the abundant rock art to be found all over the province. Some of these sites occur near Ermelo, Carolina, and Lothair to the immediate north of the project area. These include both rock paintings and rock engravings. These vivid images provide insight into the religious beliefs, aspirations and anxieties of their makers. It also allows for a dialogue between present and pre-existing forms of identity and understanding of natural and spiritual worlds. Part of what is special about the rock art of Mpumalanga is its unique diversity, with an array of sites belonging to hunter-gatherer, herder and farmer communities. The most prolific rock art in the province provides reminders of the San (hunter-gatherers), the oldest occupants of the area. These are fine line paintings done by brush, most frequently of animals and human figures which according to some researchers often represent the intersection of material and spiritual worlds. In fact, it is often maintained that the majority of the art reflects the spiritual journey of San medicine people in the invisible realm.

Recent research has also suggested that Khoekhoen (herder) art exists within the later San sequences in the area. This is an art composed mainly of geometric designs in both painted and engraved forms and posing fascinating questions about the presence of Khoi herders in the region and their interaction with other groups. The final form of rock art was the work of the various iron-age farmer communities who settled there from 400AD. Art categorised as Sotho-Tswana, which is applied by finger and is predominantly white in colour, is predominantly associated with male initiation, but during colonial times such art also becomes associated with conflict and domination. Rock art categorised as Nguni, on the other hand, seems to be entirely engraved and dominated by representations of the layout of homesteads. The farm Boomplaats has the finest known examples of this form of rock art in the region. It is clear that rock art constitutes an extraordinarily rich part of the heritage of the province, but at present it remains under-researched, undervalued, insufficiently protected and inadequately publicised (Smith & Zubieta 2007).

Oral History

Accounts of the initial waves of settlement of the region have to be reconstructed from the material record i.e. archaeology. But there are rich seams of oral tradition stretching back at least to the 15th century, which, if used critically and in conjunction with other forms of evidence, enable researchers to start to populate the historical landscape with the forebears of contemporary communities, to periodise movement, to outline patterns of conflict and co-operation, to glimpse changing forms of trade and to chart, from distinctive vantage points, the rise of new political systems such as the Pedi, Ndzundza and Swazi polities (Delius 2007). Nguni as well as Sotho-speaking farmers occupied the immediate environs of the project area in the historical past. However, the systematic identification of archaeological sites associated with these historical processes still need to be undertaken.

The Historical Period

The arrival of the first Boer settlers in 1854 heralded a new era in Mpumalanga and by implication the project area. The following four decades were to see bitter struggles over land, labour, and political control. Berlin missionary activity after 1860 added an important religious dimension to this contestation and these struggles left an indelible mark on the division of land and the nature of society and religious belief in the region. But perhaps the most singular feature of the history of Mpumalanga is

that it was the location of three critically important frontier zones. Boers competed for power and position with the Pedi, Swazi and Zulu kingdoms. They also confronted a range of internal forms of resistance and revolt. In the 1870s these frontiers played a central role in some of the most important conflicts of the 19th century. Wars between the Pedi and the Boers in 1876, the Zulu and the British in 1879, and the Pedi and the British later in the same year. They also played a decisive part in shifting the balance of power in South Africa in favour of white settlers and colonial control.

The modern landscape of Mpumalanga is dotted with the sites of crucial battles and the remnants of the elaborate fortified strongholds crafted by African and mission communities from a combination of natural features and stone walling. In addition, the economic history of Mpumalanga and South Africa is intricately linked with the discovery of precious minerals and the subsequent gold rush of the late 19th century. Early mining towns such as Pilgrims Rest and Baberton situated towards the east of the project area have become heritage tourism icons. Together, these towns contain almost 20 provincial heritage sites. However, most of these sites were identified along Eurocentric criteria and heritage features highlighting the contribution of indigenous communities are sadly lacking. While some of these sites have been recorded by local museums and researchers, many remain to be recognised and documented. Unfortunately those historical sites that have made it onto the heritage map are rarely effectively conserved or managed. In addition, they are often presented in a rather parochial manner and are rarely situated within the wider context of South African history. Neither are they linked one to another in ways which would allow an interested visitor to explore the geography and material remains of this deeply moving and profoundly important history. Although Mpumalanga is famous for the vibrant and intricate arts and crafts of local communities, many of those who admire and even purchase these artefacts are unaware of their connection to the bleaker world of battlefields. Some of the most striking of these forms of artistic expression, such as Ndzundza Ndebele dress, beadwork and wall painting, have been partly shaped by a history of defeat and dispossession.

The best-known military memorials in Mpumalanga recall bloody clashes between Boer and Briton and for many decades after its conclusion this conflict was represented as 'a white man's war'. While this version reflected the official policy of

both parties, theory and practice diverged dramatically, as is so often the case in history. It is now widely recognised that black people, including the San, played a broad range of roles in the war. As a result the term South African War has replaced the earlier more restricted name – the Boer War. But the central part black people played in the war in Mpumalanga have not received the attention it deserves in existing texts, museums and monuments (Mbenga 2007). Nevertheless, the Chrissies Meer and Ermelo area to the immediate north of the project area has seen San collaboration with Boer commando's and families during the South African War (Prins 1999). However, it is uncertain to what extent such actions also extended towards the present project area in the past.

4 BACKGROUND INFORMATION OF THE SURVEY

4.1 Methodology

A desktop study was conducted of the SAHRA inventory of heritage sites. The SAHRIS website was also consulted. The existing database does not indicate any heritage sites in the project area.

A ground survey of the proposed developments following standard and accepted archaeological procedures was conducted. The area was walked by foot and hotspot areas identified by the studying of aerial photographs covering the footprint was also visited.

4.2 Restrictions encountered during the survey

4.2.1 Visibility

Visibility during the site visit was good.

4.2.2 Disturbance.

No disturbance of any potential archaeological stratigraphy or heritage features has been noted.

4.3 Details of equipment used in the survey

GPS: Garmin Etrek

Digital cameras: Canon Powershot A460

All readings were taken using the GPS. Accuracy was to a level of 5 m.

5 DESCRIPTION OF SITES AND MATERIAL OBSERVED

5.1 Locational data

Province: Mpumalanga

Towns: Ermelo and Iswepe

5.2 Description of the general area surveyed

The footprint does not form part of any known cultural landscape. However, the archaeological survey of the footprint identified four heritage sites. These include three Cemeteries and one Grave Yard. The context of these sites are discussed in Table 2 (below).

5.3 Description of heritage sites

Table 2. Heritage sites located during the ground survey.

No	Heritage site category	Brief description	Significance (Table 3)	Mitigation	GPS Latitude and Longitude
1	Cemetery 1 (Figs 2 & 5)	This cemetery is situated adjacent to the northern portion of the footprint (Fig 1). It is located approximately 500m from the proposed powerline development. It consists of approximately 250 individual graves. The cemetery contains both marked and unmarked graves.	The cemetery contains both recent graves and graves older than 60 years. They are therefore protected by heritage legislation. It is rated as of medium significance locally (Table 3).	Strictly maintain a 50m buffer zone around the cemetery. No disturbance is allowed within the buffer zone. In order to allow for this buffer zone it is also suggested that the developer shift the proposed substation and associated powerline at least 50m to the east of its present trajectory. The developer is also encouraged to erect a sturdy fence with an	S 26° 49'10.25" E 30° 28' 32.68"

				entrance gate to the Cemetery in order to minimise potential damage to this site. It would be impractical to motivate for mitigation as it would entail reburial and exhumation of nearly 250 graves. A second phase heritage impact assessment and a prolonged community consultation process will have to be initiated (Appendix 1).	
2	Cemetery 2 (Figs 3 & 6)	This Cemetery is situated in the north western section of the footprint approximately 220m to the west of the proposed powerline trajectory. (Figs 3 & 6). The Cemetery covers an area of approximately 50m x 30m. It contains approximately 100 individual grave. The cemetery contains both marked and unmarked graves (Fig 7).	The cemetery contains both recent graves and graves older than 60 years. They are therefore protected by heritage legislation. It is rated as of medium significance locally (Table 3).	Strictly maintain a 50m buffer zone around the cemetery. No disturbance is allowed within the buffer zone. In order to allow for this buffer zone it is also suggested that the developer shift the proposed powerline at least 50m to the east of its present trajectory. It would be impractical to motivate for mitigation as it would entail reburial and exhumation of nearly 100 graves. A second phase heritage impact assessment and a prolonged community consultation process will have to be initiated (Appendix 1).	S 26° 50' 29.06" E 30° 26' 44.89"
3	Grave yard (Figs 3 & 7, 8)	This grave yard consists of four individual graves. It covers an area of approximately 10m x 12 m. The site is	The grave yard contains both recent graves and graves older than 60 years. They are therefore protected by heritage	Strictly maintain a 50m buffer zone around this site. This site is situated approximately 250m to the north of the	S 26° 50' 27.96" E 30° 26' 31.23"

		<p>situated approximately 250m to the north of the proposed power line trajectory</p>	<p>legislation. It is rated as of medium significance locally (Table 3).</p>	<p>proposed powerline trajectory. It is suggested that the powerline trajectory be shifted at least 50m to the south of its present projected position. There is no need for mitigation. However, a second phase heritage impact assessment will be called for, to arrange for mitigation, should the developers decide that it is not possible to shift the powerline further south.</p>	
4	Cemetery (Figs 4, 8 & 9)	<p>This informal cemetery is situated in the close environs of Alternative Route 3. It consists of 14 individual graves. Most of these graves are unmarked and are indicated by stone heaps. However, one formal grave with a large headstone does occur in the cemetery (Fig 9). The cemetery covers an area of 17m by 11m and it is demarcated by a wire fence. The site is situated approximately 250m to the north of the proposed power line trajectory</p>	<p>This informal cemetery contains both recent graves and graves older than 60 years. They are therefore protected by heritage legislation. It is rated as of medium significance locally (Table 3).</p>	<p>Strictly maintain a 50m buffer zone around this site. This site is situated approximately 85 m to the west of the closest communication line and 586m to the north east of the proposed substation. There is no need for mitigation. However, a second phase heritage impact assessment will be called for, to arrange for mitigation, should the developers decide that it is not possible to shift the powerline further south</p>	<p>S 26° 50' 6.78" E 30° 20' 45.6"</p>

5.4 Dating the findings

The three cemeteries and grave yard are relatively modern with graves older and younger than 60 years.

5.5 Summary of findings

Two cemeteries and one grave yard was located during the survey. The footprint does not form part of any known cultural landscape.

6 STATEMENT OF SIGNIFICANCE (HERITAGE VALUE)

6.1 Field Rating

The three cemeteries and grave yard have been rated as Generally Protected B (Table 3). They are of medium significance and the sites need to be recorded before destruction is allowed. It will also be necessary to arrange for a second phase heritage assessment by a grave relocation expert.

Table 3. Field rating and recommended grading of sites (SAHRA 2005)

Level	Details	Action
National (Grade I)	The site is considered to be of National Significance	Nominated to be declared by SAHRA
Provincial (Grade II)	This site is considered to be of Provincial significance	Nominated to be declared by Provincial Heritage Authority
Local Grade IIIA	This site is considered to be of HIGH significance locally	The site should be retained as a heritage site
Local Grade IIIB	This site is considered to be of HIGH significance locally	The site should be mitigated, and part retained as a heritage site
Generally Protected A	High to medium significance	Mitigation necessary before destruction
Generally Protected B	Medium significance	The site needs to be recorded before destruction
Generally Protected C	Low significance	No further recording is required before destruction

7 RECOMMENDATIONS

- Maintain a buffer of 50m around Cemetery 1
 - Shift the proposed substation and powerline trajectory at least 50m to the south of its present trajectory
 - Erect a sturdy fence with an entrance gate on the western border of Cemetery 1.
-
- Maintain a buffer of at least 50m around Cemetery 2
 - Shift the proposed powerline trajectory at least 50m south of its present trajectory
 - Erect a sturdy fence with an entrance gate on the southern border of Cemetery 2.
-
- Maintain a buffer zone of at least 50m around Grave Yard 1.
 - Shift the associated powerline at least 50m to the south of its present trajectory.
 - Erect a sturdy fence with an entrance gate on the southern border of Grave Yard 1
-
- Maintain a buffer of 50m around Cemetery 4 (Alternative Route 3)
 - Replace existing fence with a sturdy fence including entrance gate.

8 IMPACT OF PROPOSED DEVELOPMENT ON HERITAGE RESOURCES

Table 4. Impact of proposed development on heritage resources

HERITAGE	
HERITAGE	Three cemeteries and one grave yard occurs on the footprint
EXTENT (GEOGRAPHICAL)	Localised – all these sites are situated on the footprint
DURATION	Not applicable
PROBABILITY	Not applicable
REVERSIBILITY	Not applicable
IRREPLACEABLE LOSS OF RESOURCES	Excavation equals destruction in heritage conservation terms. Heritage sites cannot be renewed or rehabilitated as in biodiversity conservation management
CUMULATIVE IMPACTS	None
SIGNIFICANCE RATING – PRE MITIGATION	Medium to high rating. The sites must be recorded before mitigation. A second phase heritage impact assessment will be necessary and a permit must be obtained from SAHRA to allow possible rescue excavation and/or grave relocation.
MITIGATION MEASURE	Not applicable in this instance as it would be possible to shift the powerlines slightly in order to accommodate heritage conservation principles. However, National Heritage Act requires that any operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.
SIGNIFICANCE – POST MITIGATION	Not applicable

9 MAPS AND PHOTOGRAPHS

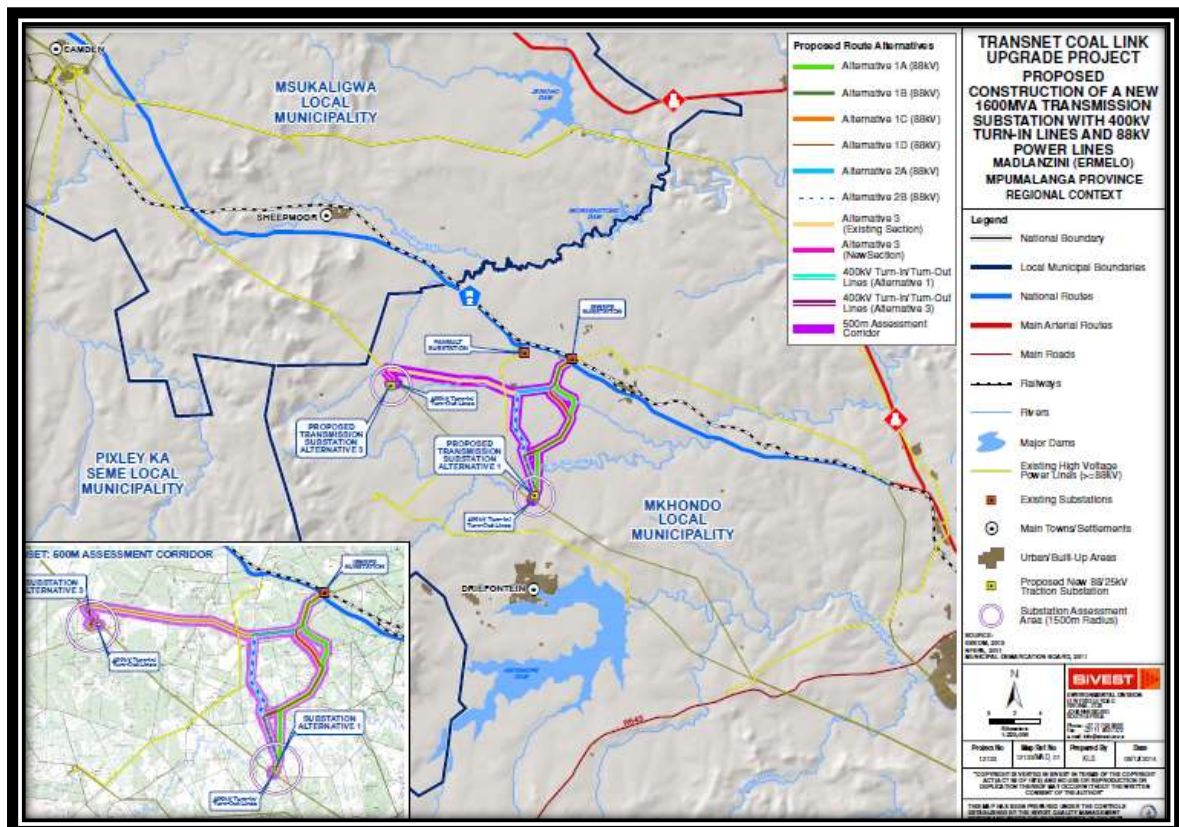


Figure 1a. Map showing the location of the Madlanzini Substation and possible powerline routes, including Alternative Routes, adjacent to the N2 in Mpumalanga Province.

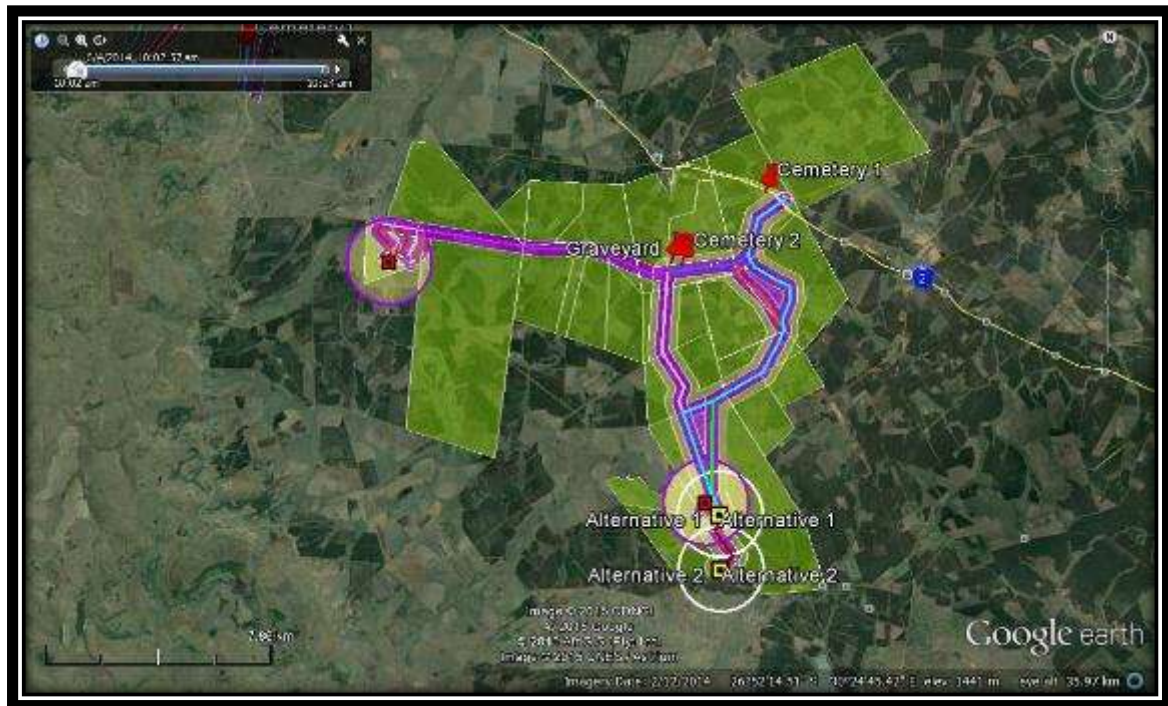


Figure 1b. Google Earth map of the project area including the alternative powerline routes.



Figure 1c. Google Earth Map showing close-up of the alternative proposed routes.

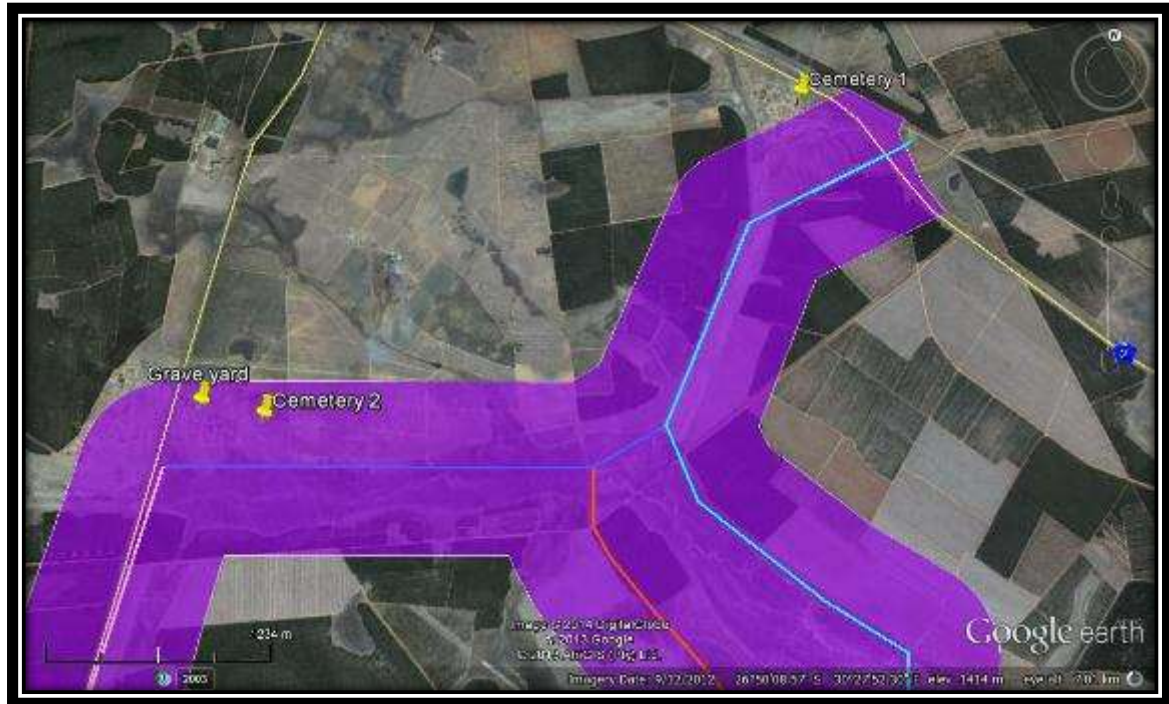


Figure 2. Google aerial photograph showing the location of cemeteries and grave yard identified on the northern and north western sections of the footprint.



Figure 3. Google aerial photograph showing the location of Cemetery 1 adjacent to the northern section of the footprint.

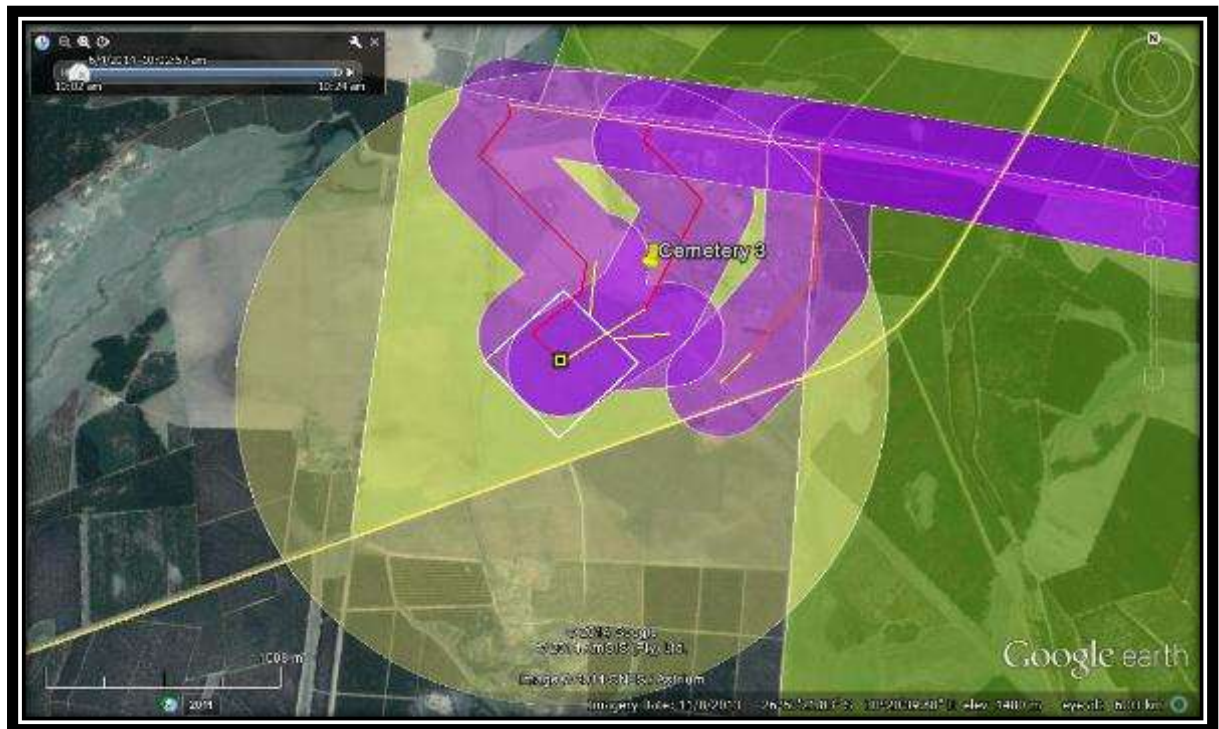


Figure 4. Google aerial photograph showing the location of Cemetery 3 in the near environs of the proposed substation on Alternative Route 3.



Figure 5. Cemetery 1



Figure 6. Cemetery 2.



Figure 7. Grave Yard 1.



Figure 8. Cemetery 3 near Alternative Route 3.



Figure 9. Formal grave in Cemetery 3.



Figure 10. General view of the project area.

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APPENDIX 1

RELOCATION OF GRAVES

Burial grounds and graves older than 60 years are dealt with in Article 36 of the NHR Act, no 25 of 1999. Legislation also applies to graves younger than 60 years. These include: a) the Human Tissues Act (Act No.65 of 1983 and as amended), b) the Removal of Graves and Dead Bodies Ordinance (Ord. No. 7 of 1925) and c) the Exhumations Ordinance (Ord. No. 12 of 1980)

Below follows a broad summary of how to deal with grave in the event of proposed development.

- If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.
- If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

- Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.
- Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.
- Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.
- During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days

so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.

- Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been received, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any items found in the grave