

Heritage Walkthrough

**FOR THE SECOND 40 KM OF THE MASA NGWEDI TRANSMISSION POWERLINE PROJECT (120
KM) FROM LEPHALALE PAST THABAZIMBI IN LIMPOPO PROVINCE**

Prepared For
Senkosi Consulting
By



HERITAGE

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EXECUTIVE SUMMARY

Site name and location: The Masa Ngwedi power line project consists of two power lines running from Lephalale past Thabazimbi in Limpopo Province. This report focuses on Section 2 of the proposed alignment that starts from the farm Turfpan to Paarl (approx. 39km). The power line corridor consists of a 400 kV line and a 765 kV line. The end tower for section 2 for the 765kV power line is tower No. 179; the end tower of the 400kV power line is tower 175.

Purpose of the study: Heritage Walk through of the proposed alignment focusing on tower positions to determine the presence of cultural heritage sites and the impact of the proposed tower positions on these non-renewable resources.

1:50 000 Topographic Map: 2427 AB, AD and CB.

EIA Consultant: Senkosi Consulting

Developer: Eskom Holdings Ltd

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Findings of the Assessment:

The impacts to heritage resources by the proposed development are considered to be low. Five sites were recorded during the walk through for this section of the project. The sites consist of a low density scatter of ex situ MSA material (Site 1) on a turf plain, a modern (not older than 60 years) farm labourer dwelling, a cemetery (Site 3) that is located 37 meters to the west of the proposed power line and the ruins (Site 4 and 5) of two farm labourer dwellings. None of the sites will be directly impacted on by tower positions but a secondary impact is possible during bush clearing on the sites. Therefore some recommendations are made to protect the sites from accidental damage during the construction phase of the project and are discussed in Section 8 of this report.

No cultural landscape elements were noted. An independent visual assessment was conducted as part of the EMPr for the project and therefor visual impacts are not addressed as part of the walk through.

If the recommendations made in this report are adhered to and based on the approval from SAHRA no red flags are identified and no deviation or micro adjustments of the line or tower positions are necessary.

Disclaimer: *Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Heritage Contracts and Archaeological Consulting CC and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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Annexure A –765 kV Heritage Summary

Annexure B – 400 kV Heritage Summary

Annexure C – Track logs of areas covered

ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMPR: Environmental Management Programme
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency
SAHRIS: South African Heritage Resources Information System

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

1 BACKGROUND INFORMATION

Heritage Contracts and Archaeological Consulting CC has been contracted by Senkosi Consulting to conduct a heritage walkthrough for the proposed Masa Ngwedi Power Line project, from Lephalale past Thabazimbi, Limpopo Province. The report forms part of the Environmental Management Programme Report (EMPR) for the proposed Masa Ngwedi project. The project consists of two power lines running from Lephalale to Thabazimbi in Limpopo Province. This report focuses on Section 2 of the proposed alignment that starts from the farm Turfpan to Paarl (approx. 39km). The power line corridor consists of a 400 kV line and a 765 kV line. The end tower for the 765kV power line is tower No. 179; the end tower of the 400kV power line is tower 175.

The aim of the study is to survey the proposed tower positions to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, review of the HIA for the proposed project; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey five sites of heritage significance were identified within the power line corridor. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA for review.

1.1 Terms of Reference

Field study

Conduct a field study to: a) visit the proposed tower positions to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points of identified as significant areas; c) determine the levels of significance of the various types of heritage resources affected by the proposed towers.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with the relevant legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- » Identify any heritage resources, which may be affected;
- » Assess the nature and degree of significance of such resources;
- » Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- » Assess the negative and positive impact of the development on these resources;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2)(b) of the NEMA and Sections 39(3)(b)(iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the EIA, BIA/EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is a legal body, based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIAs are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for from SAHRA by the client before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999 is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare.

Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

1.3 Description of Study Area

1.3.1 Location Data

The proposed 120 km transmission lines is located approximately 36 km south west of Lephalale (S23 47 59.2 E27 24 46.0) following an existing power line south, ending approximately 6 km west of Amandelbult (S24 49 55.8 E27 14 13.7), Limpopo Province. The second 40 km of the project that this report deals with traverses 11 farms. The farms that form part of this study are mostly privately owned game and cattle farms and consist of the following farms Turfpan 54 KQ, Springbokvlei 55 KQ, Ysterpan 89 KQ, Driehoek, Blinkwater 88 KQ, Krugerspan 86 KQ, Franksvley 100 KQ, Rooibokvlei 102 KQ, Rietkuil 101 KQ, Buffelsdrift 127 KQ, Paarl 124 KQ. Very few drainage lines occur in the area and all are non-perennial. The Crocodile River is the main drainage course for the area (to the south of this section of the power line) running in a north-west to south east direction linking up with the Limpopo river.

The study area falls within a Savannah Biome as described by Mucina *et al* (2006) with the vegetation described as Western Sandy Bushveld in the north and Dwaalboom Thornveld in the south. The study area is characterised by deep Khalahari windblown sand as well as turf. The area is relatively flat and featureless (no hills or pans) gently sloping towards major tributaries. The geology of the larger area consist of sandstone and mudstone of the Matlabas Subgroup, Waterberg Group; undifferentiated shale, sandstone and coal of the Karoo Sequence and also alluvium.

1.3.2. Location Map

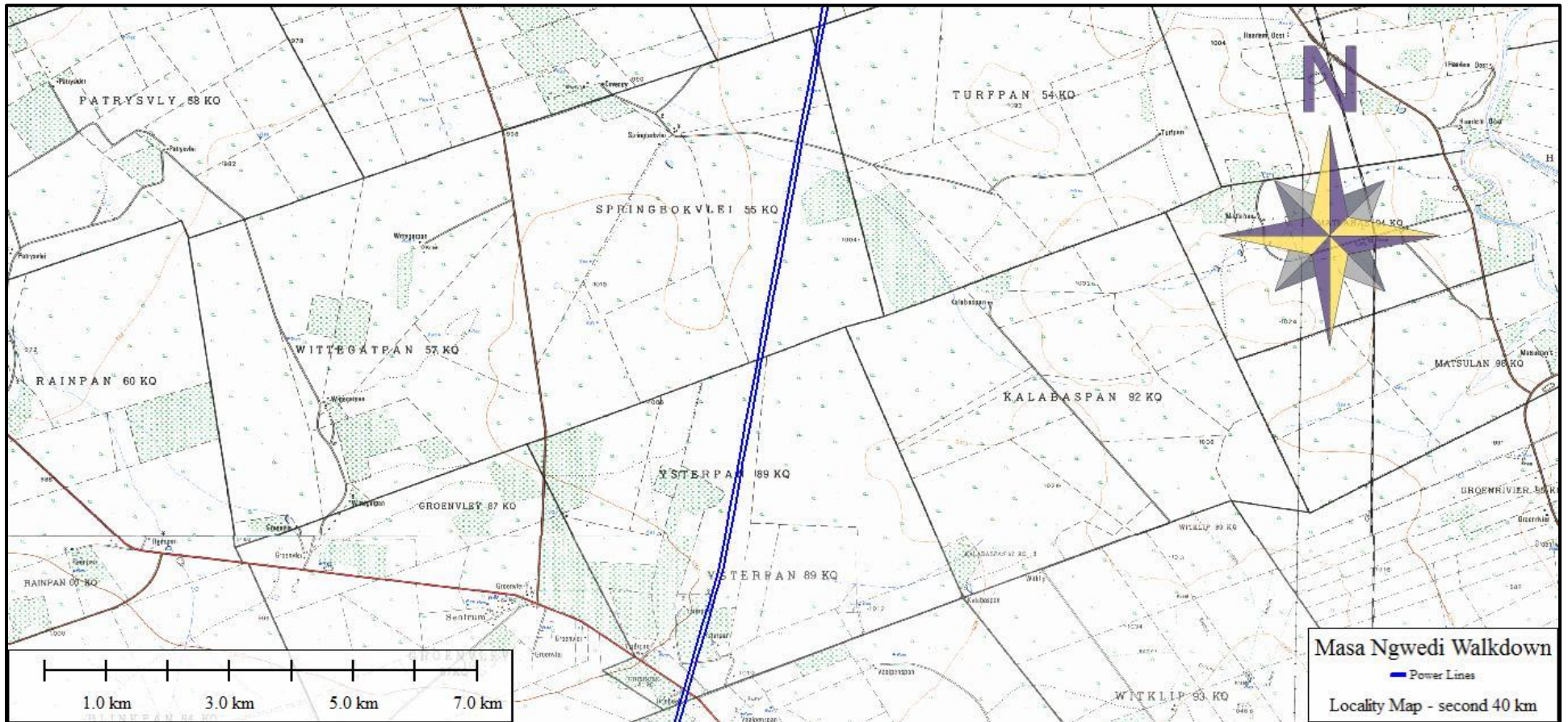


Figure 1: Position of power line on the farms Turfpan, Springbokvlei and Ysterpan.

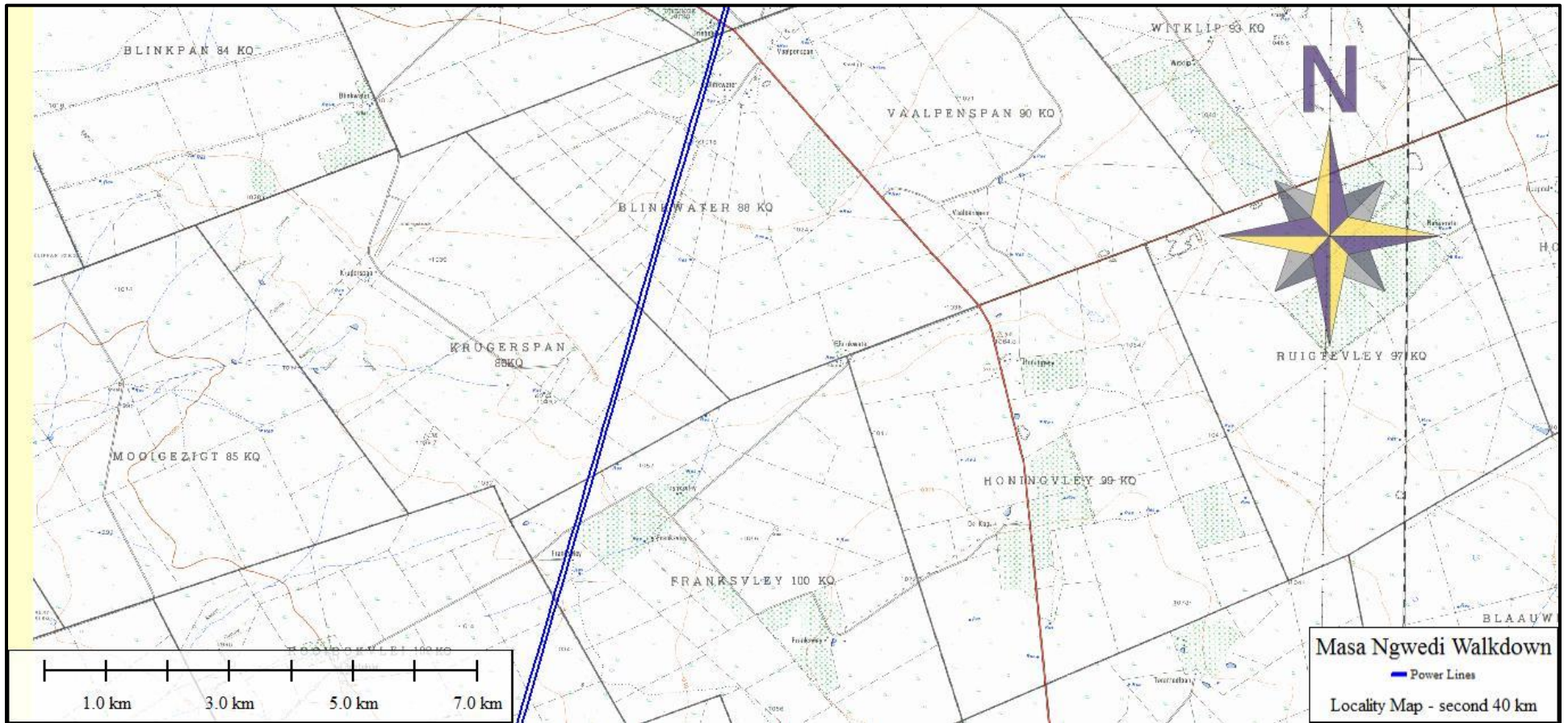


Figure 2: Position of the power line on the farms Driehoek, Blinkwater, Krugerspan, Roibokvlei and Franksvley.

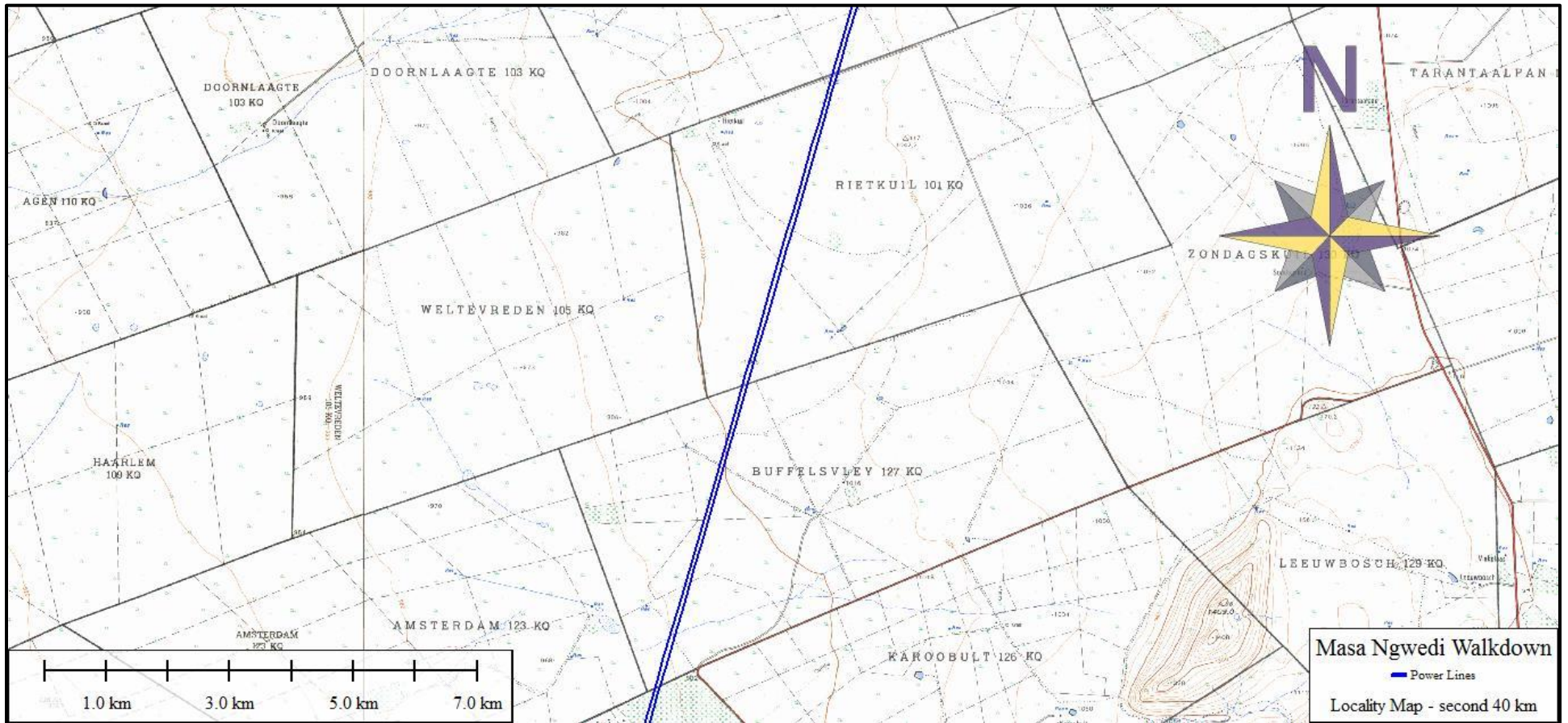


Figure 3: Position of the power line on the farms Rooibokvlei, Rietkuil and Buffelsvley .

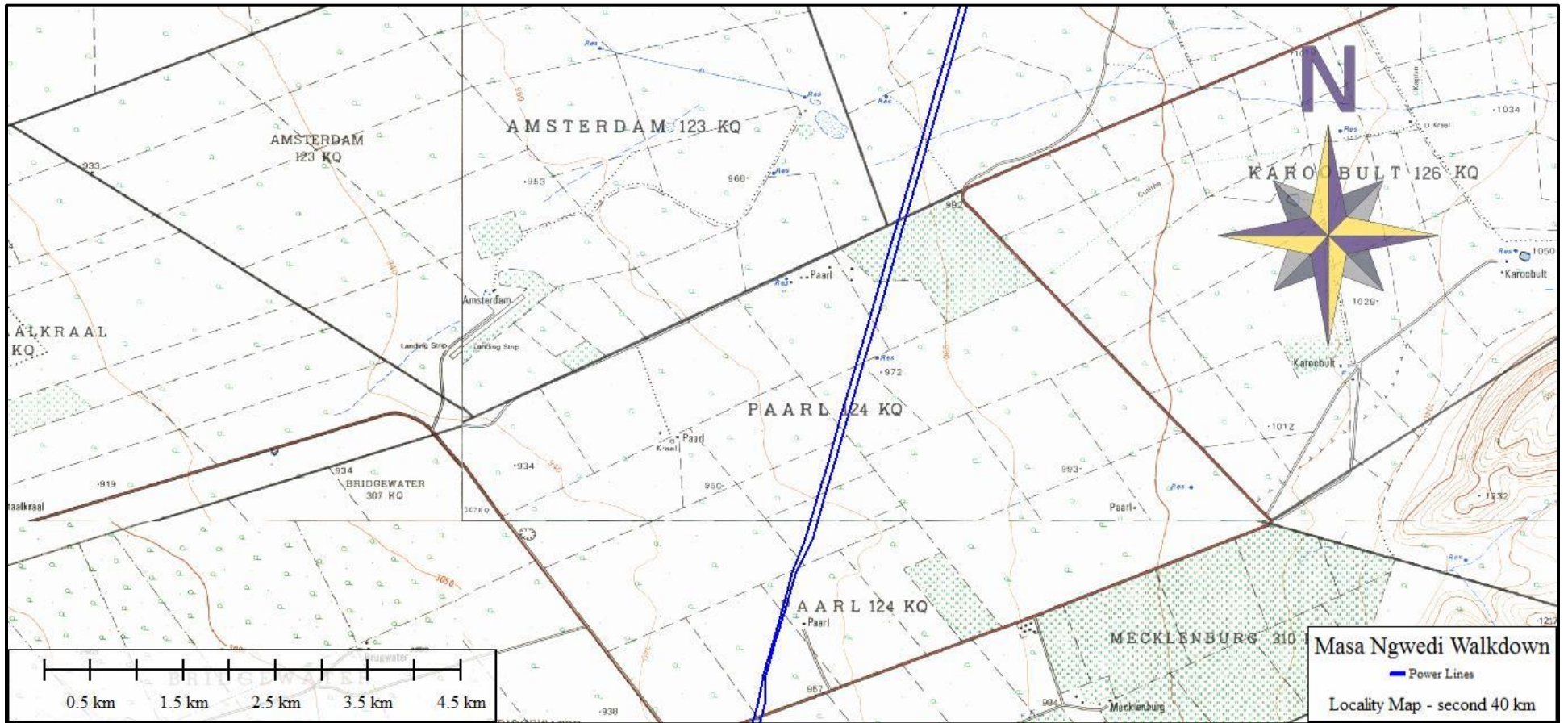


Figure 4: Position of the power line on the farm Paarl.

2. APPROACH AND METHODOLOGY

The methodology used for walk through of transmission lines is different to the methodology for projects where AIA's or HIA's are needed. A Phase 1 HIA (Pistorius 2009) was conducted as part of the EIA and subsequently as part of the construction EMP the walk through is conducted. Since the initial HIA for the project dealt with obtaining desktop information to contextualise the study area, this is not repeated during the walk through phase. However to understand the heritage context of the study area the following phased approach was utilised for this project.

2.1 Phase 1

Phase 1 included a study of the extensive 2009 HIA for the project. This was complimented by consulting the archaeological database at Wits and previous CRM reports (SAHRIS) conducted in the area after the HIA report was done by Pistorius. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located; these locations were marked and visited during the field work phase. The database of the Genealogical Society was consulted to collect data on any known graves in the area.

2.2 Phase 2 - Physical Surveying

A field survey of the linear development of approximately 39 km including a buffer zone of approximately 110 m was conducted by a group of specialists who assisted in locating graves sites and sites of archaeological significance. The heritage component focussed on the proposed tower positions while giving special attention to drainage lines, hills and outcrops, high lying areas and disturbances in the topography. The proposed tower positions were surveyed on foot by a professional archaeologist on 4 to 7 November and the 14th of November 2013 and again on the 3rd and 4th of March 2014.

Sites recorded was plotted on 1:50 000 maps and their GPS co-ordinates noted. Digital photographs were taken at all the sites.

2.3. Restrictions

Due to the fact that most cultural remains may occur below surface, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey. Thick vegetation in certain portions restricted accessibility to the tower positions as well as archaeological visibility. Only the proposed power line corridor was surveyed as indicated in the location maps, and not the entire farm that the power line traverses. The survey was impeded by the presence of dangerous animals (buffalo, rhinoceros and lions etc.) on certain farms. At the time of the walk through the location of construction camps and access routes were not available and were not assessed. The 8 meter construction road within the corridor was however assessed.

The description of the proposed project, provided by the client, is assumed to be accurate as well as the results of the 2009 HIA. Very little academic research has been done in the greater study area of the proposed power line.

Although Heritage Contracts and Archaeological Consulting CC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

Any changes or deviations of the line or tower positions will have to be assessed separately.

3 NATURE OF THE DEVELOPMENT

Eskom is expanding transmission and generation infrastructure to ensure that there is sufficient generation capacity to sustain the country's economic growth. Transmission integration studies indicated that the optimal solution to minimise the number of planned transmission power lines from Mmamabula and Medupi Power Stations was to couple the two power stations to the new Masa substation near Lephalale.

In order to transmit the power to load centres in the Rustenburg/Brits area, Gauteng and further south, Eskom Transmission plans to build six new extra high voltage transmission lines from Masa (previously called Delta substation) to a new substation Selomo (previously Epsilon) near Potchefstroom.

This heritage report concentrates on the proposed transmission power lines to be constructed between Masa and Ngwedi substations. This transmission project consists of two lines – 1x 765kV power line and 1x 400kV power line – the total servitude is 110m wide. This project forms part of the Mmamabula/Medupi Transmission Integration Project

Servitude Width:

The servitude width for both power lines is 135m to which the construction activities are limited. An 8m strip shall be cleared flush with the ground to facilitate access and construction, except where tower erection and stringing requires more space. Any extra space outside the servitude shall be negotiated with the relevant Landowner and approved by Eskom and was not assessed as part of this walk through.

All areas marked as no go areas inside the servitude shall be avoided and demarcated.

Tower Spacing:

Tower spacing: 300-500m. (Average)

Tower height: 55m. (Average)

Minimum ground clearance: 10.4m.

Tower Design:

The following types of towers may be used on this project:

- Compact cross rope suspension tower.
- Guyed-V suspension tower.

- Self-supporting double circuit tower.
- Self-supporting strain tower.

4. ARCHAEOLOGICAL AND CULTURAL HISTORIC BACKGROUND

The HIA for the project (Pistorius 2009) utilised various sources to obtain a comprehensive background study for the area. He used the following sources for information gathering:

- Databases: SAHRA database and the Archaeological Data Recording Centre housed at the National Flagship Institute (Museum Africa) in Pretoria;
- Literature survey: included academic text books; research articles; post-graduate studies; ethnographic literature; encyclopaedia and historical atlases;
- Maps: 1:50 000 topographical maps and 1: 250 000 series;
- Consultations: Various spokespersons were consulted (farm owners, herd boys, etc.) as well as a public participation process where known heritage sites were indicated as part of the 2009 HIA.
- The study resulted in a detailed chronology and background study supported by selective fieldwork to generalise the historical and archaeological character of the area. For a detailed desktop review please refer to the HIA by Pistorius (2009). In addition to the sources consulted by Pistorius this study also consulted the archaeological databases at Wits (that has no record of any sites for this section of the power line) and obtained CRM reports from SAHRIS Kusel (2007) and Hutten (2012), who did not record any sites, as well as relevant literature on the area.

4.1 Palaeontology

According to the palaeontological sensitivity map on SAHRIS for the area, no palaeontological studies are required.

4.2 Earlier Stone Age

Hominids began to make stone tools about 2.6 million years ago. Known as the Oldowan industry, most of the earliest tools were rough cobble cores and simple flakes. The flakes were used for such activities as skinning and cutting meat from scavenged animals. These early artefacts are difficult to recognize and have so far only been found in rock shelters such as the Sterkfontein Caves (Kuman, 1998); they are unlikely to occur in the study area.

At about 1.4 million years ago hominids started producing more recognizable stone artefacts such as hand axes, cleavers and core tools (Deacon & Deacon, 1999). Among other things these Acheulian tools were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus that had died from natural causes. Acheulian artefacts are usually found near the raw material from where they were quarried, at butchering sites, or as isolated finds.

No Acheulian sites are on record near the project area, but isolated finds are possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site.

4.3 Middle Stone Age

By the beginning of the Middle Stone Age (MSA), tool kits included prepared cores, parallel-sided blades and triangular points hafted to make spears (Volman, 1984). MSA people had become accomplished hunters by this time, especially of large grazing animals such as wildebeest, hartebeest and eland.

These hunters are classified as early humans, but by 100,000 years ago, they were anatomically fully modern. The oldest evidence for this change has been found in South Africa, and it is an important point in debates about the origins of modern humanity. In particular, the degree to which behaviour was fully modern is still a matter of debate. The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were two important steps in cultural evolution (Deacon & Deacon, 1999).

MSA artefacts have been found in the Oliboompoot Cave to the south of Lephalale (Mason, 1962; M. van der Ryst, 2006) and in the wider region at Marakele, as well as on the following farms New Belgium 608 LR, Schurfpoort 112 KR and Goergap 113 KR (Birkholtz & Steyn 2002). A large scale survey of almost 9000ha in 2011 by Huffman and vd Walt to the north of the current study area found that Middle Stone Age sites were associated with pans and ancient drainage systems. MSA material was also found along drainage lines and pans north of the Matlabas (van der Walt 2009).

4.4 Later Stone Age

By the beginning of the Later Stone Age (LSA), human behaviour was undoubtedly modern. Uniquely human traits, such as rock art and purposeful burials with ornaments, became a regular practice. These people were the ancestors of the San (or Bushmen).

San rock art has a well-earned reputation for aesthetic appeal and symbolic complexity (Lewis-Williams, 1981). In addition to art, LSA sites contain diagnostic artefacts, including microlithic scrapers and segments made from very fine-grained rock (Wadley, 1987). Spear hunting probably continued, but LSA people also hunted small game with bows and poisoned arrows. Important LSA deposits have been excavated in Oliboompoot Cave (Mason, 1962) and other sites in the Waterberg to the north east (Van der Ryst, 1998).

4.5 The Iron Age (AD 400 to 1840)

Bantu-speaking people moved into Eastern and Southern Africa about 2,000 years ago (Mitchell, 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. Characteristic ceramic styles help archaeologists to separate the sites into different groups and time periods. The first 1,000 years is called the Early Iron Age.

As mixed farmers, Iron Age people usually lived in semi-permanent settlements consisting of pole-and-daga (mud mixed with dung) houses and grain bins arranged around a central area for cattle (Huffman, 1982). Usually, these settlements with the 'Central Cattle Pattern' (CCP) were sited near water and good soils that could be cultivated with an iron hoe. For the project area, archaeological sites such as these are unlikely to occur except along river terraces.

Archaeologists have not yet resolved the role of a special pottery, known as Bambata, in the spread of pastoralism and mixed farming (Huffman, 2007). Some believe that Bambata pottery represents the vanguard of the Early Iron Age, or alternatively, Khoe pastoralists, while others believe it was acquired by LSA people through trade. This pottery has been

found at Oliboompoot in LSA deposits (Mason, 1962; Van der Ryst, 2006) and is thus believed to exist in the general region.

Some Iron Age settlements are on record for the study area, for instance a LIA site on the farm Springbokvlei 55 (Pistorius 2009). Some Late Iron Age sites are also on record consisting of stone walled hilltop settlements associated with the northern Nguni, later on Sotho Tswana people moved into the area associated with Moloko ceramics (van der Ryst 1998, Huffman 2004). Early Iron Age site from the Mzonjani and Happy Rest facies are on record to the south west of Thabazimbie (Huffman 2004).

The Little Ice Age began at about AD 1300, and its impact on farming societies was particularly severe. Another major drought occurred at about AD 1650, and it is unlikely that Iron Age people lived in the project area at these times.

4.6 Cultural and Historic

Voortrekkers crossed the Vaal River in 1836, and within a few years, began to spread north. Much of the Limpopo Province contained tsetse fly, and so early Boer farmers didn't settle immediately in the area. European settlement of the region began at the beginning of the last century.

5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed power line the local extent of its impact necessitates a representative sample and special attention was given to the proposed tower positions. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites.

The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- » Its importance in/to 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;
- » Sites of significance relating to the history of slavery in South Africa.

5.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and approved by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 8 of this report.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

6. WALK THROUGH FINDINGS-DESCRIPTION OF SITES

This report deals with the heritage walk through of the second section of the proposed Masa Ngwedi power line. A track log of the areas covered is included in Annexure C. The second section of the project is from the farm Turfpan to Paarl (approx. 39km); end tower for the 765kV power line is tower No. 179; the end tower of the 400kV power line is tower 175. Although the vegetation is very thick on some portions of this section, (Figure 8) other portions have better visibility (Figure 5 – 7 as well as Figure 9 and 10). It was possible to visit all the towers physically or to get close enough to assess the towers visually. This section is relatively flat with thick sand cover (Figure 15) in the north with markedly more turf to the south. This section gently slopes towards the south where the Crocodile River drains the study area and is also the major source of water in this inhospitable environment.

Five sites were recorded for this section of the power line consisting of a wide scatter of ex situ MSA material (**Site 1**) on a turf plain (Figure 11), a modern (not older than 60 years) farm labourer dwelling (**Site 2**), a cemetery (**Site 3**) that is located 37 meters to the west of the proposed power line (Figure 12) and the ruins (Site 4 and 5) of two further farm labourer dwelling (Figure 13). Please refer to section 6.3 for a short description of the sites.



Figure 5. Northern portion of Springbokvlei.



Figure 6. Northern portion of Ysterpan.



Figure 7. Eastern portion of Krugerspan.



Figure 8. Impenetrable vegetation at Franksvley.



Figure 9. Eastern portion of Rooibokvlei.



Figure 10. Central portion of Paarl.

6.1. Site Distribution Map

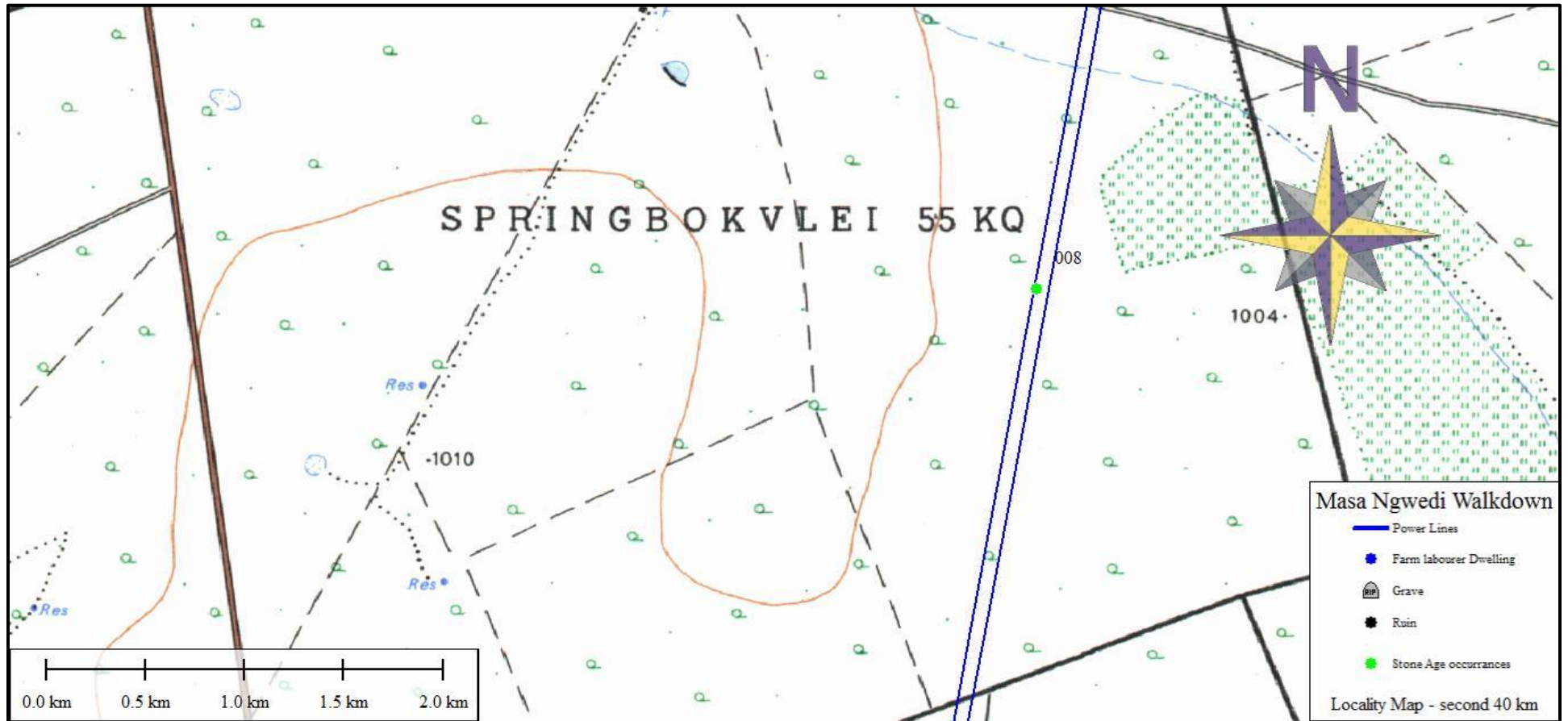


Figure 11: Site 1 (field nr 008) on the farm Springbokvlei.

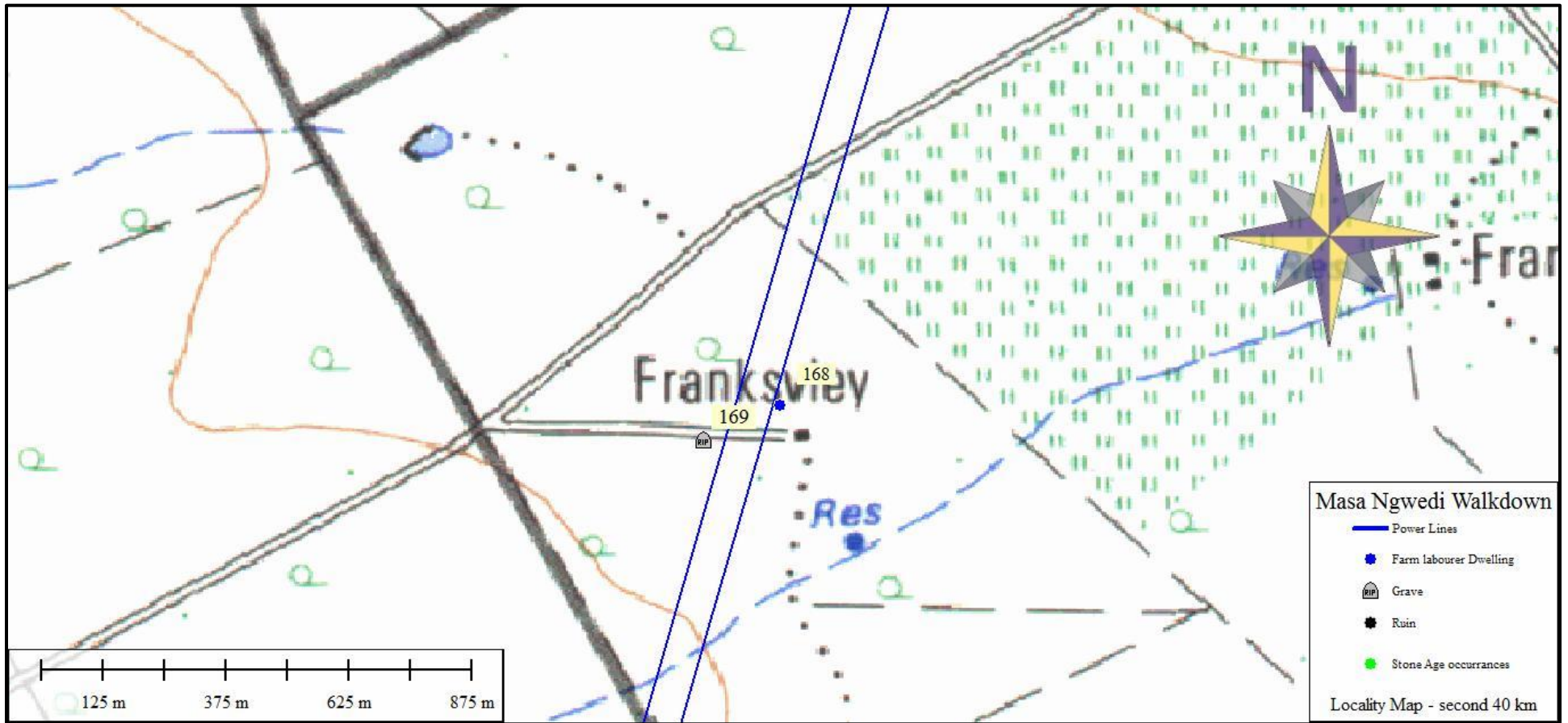


Figure 12: Site 2- 3 (field nr 168 -169) on the farm Franksvley.

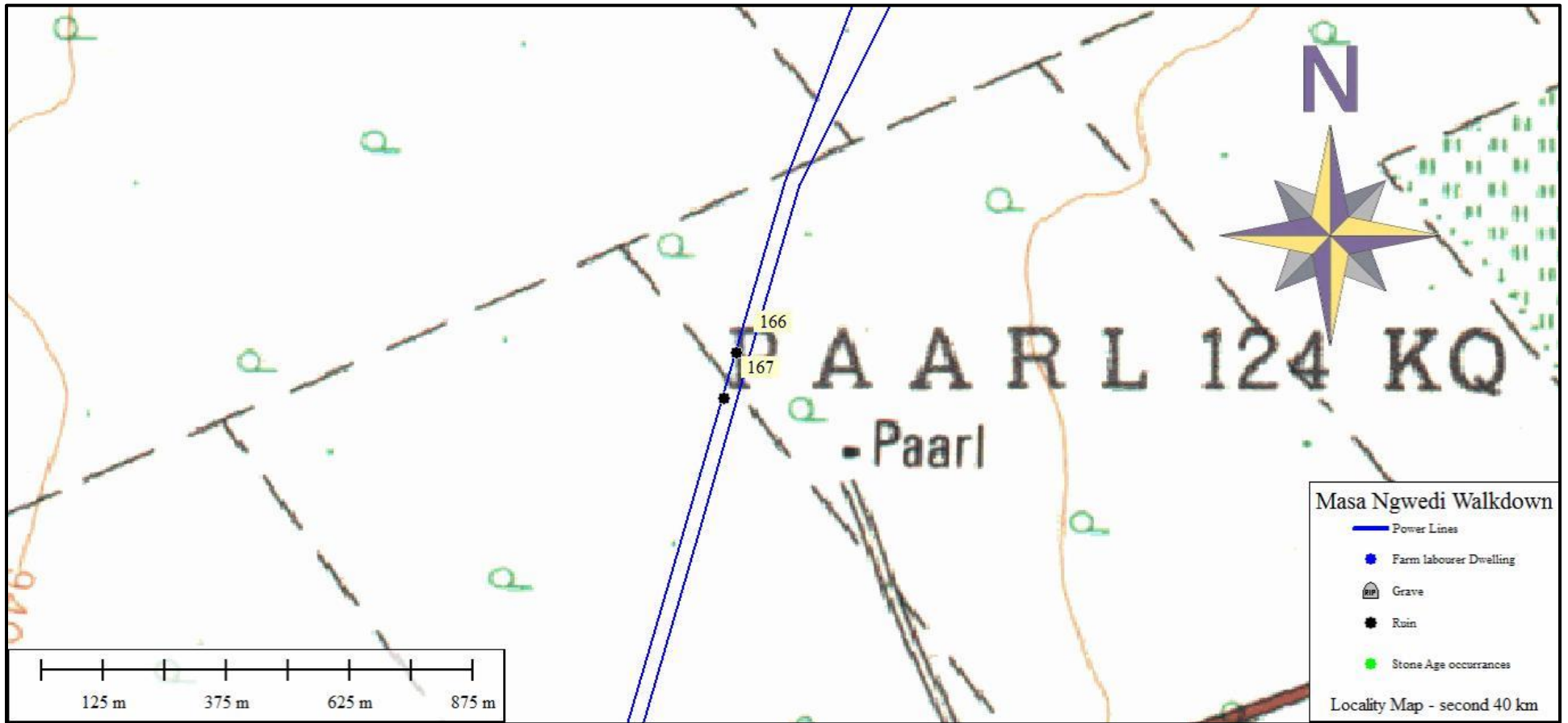


Figure 13: Site 3- 4 (field nr 166 -167) on the farm Paarl.

6.2. Sites with Coordinates

Site Number	Field Nr	Landscape	Type Site	Cultural Markers	Coordinate (accuracy 4 meters)
Site 1	008	Archaeological	Middle Stone Age	Chunks and flakes	S24 12 23.0 E27 21 49.6
Site 2	168	Modern	Farm labourer dwelling	Brick structure	S24 21 02.5 E27 19 40.0
Site 3	169	Historical	Cemetery	Marked Graves	S24 21 04.9 E27 19 35.0
Site 4	166	Modern	Ruin	Brick foundations	S24 30 32.0 E27 16 50.9
Site 5	167	Modern	Ruin	Brick foundations	S24 30 34.9 E27 16 50.1

6.3. Site Descriptions

6.3.1. Site 1

Way Point Number	008
Type of Site	Find Spot/ Occurrence
Geographical Setting	Plain
Closest Water Source	Non perennial streams
Site Components	Unknown
Current Condition of site	Ex situ material (e.g. transported, deflated or exposed by natural agents with no stratigraphy)
Describe any disturbance to the site	Extensively ploughed
Threats or sources of risk on the site	Sheet erosion
Description and type of artefacts, approximate age and significant features of the site (Raw material, source of raw material, density).	Raw material from hornfels and quartzite, artefacts consisting of triangular flakes, end scrapers and miscellaneous flakes. Found all over turf plain. Ex situ and rolled. High degree of weathering. 1 artifact every 4 square meters
Identifiable trends (concentration of one raw material or one type of artefacts in one particular area) and reasons for them	All over turf plain. Check track log
Estimation or measurement of site extent	Scattered over most of the farm Springbokvlei.
Depth and stratification of the site	None visible




Figure 14: Range of raw material



Figure 15: General site conditions

Statement of Significance	Low Significance
Field Rating (Recommended grading or field significance) of the site:	Generally Protected C (GP.C), Low significance-Destruction
Impact Evaluation of development on site	Secondary
Recommendations	No further action necessary

6.3.2. Site 2

Way Point Number	168
Type of Site	Modern
Geographical Setting	Plain
Current Condition of site	Pristine
Description and type of artefacts, approximate age and significant features of the site.	Farm labourer dwelling that is currently occupied. The site is recently build and not of architectural or heritage value.
Estimation or measurement of site extent	Approximately 6x4 meters.
Depth and stratification of the site	N.A
	
Figure 16: Site viewed from the south east	
Statement of Significance	Low Significance
Field Rating (Recommended grading or field significance) of the site:	Generally Protected C (GP.C), Low significance-Destruction
Impact Evaluation of development on site	Secondary impact during construction phase.
Recommendations	No further action necessary.

6.3.3. Site 3

Way Point Number	169
Type of Site	Modern
Geographical Setting	Plain
Current Condition of site	Well preserved
Description and type of artefacts, approximate age and significant features of the site.	The site consists of a fenced family cemetery with headstones mostly from slate. The oldest visible date for the cemetery is 1931. Based on the size of the grave dressings several children graves are present. The graves are aligned east to west. The site is located approximately 38 meters to the west of the proposed power line and no direct impact is foreseen on the site.
Estimation or measurement of site extent	There are at least 10 graves covering an area of approximately 12 x 6 meters.
Depth and stratification of the site	N.A



Figure 17: Site viewed from the east



Figure 18: Inscribed headstone

Statement of Significance	High social significance
Field Rating (Recommended grading or field significance) of the site:	Generally Protected A (GP.A)
Impact Evaluation of development on site	Secondary
Recommendations	Site must be marked as a no go area and demarcated during the construction phase.

6.3.4. Site 4 and Site 5

Way Point Number	166-167
Type of Site	Ruin
Geographical Setting	Plain
Current Condition of site	Demolished
Description and type of artefacts, approximate	The sites consist of the demolished remains of two rectangular structures assumed to be farm labourer dwellings. The sites are located to the west

age and significant features of the site.	of the Paarl farm house. The area is littered with industrial artefacts like glass, plastic and tin. Site 4 is marked by stone foundations and site 5 with a soil mound of a wattle and daub structure.
Estimation or measurement of site extent	Site 4 measures approximately 6x4 meters. Site 5 measures approximately 5x4 meters.
Depth and stratification of the site	N.A



Figure 19: Brick foundations at site 4.



Figure 20: Remains of a mud brick dwelling at site 5.

Statement of Significance	Low Significance
Field Rating (Recommended grading or field significance) of the site:	Generally Protected C (GP.C), Low significance-Destruction
Impact Evaluation of development on site	The sites are located under the proposed power lines and bush clearing during construction can have a secondary impact on the sites
Recommendations	Sites like these might contain the graves of still born children under the house foundations. As the farm is still operational, it should be possible to consult with the farm labourers to determine

	<p>whether they are aware of any graves under the foundations of the house prior to construction. If it can be confirmed that there are no still born graves in the area no further action will be required. If this cannot be confirmed any earth works in this area must be monitored by an archaeologist.</p>
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7. Potential Impact

7.1. Pre-Construction phase:

It is assumed that the pre-construction phase involves the removal of topsoil and vegetation as well as the establishment of road infrastructure needed for the construction phase. These activities can have a negative and irreversible impact on all of the recorded heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

7.2. Construction Phase

During this phase the impacts and effects are similar in nature but more extensive than the pre-construction phase. These activities can have a negative and irreversible impact on all of the recorded heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

7.3. Operation Phase:

No impact is envisaged for the recorded heritage resources during this phase.

8. CONCLUSIONS AND RECOMMENDATIONS

Five sites were recorded during the walk through for this section of the project. The sites consist of a wide scatter of ex situ MSA material (**Site 1**) on a turf plain, a modern (not older than 60 years) farm labourer dwelling (**Site 2**), a cemetery (**Site 3**) that is located 37 meters to the west of the proposed power line and the ruins (**Site 4 and 5**) of two further farm labourer dwellings. None of the sites will be directly impacted on by tower positions but a secondary impact is possible during bush clearing on the sites. Therefore some recommendations are made to protect the sites from accidental damage during the construction phase of the project and are discussed below.

Site 1 demonstrates a low density of Middle Stone Age material. Artefacts are scattered over a very large area (approximately 1km). Due to the low artefact density and the large area the site covers with the very small physical footprint (relative to the extent of the site) – and therefore the adverse effects the 765 & 400 kV power line would have on the occurrence as a whole, the site is given a low heritage significance rating and no mitigation is necessary prior to construction.

Site 2 consists of a rectangular brick welling of farm labourers located just to the west of the 400 kV line on the farm Franksvley. The site is not of any architectural or historical significance and is not older than 60 years and no further action is necessary for this site.

Site 3 consists of a demarcated family cemetery dating to the 1930's. The site is located at least 30 meters to the west of the 765 kV line and no direct impact is foreseen on the site. It is however recommended that the site is demarcated with a buffer zone of at least ten meters to protect the site from accidental damage during the construction phase.

Site 4 and 5 consist of the demolished remains of farm labourer dwellings close to the Paarl farmhouse. The demolished remains are not of archaeological or historical importance but sites like these might contain the remains of still born children under the house foundations. It is recommended that the social team consults with the farm owner and labourers to determine whether there are any known graves. If it cannot be confirmed that no graves are located under the foundations, any earth works must be monitored by an archaeologist.

No cultural landscape elements were noted in the proposed corridor. Visual impacts to scenic routes and sense of place are also considered to be low as the line follows an existing power line. A visual impact assessment was also commissioned for the project facilitated by the client and no further mitigation is recommended for this aspect from a heritage point of view.

Due to the subsurface nature of archaeological material and unmarked graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded. If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below.

Chance finds procedure

This procedure applies to Eskom's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the construction, operations or closure phases of this project, any person employed by Eskom, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on mine operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

If the recommendations as made in section 8 of this report are adhered to (subject to approval from SAHRA) there is from an archaeological point of view no reason why the proposed project should not proceed.

9. PROJECT TEAM

Jaco van der Walt, Project Manager and Archaeologist

10. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also valid for/acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique, DRC and Tanzania; having conducted more than 400 AIAs since 2000.

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ANNEXURE C

Track log of areas covered – power lines in blue and track logs in black

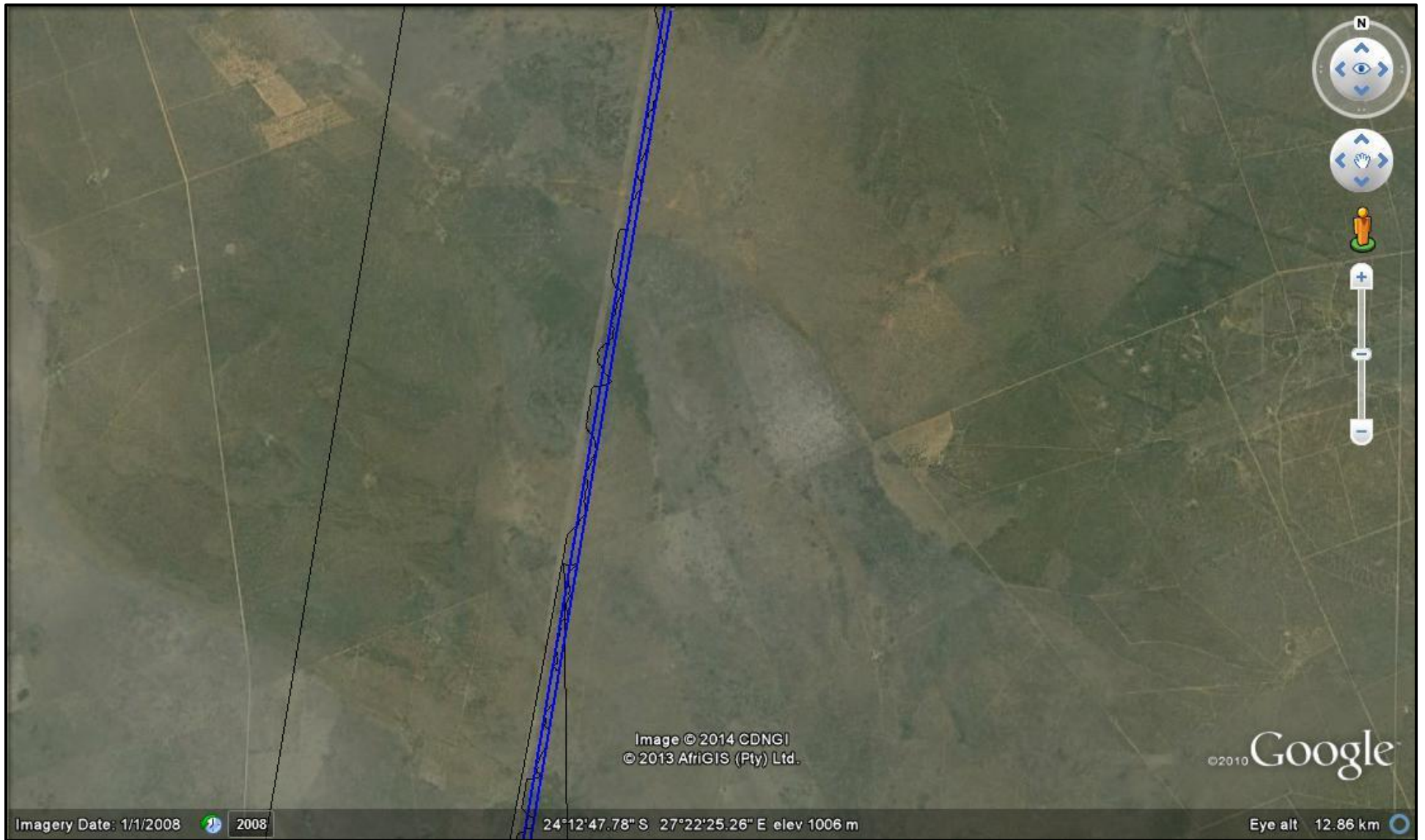


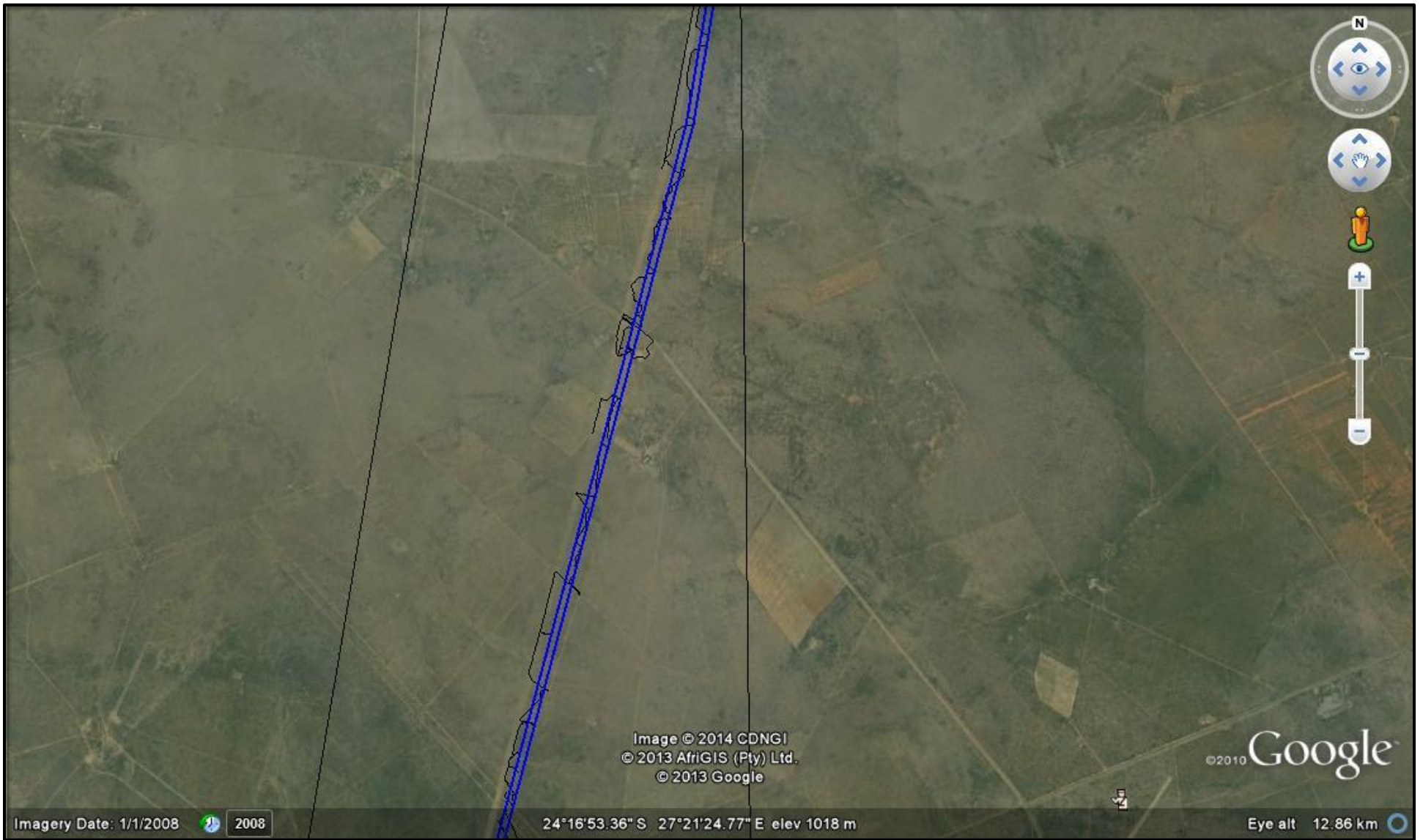
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Imagery Date: 1/1/2008 2008

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Eye alt 12.86 km



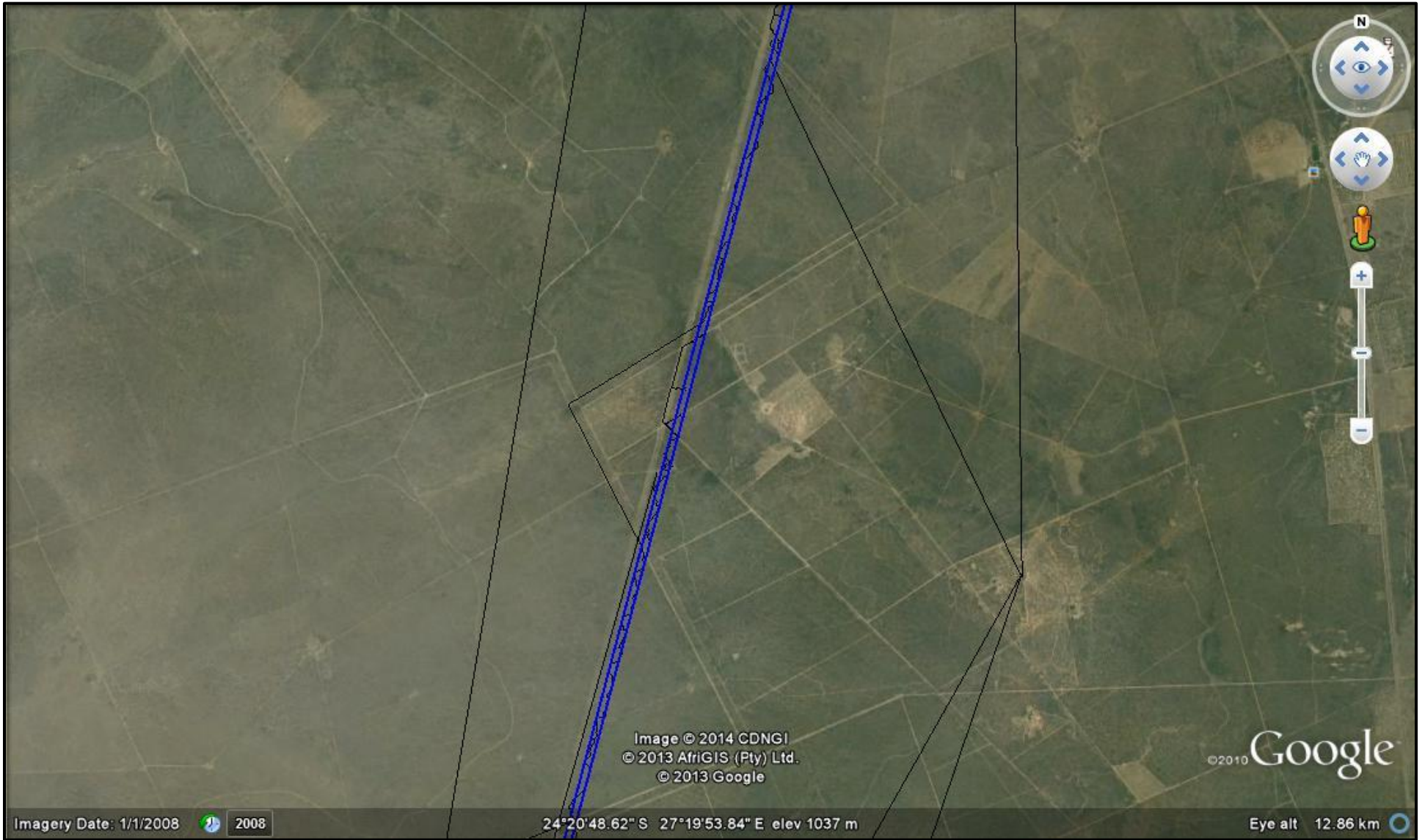




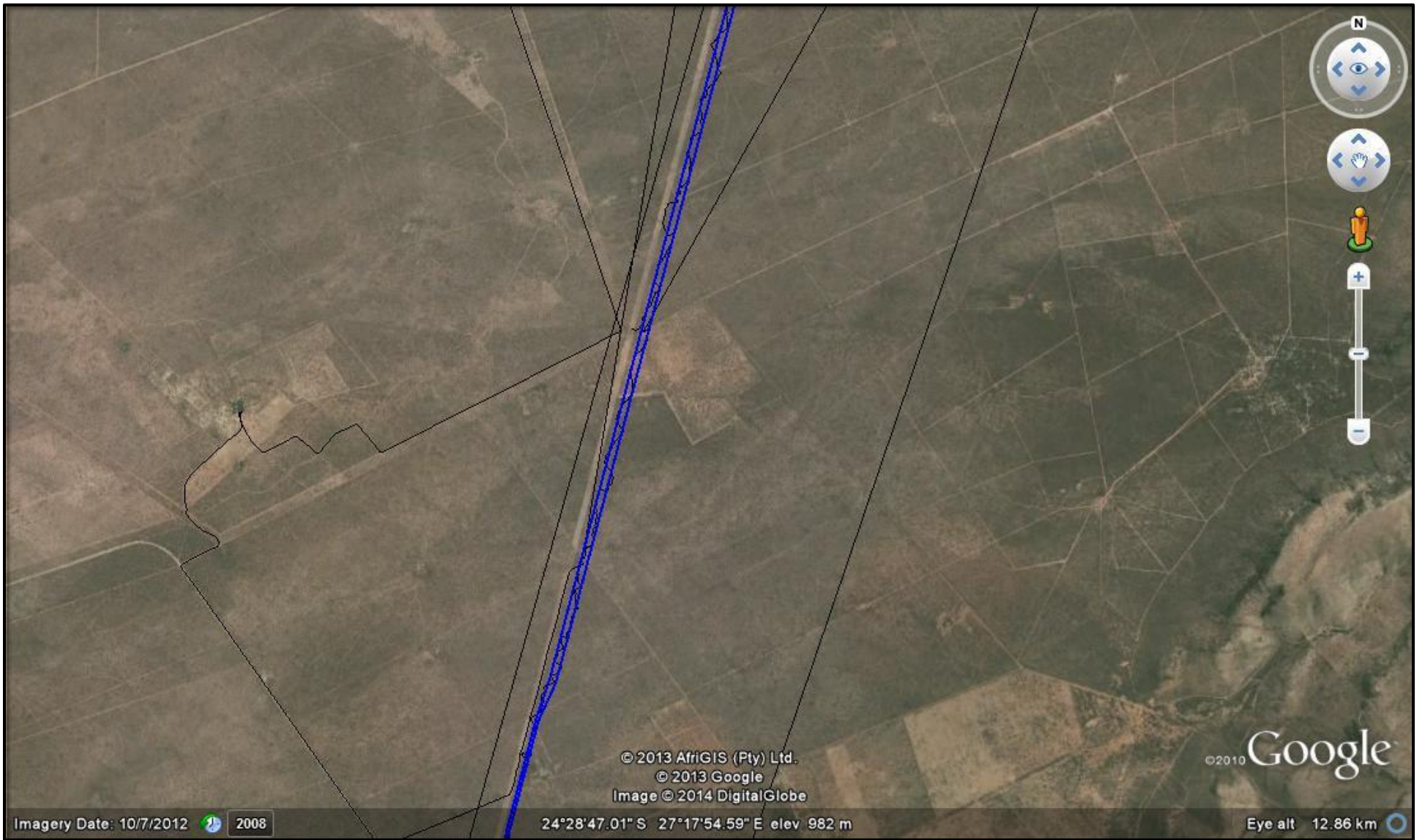
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Imagery Date: 4/10/2013 2008

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Eye alt 12.86 km



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Imagery Date: 10/7/2012 2008

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