THE PROPOSED PIGGERY ON PORTION 46 OF THE FARM BRAKKEFONTIEN 416, WITHIN THE NELSON MANDELA BAY MUNICIPALITY, EASTERN CAPE

Heritage Impact Assessment

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Declaration of Independence

I, Cherene de Bruyn, declare that –

General declaration:

- I act as the independent heritage practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting heritage impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from a heritage practitioner in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

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ACKNOWLEDGEMENT OF RECEIPT

Report Title	***THE PROPOSED PIGGERY ON PORTION 46 OF THE FARM BRAKKEFONTIEN 416, WITHIN THE NELSON MANDELA BAY MUNICIPALITY, EASTERN CAPE***		
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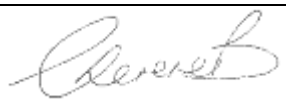
Author	**Cherene de Bruyn**		**Archaeologist/ PGS Heritage**
Internal review	**Wouter Fourie**		**Principal Heritage Specialist**
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EXECUTIVE SUMMARY

PGS Heritage (Pty) Ltd (PGS) was appointed by Habitat Link Consulting (Pty) Ltd (Habitat) to undertake a Heritage Impact Assessment (HIA) and Palaeontological Impact Assessment (PIA) which will serve to inform the Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) for the Piggery on Portion 46 of the Farm Brakkefontien 416, within the Nelson Mandela Bay Municipality, Eastern Cape.

Heritage resources are unique and non-renewable and as such any impact on such resources must be seen as significant. This report focusses specifically on the newly proposed piggery infrastructure.

The HIA has shown that the study area and surrounding area has some heritage resources situated within the proposed development boundaries. Through data analysis and a site investigation the following issues were identified from a heritage perspective.

Heritage Sites

Heritage Sites in the vicinity of the Rocklands Piggery Site

The fieldwork identified 1 heritage features (**RP01). RP01** is a farmstead that contains a historical farmhouse. No graves or burial grounds were identified during the site visit.

Historical structures

RP01 has no research potential or other cultural significance, as such it is not of heritage significance and thus not conservation worthy.

The impact significance before mitigation on the Farmhouse will be LOW negative before mitigation. *Only the study site will be affected by the proposed development*. **The possibility of the impact occurring is highly unlikely**. The expected duration of the impact is assessed as potentially permanent. Implementation of the recommended mitigation measures will modify this impact rating to an acceptable VERY LOW negative.

Burial Grounds and graves

No Burial grounds or graves were identified.

Palaeontological Impacts

According to the South African Heritage Resources Information System (SAHRIS) the proposed area of the project footprint occurs in an area where the palaeontology is assessed as being entirely of Very High (red) sensitivity The proposed development of Portion 46 of the farm Brakkefontien 416, within the Nelson Mandela Bay Municipality, Eastern Cape is underlain by

the Ceres Subgroup, Bokkeveld Group, Cape Supergroup. The apparent rarity of fossil heritage at the proposed development footprint suggests that the impact of the development on Portion 46 of the farm Brakkefontien 416, Eastern Cape will be of a low significance in palaeontological terms. It is therefore considered that the proposed development is deemed appropriate and feasible and will not lead to damaging impacts on the palaeontological heritage of the area. The construction of the development may thus be permitted in its whole extent, as the development footprint is not considered sensitive in terms of palaeontological resources.

General

It is the author's considered opinion that overall impact on heritage resources is Low to Very Low. Provided that the recommended mitigation measures are implemented, the impact would be acceptably low or could be totally mitigated to the degree that the project could be approved from a heritage perspective. The management and mitigation measures as described in Section 6 of this report have been developed to minimise the project impact on heritage resources.

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TERMINOLOGY AND ABBREVIATIONS

Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Early Stone Age

The archaeology of the Stone Age between 700 000 and 3 300 000 years ago.

Fossil

Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- 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, and
- sites of significance relating to the history of slavery in South Africa;

Holocene

The most recent geological time period which commenced 10 000 years ago.

Late Stone Age

The archaeology of the last 30 000 years associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800's, associated with iron-working and farming activities such as herding and agriculture.

Middle Iron Age

The archaeology of the period between 900-1300AD, associated with the development of the Zimbabwe culture, defined by class distinction and sacred leadership.

Middle Stone Age

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Table 1 – List of abbreviations used in this report

Abbreviations	Description
AIA	Archaeological Impact Assessment
APHP	Association of Professional Heritage Practitioners
ASAPA	Association of South African Professional Archaeologists
BAR	Basic Assessment Report
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
DRDAR	Eastern Cape Department of Rural Development and Agrarian Reform
ECO	Environmental Control Officer
EIA	Early Iron Age
EIAs	Environmental Impact Assessment
EMPr	Environmental Management Programme
EIAs practitioner	Environmental Impact Assessment Practitioner
ESA	Earlier Stone Age
GPS	Global Positioning System
FLISP	Finance Linked Individual Subsidy Programme
HIA	Heritage Impact Assessment
I&AP	Interested & Affected Party
IAIASA	International Association for Impact Assessment South Africa
LAS	Land Availability Stream
LCTs	Large Cutting Tools
LIA	Late Iron Age
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act No 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NMBM	Nelson Mandela Bay Municipality
NCW	Not Conservation Worthy
PGS	PGS Heritage (Pty) Ltd
PIA	Palaeontological Impact Assessment
PHRA	Provincial Heritage Resources Authority
PSSA	Palaeontological Society of South Africa
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System

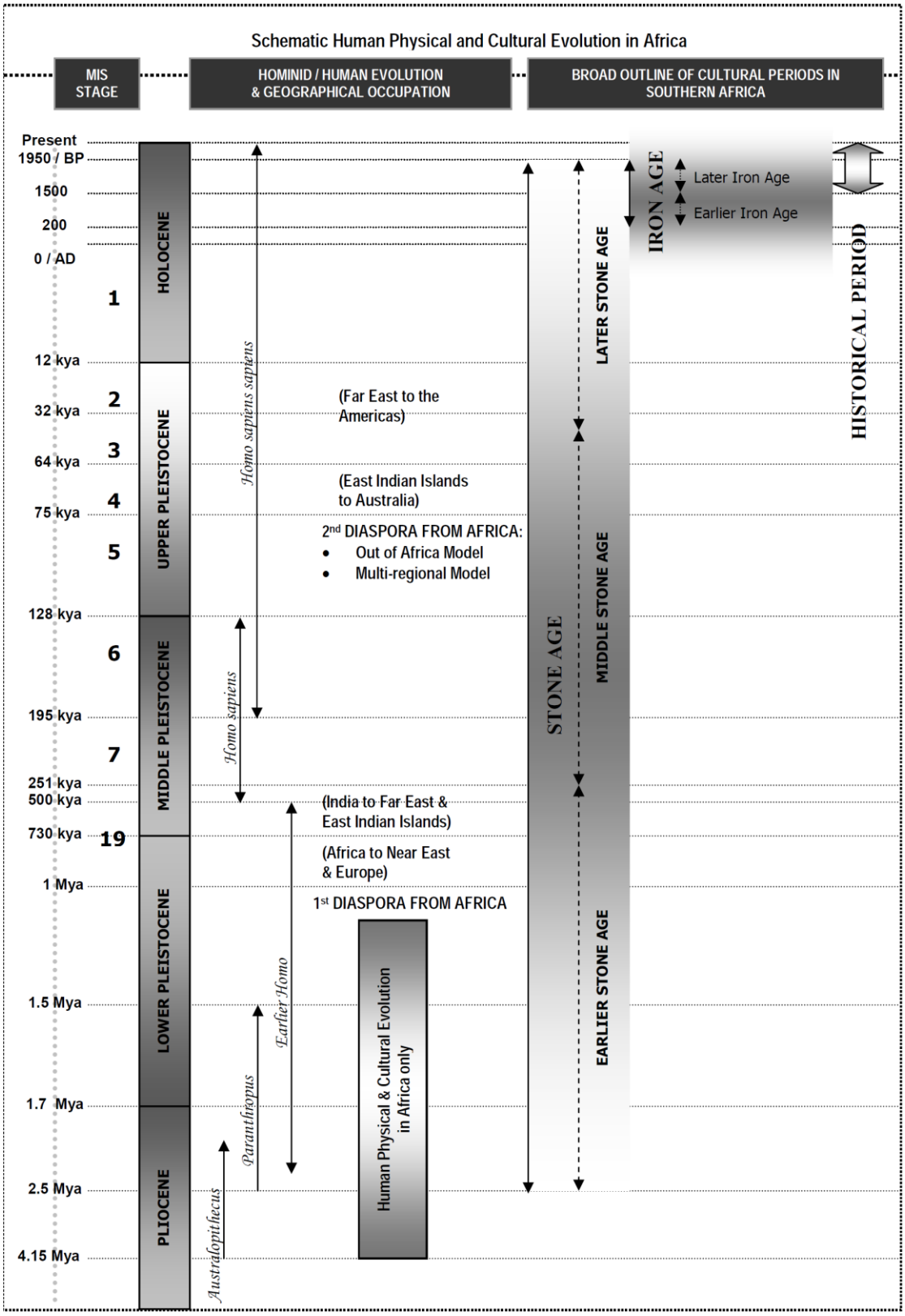


Figure 1 – Human and Cultural Timeline in Africa (Morris, 2008)

1 INTRODUCTION

PGS Heritage (Pty) Ltd (PGS) was appointed by Habitat Link Consulting (Pty) Ltd (Habitat) to undertake a Heritage Impact Assessment (HIA) and Palaeontological Impact Assessment (PIA) which will serve to inform the Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) for the Piggery on Portion 46 of the Farm Brakkefontien 416, within the Nelson Mandela Bay Municipality (NMBM), Eastern Cape.

1.1 Scope of the Study

The aim of the study is to identify possible heritage sites and finds that may occur in the proposed development area. The HIA aims to inform the BAR in the development of a comprehensive EMPr to assist the project applicant in managing the identified heritage resources in a responsible manner in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act (Act 25 of 1999) (NHRA).

1.2 Specialist Qualifications

This HIA was compiled by PGS.

The staff at PGS have a combined experience of nearly 70 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HIA processes. PGS will only undertake heritage assessment work where they have the relevant expertise and experience to undertake that work competently.

Cherene de Bruyn author of this report, is registered with the Association of Southern African Professional Archaeologists (ASAPA) as a Professional Archaeologist and is accredited as a Principal Investigator and Field Director, she is further also a member of the International Association for Impact Assessment South Africa (IAIASA). She holds a MA in Archaeology, BSc (Hons) in Physical Anthropology and a BA (Hons) in Archaeology.

Wouter Fourie, the Project Coordinator, is registered with the ASAPA as a Professional Archaeologist and is accredited as a Principal Investigator; he is further an Accredited Professional Heritage Practitioner with the Association of Professional Heritage Practitioners (APHP).

1.3 Assumptions and Limitations

Not detracting in any way from the comprehensiveness of the research undertaken, it is necessary to realise that the heritage resources located during the desktop research do not necessarily represent all the possible heritage resources present within the area.

Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well.

1.4 Legislative Context

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- Notice 648 of the Government Gazette 45421- general requirements for undertaking an initial site sensitivity verification where no specific assessment protocol has been identified
- National Environmental Management Act (NEMA), Act 107 of 1998 – Appendix 6
- National Heritage Resources Act (NHRA), Act 25 of 1999

1.4.1 *Notice 648 of the Government Gazette 45421*

Although minimum standards for archaeological (2007) and palaeontological (2012) assessments were published by SAHRA, GN.648 requires sensitivity verification for a site selected on the national web based environmental screening tool for which no specific assessment protocol related to any theme has been identified. The requirements for this GN is listed in **Table 2** and the applicable section in this report noted.

Table 2 - Reporting requirements for GN648

GN 648	**Relevant section in report**	**Where not applicable in this report**
2.2 (a) a desk top analysis, using satellite imagery;	section 4	
2.2 (b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.	section 4.6	-

GN 648	Relevant section in report	Where not applicable in this report
2.3(a) confirms or disputes the current use of the land and environmental sensitivity as identified by the national web based environmental screening tool;	section 4.6	-
2.3(b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity;	section 4.5	-

1.4.2 *NEMA – Appendix 6 requirements*

The HIA report has been compiled considering the NEMA Appendix 6 requirements for specialist reports as indicated in the table below. For ease of reference the table below provides cross references to the report sections where these requirements have been addressed. It is important to note, that where something is not applicable to this HIA, this has been indicated in the table below.

Table 3 - Reporting requirements as per NEMA Appendix 6 for specialist reports

Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	Relevant section in report	Comment where not applicable.
1.(1) (a) (i) Details of the specialist who prepared the report	Page 2 of Report – Contact details and company	-
(ii) The expertise of that person to compile a specialist report including a curriculum vita	Section 1.2 – refer to **Appendix B**	-
(b) A declaration that the person is independent in a form as may be specified by the competent authority	Page ii of the report	-
(c) An indication of the scope of, and the purpose for which, the report was prepared	Section 1.1	-
(cA) An indication of the quality and age of base data used for the specialist report	Section 3	-
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 6	-
(d) The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment	Section 3	The vegetation density does influence visibility – however the vegetation cover for the area was consistent the same during both site visits
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used	Section 3and **Appendix A**	-

Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	Relevant section in report	Comment where not applicable.
(f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 6	
(g) An identification of any areas to be avoided, including buffers	Section 4.6	No buffers or areas of sensitivity identified
(h) A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;		No buffers or areas of sensitivity identified
(i) A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.3	-
(j) A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment	Section 4.6 and 6	
(k) Any mitigation measures for inclusion in the EMPr	Section 7	
(l) Any conditions for inclusion in the environmental authorisation		None required
(m) Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 7	
(n)(i) A reasoned opinion as to whether the proposed activity, activities or portions thereof should be authorised and	Section 8	
(n)(iA) A reasoned opinion regarding the acceptability of the proposed activity or activities; and		
(n)(ii) If the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Section 8	-
(o) A description of any consultation process that was undertaken during the course of carrying out the study		Not applicable. A public consultation process was handled as part of the EIA and EMP process.
(p) A summary and copies if any comments that were received during any consultation process		Not applicable. To date no comments regarding heritage

Requirements of Appendix 6 – GN R326 EIA Regulations of 7 April 2017	Relevant section in report	Comment where not applicable.
		resources that require input from a specialist have been raised.
(q) Any other information requested by the competent authority.		Not applicable.
(2) Where a government notice by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	NEMA Appendix 6 and GN648	

1.4.3 *The National Heritage resources Act*

- National Heritage Resources Act (NHRA) Act 25 of 1999
  - Protection of Heritage Resources – Sections 34 to 36; and
  - Heritage Resources Management – Section 38

The NHRA is utilized as the basis for the identification, evaluation and management of heritage resources and in the case of Cultural Resource Management (CRM) those resources specifically impacted on by development as stipulated in Section 38 of NHRA. This study falls under s38(8) and requires comment from the relevant heritage resources authority.

2 SITE LOCATION AND DESCRIPTION

2.1 Locality and Site Description (provided by Habitat Link Consulting)

The proposed piggery unit is located on Portion 46 of the Farm Brakkefontein 416 (Uster Rangers Hill Farm), located within the NMBM, Eastern Cape Province **(Figure 2).**

The proposed project area is located between the towns of Uitenhage, Thornhill and Port Elizabeth at coordinates: 33°50'6.59"S 25°18'14.03"E. The development will be situated approximately 2.2 km west of the Rocklands Road (R334), approximately 35 km from the Port Elizabeth city centre.

The following infrastructure is encountered in the area:

- Provincial roads (R334);
- Residential properties:
- Agricultural properties;
- Power lines.

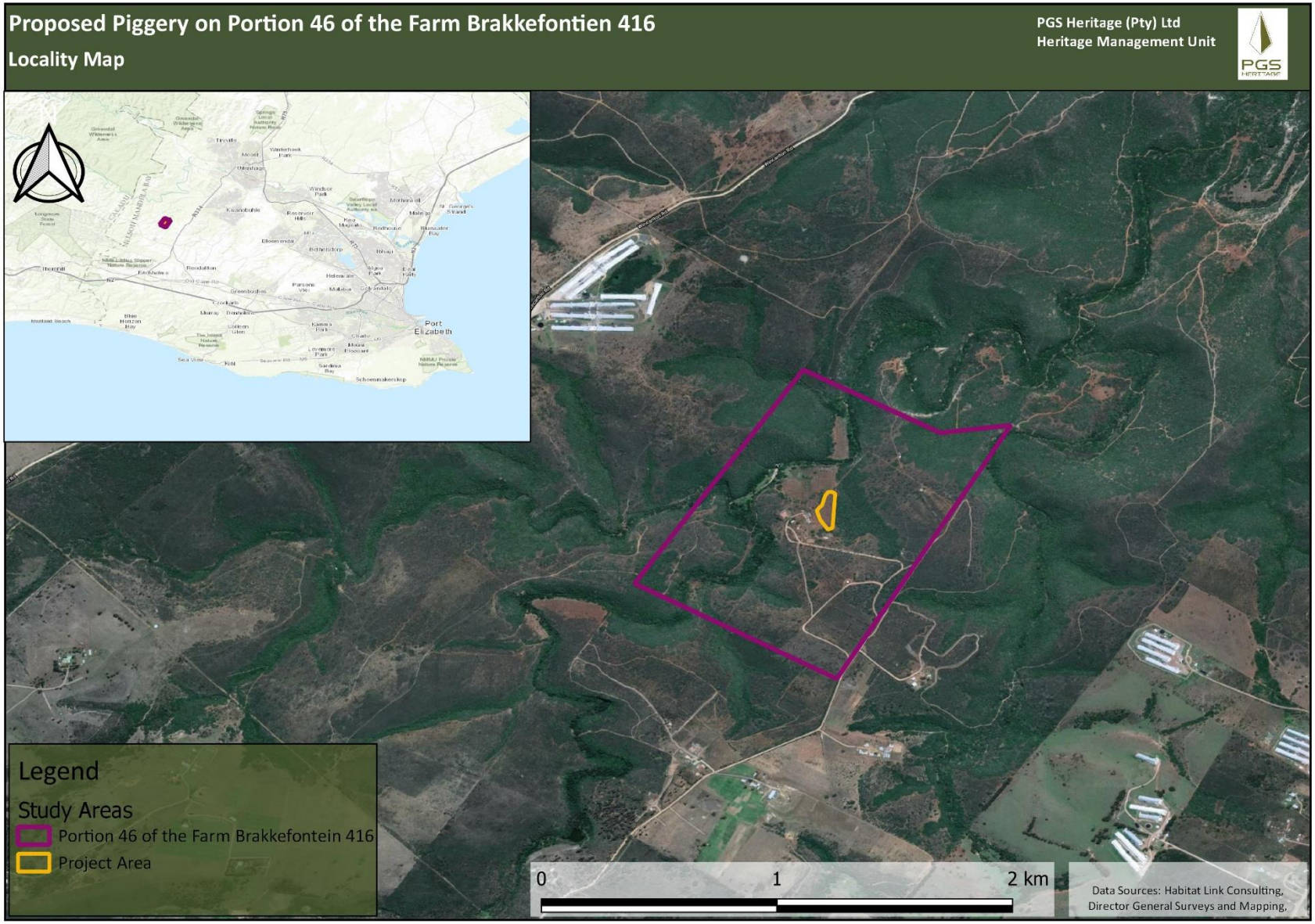


Figure 2 – Locality map of the Rocklands Piggery (Yellow Polygon)

2.2 Project description (provided by Habitat Link Consulting)

The Eastern Cape Department of Rural Development and Agrarian Reform (DRDAR), has approved the implementation of the Uster Rangers Hill project within the Rocklands agricultural area of the NMBM. The farmer is currently undertaking pig farming on open land within depleted zinc structures resulting in high mortality and inhibiting livestock growth. It is thus the intention of the DRDAR to assist the farmer with the formalisation of the piggery by establishing a facility that can accommodate a 20-sow unit (200 pigs of average 60 kg each) within a previously disturbed area of the existing farm.

The proposed development includes the following aspects:

- Site clearance including the removal and disposal of debris;
- Development of piggery housing:
    - Breeding/weaner house (180 m^2)
    - Grower house (140 m^2)
- Waste handling system consisting of two (2) lagoons (2100 m^3 each)
- Carcass disposal pit
- Construction of boreholes and water reticulation system
- Electricity supply from the existing ESKOM transformers
- Construction of new access roads
- Provision of storm water drains and pipes.

The proposed development will require a footprint of approximately 2 000 m^2 of the 88-hectare property. The study area consists of predominantly cleared and transformed agricultural land with some existing farm structures, while the surrounding land is mostly undeveloped and consists of natural bush. Located between two tributaries of the Hol River, a non-perennial river that feeds into the Elands River, the proposed development will need to ensure that effluent and storm water is correctly managed in order to avoid pollution of the watercourses.

2.2.1 *Consideration of Alternatives:*

For this project, no other alternatives have been proposed. Alternative layouts for the project could be proposed depending on the outcome of the several specialist studies forming part of the EIAs process.

3 CURRENT STATUS QUO

3.1 Site Description

The project area falls within the existing agricultural areas surrounding Uitenhage and Port Elizabeth.

Existing surrounding land uses associated with the project area include a combination of:

- informal settlements;
- farming and agricultural areas, and
- dirt roads.

As a result, the vast majority of the Rocklands Piggery site footprint overlays highly disturbed terrain. Overall, the accessibility of the project footprint area was fairly good. Although the site has been disturbed by previous agricultural activities, visibility was fairly good **(Figure 3 - Figure 8).**

Figure 3 – View of the site from the south

Figure 4 – View of the site from the north

Figure 5 – Disturbed area

Figure 6 – Existing piggery next to project area

Figure 7 – Natural bush surrounding the project area

Figure 8 – Informal type housing found on the farm

3.2 Overview of Study Area and Surrounding Landscape

DATE	DESCRIPTION
2.5 million to 250 000 years ago	The Early Stone Age is the first and oldest phase identified in South Africa's archaeological history and comprises two technological phases. The earliest of these is known as Oldowan and is associated with crude flakes and hammer stones. It dates to approximately 2 million years ago. The second technological phase is the Acheulian and comprises more refined and better made stone artefacts such as the cleaver and bifacial hand axe. The Acheulian dates back to approximately 1.5 million years ago (Korsman, & Meyer, 1999; Klein, 2000). Some sites dating to the ESA have been identified in the general area. These are usually concentrations of stone tools found close to watercourses (van Schalkwyk, 2010). One of the more important ESA sites occurs at Ananzi Springs, near Uitenhage. This is the only ESA site in the Eastern Cape which has been excavated (Webley and Hall, 1998). Ananzi Springs was excavated by the late HJ Deacon in the 1970s and wood and seed material as well as a large number of stone artefacts was found in situ in the spring deposits (Binneman et al, 2011). Scatters of ESA tools are also often found in hollows between sand dunes like the site of Geelhoutboom near Humansdorp (Webley and Hall, ibid). *No ESA sites are known from the immediate vicinity of the footprint area.*
250 000 to 40 000 years ago	The Middle Stone Age (MSA) is the second oldest phase identified in South Africa's archaeological history. This phase is associated with flakes, points and blades manufactured by means of the so-called 'prepared core' technique (Korsman, & Meyer, 1999). Several MSA sites have been identified in the Eastern Cape. Klasies River sites are located on the Tsitsikamma coast between Port Elizabeth and Plettenberg Bay and provides information about anatomically modern people who lived in southern Africa between 110 000 and 120 000 years ago (Steele, 2001; Mitchell, 2002). The Klasies River Mouth was excavated in 1967–1968. During the excavation's pieces of shell, animal bones and some human remains were found, that were associated with an MSA occupation of the site (Rightmire & Deacon, 1991). Evidence of MSA occupation has been found at Strathalan Cave B, located in the Maclear district, north-eastern Cape, approximately 500 km North-east of Uitenhage by Opperman (1996). Apart from stone tools, Opperman also excavate several hearths and grass beddings at the site. In 1979 Opperman conducted research in the Stormberg region. During this time, he excavated a trench at Grassridge Rockshelter, which located in the interior region of the Eastern Cape at the base of the Stormberg Mountains contains a rich sequence of late Pleistocene and Holocene occupations (Collins *et al.,* 2017). Opperman focused on the

DATE	DESCRIPTION
	MSA and Late Stone Age (LSA) occupation of the site and identified several stone age tools. During a rescue excavation by Gess (1969), two MSA lithic artefacts and bone tools were excavated from the Aloe site near St Georges Strand, Port Elizabeth. *No MSA sites are known from the immediate vicinity of the footprint area.*
40 000 years ago, to the historic past	A number of LSA sites are known to occur in the region, located to the west and north of the study area. The majority of archaeological sites date from the past 10 000 years and are associated with the campsites of San hunter-gatherers and Khoi pastoralists (Binneman *et al.,* 2011). Research by Binneman has shown that a number of very important LSA sites occur in the Kabeljousrivier area (inland of Jeffreys Bay). These sites include artefacts other than stone tools, like ostrich eggshell beads, bone arrowheads, small bored stones and occasionally wood fragments with incised markings (van Schalkwyk, 2010). Archaeologists believe that LSA people moved between the coast and the inland areas according to a seasonal pattern. Rock art sites are also associated with the LSA. These rock art sites are found mostly in the sandstone caves and shelters around Uitenhage, Grahamstown and Alicedale [Webley and Hall, 1998 Another rock shelter, Mafusing 1 containing LSA lithics, pottery and rock art is located near Matatiele. The site was excavated in 2011 as part of the Matatiele Archaeology and Rock Art or MARA research programme (Pinto *et al.,* 2018). There are many San hunter-gatherer sites in the nearby Groendal Wilderness Area and adjacent mountains. Here, caves and rock shelters were occupied by the San during the LSA and contain numerous paintings along the walls. The last San/KhoiSan group was killed by Commando's in the Groendal area in the 1880's (Binneman *et al.,* 2011). *No LSA sites are known from the immediate vicinity of the footprint area.*
AD 450 – AD 750	In the Eastern Cape, Early Iron Age (EIA) sites dating to around the eighth century AD (700s) have been identified at Kulubele on the Kei River and Canasta Place near East London. Excavations at Kulubele have identified evidence of ironworking, ceramic sculptures, grain pits and sheep bones, and highly decorated potsherds have been found at Canasta Place (Fourie, 2011). However, Canasta Place probably represents the most southerly evidence of early farmers in the Eastern Cape (Hall & Webley, 1998). EIA sites have also been recorded by Opperman's (1987) during his research at Colwinton (located approximately 400km north east of Uitenhage) and Bonawe, near Barkley East (Mazel, 1992). At these sites, Iron age ceramics date to AD775. Bonawe rock shelter is located near Elliot, approximately 500km north-east of Uitenhage. The site contains both end-Pleistocene and Holocene material (Booth, 2012). Some 2 000 years ago Khoi pastoralists occupied the region and lived mainly in small settlements. They were the first food producers in South Africa and introduced domesticated animals (sheep, goat and cattle) and ceramic vessels to southern Africa (Binneman, 2011). *No EIA sites are known from the immediate vicinity of the footprint area.*
AD 1650 – AD 1850	The Nguni groups of South African can be divided into four distinct groups; the Zulu-speaking peoples, the Xhosa-speaking peoples, the Swazi people from Swaziland and adjacent areas and the Ndebele people (SA History, 2019c). Around 1600's the Xhosa groups began expanding their power. Tshawe founded the Xhosa kingdom by defeating the Cirha and Jwarha groups (Peires, 1982; SA History, 2019c). His descendants expanded the kingdom by settling in new territory and bringing people living there under the control of the amaTshawe (SA History, 2019c). As the Xhosa expanded their influence westwards, the came into contact with Khoi and San groups. The Khoi and San groups were later intermarried into the Xhosa culture Jwarha groups (SA History, 2019c). His descendants expanded the kingdom by settling in new territory and bringing people living there under the control of the amaTshawe (SA History, 2019c). From about 1700, emaXhoseni, the place of the Xhosa or Xhosaland, stretched roughly along the seaboard of South Africa between the

DATE	DESCRIPTION
	Mbashe River and the Sundays River, from the slopes of the Khahlamba, Amathole and Winterberg mountains down the coast (Peires, 1982; Fourie, 2011). As the first European settlers started moving north from the Cape the came into contact with Xhosa speaking groups. In the Eastern Cape, the 18th and 19th century is marked with conflict and wars between the European settlers and the Xhosa groups (SA History, 2019c). A marked change in the conflict appeared in 1820, when John Brownlee founded a mission on the Tyhume River near Alice, and William Shaw established a chain of Methodist stations throughout the Transkei (SA History, 2019c). *No Late Iron Age (LIA) sites are known from the immediate vicinity of the footprint area*

3.3 Previous Archaeological and Heritage Studies in and around the Study Area

A scan of the SAHRIS database has revealed the following studies conducted in and around the study area of this report. These studies are summarised below in ascending date order:

WEBLEY, L. 2006. Heritage Impact Assessment for Proposed Housing Development at Winterhoek Park, Uitenhage. Prepared for SRK Consulting. Widespread distribution of MSA material, that are primarily out of context, observed throughout the area.

DRYER, C. 2007. First Phase Archaeological and Cultural Heritage Assessment of the proposed Leisure Residential Developments at De Fonteine 364, Uitenhage, Eastern Cape.

An old stone-wall and historic graveyard were identified.

BINNEMAN, J. 2008. A phase 1 Archaeological Heritage Impact assessment of the proposed Amanzi Country Estate, Uitenhage District, Nelson Mandela Bay Municipality, Eastern Cape. Prepared for Public Process Consultants. Apart from the Amanzi Springs Acheulian occupation site, the area investigated is of low archaeological sensitivity.

BINNEMAN, J. & BOOTH, C. 2010. A Phase 1 Archaeological Impact Assessment for the proposed Motherwell Nu 31 Housing Development, Portion 2 Of 316, Uitenhage, Nelson Mandela Metropolitan Municipality, Port Elizabeth, Eastern Cape Province. Prepared for Arcus GIBB. Occasional surface scatters of ESA and MSA stone tools were documented.

VAN RYNEVELD, K. 2010. Phase 1 Archaeological Impact Assessment development of the Koedoeskloof Landfill Site, Uitenhage, Eastern Cape South Africa. Prepared for FieldWork and Terreco Consulting. A low density of MSA artefacts were identified amongst raw material outcrops characterizing the southern portion of the Koedoeskloof study site. Furthermore, two Colonial Period sites identified to the south of the proposed development of the Koedoeskloof Landfill Site.

BINNEMAN, J. 2011. A Phase 1 Archaeological Heritage Impact Assessment of the proposed rezoning and subdivision of Portions 55, 56, 62 and 81 of the Farm Maitland Mines N0. 478, Uitenhage, Port Elizabeth District, Eastern Cape Province, to establish lodge developments and a Nature Reserve. Prepared for CEN Integrated Environmental Management Unit. A number of archaeological sites, all shell middens and scatters were found on the exposed fossil dune floors in the shifting dune areas along the coast and inland.

BINNEMAN, J. & BOOTH, C. & HIGGITT, N. 2011. A Phase 1 Archaeological Impact Assessment for the proposed Mixed-Use Housing Development, Kwanobuhle, Extension 11, Uitenhage, Nelson Mandela Bay Muncipality, Eastern Cape Province. Prepared for SRK Consulting. Occasional surface scatters of mainly quartzite MSA stone artefacts were observed within the disturbed areas, while LSA stone artefacts made predominantly from quartz were mainly observed within the ploughed field.

FOURIE, W. 2011. Heritage impact assessment proposed Lady Slipper Country Estate located on Farm 415, Uitenhage, Eastern Cape. Prepared for Indwe Environmental Consulting CC. During the survey two sites of heritage significance were found, which included a cemetery and a historic ruin possible older than 60 years.

BINNEMAN, J. 2013. A Phase 1 Archaeological Impact Assessment for the proposed clearing of land for agricultural purposes on Panzi Citrus Farm near Kirkwood, division of Uitenhage, Sundays River Valley Municipality, Eastern Cape Province. Prepared for CEN Integrated Environmental Management Unit. Mainly MSA stone tools were observed in exposed river gravels and vehicle tracks.

VAN RYNEVELD, K. 2014. Phase 1 Archaeological & Cultural Heritage Impact Assessment – The Dassiesridge Wind Energy Facility (WEF), between Kirkwood and Uitenhage, Cacadu District, Eastern Cape, South Africa. Prepared for Coastal & Environmental Services. Low density Stone Age artefacts as well as several colonial structures were identified.

3.4 Historical Background of Port Elizabeth, including Uitenhage

3.4.1 *Port Elizabeth*

The first Europeans to visit the area were the Portuguese explorers Bartholomew Dias, who landed on St Croix Island in Algoa Bay in September 1488, and Vasco da Gama who noted the nearby Bird Island in 1497 (Chisholm, 1911; Myles, 2017). For centuries, the area was simply marked on navigation charts as "a landing place with fresh water". Manuel de Mesquita Perestrelo, a Portuguese navigator and cartographer, also called it “Baia de Lagoa” in 1576 **(Figure 9**) (Myles, 2017).

With the arrival of Europeans in the region of Eastern Cape, conflict broke out between the Xhosa groups and the White settlers. During the 18th and 19th century conflict between these groups was mostly fuelled by the desire for suitable land, water, living space and independence (SA History 2019b). In 1799, during the first British occupation of the Colony during the Napoleonic Wars, a stone Fort was built, named Fort Frederick after the Duke of York (Encyclopaedia Britannica, 2006). This fort, built to protect against a possible landing of French troops, overlooked the site of what later became Port Elizabeth and is now a monument.

By 1815 the town of Port Elizabeth was laid out, but development did not start until 1820 (SA History 2019b). 1820 saw the arrival of 4,000 British settlers by sea, encouraged by the government of the Cape Colony as a settlement would strengthen the border region between the Cape Colony and the Xhosa people. On 10 April 1820, the *Chapman arrived* in Algoa Bay, which brought the first English settlers to

the Eastern Cape (SA History 2019a). Their arrival was followed by the *Nautilus* on the 14th of April, the *Ocean* on the 15th of April, the *Kinnersley Castle* on the 29th of April and the *Northampton* on the 30th of April (SA History 2019a). On 6 June 1820 the Cape Governor, Sir Rufane Donkin, arrived to supervise the settlement of British immigrants. He also found Port Elizabeth and named it after his late wife, Elizabeth (SA History 2019a). Between 1823 and the 1880's the population of Port Elizabeth included Europeans, KhoiKhoi, Cape Malay, Xhosa as well as Chinese and other migrant groups (SA History 2019a). In 1861 the town was granted the status of autonomous municipality (SA History, 2019a). The populations numbers grew rapidly after 1873 when the railway to Kimberley was built.

During the Second Boer War, the port was an important transit point for soldiers, horses and materials headed to the front by railway. While the city itself did not see any conflict, many refugees from the war moved into the city. These included Boer women and children interned by the British in a concentration camp. However, Port Elizabeth never formed part of the main concentration system (BCCD, 2020). The concentration camp was situated on the Port Elizabeth racecourse but by March 1901 it was moved to higher ground (BCCD, 2020). Separate camps exited for males and females, and both were fenced and guarded (BCCD, 2020). Many of the inmates from the camp originally camp from the Free state (BCCD, 2020).

In 1901 an outbreak of Bubonic plague struck the town as a result of Argentinian fodder and horses being imported into South Africa by the British military during the Anglo-Boer conflict (SA History, 2019b). Many of the residents in Port Elizabeth were affected by the plague, however it was the Black community that was affected the worst (SA History, 2019b). Following that war, the Horse Memorial was erected to honour the tens of thousands of horses and mules that died during the conflict.

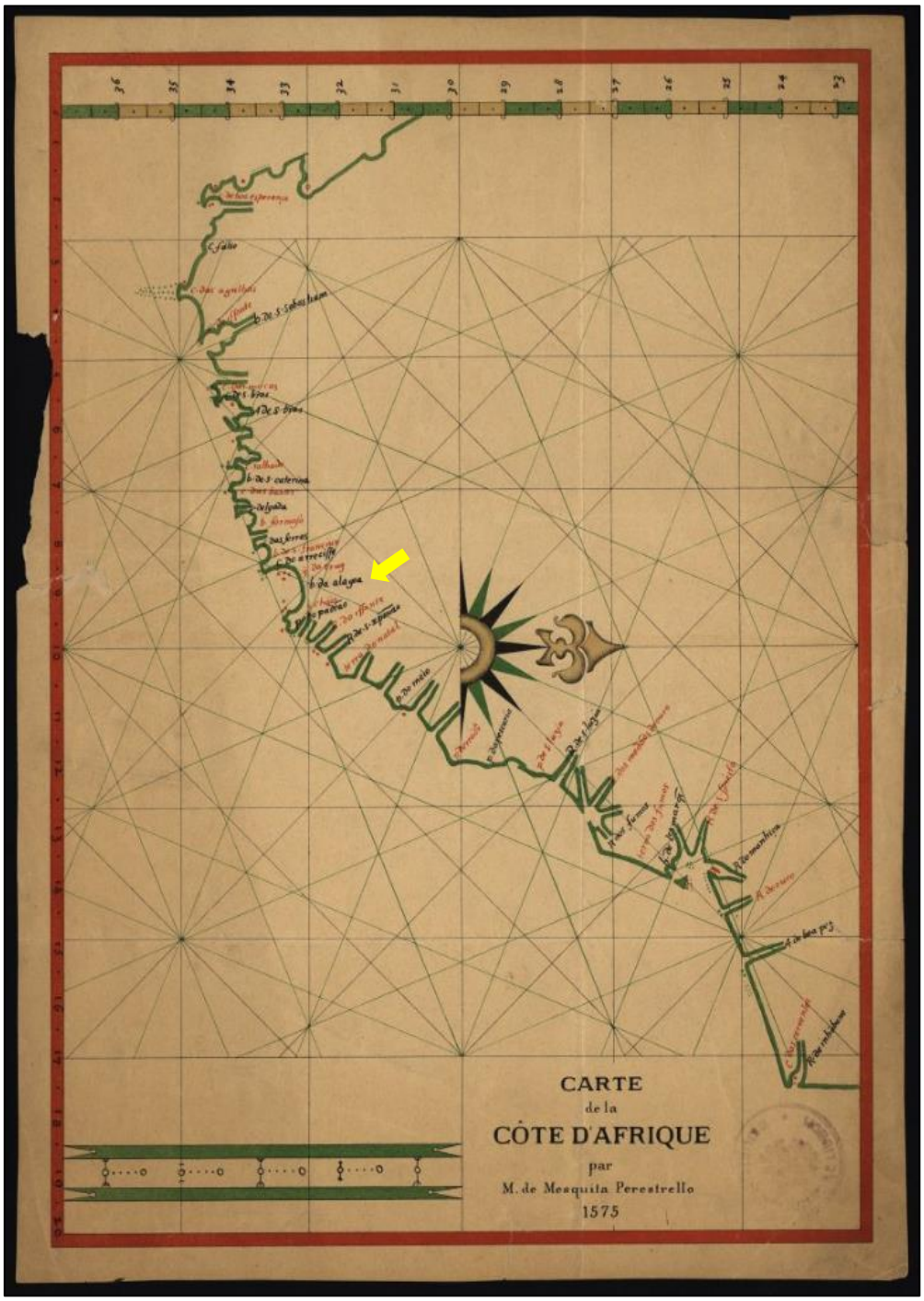


Figure 9 - 1575 map by Manuel de Mesquita Perestrelo showing the Southern African coastline from Cape of Good Hope to Inhambane (Baia de Lagoa indicated with yellow arrow) (Source: Biblioteca Nacional de Portugal, 2018)

Port Elizabeth became a city in 1913, after completion of the Kimberley Railroad (1873) spurred development of the port (Encyclopaedia Britannica, 2006).

The effects of the apartheid regime were not lost on Port Elizabeth. Forced relocation of the non-white population under the Group Areas Act began in 1962, causing various townships to be built. The whole of the South End district, being a prime real estate location, was forcibly depopulated and flattened in 1965. After the stabilization of sand dunes began in the 1870's, there was a marked increase in residential development of the area (SA History, 2019b). In 1880s, the Railways began to expropriate land between South End and the Port Elizabeth town centre, which initially belonged to the Malay community. These families were forcibly resettled in South End, with relocations continuing until 1975 (SA History, 2019b).

In 1977 Steve Biko, the black anti-apartheid activist, was interrogated and tortured by the security police in Port Elizabeth, before being transported to Pretoria where he died. Other notable deaths in the city during this time included the Cradock Four.

3.4.2 *Uitenhage*

In 1804, J. A. Uitenhage de Mist, Commissioner-General of the Batavian Republic, instructed Captain Alberti to select a site for the new Drostdy. Alberti chose a site on the banks of the Zwartkops River Valley, because of a favourable climate and abundant water supply. On 25 April of the same year, a Proclamation was issued creating the District of Uitenhage (SA History 2019a). In September the farm of the widow Scheepers was chosen as the site for the new administrative village (SA History 2019a; SA History 2020).

In 1811 Uitenhage became the focus for military operations against the amaXhosa in the frontier war of 1811-12, and in 1815 its garrison played a leading role in the suppression of the Slachter's Nek rebellion (SA History 2020). Following devastating floods, which hit the Eastern Cape in 1823, many English settlers who had arrived in the country in 1820 began to drift into the towns and some came to Uitenhage (SA History 2020). They brought with them English customs as well as ideas about architecture which differed markedly from those of the local Dutch community, and after a while their Georgian tastes began to find expression in the town's buildings, often producing an interesting fusion of aesthetics (SA History 2020). Another important development took place in 1829 when the springs on the farm Sandfontein, situated 8km above Uitenhage, were purchased by the government and added to its commonage. The town was now assured of a reliable and abundant source of water (SA History 2020).

3.4.3 *Conclusions*

The archival and historical research has revealed that Port Elizabeth and Uitenhage have a history of occupation.

3.5 Archival/historical maps

The examination of historical data and cartographic resources represents a critical tool for locating and identifying heritage resources and in determining the historical and cultural context of the study area. Relevant topographic maps and satellite imagery were studied to identify structures, possible burial grounds or archaeological sites present in the footprint area.

Topographic maps (1:50 000) for various years (1946,1976 and 1989) were assessed to observe the development of the area, as well as the location of possible historical structures and burial grounds. The maps were also used to assess the possible age of structures located, to determine whether they could be considered as heritage sites. Map overlays were created showing the possible heritage sites identified within the areas of concern, as can be seen below **(Figure 10**-**Figure 13).**

The relevant topographical maps include:

- 3325CD Uitenhage First Edition, compiled in 1947, drawn by the Trigonometrical Survey Office in 1953, Published by the Republic of South Africa Government Printer in 1973.
- 3325CD Uitenhage Second Edition, remapped in 1976 by the Director – General of Surveys, published by the Government Printer in 1979.
- 3325CD Uitenhage Third Edition, published by the Chief Directorate: Surveys and Land Information in 1989, printed by the Government Printer in 1994.

It can be seen that all the map sheets consulted depict the entire project area surrounded by several huts, as well as old agricultural fields. Historical roads are also depicted.

Furthermore, from the Chief Surveyor General database (http://csg.dla.gov.za/) the following Portions of the Farm Brakkefontein 416 **(Figure 14**-**Figure 25)** was surveyed:

- Portion 1 on 27 March 1920 by the Government Land Surveyor P. Grant-Dallon
- Portion 3 on 15 February 1921 by the Government Land Surveyor P. Grant-Dallon
- Portion 2 in December 1932
- Portion 11 in December 1932 by the Land Surveyor P. A. Lawrence
- Potion 6 in August 1933 by the Land Surveyor A. Alliman
- Portion 9 in January 1934 by the Land Surveyor A. Alliman
- Portion 9 in December 1936 by the land Surveyor G.B. Balls.
- Portion 11 in September 1941 by the Land Surveyor P. A. Lawrence
- Portion 10 in December 1941 by the land Surveyor G.B. Balls.
- Portion 36 in July 1946 by the Land Surveyor J. Packer.
- Portion 35 on 29 November 1991 by the Land Surveyor R. A. Myrdal
- Portion 36 on 23 August 1992 by the Land Surveyor R. A. Myrdal

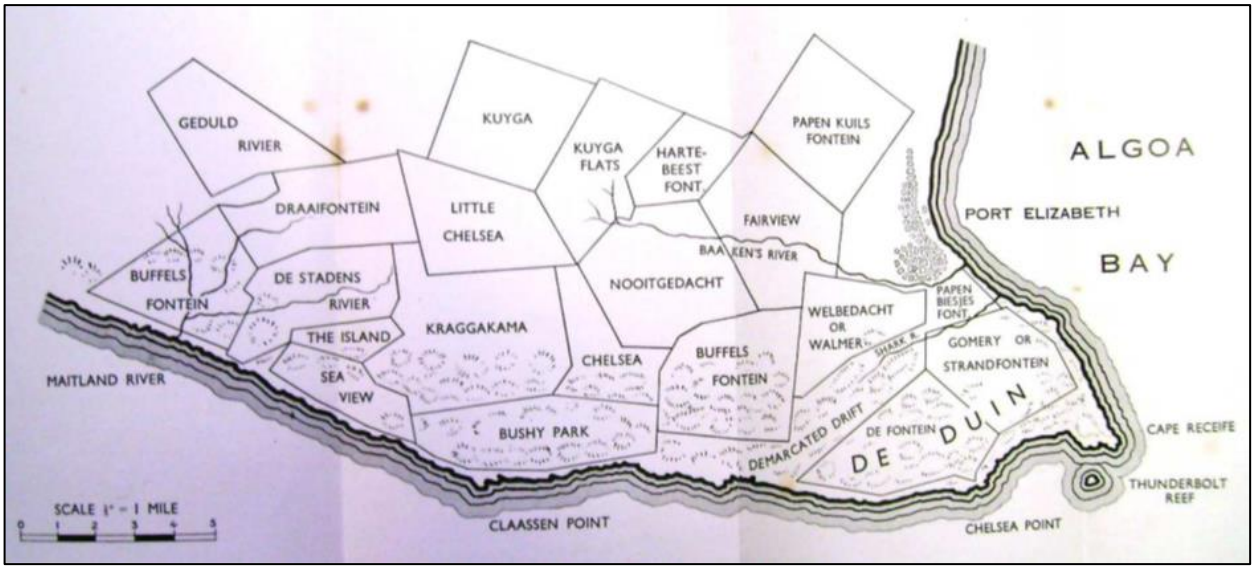


Figure 10 - Map showing the earliest subdivisions of farms in Port Elizabeth (Redgrave, 1947)

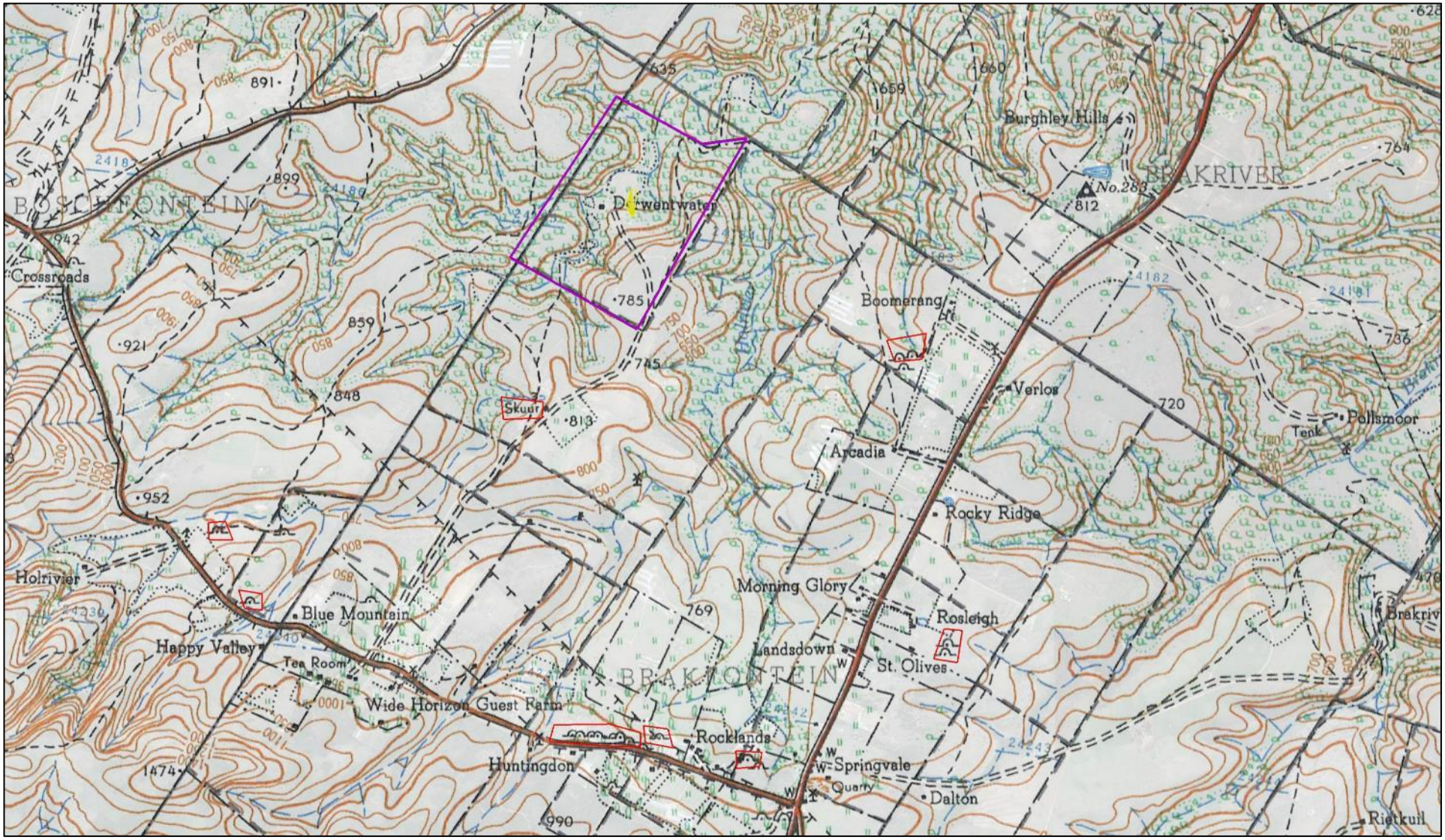


Figure 11 – First Edition Topographic map (1:50 000) 3325CD Uitenhage dating to 1947 showing the Farm Brakfontein, with several heritage features (red polygons) located in close proximity to the project area (yellow polygon).

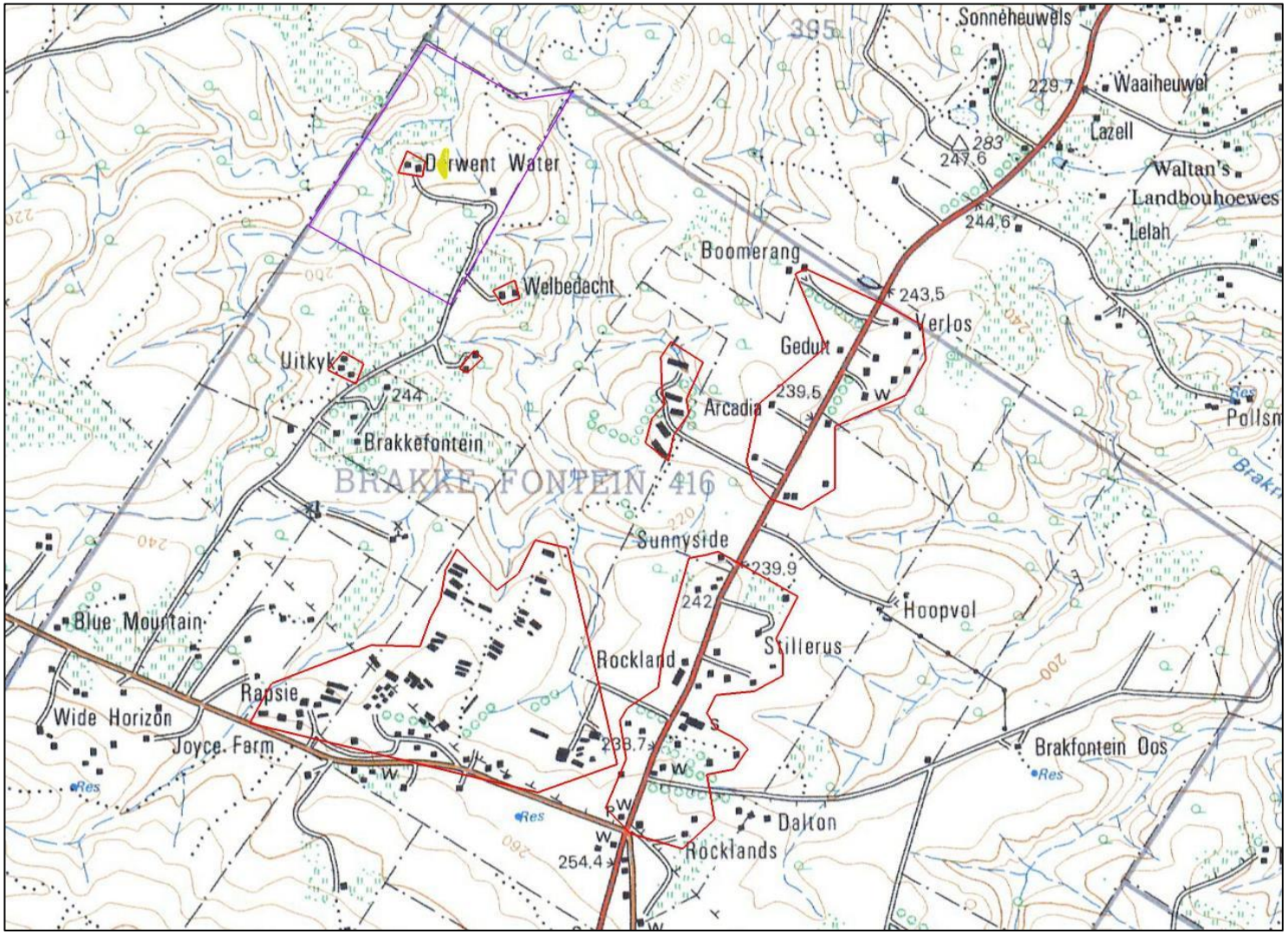


Figure 12 – Second Edition Topographic map (1:50 000) 3325CD Uitenhage dating to 1976 showing the Farm Brakkefontein, with several heritage features (red polygons) located in close proximity to the project area (yellow polygon).

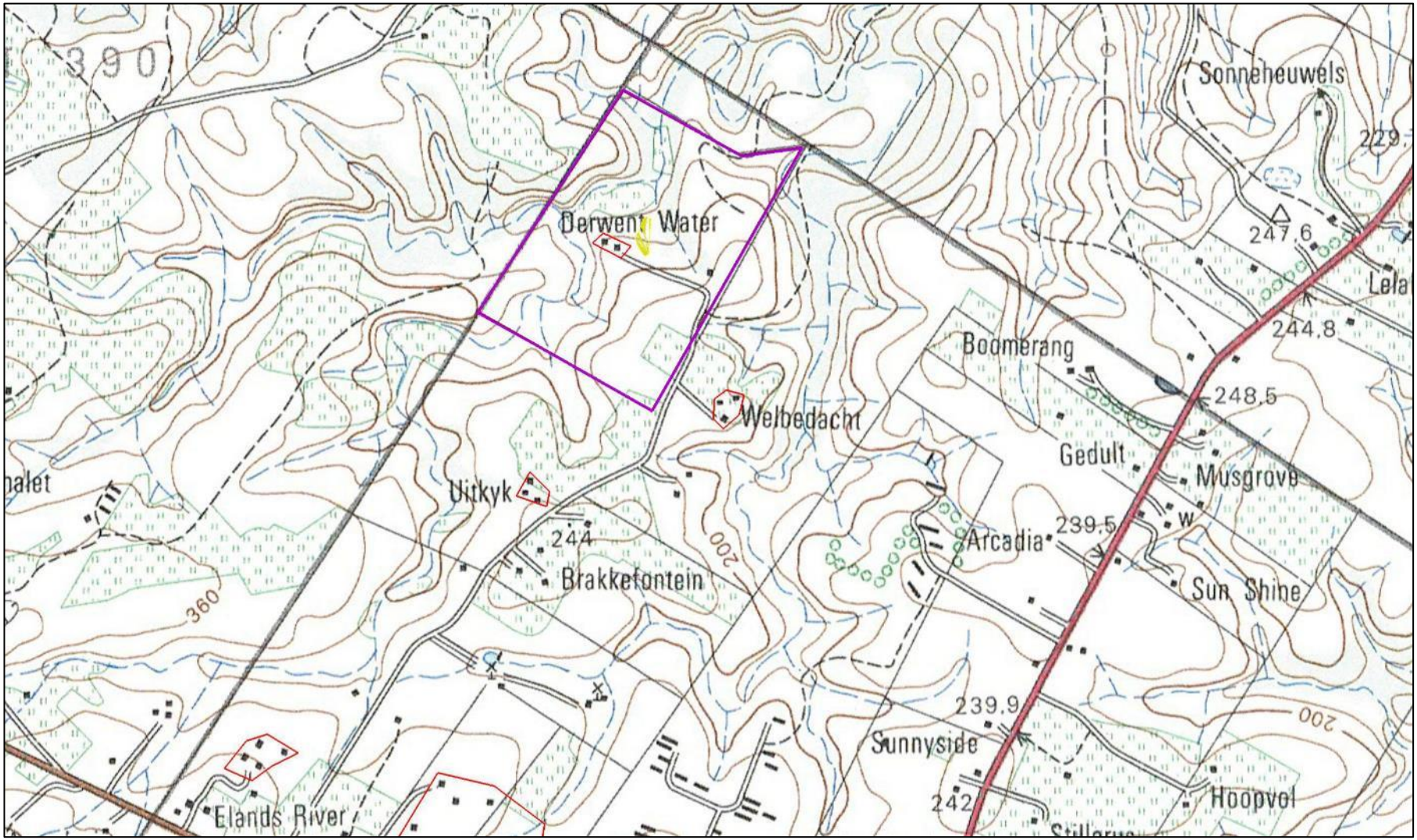


Figure 13 –Third Edition Topographic map (1:50 000) 3325CD Uitenhage dating to 1989 showing the Farm Brakkefontein, with several heritage features (red polygons) located in close proximity to the project area (yellow polygon).

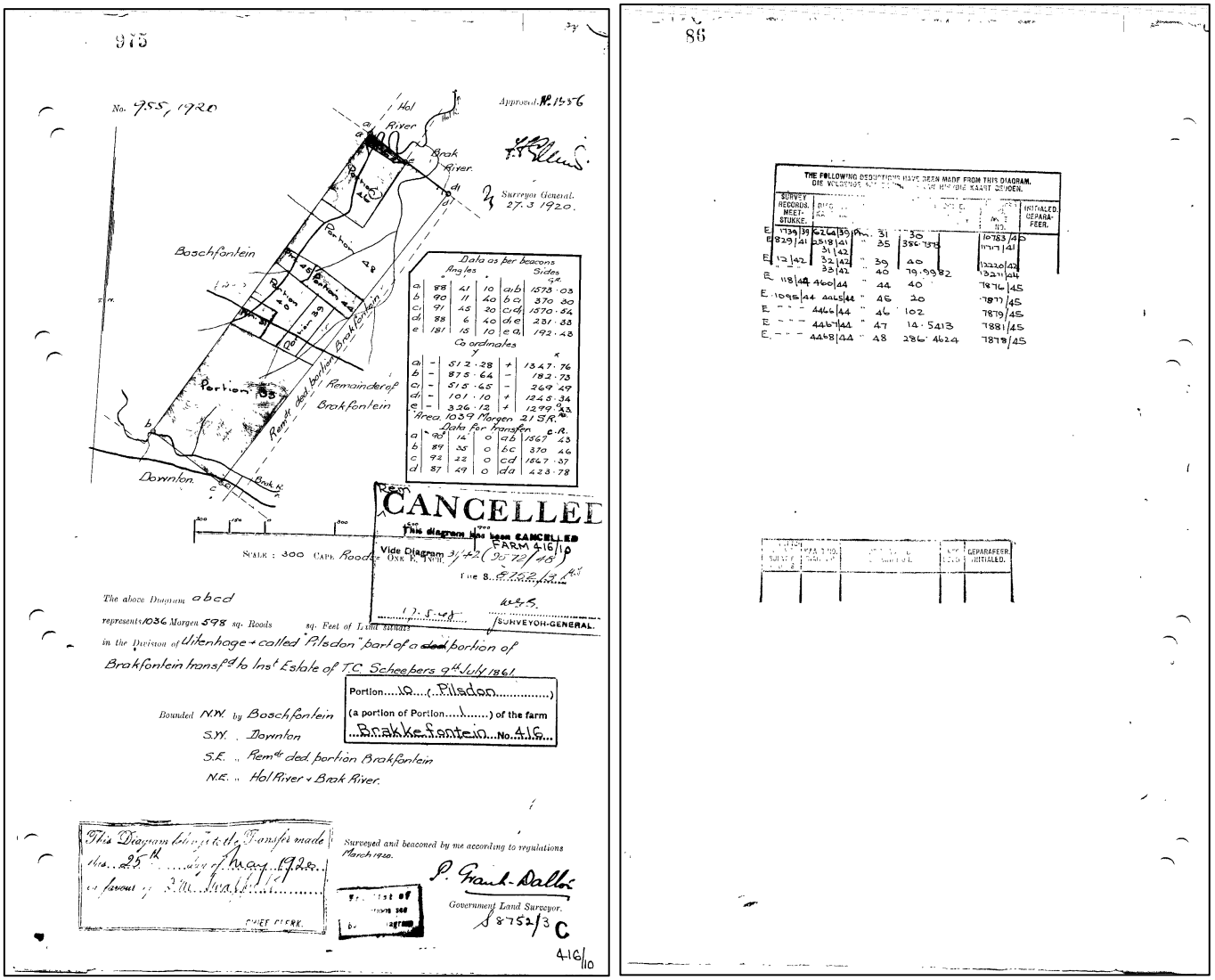


Figure 14 – SG-Diagram from the Chief Surveyor General database for Portion 1 of the Farm Brakkefontein 416, surveyed in 1920 by the Government Land Surveyor P. Grant-Dallon

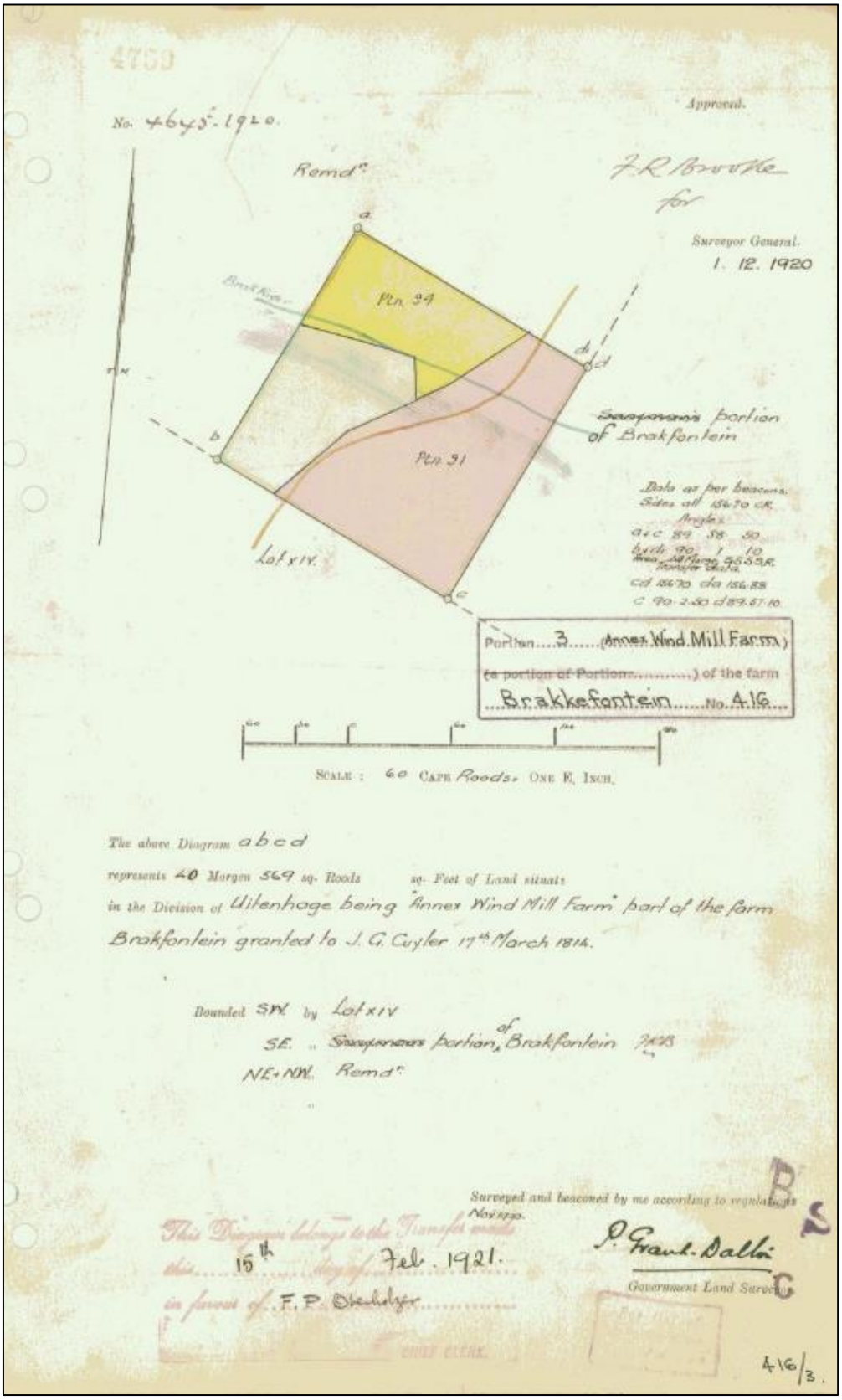


Figure 15 – SG-Diagram from the Chief Surveyor General database for Portion 3 of the Farm Brakkefontein 416, surveyed in 1921 by the Government Land Surveyor P. Grant-Dallon

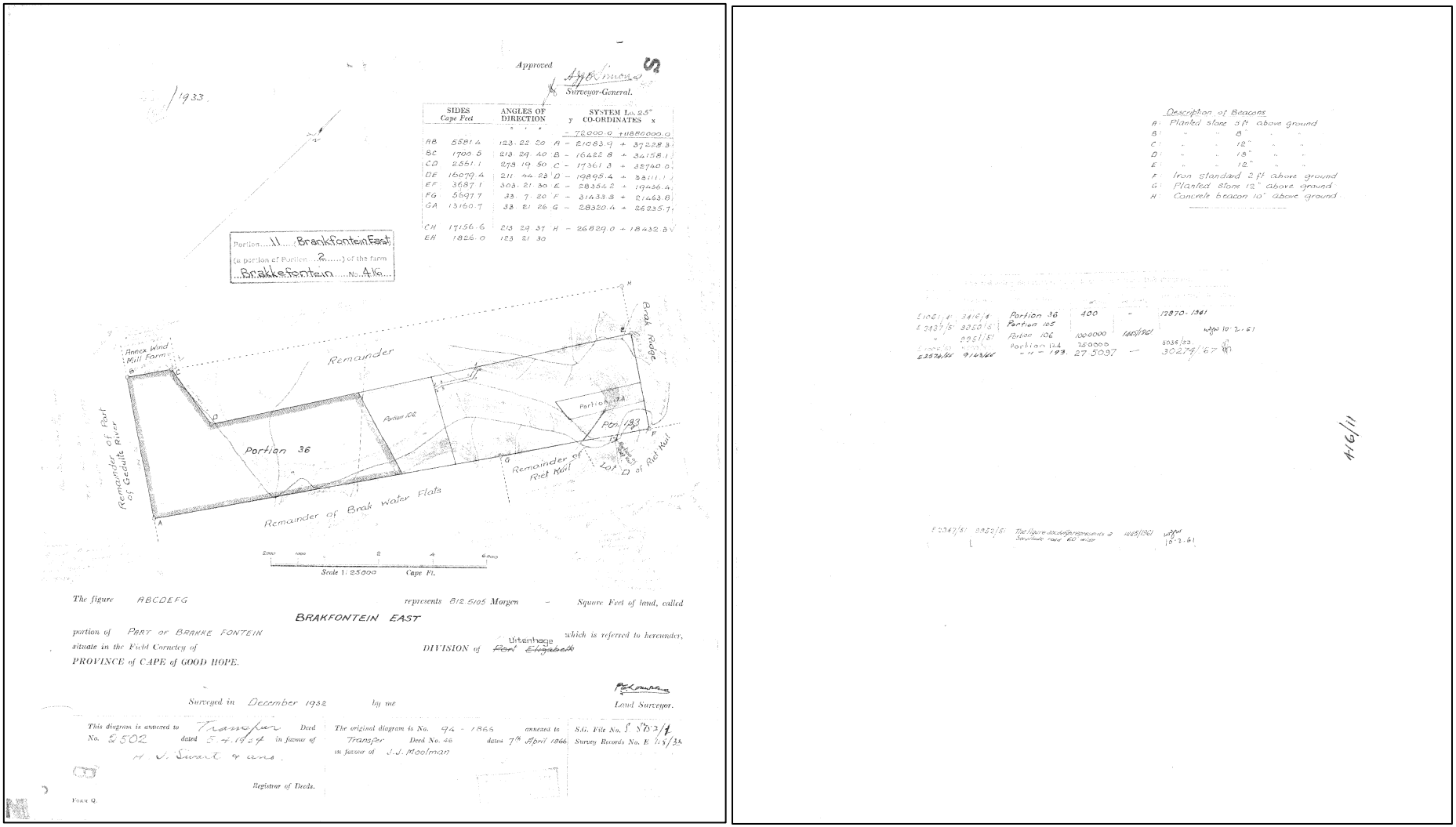


Figure 16 – SG-Diagram from the Chief Surveyor General database for Portion 2 of the Farm Brakkefontein 416, surveyed in 1932

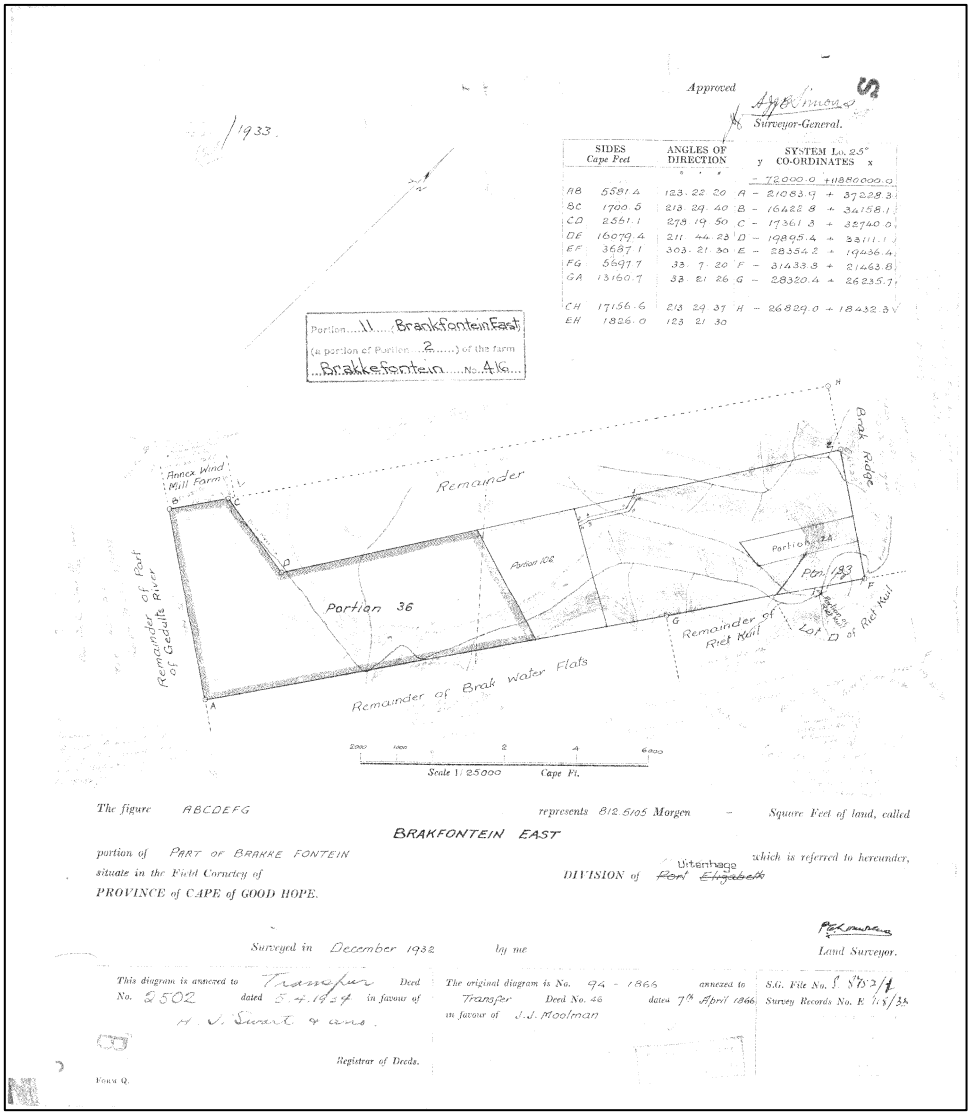
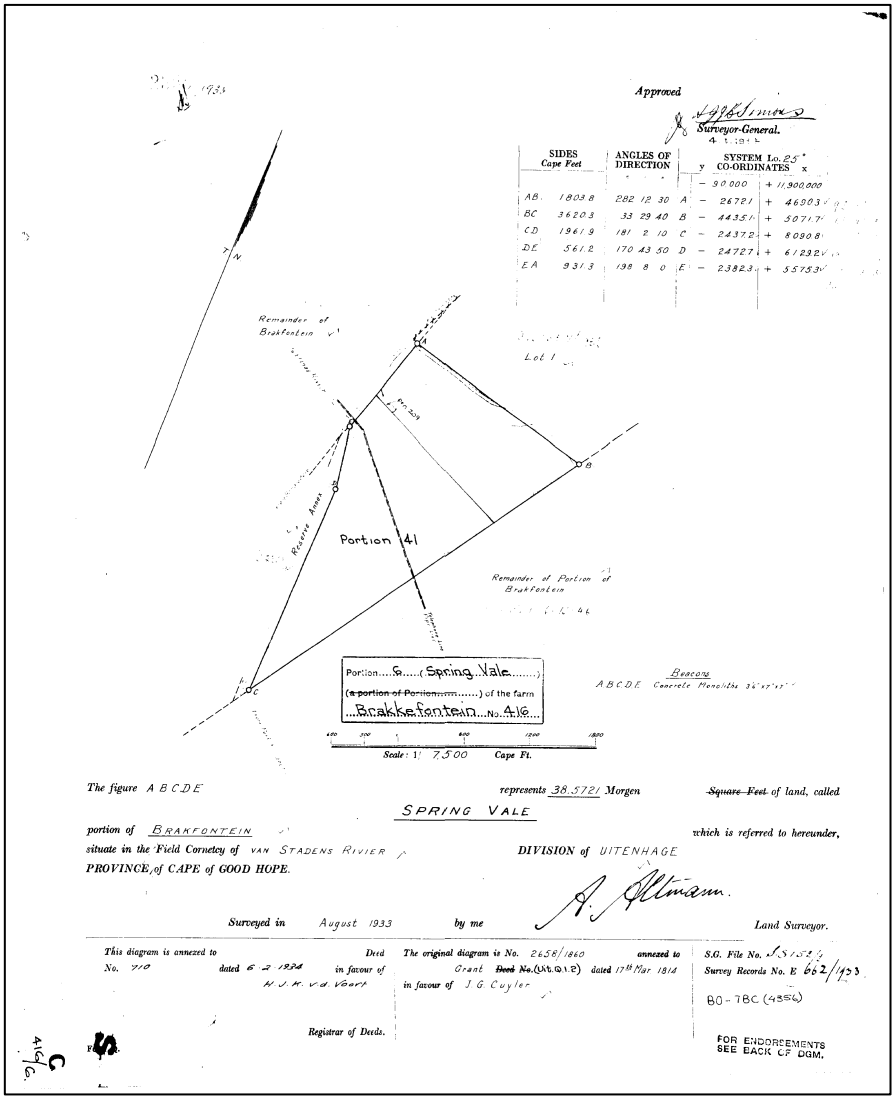


Figure 17 – SG-Diagram from the Chief Surveyor General database for Portion 11 of the Farm Brakkefontein 416, surveyed in 1932 by the Land Surveyor P. A. Lawrence



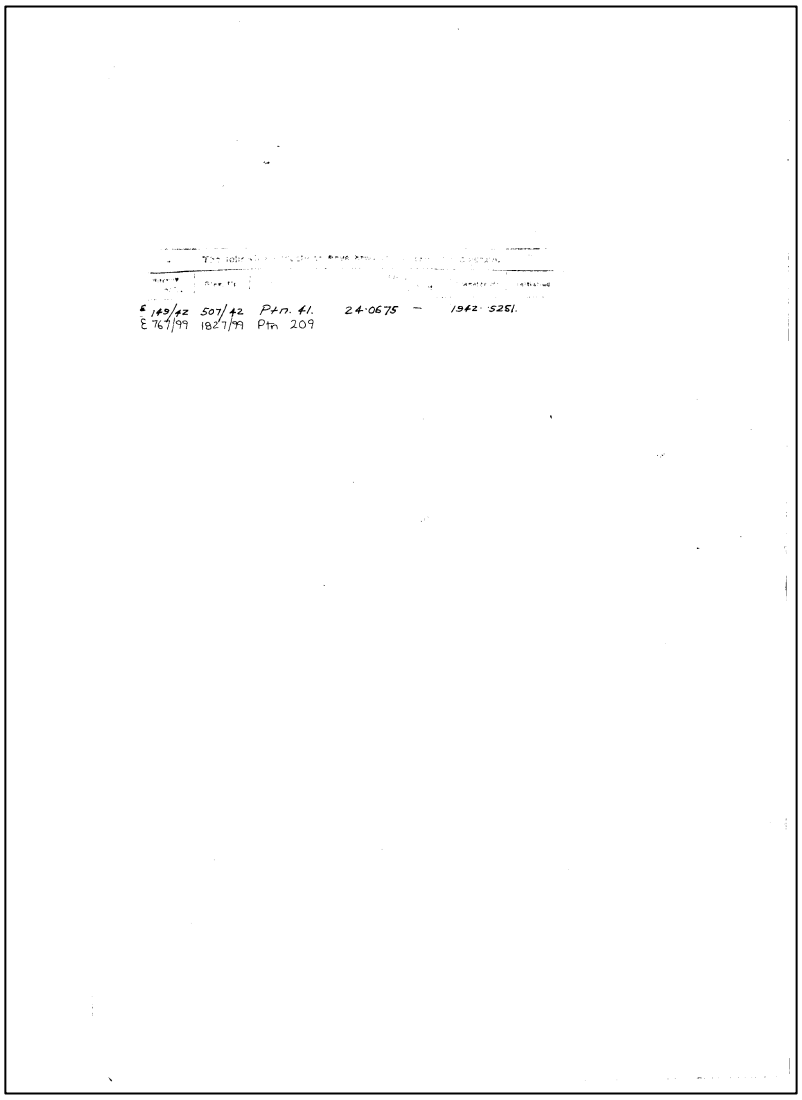


Figure 18 – SG-Diagram from the Chief Surveyor General database for Portion 6 of the Farm Brakkefontein 416, surveyed in 1933 by the Land Surveyor A. Alliman

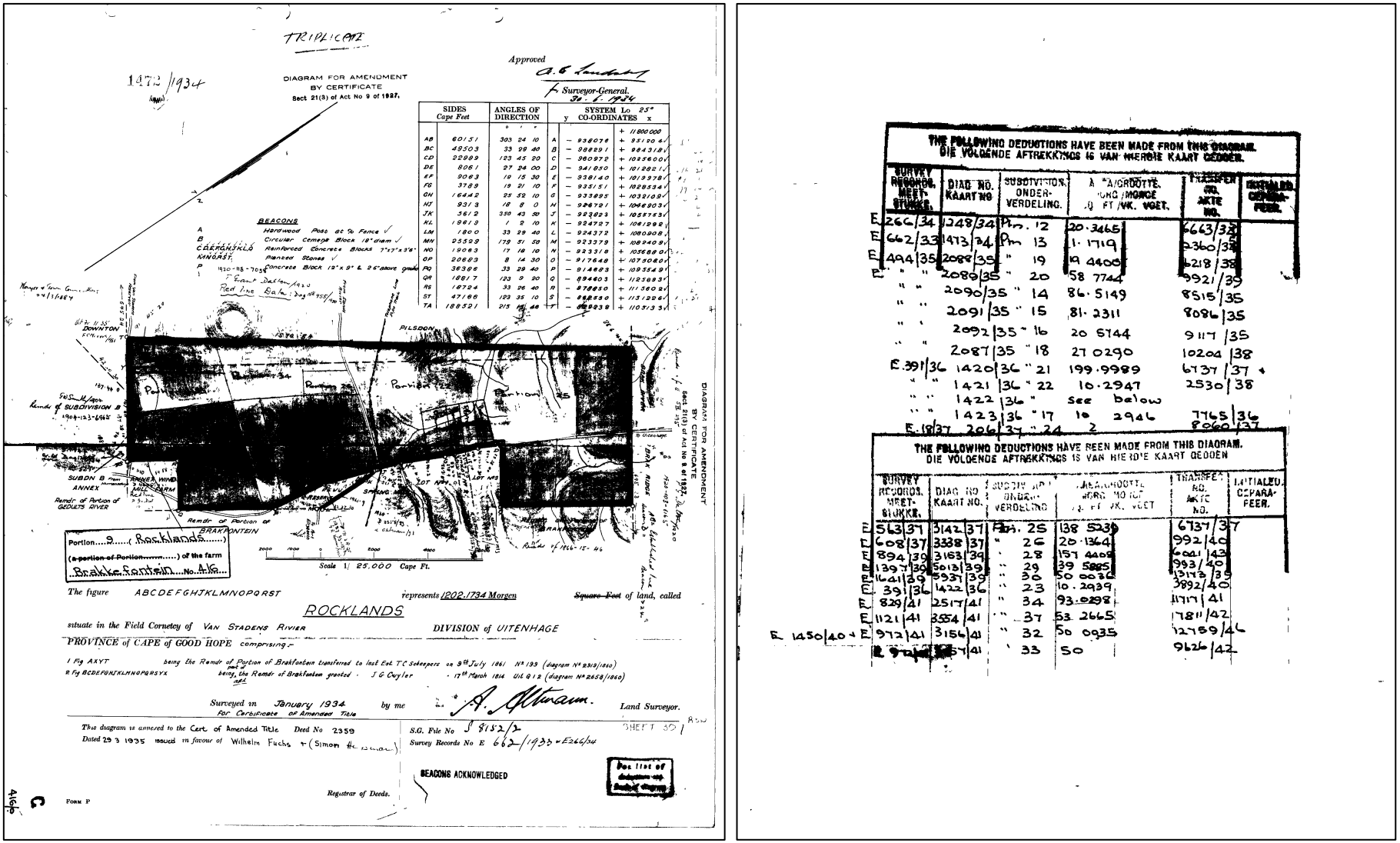


Figure 19 – SG-Diagram from the Chief Surveyor General database for Portion 9 of the Farm Brakkefontein 416, surveyed in 1934 by the Land Surveyor A. Alliman

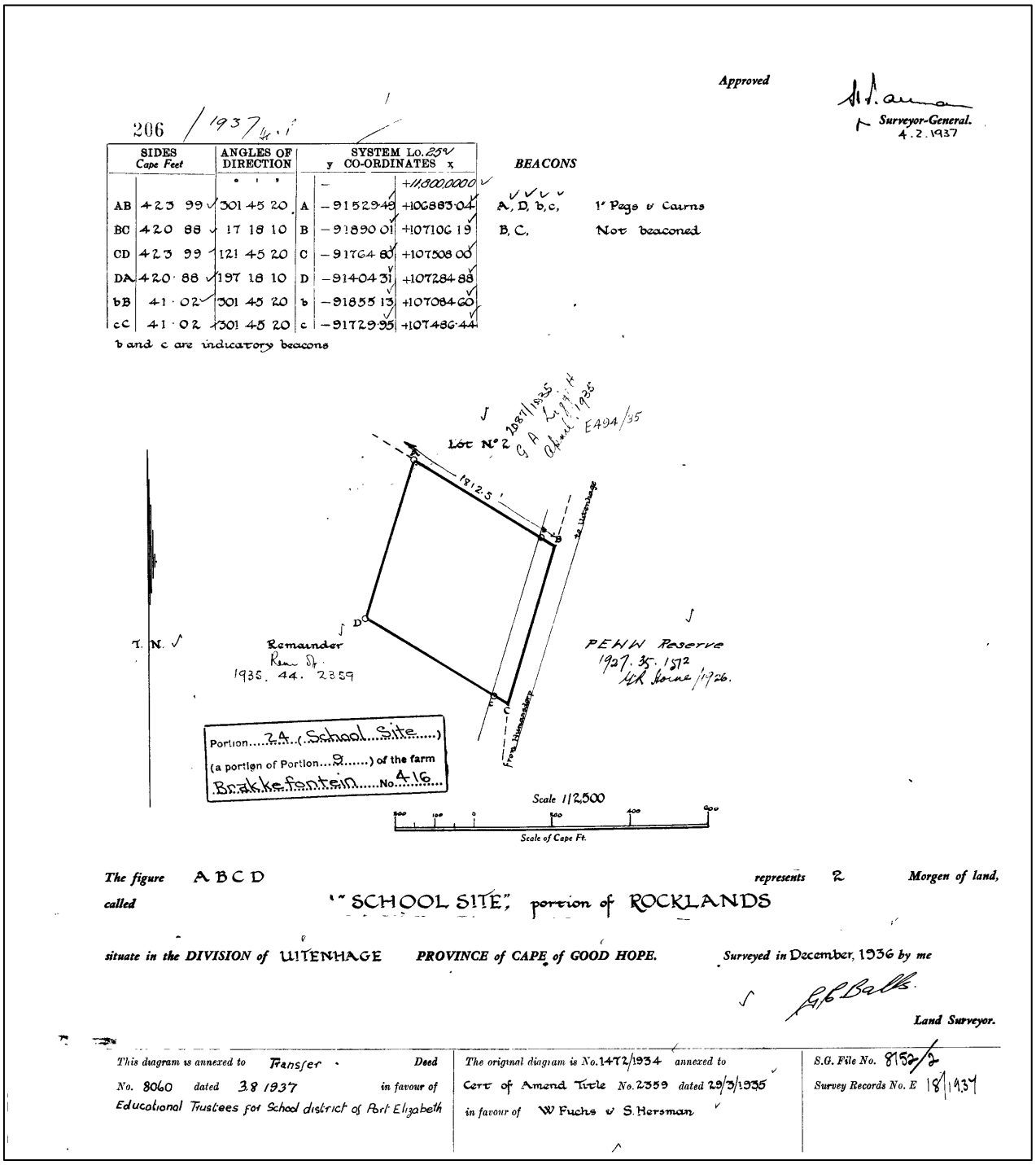


Figure 20 – SG-Diagram from the Chief Surveyor General database for Portion 9 of the Farm Brakkefontein 416, surveyed in 1936 by the land Surveyor G.B. Balls.

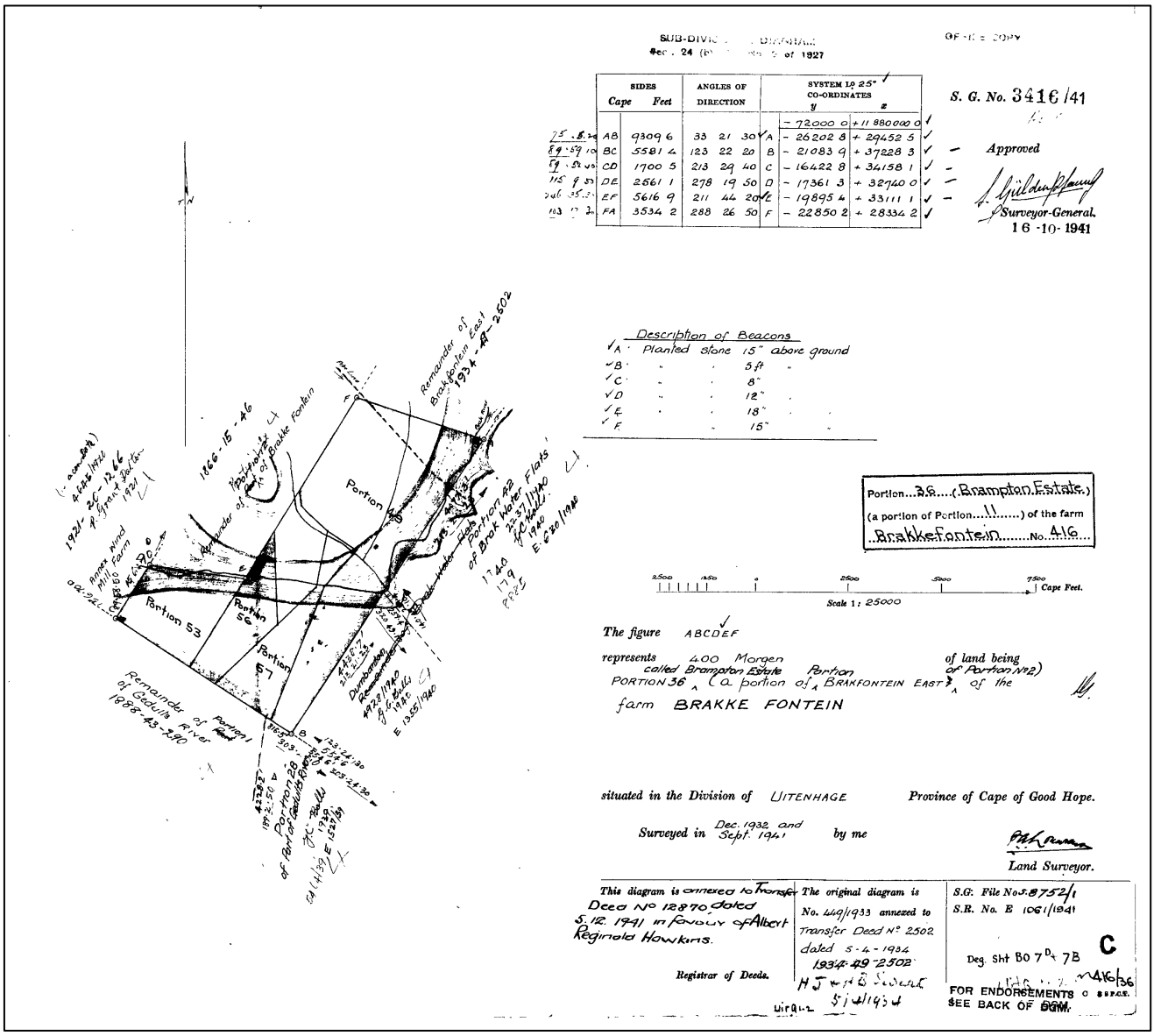
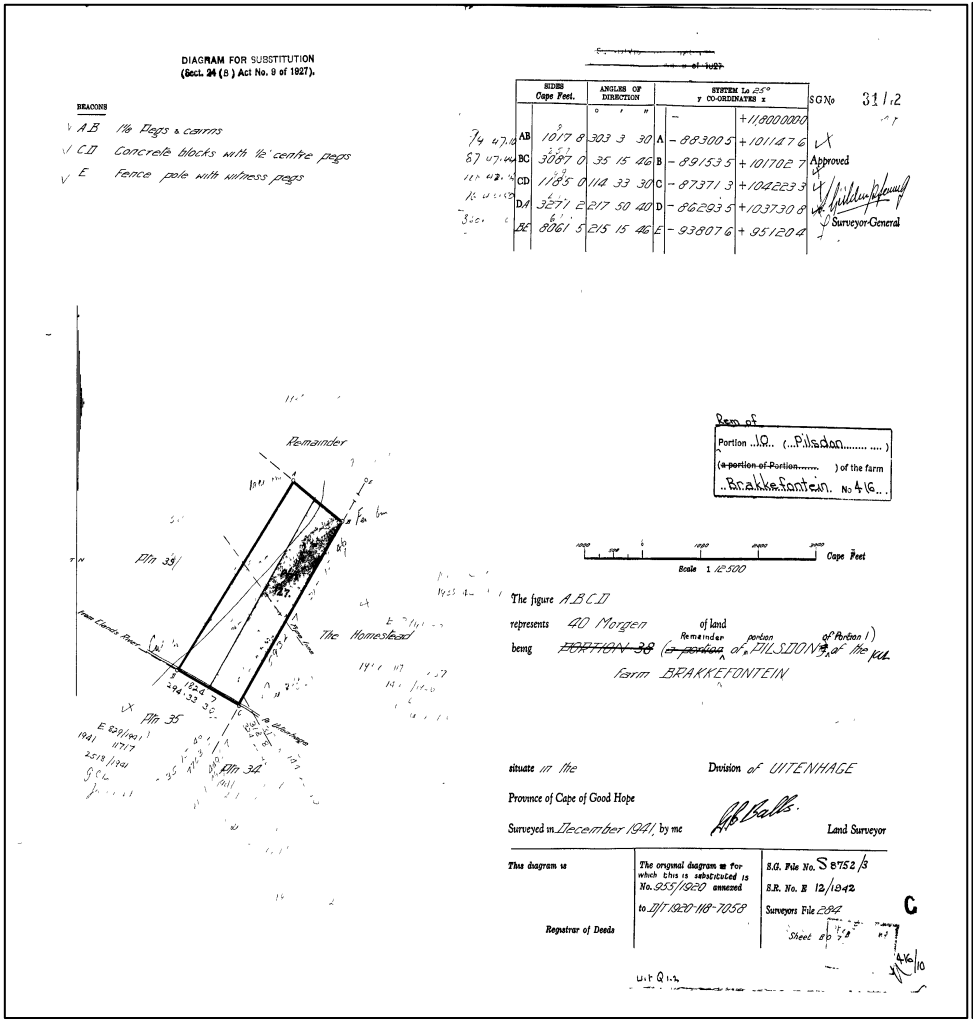


Figure 21 – SG-Diagram from the Chief Surveyor General database for Portion 11 of the Farm Brakkefontein 416, surveyed in 1941 by the Land Surveyor P. A. Lawrence



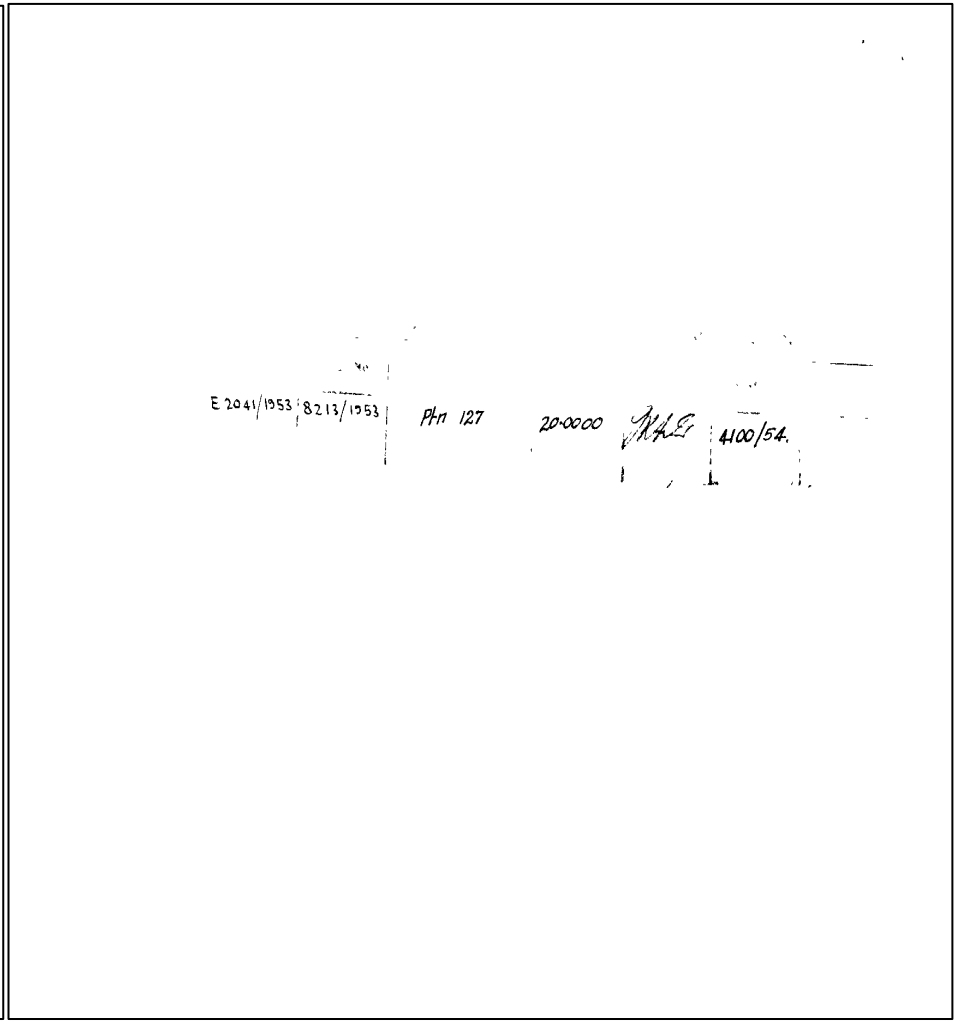


Figure 22 – SG-Diagram from the Chief Surveyor General database for Portion 10 of the Farm Brakkefontein 416, surveyed in 1941 by the Land Surveyor G.B. Balls.

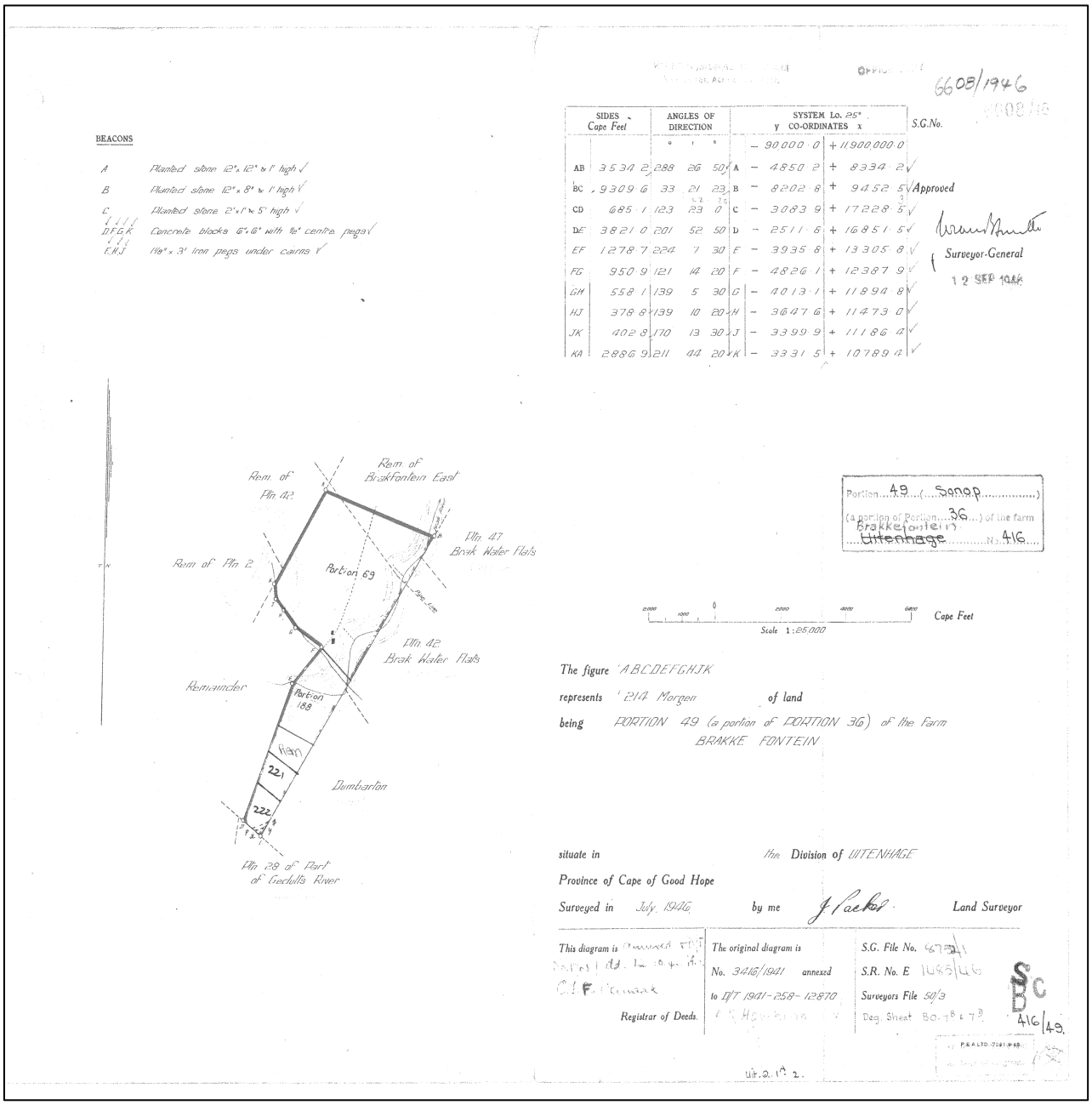
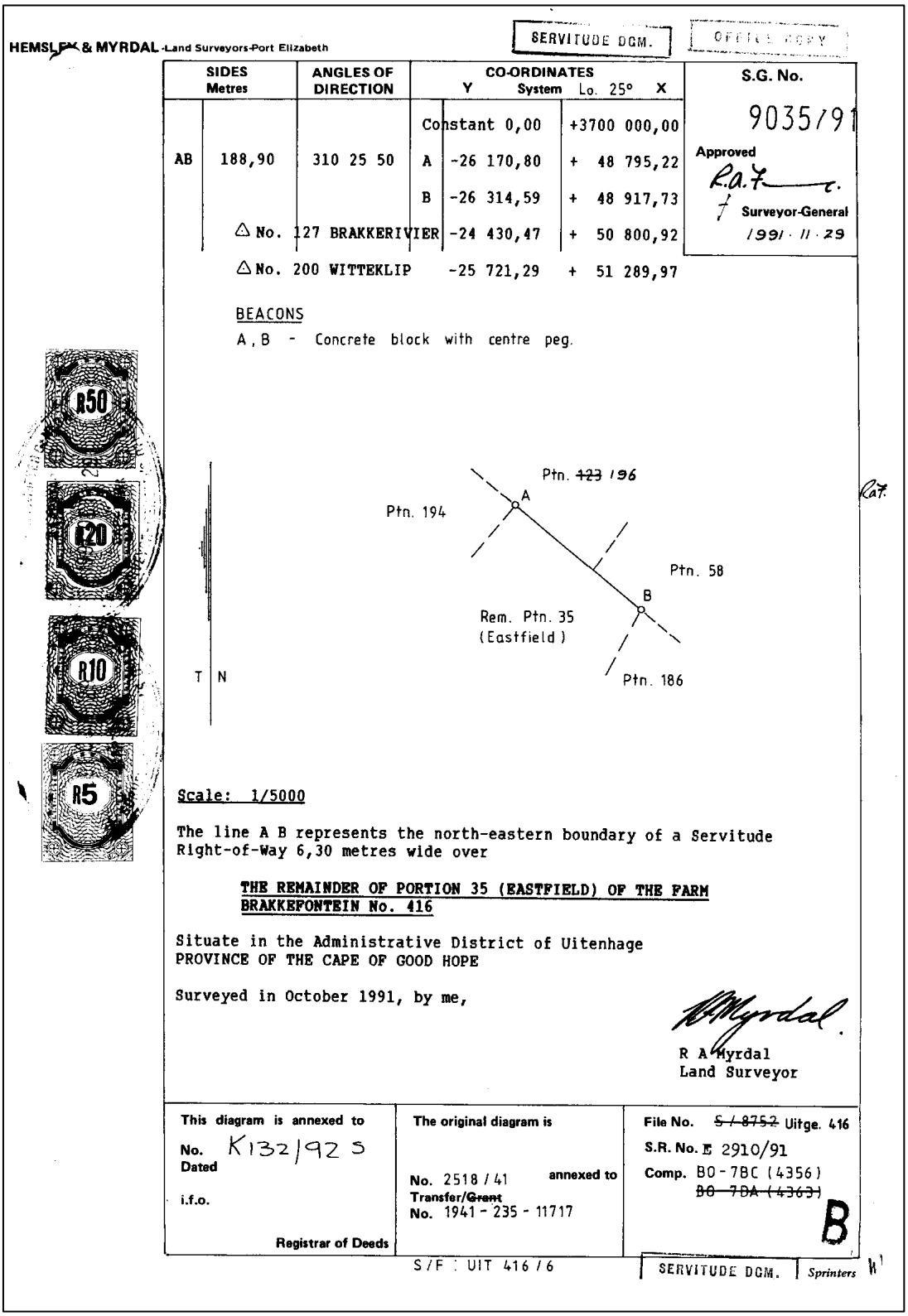


Figure 23 – SG-Diagram from the Chief Surveyor General database for Portion 36 of the Farm Brakkefontein 416, surveyed in 1946 by the Land Surveyor J. Packer.


HEMSLEY & MYRDAL -Land Surveyors-Port Elizabeth

SERVITUDE DGM. OFFICE COPY

	SIDES Metres	ANGLES OF DIRECTION		CO-ORDINATES Y System Lo. 25°	X	S.G. No.
				Constant 0,00	+3700 000,00	9035/91
AB	188,90	310 25 50	A	-26 170,80	+ 48 795,22	Approved
			B	-26 314,59	+ 48 917,73	R.A.M. Surveyor-General
	△ No. 127 BRAKKERIVIER			-24 430,47	+ 50 800,92	1991 · 11 · 29
	△ No. 200 WITTEKLIP			-25 721,29	+ 51 289,97	

BEACONS

A, B - Concrete block with centre peg.

Scale: 1/5000

The line A B represents the north-eastern boundary of a Servitude Right-of-Way 6,30 metres wide over

THE REMAINDER OF PORTION 35 (EASTFIELD) OF THE FARM BRAKKEFONTEIN No. 416

Situate in the Administrative District of Uitenhage
PROVINCE OF THE CAPE OF GOOD HOPE

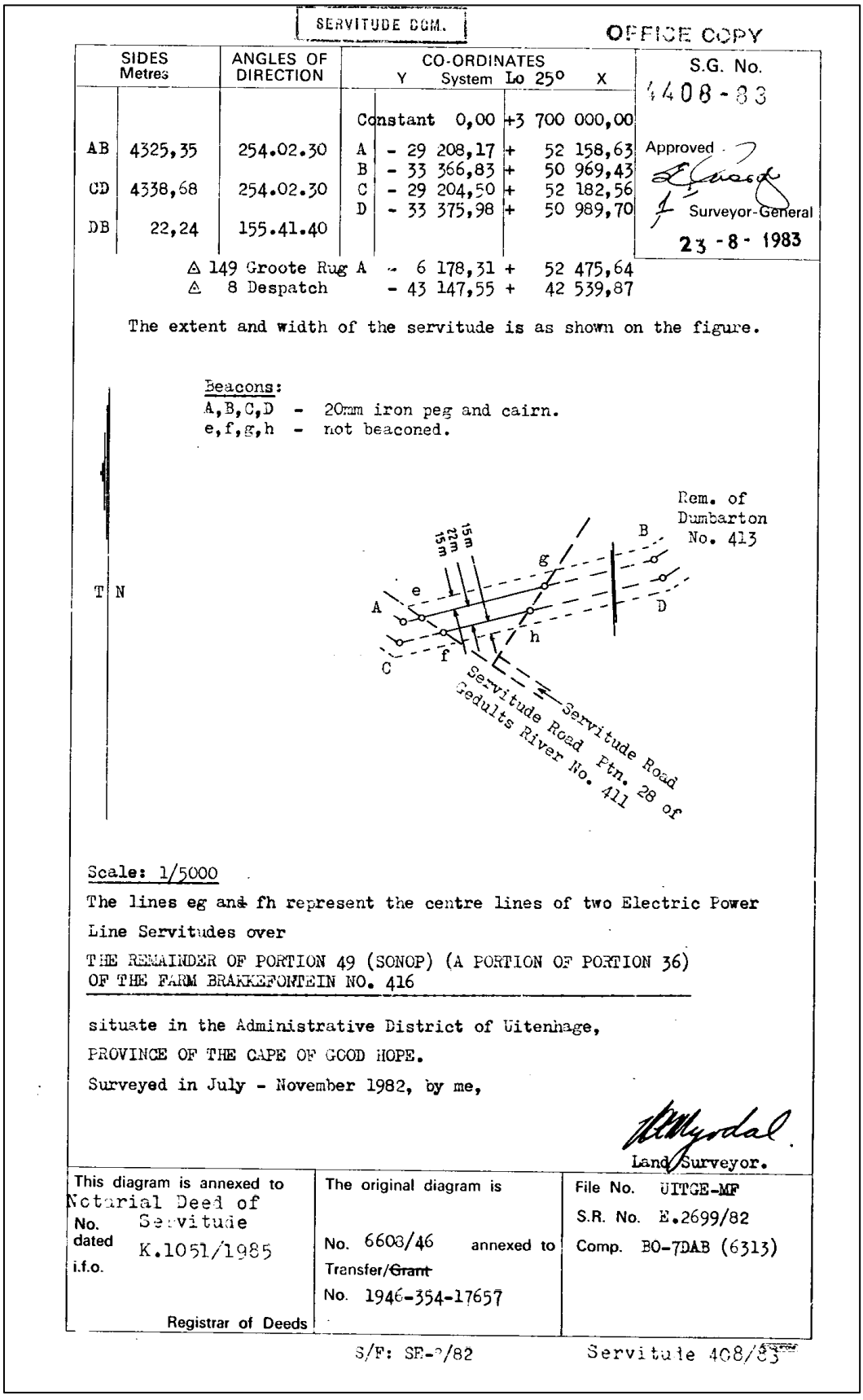
Surveyed in October 1991, by me,

R A Myrdal
Land Surveyor

This diagram is annexed to	The original diagram is	File No. S/8752 Uitge. 416
No. K132/92 S Dated i.f.o. Registrar of Deeds	No. 2518 / 41 annexed to Transfer/Grant No. 1941 - 235 - 11717	S.R. No. E 2910/91 Comp. BO-7BC (4356) BO-7DA (4363) B

S/F : UIT 416 / 6 SERVITUDE DGM. Sprinters

Figure 24 – SG-Diagram from the Chief Surveyor General database for Portion 35 of the Farm Brakkefontein 416, surveyed in 1991 by the Land Surveyor R. A. Myrdal.



SERVITUDE DGM.

OFFICE COPY

SIDES Metres		ANGLES OF DIRECTION	CO-ORDINATES Y System Lo 25° X		
			Constant 0,00	+3 700 000,00	
AB	4325,35	254.02.30	A	- 29 208,17	+ 52 158,63
			B	- 33 366,83	+ 50 969,43
CD	4338,68	254.02.30	C	- 29 204,50	+ 52 182,56
			D	- 33 375,98	+ 50 989,70
DB	22,24	155.41.40			
			△ 149 Groote Rug A	- 6 178,31	+ 52 475,64
			△ 8 Despatch	- 43 147,55	+ 42 539,87

S.G. No. 4408-83

Approved

Surveyor-General

23-8-1983

The extent and width of the servitude is as shown on the figure.

Beacons:
A,B,C,D - 20mm iron peg and cairn.
e,f,g,h - not beaconed.

T N

Rem. of Dumbarton No. 413

15m 22m 15m

A B C D e f g h

Servitude Road Ftn. 28 of Sedults River No. 411

Servitude Road

Scale: 1/5000

The lines eg and fh represent the centre lines of two Electric Power Line Servitudes over

THE REMAINDER OF PORTION 49 (SONOP) (A PORTION OF PORTION 36) OF THE FARM BRAKKEFONTEIN NO. 416

situate in the Administrative District of Uitenhage,

PROVINCE OF THE CAPE OF GOOD HOPE.

Surveyed in July - November 1982, by me,

Land Surveyor.

This diagram is annexed to Notarial Deed of Servitude No. K.1051/1985 dated i.f.o.

Registrar of Deeds

The original diagram is No. 6603/46 annexed to Transfer/~~Grant~~ No. 1946-354-17657

File No. UITGE-MF
S.R. No. E.2699/82
Comp. BO-7DAB (6313)

S/F: SE-?/82

Servitude 408/83

Figure 25 – SG-Diagram from the Chief Surveyor General database for Portion 36 of the Farm Brakkefontein 416, surveyed in 1992 by the Land Surveyor R. A. Myrdal.

3.6 Findings of historical desktop study

The findings can be compiled as follows and have been combined to produce a heritage sensitivity map for the project based on the desktop assessment (**Figure 26**).

3.6.1 *Heritage Sensitivity*

The sensitivity maps were produced by overlying:

- Satellite Imagery;
- Current Topographical Maps; and
- First to third edition Topographical Maps dating from the 1940's to 1970s.

This enabled the identification of possible heritage sensitive areas that included:

- Dwellings;
- Clusters of dwellings (homesteads, huts and farmsteads);
- Archaeological Sensitive areas; and
- Structures/Buildings.

By superimposition and analysis, it was possible to rate these structure/areas according to age and thus their level of protection under the NHRA. Note that these structures refer to possible tangible heritage sites as listed in ***Table 4***.

Table 4 -Tangible heritage sites in the study area

Name	Description	Legislative protection
Archaeology - Iron Age Sites	Older than 100 years	NHRA Sect 3 and 35
Architectural Structures	Possibly older than 60 years	NHRA Sect 3 and 34
Graves and Burial Grounds	60 years or older	NHRA Sect 3 and 36

Additionally, evaluation of satellite imagery has indicated the following areas that may be sensitive from a heritage perspective. The analysis of the studies conducted in the area assisted in the development of the following landform type to heritage find matrix in ***Table 5***.

Table 5 - Landform type to heritage find matrix

LANDFORM TYPE	HERITAGE TYPE
Crest and foot hill	LSA and MSA scatters, LIA settlements
Crest of small hills	Small LSA sites – scatters of stone artefacts, ostrich eggshell, pottery and beads
Watering holes/pans/rivers	LSA sites, LIA settlements
Farmsteads	Historical archaeological material
Ridges and drainage lines	LSA sites, LIA settlements
Forested areas	LIA sites

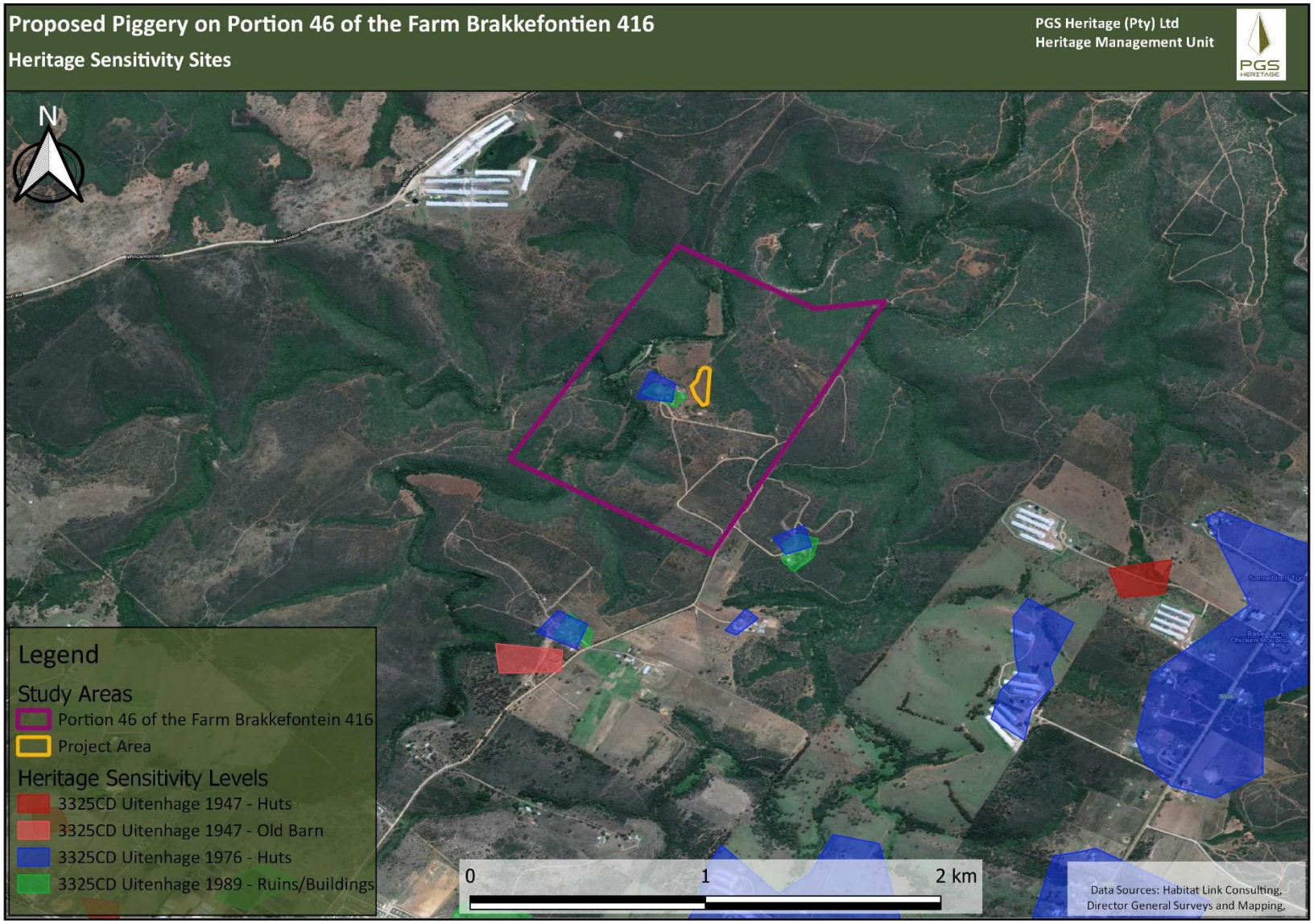


Figure 26 – Heritage sensitivity map indicating possible sensitive areas around and within Portion 46 of the Farm Brakkefontein 416 – Overview map.

4 FIELDWORK AND FINDINGS

A controlled surface survey was conducted on foot and by vehicle over a period of one day by a heritage specialist from PGS. The fieldwork was conducted on 23 January 2020. The track logs (in blue) for the survey are indicated in **Figure 27**. One site, and old Farmhouse **(RP-01)** was identified during the survey.

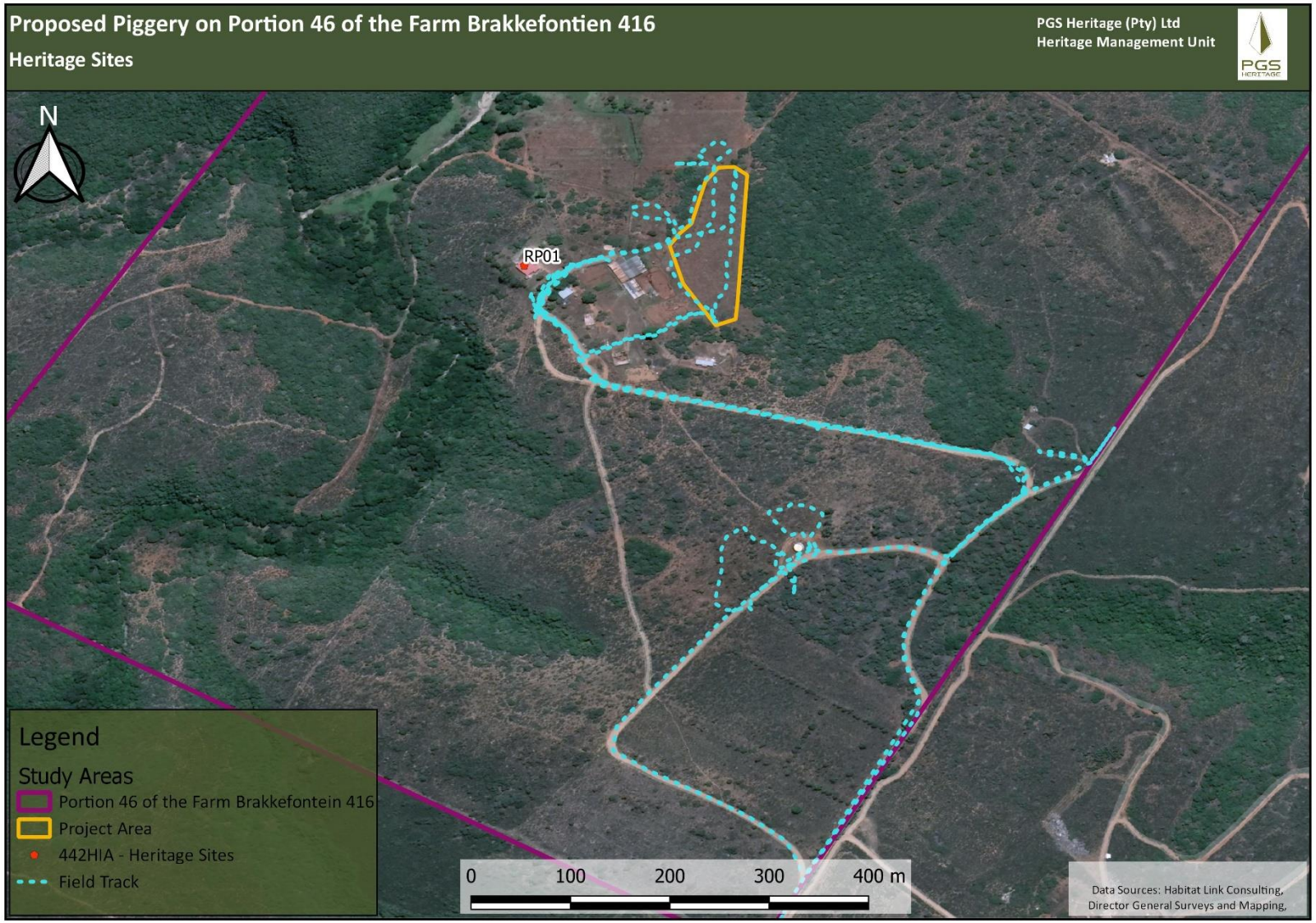


Figure 27 – Locality of the heritage resource in the study area

Table 6 - Sites identified during heritage survey

Site[1] number	Lat	Lon	Description	Heritage Significance	Heritage Rating
RP01	33°50'7.51"S	25°18'7.88"E	A farmstead was identified 100m west of the proposed project area. The farmstead includes an old historical farmhouse, a later addition and several informal buildings **(Figure 28 - Figure 31).** The architecture of the farmhouse follows the 20th century vernacular architecture for farmhouses and contains a stone chimney and red corrugated roof. To the south-east of the farmhouse is a building that was likely a later addition and used as a barn. Currently it is being used as living quarters for the farm workers. Several informal housing structures are located south-east of the farmhouse. These are contemporary at not of heritage significance. Structures older than 60 years are generally protected under Section 34 of the NHRA 25 of 1999. However, the old farmhouse is not significant in terms of its vernacular and unique building materials. This is the result of alterations to the original structure and features. It is also not, as far has been determined, associated with a unique group of people/individuals, nor does it have a special relationship between the community and the surrounding environment. Thus, the site is provisionally rated as Not Conservation Worthy (NCW) as it has no research potential or of other cultural significance. It is recommended that: • No mitigation is needed.	NCW	No research potential or other cultural significance.

[1] *Site in this context refers to a place where a heritage resource is located and not a proclaimed heritage site as contemplated under s27 of the NHRA.*

Site[1] number	Lat	Lon	Description	Heritage Significance	Heritage Rating

Figure 28 - Eastern Facade of RP01

Figure 29 - South-western facade of RP01

Figure 30 – Additional building used as rooms for workers

Figure 31 – Informal structures

5 PALAEONTOLOGY

The proposed development is underlain by the Ceres Subgroup, Bokkeveld Group, Cape Supergroup. The siliclastic Cape Supergroup spans from the Early Ordovician [approximately 500 Million years ago (Ma)] to the Early Carboniferous [~330 Ma]. This Supergroup represents about 170 million years of earth's history and consists of three subdivisions namely the Table Mountain, Bokkeveld and Witteberg Groups (Broquet, 1992). As can be seen in **Figure 32,** the proposed area of the project footprint occurs in an area where the palaeontology is assessed as being entirely of Very High (red) sensitivity. As such a field assessment and protocol for finds is required.

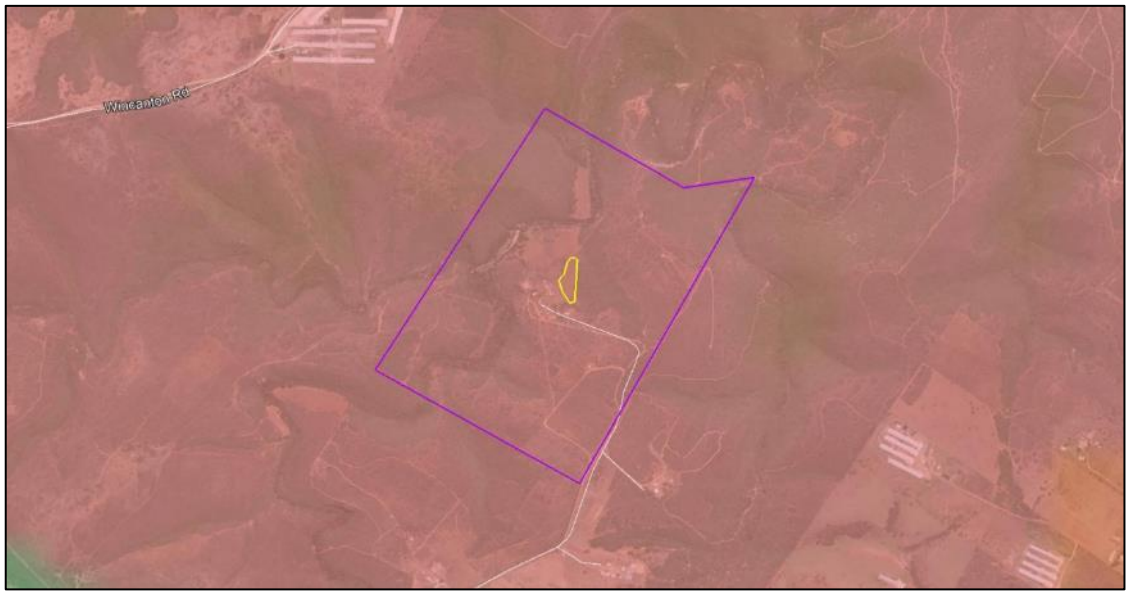


Figure 32 – Overlay of the Rocklands Piggery area on the palaeosensitivity map from the SAHRIS database. This shows that most of the area is coloured red, which is rated as Very High sensitivity

Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 33 - SAHRIS palaeosensitivity ratings table

6 IMPACT ASSESSMENT

The impact significance rating process serves two purposes: firstly, it helps to highlight the critical impacts requiring consideration in the management and approval process; secondly, it shows the primary impact characteristics, as defined above, used to evaluate impact significance.

The impacts will be ranked according to the methodology described below. Where possible, mitigation measures will be provided to manage impacts. In order to ensure uniformity, a standard impact assessment methodology will be utilised so that a wide range of impacts can be compared with each other. The impact assessment methodology makes provision for the assessment of impacts against the following criteria:

- Significance;
- Spatial scale;
- Temporal scale;
- Probability; and
- Degree of certainty.

A combined quantitative and qualitative methodology was used to describe impacts for each of the aforementioned assessment criteria. A summary of each of the qualitative descriptors along with the equivalent quantitative rating scale for each of the aforementioned criteria is given in **Table 7**.

Table 7 - Quantitative rating and equivalent descriptors for the impact assessment criteria

RATING	SIGNIFICANCE	EXTENT SCALE	TEMPORAL SCALE
1	VERY LOW	Proposed site	Incidental
2	LOW	Study area	Short-term
3	MODERATE	Local	Medium/High-term
4	HIGH	Regional / Provincial	Long-term
5	VERY HIGH	Global / National	Permanent

A more detailed description of each of the assessment criteria is given in the following sections.

Significance Assessment

Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude but does not always clearly define these since their importance in the rating scale is very relative. For example, the magnitude (i.e. the size) of area affected by atmospheric pollution may be extremely large (1 000 km^2) but the significance of this effect is dependent on the concentration or level of pollution. If the concentration is great, the significance of the impact would be HIGH or VERY HIGH, but if it is diluted it would be VERY LOW or LOW. Similarly, if 60 ha of a grassland type are destroyed the impact would be VERY HIGH if only 100 ha of that grassland type were known. The impact would be VERY LOW if the grassland type was common. A more detailed description of the impact significance rating scale is given in **Table 8** below.

Table 8 - Description of the significance rating scale

RATING		DESCRIPTION
5	Very high	Of the highest order possible within the bounds of impacts which could occur. In the case of adverse impacts: there is no possible mitigation and/or remedial activity which could offset the impact. In the case of beneficial impacts, there is no real alternative to achieving this benefit.
4	High	Impact is of substantial order within the bounds of impacts, which could occur. In the case of adverse impacts: mitigation and/or remedial activity is feasible but difficult, expensive, time-consuming or some combination of these. In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.
3	Moderate	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur. In the case of adverse impacts: mitigation and/or remedial activity are both feasible and fairly easily possible. In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.
2	Low	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts: mitigation and/or remedial activity is either easily achieved or little will be required, or both. In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.
1	Very low	Impact is negligible within the bounds of impacts which could occur. In the case of adverse impacts, almost no mitigation and/or remedial activity are needed, and any minor steps which might be needed are easy, cheap, and simple. In the case of beneficial impacts, alternative means are almost all likely to be better, in one or a number of ways, than this means of achieving the benefit. Three additional categories must also be used where relevant. They are in addition to the category represented on the scale, and if used, will replace the scale.
0	No impact	There is no impact at all - not even a very low impact on a party or system.

Spatial Scale

The spatial scale refers to the extent of the impact i.e. will the impact be felt at the local, regional, or global scale. The spatial assessment scale is described in more detail in **Table 9.**

Table 9 - Description of the significance rating scale

RATING		DESCRIPTION
5	Global/National	The maximum extent of any impact.
4	Regional/Provincial	The spatial scale is moderate within the bounds of impacts possible and will be felt at a regional scale (District Municipality to Provincial Level).
3	Local	The impact will affect an area up to 10 km from the proposed site.
2	Study Site	The impact will affect an area not exceeding the Eskom property.
1	Proposed site	The impact will affect an area no bigger than the ash disposal site.

Duration Scale

In order to accurately describe the impact, it is necessary to understand the duration and persistence of an impact in the environment. The temporal scale is rated according to criteria set out in

Table 10**.**

Table 10 - Description of the temporal rating scale

RATING		DESCRIPTION
1	Incidental	The impact will be limited to isolated incidences that are expected to occur very sporadically.
2	Short-term	The environmental impact identified will operate for the duration of the construction phase or a period of less than 5 years, whichever is the greater.
3	Medium/High term	The environmental impact identified will operate for the duration of life of facility.
4	Long term	The environmental impact identified will operate beyond the life of operation.
5	Permanent	The environmental impact will be permanent.

Degree of Probability

Probability or likelihood of an impact occurring will be described as shown in

Table 11 below.

Table 11 - Description of the degree of probability of an impact occurring

RATING	DESCRIPTION
1	Practically impossible
2	Unlikely
3	Could happen
4	Very Likely
5	It's going to happen / has occurred

Degree of Certainty

As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard "degree of certainty" scale is used as discussed in **Table 12**. The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 12 - Description of the degree of certainty rating scale

RATING	DESCRIPTION
Definite	More than 90% sure of a particular fact.
Probable	Between 70 and 90% sure of a particular fact, or of the likelihood of that impact occurring.
Possible	Between 40 and 70% sure of a particular fact or of the likelihood of an impact occurring.
Unsure	Less than 40% sure of a particular fact or the likelihood of an impact occurring.
Can't know	The consultant believes an assessment is not possible even with additional research.
Don't know	The consultant cannot, or is unwilling, to make an assessment given available information.

Quantitative Description of Impacts

To allow for impacts to be described in a quantitative manner in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus,

the total value of the impact is described as the function of significance, spatial and temporal scale as described below:

$$\textit{Impact Risk} = \frac{(\text{SIGNIFICANCE} + \textit{Spatial} + \text{Temporal}) \times \text{Probability}}{3 \qquad\qquad 5}$$

An example of how this rating scale is applied is shown in **Table 13**.

Table 13 - Example of Rating Scale

Impact	Significance	Spatial Scale	Temporal Scale	Probability	Rating
	LOW	Local	Medium/High-term	Could Happen	
Impact to air	2	3	3	3	1.6

Note: The significance, spatial and temporal scales are added to give a total of 8, that is divided by 3 to give a criteria rating of 2,67. The probability (3) is divided by 5 to give a probability rating of 0,6. The criteria rating of 2,67 is then multiplied by the probability rating (0,6) to give the final rating of 1,6.

The impact risk is classified according to five classes as described in the **Table 14** below.

Table 14 - Impact Risk Classes

RATING	IMPACT CLASS	DESCRIPTION
0.1 – 1.0	1	**Very Low**
1.1 – 2.0	2	**Low**
2.1 – 3.0	3	**Moderate**
3.1 – 4.0	4	**High**
4.1 – 5.0	5	**Very High**

Therefore, with reference to the example used for air quality above, an impact rating of 1.6 will fall in the Impact Class 2, which will be considered to be a low impact.

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6.1 Heritage Impacts

The fieldwork identified 1 heritage features **(RP01). RP01 is** a farmstead that contains a historical farmhouse. No graves or burial grounds were identified during the site visit.

6.1.1 *Historical structures*

RP01 has no research potential or other cultural significance, as such it is not of heritage significance and thus not conservation worthy.

The impact significance before mitigation on the Farmhouse will be LOW negative before mitigation. *Only the study site will be affected by the proposed development*. T**he possibility of the impact occurring is highly unlikely.** The expected duration of the impact is assessed as potentially permanent. Implementation of the recommended mitigation measures will modify this impact rating to an acceptable VERY LOW negative.

6.1.2 *Burial Grounds and graves*

No Burial grounds or graves were identified.

6.2 Palaeontological Impacts

As noted in Section 6, the proposed area of the project footprint occurs in an area where the palaeontology is assessed as being entirely of Very High (red) sensitivity. The proposed development is underlain by the Ceres Subgroup, Bokkeveld Group, Cape Supergroup. The apparent rarity of fossil heritage at the proposed development footprint suggests that the impact of the development on Portion 46 of the farm Brakkefontien 416, Eastern Cape will be of a low significance in palaeontological terms. It is therefore considered that the proposed development is deemed appropriate and feasible and will not lead to damaging impacts on the palaeontological heritage of the area. The construction of the development may thus be permitted in its whole extent, as the development footprint is not considered sensitive in terms of palaeontological resources.

6.3 Impact Assessment Table

Table 15 - Impact Assessment Table (pre-mitigation)

IMPACT	IMPACT DIRECTION	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
	Negative	LOW	Isolated Sites / proposed site	Permanent	Unlikely	
Impact on Old Historical House (RP01)	-	2	1	5	2	1,07

Table 16 - Impact Assessment Table (post-mitigation)

IMPACT	IMPACT DIRECTION	SIGNIFICANCE	SPATIAL SCALE	TEMPORAL SCALE	PROBABILITY	RATING
	Negative	NO IMPACT	Isolated Sites / proposed site	Permanent	Practically impossible	
Impact on Old Historical House (RP01)	-	0	1	5	1	0,40

6.4 Management recommendations and guidelines

6.4.1 *Construction phase*

The project will encompass a range of activities during the construction phase, including ground clearance, establishment of construction camp areas and small-scale infrastructure development associated with the project.

It is possible that cultural material will be exposed during construction and may be recoverable, keeping in mind delays can be costly during construction and as such must be minimised. Development surrounding infrastructure and construction of facilities results in significant disturbance, however foundation holes do offer a window into the past and it thus may be possible to rescue some of the data and materials. It is also possible that substantial alterations will be implemented during this phase of the project and these must be catered for. Temporary infrastructure developments, such as construction camps and laydown areas, are often changed or added to the project as required. In general, these are low impact developments as they are superficial, resulting in little alteration of the land surface, but still need to be catered for.

During the construction phase, it is important to recognize any significant material being unearthed, making the correct judgment on which actions should be taken. It is recommended that the following chance find procedure should be implemented.

6.4.2 *Chance find procedure*

- A heritage practitioner / archaeologist should be appointed to develop a heritage induction program and conduct training for the ECO as well as team leaders in the identification of heritage resources and artefacts.
- An appropriately qualified heritage practitioner / archaeologist must be identified to be called upon in the event that any possible heritage resources or artefacts are identified.
- Should an archaeological site or cultural material be discovered during construction (or operation), the area should be demarcated, and construction activities halted.
- The qualified heritage practitioner / archaeologist will then need to come out to the site and evaluate the extent and importance of the heritage resources and make the necessary recommendations for mitigating the find and the impact on the heritage resource.
- The contractor therefore should have some sort of contingency plan so that operations could move elsewhere temporarily while the materials and data are recovered.
- Construction can commence as soon as the site has been cleared and signed off by the heritage practitioner / archaeologist.

6.4.3 *Possible finds during construction and operation (mining activities)*

The study area occurs within a greater historical and archaeological site as identified during the desktop and fieldwork phase. Soil clearance for infrastructure as well as the proposed reclamation activities, could uncover the following:

- stone foundations;
- ash middens associated with the historical structures that can contain bone, glass and clay ceramics, ash, metal objects such as spoons, forks, and knives.
- unmarked graves

6.5 Timeframes

It must be kept in mind that mitigation and monitoring of heritage resources discovered during construction activity will require permitting for collection or excavation of heritage resources and lead times must be worked into the construction time frames. **Table 17** gives guidelines for lead times on permitting.

Table 17 - Lead times for permitting and mobilisation

Action	Responsibility	Timeframe
Preparation for field monitoring and finalisation of contracts	The contractor and service provider	1 month
Application for permits to do necessary mitigation work	Service provider – Archaeologist and SAHRA	3 months
Documentation, excavation and archaeological report on the relevant site	Service provider – Archaeologist	3 months
Handling of chance finds – Graves/Human Remains	Service provider – Archaeologist and SAHRA	2 weeks
Relocation of burial grounds or graves in the way of construction	Service provider – Archaeologist, SAHRA, local government and provincial government	6 months

6.6 Heritage Management Plan for EMPr implementation

Table 18 - Heritage Management Plan for EMPr implementation

Area and site no.	Mitigation measures	Phase	Timeframe	Responsible party for implementation	Monitoring Party (frequency)	Target	Performance indicators (monitoring tool)
General project area	Implement chance find procedures in case where possible heritage finds are uncovered	Construction and operation	During construction and operation	Applicant ECO Heritage Specialist	ECO (monthly / as or when required)	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 36 and 38 of NHRA	ECO Monthly Checklist/Report
RP01	No mitigation required.	Construction through to operation	Prior to and during construction	Applicant ECO	Applicant ECO	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 36 and 38 of NHRA	ECO Monthly Checklist/Report
Possible graves	The site be demarcated with a 50-meter buffer and the grave should be avoided. Undertake archaeological monitoring at earth clearance stage. If human remains are discovered a grave relocation process is recommended as a mitigation and management measure. This will involve the necessary social consultation and public participation process before grave relocation permits can be applied for with the SAHRA under the NHRA and National Health Act regulations. If during the test excavations it is determined that the feature is not a grave, the site will then have no heritage significance and require no further mitigation.	Construction through to Operational	During Construction and Operation	Applicant Environmental Control Officer (ECO) Heritage specialist	Applicant ECO	Ensure compliance with relevant legislation and recommendations from SAHRA under Section 36 and 38 of NHRA	ECO Monthly Checklist/Report

7 CONCLUSIONS

The HIA has shown that the study area and surrounding area has some heritage resources situated within the proposed development boundaries. Through data analysis and a site investigation the following issues were identified from a heritage perspective.

Heritage Sites

7.1.1 *Heritage Sites in the vicinity of the Rocklands Piggery site*

The fieldwork identified 1 heritage features (**RP01). RP01** is a farmstead that contains a historical farmhouse. No graves or burial grounds were identified during the site visit.

7.1.2 *Historical structures*

RP01 has no research potential or other cultural significance, as such it is not of heritage significance and thus not conservation worthy.

The impact significance before mitigation on the Farmhouse will be LOW negative before mitigation. *Only the study site will be affected by the proposed development*. **The possibility of the impact occurring is highly unlikely**. The expected duration of the impact is assessed as potentially permanent. Implementation of the recommended mitigation measures will modify this impact rating to an acceptable VERY LOW negative.

7.1.3 *Burial Grounds and graves*

No Burial grounds or graves were identified.

7.2 Palaeontological Impacts

According to the SAHRIS the proposed area of the project footprint occurs in an area where the palaeontology is assessed as being entirely of Very High (red) sensitivity. The study area is underlain by the Ceres Subgroup, Bokkeveld Group, Cape Supergroup. The apparent rarity of fossil heritage at the proposed development footprint suggests that the impact of the development on Portion 46 of the farm Brakkefontien 416, Eastern Cape will be of a low significance in palaeontological terms. It is therefore considered that the proposed development is deemed appropriate and feasible and will not lead to damaging impacts on the palaeontological heritage of the area. The construction of the development may thus be permitted in its whole extent, as the development footprint is not considered sensitive in terms of palaeontological resources.

7.3 General

It is the author's considered opinion that overall impact on heritage resources is Low to Very Low. Provided that the recommended mitigation measures are implemented, the impact would be acceptably low or could be totally mitigated to the degree that the project could be approved from a heritage perspective. The management and mitigation measures as described in Section 6 of this report have been developed to minimise the project impact on heritage resources

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Appendix A

Heritage Assessment Methodology

The applicable maps, tables and figures, are included as stipulated in the NHRA (no 25 of 1999), the NEMA (no 107 of 1998). The HIA process consisted of three steps:

Step I – Literature Review: The background information to the field survey relies greatly on the Heritage Background Research.

Step II – Physical Survey: A physical survey was conducted by vehicle through the proposed project area by a qualified heritage specialist. The survey was conducted over one day (21 August 2019), aimed at locating and documenting sites falling within and adjacent to the proposed development footprint.

Step III – The final step involved the recording and documentation of relevant archaeological resources, the assessment of resources in terms of the HIA criteria and report writing, as well as mapping and constructive recommendations.

The significance of heritage sites was based on four main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter)
    - Low - <10/50m2
    - Medium - 10-50/50m2
    - High - >50/50m2
- Uniqueness; and
- Potential to answer present research questions.

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be expressed as follows:

A - No further action necessary;
B - Mapping of the site and controlled sampling required;
C - No-go or relocate development activity position;
D - Preserve site, or extensive data collection and mapping of the site; and
E - Preserve site.

Impacts on these sites by the development will be evaluated as follows:

Site Significance

Site significance classification standards use is based on the heritage classification of s3 in the NHRA and developed for implementation keeping in mind the grading system approved by SAHRA for archaeological impact assessments. The update classification and rating system as developed by Heritage Western Cape (2016) is implemented in this report

Site significance classification standards prescribed by the Heritage Western Cape Guideline (2016), were used for the purpose of this report (Error! Reference source not found. and Error! Reference source not found.**)**.

Table A 1: Rating system for archaeological resources

Grading	Description of Resource	Examples of Possible Management Strategies	Heritage Significance
I	Heritage resources with qualities so exceptional that they are of special national significance. Current examples: Langebaanweg (West Coast Fossil Park), Cradle of Humankind	May be declared as a National Heritage Site managed by SAHRA. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	Highest Significance
II	Heritage resources with special qualities which make them significant, but do not fulfil the criteria for Grade I status. Current examples: Blombos, Paternoster Midden.	May be declared as a Provincial Heritage Site managed by HWC. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	Exceptionally High Significance
III	Heritage resources that contribute to the environmental quality or cultural significance of a larger area and fulfils one of the criteria set out in section 3(3) of the Act but that does not fulfil the criteria for Grade II status. Grade III sites may be formally protected by placement on the Heritage Register.		
IIIA	Such a resource must be an excellent example of its kind or must be sufficiently rare. Current examples: Varschedrift; Peers Cave; Brobartia Road Midden at Bettys Bay	Resource must be retained. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	High Significance
IIIB	Such a resource might have similar significances to those of a Grade III A resource, but to a lesser degree.	Resource must be retained where possible where not possible it must be fully investigated and/or mitigated.	Medium Significance
IIIC	Such a resource is of contributing significance.	Resource must be satisfactorily studied before impact. If the recording already done (such as in an HIA or permit application) is not sufficient, further recording or even mitigation may be required.	Low Significance
NCW	A resource that, after appropriate investigation, has been determined to not have enough heritage significance to be retained as part of the National Estate.	No further actions under the NHRA are required. This must be motivated by the applicant or the consultant and approved by the authority.	No research potential or other cultural significance

Table A 2: Rating system for built environment resources

Grading	Description of Resource	Examples of Possible Management Strategies	Heritage Significance
I	Heritage resources with qualities so exceptional that they are of special national significance. Current examples: Robben Island	May be declared as a National Heritage Site managed by SAHRA.	Highest Significance
II	Heritage resources with special qualities which make them significant in the context of a province or region, but do not fulfil the criteria for Grade I status. Current examples: St George's Cathedral, Community House	May be declared as a Provincial Heritage Site managed by HWC.	Exceptionally High Significance
II	Such a resource contributes to the environmental quality or cultural significance of a larger area and fulfils one of the criteria set out in section 3(3) of the Act but that does not fulfil the criteria for Grade II status. Grade III sites may be formally protected by placement on the Heritage Register.		
IIIA	Such a resource must be an excellent example of its kind or must be sufficiently rare. These are heritage resources which are significant in the context of an area.	This grading is applied to buildings and sites that have sufficient intrinsic significance to be regarded as local heritage resources; and are significant enough to warrant that any alteration, both internal and external, is regulated. Such buildings and sites may be representative, being excellent examples of their kind, or may be rare. In either case, they should receive maximum protection at local level.	High Significance
IIIB	Such a resource might have similar significances to those of a Grade III A resource, but to a lesser degree. These are heritage resources which are significant in the context of a townscape, neighbourhood, settlement or community.	Like Grade IIIA buildings and sites, such buildings and sites may be representative, being excellent examples of their kind, or may be rare, but less so than Grade IIIA examples. They would receive less stringent protection than Grade IIIA buildings and sites at local level.	Medium Significance
IIIC	Such a resource is of contributing significance to the environs. These are heritage resources which are significant in the context of a streetscape or direct neighbourhood.	This grading is applied to buildings and/or sites whose significance is contextual, i.e. in large part due to its contribution to the character or significance of the environs. These buildings and sites should, as a consequence, only be regulated if the significance of the environs is sufficient to warrant protective measures, regardless of whether the site falls within a Conservation or Heritage Area. Internal alterations should not necessarily be regulated.	Low Significance
NCW	A resource that, after appropriate investigation, has been determined to not have enough heritage significance to be retained as part of the National Estate.	No further actions under the NHRA are required. This must be motivated by the applicant and approved by the authority. Section 34 can even be lifted by HWC for structures in this category if they are older than 60 years.	No research potential or other cultural significance

Appendix B

Project team CV's

PROFESSIONAL CURRICULUM FOR CHERENE DE BRUYN

Name:	Cherene de Bruyn
Profession:	Archaeologist
Date of Birth:	1991-03-01
Parent Firm:	PGS Heritage (Pty) Ltd
Position in Firm:	Archaeologist
Years with Firm:	1 Month
Years' experience:	2
Nationality:	South African
HDI Status:	White Female

EDUCATION:

Name of University or Institution	:	University of Pretoria
Degree obtained:	:	BA
Major subjects	:	Archaeology and Anthropology
Year	:	2010-2012

Name of University or Institution	:	University of Pretoria
Degree obtained	:	BA (Hons)
Major subjects	:	Archaeology
Year	:	2013

Name of University or Institution	:	University of Pretoria
Degree obtained	:	BSc (Hons)
Major subjects	:	Physical Anthropology
Year	:	2015

Name of University or Institution	:	University College London
Degree obtained	:	MA
Major subjects	:	Archaeology
Year	:	2016/2017

Professional Qualifications:

Association of Southern African Professional Archaeologists - Professional Member (#432)

International Association for Impact Assessment South Africa - Member (#6082)

Association of Southern African Professional Archaeologists - CRM Accreditation

- Principle Investigator: Grave relocation
- Field Director: Colonial period archaeology, Iron Age archaeology
- Field Supervisor: Rock art, Stone Age archaeology
- Laboratory Specialist: Human Skeletal Remains

Languages:

Afrikaans

English

KEY QUALIFICATIONS

Heritage Impact Assessment Management, Historical and Archival Research, Archaeology, Physical Anthropology, Grave Relocations, Fieldwork and Project Management including *inter alia*

Summary of Experience

Involvement in various grave relocation projects and grave "rescue" excavations in the various provinces of South Africa

Involvement with various Heritage Impact Assessments, within South Africa

- Heritage Impact Assessments for various projects

HERITAGE ASSESSMENT PROJECTS

Below a selected list of Heritage Impact Assessments (HIA) Projects involvement:

- Heritage Impact Assessment for the proposed Prospecting Right Application on the Farm Reserve No 4 15823 And 7638/1, near St Lucia, within the jurisdiction of the Mfolozi Local Municipality in the King Cetshwayo District Municipality, KwaZulu-Natal Province.
- Heritage Public Participation report for the refurbishments of Lyttleton Primary School, Lyttleton Manor, Centurion, Gauteng Province.
- Heritage Public Participation report for the proposed alterations Of Erf 1/966 Rosettenville or 94 Main Street Rosettenville within the City Of Johannesburg Metropolitan Municipality, Gauteng Province.
- Heritage Impact Assessment for the proposed mining rights on the Farm Waterkloof 95 located between Griekwastad and Groblershoop in the Pixley Ka Seme District Municipality within the Northern Cape Province.
- Heritage Impact Assessment for the proposed East Coast Gas 400 Kv Power Lines, located in Richards Bay, within the Umhlathuze Local Municipality in the King Cetshwayo District Municipality in the Kwazulu-Natal Province.
- Heritage Impact Assessment for the mining right application for the Farm Woodlands 407, situated in the Free State Province.
- Heritage Impact Assessment for the refurbishments of Lyttelton Primary School, Lyttelton Manor, Centurion, Gauteng Province.
- Heritage Impact Assessment for the refurbishments of the Caledonian Stadium in Pretoria, Gauteng Province.
- Heritage Impact Assessment for the amendment of an existing prospecting right and environmental authorization for Bothaville NE Ext A, situated in the Free State Province.
- Heritage Impact Assessment Study for the Proposed New Lambano Sub Acute Facility on Stand 5454, 5455, 5456,5457 and New Training Facility on Stands 5458 and 5460 in Kensington, Johannesburg.
- Heritage Impact Assessment for the Prospecting Right and Environmental Authorization Application for Ventersburg B situated in the Free State Province.
- Heritage Impact Assessment for the proposed prospecting rights application and environmental authorisation for the farm Three Sisters in Barberton, within the city of Mbombela Local District, Mpumalanga.

- Heritage Impact Assessment and Integrated Cultural Resources Management Study for The Proposed Mfolozi-Mbewu 765kv Transmission Line, Zululand And King Cetshwayo District Municipality, KwaZulu-Natal.
- Heritage Impact Assessment for the proposed for the Construction of the Bulk Water Supply Pipeline and Feeder Pipes in Dunnottar, Gauteng Province.
- Heritage Impact Assessment for the Proposed KwaThema to Grundlingh WWTW Bulk Outfall Sewer: Capital Project Implementation near Nigel, Gauteng Province.
- Heritage Impact Assessment the prospecting right and environmental authorisation application for Kroonstad South situated in the Free State Province.
- Heritage Impact Assessment the prospecting right and environmental authorisation application for Vredefort West situated in the Free State Province.
- Archaeological impact assessment for a mining permit application for portion 19 of the farm Syferfontein 303 IP within the city of Matlosana Local Municipality in the North West Province.

GRAVE RELOCATION PROJECTS

Below, a selection of grave relocation projects involvement:

- Grave exhumation and relocation of 19 graves on erf 3 of Holding 87 North Riding Agricultural Holdings, City of Johannesburg, Gauteng Province.
- Report on the exhumation and reburial report of 16 graves from Doornkop, to Voortrekker Cemetery in Middelburg, Mpumalanga Province
- Exhumation and reburial report of 4 graves located at Tombo, Eastern Cape Province.
- Report on rescue excavations and skeletal analyses of two archaeological graves inadvertently uncovered in Boitekong, North-West Province.
- Rescue excavation of an unmarked graveyard at Diamond Park, Greenpoint, Kimberley, Northern Cape Province.
- Report on Follow-up site visit excavation and physical anthropological analyses of archaeological human remains transferred from SAPA Victim Identification Centre to Department of Anatomy. Mamelodi East Phase 2 House 566.
- Excavation of human remains from Marulaneng village, Bakenberg Limpopo Province.
- Follow up site visit on human remains found at Bothlokwa (Ramatjowe & Mphakahne), Limpopo Province.
- Follow up site visit on human remains found in Waterpoort, Soutpansberg, Limpopo Province.

EMPLOYMENT SUMMARY:

Positions Held

- 2020 – to date: Archaeologist - PGS Heritage (Pty) Ltd
- 2019: Manager of the NGT ESHS Heritage Department – NGT Holdings (Pty) Ltd
- 2018 – 2019: Archaeologist and Heritage Consultant – NGT Holdings (Pty) Ltd
- 2015-2016: Archaeological Contractor - BA3G, University of Pretoria
- 2014 – 2015: DST-NRF Archaeological Intern, Forensic Anthropological Research Centre

WOUTER FOURIE

Professional Heritage Specialist and Professional Archaeologist and Director PGS Heritage

Summary of Experience

Specialised expertise in Archaeological Mitigation and excavations, Cultural Resource Management and Heritage Impact Assessment Management, Archaeology, Anthropology, Applicable survey methods, Fieldwork and project management, Geographic Information Systems, including *inter alia* -

Involvement in various grave relocation projects (some of which relocated up to 1000 graves) and grave "rescue" excavations in the various provinces of South Africa

Involvement with various Heritage Impact Assessments, within South Africa, including -

- Archaeological Walkdowns for various projects
- Phase 2 Heritage Impact Assessments and EMPs for various projects
- Heritage Impact Assessments for various projects
    - Iron Age Mitigation Work for various projects, including archaeological excavations and monitoring
    - Involvement with various Heritage Impact Assessments, outside South Africa, including -
- Archaeological Studies in Democratic Republic of Congo
- Heritage Impact Assessments in Mozambique, Botswana and DRC
- Grave Relocation project in DRC

Key Qualifications

BA [Hons] (Cum laude) - Archaeology and Geography - 1997

BA - Archaeology, Geography and Anthropology - 1996

Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA) - Professional Member

Accredited Professional Heritage Specialist – Association of Professional Heritage Practitioners (APHP)

CRM Accreditation (ASAPA) -

- Principal Investigator - Grave Relocations
- Field Director – Iron Age
- Field Supervisor – Colonial Period and Stone Age
- Accredited with Amafa KZN

Key Work Experience

2003- current - Director – Professional Grave Solutions (Pty) Ltd

2007 – 2008 - Project Manager – Matakoma-ARM, Heritage Contracts Unit, University of the Witwatersrand

2005-2007 - Director – Matakoma Heritage Consultants (Pty) Ltd

2000-2004 - CEO– Matakoma Consultants

1998-2000 - Environmental Coordinator – Randfontein Estates Limited. Randfontein, Gauteng

1997-1998 - Environmental Officer – Department of Minerals and Energy. Johannesburg, Gauteng

Worked on various heritage projects in the SADC region including, Botswana, Mozambique, Malawi, Mauritius, Zimbabwe and the Democratic Republic of the Congo