



## environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

### DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

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File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

#### PROJECT TITLE

**Proposed additional infrastructure and areas identified during the Detail Design associated with the National Route N11 Section 13X, Mokopane Ring Road, Mogalakwena Local Municipality, Limpopo**

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**1. SPECIALIST INFORMATION**


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Liesel Stegmann

declare that --

General declaration:

- I act as the independent specialist 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 the specialist report relevant to this application, 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 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; and
- All the particulars furnished by me in this form are true and correct.

  
Signature of the specialist:

Name of company (if applicable):

27/11/18.

Date:



0925046-7  
Mumukoto w/o P.P. Moloko

Signature of the Commissioner of Oaths for project/application:

2018-11-27

Date:

WARRANT OFFICER.

Designation:

Official stamp (below)



# PHASE 1 HERITAGE RESOURCES SCOPING REPORT

## PROPOSED NEW BORROW PIT 5.5 L, ALONG THE NEW N11 -13X ROUTE, MOKOPANE, LIMPOPO

Royal HaskoningDHV (Pty) Ltd trading as Royal HaskoningDHV

Fountain Square, 78 Kalkoen Street,  
Monument Park Ext 2, 0181  
PO Box 25302,  
Monument Park,  
0105,  
Gauteng,  
South Africa

Att: S Govendor

---

F.E.Roodt and L Stegmann  
Under the supervision of Frans  
Roodt  
October 2018

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## EXECUTIVE SUMMARY

The author was contracted to conduct a Heritage Impact Assessment for the below mentioned sections, which are to be included with the project to re-align the N11-13X just outside of Mokopane.

- *New borrow pit 5.5 for use on the N11-13X;*

This area was not earmarked for development during the original surveys for re-alignment in June 2008 (Roodt *et al*: 2008). Further surveys by the author took place in March 2017 and May 2017 for various borrow pits and a bridge as the development has been refined over the years.

A paleontological study has been conducted by Prof Chris Jones, original section fell with a grey area on SAHRIS Paleontological map, however sections of the borrow pit are located within an blue coloured sector and require a protocol of finds, included in the palaeontological report. Generally protocol will include reporting any materials unearthed to the heritage authority and for a recognised palaeontologist to go to site to appropriately manage any materials found. Prof Jones stated that due to the age and nature of the strata in the development area Palaeontological materials are unlikely.

No heritage remains were recorded at the site during site survey.

No further recommendations or mitigation is required, with regards archaeological materials.

## INDEMNITY AND CONDITIONS RELATING TO THIS REPORT

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and Shasa Heritage reserves the right to modify aspects of the report including the recommendations if and when new information becomes available from ongoing research or further work in this field, or pertaining to this investigation. Although Shasa Heritage exercises due care and diligence in rendering services and preparing documents, Shasa Heritage accepts no liability, and the client, by receiving this document, indemnifies Shasa Heritage against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by Shasa Heritage and by the use of the information contained in this document. This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

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# 1. INTRODUCTION AND TERMS OF REFERENCE

**Application purpose:** To establish a new borrow pit, 5.5 L on the farm Amatavia 41 KS portion 12

**Area:** Mogalakwena District

**Size:** Borrow pit 5.5 13ha

**GPS:**

**Borrow pit 5.5 L:** S24° 08' 33.0" E29° 02' 42.0"

**Map reference number:** 2429 AA

This report will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on heritage resources.

In terms of the National Heritage Resources Act (1999) the following is of relevance:

## Historical remains

**Section 34(1)** No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

## Archaeological remains

**Section 35(4)** No person may, without a permit issued by the responsible heritage resources authority-

(a) destroy, damage, excavate, alter, deface, or otherwise disturb any archaeological or palaeontological site or any meteorite

## Burial grounds and graves

**Section 36 (3)(a)** No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

(c) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(b) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in detection or recovery of metals.

## Culture resource management



Section **38(1)** Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development\* ...

must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature, and extent of the proposed development.

**\*‘development’** 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-

- (a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (b) carry out any works on or over or under a place\*;
- (e) any change to the natural or existing condition or topography of land, and
- (f) any removal or destruction of trees, or removal of vegetation or topsoil;

**\*\*‘place** means a site, area or region, a building or other structure\* ...”

**\*\*‘structure** means any building, works, device or other facility made by people and which is fixed to the ground, ...”

## 2. METHOD

### 2.1 Sources of information and methodology

The source of information was primarily the field reconnaissance and referenced literary sources.

A pedestrian survey of the entire area was undertaken by Mr FE Roodt on 14 October 2018, during the middle of the day, during which standard methods of observation were applied. The area was carefully covered and traversed and special attention given to any areas displaying soil and or vegetative changes. As most archaeological material occur in single or multiple stratified layers beneath the soil surface, special attention was given to disturbances, both man-made such as roads and clearings, as well as those made by natural agents such as burrowing animals and erosion. Locations of heritage remains were recorded by means of a GPS (Garmin Etrex 10). Heritage material and the general conditions on the terrain were photographed with a Nikon Coolpix L25 Digital camera.



## 2.2 Limitations

The scoping survey was thorough, but limitations were experienced due to the fact that archaeological sites are subterranean and only visible when disturbed. Vegetation was moderate. The area has already been impacted on by farm access roads.

## 2.3 Categories of significance

The significance of archaeological sites is ranked into the following categories.

- No significance: sites that do not require mitigation.
- Low significance: sites, which *may* require mitigation.
- Medium significance: sites, which require mitigation.
- High significance: sites, which must not be disturbed at all.

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

*A crucial aspect in determining the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. Many aspects must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data / information which would otherwise be lost. Such*

sites must be adequately recorded and sampled before being destroyed. These are generally sites graded as of low or medium significance.

## 2.4 Terminology

**Early Stone Age:** Predominantly the Acheulean hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.

**Middle Stone Age:** Various lithic industries in SA dating from ± 250 000 yr. - 30 000 yrs. before present.

**Late Stone Age:** The period from ± 30 000-yr. to contact period with either Iron Age farmers or European colonists.

**Early Iron Age:** Most of the first millennium AD

**Middle Iron Age:** 10<sup>th</sup> to 13<sup>th</sup> centuries AD

**Late Iron Age:** 14<sup>th</sup> century to colonial period. *The entire Iron Age represents the spread of Bantu speaking peoples.*

**Historical:** Mainly cultural remains of western influence and settlement from AD1652 onwards – mostly structures older than 60 years in terms of Section 34 of the NHRA, though more recent remains can be termed historically significant should the remains hold social significance for the local community.

**Phase 1 assessment:** Scoping surveys to establish the presence of and to evaluate heritage resources in a given area

**Phase 2 assessments:** In depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

**Sensitive:** Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

## 3. DESCRIPTION OF THE PROPOSED DEVELOPMENT AND TERRAIN

**Vegetation:** Makhado Sweet Bushveld (SVcb 20) (Mucina et al. 2006)

**Terrain:** The terrain can be described as flatlands, having been used for agricultural purposes in the past. Farm access roads are visible.

**Proposed development:** Establish a new borrow pit 5.5L



Fig 1. View of borrow pit area



Fig 2. View of Borrow pit area



Fig 3: View of general area



Fig 4. General view

## 4. RESULTS OF THE SCOPING SURVEY AND DISCUSSION

### 4.1 SOCIAL and/or RELIGIOUS INTANGIBLE HERITAGE

No areas designated for socio-religious activities were recorded on the site

Significance: None

### 4.2 HISTORICAL PERIOD

No remains from the historical period were recorded.

Background historical information mainly relating to Makapansgat, In the Makapansgat World Heritage site- North east of the development:

In September 1854, 28 Boers were killed in what would later become the Northern Transvaal. These Boers were killed in separate incidents by an alliance of the Ndebele chiefdoms of Mokopane and Mankopane. In anticipation of a military retaliation, Mokopane and his followers retreated into some caves now known as Makapansgat. Two Boer commandos and their Kgatla allies attacked the caves, but failed to overpower them or force the people out. The commandos laid siege to the caves.

The siege lasted about three weeks. By the end of the siege, between 1 000 and 3 000 people in the caves had died, and many others had been captured as prisoners of war and enslaved. In addition, the Boers took 6 300 cattle, 1 200 goats and 450 kg of ivory. On the Boer side, there were few deaths from the siege. A major casualty, however, was Piet Potgieter. He was shot from inside the cave. The number of deaths among the Kgatla allies are unknown. This event has come to play a central role in the development of Afrikaner nationalism. From the Boer perspective, African "savages," without any reason, had killed the Boers when all they were trying to do was to extend "civilisation." Indeed, the "murders" of Boers in this version are referred to as a "massacre."

Significance: None

### 4.3 GRAVES

No formal or informal graves could be identified.

Significance: None

### 4.4 IRON AGE REMAINS

According to the most recent archaeological cultural distribution sequences by Huffman (2007), this area falls within the distribution area of various cultural groupings originating out of both the Urewe Tradition (eastern stream of migration) and the Kalundu Tradition (western stream of migration). The facies that may be present are:

Urewe Tradition: Kwale branch-	<i>Mzonjani facies</i> AD 450 – 750 (Early Iron Age)
Moloko branch-	<i>Icon facies</i> AD 1300 - 1500 (Late Iron Age)
	<i>Marateng facies</i> AD 1650-1840 (Late IA)

Kalundu Tradition: Happy Rest sub-branch -	<i>Doornkop facies</i> AD 750 - 1000 (Early Iron Age)
	<i>Eiland facies</i> AD 1000 – 1300 (Middle Iron Age)
	<i>Klingbeil facies</i> AD 1000 - 1200 (Middle Iron Age)
	<i>Letaba facies</i> AD 1600 - 1840 (Late Iron Age)
	<i>Marateng facies</i> AD 1650-1840 (Late IA)

The Iron Age is also well documented in the wider area, with sites dating especially to the Letaba *facies* period.

No remains from the Iron Age were recorded.

Huffman and Steel (1996) executed salvage excavations on Planknek when the N1 was built. A Late Iron Age stone walled site was excavated. Moore (1980) also conducted his MA Thesis on the Kekana, Ndebele in the region. These are all stone walled Late Iron Age Sites, possibly belonging to the Southern Ndebele.

#### 4.5 STONE AGE REMAINS

No Stone Age remains were recorded. Drainage lines and rocky areas were searched for Stone Age materials but none were recorded.

Stone Age remains were recorded in drainage lines during the original 2008 survey, however these lines were to the north of the current areas under discussion and especial care was taken in survey to ensure none were missed in this area.

The below mentioned is generic background to the area adapted from Deacon and Deacon: 1999:

The Stone Age covers most of southern Africa and the earliest consist of the Oldowan and Acheul artefacts assemblages. Oldowan tools are regularly referred to as “choppers”. Oldowan artefacts are associated with *Homo habilis*, the first true humans. In South Africa definite occurrences have been found at the sites of Sterkfontein and Swartkrans. Here they are dated to between 1.7 and 2 million years old. Bearing in mind the proximity of the Makapans Valley palaeontological site about 50km south-east of the project area it is possible that they may occur here. This was followed by the Acheulian technology from about 1.4 million years ago which introduced a new level of complexity. The large tools that dominate the Acheulian artefact assemblages range in length from 100 to 200 mm or more. Collectively they are called bifaces because they are normally shaped by flaking on both faces. In plan view they tend to be pear-shape and are broad relative to their thickness. Most bifaces are pointed and are classified as handaxes, but others have a wide cutting end and are termed cleavers. The Acheulian design persisted for more than a million years and only disappeared about 250 000 years ago. Here, too the Makapans Valley Site is referenced; especially the Cave of Hearths.

The change from Acheulian with their characteristic bifaces, handaxes and cleavers to Middle Stone Age (MSA), which are characterized by flake industries, occurred about 250 000 years ago and ended about 30 000 – 22 000 years ago. For the most part the MSA is associated with modern humans; *Homo sapiens*. MSA remains are found in open spaces where they are regularly exposed by erosion as well as in caves. Characteristics of the MSA are flake blanks in the 40 – 100 mm size range struck from prepared cores, the striking platforms of the flakes reveal one or more facets, indicating the preparation of the platform before flake removal (the prepared core technique), flakes show dorsal preparation – one or more ridges or arise down the length of the flake – as a result of previous removals from the core, flakes with convergent sides (laterals) and a pointed shape, and flakes with parallel laterals and a rectangular or quadrilateral shape: these can be termed pointed and flake blades respectively. Other flakes in MSA assemblages are irregular in form. The Cave of Hearths in the Makapans Valley Site is referenced.

The change from Middle Stone Age to Later Stone Age (LSA) took place in most parts of southern Africa little more than about 20 000 years ago. It is marked by a series of technological innovations or new tools that, initially at least, were used to do much the same jobs as had been done before, but in a different way. Their introduction was associated with changes in the nature of hunter-gatherer material culture. The innovations associated with the Later Stone Age “package” of tools include rock art – both paintings and engravings, smaller stone tools, so small that the formal tools less than 25mm long are called microliths (sometimes found in the final MSA) and Bows and

arrows. Rock art is an important feature of the LSA and is abundant in the Waterberg and the Makgabeng.

Significance: None

#### 4.6 PALAEONTOLOGICAL SENSITIVITY

The Borrow pit proposed area lies within a blue section of the SAHRIS map A palaeontological study is still currently underway by a specialist registered palaeontologist, for the wider area, however blue indicates that only a protocol of finds is required.

As part of a project for a Bulk Water supply line (SAHRIS website) that covers a wider area than this survey, Dr L. Rossouw, found that there would be a negligible possibility of unearthing paleoarchaeological heritage material (Rossouw: 2017).

A Palaeontological Study was conducted by Prof Chris Jones, see below for recommendations.

## 5. BACKGROUND ON THE AREA

According to SAHRA website, the nearest surveys to the proposed development are Case number 10484. A Bulk Water Supply line, by Jaco Van Der Walt. No heritage remains were recorded near the bridge area during their survey (Van Der Walt: 2017).

The Makapans World Heritage Site lies to the North East of the proposed development area, approximately 25km NE of the borrow pit. The unique importance of the Makapans World Heritage site should be noted due to its outstanding universal importance to not only palaeontological finds, but also it the cave's role during the historical period.

Though a Master's thesis, M Moore (1980) documents the time that Kekana, son of Musi, resided in the wider area.

In map section, see map with all areas previously surveyed by authors.

## 6. EVALUATION AND STATEMENT OF SIGNIFICANCE

6.1	<u>Significance</u>	<u>Rating</u>
1	The importance of the cultural heritage in the community or pattern of South Africa's history (Historic and political significance)	None
2	Possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage (Scientific significance).	Low
3	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)	Low
4	Importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural	None

	places or objects (Scientific significance)	
5	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)	None
6	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)	None
7	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)	None
8	Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa (Historic significance)	None
9	The significance of the site relating to the history of slavery in South Africa.	None

**6.2 Section 38(3) (c) An assessment of the impact of the development on such heritage resources.**

No resources were identified.

**6.3 Section 38(3) (d) An evaluation of the impact of the development on heritage resources relative to the sustainable economic benefits to be derived from the development.**

Low.

**6.4 Section 38(3) (e) The results of consultation with the communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.**

Social consultative process is ongoing as part of EIA.

**6.5 Section 38(3)(f) If heritage resources will be adversely affected by the proposed development the consideration of alternatives.**

No Heritage resources identified.

**6.6 Section 38(3)(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.**

Refer to recommendations for mitigation measures.

## 7. DISCUSSION AND RECOMMENDATIONS

*From an archaeological heritage resources management point of view, we have no objection with regard to the development.*

*The palaeontological recommendation is as follows (Jones:2018):*



*Bearing in mind the age and nature of the strata affected by the proposed development it is considered highly unlikely that any fossils will be encountered, save stromatolites. In mitigation it is recommended that a SACNASP accredited palaeontologist from a local institution such as the University of Limpopo makes one visit to the site during the excavation process to examine new outcrops.*

*The discovery of previously undetected subterranean heritage remains on the terrain must be reported to the Limpopo Heritage Authority or the archaeologist, and may require further mitigation measures. Palaeontological remains need to be reported to a registered palaeontologist, to adequately manage any finds. Finds would need to be salvaged by a recognised institution such as the Council for Geoscience, Bernard Price Institute for Palaeontology or the Department of Geology and Mining, University of Limpopo.*

## **8. BIBLIOGRAPHY**

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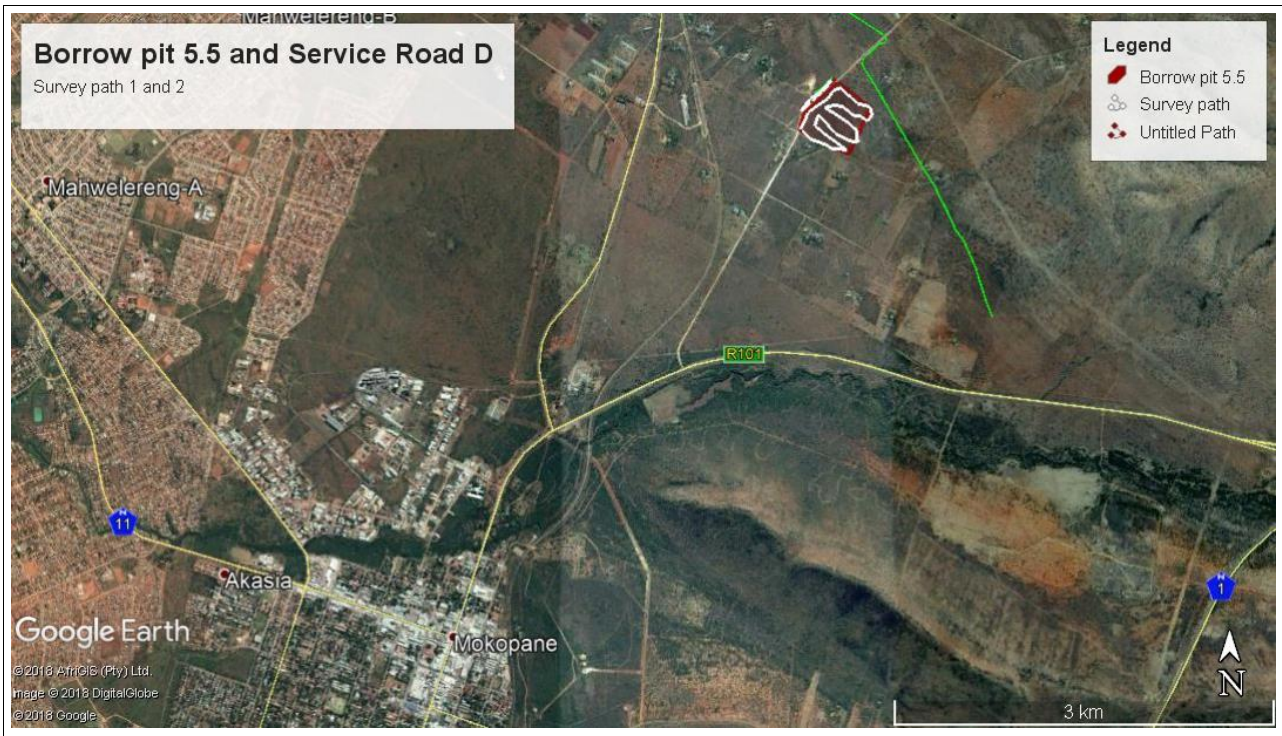
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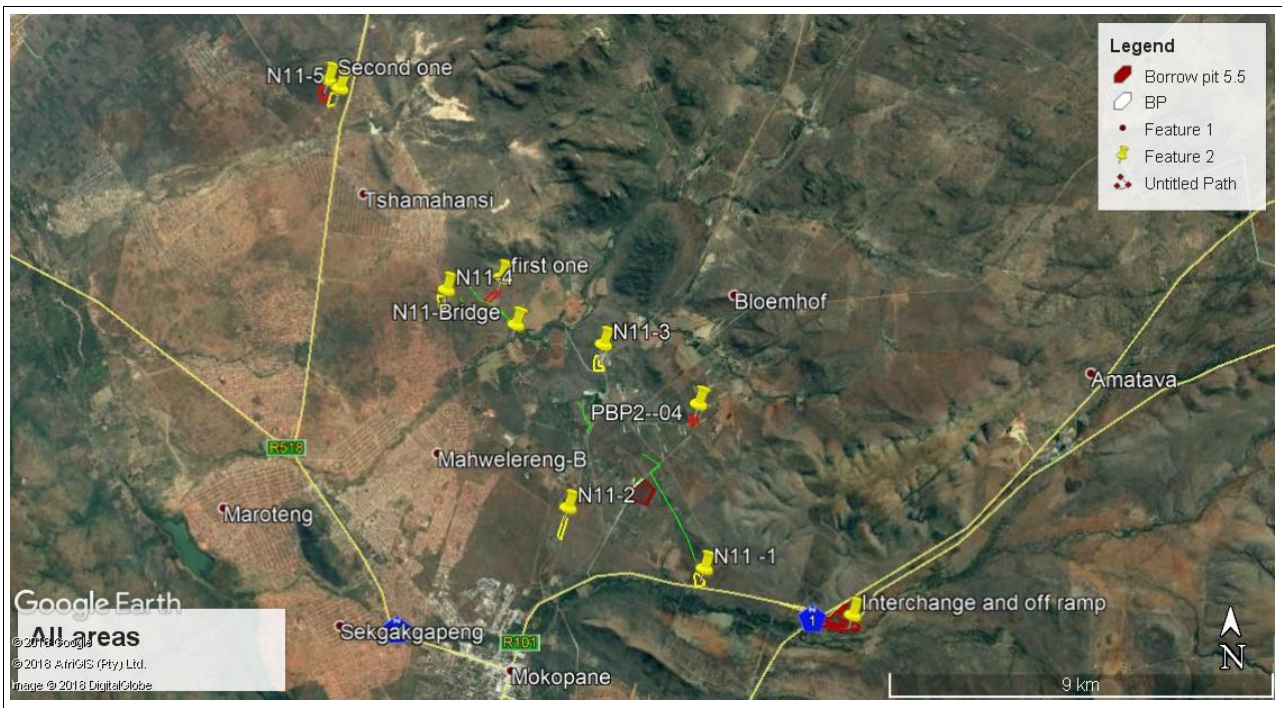
Roodt

FRANS ROODT (BA Hons, MA Archaeology, Post Grad. Dip. Museology; UP)  
Principal Investigator for SHASA Heritage Consultants





Map 2. Borrow pit 5.5 L



Map 3. All areas

Criteria	Description			
<b>EXTENT</b>	<b>National (4)</b> The whole of South Africa	<b>Regional (3)</b> Provincial and parts of neighbouring provinces	<b>Local (2)</b> Within a radius of 2 km of the construction site	<b>Site (1)</b> Within the construction site
<b>DURATION</b>	<b>Permanent (4)</b> Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	<b>Long-term (3)</b> The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory	<b>Medium-term (2)</b> The impact will last for the period of the construction phase, where after it will be entirely negated	<b>Short-term (1)</b> The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase
<b>INTENSITY</b>	<b>Very High (4)</b> Natural, cultural and social functions and processes are altered to extent that they permanently cease	<b>High (3)</b> Natural, cultural and social functions and processes are altered to extent that they temporarily cease	<b>Moderate (2)</b> Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way	<b>Low (1)</b> Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected
<b>PROBABILITY OF OCCURRENCE</b>	<b>Definite (4)</b> Impact will certainly occur	<b>Highly Probable (3)</b> Most likely that the impact will occur	<b>Possible (2)</b> The impact may occur	<b>Improbable (1)</b> Likelihood of the impact materialising is very low

**Impact is of Low probability, contained within the site. As no heritage materials were recorded, all criteria listed above are LOW**

Class	Description
<b>+</b>	<b>Any value</b> Any positive / beneficial 'impact', i.e. where no harm will occur due to the activity being undertaken.
<b>-</b>	<b>Low impact (4 -6 points)</b> A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.
	<b>Medium impact (7 -9 points)</b> Mitigation is possible with additional design and construction inputs.
	<b>High impact (10 -12 points)</b> The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
	<b>Very high impact (12 - 14 points)</b> Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a "very high impact" is likely to be a fatal flaw.
<b>Status</b>	Denotes the perceived effect of the impact on the affected area.
<b>Positive (+)</b>	Beneficial impact.
<b>Negative (-)</b>	Deleterious or adverse impact.
<b>Neutral (/)</b>	Impact is neither beneficial nor adverse.
It is important to note that the status of an impact is assigned based on the <i>status quo</i> – i.e. should the project not proceed. Therefore, not all negative impacts are equally significant.	

**In terms of Heritage resources- the development has a neutral impact as no heritage materials were recorded.**