



— Sustainable community development is our speciality —

**PHASE 1 HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED
BORROW PIT ASSOCIATED WITH THE CONSTRUCTION OF AFTON-NATALIE
BRIDGE WITHIN MAKHADO LOCAL MUNICIPALITY OF VHEMBE DISTRICT,
LIMPOPO PROVINCE.**

Compiled for:

Mamadi and Company (Pty) Ltd

1 Newtown Avenue
Killarney, 2193

Compiled by:

Vhufa Hashu Heritage Consultants

25 Roodt Street
Nelspruit, 1200
P.O. Box 1856
Nelspruit, 1200
Mobile: 083 357 3669
Fax: 086 263 5671
E-mail: info@vhhc.co.za

September 2020

Executive Summary

Magisterial Authority: Vhembe District Municipality

Developer: Makhado Local Municipality

Status of the Report: Final Report

Date of field work: 07 September 2020

Date of report: September 2020

Purpose of the Study: The purpose of this study is to identify heritage resources within a proposed development area, assess their significance, the impact of the development on the heritage resources and to provide relevant mitigation measures to alleviate impacts to the heritage resources. An assessment of impacts on heritage resources defined in section 3 of the NHRA, heritage assessment is required in terms of section 38 of the NHRA.

Vhufa Hashu Heritage Consultants cc was appointed by Mamadi and Company (Pty) Ltd to undertake a phase 1 Heritage Impact Assessment for the proposed Borrow pit in Sane area within Makhado Local Municipality of Vhembe District, Limpopo Province, in compliance with Section 38 of the National Heritage Resources Act 25 of 1999.

South Africa's historical, archaeological and paleontological heritage resources are unique and non-renewable as defined in section 3 of the NHRA. Heritage Resources as defined in section 3 of the NHRA are given "formal" protection in terms of section 27-29 and 31-32 of the NHRA and "general" protection in terms of sections 33,34,35,36 and 37 of the NHRA. Therefore, no damage, destruction or alteration may occur to heritage resources without a permit issued by a relevant heritage authority.

An assessment of impacts on heritage resources of a development is required in terms of section 38(1 and 8) of the NHRA. Where possible, heritage resources should be preserved *in situ* and conserved for future generations. This can be achieved through a monitoring and management plan that may be stipulated in the conditions issued on a development by an authority as per section 38(4)c of the NHRA. Where it is not possible to retain the heritage resources *in situ*, and the heritage resources are not deemed significant, the loss of information can be reduced by recording and mitigation of the heritage resources

through a process of excavation (or sampling) as a condition on the development in terms of section 38(4)d and e, after obtaining a permit from the relevant Heritage Resources Authority (HRA), at the cost of the developer. This allows us to record a part of the history of the place as part of the national inventory. Assessment and mitigation in the early phase of the development may save the developer considerable delays and related costs.

Heritage Resources Descriptions and Significance

Borrow Pit 01

No heritage/archaeological resources was identified within the proposed borrow pit site.

Borrow Pit 02

A grave yard is recorded next to the borrow pit site.

Borrow Pit 03

No heritage/archaeological resources was identified within the proposed borrow pit site.

Conclusion

No Heritage or Archaeological site was identified within the proposed borrow pit No.03 and the contractors should be allowed to use this borrow pit. Borrow Pit No. 01 is not suitable due to the limited space and a stream on the western side and Borrow Pit No.02 is not recommended to be used due to the grave yard next to the site.

Acknowledgements:

CLIENT NAME: Mamadi and Company (Pty) Ltd

CLIENT CONTACT PERSON: Virginia Ramakuwela

CELL: 083 353 8254

HERITAGE CONSULTANT: Vhufashu Heritage Consultants

CLIENT CONTACT PERSON: Richard R Munyai

.....
Archaeologist and Heritage Consultant cc

EXPLANATION OF ABBREVIATIONS USED IN THIS DOCUMENT

AIA	Archaeological Impact Assessment
ASAPA	South African Archaeological Professional Association
CMP	Conservation Management Plan
EIA	Early Iron Age
EMP	Environmental Management Plan
ESA	Early Stone Age
GPS	Geographical Positioning System
HIA	Heritage Impact Assessment
HMP	Heritage Management Plan
ICOMOS	International Council of Monuments and sites
LIA	Late Iron Age
LSA	Late Stone Age
MIA	Middle Iron Age
MSA	Middle Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Agency
PRHA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
VHHC	Vhufa Hashu Heritage Consultants

DEFINITIONS

“Aesthetic value” Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

„Alter” any action affecting the structure, appearance or physical properties of a place or object, whether by a way of structural or other works, by painting plastering or other decoration or any other means;

“Conservation” in relation to heritage resources, includes protection maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance

“Conservation Management Plan” A policy aimed at the management of a heritage resource and that is approved by the Heritage Resources Authority setting out the manner in which the conservation of a site, place or object will be achieved

“Cultural Significance” As defined in the NHRA means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

“Development” means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a 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 wellbeing, including-

- (a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (b) carrying out any works on or over or under a place;
- (c) subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- (d) construction or putting up for display signs or hoardings;
- (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.

“Heritage agreement” means an agreement referred to in section 42,

“Heritage Impact Assessment” A report compiled in response to a proposed development that must meet the minimum requirements set out in the NHRA and should be submitted to a heritage resources authority for consideration.

“Heritage site” means a place declared to be a national heritage site by SAHRA or site declared to be a provincial Heritage site by a PHRA

“Historic value” Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

“Improvement” in relation to heritage resources includes repair, restoration and rehabilitation of a place protected in terms of this Act.

“Interested and Affected Parties” Individuals, organisations or communities that will either be affected and/or have an interest in a development or the resulting impacts of a development.

“Management” in relation to heritage resources includes the conservation, presentation and improvement of a place protected in terms of this Act.

“Scientific value” Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period.

“Social value” Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

“Rarity” Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

“Representivity” Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

TABLE OF CONTENTS

CONTENT	PAGE
EXECUTIVE SUMMARY	2
ACKNOWLEDGEMENTS:	4
DEFINITIONS.....	6
1. INTRODUCTION.....	9
2. TERMS OF REFERENCE.....	9
3. DESCRIPTION OF THE AFFECTED AREA	10
4. LEGISLATIVE REQUIREMENTS	11
4.2. THE NATIONAL HERITAGE RESOURCE ACT (25 OF 1999).....	16
5. METHODOLOGY	17
5.1. SOURCE OF INFORMATION.....	17
8. ASSESMENT CRITERIA.....	20
8.3. Burial grounds and graves.....	20
8.4. Significance valuation Burial Ground, Historic Cemeteries and Graves.....	21
9. THE SIGNIFICANCE OF GRAVES AND BURIAL SITES.....	22
9.1 SITE SIGNIFICANCE	ERROR! BOOKMARK NOT DEFINED.
9.2. IMPACT RATING.....	ERROR! BOOKMARK NOT DEFINED.
9.3 CERTAINTY	ERROR! BOOKMARK NOT DEFINED.
9.4 DURATION	ERROR! BOOKMARK NOT DEFINED.
9.5 RECOMMENDATION.....	25
10. CONCLUSIONS AND RECOMMENDATIONS.....	25
11. REFERENCE	26

1. INTRODUCTION

Makhado Local Municipality commissioned studies for the proposed borrow pits associated with the construction of a bridge on Mufongodi river to cross from Maranikwe to Altoni and Natali within Makhado Local Municipality of Vhembe District, Limpopo Province. Mamadi and Company (Pty) Ltd was appointed to handle the Environmental Management and monitoring of the proposed project. They appointed Vhufashu Heritage Consultants cc to conduct Phase 1 Heritage Impact Assessment Scoping surveys to establish the presence of archaeological and heritage materials and to evaluate heritage resources within the proposed three borrow pits sites. Borrow pit No.01 and 02 are situated in Sane Village on the northern side of Sane Gravel road and borrow pit No.03 is situated in Strader northern side of the road to Sane South of Straider, Mufongodi river and east of Maranikwe. The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (section 34), archaeological sites and material (section 35) graves and burial sites (section 36). In order to comply with the legislations, the Applicant requires information on the heritage resources, and their significance that occur in the demarcated area. This will enable the Applicant to take proactive measures to limit the adverse effects that the development could have on such heritage resources.

2. TERMS OF REFERENCE

The terms of reference for the study were to conduct heritage impact assessment for the proposed borrow pit.

- ❖ the identification and mapping of all heritage resources in the area affected;
- ❖ an assessment of the significance of such resources in terms of heritage assessment criteria set out in regulations;
- ❖ an assessment of the impact of the development on heritage resources;
- ❖ an evaluation of the impact of the development on heritage resources relative to the interested parties regarding the impact of the development on heritage resources;
- ❖ if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- ❖ plans for mitigation of any adverse effects during and after completion of the proposed development.

3. DESCRIPTION OF THE AFFECTED AREA

The proposed three borrow pit sites are situated along the gravel road from Strader to Sane within Makhado Local Municipality of Vhembe District, Limpopo Province.



Figure 1: Locality Map for Three (03) borrow Pit sites

3.1 Borrow Pit N0.01

Borrow pit N0.01 is situated on the north western side of Sane Village, north of Sane gravel road and south of Sane Primary School GPS (S22.773313° E30.178691°)

3.1.1 Results

This study has been informed by comprehensive review of relevant literature and consultation with the local communities. No archaeological or any other cultural heritage resources was located within the direct path of the proposed borrow pit site. The borrow Pit site is not recommended for use due to a limited space on both sites and a stream on the western side.



Figure 2: View of the Proposed Borrow Pit N0.01

3.2 Borrow Pit N0.02

Borrow pit N0.02 is situated on the western side of Sane Village, north of Sane gravel road and south of Sane Primary School GPS (S22.773366° E30.174454°)

3.2.1 Results

This study has been informed by a comprehensive review of relevant literature and consultation with the local communities. A grave yard was recorded next to the borrow pit site to the north. The borrow Pit site is not recommended for use due to a grave site next to the site.



Figure 3: Proposed Borrow Pit N0.02



Figure 4: View of the proposed borrow pit No.02 from the northern direction.



Figure 5: View of the grave yard next to borrow pit No.02

3.3 Borrow Pit N0.03

Borrow pit N0.03 03 is situated in Strader northern side of the road to Sane South of Straider, Mufongodi river and east of Maranikwe GPS (S22.761428° E30.141084°)

3.3.1 Results

This study has been informed by comprehensive review of relevant literature and consultation with the local communities. No archaeological or any other cultural heritage resources was located within the direct path of the proposed borrow pit site. The borrow Pit site is recommended for use.



Figure 6: Borrow Pit No. 03



Figure 7: View of the Geotech test pits on borrow pit 03.

4. LEGISLATIVE REQUIREMENTS

Two sets of legislation are relevant for the study with regards to the protection of heritage resources and graves. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

4.1 The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

- Archaeological artifacts, structures and sites older than 100 years
- Ethnographic art objects (e.g. Prehistoric rock art) and ethnography
- Objects of decorative and visual arts
- Military objects, structures and sites older than 75 years
- Historical objects, structures and sites older than 60 years
- Proclaimed heritage sites
- Grave yards and graves older than 60 years
- Meteorites and fossils
- Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- 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 features of cultural significance
- Geological sites of scientific or cultural importance
- Sites of Archaeological and palaeological importance
- Graves and burial grounds
- Sites of significance relating to the history of slavery
- Movable objects (e.g. Archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact

Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

- The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- A construction of a bridge or similar structure exceeding 50m in length
- Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- Re-zoning of a site exceeding 10 000 m²
- Any other category provided for in the regulations of SAHRA or a provincial heritage authority.

4.2. The National Heritage Resource Act (25 of 1999)

This act established the South African Heritage Resource Agency (SAHRA) and makes provision for the establishment of Provincial Heritage Resources Authorities (PHRA). The Act makes provision for the undertaking of heritage resources impact assessments for various categories of development as determined by Section 38. It also provides for the grading of heritage resources and the implementation of a three tier level of responsibilities and functions for heritage resources to be undertaken by the State, Provincial authorities and Local authorities, depending on the grade of the Heritage resources. The Act defines cultural significance, archaeological and palaeontological sites and material (Section 35), historical sites and structures (Section 34), graves and burial sites (Section 36) which falls under its jurisdiction. Archaeological sites and material are generally those resources older than hundred years, while structures and cultural landscapes older than 60 years, including gravestones, are also protected by Section 34. Procedures for managing grave and burial grounds are clearly set out in Section 36 of the NHRA. Graves older than 100 years are legislated as archaeological sites and must be dealt with accordingly. Section 38 of the NHRA makes provision for developers to apply for a permit before any heritage resource may be damaged or destroyed.

4.3. The human tissues act (65 OF 1983)

This Act protects graves younger than 60 years. These falls under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the

exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Heritage Authorities.

Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983.

5. METHODOLOGY

5.1. Source of information

5.1.1. Survey of Literature

The methodological approach used for the study is aimed at meeting the requirements of the relevant heritage legislation. As such a desktop study was undertaken followed by a survey of the impact areas. Most of the information was obtained through the site visit made on the 17 September 2020. In practice, most archaeological and historical sites are found through systematic survey of the target landscapes. The survey therefore, sought to identify cultural heritage sites including graves, burial grounds and contemporary religious or sacred ceremonial sites associated with the proposed borrow pit. VHHC heritage specialists conducted the reconnaissance survey and impact assessment by transecting the affected landscape on foot looking for indicators of archaeological and any other cultural materials in the affected areas. In part the field officer also inspected soil profiles for potential archaeological materials that may still be trapped *in situ* in an area disturbed by human activities as well as the burrowing animals.

5.1.1.2. Field Survey

Standard archaeological observation practices were followed; Visual inspection was supplemented by relevant written sources, and oral communications with local communities from the surrounding area. In addition, the site was recorded by hand held GPS Garmin Oregon 65 and plotted on 1:50 000 topographical map. Archaeological/historical material and the general condition of the terrain were photographed with a Garmin Oregon 65 Camera.

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of archaeological significance in the area of the proposed development.

5.1.1.3. Documentation

We made inquiries to both the Limpopo Heritage Resources Authority (LIHRA) and South African Heritage Resources Agency (SAHRA). LIHRA and SAHRA maintain an archaeological database for sites recorded from field research conducted by heritage specialists. SAHRA is the national repository for all heritage studies and assessment reports produced under various projects. Unfortunately, both sources did not yield any relevant data particularly on the proposed development area. However, the data from LIHRA indicated that the Strader and Maranikwe area falls in a region with high potential for archaeological resources.

6. RESULTS OF THE FIELDWORK

6.1 Field Survey

We adopted a field research strategy of archaeological survey aimed at achieving total coverage of the affected landscape. Most archaeological and historic sites are found through systematic survey of the target landscapes. The survey also sought to identify other cultural heritage sites such as graves, burial and contemporary religious or sacred ceremonial sites in the area. Local community Leader Mr Tsanwani Judas was consulted with regards to cultural heritage resources that might be within the direct path of the proposed site. Such data is relevant in mitigation planning.

The field study team interacted with the community in order to get access to the site. We began the archaeological surveys and transacted the affected landscape on foot. In order to better our survey coverage, we started by walking more close together through target areas. Transects were set running perpendicular to communal fields because we also wanted to capture wider patterns that create the overall cultural landscape affected by the borrow pit.

6.1.2 Archaeological Survey Sampling

Distribution of archaeological sites across the landscape depends on a number of related factors, such as preservation conditions over time, the degree to which sites are exposed through erosion or lack of vegetation and actual decisions of the people who created the sites and deposited the materials originally. Using preliminary findings from the reconnaissance study, we adopted a judgement surveying strategy (stratified sampling). We divided the area into geographical zones (hills, gully, ridge, stream or river valley and flood plain). We then targeted areas we believed had archaeological or historical sites. The advantage of our strategy is that areas with high likelihood of containing cultural heritage

sites (such as those that are close and with access to water sources and potential agricultural lands) were given preference. Areas where it is highly unlikely that sites would be found (such as steep slopes, extensively rocky landscapes, areas far away from potential water sources and agricultural land) were accorded less survey priority. This allowed time and resources to be focused on the potentially most productive areas while taking into consideration the geography of the study area. Naturally, we could not be a hundred percent certain whether portions of the project area that were less surveyed did not have cultural heritage sites. However, the results obtained are reliable.

6.1.3 Study Conditions

Identification of archaeological or historical sites during surveying depends on visibility and accessibility. Areas that were sampled for the survey were readily accessible. Visibility was relatively high because the grass cover was low and in some cases non-existent.

7. CHRONOLOGICAL SEQUENCE OF THE STONE AND IRON AGE

The Stone Age is the period in human history when lithics (or stone) was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is important to note that these dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age is as follows:

Early Stone Age (ESA):	Predominantly the Acheulean hand axe industry complex dating to + 1Myr yrs-250 000 yrs. Before present.
Middle Stone Age (MSA):	Various lithic industries in SA dating from ±250 000 yr.- 30 000 yrs. before present.
Late Stone Age (LSA):	The period from ±30 000-yr.to contact period with either Iron Age farmers or European colonists.

There are no known Stone Age sites in the area including rock art. No Stone Age sites or objects were recorded during the assessment of the area.

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts:

Early Iron Age (EIA):	Most of the first millennium AD
Middle Iron Age:	10 th to 13 th centuries AD
Late Iron Age (LIA):	14 th century to colonial period. The entire Iron Age represents the spread of Bantu speaking peoples.

8. ASSESSMENT CRITERIA

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The significance of archaeological and heritage sites were based on the following criteria:

- The unique nature of a site
- The amount/depth of the archaeological deposit and the range of features (stone walls, activity areas etc.)
- The wider historic, archaeological and geographic context of the site.
- The preservation condition and integrity of the site
- The potential to answer present research questions.

8.1. Archaeological

No archaeological materials were found within the proposed borrow pits.

8.2. Historical

No historical sites/materials found on site.

8.3. Burial grounds and graves

A grave yard was recorded next to the borrow pit No.02

The legislation also protects the interests of communities that have an interest in the graves: they should be consulted before any disturbance takes place. The graves of victims of conflict and those associated with the liberation struggle are to be identified, cared for, protected and memorials erected in their honor. Graves older than 60 years, but younger than 100 years, fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissue Act (Act 65 of 1983) and are under the jurisdiction of the South African Heritage Resources Agency (SAHRA). The procedure for Consultation regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administered by a local authority. Graves in the category located inside a formal cemetery administered by a local authority will also require the same authorization as set out for graves younger than 60 years, over and above SAHRA authorization.

In terms of Section 36 (3) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) no person may, without a permit issued by the relevant heritage resources authority:

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

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

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

Therefore, in addition to the formal protection of culturally significance graves, all graves which are older than 60 years and which are not already located in a cemetery (such as ancestral graves in rural areas), are protected. Communities, which have an interest in the graves, must be consulted before any disturbance can take place. The graves of victims of conflict and those associated with the liberation struggle will have to be included, cared for, protected and memorials erected in their honor where practical. Regarding graves and burial grounds, the NHRA distinguishes between the following:

- Ancestral graves
- Royal graves and graves of traditional leaders
- Graves of victims of conflict
- Graves of individuals designated by the Minister by notice in the Gazette
- Historical graves and cemeteries
- Other human remains, which are not covered in terms of the Human Tissue Act, 1983 (Act No.65 of 1983).

8.4. Significance valuation Burial Ground, Historic Cemeteries and Graves

The significance of burial grounds and gravesites is closely tied to their age and historical, cultural and social context. Nonetheless, every burial should be considered as of high significance. Should any grave previously unknown be identified during construction, every effort should be made not disturb them. Road alignment should be shifted to ensure the grave or burial ground is not disturbed.

8.5. Previously unidentified burial sites/graves –

Although the possibilities of this occurring are very limited, should burial sites outside the NHRA be accidentally found during the proposed development, they must be reported to the nearest police station to ascertain whether or not a crime has been committed. If there is no evidence for a crime having been committed, and if the person cannot be identified so that their relatives can be contacted, the remains may be kept in an institution where certain conditions are fulfilled. These conditions are laid down in the Human Tissue Act (Act No. 65 of 1983). In contexts where the local traditional authorities give their consent to the unknown remains to be re-buried in their area, such re-interment may be conducted under the same regulations as would apply for known human remains.

9. THE SIGNIFICANCE OF GRAVES AND BURIAL SITES

The significance of burial grounds or graves has been indicated by means of stipulations derived from the National Heritage Resources Act (Act No 25 of 1999)

Heritage Significance	:	GP.A; High/Medium Significance
Impact	:	Negative
Impact Significance	:	High
Certainty	:	Probable
Duration	:	Permanent
Mitigation	:	C

- *Informal graves and Formal grave yards (Cemeteries)*

Informal and formal grave yards (Cemeteries) can be considered to be sensitive remains of high significance and are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (no 25 of 1999) this act applies whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regards to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on exhumation (Ordinance no 12 of 1980) and the Human Tissue Act (Act no 65 of 1983 as amended).

10. IMPACT ASSESSMENT

The methodology used in the assessment of the nature, extent, duration, impact and significance of actual and/or potential impacts on the environment due to the proposed development is outlined below. The cumulative impacts on the environment and the effects of the activity on the affected community have been described. In addition, mitigation measures have been proposed to prevent/reduce the identified impacts on the environment

10.1 METHODOLOGY FOR IMPACT ASSESSMENT

10.1.2 Site significance

The site significance classification standards as prescribed and endorsed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used as guidelines in determining the site significance for the purpose of this report.

Potential impacts are scored according to description provided in **Table 0-1** below.

Table 0-1: Scoring of potential impacts

SEVERITY			OCCURRENCE
MAGNITUDE (SEVERITY) OF IMPACT	DURATION OF IMPACT	EXTENT OF IMPACT	PROBABILITY OF OCCURRENCE
Magnitude (M)	Duration (D)	Scale (S)	Probability (P)
10 Very high/ don't know	5 Permanent	5 International	5 Definite/don't know
8 High	4 Long-term (impact ceases after closure of activity)	4 National	4 High probable
6 Moderate	3 Medium-term (5 to 15 years)	3 Regional	3 Medium probability
4 Low	2 Short-term (0 to 5 years)	2 Local	2 Low probability
2 Minor	1 Transient	1 Site only	1 Improbable
1 None/insignificant			

After ranking these factors for each impact, the significance of the aspects, occurrence and severity, was assessed using the following formula:

HERITAGE IMPACT	HERITAGE SIGNIFICANCE											
	Before Mitigation						After Mitigation					
	M	D	S	P	Total	SP	M	D	S	P	Total	SP
Cultural heritage												
	1	1	1	1	3	L	1	1	1	1	3	L
Proposed mitigation measures: No mitigation measures proposed.												

$$\text{Significance Points (SP)} = (M + D + S) \times P$$

The maximum SP value is up to 100. The environmental effects/significance were then rated based on the system provided in

Table 0-2 below.

HERITAGE IMPACT	HERITAGE SIGNIFICANCE											
	Before Mitigation						After Mitigation					
	M	D	S	P	Total	SP	M	D	S	P	Total	SP
Cultural heritage												
	1	1	1	1	3	L	1	1	1	1	3	L
Proposed mitigation measures: No mitigation measures proposed.												

Table 0-2: Significant point system

SP	SIGNIFICANCE RANKING	DESCRIPTION
SP > 70	Indicates High (H) environmental significance	Where it would influence the decision regardless of any possible mitigation. An impact that could influence the decision about whether or not to proceed with the project.

SP = 40 - 70	Indicates Moderate (Mod) environmental significance	Where it could have an influence on the decision unless it is mitigated. An impact or benefit which is sufficiently important to require management. Of moderate significance could influence the decisions about the project if left unmanaged.
SP < 40	Indicates Low (L) environmental significance	Where it will not have an influence on the decision. Impacts with little real effect and which should not have an influence on or require modification of the project design or alternative mitigation
+	Positive impact	An impact that is likely to result in positive consequences / effects.

11. RECOMMENDATION

Given the spatial extent of the project activities, this study recommends that a cultural heritage resources –monitoring program be designed to deal with potential chance archaeological or historical finds, including unmarked human burials that may accidentally be found during development. This is particularly more important during earth moving activities. From the heritage management perspective, there is no objection to the proposed development.

12. CONCLUSIONS AND RECOMMENDATIONS

In conclusion it is possible to say that the Phase 1 HIA for the proposed borrow pit has been conducted successfully. The landscape proves to be fairly uniform and lacking other features that might have focused past activities. The objective of the HIA is to limit primary and secondary impacts on archaeological and cultural heritage in the path of the proposed development and infrastructure footprint. However, should any chance archaeological or any other physical cultural resources be discovered subsurface during gravel extraction, heritage authorities should be informed. From an archaeological and cultural heritage resources perspective, there are no objections to the proposed project and we recommend to the Provincial Heritage Resource Agency, South African Heritage Resource Agency to approve the project as planned.

13. REFERENCE

Deacon, J. 1997. Report: Workshop on Standards for the Assessment of Significance and Research Priorities for Contract Archaeology. *South African Association of Archaeology*. No. 49,

Huffman, T.N. (2007). *Handbook to the Iron Age: The archaeology of pre-colonial farming societies in southern Africa*, Scottsville, South Africa, University of Kwazulu Natal Press.

Holm, S.E. 1966. *Bibliography of South African Pre- and Protohistoric archaeology*. Pretoria: J.L. van Schaik

Klapwijk, M. 1973. An Early Iron Age site near Tzaneen North eastern Transvaal. *South African Journal of Science*, vol.69, pp.324.

Inskeep, R .R & Maggs, T.M. O'C. 1975. Unique objects in the Iron Age of the Transvaal, South Africa. *Archaeological Bulletin* vol. 30, pp. 114-134.

Mason, R.J. 1962. *Prehistory of the Transvaal*. Johannesburg: Witwatersrand University Press.

Mönnig, H.O. 1967. *The Pedi*. Pretoria: J.L. van Schaik.

Van Warmelo, N J. 1935. *Preliminary survey of the Bantu Tribes of South Africa*. Ethnological Publications No. 5. Pretoria: Government Printer.

