

**HERITAGE IMPACT ASSESSMENT FOR THE PLANNED
STERKFORTEIN (JUNCTION 21) DEVELOPMENT, PRETORIA
MUNICIPAL DISTRICT, GAUTENG PROVINCE**

Prepared by:

J A VAN SCHALKWYK

NATIONAL CULTURAL HISTORY MUSEUM

P.O. Box 28088

Sunnyside

0132

Prepared for:

Mr B HERTZOG

M & T DEVELOPMENT

P O Box 39727

FAERIE GLEN

Gauteng

0043

7 February 2007



EXECUTIVE SUMMARY

HERITAGE IMPACT ASSESSMENT FOR THE PLANNED STERK FONTEIN (JUNCTION 21) DEVELOPMENT, PRETORIA MUNICIPAL DISTRICT, GAUTENG PROVINCE

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area in which it is proposed to do urban development.

A number of sites were identified and can be categorised into two categories: Iron Age and historic period. The latter can be subdivided into Anglo Boer War, Second World War and farming related sites. It is recommended that development can continue, but only on condition of acceptance of the proposed mitigation measures set out for each individual site in Appendix 2:

- Documentation and excavation of the Iron Age site
- Documentation and excavation of the Anglo Boer War sites
- Documentation of the Second World War sites
- Documentation of the farm labour sites
- Retaining and formalisation of the cemetery

Documentation includes mapping and photographing of sites, after which application can be made to SAHRA for their destruction. Excavation implies the systematic investigation of the site by a qualified archaeologist, on receipt of a permit issued by SAHRA.

Lastly, archaeological material, by its very nature, occurs below ground. The developer should therefore keep in mind that archaeological sites might be exposed during the development activities. It is therefore recommended that if anything is noticed, work in that area should be stopped and the occurrence should immediately be reported to a museum, preferably one at which an archaeologist is available. The archaeologist should then investigate and evaluate the finds.

TABLE OF CONTENTS

	Page
TABLE OF CONTENTS	3
GLOSSARY OF TERMS	4
LIST OF ABBREVIATIONS.....	4
1. INTRODUCTION.....	5
2. BACKGROUND AND BRIEF	5
3. STUDY APPROACH.....	6
4. STUDY AREA	8
5. SITE SIGNIFICANCE AND ASSESSMENT	10
6. IDENTIFICATION OF RISK RESOURCES	11
7. CONCLUSION.....	12
8. REFERENCES.....	13
9. PROJECT TEAM.....	13
APPENDIX 1: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON CULTURAL RESOURCES.....	14
APPENDIX 2. LIST OF IDENTIFIED SITES	16

GLOSSARY OF TERMS

Study area: Refers to the entire study area as indicated by the client in the accompanying Fig. 1 and 2.

Stone Age: The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

Iron Age: Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. These people, according to archaeological evidence, spoke early variations of the Bantu Language. Because they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 1000
Late Iron Age	AD 1000 - AD 1830

Historical Period: Since the arrival of the white settlers - c. AD 1840 - in this part of the country

LIST OF ABBREVIATIONS

ADRC	Archaeological Data Recording Centre
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

HERITAGE IMPACT ASSESSMENT FOR THE PLANNED STERKFORTEIN (JUNCTION 21) DEVELOPMENT, PRETORIA MUNICIPAL DISTRICT, GAUTENG PROVINCE

1. INTRODUCTION

The National Cultural History Museum¹ was contracted by **M & T Development** to survey an area in which it is proposed to develop a housing estate. The aim of the survey was to determine the nature and potential of cultural heritage resources found within the boundaries of the area that is to be impacted by the developed.

Cultural heritage resources are broadly defined as all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.

2. BACKGROUND AND BRIEF

The scope of work consisted of conducting a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This include:

- Conducting a desk-top investigation of the area;
- A visit to the proposed development site.

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Indicated which would be the preferred site for the proposed development;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

¹ The National Cultural History Museum is affiliated to the Northern Flagship Institution, which act as parent body for a number of museums, all of which resorts under the Department of Arts and Culture.

3. STUDY APPROACH

3.1 Information base (sources)

No sources are known to exist about the area specifically, nor on the region.

3.2 Methodology

3.1 Preliminary investigation

3.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various reports, anthropological, archaeological and historical sources were consulted - see the list of references below.

3.1.2 Data bases

The *Heritage Sites Database* and the *Environmental Potential Atlas* was consulted.

3.1.3 Other sources

Topocadastral and other maps were also studied - see the list of references below.

3.2 Field survey

The area was divided into blocks by using natural (e.g. streams) as well as manmade (e.g. roads, fences) boundaries, and each block was surveyed walking a number of transects across it. Fences and rivers obviously necessitated a deviation from this strategy.

3.3 Documentation

Sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System (GPS)*² and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

² According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then to correlate it with reference to the physical environment before plotting it on the map.

Map datum used: Hartebeeshoek 94 (WGS84).

3.4 Limitations

Dense vegetation (natural as well as agricultural) encountered during the survey period, made it difficult to identify sites, as well as to establish their extent (size). In many case, this also made the taking of photographs impossible as nothing but grass is shown.

4. STUDY AREA

4.1. Description of the study area

The location and extent of the study area can be determined from the map in Figure 1. It is to the east of the R21 and northeast of Tembisa in the Pretoria and Kempton Park municipal districts of Gauteng (Fig. 1). The centre point of the area is c.: S 25.97155, E 29.27983. It include portions of the following farms: Sterkfontein 401JR, Witkoppies 393JR, Hartbeestfontein 171R and Elandsfontein 412JR.

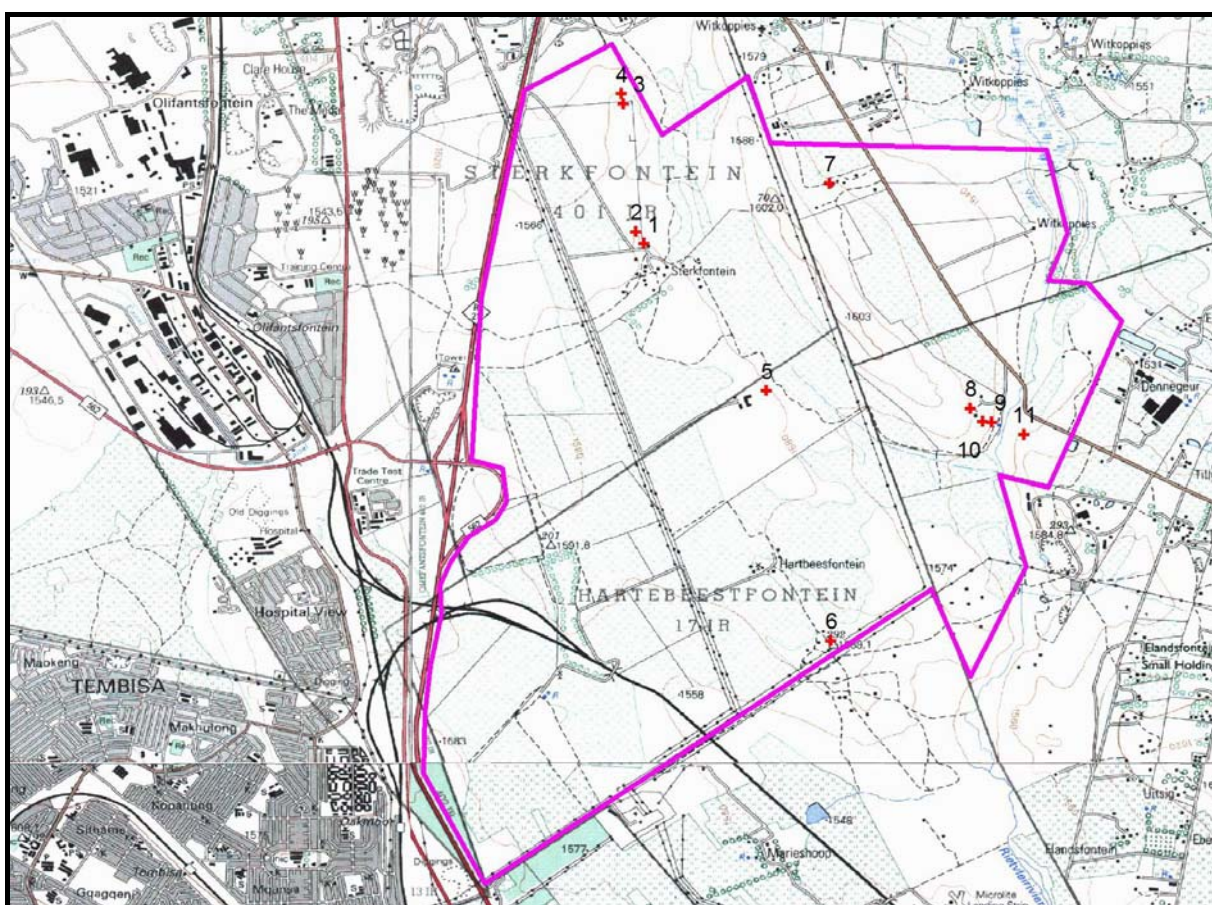


Figure 1. Location of the study area and the location of the identified sites.

The geology is made up of quartzite, with a band of dolomite running through the middle of the area. The original vegetation for the upper area is classified as Rocky Highveld Grassland, but has been destroyed in most places due to agricultural activities.

4.2 Description of region

A number of sites were identified and must be considered during development work. These are contextualized in chronological order below

4.2.1 Stone Age

No sites or object indicating Stone Age occupation of the area were found.

4.2.2 Iron Age

Some stone walling occur on the eastern close to the river. These walls were built in typical Iron Age manner, consisting of a large inner circle, with a number of smaller scallops on the outside. Because of its layout, size and location close to the river, it is guessed that this might have been a cattle outpost.

Iron Age occupation of the larger region mostly dates to the Late Iron Age, especially the period from 1500 onwards. These could be related to the Tswana or early Ndebele settlement, which is found extensively in the Bronberge, and further north in the Magaliesberge.

4.2.3 Historic period

Sites dating to this period can be subdivided into different categories.

Some sites dating to the Anglo Boer War were identified. It all relates to the occupation of Pretoria by the British and the Boers effort to prevent this. The Boers followed a strategy of harassing the British, who built small fortifications, called sangars (after the origin of these structures in India), to prevent the Boers from moving freely across the landscape.

According to the current owner of the farm, Mr G Penning, the flat area to the west of the ridge was used as a bombing range during World War 2. He himself, having being a member of the Defence Force all his life, can describe the type of ordinance found while cultivating the area. Some camping sites were erected for the officers and men to use during training activities on site.

Some farm labourer houses were also identified, as well as one cemetery

5. SITE SIGNIFICANCE AND ASSESSMENT

Impact analysis of cultural resources under threat of the proposed development, are based on the present understanding of the development.

The **significance** of a heritage site and artefacts is determined by its historical, social, aesthetic, technological and scientific value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Sites regarded as having low significance are viewed as being recorded in full after identification and would require no further mitigation. Impact from the development would therefore be judged to be low. Sites with a medium to high significance would therefore require mitigation. Mitigation, in most cases the excavation of a site, is in essence destructive and therefore the impact can be viewed as high and as permanent.

The identified can be grouped into different categories and are rated as follows

- Sites dating to the Second World War, low on a regional basis. As individual features, these are not significant nor do they show unique features. However, it does represent a specific era and should at least be recorded.
- An informal cemetery, high on a regional basis. There are probably some descendants still living in the area that would want access to the site.
- Farm labourer houses, low on a regional basis. These do not differ from what is found in contiguous areas, but, as urban sprawl takes place, they will all eventually disappear. Some should therefore be recorded. Beware of graves in the vicinity of these features, specifically those of children.
- Iron age site, high on a regional basis. These kinds of sites are rare in this region and should therefore at least be documented.
- Anglo Boer War sites, medium on a regional basis. Current understanding of events indicates that these are mostly on the edge of what took place in the region. However, they should be recorded as they form part of a larger whole.

6. IDENTIFICATION OF RISK RESOURCES

An Environmental Impact Assessment is focused on two phases of a proposed development: **the construction and operation phases**. However, from a cultural heritage perspective, this distinction does not apply. Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted, can be written into the management plan, whence they can be avoided or cared for in the future.

Construction phase:

Possible Risks	Source of the risk
Actually identified risks	
- damage to sites	Construction work
Anticipated risks	
- looting of sites	Curios workers

Operation phase:

Possible Risks	Source of the risk
Actually identified risks	
- damage to sites	Not keeping to management plans
Anticipated risks	
- damage to sites	Unscheduled construction/developments
- looting of sites	Curios visitors

7. CONCLUSION

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area in which it is proposed to do urban development.

A number of sites were identified and can be categorised into two categories: Iron Age and historic period. The latter can be subdivided into Anglo Boer War, Second World War and farming related sites. It is recommended that development can continue, but only on condition of acceptance of the proposed mitigation measures set out for each individual site in Appendix 2:

- Documentation and excavation of the Iron Age site
- Documentation and excavation of the Anglo Boer War sites
- Documentation of the Second World War sites
- Documentation of the farm labour sites
- Retaining and formalisation of the cemetery

Documentation includes mapping and photographing of sites, after which application can be made to SAHRA for their destruction. Excavation implies the systematic investigation of the site by a qualified archaeologist, on receipt of a permit issued by SAHRA.

Lastly, archaeological material, by its very nature, occurs below ground. The developer should therefore keep in mind that archaeological sites might be exposed during the development activities. It is therefore recommended that if anything is noticed, work in that area should be stopped and the occurrence should immediately be reported to a museum, preferably one at which an archaeologist is available. The archaeologist should then investigate and evaluate the finds.

8. REFERENCES

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

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

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

Panagos, D.C. 1999. Witpoort, 16 July 1900: traces of an Anglo-Boer War Battle. *Military History Journal* 11(3/4):137-148.

Richardson, D. 2001. *Historic sites of South Africa*. Cape Town: Struik Publishers.

Van Schalkwyk, J.A. 2004. *Heritage impact assessment of a section of Road D781, Pretoria District, Gauteng Province*. Unpublished report 2004KH027. Pretoria: National Cultural History Museum.

9. PROJECT TEAM

J van Schalkwyk: principal investigator

APPENDIX 1: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON CULTURAL RESOURCES

Significance

The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value				
Is it important in the community, or pattern of history				
Does it have strong or special association with the life or work of a person, group or organisation of importance in history				
Does it have significance relating to the history of slavery				
2. Aesthetic value				
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group				
3. Scientific value				
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage				
Is it important in demonstrating a high degree of creative or technical achievement at a particular period				
4. Social value				
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons				
5. Rarity				
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage				
6. Representivity				
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects				
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class				
Importance in demonstrating the principal characteristics 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.				
7. Sphere of Significance		High	Medium	Low
International				
National				
Provincial				
Regional				

Local				
Specific community				
8. Significance rating of feature				
1.	Low			
2.	Medium			
3.	High			

Significance of impact:

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a “no-go” implication on the project regardless of any mitigation

Certainty of prediction:

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% 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

Recommended management action:

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs
- 5 = formalise cemetery or, alternatively, relocate graves if need be

Legal requirements:

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

APPENDIX 2. LIST OF IDENTIFIED SITES

1. Location: Sterkfontein 401JR: S 25.95710; E 28.26940

Description: Circle of stone, approximately 10 metres in diameter against large boulder. No context could be determined as no deposit or other structures could be identified. However, the vegetation is quite dense, making this difficult.

Discussion: This site is located on a quartzite ridge and it is unsure as to what development is to take place here. It is therefore recommended that site is documented before development takes place.

Evaluation of significance: Low on a regional basis

Significance of impact: Medium

Certainty of prediction: Possible

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit



Fig. 2. The stone circle in the foreground.

2. Location: Sterkfontein 401JR: S 25.95610; E 28.26871

Description: Basis for two toilets, probably dating from the time when the area to the west was used as a bombing range (World War 2)

Discussion: This site is located on a quartzite ridge and it is unsure as to what development is to take place here. It is therefore recommended that site is documented before development takes place.

Evaluation of significance: Low on a regional basis

Significance of impact: Medium

Certainty of prediction: Possible

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit



Fig. 3. One of the two toilets

3. Location: Sterkfontein 401JR: S25.94538; E 28.26763

Description: Cement slab and a short section of stone walling. It is probably linked to the next site that was used by soldiers during World War 2 as campsite.

Discussion: This site is located on a ridge and it is unsure what development is to take place here. It is therefore recommended that it is documented before development takes place.

Evaluation of significance: Low on a regional basis

Significance of impact: Medium

Certainty of prediction: Possible

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

4. Location: Sterkfontein 401JR: S 25.94454; 28.27960

Description: Remains of an old campsite, with stone walling and fire places. It is probably linked to the previous site. It dates to the World War 2 period when the area to the west was used as a bombing range.

Discussion: This site is located on a ridge and it is unsure what development is to take place here. It is therefore recommended that it is documented before development takes place.

Evaluation of significance: Low on a regional basis

Significance of impact: Medium

Certainty of prediction: Possible

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit



Fig. 4. A section of the campsite. This seems to have been part of the kitchen.

5. Location: Hartebeestfontein 17IR: S 25.96943; E 28.27960

Description: Informal cemetery with probably more than 50 graves. Most do not have headstones, and those that have are largely illegible.

Discussion: It is recommended that this site is retained and formalised by fencing it and controlling the vegetation. The responsible person/party should be determined.

Evaluation of significance: High on a local basis

Significance of impact: High

Certainty of prediction: Possible

Recommended management action: 5 = formalise cemetery or, alternatively, relocate graves if need be

Legal requirements: Consultation, notification, permits, SAHRA permit



Fig. 5. A small section of the cemetery. The rest of the graves are hidden below the grass.

6. Location: Hartebeestfontein 17IR: S 25.99033; E 28.28503

Description: A number of farm worker homesteads occur in this area, most just outside of the area of proposed development (see also Fig. 1). During the survey, most were too overgrown with vegetation to determine their size, shape, or construction. It is also difficult to date them as surface indicators or not visible. Others were identified at the following coordinates: S 25.99447, E 28.28858; S 25.99478, E 28.28661; S 25.99447, E 28.28508; S 25.99156, E 28.28878. As they are still shown on the 1975 topocadastral map, they are taken not to be older than 60 years.

Discussion: In the past, these structures probably formed a 'unit' that will now be divided due to the proposed development. It is therefore recommended that some documentation take place both inside the development area as well as outside.

Evaluation of significance: Low on a regional basis

Significance of impact: Medium

Certainty of prediction: Possible

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: None



Fig. 6. One of the old homesteads. The centre is to be to the right of the darker, taller type of vegetation in the centre of the photograph.

7. Location: Witkoppies 393JR: S 25.95206; E 28.28494

Description: According to the 1:50 000 topocadastral map (4th edition, 1975), there are some graves located here. Although the graves could not be found, the remains of what seems to be farm labourer homesteads occur here.

Discussion: If development takes place in this area, care should be taken and a lookout should be kept for any graves.

Evaluation of significance: Low on a regional basis

Significance of impact: Low

Recommended management action: In anything is identified - 5 = formalise cemetery or, alternatively, relocate graves if need be

Legal requirements: Notification, consultation and permits.

8. Location: Elandsfontein 412JR: S 25.97088; E 28.29673

Description: Remains of what seems to be a farm labourer homestead, showing possible multi-component settlement. Some fencing, for what possibly was a cattle kraal, occurs to the south of it. As it is not shown on the 1975 topocadastral map, it might be older than 60 years.

Discussion: It is possible that these different structures are not contemporary with each other.

Evaluation of significance: Low on a regional basis

Significance of impact: High

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: SAHRA permit

9. Location: Elandsfontein 412JR: S 25.97203; E 28.29849.5"

Description: Some stone walling, consisting of a large central enclosure, with some terracing to the south and west of it. It is possible that this dates to the Iron Age or early historic times. The walls are constructed in typical manner: two parallel rows of large stones are used on the outside, and is then filled in with smaller stones inside.

Discussion: Because these kind of sites are rare in this area, it is recommended that if there is a primary impact here, these sites should be documented.

Evaluation of significance: High on a regional basis

Significance of impact: High

Recommended management action: 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary

Legal requirements: SAHRA permit

10. Location: Elandsfontein 412JR: S 25E58'19.3"; E 28E17'51.8"

Description: Circular wall of stone. The construction technique used here is very different from the previously mention, and consists only of stones stacked on top of each other, in places incorporating the natural outcrops. However, a lot of these stone have fallen over. The structure is in all probability defensive in nature and dates to the Anglo Boer War.

Discussion: Because of its current state of conservation, this feature could only be interpreted with reference to the one discussed below.

Evaluation of significance: Medium on a regional basis

Significance of impact: High

Recommended management action: 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary

Legal requirements: SAHRA permit

11. Location: Elandsfontein 412JR: S 25E58'23.0"; E 28E18'04.3"

Description: Circular wall of stone. The construction technique consists of stones stacked on top of each other, in places incorporating the natural outcrops. On the northern side, there appears what can be described as a loophole in the wall. This structure is in all probability defensive in nature and dates to the Anglo Boer War. About 50 metres south of this, there is a circular flat space, demarcated with packed stone.

Discussion: There is obviously a relation, from a strategic point of view, between this structure and the previous one. If there is an impact on the previously described site, this particular one would also, in a sense, be impacted on. Therefore, the same mitigation measures would apply to this site as well.

Evaluation of significance: Medium on a regional basis

Significance of impact: High

Recommended management action: 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary

Legal requirements: SAHRA permit