



Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

**A REPORT ON AN ARCHAEOLOGICAL IMPACT ASSESSMENT
FOR THE PROPOSED KAMEELDOORN SOLAR PV DEVELOPMENT ON THE
FARM KAMEELDOORN 271 JP, ZEERUST, NORTHWEST PROVINCE**

For:

RE..RE CAPITAL

REPORT: AE01244P

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JULY 2012

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SUMMARY

Archaetnos cc was appointed by RE.RE Capital, to conduct an Archaeological Impact Assessment for the proposed development of a Solar Photo-Voltaic operation on portions of the Kameeldoorn 271 JP, near Zeerust in the Northwest Province. Two sections of the farm (labeled A and B) has been identified by the developer as potential areas for the development, and both these had to be assessed.

The area has been disturbed through some development, including a railway line, power lines and agricultural activities in the past. However, large sections of the area have been undisturbed. A number of Late Iron Age features and sites (stone walled remains) were identified and recorded in the area, although these might not be directly impacted on by the proposed development. The report discusses the results of the assessment and background research on the archaeology and history of the area, and provides recommendations regarding any mitigation measures that might have to be implemented.

If the recommendations put forward at the end of this document are implemented, then, from an Archaeological point of view, there would be no objection to the continuation of the proposed development.

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1. INTRODUCTION

Archaeos cc was appointed by RE.RE Capital, to conduct an Archaeological Impact Assessment for the proposed development of a Solar Photo-Voltaic operation on portions of the Kameeldoorn 271 JP, near Zeerust in the Northwest Province. Two sections of the farm (labeled A and B) has been identified by the developer as potential areas for the development, and both these had to be assessed.

The area has been disturbed through some development, including a railway line, power lines and agricultural activities in the past. However, large sections of the area have been undisturbed. A number of Late Iron Age features and sites (stone walled remains) were identified and recorded in the area, although these might not be directly impacted on by the proposed development.

The client indicated the extent/boundaries of the proposed development, and the assessment was to be confined to this area.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify all objects, sites, occurrences and structures of an archaeological nature located in the area of the proposed development.
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources, should this be applicable.
5. Review applicable legislative requirements.

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

3.1 The National Heritage Resources Act

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

- a. **Archaeological artifacts, structures and sites older than 100 years**
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography

- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The national estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and palaeontological importance**
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A 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:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. 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
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

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

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

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

- a. destroy, damage, alter, exhume or remove from its original position of 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, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

3.2 The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

4. METHODOLOGY

4.1 Survey of literature

A survey of literature was undertaken in order to place the development area in an archaeological and historical context. The sources consulted in this regard are indicated in the bibliography.

4.2 Field survey

The assessment was conducted according to generally accepted AIA practices and was aimed at locating all possible objects, sites and features of archaeological significance in the area of the proposed development. If required, the location/position of any site is determined by means of a Global Positioning System (GPS), while photographs are also taken where needed.

The assessment was undertaken mainly on foot, although certain portions were traversed by vehicle.

4.3 Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

4.4 Documentation

All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

5. DESCRIPTION OF THE AREA

The proposed development area is located on the farm Kameeldoorn 271 JP, near the town of Zeerust in the Northwest Province. The topography of the area is relatively flat, although there are some hills and outcrops on portions of the area. Two areas (named A and B) has been identified as possible areas where the proposed Solar PV plant will be erected. The client indicated that both these areas had to be assessed, with Area A (the smaller of the two) being the preferred area). Area B is still farmed on, and the current owner would prefer that Area A is utilized for the development.

The area has been disturbed in the recent past in certain sections by agricultural activities including ploughing and cattle grazing. Large sections are however still in condition, especially on the hills and outcrops in the area.

Dense grass and other vegetational cover made visibility difficult, although archaeological sites were identified during the assessment.

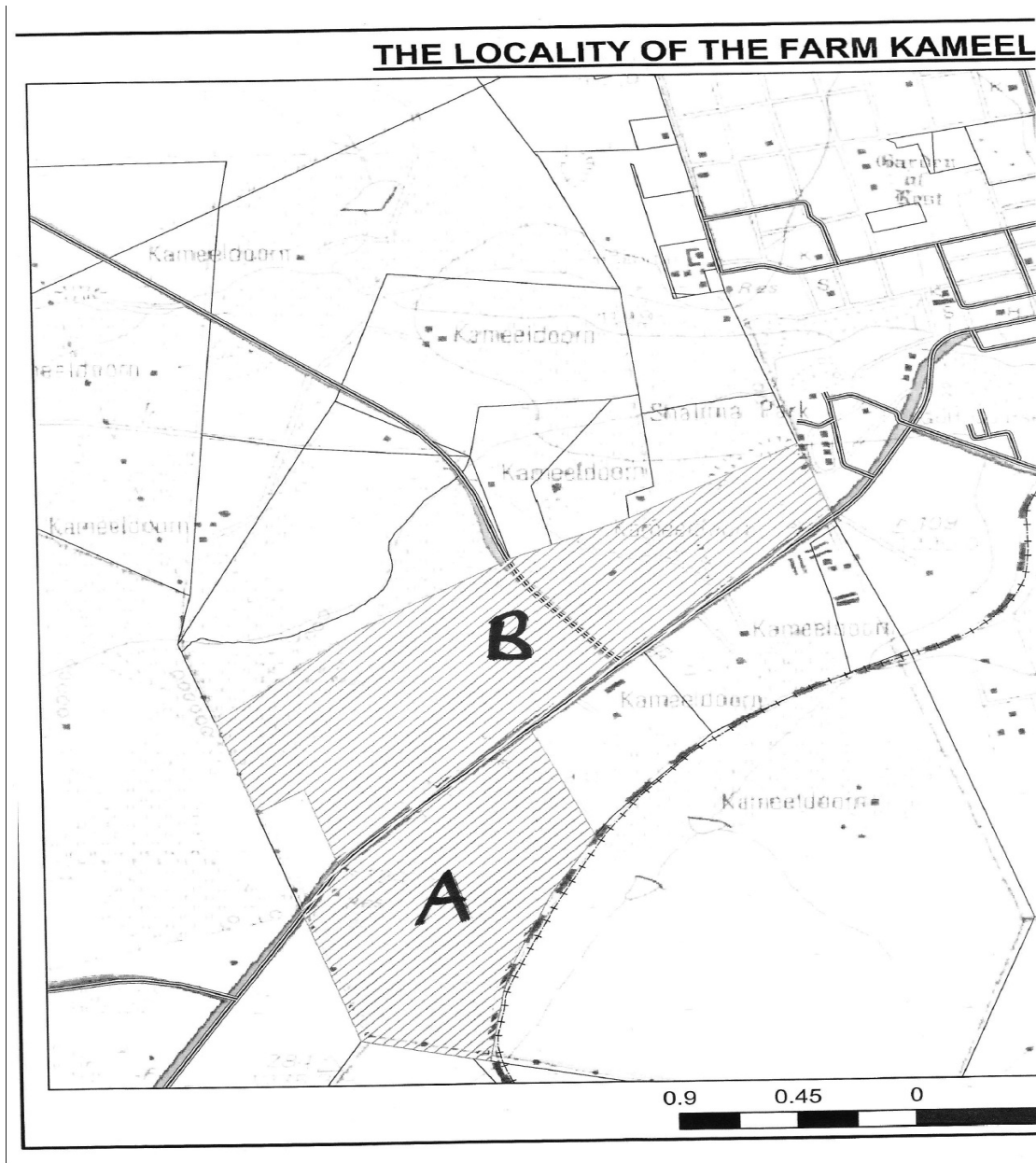


Figure 1: Location map showing areas on Kameeldoorn earmarked for development (Map courtesy client).

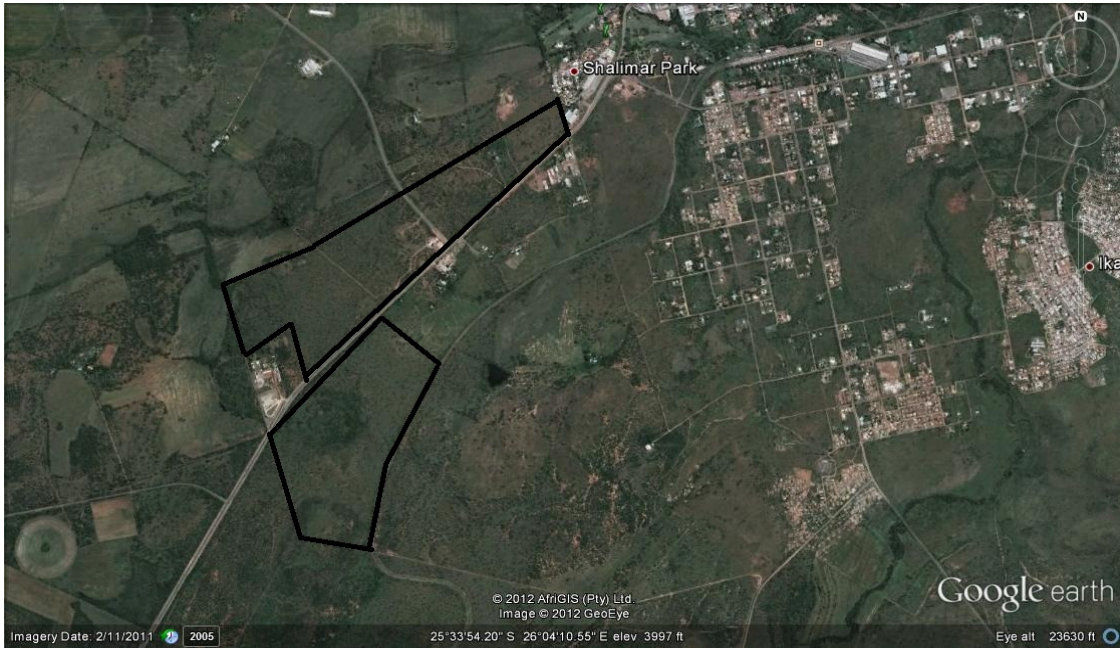


Figure 2: Aerial view of development. Area A is the smaller of the two (Google Earth 2012).



Figure 3: A view of a section of the area showing flat open section and relatively little tree cover.



Figure 4: Another view of the area from one of the hills in the area.



Figure 5: View of vegetation on one of the hills. Note the dense tree cover and some stone walling.

6. DISCUSSION

A short, general, background to the archaeology and history of the area is given in the following section.

6.1 Stone Age

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided in basically into three periods. It is however important to note that dates are relative and only

provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

Early Stone Age (ESA) 2 million – 150 000 years ago
Middle Stone Age (MSA) 150 000 – 30 000 years ago
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D

Although there are no known Stone Age sites in the area, there are some rock art (engravings) sites located in the larger geographical a few kilometers west of Zeerust and near Groot Marico to the east of Zeerust (Bergh 1999: 5).

Stone Age material is frequently found close to rivers or other watercourses, but none was found during this survey. If any will be found these will be single, scattered, stone tools.

6.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

In a band stretching roughly from Brits in the east to Zeerust in the west there are many known Iron Age sites (Bergh 1999: 7-8). These all belong to the Later Iron Age (Bergh 1999:8-9). No EIA sites are known to occur in the area (Bergh 1999: 6). By the end of the 18th century the baHurutshe stone walled sites (capitals) were located at Kaditshwene and Tshwenyane north of Zeerust (Bergh 1999: 106). Prof. J.Boeyens of UNISA did extensive archaeological research on this and other sites in the region (Boeyens 2003).

A number of Late Iron Age stone walled sites and features were located during the assessment of the area and will be discussed later on in the report.

6.3 Historical Age

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write.

Early travelers (including missionaries, hunters and adventurers) moved through this part of the Northwest Province. This included Cambell I 1820, Robert Schoon and William McLuckie in 1829, David Hume in 1830, Dr.Andrew Smith in 1835 and Cornwallis Harris in 1836 (Bergh 1999: 12, 13). They were closely followed by the Voortrekkers after that.

A number of Late Iron Age stone walled sites and features were identified during the survey in the area, and especially in the so-called Area A. The sites are located on hills and outcrops and in the area, and as a result will not be directly impacted on by the proposed development. The development will focus on the flat open sections in the area and will steer clear from the hills. The sites probably form part of a large LIA settlement complex, representing individual settlement units or homesteads with features such as cattle kraals (livestock enclosures), hut bays and other related features. It possibly date to the same time period as the Hurutshe settlement complexes at Kaditshwene and other sites close to Zeerust, and around the late 18th to early 19th century. Very little cultural material was observed, and only fragments of undecorated pottery were identified during the field assessment.

Many more sites and features possibly exist in the area, especially around hills and low outcrops and it is recommended that all development activities be kept away from these. One site (Site 7 on the aerial image) is represented by a single, undecorated potsherd located in a flat section away from the hills and it is possible that more finds such as these could occur in the area.

No sites were identified in Area B (the larger of the two areas). This area is generally flat with no hills and is also currently farmed on. The owner of the property would prefer the development occurring on Area A. With the archaeological sites occurring mostly on the hills and outcrops this would not be a problem and it is recommended that the development continue here, taking into consideration the measures put forward at the end of this report.

GPS Locations: 1. **S25.56561 E26.06028**
2. **S25.56610 E26.05985**
3. **S25.56912 E26.05675**
4. **S25.56948 E26.05672**
5. **S25.57022 E26.05659**
6. **S25.57154 E26.05576**
7. **S25.57194 E26.05825**

Cultural Significance: Medium to High (Sites 1-6). Low (Site 7)

Heritage Significance: Grade III. Should be included in the heritage register and may be mitigated (high/ medium significance).

Field Ratings: Local Grade IIIB. Sites of local importance and therefore worthy of conservation.

Mitigation: No development allowed. Fence-off and Management Plan.



Figure 7: Aerial view of development and distribution of sites recorded. Sites 1-2 are located just outside, while Site 7 is a single undecorated potsherd (Google Earth 2012 – Image 2/11/2011).



Figure 8: Stone walling at Sites 1 – 2.



Figure 9: More stone walling Sites 3-6.



Figure 10: Foundations of stone walling.



Figure 11: Livestock enclosure Site 6.



Figure 12: Undecorated potsherds from the sites.

7. CONCLUSIONS AND RECOMMENDATIONS

In conclusion it is possible to say that the Archaeological Impact Assessment for the proposed Kameeldoorn Solar PV plant development on portions of the farm Kameeldoorn 271 JP, near the town of Zeerust in the Northwest Province, was conducted successfully. Two areas (named A & B) had to be assessed, with Area A the area preferred by the owner as it is the smaller of the two and not being utilized for farming currently. A number of LIA stone walled sites and features were identified during the assessment, with most of these located in Area A and on or near hills and outcrops. With the development not envisaged near these hills or outcrops and planned for the low-lying, flat open sections it is therefore recommended that the development be allowed to continue. However, in order to protect the

archaeological sites from any indirect impact (accidental disturbance/destruction or vandalism), **it is however recommended that an Archaeological Heritage Management Plan for the Late Iron Age stone walled sites on the farm be drafted and implemented.**

It should also be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken during any development activities that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate. This would include the discovery of previously unknown graves.

8. REFERENCES

Aerial views of the area and site distribution: Google Earth 2012

Topographic location of area – Courtesy client

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Boeyens, J.C.A. 2003. **The Late Iron Age Sequence in the Marico and Early Tswana History.** The South African Archaeological Bulletin, Vol. 58, No. 178 (Dec., 2003), pp. 63-78. South African Archaeological Society.

Coertze, P.J. & Coertze, R.D. 1996. **Verklarende vakwoordeboek vir Antropologie en Argeologie.** Pretoria: R.D. Coertze.

Knudson, S.J. 1978. **Culture in retrospect.** Chicago: Rand McNally College Publishing Company.

Korsman, S.A. & Meyer, A. 1999. Die Steentydperk en rotskuns. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Republic of South Africa. 1999. **National Heritage Resources Act** (No 25 of 1999). Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act** (no 107 of 1998). Pretoria: The Government Printer.

Van der Ryst, M.M. & Meyer, A. 1999. Die Ystertydperk. Bergh, J.S. (ed.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

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APPENDIX A

DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

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

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

- | | |
|--------------------------------------|--|
| i. National Grade I significance | should be managed as part of the national estate |
| ii. Provincial Grade II significance | should be managed as part of the provincial estate |
| iii. Local Grade IIIA | should be included in the heritage register and not be mitigated (high significance) |
| iv. Local Grade IIIB | should be included in the heritage register and may be mitigated (high/ medium significance) |
| v. General protection A (IV A) | site should be mitigated before destruction (high/ medium significance) |
| vi. General protection B (IV B) | site should be recorded before destruction (medium significance) |
| vii. General protection C (IV C) | phase 1 is seen as sufficient recording and it may be demolished (low significance) |

APPENDIX D

PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – Older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or scoping phase – Establishment of the scope of the project and terms of reference.
2. Baseline assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I impact assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II mitigation or rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III management plan – For rare cases where sites are so important that development cannot be allowed.