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REPORT ON A PHASE 1 HERITAGE ASSESSMENT FOR THE OVERHEAD POWERLINE AND ZETA SUBSTATION, LOCATED ON ERF 1806 VAN DER HOFF PARK & PORTION 17 OF THE FARM VYFHOEK 424IQ POTCHEFSTROOM, NORTHWEST PROVINCE

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REPORT: APAC017/26

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SUMMARY

APelser Archaeological Consulting (APAC) was appointed by AB Enviro Consult to undertake a Phase 1 HIA for the proposed overhead powerline (4 Pylon positions) and Zeta Substation, located respectively on Erf 1806, Van der Hoff Park and Portion 17 of the farm Vyfhoek 424IQ, in Potchefstroom, Northwest Province. This forms part of the EIA for the 132kV/11Kv Network Expansion and strengthening Project for the Ventersdorp/Tlokwe Local Municipality NW405.

A number of known cultural heritage sites (archaeological and/or historical) exist in the larger geographical area within which the study area falls. There are no known sites on the specific land parcels, although some were identified in the proposed Substation area. The report will discuss the results of the desktop and field assessment and provide recommendations on the way forward at the end of the document.

From a Cultural Heritage point of view the development actions can continue, taking into consideration the mitigation measures proposed in the report.

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1. INTRODUCTION

APelser Archaeological Consulting (APAC) was appointed by AB Enviro Consult to undertake a Phase 1 HIA for the proposed overhead powerline (4 Pylon positions) and Zeta Substation, located respectively on Erf 1806, Van der Hoff Park and Portion 17 of the farm Vyfhoek 424IQ, in Potchefstroom, Northwest Province. This forms part of the EIA for the 132kV/11Kv Network Expansion and strengthening Project for the Ventersdorp/Tlokwe Local Municipality NW405.

A number of known cultural heritage sites (archaeological and/or historical) exist in the larger geographical area within which the study area falls. There are no known sites on the specific land parcels, although some were identified in the proposed Substation area.

The client indicated the location and boundaries of the Project Area, and the assessment focused on this area.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

- 1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by 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;
- 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).

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 available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

4.2 Field survey

The field assessment section of the study is conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detailed photographs are also taken where needed.

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 a general set of minimum standards. 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

APelser Archaeological Consulting (APAC) was appointed by AB Enviro Consult to undertake a Phase 1 HIA for the proposed overhead powerline (4 Pylon positions) and Zeta Substation, located respectively on Erf 1806, Van der Hoff Park and Portion 17 of the farm Vyfhoek 424IQ, in Potchefstroom, Northwest Province. This forms part of the EIA for the 132kV/11Kv Network Expansion and strengthening Project for the Ventersdorp/Tlokwe Local Municipality NW405.

The topography of the area where the 4 Pylon locations were to be assessed is flat and open and situated close to the Mooi River and its floodplains in town (Van der Hoffpark). Although grass cover was fairly dense visibility was good. There are no rocky ridges and outcrops present and tree cover is also fairly sparse. The land parcel is surrounded by urban developments such as roads and other urban developments such as commercial/industrial and settlement areas. It seems as if the area have also been disturbed and changed in the past by agricultural activities.

The topography of the area where the proposed Zeta Substation is to be located is also very flat and open, although there are some rocky outcrops in the larger area. Grass cover was not dense, and although there were some tree cover these are small/low thorn and other trees. Visibility was therefore good as well. The area was impacted in the past by agricultural practices (ploughing/crop growing), while the railway line located north of the substation location has also impacted.

The survey was done mostly on foot. The focus during the assessment was on unnatural looking clumps of trees and vegetation, as well as open patches and eroded areas.



Fig.1: General location of study area with 1 being the 1st Pylon & S the substation (Google Earth 2016 – Image date 10/10/2016).



Fig.2: Closer view of location of 4 Pylons (Google Earth 2016 – Image date 6/22/2016).



Fig.3: Closer view of location of Zeta Substation (Google Earth 2016 – Image date 6/22/2016).

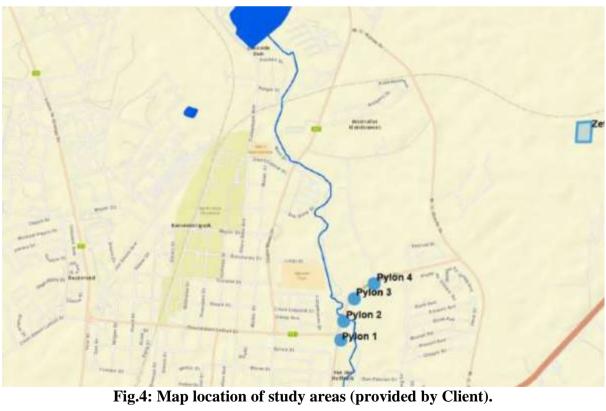




Fig.5: General view of area where the Pylons are located.



Fig.6: General view of Zeta Substation location.



Fig.7: General view of Substation area toward railway line.



Fig.8: A few low rocky outcrops occur in the area of the Zeta Substation location.

6. **DISCUSSION**

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago Middle Stone Age (MSA) less than 300 000 – 20 000 years ago Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

Based on Bergh (1999: 4-5) there are no known Stone Age sites in the study area, although there are some known in the Vredefort Dome area. The fact that there are no known Stone Age sites in the area might be indicative of the lack of Stone Age research. A small number of Stone Age objects (stone tools) were identified in the Zeta Substation study area. This will be discussed later in the section.

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

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Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.
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Huffman (2007: xiii) indicates that a Middle Iron Age should be included. His dates, which are widely accepted in archaeological circles, are:

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Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.
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No Early Iron Age sites are known to exist in the area, although there are a fairly large number of Late Iron Age stone walled sites in the bigger geographical area that includes Potchefstroom, Parys, Klerksdorp and other towns (Bergh 1999: 6-7). The author of this report worked extensively on LIA sites in the Dome area. According the Huffman's research the LIA sites in the larger area could belong to various facies of the Urewe pottery tradition, including Ntsuanatsatsi, Uitkomst, Olifantspoort, Thabeng and Buispoort. These facies (or pottery traditions) date to between AD1450 and AD1840, and was found at sites like Buffelshoek in the Vredefort Dome area by Mike Taylor (Huffman 2007: 167; 171; 191, 195 and 203).

The historical period started with the moving into the area by the first Europeans. The first group to move through the area was that of Cornwallis Harris in 1836 (Bergh 1999: 13), closely followed by the Voortrekkers and white farmers, with Potchefstroom one of the earliest towns established in the trans-Vaal in 1839 (Bergh 1999: 14; 89). During the Anglo-Transvaal War (1880-1881) a British garrison in Potchefstroom was besieged by the Boers (Bergh 1999: 47), while during the Anglo-Boer War (1899-1902) there were a number of skirmishes and battles around the area, such as a Frederikstad (p.51; 54), while there was a Black concentration camp at Frederikstad and a white concentration camp west of Potchefstroom (Bergh 1999: 54).

The oldest map that could be obtained in the Chief Surveyor General's database (www.csg.dla.gov.za) dates to 1909 and it shows that Portion 1 of Vyfhoek was transferred by Deed to one Bailie & Rex in 1877 and that Portion 2 was transferred by Deed to one E.J.A.Grimbeek in 1883. The study area was at the time located in the District of Potchefstroom and Ward of Potchefstroom of the then Transvaal Colony (Document IQ428). No historical sites or features could be identified from this map.



Fig.9: 1909 map of the area (www.csg.dla.gov.za).

Results of the March 2017 Fieldwork

No sites, features or cultural material were identified in the areas of the 4 Pylons that had to be assessed. It is recommended therefore that the development of these features be allowed, taking consideration of the recommendations made at the end of this report.

Some cultural material and features were identified in the general area of the proposed Zeta Substation development.

Sites 1 & 2: Scattered Stone tools

A few stone tools, likely dating to between the Middle and Later Stone Ages, were recorded in the area, close to a large trench/diggings that are probably the remnants of a section of the existing railway line that were moved at some stage to the position it is currently in (see Google Image - Site distribution below). These individual stone tools (flakes and cores mostly) are not in context and could also have come from another location in the gravels used for the construction of the railway line. No further mitigation is therefore recommended.

GPS Locations: S26 40 53.0 E27 07 46.20 & S26 40 51.70 E27 07 48.50

Cultural Significance: Low **Heritage Significance**: None.

Field Ratings: General protection C (IV C): Phase 1 is seen as sufficient recording and it

may be demolished (Low Significance)

Mitigation: None required.

Sites A, B & C: Stone Cairns

These features are most likely associated with the railway line and old line trench located here although their function is unknown. Two of these (A & B) are irregularly shaped (nearly round), while the third (C) is more square/rectangular shaped and seems to be more formal. Although unlikely it is similar to many stone-packed graves identified by the author in other areas. If this is indeed a grave then it has a High Significance rating and mitigation will have to be undertaken (see below for C). All three these features are situated on the periphery of the proposed Substation development area and should not likely be impacted on directly. It is however recommended that a Buffer Zone of 20m be placed around them to avoid any possible indirect and/or accidental impact.

GPS Locations: S26 40 51.10 E27 07 50.20 (A & B) & S26 40 49.50 E27 07 52.80 (C).

Cultural Significance: Low (A & B) and possibly High (C). **Heritage Significance**: None (A & B). High (If a grave - C).

Field Ratings: General protection C (IV C): Phase 1 is seen as sufficient recording and it may be demolished (Low Significance – A & B). Local Grade IIIB: should be included in the heritage register and may be mitigated (High/ Medium significance - C).

Mitigation: None required (A & B). For C the following is recommended if the site cannot be avoided by the development:

- Consultation with locals/property owner to determine if this could indeed be a grave or not
- If not a grave then it could be demolished
- If this is a grave then the recommendation would be to not disturb or impact on the grave in any way. It should be left in situ and fenced-in to avoid any accidental damage to it. A Buffer Zone of 20m should be placed around the feature to avoid any possible indirect and/or accidental impact. It can however also be exhumed and relocated if the development cannot avoid impacting on it. This can be done after a detailed social consultation process have been undertaken to try and obtain consent for the exhumation and relocation from any possible family members/descendants.



Fig.10: General area around Pylon 1.



Fig.11: General area around Pylon 2.



Fig.12: General area around Pylon 3 & Pylon 4.



Fig.13: View of a section of the old railway line trench.



Fig.14: MSA/LSA stone tools from the first location in the Zeta Substation area.



Fig.15: More stone tools (location 2).



Fig.16: Stone heap A.



Fig.17: Stone heap B.



Fig.18: Stone heap C.



Fig.19: A side view of C shows that it is much more regularly-shaped and packed. This is typical of stone-packed graves.



Fig.20: Aerial view showing sites and features identified in the Zeta Substation area. The old section of the existing rail line is clearly visible. The white lines are the tracks followed during the assessment of the area (Google Earth 2016 – Image date 6/22/2016).

It should be noted that although all efforts were made to cover the total area and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. This aspect should be kept in mind when development work commences and if any sites (incl. graves) are identified then an expert should be called in to investigate and recommend on the best way forward.

7. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting (APAC) was appointed by AB Enviro Consult to undertake a Phase 1 HIA for the proposed overhead powerline (4 Pylon positions) and Zeta Substation, located respectively on Erf 1806, Van der Hoff Park and Portion 17 of the farm Vyfhoek 424IQ, in Potchefstroom, Northwest Province. This forms part of the EIA for the 132kV/11Kv Network Expansion and strengthening Project for the Ventersdorp/Tlokwe Local Municipality NW405.

A number of known cultural heritage sites (archaeological and/or historical) exist in the larger geographical area within which the study area falls. There are no known sites on the specific land parcels, although some were identified in the proposed Substation area.

Sites 1 & 2: Scattered Stone tools

A few stone tools, likely dating to between the Middle and Later Stone Ages, were recorded in the area, close to a large trench/diggings that are probably the remnants of a section of the existing railway line that were moved at some stage to the position it is currently in. These individual stone tools (flakes and cores mostly) are not in context and could also have come from another location in the gravels used for the construction of the railway line. No further mitigation is therefore recommended.

Sites, or Features, A; B & C were stone cairns. These features are most likely associated with the railway line and old line trench located here although their function is unknown. Two of these (A & B) are irregularly shaped (nearly round), while the third (C) is more square/rectangular shaped and seems to be more formal. Although unlikely it is similar to many stone-packed graves identified by the author in other areas. If this is indeed a grave then it has a High Significance rating and mitigation will have to be undertaken. All three these features are situated on the periphery of the proposed Substation development area and should not likely be impacted on directly. It is however recommended that a Buffer Zone of 20m be placed around them to avoid any possible indirect and/or accidental impact.

Phase 1 is seen as sufficient recording for A & B and it may be demolished. For C the following is recommended:

- Consultation with locals/property owner to determine if this could indeed be a grave or not.
- If not a grave then it could be demolished
- If this is a grave then the recommendation would be to not disturb or impact on the grave in any way. It should be left in situ and fenced-in to avoid any accidental damage to it. A Buffer Zone of 20m should be placed around the feature to avoid any possible indirect and/or accidental impact. It can however also be exhumed and relocated if the development cannot avoid impacting on it. This can be done after a detailed social consultation process have been undertaken to try and obtain consent for the exhumation and relocation from any possible family members/descendants.

Finally, it should be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

From a cultural heritage point of view the development can therefore continue, taking cognizance of the above recommendations.

8. REFERENCES

Aerial views of general study area location, Site 1 Cemetery location and tracks followed: Google Earth 2016 & Maxim Planning Solutions

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www.csg.dla.gov.za - Chief Surveyor General Database. Document: IQ428.

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.

Aestetic 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, landuse, 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.