

Comprehensive and Professional Solutions for all Heritage Related Matters
CK 2006/014630/23 VAT NO.: 4360226270

**A PHASE 1 HERITAGE IMPACT ASSESSMENT & REPORT FOR
PROPOSED DEVELOPMENT ON PORTION 39 OF ERF 493
OF THE FARM KALKHEUWEL 493JQ, GAUTENG**

For:

***Nali Sustainability Solutions (Pty) Ltd
P. Bag X1, Stand 1829
Irene Farm Villages
Pierre van Ryneveld
0045***

REPORT: **APAC023/18**

by:

***A.J. Pelser
Accredited member of ASAPA
Member No. 106***

February 2023

**P.O. BOX 73703
LYNNWOOD RIDGE
0040
Tel: 083 459 3091
Fax: 086 695 7247
Email: apac.heritage@gmail.com**

Member: AJ Pelser BA (UNISA), BA (Hons) (Archaeology), MA (Archaeology) [WITS]

©Copyright

APELSE ARCHAEOLOGICAL CONSULTING

The information contained in this report is the sole intellectual property of APELSE Archaeological Consulting. It may only be used for the purposes it was commissioned for by the client.

DISCLAIMER:

Although all efforts are made to identify all sites of cultural heritage (archaeological and historical) significance during an assessment of study areas, the nature of archaeological and historical sites are as such that it is always possible that hidden or subterranean sites, features or objects could be overlooked during the study. APELSE Archaeological Consulting can't be held liable for such oversights or for costs incurred as a result thereof.

Clients & Developers should not continue with any development actions until SAHRA or one of its subsidiary bodies has provided final comments on this report. Submitting the report to SAHRA is the responsibility of the Client unless required of the Heritage Specialist as part of their appointment and Terms of Reference

A handwritten signature in black ink, appearing to be 'J. A. P.', is centered on the page.

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Nali Sustainability Solutions (Pty) Ltd to conduct a Phase 1 Heritage Impact Assessment for a proposed private residential housing development on a portion of land in the larger Cradle of Humankind area. The study & proposed development area is situated on Portion 39 of Erf 493 of the farm Kalkheuwel 493JQ, south of Broederstroom and north of Lanseria in the Gauteng Province.

The literature review indicates that there are some cultural heritage (palaeontological, archaeological and historical) sites and features in the larger geographical area within which the study area falls. However, no sites, features, or material of cultural heritage (archaeological and/or historical) origin & significance were identified and recorded in the study and/or the proposed development area during the February 2023 field assessment. This report discusses the results of both the background literature research and physical assessment and provides recommendations on the way forward.

From a Cultural Heritage point of view, it was determined that the proposed development should be allowed to continue provided that the recommendations made in the report be taken into consideration. The location of the development within the larger Cradle of Humankind World Heritage Area should also be kept in mind in the final decision making process.

CONTENTS

1. INTRODUCTION	5
2. TERMS OF REFERENCE	5
3. LEGISLATIVE REQUIREMENTS.....	5
4. METHODOLOGY	9
5. DESCRIPTION OF THE AREA	11
6. DISCUSSION.....	13
7. CONCLUSIONS AND RECOMMENDATIONS	24
8. REFERENCES	25
APPENDIX A: DEFINITION OF TERMS:.....	27
APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE.....	28
APPENDIX C: SIGNIFICANCE AND FIELD RATING:	29
APPENDIX D: PROTECTION OF HERITAGE RESOURCES:	30
APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES.....	31

1. INTRODUCTION

APelser Archaeological Consulting (APAC) was appointed by Nali Sustainability Solutions (Pty) Ltd to conduct a Phase 1 Heritage Impact Assessment for a proposed private residential housing development on a portion of land in the larger Cradle of Humankind area. The study & proposed development area is situated on Portion 39 of Erf 493 of the farm Kalkheuwel 493JQ, south of Broederstroom and north of Lanseria in the Gauteng Province.

The literature review indicates that there are some cultural heritage (palaeontological, archaeological and historical) sites and features in the larger geographical area within which the study area falls. However, no sites, features, or material of cultural heritage (archaeological and/or historical) origin & significance were identified and recorded in the study and/or the proposed development area during the February 2023 field assessment.

The client indicated the location and boundaries of the study and proposed development area, and the field assessment focused on this portion of land.

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 are dealt with mainly in. The National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998) are the two main legislations concerning the conservation of cultural resources, used as guidelines when conducting the Heritage Impact Assessment.

3.1. The National Heritage Resources Act (Act 25 of 1999)

According to the National Heritage Resources Act (Act 25 of 1999) (NHRA), 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 paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

The Heritage Impact Assessment (HIA) process is done to determine whether there are any heritage resources located within the area to be developed as well as to determine the possible impacts of the proposed development. An Archaeological Impact Assessment (AIA) only looks at archaeological resources, such as material remains of human life or activities which are at least 100 years of age, and which are of archaeological interest. A 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 000m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

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

A structure refers to 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.

To alter means any action taken that affects 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 the 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 paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological 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:

- i. 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;
- ii. 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
- iii. 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 (No. 107 of 1998)

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.

The specific requirements that specialist studies and reports must adhere to are contained in Appendix 6 of the EIA Regulations.

4. METHODOLOGY

4.1. Review of literature

A review 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. These include Bergh (1999), Huffman (2007) & Lombard et.al (2012).

4.2. Field survey

The field assessment component of the study was conducted on the 21st of February 2023 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 detail photographs are also taken where needed. Where possible grids were walked in the area where development is proposed.

4.3. 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. PROJECT DESCRIPTION

The proposed private residential housing development (for Mr. Moses Seleke), on Portion 39 of Erf 439 of the farm Kalkheuwel 493JQ, will include the construction of a Main house/homestead, access road, garage & store, staff accommodation and a Man Cave/Gazebo. The property is a vacant stand, with hardly any impacts on it except for a dirt track/access road and small area that has been cleared and leveled.

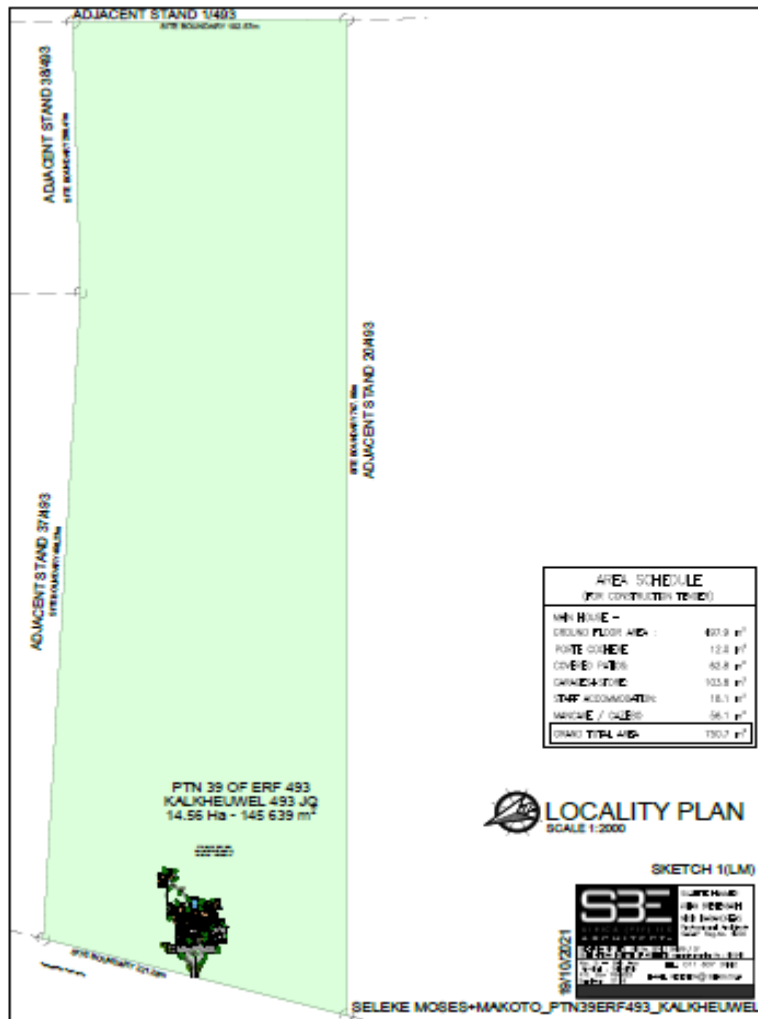


Figure 1: Locality Plan (provided by Nali Sustainability Solutions).

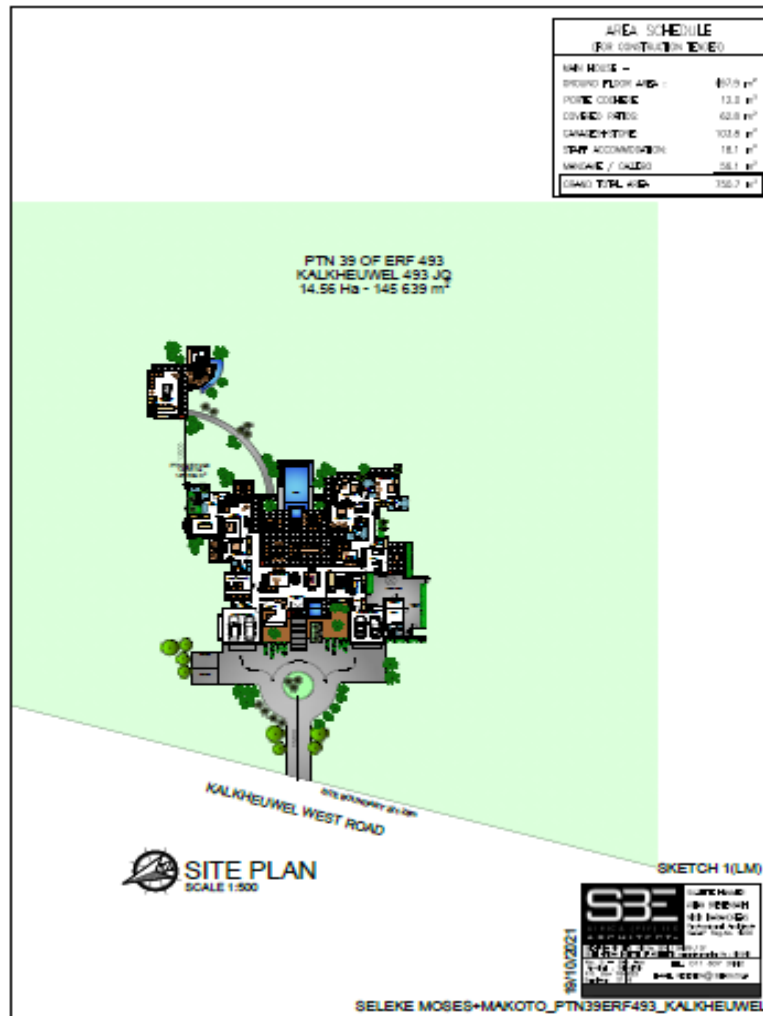


Figure 2: Site Plan (provided by Nali Sustainability Solutions).

6. DESCRIPTION OF THE AREA

The study and proposed development area is located on portions of the farm Kalkheuvel 493JQ, south of Broederstroom and north of Lanseria in Gauteng. It is situated within the larger Cradle of Human Kind World Heritage Area and as such will carry a High Significance rating in terms of the Palaeontological Heritage of the larger geographical area.

The study and development area itself has not been subjected to large-scale developments, and as a result is still fairly unaltered in terms of its original natural and historical landscape. Some existing homesteads do occur in the area, with dirt tracks, powerlines, narrow tarred roads and related fencing being the most obvious recent impacts. The topography of the area is relatively mountainous, with rocky outcrops, ridges and valleys present. Although large tree cover is fairly sparse, dense grass and shrub cover during the field assessment hampered visibility on the ground to some extent during the fieldwork.

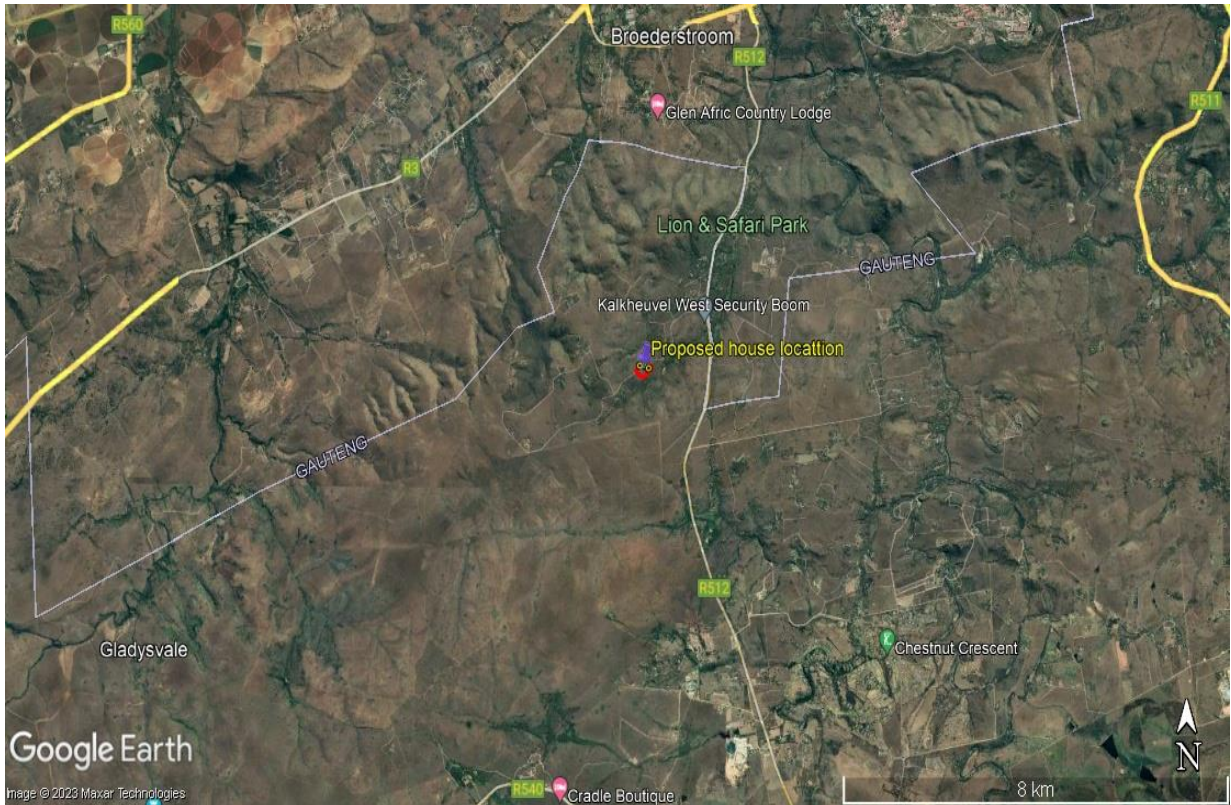


Figure 3 General location of the study and proposed development area (Google Earth 2023).



Figure 4: Closer view of the proposed development area footprint (Google Earth 2023).

7. DISCUSSION

7.1 Stone age

Basic background to the archaeology (prehistory) and recent history of the general study area will be provided first. This is by no means an exhaustive background and will only suffice to provide a basic introduction to the cultural heritage involved.

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 in 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).

The closest known Stone Age sites to the area are located at Melvillekoppies (MSA), Glenferness, Pietkloof and Zevenfontein (Bergh 1999: 4], while Revil Mason also mentions Stone Age occurrences at Witkoppen (Mason 1989). A number of Early and Middle Stone Age sites have been recorded in the larger area, while the well-known Early Hominid sites of Swartkrans and Sterkfontein (Cradle of Humankind) is situated in the larger area as well (Bergh 1999:4). The Haasgat Fossil Site is situated less than 3km from the development area.

Later Stone Age sites are known in the larger geographical area, including sites at Zwartkops, Hennopsrivier, Uitkomstgrot, Glenferness, Pietkloof and Zevenfontein (Bergh 1999: 4). Sites with rock art (engravings) have also been found in the Krugersdorp area (Bergh 1999:5). Records indicate that stone tools dating to the Early and Middle Stone Age and especially the Later Stone Age occurred all over, for example in the Jukskei River area at Glenferness shelter, excavated by Prof. Revil Mason (Van Schalkwyk 2012:11). Excavations by Mason (1997) at the Boulders Shopping Centre identified remains dating to all three phases of the Stone Age (Van der Walt 2018: 27).

No Stone Age sites or material were identified in the study area during the February 2023 field assessment. If any were to be present, they would most likely be individual stone tools or low-density scatters in open-air surface scatters around the area.

7.2 Iron age

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

Iron Age people started to settle in southern Africa c. AD 300, with one of the oldest known sites at Broederstroom south of Hartebeespoort Dam dating to AD 470. Having only had cereals (sorghum, millet) that need summer rainfall, Early Iron Age (EIA) people did not move outside this rainfall zone, and neither did they occupy the central interior Highveld area. The occupation of the larger geographical area (including the study area) did not start much before the 1500s. By the 16th century things changed, with the climate becoming warmer and wetter, creating condition that allowed Late Iron Age (LIA) farmers to occupy areas previously unsuitable, for example the Witwatersrand in the region of Klipriviersberg and the Magaliesberg to the north (Van Schalkwyk 2017: 11).

As with the Stone Age, Bergh (1999) does not indicate any known Early (EIA) Iron Age sites in the specific or larger geographical area, although stone-walled Late Iron Age sites are known to exist in the much larger geographical area (e.g., at Melvillekoppies and Bruma) [Bergh 1999: 6]. Late Iron Age sites also occur in the region of the study area, e.g., at Lone Hill and the Boulders Shopping Centre (Van Schalkwyk 2017: 11).

Based on Tom Huffman's research it is possible that LIA sites, features or material could be present in the larger area. This will include the Ntsuanatsatsi facies of the Urewe Tradition, dating to between AD1450 and AD1650 (Huffman 2007: 167); the Uitkomst facies of the same tradition (AD1700 to AD1820) [p.171]; Olifantspoort facies of Urewe (AD1500 – AD1700) [p.191], as well as the Buispoort facies of Urewe, dating to around AD1700 – AD1840 (p.203).

No Iron Age sites, features or material were identified in the area during the February 2023 assessment.

7.3 Historic 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. The first farms in the vicinity of Roodepoort/Krugersdorp were already measured out in 1839/40 (Bergh 1999: 15). This means that it is one of the first areas where white farmers settled. In 1857 the area formed part of the district of Pretoria as few other towns were established (Bergh 1999: 17). However, the town and district of Krugersdorp were established in 1894 (Bergh 1999: 21, 147).

The first Europeans to move through and into the area were the groups of Schoon and McLuckie and the missionaries Archbell and Moffat in 1829 (Bergh 1999: 12). They were followed by others such as Andrew Smith (1835), Cornwallis Harris (1836) and David Livingstone in 1847 (Bergh 1999: 13). These groups were closely followed by the Voortrekkers (Bergh 1999: 12-13).

The larger area also saw some activity during Anglo-Boer War (1899-1902) (Bergh 1999: 51; 54). The Anglo-Boer War (1899-1902) had an impact on the adjacent Midrand area, and for a short period the area was a key focus of the British war effort, when the British forces under Lord Roberts advanced through Midrand from Johannesburg enroute to Pretoria. Pretoria was occupied on 5 June 1900. Some British military units were stationed close to the study area this includes the Eskom Training Centre as well as Bibury Grange. Conflict in the area was defined by the Boer attempts to sabotage the railway line as well as attacks on troop trains. A notable incident was the successful Boer demolition of the railway culvert near the Pinedene Station. The railway had to be completely rebuilt by the Imperial Military Railways in 1901 (Van der Walt 2018: 28). In order to prevent to Boer forces freedom of movement, a system of block houses was built, some of which are located on the farm Kalkheuwel (Van Schalkwyk 2010: 11). The locations of last-mentioned blockhouses are not known exactly, and none were noted on the portion of Kalkheuwel that were assessed during the current study.

No recent historical sites and features were identified and recorded in the study & development area in February 2023.

Cradle of Human Kind World Heritage Site

The Cradle of Human Kind World Heritage Site will not be discussed here in detail, but it is important to note that it and the many fossil and other sites associated with it includes the study and proposed development site. As a result, it is important to indicate that any planned/proposed and future development activities in the area needs to adhere to the UNESCO World Heritage Convention Act (Act 49 of 1999) and the National Environmental Management Protected Areas Act (Act 57 of 2003).

In essence this means that no development should be allowed to negatively impact the Cradle of Mankind World Heritage Site (COHWHS) and its related entities and that any

development within the COHWS and its buffer zone maintains and upholds the attributes associated with its Outstanding Universal Values.

The information below is taken from the Cradle of Humankind World Heritage Site Department of Economic Development 2018 – 2023 Integrated Management Plan by the Cradle of Humankind World Heritage Site Management Authority.

“A World Heritage Site is an area or property that is deemed to have such Outstanding Universal Value from a natural and/or cultural point of view that it is deserving of being inscribed on UNESCO’s prestigious World Heritage List. The Fossil Hominid Sites of Sterkfontein, Swartkrans, Kromdraai and the Environs, known as the Cradle of Humankind World Heritage Site (COHWS), is the only World Heritage Site in Gauteng Province and one of the most prolific sites in the world in terms of the discovery of fossils of ancient human ancestors and their relatives. It was declared a World Heritage property by the UNESCO World Heritage Committee on 2 December 1999. This unique area not far from Johannesburg, Gauteng Province, South Africa, has yielded some of the most important fossil finds of extinct fauna, particularly fossils of ancient human ancestors and their relatives dating as far back as more than 3.6 million years before present. Together with the Makapan Valley site in Limpopo Province and the Taung Child site in North West Province, these three serially-listed sites together constitute what UNESCO has inscribed as the Fossil Hominid Sites of South Africa.

When the Fossil Hominid Sites of Sterkfontein, Swartkrans, Kromdraai and Environs World Heritage Site was inscribed on the World Heritage List, there were 12 recognized palaeo-anthropological and palaeontological sites with associated deposits (colloquially known as “fossil sites”) of Outstanding Universal Value. These 12 fossil sites were the basis of the nomination dossier. Even before the inscription of the World Heritage Site, the significance of these palaeontological deposits had been recognized both nationally and internationally.

Palaeo-anthropological fossil sites are recognized as those that are fossil hominin bearing sites. Palaeo-anthropological sites are a subset of the broader category of palaeontological sites. Palaeontological fossil sites are those with fossil bearing deposits of fauna (animals) and flora (plants). The deposits in the Cradle of Humankind World Heritage Site are most notably characterized as faunal palaeontological sites with several sites, currently 10, also characterized as palaeo-anthropological fossil sites. For this document, palaeoanthropology is considered as a subset of palaeontology, and thus the term palaeontology is predominantly referred to throughout the IMP, unless where specifically identified otherwise. The original 12 fossil sites indicated in the nomination dossier were graded and declared as Grade 1 National Heritage Sites in terms of the National Heritage Resources Act, Act 25 of 1999 (NHRA) at the time of inscription. Since 1999, at least 7 new sites have been discovered, permitted and excavated since the inscription. Most of these newer fossil sites have been graded and declared as National Heritage Sites, or at least Graded as a Grade 1 National Heritage Site in the case of the Goldsmith’s site. The 3 other sites, Rising Star, Soetwater, and Luleche, are considered as S35 Generally Protected Sites in terms of the NHRA. In accordance with the NHRA all known palaeontological resources, whether they have been graded and declared or not, are protected resources. This means that these as

yet ungraded and declared sites are deemed to have the same level of protection as graded and declared sites. Graded and declared sites are those where the significance of the site has been formally recorded and declared by virtue of gazetting the site as either a Provincial or National Heritage Site in the Government Gazette.

The individual sites are as follows:

Bolt's Farm: Fourie's Cave: Grade 1 declared National Heritage Site - Faunal

Bolt's Farm: Klinkerts: Grade 1 declared National Heritage Site - Faunal

Bolt's Farm: Greensleeves: Grade 1 declared National Heritage Site - Faunal

Sterkfontein Caves: Grade 1 declared National Heritage Site - Faunal, palaeoanthropological, Archaeological

Swartkrans: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological, Archaeological

Minnaars: Grade 1 declared National Heritage Site - Faunal

Cooper's Cave: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological

Kromdraai: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological, Archaeological

Drimolen: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological, Archaeological

Plover's Lake: Grade 1 declared National Heritage Site - Faunal

Motsetse: Grade 1 declared National Heritage Site - Faunal

Gladysvale: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological

Malapa: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological

Gondolin: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological

Haasgat: Grade 1 declared National Heritage Site - Faunal, palaeo-anthropological

Goldsmiths Site: graded as Grade 1 National Heritage Site (undeclared) - Faunal

Rising Star: General Protected Site in terms of S35 NHRA - Palaeo-anthropological

Luleche: General Protected Site in terms of S35 NHRA - Faunal

Soetwater: General Protected Site in terms of S35 NHRA

These are sites of Outstanding Universal Value because of the wealth of significant hominid fossils that have been unearthed here including Mrs Ples, the Taung Child skull (both *Australopithecus africanus*), Little Foot (*Australopithecus prometheus*), Karabo (*Australopithecus sediba*) as well as *Homo naledi*, revealed to the world by Professor Lee Berger of the University of the Witwatersrand in September 2015 and with new finds again in 2017 from Rising Star. All of these finds offer an incredible window into our distant past and how we have evolved as a species. The recently discovered Rising Star palaeoanthropological site, together with the world famous Sterkfontein Caves as well as many other fossil sites in the Cradle of Humankind World Heritage Site has yielded some of the richest early human ancestor sites on the planet. Work on fossils found in this important World Heritage Site has been featured in a large number of scientific works as well as the popular media including National Geographic, Scientific American, Time and many other media outlets. The Malapa fossil site and the Rising Star fossil site, like most of the older, more extensively researched fossil sites in the Cradle of Humankind World Heritage Site, still

hold precious fossil material and excavations will continue at these sites for decades to come.

The World Heritage Site is managed on behalf of the Minister of Environmental Affairs by the appointed Cradle of Humankind World Heritage Site Management Authority. The MEC: Gauteng Department of Economic Development was re-appointed as the Management Authority for the site on 8 December 2017. The development and implementation of this Integrated Management Plan (IMP) is in accordance with the powers, functions, duties and responsibilities of the appointed Management Authority. The fundamental aspect of this iconic World Heritage site is that it tells the story of our human ancestry. It looks back almost four million years through a unique fossil record which uncovers this common human ancestry. It also forces the observer to consider the present and what we are doing at this particular point in our human journey and explores the future journey of humanity-a future which is either in pursuit of harmony, unity, solidarity and a common purpose of the human spirit, or a future that is riven with a rising inequality gap, unsustainable practices, exploitation of finite natural resources, discord, distrust and war. No other place on earth presents the essence of what it might mean to be human and forces one to look at where we are now and what we might become.

In 2005, the World Heritage Committee accepted the nominations of the Taung Skull World Heritage Site property in the North West Province, South Africa and the Makapan Valley World Heritage Site in the Limpopo Province, South Africa as extensions to the Fossil Hominid Sites of Sterkfontein, Swartkrans, Kromdraai and the Environs. As a result of this extension, the Fossil Hominid Sites became what is known as a Serial World Heritage property, bringing with it additional requirements for the co-operative management of the extended property. In 2013, the World Heritage Committee accepted the State Party's request for the renaming of the Fossil Hominid Sites of Sterkfontein, Swartkrans, Kromdraai and the Environs to a name that more appropriately reflects the serial nature of the property. The correct name for the World Heritage property is now the Fossil Hominid Sites of South Africa”

Results of the February 2023 Field Assessment

During the February 2023 field assessment, no sites, features, or material of any cultural heritage (recent archaeological and/or historical) origin or significance was found in the study and development area footprint. This includes open-air scatters of Stone Age material (stone tools), Iron Age stone-walling and recent historical sites such as farmstead/homestead remains or graves and cemeteries. It needs to be mentioned again that the grass cover on the surface of the property was fairly dense at the time of the assessment, hampering visibility on the ground to some extent.

The impact of the proposed development on recent cultural heritage sites, features and material will therefore be low. However, with the development area located within the larger Cradle of Humankind area, the potential of impacts on palaeontological sites and deposits need to be considered and a Palaeontological Impact Assessment (PIA) are recommended.



Figure 5: General view of a section of the study and proposed development area.



Figure 6: Another section. Note the rocky outcrops.



Figure 7: A view of another section of the study area and property. Note the fairly dense grass cover and trees.



Figure 8: A small section of the area has recently been cleared. No cultural material such as Stone Age stone tools were visible.



Figure 9: A section of the access road/dirt track onto to study and development area.



Figure 10: General view of another section of the study and development area.

Impact Assessment and Mitigation Measures

The significance of impacts is determined using the following criteria:

Probability: describes the likelihood of the impact actually occurring

- **Improbable:** the possibility of the impact occurring is very low, due to the circumstances, design or experience.
- **Probable:** there is a probability that the impact will occur to the extent that provision must be made therefore.
- **Highly probable:** it is most likely that the impact will occur at some stage of the development.
- **Definite:** the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures or contingency plans to contain the effect.

Duration: the lifetime of the impact

- **Short Term:** the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- **Medium Term:** the impact will last up to the end of the phases, where after it will be negated.
- **Long Term:** the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
- **Permanent:** the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: the physical and spatial size of the impact

- **Local:** the impacted area extends only as far as the activity, e.g., footprint
- **Site:** the impact could affect the whole or measurable portion of the abovementioned property.
- **Regional:** the impact could affect the area including the neighboring residential areas.

Magnitude/Severity: Does the impact destroy the environment, or alter its function

- **Low:** the impact alters the affected environment in such a way that natural processes are not affected.
- **Medium:** the affected environment is altered, but functions and processes continue in a modified way.
- **High:** function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Significance: This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.

- **Negligible:** the impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
- **Low:** the impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
- **Moderate:** the impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
- **High:** The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The significance is calculated by combining the criteria in the following formula:

Sum (Duration, Scale, Magnitude) x Probability

S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability

With no sites, features and material of cultural heritage origin and significance found in the area during the assessment, the current site layout provided will not impact any sites. The impact of the proposed development on recorded and known heritage sites is therefore deemed as Low.

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short Term	1
	Medium Term	3
	Long Term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8

Significance	Sum (Duration, Scale, Magnitude)	x Probability
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

Results: 1+1+2×1 = 4 i.e., ≤20

The impact of the proposed development on the recorded and known cultural heritage sites in the area is therefore deemed as Negligible based on the Impact Assessment criteria used. However, there is always a possibility of sites, features and material being missed as a result of various factors such as vegetation cover hampering visibility on the ground, as well as the often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves). These factors need to be taken into consideration and it is therefore recommended that a Chance Finds Protocol be drafted and implemented for the proposed Portion 39 of Erf 493 of Kalkheuwel 493JQ Development.

It should furthermore be noted that this Impact Assessment only focused on the recent cultural heritage (archaeological and historical) resources and not on the Palaeontological resources.

Based on the desktop research and February 2023 field assessment it is clear that there are some cultural heritage sites and features present in the larger geographical area close to the study & proposed development area footprint. These include various Stone Age, Iron Age and recent historical sites. Known palaeontological fossil sites associated with the Cradle of Humankind Area are located in the larger area as well. The closest one to the development area is the Haasgat site.

No sites, features or material of recent cultural heritage origin were identified in the area during the recent assessment. Although it is possible that sites could have been missed as a result of many factors, it is more likely that if any sites are to be found in the proposed new development area these would not be of any high significance. If any are to be found during the development activities care should be taken to avoid any possible negative impacts on these sites. A Heritage Specialist should then also be contacted to undertake a site visit to investigate the finds and to provide recommendations on the way forward.

It should also be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) in an area that there is always a possibility that some might have been missed as a result of grass cover and other factors.

7. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting (APAC) was appointed by Nali Sustainability Solutions (Pty) Ltd to conduct a Phase 1 Heritage Impact Assessment for a proposed private

residential housing development on a portion of land in the larger Cradle of Humankind area. The study & proposed development area is situated on Portion 39 of Erf 493 of the farm Kalkheuwel 493JQ, south of Broederstroom and north of Lanseria in the Gauteng Province.

Based on the desktop research and February 2023 field assessment it is clear that there are some cultural heritage sites and features present in the larger geographical area close to the study & proposed development area footprint. These include various Stone Age, Iron Age and recent historical sites. Known palaeontological fossil sites associated with the Cradle of Humankind Area are located in the larger area as well. The closest one to the development area is the Haasgat site.

No sites, features or material of recent cultural heritage origin were identified in the area during the recent assessment. Although it is possible that sites could have been missed as a result of many factors, it is more likely that if any sites are to be found in the proposed new development area these would not be of any high significance. If any are to be found during the development activities care should be taken to avoid any possible negative impacts on these sites. A Heritage Specialist should then also be contacted to undertake a site visit to investigate the finds and to provide recommendations on the way forward.

From a recent Cultural Heritage point of view, it was determined that the proposed Moses Seleke private residential/housing development on Portion 39 of Erf 493 of Kalkheuwel 493JQ should be allowed to continue provided that the recommendations made in the report be taken into consideration. However, the location of the development within the larger Cradle of Humankind World Heritage Area should also be kept in mind in the final decision-making process. It is furthermore recommended that a Palaeontological Impact Assessment (PIA) be undertaken to cover these aspects.

The often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or buried sites, features or material be uncovered during any development actions then an Archaeological expert should be contacted to investigate and provide recommendations on the way forward.

8. REFERENCES

General and Closer views of study & development area location and footprint: Google Earth 2023.

Development Location & Layout Plans: Provided by Nali Sustainability Solutions (Pty) Ltd

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

Huffman, T.N. 2007. Handbook to the Iron Age: **The Archaeology of Pre-Colonial Farming Societies in Southern Africa.** Scottsville: University of KwaZulu-Natal Press.

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

Lombard, M., L. Wadley, J. Deacon, S. Wurz, I. Parsons, M. Mohapi, J. Swart & P. Mitchell. 2012. South African and Lesotho Stone Age Sequence Updated (I). **South African Archaeological Bulletin 67 (195): 120–144, 2012.**

Mason, R.J. 1989. **A Guide to Archaeology Sites: Johannesburg. Occasional Papers 23. Archaeology Research Unit.** University of the Witwatersrand. Johannesburg.

Van der Walt, J. 2018. **HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED FILLING STATION ON PORTION 71 NIETGEDACHT, GAUTENG PROVINCE.** Unpublished Report HCAC – Heritage Consultants Project number 2181004. For: BGH Ferndale PTY LTD. October 2018.

Van Schalkwyk, J.A. 2010. **Heritage impact assessment for the PROPOSED MOUNTAIN VIEW ESTATE DEVELOPMENT ON PORTIONS OF THE FARMS SIMONSVIEW, KALKHEUWEL, RHENOSTERSPRUIT AND RIVERSIDE, NORTH WEST AND GAUTENG PROVINCES.** Unpublished Report No: 2010/JvS/042. For: Triviron Environmental Development. May 2010.

Van Schalkwyk, J.A. 2012. **Heritage impact assessment for the PROPOSED DIEPSLOOT RESERVOIR DEVELOPMENT, PRETORIA MAGISTERIAL DISTRICT, GAUTENG PROVINCE.** Unpublished Report No: 2012/JvS/007. For: ENVIROLUTION CONSULTING. February 2012.

Van Schalkwyk, J.A. 2017. **Phase 1 Cultural Heritage Impact Assessment: THE PROPOSED CONSTRUCTION OF THE LULAMISA TO DIEPSLOOT EAST TO BLUE HILLS TO CROWTHORNE 88KV POWER LINE AND TWO SUBSTATIONS, GAUTENG PROVINCE.** Unpublished Report No: 2017/JvS/004. For: Envirolution. February 2017.

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.

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, paleontological, 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, paleontology 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.