



A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED CLEARING OF APPROXIMATELY 10 HA OF NATURAL VEGETATION FOR AGRICULTURAL ACTIVITIES AND THE CONSTRUCTION OF A WAREHOUSE, THREE CHALETs AND A RESIDENTIAL DWELLING ON THE REMAINDER OF PORTION 1 OF THE FARM VISSERS VALE NO. 96 NEAR ADDO IN THE SUNDAYS RIVER VALLEY MUNICIPALITY OF THE EASTERN CAPE PROVINCE

Prepared for: Habitat Link Consulting
P.O. Box 63879
Greenacres
Port Elizabeth
6057
Tel: +27 74 148 5583
Contact person: Ms. Christelle du Plessis
Email: christelle@habitatlink.co.za

Compiled by: Dr Johan Binneman and Mr Kobus Reichert
On behalf of: Eastern Cape Heritage Consultants
P.O. Box 689
Jeffreys Bay
6330
Tel: 042 2960399
Cell: 0728006322
Email: kobusreichert@yahoo.com
jnfbinneman@gmail.com

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Compiled by: Dr Johan Binneman and Mr Kobus Reichert

On behalf of: Eastern Cape Heritage Consultants

P.O. Box 689

Jeffreys Bay, 6330

Tel: 042 962096

Cell: 0728006322

email: kobusreichert@yahoo.com

jnfbinnean@gmail.com

Note: This report follows the minimum standard guidelines required by the South African Heritage Resources Agency for compiling Archaeological Heritage Phase 1 Impact Assessment (AHIA) reports.

EXECUTIVE SUMMARY

Habitat Link Consulting on behalf of Mr. Luc De Villiers appointed Eastern Cape Heritage Consultants to conduct a Phase 1 Archaeological Impact Assessment (AIA) for the proposed clearing of approximately 10 hectares natural vegetation for agricultural activities and the construction of a warehouse, three chalets and a residential dwelling on the remainder of Portion 1 of the farm Vissers Vale No. 96 near Addo in the Sundays River Valley Municipality, Sarah Baartman District Municipality of the Eastern Cape Province. The survey was conducted to establish the range and importance of the archaeological sites/remains, the potential impact of the development and to make recommendations to minimize possible damage to these sites.

Access to the area to be developed was easy, but due to the dense grass and thicket vegetation the archaeological visibility was poor in most places and it was difficult to find archaeological sites/materials. Occasional Middle Stone Age stone tools were observed along the embankment of the Sunday's River. The stone tools were in secondary context and not associated with any other archaeological material. Thin scatters of freshwater mussel shell were also observed in the southern part of the proposed development, but the origin of these scatters are not clear as they are not associated with any archaeological material.

The proposed development will take place along the embankment of the Sunday's River, in an area where one would expect to find freshwater mussel middens. It is recommended that if such features or any other concentrations of archaeological material are exposed, it must be reported to the archaeologist at the Albany Museum in Grahamstown or to the Eastern Cape Provincial Heritage Resources Authority so that a systematic and professional investigation can be undertaken. Furthermore, all clearing activities must be monitored and managers/foremen should be informed before clearing/construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. The Environmental Control Officer (ECO) can be trained to monitor the clearing of the vegetation and to report finds. It is suggested that an archaeologist should conduct a walkthrough when the area for development is cleared of vegetation. In general, the proposed

areas for development appear to be of low archaeological sensitivity and development may proceed as planned.

PROJECT INFORMATION

Type of development

The proposed development will include the clearing of more than 5 ha, but less than 10 ha of vegetation for dryland grazing , as well as the construction of a warehouse (4 500m²), three chalets (100m² each) and a residential dwelling (200m²) (See Maps 1-2).

Applicant

Mr. Luc De Villiers

Consultant

Habitat Link Consulting.

P. O. Box 63879

Greenacres

Port Elizabeth

6057

Tel: +27 74 148 5583

Contact person: Ms. Christelle du Plessis

Email: christelle@habitatlink.co.za

Purpose of the study

The purpose of the study was to conduct a Phase 1 Archaeological Impact Assessment (AIA) of the proposed clearing of approximately 10 hectares natural vegetation for agricultural activities and the construction of several buildings on the Remainder of Portion 1 of the Farm Vissers Vale No. 96 near Addo in the Sundays River Valley Municipality of the Eastern Cape Province. The survey was conducted to establish;

- the range and importance of possible exposed and *in situ* archaeological sites, features and materials,
- the potential impact of the development on these resources and,
- to make recommendations to minimize possible damage to these resources.

Site and Location

The site for the proposed developments is located within the 1:50 000 topographic reference map 3325BC Coerney (see Map 1). The clearing of approximately 10 hectares of natural vegetation for agricultural activities and construction of several buildings is situated on the Remainder of Portion 1 of the Farm Vissers Vale No. 96 near Addo in the Sundays River Valley Municipality of the Eastern Cape Province. The property is situated approximately 3 kilometres northwest of Sunlands, 10 kilometres northwest of Addo and adjacent to the gravel road connecting Enon to the R336 main road to Kirkwood (see Maps 1- 2). The development will take place on a relatively flat plain along the eastern embankment of the Sunday's River. The area comprises of thick yellow alluvial soils covered with dense grass and thicket vegetation in most places. The warehouse will be constructed on the disturbed premises of a previous school and the chalets and residential dwelling between the river and a water canal (see Figures 1-5) General GPS readings for the developments were taken at the warehouse site -

33.28.883S; 25.36.701E; chalet 1 site - 33.28.707S; 25.36.585E; chalet 2 site - 33.28.665S; 25.36.559E; chalet 3 site - 33.28.634S; 25.36.539E and the dwelling site - 33.28.600S; 25.36.510E.

Selected relevant impact assessments from the adjacent region, databases and collections

- Binneman, J. and Reichert, K. 2019. A phase 1 archaeological impact assessment for the proposed establishment of a big 5 game reserve with lodge accommodation and a water pipeline to various dams near Addo in the Sunday's River Valley Municipality of the Eastern Cape Province. Prepared for Habitat Link Consulting. Greenacres. Eastern Cape Heritage Consultants. Jeffreys Bay.
- Binneman, J. and Reichert, K. 2018. A phase 1 archaeological impact assessments for the proposed agricultural activities on Portion 525 of the farm Strathsomers Estate No. 42 and associated irrigation infra-structure on Portion 523 of the farm Strathsomers Estate No. 42 in the Sundays River Valley Municipality of the Eastern Cape Province. Prepared for Public Process Consultants Greenacres. Eastern Cape Heritage Consultants.
- Binneman, J. and Reichert, K. 2016a. A phase 1 archaeological impact assessment for the proposed clearing of natural vegetation to establish citrus orchards and grazing for game on the Remainder of Portion 1 of farm 119 (Wolverton) in the Sundays River Valley Municipality of the Eastern Cape Province. Prepared for Public Process Consultants. Greenacres. Eastern Cape Heritage Consultants. Jeffreys Bay.
- Binneman, J. and Reichert, K. 2016b. A phase 1 archaeological impact assessments for the proposed clearing of vegetation in three areas to establish citrus orchards on the farm Boschkraal near Kirkwood, Sunday's River Valley Local Municipality Eastern Cape Province. Prepared for Prime Resources (Pty) Ltd. Parklands. Eastern Cape Heritage Consultants. Jeffreys Bay.
- Binneman, J. and Reichert, K. 2016c. A phase 1 archaeological impact assessment for the proposed clearing of natural vegetation to expand the existing agricultural activities on portion 274, Strathsomers Estate No. 42 in the Sundays River Valley Municipality of the Eastern Cape Province. Prepared for Public Process Consultants Greenacres. Eastern Cape Heritage Consultants.
- Binneman, J. and Reichert, K. 2016d. A phase 1 archaeological impact assessment for the proposed clearing of natural vegetation to establish citrus orchards on the Remainder of Portion 14 of the farm Geelhoutboom No. 89 in the Sundays River Valley Municipality of the Eastern Cape Province. Prepared for Public Process Consultants. Greenacres. Eastern Cape Heritage Consultants. Jeffreys Bay.
- Binneman, J. and Reichert, K. 2015. A letter of recommendation (with conditions) for the exemption of a full phase 1 archaeological impact assessment for the proposed clearing of 20 ha of natural vegetation to establish citrus orchards on the farm Hitgeheim, Sunland, Sundays River Valley Municipality, Eastern Cape Province. Prepared for Engineering Advice & Services (Pty) Ltd. Humewood. Eastern Cape Heritage Consultants. Jeffreys Bay
- Binneman, J. 2014a. A phase 1 archaeological impact assessment for the proposed expansion of agricultural activities on Portion 7 of the Farm Scheepers Vlakte No. 98, Sunland near Kirkwood, Sundays River Valley Municipality, Eastern Cape Province. Prepared for I.W. Terblanche & Associates. Stellenbosch. Eastern Cape Heritage Consultants. Jeffreys Bay.
- Binneman, J. 2014b. A phase 1 archaeological impact assessment for the proposed expansion of agricultural activities on Farm 632, Sunland near Kirkwood, Sundays River Valley Municipality, Eastern Cape Province. Prepared for I.W. Terblanche & Associates. Stellenbosch. Eastern Cape Heritage Consultants. Jeffreys Bay.
- Binneman, J. 2014c. A phase 1 archaeological impact assessment for the proposed expansion of agricultural activities on the remaining extent of Farm 714, Sunland Near Kirkwood, Sundays River Valley Local Municipality, Eastern Cape Province. Prepared for I.W. Terblanche & Associates. Stellenbosch. Eastern Cape Heritage Consultants. Jeffreys Bay.

Binneman, J. 2013. A phase 1 archaeological impact assessment for the proposed expansion of agricultural activities on portion 5 of the Farm Nooitgedacht No. 118, Sunland, Sundays River Valley Municipality, Eastern Cape Province. Prepared for Public Process Consultants Greenacres. Eastern Cape Heritage Consultants.

The Albany Museum in Makhanda (Grahamstown) houses collections and information from the wider region.

BRIEF ARCHAEOLOGICAL BACKGROUND

Literature review

In general, little systematic archaeological research and regional surveys/recordings have been conducted in the Sundays River Valley area. The oldest evidence of the early inhabitants are large stone tools, called hand axes and cleavers, which can be found amongst river gravels and in old spring deposits in the region. These large stone tools are from a time period called the Earlier Stone Age (ESA) and may date between 1,5 million and 250 000 years old. In a series of spring deposits at Amanzi Spring near Addo, a large number of stone tools were found *in situ* to a depth of 3-4 metres. Remarkably, wood and seed material preserved in the spring deposits, possibly dating to between 250 000 to 800 000 years old (Inskeep 1965; Deacon 1970).

The large hand axes and cleavers were replaced by smaller stone tools called the Middle Stone Age (MSA) flake and blade industries. Evidence of MSA sites occur throughout the region and date between 250 000 and 30 000 years old. These stone artefacts, like the Earlier Stone Age tools are also found in the gravels along the banks of the Sunday's River and like hand axes are mainly in secondary context. Fossil bone may in rare cases be associated with MSA occurrences.

The majority of archaeological sites found in the area date from the past 10 000 years (called the Later Stone Age) and are associated with the campsites of San hunter-gatherers and Khoi pastoralists. These sites are difficult to find because they are in the open veld and often covered by vegetation and sand. Sometimes these sites are only represented by a few stone tools and fragments of bone (Deacon & Deacon 1999). The preservation of these sites is poor and it is not always possible to date them. There are many San hunter-gatherers sites in the nearby Suurberg and adjacent mountains. Here caves and rock shelters were occupied by the San during the Later Stone Age with well-preserved living deposits and paintings along the walls (Deacon 1976).

Some 2 000 years ago Khoi pastoralists occupied the region and lived mainly in small settlements. They were the first food producers in South Africa and introduced domesticated animals (sheep, goat and cattle) and ceramic vessels to southern Africa. Often archaeological sites are found close to the banks of large streams and rivers. Large piles of freshwater mussel shell (called middens) usually mark these sites. Prehistoric groups collected the freshwater mussel from the muddy banks of the rivers as a source of food. Mixed with the shell and other riverine and terrestrial food waste are also cultural materials. Human remains are often found buried in the middens.

References

- Deacon, H.J. 1970. The Acheulian occupation at Amanzi Springs, Uitenhage District, Cape Province. *Annals of the Cape Provincial Museums*. 8:89-189.
- Deacon, H. J., 1976. Where hunters gathered: a study of Holocene Stone Age people in the

- Eastern Cape. South African Archaeological Society Monograph Series No. 1.
- Deacon, H.J. & Deacon, J. 1999. Human beginnings in South Africa. Cape Town: David Phillips Publishers.
- Inskeep, R.R. 1965. Earlier Stone Age occupation at Amanzi: preliminary investigations. South African Journal of Science. 61:229-242.

ARCHAEOLOGICAL INVESTIGATION

Methodology

The investigation was conducted on foot by two archaeologists. All previous relevant survey information for the immediate and adjacent areas was consulted before the investigation started. A Google Earth aerial image study was also conducted of the area prior to the investigation (See Map 2). GPS readings were taken and all the important features were digitally recorded.

Limitations and assumptions

It was not possible to do a complete survey of the footprint due to dense grass and thicket vegetation in most of the area. These conditions made it difficult to locate archaeological sites/materials. Regardless of the restrictions imposed by the dense vegetation, the experiences and knowledge gained from several other investigations in the wider surrounding region provided background information to make assumption and predictions on the incidences and the significance of possible pre-colonial archaeological sites/material which may be located in the area, or which may be covered by soil and vegetation.

Finds and results

It was difficult to locate archaeological sites/materials because most of the area was covered by thick alluvial soil deposits, dense grass and thicket vegetation in most places. Thin scatters of freshwater mussel shell were observed in the southern part of the proposed development (See Map 2). Although it is common to find freshwater shell middens (of archaeological origin) along the embankment of the Sunday's River, the origin of these scatters are not clear as they are not associated with any archaeological material. Occasional Middle Stone Age stone tools were observed, but they were in secondary context and not associated with any other archaeological material.

There are no known graves or buildings older than 60 years on the area surveyed. In general, it would appear that the area is of low cultural sensitivity and that it is unlikely that any sensitive archaeological remains will be exposed during the development.

Discussions

The proposed property for development is situated adjacent to the Sundays River and it is possible that freshwater mussel middens may be found on the site. Unfortunately, little research has been conducted on these features along the Sunday's River and therefore the archaeological contexts of these features are largely unknown. Many years ago, several of these features were observed along the immediate embankments of the Sundays River upstream from Barkly Bridge. Although these features may date from the past 8 000 years or older, the stone tools observed at these features included large quartzite backed segments which has been ascribed to the Kabeljous Industry (Binneman 2007) and may date as old as 4 500 years.

References

Binneman, J.N.F. 2007. Archaeological research along the south-eastern Cape coast part 2, caves and shelters: Kabeljous River Shelter 1 and associated stone tool industries Southern African Field Archaeology 15 & 16:57-74.

ASSESSMENT OF THE IMPACTS

Pre-colonial Archaeology

Nature of the Impacts

The main impact on archaeological sites/ remains (if any) will be the physical disturbance of the material and its context. The clearing of vegetation and construction of the warehouse, chalets, and a residential dwelling may expose, disturb and displace archaeological sites/materials. However, from the investigations it would appear that the proposed site earmarked for development is of low archaeological sensitivity. The Middle Stone Age stone tools and thin scatters of freshwater shell observed are considered to be of low cultural significance, because they are in secondary context and not associated with any other archaeological remains. Notwithstanding, important materials may be covered by soil and vegetation at all the sites investigated.

Extent of the Impacts

The clearing of vegetation and construction of the warehouse, chalets, and a residential dwelling may impact on remains which are buried (such as human remains), but these impacts will be limited and restricted to the local area. The developments may disturb small areas and the negative impact on possible archaeological sites/materials may also be relatively small, but nevertheless permanent. In general, further disturbances of sites/materials may be limited by mitigation if reported immediately to the nearest archaeologist and/or to the Eastern Cape Heritage Provincial Resources Authority.

Table 1. Impacts on the pre-colonial archaeology

Nature: The potential impact of the proposed clearing of approximately 10 hectares natural vegetation for agricultural activities, construction of a warehouse, chalets, a residential dwelling and associated infrastructure on the below ground archaeology.		
	Without Mitigation	With Mitigation
Extent	Local	Local
Duration	Permanent	Permanent
Magnitude	Minor	Minor
Probability	Unlikely	Unlikely
Degree of confidence	Medium-high	Medium-high
Significance	Low	Low
Status	Negative	Neutral
Reversibility	No	No
Irreplaceable loss of resources?	No, but in some cases, yes	No
Can impacts be mitigated?	yes	
Mitigation: No mitigation is proposed for the property before construction starts because the archaeological remains are of low significance (excluding possible human remains).		

However, the ECO must be trained to monitor the clearing of the vegetation and construction of the buildings and other infrastructure and if concentrations of archaeological materials and/or human remains are exposed then all work must stop for an archaeologist to investigate (see below).

If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease in the immediate area of the finds and it must be reported immediately to the archaeologist at the Albany Museum (Tel.: 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel.: 043 7450888). Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation.

Cumulative impacts: The cumulative impacts on above and below ground archaeology will only increase if further developments of the current proposed activities are planned for more sites within the existing reserve.

Residual impacts: Long term to permanent

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PRE-COLONIAL ARCHAEOLOGY.

Objective: To conserve the pre-colonial archaeological sites/remains for the proposed clearing of approximately 10 hectares natural vegetation for agricultural activities and the construction of several buildings on the Remainder of Portion 1 of the Farm Vissers Vale No. 96 near Addo in the Sunday's River Valley.

Project component/s	The proposed development will involve the clearing of approximately 10 hectares natural vegetation for agricultural activities, the construction of a warehouse, three chalets, a residential dwelling and associated infrastructure.	
Potential impact	The physical disturbance and/or destruction of pre-colonial archaeology sites/remains.	
Activity/risk source	Clearing of vegetation and construction of buildings and associated infrastructure	
Mitigation: Target/Objective	The ECO must be trained to monitor the clearing of the vegetation which constrained the visibility of heritage resources during the initial archaeological investigation. If concentrations of archaeological materials/sites or human remains are exposed then all work must stop for an archaeologist to investigate.	
Mitigation: Action/control	Responsibility	Timeframe
The ECO must monitor the clearing of the vegetation and construction of the buildings and other infrastructure	Consultant, applicant, ECO	During the clearing of the vegetation and the construction of the buildings
Manager/foreman or ECO should be informed before clearing of the vegetation and construction of chalets and other infrastructure construction start on the possible types of sites and material they may encounter and the procedures to follow when they find sites.	Consultant, applicant manager/ECO and the archaeologist/heritage practitioner.	Before the development starts.
If any human remains (or any other concentrations of heritage material) are	Consultant, applicant and the archaeologist/	Duration of the project

<p>exposed during construction, all work must cease in the immediate area and it must be reported immediately to the archaeologist at the Albany Museum (Tel.: 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel.: 043 7450888), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to investigate and to collect such material.</p>	<p>heritage practitioner.</p>	
<p>Apply for permits from the Eastern Cape Province Heritage Resources Authority to collect and/or excavate sites/materials from archaeological sites identified to be impacted by the development.</p>	<p>Archaeologist/heritage practitioner.</p>	<p>Before the development continues and for the duration of the project</p>
<p>Performance indicator</p>	<p>All heritage sites/materials must be managed within the legislative guidelines. The success of the monitoring will be determined by the degree of damage/disturbance that can be avoided to heritage sites.</p>	
<p>Monitoring</p>	<p>All development activities must be monitored by the archaeologist/heritage specialist or alternatively a person must be trained/inducted, for example the ECO. A report and if required a list of recommendations, should be compiled and submitted to the Eastern Cape Provincial Heritage Resources Authority after the monitoring phase(s) for comment. A record must be kept of all accidental disturbances of heritage sites/material. All heritage sites/materials observed during any construction activity must be reported and recorded.</p>	



Figure 1. General views of the proposed warehouse site (main image and left top insert), areas to be cleared of vegetation (top right, middle and bottom left inserts) and a thin scatter of freshwater shell (bottom right insert).



Figure 2. General views of the proposed location of chalet 1.



Figure 3. General views of the proposed location of chalet 2.



Figure 4. General views of the proposed location of chalet 3.



Figure 5. General views of the proposed location of the main residence.

DISCUSSION AND MITIGATION

The area investigated is covered by deep yellowish alluvial soil and dense thicket vegetation in places which made it difficult to find archaeological sites. No sites were found on the area earmarked for development, but occasional Middle Stone Age stone artefacts were observed along the embankment of the Sunday's River. The proposed developments will take place along the embankment of the Sunday's River, in an area where one would expect to find fresh water shell middens. These are important archaeological sites and special care must be taken that these sites are not destroyed during development.

The main impact on possible archaeological sites/remains will be the physical disturbance of the material and its context. The clearing of the vegetation to expand the existing agricultural activities may expose, disturb and displace archaeological sites/material. However, from the investigation, it would appear that the proposed areas earmarked for development are of low archaeological sensitivity and the visual impact on the surrounding cultural landscape will also be low. It is recommended that;

1. Although it would seem unlikely that any significant archaeological remains will be exposed during the development, there is always a possibility that human remains and/or other archaeological remains such as freshwater shell middens and historical material may be uncovered during the development. Should such material be exposed during construction, all work must cease in the immediate area (depending on the type of find) and it must be reported to the archaeologist at the Albany Museum in Grahamstown (Tel: 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 7450888), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation (See appendix B for a list of possible archaeological sites that maybe found in the area).
2. All clearing activities and other developments must be monitored. Managers/foremen should be informed before clearing/construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. Alternatively, it is suggested that a person must be trained (ECO) as a site monitor to report to the foreman when heritage sites/materials are found.
3. It is suggested that an archaeologist should conduct a walkthrough of the area after the vegetation is cleared and before development starts to check if any significant sites/materials were exposed. Further recommendations will follow after the investigation.

GENERAL REMARKS AND CONDITION

Note: This is an Archaeological Impact Assessment (AIA) report compiled for the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) to enable them to make informed decisions regarding the heritage resources assessed in this report and only they have the authority to revise the report. This Report must be reviewed by the ECPHRA where after they will issue their Review Comments to the EAP/developer. The final decision rests with the ECPHRA who must grant permits if there will be any impact on cultural sites/materials as a result of the development

This report is a Phase 1 Archaeological Impact Assessment and does not exempt the developer from any other relevant heritage impact assessments as specified below:

In terms of the National Heritage Resources Act, No. 25 of 1999 (section 38) ECPHRA may require a full Heritage Impact Assessment (HIA) to assess all heritage resources, that includes *inter alia*, all places or objects of aesthetical, architectural, historic, scientific, social, spiritual, linguistic, or technological significance that may be present on a site earmarked for development. A full Heritage Impact Assessment (HIA) should assess all these heritage components, and the assessment may include archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasized that this Phase 1 AIA is based on the visibility of archaeological sites/material and may not therefore reflect the true state of affairs. Sites and material may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered during construction activities, ECPHRA or an archaeologist must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed (see attached list of possible archaeological sites and material). The developer must finance the costs should additional studies be required as outlined above. The *onus* is on the developer to ensure that the provisions of the National Heritage Resources Act No. 25 of 1999 and any instructions from ECPHRA are followed. The EAP/developer must forward this report to ECPHRA in order to obtain their Review Comments, unless alternative arrangements have been made with the heritage specialist to submit the report.

APPENDIX A: brief legislative requirements

Parts of sections 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

Archaeology, palaeontology and meteorites

35 (4) *No person may, without a permit issued by the responsible heritage resources authority—*

- (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;*
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.*

Burial grounds and graves

36. (3) (a) *No person may, without a permit issued by SAHRA or a provincial heritage resources authority—*

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or*
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.*

Heritage resources management

38. (1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –*

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) the construction of a bridge or similar structure exceeding 50m in length;*
- (c) any development or other activity which will change the character of the site –*
 - (i) exceeding 5000m² in extent, or*
 - (ii) involving three or more erven or subdivisions thereof; or*
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;*
- (d) the re-zoning of a site exceeding 10 000m² in extent; or*
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

APPENDIX A: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers

Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general, human remains are buried in a flexed position on their side, but are also found buried in a sitting position with a flat stone capping. Developers are requested to be on alert for the possibility of uncovering such remains.

Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m² in extent, should be reported to an archaeologist.

Large stone cairns

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning are not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

Stone artefacts

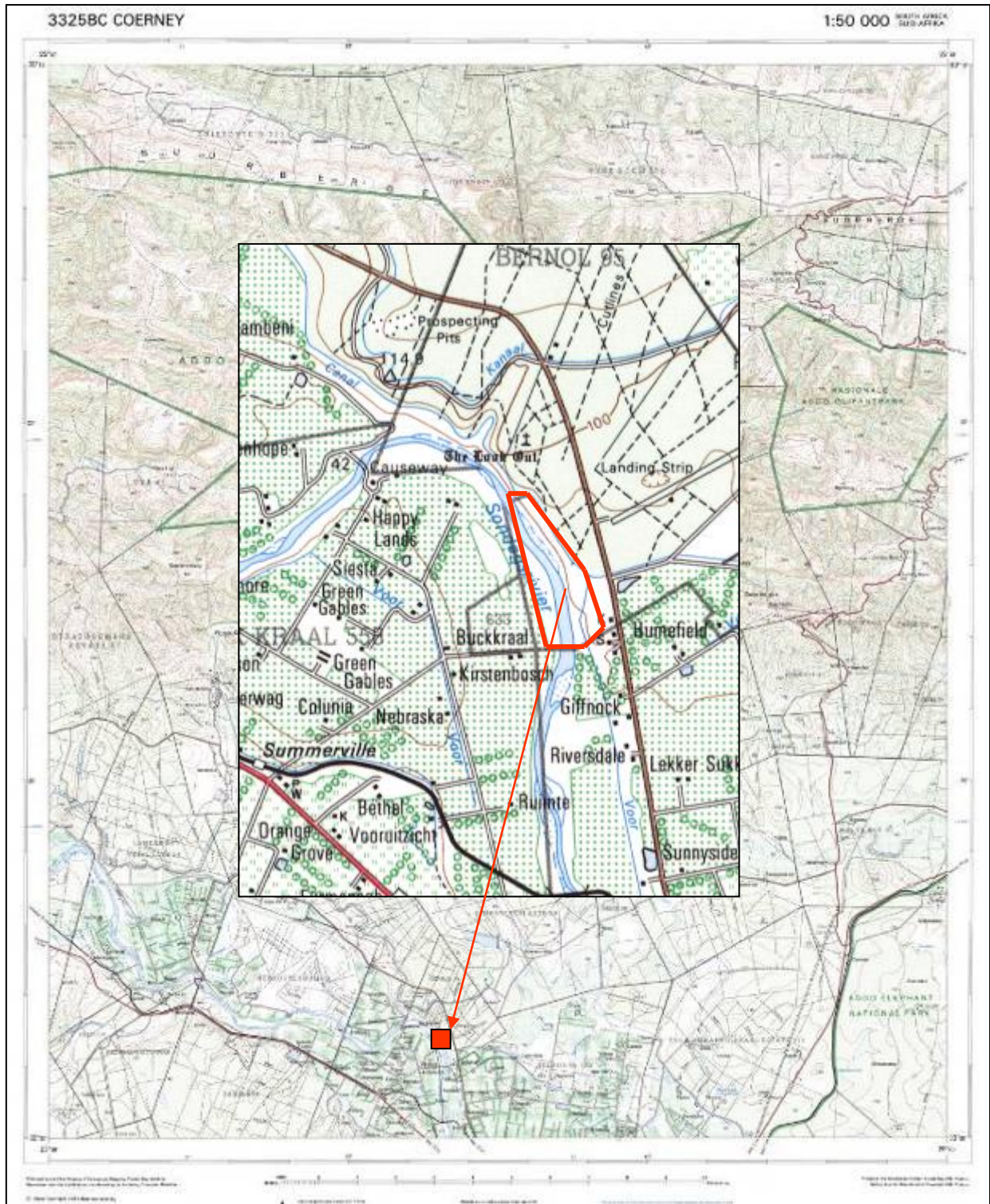
These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified.

Fossil bone

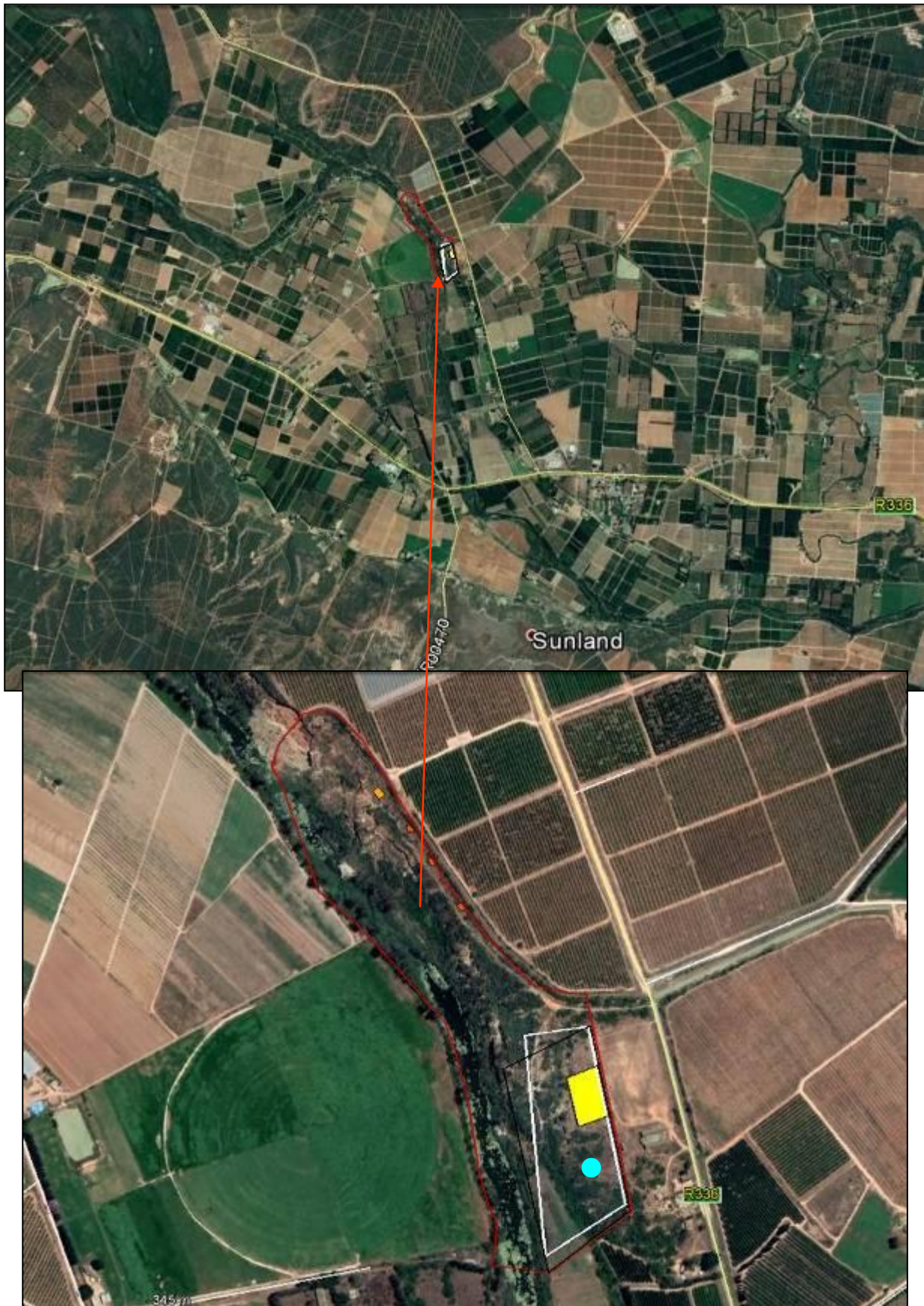
Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

Historical artefacts or features

These are easy to identify and include foundations of buildings or other construction features and items from domestic and military activities.



Map 1. 1:50 000 Maps indicating the location of the proposed development. The red lines outline the approximate size of the development.



Map 2. Aerial images indicating the location of the proposed development outline by the red lines. The light-yellow square marks the location of the warehouse, the orange squares the chalets locations, the residence by the yellow square and the blue dot the scatters of freshwater mussel (maps courtesy of Habitat Link Consulting).