

Appendix E – Heritage Impact Assessment Report

**A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) FOR THE PROPOSED
UPGRADING OF THE N2 HIGHWAY BETWEEN COEGA AND COLCHESTER AS WELL AS
THE CONSTRUCTION OF THE NEW SUNDAYS RIVER BRIDGE, AND FOUR BORROW
PITS, NELSON MANDELA METROPOLITAN MUNICIPALITY, PORT ELIZABETH, EASTERN
CAPE PROVINCE**

Prepared for: SRK Consulting
P.O. Box 21842
Port Elizabeth
6000
Tel: 041 509 4800
Fax: 041 509 4850
Contact person: Karissa Nel
Email: KNel@srk.co.za

Compiled by: Dr Johan Binneman and Ms Celeste Booth
Contact person: Ms Celeste Booth
Department of Archaeology
Albany Museum
Somerset Street
Grahamstown
6139
Tel: (046) 622 2312
Fax: (046) 622 2398
J.Binneman@ru.ac.za
celeste.booth@ru.ac.za

January 2010

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	2
PROJECT INFORMATION	3
BRIEF ARCHAEOLOGICAL BACKGROUND	4
DESCRIPTION OF THE PROPERTY.....	7
ARCHAEOLOGICAL INVESTIGATION	7
RECOMMENDATIONS	14
GENERAL REMARKS AND CONDITIONS	15
APPENDIX 1.....	16
MAPS	17

A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) FOR THE PROPOSED UPGRADING OF THE N2 HIGHWAY BETWEEN COEGA AND COLCHESTER AS WELL AS THE CONSTRUCTION OF THE NEW SUNDAYS RIVER BRIDGE, AND FOUR BORROW PITS, NELSON MANDELA METROPOLITAN MUNICIPALITY, PORT ELIZABETH, EASTERN CAPE PROVINCE

Dr Johan Binneman and Ms Celeste Booth*
 Contact person: Ms Celeste Booth
 Department of Archaeology
 Albany Museum
 Somerset Street
 Grahamstown
 6139
 Tel: (046) 622 2312
 Fax: (046) 622 2398
 J.Binneman@ru.ac.za
 celeste.booth@ru.ac.za

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

EXECUTIVE SUMMARY

Purpose of the Study

The purpose of the study was to conduct a phase 1 archaeological impact assessment (AIA) for the proposed upgrading of the N2 highway situated between Coega and Colchester, as well as the construction of the new Sundays River Bridge, and 4 borrow pits, Nelson Mandela Bay Municipality, Port Elizabeth, Eastern Cape Province.

Brief Summary of Findings

The area proposed for the upgrading of the N2 highway between Coega and Colchester as well as the construction of the new Sundays River Bridge lies on the southern side of the existing N2 highway and is approximately 12.5 km in extent. In addition, four borrow pits are also proposed along the southern side parallel to the existing N2 highway (see Maps 1 and 2), these borrow pits will provide the material required for the road upgrade and the construction of the new Sundays River Bridge. Most of the proposed area, 20 m parallel along the existing N2 highway, has been heavily disturbed by footpaths; the construction of a fence that stretches for the extent of the proposed area surveyed, and the construction of road signs, underground drain, sewage and water pipes. This area has also previously been bulldozed and disturbed by routine road maintenance activities. Moving closer to the town of Colchester the area is more developed with houses, a petrol station and a

shopping centre. In other areas, vegetation cover such as grass and low bushes is dense and impenetrable.

No archaeological remains were documented and no archaeological sites were observed along the route surveyed. It is highly unlikely that there would be any archaeological sites and materials present. The proposed area for development is rated as having low local cultural significance. Development may proceed as planned.

Recommendations

The area is of a low cultural sensitivity and development may proceed as planned, although the following recommendation must be considered:

1. The extent of the area proposed for the upgrade of the N2 highway, construction of the new Sundays River Bridge and the four proposed borrow pits has been highly disturbed, therefore, it is unlikely that any archaeological sites/remains, and human remains would be uncovered during construction. However, if concentrations of archaeological heritage material and human remains are uncovered during construction, all work must immediately cease and be reported to the Albany Museum and/or the South African Heritage Resources Agency (SAHRA) so that systematic and professional investigation/excavation can be undertaken.

PROJECT INFORMATION

The phase 1 archaeological impact assessment (AIA) is a section of the required environmental impact assessment (EIA) study.

The proposed upgrading of the N2 between Colchester and Coega as well as the construction of the new Sundays River Bridge will greatly improve the quality of the road. The proposed four borrow pits will provide the material required for the upgrading of the road and the construction of the new Sundays River Bridge.

Developer:

The South African National Roads Agency Ltd (SANRAL)
 P.O.Box 27230
 Greenacres
 6057
 Tel: 041 398 3200
 Fax: 041 398 3222

Consultant:

SRK Consulting
 P.O. Box 21842
 Port Elizabeth
 6000
 Tel: 041 509 4800
 Fax: 041 509 4850
 Email: KNel@srk.co.za
 Contact person: Karissa Nel

Terms of Reference

To conduct a survey of possible archaeological heritage sites and remains within the area of the proposed upgrading of the N2 highway between Coega and Colchester as well as the construction of the new Sundays River Bridge, and four borrow pits, Nelson Mandela Metropolitan Municipality, Port Elizabeth, Eastern Cape Province. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage features, the potential impact of the development and, to make recommendations to minimize possible damage to these sites.

Legislative requirements

Parts of section 35(4) of the National Heritage Resources Act 25 of 1999 apply:

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.

BRIEF ARCHAEOLOGICAL BACKGROUND

Literature review

Early Stone Age (ESA) (approximately 250 000 - 1 million years old) stone tools are found throughout the area. Large handaxes were reported from Coega Kop and were also collected from the banks and gravels of the Coega River and between the N2 national road and the Cerebos salt works (Albany Museum collections). One of South Africa's most important Earlier Stone Age finds and excavations (Deacon 1970) was conducted a few kilometres west of the surveyed area, at Amanzi Springs. In a series of spring deposits a large number of stone tools were found *in situ* to a depth of 3-4 metres. Wood and seed material preserved in the spring deposits, possibly dating to between 250 000 to 800 000 years old.

Middle Stone Age (MSA) (125 000 - 30 000 years ago) and Later Stone Age (LSA) (30 000 years ago to historical times) stone tools are also found in the gravels and along the banks of the Coega River. These stone artefacts, like the Earlier Stone Age handaxes are in secondary context with no other associated archaeological material.

Occurrences of fossil bone remains and Middle Stone Age stone tools were also reported south of Coega Kop (Gess 1969). During excavations the remains were found in the surface limestone, but the bulk of the bone remains were found some 1-1,5

metres below the surface. The excavations exposed a large number and variety of bones, teeth and horn cores strongly suggesting that they were deposited there by humans. The bone remains included warthog, leopard, hyena, rhinoceros and ten different antelope species. A radiocarbon date of greater than 37 000 years was obtained for the site.

Shell middens and the remains of at least 12 clay pots were reported by Rudner (1968) west of the Coega River Mouth. A large number of shell middens were also situated east of Coega River Mouth. Several of the middens were sampled and excavated just before the harbour was constructed. Many middens, ceramic pot sherds (from Later Stone Age Khoekoen pastoralist origin - last 2 000 years) and other archaeological material, are situated between the Coega and Sunday's River Mouths. These remains date mainly of Holocene Later Stone Age (last 8 000 years). Human remains have also been found in the dunes along the coast.

Two well eroded fragments of Willow pattern porcelain fragments were recovered from near the Coega River Mouth (before the harbour was constructed), which may have washed-up from a nearby nineteenth century shipwreck. Bennie (2002) has reported on several ships that floundered between the mouth of the Coega and Zwartkops River, between 1817 and 1880. There is also evidence of wreck material just off the Island of Jahleel.

The Coega (or Koega) River was first mentioned by historical travellers in 1752 (Theal 1896). The name Coega is of Khoekhoen origin and means literally 'seacow' or hippopotamus (Nienaber & Raper 1977). In November 1776, Anders Sparrman (1785) found a community of Cochoqua Khoekhoen (remnants of the Cochoqua who had fled the Cape after their defeat in the second Khoekhoen-Dutch War one hundred years previously), living on the Coega River. They were caring for the stock of a Dutch burgher. Nearby was a group of Gonaqua Khoekhoen, led by a captain named Tadi, who were also tending to the stock of a Dutch farmer. The nearby Coega Kop is shown on maps dating back to 1834 (Port Elizabeth Museum) and is reported to have been used as a navigation beacon by sailing ships wishing to enter Port Elizabeth harbour in the past. The 'kop' which has been quarried since the 1920s by SA Railways and Harbours for the development of the Port Elizabeth Harbour (Skead 1993) is likely to disappear soon with intensive quarrying.

The salt pan behind Coega Kop (not the present locality of the salt works at the river estuary) was being mined for its salt as early as 1820. However, this salt pan is likely to have been destroyed with developments in the area. A map of 1851 which indicated that the original road between Port Elizabeth and Grahamstown closely followed the present National road across the Coega River, also revealed the presence of a 'Junction Post' on the crossing. While Coetzee's (1995) definitive book on the forts of the Eastern Cape failed to indicate the presence of this military post, it is likely to represent one of Cradock/Somerset's temporary earthen fortifications established between 1812 and 1819 to protect the eastern frontier. This post, in all likelihood, no longer exists.

REFERENCES

- Bennie, J. 2002. Historical study of wrecks in the vicinity of Coega (Ngqura). Port Elizabeth Museum.
Coetzee, C. 1995. Forts of the Eastern Frontier. University of Fort Hare Press.

- Deacon, H.J. 1970. The Acheulean occupation at Amanzi Springs, Uitenhage district, Cape Province. *Annals of the Cape Provincial Museums* 6:141-169.
- Gess, W.H.R. 1969. Excavations of a Pleistocene bone deposit at Aloes near Port Elizabeth. *South African Archaeological Bulletin* 24:31-32.
- Nienaber, G.S. & Raper, P.E. 1977. *Toponymica Hottentotica*. HSRC: Pretoria.
- Rudner, J. 1968. Strandloper pottery from South and South West Africa. *Annals of the South African Museum* 49(2). Cape Town.
- Skead, C.J. 1993. *The Algoa Gazetteer*. Algoa Regional Services Council.
- Theal, G.M. 1896. *Historische Dokumenten. Reis van den Vaandrig Beutler in 1752*. Van de Sandt de Villiers & Co (Bpk) Drukkers: Kaapstad.
- Sparrman, A. 1785. A voyage to the Cape of Good Hope towards the Antarctic circle and around the world, but chiefly into the country of the Hottentots and Caffres, from the year 1772 to 1776. Vol. 1. London: Robinson.

Previous investigations

Several archaeological investigations were conducted in the general vicinity, near or on the property. During the 1990s several investigations were conducted along the coast and adjacent inland areas (Binneman 1994; Binneman and Webley 1996, 1997). In 1996 all important archaeological features east of the Coega River Mouth were removed by systematic excavations. Recently more investigations were conducted along the coast and shifting dune system (Kaplan 2007; Webley 2007).

Museum/University databases and collections

The Albany Museum in Grahamstown houses collections and information from the region.

Relevant impact assessments

- Binneman, J. 1999. Coega Industrial Development Zone: cultural sensitivity Phase 2 Report. Report prepared for Coega IDZ. Albany Museum Grahamstown.
- Binneman, J. 1994. Report on Phase 1 survey of visible archaeological features at Schelmhoek and Hougham Park. Report prepared for PPC. Albany Museum Grahamstown.
- Binneman, J. and Webley, L. 1997. Coega Industrial Development Zone: cultural sensitivity. Report prepared for African Environmental Solutions. Albany Museum Grahamstown.
- Binneman, J. and Webley, L. 1996. Proposed Eastern Cape Zinc and Phosphoric Acid Project: Baseline report: sensitivity of cultural sites. Report prepared for African Environmental Solutions. Albany Museum. Grahamstown.
- Jonathan Kaplan, J. 2007. Phase 1 archaeological impact assessment the proposed Coega integrated liquified natural gas (ing) to power project (cip) Coega industrial development zone, Port Elizabeth, Eastern Cape Province. Prepared for CSIR.
- Webley, L. 2007. Phase 1 Heritage Impact Assessment for Straits Chemicals proposed chlor-alkali and salt plant Coega Eastern Cape Province. Report prepared for SRK Consulting. Albany Museum Grahamstown.

DESCRIPTION OF THE PROPERTY

Area surveyed

Location data

The area for the proposed upgrading of the N2 is situated south and parallel to the existing N2 highway between Coega and Colchester, approximately 12.5 km in extent (see Maps 1 and 2). The existing N2 highway lies between 3 km and 5 km from the coast and is therefore within the sensitive coastal archaeology area. The construction of the new Sundays River Bridge is also a part of the upgrade of the N2 highway. The proposed four borrow pits (see Maps 1 and 2) will provide the materials for the upgrade of the N2 highway and the construction of the new Sunday River Bridge. Various GPS readings were taken using a Garmin Plus II (see Methodology below).

Map

1:50 000 - 3325DA Addo, 3325DB Colchester and 3325CD & 3425AB Uitenhage

ARCHAEOLOGICAL INVESTIGATION

Methodology

The survey was conducted by two people, simultaneously from a vehicle and on foot. The existing N2 highway was followed and spot checks were conducted every few metres for the proposed area of upgrade of the road. The Sundays River area and nearby dunes were investigated for any signs of freshwater and marine shellfish middens. The areas proposed for the four borrow pits were individually surveyed and photographed.

Firstly, the areas for the four proposed borrow pits will be described; they form part of the proposed upgrade of the N2 highway between Coega and Colchester. Secondly, various GPS points were taken they have been plotted on Map 2 and each surrounding area will be described.

PROPOSED BORROW PIT 1(BP 1): 33°44'11.88"S; 24°44'41.52"E

The area proposed for BP 1 is situated on the farm Melville 308, slightly south and running parallel to the existing N2 highway. A farm entrance road turning south off the existing N2 highway separates BP 1 and BP 2. BP 1 is situated on the western side of this farm entrance road and will about 400 m in extent. The area is covered by low grass vegetation and low shrubs, calcretes are exposed in places. The area has been disturbed by the construction of the fence that extends about 20 m to the south of the N2 highway and runs parallel to the road for the extent of the proposed area for upgrade; road signs and accident protection barricades; and the construction of the farm road (Figs 1-2).

The area was investigated for possible archaeological remains and sites. No archaeological remains or sites were observed within the area proposed for BP 1.



Fig. 1. Western area proposed for BP 1. Low grass and shrub cover and exposed calcrete.



Fig. 2. Eastern area proposed for BP 1. Road signs, the fence and the farm road is visible.

PROPOSED BORROW PIT 2 (BP 2): 33°44'9.9"S; 25°44'46.68E

The area proposed for BP 2 is situated a few metres on the eastern side of the farm entrance road on the farm Melville 308. The area is situated adjacent to the existing N2 highway and the extent of BP 2 is approximately 600 m. The area has been disturbed by the construction of road signs and the farm boundary fence. Pieces of old tar road and piles of calcrete have been dumped in the area, most probably during road routine maintenance having been carried out in the area. The area is covered by low grass vegetation and low bushes and trees (Figs 3-4).

The area was investigated for possible archaeological remains and sites. No archaeological remains or sites were observed within the area proposed for BP 2.

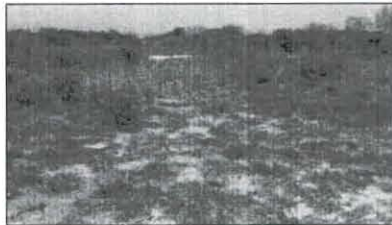


Fig. 3. Low grass and bush cover.



Fig. 4. Piles of calcrete and pieces of old tar road.

PROPOSED BORROW PIT 3 (BP 3): 33°43'3.66"S; 25°46'58.2"E

The area proposed for BP 3 is situated on the farm The Downs 308/1 adjacent to the existing N2 highway and will be approximately 300 m in extent running parallel to the N2 highway. The area comprised mainly of dense thicket vegetation and archaeological visibility was low owing to the vegetation being impenetrable. However, it is unlikely that any archaeological remains will be uncovered during construction. The area has previously been disturbed due to the construction of the

accident prevention barricade and the construction of the existing N2 highway. A small cross was observed during the survey, situated next to the road within the area proposed for BP 3, most probably in memory of a person who may have been killed in accident within the area. The dates 13.10.1982-30.12.2007 were inscribed on the cross, however, no name could be observed. It is unsure how regularly the 'cross' is visited; although some grave goods have previously been placed in front of the cross (Figs 5-6).

The area was investigated for possible archaeological remains and sites. No archaeological remains or sites were observed within the area proposed for BP 3.



Fig. 5. Dense thicket vegetation cover and the accident prevention barricade facing to the west.



Fig. 6. The cross situated within the proposed BP 3 area.

PROPOSED BORROW PIT 4 (BP 4): 33°42'54.72"S; 25°47'14.40"E

The area proposed for BP 4 is situated on the farm The Downs 308/1 and 308/4 adjacent to the existing N2 highway and will be approximately 300 m running parallel to the existing N2 highway. The area is covered by dense thicket vegetation making archaeological visibility difficult. An area 10 x 10 m seems to have been cleared and may be part of a test pit. The area has previously been disturbed by the construction of the existing N2 (Figs 7-8).

The area was investigated for possible archaeological remains and sites. No archaeological remains or sites were observed within the area proposed for BP 3.



Fig. 7. Area cleared for a possible test pit.



Fig. 8. Dense thicket vegetation cover facing towards the east.

GPS 1: 33°44'55.62"S; 25°42'58.02"E

The contract for the upgrade of the N2 highway begins 2 km within the Coega IDZ Boundary along the recently constructed dual roadway. The area is covered by open low grass cover and is disturbed owing to area having previously been cleared for the construction of the new dual roadway leading into the Coega IDZ and Port Elizabeth (Figs 9-10).

The area was investigated for possible archaeological remains and sites, but none were observed within the area surveyed.

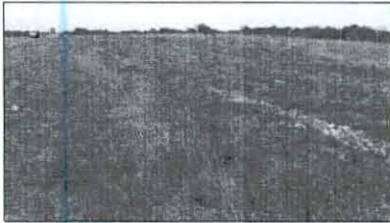


Fig. 9. Area cleared for roadworks, facing east.

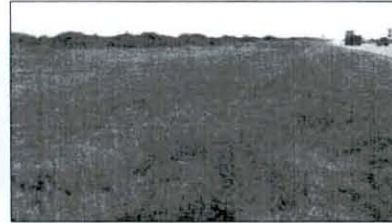


Fig. 10. Area cleared for roadworks, facing west.

GPS 2: 33°43'31.14"S; 25°46'12.66"E

An exposed calcrete area has been heavily disturbed by bulldozing and has possibly been used as a dumping area for roadworks (Figs 11-12). Some of calcrete area seems to have been tarred. The exposed area was investigated for possibly archaeological remains, however, none were observed. Calcretes occasionally contain concentrations of stone tools and fossilized bone. The developer must be aware of this situation and if, during developed, concentrations of stone tools and fossilized bones are uncovered, this must be reported to the South African Heritage Agency (SAHRA) and work must immediately cease.



Fig. 11. Exposed calcrete area south of the existing N2 highway.



Fig. 12. Area has been disturbed by bulldozing and used as a dumping area for roadworks.

GPS 3: 33°42'37.92"S; 25°47'40.32"E

A mobile dune area lies about 10 m south of the existing N2 highway directly west and next to the Sundays River Bridge. A fence demarcates the boundary of the dune and the area proposed for the upgrading of the N2 highway and construction of the new Sundays River Bridge (Figs 13-14). The dune area was investigated for possible archaeological remains, sites and shell middens. The river bank area was investigated for any possible freshwater shell middens. The area between the existing N2 highway and the fence has in the past been disturbed by construction of the accident prevention barricade and road signs.

The area was investigated for possible archaeological remains and sites, but none were observed within the area surveyed.



Fig. 13. Eastern view of the mobile dune area west of the Sundays River Bridge.



Fig. 14. Area disturbed by erection of the fence and construction of the barricade and road signs.

GPS 4: 33°42'29.52"S; 25°47'54.18"E

The area is covered by dense thicket vegetation. Sand dunes can be observed in the distance approximately 300 m from the existing N2 highway. A suburban area is situated between the existing N2 highway and the sand dunes. The area has been disturbed by the construction of the existing N2 highway and a bridge that crosses the existing N2 highway (Figs 15-16).

The area was investigated for possible archaeological remains and sites, but none were observed within the area surveyed.



Fig. 15. Dense vegetation facing west.



Fig. 16. Distance of the dunes and the position of the suburban area from the existing N2 highway. The bridge crossing over the N2 highway is also visible.

GPS 5: 33° 42' 14.10S; 25° 48' 12.78E

The area is covered by dense thicket vegetation making archaeological visibility difficult. However, it is unlikely that archaeological remains will be found *in situ* within the area owing to disturbance caused by the construction of the existing N2 highway. The suburban area of Cannonville situated about 100 m from the existing N2 highway (Figs 17-18).

The area was investigated for possible archaeological remains and sites, but none were observed within the area surveyed.

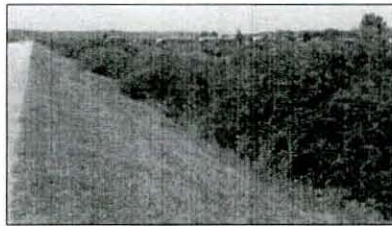


Fig. 17. View of proposed area facing east.

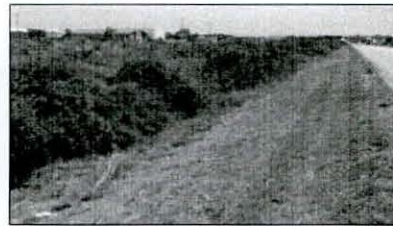


Fig. 18. View of proposed area facing west.

GPS 6: 33° 41' 51.48"S; 25° 48' 37.92"E

The area marks the Cannonville intersection with the Cannonville road leading south from the existing N2 highway. The area is relatively open low grass vegetation next to the roads becoming more densely thicket vegetation the further from the road. The area proposed for the N2 upgrade has been disturbed by the construction of the existing roads, fences, road signs and footpaths (Figs 19-20).

The area was investigated for possible archaeological remains and sites, but none were observed within the area surveyed.

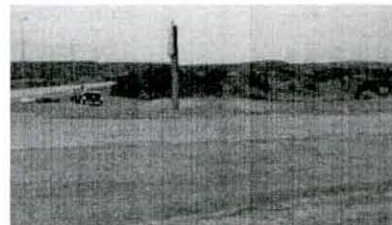


Fig. 19. The Cannonville road leading south off the existing N2 highway facing east.



Fig. 20. Low grass and dense thicket vegetation facing west.

GPS 7: 33° 41' 51.48"S; 25° 49' 24.54"E

The proposed area for the N2 road upgrade has been heavily disturbed by the construction of the existing N2 highway, bus stop and the erection of the chevron sign poles and a fence 20 m south of the existing N2 highway. The proposed area is covered in low grass vegetation. The area 50-100 m south of the existing N2 highway is the developed suburban area of Colchester.

The area was investigated for possible archaeological remains and sites, but none were observed within the area surveyed.



Fig. 21. View of the bus stop, chevron sign poles and Colchester facing east.

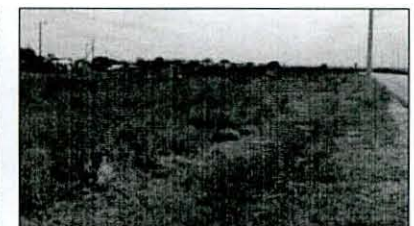


Fig. 22. View of the low grass vegetation and lamp poles facing west.

GPS 8: 33° 41' 25.98"S; 25° 49' 35.10"E

The end of the contract for the proposed N2 road upgrade finishes at the Colchester Petrol Station. The area between the bus stop and the petrol station has been heavily disturbed by the construction of the petrol station and a shopping centre. Lamp poles and chevron sign poles have also been erected (Figs 23-24).

The area was investigated for possible archaeological remains and sites, but none were observed within the area surveyed.

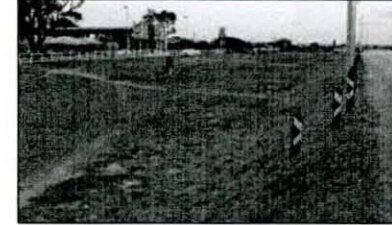


Fig. 23-24. View of the petrol station, lamp posts and chevron sign posts facing west.



RECOMMENDATIONS

The area has been rated as having low local cultural significance, although the following recommendations must be considered:

1. In the unlikely event that any concentrations of archaeological material are exposed during construction, all work in that area should stop and it should be reported immediately to the nearest museum/archaeologist or to the South African Heritage Resources Agency so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material (See appendix 1 for a list of possible archaeological sites that maybe found in the area).
2. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

GENERAL REMARKS AND CONDITIONS

Note: This report is a phase 1 archaeological heritage impact assessment/investigation only and does not include or exempt other required heritage impact assessments (see below).

The National Heritage Resources Act (Act No. 25 of 1999, section 35) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including 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 the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, reflect the true state of affairs. Many sites/features 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, (such as during any phase of construction work), archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act No. 25 of 1999.

It must also be clear that Archaeological Specialist Reports (ASRs) will be assessed by the relevant heritage resources authority. The final decision rests with the heritage resources authority, which should grant a permit or a formal letter of permission for the destruction of any cultural sites.

APPENDIX 1: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers

1. 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 the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this.

2. 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.

3. Fossil bone

Fossil bones or any other concentrations of bones, whether fossilized or not, should be reported.

4. Stone artefacts

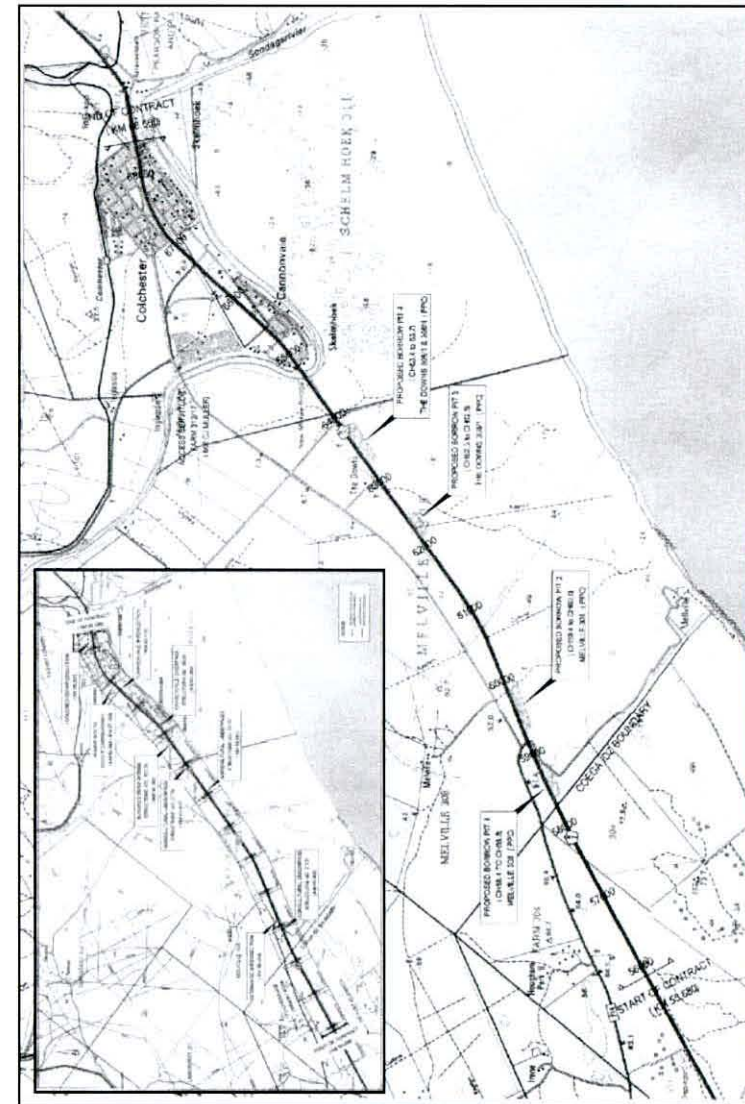
These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified.

5. Stone features and platforms

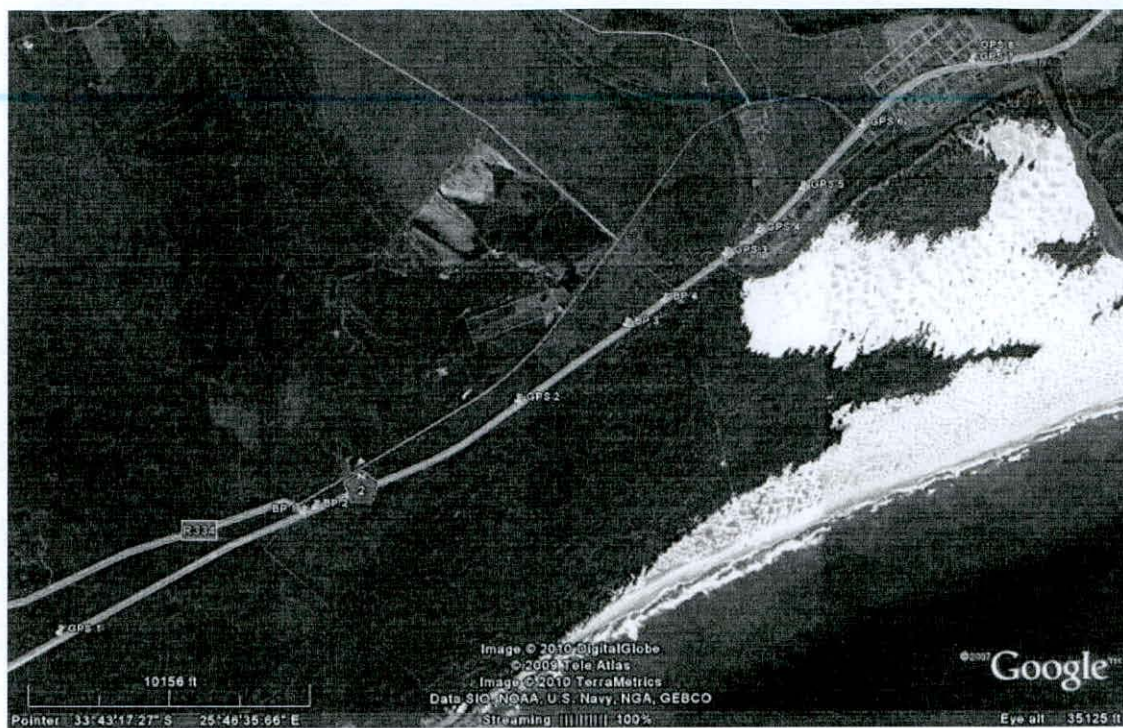
They come in different forms and sizes, but are easy to identify. The most common are an accumulation of roughly circular fire cracked stones tightly spaced and filled in with charcoal and marine shell. They are usually 1-2 metres in diameter and may represent cooking platforms. Others may resemble circular single row cobble stone markers. These are different sizes and may be the remains of wind breaks or cooking shelters.

6. Historical artefacts or features

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



Map 1: 1:50 000 maps indicating the extent of the proposed upgrade of the N2 road and the four proposed borrow pits (maps courtesy of SRK Consulting)



Map 2. Aerial view of the proposed area for the N2 road upgrade and the four proposed borrow pits, GPS plotted.