

HERITAGE IMPACT ASSESSMENT PROPOSED CLANWILLIAM INTERSECTION UPGRADE ON NATIONAL ROUTE N7 SECTION 3 FROM APPROXIMATELY KM 127 TO KM 128

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act as part of an EIA.)

Prepared for

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November 2012



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INTEGRATED EXECUTIVE SUMMARY

Following the comment on the NID (see Appendix 1) for the proposed project compiled by ACO Associates cc, we have been appointed by CCA Environmental (Pty) Ltd to undertake a Heritage Impact Assessment, as part of the EIA process, that addresses particularly archaeological and palaeontological issues for the proposed Clanwilliam intersection upgrade on national route N7 section 3, from approximately km 127 to km 128 (Figures 1 and 2).

Archaeology:

Heritage issues are encountered along Ramp alignments 1, 2, 3 and 4. Engineers have indicated that most of these can be avoided by careful alignment, but where this is not possible, some mitigation would be required.

- Of particular concern are the ruins of a small vernacular building and associated kraal that would be directly impacted by Ramp Alignment 1. Re-alignment of this section of ramp is not possible. In our opinion, the structures do not contribute significantly to the character of the environs, nor do the immediate environs warrant any protective measures. As such, we believe the site can be mitigated by recording (photographs, measured drawing) and collection of artefacts as required, after which consent for demolition should be issued. A Section 35 permit would be required to undertake the work and a blank application is included in this report;
- A small informal cemetery with head and footstones of sandstone, lies to the one side of Ramp Alignment 1 and would not be directly impacted. The site must however be identified and marked prior to construction in order to protect it during the construction period;
- An area of soft soil that is similar in appearance to the abovementioned informal cemetery has been identified further along Ramp Alignment 1, although no surface traces of graves are evident. The site lies close to the alignment but according to the engineers, could be avoided. It must be identified and clearly marked by the archaeologist in order for it to be protected during the construction period;
- Historic road alignments are found along Ramp Alignments 2 and 3. As the ramp alignments stand, some impact would occur to the features. However, the impact is considered minor as most sections of old road remain intact beyond the ramp alignments. Some impacts have already occurred during the building of the existing N7. In our opinion, the structures do not contribute significantly to the character of the environs, nor do the immediate environs warrant any protective measures. As such, we believe that portions of the road that would be impacted could be mitigated by recording (photographs and plotting via Google Earth);
- An enigmatic feature close to Ramp Alignment 2. We believe that the feature may represent a single grave. The site lies close to the alignment but according to the engineers could be avoided. It must be identified and clearly marked by the archaeologist in order for it to be protected during the construction period;

Palaeontology

The project has been assessed by a desktop study by Dr Graham Avery.

- The surrounding area is relatively hilly and the rock substrate is Cape Super Group Table Mountain Series quartzitic sandstone with thin shale and conglomerate lenses; these are ancient and do not normally preserve fossils. To the east, the land surface slopes down to the Olifants River. Although

there is a covering of sandy soil in places, the possibility that recent fossils or sub-fossils would be encountered during any excavations in these sediments is minimal;

- Occurrences of palaeontological material in the area of the proposed interchange is unlikely. Geotechnical information and details of the depth to which any excavations would extend would assist in assessing whether and where monitoring of alluvial deposits would be necessary;
- While it is unlikely that fossils would be encountered, it should be borne in mind that small pockets of bone can occur in younger deposits where bone accumulators like hyenas, jackals or porcupines used holes/burrows dug, for instance, by aardvarks. “Heuweltjies”, considered to be the remains of ancient termite nests, can contain the remains of nests and are frequently burrowed into by aardvarks;
- Protocols for dealing with palaeontological/palynological monitoring/mitigation must be included in the Environmental Management Plan (EMP). Any such material is likely to be fragile and due care must be exercised;
- Permits from the appropriate Heritage agencies would be required should fossil remains be encountered. Any material recovered would be lodged in the palaeontological collections of Iziko South African Museum.

Built environment:

- A public monument commemorating “25 years of National Party Rule...” lies close to the alignment of Ramp 3, but according to the engineers would be avoided. It is protected by Section 37 of the NHRA of 1999. It must be identified and clearly marked by the archaeologist in order for it to be protected during the construction period;

Integrated heritage conclusions:

No severe limitations were identified in terms of Stone Age Archaeology or Palaeontology and the project would have limited impact on heritage resources. Impacts are considered to be manageable for the most part. A number of heritage resources would be avoided but must nevertheless be identified and marked to avoid impact during the construction phase. A known graveyard, and a possible graveyard and possible single isolated grave are of particular significance and must under no circumstances be disturbed.

Palaeontological resources are unlikely to occur on the site, but if found, must be mitigated by the appropriate professionals.

Some further archaeological interventions with respect to recording parts of the old road is required, and a small vernacular ruin and kraal (ungraded) must be recorded and mitigated prior to the construction phase as they would be destroyed. A public monument (commemorating 25 years of National Party rule) on alignment 3 is protected under Section 37 of the NHRA. It would be avoided by the alignment, although it would become more visible. Some renewed vandalism of this monument may occur.

1. INTRODUCTION

The South African National Roads Agency SOC Limited (SANRAL) is proposing to upgrade the National Route 7 Interchange at Clanwilliam (see Plate 1, Figures 1 and 2).



Plate 1: Approximate positions of on and off ramps linking to the existing R364 (Clanwilliam - Lamberts Bay Road) showing the receiving environment

Specific items of the upgrade would include the following:

- The proposed intersection upgrade would consist of adding three new ramps to the existing intersection and the partial realignment of the existing ramp. These ramps would be 8 m wide, and would consist of a 4 m lane with a 2 m shoulder on each side.
- The ramps would each be approximately 500 m long, and would start by breaking away from the existing N7 and would end up in a T-junction on the R364 Clanwilliam / Lamberts Bay road.
- No new borrow pits or spoil areas are envisaged for this intersection upgrade as this would form part of the construction of the realignment of the N7 and those spoil areas and borrow pits would be used.

The current road layout at Clanwilliam Intersection consists of a link from the R364 (Clanwilliam Road) to the N7, as well as the N7 that crosses the R364 with an overpass bridge to the Lamberts Bay Road. The current access for Clanwilliam and Lamberts Bay from the N7 is via a link from the N7 to the R364 with a T-intersection onto the N7. To get access to this link for northbound traffic on the N7, traffic must make a right turn across the N7. This creates a very unsafe situation as there are stationary vehicles on the N7 that are waiting for a gap in the south bound traffic before they can turn right. Traffic from the link wanting to turn right onto the N7 to travel northbound must turn across the southbound traffic on the N7. The sight distance is limited as the link intersection is located on the inside of a horizontal curve. To eliminate these unsafe movements, it is proposed to put ramps from the N7 onto the R364. By incorporating the ramps with the current overpass bridge, it would change the N7 and the R364 crossing into a diamond interchange. The diamond interchange would give access to and from the N7 without interfering with the N7 traffic. This would create a much safer situation than the current one.

Following the comment from HWC on the NID for the proposed project compiled by ACO Associates cc (see Appendix 1), we were again appointed to undertake both a Heritage Impact assessment (HIA) and Archaeological Impact Assessment (AIA) (see Appendix 2). A desktop assessment of palaeontology has been compiled by Dr Graham Avery (see Appendix 3). Specialist reports as requested by HWC are appended in full.

1.1 Impact summary

Table 1: Impact significance on archaeological heritage resources - Ramps 1-3:

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	local	local
Duration	permanent	permanent
Intensity	high	medium
Probability	definite	definite
Confidence	high	high
Significance	high	medium
Cumulative impact	medium	low
Nature of Cumulative impact	There are existing minor cumulative impacts on the resources due to creation of tracks and informal roads on private farm land along the respective alignments. Construction of the N7, and existing off ramps contributed significantly to existing impacts, particularly along the alignments of proposed offramps 2 and 3. The current proposals would add to the cumulative impact on heritage resources.	
Degree to which impact can be reversed	Irreversible - heritage resources are generally non-renewable. However, in this case, some impacts are minimal as parts of the resource remain unaffected (ie old roads). Some resources such as a small dwelling and kraal would likely be completely destroyed by ramp alignment 1.	
Degree to which impact may cause irreplaceable loss of resources	Some resources may be completely destroyed (ruin and kraal) but information can be recorded, while other would only be partially impacted (old roads) and the impacted sections would not affect the interpretation of the overall resource. Graves and graveyards (if they are confirmed) may require special measures to mitigate, or be avoided to prevent irreplaceable loss.	
Degree to which impact can be mitigated	Medium - but the heritage resources that have been identified are generally not of high significance in the heritage sense, and although they may be disturbed or removed, the information can be recorded largely mitigating the loss. Red flag issues consist of a possible graveyard along ramp 1, and possible grave along ramp 2, which might require special measures to be implemented if the resources are confirmed to contain human remains.	

No impact table has been provided in the Palaeontological report presumably due to the fact that virtually no impacts are anticipated.

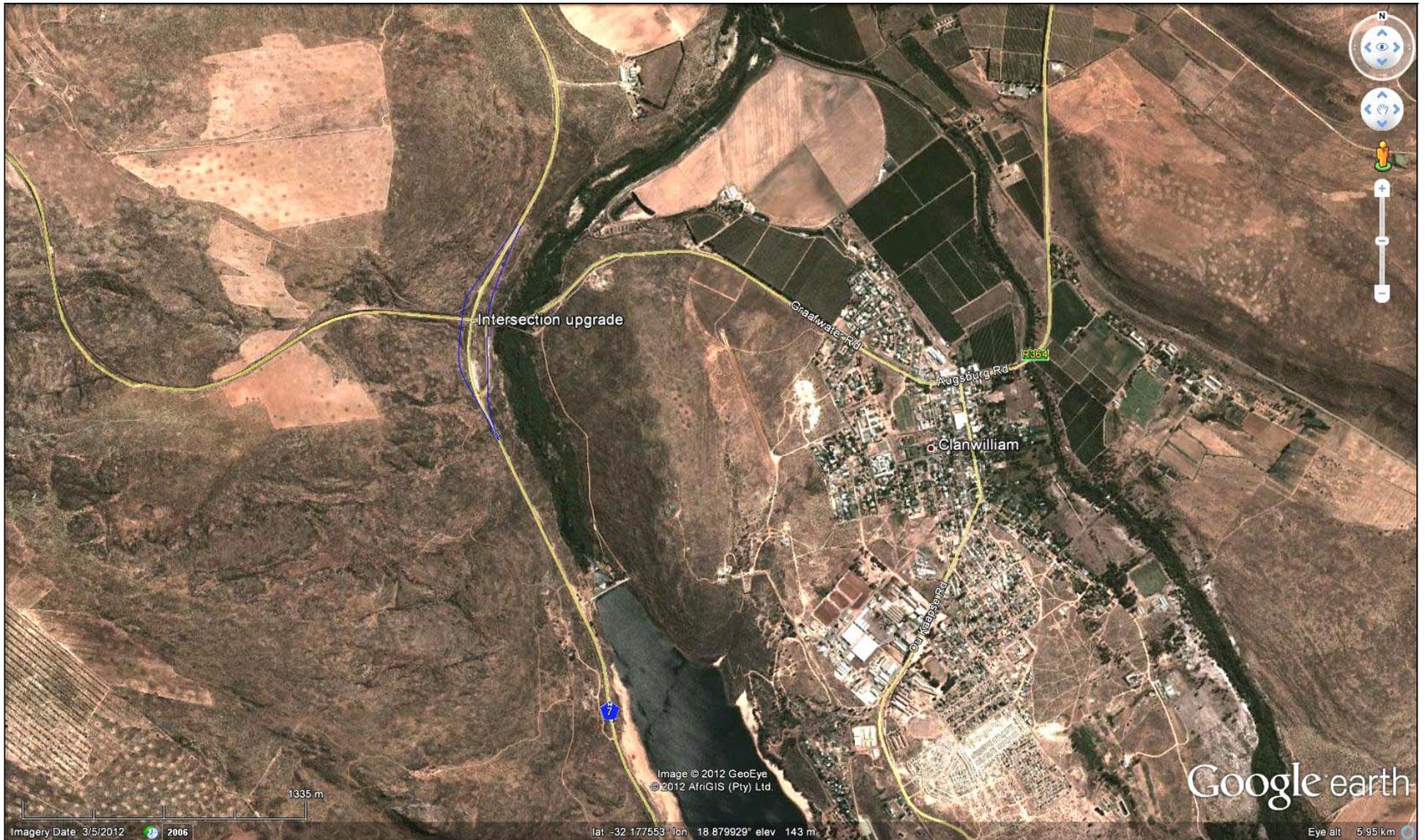


Figure 1: The site of the proposed intersection upgrade (blue) in local geographical context

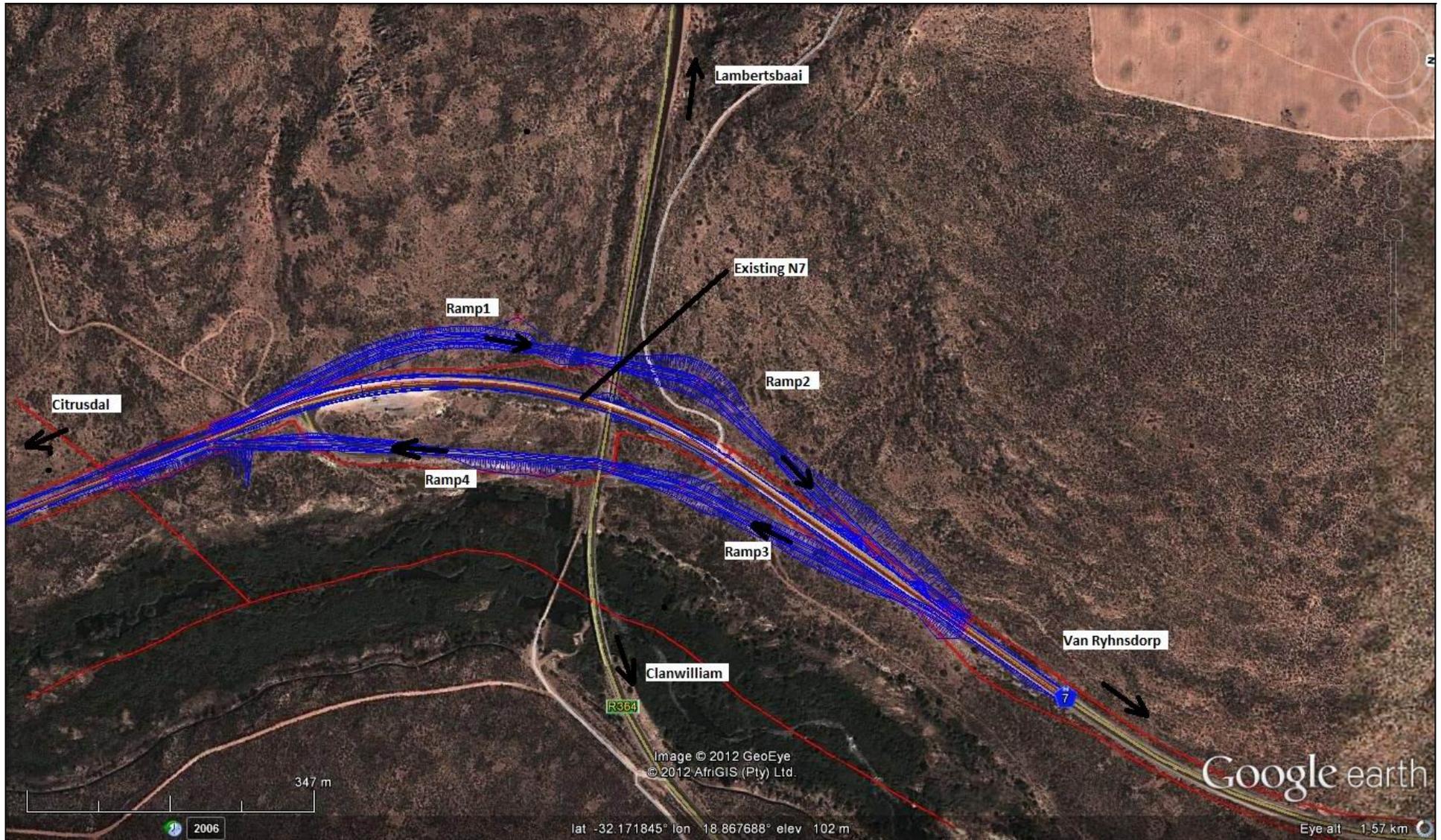


Figure 2: Detailed layouts of the proposed interchange (note north direction). Road reserves and farm boundaries in red.

2. INTEGRATED HERITAGE RECOMMENDATIONS

2.1 Archaeology:

- Heritage issues are encountered along Ramp alignments 1, 2 and 3 some of which require mitigation if re-alignment of the ramps is not possible.
- Of particular concern are a small vernacular ruin and kraal that would be directly impacted by Ramp Alignment 1. The site can be mitigated by recording and/or excavation;
- A small informal cemetery with head and footstones of sandstone, lies to the one side of Ramp Alignment 1 and would not be directly impacted. The site must however be identified and marked prior to construction in order to protect it during the construction period;
- An area of soft soil that is similar in appearance to the informal cemetery has been identified further along Ramp Alignment 1. Although no surface traces of graves are evident, the site should be tested to determine if grave shafts are present below surface or not;
- Partially preserved historic road alignments are found along Ramp Alignments 2 and 3. As the ramp alignments stand, some impact would occur to the old road features. However, the impact is considered minor as most sections of old road remain intact beyond the ramp alignments. Some impacts have already occurred during the building of the existing N7;
- An enigmatic feature close to Ramp Alignment 3 must be tested to determine if it represents a grave or not.

2.2 Palaeontology

The project has been assessed by a desktop study by Dr Graham Avery.

- The surrounding area is relatively hilly and the rock substrate is Cape Super Group Table Mountain Series quartzitic sandstone with thin shale and conglomerate lenses; these are ancient and do not normally preserve fossils. To the east, the land surface slopes down to the Olifants River. Although there is a covering of sandy soil in places, the possibility that recent fossils or sub-fossils would be encountered during any excavations in these sediments is minimal;
- Occurrences of palaeontological material in the area of the proposed interchange is unlikely. Geotechnical information and details of the depth to which any excavations would extend would assist in assessing whether and where monitoring of alluvial deposits would be necessary;
- While it is unlikely that fossils would be encountered, it should be borne in mind that small pockets of bone can occur in younger deposits where bone accumulators like hyenas, jackals or porcupines used holes/burrows dug, for instance, by aardvarks. “Heuweltjies”, considered to be the remains of ancient termite nests, can contain the remains of nests and are frequently burrowed into by aardvarks;
- Protocols for dealing with palaeontological/palynological monitoring/mitigation must be included in the Environmental Management Plan (EMP). Any such material is likely to be fragile and due care must be exercised;
- Permits from the appropriate Heritage agencies would be required should fossil remains be encountered. Any material recovered would be lodged in the palaeontological collections of Iziko South African Museum.

2.3 Built environment:

A monument commemorating 25 years of National Party rule would be impacted by Ramp Alignment 3. It currently stands on private land and appears to be protected by Section 37 of the NHRA of 1999. As the requirements of Section 37 have not been met by the Local Authority, it is not absolutely clear what protections apply and what process must be undertaken to either move, or demolish the monument. It has been suggested that moving it is an option if desired by the landowner, but if not, public consultation may be required to determine if there is a desire more broadly to preserve it as heritage, or if it can be demolished. Cost implications must be considered.

2.4 Integrated heritage conclusions:

No severe limitations were identified in terms of Stone Age Archaeology or Palaeontology and the project would have limited impact on heritage resources. Impacts are considered to be manageable for the most part, though if graves are identified at one of the sites, some redesign, or exhumation may be required.

Palaeontological resources are unlikely to occur on the site, but if found, must be mitigated by the appropriate professionals.

Some further archaeological interventions with respect to possible graves are necessary to inform decision making, and mitigation of a small ruin and kraal is required prior to the construction phase. Consultation with Heritage authorities, landowner, SANRAL (?) and the public should be undertaken to determine if the monument on alignment 3 must be moved or demolished.

APPENDIX 1: NID COMMENT

Our Ref: HM\WEST COAST\CEDERBERG\CLANWILLIAM\FARM 201 PORTIONS 1 AND 0,
MALGASHOEK



Enquiries Jenna Lavin

Date: 29 August 2012

Tel: 0214839685

Case No: 120823JL13E

Email: jenna.lavin@pgwc.gov.za

Auto IDs: 1962 - 2064

RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP

**In terms of section 38(8) of the National Heritage Resources Act (Act 25 of 1999)
and the Western Cape Provincial Gazette 6061, Notice 298 of 2003**

Attention: Mr David Halkett

ACO Associates cc

8 Jacobs Ladder

St James

7945

CASE NUMBER: 120823JL13E

NID: PROPOSED UPGRADE OF THE N7 ROUTE SECTION 3, KM 127 TO KM 128 ON FARM 201 PORTIONS 1 AND 0, MALGASHOEK, CLANWILLIAM

The matter above has reference.

Your NID received on 23 August 2012 was tabled and the following was discussed;

1. The application is to add 4 ramps to an existing intersection, each approximately 500m long, to link the N7 with the R364
2. No new borrow pits or spoil areas are envisaged
3. A monument celebrating 25 years of NP rule c. 1973 will be directly impacted by one of the routes
4. Significant archaeological resources are known to occur in the area proposed for development
5. An informal graveyard is known close to one of the proposed routes
6. A ruin, kraal and old road alignments will be impacted by 2 of the routes

Decision

Since there is reason to believe that heritage resources will be impacted upon, HWC requires an HIA in terms of S. 38(3) of the NHRA (Act 25 of 1999) assessing the impacts on the following heritage resources which it has identified; the identified monument, Archaeological resources, Palaeontological resources, the informal graveyard and the identified structures (ruin, kraal, old road alignments)

Terms and Conditions:

Heritage Western Cape reserves the right to request additional information as required.

Should you have any further queries, please contact the official above and quote the case number above.

Yours faithfully

Andrew B Hall
Chief Executive Officer
Heritage Western Cape

APPENDIX 2: ARCHAEOLOGICAL IMPACT ASSESSMENT

ARCHAEOLOGICAL IMPACT ASSESSMENT PROPOSED CLANWILLIAM INTERSECTION UPGRADE ON NATIONAL ROUTE N7 SECTION 3 FROM APPROXIMATELY KM 127 TO KM 128

(Assessment conducted under Section 38 (8) of the
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Prepared for

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DECLARATION

by the independent person who compiled a specialist report or undertook a specialist process

I ...David John Halkett....., as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Note: The terms of reference must be attached.



Signature of the specialist:

ACO Associates cc
Name of company:

28th June 2012
Date:

EXECUTIVE SUMMARY

The South African National Roads Agency SOC Limited (SANRAL) is proposing to upgrade the National Route 7 Interchange at Clanwilliam.

The current road layout at Clanwilliam Intersection consists of a link from the R364 (Clanwilliam Road) to the N7, as well as the N7 that crosses the R364 with an overpass bridge to the Lamberts Bay Road. The current access for Clanwilliam and Lamberts Bay from the N7 is via a link from the N7 to the R364 with a T-intersection onto the N7. To get access to this link for northbound traffic on the N7, traffic must make a right turn across the N7. This creates a very unsafe situation as there are stationary vehicles on the N7 that are waiting for a gap in the south bound traffic before they can turn right. Traffic from the link wanting to turn right onto the N7 to travel northbound must turn across the southbound traffic on the N7. The sight distance is limited as the link intersection is located on the inside of a horizontal curve. To eliminate these unsafe movements, it is proposed to put ramps from the N7 onto the R364. By incorporating the ramps with the current overpass bridge, it would change the N7 and the R364 crossing into a diamond interchange. The diamond interchange would give access to and from the N7 without interfering with the N7 traffic. This would create a much safer situation than the current one.

ACO Associates cc was appointed by CCA Environmental to submit an NID and following receipt of comment, to undertake an archaeological assessment and prepare the integrated Heritage Impact Assessment.

Archaeology:

Heritage issues are encountered along Ramp alignments 1, 2, 3 and 4. Engineers have indicated that most of these can be avoided by careful alignment, but where this is not possible, some mitigation would be required.

- Of particular concern are the ruins of a small vernacular building and associated kraal that would be directly impacted by Ramp Alignment 1. Re-alignment of this section of ramp is not possible. In our opinion, the structures do not contribute significantly the character of the environs, nor do the immediate environs warrant any protective measures. As such, we believe the site can be mitigated by recording (photographs, measured drawing) and collection of artefacts as required, after which consent for demolition should be issued. A Section 35 permit would be required to undertake the work and a blank application is included;
- A small informal cemetery with head and footstones of sandstone, lies to the one side of Ramp Alignment 1 and would not be directly impacted. The site must however be identified and marked prior to construction in order to protect it during the construction period;
- An area of soft soil that is similar in appearance to the abovementioned informal cemetery has been identified further along Ramp Alignment 1, although no surface traces of graves are evident. The site lies close to the alignment but according to the engineers, can be avoided. It must be identified and clearly marked by the archaeologist in order for it to be protected during the construction period;
- Historic road alignments are found along Ramp Alignments 2 and 3. As the ramp alignments stand, some impact would occur to the features. However, the impact is considered minor as most sections of old road remain intact beyond the ramp alignments. Some impacts have already occurred during the building of the existing N7 In our opinion, the structures do not contribute

significantly the character of the environs, nor do the immediate environs warrant any protective measures. As such, we believe that portions of the road that would be impacted can be mitigated by recording (photographs and plotting via Google Earth);

- An enigmatic feature close to Ramp Alignment 2. We believe that the feature may represent a single grave. The site lies close to the alignment but according to the engineers can be avoided. It must be identified and clearly marked by the archaeologist in order for it to be protected during the construction period;

Built Environment

- A public monument commemorating “25 years of National Party Rule...” lies close to the alignment of Ramp 3, but according to the engineers can be avoided. It must be identified and clearly marked by the archaeologist in order for it to be protected during the construction period;

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1. INTRODUCTION

The South African National Roads Agency SOC Limited (SANRAL) is proposing to upgrade the National Route 7 Interchange at Clanwilliam (see Plate 1, Figures 1 and 2).



Plate 1: Approximate positions of on- and off- ramps linking to the existing R364 (Clanwilliam - Lamberts Bay Road) showing the receiving environment

Specific items of the upgrade would include the following:

- The proposed intersection upgrade would consist of adding 3 additional ramps and modifying an existing ramp at the existing intersection. These ramps would be 12 m wide, and would consist of a 4 m lane with a 2 m shoulder on each side.
- The ramps would each be approximately 500 m long, and would start by breaking away from the existing N7 and would end up in a T-junction on the R364 Clanwilliam / Lamberts Bay road.
- No new borrow pits or spoil areas are envisaged for this intersection upgrade as this would form part of the construction of the realignment of the N7 and those spoil areas and borrow pits would be used.

The current road layout at Clanwilliam Intersection consists of a link from the R364 (Clanwilliam Road) to the N7, as well as the N7 that crosses the R364 with an overpass bridge to the Lamberts Bay Road. The current access for Clanwilliam and Lamberts Bay from the N7 is via a link from the N7 to the R364 with a T-intersection onto the N7. To get access to this link for northbound traffic on the N7, traffic must make a right turn across the N7. This creates a very unsafe situation as there are stationary vehicles on the N7 that are waiting for a gap in the south bound traffic before they can turn right. Traffic from the link wanting to turn right onto the N7 to travel northbound must turn across the southbound traffic on the N7. The sight distance is limited as the link intersection is located on the inside of a horizontal curve. To eliminate these unsafe movements, it is proposed to put ramps from the N7 onto the R364. By incorporating the ramps with the current overpass bridge, it would change the N7 and the R364 crossing into a diamond interchange. The diamond interchange would give access to and from the N7 without interfering with the N7 traffic. This would create a much safer situation than the current one.

Thus there is a need to establish if the proposed ramps would impact on heritage sites. HWC was notified of the proposed project via a NID submission and the comment received required the preparation of an HIA that addressed: Archaeological and Palaeontological resources, the identified NP monument, the informal cemetery and other identified structures such as a ruin, kraal and old road alignments. ACO Associates cc was appointed by CCA Environmental to undertake an archaeological assessment and prepare the integrated Heritage Impact Assessment.

1.1 Previous work relevant to the current project

The Archaeology Contracts Office at UCT previously undertook a Heritage Impact Assessment of the raising of the Clanwilliam Dam wall (Orton & Hart 2005), and ACO Associates cc have recently completed an assessment of realigning a section of the N7 to accommodate the increased full supply level of the dam (Halkett and Orton 2012). ACO Associates has also recently assessed the upgrade of sections of the N7 between Clanwilliam and Trawal (Halkett 2012a,b). During an assessment of a powerline between Clanwilliam and Graafwater (Halkett 2009), a small informal cemetery was found some 800 meters south west of the existing Clanwilliam offramp. The area has also been the subject of archaeological surveys undertaken by UCT's Department of Archaeology during teaching programs in the 1970's and 1980's. These surveys were largely aimed at recording and plotting pre-colonial archaeological sites containing rock paintings and other remnants of occupation. More recent historical features were frequently ignored however. The general Clanwilliam area is known to be rich in archaeological resources and includes the excavated cave site known as "Andriesgrond", that is located in the sandstone koppie some 2.5 km south of the proposed interchange (Parkington 1979, Anderson 1991). The archaeology of the Olifants River Valley has been discussed in numerous other scientific publications that are not quoted here. The Spatial Archaeology Research Unit site database lists only 2 sites (MG4 & MG6) some 500 meters south west of the proposed western ramp (digital site locations provided by Mr N Wiltshire).

2. METHODOLOGY

We assessed the proposed alternate alignments using Google Earth to determine if any features could be determined at that scale. Given the deadlines on the project, the client requested that ACO undertake a site visit at the time of compiling the NID so that the information would be available to compile the HIA as soon as the NID comment was received. It was expected that the HIA would be a requirement given the known existing heritage resources in the area. Subsequently, an adjustment to ramp 4 was proposed and required the area between the existing off ramp and the N7 to be inspected. The findings of that report are included as Appendix 3. It appears though that it is in fact possible to use the originally proposed alignment and so that small survey area is included for the purpose of completeness and to encapsulate all the heritage findings.

The field inspection was undertaken by Mr D Halkett and Ms R Mosdell on 4/5th August 2012, while the area between the existing ramp and N7 was examined by Mr Jayson Orton on the 12th October. The ramp alignments were loaded onto a hand held GPS device for the fieldwork phase and walk paths were recorded with the same instrument. Important heritage features were photographed and assessed for impact, and mitigation was considered. All ramp alignments have been walked.

3. FINDINGS AND MITIGATION

See Figure 2 for the numbering and orientation of the different ramps. A list of heritage resources identified during the survey can be found as Table 1 in Appendix 1. Each of the sites is described and the heritage significance is rated. Mitigation is suggested where necessary. More detailed maps of the various ramps indicating heritage sites and walk/drive paths are presented in Figures 3 and 4 following Table 1. A list of additional actions that are required to fully assess some of the heritage sites is presented in Table 2. Some of these actions must occur before the final decisions are made with respect to the ramp alignments as they have been presented.

3.1 Ramp 1

An **informal cemetery** (005 - 023) is sufficiently distant from the proposed offramp not to be impacted directly. It must still be identified and marked prior to commencement of the construction phase. It is not clear who is buried here, but it may have to do with the period of dam construction, or be associated with the small ruined dwelling elsewhere along the alignment and described below (Plates 2 - 3).



Plates 2 and 3: A small informal graveyard with sandstone head and footstones marking the graves, near the start of Ramp 1 must be identified and avoided during construction

Of concern is a somewhat enigmatic observation (waypoints 026 - 047) further north along the alignment of Ramp 1. The **unknown feature** is similar in form to the known informal cemetery close by, yet lacks any burial mounds or grave markers. Two earth filled half-44 gallon drums seem to form an entrance to the area though there is no obvious signs of any fencing material today. Slightly mounded and devoid of the prevailing vegetation, it is probably an old termite hill (“heuweltjie”) that has disintegrated and been re-used (Plates 4 - 5). The engineers have determined that the site can be avoided by the proposed alignment. It must be identified and marked prior to commencement of the construction phase.



Plates 4 and 5: A small earth mound on the edge of which are placed two earth-filled half 44 gallon drums. It is reminiscent of the identified informal cemetery though lacks surface traces of graves? The site must be marked and avoided during the construction phase.

A **small ruined vernacular dwelling with associated stone kraal and possible bread oven** are also found along the alignment of Ramp 1. It is not unfortunately possible to re-align this section of the ramp to avoid the structures. The site probably dates to around the late 19th c judging by the occasional fragments of transfer printed refined earthenware, scattered about, and although of some moderate heritage interest, consent would probably be granted by HWC for demolition after some basic recording and mitigation has occurred (Plates 6 - 8). A blank permit application form is included (Appendix 4)



Plates 6-8: A small vernacular building ruin and associated kraal lie directly on the alignment of Ramp 1 and would be severely impacted by the development. These structures could be mitigated by recording and collection.

Two small rock shelters containing LSA artefacts and rock paintings occur some 180 meters from Ramp I and no direct impacts are anticipated from construction (Plates 9 - 11). Secondary impacts may result if the shelters are used by road workers during construction. The rock shelter containing the paintings (024) is already badly impacted by soot from fires and graffiti. The other shelter (025) is low and has no paintings so less impact is anticipated, if any.



Plates 9 - 11: A small rockshelter contains an ephemeral LSA deposit with artefacts and rock paintings. Another smaller low shelter has only a scatter of LSA artefacts on the talus.

3.2 Ramp 2

Of some interest are sections of **old road** that lie partially on Ramp alignments 2 and 3 and immediately west of the existing off ramp (Ramp 4) (see Appendix 3). Portions of the roads, which I have called Old Road (1) and Old Road (2) are almost certainly the remains of the original roads shown particularly on the old military map of 1943 (below r). The original “N7” ran to the east of the Olifants River.

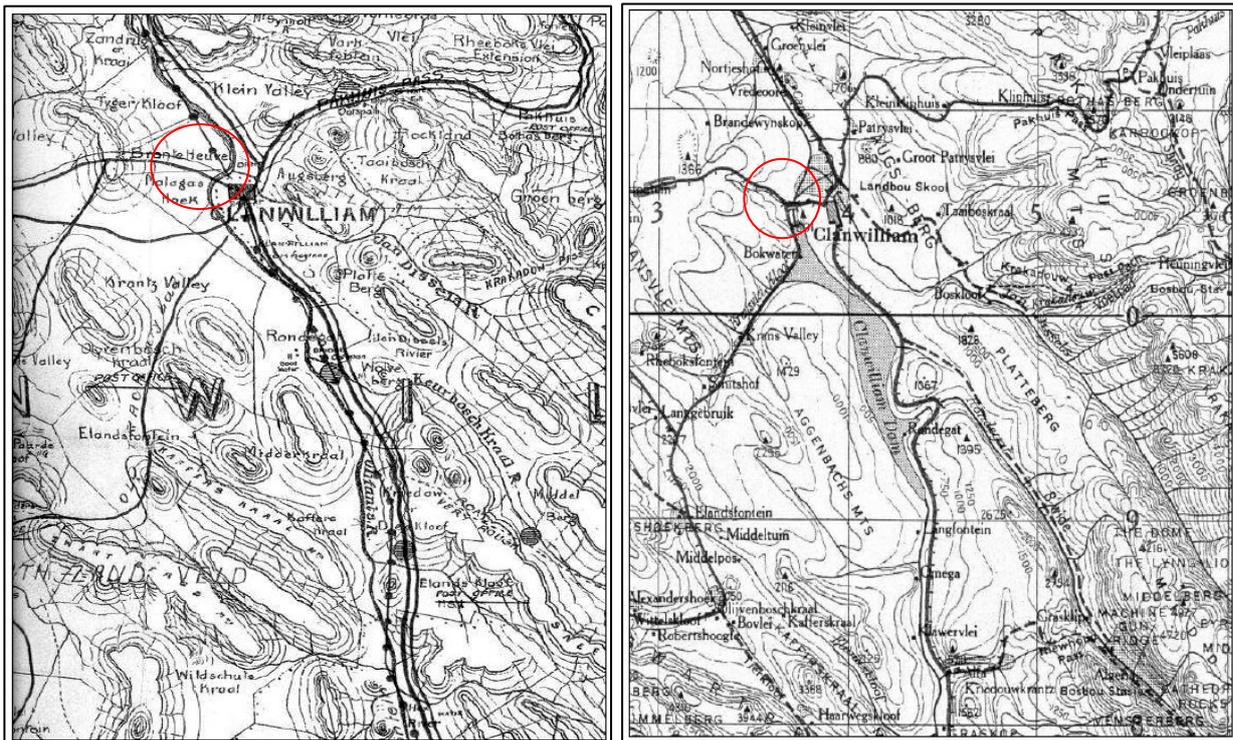


Plate 12: Map showing proposed main roads as double lines (M3/2826 1900 - Casgrain) **Plate 13:** A map of the Clanwilliam Dam and surrounding areas made for the military in 1943. It is the earliest map showing the Clanwilliam dam. The main road from Citrusdal to Clanwilliam still runs along the east bank of the Olifants River (M3/4711, 1943).

It is not clear who designed and built these roads, but the embankments with projecting stones along the top edges are reminiscent of both the 1860’s and 1930’s roads along the eastern side of the Clanwilliam Dam (Orton and Hart 2005, plates 26-35) (Plates 14 and 15). There was originally almost certain to have been a wagon track linking Clanwilliam to Graafwater and it is that that was probably

formalised. The section of the N7 now in use between Citrusdal and Clanwilliam was built in 1958/1959 following the completion of Grey's (now Piekenierskloof) Pass (Ross 2003).



Plates 14 and 15: Historic road alignments with embankment walls and projecting edge stones

There is probably enough structural integrity for the remaining sections of old road to have some value from a tourism and local interest perspective. Some impacts to these features can be sustained as only relatively small sections would be affected by the ramp alignment.

Another **enigmatic feature** (059) (Plate 16) might represent either a grave or something more mundane and associated with the old road. It lies close to the proposed ramp and according to the engineers, can be avoided by construction. It must be identified by the archaeologist and protected during the construction process.



Plate 16: A small enigmatic feature just off the alignment of ramp 2 may represent an informal grave. It must be identified and protected during the construction phase

3.3 Ramp 3

The area is already somewhat degraded due to the previous construction work for the N7. Being downslope of a road cutting, a fair amount of rubble has been placed here. Some areas are however unaffected. Two additional sections of **old road** (2) (described above) are found in this section and may have led down to a drift/or bridge across the Olifants River. Only a small section would be impacted by the ramp proposal (Plates 17 - 18). We have suggested some basic recording of road sections that would be impacted;



Plates 17 and 18: Old road alignments

While not strictly an archaeological issue, a monument on the site of ramp 3 is raised as a general heritage issue.

A **monument** to “25 years of National Party Rule...” (waypoint 004) would originally have been impacted by the Alternative 1A design. However, after being alerted to its presence, the route alignment was adjusted to avoid the monument and to prevent the necessity of demolishing or moving it. It would therefore not be directly impacted by ramp 3.

An attempt has already been made to destroy the polished granite plaque that is cemented into a rough sandstone block “obelisk” (Plates 19 - 20). The attempt at destruction is probably a form of protest.

Once quite a prominent feature, lying directly in view of motorists entering the Clanwilliam intersection, the view is now largely obscured by various signage and billboards and would hardly be seen by the average motorist nowadays (Plate 21), although it would become more visible after construction of the new off ramp. We suspect that renewed acts of vandalism would occur. .



Plates 19 and 20: Monument to “25 years of National Party rule...”



Plate 21: The monument (arrowed) is obscured by advertising boards and road signage.

As the impact of the ramp as originally proposed appeared to be direct, some thought was given to dealing with the object in an unbiased manner. I consulted Dr S Townsend, the Chairman of the IACOM at HWC for advice on the matter and have integrated some of his suggestions below. As he pointed out though, there is no clear cut, defined process to follow as the law stands at present. The NHRA or 1999 covers monuments as follows:

Part 2: General protections

Public monuments and memorials

37. *Public monuments and memorials must, without the need to publish a notice to this effect, be protected in the same manner as places which are entered in a heritage register referred to in section 30.*

Public monuments are defined in Section 2 of the act as:

“public monuments and memorials” means all monuments and memorials — (a) erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government; or (b) which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual;

In the ideal world, if the object fulfilled the criteria set out above, and if it were listed in a heritage register maintained by the local authority, such objects would be protected by the local authority under its own heritage by-law, or the heritage section of its own zoning scheme. Few local authorities have such a mechanism(s) in place however.

In order to consider a way forward we need to keep in mind questions such as the following: If the National Party no longer exists, is there anyone to care what happens to the monument? Can we find someone who cares about it, someone who claims it as heritage? In terms of relocation of the object, if that were an option: Where to? Why? At whose cost? Who desires it?

That in mind, we may look at Section 30, subsection 11, paragraphs a-e of the Act for guidance with respect to the way forward even though the local authority has not fulfilled the delegated role (and particularly highlighted sections):

(11) Within six months of the publication of a notice in the Provincial Gazette concerning the inclusion in the heritage register of a place falling within its area of jurisdiction, every local authority must make provision for the protection of such place through the provisions of its planning scheme or by-laws under this Act: Provided that any such protective provisions shall be jointly approved by the provincial heritage resources authority, the relevant local authority and the provincial planning authority, and provided further that—

- (a) the special consent of the local authority shall be required for any alteration to or development affecting a place listed in the heritage register;
- (b) the local authority must, prior to the consideration of an application under paragraph (a), notify any conservation bodies which have, in terms of section 25(1)(b), registered their interest in the geographical area or type of property concerned and give them a reasonable period in which to register an objection or make other representations with respect to the application;
- (c) in assessing an application under paragraph (a), the local authority shall consider—
- (i) the cultural significance of the place and how this could be affected by the proposed alteration or development; and
 - (ii) any objection or representations under paragraph (b);
- (d) where the local authority resolves to approve an application under paragraph (a) which would materially affect the cultural significance of the place and an objection to such approval has been registered under paragraph (b), unless the conservation body concerned withdraws such objection, the objection shall be deemed to be an appeal in terms of section 49 and the local authority shall submit the application and all relevant information to the relevant appeal body; and
- (e) in the event of any alteration or development of a place listed in a heritage register being undertaken without the consent of the local authority, the local authority may require the owner to stop such work instantly and restore the site to its previous condition within a specified period. If the owner fails to comply with the local authority's requirements the local authority shall have the right to carry out such restoration work itself and recover the cost thereof from the owner.

No local Clanwilliam heritage/conservation body could be identified (either by contacting colleagues or looking at the list compiled by HWC) to get opinion on the matter. I approached Prof John Parkington from the Living Landscape Project at Clanwilliam for contact names of persons at the Clanwilliam Municipality who might assist, and subsequently sent e-mails to Mr J Kotze, and Mr J Klaaste at the Cederberg Municipality (Raad) asking amongst other things, whether the monument was on public land or not? Mr Kotze responded and indicated he would get back to me. CCA have since established that the land is privately owned by Mr Koos Genis and is part of the farm Malgashoek. Further discussion on the way forward is presented in Section 4, although is no longer completely relevant, but retained for completeness of the process.

3.4 Ramp 4

No significant heritage was identified along the alignment of this ramp through an area that is rather degraded due to previous construction activities. A portion of a road (064) was observed but is believed to be related to the construction of the dam. It has no formal embankment walls like other old road sections observed. No mitigation is required. Additional sections of the old road are also preserved in the area to the west of the existing off ramp (between the existing ramp and the N7) (see Appendix 3).

Table 2: Additional actions to assess heritage sites prior to finalising decisions or construction

Additional tasks	Ramp	Waypoints	Action	Permits required	Detailed action	Timing	Duration
Informal cemetery	1	005 - 023	demarcate	no	Demarcate the extent of the cemetery clearly with durable materials so it is not impacted during the construction period	before surveying and pegging of alignments prior to construction	1 hour on site
Possible cemetery	1	026 - 047	identify, with visible markings and avoid during construction	no	Demarcate the extent of the suspected cemetery clearly with durable materials so it is not impacted during the construction period.	before surveying and pegging of alignments prior to construction	1 hour on site
Ruined dwelling and kraal	1	049a	record and map structures,	yes	Photograph, measure and record structures and associated features before construction commences (a Section 35 permit application for	before surveying and	1 day on site

			collect artefacts		collection as required is included as Appendix 4). Permission to demolish would probably be granted by HWC following submission of the mitigation report. The mitigation should be done well in advance of the construction to avoid delays in receiving demolition permission.	pegging of alignments prior to construction	
Old roads 1 and 2	2/3	052-058, 002-003	record and map structures	no	Photograph and document the structural details before construction commences. Some impact on the feature can be sustained as only a relatively small portion overall would be impacted. There must be no additional destruction or re-use of historic building materials or markers. These may perhaps form points of tourism interest in future. Demarcate parts that should not be impacted by secondary activities. The features should be identified on plans and construction crews must be instructed as to what is protected.	before construction	½ day on site
Possible grave	2	059	identify, with visible markings and avoid during construction	no	Demarcate the extent of the grave and small buffer clearly with durable materials so it is not impacted during the construction period	before surveying and pegging of alignments prior to construction	½ day on site
Public monument	3	004	identify, with visible markings and avoid during construction	yes	Demarcate the extent of the monument clearly with durable materials so it is not impacted during the construction period	before surveying and pegging of alignments prior to construction	½ hour on site

4. IMPACT ASSESSMENT

Ramps 1 to 3 would require some mitigation of heritage resources under the current alignments. No discernible impacts to heritage resources would result from the current alignment Ramp 4. This is largely along the route of the existing off ramp.

Table 1: Impact significance on archaeological heritage resources - Ramps 1-3¹:

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	local	local
Duration	permanent - long term	long term
Intensity	medium - high	medium - high
Probability	definite	definite
Confidence	high	high
Significance	high	low
Cumulative impact	medium	low
Nature of Cumulative impact	There are already existing minor cumulative impacts on the resources due to creation of tracks and informal roads on private farm land along the respective alignments. Construction of the N7, and existing off ramp contributed significantly to the existing impacts. Only ramp alignment 1 would directly impact archaeological/heritage resources in a significant way, while ramps 2 and 3 would have moderate impact on historic road alignments. The current proposals would add moderately to the cumulative impact on heritage resources provided that the other sites described are not damaged or impacted during the construction phase..	

¹ Only one site would be permanently impacted, while others would be avoided. The context of the remaining sites would change with the proximity of the new ramps and the risk of future damage increases with proximity of roads.

Degree to which impact can be reversed	Irreversible - heritage resources are generally non-renewable. However, in this case, some impacts are minimised as the greater parts of the resource remain unaffected (ie historic roads). Some resources such as a small dwelling and kraal would likely be completely destroyed by ramp alignment 1 and although it can be mitigated, would result in loss of context and form.
Degree to which impact may cause irreplaceable loss of resources	Some resources may be completely destroyed (ruin and kraal) but information can be recorded. Other resources (historic roads) would only be partially impacted although in our opinion, the impacted sections would not affect the interpretation of the overall resource. Other resources recognised in the survey must be identified and marked so they may be avoided during the construction phase in order to prevent irreplaceable loss.
Degree to which impact can be mitigated	The heritage resources that have been identified are generally not of high heritage significance and although they may be disturbed or removed, the information can be recorded, largely mitigating the loss. Significant mitigation has already occurred by ensuring that certain resources are avoided and protected during the construction phase.

5. CONCLUSIONS

Heritage sites have been identified along Ramp Alignments 1, 2, 3 and 4 (although in the latter would not be affected). It has been determined by the engineers that a number of the recorded heritage resources could be avoided, and as a result, further action is limited to identifying and marking the sites for protection during the construction phase.

In particular, on Ramp Alignment 1, is a possible informal cemetery, and on Ramp Alignment 2, a stone feature that may represent an individual grave. The ruin of a small vernacular building and associated kraal on Ramp 1 would be directly impacted by the development as it is not possible to re-align the road at that point. These ruins need to be recorded (as indicated) and can then probably be demolished (a permit application is included to facilitate the process). Some sections of historic road have been observed on alignment 2 but do not present a severe restriction of the project. Some minor impacts would occur to sections of the historic alignments, but the greater part remains unaffected. We therefore suggest some recording of the details of the portions that would be lost.

5.1 Ruins

In terms of the NHRA, following recording of the small building complex (ruin, kraal, oven) permission would be required for its destruction via a Section 35 permit from HWC (attached).

5.2 Roads

Structural details of the portions of roads that would be removed should be recorded prior to the construction phase...

5.3 Graves and graveyards

A known graveyard near to Ramp Alignment 1, is not directly affected, but nevertheless must be identified and protected during the construction phase. A suspected graveyard also situated along Ramp Alignment 1, and a suspected isolated grave along Ramp Alignment 2, must similarly be identified and protected during the construction phase

5.4 Monument

The monument would be avoided. Although quite obvious, it must be identified and protected during the construction phase.

6. REFERENCES

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Table 3: Known heritage sites in the vicinity of the proposed ramps (grey shading indicates heritage sites for which there are multiple waypoints)

LABEL	E Dec Deg	S Dec Deg	Component	Description	Grading	Mitigation as required
005	32.17697703	18.86703104	Ramp 1	Informal cemetery with approximately 10 graves. Some marked by informal rock head and foot stones while others have stone covered mounds. The circumference is marked by a number of GPS points (005-022) Centre point marked by waypoint 023. This has previously been referred to us as site MG1 (abbreviated Malgashoek - after the farm name). There is however another site MG1 recorded by Manhire of which we were not aware at the time. The closest edge is approximately 58 meters west of the centreline of the road alignment	I	Although not directly impacted by the activity, the cemetery must be identified and clearly marked before the construction phase commences. The site should be fenced on completion of the activities. Cemeteries are <i>de facto</i> Grade 1 sites
006	32.17703302	18.86707404	Ramp 1	edge delimiting waypoint	"	"
007	32.17703797	18.86718501	Ramp 1	edge delimiting waypoint	"	"
008	32.17702900	18.86725903	Ramp 1	edge delimiting waypoint	"	"
009	32.17702196	18.86731803	Ramp 1	edge delimiting waypoint	"	"
010	32.17697703	18.86735802	Ramp 1	edge delimiting waypoint	"	"
011	32.17692699	18.86734997	Ramp 1	edge delimiting waypoint	"	"
012	32.17689497	18.86732600	Ramp 1	edge delimiting waypoint	"	"
013	32.17686103	18.86732399	Ramp 1	edge delimiting waypoint	"	"
014	32.17684301	18.86727897	Ramp 1	edge delimiting waypoint	"	"
015	32.17683102	18.86721997	Ramp 1	edge delimiting waypoint	"	"
016	32.17682096	18.86717403	Ramp 1	edge delimiting waypoint	"	"
017	32.17682499	18.86712802	Ramp 1	edge delimiting waypoint	"	"
018	32.17685499	18.86709197	Ramp 1	edge delimiting waypoint	"	"
019	32.17687402	18.86706096	Ramp 1	edge delimiting waypoint	"	"
020	32.17690604	18.86704797	Ramp 1	edge delimiting waypoint	"	"
021	32.17693001	18.86704101	Ramp 1	edge delimiting waypoint	"	"
022	32.17695197	18.86705602	Ramp 1	edge delimiting waypoint	"	"
023	32.17693202	18.86720404	Ramp 1	cemetery centre point	"	"
024	32.17655400	18.86556999	Ramp 1	Small rockshelter approximately 180 meters west of proposed ramp 1. Some rock paintings are present though impacted by fires and graffiti. Some human figures in fine line style are noted and finger painting is also present. Shallow deposit is present in the shelter while Late Stone Age artefacts in a variety of raw materials are observed on the overgrown talus slope. A number of silcrete flakes and adzes were observed on the lower talus.	med signif	No mitigation - No direct impact. Secondary impacts may occur if road crews use the site for shelter from the elements. No fires are to be lit inside the shelter and graffiti is forbidden
025	32.17709597	18.86580803	Ramp 1	Immediately opposite 024 (approximately 50 meters) is another low rock shelter. No rock paintings were observed though some red patches are present. An artefact scatter is present on the talus containing similar raw material and artefacts as at 024.	med signif	No mitigation - No direct impact.
026	32.17625502	18.86733597	Ramp 1	A small earth mound very reminiscent of the cemetery at 026, but without the headstones or any signs of grave mounds. Some stones are scattered about however and aardvark burrows are present. Two	I(?)	The "cemetery" must be identified and clearly marked before the construction phase commences.

				earth filled metal drums are arranged on the eastern side of the mound as if demarcating some form of entrance. Surrounding this are traces of informal settlement such as tin cans, corrugated iron, refined earthenware, a fragment of mill stone and some copper fragments. The mound is suspicious and should be treated as a cemetery until the contrary can be confirmed. The circumference is marked by a number of GPS points (027-047) Centre point marked by waypoint 026. the closest edge is located approximately 14 meters west of the centreline of the ramp alignment.		
027	32.17631604	18.86736003	Ramp 1	edge delimiting waypoint	"	"
028	32.17627999	18.86741702	Ramp 1	edge delimiting waypoint	"	"
029	32.17622903	18.86743798	Ramp 1	edge delimiting waypoint	"	"
030	32.17618704	18.86742298	Ramp 1	edge delimiting waypoint	"	"
031	32.17615200	18.86740101	Ramp 1	edge delimiting waypoint	"	"
032	32.17613298	18.86737403	Ramp 1	edge delimiting waypoint	"	"
033	32.17613197	18.86733798	Ramp 1	edge delimiting waypoint	"	"
034	32.17613800	18.86729498	Ramp 1	edge delimiting waypoint	"	"
035	32.17614404	18.86727604	Ramp 1	edge delimiting waypoint	"	"
036	32.17615301	18.86724997	Ramp 1	edge delimiting waypoint	"	"
037	32.17617597	18.86723103	Ramp 1	edge delimiting waypoint	"	"
038	32.17618704	18.86720999	Ramp 1	edge delimiting waypoint	"	"
039	32.17620296	18.86719197	Ramp 1	edge delimiting waypoint	"	"
040	32.17624697	18.86720899	Ramp 1	edge delimiting waypoint	"	"
041	32.17626499	18.86721804	Ramp 1	edge delimiting waypoint	"	"
042	32.17628100	18.86722701	Ramp 1	edge delimiting waypoint	"	"
043	32.17630003	18.86724503	Ramp 1	edge delimiting waypoint	"	"
044	32.17631201	18.86726397	Ramp 1	edge delimiting waypoint	"	"
045	32.17631897	18.86727696	Ramp 1	edge delimiting waypoint	"	"
046	32.17631998	18.86730001	Ramp 1	edge delimiting waypoint	"	"
047	32.17631897	18.86731401	Ramp 1	edge delimiting waypoint	"	"
048	32.17609299	18.86756999	Ramp 1	Isolated ESA core in quartzite	low signif	no mitigation
049a	32.17479700	18.86690500	Ramp 1	Stone and mud brick ruin and small circular stone kraal. Some fragments of 19 th c refined earthenware, tin cans glass etc	ungraded	Photograph, measure and record structure and associated features before construction commences. Permission to demolish would probably be granted by HWC following recording.
049b	32.17462004	18.86703397	Ramp 1	Small square brick and stone feature - possibly a bread oven base, directly associated with the ruin and kraal.	"	"
051	32.17437697	18.86676298	Ramp 1	Small stone cairn on a rocky shelf probably associated with the ruin. Not a grave given the rock surface.	ungraded	"
052	32.17212098	18.86743496	Ramp 2	Old road (1) - with stone embankment. Running approx nw - se then swinging to the west.	ungraded	Photograph and document structural details before construction commences. Some impact on the feature can be sustained as only a relatively small portion would be impacted. No re-use of historic building materials. These may perhaps form points of tourism interest in future.

053	32.17191000	18.86734301	Ramp 2	Old road (1) - with stone embankment. Running approx nw - se then swinging to the west.	ungraded	“
054	32.17161404	18.86718803	Ramp 2	Old road (1) - with stone embankment. Running approx nw - se then swinging to the west.	ungraded	“
055	32.17155000	18.86680900	Ramp 2	Old road (1) - with stone embankment. Running approx nw - se then swinging to the west.	ungraded	“
056	32.17153198	18.86675804	Ramp 2	Old road (2) - with stone embankment. Running approx e - w going towards Graafwater.	ungraded	Only directly impacted by Ramp 3. Some impacts can be sustained as only a relatively small section is impacted. Photograph and document structural details of the sections to be impacted before construction commences.
057	32.17139301	18.86719499	Ramp 2	Old road (2) - with stone embankment. Running approx e - w going towards Graafwater.	ungraded	“
058	32.17131204	18.86749397	Ramp 2	Old road (2) - with stone embankment. Running approx e - w going towards Graafwater. Abruptly truncated here but re-merges briefly closer to the N7. Also noted on the east side of N7 (see also waypoints 002, 003)	ungraded	“
002	32.17123300	18.86902903	Ramp 3	Old road (2) - some crude embankment walls but in places more formal	ungraded	“
003	32.17119100	18.86874899	Ramp 3	Old road (2) - some crude embankment walls but in places more formal	ungraded	“
059	32.17138496	18.86770201	Ramp 2	Semi circular stone feature consisting of a ring of upright stone “slabs”. One slab bigger than others. It is an isolated feature reminiscent of a grave? It lies approx 17 meters to the nw of the ramp centreline.	unknown at this time	Identify and clearly mark before construction begins and avoid. If impact cannot be avoided, the feature should be examined in more detail by probing or excavation to determine its function. If it is a grave then permission would be required to exhume and rebury elsewhere.
060	32.16991704	18.86889299	Ramp 2	Crude alignment of stones probably marking clearing of a rough track	ungraded	No mitigation required
063	32.16980103	18.86911696	Ramp 2	Crude alignment of stones probably marking clearing of a rough track	ungraded	“
061	32.16933098	18.86888604	Ramp 2	A small rock overhang with a possible paint daub. A small amount of silcrete debitage found in front on talus.	ungraded	No mitigation required
062	32.16956500	18.86899601	Ramp 2	Ephemeral silcrete and quartzite scatter	ungraded	No mitigation required
004	32.17286504	18.86839100	Ramp 3	Monument celebrating 25 years of National Party Rule (1948 -1973). Unveiled by Minister PW Botha, 4.5.1973, Erected by the CWM Dist. Raad (cemeted sandstone rock "obelisk" with polished granite plaque - deliberately damaged). At present largely hidden from view by large signboards, but this would change after the new ramp is completed.	unknown at this time	Identify and clearly mark before construction begins
064	32.17655299	18.86851396	Ramp 4	Crude track with rocks piled either side - possibly associated with dam construction	ungraded	No mitigation required
050	32.17450001	18.86685804	Ramp 1	Recent geotechnical drill hole - no heritage significance. Recorded for information only.	n/a	n/a



Figure 1: Detailed views of the ramp alignments 1(west) and 4 (east) (blue), Walk and drive paths (magenta), heritage sites (yellow diamonds), known informal cemetery (green shading), possible cemetery (yellow shading).

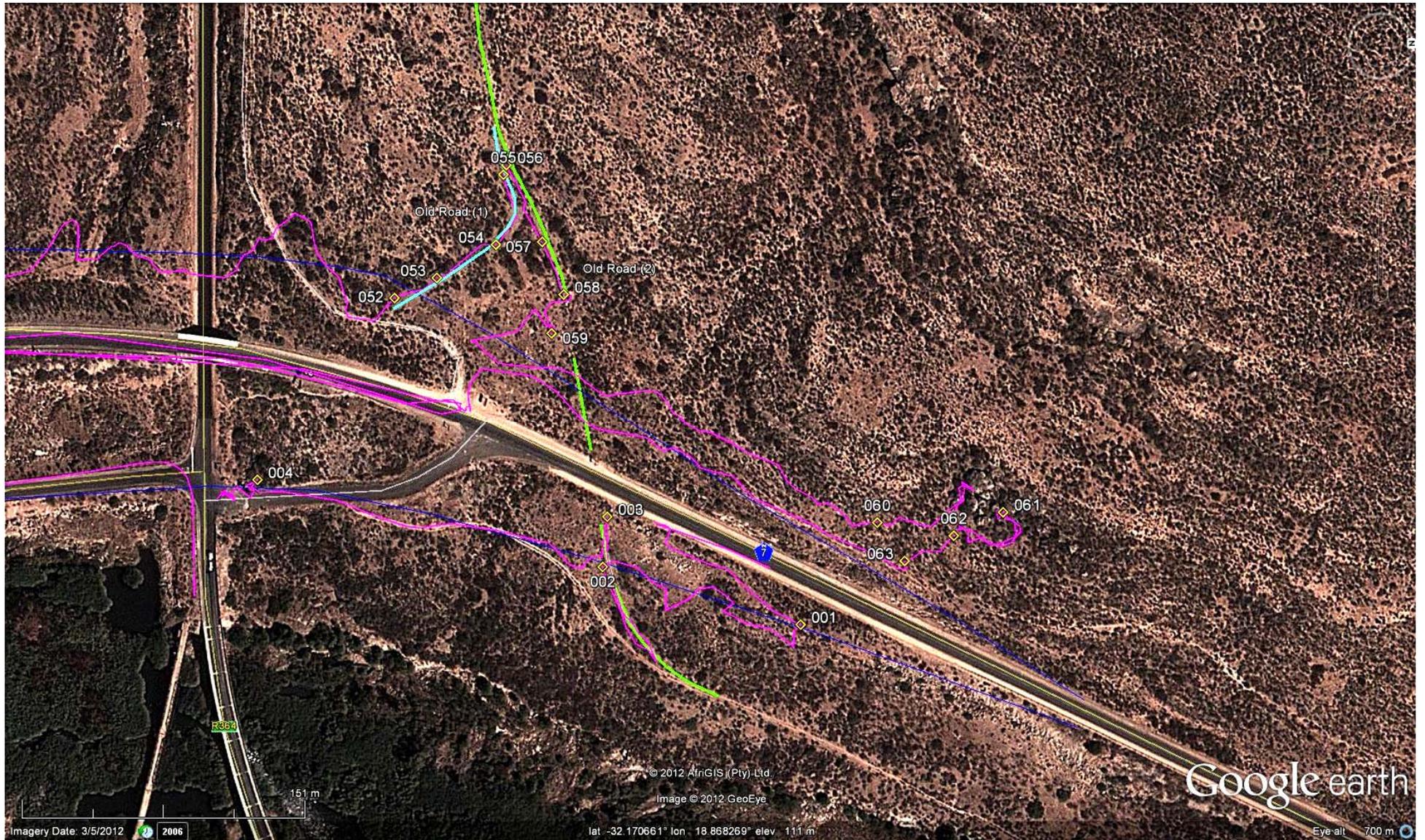


Figure 2: Detailed views of the ramp alignments 2 (west) and 3 (east) (blue), Walk and drive paths (magenta), heritage sites (yellow diamonds), old road (1) (turquoise), old road (2) (green).

APPENDIX 3: ADDITIONAL ASSESSMENT

ADDITIONAL ASSESSMENT INFORMATION PROPOSED CLANWILLIAM INTERSECTION UPGRADE ON NATIONAL ROUTE N7 SECTION 3 FROM APPROXIMATELY KM 127 TO KM 128

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act as part of an EIA.)

Prepared for

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October 2012



Prepared by

Dave Halkett and Jayson Orton

ACO Associates cc

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1. INTRODUCTION

A possible amendment of the alignment of Off ramp 4 has meant that some additional assessment of the areas has been necessary. The following is a short statement of the findings of that additional assessment and is to be read in conjunction with (Halkett 2012a). The area of assessment is shown in Figure 1.

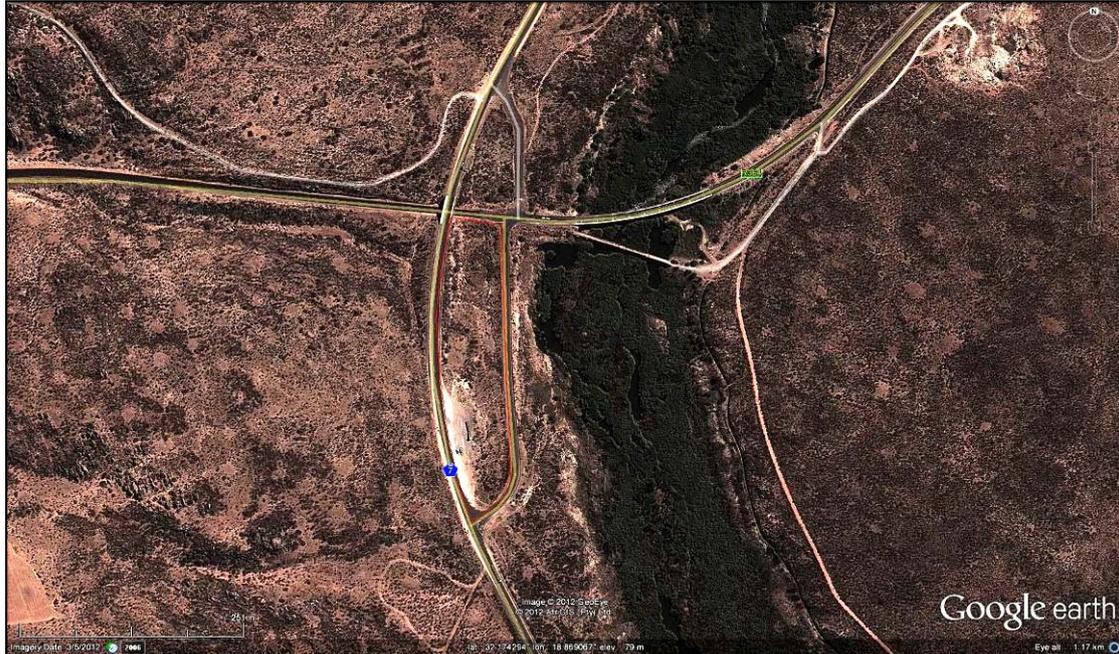


Figure 1: The area of assessment is shown by the red polygon

2. METHOD

When requested to comment on the possible heritage implications of the amended alignment, Mr Orton and I inspected the site via Google Earth Street View. It was immediately apparent that some linear feature was present there. The site was subsequently visited and the area between the existing offramp and the N7 was inspected.

3. OBSERVATIONS

Sections of the old Clanwilliam Road are preserved within the proposed area and are indicated on Figure 2 and Plates 1 - 4. A section of old road (~170 meters) with preserved dirt surface fabric and dry stone embankment walls is noted in the southern half of the area (orange line). In the northern section of the site the road has been considerably disturbed and only sections of road surface were observed there, although in sufficient condition to indicate that the old road obviously linked up with the old iron girder bridge crossing the Olifants River in the direction of Clanwilliam.

Some interruption to the pattern of the old road is probably due in part to the construction of the N7 and in particular to the culverts which run below both the N7 and off-ramp at this point.

4. CONCLUSION AND MITIGATION

Possible mitigation of the old road would be to have the new off-ramp run parallel to it (purple line) if it were possible to accommodate (see Figure 3). This would mean that well preserved sections of the old road and dry stone embankment walls in the southern section of the area (orange line) could be retained and preserved. In our opinion, sections of the road in the northern section where only traces of the old surface is present could be removed. The old road and old iron girder bridge (although not affected by this proposal) are not without some heritage significance and potential tourist value.

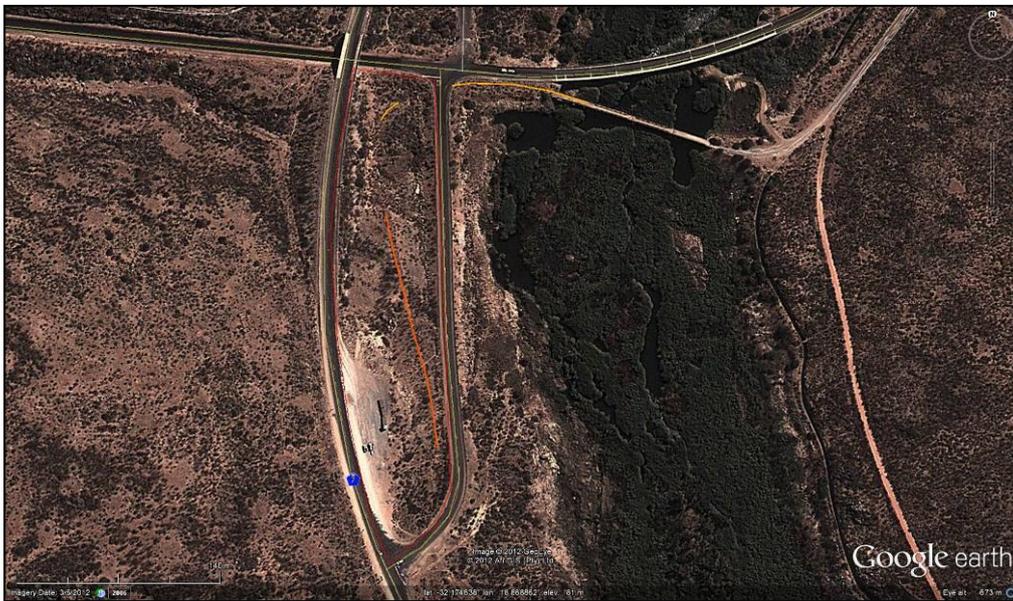


Figure 2: Additional sections of old road were located within the area proposed as an alternative alignment for Ramp 4. Section indicated by orange line consists of old road surface fabric and dry stone embankment walls. Areas indicated by yellow lines only have surfacing preserved. The old road obviously linked up with the old iron girder bridge crossing the Olifants River.



Plate 1: The site context lying between the N7 and existing offramp. Both are elevated on embankments.
Plate 2: The old road is marked by dry stone embankment walls in the southern section of the site.



Plate 3: Dry stone embankment walls **Plate 4:** Old surface with traces of embankment stones in the northern section of the site



Figure 3: Possible mitigation of the old road would be to have the new off-ramp run parallel to it (purple line) if possible. This would mean that well preserved sections of the old road and dry stone embankment walls in the southern section of the area (orange line) could be retained. In our opinion, sections of the road in the northern section where only traces of the old surface is present could be removed.

5. REFERENCES

Halkett, D. 2012a Archaeological impact assessment of the proposed Clanwilliam intersection upgrade on national route N7 section 3, from approximately km 127 to km 128. Unpublished report prepared for CCA Environmental (Pty) Ltd. ACO Associates cc.

APPENDIX 4: PALEONTOLOGICAL SITE ASSESSMENT

**Palaeontological Assessment:
Proposed Upgrade of N7 Route
Section 3, km 127 to km 128 on Farm
201 Portions 1 and 0, Malgashoek,
Clanwilliam (3218BB Clanwilliam)**

Prepared by

Graham Avery
(Sole Proprietor)

Archaeozoology, Stone Age Archaeology and Quaternary Palaeontology

September, 2012

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Executive Summary

Graham Avery was commissioned by CCA Environmental (Pty) Ltd (CCA) to conduct a desktop study of the palaeontological potential along the area to be covered by a proposed upgrade of the N7 between Clanwilliam and Trawal.

Applicant: The South African National Roads Agency SOC Limited (SANRAL)
Proposed activity: Road Upgrade
Location: N7 Clanwilliam interchange. Route Section 3, km 127 to km 128 on Farm 201 Portions 1 and 0, Malgashoek.

The specified area traverses the western slopes of the Olifants River Valley. Details of the geology are derived from 1:250 000 Geological Series 3218 Clanwilliam (and see Norman and Whitfield (2006) for a summary of the area). Topography is rocky and hilly, comprising primarily elements of the Cape Super Group Table Mountain Series sandstones with some shale lenses, neither of which is likely to yield fossils. Sandy patches occur on the surrounding slopes and Quaternary-aged alluvial sediments are along the river. The latter could contain fossils and sub-fossils. Any alluvial deposits (should river crossings be intersected) should be carefully assessed.

The existence of fossils in the very ancient underlying hard rocks in the area concerned is extremely unlikely but younger sediments may contain ancient wetland deposits, which preserve pollens and/or more-recent fossils. Collaboration between the developer/contractor and a suitably-qualified palaeontologist will be required when sufficient detail is available for more-accurate assessment of the approved line and decision-making regarding the necessity (or not) of monitoring during construction.

Geotechnical information and details of the depth to which any excavations will extend would assist in assessing whether monitoring will be necessary.

Provided that the recommendations of this assessment are complied with, there is no palaeontological reason why the proposed development should not proceed.

Location of the proposed upgrade

The proposed area is on 1:50 000 topographical map 3218BB Clanwilliam (here Google Earth coverage is provided (Figure 1).

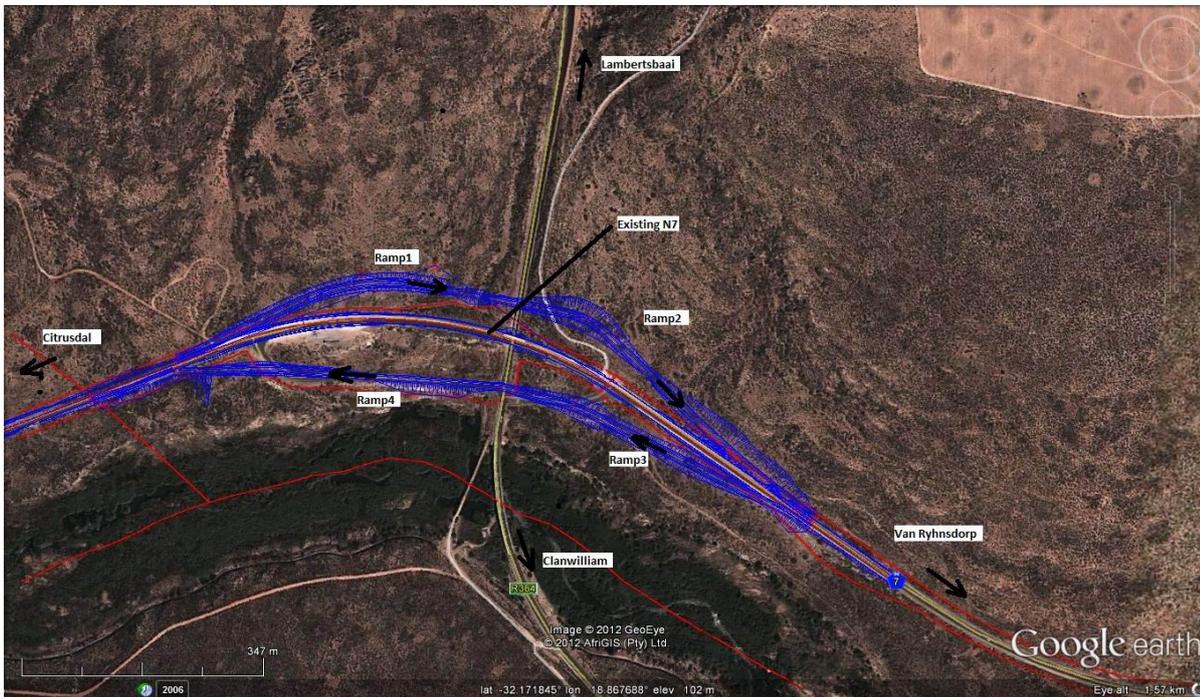


Figure 1. The location of the study area.

Method

Locality details were provided. A desktop study was conducted, by Dr G. Avery, Archaeozoologist. Details of the underlying sediments are derived from 1:250 000 Geological Series 3218 Clanwilliam (Figure 2).

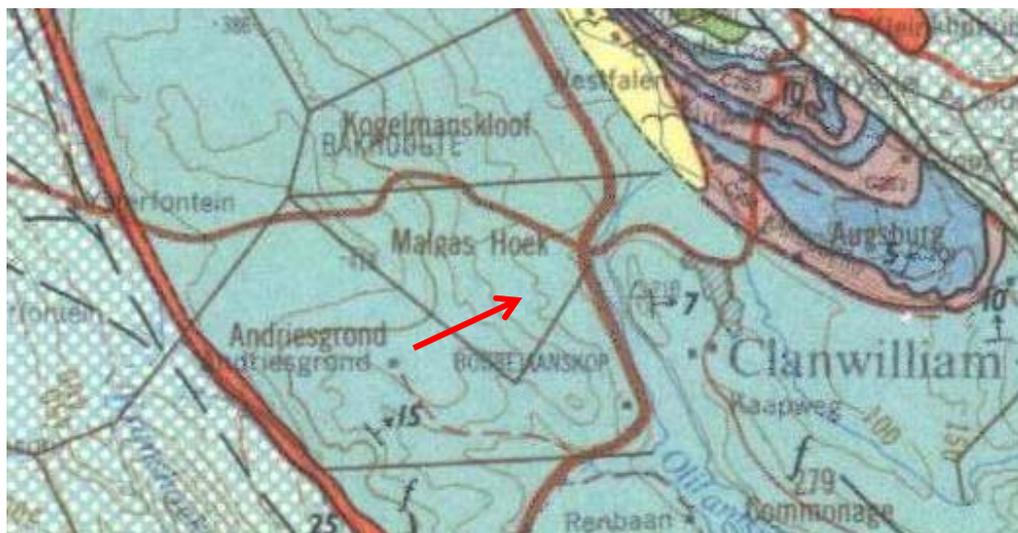


Figure 2. Section of 1:250 000 Geological Series 3218 Clanwilliam (location of proposed new interchange arrowed).

Results of Survey

The surrounding area is relatively hilly and the rock substrate is Cape Super Group Table Mountain Series quartzitic sandstone with thin shale and conglomerate lenses; these are ancient and do not normally preserve fossils. To the east, the land surface slopes down to the Olifants River. Although there is a covering of sandy soil in places, the possibility that recent fossils or sub-fossils will be encountered during any excavations in these sediments is minimal. Nevertheless, the 'round', raised hummocks (known as 'heuweltjies'), which are evident on Figure 1 as scattered light patches do raise the possibility that fossils may occur in undisturbed examples. These features are considered to be remnants of fossil termite mounds. Under suitable conditions termite nests themselves can be preserved (Moore and Picker, 1991, Lovegrove and Siegfried, 1989). In addition, aardvarks are known to burrow into termite nests. Their burrows may subsequently be occupied by bone-accumulating animals, such as hyaenas and porcupines and, since the nests tend to become calcareous, may preserve bones.

It is not clear whether tributaries of the Olifants River intersect the proposed area. It should be noted that alluvial deposits may include sand and gravel sediments that could contain fossils and/or sub-fossils. The presence of heuweltjies and any alluvial deposits within the proposed area, should be carefully assessed when the upgrade is approved.

It is possible that fossils or sub-fossils of interest could be encountered during any excavation that cuts into undisturbed sediments; younger sediments may contain ancient wetland deposits and/or more-recent fossils. Small pockets of bone can occur in older dunes and alluvium, for instance, or where bone accumulators like hyaenas, jackals or porcupines used holes/burrows dug by aardvarks.

While the occurrence of fossils in underlying hard rock sediments in the area concerned is unlikely, any excavation that penetrates into Pleistocene or Recent sediments may have potential; Collaboration between the contractor and a suitably-qualified palaeontologist will be required when sufficient detail is available for more-accurate assessment of the approved upgrade and decision making regarding the necessity (or not) of monitoring during construction.

Comments

Occurrence of palaeontological material in the proposed interchange is unlikely. Geotechnical information and details of the depth to which any excavations will extend would assist in assessing whether and where monitoring of alluvial deposits will be necessary.

While it is unlikely that fossils will be encountered, it should be borne in mind that small pockets of bone can occur in younger deposits where bone accumulators like hyaenas, jackals or porcupines used holes/burrows dug, for instance, by aardvarks.

Good communication with the developer and contractors regarding the need for on-site monitoring during excavations will be required.

Permits from the appropriate Heritage agencies will be required should fossil remains be encountered. To prevent possible delays, these should preferably be obtained ahead of any construction activity.

Conclusion

The likelihood that palaeontological remains will be encountered during the proposed upgrade of the N7 between Clanwilliam and Trawal is minimal but, if encountered, such material is important and must be recorded by an appropriately-qualified person.

Provided that the recommendations in this report are followed, current information indicates that the proposed upgrade will not impact significantly on palaeontological remains. Appropriately conducted the development may provide opportunities to access rare fossil material and to better understand the local Quaternary sequence.

From the palaeontological perspective the development can be allowed to proceed.

Recommendations

If possible, geotechnical information together with the proposed depths of excavations for bridge foundations should be provided prior to the commencement of construction. This may enable a better estimation of the time(s) when/if monitoring might be necessary.

If deemed necessary, areas where fossils may be encountered should be monitored; to minimize time spent on site the frequency of monitoring is to be worked out *a priori*, once approval is given, by an appropriately-qualified palaeontologist and the applicant/contractor.

Protocols for dealing with palaeontological/palynological monitoring/mitigation must be included in the Environmental Management Plan (EMP). Any such material is likely to be fragile and due care must be exercised.

Any material recovered will be lodged in the palaeontological collections of Iziko South African Museum.

Funds must be available *a priori* to cover costs.

6. Heritage Permits Required

The primary heritage legislation that needs to be considered is The South African Heritage Resources Act 25 of 1999 and regulations (details at www.sahra.org.za).

Clearance in terms of the National Heritage Act of 1999 and Amendments will be required before the development can proceed.

To obviate possible delays should fossil material be encountered, a permit from the Western Cape Provincial Heritage Agency must be applied for ahead of construction. This would enable the monitor to readily recover material, should it be encountered during construction activities.

7. References

Norman, N., Whitfield, G., 2006. Geological Journeys, Struik, Cape Town.

Moore, J.M., Picker, M.D., 1991. Heuweltjies (earth mounds) in the Clanwilliam District, Cape Province, South Africa: 4000-year-old termite nests, *Oecologia* 86, 424-432.

Lovegrove, B.G., Siegfried, W.R., 1989. Spacing and origin(s) of Mima-like earth mounds in the western Cape Province of South Africa, South African Journal of Science 85, 108-112.



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Email: Dr.G.Avery@gmail.com

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Honorary Associate: Iziko Museums, Natural History Collections Department

Honorary Research Associate: University of Cape Town, Archaeology Department

APPENDIX 5: SECTION 35 PERMIT APPLICATION FORM

Annexure B

APPLICATION FOR AN ARCHAEOLOGICAL PERMIT

TO DESTROY, DAMAGE, EXCAVATE, ALTER, DEFACE OR OTHERWISE DISTURB ANY
ARCHAEOLOGICAL SITE,

OR

DESTROY, DAMAGE, EXCAVATE, REMOVE FROM ITS ORIGINAL POSITION,

OR

COLLECT ANY ARCHAEOLOGICAL MATERIAL OR OBJECT

OR

BRING ONTO OR USE AT AN ARCHAEOLOGICAL SITE ANY EXCAVATION EQUIPMENT OR ANY
EQUIPMENT THAT ASSISTS IN THE DETECTION OR RECOVERY OF METALS OR ARCHAEOLOGICAL
MATERIAL OR OBJECTS,

PROTECTED IN TERMS OF SECTION 35(4) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25
OF 1999)

FILL IN ALL SECTIONS RELATING TO YOUR APPLICATION.

1. DETAILS OF ARCHAEOLOGICAL SITE

- 1.1 Name and physical address of site:
- 1.2 Erf/Stand/Farm name and number:
- 1.3 Type of site (Provide a short description of the site, on a separate sheet):
- 1.3.1 Period, era, age or date of site:
- 1.4 Magisterial district in which the site, place or structure is situated (essential):
- 1.4.1 Planning authority (if known):
- 1.5 Is the site a declared provincial heritage site or provisionally protected place? YES / NO
If so, please attach a photocopy of the gazette notice or provide the following information:
- 1.5.1 Date of notice of declaration or provisional protection in the *Government Gazette* or *Provincial Gazette* (dd/mm/yy)
(if known):
- 1.5.2 Number of notice of declaration or provisional protection in the *Government Gazette* or *Provincial Gazette* (if
known):
- 1.5.3 Number of *Government Gazette* or *Provincial Gazette* (if known):
- 1.5.4 Date of publication of the *Government Gazette* or *Provincial Gazette* (dd/mm/yy) (if known):
- 1.6 Current use of property:
- 1.7 Cadastral or geographical co-ordinates of the site, place or structure (Mark the position of the site on a copy of a
1:10 000 map / aerial photograph or a 1:50 000 map and include this in your application):
- 1.7.1 Name and number of 1:50 000 (or larger scale) map:
- 1.7.2 Latitude and longitude (where possible supply decimal version):
- 1.7.3 Spatial Referencing System:
 Global position Datum: Old Cape / WGS84 / Other (Please specify date of reading):
- Trigonometry Date of map:
- Other Date of recording:

2. DETAILS OF THE APPLICANT

- 2.1 Name and Title:
- 2.2 Address:
- 2.3 Postal code:

- 2.4 Contact numbers:
- 2.4.1 Telephone area code: (.....) Telephone number: (w) (h)
- 2.4.2 Facsimile area code: (.....) Facsimile number:
- 2.4.3 Cellular phone number:
- 2.4.4 E-mail:
- 2.5 Qualifications and experience of the applicant:
- 2.6 Current academic status of the applicant:
- 2.7 Identity number / Passport number of the applicant:

2.8 Declaration of applicant: I, hereby declare that I undertake to comply with the conditions and restrictions or directions under which Heritage Western Cape may issue the permit for which I am applying.

Signature of applicant: _____ Date:

2.9 Declaration of Research Supervisor if applicant is a research student:
I, hereby declare that I will support this project and will assist the student to comply with the conditions and restrictions or directions under which Heritage Western Cape may issue the permit for which this student is applying.

Signature of Research Supervisor: _____ Date:

3. NAME AND ADDRESS OF AUTHORISED REPRESENTATIVE(S) OF THE APPLICANT WHO WILL BE PERMANENTLY ON SITE DURING THE ACTION

- 3.1 Name and Title:
- 3.2 Address:
- 3.3 Postal code:
- 3.4 Contact Details:
- 3.4.1 Telephone area code: (.....) Telephone number:
- 3.4.2 Facsimile area code: (.....) Facsimile number:
- 3.4.3 Cellular phone number:
- 3.4.4 E-mail:
- 3.5 Identity number:
- 3.6 Qualifications and/or relevant experience of authorised representative/s:

3.7 Will the authorised representative/s undertake the actions under supervision of the applicant? Yes/No
3.8 Declaration: I, hereby declare that I will undertake the actions under the supervision of the applicant.

Signature of authorised representative: _____ Date:

4. DETAILS OF THE REGISTERED OWNER OF THE SITE (A letter from the owner giving the following details and comment on the planned action may be submitted)

- 4.1 Name and Title:
- 4.2 Address:
- 4.3 Postal code:
- 4.4 Contact detail
- 4.4.1 Telephone area code: (.....) Telephone number:
- 4.4.2 Facsimile area code: (.....) Facsimile number:
- 4.4.3 Cellular phone number:
- 4.4.4 E-mail:
- 4.5 Identity number:

4.6 Declaration: I, am fully aware of this application and accept its contents.

Signature of owner: _____ Date:

4.7 Comments from owner on planned action (if any)

5. PURPOSE OF THE APPLICATION (place a cross in the appropriate block(s) below)

- 5.1 Type of work/Nature of activity:
 - 5.1.1 Destruction for the purpose of:
 - Analysis Dating Restoration Other
 - 5.1.2 Damage for:
 - Analysis Dating Restoration Other
 - 5.1.3 Excavation
 - 5.1.4 Alteration
 - 5.1.5 Defacement
 - 5.1.6 Disturbance
 - 5.1.7 Removal from its original position
 - 5.1.8 Collection
 - 5.1.9 Use of excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological material or objects
(If relevant, provide a motivation for the use of mechanical excavation equipment or any equipment that assists in the detection or recovery of metal or archaeological material or objects.)
 - 5.1.10 Removal of graffiti at a rock art site
- 5.2 Period for which the permit is required (maximum three years)/ Proposed date of completion of activity:
From: To:
- 5.4 Re-application for permit Date and number of previous permit: (dd/mm/yy)

6. DESCRIPTION OF AND MOTIVATION FOR THE ACTION PROPOSED

(Provide a short description of the proposed action which must be supported by the documentation specified in 7 and 9 hereunder, as well as a full motivation for the proposed action, with reference to conservation policy and/or principles, where appropriate.)

7. DETAILS OF COLLABORATING INSTITUTION WHERE THE APPLICANT WILL BE BASED WHILE UNDERTAKING THE PROJECT

- 7.1 Name of the collaborating institution:
- 7.2 Name and Title of Head of the collaborating institution:
- 7.3 Identity number of the Head of the collaborating institution:
- 7.4 Address:
- 7.5 Postal code:
- 7.6 Telephone area code: (.....) Telephone number:
- 7.7 Facsimile area code: (.....) Facsimile number:
- 7.8 Cellular phone number:
- 7.9 E-mail:
- 7.10 Declaration of the Head of the collaborating institution: I,
in my capacity as of the
hereby declare that the applicant will be based at this institution while undertaking the project and that I support the application.

Signature of the Head of the collaborating institution: _____ Date:.....

DETAILS OF THE COLLABORATING INSTITUTION WHERE MATERIALS AND RECORDS WILL BE STORED AND CURATED

- 8.1 Name of the collaborating institution:
- 8.2 Name and title of Head of the collaborating institution:
- 8.3 Identity number of the Head of the collaborating institution:
- 8.4 Address:.....
- 8.5 Postal code:.....
- 8.6 Telephone area code: (.....) Telephone number:
- 8.7 Facsimile area code: (.....) Facsimile number:
- 8.8 Cellular phone number:
- 8.9 E-mail:
- 8.10 Declaration of the Head of the collaborating institution: I,
in my capacity as of the

.....hereby declare that the collaborating institution has an official written collections policy and undertakes to store and curate the material and records from this project, once completed.

Signature of the Head of the collaborating institution: _____ Date:

DOCUMENTATION TO ACCOMPANY THIS APPLICATION

- 9.1 LOCALITY PLAN showing where the site is and a SITE PLAN showing the layout of the property and pertinent features relevant to the planned action.
- 9.2 SITE DESCRIPTION (see 1.3).
- 9.3 PROJECT DESCRIPTION AND MOTIVATION including relevant scientific background, motivation for use of mechanical equipment and plans for conservation of the site after the planned action (see 6) including plans for conservation of the site after the action.
- 9.4 VISUAL AIDS including photographs, videos of the site in its present form, where appropriate. Please provide captions and dates to all photographs.
- 9.5 Details and outcome of any PREVIOUS SUBMISSIONS made to any other authority (the former National Monuments Council (NMC), SAHRA, etc.) in respect to this application.
- 9.6 ANY ADDITIONAL PERTINENT INFORMATION that you believe will assist Heritage Western Cape to consider your application.

PLEASE NOTE:

- 10.1 Unless both the applicant and the head of the department / head of the institution which curates the material, sign the application form, and the registered owner either signs or supplies a letter approving the project, this form will not be processed by Heritage Western Cape.
- 10.2 **Applications are considered to be public documents and are open to public scrutiny. Should you wish your application to be kept confidential, please motivate your request on a separate sheet.**

When completed, please return this form to:

The Secretariat
Heritage Western Cape Permit Committee
Private Bag X9067
CAPE TOWN
8000

Telephone: 021 424-0410
Fax 021 424-0457

