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## **PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT PROPOSED UPGRADING OF ROAD R72: SECTION PORT ALFRED TO KEISKAMMA**



*Assessment conducted under:*

**Section 35(4) of the National Heritage Resources Act No. 25 of 1999**

*Commissioned by:*

**Royal Haskoning DHV for SANRAL and African Heritage Resources**

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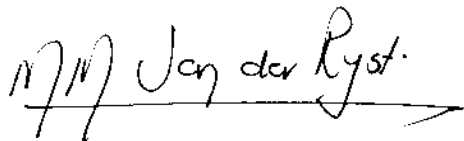
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## Executive summary

### Purpose

This report details the results of a Phase 1 Archaeological Impact Assessment (AIA) commissioned by Royal Haskoning DHV for the South African National Roads Agency Limited (SANRAL).

### Terms of Reference

African Heritage Resources was requested to conduct a heritage survey within the road reserve of the existing R72 Road from Port Alfred to the Keiskamma River bridge in the Eastern Cape Province and provide a report on possible sites of heritage significance in terms of the National Resources Heritage Act No. 25 of 1999. It is the intension SANRAL to upgrade this section of road; the exact **nature and extent** of the **road upgrades** were unknown at the time of the survey. The survey was conducted to establish the range and importance of archaeological and heritage resources and features, the potential impact of the development and to make recommendations to minimize impact on recorded sites.

### Methodology

A number of research methods were used. We firstly consulted a combination of Bing and Google earth data sources of the area to provisionally locate structural features and/or any areas of potential heritage sensitivity. A systematic literature search of relevant published sources was undertaken before and after the AIA. During the AIA we first visited the cultural history museum in Port Alfred to gain a broad impression of heritage resources within the region. The methodology applied during the actual AIA was to drive/walk the distance of 70 km between Port Alfred and the Keiskamma River focusing first on the reserve on the western side of the road and then coming back from the Keiskamma River focusing on the eastern side of the existing reserve. The vegetation in the area being typically costal thicket is extremely dense along sections of the road. All open areas along the road were fieldwalked. Areas with attributes that signal possible heritage remains were intensively searched (invader trees, large trees, areas around rivers, areas of disturbance, etc.); road cuttings were inspected for artefactual remains; potential paleontological sources recorded and nearby historic structures photographed.

### Summary

During the survey of the proposed road upgrade no archaeological or cultural heritage resources were recorded. From the literature review it is however evident that the study area is of high

cultural significance with numerous resources recorded previously. A road reserve takes up a relatively narrow swathe of land that may not have surface evidence of heritage resources. The dense vegetation cover severely restricts visibility of heritage features. Other researchers have also remarked on the often low archaeological visibility in the Eastern Cape on account of a generally dense tree and grass cover (Feely 1987). Prehistoric sites and features are often only revealed when vegetation cover and soils have been removed. The prehistory of this part of the Eastern Cape is also to some extent under-researched. Archaeological deposits, prehistoric living sites and special activity areas frequently occur below ground level.

In the following section we contextualize the palaeontology, prehistory and recent history of the region to demonstrate that some important cultural resources have been previously recorded in the study area. Note that a copy of this report will be lodged with SAHRA as stipulated by the NHRA Act No. 25 of 1999, Section 38 (especially subsection 4).

***Note: The position of potential borrow pits was unknown at the time of the field survey. Accordingly a follow-on assessment will have to be undertaken for these.***

### **Recommendation**

No archaeological deposits, heritage features, structures older than 60 years, burial grounds or graves have been recorded during the AIA. From a heritage perspective the impacts associated with the road construction are considered to be of **low significance** as the upgrade will not have any direct negative impacts on known heritage resources. There is however a **high probability** of finding/exposing heritage and paleontological resources during the construction phase given the rich historical and palaeontological contexts. It is subsequently recommended that the construction phase of the project proceed subject to the following conditions:

- The R72 traverses an area with a rich prehistorical and historical history. Overall the area has a low archaeological visibility. Most archaeological occurrences that have been previously recorded manifested as sub-surface deposits following on construction and development activities. There is a relatively high possibility of encountering cultural artefacts along this 70 km stretch of road. At this stage the nature and extent of the road upgrade has not been finalized. It is therefore recommended that a risk-cautious approach be followed.

- Based on the extensive archaeological and palaeontological record that has been recorded for the Eastern Cape and the data gathered through our literature research we recommend that a watching brief should be instituted during road construction (i.e. a professional archaeologist must inspect construction areas during the removal of topsoil or excavation).
- In the event that future construction activities reveal any buried sites or skeletal material, development activities should be halted and SAHRA or a university or museum notified in order for an investigation and assessment of the find(s) to take place (cf. National Heritage Resources Act (NHRA) Act No. 25 of 1999, Section 36(6)).

## Glossary and acronyms

**AIA** Archaeological Impact Assessment

**EIA's** Environmental Impact Assessments

**HIA** Heritage Impact Assessment

**Archaeological remains** can be defined as any features or objects resulting from human activities, which have been deposited on or in the ground, reflecting past ways of life and are older than 100 years.

**Conservation** as used in this report in relation to heritage resources 'includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance' (NHRA 1999: Act 25:2iii).

**Cultural significance** means 'aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance' (NHRA 1999: Act 25:2(vi)).

**Development** means any 'physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being' (NHRA 1999: Act 25:2(viii)).

**Heritage.** Heritage resources have lasting value in their own right and provide evidence of the origins of South African society. They are limited and non-renewable. The National Heritage Resources Act section 32, p. 55 defines these as an 'object or collection of objects, or a type of object or list of objects, whether specific or generic, that is part of the national estate and the export of which SAHRA deems it necessary to control, may be declared a heritage object'.

These include historical places, objects of archaeological, cultural or historical significance; objects to which oral traditions are attached and which are associated with living heritage; objects of scientific value, fossils, etc.

**NHRA.** National Heritage Resources Act.

**SAHRA.** South African Heritage Resources Agency.

**The Act** means the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

**The Stone Age:** **ESA** (Earlier Stone Age), **MSA** (Middle Stone Age), **LSA** (Later Stone Age).

## LIST OF ABBREVIATIONS

ASAPA	Association for South African Professional Archaeologists
AIA	Archaeological Impact Assessment
BP	Before Present
EIA	Environmental Impact Assessment
ESA	Earlier Stone Age
HIA	Heritage Impact Assessment
LSA	Later Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act No.25 of 1999, Section 35
SAHRA	South African Heritage Resources Association

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## 1 The Phase 1 AIA

The heritage practitioners were contracted to conduct a heritage survey and provide a report on any possible archaeological occurrences, built structures older than 60 years, burial grounds and graves, graves of victims of conflict and landscapes with cultural and intangible significance within the area of the proposed upgrading of the Port Alfred-Keiskamma section of the R72 Road, Eastern Cape Province. Archaeological Impact Assessments (AIAs) are required by the *National Heritage Resources Act* (NHRA) (Act No. 25 of 1999) and conducted in terms of the *SAHRA APM Guidelines: Minimum Standards: Archaeological and Palaeontological Components of Impact Assessment Reports* (2007).

During the AIA a distance of 70 km, including the road reserve, was surveyed along the Port Alfred and Keiskamma road. The road reserve shows a mosaic of environments: very dense coastal vegetation with extremely low archaeological visibility, rehabilitated cuttings that have revegetated; a shoulder of grass, gravel and surface tar patches; areas where subsoil is exposed; mudstones, shale, quartzite and sandstone outcrops; and dunes with associated coastal thicket vegetation. The current removal of alien vegetation along some areas abutting the road reserve results in extensive but shallow subsurface disturbance. Village settlements, coastal recreation developments and farms with associated infrastructure and manmade impoundment occur along the Port Alfred-Keiskamma of road.



Figure 1 Typical road reserve, note the density of vegetation.

On account of the landscape attributes we would afford the section north of the Fish River to the Keiskamma a rating of higher sensitivity for possible surface and subsurface archaeological occurrences. Several estuary river mouths occur along this stretch of road. Stone Age and farming communities intensively utilized river basin habitats, rocky coasts and estuaries with productive marine resources and outcrops of stone suitable for the manufacture of stone tools. Such localities on the Port Alfred Road include, for example, the Fish River Mouth; Kleinemonde East, a temporarily

open/closed estuary (Froneman and Allen 2008); and Mgalwane River Mouth (Lindsay 1998). In the discussion of the archaeology (2.2) we note several references to collections of stone tools that originated from estuary localities such as the Fish River Mouth, Kleinemonde and the Keiskamma River Mouth that are now in the repository of the British Museum. This clearly demonstrates the utilization of these landscape features during the prehistoric period.



Figure 2 Fish River bridge. Note close proximity to the river mouth, an area with documented heritage resources.

During the AIA sources suitable for lithic production have been observed at Kleinemonde East and West. It is important to note that not only have Stone Age lithics been collected in the 1800s at Kleinemonde but that one of the first archaeological excavations undertaken in South Africa was in Stone Age deposits at this locality (Mitchell 1998; Cohen 1999). Please refer to the discussion of the archaeology of the region for more detail on the archaeological investigations undertaken at Kleinemonde. After the Birah River the road cuts through a number of outcrops that exhibits a succession of mudstones, shales and sandstones of the Witteberg Supergroup. Our investigation of the geological deposit suggests that it may potentially contain fossiliferous material and that these areas should be flagged (Fig. 3). A subsequent literature search confirmed that marine fossils were found at Birbury Farm (Gess 2007).



Figure 3 A succession of mudstones, shales and sandstones of the Witteberg Supergroup.

No structures older than 60 years have been identified in the built environment close to the road reserve. Only two historic farmsteads and associated outbuildings were recorded at some distance from the road towards the Keiskamma River. In another instance a row of sisal near the side of the road may suggest that the current road could have been built on some farmland.



Figure 4 Example of historical structures outside the road reserve.

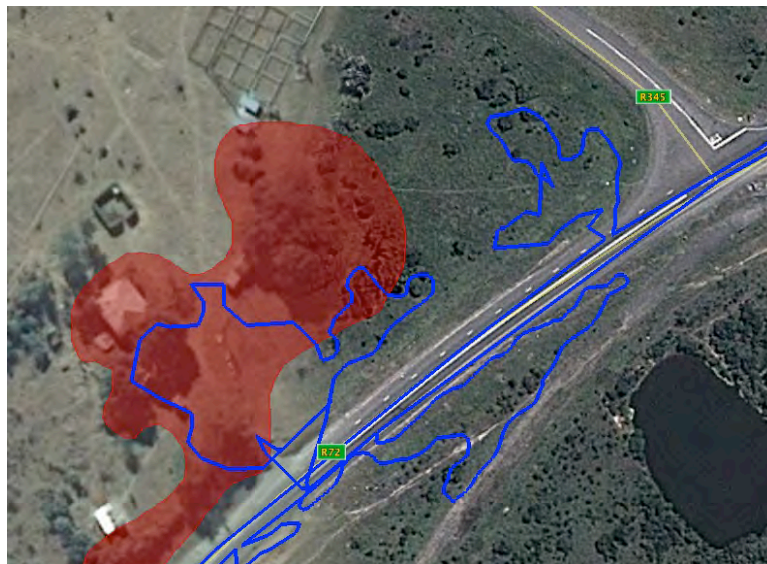


Figure 5 Instance of walked tracks in the vicinity of historical structures.

## **2 Overview of the palaeontology, prehistory and contact period history of the study area**

### **2.1 Palaeontology**

It is well known that the paleontological record of the Eastern Cape region includes plant and animal fossils. Andrew Geddes Bain (1797-1864), while overseeing the construction of roads in the then Cape Colony, made important contributions to the prehistory, geology and palaeontology of the Cape. He compiled the first geological map of the country. Bain also discovered fossil remains of plants and mammal-like reptiles in the rocks of the Karoo System. In the study area Bain found various plant fossils in 1857 during road building activities in the vicinity of the Kowie River where

the town of Port Alfred subsequently developed (Gess 2007). Shales of the Weltevrede Formation (a member of the Witteberg Group that comprises the uppermost subdivision of the Cape Supergroup) and the Pliocene limestones may potentially contain fossils (Gess 2007). Most of the known Devonian plant fossils were found in the Late Devonian-age shales within the lower Witteberg Group in the Eastern Cape (Gess 2007). The Witteberg sediments also contain marine invertebrates. A locality near Birbury Farm on the road between Port Alfred and Keiskamma delivered thousands of fossil shark teeth and a number of taxa from the Witteberg sediments (Gess 2007). In a report prepared for waste treatment facilities at Port Alfred, Gess (2007) cautioned that major excavations during future developments might expose potential fossiliferous deposits.

The palaeontology record was taken in consideration during the survey with the intention of raising awareness during the infrastructural activities of the proposed road improvement. Within the study area quartzites of the Weltevrede Formation shale outcrops and purplish sedimentary deposits were observed in some areas along the Port Alfred to Keiskamma road (Fig. 3).

## **2.2 Archaeology**

While no Stone Age tools or archaeological sites were recorded during the AIA, a visit to the Port Alfred Museum and a study of the literature confirm the prehistoric presence of humans in this area. Inland surface sites from all the Stone Age periods have been recorded from early on (Derricourt 1977). Stone tools catalogued from the 'Kasouga River', the 'Great Fish River Mouth' 'Kleinemonde' 'Tharfield' and the 'Keiskamma River Mouth' are housed at the British Museum (Mitchell 1998). Open-air sites, shell middens (some with pottery), and Middle Stone Age (MSA) lithics have been recorded at the Keiskamma River Mouth (Derricourt 1977; Mitchell 1998).

Bain also made a collection of Stone Age lithics from Kleinemonde. These are now in the repository of the British Museum (Mitchell 1998; [www.britishmuseum.org](http://www.britishmuseum.org)). Sir C. Lyell, who received some of the Kleinemonde lithics through his association with Bain, too donated the artefacts to this institution (Mitchell 1998). One of the first ever archaeological excavations in South Africa was also undertaken at Kleinemonde. When Thomas Holden Bowker was shown some European flint tools in 1857 or 1858 by Edgar J. Layard, the Curator of the South African Museum in Cape Town, Bowker recognized them as similar to lithics collected by him from Kleinemonde (Cohen 1999). Bowker not only relocated the stone tools in a barn, but went back to Kleinemonde where he conducted a small excavation on Bowker-owned land and recovered more stone tools (Cohen 1999). Layard (1872) published an account on some of the stone implements. His description is very vague, and it is of

more interest to quote what he wrote on Bowker: ...*'that he had not only picked up scores of similar flakes in the eastern province, but had, moreover, when a boy, actually used them as heads for his own arrows, finding them from their shape peculiarly adapted to his purpose, the usually concave form causing the arrow to spin like a rifle bullet and thus travel with greater accuracy'* (1872:xcviii). Some MSA tools collected by Atherstone at this locality are also housed in the British Museum collections (Mitchell 1998).

While Stone Age collections at the Albany Museum confirm a strong presence of Stone Age people over most of the Eastern Cape, the archaeology of this region remain under-researched (Binneman 2001, 2005; Binneman et al. 2010). Earlier Stone Age (ESA) lithics have been recorded in gravels of old river terraces of the Coega River and estuary (Binneman et al. 2010). ESA sites tend to occur near sources of water (Deacon and Deacon 1999). Excavations by Ray Inskeep in 1993 and Hilary Deacon in the 1970s were undertaken in a series of spring deposits at Amanzi Springs near Uitenhage where an ESA assemblage was found in a stratified deposit (Deacon 1993). Amanzi is a particular important ESA site, specifically because wood and seed material preserved remarkably well in the waterlogged conditions. At Amanzi the attributes of the assemblages, such as artefact density and the relative frequencies of completed bifaces in relation to roughouts, suggest a living site (Deacon 1993).

Archaeological deposits are often buried, and this should be borne in mind when excavations for the road upgrading are undertaken. At Aloes, east of Port Elizabeth, surface MSA tools and faunal material were found 1.5 metres below the surface during building construction (Gess 1969). The composition of the faunal assemblage from this locality suggests an anthropogenic origin (Gess 1969). Some river gravels and numerous surface localities in the Eastern Cape also contain MSA lithics (Deacon and Deacon 1999).

Holocene archaeological sites from the Later Stone Age (LSA) that date from the past 10 000 are associated with hunter-gatherers and Khoekhoe pastoralists. Hall (1990) produced a study on the hunter-gatherer-fishers of the Fish River Basin in which he demonstrates the extensive use of marine and riverine habitats. Most sites from this period are difficult to locate because they occur in areas of dense vegetation or are buried under sand dunes. Human remains have also been found in the dunes along the coast (Binneman et al. 2010). Caves and rock shelters were occupied during the LSA and may contain paintings along the walls (Booth 2012). During the R72 Road AIA several open cave or shelter mouths have been observed outside the road reserve along the higher ridges along the Port Alfred-Keiskamma road. According to Binneman et al. (2010) members of one of the last

hunter-gatherer groups in the Eastern Cape were killed in the 1880s by commandos in the Groendal area. This argues for the extensive occupancy of the region until relatively recent by hunter-gatherer groups.

Shell middens are conspicuous along beaches and river estuaries (Rudner 1968). Numerous shell middens have been recorded east of the Coega River Mouth (Binneman et al. 2010). They comprise extensive deposits of mostly marine shells and sometimes terrestrial resources gathered in the coastal and adjacent inland areas, cultural materials and infrequently also human remains. Some middens that have been sampled also yielded sherds of Khoekhoe pastoralist ceramics dating to the last 2000 years (Binneman et al. 2010). Indigenous farming communities too gathered marine resources (Derricourt 1975, 1977; Lasiak 1991; Lasiak and Field 1995). The brown mussel *Perna perna* were in particular harvested by these groups as attested by middens that contain mostly mussel shells.

The following schematic outline provides broad dates for the prehistoric occupation of southern Africa:

### Archaeological context: sequence and definitions

Period	Approximate dates
<b>Earlier Stone Age</b>	more than 2 million years ago - 250 000/200 000 years ago
<b>Middle Stone Age</b>	200 000/250 000 years ago – around 20 000 years ago to even the Last Glacial Maximum (LGM) in some regions
<b>Later Stone Age</b> (Includes San Rock Art) Hunter-gatherer and herder groups	>20 000/10 000 – 200 years ago and up to historic times in certain areas
<b>African farmer occupation</b>	From around 250 AD



## 2.3 Farming communities and colonial settler historiography

It is notable that the archaeology of indigenous farmer communities is underrepresented in museum collections in contrast to the abundance Stone Age assemblages (Derricourt 1997). In many museums it is the more recent history of the Xhosa that are exhibited, for example the museum at Port Alfred. Derricourt (1977) in his research on the area identified several ceramic traditions for the later prehistory that suggests different cultural entities. A vast body of literature exists on the complex historiography of black communities in the Eastern Cape. Tourism endeavours even market the region as the 'Frontier Country' on account of the many conflicts that arose from interactive relationships between inmoving colonists and farming groups (Cornwell 2003). As a result of the expansion of the Cape Colony to the east white colonists were encourage to settle in the area from the 1820s onwards. The R72 road also crosses a number of the farms allocated to the 1820 settlers but no historical resources were recorded at these localities.



Figure 6 Historical photograph of the Port Alfred wharf and pont.

A range of segregationist strategies was applied since 1805 to deal with African polities and later adapted in response to Xhosa resistance (Lester 1997). Frontier zones were further reinforced by importing settlers to occupy buffer areas (Crais 1991). These included British, Scottish and German settlers, accounting for many of the foreign place names in the region. The role of missionary endeavours in the Eastern Cape was also of prime importance.

The delimitation of frontiers had limited success, as boundaries are movable zones that were transgressed by both colonist groups and the Xhosa. The initial separationist zone of economic, social and cultural separation proved to be unattainable (Lester 1997). Hybrid assimilation strategies

were adopted that allowed more permeable zones. Marginal zones are however transient and the strategic objectives of the various role players, such as economic and labour needs, cattle raiding and political strategies directed a range of interactive relationships. Clashes on the frontier resulted in nine frontier wars. In due course a network of forts was built to protect annexured territories. Spatial margins contracted and expanded following on the various wars. A limited resource base in terms of good grazing territories and water availability exacerbated internal conflict among the various Xhosa groups on top of clashes with the British and colonizers.

The suicide of many Xhosa in 1856-1867 emanated from the prophecies of Nongqawuse that called for the slaying of cattle and a discontinuation of agricultural practices. It is estimated that 400 000 head of cattle were killed and that around 40 000 people had to leave their homes in search of food (Peires 1987). Even before the cattle killing some would slaughter their cattle to prevent them dying from lung sickness, an epidemic that devastated cattle herds from 1855 onwards (Peires 1987). These factors contributed to the destruction of Xhosa military power and the resistance against colonist expansion. The autonomy of the various Xhosa chieftainships was eventually severely impounded.

All of these issues made for shifting discourse following on complex and multisided internal politics and economies that culminated in the destabilization of the Xhosa of the Eastern Cape accompanied by drastic cultural, social and economic change.

### **3 Legislative framework**

#### **3.1 Archaeological resources**

The National Heritage Resources Act (NHRA) (Act No. 25 of 1999, section 35) details the assessment and management of all heritage resources, including intangible heritage, in southern Africa. All archaeological remains, artificial features and structures older than 100 years and historic structures older than 60 years are protected by this Act. The legislation requires that all heritage resources, that is, all places or objects of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance are protected (SAHRA2007:2). No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the SAHRA.

Human remains older than 60 years are protected by the National Heritage Resources Act Section 36. Human remains that are less than 60 years old are protected by the Human Tissue Act (Act 65 of 1983 as amended).



The following sections of the South African Heritage Resources Act, 1999 (Act 25 of 1999) must be noted:

**Structures**

**34. (1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.**

**Archaeology, palaeontology and meteorite**

**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;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

**Burial grounds and graves**

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

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

## 4 Findings and recommendations

No archaeological deposits, heritage features, structures older than 60 years, burial grounds or graves have been recorded during the AIA. From a heritage perspective the impacts associated with the road construction are considered to be of **low significance** as the upgrade will not have any direct negative impacts on known heritage resources. There is however a **high probability** of finding/exposing heritage and paleontological resources during the construction phase given the rich historical and paleontological contexts. It is subsequently recommended that the construction phase of the project proceed subject to the following conditions:

- The R72 traverses an area with a rich prehistorical and historical history. Overall the area has a low archaeological visibility. Most archaeological occurrences that have been previously recorded manifested as sub-surface deposits following on construction and development activities. There is a relatively high possibility of encountering cultural artefacts along this 70 km stretch of road. At this stage the nature and extent of the road upgrade has not been finalized. It is therefore recommended that a risk-cautious approach be followed.
- Based on the extensive archaeological and palaeontological record that has been recorded for the Eastern Cape and the data gathered through our literature research we recommend that a watching brief should be instituted during road construction (i.e. a professional archaeologist must inspect construction areas during the removal of topsoil or excavation).
- In the event that future construction activities reveal any buried sites or skeletal material, development activities should be halted and SAHRA or a university or museum notified in order for an investigation and assessment of the find(s) to take place (cf. National Heritage Resources Act (NHRA) Act No. 25 of 1999, Section 36 (6)).



Figure 7 Aerial photograph of the survey area with tracks and areas with highest probability to contain heritage resources shown in red.

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