

CULTURAL HERITAGE IMPACT ASSESSMENT OF THE MHLOPENI ROAD UPGRADE, MUDEN.



ACTIVE HERITAGE cc.

For: Hanslab (PTY)Lmt

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Declaration of Consultants independence

Frans Prins is an independent consultant to Hanslab (PTY) Lmt and has no business, financial, personal or other interest in the activity, application or appeal in respect of which he was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances whatsoever that compromise the objectivity of this specialist performing such work.



Frans Prins

LIST OF ABBREVIATIONS AND ACRONYMS

EIA	Early Iron Age
ESA	Early Stone Age
HISTORIC PERIOD	Since the arrival of the white settlers - c. AD 1820 in this part of the country
IRON AGE	Early Iron Age AD 200 - AD 1000 Late Iron Age AD 1000 - AD 1830
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998 and associated regulations (2006).
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999) and associated regulations (2000)
SAHRA	South African Heritage Resources Agency
STONE AGE	Early Stone Age 2 000 000 - 250 000 BP Middle Stone Age 250 000 - 25 000 BP Late Stone Age 30 000 - until c. AD 200

EXECUTIVE SUMMARY

A cultural heritage survey of the proposed upgrade of the Mhlopeni Road near Muden identified one Early Iron Age Site within 35m from the road reserve. It is important to maintain a buffer of at least 30m around this important site. Should this not be possible then a phase two heritage impact assessment must be initiated. Mitigation would involve a rescue excavation through a permit application process from the provincial heritage agency Amafa. Modern graves occur in the area but none are situated closer than 30m to the proposed road upgrade and they are therefore not threatened. The proposed development may therefore proceed on the remainder of the footprint as planned, however, attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act no 4 of 2008) which, requires that operations that expose archaeological or historical remains should cease immediately, pending evaluation by the provincial heritage agency.

1 BACKGROUND INFORMATION ON THE PROJECT

Table 1. Background information

Consultants:	Frans Prins of Active Heritage cc conducted the general Heritage Impact Assessment study.
Type of development:	<p>The Department of Transport (Applicant) proposes to upgrade an existing mud track to a Type 7A gravel road along Mhlopeni Local Road within the Umvoti Local Municipality. This upgrade will involve the construction of pipe culverts, a slab structure & a causeway structure that will facilitate the natural flow of water within the drainage channels.</p> <p>There is an urgent need to ensure safe and reliable means of access for both vehicles and pedestrians. The construction of the causeway structure will also make travelling for basic amenities, education and work feasible for local community members. The existing crossing is prone to flooding particularly during periods of high rainfall, thus limiting the access to basic amenities. Once construction is complete the causeway will allow for public transport modes to cater for local communities efficiently and allow for quick response from the police and emergency services.</p>
Rezoning or subdivision:	Not applicable
Terms of reference	To carry out a Heritage Impact Assessment. The Paleontological Impact Assessment of the footprint is reported in Appendix 1.
Legislative requirements:	The Heritage Impact Assessment was carried out in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and following the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the KwaZulu-Natal Heritage Act, 1997 (Act No. 4 of 2008)

1.1. Details of the area surveyed:

The proposed road development is situated near Muden in the Umvoti Local Municipality (Figs 1 & 2). It is situated in a communal area with Zulu homesteads dotted along the existing mud track and further afield (Figs 5 & 6). The Department of Transport (Applicant) proposes to upgrade the existing mud track to a Type 7A gravel road. The GPS coordinates for the proposed road upgrade are:

Start: S 28° 58' 24" E 30° 24' 11"

End: S 29° 00' 08" E 30° 23' 56"

This road upgrade will involve the construction of pipe culverts, a slab structure & a causeway structure that will facilitate the natural flow of water within the drainage channels. The GPS coordinates for the associated road developments are given in Table 2.

Table 2. GPS coordinates of associated structures on the proposed road upgrade.

Location of the pipe culverts, slab & causeway structure:	Latitude (DDMMSS)	Longitude (DDMMSS)
Drainage Line 1	28° 58' 35" S	30° 24' 11" E
Major Drainage Line 2 (Slab Structure)	28° 58' 40" S	30° 24' 16" E
Major Drainage Line 3 (Pipe Culvert):	28° 58' 45" S	30° 24' 12" E
Drainage Line 4 (Pipe Culvert):	28° 58' 47" S	30° 24' 11" E
Drainage Line 5 (Pipe Culvert):	28° 58' 50" S	30° 24' 05" E
Drainage Line 6 (Pipe Culvert):	28° 58' 58" S	30° 23' 49" E
Drainage Line 7 (Pipe Culvert):	28° 59' 18" S	30° 23' 34" E
Drainage Line 8 (Pipe Culvert):	28° 59' 27" S	30° 23' 37" E
Drainage Line 9 (Pipe Culvert):	28° 59' 30" S	30° 23' 35" E
Drainage Line 10 (Pipe Culvert):	28° 59' 47" S	30° 23' 37" E
Drainage Line 11 (Pipe Culvert):	28° 59' 56" S	30° 23' 38" E
Drainage Line 12 (Pipe Culvert & Damage to Existing Gabion Structure)	28° 59' 58" S	30° 23' 43" E
Drainage Line 13 (Pipe Culvert):	29° 00' 00" S	30° 23' 45" E
Drainage Line 14 (Pipe Culvert):	29° 00' 01" S	30° 23' 47" E
Drainage Line 15 (Causeway):	29° 00' 03" S	30° 23' 51" E
Drainage Line 16 (Pipe Culvert)	29° 00' 07" S	30° 23' 54" E
End Point & Drainage Line 17 (Pipe Culvert):	29° 00' 08" S	30° 23' 56" E

2 BACKGROUND TO ARCHAEOLOGICAL HISTORY OF AREA

The archaeological history of the Province of KwaZulu-Natal (KZN) dates back to about 2 million years and possibly older, which marks the beginning of the Stone Age. The Stone Age in KZN was extensively researched by Professor Oliver Davies formerly of the Natal Museum. The Stone Age period has been divided in to three periods namely: Early Stone Age (ESA) dating between 2 million years ago to about 200 000 years ago, Middle Stone Age (MSA) dating between 200 000 years ago to about 30 000 years ago, and the Later Stone Age (LSA)

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which dates from 30 000 to about 2 000 year ago. The Stone Age period ends around approximately 2 000 years ago when Bantu speaking Age farmers from the north arrived in southern Africa. The Iron Age is also divided into three periods, namely: Early Iron Age (EIA) dating between AD 200 and AD 900, Middle Iron Age (MIA) dating between AD 900 and AD 1300, Late Iron Age (LIA) dating between AD 1 300 and 1 820.

2.1 Stone Age

2.1.1 Early Stone Age (ESA)

The ESA is considered as the beginning of the stone tool technology. It dates back to over 2 million years ago until 200 000 years ago. This period is characterised by Oldowan and Acheulean industries. The Oldowan Industry, dating to approximately between over 2 million years and 1.7 million years predates the later Acheulean. The Oldowan Industry consists of very simple, crudely made core tools from which flakes are struck a couple of times. To date, there is no consensus amongst archaeologists as to which hominid species manufactured these artefacts. The Acheulean Industry lasted from about 1.7 million years until 200 thousand years ago. Acheulean tools were more specialized tools than those of the earlier industry. They were shaped intentionally to carry out specific tasks such as hacking and bashing to remove limbs from animals and marrow from bone. These duties were performed using the large sharp pointed artefacts known as handaxes. Cleavers, with their sharp, flat cutting edges were used to carry out more heavy duty butchering activities (Esterhuysen, 2007). The ESA technology lasted for a very long time, from early to middle Pleistocene and thus seems to have been sufficient to meet the needs of early hominids and their ancestors. ESA tool occurrence has been reported in open air context on seven sites in the greater Weenen area. None of these sites occur on the actual footprint. Apart from stone artefacts, the ESA sites have produced very little as regards other archaeological remains. This has made it difficult to make inferences pointing to economical dynamics of the ESA people in this part of the world. The diet of ESA peoples has therefore had to be reconstructed on the basis of evidence from elsewhere that it comprised primarily of animal and plant foods (Mazel 1989).

2.1.2 Middle Stone Age (MSA)

The MSA dates to between 200 000 and 30 000 years ago, coinciding with the emergence of modern humans. The MSA technology is therefore believed to have been manufactured by fully modern humans known as *Homo sapiens* who emerged around 250 000 years ago. While some of the sites belonging to this time period occur in similar contexts as those of ESA, most of the MSA sites are located in rock shelters. Palaeoenvironmental data suggest that the distribution of MSA sites in the high lying Drakensberg and surrounding areas was influenced

by the climate conditions, specifically the amount and duration of snow (Carter, 1976). In general, the MSA stone tools are smaller than those of the ESA. Although some MSA tools are made from prepared cores, the majority of MSA flakes are rather irregular and are probably waste material from knapping exercises. A variety of MSA tools include blades, flakes, scrapers and pointed tools that may have been hafted onto shafts or handles and used as spearheads. Between 70 000 and 60 000 years ago new tool types appear known as segments and trapezoids. These tool types are referred to as backed tools from the method of preparation. Residue analyses on the backed tools from South African MSA sites including those in KZN indicate that these tools were certainly used as spear heads and perhaps even arrow points (Wadley, 2007). A few sites with impressive MSA deposits have been excavated in KZN. Perhaps the best known ones are Sibudu Cave and Umhlatuzana Cave to the south east of the study area, and Border Cave to the north of the study area. All these sites provided impressive evidence for fine resolution data and detailed stratigraphy (Wadley & Jacobs, 2006). Fourteen Middle Stone Age sites have been recorded in the greater Muden area. These, like the Early Stone Age sites, are mostly restricted on open air sites with little archaeological context remaining. None of the known Middle Stone Age sites occur on the footprint, however, four sites occur within 1km from the start of the proposed road upgrade.

2.1.3 Late Stone Age (LSA)

Compared to the earlier MSA and ESA, more is known about the LSA which dates from around 30 000 to 2 000 (possibly later) years ago. This is because LSA sites are more recent than ESA and MSA sites and therefore achieve better preservation of a greater variety of organic archaeological material. The Later Stone Age is usually associated with the San (Bushmen) or their direct ancestors. The tools during this period were even smaller and more diverse than those of the preceding Middle Stone Age period. LSA tool technology is observed to display rapid stylistic change compared to the slower pace in the MSA. The rapidity is more evident during the last 10 000 years. The LSA tool sequence includes informal small blade tradition from about 22 000 – 12 000 years ago, a scraper and adze-rich industry between 12 000 – 8 000 years ago, a backed tool and small scraper industry between 8 000 – 4 000 years and ending with a variable set of other industries thereafter (Wadley, 2007). Adzes are thought to be wood working tools and may have also been used to make digging sticks and handles for tools. Scrapers are tools that are thought to have been used to prepare hides for clothing and manufacture of other leather items. Backed tools may have been used for cutting as well as tips for arrows. It was also during Later Stone Age times that the bow and arrow was introduced into southern Africa – perhaps around 20 000 years ago. Because of the bow and arrow and

the use of traps and snares, Later Stone Age people were far more efficient in exploiting their natural environment than Middle Stone Age people. Up until 2 000 years ago Later Stone Age people dominated the southern African landscape. However, shortly after 2 000 years ago the first Khoi herders and Bantu-speaking agro pastoralists immigrated into southern Africa from the north. This led to major demographic changes in the population distribution of the subcontinent. San hunter-gatherers were either assimilated or moved off to more marginal environments such as the Kalahari Desert or some mountain ranges unsuitable for small-scale subsistence farming and herding. The San in the coastal areas of KZN were the first to have been displaced by incoming African agro pastoralists. However, some independent groups continue to practice their hunter gatherer lifestyle in the foothills of the Drakensberg until the period of white colonialisation around the 1840's (Wright & Mazel, 2007). According to the KwaZulu- Natal Museum archaeological database there are fourteen Later Stone Age sites in the greater Muden area. Although ten of these are surface scatters the remaining four are cave deposits in archaeological context. Also dating to the LSA period is the impressive Rock Art found on cave walls and rock faces. Rock Art can be in the form of rock paintings or rock engravings. The province of KZN is renowned for the prolific San rock painting sites concentrated in the Drakensberg. Rock art sites do occur outside the Drakensberg including the lower altitude areas towards Muden, however, these sites have not been afforded similar research attention as those sites occurring in the Drakensberg. Four rock art sites occur within 1km from the proposed road upgrade.

2.2 Iron Age

2.2.1 Early Iron Age (EIA)

Unlike the Stone Age people whose life styles were arguably egalitarian, Iron Age people led quite complex life styles. Their way of life of greater dependence on agriculture necessitated more sedentary settlements. They cultivated crops and kept domestic animals such as cattle, sheep, goats and dogs. Pottery production is also an important feature of Iron Age communities. Iron smelting was practised quite significantly by Iron Age society as they had to produce iron implements for agricultural use. However no smelting sites were discovered in the study area as it is the northern KZN that is rich in abandoned iron smelting sites (Maggs, 1989). Although Iron Age people occasionally hunted and gathered wild plants and shellfish, the bulk of their diet consisted of the crops they cultivated as well as the meat of the animals they kept. EIA villages were relatively large settlements strategically located in valleys beside rivers to take advantage of the fertile alluvial soils for growing crops (Maggs, 1989). The EIA sites in KZN date to around AD 500 to AD 900. Extensive research in the province, in the

greater Weenen and Muden areas, of this period led to it being divided in the following time lines according to ceramic styles (Maggs, 1989; Huffman 2007):

- _ Msuluzi (AD 500);
- _ Ndondondwane (AD 700 – 800);
- _ Ntshekane (AD 800 – 900).

The archaeological data base of the KwaZulu-Natal Museum indicates that ten Early Iron Age sites occur in the greater Muden area. Here they are situated at altitudes below 1000m adjacent to the Mooi, Mhlopeni and Msuluzi Rivers. The well-known and researched sites of Mhlopeni and Magogo (Maggs & Ward 1984) occurs in the immediate vicinity of the proposed road upgrade.

2.2.2 Late Iron Age (LIA)

The LIA is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stone wall settlements. However, in this part of the world, stone walls were not common as the Nguni people used thatch and wood to build their houses. This explains the failure to obtain sites from the aerial photograph investigation of the study area. Trade played a major role in the economy of LIA societies. Goods were traded locally and over long distances. The main trade goods included metal, salt, grain, cattle and thatch. This led to the establishment of economically driven centres and the growth of trade wealth. Keeping of domestic animals, metal work and the cultivation of crops continued with a change in the organisation of economic activities. Evidence for this stems from the fact that iron smelting evidence was not found in almost every settlement (Maggs, 1989; Huffman 2007). Twelve Later Iron Age sites occur in the greater Muden area. The majority of these were most probably inhabited by early Nguni-speaking agropastoralists before the Shakan era in the beginning of the 19th century. However, despite the occurrence of numerous sites in this area they, in contrast with the Early Iron Age sites, have not been well researched. Two Later Iron Age sites occur within 1km from the proposed road upgrade.

2.3 Historic Period

Oral tradition is the basis of the evidence of historical events that took place before history could be recorded. This kind of evidence becomes even more reliable in cases where archaeology could be utilised to back up the oral records. Sources of evidence for socio political organization during the mid-eighteenth to early nineteenth century in the study area and the larger former Natal Province suggest that the people here existed in numerous small-scale political units of different sizes, population numbers and political structures (Wright & Hamilton, 1989). This period was largely characterised by rage and instability as political

skirmishes broke due to the thirst for power and resources between chiefdoms. During the 2nd half of the eighteenth century, stronger chiefdoms and paramountcies emerged. However, these were not fully grown states as there was no proper formal central political body established. This changed in the 1780's when a shift towards a more centralized political state occurred. This shift was mainly characterized by population growth and geographical expansion of states. The most important and largest and strongest states at the time were the Mabhudu, Ndwandwe and Mthethwa. However, other smaller states, also established themselves in the area. These included in the south the Qwabe, Bhaca, Mbo, Hlubi, Bhele, Ngwane and many others (Wright & Hamilton, 1989). The greater Muden area was inhabited by the Thembu and Mcunu clans. The Zulu kingdom, established by King Shaka however remained the most powerful in the region in the early years of the 19th century. Shaka fought ruthlessly and often defeated his rivals and conquered their cattle, wives and even burnt their villages. Both the Tembu and Mcunu occupied the greater Muden area due to the expansionistic policies of the King Shaka.

These wars are often referred to as Difaqane and this period was characterised by rage and blood shedding. Shaka was assassinated in 1828 at which time he had transformed the nature of the society in the Natal and Zululand regions. He was succeeded by Dingaan (Wright & Hamilton, 1989). Dutch farmers unhappy with the British rule in Cape Town decided to explore into the interior of the country, away from British rule. Some groups remained in the Eastern Cape, others kept going and a few settled in the Orange Free State and the Transvaal. A great number, led by Piet Retief and Gerrit Maritz, crossed the Drakensberg into Natal.

Here they encountered the Zulus who lured them into a trap and brutally massacred many of them. This was only one of the many failures of the white settler expeditions in the frontier areas and when the shocking news reached the Cape, more groups were sent to the interior to revenge. A series of battles were fought but the most notable was the Battle of Blood River in 1838 where the Boers defeated the Zulus. This ended the Zulu threat to the white settlers and a permanent and formal settlement in Natal was established. However the Zulu kingdom remained independent for a couple of decades. The Republic of Natalia was annexed by the British in 1845 and in 1879 the Zulu kingdom was also invaded (Wright & Hamilton, 1989). The Anglo-Zulu War has been well recorded and an important occurrence took place at Keates Drift and Jamesons Drift, near the project area, when a few British soldiers attempted to cross the Tugela River after their defeat at the battle of Isandlwana. Although no relicts or artefacts survive from this encounter the surrounding landscape is still imbued with the meaning of this important period in the colonial history of KwaZulu-Natal. The Bambata Rebellion of 1906 saw

various incidents in the close vicinity of the project area. The most significant is perhaps the Bambata Rock Ambush that occurred approximately 20km from the project area.

2.3.1 Short history of Muden

In 1862 the missionary Reverend Heinrich Röttcher sailed to South Africa from Germany on a ship called the Candace. In the same year he trekked through the Midlands where he found and named Müden after his home town in Germany. In 1940 Heinrich's grandson – Vic Röttcher, an orange wine and lucerne farmer, built the Ivala Farmstead. Vic and his wife Nola had 3 children – Lorna, Gene and Denzil who grew up at Ivala. In 1975 Vic passed away and Nola in 1978, after which Denzil ran the farm. In 1982 Denzil passed away and the farm was sold to Mr. Luke Wenzel. During this period the orange wine industry in the Muden Valley suffered financially – largely due to the increasing crime in the area. Other farms in the area suffered the same fate and land issues saw many areas being claimed by the local community. With the collapse of the orange farming industry in the Muden valley some of the former farmsteads became bed and breakfasts and tourist ventures. The Mhlopeni Nature Reserve is another well-known private enterprise in the Muden area that has recently been subject to land claims.

3 BACKGROUND INFORMATION OF THE SURVEY

3.1 Methodology

A desktop study was conducted of the heritage databases housed in the KwaZulu-Natal Museum. In addition, the available archaeological and historical literature covering the greater Muden area was also consulted. The SAHRIS website was consulted to obtain information on previous heritage surveys and site data near the study area.

A ground survey, following standard and accepted archaeological procedures, was conducted by the consultant on the 28 March 2017.

3.2 Restrictions encountered during the survey

3.2.1 Visibility

No disturbance of any potential heritage features was noted.

3.3 Details of equipment used in the survey

GPS: Garmin Etrek

Digital cameras: Canon Powershot A460

All readings were taken using the GPS. Accuracy was to a level of 5 m.

4 DESCRIPTION OF SITES AND MATERIAL OBSERVED

4.1 Locational data

Province: KwaZulu-Natal

Town: Muden

Municipality: Umvoti Local Municipality

4.2 Heritage Sites Located during the Survey

4.2.1 Background

No heritage sites occur directly within the trajectory of the proposed road upgrade and associated infrastructure. Modern graves are associated with Zulu homesteads in the area (Fig 6). None of these occur within 30m from the road reserve and they are not threatened by the proposed development. However, the well-known and researched Magogo Early Iron Age Site is located within 35m from the edge of the road earmarked for upgrading. A description of the site follows below.

4.2.2 Magogo Early Iron Age Site

4.2.2.1 Background

During the 1970's and 1980's the then Natal Museum conducted surveys and excavations on Early Iron Age sites that are particularly well represented in the greater Muden area (Maggs & Ward 1984). One of these sites, Magogo (Site no: 2830CD 034) is located within 35m from the edge of the proposed road upgrade. Although the initial archaeological excavations took place in 1979 (Maggs & Ward 1984; Voigt 1984) subsequent research on the site also took place in 1998 when Whitelaw excavated an eroded grave on the site (unpublished report, KZN Museum).

4.2.2.2 Site Context

The GPS coordinates of the Site are: S 28° 58' 58.08" E 30° 23' 39.62". It is situated between the proposed road upgrade and the Mooi River and covers an area of approximately 7 hectares (Figs 3 & 4).

The Site consists of a series of concentrations of Early Iron Age material stretching about 200m down towards the Mooi River. Its lateral extent is at least 180m occurring mainly to the north in an extensive area of dongas and erosion gullies (Fig 7). The Site is characterised by Sun Valley-Ferry-Weenen soil to some depth with patches of gravel from the hill slopes above. Numerous concentrations of Early Iron Age material occur in the erosion gullies and dongas, however, some material also occur in the old cultivated but not eroded area south of the gullies. They appear to continue down as far as an irrigation furrow which is about 60m from the Mooi River. At least some of the concentrations represent buried features to a depth of about 1 m with grey filling, bone, etc. (Figs 8 & 9). A slag heap is situated on the southern section of the Site (Fig 12). Typical Early Iron Age material such as decorated pottery (Figs 10 & 11), tuyeres (Fig 16), shell disc beads, upper and lower grindstones (Fig 13), and dagga (Fig 15) is scattered over a large area. This is a relatively rich site apparently with good discrete concentrations suggestive of stone capped "rubbish pits", although most of these appear to have been damaged by erosion (Figs 8 & 9). Pottery apparently belonging to all the main ceramic phases of the Early Iron Age (i.e. Msuluzi, Ndondondwane, and Ntshekane) are still visible on the surface.

4.2.2.3 Mitigation

Although archaeological excavations took place on the Site in 1979 and 1998 there are still numerous features and archaeological material visible on the surface. The information obtained from previous excavations have contributed greatly to the academic knowledge-base relating to the Early Iron Age of Kwa-Zulu Natal (Maggs & Ward 1984; Voigt 1984). As such this is an important Site that can still contribute to our knowledge of first millennium agropastoralist settlement in South Africa (Table 3). The site is rated as Local Grade 111A (Table 4) and should be retained as a heritage site.

It is imperative that the developers should maintain a buffer zone of at least 30m around the Site. No material or features may be removed or altered from the Site or within the buffer zone. No access roads may be constructed on the site.

**Table 3. Evaluation and statement of significance of the Magogo Early Iron Age Site.
Significance criteria in terms of Section 3(3) of the NHRA**

	Significance	Rating
1.	Historic and political significance - The importance of the cultural heritage in the community or pattern of South Africa's history.	None.
2.	Scientific significance – Possession of uncommon, rare or endangered aspects of South Africa's cultural heritage.	High
3.	Research/scientific significance – Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage.	High
4.	Scientific significance – Importance in demonstrating the principal characteristics of a particular class of South Africa's cultural places/objects.	High
5.	Aesthetic significance – Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.	High
6.	Scientific significance – Importance in demonstrating a high degree of creative or technical achievement at a particular period.	High.
7.	Social significance – Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.	None.
8.	Historic significance – Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa.	None.
9.	The significance of the site relating to the history of slavery in South Africa.	None.

5 STATEMENT OF SIGNIFICANCE (HERITAGE VALUE)

5.1 Field Rating

The Early Iron Age Site has been rated as Provincial (Grade 111) (Table 4).

Table 4. Field rating and recommended grading of sites (SAHRA 2005)

Level	Details	Action
National (Grade I)	The site is considered to be of National Significance	Nominated to be declared by SAHRA
Provincial (Grade II)	This site is considered to be of Provincial significance	Nominated to be declared by Provincial Heritage Authority
Local Grade IIIA	This site is considered to be of HIGH significance locally	The site should be retained as a heritage site
Local Grade IIIB	This site is considered to be of HIGH significance locally	The site should be mitigated, and part retained as a heritage site
Generally Protected A	High to medium significance	Mitigation necessary before destruction
Generally Protected B	Medium significance	The site needs to be recorded before destruction
Generally Protected C	Low significance	No further recording is required before destruction

6 RECOMMENDATIONS

The proposed development may proceed in terms of heritage values as there are no archaeological sites, heritage sites or graves within the immediate vicinity of the proposed road upgrade. The area is also not part of any known cultural landscape. However, an important Early Iron Age Site is situated approximately 35m to the east of the proposed road upgrade (Fig 2). In order to protect the integrity of this site the following recommendations must be adhered to:

- Strictly maintain a buffer zone of 30m around the Early Iron Age site.
- No construction structures, equipment or vehicles may be stored within the buffer zone.
- No material or structures may be altered or removed from this buffer zone and the archaeological site.
- No access roads may be constructed on the site.
- The proposed development must be restricted to the existing trajectory of the Mhlopeni mud track.
- Any deviations more than 10m from the existing mud track trajectory, in the area adjacent to the Early Iron Age site, will require a Phase Two Heritage Impact Assessment by an Amafa registered archaeologist with an Iron Age background.

It must be noted that the Provincial Heritage Act requires that operations exposing paleontological, archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

7 MAPS AND FIGURES

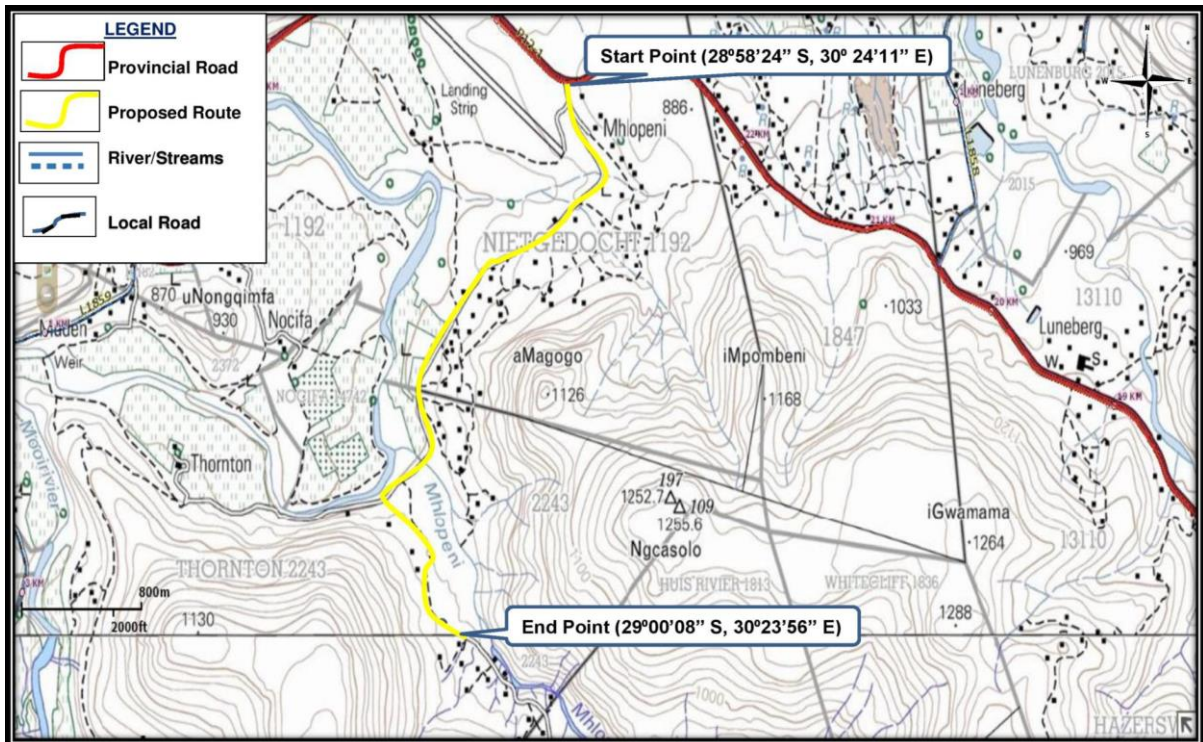


Figure 1. Topographical map showing the location of the proposed Mhlopeni Road Upgrade near Muden (highlighted in yellow) (Source: Hanslab).

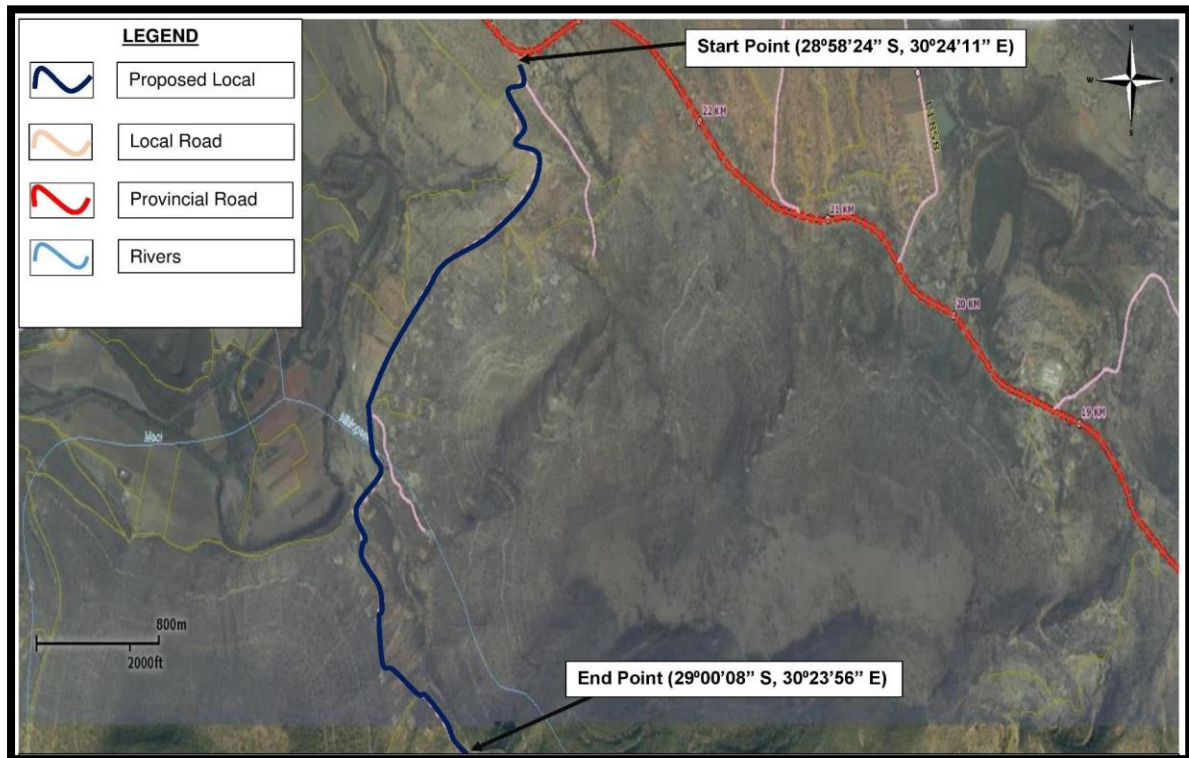


Figure 2. Aerial view of the proposed road upgrade (Source: Hanslab).

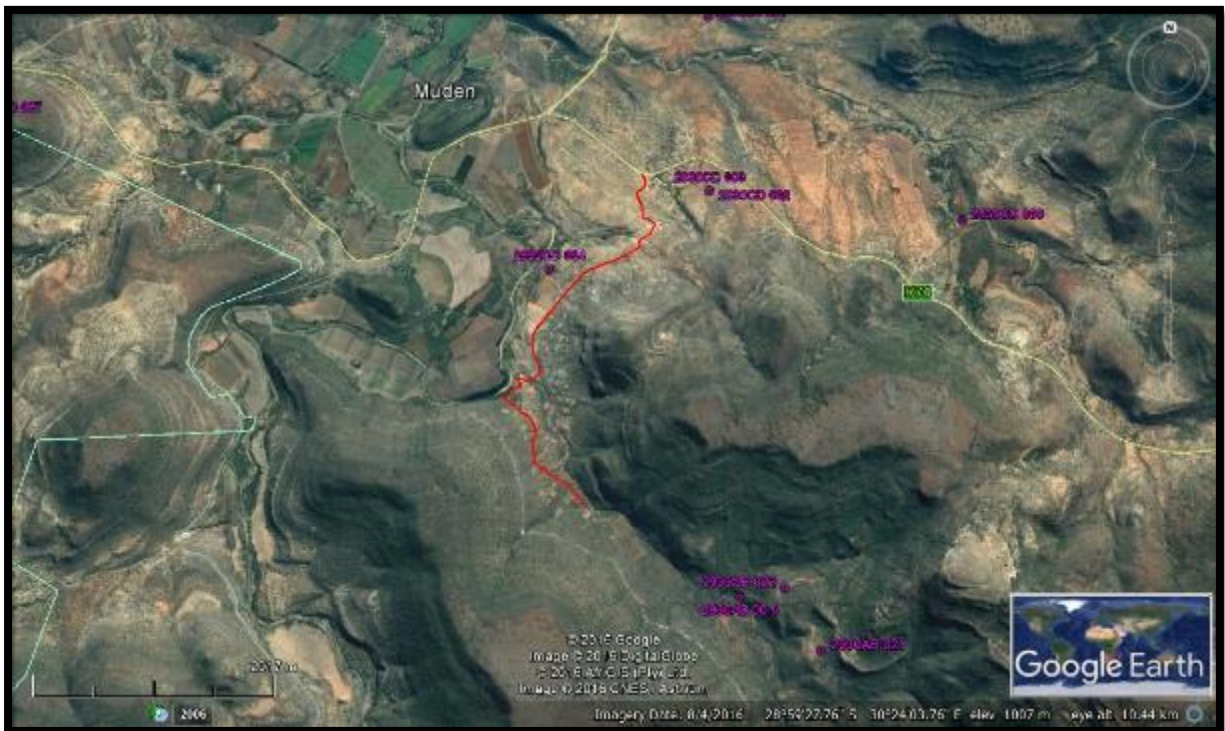


Figure 3. Google Earth Imagery showing the distribution of known heritage sites (purple polygons) in the near environs of the proposed road upgrade.



Figure 4. Google Earth Imagery showing the location of the Magogo Early Iron Age Site (yellow polygon) adjacent to the Mhlopeni Mud Track.



Figure 5. *The existing Mhlopeni Mud Track that has been earmarked for upgrading.*



Figure 6. *Although graves do occur in association with Zulu homesteads in the area none are located directly adjacent to or within the proposed road upgrade trajectory.*



Figure 7. Photograph of the Magogo Early Iron Age site showing the exposed erosion dongas containing cultural material.



Figure 8. Probably a stone-capped Early Iron Age refuse pit.



Figure 9. A partially eroded Early Iron Age refuge pit. Faunal material, potsherds, and smelting slag lies scattered about.



Figure 10. Potsherd decorated with herringbone pattern.



Figure 11. Scatter of potsherds in a donga.



Figure 12. Scatter of smelters slag on western side of the Early Iron Age site.



Figure 13. Broken lower grinding stone protruding from a partially exposed “refuge pit”.



Figure 14. Achatina disc shell bead



Figure 15. Baked dagga from an Early Iron Age hut floor.



Figure 16. Tuyere fragment

9 REFERENCES

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APPENDIX 1

**Palaeontological Impact Assessment for the proposed upgrade of an
existing mud track to Type 7a gravel road along the Mhlopeni Local road
(Muden, Umvoti local municipality, KwaZulu-Natal)**

Conducted by Gary Trower (MSc in Environmental Management, UFS)

April 2017

Declaration of Consultants independence

Gary Trower is an independent consultant to Hanslab (PTY) Lmt and has no business, financial, personal or other interest in the activity, application or appeal in respect of which he was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances whatsoever that compromise the objectivity of this specialist performing such work.



Gary Trower

Introduction

In terms of the National Environmental Management Act 107 of 1998, Section 38 (8) of the National Heritage Resources Act 25 of 1999, and the KwaZulu-Natal Heritage Act 4 of 2008, all proposed developments that are likely to impact on all aspects of heritage require a field assessment in order to ensure that such resources are not damaged or destroyed in the process. The KwaZulu-Natal Department of Transport proposes to upgrade an existing mud track/sand road to a Type 7A gravel road. The upgraded road will be located in the village of Muden along the Mhlopheni local road, improving access for villagers living in the surrounding hillside (Figure 1). The road will cross watercourses where underlying bedrock is exposed and the development will take place in a region with a high sensitivity rating (in terms of palaeontological material), therefore a survey of the landscape was required in order to conduct an assessment of the possible heritage resources which could be at risk.

Geology

The geology in the vicinity of the site is dominated by Carboniferous and Permian deposits of the Dwyka and Ecca Groups. There are also several outcrops of dolerite in the region, representing Jurassic lava intrusions which gave rise to the dolerite dykes in the landscape. Considerably younger alluvial deposits occur alongside many of the drainage lines within the valleys and are Quaternary in age (Figure 2). Rocks of the Karoo Basin are therefore rich repositories for palaeontological material and developers need to be aware when carrying out work which may destroy details preserved in these underlying beds



Figure 1: Showing satellite image of the proposed road in red, north is on top. The yellow dot indicates the start of the road and the blue dot is where it ends on the slopes of the hillside. Modified from Google, elevation is exaggerated

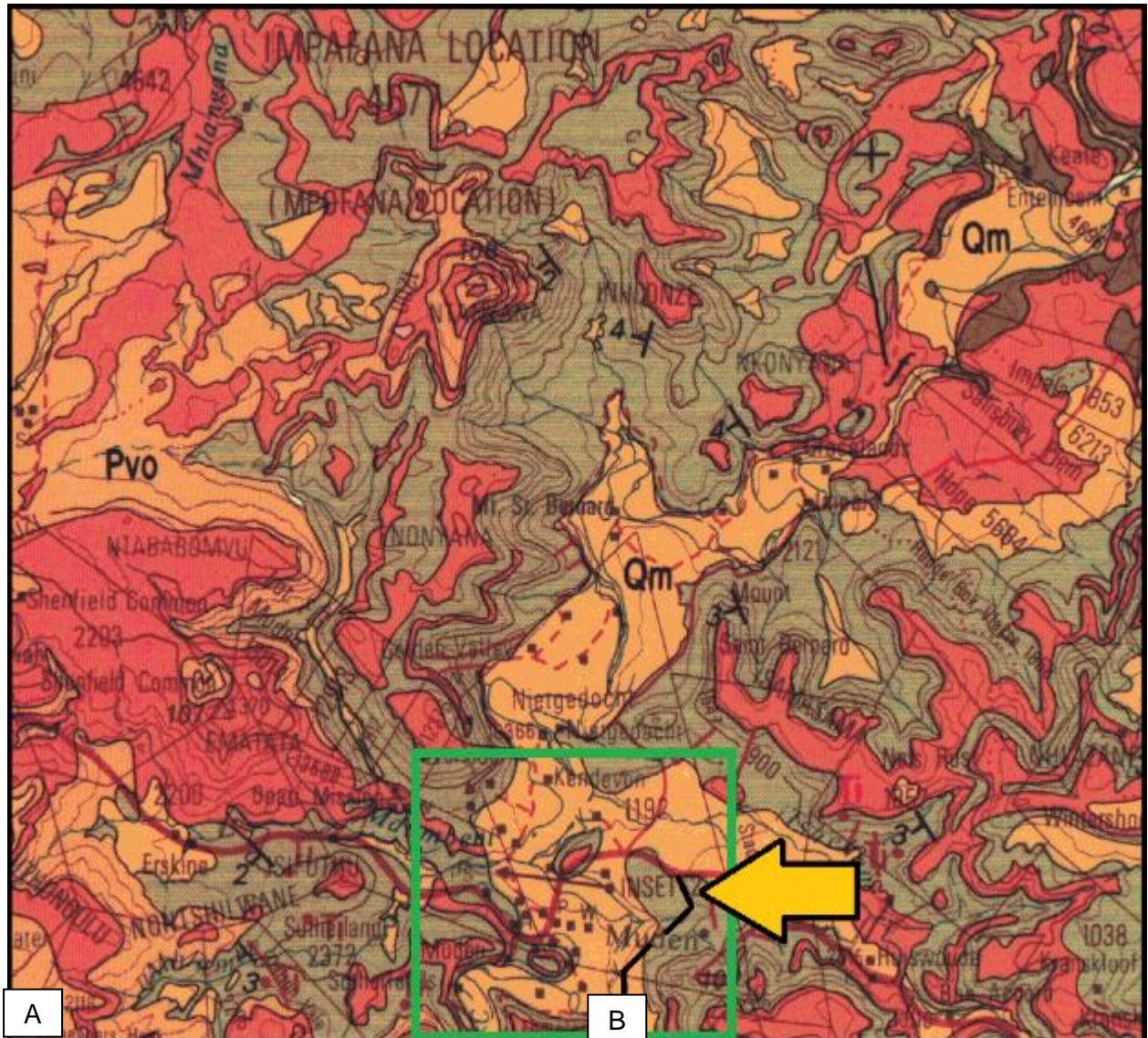


Figure 2: Geological map of the region where the proposed development will take place, highlighted within the green square. The yellow arrow points to the road, the pathway of which is indicated in black. Lithology comprises Jd: Dolerite; Pv: medium-coarse-grained sandstone, grey micaceous shale and coal; Pvo: Dark-grey shale & Qm: basal boulder bed and yellow-brown sandy clay. Geology relative to study area comprises Eccca (Pv and Pvo) and Quaternary material (Qm). Modified from 2830 Dundee, 1:250 000 Topo-Cadastral Series of South Africa, Chief Director of Surveys and Mapping

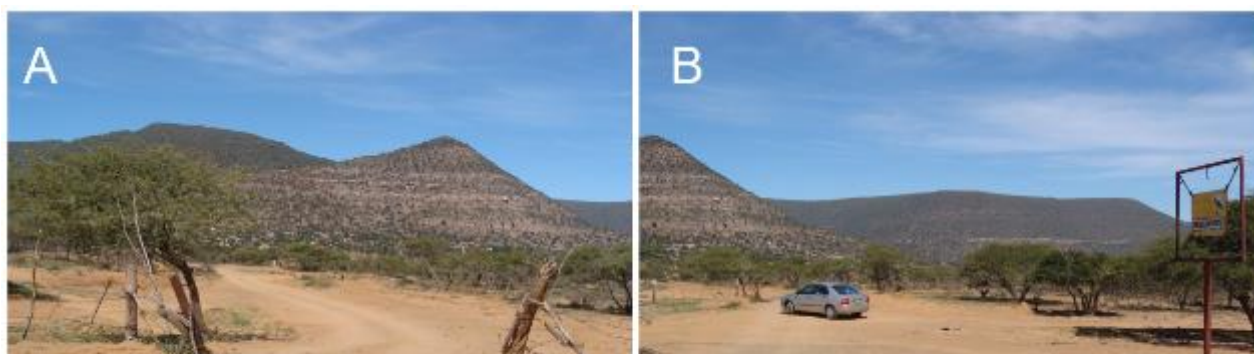


Figure 3 A&B: The start of the proposed road to be upgraded, S 28° 58' 25.3" E 30° 24' 12.8", corresponding to the yellow dot in Figure 1

Field observations

During the survey, exposed bedrock was noted at several places. The sandstone was very coarse and was completely devoid of fossils (Figure 4&5). The abrasive environment when these beds were being deposited also greatly reduced the chance of good fossil preservation. Finer-grained sandstone units were also visible close to the proposed road but none of these contained any fossils, whether fossil bone or trace fossils. Dolerite outcrops were very common in the region, which also greatly reduces the possibility of fossil preservation due to the destructive nature of these intrusions. A large proportion of the colluvium was made up of dolerite boulders of various sizes (Figure 5).

When viewing the PalaeoSensitivity map on the SAHRA website (www.sahra.org.za/sahris/map/palaeo), the area where the proposed development will take place is given as red, the highest sensitivity rating. In spite of this, no palaeontological material was visible in the vicinity or along the route of the proposed road upgrade.



Figure 4 A&B: Looking upstream (A) and downstream (B) along the exposed bedrock. The sandstone was coarse-grained in nature and was overlain by finer-grained sandstones, all of which were devoid of fossils





Figure 5: A smaller watercourse that the road crosses over, displaying the same coarse-grained sandstones. Note the large dolerite boulders, a common element of the hillside colluvium



Figure 6: The section of road to be upgraded ends on the slopes of the hillside, corresponding to the blue dot in Figure 1

Recommendations

The proposed upgrade of the road can proceed as no palaeontological material was noted along the entire length of road. Although it is possible that fossils may occur in the region and some of these may lay buried in the vicinity of the road (based on the SAHRA sensitivity map), the overlying soil horizon may act as a buffer to the disturbance of such material and the fact that no fossils were visible within the rock outcrops adjacent to the proposed road indicates the probability of any disturbance to any aspects heritage is insignificant or zero.