

**PHASE ONE HERITAGE IMPACT ASSESSMENT
OF THE PROPOSED LOCAL ROAD UPGRADES
L446, L3478 (Skova) AND MADONDO BRIDGE,
NEAR WEENEN, KZN.**



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For: Hanslab

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Frans received his MA (Archaeology) from the University of Stellenbosch and is presently a PhD candidate on social anthropology at UKZN. His PhD research topic deals with indigenous San perceptions and interactions with the rock art heritage of the Drakensberg.

Frans was employed as a junior research associate at the then University of Transkei, Botany Department in 1988-1990. Although attached to a Botany Department he conducted a palaeoecological study on the Iron Age of northern Transkei - this study formed the basis for his MA thesis in Archaeology. Frans left the University of Transkei to accept a junior lecturing position at the University of Stellenbosch in 1990. He taught mostly undergraduate courses on World Archaeology and research methodology during this period.

From 1991 – 2001 Frans was appointed as the head of the department of Historical Anthropology at the Natal Museum, Pietermaritzburg. His tasks included academic research and publication, display conceptualization, and curating the African ethnology collections of the Museum. He developed various displays at the Natal Museum on topics ranging from Zulu material culture, traditional healing, and indigenous classificatory systems. During this period Frans also developed a close association with the Departments of Fine Art, Psychology, and Cultural and Media Studies at the then University of Natal. He assisted many post-graduate students with projects relating to the cultural heritage of South Africa. He also taught post-graduate courses on qualitative research methodology to honours students at the Psychology Department,

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Frans left the Natal Museum in 2001 when approached by a Swiss funding agency to assist an international NGO (Working Group for Indigenous Minorities) with the conceptualization of a San or Bushman museum near Cape Town. During this period he consulted extensively with various San groupings in South Africa, Namibia and Botswana. During this period he also made major research and conceptual contributions to the Kamberg and Didima Rock Art Centres in the Ukhahlamba Drakensberg World Heritage Site.

Between 2003 and 2007 Frans was employed as the Cultural Resource Specialist for the Maloti Drakensberg Transfrontier Project – a bilateral conservation project funded through the World Bank. This project involved the facilitation with various stakeholders in order to produce a cultural heritage conservation and development strategy for the adjacent parts of Lesotho and South Africa. Frans was the facilitator for numerous heritage surveys and assessments during this project. This vast area included more than 2000 heritage sites. Many of these sites had to be assessed and heritage management plans designed for them. He had a major input in the drafting of the new Cultural Resource Management Plan for the Ukhahlamba Drakensberg World Heritage site in 2007/2008. A highpoint of his career was the inclusion of Drakensberg San indigenous knowledge systems, with San collaboration, into the management plans of various rock art sites in this world heritage site. He also liaised with the tourism specialist with the drafting of a tourism business plan for the area.

During April 2008 Frans accepted employment at the environmental agency called Strategic Environmental Focus (SEF). His main task was to set-up and run the cultural heritage unit of this national company. During this period he also became an accredited heritage impact assessor and he is rated by both Amafa and the South African Heritage Resources Agency (SAHRA). He completed almost 50 heritage impact assessment reports nation-wide during an 18th month period.

Frans left SEF and started his own heritage consultancy called “Active Heritage cc” in July 2009. Although mostly active along the eastern seaboard his clients also include international companies such as Royal Dutch Shell through Golder Associates, and UNESCO. He has now completed almost 1000 heritage conservation and management reports for various clients since the inception of “Active Heritage cc”. Amongst these was a heritage study of the controversial fracking gas exploration of the Karoo Basin and various proposed mining developments in South Africa and proposed developments adjacent to various World Heritage sites. Apart from heritage impact assessments (HIA's) Frans also assist the National Heritage Council (NHC) through Haley Sharpe Southern Africa', with heritage site data capturing and analysis for the proposed National Liberation Route World Heritage Site and the national intangible heritage audit. In addition, he is has done background research and conceptualization of the proposed Dinosaur Interpretative Centre at Golden Gate National Park and the proposed Khoi and

San Interpretive Centre at Camdeboo, Eastern Cape Province. During 2009 he also produced the first draft dossier for the nomination of the Sehlabathebe National Park, Lesotho as a UNESCO inscribed World Heritage Site.

Frans was appointed as temporary lecturer in the department of Heritage and Tourism, UKZN in 2011. He is also a research affiliate at the School of Cultural and Media Studies in the same institution.

Frans's research interests include African Iron Age, paleoecology, rock art research, San ethnography, traditional healers in South Africa, and heritage conservation. Frans has produced more than forty publications on these topics in both popular and academic publications. He is frequently approached by local and international video and film productions in order to assist with research and conceptualization for programmes on African heritage and culture. He has also acted as presenter and specialist for local and international film productions on the rock art of southern Africa. Frans has a wide experience in the fields of museum and interpretive centre display and made a significant contribution to the conceptual planning of displays at the Natal Museum, Golden Horse Casino, Didima Rock Art Centre and !Khwa tu San Heritage Centre. Frans is also the co-founder and active member of "African Antiqua" a small tour company who conducts archaeological and cultural tours world-wide. He is a Thetha accredited cultural tour guide and he has conducted more than 50 tours to heritage sites since 1992.

Declaration of Consultants independence

Frans Prins is an independent consultant to Hanslab 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

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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 heritage survey of the proposed upgrade of two roads (L3478 and L446) and the Madondo Bridge near Weenen, Inkosi Langalibalele Local Municipality, KZN identified no archaeological or heritage sites at local road L3478. A few Early Iron Age potsherds were found approximately 600m from the Madondo Bridge. However, this site is not threatened by the proposed development. The greater project area is also not part of any known cultural landscape. However, three grave sites occur adjacent to the L446. Due to their close proximity to the road a buffer zone of 5m must be strictly enforced around these graves prior to any construction. The Phase 1 Paleontological desktop assessment indicates that Madondo Bridge and the L446 have a moderate paleontological sensitivity whereas the L3478 has a high paleontological sensitivity. An Amafa registered palaeontologist will be required to conduct a Second Phase Desktop assessment of the Madondo Bridge and the L446. Due to the high paleontological sensitivity of the area the palaeontologist will also be required to conduct a ground survey of the L3478 before development may proceed. 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 as well as graves and fossil material should cease immediately, pending evaluation by the provincial heritage agency.

1 BACKGROUND INFORMATION ON THE PROJECT

Table 1. Background information

Consultant:	Frans Prins (Active Heritage cc) for Hanslab
Type of development:	The Department of Transport (Applicant) is currently addressing the needs of previously disadvantaged rural areas by providing service delivery by means of infrastructure development to ensure the safety of road users. The Applicant proposes to upgrade the current informal Local Roads into a more suitable and efficient means for transportation and mobility. - Local Road L3478 (Skova Road) - Local Road L446 - Madondo Bridge
Rezoning or subdivision:	Rezoning
Terms of reference	To carry out a Phase One Heritage Impact Assessment (including a Phase One Paleontological Desktop Assessment).
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 project area is located near the town of Weenen in the Inkosi Local Municipality, KZN (Fig 1). Three local roads have been surveyed and assessed. These include the following:

- a) Madondo Bridge. A bridge crossing a local stream situated approximately 10km to the north of Weenen. The length of the associated road has been increased from 48m – 60 m. The GPS coordinates of the associated road is presented in Table 2 (Figs 2, 15, 16).
- b) L 3478 (Skova). A dirt road of approximately 10km long situated 9 km to the south of Weenen. The GPS coordinates of this road is presented in Table 2 (Figs 6, 18, 20)
- c) L446. A dirt road of approximately 7km long situated 9.5km to the east of Weenen. It borders onto the R74 in the north (Figs 8, 21). The GPS coordinates of this road is presented in Table 2.

Table 2. GPS coordinates of local roads investigated.

Madondo Bridge	
Location	28°46'08.41"S 30°06'40.00"E
L3478	
Km 0.0	28°56'21.80"S 30° 4'2.80"E
Km 1.0	28°56'50.80"S 30° 3'44.00"E
Km 2.0	28°57'3.80"S 30° 3'13.20"E
Km 3.0	28°57'26.10"S 30° 3'24.40"E
Km 3.4	28°57'36.10"S 30° 3'24.40"E
Km 4.0	28°57'50.80"S 30° 3'23.40"E
Km 5.0	28°57'53.60"S 30° 2'48.00"E
Km 6.0	28°58'6.30"S 30° 2'22.50"E
Km 7.0	28°58'27.40"S 30° 1'55.50"E
Km 8.0	28°58'45.00"S 30° 1'28.20"E
Km 9.0	28°59'11.30"S 30° 1'12.70"E
Km 10.0	28°59'39.90"S 30° 1'13.20"E
Km 11.0	29° 0'3.60"S 30° 0'57.80"E
Km 11.5	29° 0'17.00"S 30° 1'0.50"E
L446	
Km 0.0	28°53'36.78"S 30° 9'56.38"E
Km 1.0	28°54'7.24"S 30°10'7.00"E
Km 2.0	28°54'28.73"S 30° 9'58.10"E
Km 3.0	28°54'52.74"S 30° 9'34.85"E
Km 4.0	28°54'51.55"S 30° 9'0.61"E
Km 4.5	28°54'57.53"S 30° 8'43.55"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) 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 Weenen 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.

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 colonisation 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 Weenen 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 Weenen,

however, these sites have not been afforded similar research attention as those sites occurring in the Drakensberg. Although two rock art sites occur in the Weenen Nature Reserve none of them are found within the near vicinity of the footprint.

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 six Early Iron Age sites occur in the immediate vicinity of the study area. The well known and researched site of Msuluzi-Confluence (ibid) occurs in the greater Weenen area. None of these sites occur on the footprint.

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). Eight Later Iron Age sites occur in the greater Weenen area. The majority of these are stone built circular structures that were most probably inhabited by early Nguni-speaking agropastoralists before the Shakan era in the beginning of the 19th century. Although the majority of these sites occur in the Weenen Nature Reserve none occur in the close vicinity of the footprint.

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 paramouncies 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 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.

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 vicinity of the project area. The most significant is perhaps the Bambata Rock Ambush that occurred approximately 30km from the project area.

2.3.1 Short history of Weenen

The town of Weenen is set on the banks of the Bushmans or Intshezi River. Early Dutch settlers who set-up farms along this river soon after the Great Trek in 1838 were plagued by San or Bushman raiders who took cattle and sheep from these farms before fleeing back to the heights of the Maloti-Drakensberg in the west. Weenen was established in 1838 when it was laid out in a Voortrekker grid pattern similar to many old villages in South Africa today that also benefit by a canal network that linked various properties in town. Weenen, meaning “place of weeping” in Dutch, is called so because of the massacre of the Voortrekkers after land negotiations failed between the Voortrekker leader Piet Retief and the Zulu king Dingane. Various massacres followed in the vicinity and finally, survivors fled the site now referred to as Weenen, intent on regrouping and avenging the dead. Within a year the Battle of Blood River followed and many of the

battles that today typify the KwaZulu-Natal Battlefields took place around here. The town, because of its long history, is full of historical buildings, including the Voortrekker homestead Museum, a Dutch Reformed Church and other classic examples of the time. The Bloukrans massacre site in the near vicinity of the town has been declared a provincial heritage site (Derwent 2006). There are various other built heritage sites in the greater Weenen area, including battle sites, that need further investigation.

3 BACKGROUND INFORMATION OF THE SURVEY

3.1 Methodology

A desktop study was conducted of the archaeological databases housed in the KwaZulu-Natal Museum. The SAHRIS website was consulted for previous heritage surveys and heritage site data covering the project area. In addition, the available archaeological and heritage literature covering the greater Weenen area was consulted. Aerial photographs covering the area were scrutinised for potential Iron Age and historical period structures and grave sites. A ground survey, following standard and accepted archaeological procedures, was conducted on the 15 May 2020. Particular attention was focused on the occurrence of potential grave sites and other heritage resources on the footprint.

3.1.1 *Guidance from Desktop Study (Assumptions and Limitations)*

- The desktop study indicates that Stone Age Sites of all periods and traditions may occur in the greater Weenen area. However, Early Stone Age sites typically occur close to permanent and prominent sources of water and there is a possibility that some may occur in the near vicinity of Madondo Bridge.
- Middle Stone Age tools have been found in dongas and erosion gullies at various locales in the greater Weenen/Muden areas. These sites are usually out of context and of little research value. However, similar sites may occur in the project area. Middle Stone Age deposits also occur in deep cave deposits throughout KwaZulu-Natal but no caves or shelters are associated with any of the roads investigated for this project.
- Later Stone Age sites, and associated rock paintings, are prolific in the coastal areas of KwaZulu-Natal and also in the foothills of the Drakensberg to the west.

Some have been recorded at Weenen Nature Reserve to the immediate west of the project area. However, there are no suitable sandstone outcrops associated with any of the proposed roads that may harbour rock art sites.

- Early Iron Age Sites typically occur along major river valleys below the 700 m contour in KwaZulu-Natal. Some well-known and excavated Early Iron Age sites do occur in the greater Weenen/Muden areas. It is possible that some may occur at Madondo Bridge. However, it is unlikely that they may be associated with the L3478 and the L446 as these roads are situated above the 1000m contour.
- Later Iron Age sites may occur in the greater Weenen/Muden areas. These sites were occupied by the ancestors of the first Nguni-speaking agriculturists as well as their descendants who settled in KwaZulu-Natal. Many of these are stone-walled and very visible. A large concentration occurs to the immediate west of the project area in association with the Weenen Nature Reserve. It is possible that some may occur in association with the roads investigated for this project.
- Historical buildings, structures and farmsteads do occur in the greater Weenen area. Most of these occur in the town of Weenen but buildings associated with old farms may also occur in the project area.
- Graves may occur throughout the project area especially in the near environs of existing homesteads.

3.2 Restrictions encountered during the survey

3.2.1 Visibility

Visibility was good.

3.2.2 Disturbance

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

Closest Towns: Weenen

Municipality: Nkosi Langalibalele Local Municipality

4.2 Description of the general area surveyed

4.2.1 Background

The project area covers the rural areas to the north, south and east of Weenen (Figs 1 & 14). The desktop survey did not locate any archaeological sites within 100m from any of the roads surveyed (Figs 3, 6, 8). None are shown in existing data bases, such as the archaeological data base of the KwaZulu-Natal Museum, that covers the area. In addition, various CRM studies have been conducted in the greater Weenen area in the past (see Anderson 2019, Prins 2015, 2014a, 2014b). None of these cover the roads as indicated in this project.

However, the consultant located four heritage sites during the ground survey. An Early Iron Age site is located approximately 600m to the east of Madondo Bridge. Three grave sites occur adjacent to the L 446. No heritage sites are associated with the L 3478. The project area is also not part of any known cultural landscape. The location and context of the identified heritage sites is presented in Table 3.

4.2.2 Stakeholder Consultation

The consultant spoke to local pedestrians encountered in the project area during the ground survey. None of them had any knowledge of graves or other heritage features at Madondo Bridge or along the L 3478 in the project area. However, local residents had knowledge of all the graves situated adjacent to the L 446 (Fig 20).

Table 3: Heritage Site Description and Context

Site no	Site description	GPS Coordinates	Rating	Mitigation per individual site
Graveyard 1 at L446 (Figs 9, 10, 22, 23)	A graveyard occurs approximately 7km from the side of the existing road. One grave is visible on the surface. The grave is unmarked and indicated by neatly packed stone heap. The grave covers an area of approximately 1.6m x 1.8m. The majority of these graves appear to be older than 60 years old. However, it is important to note that all graves are protected by provincial heritage legislation in KwaZulu-Natal.	S 28° 54' 58.21" E 30° 08' 45.12"	Medium to high (Table 4) as this grave is still visited by relatives of the deceased.	Maintain a buffer zone of 5m around the site as the grave is situated in close proximity to the road (i.e. 7m) Alternatively motivate for a Heritage Specialist to conduct the required Heritage Processes / Permits. This will include the application of a permit from Amafa and a potential grave exhumation and reburial exercise (Appendix 1). An intensive community liaison process must be followed in order to identify alternative options.
Graveyard 2 at L446 (Figs 9, 11, 24, 25)	A graveyard that is situated approximately 13 m from the side of the existing road (south bank). There may be more than one grave but only one is clearly visible on the surface. This graves is unmarked and indicated by an informal soil heap. The graves are clustered together in an area of approximately 3m x 6m. The visible grave covers an area of approximately 1.6m x 1.8m. The majority of these graves appear to be older than 60 years old. However, it is important to note that all graves are protected by provincial heritage legislation in KwaZulu-Natal.	S 28° 54' 50.20" E 30° 09' 25.61"	Medium to high (Table 4). The graves are still visited by family members of the deceased.	Maintain a buffer zone of 5m around the site as the grave is situated in close proximity to the road (i.e. 13m) Alternatively motivate for a Heritage Specialist to conduct the required Heritage Processes / Permits. This will include the application of a permit from Amafa and a potential grave exhumation and reburial exercise (Appendix 1). An intensive community liaison process must be followed in order to identify alternative options.
Graveyard 3 at L446 (Figs 9, 12, 26, 27).	A graveyard that is situated approximately 12 m from the side of the existing road (west bank). The graves	S 28° 54' 22.11" E 30° 10' 09.18"	Medium to high (Table 4). The graves are	Maintain a buffer zone of 5m around the site as the grave is situated in close

	are unmarked and indicated by neatly packed stone heaps. The clearly visible grave covers an area of approximately 1.6m x 1.8m. It appears to be older than 60 years old. However, it is important to note that all graves are protected by provincial heritage legislation in KwaZulu-Natal.		still visited by family members of the deceased.	proximity to the road (i.e. 12 m). Alternatively motivate for a Heritage Specialist to conduct the required Heritage Processes / Permits. This will include the application of a permit from Amafa and a potential grave exhumation and reburial exercise (Appendix 1). An intensive community liaison process must be followed in order to identify alternative options.
Early Iron Age site at Madondo Bridge (Figs 4, 17, 18, 19)	A few potsherds were found at the surface approximately 600m to the east of the Madondo Bridge. Some of them have the diagnostic Early Iron Age decoration. These potsherds are out of context and not situated in situ. No other archaeological material was found.	S 28° 46' 07,26 E 30° 03' 27,33"	Locally high (Table 4). Site must be fully recorded before mitigation.	This potentially important site is situated approximately 600m to the east of the Madondo Bridge. There is no need for mitigation as the construction activities will have no impact on the site. However, it is important to maintain a buffer of at least 30m around this site.

4.2.3 Desktop Paleontology Assessment

The consultant conducted a Phase One Desktop Paleontological Assessment. This assessment is a requirement by Amafa (the provincial heritage agency) for all Phase One Heritage Impact Assessments. Archaeologists have been given permission to conduct the Phase One Paleontological Desktop, however, this is a preliminary analysis based on the SAHRIS fossil sensitivity map. Should the study area have any paleontological sensitivity (as captured in this Phase One Desktop assessment) then it must be followed-up by a professionally trained and accredited palaeontologist. The

three local roads investigated in this study do show paleontological sensitivity as indicated by the SAHRIS fossil sensitivity map (Fig 13). The following is thus required:

- Madondo Bridge is of moderate paleontological sensitivity (green background colour). An Amafa accredited palaeontologist must conduct a Second Phase Desktop Study of the project area before development may proceed.
- L446 is of moderate paleontological sensitivity (green background colour). An Amafa accredited palaeontologist must conduct a Second Phase Desktop Study of the project area before development may proceed.
- Portions of L3478 is of high paleontological sensitivity (red background colour). A ground survey by an Amafa accredited palaeontologist will be required followed by a protocol of finds.

5 STATEMENT OF SIGNIFICANCE (HERITAGE VALUE)

5.1 Field Rating (excluding paleontology)

- The Early Iron Age site near Madondo Bridge is rated as Local Grade 111B it should be mitigated if threatened by the proposed development. It is considered to be of high significance locally (Tables 4 & 5). However, this site is not threatened by the proposed development as it is situated approximately 600m to the east of the proposed development. The risk assessment of Madondo Bridge is presented in Table 6. The impacts associated with construction and operation is presented in Tables 7 & 8 respectively.
- The three grave sites adjacent to the L446 are rated as Generally Protected A. They have a high to medium significance. Mitigation is necessary before destruction (Tables 4 & 5). These sites are threatened by the proposed development due to their close proximity to the local road L446. Mitigation measures do apply (see Table 3). The risk assessment of the L446 is presented in Table 6. The impacts associated with construction and operation is presented in Tables 7 & 8 respectively.
- Ratings and heritage assessments do not apply to local road L3478 (Skova) as no heritage sites occur within 50m of this road.

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

Table 5. Evaluation and statement of significance.

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.	None.
3.	Research/scientific significance – Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage.	None.
4.	Scientific significance – Importance in demonstrating the principal characteristics of a particular class of South Africa's cultural places/objects.	The Early iron Age Site may have scientific significance but more research is needed.

5.	Aesthetic significance – Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.	None.
6.	Scientific significance – Importance in demonstrating a high degree of creative or technical achievement at a particular period.	None.
7.	Social significance – Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.	The three graveyards are relevant to the local community
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.

Table 6. Risk assessment (excluding paleontology)

	Low	Medium	High
Madondo Bridge		X	
L446			X
L3478 (Skova)	X		

Table 7. Impacts associated with construction

	Direct	Indirect	Cumulative
Madondo Bridge	None (rating – low i.e. 25%)	Some – Early Iron Age site may be disturbed by construction equipment and secondary access roads, however, it is unlikely (rating – medium i.e. 50%)	Some – Early Iron Age site may be disturbed by construction equipment and secondary access roads, however, it is unlikely (rating – medium i.e. 50%)
L446	Graveyards 1, 2, 3 may be disturbed (rating – high 75%)	High possibility that secondary construction activities and movements may disturb the graveyards (rating - high i.e. 75%)	High possibility for disturbance of graveyards if buffer zones are not respected (rating – high i.e. 75%).
L3478	None (rating – low i.e. 25%)	None (rating – low 25%)	None (rating – low i.e. 25%)

Table 8. Impacts associated with operation

	Direct	Indirect	Cumulative
Madondo Bridge	None (rating – low)	None (rating – low)	None (rating – low)
L446	None, if buffer zones are respected (rating – medium)	None, if buffer zones are respected (rating – medium)	None, if buffer zones are respected (rating – medium)
L3478	None (rating – low)	None (rating – low)	None (rating – low)

6 RECOMMENDATIONS

- The project may proceed from a general heritage perspective (excluding paleontology). However, mitigation applies to local road L446 as three graveyards are situated in the close environs of the road.
- In terms of mitigation a buffer zone of at least 5m must be maintained around all the graveyards identified along the L446. (Ideally, a buffer of at least 30m must be respected around graves). The developer should alter the trajectory of the road, if necessary, in order to ensure that the buffer of 5m is maintained. Should this not be possible then the developer may call for a Second Phase Heritage Impact Assessment (Appendix 1). This second phase may entail further investigations in terms of grave exhumation and relocation. However, this second option is the least preferable in terms of Amafa grave mitigation regulations.
- Although an Early Iron Age site is situated near the Madondo Bridge it is located more than 600m to the east of the footprint. There is therefore no need for mitigation as such. However, it would be wise to respect a buffer zone of at least 30m around this site.
- A Second Phase Desktop Paleontological Impact Assessment, by a qualified palaeontologist, must be conducted at the Madondo Bridge before development may proceed.
- A Second Phase Desktop Paleontological Impact Assessment, by a qualified palaeontologist, must be conducted of local road L446 before development may proceed.
- A Second Phase Desktop Paleontological ground survey must be conducted of the local road L3478, by a qualified palaeontologist, before development may proceed.

- It is also important to take note of the KwaZulu-Natal Heritage Act requires that any exposing of graves and archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

7 MAPS AND FIGURES

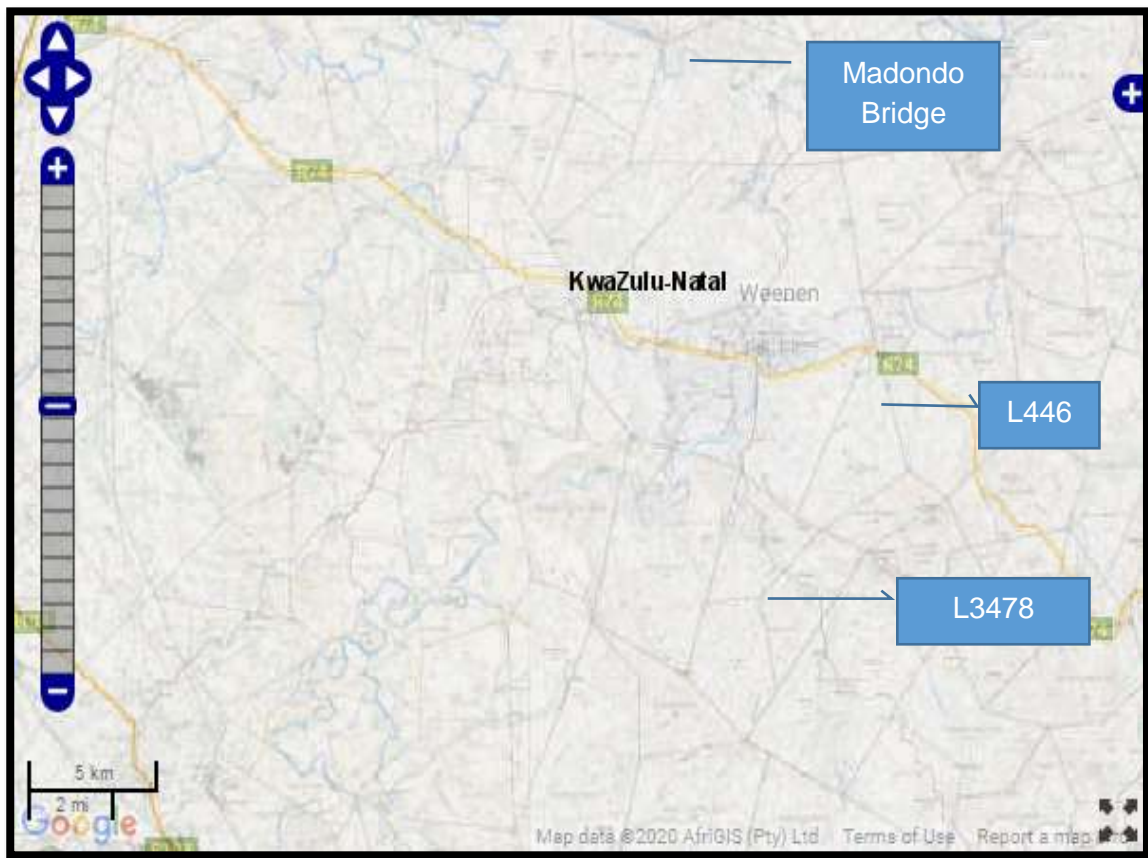


Figure 1. Topographical map showing the location of the three local roads discussed in this project.



Figure 2. Google Earth Imagery showing the location of the Madondo Bridge.

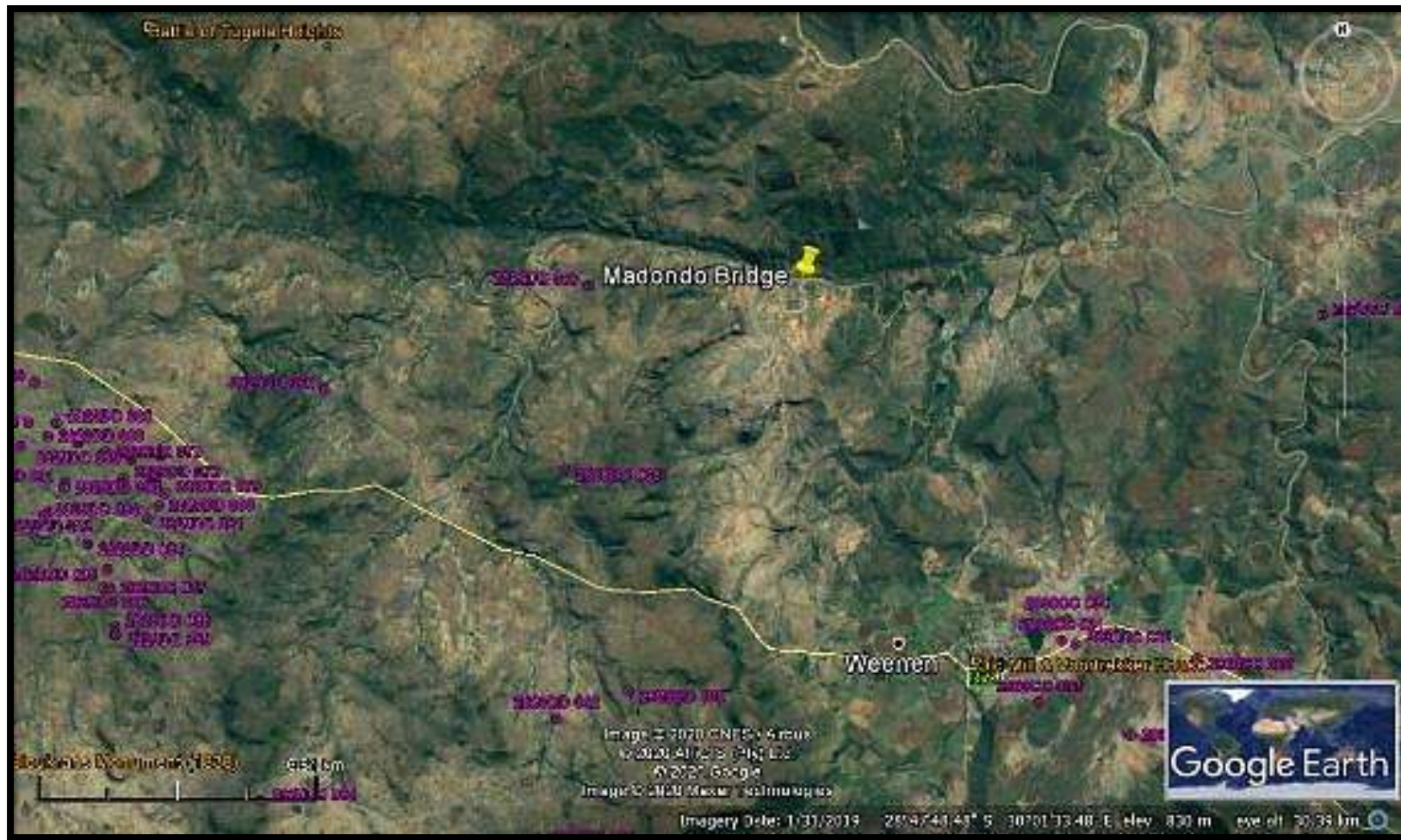


Figure 3. Google Earth Imagery showing the distribution of known heritage sites (purple and yellow markers) near Madondo Bridge, Weenen. None of the known sites occur closer than 2km to the footprint.



Figure 4. Google Earth Imagery showing the location of the Early Iron Age potsherds approximately 600m to the east of the Madondo Bridge

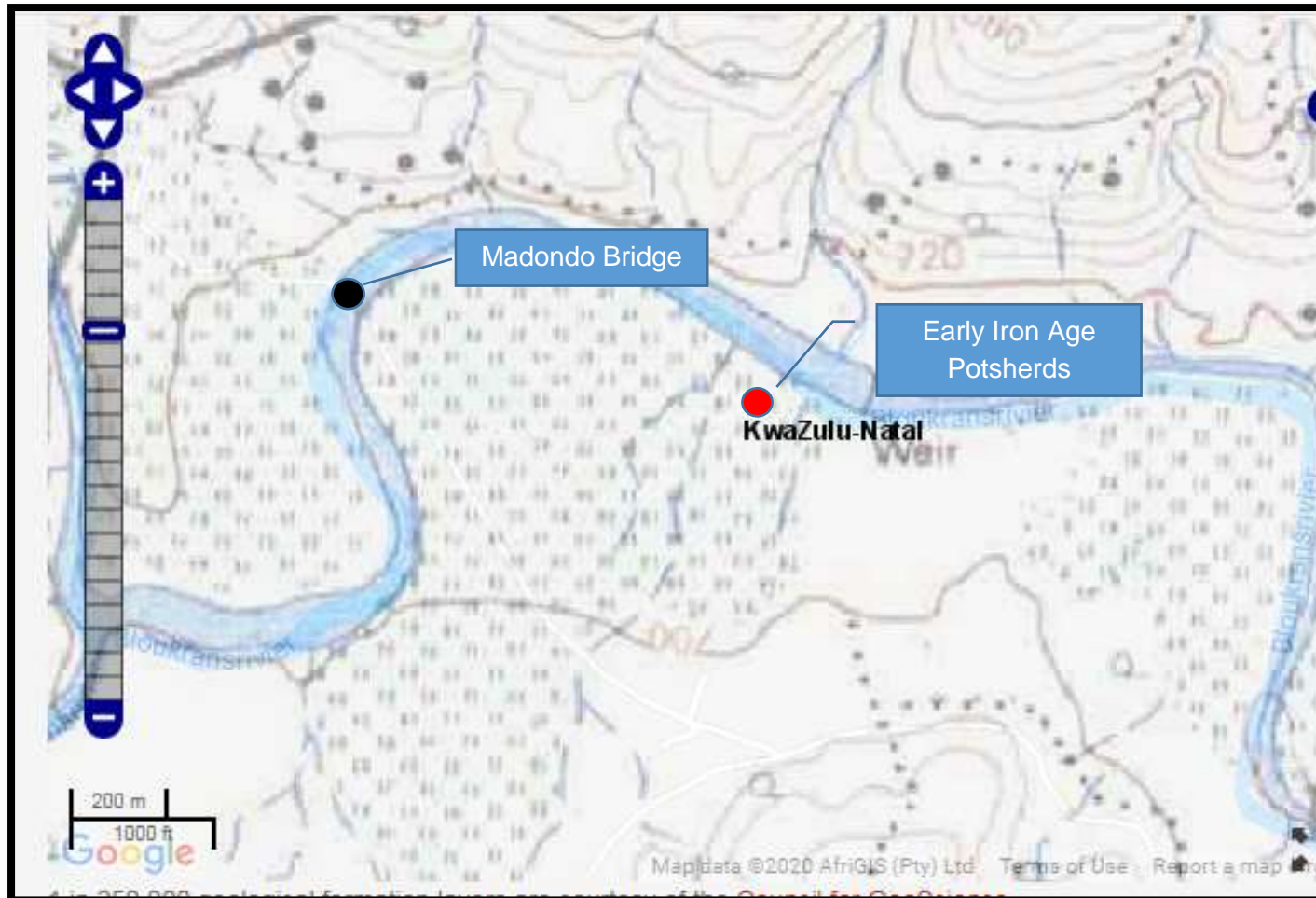


Figure 5. Topographical map showing the location of the Early Iron Age site approximately 600m to the east of Madondo Br

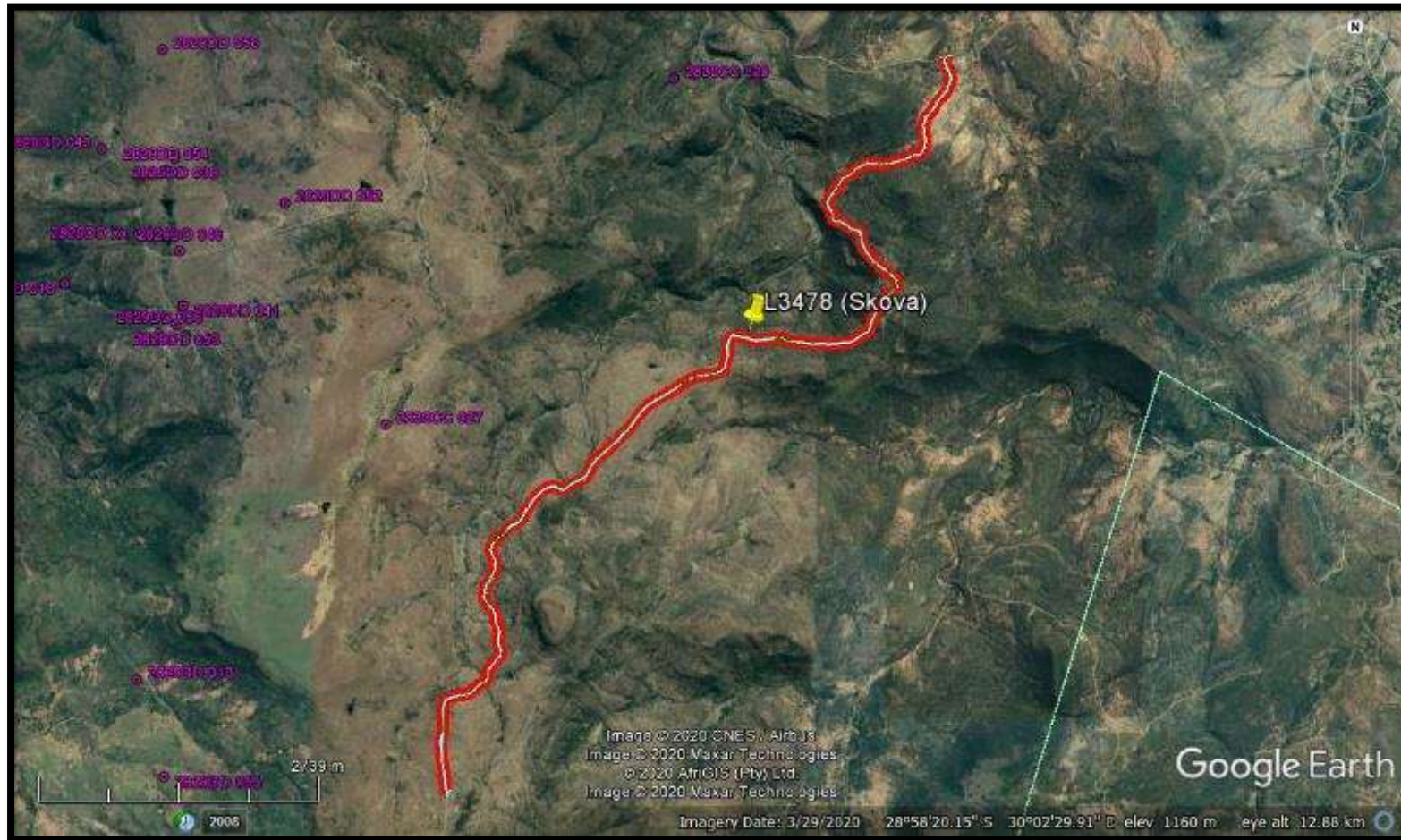


Figure 6. Google Earth Imagery showing the location of local road L3478 (Skova). The purple markers indicate known archaeological sites. None occur closer than 2km to the footprint.

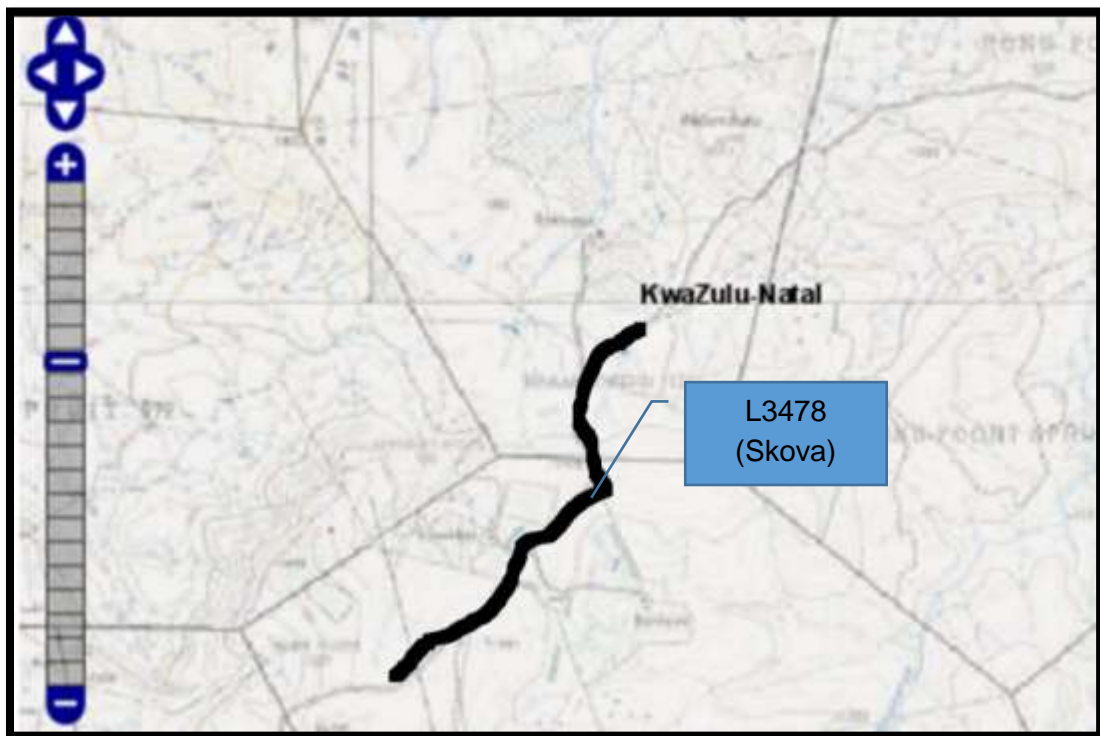


Figure 7. Topographical Map showing the location of local road L3478 (Skova).



Figure 8. Google Earth Imagery showing the location of local road L446. The purple and yellow markers shows the location of known heritage site in the area. None occur closer than 3km to the footprint.

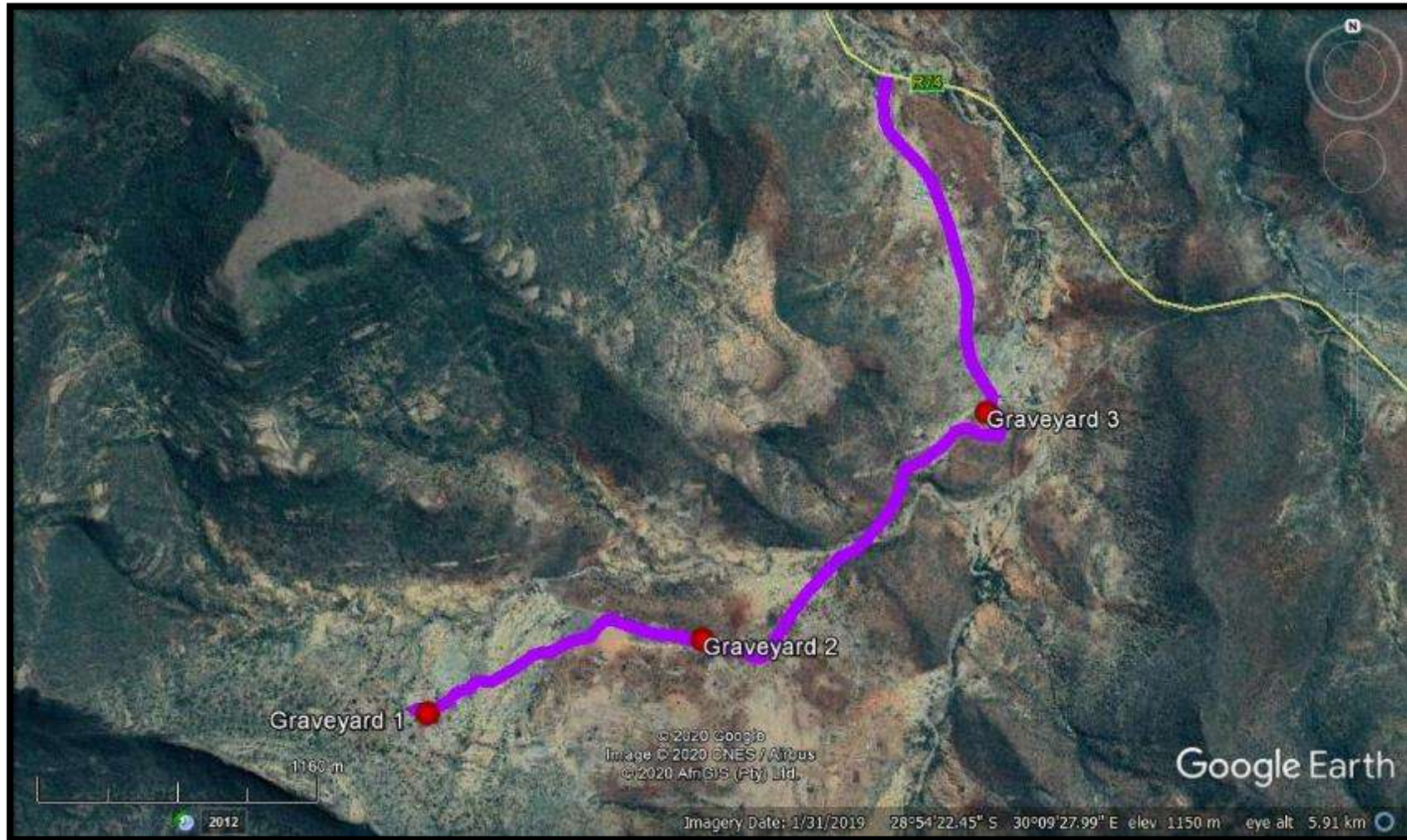


Figure 9. Google Earth Imagery showing the location of three identified graveyards adjacent to the L 446.



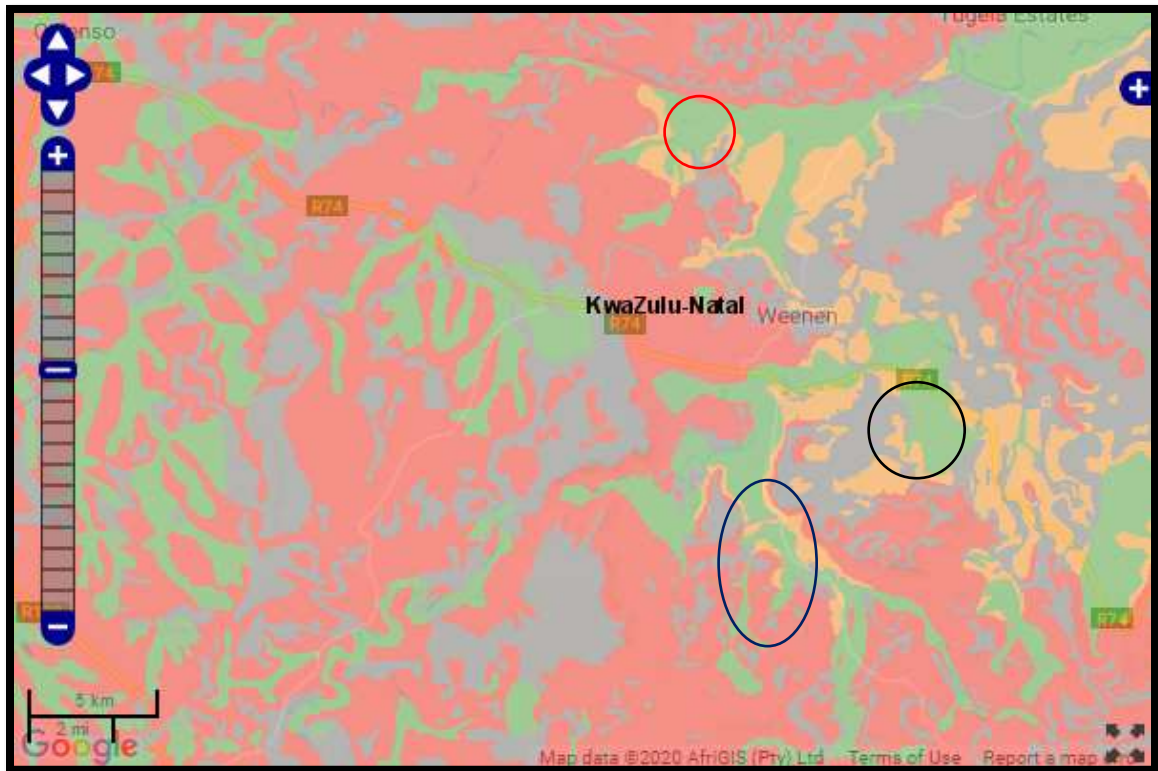
Figure 10. The location of Graveyard 1 adjacent to the L446. The polygon indicates both the graveyard and associated 5m buffer zone.



Figure 11. The location of Graveyard 2 adjacent to the L446. The polygon indicates both the graveyard and associated 5m buffer zone.



Figure 12. The location of Graveyard 3 adjacent to the L446. The polygon indicates both the graveyard and the associated 5m buffer zone.



Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 13. Fossil Sensitivity Map of the project area: The Madondo Bridge area is indicated by the red polygon. Local road L446 is indicated by the black polygon. Local road L3478 is indicated by the blue polygon. (Source: SAHRIS website).



Figure 14. View over the project area



Figure 15. The Madondo Bridge and associated road ,view facing north.



Fig 16. Madondo Bridge, view facing south.



Figure 17. The location of the Early Iron Age potsherds adjacent to the Bloukrans River.



Figure 18. Decorated Early Iron Age potsherd adjacent to the Bloukrans River.



Figure 19. Undiagnostic potsherds adjacent to the Bloukrans River.



Figure 20. *Although some homesteads are situated adjacent to local road L3478 (Skova) there are no graves situated closer than 50m from the existing road.*

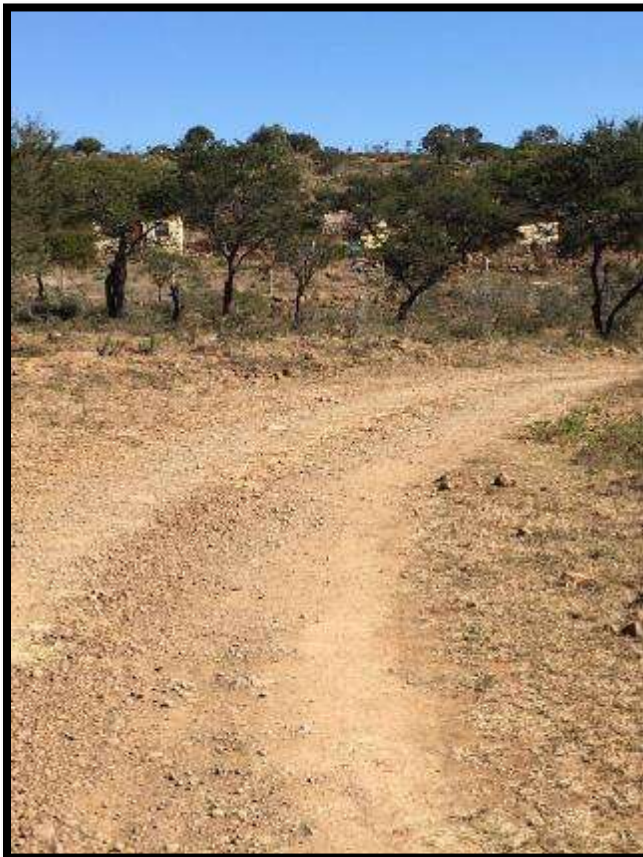


Figure 21. *Local Road L446.*



Figure 20. Graveyard 1. The grave is unmarked.



Figure 23. Graveyard 1 relative to adjacent road.



Figure 24. Graveyard 2. The visible grave is indicated by an informal soil heap. The grave is unmarked.



Figure 25. View from graveyard 2 to nearest structure associated with adjacent homestead.



Figure 26. Position of graveyard 3 relative to the closest homestead.



Figure 27. Graveyard 3. The unmarked grave is indicated by a heap of stones.

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APPENDIX 1.

RELOCATION OF GRAVES

Burial grounds and graves are dealt with in Article 36 of the NHR Act, no 25 of 1999. Below follows a broad summary of how to deal with grave in the event of proposed development.

□ If the graves are younger than 60 years, an undertaker can be contracted to deal with the exhumation and reburial. This will include public participation, organising cemeteries, coffins, etc. They need permits and have their own requirements that must be adhered to.

□ If the graves are older than 60 years old or of undetermined age, an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. This is a requirement by law.

Once it has been decided to relocate particular graves, the following steps should be taken:

□ Notices of the intention to relocate the graves need to be put up at the burial site for a period of 60 days. This should contain information where communities and family members can contact the developer/archaeologist/public-relations officer/undertaker. All information pertaining to the identification of the graves needs to be documented for the application of a SAHRA permit. The notices need to be in at least 3 languages, English, and two other languages. This is a requirement by law.

□ Notices of the intention needs to be placed in at least two local newspapers and have the same information as the above point. This is a requirement by law.

□ Local radio stations can also be used to try contact family members. This is not required by law, but is helpful in trying to contact family members.

□ During this time (60 days) a suitable cemetery need to be identified close to the development area or otherwise one specified by the family of the deceased.

□ An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account. This is a requirement by law.

□ Once the 60 days has passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.

