PHASE ONE HERITAGE IMPACT ASSESSMENT OF THE PROPOSED UPGRADE OF NINI ACCESS ROAD (LOCAL ROAD L2957) AND CAUSEWAY NEAR DUNDEE, KWAZULU-NATAL

ACTIVE HERITAGE cc.

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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
IIA	Intermediate Iron Age
ISA	Intermediate Stone Age
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

A First Phase Heritage Impact Assessment and survey of the proposed Nini access road and causeway on local road L2957 near Dundee, KwaZulu-Natal identified some heritage sites in the greater project area. These included Later Iron Age Sites, Historical Stone walled Sits and Grave Sites. However, none of these occur within 50m from the proposed road trajectory. None of these sites need mitigation. No graves were observed within the footprint. The paleontologist reports that the Nini Access Road development will not pose a significant threat to local fossil heritage resources. Potential paleontological impact resulting from this particular development is considered low. However, construction work may expose archaeological and fossil material and 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

Consultant:	Hanslab (Pty) Lmt sub-consulted Active Heritage cc to conduct the heritage impact assessment. Active Heritage cc sub-consulted Paleoservices cc to complete the paleontological component of the study.
Type of development:	The KZN Department of Transport (DOT) proposes to upgrade the existing access road to a Type 7A Local Road (gravel road) which is approximately 2.219 km in length and 6 m in width that conforms to DOT standards. The existing dirt road (Fig 3) will be upgraded in one of Dundee villages off P6-4 on local road L2957. DOT also proposes to construct a causeway structure within the water course. (6m in width and 7.260Km in length) that conforms to DOT standards. Based on DOT standard details for a causeway the approx. width is 8.45 m and length is 7.4 m which varies according to the stream width. A standard portal causeway will be constructed with a length of 10 m and width of 8 m which will be supported on pad foundation founded on bedrock.
Rezoning or subdivision:	Not applicable
Terms of reference	To carry out a Heritage Impact Assessment including the paleontological component.
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 situated adjacent to the R33 approximately 3.4km south of Pomeroy and 55km south of Dundee (Fig 1). It falls within the Msinga Local Municipality and the uMzinyathi District Municipality. The offices of the Msinga Municipality is located in the town of Tugela Ferry. The site for the proposed development is located in one of the villages in the Msinga Municipality on local road L2957 (Fig 2). The project area comprises of rural residential area intercepted by fields used for crop production, open areas used for grazing livestock and secondary roads. Most residential areas are on undulating terrain with gentle slopes. In some areas

particularly along the water ways and streams the area is distinctively incised by dongas and sheet erosion scars (Fig 4).

The proposed access road (L2957) is located at the following GPS coordinates:

Starting point :	28°35´21.70˝ S	30°26´56.44˝E
Middle/Additional point of the activity :	28°34´59.41˝S	30°27´21.51˝ E
End point of the activity:	28°35´07.36˝S	30°28´01.92˝ E

1.2. Relevant Legislation:

According to the National Heritage Resources Act, 1999 (NHRA) (Act No. 25 of 1999), the heritage resources of South Africa include:

a. places, buildings, structures and equipment of cultural significance;
b. places to which oral traditions are attached or which are associated with living heritage;
c. historical settlements and townscapes;
d. landscapes and natural features of cultural significance;
e. geological sites of scientific or cultural importance;
f. archaeological and palaeontological sites;
g. graves and burial grounds, including-
i. ancestral graves;
ii. royal graves and graves of traditional leaders;
iii. graves of victims of conflict;
iv. graves of individuals designated by the Minister by notice in the Gazette;
v. historical graves and cemeteries; and
vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
h. sites of significance relating to the history of slavery in South Africa;
i. movable objects, including-
i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;

ii. objects to which oral traditions are attached or which are associated with living heritage;
iii. ethnographic art and objects;
iv. military objects;
v. objects of decorative or fine art;
vi. objects of scientific or technological interest; and
vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

2 SCOPE OF WORK

This study aims to identify and assess the significance of any heritage and archaeological resources occurring on or adjacent to the proposed development. Based on the significance, the impact of the development on the heritage resources will be determined and appropriate actions to reduce the impact on the heritage resources put forward. In terms of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of:

a. its importance in the community, or pattern of South Africa's history;
b. its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
c. its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
d. its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
e. its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
f. its importance in demonstrating a high degree of creative or technical achievement at a particular period;
g. its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
h. its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and

i. sites of significance relating to the history of slavery in South Africa.

3 BACKGROUND TO HISTORY OF THE AREA

3.1 Archaeology

Portions of the greater Msinga area have been systematically surveyed for archaeological heritage sites in the past. These were mostly conducted by archaeologists attached to the then Natal Museum as well as by Amafa staff. Sixty sites are recorded in the data base of the KwaZulu-Natal Museum. These include fourteen Early Stone Age sites, eight Middle Stone Age sites, ten Later Stone Age sites, three rock painting sites, and forty Later Iron Age sites. The majority of the Early Stone Age sites occur in open air context in large dongas. Middle and Later Stone Age sites occur in context in four rock shelters. Two of these shelters also contain typical San fine line paintings. The majority of the known Later Iron Age sites are situated to the south east of Nqutu. They were located during a large scale survey of the area by archaeologists who were interested in the Later Iron Age ecology of Zululand (Hall 1980). They are demarcated by characteristic stone walling. Three stone walling typologies have been identified in the area namely Type A, C, and D (ibid).

The San were the owners of the land for almost 30 000 years but the local demography started to change soon after 2000 years ago when the first Bantu-speaking farmers crossed the Limpopo River and arrived in South Africa. Around 800 years ago, if not earlier, Bantu-speaking farmers also settled in the greater Nqutu area. Although some of the sites constructed by these African farmers consisted of stone walling not all of them were made from stone. Sites located elsewhere in the KwaZulu-Natal show that many settlements just consisted of wattle and daub structures. These Later Iron Age sites were most probably inhabited by Nguni-speaking groups who were the direct ancestors of the Zulu (Bryant 1965). The area is presently dominated by the amaThembu and amaCunu tribal groupings. With the expansion of the Zulu kingdom of King Shaka in the early 1820's the study area became firmly incorporated into this pre-capitalist kingdom. It is not surprising that this area played such a central part in the colonial period history of KwaZulu-Natal. The Battle of Blood River, between Boer and Zulu, took place to west of the study area in 1838, but it was the Anglo-Zulu war of

1879 that was to a large part acted out in the immediate vicinity of the project area. These battle field sites as well as associated graves and buildings of the era are proclaimed heritage sites and are protected by provincial heritage legislation (Derwent 2006).

3.2 Anglo-Zulu War

The Anglo-Zulu War was a military conflict between the British Empire and the Kingdom of Zululand, taking place from January 8 to July 4, 1879, in South Africa. The root cause of the Anglo-Zulu War was the discovery of diamonds in the region, in the land near the Vaal River, in 1867. This led to an increased British interest in the area. But there were two obstacles: the Boers (politically organized in the Orange Free State and the Republic of Transvaal), and the Kingdom of Zululand, which arose in the first half of the 19th century. During the 1870s, West Griqualand, which was the territory where diamonds had been discovered, was annexed to the British Empire. In December 1878, the British High Commissioner, Sir Henry Bartle Frere, sent an ultimatum to Cetshwayo, the King of Zululand. Having obtained no answer to the ultimatum, 15,000 British troops, under the command of Lord Chelmsford, began the invasion of Zululand by January 8, 1879.

The Anglo-Zulu War was savage and comprises a series of eight battles, beginning with the Battle of Isandlwana, at which 22,000 Zulu warriors defeated 1,800 British soldiers on January 22, 1879. Isandlwana was an unexpected blow to the morale of the British empire as it the was the scene of the defeat of Imperial & Colonial forces on 22 January 1879 mostly from the 24 Regiment, Natal Carbineers and Natal Native Regiments. This epic battle took place in the southern section of the project area and a memorial on the site commemorates the brave warriors who gave their lives on this day (Derwent 2006). The defence of Rorke's Drift on 22 January 1879, to the south of the project area, followed the defeat of the British forces at Isandlwana and commenced at 16.30 pm and went on through the night to about 4 am. The Mission Station at the foot of the Oskarberg was held by 1st & 2nd Company of the 24th Regiment. It had been left under the command of Major Henry Spalding. The battle eventually left about 370 Zulu dead (4000 under the command of Prince Dabulamanzi kaMpande), and 17 British soldiers dead out of a force of about 100 men. The Zulu's eventually withdrew. Having overcome three military defeats (Battle of Isandlwana, Battle of Intombe, and Battle of Hlobane), the British began gaining the upper hand as

they obtained decisive victories in the last four battles of the war: Battle of Kambula (March 29), Battle of Gingindlovu (April 2), Battle of Eshowe (April 3), and Battle of Ulundi (July 4, 1879). After the defeat at Isandlwana, the British were determined to take revenge and defeat the Zulu's led by King Cetshwayo kaMpande, and crossed the White Umfolozi on 4 July 1879 with a force of approximately 5124 men. Led by Lord Chelmsford a, battle took place that day which led to the Zulu defeat. Fort Marshall, situated within the northern section of the project area, was occupied between May & July 1879 by the 24th Regiment. There are 11 soldiers buried there, most dying of wounds from the battle of Ulundi. The ramparts and graves are still visible. As a result of the British victory over the Zulus, the Kingdom of Zululand lost its independence and it became part of a British Colony (ibid).

4 BACKGROUND INFORMATION OF THE SURVEY

4.1 Methodology

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

A ground survey, following standard and accepted archaeological procedures, was conducted on the 18 July 2015.

In addition, members of local communities were approached to ask for the location of potential grave sites as well as other heritage features in the area.

4.2 Restrictions encountered during the survey

4.2.1 Visibility

Visibility was good.

4.2.2 Disturbance

No disturbance of any heritage sites or features was noted.

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.

5 DESCRIPTION OF SITES AND MATERIAL OBSERVED

5.1 Locational data

Province: KwaZulu-Natal
Towns: Dundee, Pomeroy

5.2 Description of the general area surveyed

No heritage sites were observed within 50m from the proposed road upgrade. Although some Zulu homesteads are located along the L2957 (Fig 5) none of these had grave sites associated with them. The area is also not part of any known cultural landscape.

5.3 Description of sites

Not applicable as no heritage sites occur on the footprint.

6 STATEMENT OF SIGNIFICANCE (HERITAGE VALUE)

6.1 Field Rating

Not applicable, as no heritage sites occur on the footprint.

Table 3. 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

A palaeontological foot survey of the study area has indicated that the proposed development will not impact fossiliferous bedrock sediments because it is largely mantled by geologically recent superficial deposits (alluvium and residual soils) of low palaeontological sensitivity. It is concluded that the Nini Access Road development will not pose a significant threat to local fossil heritage resources. Potential palaeontological impact resulting from this particular development is considered low. The study area is assigned a site rating of General Protection C (GPA) (Appendix 1).

7 SUMMARY AND RECOMMENDATIONS

- The heritage impact assessment survey identified no heritage sites adjacent to and within 50m of the proposed Access Road L2957.
- The area has a low rating in terms of its palaeontological significance and the development may proceed.

8 MAPS AND PHOTOGRAPHS

Figure 1: Google Earth Photograph showing the locality of the Project Area (Nini Road) in KwaZulu-Natal.

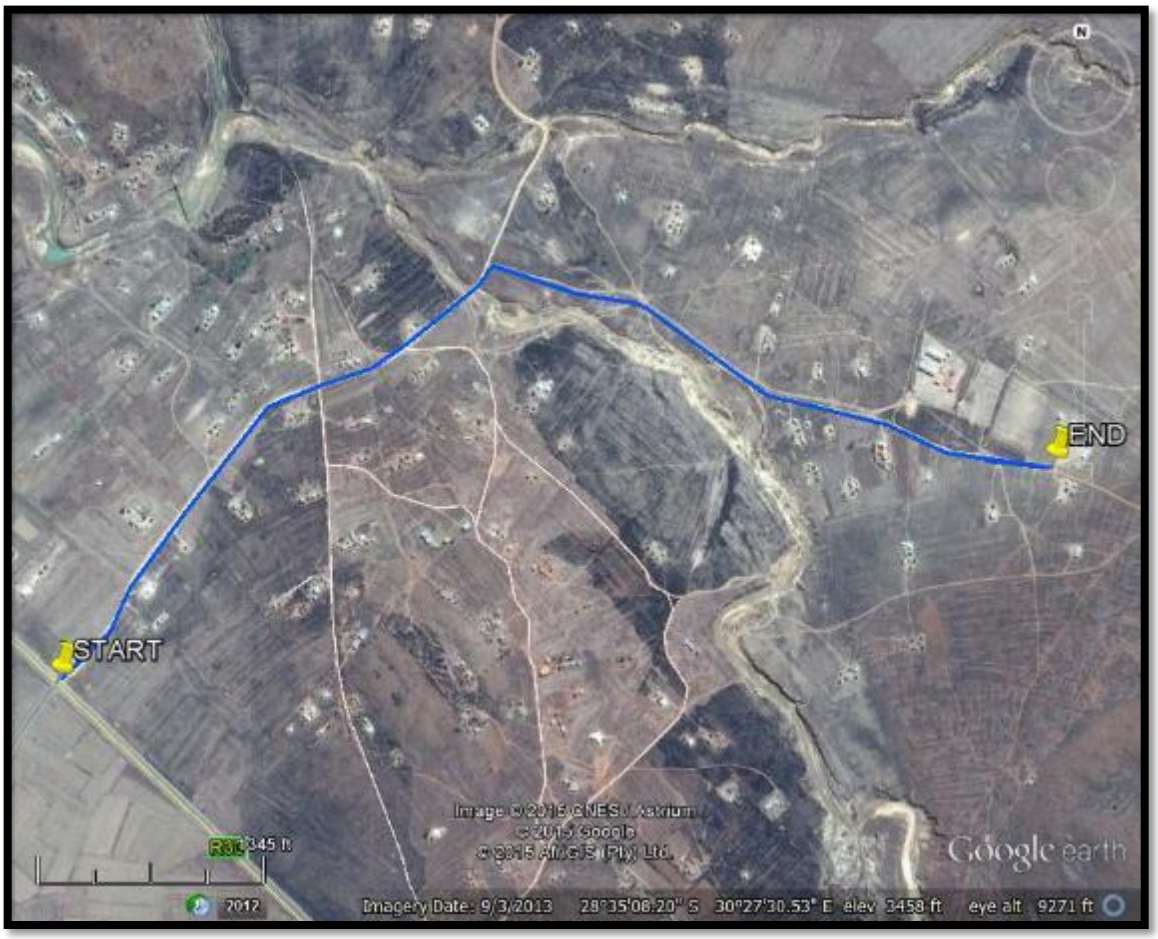

Figure 2: Google Earth Photograph showing the locality of the proposed Access Road L2957 near Pomeroy in northern KwaZulu-Natal.

Figure 3. Access Road L2957. Homesteads are visible in the far distance.

Figure 4. Access Road L2957 showing dongas and alien vegetation adjacent to the road.

Figure 5. No graves were associated with any of the homesteads situated adjacent to the road.

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APPENDIX 1

Phase 1 Palaeontological Impact Assessment of the proposed 2.3 km – long Nini Access Road near Pomeroy, KZN Province.

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Executive Summary

A Phase 1 palaeontological impact assessment was conducted for the rehabilitation of a 2.3km section of the Nini Access Road near the town of Pomeroy, KZN Province. Potentially fossiliferous rock units within the area are made up of Vryheid Formation sandstones of the Ecca Group. A foot survey of the study area has indicated that the proposed development will not impact fossiliferous bedrock sediments because it is largely mantled by geologically recent superficial deposits (alluvium and residual soils) of low palaeontological sensitivity. It is concluded that the Nini Access Road development will not pose a significant threat to local fossil heritage resources. Potential palaeontological impact resulting from this particular development is considered low. The study area is assigned a site rating of General Protection C (GP C).3

Introduction

A Phase 1 palaeontological impact assessment was conducted for the rehabilitation of a 2.3km section of the Nini Access Road near the town of Pomeroy, KZN Province (**Fig. 1**).

Methodology

The affected area was evaluated on the basis of existing field data, geological maps and published literature. The proposed road section was investigated by means of a pedestrian survey. The study area is rated according to field rating categories as prescribed by SAHRA (**Table 1**).

Locality data

1 : 50 000 scale topographic map: 2830CB Pomeroy
1 : 250 000 scale geological map 2830 Dundee
Site coordinates (**Fig 1**):
A) 28°35'20.94"S 30°26'57.56"E
B) 28°34'56.53"S 30°27'25.01"E
C) 28°35'7.69"S 30°28'2.46"E

The access point to the 2.3 km road section is located off the R33, about 4 km south of Pomeroy. The affected area in made up of open grassland, situated on undulating terrain that is drained by the nearby Sampofu River **(Fig. 2).**

Palaeontological Background

Palaeontological heritage in and around the study area is represented by Karoo Supergroup sandstones belonging to the Early Permian, Vryheid Formation of the Ecca Group (Lindstrom 1987) (**Fig. 3**). The Vryheid Formation is well-known for the occurrence of coal beds and its rich variety of plant fossils (Anderson and Anderson 1985; Bamford *et al.* 2004). Vertebrate fossils are absent from the Vryheid Formation, although the aquatic reptile, *Mesosaurus,* as well as fish (*Palaeoniscus capensis*), have been recorded in equivalent-aged strata in the Whitehill Formation in the southern part of the Karoo basin (Oelofson and Aroujo 1987; MacRae, 1999; Modesto, 2006; Johnson *et al.* 2006). Invertebrate trace fossils have been described in 4
some detail by Mason and Christie (1986). Dolerites in the form of dykes and sills are common in the region and are not palaeontologically significant. Geologically recent (Quaternary) and localized fossil-rich alluvial exposures, assigned to the Quaternary Cornelia Formation, are found about 200 km to north of Dundee. There is currently no record of Quaternary fossil remains or exposures from the study area.

Field Assessment

The proposed section is situated within an outcrop area of light-coloured, cross-bedded Vryheid Formation sandstones (Ecca Group, Karoo Supergroup) that are mantled by a substantial capping of Quaternary superficial deposits (alluvium and residual soils) derived from the nearby Sampofu River system (**Fig. 4 - 6**). The proposed development with primarily impact on well-developed superficial deposits as well as dolerite bedrock where the section crosses the Sampofu River (**Fig. 7).**

Impact Statement and Recommendations

Potentially fossiliferous rock units within the area are made up of Vryheid Formation sandstones of the Ecca Group. A foot survey of the

study area has indicated that the proposed development will not impact fossiliferous bedrock sediments because it is largely mantled by geologically recent superficial deposits (alluvium and residual soils) of low palaeontological sensitivity. It is concluded that the Nini Access Road development will not pose a significant threat to local fossil heritage resources. Potential palaeontological impact resulting from this particular development is considered low. The study area is assigned a site rating of General Protection C (GP C).

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Tables and Figures

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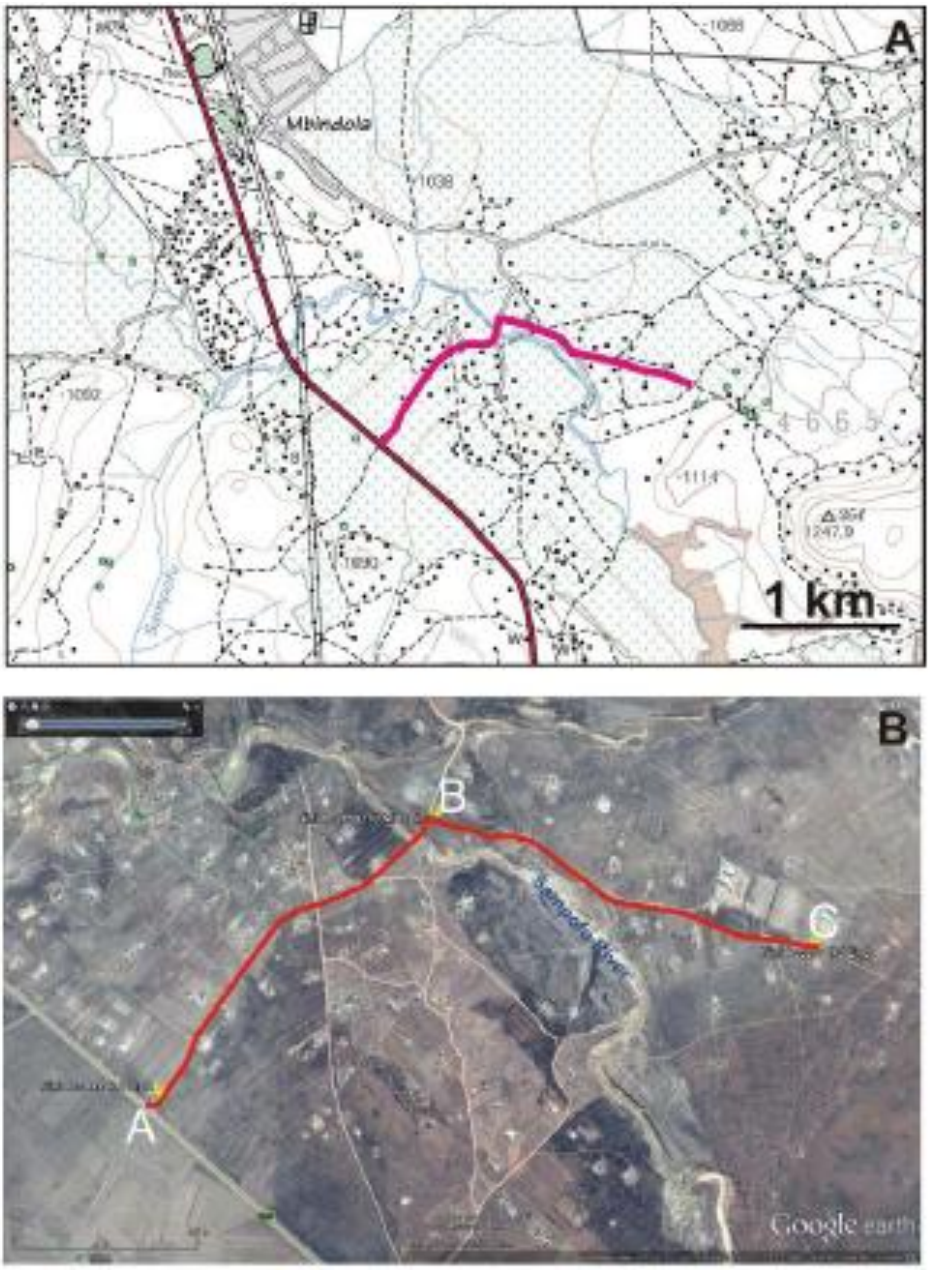

Figure 1. Map of the proposed Nini Access Road. (A) Portion of 1:50 000 scale topographic map 2830CB Pomeroy. (B) Aerial view of the proposed road section.

Figure 2. The Nini Acces Road, looking east (top) and south (bottom).

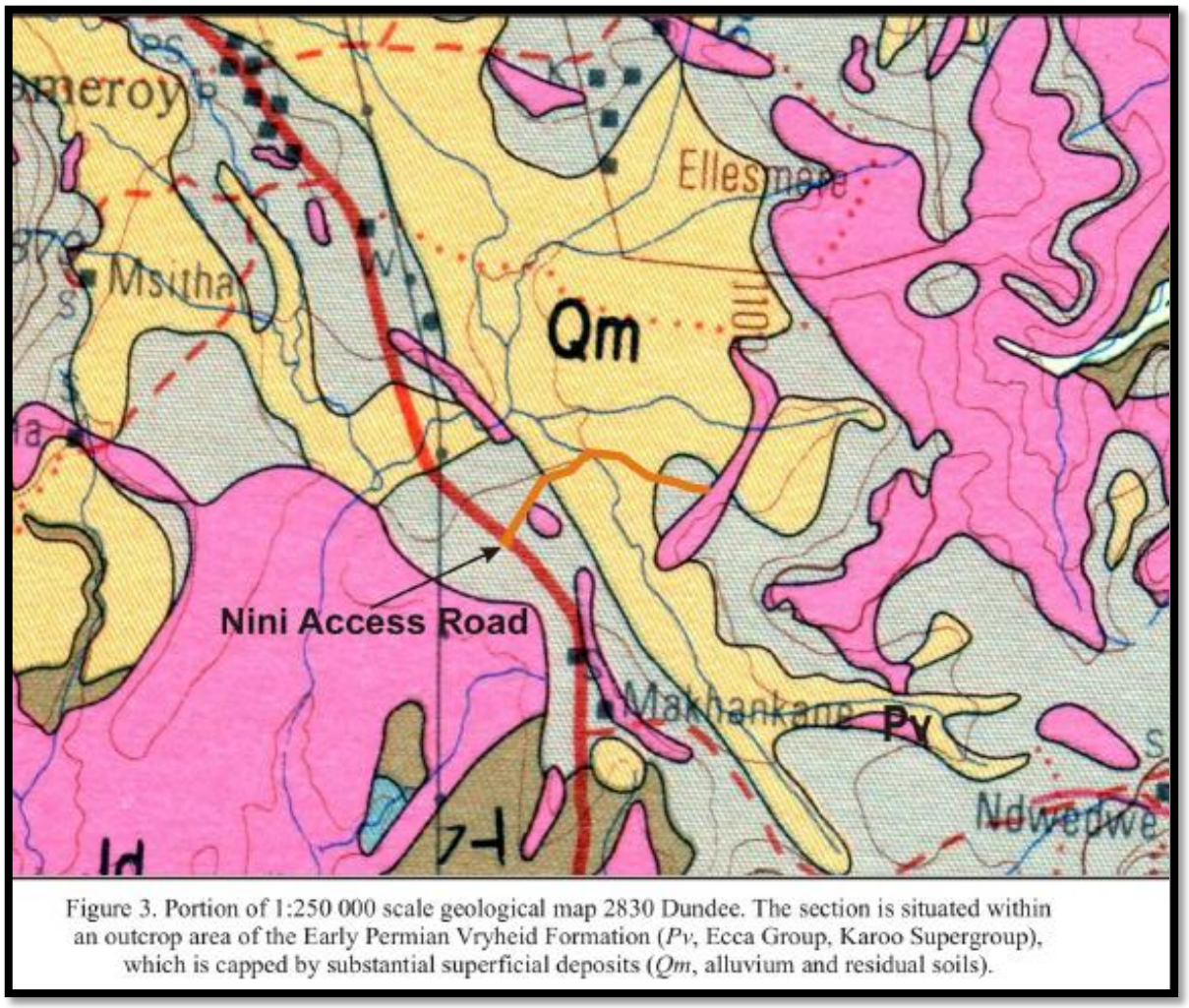

Figure 3. Portion of 1:250 000 scale geological map 2830 Dundee. The section is situated within an outcrop area of the Early Permian Vryheid Formation (*Pv*, Ecca Group, Karoo Supergroup), which is capped by substantial superficial deposits (*Qm*, alluvium and residual soils).

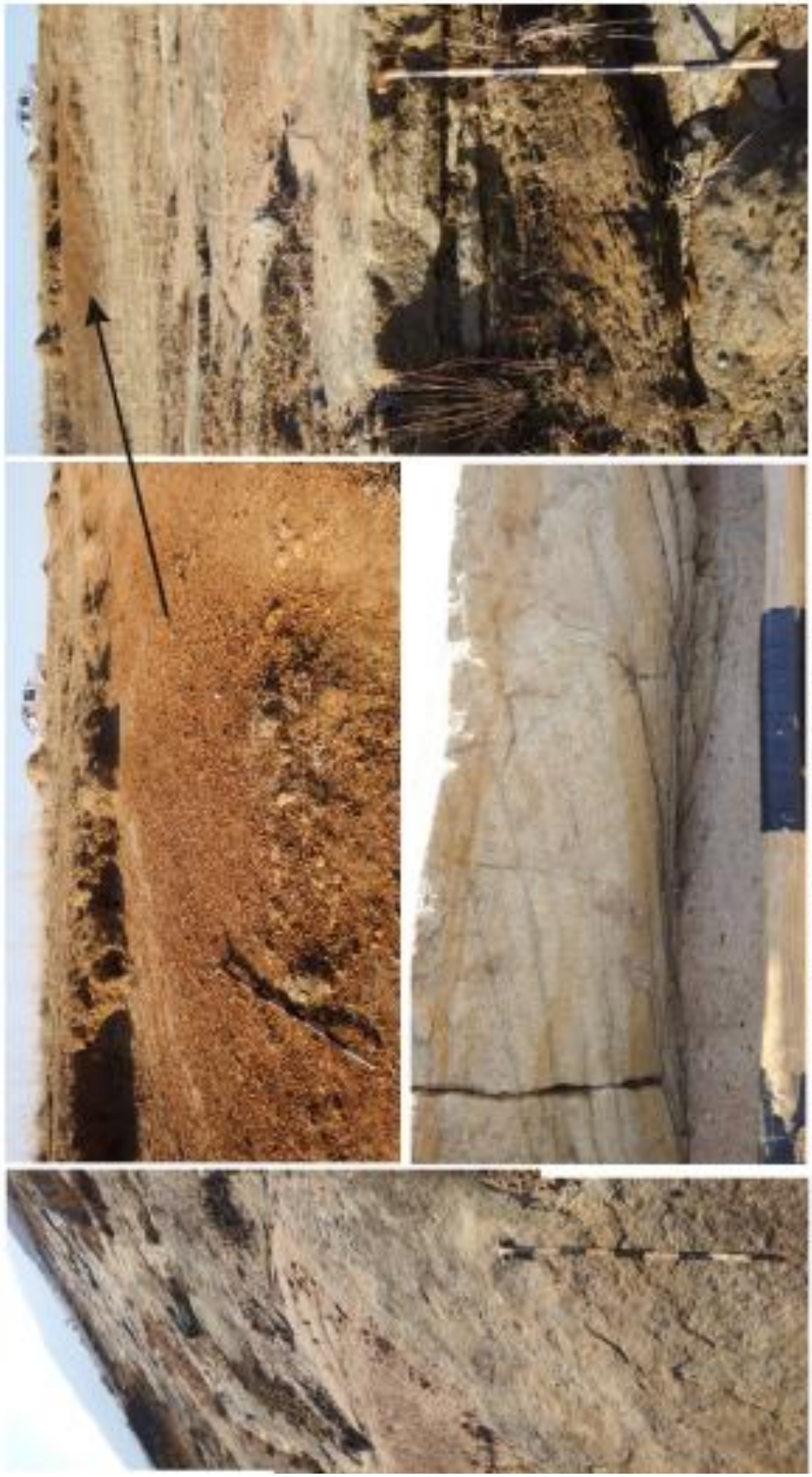

Figure 4. Light-coloured, medium to coarse-grained Vryheid Formation sandstones are exposed along a streambed of the Sampofu River that runs parallel to a the Nini road, and is capped by substantial alluvial deposits. Scale 1 = 10 cm.

Figure 5. Looking south along the dry riverbed of the Sampofu River towards the endpoint (see Fig. 1, C). Exposed dolerite boulders (left) are capped by mottled-grey overbank sediments at where the section crosses the riverbed (center & right). Scale 1 =10 cm.

Figure 6. Well-developed alluvial deposits of the Sampofu River, looking west towards the R33.

Figure 7. Intrusive dolerite bedrock exposed near point B (Fig. 1, B) along the dry riverbed of the Sampofu, looking east-notheast.