

**PROPOSED UPGRADE OF D1867 ROAD SITUATED
WITHIN THE PHONGOLA MUNICIPALITY, KWAZULU-
NATAL AND MPUMALANGA PROVINCES**

Phase 1 Heritage Impact Assessment

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EXECUTIVE SUMMARY

The proposed upgrade of the D1867 road comprises a 10.5 km section of the D1867 road starting at km 6 and ending at km 16.5. The project will include the upgrade of the road from gravel to a blacktop surface. Bridges will be upgraded, and the project will also include the use of borrow pits. The road will not be widened.

The length of the road upgrade is 10.5 km in length hence it triggers section 41 (1)(a) of the KwaZulu-Natal Amafa and Research Institute Act (Act No 5 of 2018) and section 38 (1)(a) of the National Heritage Resources Act (Act No 25 of 1999), which refer to the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length. Although the borrow pits maybe less than 5 ha (50 000 m²) in size, they still trigger sections 41 (1)(c) and section 38 (1)(c) of both the above Acts that refer to any development or other activity which will change the character of site- (i) exceeding 5000 m².

The D1867 road is situated within the uPhongola Municipality in KwaZulu-Natal, and it links with N2-32 at Km 68, runs along the border and, for a short section, diverts into Mpumalanga, and intersects with the D1869 road. The start point of the road is at 27°20'38.65" S; 31°11'04.57" E and ending at 27°16'52.62" S; 31°14'23.81" E.

An inspection of the project site was undertaken on 09 July 2019. Visibility was good in general although the grass layer abutting the road and around the borrow pits was dense.

A diversion of the current alignment of the D1867 is proposed where the road loops into the Mozana River valley before crossing the river. Two homesteads are situated south-east of the existing road as well as a burial site consisting of at least 16 graves. The graves are situated between the two homesteads and are located about 80m south-east from the proposed road diversion. The graves are made from packed rock and earth, and some appear to be well over 60 years of age

The proposed road diversion also crosses a rocky outcrop which is in pristine condition. It should be avoided by the proposed upgrade as such areas are often archaeologically sensitive.

Homesteads and other structures were found to be situated some distance from the D1867 and at no risk of damage by the proposed upgrade. A number of graves were noted that are situated within homestead boundaries hence at no risk by the road upgrade.

A temporary wooden structure was found close to the road. The house is used by Shembe followers when they come to the area to worship. It is situated within 6m of the road and could be impacted by the upgrade of the D1867. The structure is significant because of its association with the Shembe religion and its potential importance or use to the local Shembe community. Another structure made of stone was found not far from the wooden structure which is also used by Shembe followers. The structure is significant again for its association with the Shembe religion. It is situated close to the road and could be impacted by the road upgrade.

The three proposed borrow pit sites were inspected and all were found to have been previously mined. No heritage resources were found therefore, any of the sites can be used.

The proposed diversion across the Mozana River should not impact the burial site located between the two homesteads. As it appears that the burial site falls within the Mpumalanga Province, section 36 of the NHRA will apply. Section 36 (1) states that where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit. Sub-section (3) (a)(b) of the NHRA states that no person may, without a permit issued by SAHRA or a provincial heritage resources authority—destroy, damage, alter, exhume, remove from its original position, or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority. It should be noted that graves are also protected in terms of section 39 (1) of the KwaZulu-Natal Amafa and Research Institute Act, 2018.

An assessment of the significance of impacts of the upgrade of the road on graves indicated that both pre- and post-mitigation, the impact would be a low impact due to the distance between the burial site and the proposed road upgrade. It is recommended that the burial site is clearly demarcated to avoid any impacts to the graves during the construction phase of the project. Of the two deviation alternatives, alternative 5 is the preferred option from a heritage perspective as it is located some distance from the burial site as well as from the two homesteads.

It is recommended that, in discussion with the Shembe leaders in the community the temporary Shembe structure is moved away from the road and that the immovable structure is protected by a buffer to avoid damage to it during the upgrade of the road.

If the recommendations and mitigation measures provided in this report are implemented and adhered to as well as those of the desktop palaeontological study, then the upgrade of the D1867 may proceed from a heritage perspective.

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I, **Jean Lois Beater**, act as an independent specialist for this project and I do not have any vested interest either business, financial, personal or other, in the proposed activity other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014.

SPECIALIST DETAILS

Name	Qualification	Professional Registration
Jean Beater	MA (Heritage Studies) MSc (Environmental Management)	Member of Association of South African Professional Archaeologists (No. 349) Member of IAIAAsa (No. 1538)

1. INTRODUCTION

The proposed upgrade of the D1867 road comprises a 10.5 km section of the D1867 road starting at km 6 and ending at km 16.5. The project will include the upgrade of the road from gravel to a blacktop surface. Bridges will be upgraded, and the project will also include the use of borrow pits. The road will not be widened.

This is the Phase 1 Heritage Impact Assessment (HIA) report for the proposed road upgrade.

2. LEGISLATIVE BACKGROUND

The length of the road upgrade is 10.5 km in length hence it triggers section 41 (1)(a) of the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) and section 38 (1)(a) of the National Heritage Resources Act (NHRA), 1999 (Act No 25 of 1999) which list developments or activities that may require an HIA. The relevant section of the Act refers to the following development: *“the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length”*.

It is understood from the Environmental Assessment Practitioner (EAP), Afzelia Environmental Consultants, that the borrow pits maybe less than 5 ha (50 000 m²) in size. However, they still trigger section 41 (1)(c) and section 38 (1)(c) of the above Acts respectively that refer to *any development or other activity which will change the character of site- (i) exceeding 5000 m²*.

In addition, the proposed project may impact on graves, structures, archaeological and palaeontological resources that are protected in terms of sections 37, 38, 39, and 40 of the KwaZulu-Natal Amafa and Research Institute Act, 2018 as well as sections 34, 35 and 36 of the NHRA.

In terms of section 3 of the NHRA, heritage resources are:

- (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 paleontological 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) 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).

The Phase I HIA was undertaken to assess whether any heritage resources will be impacted by the proposed road upgrade.

3. LOCATION

The D1867 road is situated within the uPhongola Municipality, and it links with N2-32 at Km 68, runs along the border with Mpumalanga and, for a short section, diverts into Mpumalanga, and intersects with the D1869 road. The start point of the road is at 27°20'38.65" S; 31°11'04.57" E and ending at 27°16'52.62" S; 31°14'23.81" E.

The Community Liaison Officer (CLO) for the project told the specialist that the area in which much of the upgrade is taking place is called Khiphunyawo or Tobolsk (the name of farm on which the area is situated).

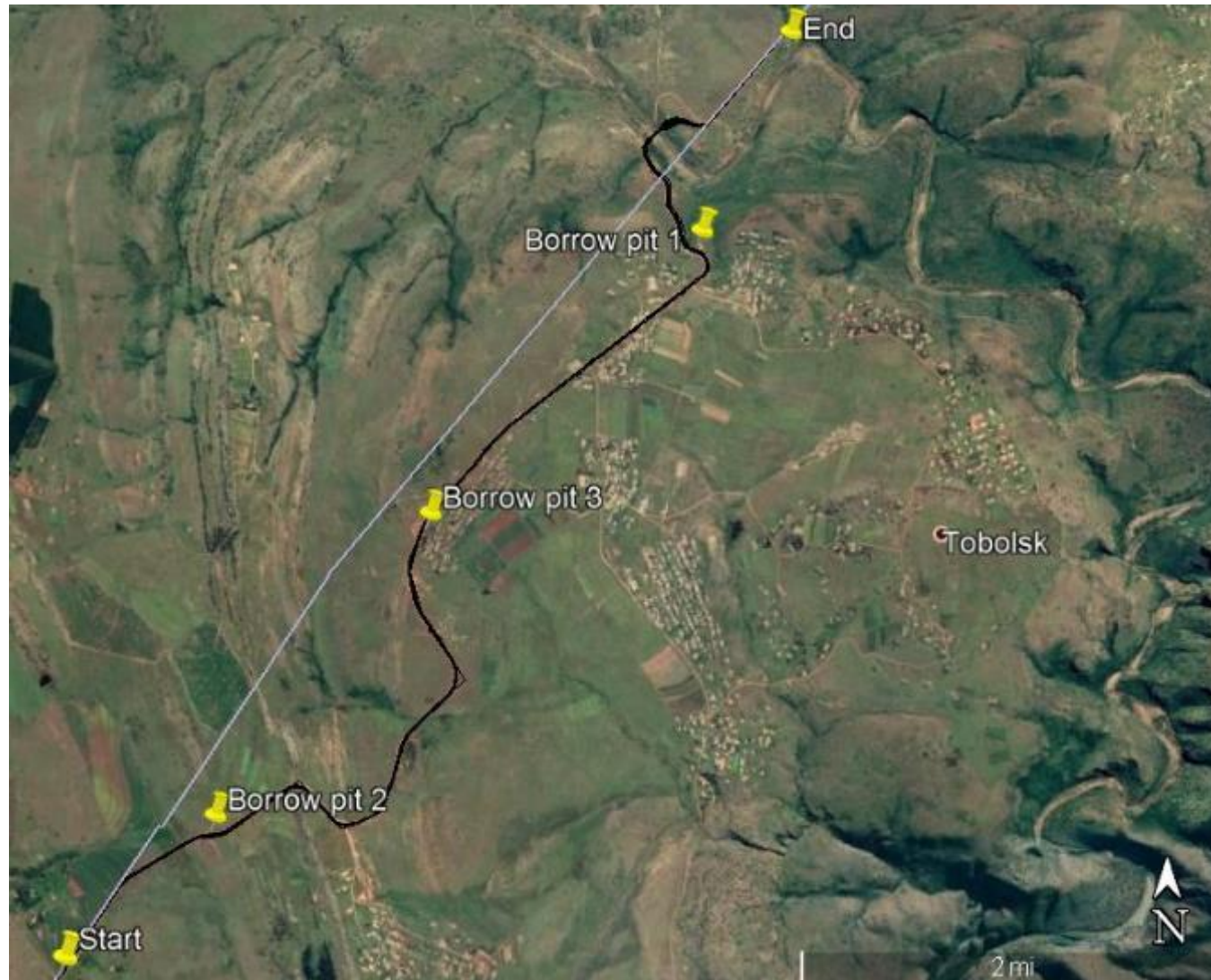


Figure 1: Aerial view of section of road to be upgraded indicated in black

4. TERMS OF REFERENCE

Undertake a Phase 1 Heritage Impact Assessment in order to determine the possible existence of heritage resources, as listed above, that could be impacted by the proposed road upgrade. Provide mitigation measures to limit or avoid the impact of the proposed project on heritage resources (if any).

As the road falls within two provinces, namely KwaZulu-Natal and Mpumalanga, the Phase 1 HIA report will be submitted by the Environmental Assessment Practitioner to both provincial heritage resources authorities, namely the KwaZulu-Natal Amafa and Research Institute (hereafter, referred to as the Institute), and the Mpumalanga Provincial Heritage Resources Authority (MPHRA), for their assessment and comment.

5. METHODOLOGY

A survey of literature, including other heritage impact assessment reports completed for the larger area, was undertaken in order to ascertain the history of the area and what type of heritage resources have or may be found in the area of development.

An inspection of the project site was undertaken on 09 July 2019. The specialist was accompanied to site by the CLO, Mr. Thami Msibi. Visibility was good in general although the grass layer abutting the road and around the borrow pits was dense.

6. HISTORICAL BACKGROUND OF AREA

According to G&A Heritage (2018:16-17), the larger area is home to all three of the known phases of the Stone Age, namely: Early- (2.5 million – 250 000 years ago), Middle- (250 000 – 20 000 years ago) and Late Stone Age (22 000 – 200 years ago). Early to Middle Stone Age (MSA) sites are uncommon in this area, however rock-art sites and Late Stone Age (LSA) sites are much better known. During the MSA, 200 000 years ago, modern man or Homo sapiens emerged, manufacturing a wider range of tools, with technologies more advanced than those from earlier periods. This enabled hunter-gatherer bands to adapt to different environments. From this time onwards, rock shelters and caves were used for occupation and reoccupation over long periods of time. The Late Stone Age is associated with the predecessors of the San and Khoi Khoi. Stone Age people lived well into the 19th century in some places in South Africa.

During the third century AD, several groups of farming peoples from eastern and south-central Africa began to settle along the east coast and river valleys that drain into the Indian Ocean. In eastern South Africa, these early farmers displayed a preference for settling on savannah environment along major water bodies where annual precipitation provided adequate moisture for grain production. Over thirty Early Iron Age (EIA) identified settlements in the Thukela Basin are found on discontinuous patches of rich colluvial soils within a short distance of the Thukela River or its tributaries. EIA settlements were initially established in the coastal forest in the fifth century AD and later in the savannah woodland belt alongside rivers in the (seventh century AD). A considerable number of Late Iron Age (LIA) stone walled sites, dating from the 18th and the 19th centuries, occur along and on top of the rocky ridges in the larger area. Stone walled settlements are concentrated in clusters of sites and sometimes are dispersed over large areas. Many of the Iron Age sites are also associated with Zulu encampments. Due to the semi-nomadic nature of such sites and the use of removable huts, the sites are often difficult to identify and might manifest in some stone circles, use to anchor these structures to the ground (G&A Heritage 2018:17-18).

During the 1880s, the boundaries between Zulu, Tembe-Tsonga, Swazi, Transvaal, and British territories were in a state of flux. They had not been conclusively defined and surveyed. Indeed, earlier there had been no reason to do so, for the region was unhealthy and not particularly desirable. Moreover, other land was still obtainable. Neither was there any major African clan or chieftain strong enough to claim unchallenged supremacy in the region and it was used by the Swazi, the various Tembe-Tsonga and Maputo groups as well as Zulu, white agents and concession seekers. The Transvaal required an outlet to the sea and a harbour of its own completely free from British influence. Tongaland increased in strategic importance as other points of coastal access were successively blocked. By the late 1880s it was therefore strategically vital for the Transvaal to present a claim to land adjoining Tongoland in the hope that a portion of Tsonga country might be annexed to the Transvaal and Kosi Bay become the long dreamed-of harbour. British policy vacillated between allowing the Transvaal to claim Tongaland and annexing it to Zululand as part of imperial expansion. Under these circumstances, the Transvaal and British governments jockeyed for influence with the chieftains of the region in an attempt to achieve hegemony. How best to lay claim to the northern bank of the Pongola River was clearly the Transvaal's most pressing problem. So, the proclamation of a game reserve was a solution to the political frustration confronting Kruger's government and the Pongola Game Reserve was thus formally proclaimed on 13 June 1894 (Pongola Game Reserve 2019:2).

During the Depression years of the 1930s, a government irrigation settlement was established on the west side of the Lebombo mountains. This settlement comprised 159 plots with a total area of 6,189 ha. A sugar mill was constructed in 1954 and water for irrigation was provided either by government-built gravity canals or was pumped directly from the Pongola River. This all led to the development of the town of Pongola (Royal Jozini Private Game Reserve Swaziland 2011:1). By 1955, plans were well advanced for the construction of the dam, to be built in the Pongolapoort – the gorge between the Ubombo and Lebombo Mountains. The dam was planned to support 40 000 to 50 000 ha of irrigation on the Makatini Flats. Apart from boosting commercial farming, the government also hoped to ‘stabilise the frontier’ bordering Mozambique and Swaziland (Royal Jozini Private Game Reserve Swaziland 2011:4).

7. RESULT OF SITE INSPECTION

The site inspection started at the end point (north-eastern end) of the proposed upgrade and proceeded southwards to the start point of the upgrade. There is existing infrastructure along the D1867 including power lines as well as a new water pipeline on the western side of the road. This pipeline runs the entire length of the proposed road upgrade.



Figure 2: View towards end point of road upgrade

A diversion of the current alignment of the D1867 is proposed where the road loops into the Mozana River valley before crossing the river (see **Figure 3** below). Diversion alternatives 4 and

5 are very similar with alternative 4 located slightly closer to the existing road and alternative 5 located slightly closer to the burial site discussed below.

Two homesteads are situated south-east of the existing road as well as a burial site consisting of at least 16 graves that were pointed out by those residing at the homestead. The graves between the two homesteads are located about 80m from the proposed road diversion. The graves are made from packed rock and earth, and some appear to be well over 60 years of age

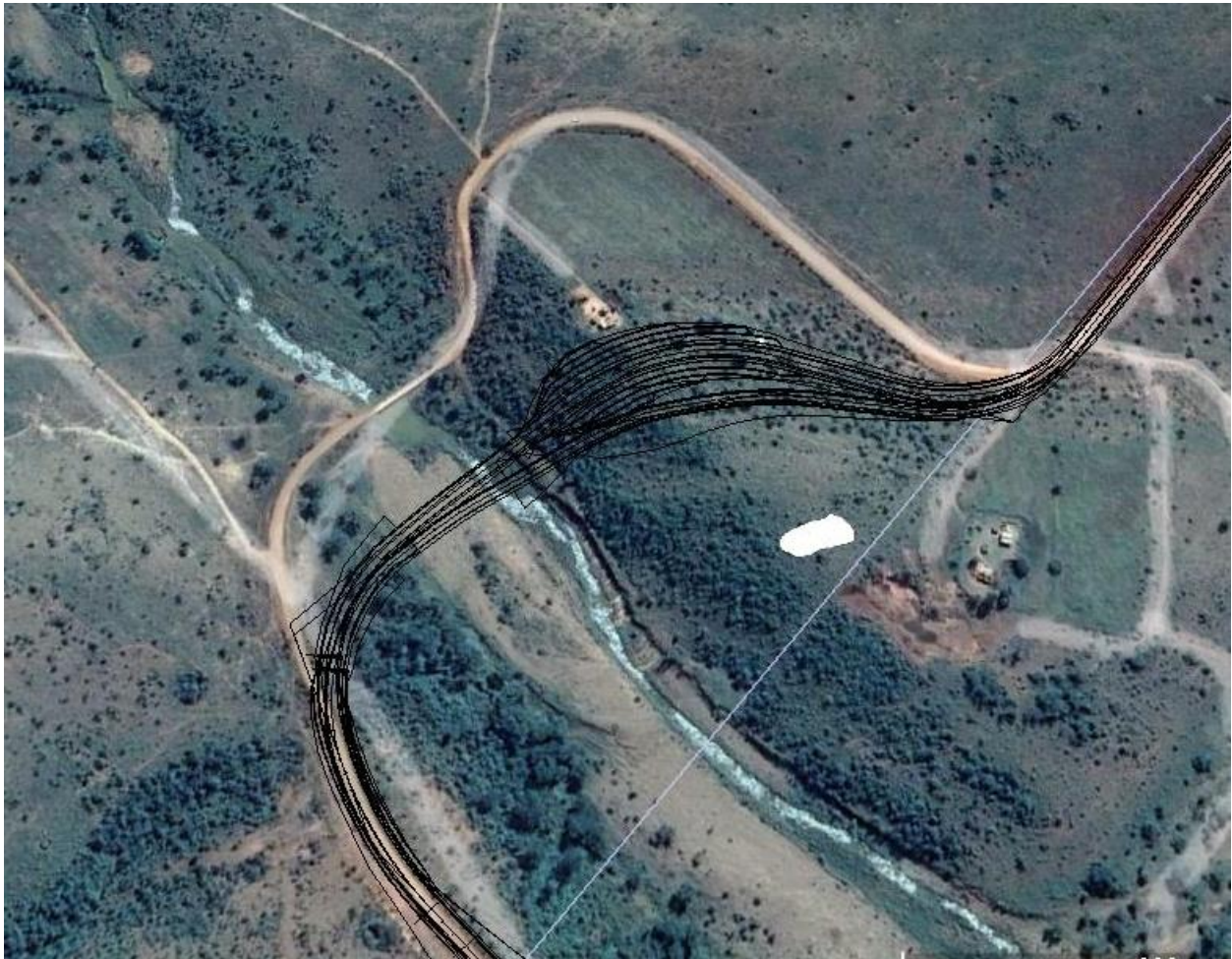


Figure 3: Burial site shaded in white with road diversion indicated in black

Between the graves and the homestead are the remains of several homesteads. The residents of the homestead explained that family members had lived in this area and when they died, the structures were dismantled. According to these residents, all associated graves are located in the burial site mentioned above.



Figure 4: Graves made from packed rock



Figure 5: Graves forming part of the burial site

The proposed diversion crosses a rocky outcrop that is situated above the river. The outcrop is in pristine condition and should be avoided by the proposed road upgrade as such areas can be archaeologically sensitive, although nothing was found during the site inspection.

The bridge crossing the Mozana River is a single vehicle bridge as can be seen in **Figure 6** below. The age of the bridge appears to be around 20-30 years old.

The site of the first borrow pit (coordinates: 27°17'42.00" S; 31°13'58.50" E) is situated above the valley after crossing the Mozana River. It is an existing borrow pit which has been previously mined. The area is highly disturbed and is currently used to dump building rubble and other waste (see **Figure 7** below). No heritage resources were found in and around the borrow pit.



Figure 6: Rocky outcrop



Figure 7: Existing bridge crossing Mozana River



Figure 8: Borrow pit 1 showing disturbance and dumping

Moving south from borrow pit 1, homesteads and other structures were found to be situated some distance from the D1867. A number of graves were noted that are situated within homestead boundaries hence at no risk by the proposed upgrade.



Figure 9: D1867 looking southwards



Figure 10: Graves within fence around homestead

Some structures situated along the road could be protected structures (structures older than 60 years) including a shop that is situated at the intersection of the D1867 and L1548 roads. However, the structures are situated far away enough not to be impacted by the road upgrade.



Figure 11: Potential protected structure

New structures have been built close to the road including a water reservoir and associated building, but these should not be impacted by the proposed upgrade.



Figure 12: Reservoir and associated building

Borrow pit 3 (coordinates: 27°18'50.60" S; 31°12'41.37" E) was inspected. It is an existing borrow pit that has been previously mined and is therefore highly disturbed. No heritage resources were found during the inspection.



Figure 13: Borrow pit 3

Moving south from borrow pit 3, a wooden temporary structure was found close to the road at 27°19'17.06" S; 31°12'48.00" E. The CLO explained that the house was used by Shembe followers when they came to the area to worship. It is within 6m of the road and could be impacted by the upgrade of the D1867. The structure is significant because of its association with the Shembe religion and its potential importance or use to the local Shembe community.



Figure 14: Shembe temporary structure

Another structure made of stone was found not far from the wooden structure which the CLO said was also used by the Shembe followers when they were in the area to worship. It is situated at 27°19'20.55" S; 31°12'50.39" E. The structure is significant again for its association with the Shembe religion. It is situated about 5m from the road and could be impacted by the proposed road upgrade.



Figure 15: Shembe structure close to road

Between the Shembe sites mentioned above and borrow pit 2, areas cultivated with maize were noted. Borrow pit 2 is an existing borrow pit. The area is highly disturbed by previous and current mining and no heritage sites were found.



Figure 16: Borrow pit 2

From borrow pit 2 until the start point of the proposed upgrade no further heritage resources were found. Graves were seen within homesteads some distance from the road and will not be impacted by the upgrade.



Figure 17: View of road looking south from borrow pit 2



Figure 18: View of D1867 looking northwards from starting point of upgrade

The heritage resources found during the site inspection of the proposed upgrade of the D1867 road are listed in **Table 1** below.

Table 1: List of heritage resources

COORDINATES	HERITAGE RESOURCE	PROXIMITY TO D1867
27°17'15.22" S; 31°13'56.18" E	Burial site with ± 16 graves; high heritage significance, many of the graves could be >60 years	The burial site should not be impacted by the proposed deviation alternatives
27°19'17.06" S; 31°12'48.00" E	Moveable structure; recent structure; significance is related to its association with Shembe religion	6m from road
27°19'20.55" S; 31°12'50.39" E	Structure; fairly recent structure; significance is related to its association with Shembe religion	5m from road

It is understood from the EAP that a desktop palaeontological assessment will be undertaken for the proposed road upgrade.

8. ASSESSMENT OF IMPACTS

The methodology used for the assessment of impacts of the proposed road upgrade was provided by the EAP. The direct, indirect and cumulative impacts of the issues identified through the Phase 1 HIA were assessed in terms of the following criteria:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
 - the lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
 - the lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;
 - medium-term (5–15 years) – assigned a score of 3;
 - long term (> 15 years) - assigned a score of 4; or
 - permanent - assigned a score of 5;
- The **magnitude**, quantified on a scale from 0-10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **probability** of occurrence, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1–5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- The status, which will be described as either positive, negative or neutral.
- The degree to which the impact can be reversed.
- The degree to which the impact may cause irreplaceable loss of resources.
- The degree to which the impact can be mitigated.

The significance is calculated by combining the criteria in the following formula:

$$S = (E+D+M) \times P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- >60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

Table 2: Assessment of impact on graves

Nature: Protected graves could be damaged or destroyed by proposed road diversion		
	Without mitigation	With mitigation
Extent	Local (2)	Local (2)
Duration	Permanent (5)	Permanent (5)
Magnitude	Moderate (6)	Low (4)
Probability	Improbable (2)	Improbable (2)
Significance	26 (Low)	22 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Low	Low
Irreplaceable loss of resources	Yes	Yes
Can impacts be mitigated?	Yes	
<i>Mitigation: During the construction of the road, the burial site should be clearly demarcated with danger tape or fencing so that the graves are not accidentally damaged during construction</i>		
<i>Mitigation Measures: (1) A buffer of 5m must be placed around the graves so that the graves are not impacted by the road works; (2) No construction activities may take place within the buffer; (3) if graves are damaged, then the Institute must be informed, work must stop in the immediate area and the damaged graves must be repaired under supervision of a heritage specialist and the Institute (4) work force to respect the significance of graves to the family and community</i>		
Cumulative impacts: Potentially, if graves are damaged or desecrated in any way		
Residual Impacts: Potentially if graves are damaged in any way		

Table 3: Assessment of impact on structures

Nature: Structures of potential importance to members of the Shembe community that could be altered, damaged, or destroyed by road upgrade		
	Without mitigation	With mitigation
Extent	Local (2)	Local (2)
Duration	Long-term (4)	Long-term (4)
Magnitude	Moderate (6)	Minor (2)
Probability	Probable (3)	Improbable (2)
Significance	36 (Medium)	16 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Low	Low
Irreplaceable loss of resources	Yes	Yes
Can impacts be mitigated?	Yes	
<i>Mitigation: The structures are not protected by heritage legislation but could be of importance to members of the community; engage with the leaders of the Shembe community to see if the movable structure can be moved further away from the road</i>		
<i>Mitigation Measures: (1) A buffer of 5m must be placed between the structures and the road works to avoid damage to them during the upgrade; (2) work force to respect the significance of the structures to members of the Shembe community</i>		
Cumulative impacts: None		
Residual Impacts: None		

9. DISCUSSION, RECOMMENDATIONS AND CONCLUSION

The proposed diversion across the Mozana River should not impact the burial site discussed above. All human remains have high heritage significance at all levels for their spiritual, social and cultural values. Graves and burial sites are protected by section 39 (1) of the KwaZulu-Natal Amafa and Research Institute Act, which refers to the general protection of informal and private burial grounds. In terms of sub-section (1), no grave or burial ground older than 60 years, or deemed to be of heritage significance by a heritage authority –

(a) not otherwise protected by this Act; and

(b) not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, inundated, removed from its original position, or otherwise disturbed without the prior written approval of the Institute having been obtained on written application to the Institute and in terms of the regulations to this Act.

As it appears that the graves fall within the Mpumalanga Province, section 36 of the NHRA will apply. Section 36 (1) states that where it is not the responsibility of any other authority, SAHRA

must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit. Sub-section (3) (a)(b) of the NHRA states that no person may, without a permit issued by SAHRA or a provincial heritage resources authority—destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority.

An assessment of the significance of impacts of the upgrade of the road on graves indicated that both pre- and post-mitigation, the impact would be a low impact due to the distance between the burial site and the proposed road upgrade. It is recommended that the burial site is clearly demarcated to avoid any impacts to the graves during the construction phase of the project. Of the two deviation alternatives, alternative 5 is the preferred option from a heritage perspective as it is located some distance from the burial site as well as from the two homesteads.

The three proposed borrow pit sites were inspected and all were found to have been previously mined. Due to the highly disturbed nature of the sites, no heritage resources were found therefore, any of the sites can be utilised.

If the recommendations and mitigation measures provided in this report are implemented and adhered to as well as those of the desktop palaeontological study, then the upgrade of the D1867 may proceed from a heritage perspective.

10. ADDITIONAL MITIGATION MEASURES

- Workers should be made aware of the types of heritage resources, such as graves, that could be found during the construction of the proposed road upgrade.
- For any chance heritage finds (graves, etc.), all work must cease in the area affected and the Contractor must immediately inform the Project Manager. A registered heritage specialist must be called to site to inspect the finding/s. The relevant heritage resource agency (the Institute) must be informed about the finding/s.
- The heritage specialist will assess the significance of the heritage resource/s found and provide guidance on the way forward.
- Permits must be obtained from the Institute if heritage resources are to be removed, destroyed or altered.

- Under no circumstances may any heritage material be destroyed or removed from the project site unless under direction of a heritage specialist.
- Should any recent remains be found on site that could potentially be human remains, the South African Police Service as well as the Institute must be contacted. No SAPS official may remove remains (recent or not) until the correct permit/s have been obtained.
- All mitigation measures and recommendations proposed by the desktop palaeontological study must be implemented.

11. REFERENCES

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