

**D2312 CULVERT WASHAWAY PROJECT, NDWEDWE
LOCAL MUNICIPALITY, KWAZULU-NATAL**

Desktop Heritage Assessment

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**FOR: ENVIROPRO
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I, Jean 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
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1. INTRODUCTION

The KwaZulu-Natal Department of Transport (DoT) proposes to replace the D2312 road water crossing concrete culvert which had been washed away in the latter half of 2021. In addition, the DoT proposes to remove an earthen structure upstream of the culvert that was put in place as a temporary crossing measure until the culvert has been replaced. The site of the earthen structure will be rehabilitated. The watercourse appears to be a tributary of the Mona River.

A desktop heritage assessment was undertaken to see if the project will impact heritage resources. Due to the area already been disturbed by the culvert that has been washed away and the construction of the upstream earthen structure, it was felt that a desktop heritage assessment would be sufficient for the project.

2. LEGISLATIVE BACKGROUND

The combined length of the culvert to be replaced and the earthen structure to be removed is more than 50m hence the project triggers section 41 (1)(b) of the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) which lists developments or activities that may require an HIA. Section 41 (1)(b) refers to the construction of a bridge or similar structure exceeding 50m in length.

The replacement of the culvert that was washed away and removal of the earthen structure may also impact graves, protected 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.

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).

3. LOCATION

The culvert that has been washed away is located approximately 4 km north of the town of Ndwedwe in KwaZulu-Natal (**Fig. 1**). Ndwedwe is situated about 25km north west of Tongaat and 24 km north west of the town of Verulam. **Figure 2** shows the project site with the damaged culvert located downstream and the temporary earthen structure located upstream.

4. TERMS OF REFERENCE

Undertake a desktop heritage assessment in order to determine whether heritage resources could be impacted by the proposed replacement of the culvert and the removal of the earthen structure. Provide mitigation measures to limit or avoid the impact of the proposed project on heritage resources (if any).

Submit the HIA report to the provincial heritage resources authority, the KwaZulu-Natal Amafa and Research Institute (hereafter referred to as the Institute), for their assessment and comment.

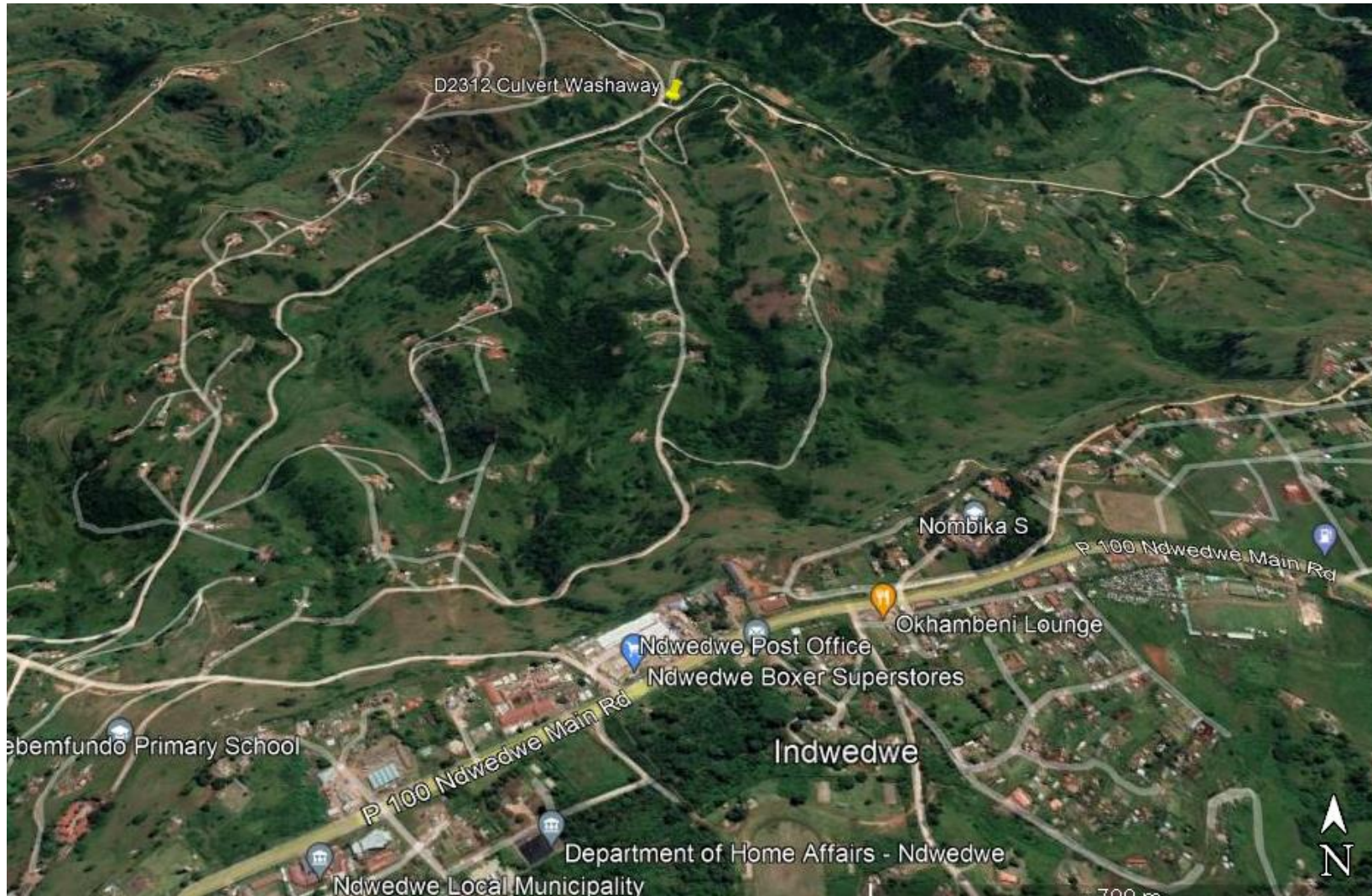


Figure 1: Location of culvert washaway in relation to town of Ndwedwe



Figure 2: Damaged culvert and earthen structure

5. METHODOLOGY AND CONSTRAINTS

A survey of literature, including other heritage impact assessment reports completed for the surrounding 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.

Photographs of the culvert that was washed away and the earthen structure were provided by Enviropro, the Environmental Assessment Practitioner (EAP).

Older maps and aerial photographs were consulted in order to understand what the project site was like previously. These maps and photographs were obtained from the Department of Rural Development and Land Reform's CDNGI geospatial information website (www.cdnqiportal.co.za).

6. HISTORICAL BACKGROUND OF PROJECT & SURROUNDING AREA

According to Anderson (2014:13), who undertook several heritage surveys for roads in the greater Ndwedwe area, there are archaeological sites in the wider area including all types of Stone Age and Iron Age sites. Many of these sites are situated along the coastal corridor and in the much larger surrounding area.

From the pre-Shakan period in the 1700s the vast areas around Ndwedwe and surrounding areas were under the leadership and governance of many tribal chiefs and izunduna. It was not until the Shakan period [1815-1828] that these were brought under one kingdom, the Zulu Kingdom of Shaka. Some of the leading clans and tribal chiefs in the Ndwedwe region, who have deep roots from the pre-Shakan history, include the Chili, Maphephetheni, Ngcolosi, Nyuswa, Nzama, AmaQadi, and Shangase (Ximba 2009:59).

King Shaka's main royal residences were called Bulawayo which was located in Eshowe, Umbelebele which was located in KwaMashu and Dukuza which was located in Stanger. Geographically, the Stanger royal residence is the nearest to Ndwedwe and it was understood that an area within a radius of 90 km was regarded as been within the domain and influence of King Shaka (Ximba: 59). Ndwedwe is situated approximately 55 km from Stanger.

The larger project area is influenced by the Shembe religious beliefs, symbolised by the mythological 'Holy Mountain of Nhlankakazi' situated close to Ndwedwe. An annual pilgrimage to the Mountain is undertaken by the faithful which is based on the third book of Moses. It is said to date back to a revelation iNkosi Shembe of amaNazaretha experienced in 1916, where it was revealed upon him that God would only speak to him at the Holy Mountain Nhlankakazi. It is said that Isaiah Shembe was alone when he was struck down by lightning where the voice of the Lord ordered him to go south. He was carried unconscious to his hut and taken for dead. On waking up he then told his followers that he had been among spirits who had instructed him to go south. He then took his Bible, a blanket, a rod as well as gifts from his followers and engaged on a pilgrimage to the south. That was the birth of the Nhlankakazi pilgrimage which is still followed today (Hlatswayo 2012:2).

Of Zulu origin, Ndwedwe is said to mean 'long, bare table-land or ridge', or 'pensive', referring to its peaceful setting (Raper 1989:332).

7. DESKTOP ASSESSMENT

The 1969 topographic map of the area (2930BD) shows residences, foot paths and cultivated land in the vicinity of the culvert. The 1981 map shows less footpaths and more cultivation and homesteads. There are no homesteads close to the culvert and earthen structure.



Figure 3: Relevant section of 1969 topographic map

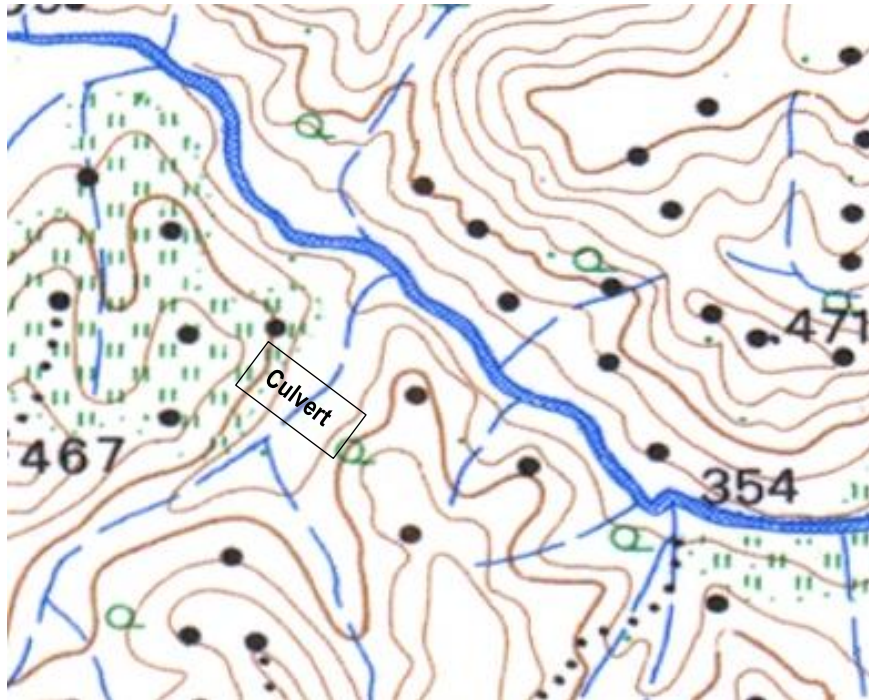


Figure 4: 1981 topographic map

Fig. 5 shows the damaged culvert and the earthen structure which was put in place as a temporary measure for residents to cross the watercourse. The area from which soil for the temporary earthen was obtained can be seen in the background of the photograph.



Figure 5: Culvert on left and earthen structure to the right



Figure 6: Damaged culvert



Figure 7: Damaged culvert with homestead in background

The closest homestead to the culvert and earthen structure is just over 130m south of both structures.



Figure 8: Damaged culvert with road in background

The image below shows the damaged culvert as well as a furrow to the right of the culvert that appears to be recently dug and that has led to the disturbance of the immediate and surrounding area.



Figure 9: Damaged culvert and furrow



Figure 10: Remains of culvert

The culvert falls into an area of low fossil sensitivity therefore no further palaeontological studies are necessary, however, a protocol for chance fossil finds is included in Chapter 9 of this report.

8. DISCUSSION AND CONCLUSION

With the culvert having been washed away, the surrounding area has been disturbed by the attempts to provide safe passage across the watercourse including the making of a temporary earthen bridge or structure. The initial building of the culvert will also have disturbed the area. Previous topographical maps of the culvert and surroundings shows an area with scattered homesteads with some cultivation taking place. The homesteads are located some distance from the watercourse.

The previous and current disturbance to the project area indicates that if there were heritage resources in the area, they would have been destroyed by the building and subsequent destruction of the culvert and the disturbance to the area when the temporary structure was built to enable residents to cross the watercourse safely.

The proposed re-building of the culvert and removal of the earthen structure will have no impact on heritage sites and therefore can proceed from a heritage perspective as long as the mitigation measures provided in the chapter below are adhered to.

9. MITIGATION MEASURES

- For any chance heritage finds, all work must cease in the area affected and the Applicant / Contractor must be immediately informed. A registered heritage specialist must be called to site to inspect the finding/s. The Institute must be informed about the finding/s.
- The heritage specialist will assess the significance of the resource 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 altered, destroyed or removed from 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.

- The following chance fossil find protocol must be followed at all times during the re-building of the culvert:
 - When re-building begins, the rocks must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (root traces, burrows, or marine shells) should be put aside in a suitably protected place.
 - Photographs of possible fossils can be sent to a palaeontologist for a preliminary assessment.
 - If there is any possible fossil material found by the developer/environmental officer then a qualified palaeontologist must visit the site to inspect the selected material and check the dumps where feasible.
 - Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site an Amafa permit must be obtained. Annual reports must be submitted to Amafa and the South African Heritage Resources Authority (SAHRA) as required by the relevant permits.

10. REFERENCES

Anderson, G. 2014. Heritage survey of the Nkambini access road and bridges upgrade, Ward 13, Ndwedwe Local Municipality, Ilembe District Municipality, KwaZulu-Natal.

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