

**DESKTOP HERITAGE SURVEY OF THE PROPOSED
D1240 CAUSEWAY AND CULVERT UPGRADE**

FOR HANSLAB ENVIRONMENTAL CONSULTANTS

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INTRODUCTION

The KwaZulu-Natal Department of Transport proposes to construct a new causeway structure over the Kwambushumbushu River and culvert structure over a tributary on District Road 1240 (D1240). The proposed structure will replace the existing, ineffective structure at the crossing point.

The site for the proposed new structures over the Kwambushumbushu River and tributary are situated in the Inkosi Langalibalele (KZN 236) local municipality, 52.3km from the town of Estcourt. It is located in ward 1 at approximately Km 6.3 on District road 1240. D1240 continues for 8.18 km to where it connects to main road 28-1 according to the KZN Department of Transport's Arc GIS Database. The site can be accessed via Department of Transport Cost Centre Estcourt region. From 1 Lorne Street, Head west onto P29 (R103) towards Lorne street about 22km, turn left onto P379 and drive for 13km. Turn left onto P28-1 and drive about 3km and turn right to D1240. Drive about 8km and you will reach the site on D1240.

The structures are as follows:

Structure	Physical Location	Length	Width	Footprint
Causeway Structure 2 x (3.2m x 2.5m) box culverts	29°14'35.0''S 29°38'24.8''E	10.14m	21.7m	354.54m ² (including wingwalls)
Culvert Structure 2 x 900mm pipe culvert structure	29°14'35.49''S 29°38'23.27''E	11.74m	5.6m	44.02m ² (including wingwalls)

Umlando was contracted by HANSLAB Environmental Consultants to undertake the heritage assessment of the proposed Kwambushumbushu River causeway and culvert. These structures do not trigger an HIA but an opinion was requested.

FIG. 1 GENERAL LOCATION OF THE PROPOSED

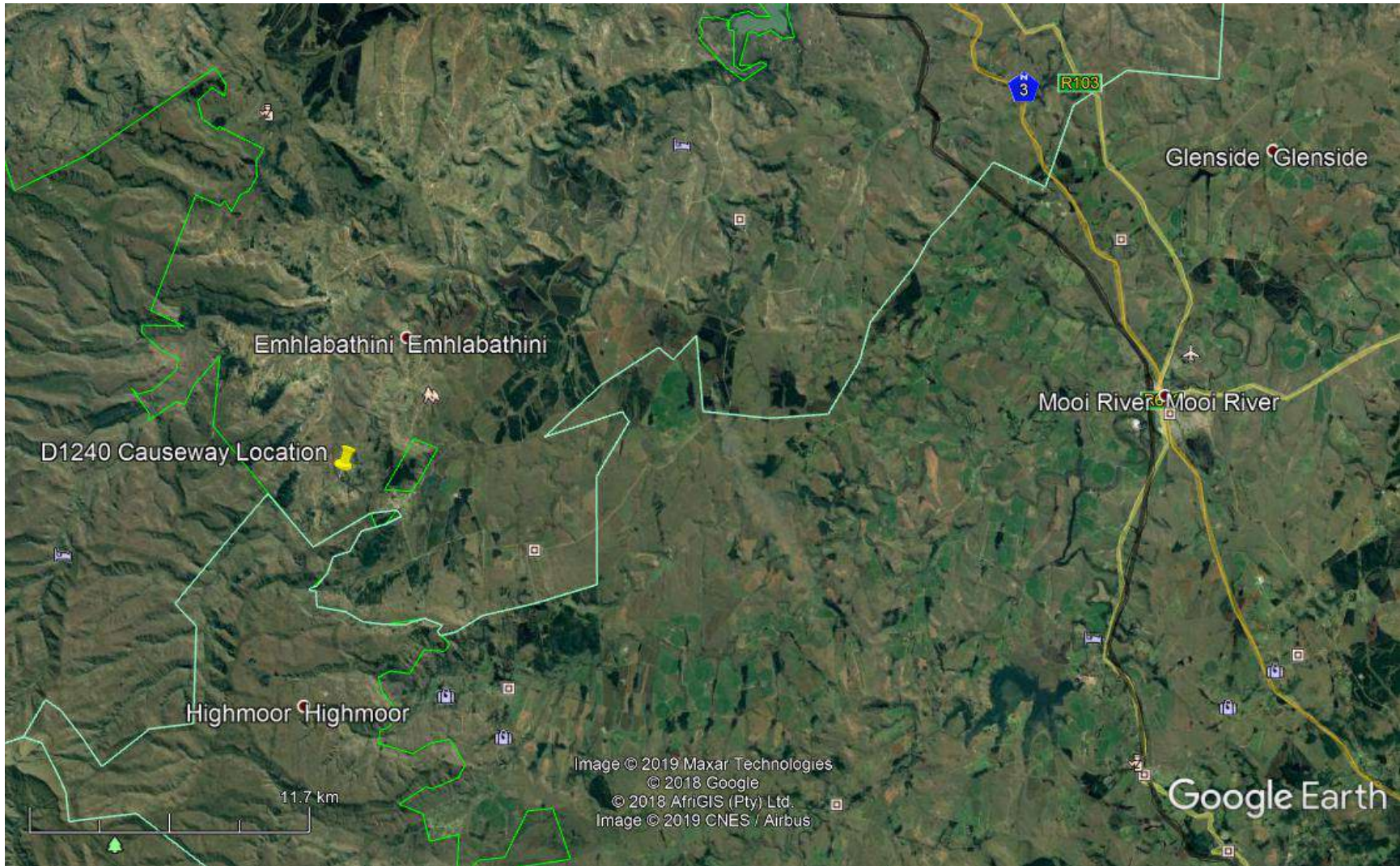


FIG. 2: AERIAL OVERVIEW OF THE PROPOSED



KWAZULU NATAL AMAFA AND RESEARCH INSTITUTE, ACT 05, 2018

“General protection: Structures.—

- No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Council having been obtained on written application to the Council.
- Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- The Council may, by notice in the *Gazette*, exempt—
- A defined geographical area; or
- defined categories of sites within a defined geographical area, from the provisions of subsection where the Council is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.

General protection: Graves of victims of conflict.—No person may damage, alter, exhume, or remove from its original position—

- the grave of a victim of conflict;
- a cemetery made up of such graves; or
- any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.
- General protection: Traditional burial places.—
- No grave—
- not otherwise protected by this Act; and
- not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, removed from its original

position, or otherwise disturbed without the prior written approval of the Council having been obtained on written application to the Council.

The Council may only issue written approval once the Council is satisfied that—

- the applicant has made a concerted effort to consult with communities and individuals who by tradition may have an interest in the grave; and
- the applicant and the relevant communities or individuals have reached agreement regarding the grave.

General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—

- No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Council without delay.
- The Council may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Council to be inappropriate within 50 metres of a rock art site.
- No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site,

palaeontological site, historic fortification, or meteorite impact site, or use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Council having been obtained on written application to the Council.

- The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government.”

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the database that has been collated by Umlando. This databases contains archaeological site locations and basic information from several provinces (information from Umlando surveys and some colleagues), most of the national and provincial monuments and battlefields in Southern Africa (<http://www.vuvuzela.com/googleearth/monuments.html>) and cemeteries in southern Africa (information supplied by the Genealogical Society of Southern Africa). We use 1st and 2nd edition 1:50 000 topographical and 1937 aerial photographs where available, to assist in general location and dating of buildings and/or graves. The database is in Google Earth format and thus used as a quick reference when undertaking desktop studies. Where required we would consult with a local data recording centre, however these tend to be fragmented between different institutions and areas and thus difficult to access at times. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan.

All sites are grouped according to low, medium, and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips, and decorated sherds are sampled, while bone, stone, and shell are mostly noted. Sampling usually occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features.

Defining significance

Heritage sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. State of preservation of:

- 1.1. Organic remains:
 - 1.1.1. Faunal
 - 1.1.2. Botanical
- 1.2. Rock art
- 1.3. Walling
- 1.4. Presence of a cultural deposit
- 1.5. Features:
 - 1.5.1. Ash Features
 - 1.5.2. Graves
 - 1.5.3. Middens
 - 1.5.4. Cattle byres
 - 1.5.5. Bedding and ash complexes

2. Spatial arrangements:

- 2.1. Internal housing arrangements
- 2.2. Intra-site settlement patterns
- 2.3. Inter-site settlement patterns

3. Features of the site:

- 3.1. Are there any unusual, unique or rare artefacts or images at the site?
- 3.2. Is it a type site?
- 3.3. Does the site have a very good example of a specific time period, feature, or artefact?

4. Research:

- 4.1. Providing information on current research projects
- 4.2. Salvaging information for potential future research projects

5. Inter- and intra-site variability

- 5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?
- 5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?

6. Archaeological Experience:

- 6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.

7. Educational:

- 7.1. Does the site have the potential to be used as an educational instrument?
- 7.2. Does the site have the potential to become a tourist attraction?
- 7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

8. Other Heritage Significance:

- 8.1. Palaeontological sites
- 8.2. Historical buildings
- 8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites

- 8.4. Graves and/or community cemeteries
- 8.5. Living Heritage Sites
- 8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

RESULTS

DESKTOP STUDY

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. Fig. 4 indicates that the general area is of high heritage significance. The sites date to the ESA, MSA, LSA, LIA and HP. Furthermore, there are many rock art sites in the sandstone formations.

Fig. 5 shows the study area in 1944. The area around the proposed causeway is agricultural fields.

The 1975 topographical map indicates that the house to the south of the causeway is older than 45 years in age (fig. 6).

The palaeontological sensitivity map indicates the study area in an area of very high sensitivity (fig. 7).

FIG. 4: LOCATION OF KNOWN HERITAGE SITES I THE GENERAL AREA

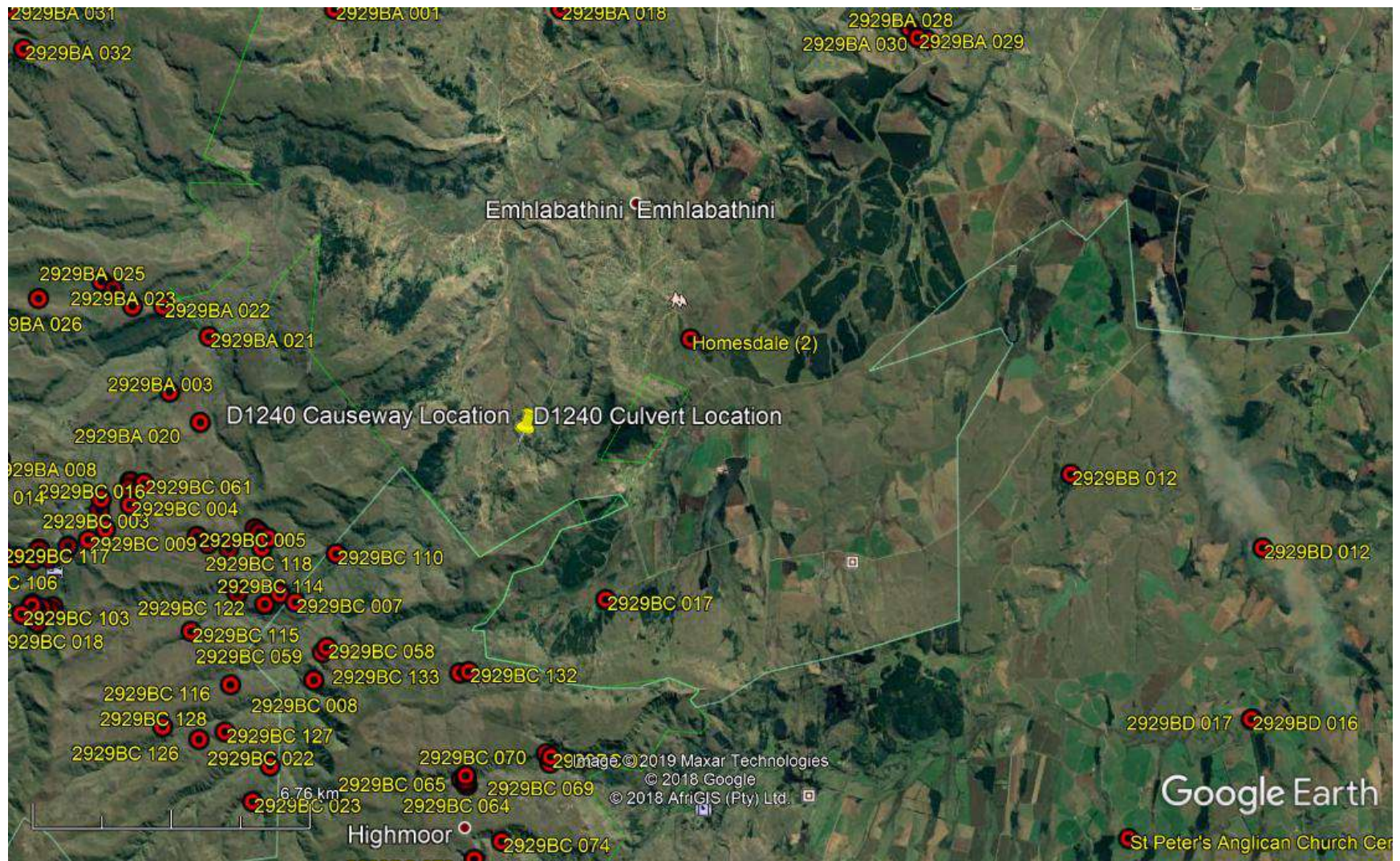


FIG.5: FIG. 4: LOCATION OF THE STUDY AREA IN 1944

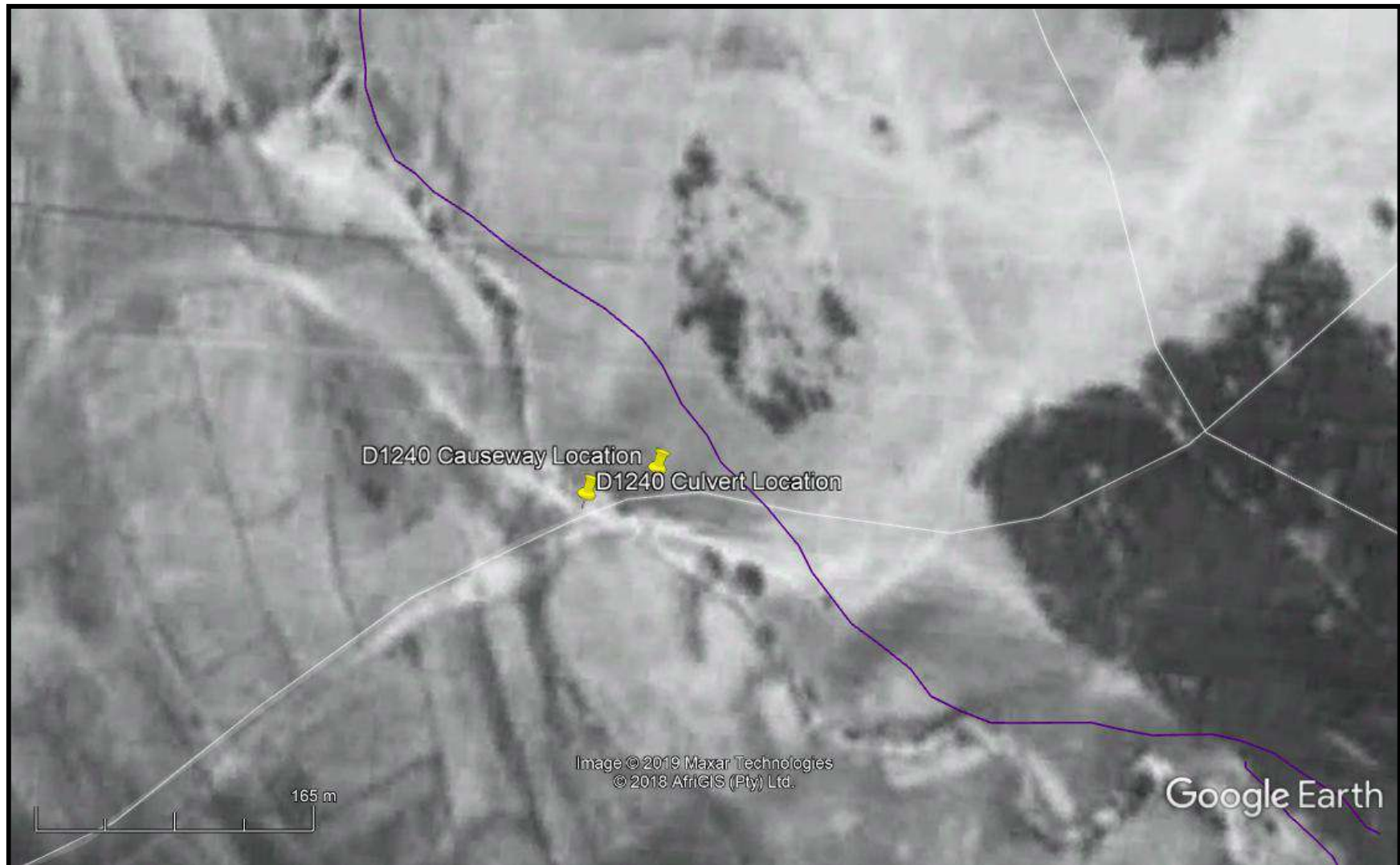


FIG.6: LOCATION OF THE STUDY AREA IN 1975

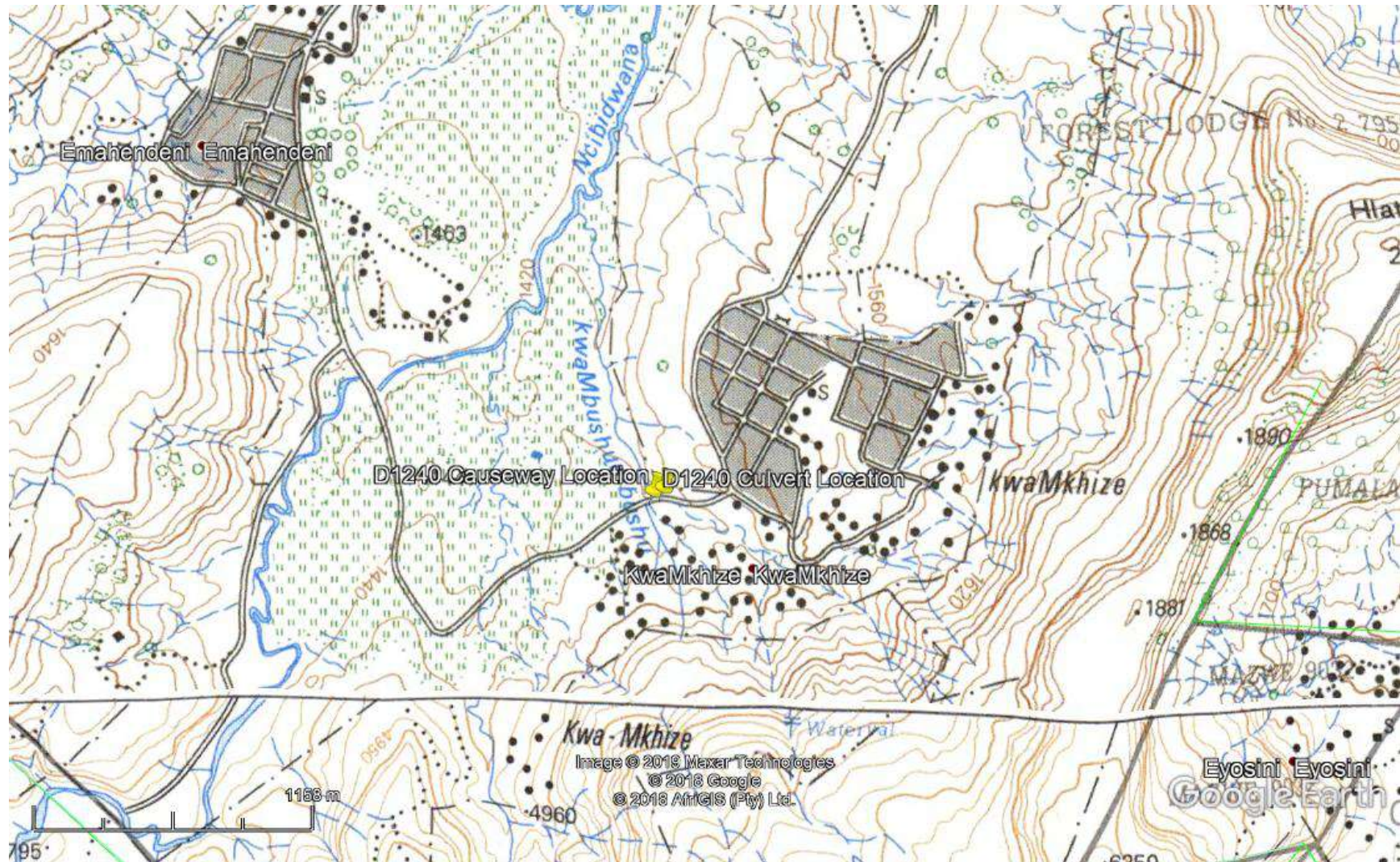
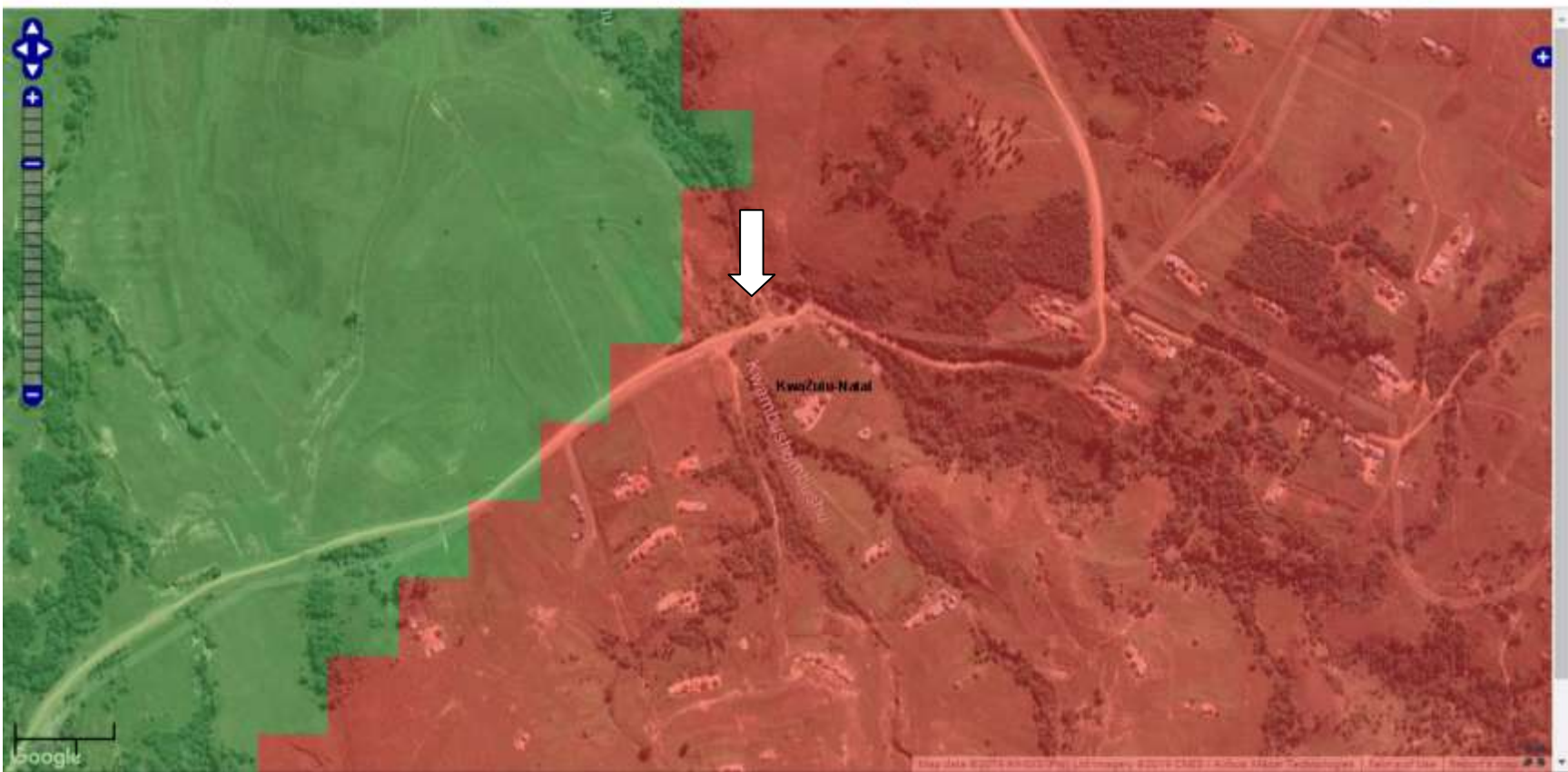


FIG. 7: PALAEOANTHROPOLOGICAL SENSITIVITY MAP



DISCUSSION

The proposed development does not trigger the need for an HIA: both are >12m in length. The development itself occurs in a river that would periodically overflow and remove all potential artefacts and/or sites if they ever existed. The maps indicate that it is highly unlikely that a heritage site will occur within 50m of the development. Graves are visible on Google Earth at the house to the south of the upgrade; however, these are buffered by a maize field and are 60m+ away.

There are no sandstone overhangs in the immediate vicinity, and thus no rock art will occur.

While the area is in a very sensitive area for palaeontological remains, the causeway will not be extending more than 1.5m in depth, where unweathered fossil bearing deposits could occur.

The upgrade should be exempt from further HIA mitigation.

CONCLUSION

A desktop heritage survey was undertaken for the proposed D1240 causeway and culvert upgrade. The HIA was at the request of KwaZulu Natal Amafa and Research Institute. The desktop indicated that it was highly unlikely that there will be any heritage sites in the study area and immediate surrounds.

The desktop recommends that no further HIA & PIA mitigation is required.