

**HERITAGE SURVEY OF THE UPGRADING OF MAIN  
RAOD 278 AND TWO BORROW PITS, KZN**

**FOR ENVIROEDGE CC**

**DATE: 29 MARCH 2020**

**By Gavin Anderson**

**Umlando: Archaeological Surveys and Heritage  
Management**

**PO Box 102532, Meerensee, 3901**

**Phone: 035-7531785      Cell: 0836585362**

**umlando@gmail.com**



## **EXECUTIVE SUMMARY**

*The project area is situated approximately 35 km north-east of the Pietermaritzburg CBD, 11km north east of Wartburg and 2km east of Dalton. The project area extends into Wards 1, 3 and 7 of the Umshwati Local Municipality, uMgungundlovu District Municipality. The start point of the P278 Road upgrade is at the junction of the P157 and P156-1. The project includes the sourcing of gravel material from two potential Borrow Pits (BP). BP 1 is located on Portion 26 of the Farm Paardfontein 1299, and BP2 on Portion 2 of the Farm Bockenhoutfontein 1289.*

*The road will be widened to approximately 8m*

## TABLE OF CONTENT

INTRODUCTION .....	5
KWAZULU NATAL AMAFA AND RESEARCH INSTITUTE, ACT 05, 2018 .....	10
METHOD .....	12
Defining significance.....	13
RESULTS .....	16
DESKTOP STUDY .....	16
PALAEONTOLOGICAL SENSITIVITY .....	20
FIELD SURVEY RESULTS .....	21
MANAGEMENT PLAN .....	23
CONCLUSION.....	23
REFERENCES .....	23
<b>EXPERIENCE OF THE HERITAGE CONSULTANT .....</b>	<b>24</b>
<b>DECLARATION OF INDEPENDENCE.....</b>	<b>24</b>

## TABLE OF FIGURES

FIG. 1 GENERAL LOCATION OF THE PROPOSED DEVELOPMENT .....	6
FIG. 2: AERIAL OVERVIEW OF THE PROPOSED DEVELOPMENT OF ERF 1703.....	7
FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT .....	8
FIG. 4: SCENIC VIEWS OF THE STUDY AREA .....	9
TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES .....	15
FIG. 5: LOCATION OF KNOWN HERITAGE SITES IN THE GENERAL AREA .....	17
FIG. 6: LOCATION OF PROPOSED DEVELOPMENT IN 1937.....	18
FIG. 7: LOCATION OF PROPOSED DEVELOPMENT IN 1968.....	19
TABLE 2: LOCATION OF SITES NOTED IN THE DESKTOP STUDY .....	20
FIG. 8: PALAEONTOLOGICAL SENSITIVITY MAP .....	20
FIG. 9: BORROW PIT 1 .....	21
FIG. 10: BORROW PIT 2 .....	22

## Abbreviations

HP	Historical Period
IIA	Indeterminate Iron Age
LIA	Late Iron Age
EIA	Early Iron Age
ISA	Indeterminate Stone Age
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
HIA	Heritage Impact Assessment
PIA	Palaeontological Impact Assessment

## INTRODUCTION

EnviroEdge cc is submitting the applications for environmental authorisation and a water use licence application, on behalf of the applicant KwaZulu-Natal Department of Transport for the proposed upgrading of 11km of the Main P278 Road. The project area is situated approximately 35 km north-east of the Pietermaritzburg CBD, 11km north east of Wartburg and 2km east of Dalton. The project area extends into Wards 1, 3 and 7 of the Umshwati Local Municipality, uMgungundlovu District Municipality. The start point of the P278 Road upgrade is at the junction of the P157 and P156-1, at the start co-ordinates: 29°21'18.31" S 30°39'20.99" E. The project includes the sourcing of gravel material from two potential Borrow Pits (BP). BP 1 is located on Portion 26 of the Farm Paardfontein 1299 at co-ordinates: 29°16'34.45"S 30°40'46.57"E, and BP2 on Portion 2 of the Farm Bockenhoutfontein 1289 at co-ordinates: 29°16'28.8"S 30°42'50.59"E.

Umlando was subcontracted to undertake the HIA study of the road and two quarries.

Figures 1 – 4 show the location of the development.

FIG. 1 GENERAL LOCATION OF THE PROPOSED DEVELOPMENT

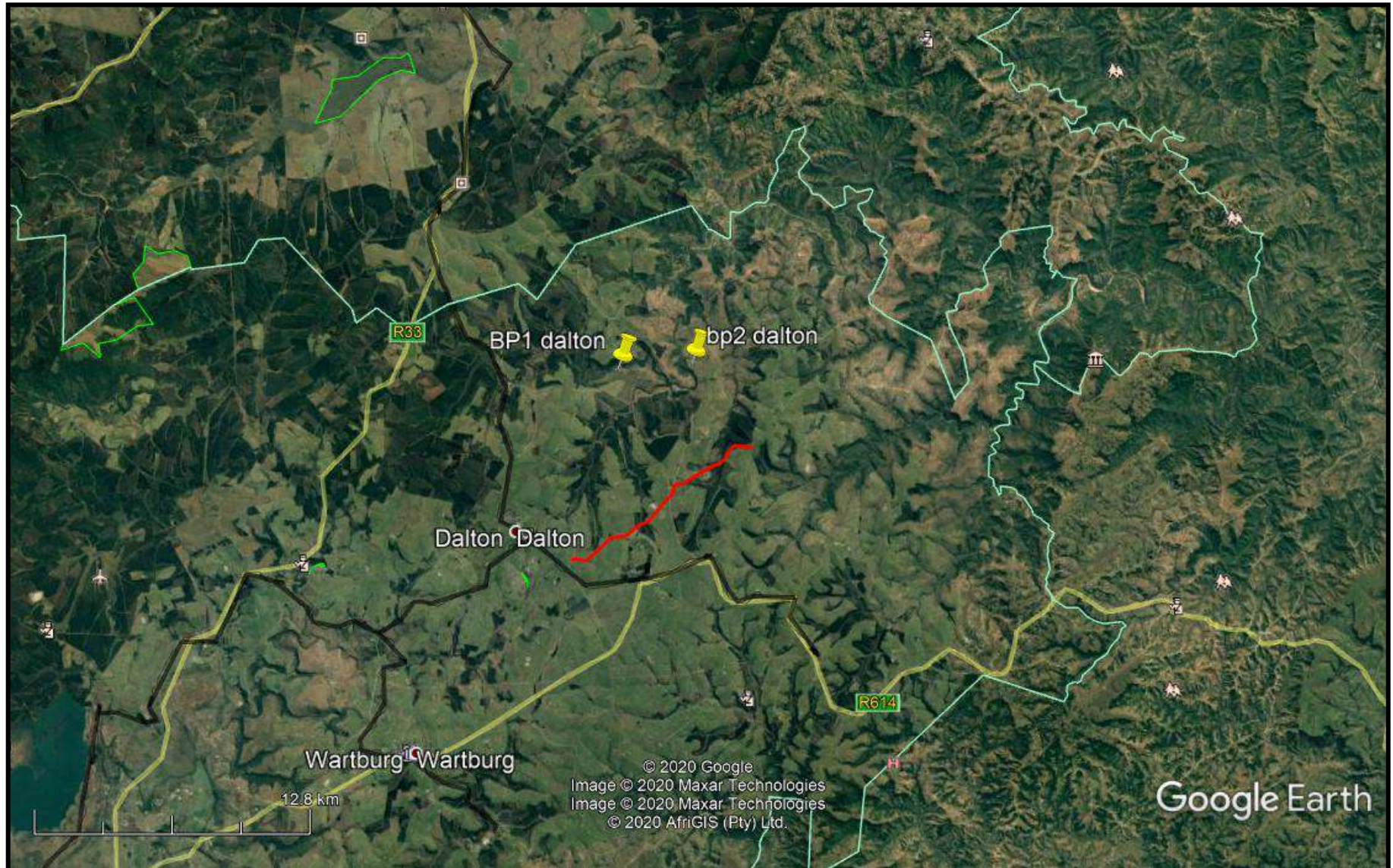


FIG. 2: AERIAL OVERVIEW OF THE PROPOSED DEVELOPMENT OF ERF 1703

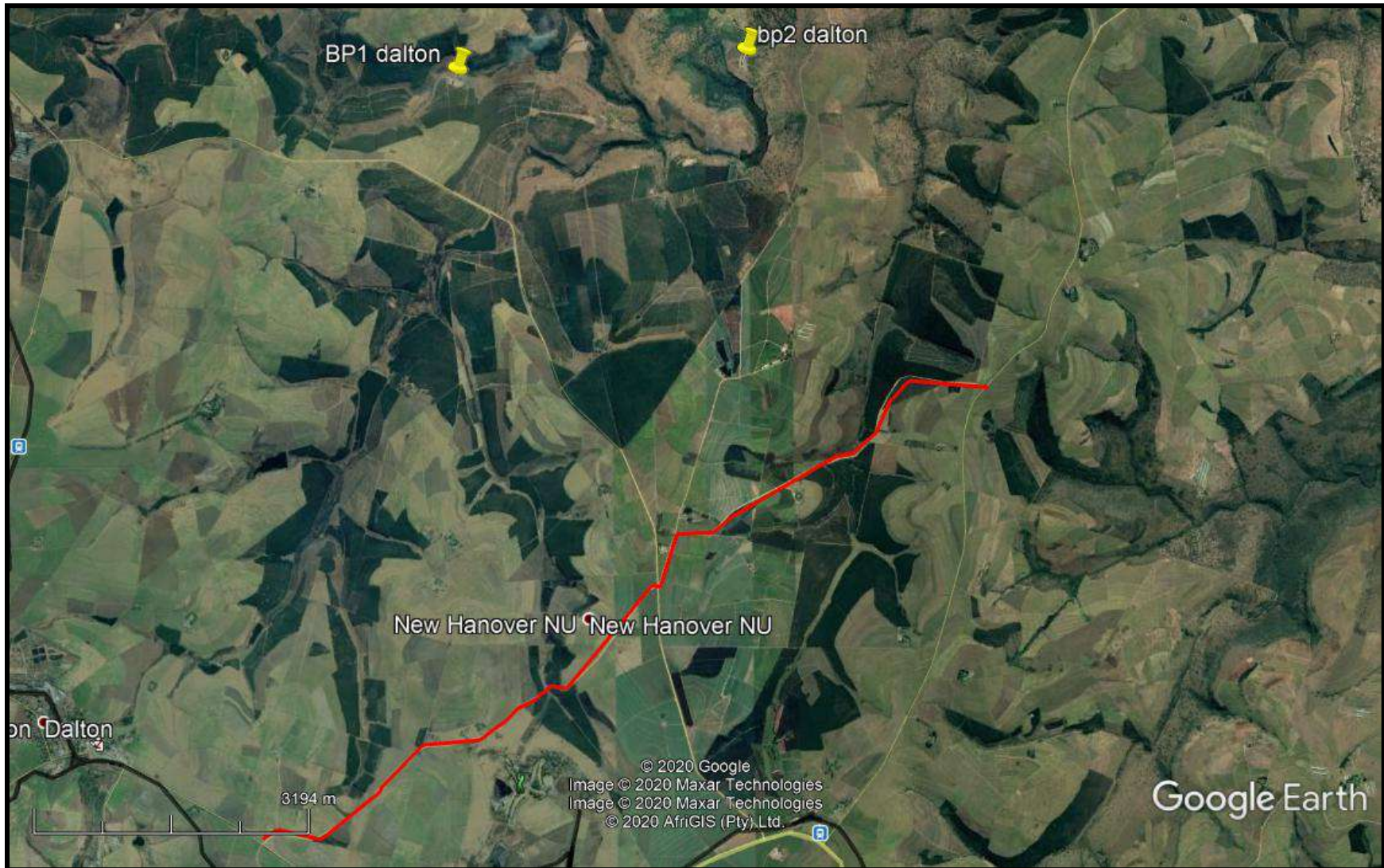


FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT

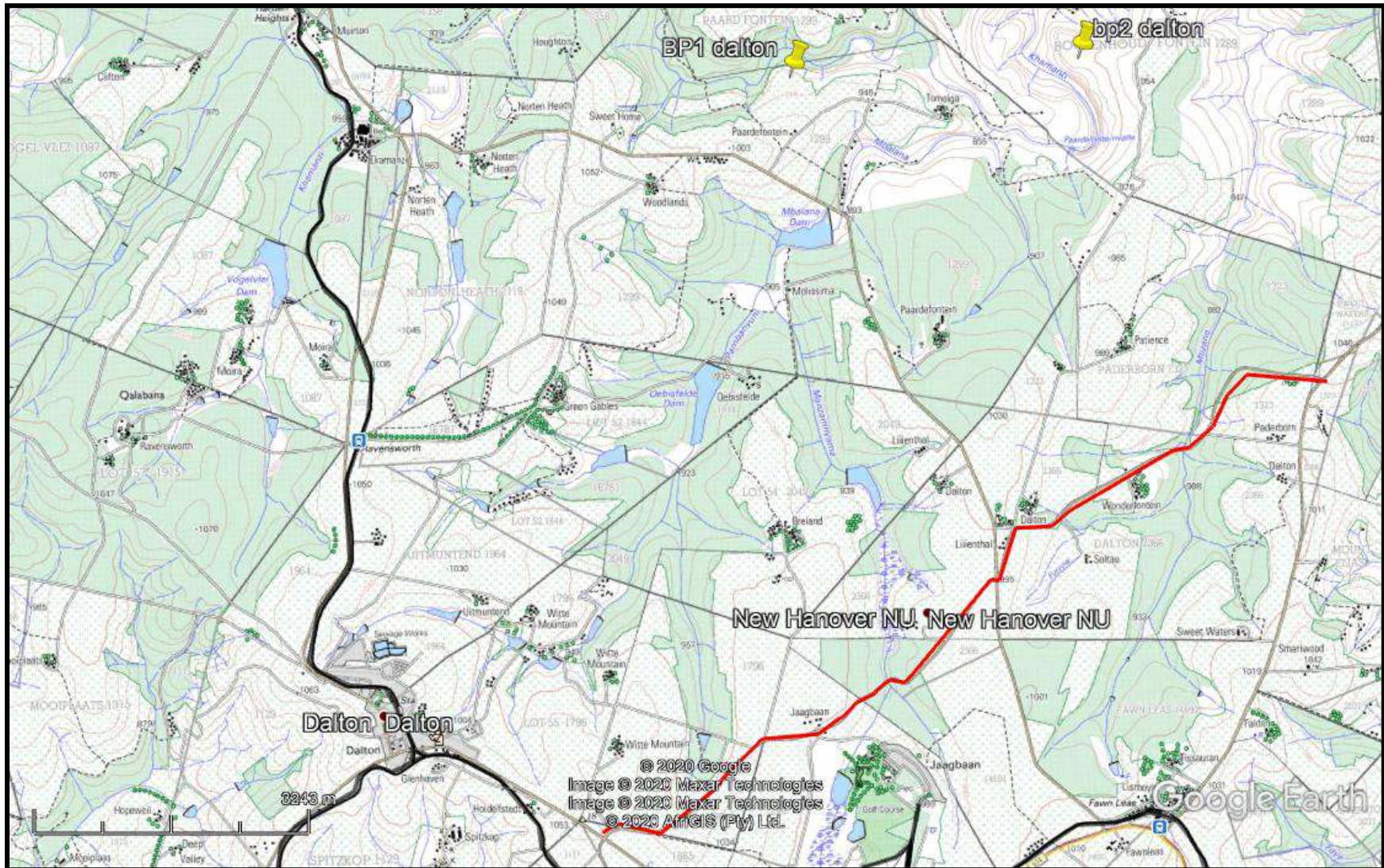




FIG. 4: SCENIC VIEWS OF THE STUDY AREA



**KWAZULU NATAL AMAFA AND RESEARCH INSTITUTE<sup>1</sup>, 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

---

<sup>1</sup> Hereafter referred to as KARI

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 1<sup>st</sup> and 2<sup>nd</sup> 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. Table 1 lists the grading system

**TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES**

SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	
High / Medium Significance	Generally Protected A		Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B		Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C		On-site sampling monitoring or no archaeological mitigation required prior to or during development / destruction

## 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. There have been no prior surveys in the study area. The archaeological sites tend to be open Stone Age scatters or Late Iron Age sites and are of low significance (fig. 5). Beater (2018) undertook a general HIA for a bulk water supply scheme near the start of the P278; however, this excluded archaeology and palaeontology. No comment was made by KARI to the application.

The 1937 aerial photograph indicates that there are two heritage features within 100m of the road. These are farm buildings (fig. 6).

The 1968 1:50 000 topographical map indicates that there are two farm buildings (predating 1937) and six farm labourer's houses within 100m of the road (fig. 7). The farm labourer's houses occur within 50m of the road. A farm labourer's house occurs within 50m of BP1.

A comparison with current Google Earth imagery indicates that none of the farm labourer's houses exists. These are now sugar cane fields.

The locations of these sites are given in Table 2.



FIG. 5: LOCATION OF KNOWN HERITAGE SITES IN THE GENERAL AREA

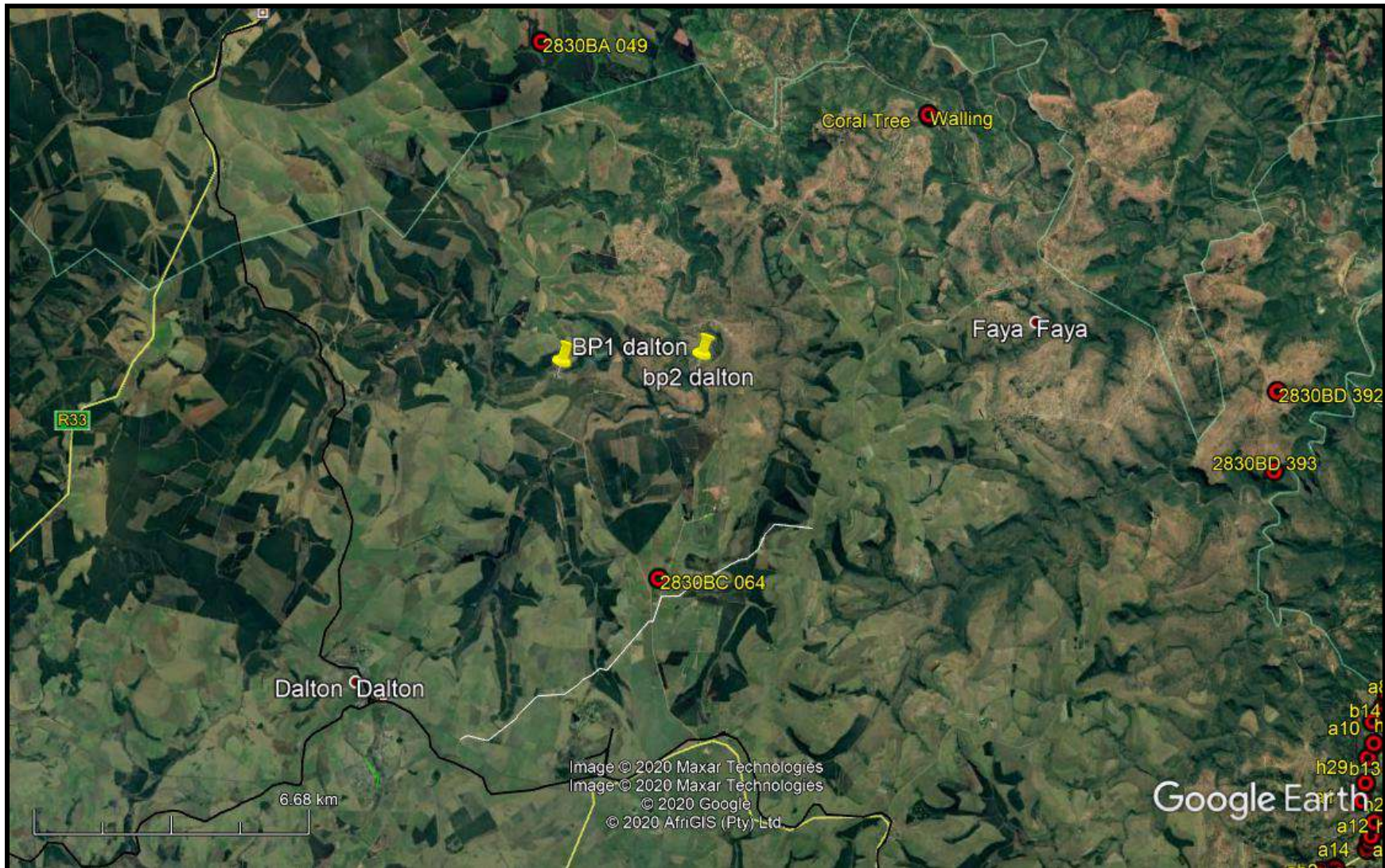


FIG. 6: LOCATION OF PROPOSED DEVELOPMENT IN 1937

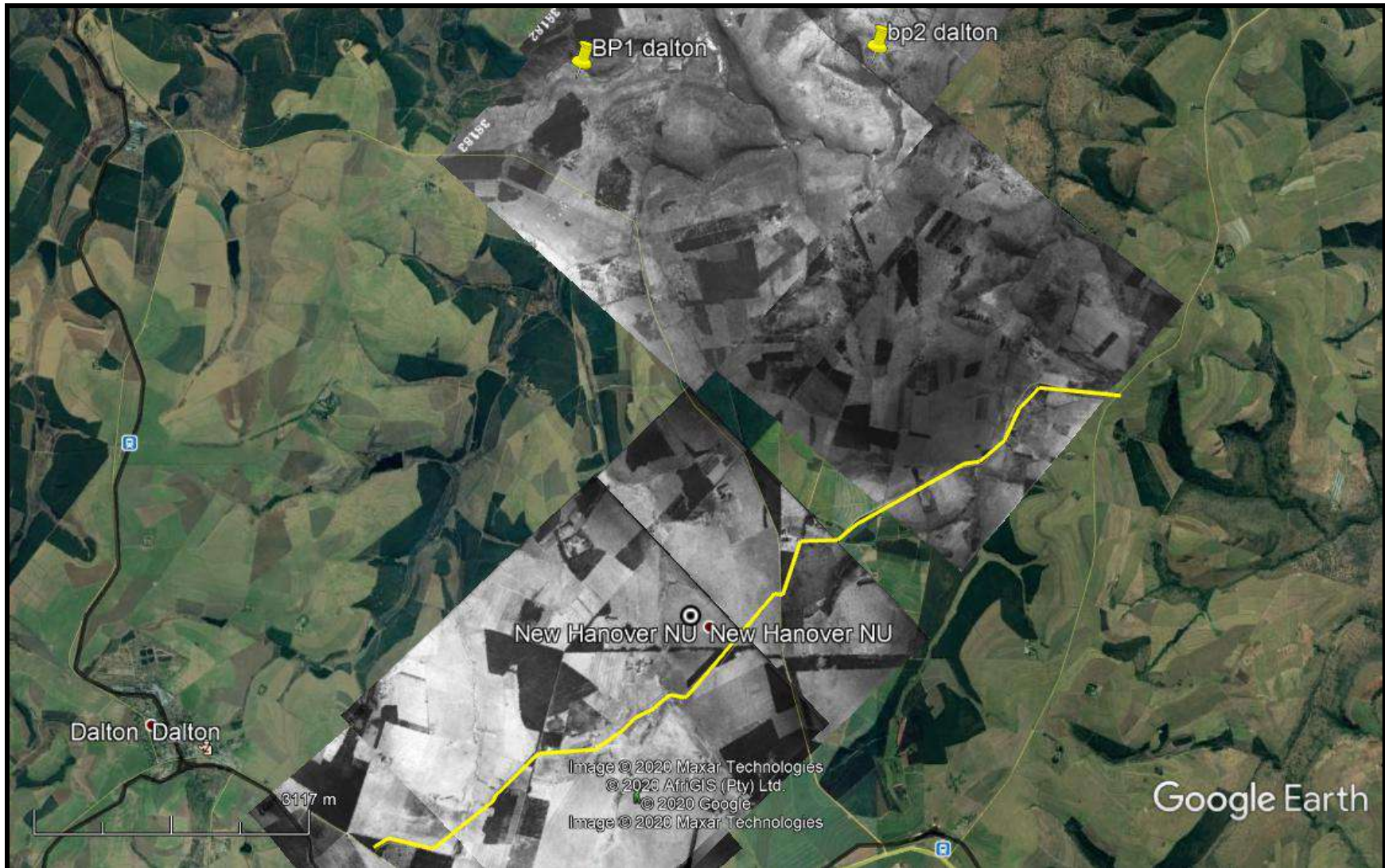
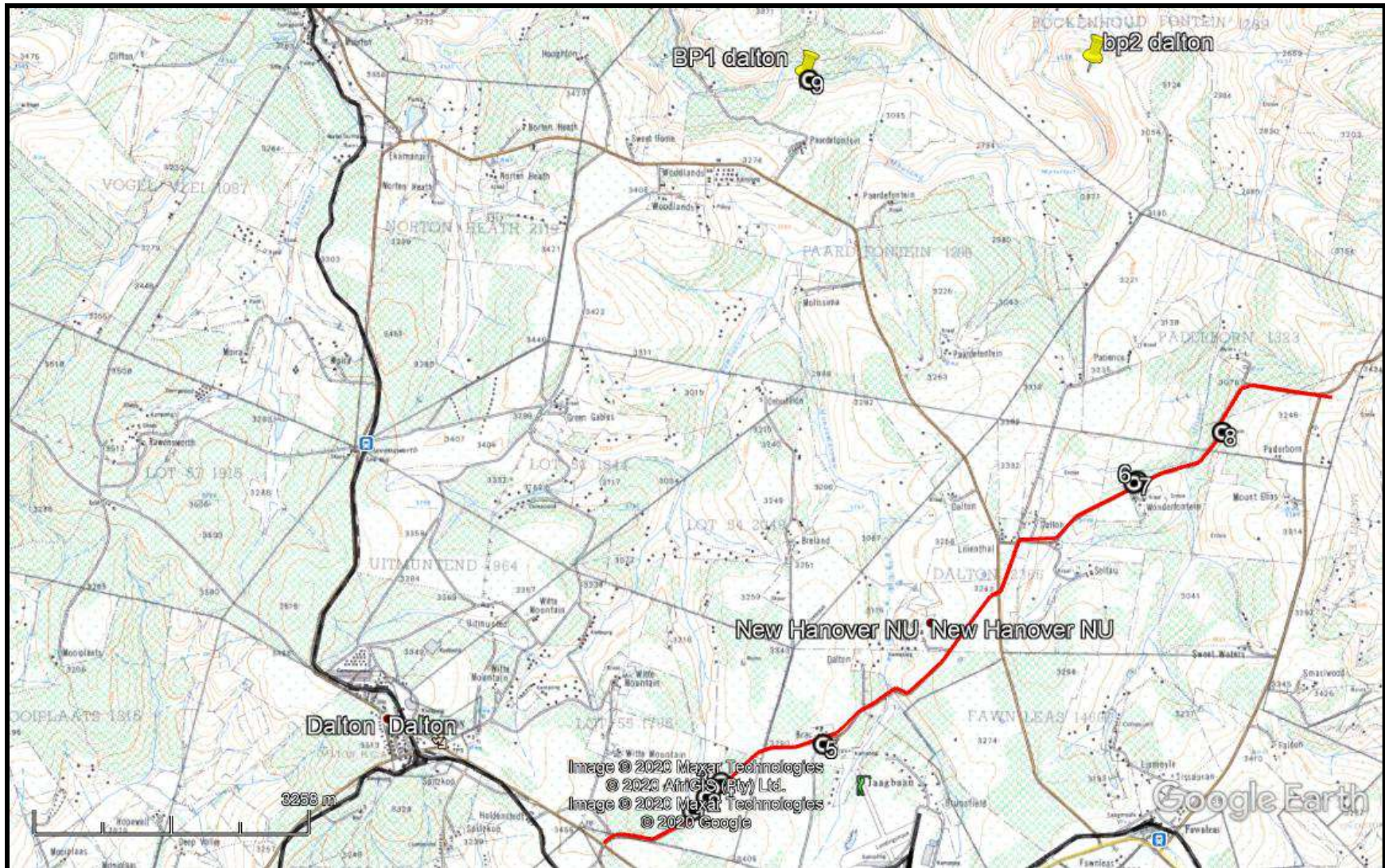


FIG. 7: LOCATION OF PROPOSED DEVELOPMENT IN 1968



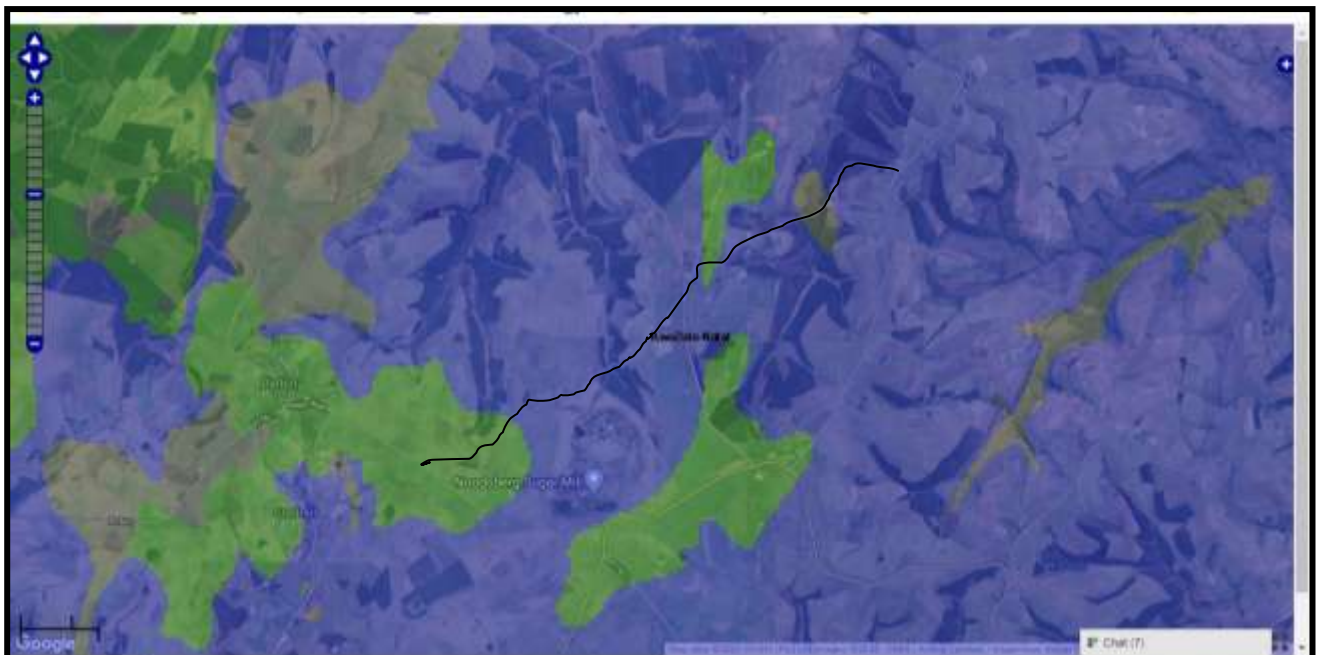
**TABLE 2: LOCATION OF SITES NOTED IN THE DESKTOP STUDY**

<b>Name</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Description</b>
<b>1</b>	-29.351651279	30.666756044	Labourer's house
<b>2</b>	-29.350277991	30.668098046	Labourer's house
<b>3</b>	-29.349323525	30.668810026	Labourer's house
<b>4</b>	-29.348704087	30.669851964	Labourer's house
<b>5</b>	-29.344492157	30.682047661	Brac
<b>6</b>	-29.317620581	30.719371440	Labourer's house
<b>7</b>	-29.317399287	30.719783932	Labourer's house
<b>8</b>	-29.312285929	30.730019223	Buildings and Ruin
<b>9</b>	-29.275411037	30.680488989	Labourer's house

### **PALAEONTOLOGICAL SENSITIVITY**

Most of the road is in an area of no palaeontological sensitivity (fig. 8). The first 1km (from the west) is in an area of medium sensitivity. However, since this is a road upgrade, there will not be any excavations in this area.

No further IA mitigation should be required.

**FIG. 8: PALAEONTOLOGICAL SENSITIVITY MAP**

## FIELD SURVEY RESULTS

A field survey was undertaken on the 19 March 2020. Figure 4 shows that the sides of the road are mostly covered by sugarcane plantations and afforestation. None of the labourer's houses from the desktop study were observed.

The two borrow pits were surveyed for possible human occupation. Borrow Pit 1 is an existing borrow pit in a previously afforested area (fig. 9). No sites were noted.

**FIG. 9: BORROW PIT 1**



Borrow Pit 2 is an existing Borrow Pit in grasslands. The Borrow Pit triggered my criteria for a LIA/HP settlement from the Google Earth imagery. While the grass was dense in the general area, no stone walling was visible to indicate a settlement.

**FIG. 10: BORROW PIT 2**



## MANAGEMENT PLAN

No further HIA management is required for this project.

## CONCLUSION

A heritage survey was undertaken for the proposed P278 road upgrade and two associated Borrow Pits. The desktop study indicated that historically recent farm labourer's houses occurred near the road as well as some farm buildings. These houses no longer exist and are under sugar cane farming.

Both borrow pits have no heritage features and are in areas of no palaeontological sensitivity.

Most of the road upgrade occurs in areas of no palaeontological sensitivity, except for the first kilometre on the western side. This section is of medium sensitivity. However, the road upgrade will not be excavating into the ground, and thus it will not affect any palaeontological layers.

The HIA for the road upgrade and associated Borrow Pits are complete and no further mitigation is required.

## REFERENCES

### Maps:

2830BC

117B\_017\_38181 – 38183

117B\_018\_39140

117B\_019\_38595 - 38597

Beater, J. 2018. Umshwathi Bulk Water Supply Scheme Phase 4, Ndwedwe Local Municipality, Kwazulu-Natal. Phase 1 Heritage Impact Assessment.

### **EXPERIENCE OF THE HERITAGE CONSULTANT**

Gavin Anderson has a M. Phil (in archaeology and social psychology) degree from the University of Cape Town. Gavin has been working as a professional archaeologist and heritage impact assessor since 1995. He joined the Association of Professional Archaeologists of Southern Africa in 1998 when it was formed. Gavin is rated as a Principle Investigator with expertise status in Rock Art, Stone Age and Iron Age studies. In addition to this, he was worked on both West and East Coast shell middens, Anglo-Boer War sites, and Historical Period sites.

### **DECLARATION OF INDEPENDENCE**

I, Gavin Anderson, declare that I am an independent specialist consultant and have no financial, personal or other interest in the proposed development, nor the developers or any of their subsidiaries, apart from fair remuneration for work performed in the delivery of heritage assessment services. There are no circumstances that compromise the objectivity of my performing such work.

A handwritten signature in black ink, appearing to read 'G. Anderson', with a horizontal line underneath.

Gavin Anderson  
Archaeologist/Heritage Impact Assessor