

**HERITAGE SURVEY OF THE PROPOSED R22
DEVIATION, HLUHLUWE, KZN**

FOR TERRATEST (PTY) LTD

DATE: 9 MARCH 2017

By Gavin Anderson

**Umlando: Archaeological Surveys and Heritage
Management**

PO Box 102532, Meerensee, 3901

Phone/fax: 035-7531785 Fax: 0865445631

Cell: 0836585362



TABLE OF CONTENT

INTRODUCTION	5
KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008	10
METHOD	12
Defining significance.....	13
RESULTS	16
DESKTOP STUDY	16
PALAEONTOLOGICAL IMPACT ASSESSMENT	23
FIELD SURVEY.....	24
MANAGEMENT PLAN	26
CONCLUSION.....	29
REFERENCES	30
EXPERIENCE OF THE HERITAGE CONSULTANT	31
DECLARATION OF INDEPENDENCE	31

TABLE OF FIGURES

FIG. 1 GENERAL LOCATION OF THE STUDY AREA.....	6
FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA	7
FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE R22 ROUTE	8
FIG. 4: SCENIC VIEWS OF THE PIPELINE ROUTE	9
TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES	15
FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA	17
FIG. 6: SURVEYOR GENERAL MAP OF LOT 118 13515	18
FIG. 7: SURVEYOR GENERAL MAP OF LOT 74 13414 (1921)	19
FIG. 8: SURVEYOR GENERAL MAP OF LOT 75 13531 (1921).....	20
FIG. 9: STUDY AREA IN 1937	21
FIG. 10: STUDY AREA IN 1942	22
FIG. 11: PALAEONTOLOGICAL SENSITIVITY MAP	23
TABLE 2: LOCATION OF RECORDED FINDS	24
FIG. 12: MSA TOOLS.....	25
FIG. 13 POTTERY SHARD	25
FIG. 14: BULLDOZED RUINS OF A HOUSE	26
FIG. 15: LOCATION OF ISOLATED ARTEFACTS AND A RUIN	28

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

EXECUTIVE SUMMARY

Umlando was contracted to undertake the HIA for the proposed R22 realignment around Hluhluwe town, KZN. The deviation passes through existing pineapple fields and older agricultural fields.

The heritage survey noted several isolated MSA stone tools along the route. A single pottery shard dating to the LIA or Historical Period was observed. The artefacts are of low significance and do not constitute an archaeological site per se. No further mitigation is required; however the EMPr should note the possibility of human remains that might occur on the western hill, and that there is a specific procedure to follow if human remains are uncovered.

The eastern side of the proposed route occurs in an area of high palaeontological sensitivity. This area will require a minimum of a desktop palaeontological impact assessment.

INTRODUCTION

The proposed realignment of the R22 around Hluhluwe town will assist in diverting traffic that is not destined for Hluhluwe to the adjoining Mbazwana/Sodwana Bay Road. The diversion of traffic will reduce existing traffic volumes within the town, thereby reducing the risk to road users and pedestrians, reduce wear on town infrastructure and decrease road maintenance costs. In addition, travel time delays will be reduced for road users as a more direct route bypassing the town, will be available.

The design requirements for the realignment are as follows:

- Construction of a single carriageway road, with a total width of 13 meters (m), within the national road reserve of 42m. This will serve to accommodate one lane of traffic per direction; and
- The single carriageway road will tie into the authorised, but not yet constructed, road-over-rail bridge and approach alignment.”

SANRAL, as the applicant, appointed Terratest (Pty) Ltd to undertake the Environmental Impact Assessment. Terratest (Pty) Ltd subcontracted Umlando to undertake the HIA.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

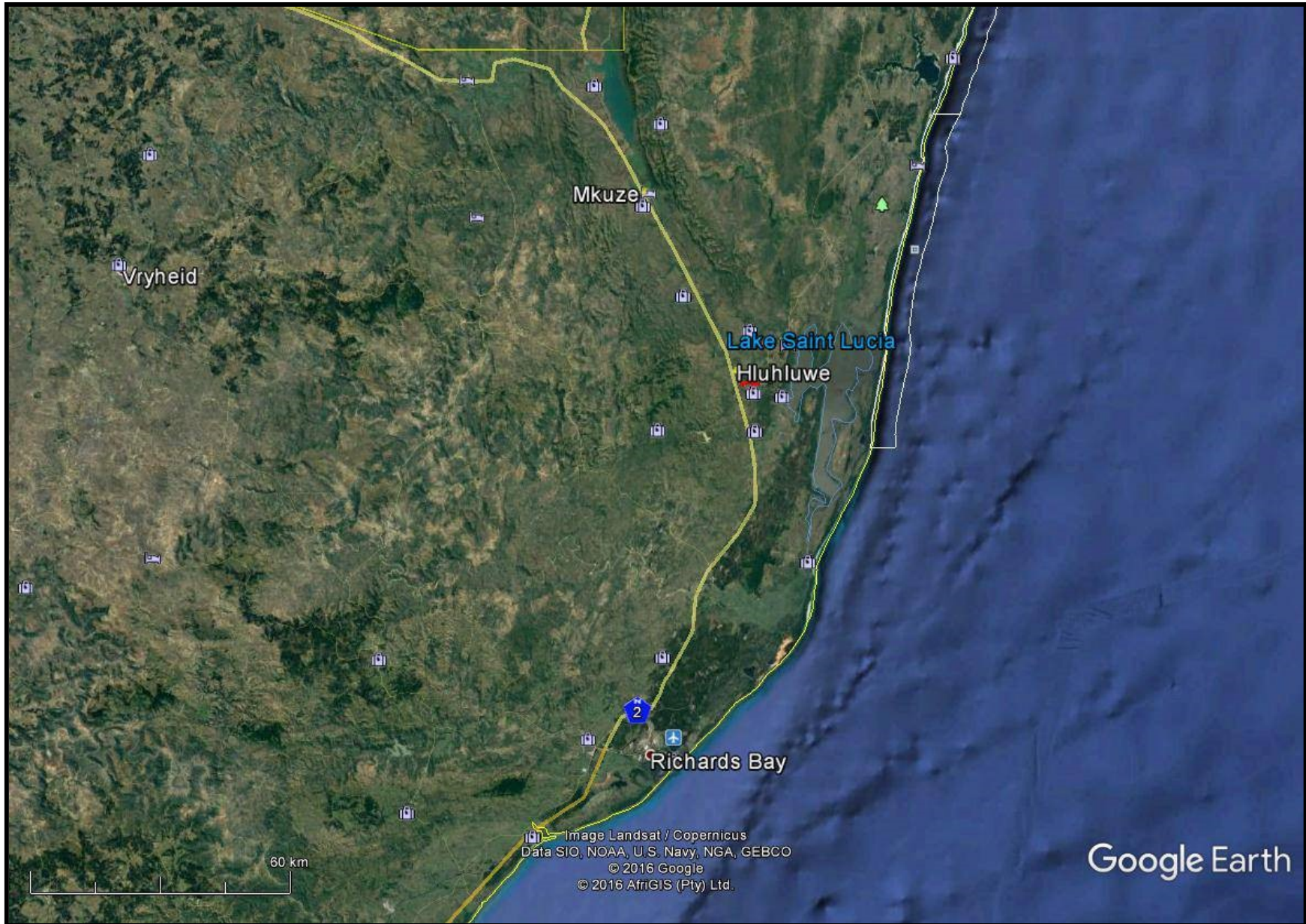


FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA

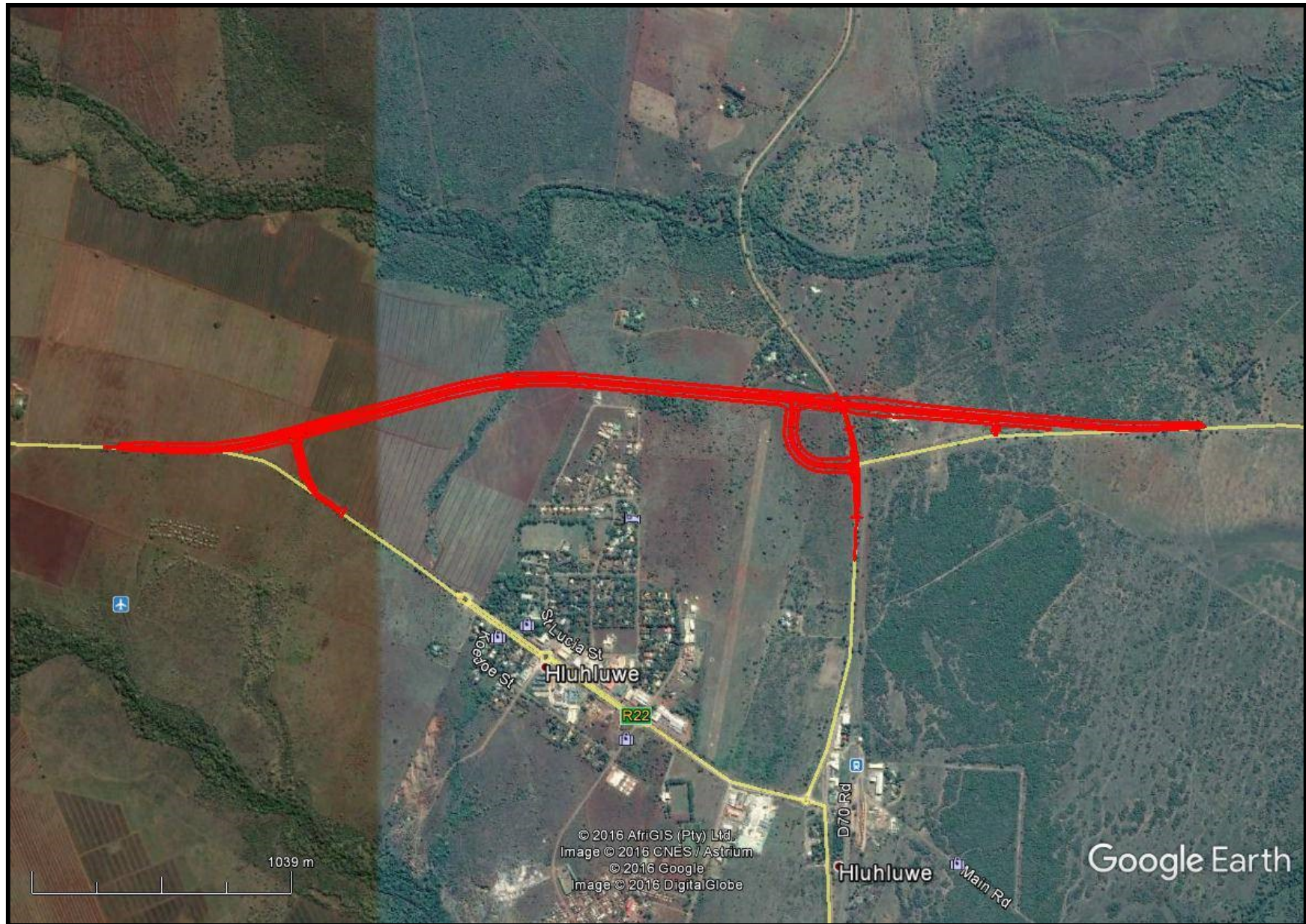


FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE R22 ROUTE

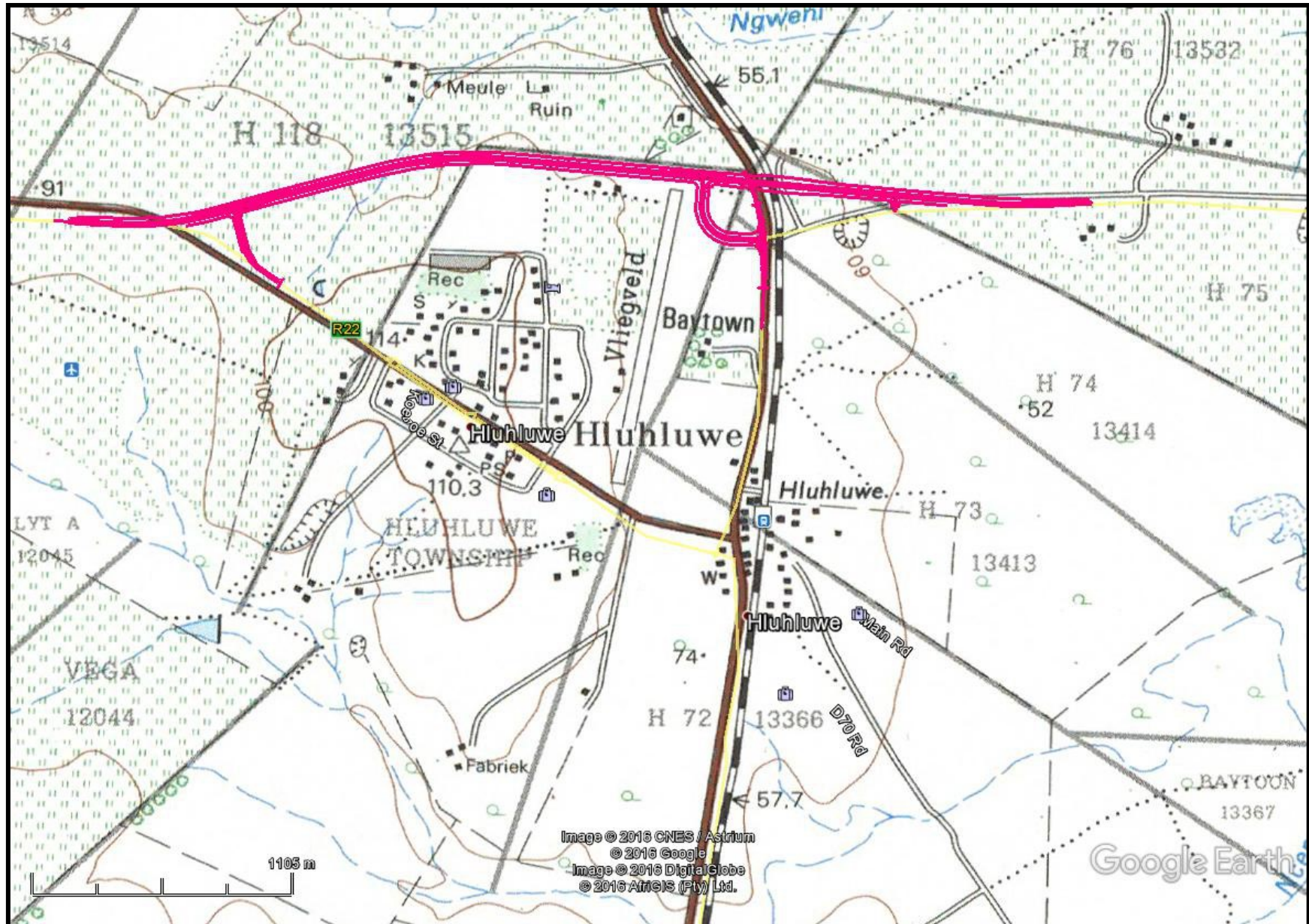


FIG. 4: SCENIC VIEWS OF THE ROUTE REALIGNMENT



KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008

“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.” (KZN Heritage Act of 2008)

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. These databases contain 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.

The above significance ratings allow one to grade the site according to SAHRA's grading scale. This is summarised in Table 1.

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. The archaeological database indicates that there are archaeological sites in the general area (fig. 5). These sites include all types of Stone Age sites. One site (2832 AA 002) was recorded in 1950 by Oliver Davies. The site was a scatter of MSA tools. Other scatters of ESA, MSA and LSA tools were recorded in the general area by O. Davies as well. No national monuments, battlefields, or historical cemeteries are known to occur in the study area.

The Surveyor General maps indicated that the area was first surveyed in 1921 (N_2258T1 N_AEC4T1 102GLE01). No structures, apart from the railroad, occur on the maps (fig.'s 6 – 8).

The 1937 aerial photographs indicate at least two farm buildings outside of the road footprint (16_002_13097; fig. 9). The photographs indicate that the realignment footprint is in uncultivated grassland.

The 1942 1:50 000 map indicates that there are no structures in the footprint (fig. 10).

FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

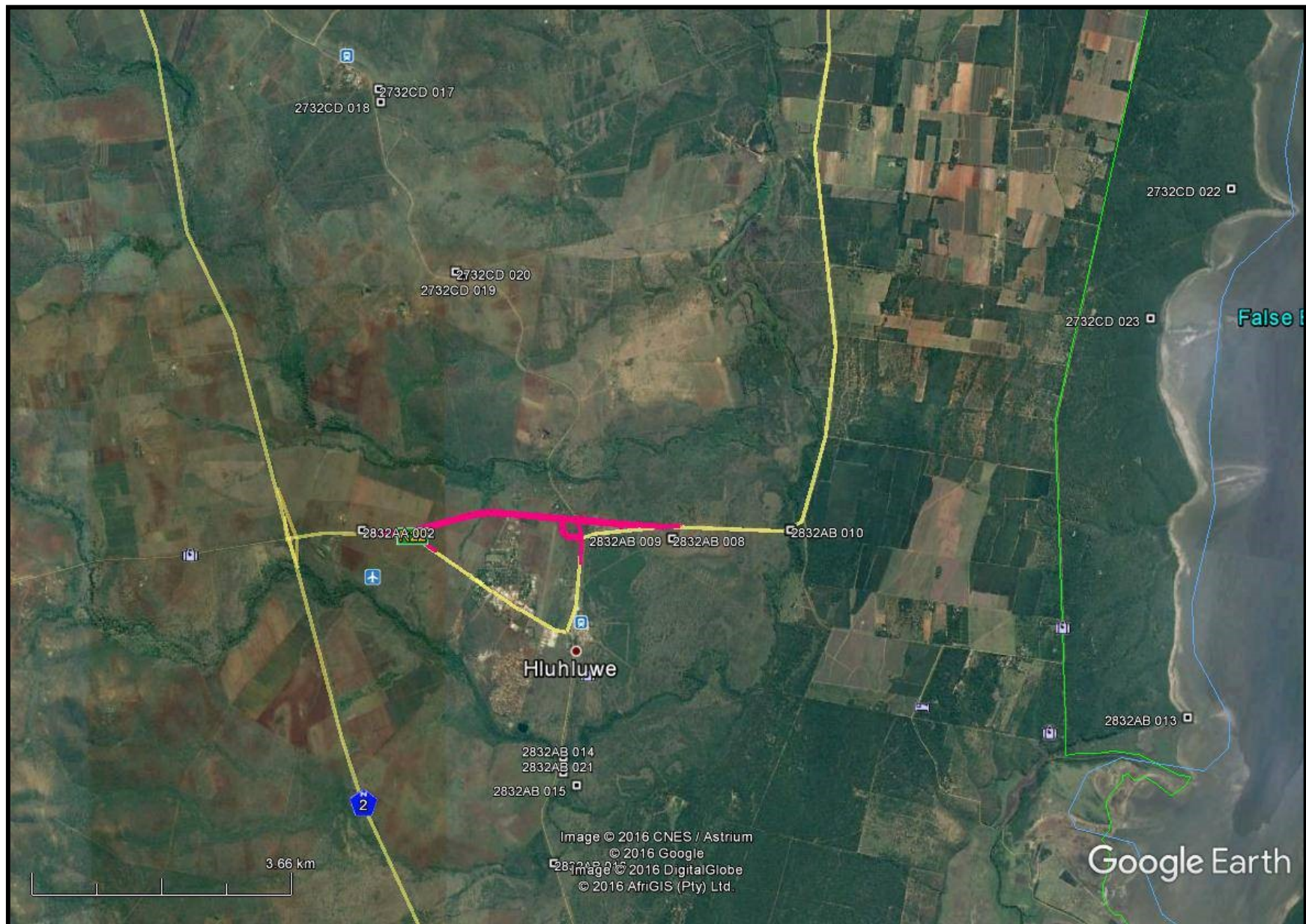
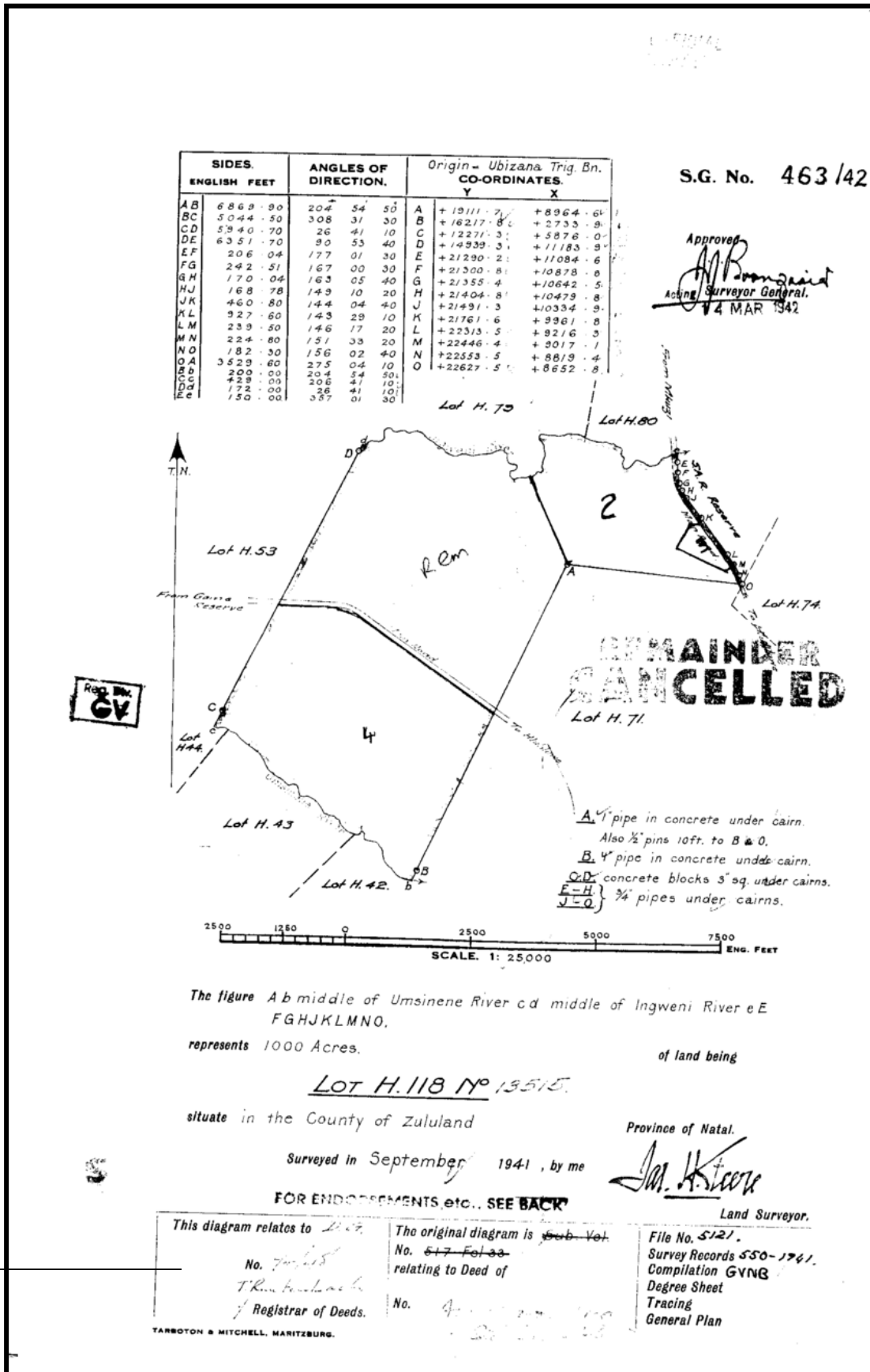
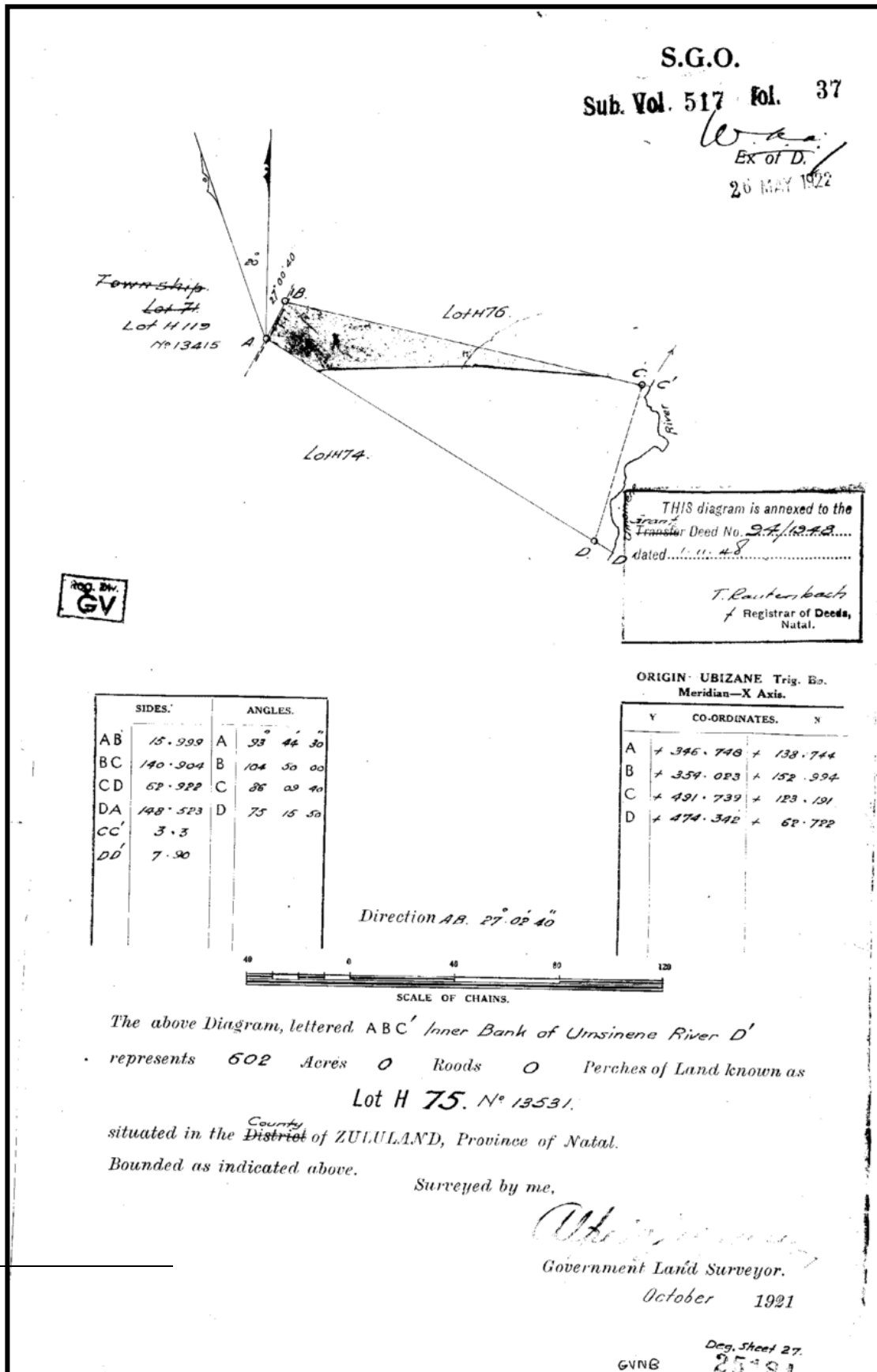


FIG. 6: SURVEYOR GENERAL MAP OF LOT 118 13515¹



1 102GLE01

FIG. 7: SURVEYOR GENERAL MAP OF LOT 74 13414 (1921)²



² N_AEC4T1

FIG. 8: SURVEYOR GENERAL MAP OF LOT 75 13531 (1921)³

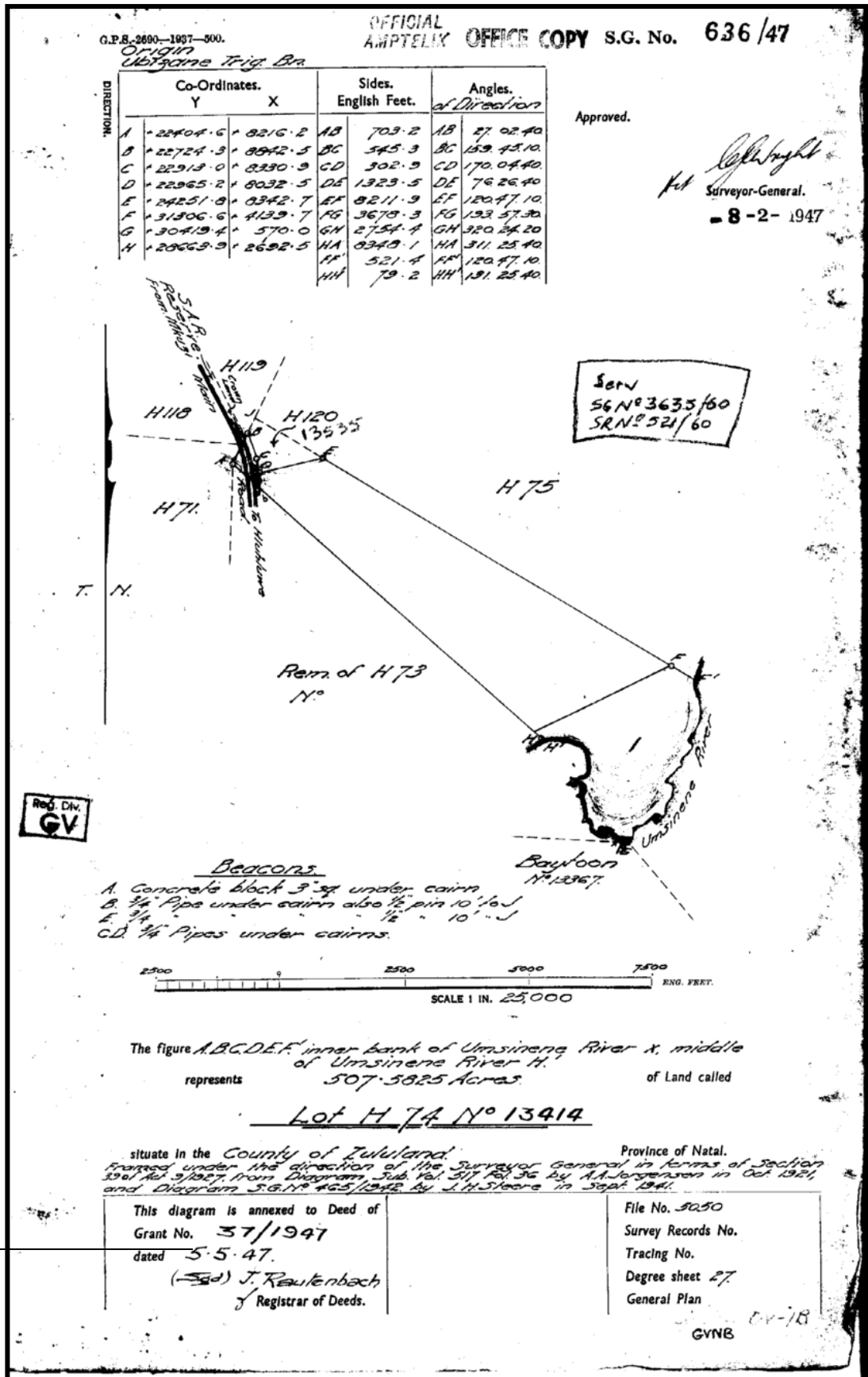
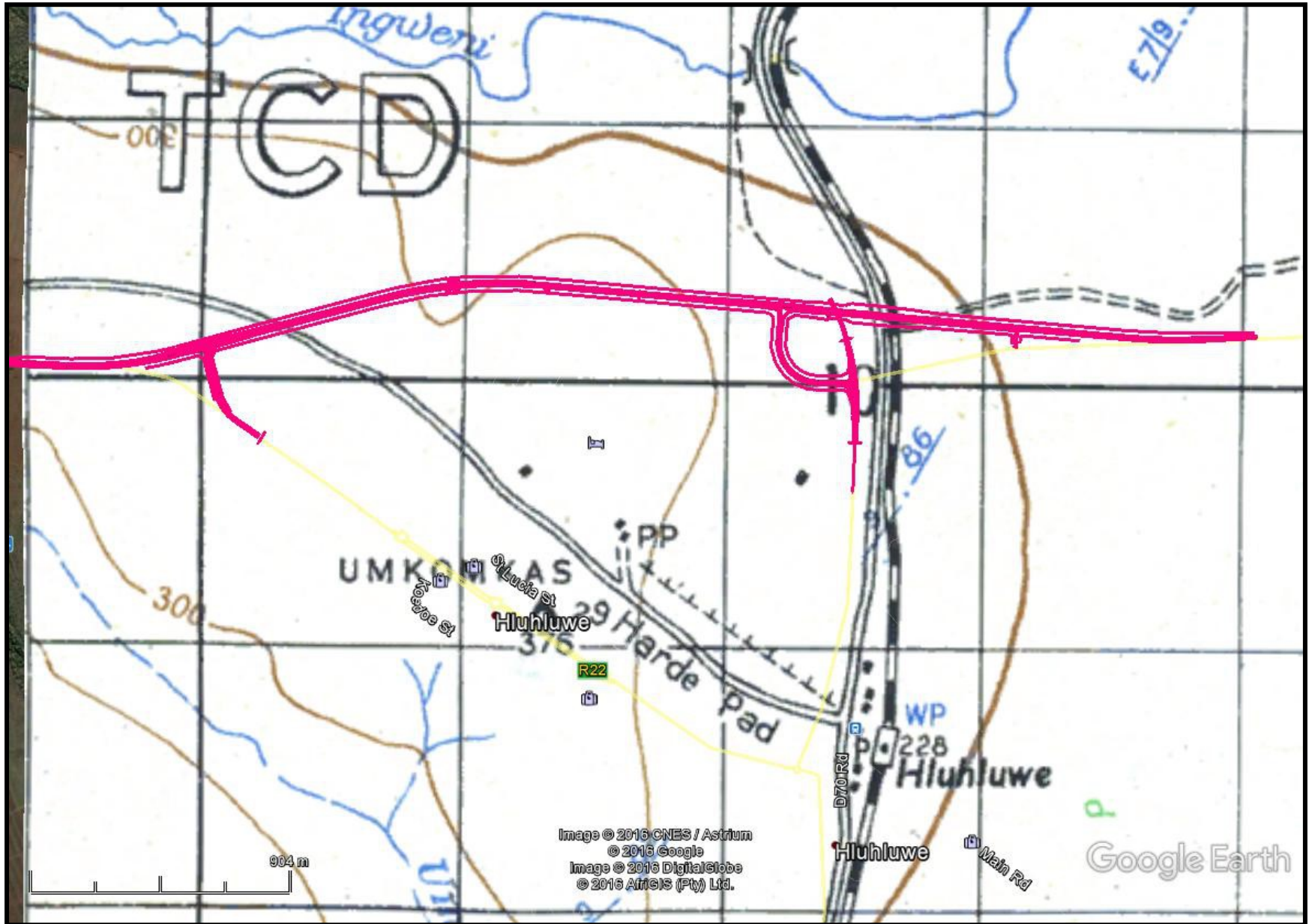


FIG. 9: STUDY AREA IN 1937



FIG. 10: STUDY AREA IN 1942



PALAEONTOLOGICAL IMPACT ASSESSMENT

The palaeontological sensitivity map indicates that the eastern half of the proposed route is in a high to very highly sensitive area, i.e. from the railway eastwards (fig. 11). A palaeontological impact assessment will be required. This can begin with a desktop study and then a field trip, or a combination at the same time). Given that a bridge will be built in this area, there will probably be a need for on-site monitoring by a palaeontologist.

FIG. 11: PALAEONTOLOGICAL SENSITIVITY MAP



COLOUR	SENSITIVITY	REQUIRED ACTION
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

FIELD SURVEY

A field survey was undertaken in March 2017. Most of the route footprint is in existing pineapple fields that have been extensively ploughed over the years. As Oliver Davies noted, the hill is a scatter of MSA tools. These are found all over the hills of Hluhluwe. They occur as isolated artefacts, in a secondary context (fig. 12). In addition to the stone tools, one pottery shard was observed on the main hill (fig. 13). The shard dates to the LIA or HP. While other shards were not noted (partially due to the ground being covered by black plastic for the pineapples), they would probably occur. This means that there could be a settlement. The settlement would, however be severely disturbed by ploughing activity and unlikely to have any intact deposits left.

The bulldozed remains of a bricked structure occurs just west of the railway (fig. 14). The structure does not appear on the older maps and appears to be recent.

Fig. 15 show the location of some of the artefacts and ruins, while Table 2 summarises the finds.

Significance: The stone tools and the pottery shard are of low significance.

Mitigation: No further mitigation is required. However, a protocol for human remains is required (see management plan below) as these might occur due to the existence of a settlement in the general area.

TABLE 2: LOCATION OF RECORDED FINDS

NAME	LATITUDE	LONGITUDE	DESCRIPTION
MSA	-28.010730075	32.259052048	MSA flakes
MSA	-28.008388665	32.262295273	MSA flake
MSA	-28.009622306	32.268027951	MSA flakes
MSA	-28.010111288	32.274491558	MSA flakes
Ruins	-28.009263914	32.274251431	Ruins
Shard	-28.012686504	32.261018030	LIA/HP Shard

FIG. 12: MSA TOOLS



FIG. 13 POTTERY SHARD



FIG. 14: BULLDOZED RUINS OF A HOUSE



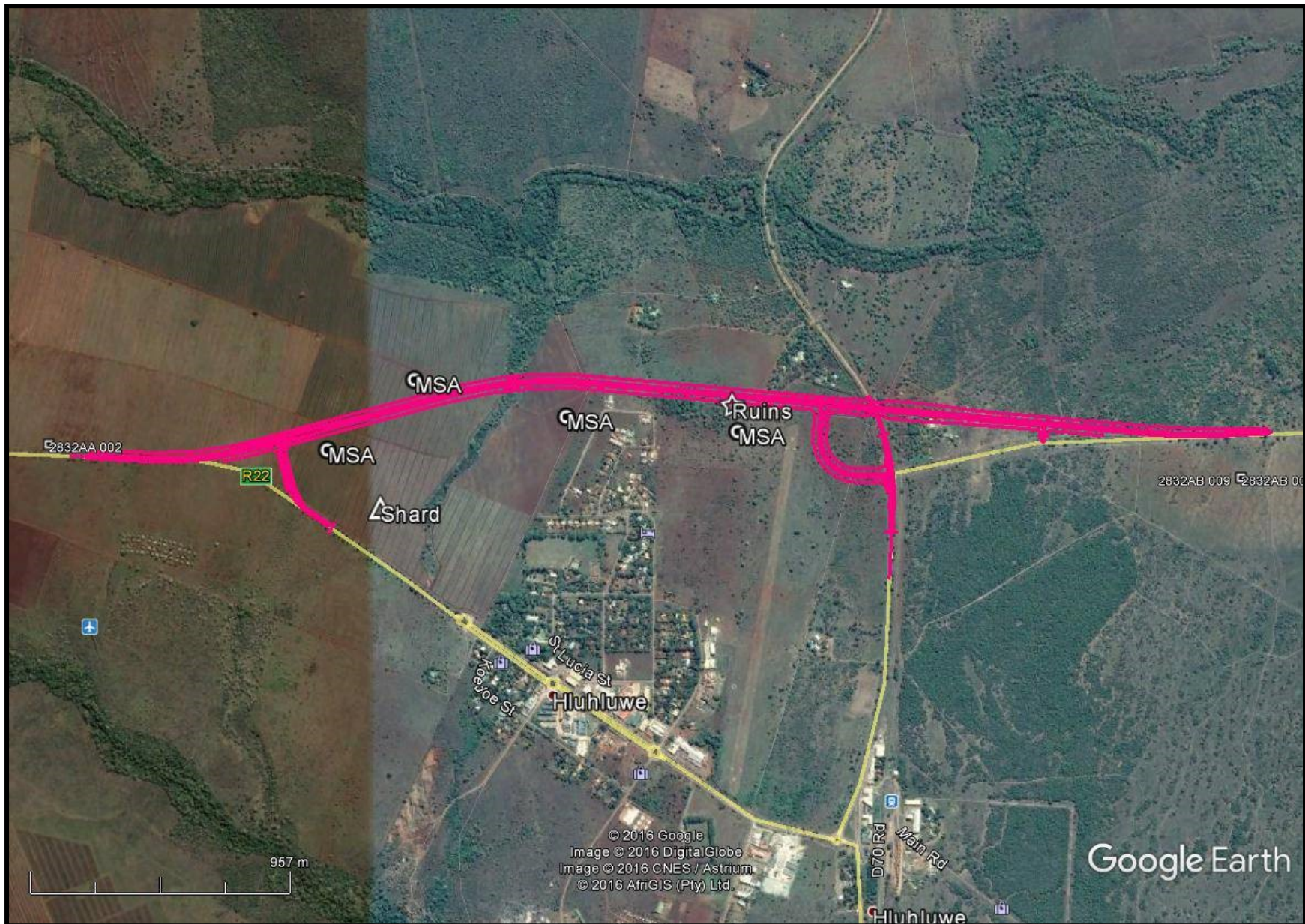
MANAGEMENT PLAN

The Environmental Impact Assessment for the realignment has been separated into a Basic Assessment for the road-over-rail bridge and approach alignment, and a Scoping and Environmental Impact Assessment for the road realignment component. As such, the PIA component of the work fell within the road-over-rail bridge and approach alignment application. With regards to the road-over-rail bridge component, Amafa aKwaZulu-Natali has provided comment and noted that a PIA wasn't necessary, but that a palaeontologist will need to be on site during the earth moving stages of the construction phase.

Whenever Iron Age sites are located there is a possibility of human graves occurring in the area. The pottery shard indicates that there was most probably an Iron Age settlement on the hill in the past. The systematic ploughing of the land would have destroyed any grave markers, especially if they were

subsurface. The construction company should be made aware that archaeological human graves may occur on this hill, and if any are uncovered, then work in that area needs to cease immediately. The area needs to be demarcated with a 20m buffer and the ECO, Amafa KZN and the SAPS need to be informed. Construction activity may continue elsewhere.

FIG. 15: LOCATION OF ISOLATED ARTEFACTS AND A RUIN



CONCLUSION

An heritage survey was undertaken for the proposed Hluhluwe R22 realignment. The realignment goes through existing pineapple fields and fallow fields to the west, and a recent cattle pen to the east. A few isolated artefacts were noted along the proposed route and general area. These artefacts are of low significance and no further mitigation is required. No permit from Amafa KZN is required. Due to their low significance, these artefacts need not be removed / collected / cordoned off or buffered prior to construction taking place and do not affect the proposed alignment or the construction thereof.

A general management plan for possible human remains is required and included within this report.

A palaeontological impact assessment is required for the eastern portion i.e. road-over-rail bridge and approach alignment, of the alignment.

REFERENCES

Surveyor General maps:

N_2258T1

N_AEC4T1

102GLE01

Aerial photographs

16_002_13095 - 16_002_13097

Topographical maps

2832 AB & BA Hluhluwe 1:50 000 topographical map 1942

2832 AA & AB Hluhluwe 1:50 000 topographical map 1978

General

Natal Museum Site Record Database

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', written over a horizontal line.

Gavin Anderson
Archaeologist/Heritage Impact Assessor