

ENVIRONMENTAL IMPACT ASSESSMENT: SCOPING REPORT

FOR THE DEVELOPMENT OF THE GIRIVONDO
BORDER POST, THE MAKHADZI PICNIC SITE
& INTERPRETIVE CENTRE & ACCESS ROAD,

S.A.H.R.A.
2003-02-27
ONTVANG/RECEIVED

NORTHERN REGION,
KRUGER NATIONAL PARK

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Prepared for:



South African
NATIONAL PARKS

For submission to:
THE DEPARTMENT OF ENVIRONMENT AFFAIRS
AND TOURISM

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Size: From the edge of the road, the site extends for 65 m inland and for 30 m parallel to the road.

The survey procedure is currently being revised. This will require the enlargement of the site to approximately 300 m along the road.

3.2.5.2 Fixed-point photography sites (FPP sites)

These sites are generally marked by a white paint mark (usually a dot or sometimes a cross) on tar roads, bridges or, in the case of gravel roads, sometimes tree stems or the trees themselves. Measured distances to the points, GPS readings and other descriptions are used to find the exact location of a point. It is recommended that these descriptions be used rather than relying on paint markers which are not always clearly visible.

Panoramic photographs are taken at each one of these sites, numbering up to eight (8) in order to cover the complete circle around the site. The distance covered by each photograph varies greatly but can sometimes reach up to one kilometre, which means that the diameter of some of the sites may be 2 kilometres long.

3.2.5.3 Aerial transects (AT)

These strips are not marked on the ground but usually start at prominent features like river-crossings or road-junctions.

The transects straddle roads covering approximately 250 m on either side of the latter and are 1500 m long.

3.2.5.4 Requirements and specifications regarding road construction and de-commissioning in respect of monitoring sites

- Road drainage must not be directed towards a VCA or FPP site;
- No road of any kind is to pass through or development to take place within a FPP or AT site (see above-mentioned extents of sites), which means that for FPP sites a buffer zone (circle) with a 1 km radius around the actual site should be respected. The extent of AT sites is clear from the above description, therefore, no development within the extent of these sites.

3.3 CULTURAL HISTORICAL ENVIRONMENT

An archaeological survey of the proposed Makhadzi Giriyondo Study area was conducted by Mr. Francois Coetzee of the Archaeology Contracts Unit of the University of South Africa during December 2002. His report is included in full hereunder:

1. Introduction

The Archaeology Contracts Unit (UNISA) conducted an investigation, focussing on the archaeological and historical aspects of the Giriyondo-Makhadzi Development in the Kruger National Park. The Development consists of an existing road that will be upgraded, a military base that will be converted into a picnic site and the establishment of the new border post. This report was requested by Van Riet and Louw Landscape Architects. This Heritage Impact

Assessment (HIA) forms part of a comprehensive EIA necessitated by the proposed development.

The aim of this investigation is to locate, identify and document visible archaeological artefacts, structures (including graves) and settlements of cultural significance within the proposed localities.

2. Terms of Reference

The terms of reference of this survey are as follows:

- * Compile a brief contextualisation of the area's ethnographic and colonial history
- * Provide a detailed description of all archaeological artefacts, structures (including graves) and settlements within the proposed areas of development
- * Assess the significance of the impact of the proposed development on the archaeological remains within the areas
- * Estimate the level of sensitivity/importance of the archaeological remains within the areas
- * Propose possible mitigation measures provided that such action is necessitated by the development

3. Definitions and Approach

- Archaeological remains can be defined as human-made objects, which reflect past ways of life, deposited in or on the ground.
- All archaeological remains, artificial features and structures older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the **National Heritage Resources Act (NHRA) (Act No. 25 of 1999)**. The Act makes an archaeological impact assessment as part of an EIA and EMPR mandatory. No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the **South African Heritage Resources Agency (SAHRA)**. Full cognisance is taken of this Act in making recommendations in this report.
- Cognisance will also be taken of the **Minerals Act (Act No 50 of 1991)** and the **National Environmental Management Act (Act No 107 of 1998)** when making any recommendations.
- Cultural resources are non-renewable.
- The guidelines as provided by the **NHRA (Act No. 25 of 1999)** in Section 3, with special reference to subsection 3, and the Australian ICOMOS Charter (also known as the Burra Charter) are used when determining the cultural significance or other special value of archaeological or historical sites.
- It should be kept in mind that archaeological deposits usually occur below ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted, and a university or museum would be required to be notified in order for an investigation and evaluation of the find(s) to take place (cf. **NHRA (Act No. 25 of 1999)**, Section 36 (6)).
- A copy of this report will be lodged with the **South African Heritage Resources Agency (SAHRA)** as stipulated by the **National Heritage Resources Act (NHRA) (Act No. 25 of 1999)**, Section 38 (especially subsection 4).

4. Methodology

4.1 Literature Study

Various archaeological, ethnographic and historic sources were consulted to compile a concise cultural framework of the area under investigation.

4.2 **Maps and Other Sources**
The investigated areas were located by using the 1:50 000 Topographic Map 2331 DA and aerial photographs, followed by an on-site investigation.

4.3 **Fieldwork**
The field survey took place on 14 & 15 December 2002. The existing road, picnic site and proposed border post were extensively investigated by vehicle and on foot.

5. **Area Description**
The existing road crosses the Makhadzi stream and various other smaller streams in the area. The picnic site will be developed on an abandoned military camp. The border post will be situated on the Lebombo mountain range next to the Park fence in mostly disturbed areas (three possible locals are proposed).

6. Chronological Framework

PERIOD	APPROXIMATE DATE
Early Stone Age	more than c. 2 million years ago - c. 200 000 years ago
Middle Stone Age	c. 200 000 years ago - c. 25 000 years ago
Later Stone Age (Includes San Rock Art)	c. 25 000 years ago - c: AD 200 (up to historic times in certain areas)
Early Iron Age	c. AD 400 - c. AD 1025
Late Iron Age (Sonevalled sites)	c. AD 1025 - c. AD 1830 (c. AD 1640 - c. AD 1830)

7. Archaeological and Ethnohistorical Context

7.1 Stone Age Context

The Stone Age occupation of the Park is characterised by small groups of nomadic hunters-gatherers-fishermen who moved over large territories. Although bone, organic fibres and skin were used in the manufacture of a range of implements and household goods, lithics constitute a major part of any Stone Age archaeological assemblage. The Stone Age of southern Africa is divided into the Early, Middle and Later Stone Age.

Stone tools from all these phases are found throughout the Park. Concentrations of Early Stone Age (ESA) (dating to more than 2 million years ago and up to 200 000 years ago) tools are prolific in the northern areas, but also occur in the south in the Timbavati as well as the Stolsnek area. These sites usually occur near rivers and pans where water and game are available. An extended ESA site has been recorded south of the Shingwedzi River near the banks of the Makhadzi stream (80 to 100 metres from the riverbed), west of the Lebombo mountains (Eloff 1990:6).

A much wider presence of anatomically modern humans, associated with the Middle Stone Age (MSA), is found in the Park. The MSA dates from approximately 200 000 to 25 000 years ago. Apart from isolated sites, concentrations of MSA sites are located near Kostini near the Shingwedzi River, along the lower course of the Tsende stream as well as on the northern banks of the Letaba River (Eloff 1990:7).

Wide-spread occupation by Later Stone Age people (25 000 years ago to historic times) has been documented in the Park. Although open sites near rivers and pans were favoured, the numerous small rock shelters in the southern region of the Park were also intensively utilized

during this period. The south is also well-known as a major rock art location (Eloff 1990:10-17).

7.2 Iron Age Context

Both Early and Later Iron Age settlement in the Park has been recorded by various archaeological researchers. Radiocarbon dates indicate occupation from approximately the beginning of the fifth century until historic times. Contact situations between the hunter-gatherers and the migratory agropastoralists seem to have been initially symbiotic. The earliest Iron Age occupation (from AD 400) is associated with the Letaba River, followed by settlements near the Sabie and Crocodile River areas (Eloff 1990:28). By AD 700 - AD 800 immigrants have settled along the Levuvhu, Letaba, Olifants, Sabie and Crocodile Rivers (Eloff 1990:29). These agropastoralists migrating into the Park brought with them a variety of domesticated grains and beans as well as domestic animals. However, they still gathered wild foods and hunted actively. They lived in settled villages where they practised mining, smelting and working of iron, copper and gold. They also manufactured pottery. Decorations on the pottery are culturally diagnostic elements which are used by archaeologists to identify periods and traditions.

The later phase of the Iron Age (from approximately AD 1600) is characterised by hill-top settlements demarcated by prominent periphery walls and occupation structures built from stone. Stone-walled settlements situated in the northern regions of the Park (e.g. Thulamela) are broadly associated with Shona and Venda speaking people and those situated in the central areas (e.g. Masorini) are broadly associated with Sotho speaking people, specifically the Baphalaborwa. The Baphalaborwa arrived in the area of the present-day Phalaborwa in the 1700s from where they settled in the area between the Olifants and Letaba Rivers. They were very successful iron and copper smelters and were probably linked to the east-coast trade network. Research also suggests that certain Tsonga groups might have settled on the Lebombo mountains to the west, though they are not generally associated with stone-walled settlements (Eloff 1990:30-31).

7.3 Ethnography

During the 18th century, BaHlengwe, settled and dominated the central regions of the present-day Kruger National Park (Eloff 1990:44). During this time the area was also influenced by the military presence of Swazi, Eastern Sotho and Tsonga groups (Meyer 1986:242). The Baphalaborwa people are still situated outside the Park and reside around present-day town of Phalaborwa.

8. Historical Context

After the 10th century trade became an important element of the economy. Items such as game products (including ivory and animal furs), iron, copper and gold, were exported and salt, grain, cattle, sea shells as well as glass beads and textiles from the East imported. Although ivory was a major trade item, documents on trade with the East Coast also refer to leopard skins, tortoise shells and slaves. Gold is specifically mentioned in documents relating to the twelfth century. Although the Arab traders controlled the trade until the 16th century, they used local people as porters and agents. Various trade routes went through the Park. One of the trade routes, recorded as 'Route B: From Inhambane to Soufpanenberg' went through the Shingwedzi Poort across the Lebombo mountains (Eloff 1990:51). This route is situated further north and will not be affected by this development.

Accounts by travellers from 1725 to 1838 describe, as mentioned above, a significant presence of agropastoralists in the area, which would subsequently become the Kruger National Park. After several debates in the ZAR parliament the Sabie 'Gouvernements Wildtuin' was proclaimed on 26 March 1898 (Eloff 1990:1).

9. Site Descriptions

No archaeological or historical sites were identified in the area of the proposed developments. In addition, no historic trade routes or wagon trails have been recorded in the area.

The abandoned military camp that will be developed into a picnic site was probably an old field ranger camp known only as Makhadzi (Eloff 1990:451).

Late Iron Age sites associated with the Shilowa Complex are situated further to the north of the proposed developments. These sites consist of stone-walled settlements situated on top of prominent hills. Scatters of cultural material (e.g. potsherds) are usually evident on the surface. Two sites belonging to the Shilowa Complex namely, Mo 1 and Mo 15, were recorded by Meyer further to the north of the development (Meyer 1986:236, 237, also cf Eloff 1990:471).

11. Conclusions and Recommendations

No archaeological or historical sites have been recorded in the proposed areas of development (i.e. road, picnic site and border post). Although recent floods occurred in the area and may have removed exposed Stone Age surface deposits, no evidence was found indicating settlements. Due to the position of the road (low-lying contours) no Late Iron Age stone-walled settlements which usually occur on top of prominent hills are affected. No mitigation measures are required.

Also note the following:

- It should be kept in mind that archaeological deposits usually occur below ground level. Should artefacts or skeletal material be revealed during the construction of the resort development as well as the access roads, a university or museum has to be notified in order for an investigation and evaluation of the find(s), by a qualified archaeologist, to take place.

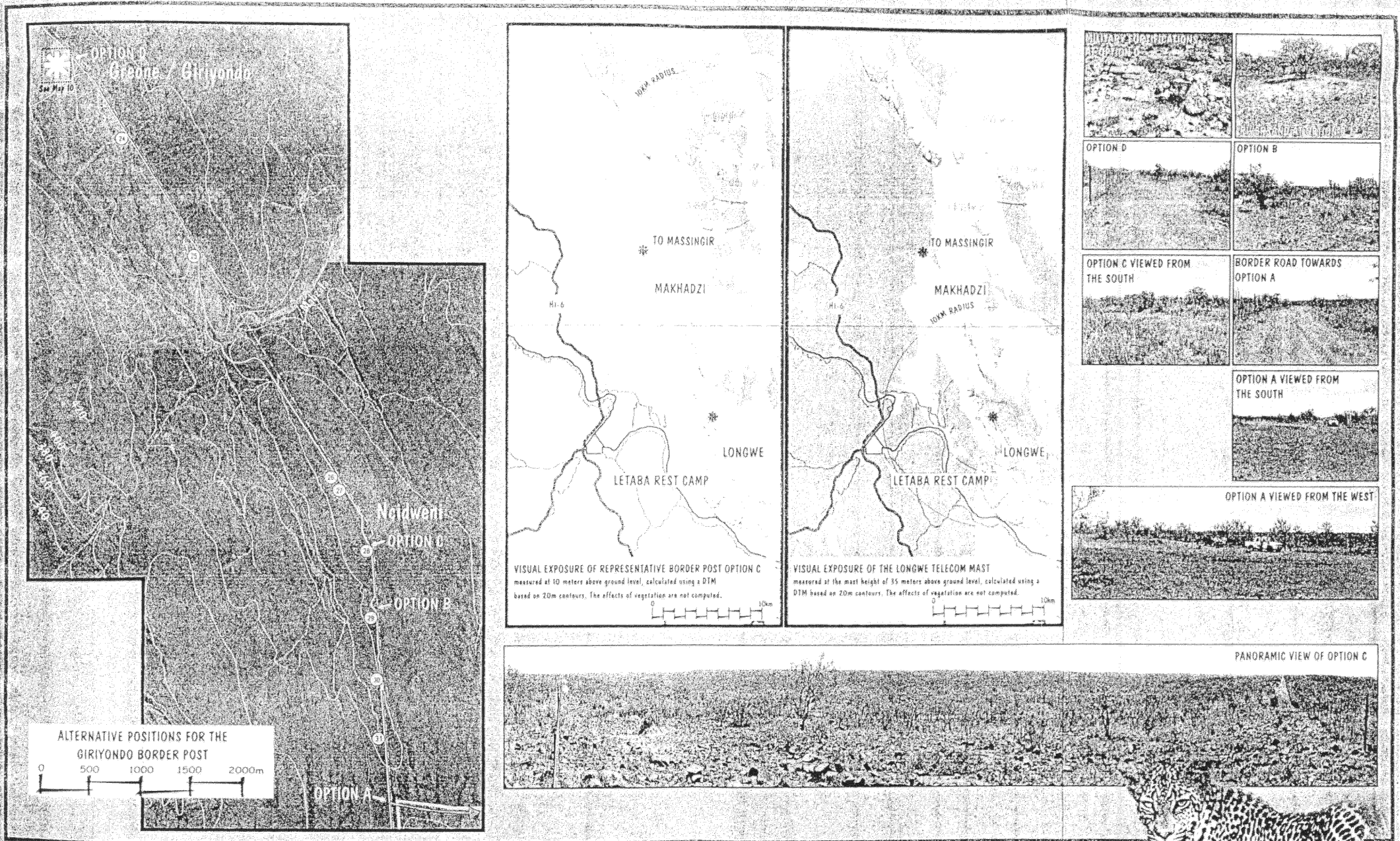
3.4 AESTHETIC ENVIRONMENT

The aesthetic environment concerns the ability of the site to appeal to man's visual and acoustic senses. View quality, wilderness character and ambiance, and the absence of man-made structures and noise all contribute to a pleasant aesthetic environment.

The aesthetic environment of the study area extending from the H1-6 in the west to the border in the east is dominated by the paucity of man-made structures. It is the wilderness character of the region that permeates the landscape character and is of great value to the conservation and recreation activities. This wilderness character is further enhanced by the presence of the river channels.

The homogenous visual quality of the mopane veld of the plains, which constitutes the majority of the study area, offsets the dramatic and rugged landscape of the Lebombo Mountain range which forms the eastern extremity of the study area.

Man-made structures such as windmills, concrete reservoirs and drinking troughs (i.e. at Malopenyana, Makhadzi site, Shidakeni and Manyeleti Dam) do not add to the wilderness appeal of the area, certainly not from a visual perspective. Expectations are that KNP will investigate decommissioning or replacing the windmills with less obtrusive solar pumps in the near future in line with the current water provision policy.

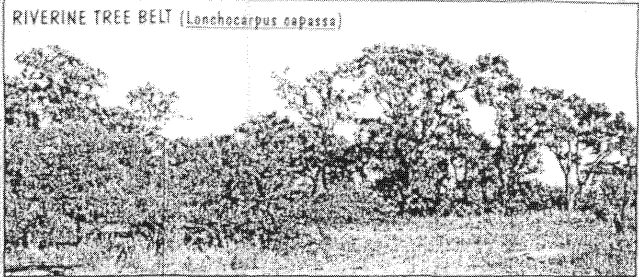
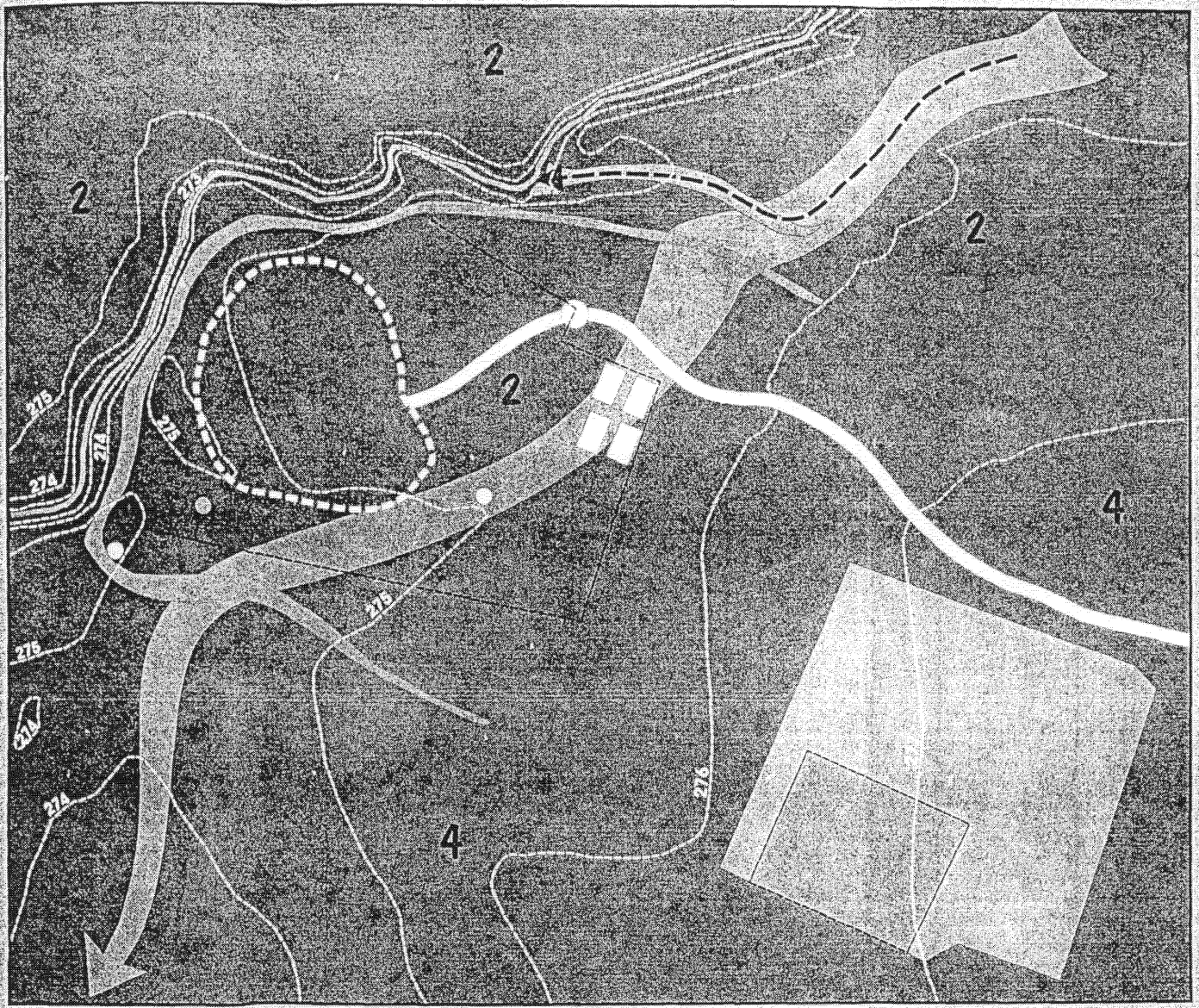


GIRIYONDO - MAKHADZI EIA

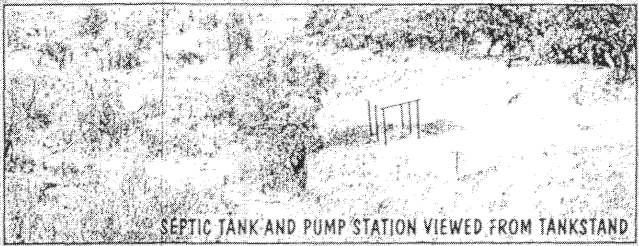
Map 8: Giriyondo site evaluation

- Gravelled KNP management road
- Un-surfaced KNP management track
- Un-surfaced 'Sisal' track
- Access road to Massingir
- Existing gravel pits
- Old Military observation post
- International border
- Limpopo National Park - Wildlife Sanctuary
- Non perennial rivers and streams
- 20m contours





RIVERINE TREE BELT (*Lonchocarpus naPassa*)



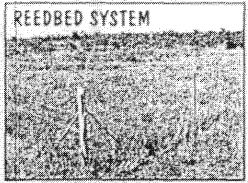
SEPTIC TANK AND PUMP STATION VIEWED FROM TANKSTAND



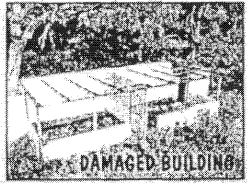
ASSORTED BUILDINGS, VIEWED FROM TANKSTAND.



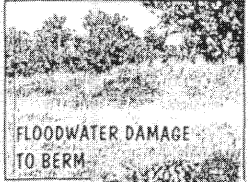
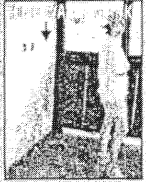
TANKSTAND



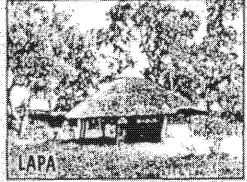
REEDBED SYSTEM



DAMAGED BUILDING



FLOODWATER DAMAGE TO BERM



LAPA

GIRIYONDO - MAKHADZI EIA

Map 7: Makhadzi site evaluation

- Makhadzi river
- 1m contours
- Fence
- Access road
- Gate
- Assorted buildings
- Water tankstand
- Diesel tank
- Concrete platform
- Floodwater diversion berm
- Reedbed system
- Old soccer field

- Diversion channel
- Diversion of 50 year flood event
- 2** SOILS AND VEGETATION
Combretum arborescens / *Crotophaga sulcirostris* (open woodland) & open Sporobolus grassland underlain by percolitic soils (Sceptera Swaziland & Klapmuis terms).
- 4** *Crotophaga sulcirostris* (open woodland) underlain by undifferentiated KwaZulu Natal soils (Sceptera & Klapmuis terms).

