Phase 1 Archaeological Impact Assessment of a new township development on Farm Rodenbeck 2972, Bloemfontein, FS Province.

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Summary

A Phase 1 Archaeological Impact Assessment was carried out within a 70 ha area demarcated for residential development on Farm Rodenbeck 2972, Bloemfontein, Free State Province. The site is characterized by rocky terrain degraded by previous residential development and construction activities. A foot survey of the terrain revealed no evidence of *in situ* Stone Age archaeological material, capped or distributed as surface scatters on the landscape. There are also no indications of rock art (engravings on dolerite outcrop), prehistoric structures, Anglo Boer War sites, graves or buildings with historical significance older than 60 years within the boundaries of the study area. There are no archaeological grounds to suspend excavation activities within the proposed development footprint. The proposed development footprint is assigned a site rating of Generally Protected C (GP.C). As far as archaeological heritage is concerned, the proposed development may proceed provided that all activities are restricted to within the boundaries of the development footprint.

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Introduction

A Phase 1 Archaeological Impact Assessment was carried out within a 70 ha area demarcated for residential development on Farm Rodenbeck 2972, Bloemfontein, Free State Province **(Fig. 1**). The assessment is required as a prerequisite for new development in terms of the National Environmental Management Act and is also called for in terms of the National Heritage Resources Act (NHRA) 25 of 1999. The region's unique and non-renewable archaeological and palaeontological heritage sites are 'Generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. As many such heritage sites are threatened daily by development, both the environmental and heritage legislation require impact assessment reports that identify all heritage resources including archaeological and palaeontological sites in the area to be developed, and that make recommendations for protection or mitigation of the impact of the sites.

The NHRA identifies what is defined as a heritage resource, the criteria for establishing its significance and lists specific activities for which a heritage specialist study may be required. In this regard, categories of development listed in Section 38 (1) of the NHR Act are:

- The construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- The construction of a bridge or similar structure exceeding 50m in length;
- Any development or other activity which will change the character of the site

a) exceeding 5000 m² in extent; or

b) involving three or more existing erven or subdivisions thereof; or

c) involving three or more subdivisions thereof which have been consolidated within the past five years;

- The rezoning of a site exceeding 10 000 m²; or
- Any other category of development provided for in regulations by the South African Heritage Resources Agency (SAHRA).

A site visit and subsequent assessment took place during November 2014. The task involved identification of possible paleontological sites or occurrences in the proposed zone, an assessment of their significance, possible impact by the proposed development and recommendations for mitigation where relevant.

Terms of Reference

- Identify and map possible heritage sites and occurrences using available resources.
- Determine and assess the potential impacts of the proposed development on potential heritage resources;
- Recommend mitigation measures to minimize potential impacts associated with the proposed development.

Methodology

The heritage significance of the affected area was evaluated through a desktop study and carried out on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes. Relevant publications, aerial photographs (incl. Google Earth) and site records were consulted and integrated with data acquired during the on-site inspection.

Field Rating

Site significance classification standards as prescribed by SAHRA (2005) for archaeological sites were used for the purpose of this report (**Table 1**).

Locality data

1 : 50 000 scale topographic map: 2926 AA Bloemfontein

1: 250 000 scale geological map 2926 Bloemfontein

The site is located within a residential area on Dr Belcher Road going south towards Dewetsdorp, about 9km south of the Bloemfontein CBD (**Fig. 2**)

Site coordinates (**Fig. 2**):

A) 29°11'10.50"S 26°16'11.04"E

B) 29°10'55.54"S 26°16'35.64"E

C) 29°11'4.17"S 26°16'48.74"E

D) 29°11'4.25"S 26°17'4.37"E

E) 29°11'23.97"S 26°17'0.35"E

F) 29°11'23.35"S 26°16'50.01"E

G) 29°11'10.23"S 26°16'48.22"E

H) 29°11'30.44"S 26°16'19.95"E

Background

The Stone Age archaeological record of the Bloemfontein region spans back to the Middle Stone Age. Prehistoric archaeological remains previously recorded in the region include numerous occurrences of *in situ* Middle and Later Stone Age artefacts eroding out of the overbank sediments along the nearby Modder River and its tributaries where they are often found in association large mammal fossil remains (Broom 1909; Churchill *et al*. 2000; Rossouw 1999, 2000, 2006). The incidence of surface scatters usually decreases away from localized areas such as alluvial contexts and dolerite-shale contact zones when stone tools largely occur as contextually derived individual finds in the open veld. Stone tools are mostly made of hornfels, a fine-grained isotropic rock found in the hot-contact zone between the dolerites and shales in the area. As a result, stone tool factory sites are commonly found near dolerite-shale contact zones. The study area is located outside the south-western periphery of distribution of Late Iron Age stone-walled settlements in the Free State (Maggs 1976).

Field Assessment

The site is characterized by rocky terrain degraded by previous residential development and construction activities (**Fig. 3 - 5**). A foot survey of the terrain revealed no evidence of *in situ* Stone Age archaeological material, capped or distributed as surface scatters on the landscape. There are also no indications of rock art (engravings on dolerite outcrop), prehistoric structures, Anglo Boer War sites, graves or buildings with historical significance older than 60 years within the boundaries of the study area.

Impact Statement and Recommendations

There are no major archaeological grounds to suspend excavation activities within the proposed development footprint. The proposed development footprint is assigned a site rating of Generally Protected C (GP.C). As far as archaeological heritage is concerned, the proposed development may proceed provided that all activities are restricted to within the boundaries of the development footprint.

References

Churchill, S.E., Brink, J.S., Berger, L.R. Hutchison, R.A., Rossouw L., *et. al*. 2000. Erfkroon: a new Florisian fossil locality from fluvial contexts in the western Free State, South Africa. *South.African Journal of Science* 96: 161 – 163.

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DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference. I have no interest in secondary or downstream developments as a result of the authorization of this project and have no conflicting interests in the undertaking of the activity.

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Tables and Figures

Table 1. Field rating categories as prescribed by SAHRA.

Field Rating	**Grade**	**Significance**	**Mitigation**
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

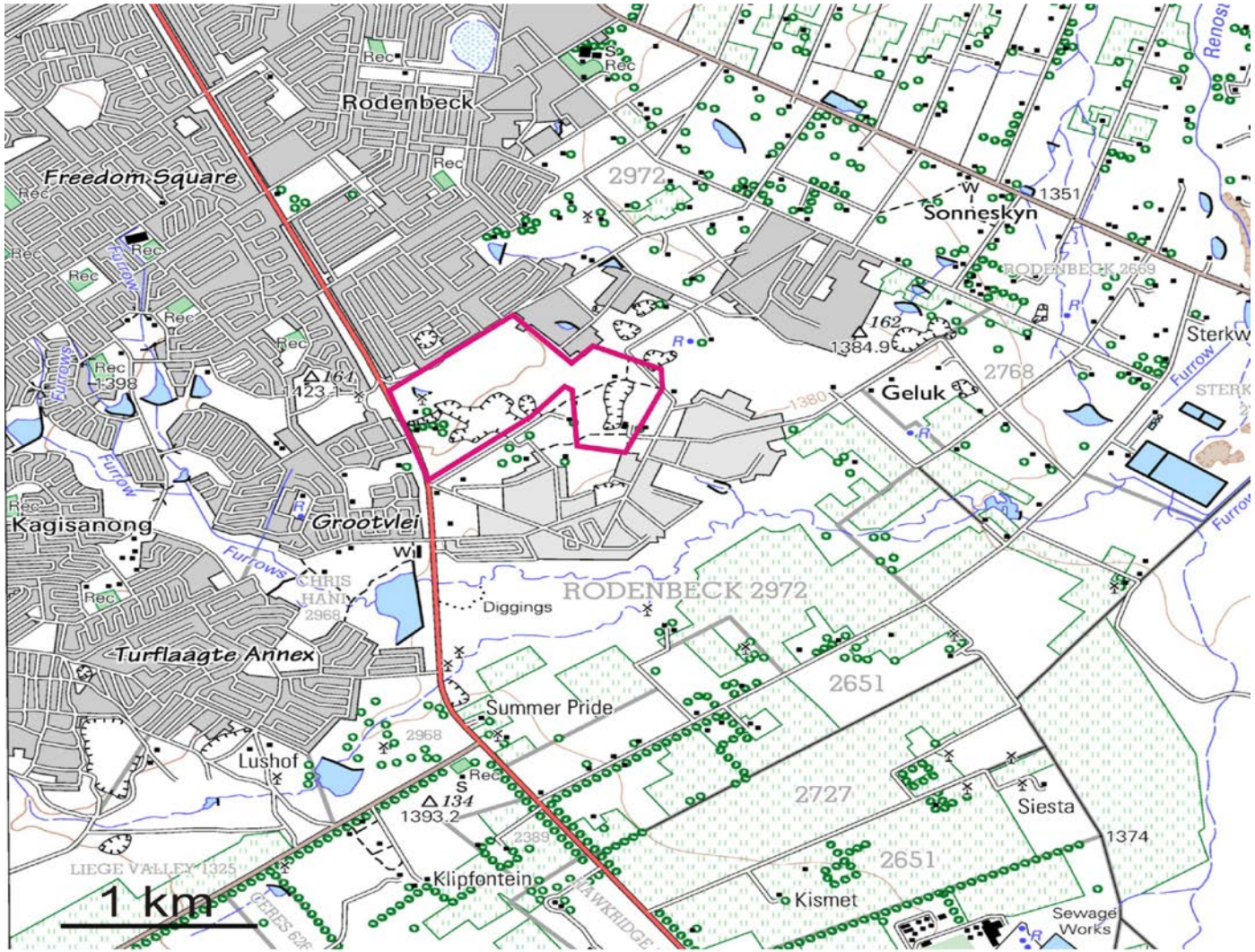

Figure 1. Map of the study area (portion of 1:50 000 scale topographic 2926 AA Bloemfontein).

Figure 2. Aerial view of the study area.

Figure 3. General view of the study area, looking northeast (top) and west (below).

Figure 4. General view of the study area, looking north (top) and northwest (below).

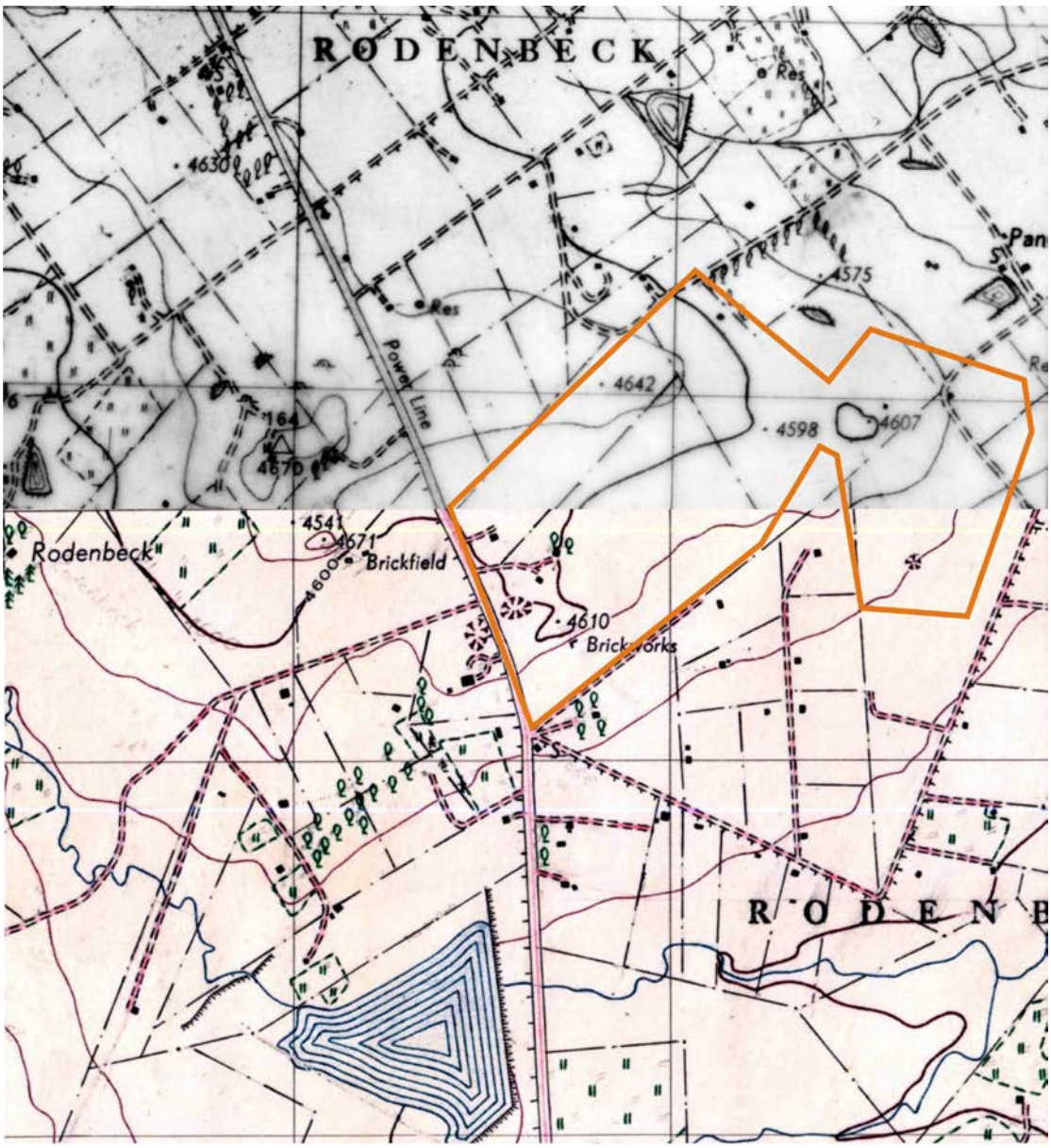

Figure 3. Portion of 1:18 000 scale topographical map of the study area, circa 1948, showing no building structures except for a brickworks located at the southwestern boundary.