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AN ARCHAEOLOGICAL IMPACT ASSESSMENT OF PROPOSED FACILITIES AT THE ATLANTIS SHOOTING RANGE

Prepared for

Ninham Shand (Pty) Ltd

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Prepared by

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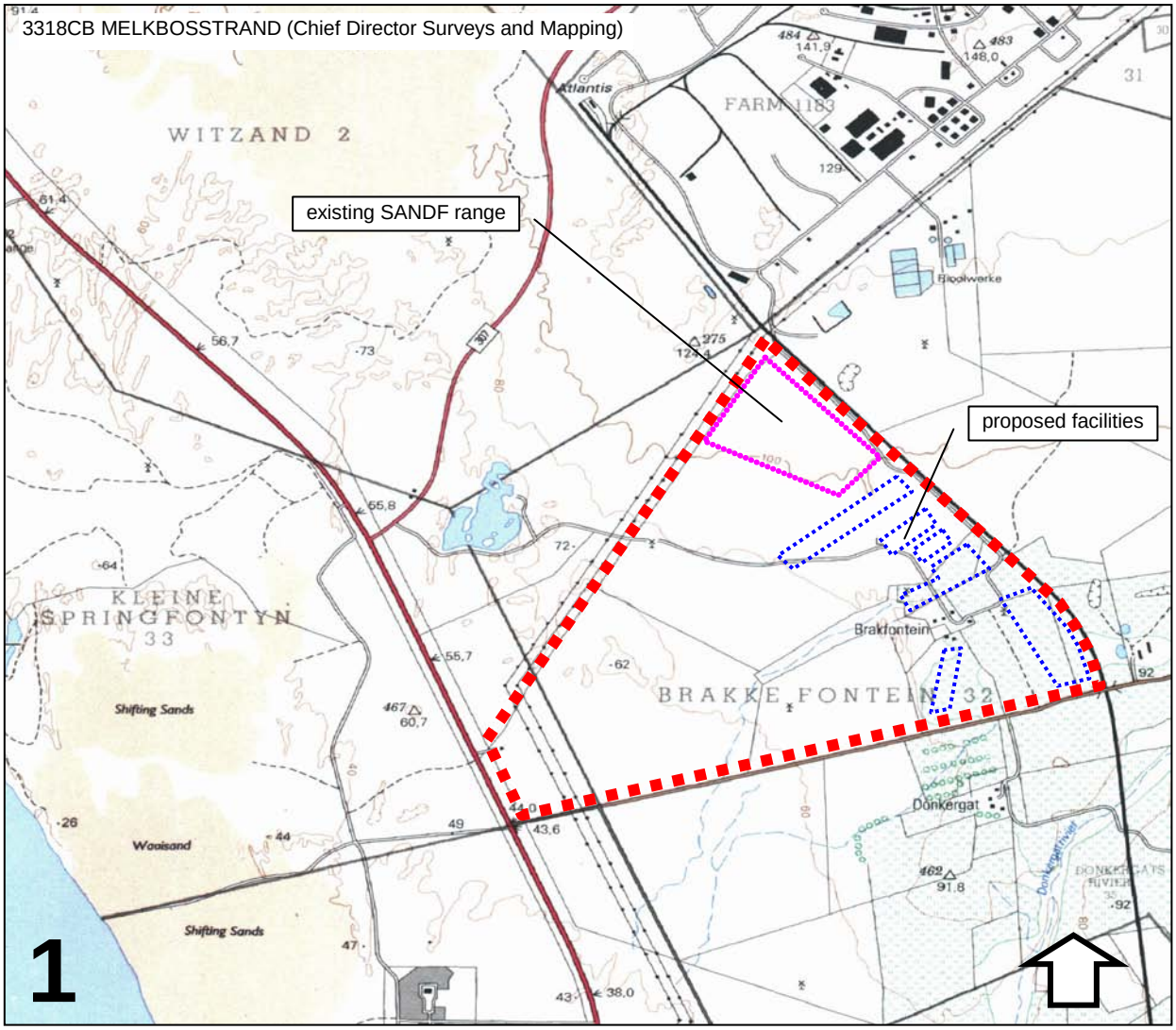
1. INTRODUCTION

Ninham Shand have been appointed by the Western Cape Shooting Union to undertake an environmental application for the proposed development of a shooting range (a number of short and long ranges), adjacent to the existing SANDF shooting range near Atlantis (Figure 1). The Archaeology Contracts Office was asked to undertake an archaeological assessment of the proposed facilities covering approximately 24 hectares. The brief required us to concentrate specifically on the identified facilities, but also to make comment on any other heritage aspects, that became evident during the work. The existing SANDF range, and the approximate areas of the new facilities are shown on Figure 1.

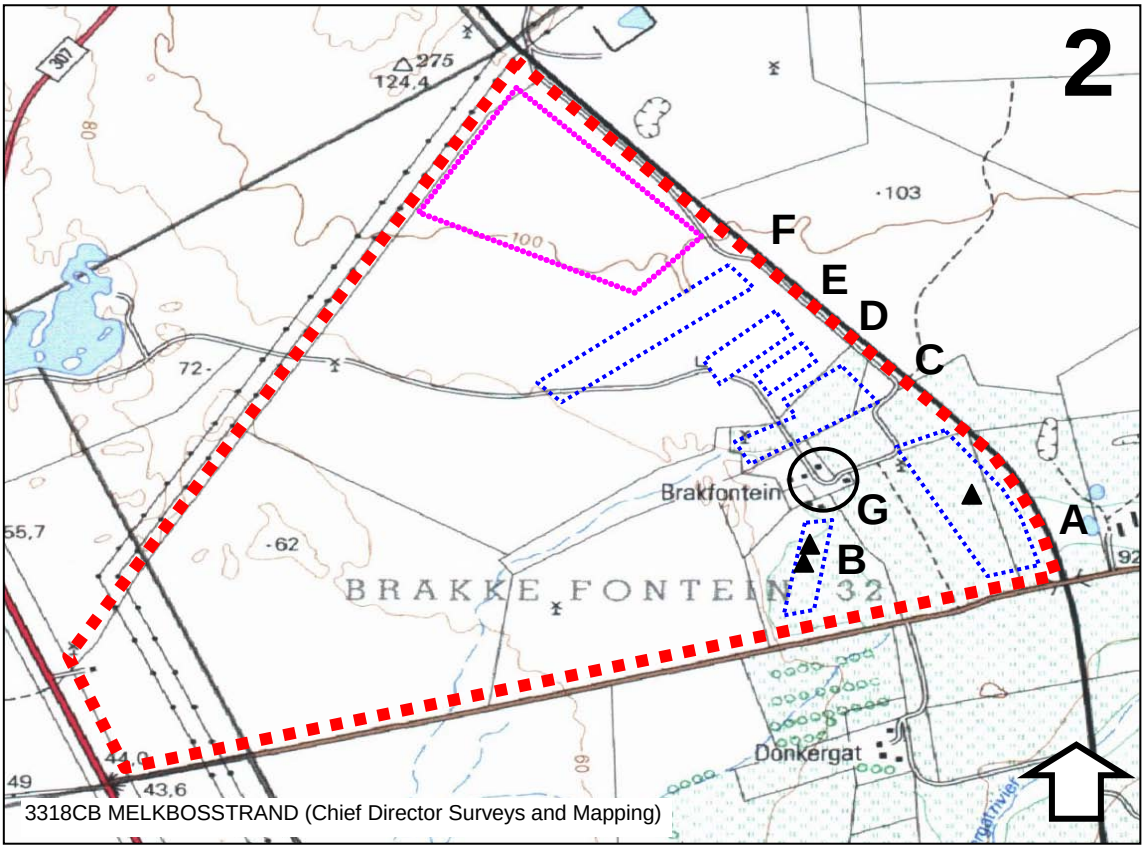


2. METHOD

A combination of site plans and an orthophoto were used to locate the proposed facilities on the ground. A foot survey of all areas was made (except where dense alien vegetation prevented access). The locations of archaeological sites were established with a hand held GPS using the WGS84 datum. Sites were described in notes and representative artefacts photographed. Limitations to the survey were experienced due to dense alien vegetation in places. These will be discussed in more detail in section 3.

3. FINDINGS

The location of the proposed facilities is shown in Figure 2 and have they been assigned identifying letters to facilitate discussion[1].



archaeological material ▲

3.1 Area A (Clay pigeon shooting)

3.1.1 Characteristics of the site

Formerly ploughed agricultural land, the area is now covered by low grass and stands of thorn scrub and occasional alien trees. The numerous burrows that are evident over the whole area seem to have been made by some type of small mammal (possibly Mongoose), and mole activity is also observed. The soil is sandy, and in places, burrowing has brought ferruginous material to the surface. The occasional remains of ancient termiteria still remain in the form of low mounds.

3.1.2 Archaeological observations

In areas where ferruginous material has been brought to the surface, it is accompanied by stone artefactual material, including small flakes and cores made on quartzite, and material that looks like silcrete but may just be fine grained quartzite. The material is small but may still be of ESA origin. The material is not really of suitable quantity to make a proper

[1] Assigned by the author

assessment of age. While the artefactual material is widely broadcast over the whole area, one patch seems to contain a slightly higher density of material. A GPS reading was taken at this point (33°38'14.2"S 18°29'28.0" E), and a representative collection of the artefacts photographed (see at right).

3.1.3 Limitations to survey

While surface visibility was limited by grass cover, it is our opinion that it did not substantially reduce our ability to assess the area.

3.1.4 Mitigation

No mitigation is required (but see comments under general mitigation).

3.2 AREA B (Firing? platforms)

3.2.1 Characteristics of the site

Formerly ploughed agricultural land, the area is now covered by low grass and stands of thorn scrub and stands of dense alien trees. The soil is sandy, and in places, burrowing has brought ferruginous material to the surface.

3.2.2 Archaeological observations

In areas where ferruginous material has been brought to the surface by burrowing animals, it is accompanied by stone artefactual material, including small flakes made on quartzite. Like area A, the artefactual material is broadcast over a wide area at low density, with one area appearing a little more dense. A GPS reading was taken here (33°38'25.2"S 18°28'52.4"E). We also located a discoid with clear ESA affinities and not far away, a handaxe. (33°38'28.0"S 18°28'51.8"E).

3.2.3 Limitations to survey

While surface visibility was limited by grass cover, it is our opinion that it did not substantially reduce our ability to assess the area.

3.2.4 Mitigation

No mitigation is required (but see comments under general mitigation).

3.3 AREA C (incl. 500, 300, 100 meter silhouette rifle ranges)

3.3.1 Characteristics of the site

Small parts of the area appears to formerly have been agricultural and grazing land and the area is now covered by grass and stands of alien trees . The soil is sandy, and in places, mole burrowing is observed. A small pit containing a refuse dump is found at the NE end of the 500 meter range, and an old borrow pit (?) at the N side of the 100 meter range. Both pits, and burrowing activities show that calcrete is found beneath the sands of this area. No ferruginous material was observed, but it may be present at greater depth.

3.3.2 Archaeological observations

Only a single small quartzite flake was observed in this area. No fossil material was observed in the exposed calcrete.

3.3.3 Limitations to survey

Grass cover was less dense than in the previously ploughed areas and visibility was generally adequate.

3.3.4 Mitigation

No mitigation is required (but see comments under general mitigation).

3.4 AREA D (200 meter small bore range)

3.4.1 Characteristics of the site

Sandy soils covered by clumpy grass with the majority of the area covered by dense new growth alien trees.

3.4.2 Archaeological observations

No observations were made in the "open" land on the southern edge of the proposed location.

3.4.3 Limitations to survey

Dense alien vegetation prevented access to most of the area and no absolute comment can be made. In our opinion though, it is unlikely that anything of great significance would be found in the rest of the area.

3.4.4 Mitigation

(see comments under general mitigation).

3.5 AREA E (Centre fire rifle range, Swiss army rifle range)

3.5.1 Characteristics of the site

The area is covered by dense new growth alien trees.

3.5.2 Archaeological observations

No observations could be made.

3.5.3 Limitations to survey

Dense alien vegetation prevented access to the area and no absolute comment can be made. In our opinion though, it is unlikely that anything of great significance would be found in the rest of the area.

3.5.4 Mitigation

(see comments under general mitigation).

3.6 AREA F (Centre fire rifle range, Swiss army rifle range)

3.6.1 Characteristics of the site

The area is covered by dense new and old growth alien trees. A swathe had been cut into the trees over a distance of approximately 300 meters. The soils are sandy and calcrete is present close to the surface, showing up in the roots of collapsed trees and in pits, and furrows.

3.6.2 Archaeological observations

Limited observations could be made where trees had been cleared. A single quartzite flake was observed. An informal furrow emerges from the thick vegetation in the south east and turns 90° to run along the border of the existing range towards the south west. A soil berm runs along the southern edge of the furrow running parallel to the existing range. It is difficult to know the age, origin or use of this feature, but it may be related to farming activities or drainage of marshy lands.

3.6.3 Limitations to survey

Dense alien vegetation prevented access to most of the area and no absolute comment can be made. In our opinion though, it is unlikely that anything of great significance would be found in the rest of the area.

3.6.4 Mitigation

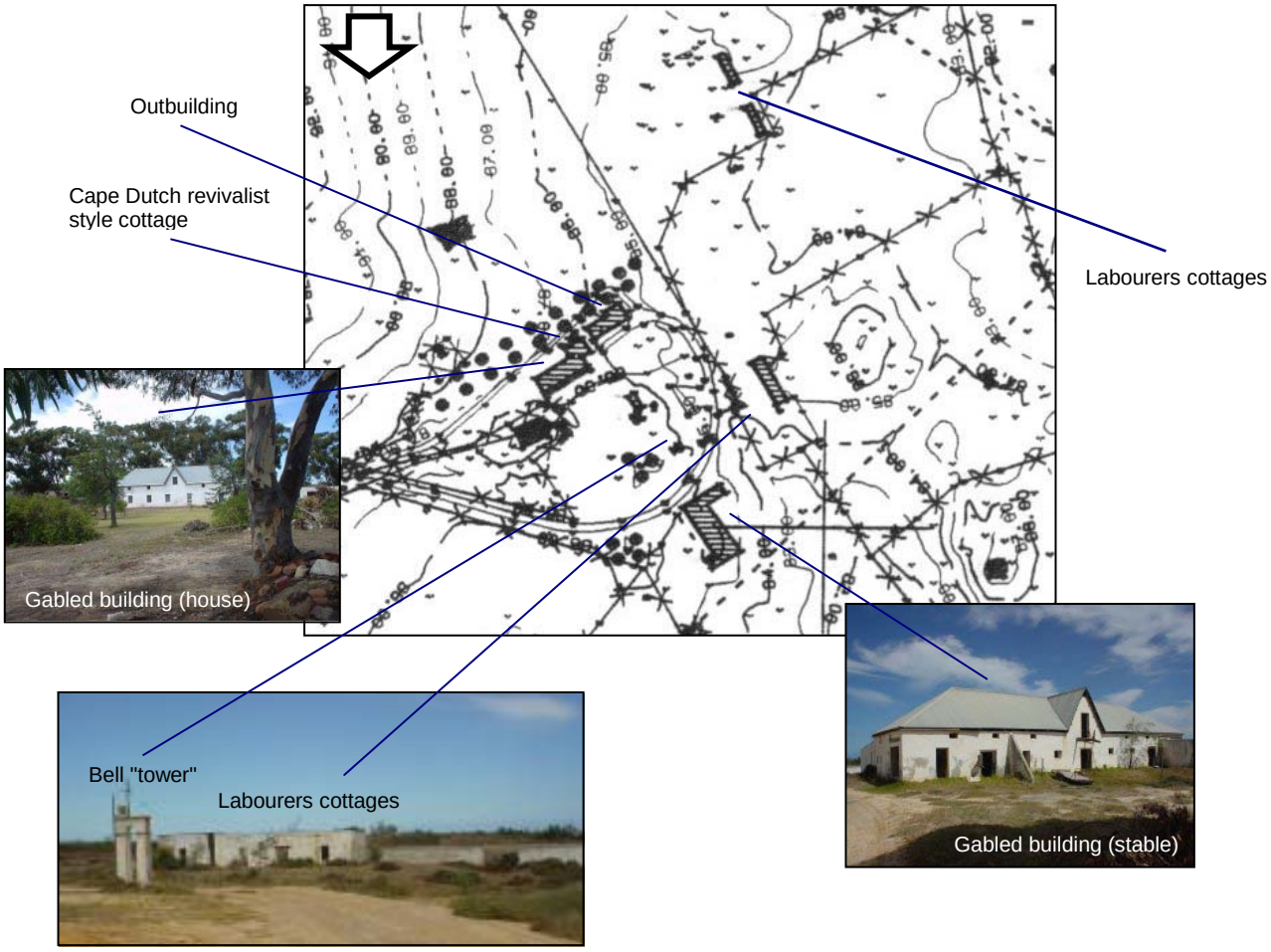
(see comments under general mitigation).

3.7 BRAKFONTEIN FARM COMPLEX

Although this is not indicated as being impacted directly by developments of range facilities, we would presume some form of adaptive re-use will be made of the structures. As we were asked to comment on other issues that we became of, we have included observations about this building complex.

3.7.1 Characteristics of the site

This is a farm *werf* perched on a low knoll of land. The *werf* is made up of two main buildings (gabled) and several smaller buildings that include labourers' cottages and outbuildings. A bell (tower) may be a recent addition.



3.7.2 Archaeological observations

We have not made an in depth study of the *werf* but have noted some of the main features.

3.7.2.1 The Barn

The barn was easily accessible, and the fact that it is poor state of repair, meant that some of the structural detail could be seen where plaster has detached. There is an indication that the roof was originally thatched. Some original moulded (Oregon) beams are present supporting the floor of a room above the entrance door. The ground floor entrance room has a cobbled floor (damaged in places) suggesting use as a stable. Other remains such as feeding troughs confirm the use. At least one wall is constructed with calcrete blocks, while others are made from sun dried clay brick. This building could pre-date 1850AD.

3.7.2.2 Dwelling house and revivalist cottage

We were not able to access this building as it is in use. The façade is similar to that of the barn, having a central gable. It would appear from outward signs that the roof has also been converted from thatch to corrugated iron. One corner of the house seems to overlap a Cape Dutch revivalist style cottage dating to c1930. It is not certain what the precise relationship between the two is.

3.7.2.3 Labourers cottages

These look more recent possibly made from cement blocks.

3.7.2.4 Bell "tower"

This closely resembles "slave bells" seen on some of the larger 18th century colonial farm complexes at the Cape. It is not possible to determine if it is original or not.

3.7.2.5 General observations

We have noted the presence of 19th century ceramics at places around the outskirts of the *werf*. These relate to refuse disposal and may mark the presence of historic dumps.

3.7.3 Mitigation

As we do not know at this stage if the farm complex will be adaptively re-used, we can only make a general mitigation comment at this stage.

There is enough evidence to suggest that at least some of the buildings are in excess of 60 years old. As such they are subject to the restrictions identified in the National Heritage Resources Act of 1999 (NHRA). Permits are required from the Provincial Heritage Resources Authority (PHRA) to undertake modification or demolition of any building over 60 years of age.

It is possible that graves may exist in the vicinity of the farm.

To more precisely determine what buildings will be subject to restrictions, to determine if graves are present, and to understand the history of the farm complex, it would be necessary to undertake a more detailed investigation by way of an archival study (and possibly some physical site investigation of the buildings).

4. CONCLUSIONS

Although there is archaeological material broadcast over a wide area of the site, it is at very low density. Early Stone Age (ESA) material seems to be most prevalent in the south-eastern sector where it seems to associated with sub-surface Ferricrete. No Late (LSA) or Middle Stone age (MSA) material was observed.

The presence of Calcrete formations below the surface is noted in borrow pits and furrows and seems more prevalent in the Northern and western part of the site. Calcretes can often indicate that conditions are optimal for the fossilisation of bone and Ferricrete can also lead to this happening. The presence of fossilised bones in the presence of ESA artefactual material is noted at the site known as Duynefontein 2 (DFT2) a short distance to the north of Koeberg Nuclear Power Station. In this case fossilisation was due to the uptake of iron

minerals from groundwater during periods of higher water table. The iron was leached from the Ferricrete by groundwater solution (Klein et al 1999, 2003).

The Brakfontein farm building complex has elements which suggest that the original settlement is of some antiquity, perhaps pre-dating 1850AD. A furrow that was found adjacent to the existing SANDF range, may indicate attempts to drain marshy land as part of the farming activities for which the site was originally used.

The presence of thick grass cover, as well as the presence of dense alien tree growth, has proved to be a limitation to the survey of some parts of the site. Despite this limitation, it is our opinion that increased visibility would not greatly change our assessment of the sites of proposed development as a whole. We do suggest that some further actions need taken and discuss these in the following section of the report.

5. MITIGATION

5.1 Stone age material

5.1.1 Artefactual material

No further action is required to mitigate the presence of this type of material. However, interesting artefacts such as Early Stone Age could be collected and form the basis of a small display at the firing range. Collection may only be made by an archaeologist under a permit from the Provincial Heritage Resources Authority. We know the location of at least one of these, and to find more may require monitoring of any earthworks, particularly in the southern sector of the site.

5.1.2 Other

If there are to be any major earthworks on the site as a whole (e.g. grading, cut and fill, borrow pits, provision of services) contractors must be made aware of the strong possibility of finding pre-colonial human burials at unpredictable locations where soft soil is present in any depth. If these are found, they should be left undisturbed following the discovery and their presence reported to The South African Heritage Resources Authority (SAHRA).

Fossilised bones may be found below the surface. These could mark the positions of ancient waterholes or carnivore activity sites. Contractors must also be made aware of this possibility. Any finds of such material, or any other heritage material should be left undisturbed following the discovery and reported to the Provincial Heritage Resources Authority (PHRA).

5.1.3 The Brakfontein Farm Complex

Permission will be required to undertake any modification or demolition of any building older than 60 years. If the farm complex is to undergo re-use, it should be subject to a separate investigation to determine the history.

It is possible that there could be graves in the vicinity of the farm, that may no longer have any form of marker. Graves and their contents should be left undisturbed and SAHRA should be notified of the presence.

6. REFERENCES

Klein, R.G., Avery, G., Cruz-Uribe, K., Halkett, D., Hart, T., Milo, R.G., Volman, T.P. 1999. Duinefontein 2: An Acheulean Site in the Western Cape Province of South Africa. Journal of Human Evolution 37, 153-190.

Cruz-Uribe, K., Klein, R.G., Avery, G., Avery, D.M., Halkett, D., Hart, T., Milo, R.G., Sampson, C.G. & Volman, T.P. 2003. Excavation of buried late Acheulean (mid-quaternary) land surfaces at Duinefontein 2, western Cape province, South Africa. Journal of Archaeological Science 30, 559-575.

7. LIST OF TERMS

ESA - Early Stone Age: the period of human history between ±2million - ±200 000 years

MSA - Middle Stone Age: the period of human history between ±200 000 - ±30 000 years

LSA - Late Stone Age: the period of human history between ±30 000 - ±250 years

SAHRA - South African Heritage Resources Agency - responsible for national heritage matters and human burials.

PHRA - Provincial Heritage Resources Authority - responsible for provincial heritage matters