

**Proposed Resort Development, Portion 21-1 of Farm 108,
Portion 21-2 of Farm 108, Portion 21-3 of Farm 108 and Fishing
Lease 112, Jacobsbaai, Saldanha Magisterial District, Western
Cape Province**

**EXPLORATORY INVESTIGATION OF SHELL MIDDENS FOR
RECOMMENDATIONS IN ARCHAEOLOGICAL MITIGATION**

(HWC permit No. 2008-10-001) (HWC Ref. No. HM/JACOBSBAAI/FARM 108 PTN 21)

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Executive Summary

Cape Lowlands Environmental Services appointed CHARM to conduct mitigatory and exploratory work on Portions 21-1 and 21-3 of Farm 108 Jacobsbaai. Heritage Western Cape's requirements were to;

- 1. obtain shellfish samples,*
- 2. obtain materials to date the archaeological deposits,*
- 3. determine the spatial and vertical extent of the shell middens through exploratory excavations and*
- 4. where necessary, make recommendations for further measures in archaeological mitigation.*

Due to the outcome of exploratory excavations, shellfish sampling and obtaining materials for dating were not performed as this would best be accomplished through controlled archaeological excavations as recommended below. The spatial and vertical extents of shell middens were determined and recommendations for further measures in archaeological mitigation were made.

For Portion 21-1 it is recommended that;

- 1. the above mentioned mitigation measures be implemented,*
- 2. when completed to the satisfaction of Heritage Western Cape, the developer applies for a destruction permit from the same heritage authority,*
- 3. once a the developer obtains a destruction permit from Heritage Western Cape, development of PTN 21-1 may commence,*
- 4. in the event that important heritage material is exposed, earthmoving activities should be monitored by a professional archaeologist and/or trained personnel and*
- 5. in the absence of monitoring and in the event that human burials or archaeological resources are uncovered or exposed during earthworks or excavations, they must be reported immediately to the South African Resources Agency – for burials only (Att: Mrs. M. Leslie or Mrs. C. Scheermeyer 021 462*

4502) and Heritage Western Cape (Att: Mr. N. Wiltshire 021 483 9685). An archaeologist will be required to remove the remains at the expense of the developer.

For Portion 21-3 it is recommended that;

- 1. Apart from points 4 and 5 as recommended for PTN 21-1, no further mitigation is required for the southern portion of PTN 21-3.*

Introduction

This report on exploratory investigations of shell middens at Jacobsbaai – commissioned by Mr. Nicolaas Hanekom and Mr. Mark Duckitt of Cape Lowlands Environmental Services - is a follow up on the initial Phase 1 Archaeological Impact Assessment (AIA) carried out by the Agency for Cultural Resource Management (Kaplan 2007). We thought it unnecessary to repeat the background information and detail presented in the Kaplan report. Ideally, the present report should be read in combination with the aforesaid document.

The present report focuses on results of exploratory, test pit excavations carried out at Jacobsbaai (Figures 1 through 4 and Plate 1) in October 2008 by a crew of the Centre for Heritage and Archaeological Resources Management (CHARM). In accordance with recommendations made by Kaplan (2007), and as authorized by Heritage Western Cape (HWC Ref. No. HM/JACOBSBAAI/FARM 108 PTN 21), the purpose of our operations was to;

1. obtain shellfish samples,
2. obtain materials to date the archaeological deposits,
3. determine the spatial and vertical extent of the shell middens through exploratory excavations,
4. where necessary, make recommendations for further measures in archaeological mitigation.

Methodology

Based on the accruing experience of shell midden excavation in the Mossel Bay area as well as on the South and West Cape Coasts (for example see Nilssen & Manhire 2008, Nilssen et al 2006; Yates 2004), the following procedures and protocols were implemented. The excavation of Test Holes, also known as Shovel Tests or Test Pits, was carried out over a two and a half day period on the affected erven at Jacobsbaai. Each hole was approximately one

meter square and excavated to a depth of between 1 and 1.6 m. Where deemed necessary, and for closer assessment, excavated sediments and materials were sieved through a nested tier of screens with 10, 3 and 1.5 mm mesh sizes. No excavated material was retained. The recording method consisted of a written description, comprehensive digital photography and a 3-D fix of each test hole with hand held Garmin Etrex Vista and Garmin Yellow GPS units (map datum WGS 84). A comprehensive data set is available from the author. Test holes were backfilled on completion with excavated sediments and materials.

Summary of the Series of Test Holes Excavated During the Exploratory Investigation

In accordance with recommendations made by Kaplan (2007), and as authorized by Heritage Western Cape (HWC Ref. No. HM/JACOBSBAAI/FARM 108 PTN 21), the focus of our work was on Portions 21-1 (PTN 21-1) and 21-3 (PTN 21-3) of the Farm 108 Jacobsbaai (Figures 1 through 4 and Plate 1). As shown in Figure 3, the area to the north of the red line through PTN 21-3 - that contains the shell midden identified by Kaplan - will be a conservancy / nature area and therefore no exploratory excavations were conducted there.

A large, mechanically excavated hole and associated spoil heaps between Portions 21-1 and 21-3, reveals disturbed surface and lower sands that contain very low density shell midden materials (see f in Figure 4 and Plate 2).

During the current phase of operations, a total of 15 Test Holes were excavated within the affected areas (Figure 4).

PTN 21-1

PTN 21-1 is a roughly triangular-shaped Erf situated west of the road's fork on an island of dune sands between the gravel roads leading to the Weskusplek restaurant and hotel in the south and Gonnasbaai in the north

(Figure 4 and Plate 1). The middle of the site is slightly elevated. Substantial disturbance to the shell midden was caused by road construction, trenching operations and animal burrowing (Figure 4 and Plate 1, also see Kaplan 2007). PTN 21-1 is centered on S 32.96344 E 17.88560; 17 Y-082797 X3649040 (map datum WGS 84 - decimal degrees; SA National Grid coordinates) and the approximate coordinates for boundary points of the tested area are as follows (see A, B and C in Figure 4; accurate coordinate data are obtainable from the project surveyor);

A; S32.96328 E17.88542; 17 Y-082781 X3649023

B; S32.96347 E17.88599; 17 Y-082834 X3649045

C; S32.96350 E17.88543; 17 Y-082782 X3649048

A total of 6 Test Holes were excavated in the area (Holes 1 to 6 – Original GPS No's 69, 70, and 87 to 90 – coordinate data and more detailed hole by hole descriptions are available from author). Test Holes measured roughly 1 m² and were excavated to depths ranging from 1 to 1.6 metres. Vegetation cover is dense and associated roots are active to a depth of around 40cm and caused medium to intense disturbance to some anthropogenic layers. Animal burrowing is commonly evident at the surface and has disturbed archaeological deposits to a greater or lesser extent at different Test Holes. Across the tested area, sediments from surface to a depth of around 50 cm consist of ashy brown sand that varies in colour from dark brown at the top to light brown at the bottom. From a depth of about 50 cm below surface to the base of excavations the sediments consist of light brown to yellow beige dune sands (Plate 5). Excavation of the Test Holes revealed that the area contains substantial shell midden deposits that are stratified in places and disturbed by animal burrowing in others (Plates 3, 4 & 5). The latter is in addition to disturbances by road construction and trenching operations.

Test Holes 1 and 4 exposed thick (40 to 50 cm), good quality and partially stratified shell midden deposits starting from a depth of 20 to 40 cm (Plates 3 &

5). While test hole 3 also contained thick (40 cm) shell midden materials first appearing at a depth of 30 cm, the deposits are not clearly stratified and more disturbed by burrowing than those encountered in holes 1 and 4 (Plate 5). Test Holes 2 and 5 contained relatively thin (10 to 30 cm) shell midden layers starting at a depth of 30 to 60 cm in their southern and eastern portions respectively, while the archaeological materials fade out to the north and west respectively (Plate 5). The latter and the paucity of shell midden material in Test Hole 6 are interpreted to indicate the tailing off and approximate boundary of the shell midden as indicated by the green oval in Figure 4 (Plate 5).

The marine shellfish assemblage is overwhelmingly dominated by the limpet *Scutellastra argenvillei* with *Cymbula granatina* being the next most abundant. The remaining identified shellfish species are listed in order of abundance and include; *Choromytilus meridionalis*, *S. granularis*, *S. cochlear*, *S. longicosta*, *S. tabularis* and *Bullia digitalis*. Bones occur in moderate frequencies, but are not equally common in all Test Holes. Faunal remains include small and medium bovid, sea bird (cormorant), fish, tortoise and crayfish (see inset Plate 3). Cultural material is restricted to stone including broken and fire damaged lower and upper grindstones in quartzite and/or granite, a quartz core and chunks as well as a silcrete adze (see inset Plate 3). No pottery or ostrich egg shell was seen. No traces of in situ hearths were identified.

PTN 21-3

The eastern boundary of PTN 21-3 is some 50 m directly west of the western extent of PTN 21-1 and is situated on the eastern slope of a barrier dune that faces PTN 21-1 in the south and the Jacobsbaai abalone / perlemoen farm in the north (Figure 3 and Plate 1). The dune is vegetated with coastal Fynbos and trees are absent (Plate 1). Disturbance of surface sands in the form of pedestrian tracks is evident in the southern portion of the property. Animal burrowing is also evident in several places in the form of mole heaps. A shell midden was identified in the northern portion of the property and Kaplan rated it

to be of medium-high local significance (Figure 3; see Kaplan 2007). As a result, the area to the north of the red line through PTN 21-3 will be a conservancy / nature area and therefore no exploratory excavations were conducted there (Figure 3). The investigated area of PTN 21-3 is centered on S32.96312 E17.88482; 17 Y-082725 X3649006 (map datum WGS 84 - decimal degrees; SA National Grid coordinates) and the approximate coordinates for boundary points of the tested area are as follows (see D through I in Figure 4; accurate coordinate data are obtainable from the project surveyor);

D; S32.96279 E17.88478; 17 Y-082722 X3648968
E; S32.96286 E17.88496; 17 Y-082738 X3648977
F; S32.96302 E17.88501; 17 Y-082742 X3648995
G; S32.96358 E17.88471; 17 Y-082715 X3649056
H; S32.96351 E17.88457; 17 Y-082701 X3649049
I; S32.96304 E17.88474; 17 Y-082718 X3648997

A total of 9 Test Holes were excavated in the area (Holes 7 to 15 – Original GPS No's 91 through 99 – coordinate data and more detailed hole by hole descriptions are available from author). Test Holes measured roughly 1 m² and were excavated to depths ranging from 1.3 to 1.5 meters. Vegetation cover is moderate to dense and associated roots are active to a depth of around 40cm. Subsurface evidence for animal burrowing is lacking due to the absence of anthropogenic layers and the homogeneity of sediments. Across the tested area, subsurface sediments are similar to those described above for PTN 21-1 (Plate 6). Test Hole excavations revealed that the area contains ephemerally scattered specimens of anthropogenic marine shellfish – mostly *Scutellastra argenvillei* - starting from a depth of 25 to 50 cm below surface, but no subsurface archaeological layers or lenses were encountered in any Test Holes (Plate 6). Unexpectedly, sediments in 6 of the 9 excavations were sterile.

Due to the outcome of exploratory excavations, shellfish sampling and obtaining materials for dating were not performed as this would best be

accomplished during controlled archaeological excavations as recommended below.

Recommended Mitigation of PTN 21-1 and PTN 21-3

Motivation

The archaeological and palaeontological records are extremely rich on the Vredenberg Peninsula and surrounding region with many sites and occurrences receiving considerable attention from local and international researchers (see Kaplan 2007 and references therein). The near shore archaeological shell middens at Jacobsbaai however, have been less fortunate. Evidence for the earlier abundance of shell middens in Jacobsbaai comes in the form of archaeological deposits and materials exposed as a result of road cuttings, trenching operations, residential and other coastal developments as well as the installation of their associated services. “The majority of archaeological sites have already been severely disturbed and damaged ...” (Kaplan 2007 pg. 10). The only work conducted at Jacobsbaai consists of;

- archaeological shovel testing of Erven 85 and 86 showing “fairly substantial shellfish deposits, and modest amounts of bone, stone tools, ostrich eggshell and pottery occur in the shoreline area” (Kaplan 2007 pg. 10) and
- a radiocarbon date – the first of archaeological origin for Jacobsbaai - of 3300 BP attained on a shellfish sample from Erf 6

PTN 21-1

With the above in mind and considering that PTN 21-2 and the northern portion of PTN 21-3 will not be developed, the proposed development offers an opportunity to obtain high quality archaeological data – not available to date - through controlled stratigraphic excavations. A permit to conduct archaeological excavations must be obtained from Heritage Western Cape. Depending on the density and thickness of shell deposits, the excavation should cover an area of

between 10 m² and 15 m². The approach should be to take advantage of the existing trench to expose midden profiles prior to excavation and similarly, to expose the best deposits as revealed in certain Test Holes. Because the developer has already committed considerable portions of property to conservation, the archaeological mitigation recommended here is advantageous as it will free PTN 21-1 for development.

It is recommended that;

6. the above mentioned mitigation measures be implemented,
7. when completed to the satisfaction of Heritage Western Cape, the developer applies for a destruction permit from the same heritage authority,
8. once a the developer obtains a destruction permit from Heritage Western Cape, development of PTN 21-1 may commence,
9. in the event that important heritage material is exposed, earthmoving activities should be monitored by a professional archaeologist and/or trained personnel and
10. in the absence of monitoring and in the event that human burials or archaeological resources are uncovered or exposed during earthworks or excavations, they must be reported immediately to the South African Resources Agency – for burials only (Att: Mrs. M. Leslie or Mrs. C. Scheermeyer 021 462 4502) and Heritage Western Cape (Att: Mr. N. Wiltshire 021 483 9685). An archaeologist will be required to remove the remains at the expense of the developer.

PTN 21-3

The northern portion containing the shell midden will be conserved and therefore no destructive or intrusive mitigation should be conducted. In line with conservation policy, this site must remain untouched and therefore requires the installation of measures for its protection and conservation. A conservation

management plan should be developed for the conservation areas. Apart from points 4 and 5 as recommended for PTN 21-1, no further mitigation is required for the southern portion of PTN 21-3.

References (see references in Kaplan 2007)

Kaplan, J 2007. Phase 1 Archaeological Impact Assessment of a Proposed Development Portion 21-1 of Farm 108, Portion 21-2 of Farm 108, Portion 21-3 of Farm 108 and Fishing Lease 112, Jacobsbaai. Report prepared for Cape Lowlands Environmental Services, Att: Mr Nic Haanekom.

Nilssen, P., Yates, R. & Manhire, A. 2006. Exploratory investigation of shell middens. Erf 15387 and a portion of Erf 2001, Farm Boplaas, Pinnacle Point, Mossel Bay, Western Cape Province. Final report prepared for Heritage Western Cape and Pinnacle Point Resort (Pty) Ltd.

Nilssen, P & Manhire, A. 2008. The Proposed Development of Romansbaai on Portions 2, 17, 18 of Farm Klipfonteyn 711, Romansbaai, Gansbaai, Western Cape Province. Exploratory investigation of shell middens to make recommendations for archaeological mitigation. Report prepared for Danger Point Ecological Development Company (Pty) Ltd and Heritage Western Cape.

Yates, R. 2004. Archaeological Heritage Resources Assessment: Portion 37 of the Farm Uitkomst 23, Paternoster, Saldanha Bay Municipality, Western Cape Province. Report prepared for Deon Van Zyl Consultants.

Figures & Plates (on following pages)



Figure 1. General location of Jacobsbaai and study area – framed in black - relative to Vredenburg on the Cape West Coast. Access route is indicated with red arrows.

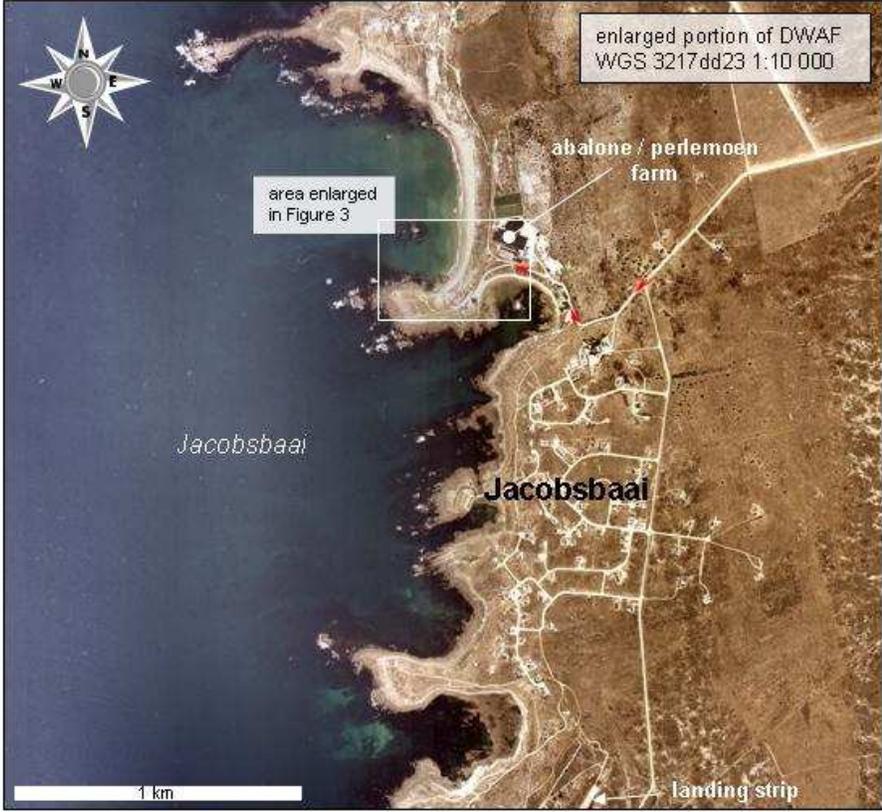


Figure 2. Enlarged area as indicated in Figure 1 showing the general location of the study area – framed in white – in the northern part of Jacobsbaai. Access route is indicated with red arrows.



Figure 3. Enlarged area as indicated in Figure 2 showing four nodes of study area – outlined in red – and shell midden deposits identified by Kaplan are represented by green ovals and circles.

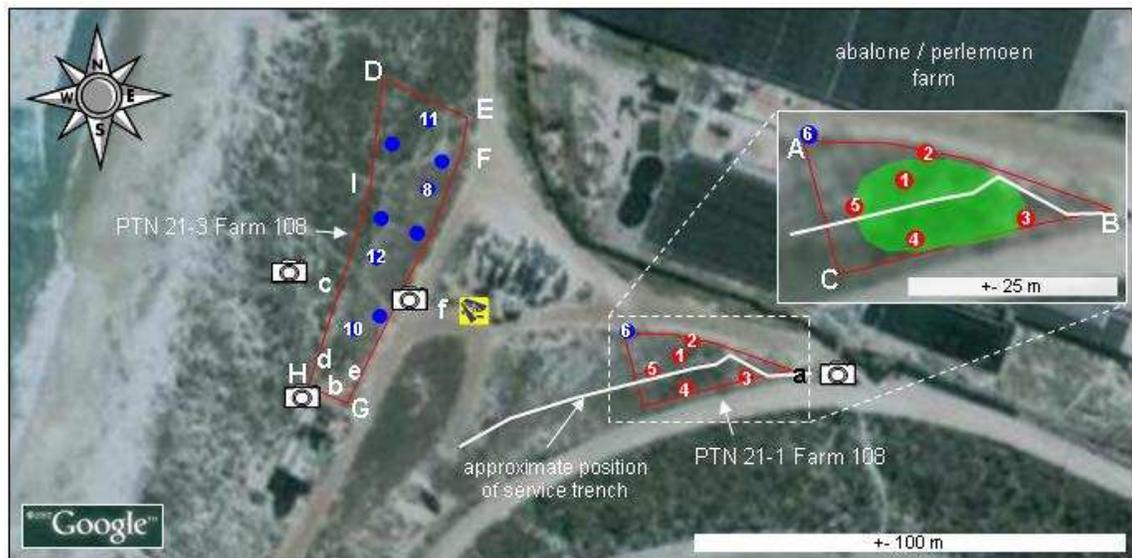


Figure 4. Enlarged area as indicated in Figure 3 showing nodes of study area – outlined in red – subjected to shovel test excavations. Sensitive and non-sensitive tests are shown with red and blue dots respectively. Camera icons indicate localities from where photographs were taken and associated lower case letters show the direction in which photos were taken (see Plates 1 & 2). Green oval - truncated by service trench - in inset represents the extent of medium quality shell midden deposits as exposed in Test Holes 1 through 5 (see Plates 3, 4 & 5).



Plate 1. The nature and terrain of the two applicable nodes of the study area, Portions 21-1 & 21-3 of Farm 108, Jacobsbaai are shown from the east (a), south west (b & d) and west (c) (see Figure 4).

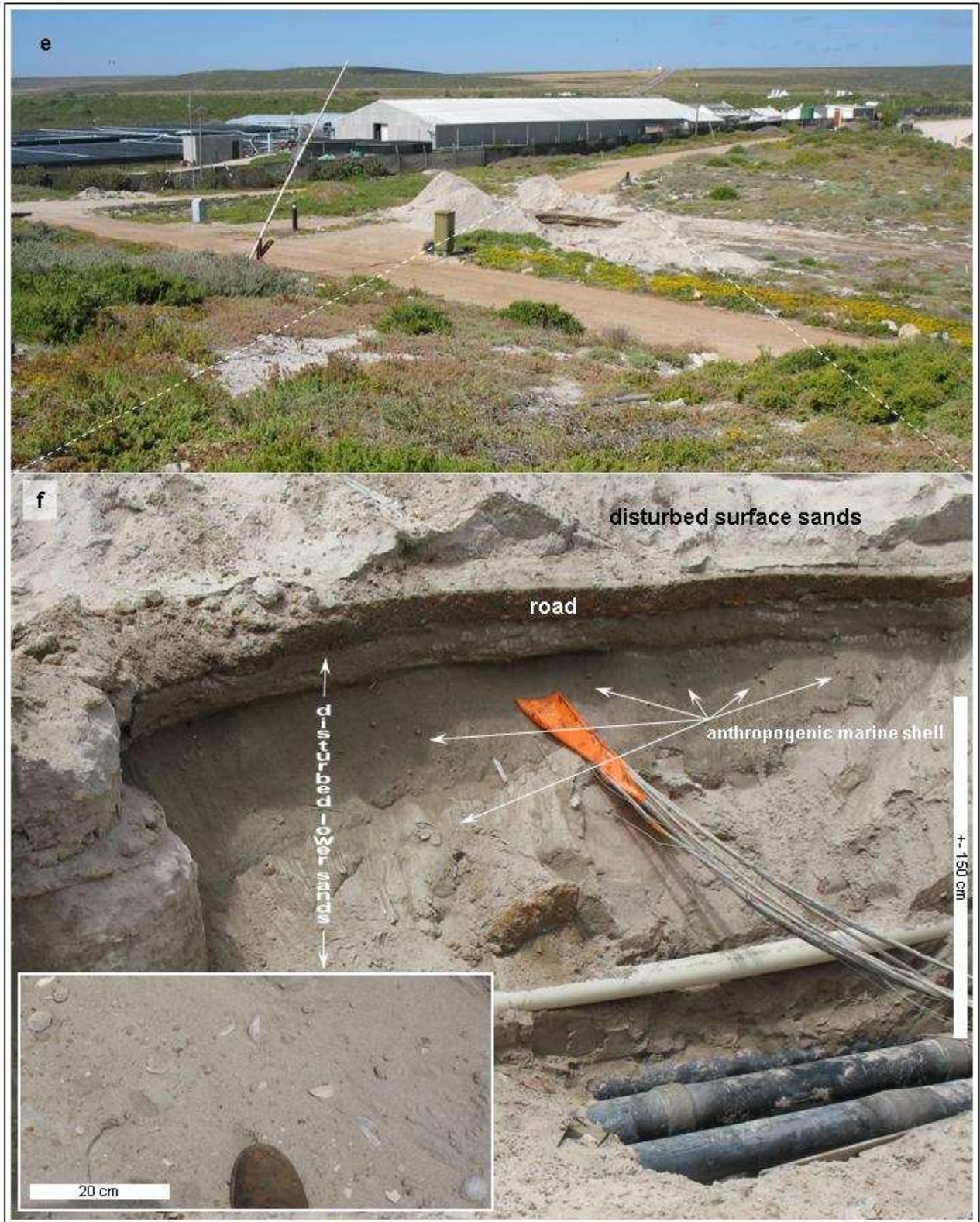


Plate 2. The placement and size of a mechanical excavation are shown in **e**, while more detail of the hole and exposed profiles are shown in **f** (also see Figure 4). Lower inset shows marine shell on spoil heap of excavated sands.



Plate 3. Upper image displays surroundings of Test Hole 1 (see Figure 4) while lower image shows excavated profiles with thick, partly stratified and partly disturbed – burrowed – anthropogenic shell midden deposits. Lower inset shows broken upper and lower grindstone chunks, bone of marine, terrestrial and avian origin and a crayfish mandible. Respectively, the long and short red scale indicators are 50 and 10 cm in length.



Plate 4. Upper image displays surroundings of Test Hole 6 (see Figure 4) while lower image shows excavated profiles with ephemeral, disturbed – burrowed – anthropogenic shell midden deposits. No archaeological layers occur in the profiles. Respectively, the long and short red scale indicators are 50 and 10 cm in length.



Plate 5. The above show how archaeological deposits vary across the tested area of Portion 21-1 of Farm 108, Jacobsbaai. Numbers in top left hand corners represent Test Hole numbers whose locations are indicated with numbered dots in Figure 4. Respectively, the long and short red scale indicators are 50 and 10 cm in length.



Plate 6. As examples, Test Holes 8, 10, 11 and 12 – clockwise from top left – show that archaeological materials are all but absent from the tested area of Portion 21-3 of Farm 108, Jacobsbaai (see Figure 4). Deposits are disturbed and no anthropogenic horizons were exposed in any Test Holes. Respectively, the long and short red scale indicators are 50 and 10 cm in length.