

Archaeological Excavations in Mitigation of the Series of Test Pits in Areas 1 to 5 of the Pinnacle Point Shell Midden Complex

Erf 15387 and a portion of Erf 2001, Farm Boplaas, Pinnacle Point, Mossel Bay, Western Cape Province

2nd Progress Report

Prepared For:

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and

Heritage Western Cape

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Executive Summary

This progress report deals with fieldwork and basic sorting completed for the project at the Pinnacle Point Shell Midden Complex (Figures 1 through 3). Following the initial scoping and exploratory phases, a number of medium to large scale excavations were undertaken during 2006 & 2007, in accordance with the HWC permit requirements. Collectively, the shell midden excavations at Pinnacle Point provide an extremely valuable data set of pre-colonial marine exploitation patterns over the last 4000 or so years. They also provide a particularly useful comparison to the much older Middle Stone Age deposits at the nearby Pinnacle Point Cave System. These studies all contribute towards the greater goal of understanding human behaviour in the past.

The Pinnacle Point Shell Midden Complex is divided into 5 separate study areas, designated Areas 1 to 5 (Figures 2 & 3). A total of six excavations were completed covering Areas 1 to 4. No excavations were undertaken in Area 5 as no development is planned for the immediate future.

Excavations were conducted according to the conditions detailed in the HWC permit applications. An 0.5 metre interval grid system, locked into the SA National Grid System, was utilised at all the excavations. Wherever possible the natural and/or anthropogenic stratification was followed. All deposits from anthropogenic sources were sieved through a tiered system of 10, 3 and 1.5 mm mesh-sized screens. The excavated materials were sorted and temporarily curated at the CHARM laboratory in Mossel Bay and materials are currently under lock and key at Pinnacle Point (courtesy Pinnacle Point Resorts Pty Ltd). Materials are ready for post-excavation processing, but we await the result of an application to HWC for renewal of the permit and approval from the client for work to proceed.

Results from the excavations reveal that dense, high quality shell middens exist in all the areas sampled. Pottery was completely absent from all the excavations from the higher ground in Areas 1 and 2. This suggests that these middens are probably between two thousand and four thousand years old.

The single large scale excavation undertaken close to the shoreline in Area 3 produced a very different set of results. Pottery was found throughout the excavation indicating an occupation date of less than two thousand years ago. Material recovered included fish, bird and mammal bone as well as stone artefacts whilst the outstanding find was a well preserved stone-lined hearth.

Recommendations for protection and conservation measures have been made for sites in Areas 1 and 4 which are to be conserved in perpetuity. Recommendations for the large, sub-surface shell midden in Area 1, close to the boundary of the property, include the erection of a protective wooden fence complemented by an information plaque. The recommendations for PP 19 shell midden in Area 4, which is in a very vulnerable position, are that the site be completely covered with biddum / geotextile to prevent penetration of roots and then by a bank of sand and topsoil for protection and revegetation and finally enclosed and protected by a wooden palisade. Again, an information plaque – in relevant languages - should be erected qualifying the protected status of the site and including some information on the archaeology of the area.

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1. Introduction

This progress report focuses on the fieldwork recently completed at Pinnacle Point Shell Midden Complex. Following the initial scoping and exploratory phases, a number of medium to large scale excavations were undertaken in accordance with the HWC permit requirements. The purpose of these operations was twofold. Firstly, to conserve certain areas of important heritage and archaeological value in perpetuity and, secondly, to maximise information retrieval from areas due to be impacted by future construction and development.

1.1 Methodology

Based on the accruing experience of shell midden excavation in the Mossel Bay area, as well as on the West Coast (for example see Yates 2004, 22), the following procedures and protocols were implemented:

Established and documented the location of a 0.5 metre interval grid system that was locked into the SA National Grid System (all survey data was generated and captured with a Topcon GPT-3005N Total Station and Psion WorkAbout Pro hand held computer respectively).

The deposits were excavated utilizing this grid as the basic mapping control.

Where a depth of sediment with derived shell lay above *in-situ* deposits, the overburden was carefully removed by spade prior to exposing intact strata.

Excavations proceeded either from previously exposed sections created by road building and pipe laying operations or from spade dug test holes excavated during the exploratory investigation (Nilssen et al 2006) that provided initial stratigraphic controls.

Wherever possible, the endeavour was to follow the natural and/or anthropogenic stratification during the excavations as well as to remove the full depth of the anthropogenic sediments over the excavation area and to isolate the contents of intrusive animal burrows.

The deposits from anthropogenic sources were sieved through a nested 10, 3 and 1.5 mm size mesh (the implemented size being noted). Where relevant, deposits from non-anthropogenic sources were sieved through 10 and 3 mm size mesh.

Used professional excavation procedures in the recovery and treatment of finds, including all charcoal (full details of excavation procedures and protocols are available from the author).

Sampled shellfish both through depth and across space resulting in shellfish samples from about 20% of the total excavated volume (a 50 x 50 cm column was sampled for shell from nearly each excavated square meter).

Made records of the volume, stratification and nature of sediments.

Maintained comprehensive written, mapping and high resolution digital photographic (Canon EOS350D, 8 Mega pixels with an 18-35.5 mm EFS lens, as well as a Canon PowerShot A640 10 Mega pixel) records throughout the process.

Budgeted for and will acquire a sufficient number of radiocarbon dates to determine the age of depositional sequences.

All captured digital data was backed up to a second laptop as well as an external hard drive.

The excavated materials are currently being sorted in the laboratory. The results of the basic analysis and the submitted radiocarbon dates will be available in the near future.

1.2 Summary of the Series of Test Pits Excavated During the Exploratory Investigation and Details of the Required Mitigation

As described in the Exploratory Investigation (Nilssen et al 2006) and the relevant Permit Applications, the Pinnacle Point Shell Midden Complex was divided into a number of discrete study areas, referred to as Areas 1 to 5. A total of 52 test holes were excavated within the prescribed areas and, at a later date, around 30 additional holes were excavated in Area 5.

Area 1

Located on the high ground above the stream, Area 1 was spatially distinct and at a higher elevation from the archaeological sites in Areas 2 to 5.

A total of 13 test holes were excavated in Area 1 (Holes 1 to 13). The results from the excavations suggest that there are at least three discrete shell middens deposited at different times and physically separated by wind blown sands.

The recommended mitigation for Area 1 was that a volume of about 1m³ or an area of 10m² should be excavated in the dense shell middens centred on holes 1, 5, 12 and 13. For the more ephemeral middens, standard shellfish sampling procedures should be adopted centred on holes 6, 7 and 8.

Area 2

Area 2 is close to the small stream, at the base of the slope leading up to area 1. Area 2 has suffered considerable disturbance from successive episodes of historic period tracks and occupation as well as recent road building and pipe laying operations. This has had a detrimental effect on the archaeology. A total of 8 test holes were excavated in Area 2 (Holes 14 to 21). The results from the test excavations suggest that there are at least three major shell middens and possibly a number of smaller shell scatters.

The recommended mitigation for Area 2 was that excavations should be conducted, centred on Holes 15, 17, 20 and 21. These excavations should involve a volume of 2m³ or an area of around 20m².

Area 3

Area 3 is also located close to the small stream which bisects the Pinnacle Point Midden Complex but is nearer to the sea than Area 2. A total of eight test holes (numbered Holes 22 to 29) were excavated in Area 3.

Area 3 may be appropriately divided into two sections as demarcated by the local topography. The first section comprises a rock enclosed, grassy courtyard and contains rich archaeological deposits. The second section, consisting of sand dunes, has been severely impacted by successive road building activities. There are at least two, and possibly more, periods of occupation. This is evident in the fairly thin upper shell lens and the much more extensive lower lens, visible in several of the excavated test holes.

The recommended mitigation for Area 3 was that the grassy area of the first section, where Test Holes 22 and 23 were positioned, was to be conserved. This site is now referred to as PP 31 and will not be developed.

The recommended mitigation for the second section of Area 3 is that an area of 50m² is excavated centred on Holes 24 to 29.

Area 4

Located on the west bank of the stream, Area 4 is transected by the "Old Road". A total of seven test holes (numbered Holes 30 to 36) were excavated in Area 4.

Area 4 is dominated by the presence of a very large shell midden, the importance of which is already known. Referred to as PP 19, it has already been impacted by road building episodes. The so-called "Old Road" actually passes through the southern end of the midden.

Apart from PP 19 there are a number of smaller middens representing separate archaeological occurrences.

The large shell midden PP 19 is to be conserved in perpetuity. Conservation and remedial mitigation requirements included cleaning exposed sections, recording stratigraphy and taking samples for two radiocarbon dates.

Area 5

Area 5 occupies the high, sloping ground above Area 4. A total of sixteen test holes (numbered Holes 37 to 52) were excavated in Area 5.

One reasonably thick shell midden exists at the top of the hill. Other smaller shell lenses and surface scatters are present on the lower slopes.

No mitigation is required in the short term dealt with in this report. Mitigation will be required if and when developments occur.

2. Results and Status of Assemblage and Post-Excavation Processing

Area 1

An excavation covering an area of 10m² was completed, beginning at Hole 1 and extending eastwards to include Hole 5 (Plate 2). Two extensive shell middens were encountered. The uppermost was a densely compacted shell lens which included brown mussel, *Turbo sarmaticus*, *Diloma* sp. and various limpet species. Also present were mammal bone, fish bone, quartzite chunks and flakes, beach cobbles as well as an ochre stained grindstone.

The lower shell lens was separated from the upper lens by a layer of sterile sand $\pm 60\text{cm}$ thick. The lower lens was fairly thin and mainly composed of large, intact *Perna perna* shells. It was also more limited spatially, thinning out towards the south and east.

In combination with the main excavation, a number of shell samples were taken, centred on test holes 6, 7 and 8. A narrow trench dug between test holes 7 & 8 revealed the existence of a fairly substantial upper shell lens and the merest trace of a lower shell lens some 60cm below. A trench dug southwards from test hole 6 lacked the expected upper shell lens but included a fairly thick sandy lens with dispersed shell at the expected depth for a lower lens.

The most likely explanation is that the very ephemeral shell presence in holes 7 and 8 is the final expression of the lower shell lens is well represented in hole 6. The absence of an upper shell lens in the trench dug to the south from hole 6 is more puzzling but the lens reported in the original test hole was extremely thin and probably running out towards the south where the trench was dug.

The key questions are how many discrete shell middens are there in Area 1 and what is the relationship between the large middens from the main excavation and the smaller shell lenses from the shell samples?

Excavations centred on holes 1 & 5 exposed two major middens deposited at different periods in the past. The lower midden is especially interesting as it is quite different in character and content from the upper midden. It is obviously considerably older and might date to more than 4000 years old.

The shell lenses revealed in the trenches dug for the shell samples are most likely related to the middens from the main excavation. Test hole 6 is approximately 4m SE of the last squares excavated at the main site and both upper and lower shell lenses are strongly present in the final profile. It is unlikely that two completely separate midden systems, each with similar upper and lower shell lenses divided by similar depth of sterile sand, could exist in such close proximity. Clarification of the situation will be assisted by the quantification and analysis of the species composition of the various shellfish units. Likewise radiocarbon dating of shellfish specimens will greatly add to our knowledge of the age of the middens.

The proposed excavation centred on test holes 12 & 13 was not undertaken for several reasons. The holes lie on the extreme edge of the property and are well away from the footprint of any housing structure. This part of Area 1 is thickly covered by pristine indigenous flora which cannot be disturbed without permission from the appropriate authority. The shell lens is at a depth of more than one metre below surface and should be conserved rather than excavated.

To maximize information retrieval a substantial shell sample was taken from test hole 12 where the shell lens was exposed (Plate 3).

Area 2

Three excavations were carried out in Area 2.

Hole 15

The shell midden centred on Hole 15 had been severely impacted by successive episodes of road building and pipe laying operations as well as 4x4 quadbike exposure. The sandy track, running north-south, has cut through the midden exposing the shell lens in the west facing bank of the road. The excavation revealed a thick shell lens extending only a short way to the east, away from the sandy track. The excavation was disappointing as it showed that a large, and possibly major, portion of the midden had been destroyed by vehicle and pedestrian traffic as well as trenching operations.

However, the midden, albeit rather thin, did extend some way south towards the sea. The total absence of any pieces of pottery (common at other sites nearby in Area 3) places the site as probably older than 2000 years. One point of interest was the large number of white mussel shells (*Donax serra*) which are notably rare at other sites. This is particularly interesting as the current shoreline offers few opportunities for collecting these sand-based mussels indicating that the sea level and/or sand regime must have been quite different several thousand years ago (Plate 4).

A small bonus was the discovery of a second, lower shell lens towards the south of the site. It was fairly thin and, unlike the upper, main lens, consisted mainly of brown mussel (*Perna perna*).

The site had been so reduced in size by road building that only a small part remained intact. This remaining part, covering an area of 4.5m², was excavated in total (Plate 5).

Holes 17 & 20

The excavation commenced at Hole 17 and was extended to include Hole 20.

Test holes dug during the exploratory investigation revealed a complex stratigraphy involving three discrete shell lenses containing considerable volumes of shell. The first shell lens, just below the surface, was extremely dense and contained a wide variety of shell species as well mammal and fish bone and a significant stone artefact component. The second shell lens encountered at a depth of ± 60 cm below the surface. Whilst not on the scale of the first lens, it was fairly dense and also contained a varied collection of shell species. The final lens, at a depth of nearly 100cm below the surface was less dense but notable for the presence of large numbers of *Turbo sarmaticus* in association with brown mussel and various limpet species.

Continued excavation produced a total of nine anthropogenic layers. Material recovered included fish vertebrae, bird and mammal bone as well as stone flakes.

The excavation covered an area of 5.25m².

Hole 21

An area of 4m² was excavated centred on hole 21.

The excavation revealed the presence of six anthropogenic layers. In general, shell fragmentation was high with inclusions such as stone chunks, water worn pebbles and scattered charcoal. No pottery was recovered.

Area 3

This was an area of Aeolian sand deposits close to the current shoreline. Road cutting and continual usage has severely impacted the area which contains a number of shell middens involving at least two time periods.

The excavation was centred on hole 24 but expanded to include the surrounding holes 25 to 28. There were two major anthropogenic layers, both stratigraphically complex with multiples components, as well as some minor shell lenses.

The upper layer was a thick shell lens in a dark, organic matrix. The shell was a mixture of brown and white mussel along with turbo, whelks and limpets. The lower layer was an extensive shell midden incorporating several hearth units.

Pottery was found throughout the excavation indicating occupation less than 2000 years ago. The outstanding find was a well preserved stone-lined hearth (Plates 6 and 7). Specialist samples were taken for dating and other analytical procedures.

A total area of 49.5 m² was excavated in Area 3.

Area 4

As described above, site PP 19 is to be conserved in perpetuity. Intervention in Area 4 was limited to one small scale excavation to obtain charcoal and shell samples. The PP 19 shell midden was sand-bagged as a protective measure until permanent conservation measures are implemented (Plates 8 and 9).

Area 5

As described above, no work is currently being undertaken in Area 5. Mitigation will, however, be required if any development is allowed to take place in Area 5.

Status of Assemblage and Post-Excavation Processing

Excavated materials from all excavations have been sorted into shell, fauna, lithics, cultural, charcoal, special finds, etc., and were tagged, bagged and boxed at the CHARM laboratory in Mossel Bay. Boxed materials from the shell midden complex and other sites associated with Pinnacle Point are currently under lock and key at the maintenance shed at Pinnacle Point, which is under 24hr security (courtesy Pinnacle Point Resorts Pty Ltd). Excavated materials are ready for post-excavation processing, basic analysis by various specialists and dating, but we await the result of an application to HWC for renewal of the permit and approval from the client for work to proceed.

3. Protection and Conservation Measures for Selected Archaeological Sites in Areas 1 & 4

Area 1

Excavation and sampling operations have been completed in Area 1 with the exception of the very deep shell midden on the extreme western edge of Erf 17888. The position of the midden is marked by Holes 12 & 13 on the area map (See Figure 3). As detailed above, it was decided not to disturb this midden as it lay on the boundary of the property, includes protected vegetation and would not be impacted by any building operations.

The site is currently well protected as it is covered by over a metre of sandy soil. Furthermore, the surface is thickly covered by pristine indigenous vegetation including milkwoods with deep root systems. To ensure that the integrity of the midden is retained in perpetuity, the perimeter of the site should be staked out and a permanent wooden fence or palisade erected to enclose the whole site. To complete the process, a plaque in relevant languages should be erected qualifying the protected status of the site and including some information on the archaeology of the area.

Area 4

Although no development is planned for Area 4, it requires special consideration as a conservation area as it contains the very large shell midden PP 19. As described above, the PP 19 shell midden is an important heritage site and is to be conserved in perpetuity.

There is a note of urgency here as PP 19 has already been severely impacted by previous road building episodes and the so-called “Old Road” actually passes through the southern end of the midden. Furthermore, the PP 19 shell midden is in a very vulnerable position as it is close to the beach and inevitably attracts the attention of passers by.

The most practical solution for the protection of the archaeological deposits at PP 19 is to cover the whole site with biddum / geotextile and a thick layer of sand and topsoil. The surface could then be re-vegetated and this would effectively protect the site as well as rendering it invisible to potential vandalism.

Before proceeding with protection measures, the perimeter of the midden site must be surveyed and staked out (See Table 1 for coordinates). As the overburden covering archaeological deposit is very thin it is critical that no vehicles or mechanical earthmoving machinery move onto these sites.

Sand should be dumped on the perimeter of the sites and then hand-shoveled to cover the site with a bed of between 1 to 1.5m of sand. Particular attention must be paid to the edges of the site where erosion has already taken place and additional layers of sand may be required. Once this process has been completed the surface above the midden can be re-vegetated with indigenous dune flora.

Prior to and after covering the site, no vehicular movement or any construction activities may take place on, or close to, the demarcated area. These protective/conservation measures must be written into the title deeds to ensure that the sites are conserved in perpetuity. Additionally, the sites must be accessible to future researchers.

The final stage would be to erect a wooden palisade around the perimeter of the site complete with a plaque in relevant languages detailing the heritage status of the midden as well as a broad description of the archaeology of the area.

Table 1. Coordinates for relevant test holes in Area 4 (PP 19) are as follows (Nilssen *et al*/2006 pg 17);

| ST No. / Name | X or Northing 37 to go before value given | Y or Easting True value | Excavated Depth in cm | Archaeological Layers |
|---------------|---|----------------------------|--------------------------|--------------------------|
| 30 / PP 19 | 86929.56 | 85158.73 | 60 (rocks) | Single & Thin |
| 31 / PP 19 | 86940.09 | 85150.72 | 70 (rocks) | Multiple & Dense |
| 32 / PP 19 | 86948.52 | 85151.34 | 100 (cobbles) | Single & Thin |
| 33 / PP 19 | 86926.28 | 85145.10 | 100 | Couple & Dense |
| 34 / PP 19 | 86923.45 | 85149.99 | 100 | Single & Thin |
| 35 / PP 19 | 86923.30 | 85160.20 | 100 | None |
| 36 / PP 19 | 86935.70 | 85141.84 | 100 (rocks) | Couple & Sparse |

4. References

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.

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 and Plates (on following pages)

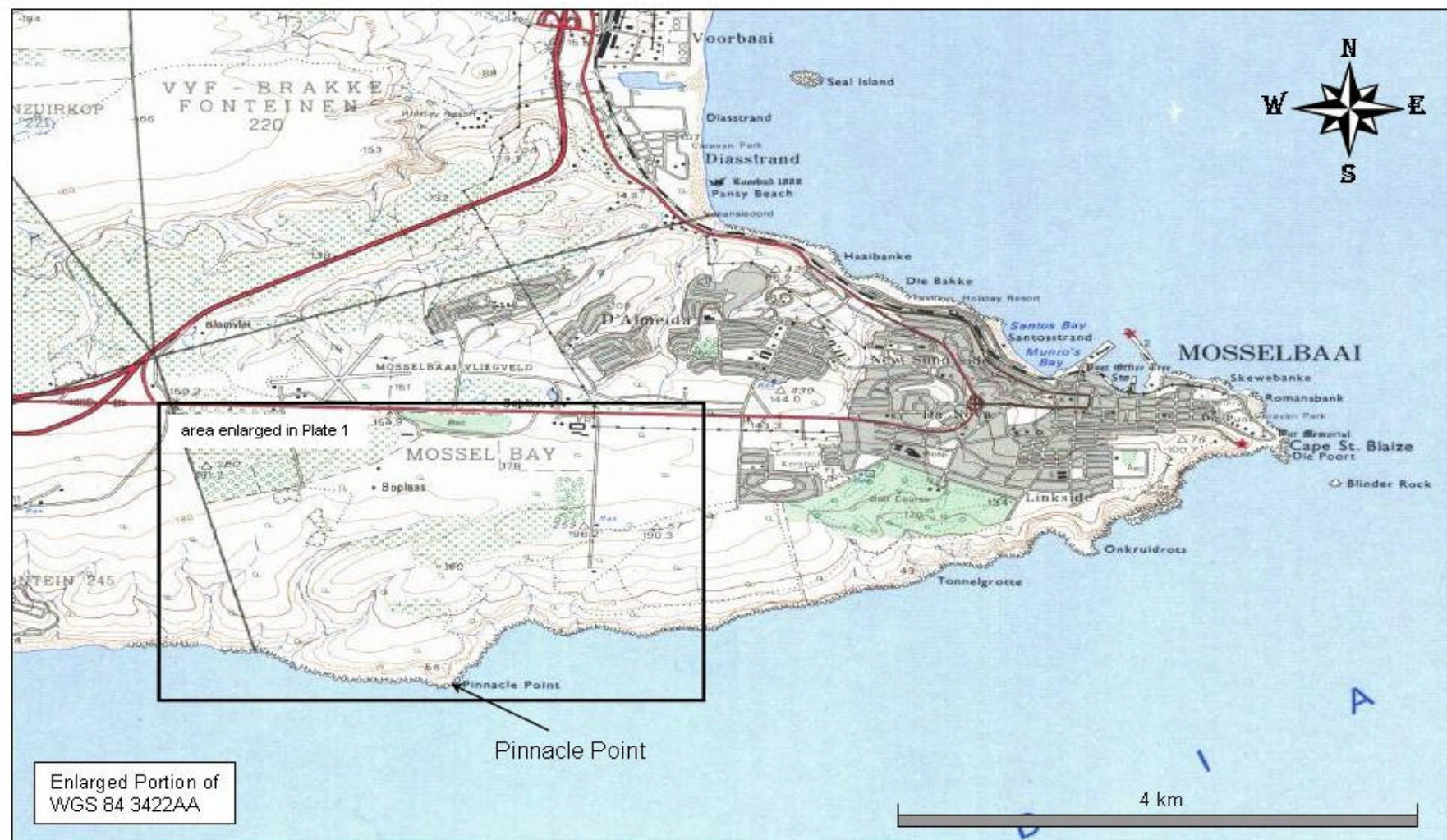


Figure 1. General location of Pinnacle Point relative to the coastal town of Mossel Bay, Western Cape Province.



Plate 1. Enlarged area as indicated in Figure 1. The white line depicts the boundary of the property under development at Pinnacle Point. Shell middens – PP 18, PP 19 and PP 20 - are indicated with red dots (approximate locations). Yellow frame indicates approximate area framed in Figure 2 and enlarged in Figure 3.

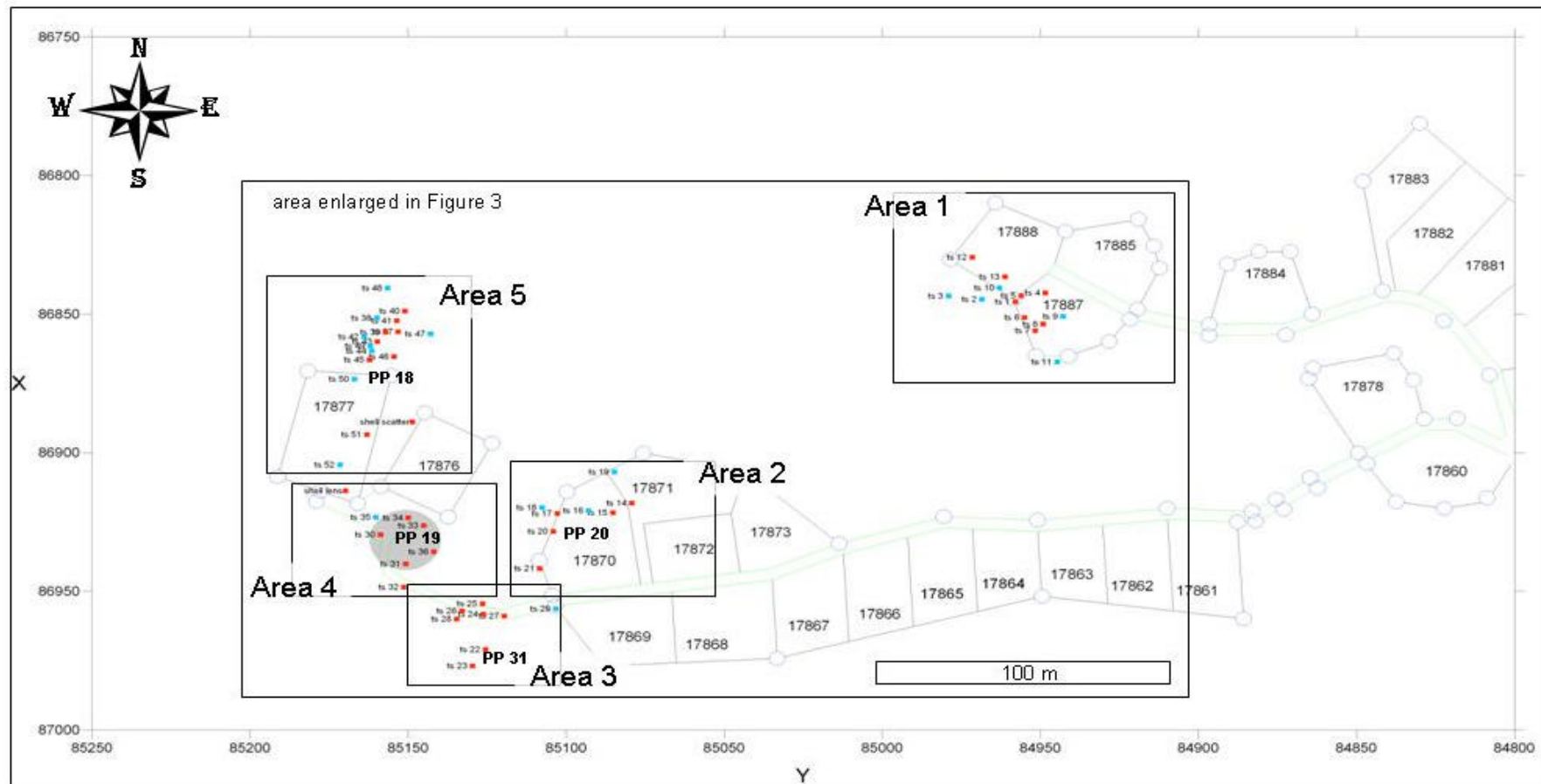


Figure 2. Layout plan of roads and residential erven at the western extent of development at Pinnacle Point. Locations of study Areas are shown relative to sites PP 18, PP 19 and PP 20 (see Plate 1). 37 must go before values on the X axis that represent northing while the values on the Y axis are true and represent easting. Survey data – also see Table 1 - are locked into the SA National Grid system (WGS 84). The 100m scale bar is taken from the X axis.

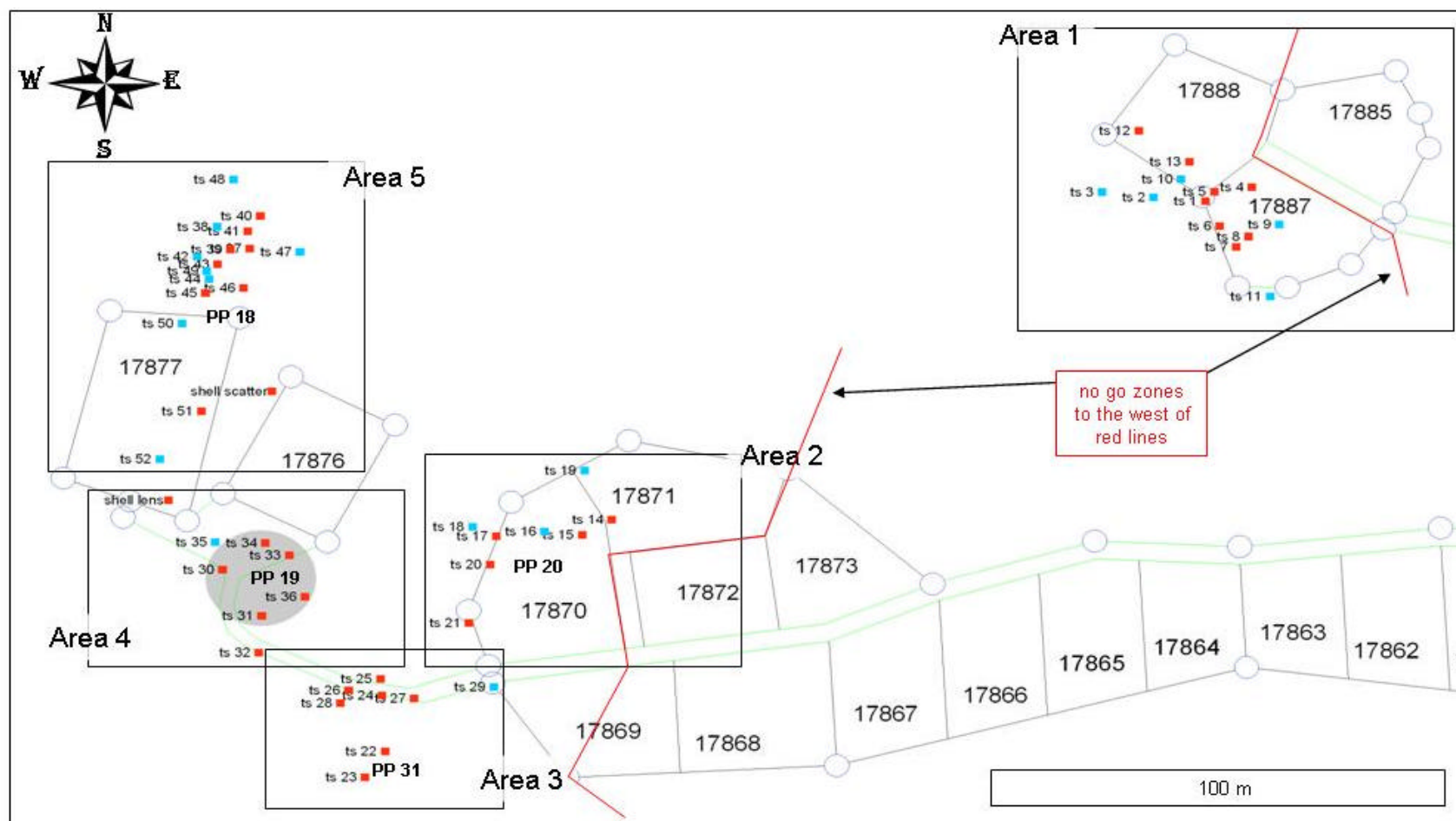


Figure 3. Enlarged area as indicated in Figure 2 and Plate 1 (yellow rectangle). Locations of shovel test – exploratory - excavations are indicated by blue and red squares and named by ts and a number (e.g., ts 12 in Area 1) that are referred to as hole number in the text (e.g., hole 12). Blue squares represent holes with surface or sparse archaeological materials or sterile sediment and shell midden bearing holes are indicated with red squares. Red lines indicate the eastern boundaries for proposed no go zones.



Plate 2. Excavation of Hole 1 (Area 1)



Plate 3. View of shell sampling from Hole 12 (Area 1).



Plate 4. View from Hole 15 site – Area 2 – towards a stormy sea.



Plate 5. View of the excavation of Hole 15 (Area 2) beneath the tent. The main shell lens is visible in the profile.



Plate 6. View of the excavation centred on Holes 24 to 28 (Area 3). The top of the stone-lined hearth is visible on the extreme left.



Plate 7. Close up of the stone-lined hearth shown in Plate 6.



Plate 8. View of the large shell midden PP 19 (Area 4) surrounded by hazard tape.



Plate 9. View of the shell midden PP 19 (Area 4) sandbagged for protection.