

# HERITAGE IMPACT ASSESSMENT

## THE PROPOSED KHOISAN BAY DEVELOPMENT ON PORTION 2 (LANGBOSCH) OF THE FARM STRANDFONTEIN NO. 712, DE KELDERS WESTERN CAPE

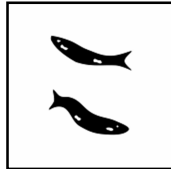
**HWC Case No. 120416JL05**

Assessment conducted under Section 38 (3) of the National Heritage  
Resource Act (No. 25 of 1999)

Prepared for:

**KHOISAN BAY ESTATES (PTY) LTD**

By



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2012<sup>1</sup>**

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## **Executive summary**

ACRM was appointed to conduct a Heritage Impact Assessment (HIA) for the proposed Khoisan Bay housing development on Portion 2 (Langbosch) of the Farm Strandfontein No. 712 at De Kelders, near Gansbaai in the Western Cape.

An application to develop 1850 housing units on the 110 ha property was first made in 2006. An Archaeological Impact Assessment (AIA) of the proposed development was undertaken by ACRM at the time, in which 13 archaeological sites, including scatters of marine shellfish, ostrich eggshell, stone flakes and pottery were documented.

The footprint area for the proposed development has now been substantially reduced to 36.6 ha, while the number of housing opportunities has been scaled down to 472 units.

An Environmental Impact Assessment (EIA) for the proposed development was completed in 2010, with the submission of outstanding information on the final Environmental Impact Report submitted to the Western Cape Department of Environmental Affairs and Development Planning (DEADP) in March 2012. Authorization for a reduced development footprint was subsequently approved by DEADP in July 2012.

Given that six years have lapsed since the original AIA was completed, on being notified of the new development proposal, Heritage Western Cape (HWC) requested that a (new) Notification of Intent to Develop (NID) must be completed, as the proposal has undergone significant revision.

A new NID was therefore submitted to HWC for comment, and in a letter dated 25 April, 2012 (Case No. 120416JL05), HWC requested that a HIA, consisting of an archaeological study must be done. In addition, HWC requested that an assessment of the visual impact of the proposed development on the 'natural landscape of the Walker Bay Reserve' must also be undertaken.

ACRM was appointed to undertake the specialist archaeology study, and to co-ordinate the HIA.

A Visual Impact Assessment (VIA) of the development proposal was done by New World Associates in 2007, but did not address potential impacts relating to the Walker Bay Reserve natural landscape. The VIA has since been revised to address this issue and the findings of the report are presented here.

### Specialist archaeological study

A 1 day field survey of the proposed new development site was undertaken in which the following observations were made:

- Several thin, diffuse scatters of fragmented marine shellfish were documented during the baseline study. These very ephemeral occurrences are assigned to the Later Stone Age (LSA). Except for one small piece of ostrich eggshell, no pottery, bone, or any stone implements were encountered during the study.
- A few Early Stone Age (ESA) flakes and angular chunks were recorded.

As archaeological sites are concerned, the occurrences are all lacking in context. As a result, the remains have been rated as having low (Grade C) local significance.

It should be noted, however, that the proposed development site is infested with alien Rooikrantz, and carpeted in dense Strandveld vegetation, resulting in very poor archaeological visibility. Access to the site was thus severely constrained. Archaeological sites may be therefore hidden under the dense vegetation cover, in deflated areas between the now stabilized dunes, and will only be exposed once vegetation clearing operations commence.

#### Walker Bay Nature Reserve natural landscape

The VIA notes that the revised development plan (from the previous design of 2007) is a much-reduced extension of the coastal resort town within the existing urban edge. The new subdivision and rezoning shows a highly reduced development plan from the original application with large areas being given over to public and private open space, acting as buffers between the proposed residential expansion and the Walker Bay Nature Reserve. According to New World Associates (NWA), this arrangement provides a 'more than adequate buffer' compared to the old scheme, which did not have one.

The report notes that the proposed development now covers only about one third of the site, leaving a substantial Public Open Space buffer (Portion 3) against the Walker Bay Nature Reserve on the site's northern dune field. Portion 3 of Farm 712, at 54 ha, will be rezoned as a protected Conservation Area, while the central Portion 2 (18 ha) has also been left undeveloped as Private Open Space as required by DEA&DP. The rezoning thus limits the proposed development to Portion 1.

The large buffer (Portion 3 & 2) generously protects the southern edge of the Walker Bay Nature Reserve, and the R43 scenic route. Complex site and surrounding complex topography also limits visibility of the site to local views.

Thus, according to Eitzen of NWA, views from the most scenic (western) edge of the Walker Bay Reserve entrance to the northern edge of the proposed development 'will not be substantially affected'. The site cannot be seen at all from this more public area of the reserve at the entrance to Klipgat Cave and the beach. The high ridgeline of sand dunes a couple hundred metres into the site screens off all views from the reserve of the bulk of the site. Alien invasion by Rooikrantz is also evident and further screens views by its height.

Tellingly, Eitzen notes that even were Portion 2 to be developed as residential, this still would not affect views from Walker Bay Nature Reserve due to the distance and the intervening ridgelines.

It is concluded that the proposed development will not impact on the Walker Bay Reserve and that the integrity of the natural landscape will be retained throughout the operational phase of the proposed development.

With regard to the proposed Khoisan Bay housing development on Portion 2 (Langbosch) of the Farm Strandfontein No. 712 near De Kelders, the following recommendations are made:

#### Archaeology

1. Test pits must be excavated on the low frontal dunes alongside the De Kelders residential area in the north western portion of the proposed development site, where some diffuse shellfish was encountered. This must be done in order to determine the absence/presence of any sub-surface archaeological deposits. If some of these surface scatters are found to have depth and undisturbed deposits, they will have to be sampled by way of controlled archaeological excavation.
2. Monitoring of vegetation clearing operations and bulk earthworks must be carried during the construction phase of the development. This can be undertaken by the Environmental Control Officer, in consultation with the archaeologist. A monitoring plan must be submitted to Heritage Western Cape for approval.
3. If any unmarked human remains, or buried shell middens are uncovered or exposed during earthworks, these must immediately be reported to the archaeologist (J Kaplan 082 321 0172), or Heritage Western Cape (Troy Smuts 021 483 9543). Sampling of deposits may need to be carried out if deemed necessary by the archaeologist. In the case of human burials, these will have to be removed under a permit issued by the South African Heritage Resources Agency (SAHRA).
4. A Heritage Management Plan must be implemented in order to protect potentially important archaeological sites that were documented (outside the proposed footprint area – in Portions 3 & 2), during the 2006 AIA, that may be threatened by cumulative impacts resulting from the proposed new development.

**DECLARATION OF INDEPENDENCE**

I, **Jonathan Kaplan**, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in the compilation of the above report;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have any vested interest in the proposed activity proceeding;
- have disclosed to the EAP any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management act;
- have provided the EAP with access to all information at my disposal regarding the application, whether such information is favorable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543, 2010.

Signature of the specialist

A handwritten signature in black ink, appearing to be 'Jonathan Kaplan', written in a cursive style.

Date: **27<sup>th</sup> August, 2012**

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## 1. INTRODUCTION

Plan Active Town & Regional Planners, on behalf of Khoisan Bay Estates (Pty) Ltd requested that the Agency for Cultural Resource Management (ACRM) conduct a Heritage Impact Assessment (HIA) for the proposed Khoisan Bay housing development on Portion 2 (Langbosch) of the Farm Strandfontein No. 712 at Die Kelders (Overstrand Municipality) near Gansbaai in the Western Cape (Figure 1).

An application to develop Farm No. 712 was first initiated in 2006 with a proposal to develop 1850 housing units on 110 ha of land. An Archaeological Impact Assessment (AIA) of the proposed development was undertaken by ACRM at the time, in which up to 13 archaeological sites, including scatters of marine shellfish, ostrich eggshell, stone flakes and pottery were documented (Kaplan 2006). Most of the archaeological heritage was recorded in the highly visible (recently burnt) northern portion of the farm, outside the current proposed (new) footprint area.

The footprint area for the proposed new development has now been reduced to 36.6 ha, while the number of housing opportunities has been scaled down to 472 units, including associated infrastructure such as engineering services and internal streets (Figures 2 & 3).

It is therefore proposed to rezone Portion 1, a portion of Portion 2 (Langbosch) of the Farm Strandfontein No. 712, from Agriculture Zone I to Sub divisional Area in order to create the following:

- 118 Single Residential erven
- 354 Group Housing erven
- 6 Public Open Space erven
- 1 Institutional Zone Erf (community hall)
- 1 Business Zone Erf
- 1 Road Zone Erf

The remaining portions (2 & 3) of Portion 2 of Farm 712 have been set aside for Private Open Space and Public Open Space (refer to Figures 4 & 5).

An Environmental Impact Assessment (EIA) for the proposed development was completed in 2010 (Neethling 2010), with the submission of outstanding information on the final Environmental Impact Report submitted to the Western Cape Department of Environmental Affairs and Development Planning (DEADP) in March 2012. Environmental authorization for a reduced development footprint was subsequently approved by DEADP in July 2012<sup>2</sup>.

Given that six years have lapsed since the original AIA was completed, on being notified of the revised development proposal, Heritage Western Cape (HWC) requested that a new Notification of Intent to Develop (NID) must be completed, as the proposal has undergone significant revision.

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<sup>2</sup> Western Cape Department of Environmental Affairs and Development Planning: Directorate Land Management Unit 2. Letter dated 19 June, 2012. EIA Reference No. E12/2/3/2-E2/11/0093/06

A new NID was subsequently completed and submitted to Heritage Western Cape (HWC) for comment. In a letter dated 25 April, 2012 (Case No. 120416JL05), HWC requested that a HIA, consisting of an archaeological study must be done.

In addition, HWC requested that an assessment of the visual impact of the proposed development on the 'natural landscape of the Walker Bay Reserve' must also be undertaken.

ACRM was appointed to undertake the specialist archaeology study, and to co-ordinate the HIA.

A Visual Impact Assessment (VIA) of the development proposal was done by New World Associates in 2007, but did not address impacts relating to the Walker Bay Reserve natural landscape. The VIA has since been revised to address this issue and the findings of the report are presented (refer to Appendix IV for the full VIA report).



Figure 1. Map indicating the location site of the proposed Khoisan Bay housing development

## 2. HERITAGE LEGISLATION

The National Heritage Resources Act (Act No. 25 of 1999) makes provision for a compulsory Heritage Impact Assessment (HIA) when an area exceeding 5000 m<sup>2</sup> is being developed. This is to determine if the area contains heritage sites and to take the necessary steps to ensure that they are not damaged or destroyed during development.



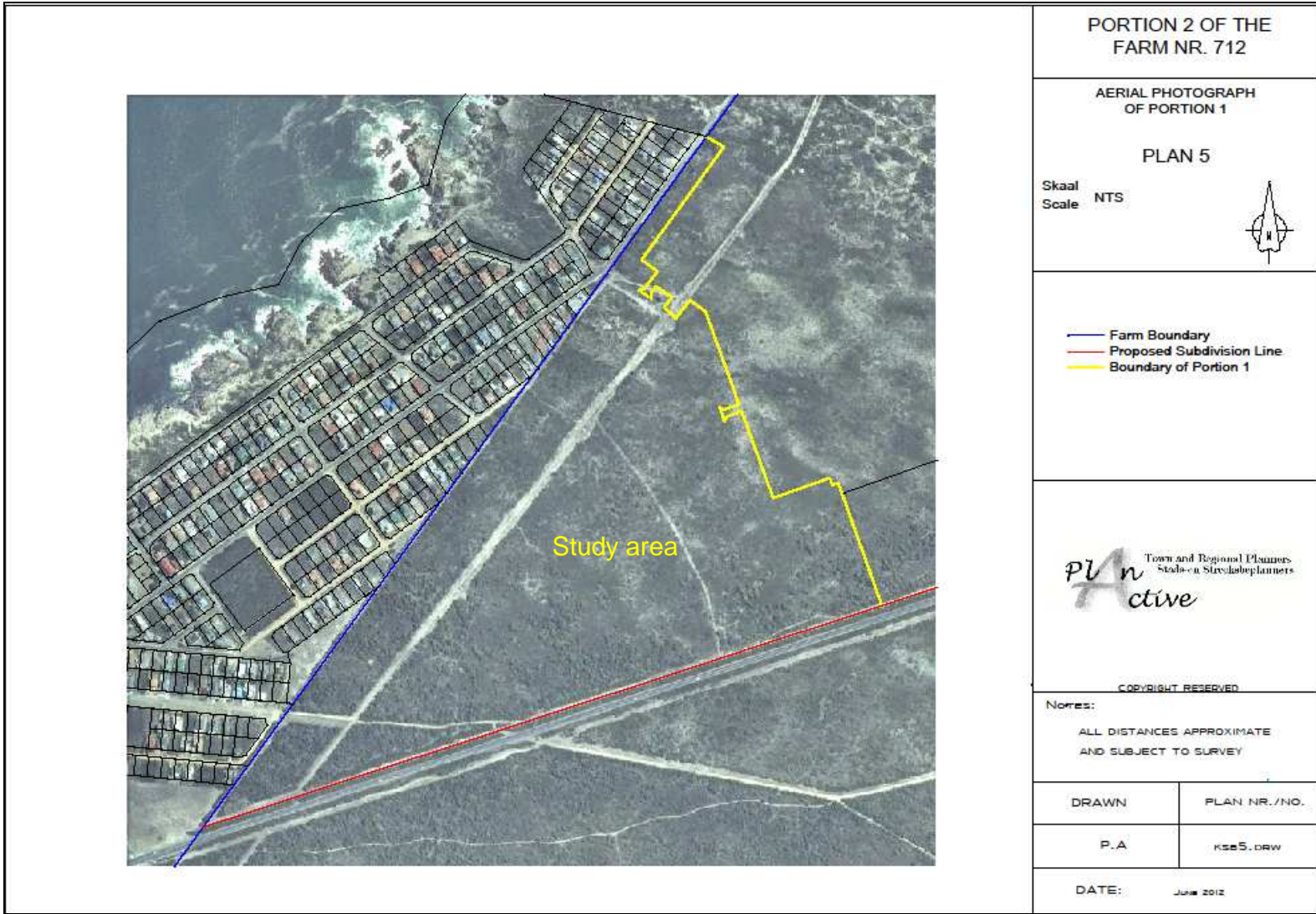


Figure 2. Google Satellite photograph of the proposed 36.6 ha footprint area.

Heritage Impact Assessment proposed Khoisan Bay development, De Kelders

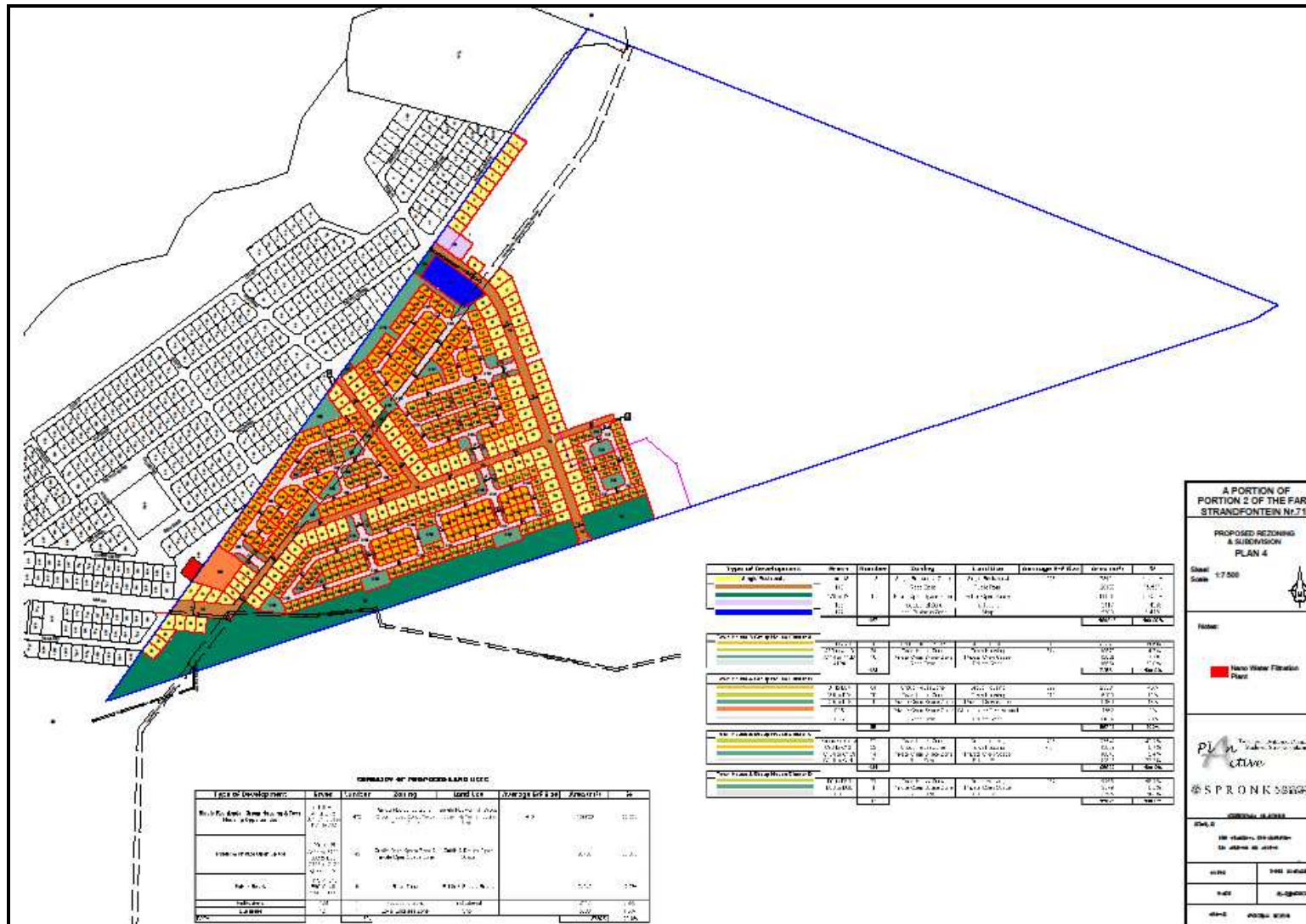


Figure 3. Proposed Khoisan Bay Development, site development plan.

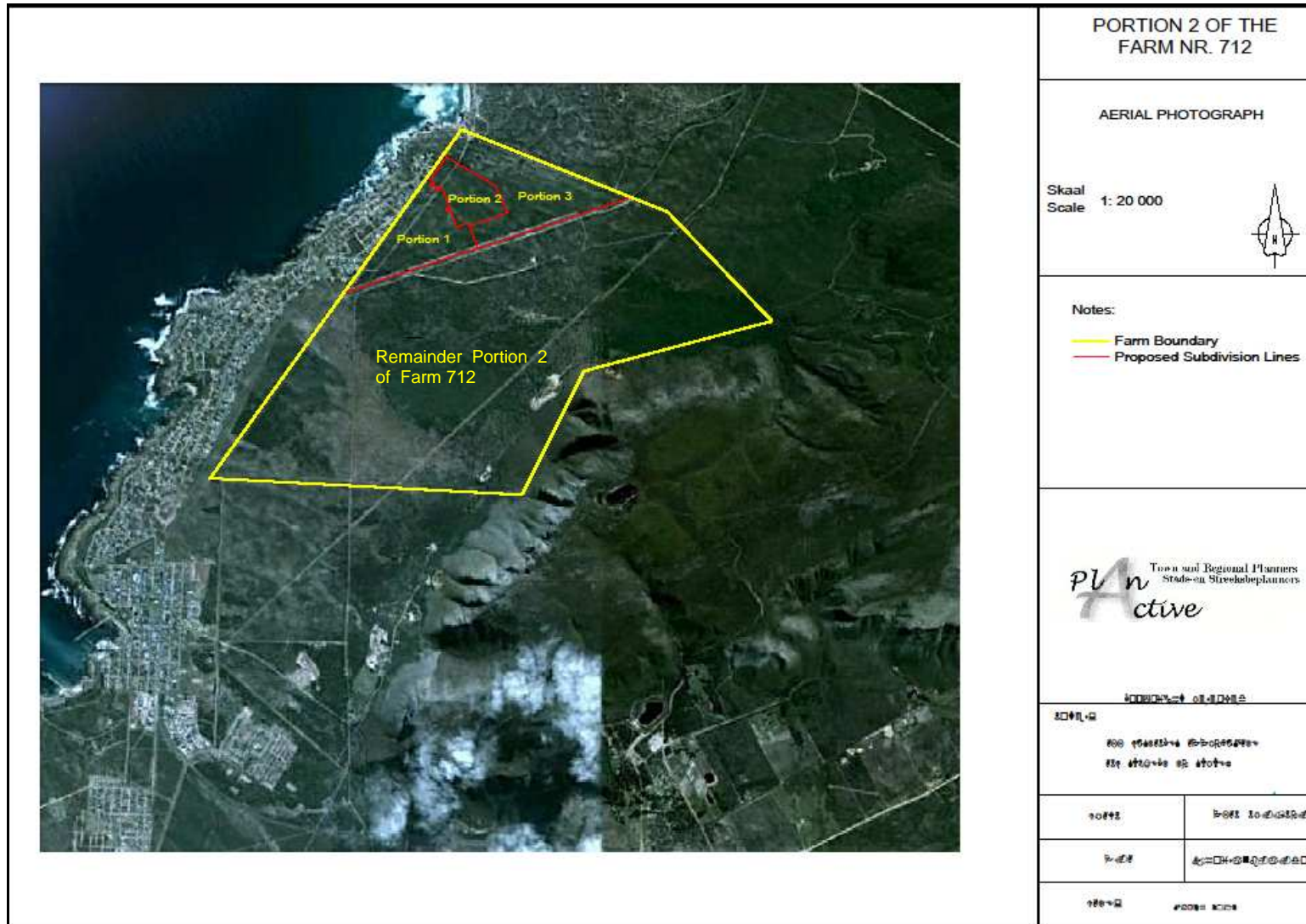


Figure 4. Proposed subdivision of Portion 2 (Langbosch) of Farm No. 712.

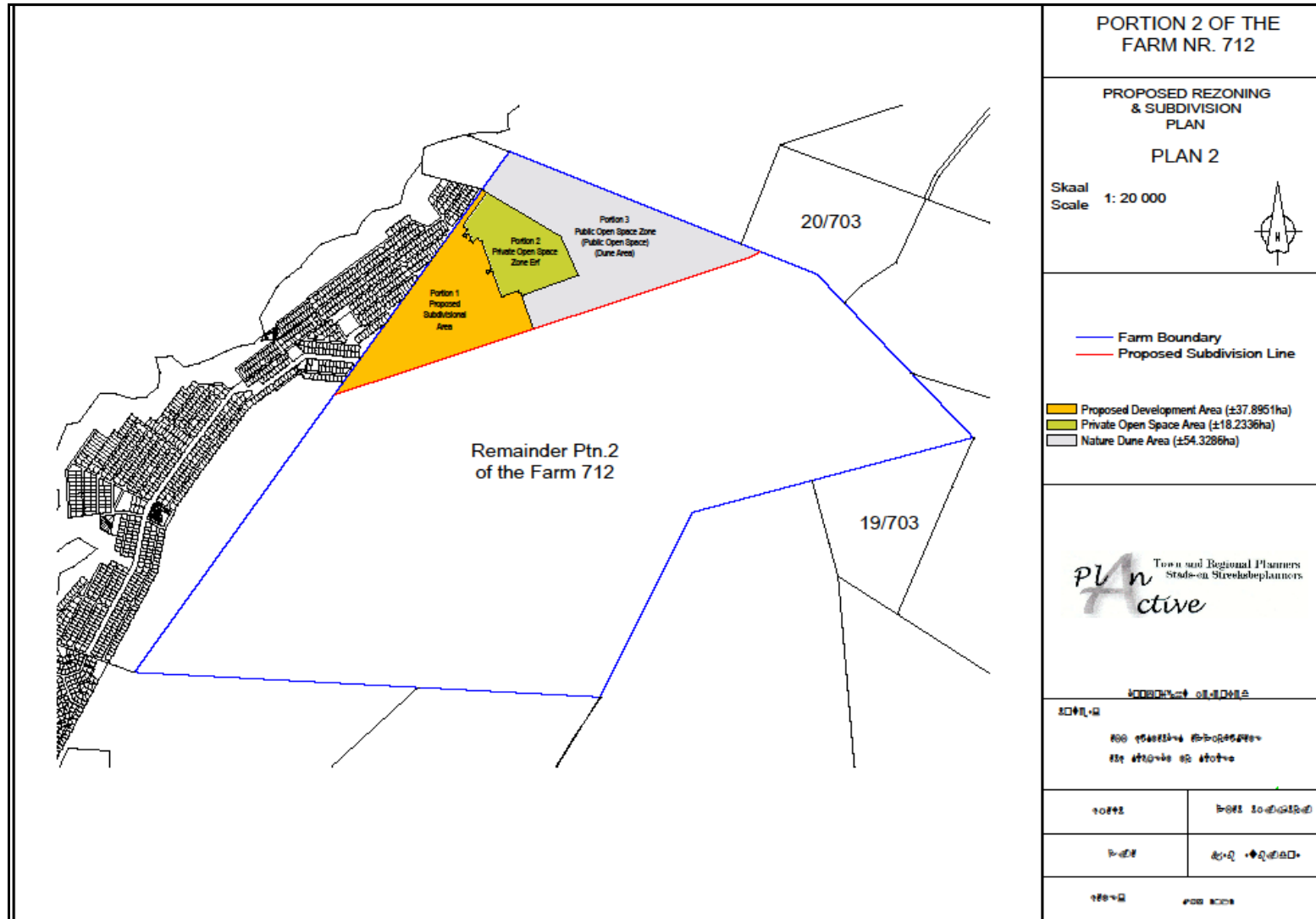


Figure 5. Proposed rezoning and subdivision of Portion 2 of Farm No. 712.

### 3. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The proposed development site is located immediately alongside the R43, on the right hand side of the road as one enters De Kelders from Stanford. The site comprises a series of undulating sand dunes that slopes in a north westerly direction toward the sea. The farm abuts onto the northern boundary of the De Kelders residential area, and the Walker Bay Nature Reserve (Figures 6-12). Eitzen (2013) notes that the heritage character of the site is restricted to its scenic beauty and almost natural status.

Some basic infrastructure is already in place on the proposed site. This comprises a service road with underground bulk water supply pipeline that services De Kelders Township. The proposed development site is currently vacant. No buildings or structures occur within the proposed 36 ha footprint area.

When the 2006 AIA was done, almost the entire northern portion of the farm had been completely burnt (resulting in very good archaeological visibility), but the southern portion was covered with dense alien Rooikrantz, resulting in very poor visibility.

The vegetation has since recovered from the fire, and most of the farm is currently infested with alien Rooikrantz, especially in the south, while Overberg Dune Strandveld and Limestone Fynbos now cover the entire property up until the southern boundary of the Walker Bay Reserve.

Surrounding land use is residential (De Kelders), Wilderness (Walker Bay Reserve) and vacant land east of the R43.



Figure 6. View of the site facing south west. Note the extremely dense Rooikrantz.



Figure 7. View of the site facing south. Walker Bay Reserve can be seen in the far distance



Figure 8. View of the site facing north.



Figure 9. View of the site facing north.



Figure 10. View of the site facing north.



Figure 11. View of the site facing south.



Figure 12. View of the site facing south west.



## **4. STUDY APPROACH**

### **4.1 Method**

A survey of the study area was undertaken on 22<sup>nd</sup> June 2012. A track path of the foot survey was created (refer to Figure 17 in Appendix II). All archaeological occurrences located during the study were plotted using a hand held GPS device, set on the map datum wgs 84. A spread sheet of waypoints and description of the archaeological finds is indicated in Table 1 (refer to Appendix I). A desk top study was also done.

### **4.2 Constraints and limitations**

The proposed 36.6 ha footprint area, as well as the remainder of the property (i.e. Portion 2 & 3), are covered in a combination of extremely dense alien vegetation (Rooikrantz) and a thick carpet of Overberg Dune Strandveld and Limestone Fynbos, resulting in very poor archaeological visibility. The southern portion particularly is infested with Rooikrantz. Apart from a few barely visible footpaths, woodcutter trails, the existing servitude and sandy track around the perimeter, the site is virtually impenetrable.

### **4.3 Identification of potential risks**

Buried shell middens and unmarked human burials may be uncovered during vegetation clearing operations and bulk earthworks.

### **4.4 Results of the desk top study**

Twenty years ago there were more than 140 known archaeological sites (mainly shell middens) in the Gansbaai/De Kelders area (Kaplan 1993; Rudner 1968). The most famous of these sites is the De Kelders Cave located on the coast in the Walker Bay Nature Reserve, less than a kilometer from the proposed development site. This site has not only produced Middle Stone Age remains older than 40 000 years, but also has the earliest dated evidence in the country for domesticated sheep about 1600 years ago (Sealy & Yates 1994; Schweitzer 1979). With its rocky shoreline, the region acted as foci that attracted both Later (LSA) and Middle Stone Age (MSA) people as it offered opportunities for the exploitation of marine foods, particularly shellfish.

Since the late 1990's numerous Archaeological Impact Assessments (AIAs), as part of the EIA process, have been carried out in the region, between De Kelders and Pearly Beach, which have documented many more sites (almost doubling the number), confirming the archaeological sensitivity of the coastal zone in this region (Hart 2010, 2006, 2003; Kaplan 1996, 2000, 2005, 2006b, 2006c, 2007; Nilssen 2004, 2008; Orton & Hart 2005; Van Pletzen-Vos & Rust 2012; Webley 2008).

## 5. RESULTS OF THE ARCHAEOLOGICAL STUDY

The following observations were made during the baseline study (refer to Table 1 in Appendix I and Figure 17 in Appendix II).

Isolated fragments of marine shellfish (736) were documented on soft loose sands alongside the servitude that cuts across the proposed development site (Figure 13). The shellfish comprises mainly un-diagnostic pieces of limpets, but one whole Scutellastra longicosta was found, as well as a few fragments of Black Mussel (Choromytilus meridionalis). Two crude quartzite chunks were also noted lying nearby, but no pottery or any other cultural remains were found on this highly disturbed and degraded 'site'.

Tiny fragments of Black Mussel shell (742) were also found on soft loose sands alongside the servitude. No cultural remains were found.

A few fragments of Black Mussel (737) were found on the side of a vegetated dune, and several fragments of limpets and Black Mussel (738) were found in a small sandy track, alongside the western boundary of the property. No cultural remains were found.

Fragments of weathered shellfish (limpet and Black Mussel) including a few pieces of burnt shell (739) were found alongside a small sandy track near the western boundary of the property. Several piles of recently harvested white mussel (Donax serra) were also found hidden among the vegetated dunes alongside the same track. No cultural remains were found.

A few tiny fragments of Black Mussel and two small whelks (743) were encountered on soft sands east of the main servitude. No cultural remains were found.

A few very small patches of a few fragments of weathered shellfish (740 & 741), mainly limpets, were documented on the undisturbed, vegetated frontal dunes running alongside the western boundary of the proposed site. One small piece of weathered ostrich eggshell was also found, but no other organic remains such as pottery or bone, or any stone implements were found.

A thin patch (about 3 m in extent) of marine shellfish, that includes mainly fragments of limpets, Black Mussel, a single Operculum and two barnacles, including a few small whole shells (744), were recorded on the soft, loose sands on the flatter dunes about 15 m to the east of the servitude (Figure 14). Even smaller, thinner more diffuse scatters of a few fragments of Black Mussel shell and limpet (745 & 746) were found on loose patches of sand close by. No stone implements or any pottery, bone or ostrich eggshell was found.

Several fragments of weathered (adiagnostic) limpets were found on a patch of sand on a larger dune (748) on the higher elevations of the site. Some outcroppings of calcrete occur on the dune.

A very thin scatter of shellfish, that included some Black Mussel, limpet and several larger fragments of Turbo Sarmaticus (750) were found in the sandy track that cuts through the centre of the property (Figure 15).

Two isolated weathered ESA quartzite flakes (733 & 734), and two isolated weathered ESA angular chunks (735 & 751) were also found (Figure 16).

### 5.1 Significance of the archaeological remains

As archaeological sites are concerned, the occurrences are all lacking in context. The middens are best described as very low density surface scatters of shellfish. Apart from the extremely small volumes of shellfish, no other organic remains such as bone or pottery were found. Only one small piece of weathered ostrich eggshell was found (on site 740). While sites 740 and 741 appear to occur in an undisturbed context, the archaeological remains located during the study have all been rated as having low (Grade C) local significance.



Figure 13. Site 736



Figure 15. Site 750.



Figure 14. Site 744.



Figure 16. ESA lithics encountered during the study. Scale is in cm

## **6. VISUAL IMPACT ASSESSMENT: WALKER BAY NATURE RESERVE NATURAL LANDSCAPE**

The VIA, which was done by New World Associates (Eitzen 2013) notes that the revised development plan (from the previous design of 2007) is a much-reduced extension of the coastal resort town within the existing urban edge. The new subdivision and rezoning shows a highly reduced development plan from the original application with large areas of public and private open space acting as buffers between the proposed new residential expansion and the Walker Bay Nature Reserve. This arrangement, according to Eitzen (2013), 'provides a more than adequate buffer' compared to the old scheme, which did not even have one.

The report notes that the proposed development now covers about one third of the site, leaving a substantial Public Open Space buffer (Portion 3) against the Walker Bay Nature Reserve on the site's northern dune field. Portion 3, at 54 ha, will be rezoned as a protected Conservation Area, while Portion 2 (18 ha) has also been left undeveloped as Private Open Space as required by DEA&DP. The rezoning substantially limits the proposed development to Portion 1. The large buffer (Portion 3 & 2) generously protects the southern edge of the Walker Bay Nature Reserve and the R43 scenic route. Complex topography also limits visibility of the site (Eitzen 2013).

According to Eitzen (2013:51), views from the most scenic (western) edge of the Walker Bay Nature Reserve entrance to the northern edge of the proposed development 'will not be substantially affected'. The site cannot be seen at all from this more public area of the reserve at the entrance to Klipgat Cave and the beach. The high ridgeline of sand dunes a couple hundred metres into the site screens off all views from the reserve of the bulk of the site. Alien invasion by Rooikranz is also evident and further screens views by its height.

Tellingly, Eitzen (2013) notes that even were Portion 2 to be developed as residential this still would not affect views from Walker Bay Nature Reserve due to the distance and the intervening ridgelines.

It is concluded that the proposed development will not impact on the Walker Bay Reserve and that the integrity of the natural landscape will be retained throughout the operational phase of the proposed development.

## **7. IMPACT STATEMENT**

The results of the baseline study indicate that the proposed Khoisan Bay housing development on Portion 2 (Langbosch) of Farm No. 712 will not have an impact of great significance on the archaeological heritage that has been documented.

Buried shell middens and unmarked human burials may, however, be uncovered during vegetation clearing operations and bulk earthworks. This is a distinct possibility, given that a number of potentially important archaeological sites were recorded in Portions 2 and 3 of the affected site during the 2006 AIA (refer to Figure 18 in Appendix III).

The proposed development site is also close to the rocky shoreline (and De Kelders Cave), and abundant marine resources that were known to have been exploited by both

Middle and Later Stone Age peoples in the past. The receiving environment is a potentially sensitive archaeological landscape.

Eitzen (2013) notes that the proposed development will not impact on the natural qualities of the Walker Bay Nature Reserve and the site cannot be seen at all due to the distance, intervening ridgelines, and dense vegetation cover.

## **8. CUMULATIVE IMPACTS ON THE SURROUNDING ARCHAEOLOGICAL HERITAGE**

Environmental Impact Assessments (or EIAs) are typically carried out on site specific developments, whereas cumulative impacts may result from broader bio-physical and social considerations, which cannot be addressed at the project specific level. While Portion 2 of Farm 712 will be rezoned as Private Open space (where no future development will be allowed), and Portion 3 rezoned as protected Public Open Space, a large increase in the number residents (over the life cycle of the project) may impact on some of the more important archaeological sites (namely STF 1, 2, 8, 9 & 10) that were recorded during the 2006 study (Kaplan 2006). These so-called cumulative impacts will therefore need to be managed, given the sensitivity of the surrounding archaeological landscape.

## **9. CONCLUSION**

The archaeologist has identified no significant impacts to the archaeological heritage that will need to be mitigated prior to the proposed development commencing.

Buried archaeological heritage, including shell middens and unmarked human burials may, however, be exposed during vegetation clearing operations and bulk earthworks.

Cumulative impacts will need to be managed during the Operational Phase of the project.

## **10. RECOMMENDATIONS**

With regard to the proposed Khoisan Bay housing development on Portion 2 (Langbosch) of the Farm Strandfontein No. 712 near De Kelders, the following recommendations are made:

### Archaeology

1. Test pits (around Sites 740 & 741) must be excavated on the low dunes alongside the De Kelders residential area in the north western portion of the site. This must be done in order to determine the absence/presence of any sub-surface archaeological deposits. If some of these surface scatters are found to have depth and undisturbed deposits, they will have to be sampled by way of controlled archaeological excavation.
2. Monitoring of vegetation clearing operations and bulk earthworks must be carried during the construction phase of the development. This can be undertaken by the Environmental Control Officer, in consultation with the archaeologist. A monitoring plan must be submitted to Heritage Western Cape for approval.

3. If any unmarked human remains, or buried shell middens are uncovered or exposed during bulk earthworks, these must immediately be reported to the archaeologist (J Kaplan 082 321 0172), or Heritage Western Cape (Troy Smuts 021 483 9543). Sampling of deposits may need to be carried out if deemed necessary by the archaeologist.

In the case of human burials, these will have to be removed under a permit issued by the South African Heritage Resources Agency (SAHRA). Burials must not be removed until inspected by the archaeologist.

4. A Heritage Management Plan must be implemented in order to protect potentially important archaeological sites that were documented (outside the proposed footprint area) during the 2006 AIA, that may be threatened by cumulative impacts resulting from the proposed development.

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Appendix I

Spread sheet of waypoints & description of archaeological finds

Heritage Impact Assessment proposed Khoisan Bay development, De Kelders

Site No.	Name of Farm	Lat/Long	Description of finds
	Portion 2 (Langbosch) of Farm 712		
733		S34 33.412 E19 22.302	Broken, weathered ESA quartzite flake
734		S34 33.407 E19 22.424	Weathered ESA flake
735		S34 33.381 E19 22.524	Weathered chunk - ESA
736		S34 33.184 E19 22.463	A very thin scatter of dispersed fragments of shellfish on soft sands in servitude. Mainly limpets, but 1 whole <i>S. longicosta</i> . Also a few fragments of black mussel,
737		S34 33.073 E19 22.493	X 2 fragments of black mussel on dune
738		S34 33.055 E19 22.530	A few fragments of shellfish – limpets in small sandy track/fire break
739		S34 33.054 E19 22.520	A few fragments of weathered shellfish (limpet and 1-2 mussel), some burnt, alongside small sandy track. Lots of white mussel (modern) lying about
740		S34 33.025 E19 22.541	Fragments/small patches of weathered shellfish – mussel and limpet inc. <i>S. cochlear</i> on low vegetated (ground cover) frontal dune alongside residential development. 1 x OES.
741		S34 33.020 E19 22.535	Bits/small patches of shell – same as above. 1 x small manuport
742		S34 33.047 E19 22.554	A few tiny fragments of Black mussel on soft loose sand alongside servitude
743		S34 33.059 E19 22.593	A few tiny fragments of black mussel and 2-3 small whelk on soft sands east of servitude
744		S34 33.078 E19 22.605	Small, thin patch (3 m in extent) of shellfish, mainly fragments of (limpets, mussel, 1 x Operculum, barnacle, inc. a few whole shells) on soft sands. No stone or organic remains
745		S34 33.077 E19 22.584	Small, thin scatter of black mussel shell
746		S34 33.090 E19 22.553	A few fragments of shell on sandy dune top.
748		S34 33.160 E19 22.598	A few fragments of shellfish on patch of sand
750		S34 33.220 E19 22.545	A few fragments of shell, inc. black mussel, 1 x operculum, T. Sarmaticus in sandy track that cuts across the site
751		S34 33.160 E19 22.493	Weathered ESA quartzite cobble/chunk

Table 1. Spread sheet of waypoints and description of archaeological finds

Appendix II

Track path and illustration of archaeological waypoints

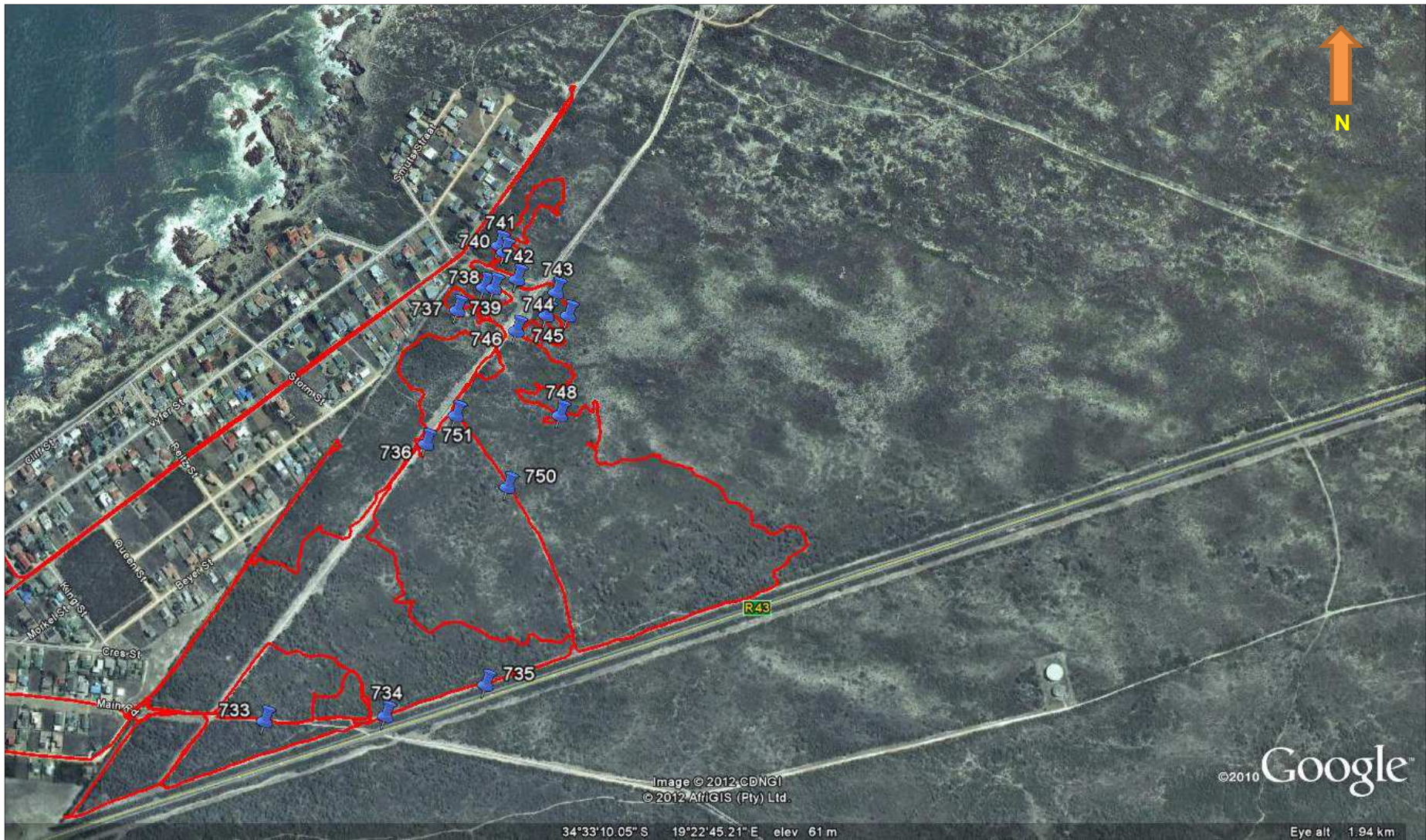


Figure 17. Khoisan Bay archaeological study (2012). Track paths and waypoints of archaeological finds

### Appendix III

Location of archaeological occurrences documented during 2006 AIA

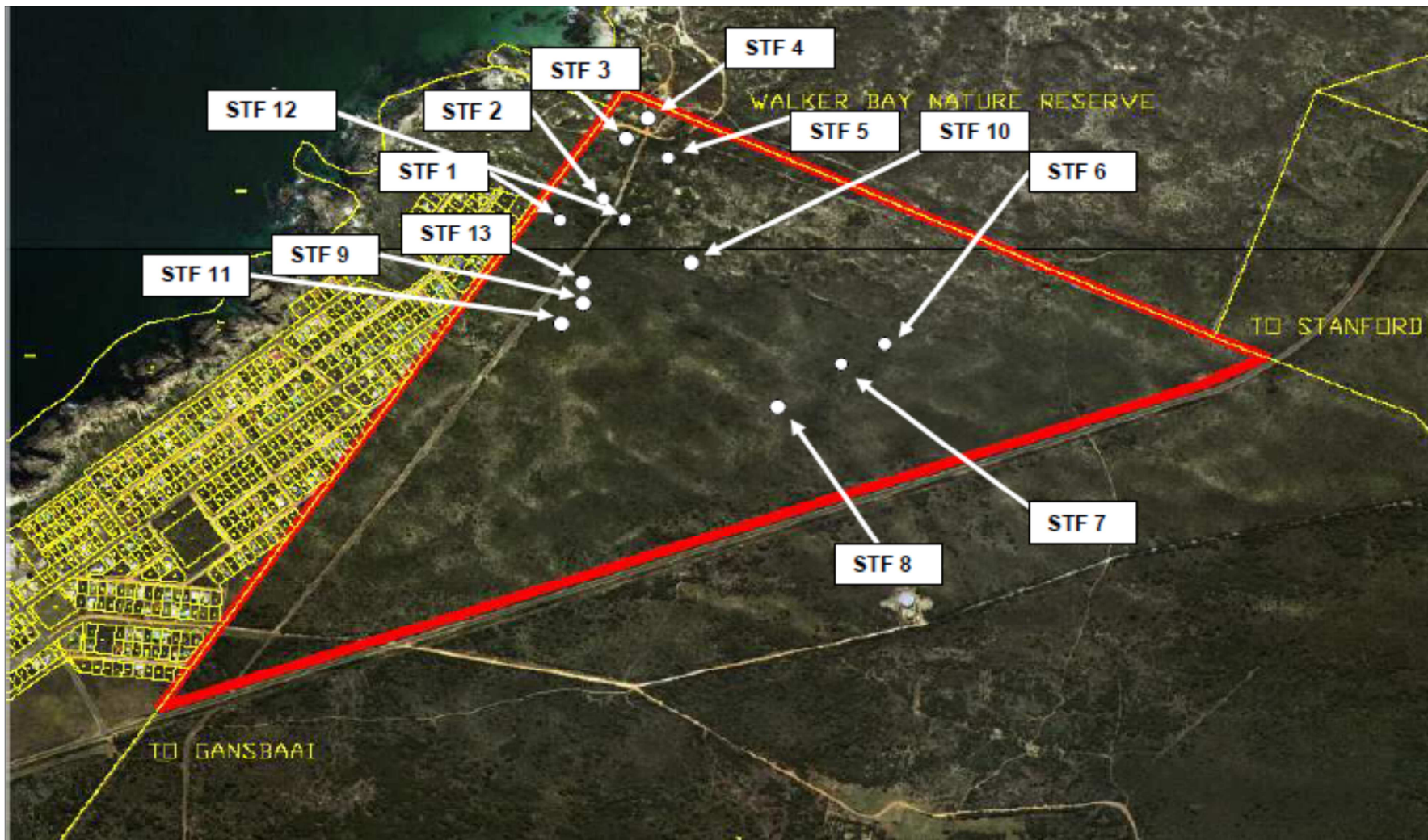


Figure 18. Location of archaeological sites documented during the 2006 AIA (reproduced from Kaplan 2006).

Appendix IV

Visual Impact Assessment