

C13/3/6/2/1/1/1/1/1/A3

HERITAGE WESTERN CAPE
Provincial Heritage Resources Authority of the Western Cape
Department of Cultural Affairs and Sport
Branch: Cultural Affairs
Private Bag X9067
Cape Town
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22 May 2003

Louis de Villiers
De Villiers Brownlie Associates

Tel 021 674 4263
Our Ref C13/3/7/5

Dear Mr de Villiers

**RE: PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT OF THE PROPOSED
BLOUBERGSTRAND EAST-WEST ACTIVITY/MOBILITY LINK FOR BIG BAY
DEVELOPMENT**

The Phase 1 archaeological impact assessment for the above road link has been reviewed by the recently appointed Archaeology, Palaeontology and Meteorites Committee of the Council of the provincial heritage resources authority, Heritage Western Cape. It is noted that no significant archaeological sites or remains were located.

With respect to the archaeological heritage resources, Heritage Western Cape has no objections to the routes proposed for the road link, provided that there is a written undertaking from the developer that the recommendations made in the Phase 1 assessment are followed, viz:

- a professional archaeologist will be contracted to monitor all vegetation-clearing, earthworks and levelling and alteration of dunes, and to brief the Environmental Control Officer, contractors, staff and plant operators on what to look out for;
- archaeological and palaeontological remains uncovered or disturbed during these operations will not be further disturbed until they have been inspected by the archaeologist; and
- any human remains that are discovered during the course of operations will be treated with respect and reported immediately to the South African Heritage Resources Agency.

Yours sincerely



Chris Snelling
Manager: Heritage Resources Management
pp. Heritage Western Cape

FILE

**DEVELOPMENT OF BIG BAY :
ALIGNMENT OF EAST-WEST ROUTES**

Hawkins Hawkins & Osborn South (Pty) Ltd
Consulting Engineers
Cape Town

5853
November 2002

FILE

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INTRODUCTION

Given the rapid rate of development in the Blaauwberg area which has given rise to an ever increasing movement demand in the area, the City of Cape Town : CMC Administration became concerned that this development was not being supported by the required transport infrastructure. The Macro Transport Impact Assessment (Macro TIA) (Ref 1), was therefore commissioned to demonstrate the ability of the proposed road network for the area to handle future flows. An important outcome was that the two parallel east-west routes previously proposed in terms of the Bloubergsvlei Sub-regional Structure Plan be combined into a single East-West Activity Route with a single intersection on the West Coast Road (R27).

The routing proposals for the above were investigated in the East-West Activity Route Strategic Planning Assessment (Ref 2).

Following from the above, the Big Bay TIA (Ref 3) identified the need for the construction of the East-West Activity Route as far as the R27 as essential for the full development of Big Bay. This brief report discusses the proposed alignment alternatives between Big Bay and the R27.

ALIGNMENT CONSTRAINTS

Geometric Constraints

In terms of the Road Access Guidelines (Ref 4) the alignment of the East-West Activity Route and the intersection with the West Coast Road (R27) has been fixed at a distance of 1200m north of the Tryall Road intersection. In the same way the traffic roundabout where the two routes combine has been fixed at a distance of 540m from the R27 intersection, which is appropriate for the development environment and class of road. Further to this, in collapsing the formerly planned East-West Mobility Route and the East-West Activity Spine, it was a stated requirement of the Macro TIA that the two routes intersect at roughly equal angles with the single route.

Other Constraints

Amongst the other constraints identified in Ref 2, was the need to allow for a future detention pond in the low lying area immediately north of the proposed roundabout, and also the need to provide for access opportunities for the future development of the Public Works land between Big Bay and the West Coast Road.

ALIGNMENT ALTERNATIVES

Alignment A shown in Figure 1 is the alignment proposed in the East-West Activity Route Strategic Assessment (Ref 2). The proposed route comprises essentially 3 components - the Activity Spine (to the north), the Mobility Route, and the combined route. An alignment has been indicated for the proposed Wave Road (to the south) which shows it forming the fourth leg of the roundabout. We would like to emphasise that this is essentially a notional alignment included to demonstrate that a link between Wave Road and the East-West Route is easily achievable. The

actual alignment and connection point for Wave Road will be determined in the planning

phase for the development of the Department of Public Works land and as such falls beyond the scope of the Big Bay Development.

Following the submission of the Strategic Assessment (Ref 2), the route was investigated in the field on 18 April 2002 by Coastec Coastal and Environmental consultants. A record of the plant species encountered in the proposed road reserves was produced and general comments and recommendations were provided (Ref 5). Subsequently too, the Agency of Cultural Resource Management was requested to undertake a Phase 1 Archeological Impact Assessment (AIA) of the route, with the aim of identifying and mapping archeological remains of significance which could be affected by the proposed road construction (Ref 6).

As such the proposed alignment satisfies the geometric and other criteria stated in the previous section. Furthermore, no significant archeological sites or remains were located in the Phase 1 AIA. In terms of the botanical assessment, the three components of the proposed routes pass through an area highly disturbed by the infestation of Port Jackson willow and rooikrans with little evidence of species or habitats worth preserving. Comment was made on the low point immediately north of the proposed traffic roundabout where wetland species were encountered. Both alignments pass well clear of this localised low point which is also under consideration as a likely site for a future detention pond for the drainage of the land belonging to the Department of Public Works once it has been developed.

Topographically the principal feature of the area is a dune orientated north-south immediately west of the Big Bay boundary. The Activity Spine and Mobility Route branches of Alignment A impinge slightly on the northern and southern toe of the dune respectively. An alternative Alignment B shown in Figure 2 was investigated. Given the geometric constraints it is not feasible to offset the Activity and Mobility branches simultaneously. Since the southern toe of the dune would be affected more than the northern toe, in this alternative alignment the proposed traffic roundabout would be located approximately 80m to the south of the original position which in turn would shift the Mobility branch approximately 30m to the south close to toe of the dune. The route geometry would be adjusted accordingly.

While Alternative B would to some degree reduce the effect on the north-south dune, it would be achieved at the expense of introducing a degree of undesirable (but not unachievable) curvilinearity in the alignment of the combined route on the approach to the future major interchange.

CONCLUSION

- The constraints imposed by the Road Access Guidelines (Ref 4) have to a large degree fixed the position of the East-West Route, and also the proposed traffic roundabout where the Activity Spine and the Mobility Route converge.
- Two alignments have been investigated, both of which satisfy the design criteria. The two routes represent some degree a trade-off between the effect on toe of the existing north south dune and the preferred geometric features of the route.
- No significant archeological remains were located during the Phase 1 AIA.
- Neither of the two alignments are in conflict with the recommendations in either botanical or the archeological reports.

REFERENCES

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2. ***"East-West Activity Route Big Bay to M12 Arterial Strategic Planning Assessment"***. Prepared for Blaauwberg Administration by Hawkins Hawkins & Osborn, MLH Architects & Planners and Civtech. Cape Town. October 2001.
3. ***"Big Bay, Bloubergstrand Traffic Impact Assessment"***. Prepared for Blaauwberg Administration by Hawkins Hawkins & Osborn. Cape Town. September 2001.
4. ***"Road Access Guidelines"***. Provincial Administration : Western Cape. Department of Economic Affairs, Agriculture & Tourism : Transport Branch. Cape Town. May 2001.
5. ***"Comment on Big Bay - R27 Road Alignment"***. Coastec Coastal and Environmental Consultants. Rondebosch. July 2002.
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PROPOSED EAST-WEST ROUTE
ALTERNATIVE A
(NOT TO SCALE)



FIGURE 1



PROPOSED EAST-WEST ROUTE
ALTERNATIVE B
(NOT TO SCALE)



FIGURE 2

APPENDIX A

COMMENT ON BIG BAY - R27 ROAD ALIGNMENT

COASTEC

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COMMENT ON BIG BAY-R27 ROAD ALIGNMENT

1. BACKGROUND

A network of roads is to be constructed between the Big Bay eastern boundary and the R27. Coastec was requested to comment on the alignment of these roads and provide appropriate recommendations based on the sensitivity and indigenous plantlife of the site.

2. FINDINGS

Following a site visit of the area on 18 April, much of the area between Big Bay and the R27 was found to be severely disturbed and is heavily infested with *Acacia saligna* Port Jackson willow and *A.cyclops* rooikrans. The alignments of the proposed roads were fine-tuned after discussions with Hawkins Hawkins and Osborn, on the basis of the importance of the local habitats and plant species assemblages.

Subsequent to this written recommendations were requested by RabCav, the developers at Big Bay. A record of the plant species encountered at each section between co-ordinates is appended, as is a diagram of the proposed road alignment. Three areas were of concern:

1. A low point near co-ordinate HH71 (refer to diagram) which indicates damp conditions due to the presence of wetland species
2. The southern part (approx. co-ordinates HH17 - HH16) of a north-south dune ridge in the west of the site
3. The northern part of the same dune system (approx. HH4 - HH3).

1 Co-ordinates along the respective routes are numbered from HH1 to HH31

COASTEC coastal and environmental consultants

botanical specialists ecological analysis environmental management impact assessment

SPECIFIC RECOMMENDATIONS

- The road routing near the low point needs to be re-aligned accordingly – this has subsequently been undertaken
- The routing to the south and north of the dune ridge needs to accommodate a 25 m buffer between the edge of the road reserve and the toe of the dune. This follows the principles for dune buffering as laid down in the recommendations for natural open space within the Big Bay development.

GENERAL COMMENTS AND RECOMMENDATIONS

- The road system is being designed in a vacuum. We have no idea of the intended fate of the area between Big Bay and the R27, and therefore the roads in essence will be informing future development in this area (as opposed to the other way round!)
- The study has not included a spring survey; therefore a fully objective evaluation of the sensitivities of the site cannot be provided
- Any indigenous species appropriate for rehabilitation and landscaping within Big Bay and which will be lost in any road construction, should be “rescued” for this purpose
- There are a number of milkwoods on the site. These will need to be protected in any future development/road construction
- Adequate protection and buffering should be afforded the dune system in the north-west of the site (i.e. the dune abutting the north-east boundary of Big Bay), following the general principles described for the Big Bay dunes.

A Barrie Low MSAIE&ES
Environmental consultant

28 July 2002

BIG BAY-R27 ROAD ALIGNMENT: COORDINATES AND BOTANY

<i>Coordinate (HH)</i>	<u>Big Bay SE to circle</u>														<u>Circle to R27</u>					<u>Circle to Big Bay NE</u>					<i>Freq. (%)</i>											
	<i>31/30</i>	<i>29</i>	<i>28</i>	<i>27</i>	<i>26</i>	<i>25</i>	<i>24</i>	<i>23</i>	<i>22</i>	<i>21</i>	<i>20</i>	<i>19</i>	<i>18</i>	<i>17</i>	<i>16</i>	<i>15</i>	<i>14</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>R27</i>	<i>8</i>		<i>7</i>	<i>6</i>	<i>5</i>	<i>4</i>	<i>3</i>	<i>2</i>	<i>1</i>				
Acacia spp.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Aspalathus hispida																																			3	
Asparagus sp.									1																										3	
Carpobrotus cf. acinaciformis																		1																	3	
Carpobrotus edulis			1																																3	
Chondropetalum cf. microcarpum									1																										6	
Chrysanthemoides incana				1											1	1				1	1			1	1				1		1		1	32		
Chrysanthemoides monilifera										1																									3	
Cineraria geifolia				1			1	1					1																						13	
Cynanchum africanum																1	1															1			10	
Cynodon dactylon											1																								3	
Ehrharta villosa	1			1	1					1		1	1										1	1			1	1	1	1				39		
Eragrostis curvula																								1											3	
Euclea racemosa			1												1																		1		10	
cf. Exomis microphylla										1																									3	
Felicia sp.			1											1					1					1		1									16	
Ficinia sp.																							1												3	
Hellmuthia membranacea																												1	1						6	
Hermannia cf. pinnata																									1										6	
Juncus kraussii											1																								3	
Lessertia frutescens										1									1		1			1											13	
Lycium sp.																								1												3

Lyperia cf. tristis	1		1	1				1	1	1	1						1					26									
Metalasia muricata																	1					3									
Nylandtia spinosa										1			1	1			1		1			16									
Otholobium cf. bracteolatum							1						1				1	1	1			16									
Pentaschistis cf. pallida		1	1	1		1		1	1	1	1		1	1	1	1	1	1	1	1	1	1	65								
Phylla ericoides											1								1			6									
Psoralea repens													1									3									
Rhus crenata																					1	3									
Rhus glauca	1	1	1	1	1	1		1			1	1	1	1	1		1	1	1	1	1	1	68								
Rhus laevigata	1		1	1		1	1	1		1	1	1		1	1	1	1	1	1	1	1	1	61								
Ruschia macowanii				1						1	1										1	1	16								
Senecio burchellii														1							1		6								
Senecio elegans			1		1	1		1			1		1							1			23								
Senecio halimifolius							1																3								
Solanum cf. guineense							1																3								
Tetragonia fruticosa																				1			3								
Thamnochorus spicigerus																	1		1	1			13								
Trachyandra cf. divaricata	1		1			1		1			1		1	1	1	1	1		1	1		1	45								
Viscum capense											1										1		6								
Zygophyllum flexuosum									1	1						1	1		1	1	1	1	26								
Zygophyllum morganiana																						1	3								
	4	1	6	7	5	3	3	5	10	3	6	2	5	6	6	9	4	10	5	5	3	7	15	5	6	10	11	6	10	3	4

APPENDIX B

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT
THE PROPOSED BLOUBERGSTRAND EAST-WEST
ACTIVITY / MOBILITY LINK**

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT
THE PROPOSED BOUBERGSTRAND EAST-WEST
ACTIVITY/MOBILITY LINK**

Prepared for

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By

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**AUGUST
2002**

Executive Summary

No significant archaeological sites or remains were located during a Phase 1 Archaeological Impact Assessment of the proposed Bloubergstrand East-West Activity/Mobility Link.

The proposed project comprises the construction of a link road between Otto du Plessis Drive, the R27 (West Coast road) and the N7.

The study area is mostly heavily infested with alien and natural vegetation, resulting in low archaeological visibility.

The receiving environment is also partially disturbed and modified.

Some occasional fragments of shellfish were located in open spaces west of the R27, but these remains are not considered to be important.

No archaeological remains were located east of the R27.

Important archaeological sites may, however, be exposed once vegetation-clearing operations commence. Scatters of stone tools and shell middens may be located on or behind vegetated dunes, in dune blowouts, or in wind deflated dune slacks.

Buried shell middens and human burial remains may also possibly be uncovered or exposed during road construction activities.

With regard to the proposed Bloubergstrand East-West Activity/Mobility Link, the following archaeological recommendations are made:

- The vegetation-clearing programme should be monitored by a professional archaeologist.
- All earthworks and excavations related to roadworks should be monitored by a professional archaeologist.
- The Environmental Control Officer (ECO) is to be briefed by a professional archaeologist what to look out for during vegetation clearing operations and preparation of the site for construction purposes. Levelling and alteration of dunes, for example, may expose buried shell middens and human remains.
- Contractors, staff and particularly plant operators should be briefed what to look out for during vegetation clearing operations and road construction activities.
- Heritage remains uncovered or disturbed during vegetation clearing and earthworks should not be disturbed until inspected by the ECO and verified by a professional archaeologist.
- Should any human remains be disturbed, exposed or uncovered during earthworks, these should immediately be reported to a professional archaeologist, or the South African Heritage Resources Agency.

Burial remains should be treated sensitively at all times. Human remains should not be removed until inspected by a professional archaeologist.

- Proposed borrow pits should be inspected for archaeological sites/remains.
- The construction EMP should detail reporting procedures to manage the discovery of any heritage artefacts during construction. This would include the recovery or exposure of human burials during construction activities, for example.

The recommendations are subject to the approval of the South African Heritage Resources Agency (SAHRA).

1. INTRODUCTION

1.1 Background and brief

De Villiers Brownlie Associates has requested the Agency for Cultural Resource Management to undertake a Phase 1 Archaeological Impact Assessment (AIA) of the proposed Bloubergstrand East West Activity/Mobility Link.

The proposed project comprises the construction of a link road between Otto du Plessis Drive, the R27 (West Coast road) and the N7.

The bulk of the work involves the construction of three roads; the East West Activity Spine, the East-West Mobility Route, and the East West Activity Route, including the construction of a ring road, and an intersection at the R27.

The aim of the AIA is to locate, identify and map archaeological remains that may be negatively impacted by the proposed project, and to propose measures to mitigate against the impact.

2. TERMS OF REFERENCE

The terms of reference for the AIA were:

1. to determine whether there are likely to be any archaeological sites of significance within the proposed site.
2. to identify and map any sites of archaeological significance within the above area;
3. to assess the sensitivity and conservation significance of archaeological sites potentially affected by the proposed development;
4. to assess the status and significance of any impacts resulting from the proposed development, and
5. to identify mitigatory measures to protect and maintain any valuable archaeological sites that may exist within the site.

3. THE STUDY SITE

The study site and the proposed project are illustrated in Figure 1.

The area searched for archaeological remains included the proposed link roads from the eastern boundary of the planned Big Bay development, up to the 400 Kv powerline east of the R27.

4. CONSTRAINTS AND LIMITATIONS

The field study was constrained by thick vegetation cover, particularly in the east-west activity route, resulting in extremely low archaeological visibility.

5. STUDY APPROACH AND DOCUMENTATION OF ARCHAEOLOGICAL SITES

5.1 Method of survey

The approach used in the archaeological study entailed a foot survey of the proposed east-west mobility link.

The surrounding area within the development envelope was also searched for archaeological remains.

A desktop study was undertaken.

6. A BRIEF OVERVIEW OF THE ARCHAEOLOGICAL CONTEXT OF THE STUDY AREA

Archaeological sites are well documented in the study area. A large number of Later Stone Age² (LSA) coastal sites have been described (Rudner 1968; Kaplan 1993, 1997, 1998a,b,c,d), some of which have been examined in more detail (Deacon & Goosen 1997; Kaplan 1998c,d, Kaplan 2000a).

LSA as well as much older Middle Stone Age³ (MSA) sites have also been documented in the interior of the study area. (Kaplan 2000a, b, 2002).

The sites represent the last remnants of a hunter-gatherer and pastoralist-herder lifestyle that was once present in the Table Bay area thousands of years ago.

There are numerous historical accounts of 'Strandlopers' (Khoi entrepreneurs in the trade between the Dutch and the Khoi) peopling the Table Bay coastline before and shortly after the arrival of the Dutch settlers at the Cape in 1652 (Smith 1983). 'Contact' items such as glass tools have been uncovered from archaeological excavations in Melkbosstrand (Kaplan 1998d).

6.1 Burials

At least 17 Khoisan burial sites have been uncovered from the coastal dunes between Milnerton and Melkbosstrand (Abrahams 1988; Deacon & Goosen 1997; Kaplan 1998a, Kaplan 2000c, Kaplan 2002; Yates 2001). The majority of these burials were exposed as a result of earthworks for development purposes. Burials associated with bored stones, stone tools and ostrich eggshell beads have also been excavated on the farm Groot Oliphantskop (Kaplan 1996), between the N7 and the R27.

2 A term referring to the last 20 000 years of precolonial history in southern Africa.

3 A term referring to the period between 200 000 and 20 000 years ago.

7. LEGISLATIVE REQUIREMENTS

7.1 The National Heritage Resources Act (Act No. 25 of 1999)

7.1.1 Archaeology (Section 35 (4))

No person may, without a permit issued by the responsible heritage resources authority, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object.

7.1.2 Burial grounds and graves (Section 36 (3))

No person may, without a permit issued by SAHRA or a provincial heritage authority, destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority.

8. IDENTIFICATION OF RISK SOURCES

The following project actions may impact negatively on archaeological sites. The actions are most likely to occur during the construction phase of the proposed project.

- Vegetation clearing operations may expose or uncover shell middens and artefact scatters.
- Earthworks and excavations may expose or uncover buried shell middens and human remains.

9. RESULTS OF THE IMPACT ASSESSMENT

No archaeological remains were located during the Phase 1 AIA.

Occasional fragments of shellfish (Black mussel and limpet) were located in some open spaces west of the R27. These remains are not considered to be important.

10. IMPACT STATEMENT

The impact of the proposed project on archaeological sites is likely to range from low to high.

Important sites may be exposed once vegetation-clearing operations commence. Scatters of stone tools and shell middens may be located on or behind vegetated dunes, in dune blowouts, or in wind deflated dune slacks.

Buried shell middens and human burial remains may also possibly be uncovered or exposed during road construction activities, excavations and earthworks.

11. CONCLUDING STATEMENT

No significant archaeological sites were located during a study of the proposed Bloubergstrand East-West Activity/Mobility Link.

Shell middens and human burial remains may, however, be exposed or uncovered during the construction phase of the project.

12. RECOMMENDATIONS

With regard to the proposed Bloubergstrand East-West Activity/Mobility Link, the following archaeological recommendations are made:

- The vegetation-clearing programme should be monitored by a professional archaeologist.
- All earthworks and excavations related to road works should be monitored by a professional archaeologist.
- The Environmental Control Officer (ECO) is to be briefed by a professional archaeologist what to look out for during vegetation clearing operations and preparation of the site for construction purposes. Levelling and alteration of dunes, for example, may expose buried shell middens and human remains.
- Contractors, staff and particularly plant operators should be briefed what to look out for during vegetation clearing operations and earthworks.
- Heritage remains uncovered or disturbed during vegetation clearing and earthworks should not be disturbed until inspected by the ECO and verified by a professional archaeologist.
- Should any human remains be disturbed, exposed or uncovered during earthworks, these should immediately be reported to a professional archaeologist, or the South African Heritage Resources Agency.

Burial remains should be treated sensitively at all times. Human remains should not be removed until inspected by a professional archaeologist.

- Proposed borrow pits should be inspected for archaeological sites/remains.
- The construction EMP should detail reporting procedures to manage the discovery of any heritage artefacts during construction. This would include the recovery or exposure of human burials during construction activities, for example.

The recommendations are subject to the approval of the South African Heritage Resources Agency (SAHRA).

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