

**A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESMENT (AIA) FOR THE AIRPORTS COMPANY OF SOUTH AFRICA (ACSA) PROPOSED PORT ELIZABETH AIRPORT STORMWATER UPGRADE, WALMER, NELSON MANDELA BAY MUNICIPALITY, EASTERN CAPE PROVINCE**

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**TABLE OF CONTENTS**

1.	EXECUTIVE SUMMARY	2.
2.	BACKGROUND INFORMATION	3.
3.	HERITAGE LEGISLATIVE REQUIREMENTS	4.
4.	BRIEF ARCHAEOLOGICAL BACKGROUND	6.
5.	DESCRIPTION OF THE PROPERTY	12.
6.	ARCHAEOLOGICAL INVESTIGATION	18.
7.	DESCRIPTION OF SITES	26.
8.	GPS CO-ORDINATES AND SITES FOR THE PROPOSED ACSA STORMWATER OUTFALL SYSTEM UPGRADE	27.
9.	CONCLUSION	28.
10.	RECOMMENDATIONS	28.
11.	REFERENCES	29.
12.	RELEVANT ARCHAEOLOGICAL IMPACT ASSESSMENTS	29.
13.	GENERAL REMARKS AND CONDITIONS	30.
	APPENDIX A: GRADING SYSTEM	32.
	APPENDIX B: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM COASTAL AREAS: guidelines and procedures for developers	33.

## **A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) FOR THE AIRPORTS COMPANY OF SOUTH AFRICA (ACSA) PROPOSED PORT ELIZABETH AIRPORT STORMWATER UPGRADE, WALMER, NELSON MANDELA BAY MUNICIPALITY, EASTERN CAPE PROVINCE.**

**Note:** This report follows the minimum standard guidelines required by the South African Heritage Resources Agency for compiling a Phase 1 Archaeological Impact Assessment (AIA).

### **1. EXECUTIVE SUMMARY**

#### **1.1. Purpose of the Study**

The purpose of the study was to conduct a phase 1 archaeological impact assessment (AIA) for the Airports Company of South Africa (ACSA) proposed Port Elizabeth Airport Stormwater Upgrade, Walmer, Nelson Mandela Bay Municipality, Eastern Cape Province. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage materials and features, the potential impact of the development, and to make recommendations to minimize possible damage to these sites.

#### **1.2. Brief Summary of Findings**

The proposed area for development is located within an already developed and built-up area in the suburb of Walmer between the Port Elizabeth Airport and South End Cemetery. The proposed area for development is mostly covered in dense grass and other vegetation that made archaeological visibility relatively difficult. Very dense vegetation occurs within a wetland area and a perennial stream runs through the area. The project area is situated within the remains and ruins of buildings and structures of Stuart Township (also referred to as Newtown), a municipal housing project that was established in 1938. Much of the ground surface has been heavily disturbed by the construction of a railway line, a railway bridge, manholes, existing underground piping, roads (gravelled and tarred) and the establishment of Stuart Township. Despite a systematic investigation, no archaeological heritage resources were identified.

The remains and ruins of building foundations that would have been part of the housing accommodation of Stuart Township were identified within the vicinity of the route for the stormwater outfall system. A possible drinking trough and the remains of an old road were identified during the survey and reflect the remains of the area previously associated with Stuart Township. A presumably recently laid out stone packed circular feature was identified on the top of the old roadway cutting.

### 1.3. Recommendations

The area is of a low archaeological sensitivity and the development may proceed as planned, although the following recommendations must be considered:

1. A demolition permit should be applied for as the remains and ruins of Stuart Township and its later extension in 1951 is older than 60 years and may be covered by the dense vegetation within the proposed route for the stormwater outfall system.
2. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.
3. Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

## 2. BACKGROUND INFORMATION

SRK Consulting has been appointed by the Airports Company South Africa (ACSA) to conduct the Basic Assessment (BA) process for the upgrading of the stormwater outfall system at Port Elizabeth Airport's secondary runway. The Department of Archaeology, Albany Museum, has been appointed by SRK Consulting to conduct the phase 1 archaeological impact assessment (AIA). This phase 1 archaeological impact assessment (AIA) report is part of the Basic Assessment (BA) process.

The purpose of the stormwater upgrade is to address the problem of water ponding in low lying areas and stormwater management of the airport runways, during rainfall events. The proposed underground pipeline (approximately 600m long) will run parallel to an existing pipeline and cross under Allister Miller Drive and a railway line to a discharge point into the Hume River. Subsoil drains and manholes/catchpits will be installed at regular intervals along the pipeline in order to lower the water table over time and prevent the soil becoming waterlogged. The pipeline will require a servitude of approximately 10 m for stockpile storage and access during construction and pipeline trenches will be up to 3 m in depth.

## 2.1. Developer:

Airports Company South Africa (ACSA).

## 2.2. Consultant:

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## 2.3. Terms of Reference

- Conduct a literature review of known archaeological resources within the area with a view to determining which of these resources are likely to occur within the development footprint;
- Conduct a survey to establish the range and importance of the exposed and *in situ* archaeological heritage materials and features;
- Comment on potential impacts on these resources resulting from the development;
- Make recommendations regarding the mitigation of any damage to archaeological resources identified, or that be identified during the construction phase; and
- Submit the AIA to the relevant heritage authorities for comments

## 3. HERITAGE LEGISLATIVE REQUIREMENTS

Parts of sections 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

### ***Structures***

34. (1) *No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority*

### **Archaeology, palaeontology and meteorites**

35 (4) No person may, without a permit issued by the responsible heritage resources authority—

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

### **Burial grounds and graves**

36. (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume, 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; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

### **Heritage resources management**

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as -

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of the site -
  - (i) exceeding 5000m<sup>2</sup> in extent, or
  - (ii) involving three or more erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

- (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;
- (d) the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

#### **4. BRIEF ARCHAEOLOGICAL BACKGROUND**

##### **4.1. Literature review**

###### **4.1.1. Early Stone Age (ESA)**

Little is known of the early prehistory of the region. The oldest evidence of the early inhabitants are large stone tools, called handaxes and cleavers, which may be found amongst river gravels such as the Swartkops River and in old spring deposits within the region. These large stone tools are from a time period called the Earlier Stone Age (ESA) and may date between 1, 4 million and 250 000 years old. Large numbers of Early Stone Age stone tools were found at a research excavation at Amanzi Springs, some 10 kilometres north-east of Uitenhage (Deacon 1970). In a series of spring deposits a large number of stone tools were found *in situ* to a depth of 3-4 meters. Wood and seed material preserved remarkably very well within the spring deposits, and possibly date to between 800 000 to 250 000 years old.

###### **4.1.2. Middle Stone Age (MSA)**

The large handaxes and cleavers were replaced by smaller stone tools called the Middle Stone Age (MSA) flake and blade industries. Evidence of Middle Stone Age sites occur throughout the region and date between 250 000 and 30 000 years old. Fossil bone may in rare cases be associated with Middle Stone Age occurrences (Gess 1969). These stone artefacts, like the Earlier Stone Age handaxes are usually observed in secondary context with no other associated archaeological material.

###### **4.1.3. Later Stone Age (LSA)**

The majority of archaeological sites found in the area date from the past 10 000 years (called the Later Stone Age) and are associated with the campsites of San hunter-gatherers and Khoi pastoralists. These sites are difficult to find because they are in the open veld and often covered by vegetation and sand. Sometimes these sites are only represented by a few stone tools and fragments of bone. The preservation of these sites is

poor and it is not always possible to date them (Deacon and Deacon 1999). There are many San hunter-gatherer sites in the nearby Groendal Wilderness Area and adjacent mountains. Here, caves and rock shelters were occupied by the San during the Later Stone Age and contain numerous paintings along the walls. The last San/KhoiSan group was killed by Commando's in the Groendal area in the 1880s.

#### **4.1.4. The Last 2000 Years**

Some 2 000 years ago Khoi pastoralists occupied the region and lived mainly in small settlements. They were the first food producers in South Africa and introduced domesticated animals (sheep, goat and cattle) and ceramic vessels to southern Africa. Often archaeological sites are found close to the banks of large streams and rivers. Large piles of freshwater mussel shell (called middens) usually mark these sites. Prehistoric groups collected the freshwater mussel from the muddy banks of the rivers as a source of food. Mixed with the shell and other riverine and terrestrial food waste are also cultural materials. Human remains are often found buried in the middens (Deacon and Deacon 1999).

#### **4.1.5. Historical Research of Stuart Township**

The proposed area for the stormwater outfall system is situated within a previously developed settlement officially known as Stuart Township (also referred to as Newtown). Only the remains and ruins of some of the roads and building foundations and structures are visible between the dense vegetation cover. It is presumed the dense vegetation growth has covered the residual remains of foundation and structures.

Stuart Township was established as part of an “economic” / “sub economic” housing project initiated by the Port Elizabeth Municipality between 1923 and 1939 and enabled by the 1920 Housing Act. These schemes mandated that housing be constructed along racially separate lines, therefore, nearly 4 000 houses were built for Africans, beginning in New Brighton, 1 400 houses for Europeans and about 2000 houses for Coloureds. The new Council houses designated for members of the European (whites) and non-white (Coloureds) populations were more loosely scattered around the city situated on available land, and were often cited adjacent to one another, divided by a road or minor physical buffer strip, in contrast to the principles of broad racial zoning characteristic of later apartheid policies which saw whole sections of cities reserved for particular groups. In 1936, while there were several areas in the city where substantial numbers of members of the Coloured community resided near members of the European community (whites), such as South End, North End, and Sidwell, (though rigid street-level separation predominated), there was only one area within the city boundaries, Korsten, where large numbers of Africans lived (Figure 1) (Adler 1995).



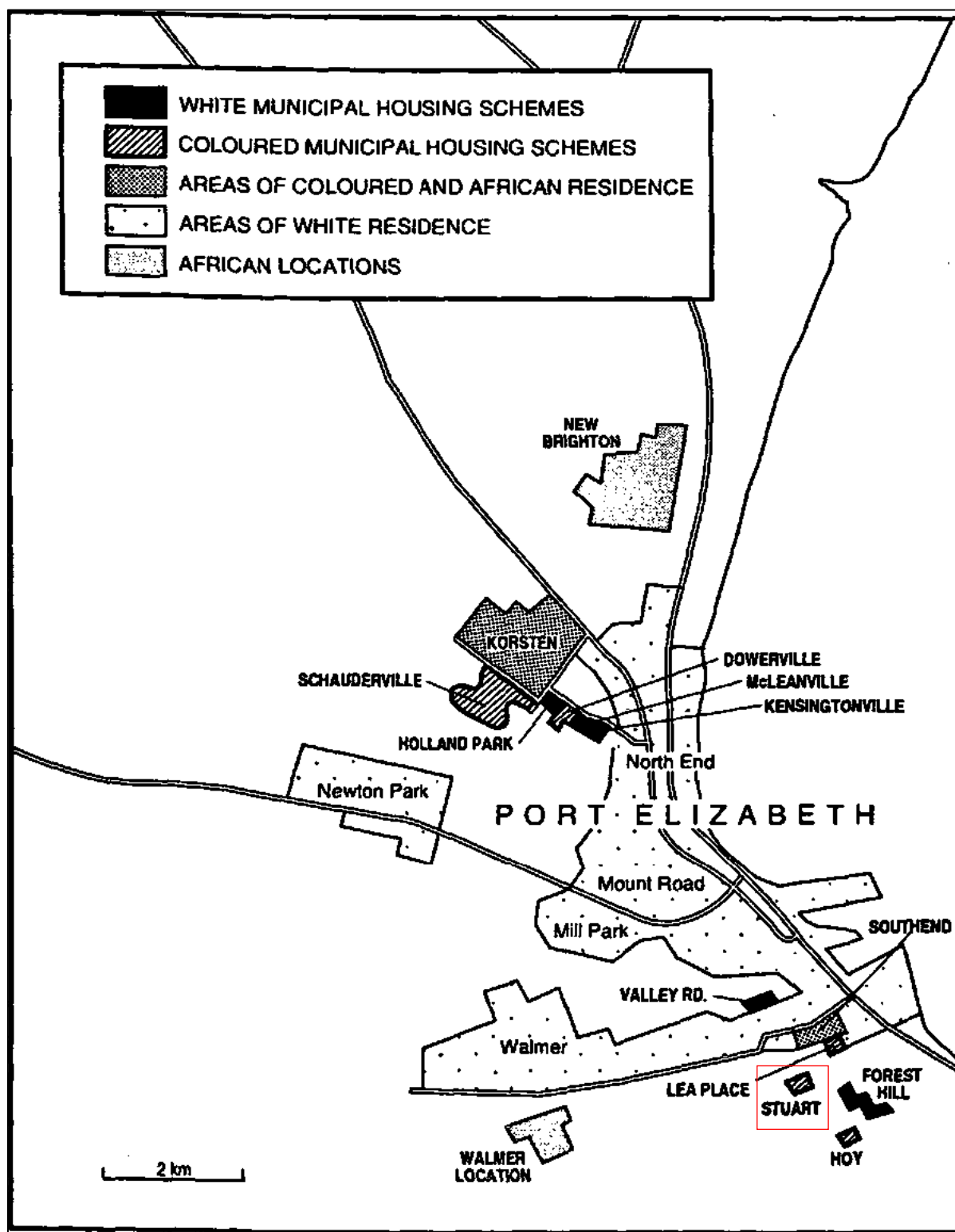


Figure 1. Port Elizabeth, Residential Areas and Municipal Housing Scheme, 1943 (Adler 1995).

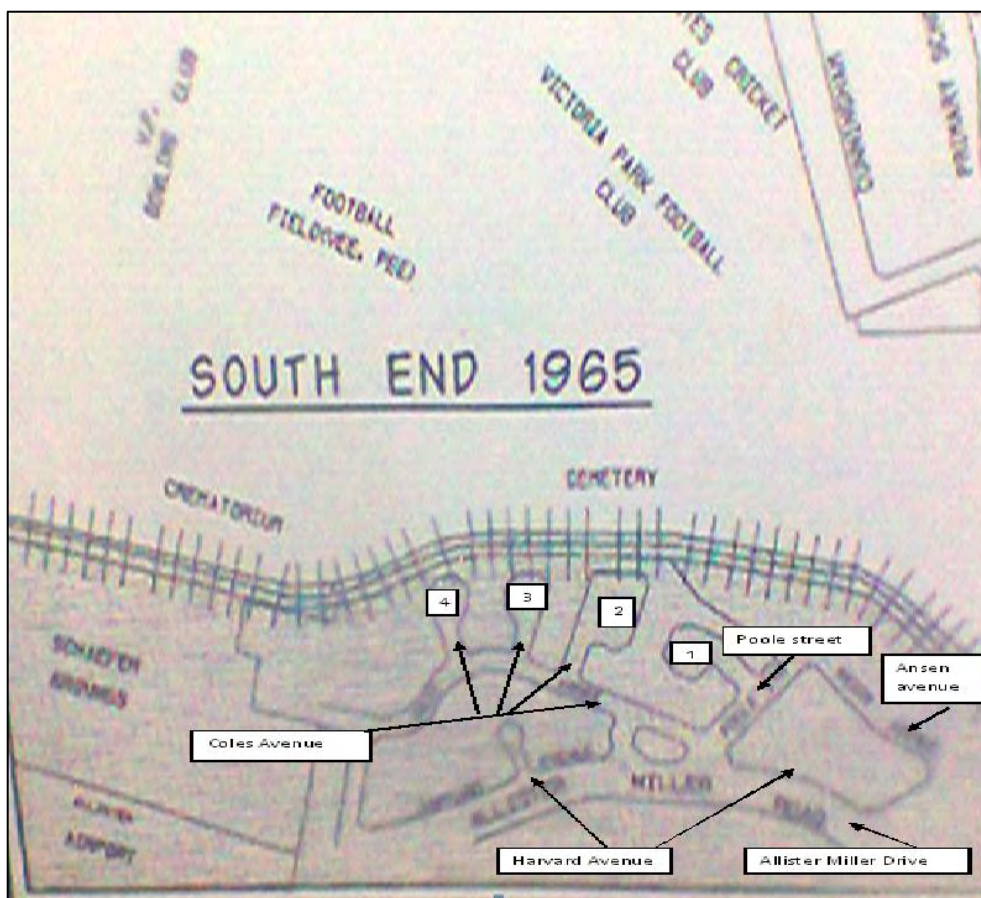


Figure 2. Map of South End 1965, showing the layout of Stuart Township (Agherdien *et al.* 1997).

Stuart Township was established in 1938, named after JH Stuart who became a municipal councillor in 1936, and was situated at the end of South End (current study area) (Figure 2: layout of Stuart Township). The settlement was largely built to house non-whites (members of the Coloured community). Two hundred semi-detached houses that included between 1 - 3 bedrooms were constructed (Figures 3-4). The houses were arranged on four squares, usually about twenty-six houses on one square, with a connecting lane to each square and a large opening off two roads to accommodate vehicles. One internal road, referred to as Poole Street, is still clearly visible and was accessed during the phase 1 archaeological impact assessment survey towards the railway walk bridge.

During the early 1950's non-white communities (members of the Coloured community) were moved from the nearby suburb of Forest Hill to resettle in houses added to Stuart Township for their accommodation. These houses were constructed on the eastern side of Poole Street. The proclamation of group areas in 1961 added immensely to the problem, as members of the non-white population (members of the Coloured community) living in South End, North End and other parts of the city would have to be rehoused in the new

Coloured group area stretching north from Schauderville. These removals occurred throughout the 1960s, and though the bulk of the Coloured population had been relocated by 1970 some smaller areas were cleared only in 1984. In remaking the residential map of Port Elizabeth, the removals orchestrated under the amended Urban Areas and Group Areas Acts also transformed social relationships within and between legally defined "groups." Coloureds and Africans were effectively physically separated in the Port Elizabeth municipal area by the late 1950s, while members of the Coloured community were gradually removed from European (white) areas by the early 1970s.

The removal and relocation of the original non-white residents (members of the Coloured community) of Stuart Township began in the late 1950's and continued to the 1960's. By the beginning of the 1970's the non-white residents (members of the Coloured community) of Stuart Township were completely removed and relocated to the northern areas of Port Elizabeth from Schauderville to Gelvandale. In 1972 Europeans (members of white population) were moved into Stuart Township (Figure 5). On 10 January 1979, 127 houses of Stuart Township were demolished (Mellandorp, L. pers com).





Figure 4. Close-up view of the semi-detached houses in Stuart Township (copyright Cory Library, Grahamstown).



Figure 5. View of Poole Street off the existing railway line walk bridge showing the western extent of Stuart Town (photograph taken during the early- to mid- 1970's after the white people were relocated to the settlement) (Jefta, K.: [www.newtownmemoirs.blogspot.com](http://www.newtownmemoirs.blogspot.com)).

## 5. DESCRIPTION OF THE PROPERTY

### 5. 1. Location data

The proposed area for development is located in the suburb of Walmer within an already developed area of Port Elizabeth, situated immediately north of the Port Elizabeth Airport and south of the South End cemetery, and immediately east the now demolished remains of Stuart Township. Although the proposed site is situated at about 2.4 km from the nearest coastline, which is considered to be within the 5 km sensitive coastal archaeological zone, this area of Port Elizabeth is already developed and built-up, therefore eliminating any possibility of finding *in situ* coastal shell middens and associated organic and material heritage resources. The currently disused railway line runs through the area and proposed route for the upgrade of the stormwater outfall system. The project area can easily be accessed off Allister Miller Drive, the main access route for the Port Elizabeth Airport.

### 5.2. Map

1:50 000 Map: 3325DC & DD 3425BA PORT ELIZABETH



Figure 6. 1:50 000 topographic maps 3325DC & DD 3425BA PORT ELIZABETH showing the location of the proposed area for development.

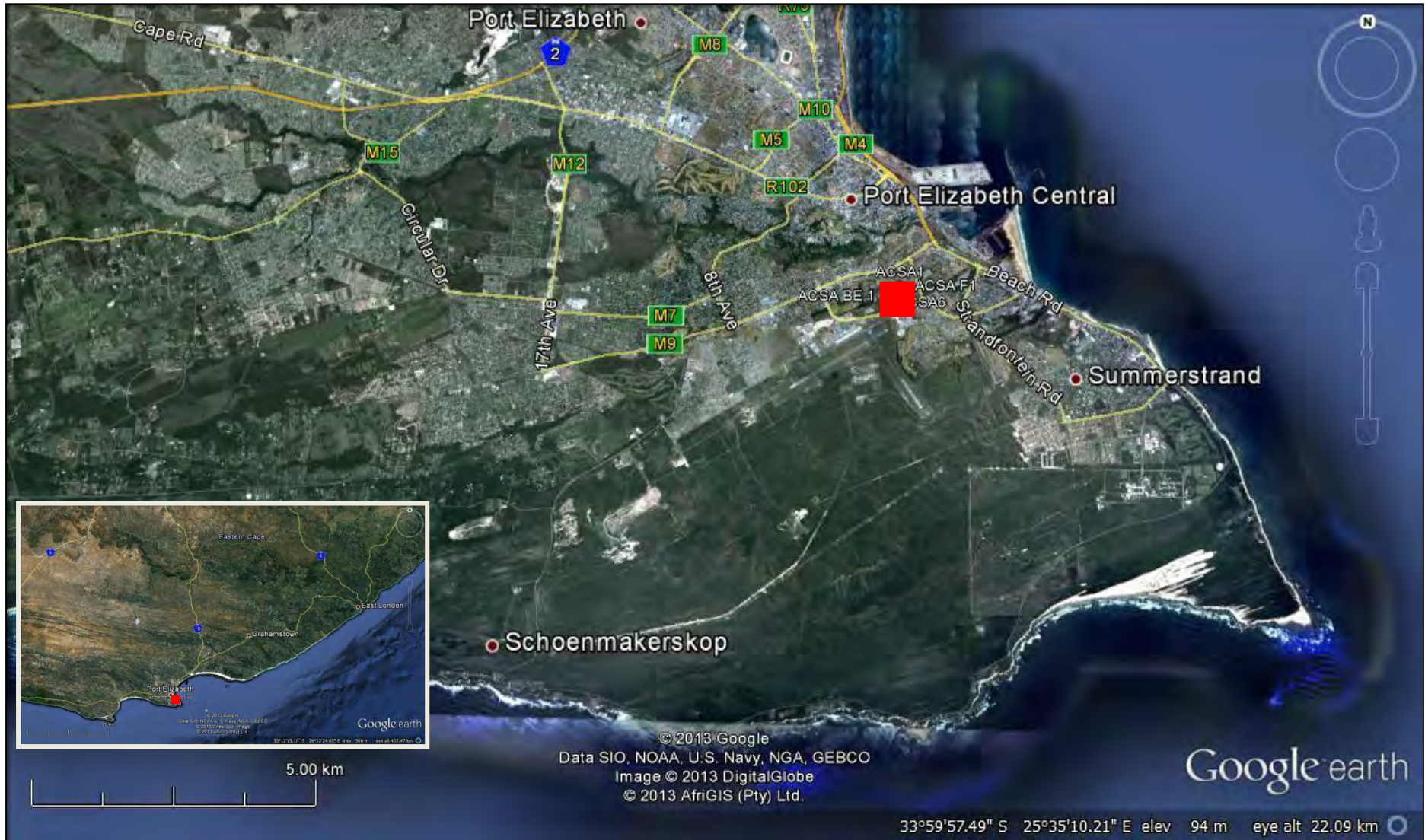


Figure 7: Aerial view of the location of the proposed area for the ACSA stormwater outfall system upgrade.

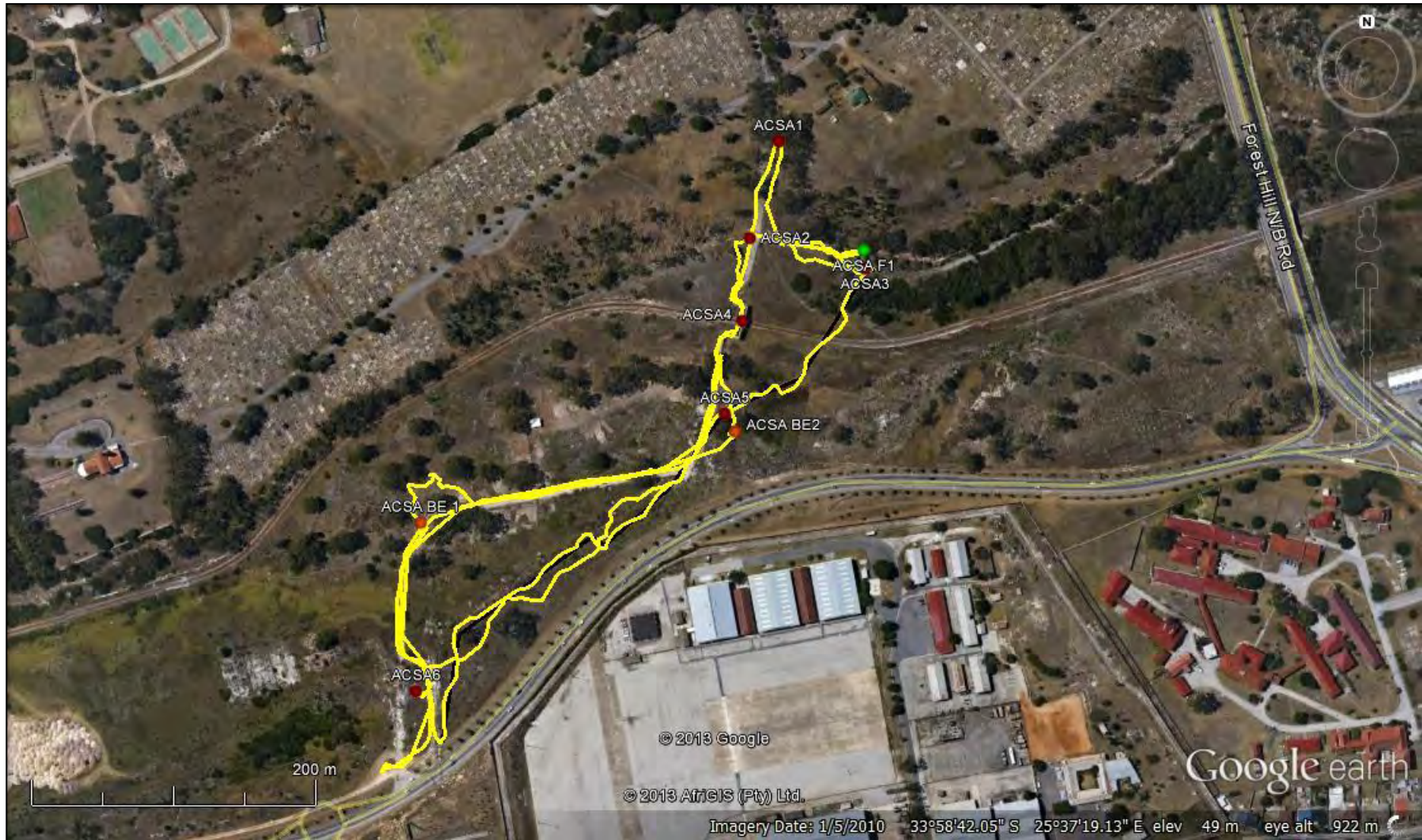


Figure 8. Close-up view of the proposed area for the ACSA stormwater outfall system upgrade showing the track surveyed, general GPS points, and points of interest (see Table 8.1 for description of points marked).





Figure 9. View of tracks and recorded areas in relation to the extent of the layout of Stuart Township (demolished in 1979) (blue outlines, not to scale).

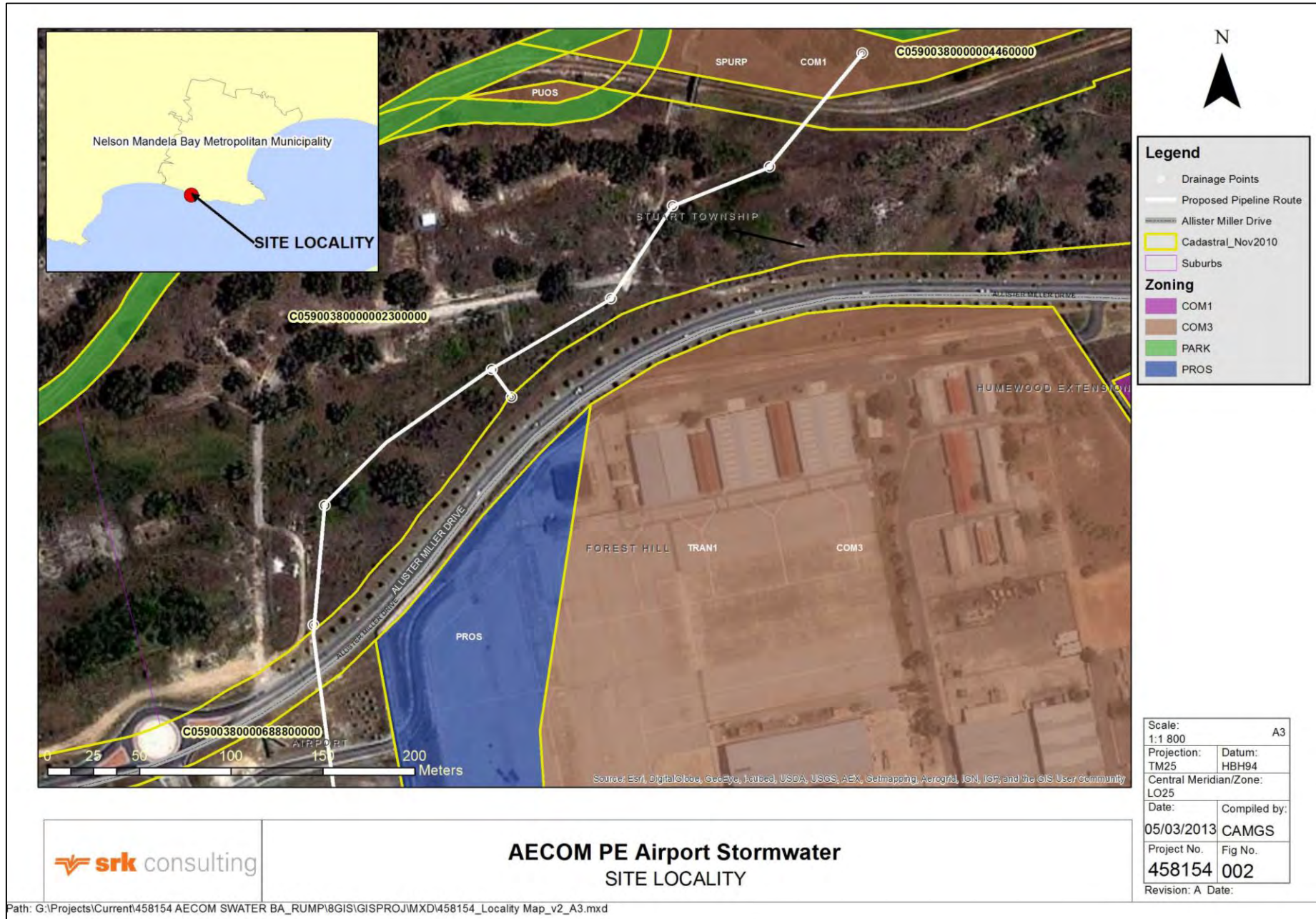


Figure 10. GIS generated map of the layout of the area proposed for the ACSA stormwater outfall system upgrade (image courtesy of SRK Consulting).



DRAWING REFERENCE	
No.	
LEGENDS	
STATUS	
PREPARED	DESIGNED
CHECKED	APPROVED
CLIENT APPR.	THREAT
APPROVED BY	CONTRACT AS SHOWN
NOTES	
REVISIONS	

DRAWN:	DESIGNED:
JW	JW
CHECKED:	ENGINEER:
JW	JW
CLIENT APPR.:	DATE:
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CLIENT:  
AIRPORTS COMPANY  
SOUTH AFRICA

CONTRACT:  
PORT ELIZABETH AIRPORT  
STORMWATER AND  
SUBSOIL DRAINAGE

TITLE:  
DISCHARGE AREA

DRAWING No:  
P-C113/PE/DE/006  
PROJECT No:  
P-C113  
REV. NO:  
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Figure 11. GIS generated map of the layout of the area proposed for the ACSA stormwater outfall system upgrade including the route of the existing pipeline (image courtesy of SRK Consulting).

## 6. ARCHAEOLOGICAL INVESTIGATION

### Methodology

The survey was conducted by three people on foot by following the proposed route for the stormwater outfall system upgrade. GPS readings and photographs were taken using a Garmin Oregon 550 (see Table 8.1 for description of points of interest). The GPS readings have been plotted on Figure 8.

Most of the area proposed for development is covered in dense grass and other vegetation with very few exposed surface areas, which made archaeological visibility difficult (Figures 11-14). The proposed area for development has been heavily disturbed by the construction of the built environment such as fences, roads (gravelled and tarred), a railway line and a railway bridge crossing (Figures 15-16). Building remains from the now defunct Stuart Township are visible over the wider area and can be identified by the uneven surface cover where it is possible that further remains occur below the current dense vegetation cover and growth (Figure 17). In addition, the surface would have been heavily disturbed during the construction of this pipeline and associated manholes and the construction of the houses and structures associated with Stuart Township (Figures 18-21).



Figure 12. View overlooking the vegetation cover towards the Port Elizabeth Airport.



**Figure 13. View of the landscape and dense grass and vegetation.**



**Figure 14. View of the landscape showing the dense grass vegetation.**



**Figure 15.** Example of one of the exposed areas within the immediate vicinity of the proposed pipeline route.



**Figure 16.** View of the bridge over the railway line leading into Poole Street (Stuart Township).



**Figure 17. View of the disused railway line running through the proposed route for the pipeline.**



**Figure 18. View of remains of the building structures associate with Stuart Township within the immediate vicinity of the proposed route for the pipeline.**



**Figure 19.** View of the existing underground stormwater pipeline proposed for upgrade.



**Figure 20.** Looking into one of the underground open manholes.





**Figure 21. View of manhole covers near to Allister Miller Drive.**



**Figure 22. View the manholes for the existing stormwater pipeline.**

Despite a systematic investigation, no pre-colonial or historical archaeological material was identified. No archaeological heritage remains were observed during the survey and it is therefore unlikely that *in situ* archaeological material would be uncovered during the construction activities.

Building foundations (ACSA BE1) (Figures 24-25) and possibly a livestock drinking trough (ACSA BE2) (Figure 24) were encountered during the survey and suggest that the building foundations were a part of Stuart Township that was demolished during the late 1950's and early 1960's owing to forced removals during that period. The remains of a road that may have been one of the internal roads and now leads to Forest Hill Drive can be observed at the most northern point of the proposed route for the pipeline, near the GPS point marked ACSA3.

The remains of the building foundations can be identified by stairs that are situated along the tarred road that runs through the wider area, about 165 m from the entrance along Allister Miller Drive. No historical heritage remains were identified in association the foundations, most of the materials identified seem to have been manufactured within the last 20 years and possibly littered or dumped within the area. The trough is not situated in the area proposed for development, and therefore is unlikely to be negatively affected by the construction activities.



Figure 23. View of the remains of the foundations at ACSA BE1.



**Figure 24.** View of the remains of the foundations at ACSA BE1.



**Figure 25.** View of the possible drinking trough observed during the survey of the surrounding area of the proposed route for the pipeline.

In addition, a stone packed circular feature (ACSA F1) (Figure 19), approximately 1 m x 1 m in extent with an upright rock placed in the middle of the circle was identified on a small hill directly above the remains of the old roadway. It is possible that the structure may have recently been packed for cultural, religious, or arbitrary purposes and does not occur within the proposed route for the pipeline.



Figure 26. View of the stone packed feature located at ACSA F1.

## 7. SURVEY AND DESCRIPTION OF SITES

No archaeological heritage remains were identified at the surface or within the exposed areas during the survey. Archaeological material is most often located beneath the surface of the soil, and there is still a possibility that artefacts (most likely not *in situ*) may come to light once the soil surface is removed.

Two built environment features, the remains of building foundations (ACSA BE1) and the possible drinking trough (ACSA BE2) were identified within the immediate area of the proposed route for the pipeline. It is unlikely that these features would be affected during construction activities. However, it is possible that the remains of additional building structures associated with Stuart Township would be uncovered underneath the dense vegetation. As Stuart Township was established in 1938 and the eastern side of Poole Street extended by 1951, the remains of the settlement are generally protected under the National Heritage Resources Act (NHRA 25 of 1999).

One stone packed circular (ACSA F1) (probably recently packed) was identified outside of the proposed route for the pipeline. This feature should not be negatively affected by the construction of the pipeline.

## 8. GPS CO-ORDINATES AND SITES FOR THE PROPOSED ACSA STORMWATER OUTFALL SYSTEM UPGRADE.

**TABLE 8.1. GPS CO-ORDINATES AND SITES FOR THE PROPOSED ACSA STORMWATER OUTFALL SYSTEM UPGRADE.**

REFERENCE	DESCRIPTION	CO-ORDINATES	HERITAGE RATING
<b>Built Environment and Features</b>			
ACSA BE1	Remains of building foundations	33° 58'44.35"S; 25° 37'11.01"E	III
ACSA BE2	Possible drinking trough	33° 58'42.25"S; 25° 37'19.70"	III
ACSA F1	Stone packed circular feature (probably modern)	33° 58'38.08"S; 25° 37'23.26"E	N/A
<b>General GPS Readings</b>			
ACSA1	Northern most point of the proposed development area	33° 58'35.60"S; 25° 37'20.90"E	N/A
ACSA2	Area disturbed by a roadway	33° 58'37.80"S; 25° 37'20.10"E	N/A
ACSA3	View of surrounding area	33° 58'38.50"S; 25° 37'23.30"E	N/A
ACSA4	Bridge (area surrounding the railway very disturbed)	33° 58'39.70"S; 25° 37'19.90"E	N/A
ACSA5	Original track	33° 58'41.84"S; 25° 37'19.41"E	N/A
ACSA6	Remains of structures associated with Stuart Township	33° 58'48.2"S; 25° 37'10.90"E	III

## 9. CONCLUSION

The phase 1 archaeological impact assessment was conducted by three people on foot by following the route proposed for the upgrade of stormwater outfall that will run parallel to the existing pipeline and cross under the Allister Miller Drive and the railway line to a discharge point into the Hume River.

Two built environment features, namely the remains of building foundations and a possible drinking trough were observed during the survey. These areas are outside of the footprint for the outfall system upgrade and should not be negatively affected by the construction activities. However, it is possible that the remains of additional building structures associated with Stuart Township would be uncovered underneath the dense vegetation.

Stuart Township was established in 1938 and extended during 1951, therefore the remains are older than 60 years and are protected under the National Heritage Resources Act (NHRA 25 of 1999). Owing to the state of the remains of the structures the significance of the built environment is low and a demolition permit should be applied for to keep in line with the legislation. One stone packed circular feature was identified on the road cutting adjacent to the remains of an old road. This feature is most likely recent. However, the feature does not occur within the development footprint and should not be negatively affected by the construction activities.

No archaeological heritage resources were identified during the survey; this may be attributed to the lack of exposed surfaces and obscured visibility owing to the dense grass vegetation. The area has already been heavily disturbed by previous farming activities, the construction of roads, the railway line, the walk bridge over the railway line, as well as the existing stormwater pipeline and likelihood of encountering *in situ* archaeological heritage remains is minimal. However, it is common for stone artefacts to occur between the surface and between 50 - 80 cm and the developers, foremen, and/or the Environmental Control Officer should be informed of the possible heritage remains that may be encountered.

## 10. RECOMMENDATIONS

The area is of a low cultural sensitivity and development may proceed as planned, although the following recommendations must be considered:

1. A demolition permit should be applied for as the remains and ruins of Stuart Township and its later extension in 1951 is older than 60 years and may be covered by the dense vegetation within the proposed route for the stormwater outfall system.

2. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.
3. Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

## 11. REFERENCES

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## 12. RELEVANT ARCHAEOLOGICAL IMPACT ASSESSMENTS

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### 13. GENERAL REMARKS AND CONDITIONS

**Note:** This report is a phase 1 archaeological heritage impact assessment/ investigation only and does not include or exempt other required heritage impact assessments (see below).

The National Heritage Resources Act (Act No. 25 of 1999, section 35) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasized that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, reflect the true state of affairs. Many sites/features may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, (such as during any phase of construction work), archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act No. 25 of 1999.



It must also be clear that Archaeological Specialist Reports (ASRs) will be assessed by the relevant heritage resources authority. The final decision rests with the heritage resources authority, which may grant a permit or a formal letter of permission for the destruction of any cultural sites.

## APPENDIX A: GRADING SYSTEM

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- Grade I: Heritage resources with qualities so exceptional that they are of special national significance;
- Grade II: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- Grade III: Other heritage resources worthy of conservation on a local authority level.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable mitigation measures would allow the development activities to continue.

## APPENDIX B: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AND COASTAL AREAS: guidelines and procedures for developers

### 1. Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this.

### 2. Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m<sup>2</sup> in extent, should be reported to an archaeologist.

### 3. Marine Shell middens

Shell middens can be defined as an accumulation of marine shell deposited by human agents rather than the result of marine activity. The shells are concentrated in a specific locality above the high-water mark and frequently contain stone tools, pottery, bone and occasionally also human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m<sup>2</sup> in extent, should be reported to an archaeologist.

### 4. Stone artefacts

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified

### 5. Fossil bone

Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

## 6. Large stone features

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

## 7. Historical artefacts or features

These are easy to identified and include foundations of buildings or other construction features and items from domestic and military activities.