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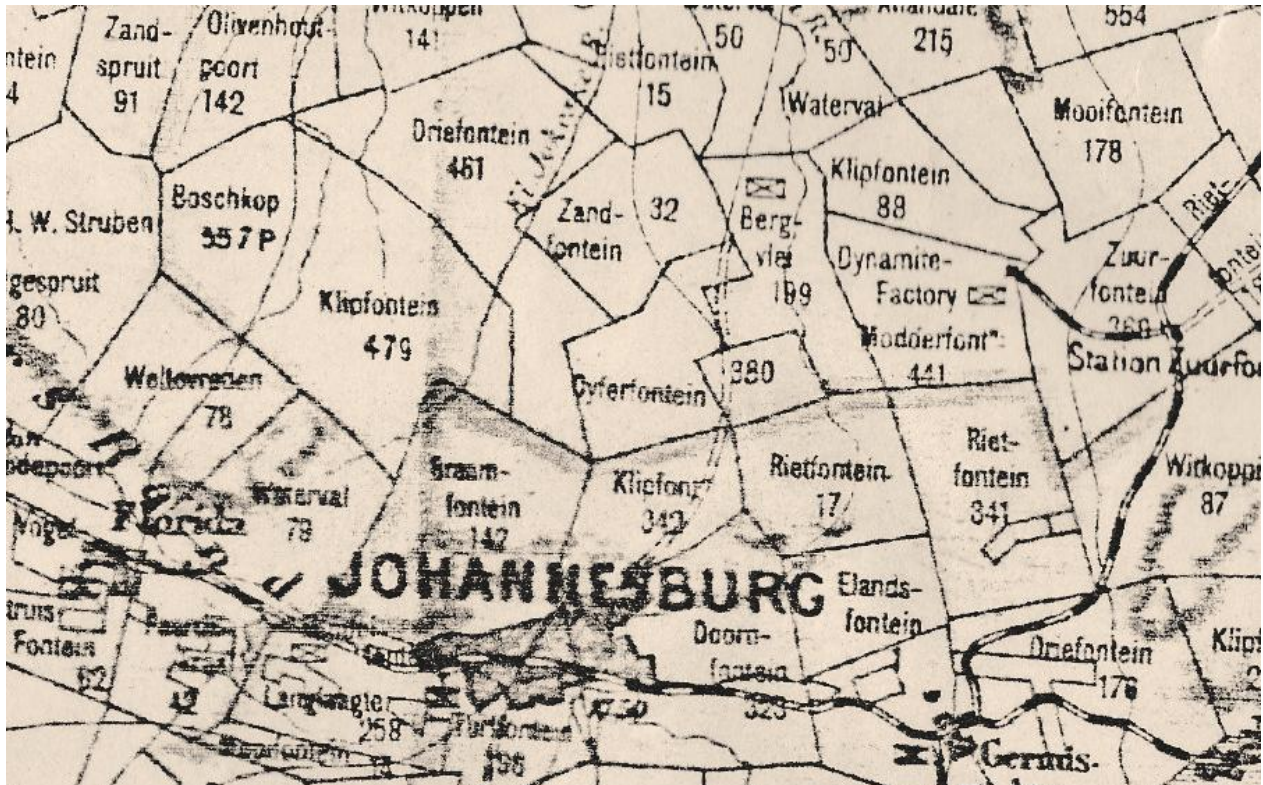
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*1st phase heritage impact assessment along Katherine Street for the Johannesburg Metro's proposed Bus Rapid Transit System from down town Sandton to Alexandra*



**Report compiled by Sidney Miller.**

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**PREAMBLE**

This First Phase Heritage Impact Assessment provides an inventory of the heritage resources that may be impacted by the proposed new BRT route.

It has been recommended that a Second Phase Heritage Impact Assessment be conducted for the structures that will be affected by the proposed new BRT route. The objectives of the Second Phase Heritage Impact Assessment are to assess the significance of the heritage structures affected, assess the impact of the project on these structures and recommend appropriate mitigation measures to minimise negative impacts.

## **1. EXECUTIVE SUMMARY**

African Heritage Consultants were tasked to undertake a first phase heritage impact assessment for the Johannesburg Metro's proposed new Bus Rapid Transit System between Sandton and Alexandra along Katherine Street, from Sandton Drive to Lees Street, Alexandra.

The engineering plans of the route were studied as well as the positioning of the Bus Stations. The full route was surveyed, evaluated and photographed as can be seen in the document below and its addendums.

Along the whole route only one "heritage building" was identified, and that is set behind a high garden wall and well away from the road. (*See figure 44 in the Photographic Addendum.*)

No road construction, curbing stones or paving that can be described as having heritage value, could be identified.

No street furniture or lighting or fences that can be described as having heritage value could be identified.

It is accepted that archaeological historical and human remains that are located sub-surface along the route cannot be identified at present, for obvious reasons. If such remains are encountered during construction then the heritage authorities must be contacted so that mitigation may proceed.

There is a bridge in Katherine Street where it crosses the Sandspruit that appears to be older than sixty years (SEE PAGE 24). If the bridge is to be impacted upon during construction then a second phase study will need to be conducted to clarify its status within the proposed design parameters (that does not exist at present).

### ***Recommendation***

***Taking all into consideration it is therefore recommended that the construction of the Bus Rapid Transit system along this route may proceed without further heritage mitigation. If the Katherine Street Bridge over the Sandspruit is to be impacted upon then the necessary mitigations required by Act 25 of 1999 must be adhered to. This normally requires a second phase heritage impact study that has to be perused and approved by PHRA. If the second phase study is approved by PHRA then an application for a demolition report must be handed in to PHRA. If approved, then it will be issued by PHRA and work on the bridge will be able to proceed.***



**Sidney Miller.**

**B.Sc (Eng) Civ. M.(Architecture) Conservation. ASAPA member no 087**

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## **2. DEFINITIONS**

The broad generic term *Cultural Heritage Resources* refers to any physical and spiritual property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, belief or social interaction.

### **PROTECTED SITES IN TERMS OF THE NATIONAL HERITAGE ACT, Act. NO. 25 OF 1999**

The following are the most important sites and objects protected by the **National Heritage Act: (see sections 4.1 and 4.2)**

- a. Structures or parts of structures older than 60 years**
- b. Archaeological sites and objects**
- c. Palaeontological sites
- d. Meteorites
- e. Ship wrecks
- f. Burial grounds
- g. Graves of victims of conflict
- h. Public monuments and memorials**
- i. Structures, places and objects protected through the publication of notices in the Government and Provincial Gazette**
- j. Any other places or objects which are considered to be of interest or of historical or cultural significance**
- k. Geological sites of scientific or cultural importance
- l. Sites of significance relating to the history of slavery in South Africa
- m. Objects to which oral traditions are attached
- n. Sites of cultural significance or other value to a community or pattern of South African history**

We furthermore specifically also refer to in Act 25 of 1999:-

#### **Section 4.1.3. Heritage Impact Assessment**

**Section 4.1.3.a.** The construction of a linear development such as a road exceeding 300 meters in length

**Section 4.1.3.e.** Any other category provided for in the regulations of SAHRA or by PHRA

#### **Section 4.1.5. Archaeology, Palaeontology and Meteorites**

This section states clearly that archaeological material in any form may only **be disturbed** after receiving a permit from SAHRA. It also states clearly that **to destroy** such a disturbed site a second and separate permit is required.

### **3. PROTECTED SITES IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (Act 107 of 1998)**

The environmental act requires that:

*“The disturbance of landscapes and sites that constitute a nation’s cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied”.*

## **4. METHODOLOGY**

African Heritage Consultants, *further referred to as A.H.C.*, were tasked by Iliso to undertake a first phase heritage impact assessment on the proposed new Bus Rapid Transit System for the Johannesburg Metro along Katherine Street, from Sandton Drive to Lees Street, Alexandra.

To fulfil this mandate a number of specific working parameters were defined and specific actions taken.

### **4.1. Parameters.**

4.1.1. Previous observations by A.H.C. on three similar lines in the Tshwane Metro are utilised in the compilation of this report.

4.1.2. Vehicles and traffic of the proposed Bus Rapid Transport System had no negative impact on the Heritage Estate (as defined by Act 25 of 1999) along the route if the buildings or sites were not physically impacted upon by the proposed demolition or alteration of such buildings or sites.

4.1.3. Any excavation along the proposed route of the Bus Rapid Transport System in any location older than 100 years will be perceived as possible impact on an archaeological site as defined by Act 25 of 1999.

4.1.4. If excavations as described in 4.1.3 are planned, then such proposed excavations on the appropriate areas will have to be evaluated in a second phase study.

4.1.5. If landscaping to sidewalks is planned in areas along the route that are considered to be protected by Act 25 of 1999), such alterations on the appropriate areas must be evaluated in a second phase study.

4.1.6. Placement of bus terminuses. Where it is found that the structural presence of bus terminuses may have a negative impact on heritage buildings or sites, the location of such bus terminuses may have to be relocated, or their design adapted to suit the site and its historical environment.

4.1.7. "Heritage buildings and sites" are buildings and sites known to be older than 60 years.

4.1.8. "Buildings and sites of interest" are buildings and sites that are marginally younger than 60 years but have the potential to achieve the status of a "heritage building or site" where design, prominent architects, scientific innovation or recent political "struggle" issues are present.

4.1.9. The remarks and conclusions of A.H.C. are not finite, and will have to be approved by the Provincial Heritage Authorities after PHRA's perusal of the report and the attached proposed design plans and diagrams.

4.1.10. The legal public participation processes required regarding heritage issues will be conducted by an independent consultant of the Johannesburg Metro.

4.1.11. It must be understood that no construction may proceed without clearance by PHRA.

### **4.2. Working procedure of A.H.C.**

4.2.1. All relevant maps and documents that pertain to the project and the proposed route were studied and considered by A.H.C.

4.2.2. The route was visited and photographed on several occasions.

4.2.3. The full extent of the route was evaluated and “heritage buildings and sites” as well as “buildings and sites of interest” were recorded.

4.2.4. As this is only a first phase study no DETAILED RECORDING of buildings and sites was done.

4.2.5. DETAILED RECORDING of buildings and sites will only be undertaken if necessitated by any impact of the proposed Bus Rapid Transit System on certain buildings and sites.

4.2.6. For purposes of recording the route was divided into sections already identified on the engineer’s drawings, and photographs and evaluation of the relevant buildings and sites of importance were documented.

4.2.7. Since it is not possible to predict the sub-surface condition of the route and the possible archaeological remains that may occur there, the mitigation of such material will be an ongoing concern during construction.

## **5. INTRODUCTION.**

African Heritage Consultants were tasked by Iliso to undertake a first phase heritage impact assessment on the proposed new Bus Rapid Transit System for the Johannesburg Metro, running along Katherine Street, from Sandton Drive to Lees Street, Alexandra.

The purpose of this proposed Bus Rapid Transit System is a continuation of a nation-wide project for the rolling out of an improved public transport system. The reason for this is that the Bus Rapid Transit Systems would alleviate traffic congestion, make medium distance transport more affordable and complement existing transport systems such as metro busses, taxis and rail transport.

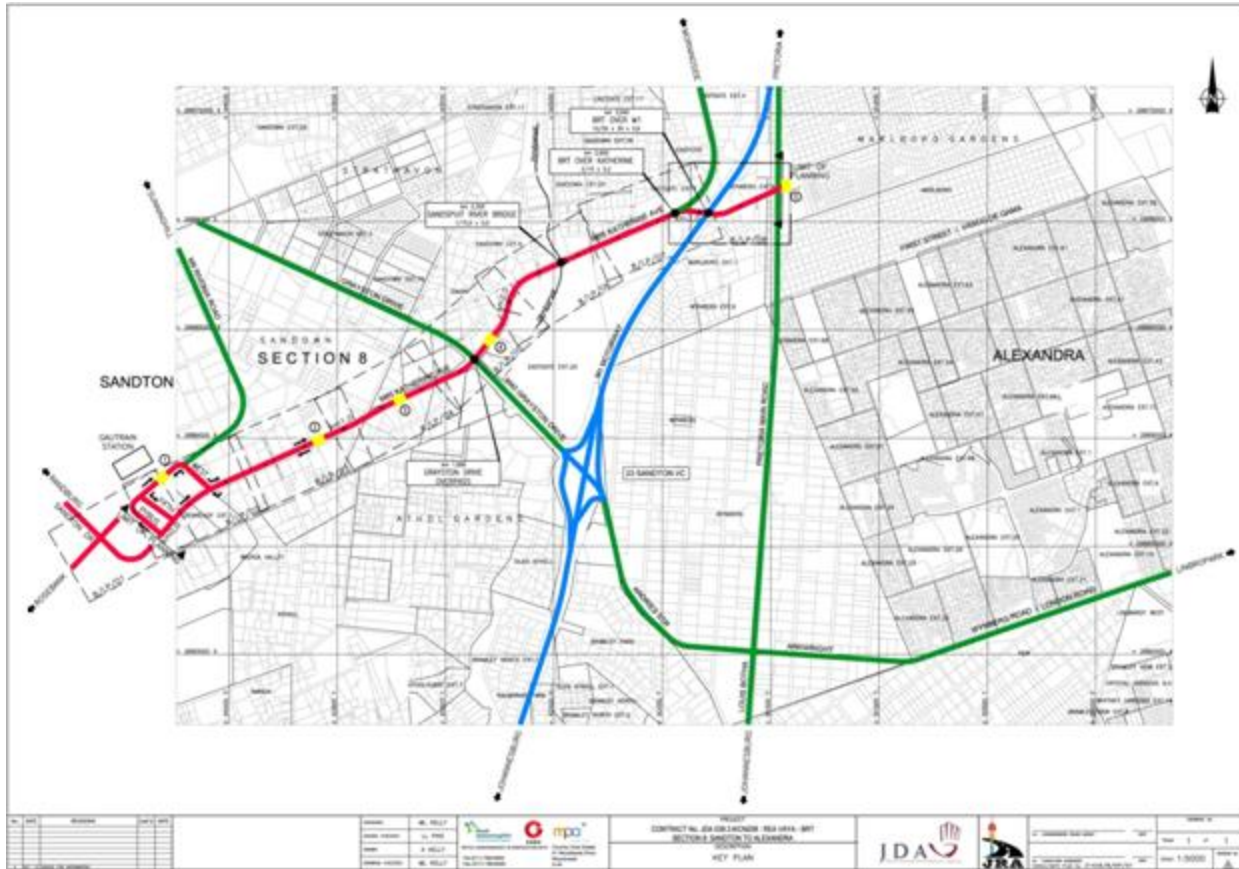
The system has already become reality in other cities in South Africa, and from a heritage point of view has so far had little negative effect on historic buildings and sites. In certain cases, such as in Paul Kruger Street in Pretoria Central, the system in conjunction with the landscaping will in fact aid the showcasing of historic buildings, improve and protect historic sidewalks, and will assist transfer of knowledge regarding the past to the public.

The present proposed route that is investigated is aligned as follows:

The route will commence near the Holiday Inn Garden Court area where Sandton Drive becomes Katherine Street. It then passes to the north of Dennehof and Wierda Valley and to the south of Sandown. At Athol Gardens it passes below Grayston Drive and onwards to Barlow Park. Where Katherine Street turns sharply to the north, a proposed new bridge will cross the De Villiers Graaff Motorway and link onto Lees Street, Marlboro South. The proposed route will terminate at the Pretoria Main Road.

Johannesburg, at only 127 years, is one of the youngest cities in the world but the massive impact of the gold that was discovered and mined during its formative years caused an explosion in dimension between 1886 and the outbreak of the Second World War in 1939, by which time most of its suburbs were already defined.

The impact of the wealth from the gold mining industry is manifested by suburbs such as Sandown, Strathavon and Athol Gardens. These suburbs reflect the footprint of architecture of the Edwardian, Art Deco and modern periods as present in a South African context.



*Fig. 01. BRT Route Map*

More important still, the suburb of Alexandra adjacent to the predominantly white suburbs has also survived into the twenty-first century along with the baggage of the previous political dispensation but its historic voice remained in its architecture of small houses and blocks of flats that were intended as one of the solutions for a black residential area near Johannesburg Central.

The proposed Bus Rapid Transit System now will pass through all the above-mentioned suburbs as well as several other newer suburbs thus linking the past because of a common need: to alleviate the rising cost of energy and transport.

Although there are many voices<sup>1</sup> that are raised for other reasons against the establishment of a nation-wide Bus Rapid Transit System, the actual impact on historical buildings and sites will be minimal.

As the possible expected impact of the Bus Rapid Transit System on heritage remains, it is necessary to identify any possible impact and mitigate it in the manner described by act 25 of 1999, the National Heritage Act

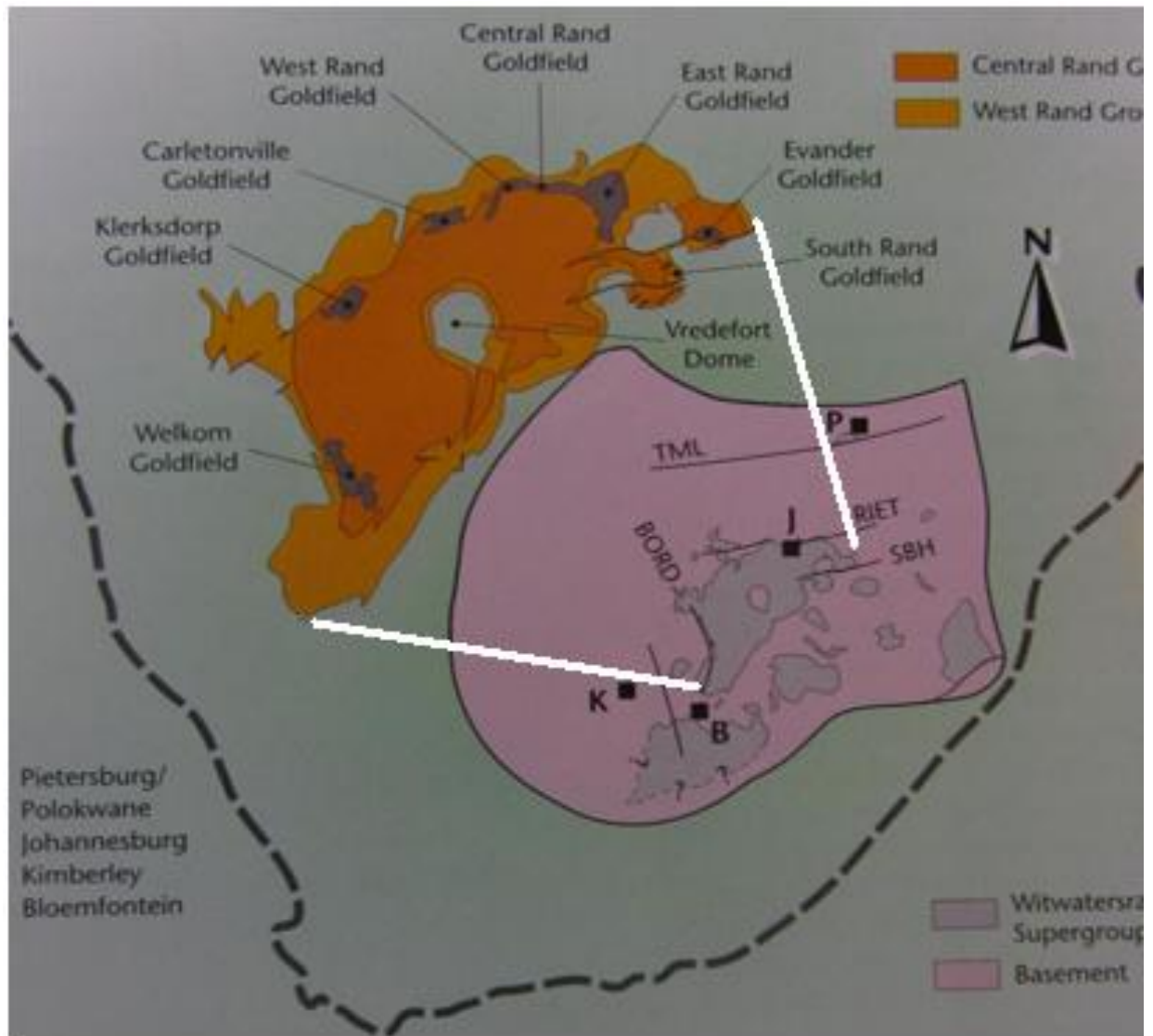
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<sup>1</sup> The system will impact negatively on the Taxi transport systems, and in built-up areas it removes 50% of the road available for normal commuters



## 6. ECOLOGY.

### 6.1. Geology. (See McCarthy & Rubidge, 2005, for full description.)



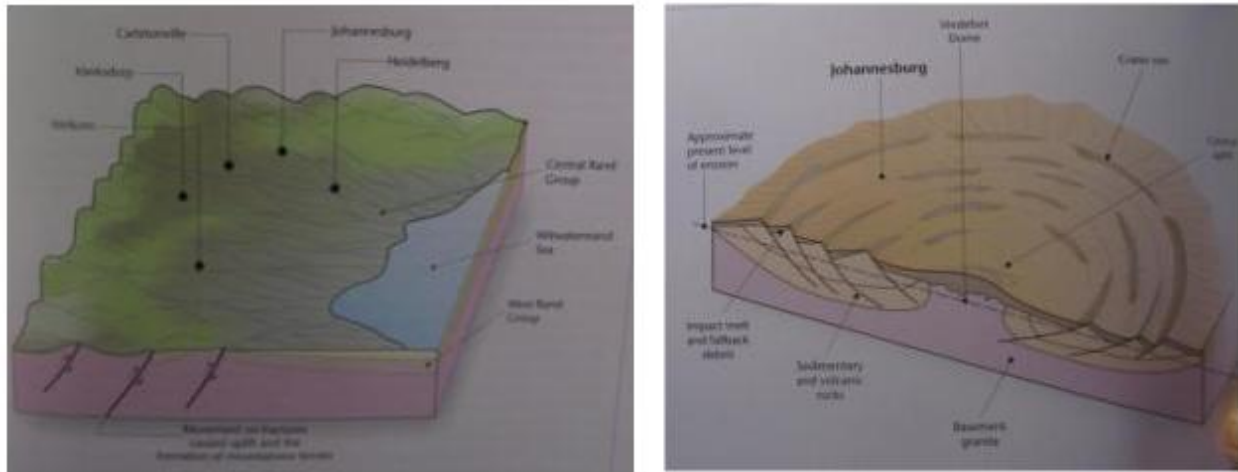
**Fig. 02.** The remains of two pre-Pangean continents, the Kaapvaal Craton and the Zimbabwean Craton collided some 2700 million years ago. This resulted in the tilting of the Kaapvaal Craton and the erosion and winnowing of heavy metals into a shallow sea. The area shaded in pink is an estimated shape of the Transvaal Craton, while the orange area is an enlargement of the central goldfields. (McCarthy and Rubidge, p 102.)

If it had not been for the mineral composition of the geological under-build of the region it is very possible that this structure would not have existed: the gold deposits, and their associated minerals, that were deposited along the MAIN REEF. The origins of these geological phenomena are rather complex which possibly only a few geologists would understand. See McCarthy and Rubidge, p.102.... 'The rocks of the Witwatersrand Supergroup were originally widely distributed over the Kaapvaal Craton, but much has been removed by erosion, leaving only the scattered remains shown in figure 01. The enlarged inset shows the main area of preservation of the Witwatersrand Supergroup basin. The major goldfields occur in an arc around the western and northern sides of the basin. The locations of these goldfields were

determined by earth movements along faults such as the Thabazimbi-Murchison (TML) Line, the Rietfontein (RIET) Fault, the Sugerbush (SHB) Fault and the Border (BORD) Fault.

The authors further state that between 2 700 and 2 000 million years ago the crust tilted again, trapping the gold deposits against one side of the TranSvaal basin. With the impact of the Vredefort meteorite, large portions of the gold-bearing geological structures were infolded by the impact phenomena, effectively shielding it against erosion and therefore preserving large portions of the original deposits.

Although the gold of the Zimbabwe Craton was discovered and utilised by Africans more than a thousand years ago, the central goldfields were only discovered in 1886 after the Pilgrims Rest, Baberton and Magaliesberg alluvial fields were identified in the 1870s.



**Figs 03 and 04.** The two most important reasons for the central South African Goldfields: dilution of heavy minerals into an ancient maritime environments and the Vredefort meteorite impact event. (McCarthy and Rubidge, p 103 and 136.)

## 6.2. Vegetation. (See Acocks, 1988)<sup>2</sup>

According to Acocks three of his original veld types are present in and around Johannesburg. Veld type 61 to the north of Johannesburg which consist of three variations, i.e. (a) the Eastern, (b) Central and (c) Western categories. In Johannesburg it is Type 61 (b) that concerns us. Apparently it is possible that this type is a derivative of an *Acacia caffra* savannah which it still is in parts. It is a sparse and tall tufted type with the forbs playing an important part, and is extremely sour. It is the veld type of the Witwatersrand and the high undulating country sloping down to the Magaliesberg. The rocks are mainly quartzite, shale, dolomite, chert and granite. The soils are poor and acid, either stony or sandy with an altitude of 1450 to 1750 metres above sea level. Rainfall is in the region of 750 mm per annum and the winters are cold and frosty. Combined with continuous burning the veld is particularly sour and supports wiry grazing, not particularly edible for livestock. At the Rietvlei research station though, it was shown that the veld was particularly suitable for intensive farming.

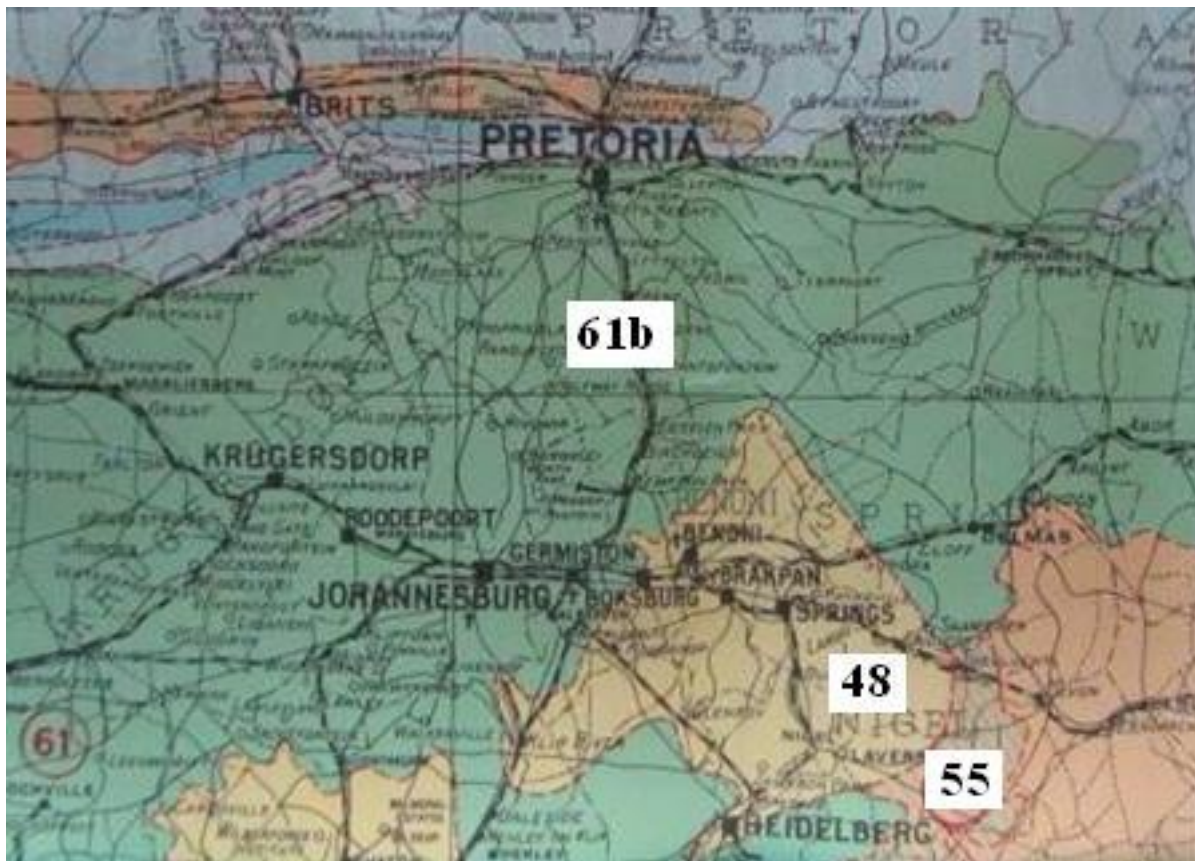
Rocky ridges carry Bushveld vegetation dominated by *Protea caffra*, *Acacia caffra*, *Celtis africana* and sometimes *P. welwitschii* as well as a large number of South Bushveld shrubs in smaller numbers. A typical plant of the hills is *Xerophyta retinervis*. In sheltered valleys and sinkholes there are traces of

<sup>2</sup> The author is aware of the updated version of Acocks's work by Mucina & Rutherford, 2010, but for the purposes of this publication Acocks version is preferred.

temperate or transitional forest, with species such as *Celtis africana*, *Kiggelera africana*, *Halleria lucida*, *Leucosidea sericea*, *Buddleja salviifolia* and *Cassinopsis ilicifolia*, for example in the Fountains Valley in Pretoria, which is in great contrast to the traces of tropical forest a few miles away in the kloofs of the northern slopes of the Magaliesberg. For the extremely long lists of grass species and succulent species see page 114 of Acocks.

Acocks describes his type 48 as *Cymbopogon-Themeda* grass-veld. It also consists of two regions, north and south, the south being a moderately dense grass-veld, and the north a sparser more tufted veld. Altitude varies between 1350 and 2000 m above sea level with summer rainfall of between 450 and 750 mm per annum severe frosty winters. Amongst the grasses that generally occur are *Setaria flabellate*, *Themeda triandra*, *Heteropogon contortus*, a number of *Eragrostis* species and others (Acocks p 100-101)

The greatest impact that this vegetative composition had on the development of the goldfields was that there was no wood available for either shelter, construction work, heating or food preparation. This resulted in the transport of wood from other parts of the region, the planting of millions of trees and the discovery and development of the regional coal fields.



*Fig. 05. Johannesburg is located on the intersection of two different veld type zones as illustrated above, with a third located towards Heidelberg. (Acocks map, Veld Types of Southern Africa.)*

## **7. ARCHAEOLOGY AND EUROPEAN BACKGROUND**

### **7.1. Stone Age**

Although there are no well-known type sites located on or around the study area there is evidence of the use of the area during the formative years of man along the Klip River<sup>3</sup>. At Vereeniging in the 1920s, Van Riet Lowe discovered extensive stone tool ensembles of the Early Stone Age, which at the time were protected as national heritage sites.

Regarding the Later Stone Age there does not appear to be much evidence of the hunter gatherers utilising the area, except for petroglyphs that occur at Redan some sixty kilometres to the south and several engraving sites along the Vaal river near Vereeniging and Van der Bijl Park that were utilised possibly by pastoralists and/or hunter gatherers during the last five millennia.

*Regarding the present study area, Stone Age remains will not influence the development.*

### **7.2. Iron Age**

#### **7.2.1. Early Iron Age remains.**

The only Early Iron Age remains known in the greater Johannesburg region is the Broederstroom village site, and the Melville Koppies Smelting sites excavated by Professor Mason from the Department of Archaeology of WITS in the 1980s.

*As these sites are extremely rare, it is unlikely that material from the same period will be encountered in the present study area.*

#### **7.2.2. Later Iron Age remains.**

From the fifteenth century onwards we find a diverse population of Iron Age people utilizing the grasslands of the Highveld. Towards the northwest there were first the ancestors of the Sotho/Tswana language groups and to the east the ancestors of Nguni/ Ndebele speakers. From the eighteenth century onwards stone-walled villages arose and cultural materials developed that distinguished the language groups from another. Owing to population pressure in the human landscape there were also shared landscapes that may have been brought about either civil or belligerent interaction. In the second and third decades of the nineteenth century the appearance of Mzilikazi in the landscape to the north brought an abrupt halt to normal African life.

Many hundreds of remains from this period can be seen in the non-urbanised areas between Parys and Heidelberg, which pointed to a rather intense occupation of the region. The best known remains are those excavated by Mason on Klipriviersberg.

*As these sites are relatively rare, it is unlikely that material from the same period will be encountered in the present study area.*

### **7.3. European settlement.**

#### **7.3.1. The Great Trek**

The Great Trek is rather incorrectly named, as no more than between five percent and twenty percent of the Cape population in fact left British Authority, over a period of three to four years. With the split between the Maritz Group and the Pretorius group and the fragmentary nature of the ‘Northern Group’

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<sup>3</sup> The tools discovered by Van Riet Lowe were from the early and middle stone age periods

there was little coherence in their 'settlement plan', and many were originally simply killed by indigenous people such as the Van Rensburg Trek, or by the rigorous and dangerous nature of Africa such as the Louis Trichardt Trek. Some prematurely settled in 'towns' such as De Clercq and only over a period of ten years were Potchefstroom, Lydenburg, Ohrigstad and Schoemansdal born. Although towns were founded, they were only functional as focal points for religious, political, governance and trade activities. Most of the populace were settled on farms and retained townhouses for periodical visits.

Shortly after the end of the Great Trek around 1840 a number of families settled in, on and around the warmer Bushveld hunting ground to the north. However they soon became aware of the discomfort during the summer in the Lowveld regions and the obvious advantages of the Highveld where it was cooler with good grazing. This resulted in the two-farm system with entire households and their livestock moving back and forth between the two farms.



**Fig. 06.** *The remains of one of the Schutte family's dwellings from the 1850s on the farm Deelkraal to the southwest of Johannesburg, which is typical of early pioneer architecture.)*



**Fig. 07.** *Willem Petrus Prinsloo (1820-1898) was one of the famous landowners in Johannesburg's history. He owned the farm Modderfontein during the discovery of the Johannesburg goldfield which was only used for the movement of his livestock to and from the winter grazing areas in the Bushveld. A mining syndicate bought his farm for a 'princely sum'. With this money he purchased a number of farms to the north, among them the 699 hectares of land of the farm Elandsfontein in 1896 from the Minnaars, old friends of his family.*

*Modderfontein turned out to be the Brakpan and Benoni goldfields and Elandsfontein was the Cullinan diamond mine. (Helme 1974:35).*

### **7.3.2. Johannesburg**

The original population of the Z.A.R., or the Transvaal, were pastoralists of Dutch descent and their only wish was to be rid of the dominance of Britain, particularly the laws related to slavery. They were also well aware of the British hunger for minerals and did their best to subdue and restrain any rumours about the presence of minerals in the Transvaal. This state of affairs is best illustrated with the way in which Carl Mauch was unceremoniously bundled out of the Z.A.R. in 1872 after three years of geological survey and his remarkable discoveries. As he was not allowed to return he committed suicide in Germany soon after.

But word got out of his work and soon the floodgates opened. On the back of the Kimberly diamond field's wealth it was not long before the *Eersteling* gold near modern day Polokwane, and the Magaliesberg gold was discovered in 1875. This was soon followed by the discovery of the fields at Pilgrim's Rest and Barberton, but none could imagine what the conglomerates of the MAIN REEF were holding in stall for a gold hungry world. As happened in Kimberly, the gold was first mined by individuals who worked on claims, but in time the big players stepped in with expensive machinery and consolidation, laying the base for the modern mining industry that we know today.

The South African War from 1899 to 1902 settled the ownership of the goldfields, but soon after the recovered ounces of gold per tonnage dropped to such a low level that the gold industry was on the verge of collapse. With the discovery of the cyanide reclamation process, the industry was revived, only to be confronted with the First World War, the miners' strikes in the early 1920s, the depression of the 1930s, the Second World War in 1939, the apartheid government of 1948, the independence of the Union of South Africa in 1960 and the new South Africa in 1994. Now in 2013 gold is still being extracted after 130 years.

From the above history it is clear that mining cannot continue without its most essential need, i.e. manpower. In addition there are the other elements such as energy, machine parts, food and equipment for workers, schools for the children of workers, doctors, lawyers and host of people rendering support services.

All of these people were in need of accommodation and we then find that every era of the mining industry resulted in different architectural styles suited to the different economic and other layers of society.

*As buildings and infrastructure representing all periods from 1890 to modern times occur along the proposed Bus Rapid Transit System route it is imperative that care must be taken not to detrimentally impact on these buildings and sites. Where any such negative impact is present, mitigation through second phase studies must be requested from the Provincial Heritage Resources Authority.<sup>4</sup>*

### **7.3.3. Johannesburg's 125th Anniversary.**

*The speech delivered at the Sci-Bono Discovery Centre at Newtown by the Executive Mayor of the City of Johannesburg, Clr Mpho Parks Tau on the occasion of the 125th Anniversary of the founding of Johannesburg, is included here to illustrate the official position of the Johannesburg Metro in terms of its heritage.*

*Ladies and Gentlemen,*

*There are moments in history that require revisiting. When we do so we discover that a systematic and*

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<sup>4</sup> This caution is included to remind all that the general area through which the route passes have been occupied by Europeans for over 150 years. It is the purpose of the investigation to identify such remains, or their absence. Only after the investigation is completed can one determine the actual status of heritage remains.

*critical research on our past reveals an unusual wealth of information. As we do so, we discover knowledge and deep heroism that inspires us to do more. Johannesburg grew from tent town to wood and iron shanties to bricks and mortar buildings at the pace of an historical wink of an eye. **Within less than two decades since its formal proclamation the broad outlines of the City, as we know it today was already well established.***

*This City has also continued to shape our history as it evolved over decades. One of the youngest major cities in the world, Johannesburg marks its 125th anniversary this year. **Johannesburg was founded in 1886 as a result of the discovery of gold on the Witwatersrand.** So it is for a good reason that Johannesburg is known to many as Egoli (Zulu) or Gauteng (Sotho), both names meaning "the Place of Gold". Probably no city in the world has grown faster. Powered by the world's greatest gold-rush, Johannesburg soon grew into a bustling metropolis. **Before the discovery of gold the landscape of Johannesburg was dotted with a number of African homesteads and a few white-owned farmhouses.***

*Compared to what followed, Johannesburg's beginnings looked small and humble. **The mining camp of 1886 covered a few square kilometres and had a population of a few thousand people. Already in 1886 there were 14 liquor stores and one hotel – but no sanitation or health services.** Johannesburg was founded as a mining camp towards the end of 1886, a few months after the discovery of **the Main reef in Langlaagte.** Trying to fix a precise date for the founding of Johannesburg can be open to some interpretation and debate. Some argue that Johannesburg began in September, while others say it was founded in October. However, Johannesburg's anniversary does not come down to a single date. The fact is that, a series of important events moved very quickly towards the end of 1886:*

- *In September President Paul Kruger declared the area as public diggings.*
- *Then on the 4th of October came the proclamation of **Randjeslaagte - the original residential area where Johannesburg was founded.***
- *In November, the first official Diggers Committee was sworn into office - representing the first local government structure (and arguably a forerunner of the Johannesburg City Council).*
- *December saw the first sale of stands (actually the sale of leases) in Johannesburg.*

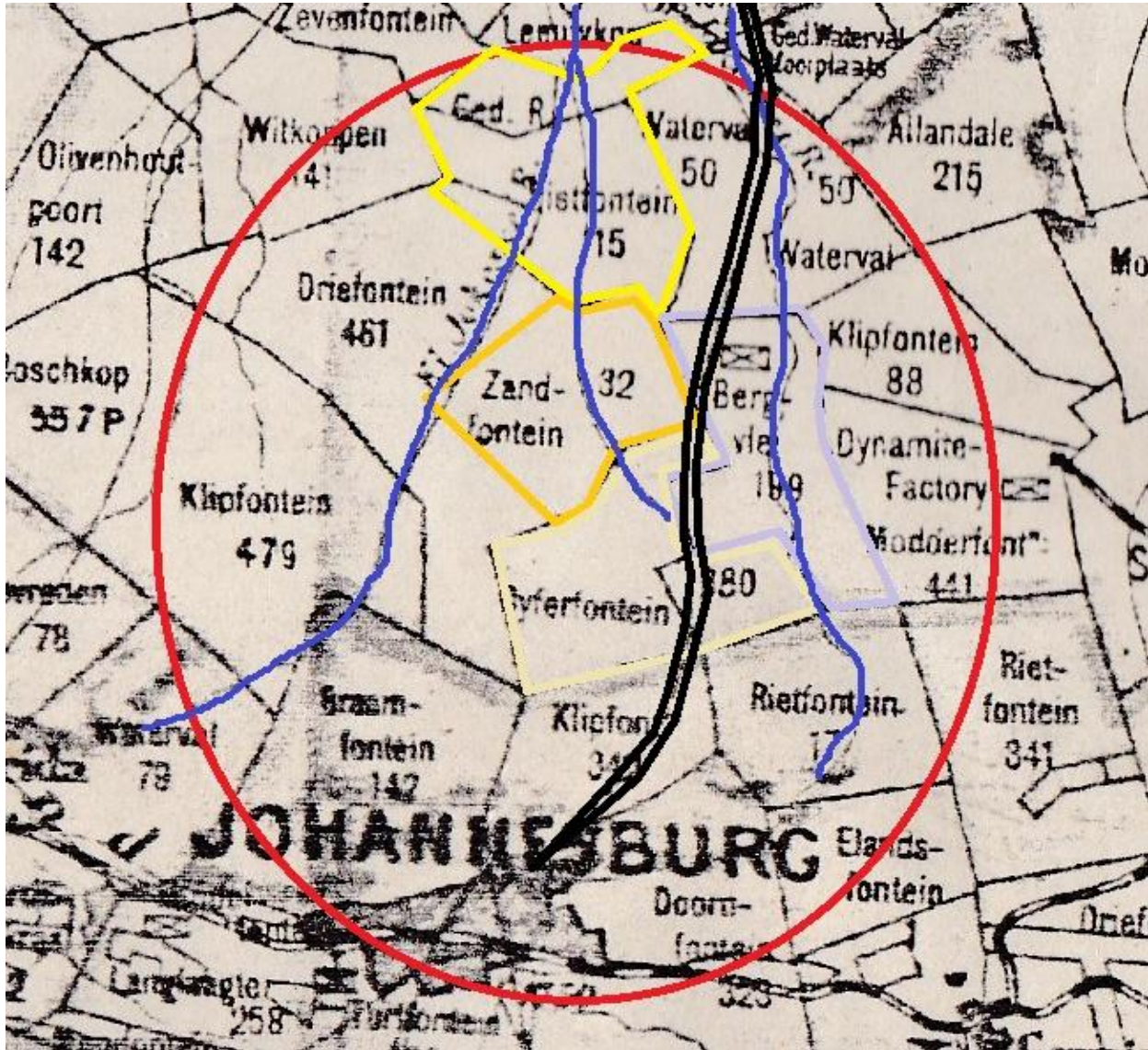
*Hot on the heels of the discovery of gold, Johannesburg attracted large numbers of gold prospectors, fortune-hunters and ordinary work-seekers. Arriving in their thousands, and coming from far and wide, there were a variety of people, including blacks and whites. This mix of humanity gave the young town a cosmopolitan character from the start. The government of Paul Kruger became increasingly fearful of the great influx of foreigners, many of them English-speaking – who they called "uitlanders" (aliens). Johannesburg, springing up as it did, suddenly, (very suddenly) in the midst of the Boer Republic in 1886, was to the Boers an alien city. President Kruger and his cabinet became increasingly unhappy and fearful about the influence of a growing population of foreigners, regarded as wild adventurers who knew only one god – gold. The authorities of the Boer Republic consoled themselves that the gold would run out, the town would not last, and then the "Uitlanders" – the aliens – would leave.*

***But Johannesburg did not go away.***

***Within six years of its birth, Johannesburg was already the biggest town in South Africa, with large buildings, street lighting, suburban mansions, and shops to rival those in Cape Town. By 1896 – when Johannesburg was just 10 years old – its population had risen to 100 000. Despite President Kruger, Johannesburg went on to become the most cosmopolitan place in Africa. No other place in Southern Africa contained such a varied cultural mix. It was this robust blend of nations, cultures and languages that gave Johannesburg its unique character. The energy that this generated – economic social and political energy - was to drive much of South Africa's subsequent history.....”***

## 8. HISTORICAL LOCATION OF THE STUDY AREA

### 8.1. Historical map.



*Fig. 08. Greater study area as defined by Jeppe's 1899 Map of the Transvaal.*

*This is one of the few published diagrams that show the definition of the original properties surrounding the farm "Randjeslaagte" on which the first proclaimed residential area of Johannesburg was founded, with "Langlaagte" to its west, where the first gold was discovered and mined.*

*Note the farms Zandfontein and Rietfontein on which Sandton was established and Bergvlei on which Alexandra was established with the three drainage lines that still exist today.*

*Also note the original wagon route past Bergvlei homestead /post office, which was the route to Pretoria and developed into what, is today the Pretoria Main Road. It is along the same route which another part of the proposed Johannesburg Metro's Bus Rapid Transport System along Louis Botha Avenue is proposed, further enhancing the continuation of an historical transport corridor.*



From the above reproduced speech on the 125<sup>th</sup> anniversary of the founding of Johannesburg and the above, two figures from Jeppe's 1899 Map of the Transvaal show the discovery of gold and the development of the area in one decade, the basic shape of modern Gauteng is seen. If Jeppe's 1899 map is studied to the west and east one will see that the new accent on development in the region already focused on the axis of the MAIN REEF, as well as bringing into play the coal fields of the southern and eastern Transvaal.

*For the purpose of the present studies it can be said that the proposed Bus Rapid Transit System route involves heritage in one way or another. The heritage authorities require developers to respect these origins, even if in world terms Gauteng is still in its infancy. With the necessary knowledge and guidance we could proceed with modern additions to the history of Gauteng, provided that a sense of both the past and the future is interwoven in respect of the people who will still be living here.*

## **8.2. Historical information on specific suburbs.**

To illustrate the importance of heritage impact studies short extracts from the historical background of Sandton and Alexandra are included here. This is done to emphasize the historical underlay of Johannesburg's suburbs which needs to be acknowledged during any development and which might be ignored if focus is placed on specific developments while the bigger picture is disregarded. This more often than not leads to frustration on the part of the developer if he regards heritage as an impediment rather than an asset.

**8.2.1. Sandton** is an affluent area situated within the metro of Johannesburg. The name comes from the combination of two of its suburbs, Sandown and Bryanston. In 1969 Sandton was promulgated as a municipality in its own right, but lost its status as an independent town after the re-organization of South African local governments.

Archaeological findings suggest that the area which today comprises Sandton, had originally been occupied by various indigenous groups before European settlement. The first of the Voortrekkers to settle in the area were the Esterhuysens of Zandfontein. A monument to commemorate them may be found just off Adrienne Street. In the 1870s the Wilhelmi family of Hanover in Germany acquired the farm Driefontein no.3. The original farms Driefontein Rietfontein and Zandfontein are now known as Sandton. The Wilhelmi family's original home, now within the confines of the Field & Study Centre, was looted during the Second South African War. Their 1906 Parkmore farmhouse served as the icon for the Sandton Historical Foundation. The Ehler family owned Rietfontein farm.

In the 1960s the municipality of Sandton was established as an extension of the Johannesburg City in 1969, after Johannesburg began to expand northwards. Initially it was very much a residential area consisting mostly of smallholdings where the owners kept riding horses. Sandton's rural "horsey" lifestyle lent it the image of a smart address.

After the demise of Apartheid and the introduction of the new political dispensation, Sandton first became part of the Eastern Metropolitan Substructure and later of the City of Johannesburg following new demarcations put forward by the ANC government, and it is now no longer a separate municipality.

Urban decay in downtown Johannesburg resulted in the relocation of many corporate businesses to Sandton in the 1990s. It has become the new financial district of South Africa and Johannesburg's premier business centre. Much of the financial focus of Johannesburg has shifted from the Central Business District to Sandton. However, three of South Africa's four largest banks have kept their head offices in downtown Johannesburg, along with Transnet.

A lot of the "new money" has moved north to Sandton, including investment banks and financial consultants. A considerable amount of the city's A-grade office space is to be found in Sandton. The JSE Securities Exchange relocated its offices to Sandton from the central business district in the late 1990s.

**8.2.2. Alexandra** was established in 1912, on land originally owned by a farmer, Mr Papenfus, who tried to establish a white residential township there naming it after his wife, Alexandra. However, because it was then a considerable distance from the centre of Johannesburg, this was not a great success.

Consequently Alexandra was proclaimed as a so-called native township. Because the township was proclaimed before the South African 1913 Land Act, it was one of the few urban areas in South Africa where black people could own land under a freehold title. By 1916, the population of Alexandra had grown to 30,000 people and the Alexandra Health Committee was established to manage the township. However, the Committee was not allowed to collect local taxes, nor was the Johannesburg City Council willing to take responsibility for services to an area that it claimed fell outside its jurisdiction, leading to a lack of resources and proper management.

When the National Party came into power in 1948 and started to implement the policy of separate development Alexandra was put under the direct control of the Department of Native Affairs. In the early 1960s, the government decided to demolish all family accommodation in Alexandra and replace it with hostels restricted to either men or women, which led to widespread resistance and protest. Owing to the high costs, lack of alternative housing for the persons that would have to be removed and the escalating opposition led by the Rev Sam Buti's 's "Save Alexandra Party", only two hostels were actually completed, and so the original scheme was cancelled in 1979.

The riots that started in Soweto in June 1976 quickly spread to other areas in South Africa, such as Alexandra, where 19 people died. As a consequence of these riots, evictions, forced removals and expropriation of black property were stopped; urban blacks were no longer regarded as temporary residents and their permanent status was recognized. Finally, in 1982, Alexandra was given the official status of a residential area as opposed to a native township and the then Alexandra liaison committee, led by Rev Buti, was instituted to run the township.

In 1980 a Master Plan for Alexandra was introduced, with the aim to transform Alexandra into a garden city with a completely new layout. However, only a small part of this plan was actually ever implemented; the execution of the Master Plan was permanently stopped by the Alex Six Days uprising in February 1986, during which 40 people died. By May the council started collapsing and the councillors resigned which saw the emergence of street committees and peoples' courts. After the imposition of the nationwide state of emergency in June, the South African Defence Force moved in to keep the peace. In its place, the government introduced the Urban Renewal Plan as part of its strategy during the state of emergency. However, this plan led to considerable demolitions, disruptions and displacement in the community as well as two treason trials involving 13 leaders of Alexandra.

This, combined with the considerable number of additional people moving into Alexandra during this time, led to the building of a new area called the East Bank. Because of the insufficient capacity and difficult maintenance of the newly built infrastructure, the situation quickly deteriorated and thus the Urban Renewal Plan was shelved in 1990. During the communal and political conflicts that took place during the period 1991-1992, many people died, were injured or displaced. This led to several peace initiatives, which were greatly assisted by the first fully democratic South African elections in April 1994.

When walking along the streets of Africa's richest square mile surrounded by Manhattan-style skyscrapers, opulent houses, office towers, international and locally renowned brands, and exotic cars, it's hard to believe that Sandton consisted merely of sandy horse trails and grassy estates just 50 years ago. Today there is nothing left of the effort, dreams and impact of the ancestors of either the first inhabitants or the first people to populate Johannesburg. When and where will our descendants find messages from the past such as exist in Oxford, Prague, or Moscow?

## **9. FIELD RECORDING AND HERITAGE COMMENTS**



*Fig. 09. The basic route as defined by the client.*

***Special note:*** *Owing to the bulk of the data and photographs recorded, it is presented as an addendum to this report.*

*The first of these addendums is a tabulation of the status of sites, the use of the land, photographs taken and the numbering of the photographs.*

*The second addendum contains the photographs that were taken.*

*Below are represented Google Earth images of the land according to section, the random numbering of the properties and comments on different aspects.*

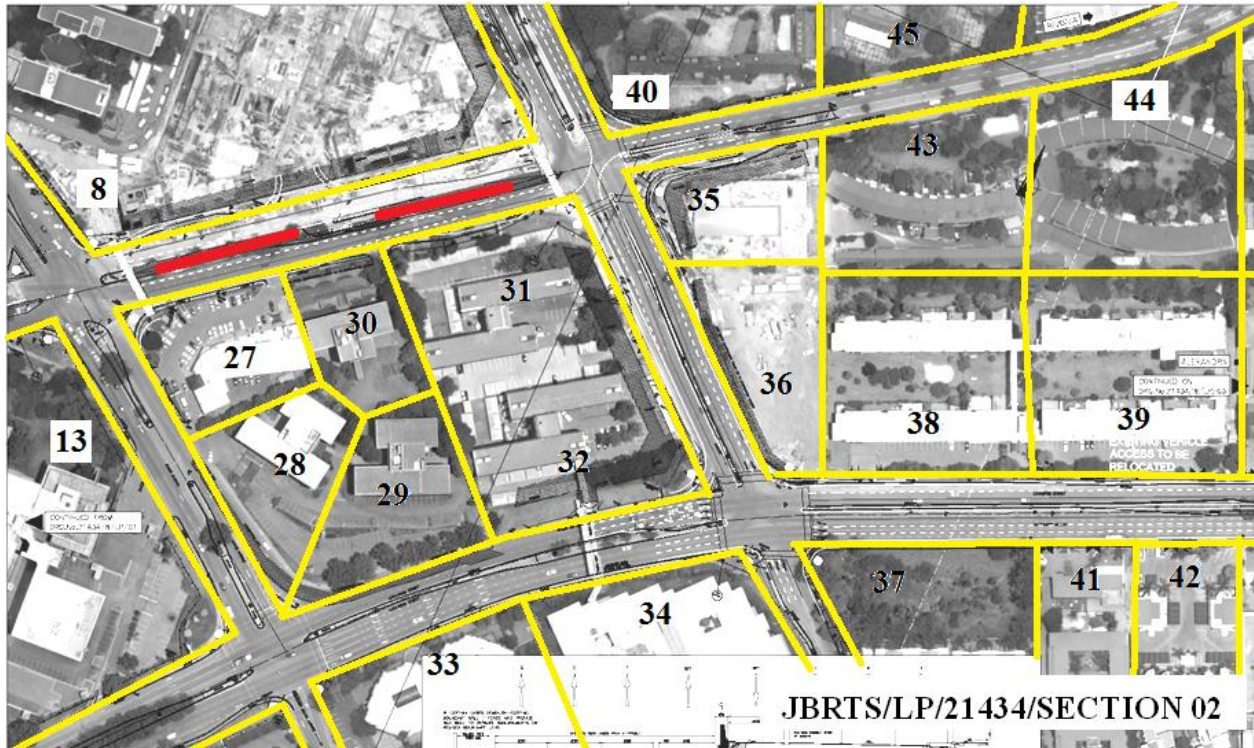
**9. 1. Section 21434/B/LP/01**



*Fig. 10. Above can be seen section 21434/B/LP/01 showing buildings, streets and site numbering.*

<b>Comments on section 21434/B/LP/01</b>	
<b>Historical buildings.</b>	<b>None remaining</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>Construction of the proposed Bus rapid Transit System may commence without mitigation from a Heritage point of view</b>

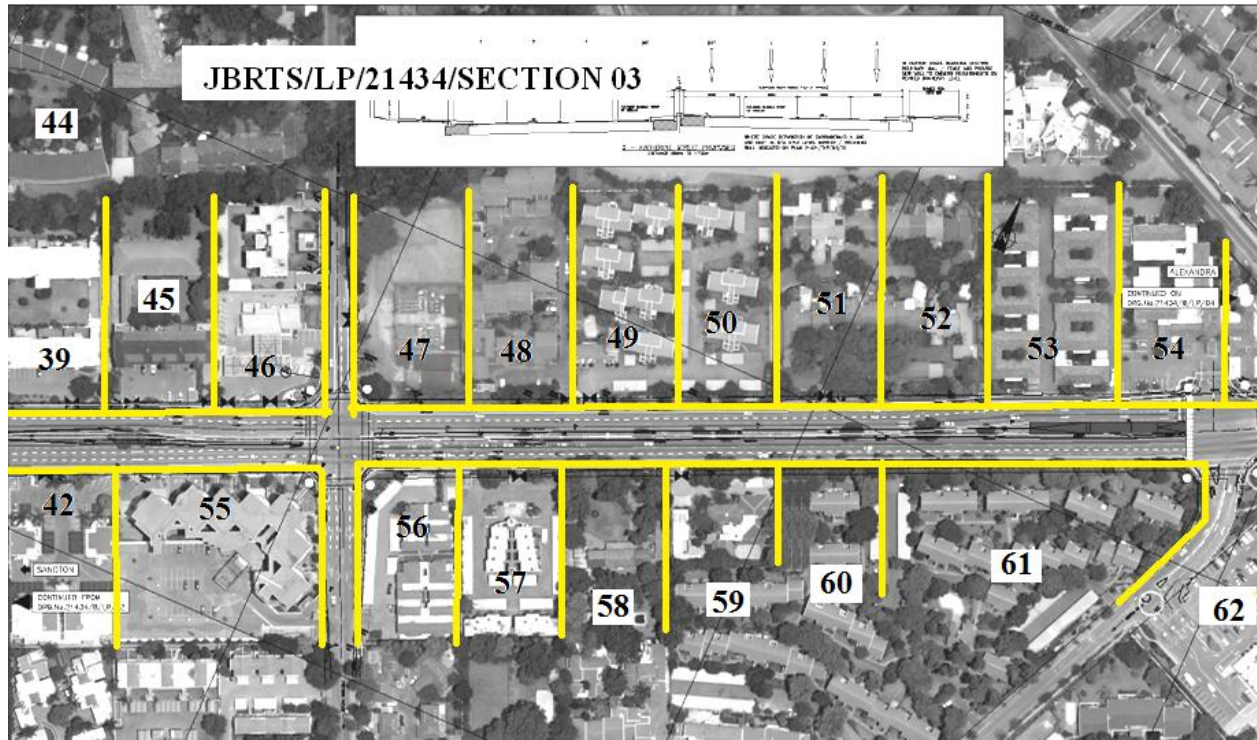
**9. 2. Section 21434/B/LP/02**



*Fig. 11. Above can be seen section 21434/B/LP/02 showing buildings, streets and site numbering.*

<b>Comments on section 21434/B/LP/02</b>	
<b>Historical buildings.</b>	<b>None remaining</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>Construction of the proposed Bus rapid Transit System may commence without mitigation from a Heritage point of view</b>

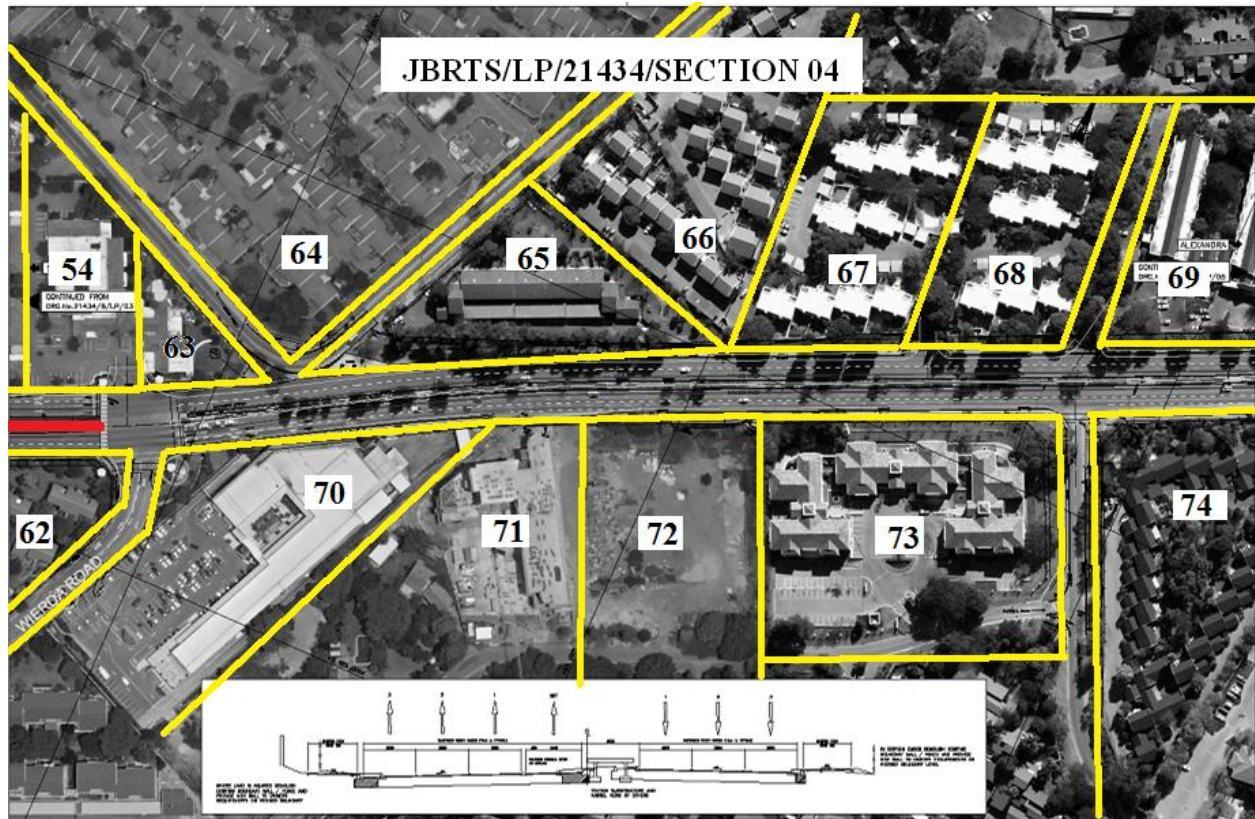
**9. 3. Section 21434/B/LP/03**



*Fig. 12. Above can be seen section 21434/B/LP/03 showing buildings, streets and site numbering.*

Comments on section 21434/B/LP/03	
<b>Historical buildings.</b>	<b>One remaining (see figure 44 in photographic documentation) at number 58. It is situated well back in the property and is screened by a high garden wall.</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>Construction of the proposed Bus rapid Transit System may commence without mitigation from a Heritage point of view</b>

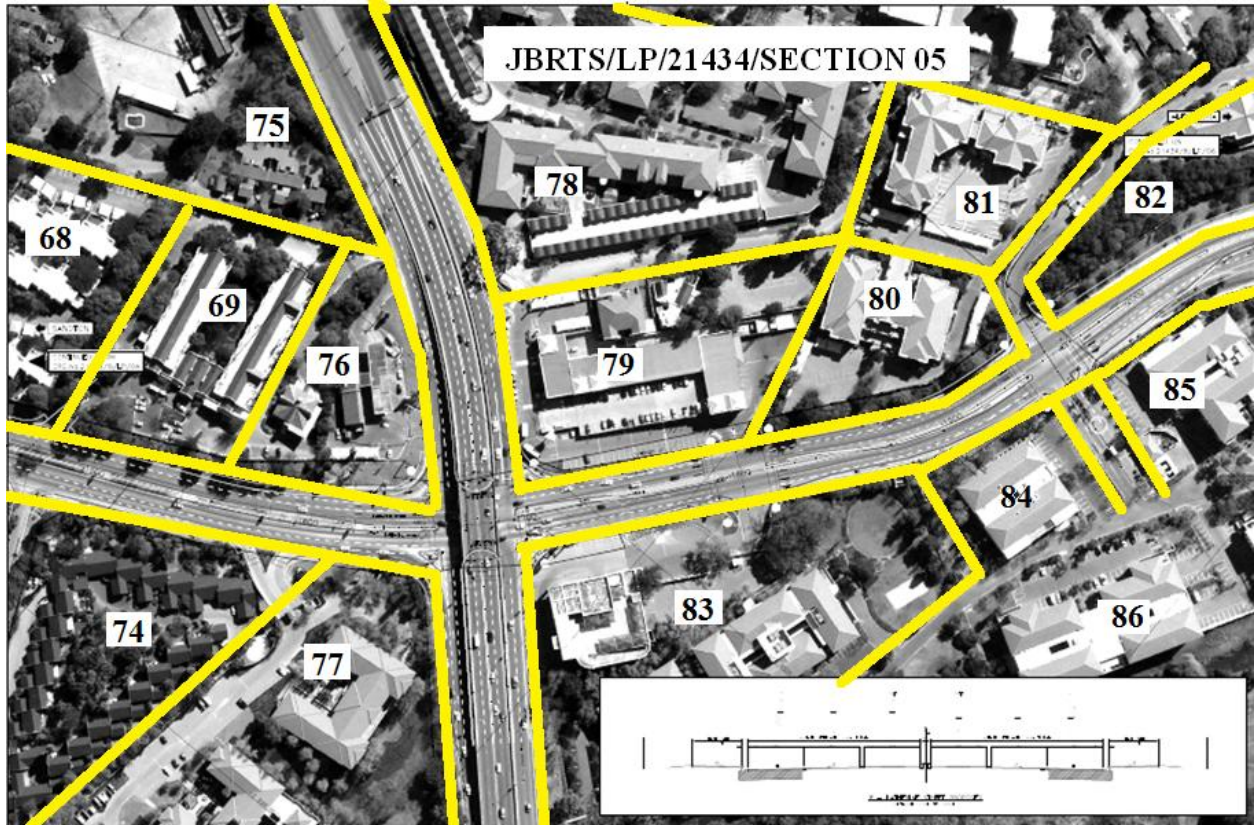
**9.4. Section 21434/B/LP/04**



*Fig. 13. Above can be seen section 21434/B/LP/04 showing buildings, streets and site numbering.*

<b>Comments on section 21434/B/LP/04</b>	
<b>Historical buildings.</b>	<b>None remaining</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>Construction of the proposed Bus rapid Transit System may commence without mitigation from a Heritage point of view</b>

**9.5. Section 21434/B/LP/05**



*Fig. 14. Above can be seen section 21434/B/LP/05 showing buildings, streets and site numbering.*

<b>Comments on section 21434/B/LP/05</b>	
<b>Historical buildings.</b>	<b>None remaining</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>Construction of the proposed Bus rapid Transit System may commence without mitigation from a Heritage point of view</b>



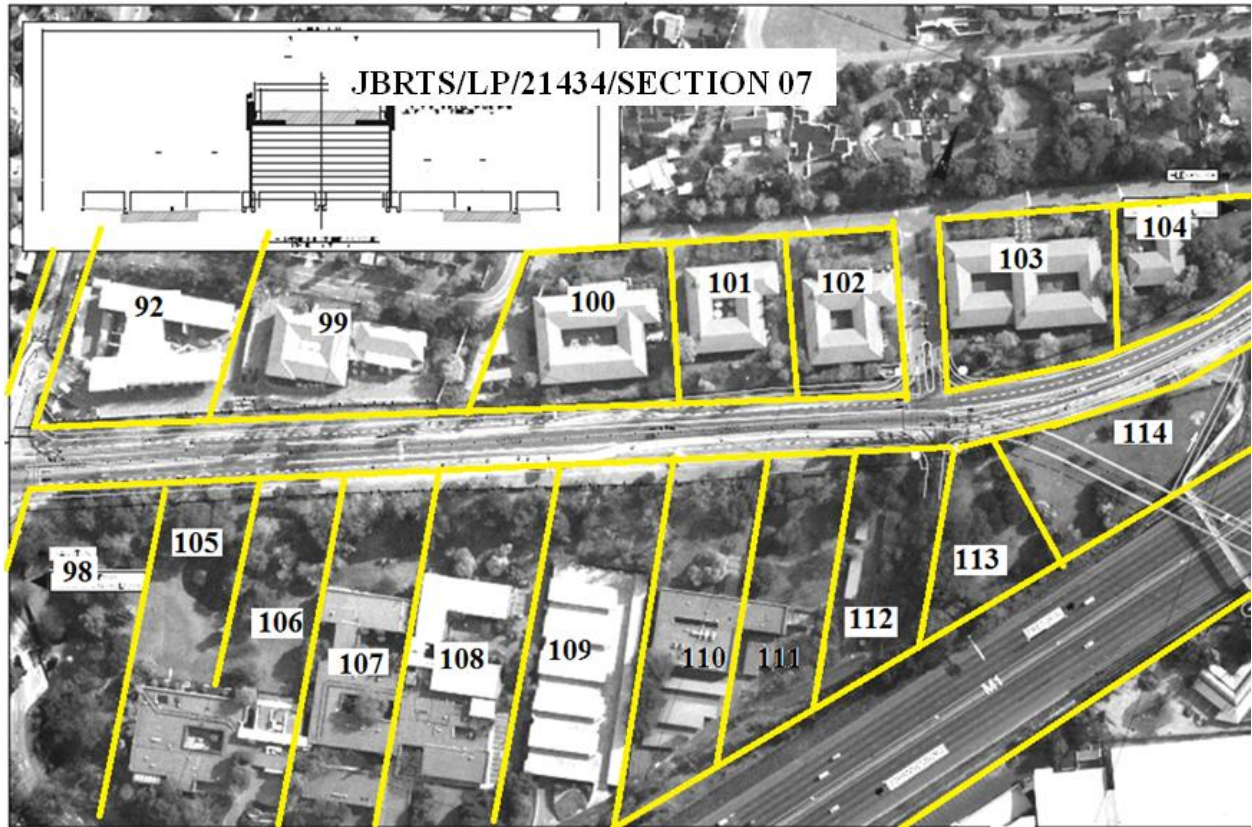
**9.6. Section 21434/B/LP/06**



*Fig. 15. Above can be seen section 21434/B/LP/06 showing buildings, streets and site numbering.*

<b>Comments on section 21434/B/LP/06</b>	
<b>Historical buildings.</b>	<b>BRIDGE OVER SANDSPRUIT</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>After bridge detail is available mitigation in the format of a second phase heritage impact assessment must be presented to PHRA. If this is approved the a demolition permit must be obtained from PHRA</b>

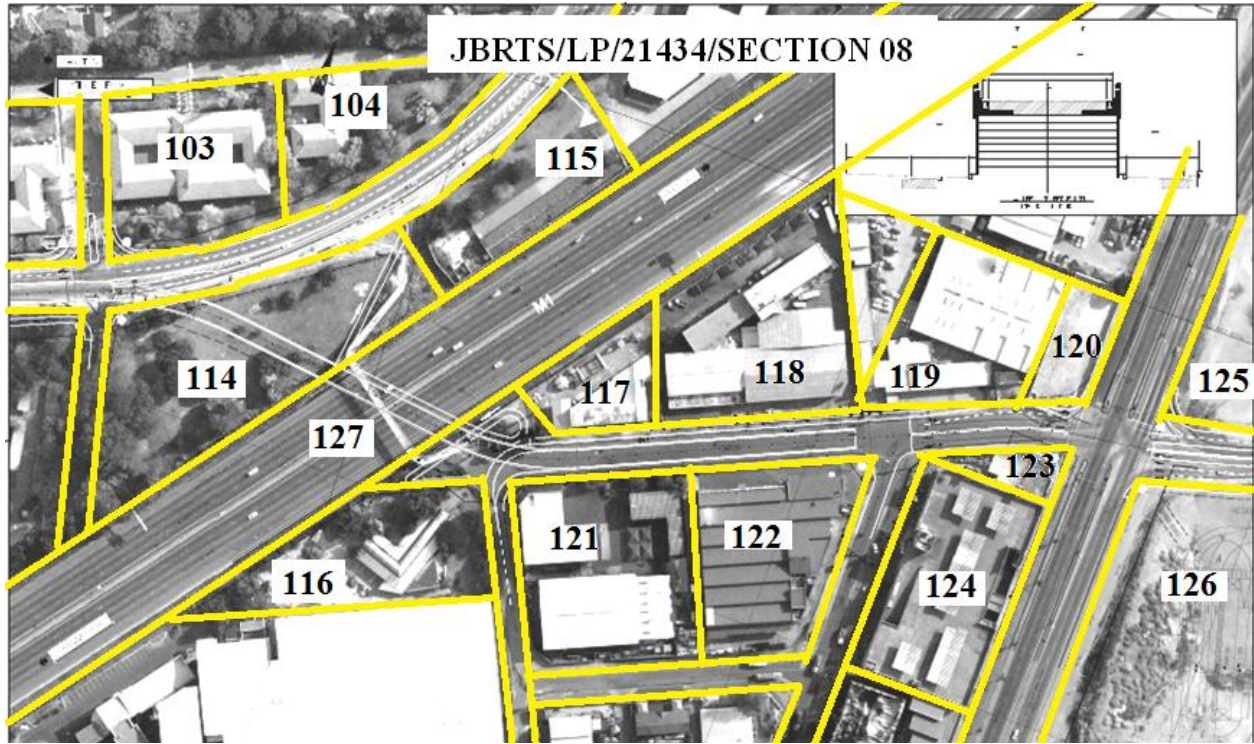
**9.7. Section 21434/B/LP/07**



*Fig. 16. Above can be seen section 21434/B/LP/07 showing buildings, streets and site numbering.*

<b>Comments on section 21434/B/LP/07</b>	
<b>Historical buildings.</b>	<b>None remaining</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>Construction of the proposed Bus rapid Transit System may commence without mitigation from a Heritage point of view</b>

**9.8. Section 21434/B/LP/08**



*Fig. 17. Above can be seen section 21434/B/LP/08 showing buildings, streets and site numbering.*

<b>Comments on section 21434/B/LP/08</b>	
<b>Historical buildings.</b>	<b>None remaining</b>
<b>Streetscape.</b>	<b>No historical streetscape remaining</b>
<b>Sidewalks.</b>	<b>No historical sidewalks remaining</b>
<b>Bus stations.</b>	<b>No impact on historical buildings or sites</b>
<b>General comment.</b>	<b>Construction of the proposed Bus rapid Transit System may commence without mitigation from a Heritage point of view</b>

## **10. SUMMARY**

African Heritage Consultants were tasked to undertake a first phase heritage impact assessment for the Johannesburg Metro's proposed new Bus Rapid Transit System between Sandton and Alexandra along Katherine Street, from Sandton Drive to Lee Street, Alexandra.

The engineering plans of the route were studied as well as the positioning of the Bus Stations. The full route was surveyed, evaluated and photographed as can be seen in the document above and its addendums.

Along the whole route only one "heritage building" was identified, and that is set behind a high garden wall and well away from the road.

No road construction, curbing stones or paving that can be described as having heritage value could be identified.

No street furniture or lighting or fences that can be described as having heritage value could be identified.

It is accepted that archaeological historical and human remains that are located sub-surface along the route cannot be identified at present, for obvious reasons. If such remains are encountered during construction then the heritage authorities must be contacted so that mitigation may proceed.

## **11. RECOMMENDATION.**

The construction may proceed without any further heritage consideration or mitigation.

It is accepted that archaeological historical and human remains that are located sub-surface along the route cannot be identified at present, for obvious reasons. If such remains are encountered during construction then the heritage authorities must be contacted so that mitigation may proceed.

## **12. BIBLIOGRAPHY**

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### ***Unpublished Reports***

- Miller, S.M. 2012. A Report on Heritage Impact Assessment for the City of Tshwane Bus Rapid Transit Line 1A, Tshwane, Gauteng. (Paul Kruger Street)
- Miller, S.M. 2012. A Report on Heritage impact assessment for the City of Tshwane Bus Rapid Transit Line 1B, Tshwane, Gauteng. (Boom Street to Kopanong)
- Pelser, A. J. 2012. A report on Heritage Impact assessment for the City of Tshwane Bus Rapid Transit Line 2, Tshwane, Gauteng.

# APPENDIX A

## DECLARATION OF INDEPENDENCE.

**APPENDIX A: DECLARATION OF INDEPENDENCE**

*I, Sidney Mears Miller (ID 5412135029082) declare that:*

- I act as an independent environmental practitioner in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- I declare that there are no circumstances that may compromise my objectivity in performing such work.
- I have expertise in conducting environmental impact assessments, including knowledge of the National Heritage Resources Act (No 25 of 1999) and any guidelines that have relevance to the proposed activity.
- I will comply with the Act, regulations and all other applicable legislation.
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application.
- I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application.
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report.
- I will keep a register of all interested and affected parties that participated in a public participation process.
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.
- All the particulars furnished by me in this form are true and correct.
- I will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations.
- I realize that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity and/or proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations.



**SIDNEY MEARS MILLER**

# APPENDIX B

## DOCUMENTATION TABLES



JBRTS/LP/21434/SECTION 01									
Comment on section 01:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
1							✓	✓	
2							✓	✓	
3							✓	✓	
4							✓	✓	
5							✓	✓	New Building
6							✓	✓	New Building
7							✓	✓	Circa 1960/1970
8							✓	✓	Modern
9							✓	✓	
10							✓	✓	Demolished
11							✓	✓	
12							✓	✓	New Building
13							✓	✓	New Building
14							✓	✓	
15							✓	✓	
16							✓	✓	
17							✓	✓	
18							✓	✓	
19							✓	✓	Demolished
20							✓	✓	Demolished
21							✓	✓	Demolished
22							✓	✓	
23							✓	✓	
24							✓	✓	
25							✓	✓	Demolished
26							✓	✓	
27							✓	✓	New Building
28							✓	✓	New Building

JBRTS/LP/21434/SECTION 02									
Comment on section 02:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
29							√	√	Big new building
30							√	√	Big new building
31							√	√	Big new building
32							√	√	Big new building
33							√	√	Modern dark
34							√	√	Modern dark
35							√	√	Gautrain Hotel
36							√	√	Gautrain Hotel
37	√							√	
38							√	√	Apartments circa 1960's
39							√	√	Open land
40							√	√	Modern
41							√	√	The Westford Hotel
42							√	√	The Westford Hotel

JBRTS/LP/21434/SECTION 03									
Comment on section 03:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
45							√	√	Modern flats
46							√	√	Garage
47							√	√	Services, electricity
48							√	√	Milford Close
49							√	√	Modern apartments circa 1990's
50							√	√	Modern apartments circa 1990's
51							√	√	Modern apartments circa 1990's
52							√	√	Modern apartments circa 1990's
53							√	√	Modern apartments circa 1990's
54							√	√	Southern Suns Hotel
55							√	√	Apartments , circa 1990
56							√	√	Apartments , circa 1990
57								√	Village Blues, circa 1990
58					√			√	<b>Protected building</b>
59							√	√	Apartments circa 1970/1980
60							√	√	Apartments circa 1970/1980
61							√	√	Apartments circa 1970/1980

JBRTS/LP/21434/SECTION 04									
Comment on section 04:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
64							√	√	Modern Suburb
65							√	√	Apartments circa 1960's
67							√	√	Kerkina Apartments circa 1990's
68							√	√	Kerkina Apartments circa 1990's
69							√	√	City Lodge
70							√	√	Athol Square Mall
71							√	√	Park Inn new building
72							√	√	Volkscas
73							√	√	Apartments circa 1980's
74							√	√	Apartments circa 1980's

JBRTS/LP/21434/SECTION 05									
Comment on section 05:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
76							√	√	Modern Garage
77							√	√	Grayston Office
79							√	√	ABSA Vehicle finance
80							√	√	Vunani office block
82	√							√	Vunani office block park open ground
83							√	√	Modern office block
84							√	√	Pinmill offices
85							√	√	Pinmill farm

JBRTS/LP/21434/SECTION 06									
Comment on section 06:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
88							√	√	McCan Worldside buisness
89							√	√	EOH, Business premises and Apartments
90	√							√	River (bridge) circa 1940
91							√	√	Apartments circa 1980's
92							√	√	Innes Free business premises
93							√	√	Office Blocks circa 1980's
94							√	√	Office Blocks circa 1980's
95							√	√	Office Blocks circa 1980's
96	√							√	River (bridge) circa 1940
97	√							√	Sports Grounds
98							√	√	Barloworld offices and Apartments

JBRTS/LP/21434/SECTION 07									
Comment on section 07:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
99							√	√	Sungard Offices
100							√	√	Sungard Offices
101							√	√	Sungard Offices
102							√	√	Sungard Offices
103							√	√	Sungard Offices
104							√	√	Sungard Offices
105							√	√	Brown wall apartments
106							√	√	Brown wall apartments
107							√	√	Brown wall apartments
108							√	√	Brown wall apartments
109							√	√	Brown wall apartments
110							√	√	Brown wall apartments
111							√	√	Brown wall apartments
112							√	√	Brown wall apartments
113							√	√	Brown wall apartments
114	√							√	Open ground

JBRTS/LP/21434/SECTION 08									
Comment on section 08:									
Number	Designation				Heritage			Photo	Remarks
	Park	Dwelling	Apartment	Business	Protected	Marginal	Modern		
115							√	√	Light Industries circa 1960 to 1990
116							√	√	Light Industries circa 1960 to 1990
117							√	√	Light Industries circa 1960 to 1990
118							√	√	Light Industries circa 1960 to 1990
119							√	√	Light Industries circa 1960 to 1990
120							√	√	Light Industries circa 1960 to 1990
121							√	√	Light Industries circa 1960 to 1990
122							√	√	Light Industries circa 1960 to 1990
123							√	√	Light Industries circa 1960 to 1990
124							√	√	Light Industries circa 1960 to 1990
125							√	√	Open ground, taxis
126							√	√	Open ground, soccer



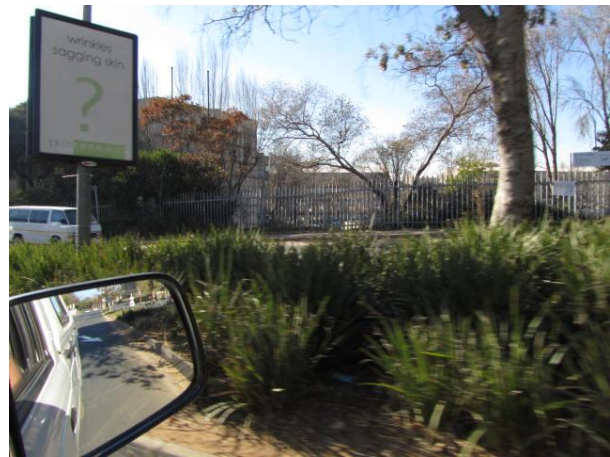
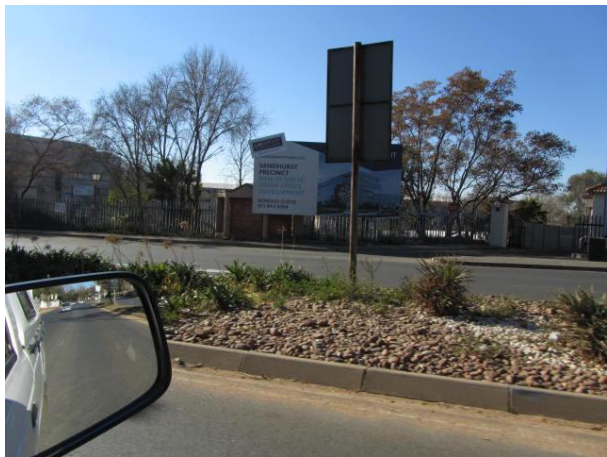
# APPENDIX C

## PHOTOGRAPHIC RECORDING

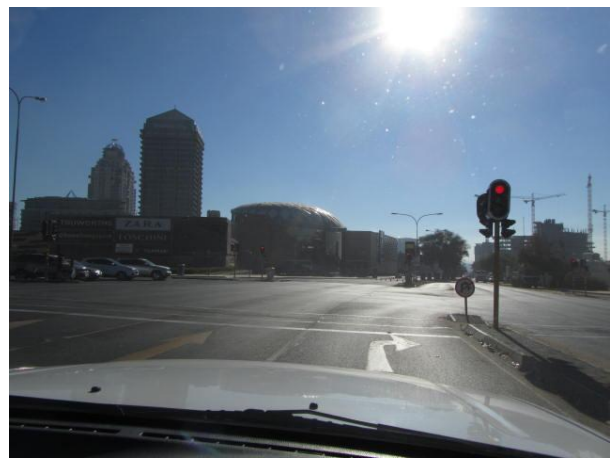
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 1 and 2.** Section 21434/B/LP/01.



**Figs. 3 and 4.** Section 21434/B/LP/01.



**Figs. 5 and 6.** Section 21434/B/LP/01.

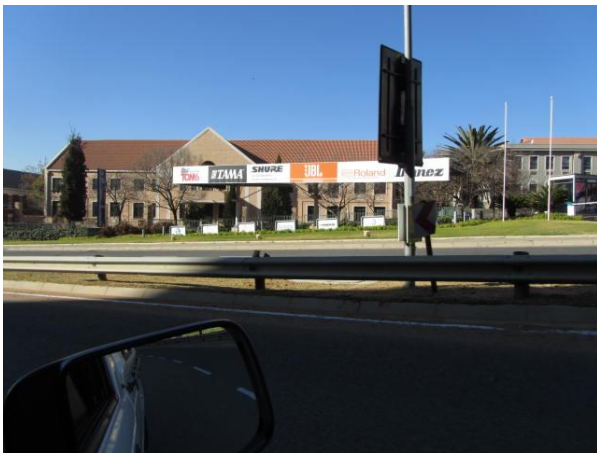
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 7 and 8.** Section 21434/B/LP/01.



**Figs. 9 and 10.** Section 21434/B/LP/01.



**Figs. 11 and 12.** Section 21434/B/LP/01.

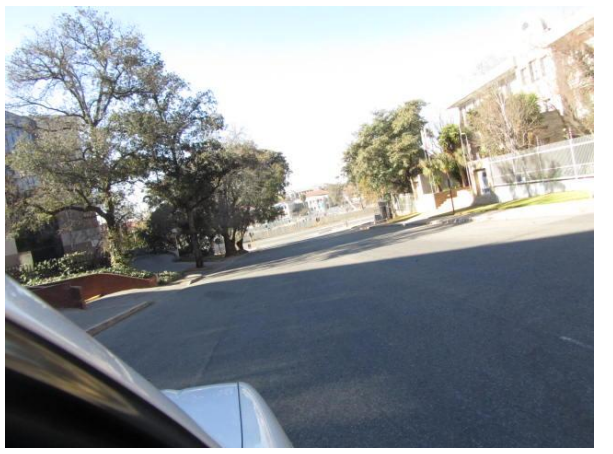
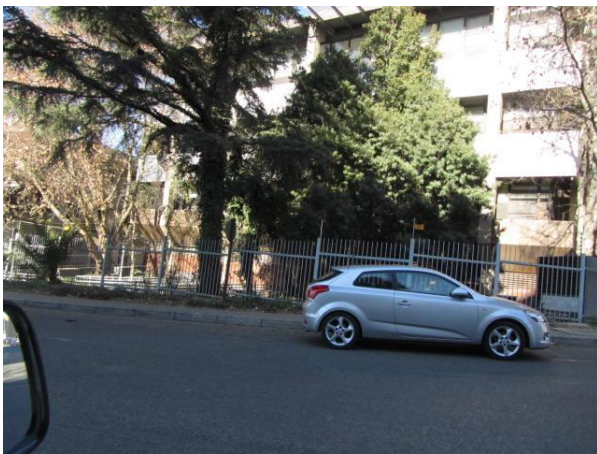
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 13 and 14.** Section 21434/B/LP/01.



**Figs. 15 and 16.** Section 21434/B/LP/01.



**Figs. 17 and 18.** Section 21434/B/LP/01.

*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 19 and 20.** Section 21434/B/LP/01.



**Figs. 21 and 22.** Section 21434/B/LP/01.



**Figs. 23 and 24.** Section 21434/B/LP/01.

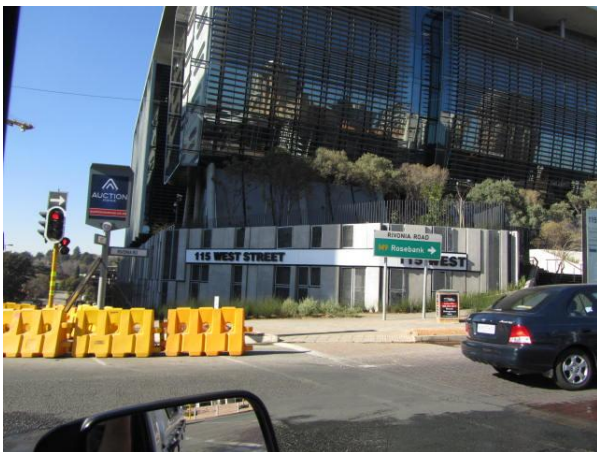
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 25 and 26.** Section 21434/B/LP/01.



**Figs 27 and 28.** Section 21434/B/LP/01.



**Figs. 29 and 30.** Section 21434/B/LP/01.

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**Figs. 31 and 32.** Section 21434/B/LP/01.



**Figs 33 and 34.** Section 21434/B/LP/02.



**Figs. 35 and 36.** Section 21434/B/LP/02.

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**Figs. 37 and 38.** Section 21434/B/LP/02.



**Figs. 39 and 40.** Section 21434/B/LP/03.



**Figs. 41 and 42.** Section 21434/B/LP/03.



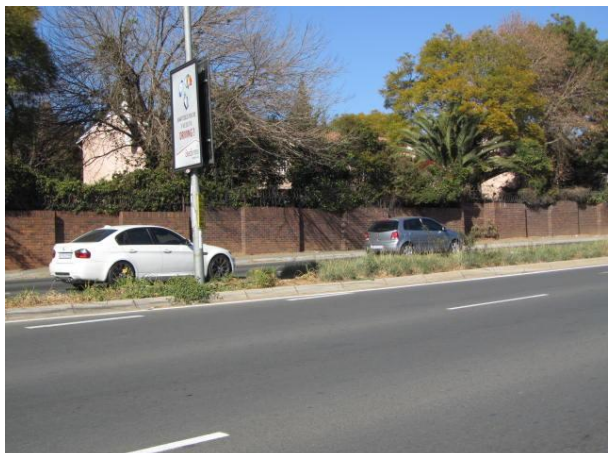
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 43 and 44.** Section 21434/B/LP/03.



**Figs. 45 and 46.** Section 21434/B/LP/03.



**Figs. 47 and 48.** Section 21434/B/LP/03.

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**Figs. 49 and 50.** Section 21434/B/LP/03.



**Figs. 51 and 52.** Section 21434/B/LP/03.



**Figs. 53 and 54.** Section 21434/B/LP/04.

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**Figs. 55 and 56.** Section 21434/B/LP/04.



**Figs. 57 and 58.** Section 21434/B/LP/04



**Figs. 59 and 60.** Section 21434/B/LP/04.

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**Figs. 61 and 62.** Section 21434/B/LP/05.



**Figs. 63 and 64.** Section 21434/B/LP/05.



**Figs. 65 and 66.** Section 21434/B/LP/05.

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**Figs. 67 and 68.** Section 21434/B/LP/05.



**Figs. 69 and 70.** Section 21434/B/LP/06.



**Figs. 71 and 72.** Section 21434/B/LP/06.

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**Figs. 73 and 74.** Section 21434/B/LP/06.



**Figs. 75 and 76.** Section 21434/B/LP/06.



**Figs. 77 and 78.** Section 21434/B/LP/06.

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**Figs. 79 and 80.** Section 21434/B/LP/06.



**Fig. 81.** Section 21434/B/LP/06.



**Figs. 82 and 83.** Section 21434/B/LP/07.

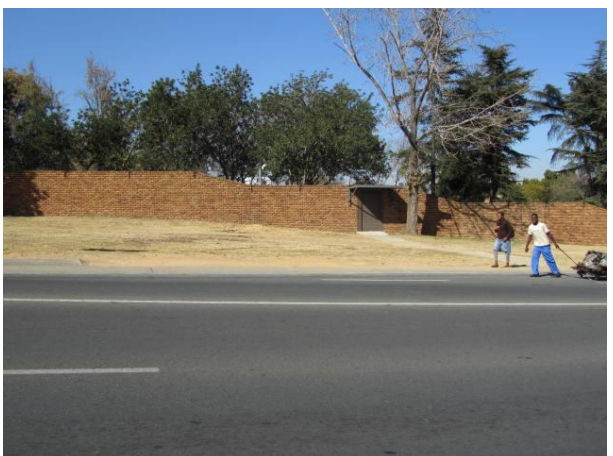
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**Figs. 84 and 85.** Section 21434/B/LP/07.



**Figs. 86 and 87.** Section 21434/B/LP/07.



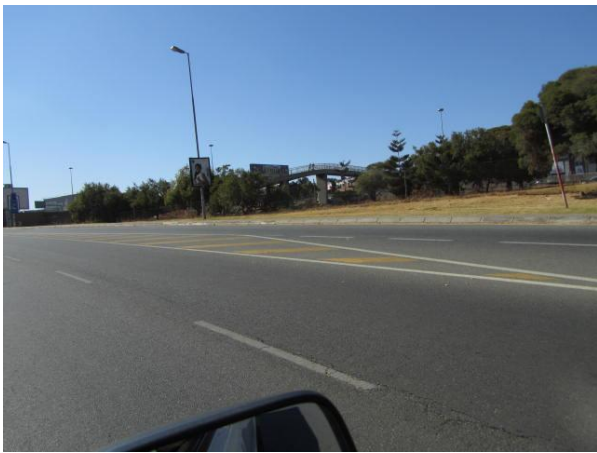
**Figs. 88 and 89.** Section 21434/B/LP/07.



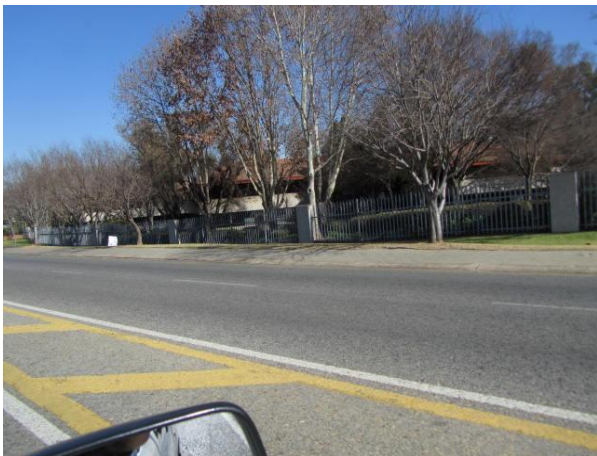
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 90 and 91.** Section 21434/B/LP/07.



**Figs. 92 and 93.** Section 21434/B/LP/08.



**Figs. 94 and 95.** Section 21434/B/LP/08.

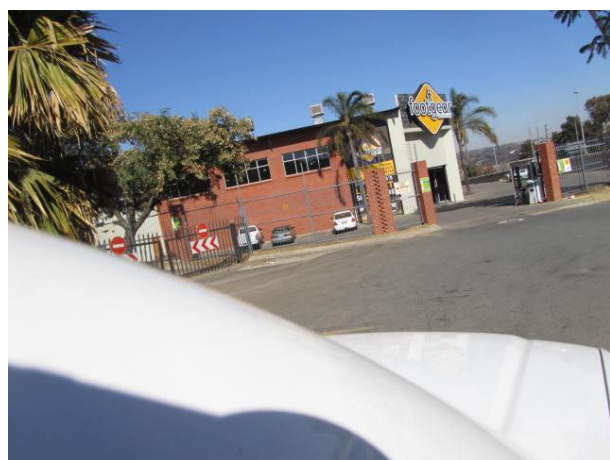
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 96 and 97.** Section 21434/B/LP/08.



**Figures 98 and 99.** Section 21434/B/LP/08.



**Figs. 100 and 101.** Section 21434/B/LP/08.

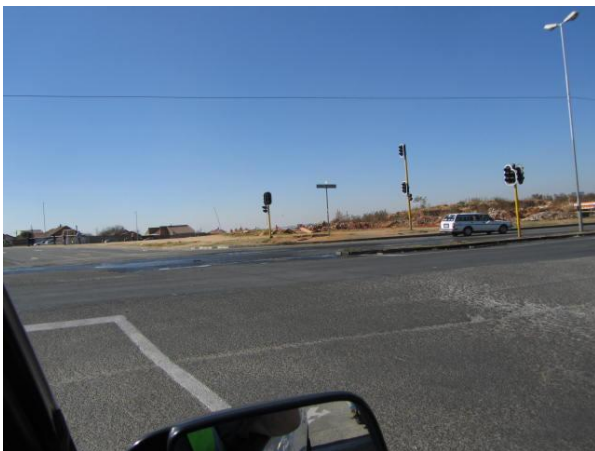
*1st phase heritage impact assessment for the Johannesburg Bus Rapid Transit System along Katherine Street.*



**Figs. 102 and 103.** Section 21434/B/LP/08.



**Figs. 104 and 105.** Section 21434/B/LP/08.



**Figs. 106 and 107.** Section 21434/B/LP/08.

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**Figs. 108 and 109.** Section 21434/B/LP/08.