



**NGT INFRACO**  
PLANNING | CONSTRUCTION | MAINTENANCE

**PROJECT TITLE:**

PROPOSED SUPPERCHICKS POULTRY FARM ON PORTION 68 OF THE FARM  
KAMEELZYNKRAAL NO 547 WITHIN CITY OF TSHWANE METROPOLITAN MUNICIPALITY,  
GAUTENG PROVINCE, SOUTH AFRICA.

**PROJECT EIA REFERENCE:**

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**SPECIALIST REPORT:**

HIA for the Proposed SuperChicks Poultry Farm on  
Portion 68 of the Farm Kameelzynkraal No 547 Within  
The, Pretoria East Within the City of Tshwane  
Metropolitan Municipality, Gauteng Province, South  
Africa

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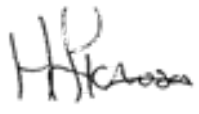
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**DECLARATION OF INDEPENDENCE**

Nkosinathi Tomose for NGT Infraco has compiled this report. The views expressed in this report are entirely those of the author and no other interest was displayed during the decision-making process for the project.

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<b>CLIENT:</b>	<b>MOKGOPE CONSULTING CC</b>
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<b>DESIGNATION</b>	Environmental Affairs
<b>SIGNATURE</b>	

## **EXECUTIVE SUMMARY**

Mokgope has appointed NGT Infraco to conduct the HIA study for SuperChicks Poultry Farm's proposed development on Portion 68 of the Farm Kameelzynkraal No 547, Region 7, Ward 105, Pretoria East within the CoTMM, Gauteng Province, South Africa. This report forms part of the environmental impact assessment ("EIA") and Environmental Management Programme ("EMPr") process for the proposed development. The study is conducted independently in terms of Section 38 (1) and Section 38 (8) of the National Heritage Resources Act ("NHRA"), No. 25 of 1999.

The standard NGT Infraco HIA study entails: conducting a detailed background information search of the receiving environment. The investigation assesses the previous studies conducted in and around the proposed development study area and the broader receiving environment, among other forms of data. It also includes performing an onsite investigation (survey) to identify and map heritage resources and sites. This step is followed by assessing the impacts of the proposed development on the identified heritage resources and sites. A heritage Public Participation (PP) process is conducted as part of the HIA study to allow Interested and Affected Parties to give inputs on the heritage study and conservation of heritage resources. Then conclusions are made about the nature of the project's impacts on the heritage resources or site or the heritage fabric of a place or landscape. Recommendations are made to best use heritage as the base for the development or incorporate heritage resources and sites as an integral component of the sustainable conservation project. When it is inevitable not to impact heritage resources, the cultural landscape and heritage memorialisation strategies are devised to memorialise its heritage fabric. Because heritage also has an intangible aspect, which often ignored, even in projects that neither negatively impact heritage resources or site, memorialisation is encouraged to evoke the cultural significance or a place or landscape (its cultural heritage fabric). Furthermore, recommendations are made on how the positive project benefits can be enhanced to ensure a long-term strategy for the conservation and promotion of heritage resources, if any are found, particularly in urban gentrification programmes with heritage forming part of urbanism strategy.

The survey of the project area was conducted on:

- May 2020 by Nkosinathi Tomose (Managing Director and Principal Consultant)

The survey was conducted on foot. A vehicle was also used to access the site. The survey did yield an MSA flake (scatter with no context) and a recent stone-walled structure with no roof. The MSA flake has been assessed to Low Heritage Significance, and the stone-walled structure is recent and does not conform to Section 34 general protection of historic property. It is also not associated with any historical event or individuals. Based on the results of the field survey for heritage resources and the study for plants and other natural environmental features that have the potential to contribute to the cultural landscape, the following conclusions and recommendations are made:

### Conclusions:

- It is concluded that the survey of SuperChicks Poultry Farm yielded one MSA stone tool in the form of a flake that is a scatter without any context. When assessed, this scatter is of Low Archaeological and Heritage Significance. This resource triggered Section 35 of the NHRA, No. 25 of 1999
- It also yielded a stone-walled structure that is recent in age and not of Cultural Heritage Significance; the structure was built in the mid-1990s and is less than 60 years in age and not protected in Section 34 of the NHRA, No.; 25 of 1999.
- No other archaeological and heritage resources were found on site. It has, however, been found that the site falls within an area that contains a combination of Low and Highly Sensitive Palaeontological Resources. The Palaeontological Sensitivity Layer is in terms of the Council of Geoscience and SAHRA Palaeontological Sensitivity Layer. Section 35 of the NHRA, No. 25 is again triggered. Palaeontological Resources Management Protocol is developed and concluded in this report as Annexure 1. The Protocol contains recommendations on how the Paleontologically Resources should be treated during the construction phase of the project. It is also concluded that the development to proceed subject to adoption and implementation of the recommendation contained in Annexure 1.
- In terms of the natural environment and its potential to contribute to the cultural landscape, the SuperChicks site did not yield any natural environmental features of cultural heritage significance. Such sites often include mountains, forest, caves or water bodies such as wetlands and springs that may have a cultural association. The trees on site are not of any cultural significance like Morula trees in the Northern Regions of South Africa.
- It also did not yield plant species that are of medicinal importance in terms of terrestrial biodiversity, which, when assessed, contains some of the essential terrestrial biodiversity species.
- An informal interview with occupants of the homestead situated east of the site regarding potential graves on site established no graves on site. People were buried in a centralised cemetery in the area.
- Based on these conclusions made about the site, the following recommendation is made.

### Recommendations:

- It is recommended that both PHRA-G and SAHRA exercise their discretion and grant the project a **Positive Review Comment** and allow the proposed development to continue as planned.
- The scatter found on site is of Low Archaeological and Heritage Significance, and the stone-walled structure is less than 60 years and not any cultural importance.
- With regards to Palaeontological Sensitivity Assessment, the development can proceed as planned with monitoring of the construction activities by a qualified palaeontologist - the monitoring should take place during foundation trenching.

**Disclaimer:**

Although a comprehensive survey of the site took place; some archaeological material and unmarked graves are subterranean and may have been missed. As such, they may have not been identified during the survey. If the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should construction activities unearth such resources, the development activities should immediately stop, and an archaeologist is contacted to conduct a site visit, assess the resources and recommend the finds' mitigation measures. SAHRA and PHRA-G should also be informed immediately of such discoveries. In this case, no archaeological material of graves should be moved from the site until the heritage specialist has been able to assess the site's significance and archaeological material, subject to SAHRA approval.

Some areas of the site were covered in high thatch grass; as such, should any stone tool material be discovered during site clearance – they should be reported to the SAHRA APM unit. Construction activities should be stopped until a qualified Stone Age Archaeologist conducts assesses the discovered resources. The resources are mitigated following the receipt of the mitigation permit by the SAHRA APM Unit.

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## LIST OF ABBREVIATIONS

ACRONYMS	DESCRIPTION
<b>AUTHORITIES</b>	
ASAPA	Association of South African Professional Archaeologists
CoTMM	City of Tshwane Metropolitan Municipality
NGT	Nurture, Grow, Treasure
PHRA-G	Provincial Heritage Resources Agency Gauteng
SAHRA	South African Heritage Resources Agency
GDARD	Gauteng Department of Agriculture and Rural Development
<b>DISCIPLINE</b>	
BGG	Burial grounds and graves
CMP	Conservation Management Plan
ICMP	Integrated Conservation Management Plan
HIA	Heritage Impact Assessment
H-PP	Heritage Public Participation
I&APs	Interested and Affected Parties
PIA	Palaeontological Impact Assessment
PSL	Palaeontological Sensitivity Layer
RQC	Review and Quality Control
<b>LEGAL</b>	
NHRA	National Heritage Resources Act, No. 25 of 1999
NEMA	National Environmental Management Act, No. 108 of 1998

## TERMS AND DEFINITIONS

### *Archaeological resources*

These include:

- Material remains resulting from human activities which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;

- Rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- Wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- Features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

### ***Palaeontological***

This means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial.

### ***Cultural significance***

- This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

### ***Development***

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in the change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- Construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- Carrying out any works on or over or under a place;
- Subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- Constructing or putting up for display signs or boards; any change to the natural or existing condition or topography of land;
- And any removal or destruction of trees, or removal of vegetation or topsoil.

**Heritage resources:** This means any place or object of cultural significance

### ***Living heritage***

- This means the intangible aspects of inherited culture and may include cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationship.

## 1. INTRODUCTION

### 1.1. Background Information for Proposed Programme

SuperChicks (Pty) Ltd has appointed Mokgope to manage the EIA process and compile an EMPr for the proposed development of SuperChicks Poultry Farm on SuperChicks Poultry Farm on Portion 68 of the Farm Kameelzynkraal No 547, Region 7, Ward 105, Pretoria East within City of Tshwane Metropolitan Municipality (CoTMM), Gauteng Province.

According to the project document shared with NGT Infraco, the proposed SuperChicks Poultry Farm will include the development of the following infrastructure (*Figure 1*):

One hatchery and six broiler houses are to be built; these six houses will have an open environment and include staff facilities such as ablutions, a kitchen etc. The structures measuring 18m x 60m and will be a closed environment and contain the necessary amenities. The hatchery hold approximately capacity of 234 000 eggs per week, while the broiler houses will keep 250 000 birds per cycle of 42 days. The access road to the site will be extended to roughly a width of 8 metres in total.

The proposed houses will use some of the latest technology available for ventilation, lighting, heating, and cooling. Environmental conditions such as temperature and lighting play a vital role in bird growth and development and, therefore, be carefully controlled. The proposed houses will also make use of the latest technology for automatic feed and water distribution.

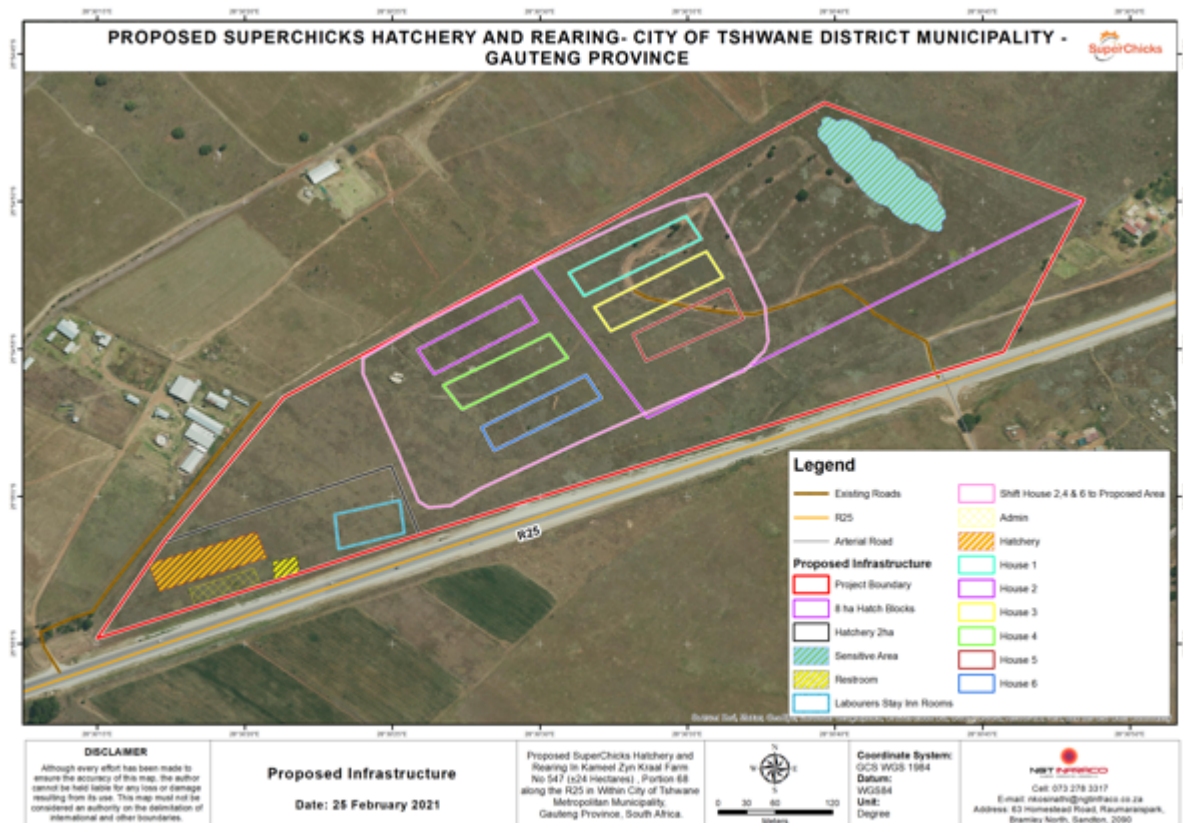
SuperChicks proposes to construct a hatchery of 6 broilers estimated to produce a maximum of 76 800 eggs set per week. Structures to be constructed on-site include but not limited to:

- 6 X Building Structures (Size: 126mtrs x 15mtrs)
- Length: 126m
- Width: 15m
- Eave height: 2.3m
- Dog House length: 27m
- Dog House width: 1.5m
- Secure wind speed design: 120kmph (according to engineering standards)
- Rack and Pinion doors: 27m x 1m (x 2) shutters to be supplied by Big Dutchman
- Control and storeroom: 3m x 3m (x2)
- Production area: 1890m<sup>2</sup>
- Max allowable temperature: 40 deg
- Min allowable temperature: -10 deg
- Roof slope: 12.5 deg

#### Additional Structures

- 1 x Egg collection System
- 1 x Manure Scrapper
- 1 x Horizontal and Elevator Manure Conveyor

- 1 x Chain Feeding System (chain provided for each tier)
- 1 x Flex Auger System
- 2 x 19 metric tonne Feeding Tanks
- Ventilation Equipment
- Electrical Component with control panel
- 1 x Curtain System of 188m x 3 m
- Water requirements will need two boreholes for the site.
- 1 x 20m<sup>2</sup> waste storage area.



*Figure 1- Sketch of the proposed infrastructure*

This HIA forms part of the various specialist studies to inform the BAR and the EMPr about the receiving environment's environmental and heritage status. NGT Infracore has been appointed to manage the HIA. The study investigates the potential impacts of the proposed project on heritage resources within the receiving environment and the impact on the intangible heritage fabric of the receiving environment. This HIA's objective is to advise on the management of the heritage resources (both the tangible and the intangible) in the study area in terms of known heritage resources management measures in line with the NHRA, No. 25 of 1999.

**1.2. Proposed Work Scope**

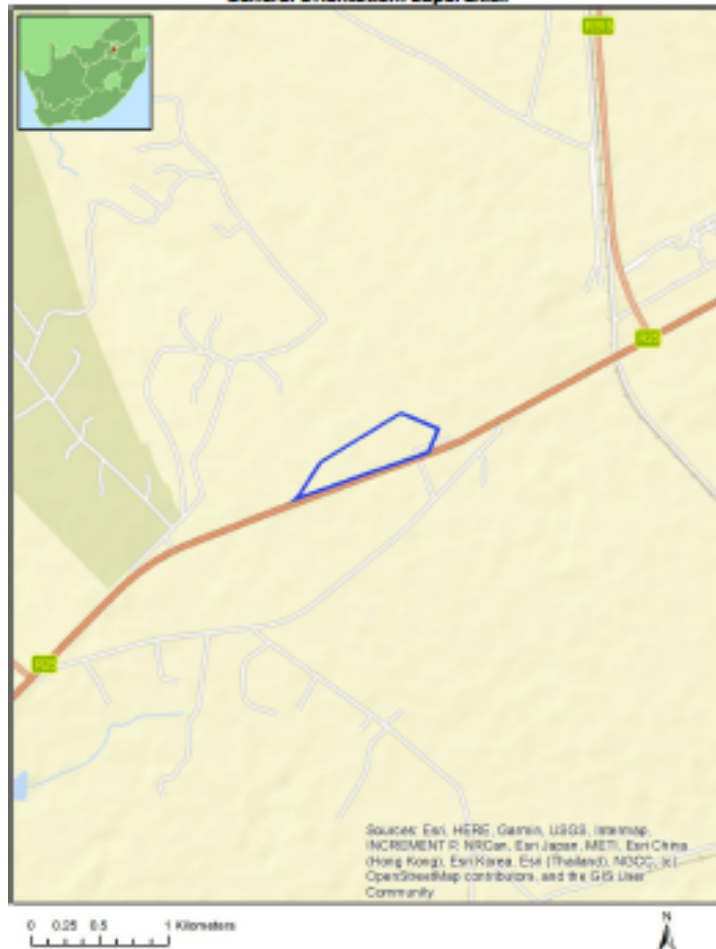
- BAR and EMPr conducted by Mokgope and acquisition of environmental permits
- Specialist inputs to inform the BAR and EMPr

Over and above the compliance requirements for HIA's as part of the BAR and EMPr, this HIA intends to give information on what should be done to enhance further the cultural fabric of the receiving environment in the second stage of the project.

### **1.3. Location of the study area**

The study area is situated on the R25 and Portion 68 of the Farm Kameelzynkraal No 547, Region 7, of the CoTMM, Gauteng Province (*Figure 2 and Figure 4*). It is situated east of Klipkop Conservatory (*Figure 3*). It is nestled between the following major roads (*Figure 4*):

- The M6 in the west
- The R 515 in the east
- The R 25 in the south and the M4 in found further north
- Road (Soutpad Road) in the west.



### Cadastral details of the proposed site

#### Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	KAMEEL ZYN KRAAL	547	0	25°55'19.31S	28°31'12.78E	Farm
2	KAMEEL ZYN KRAAL	547	39	25°54'58.03S	28°30'48E	Farm Portion
3	KAMEEL ZYN KRAAL	547	68	25°54'50.38S	28°30'40.2E	Farm Portion
4	KAMEEL ZYN KRAAL	547	78	25°55'25.11S	28°30'5.05E	Farm Portion

Figure 2- SuperChicks site along the R25



*Figure 3- SuperChicks site in relation to Klipkop conservatory and the R25*



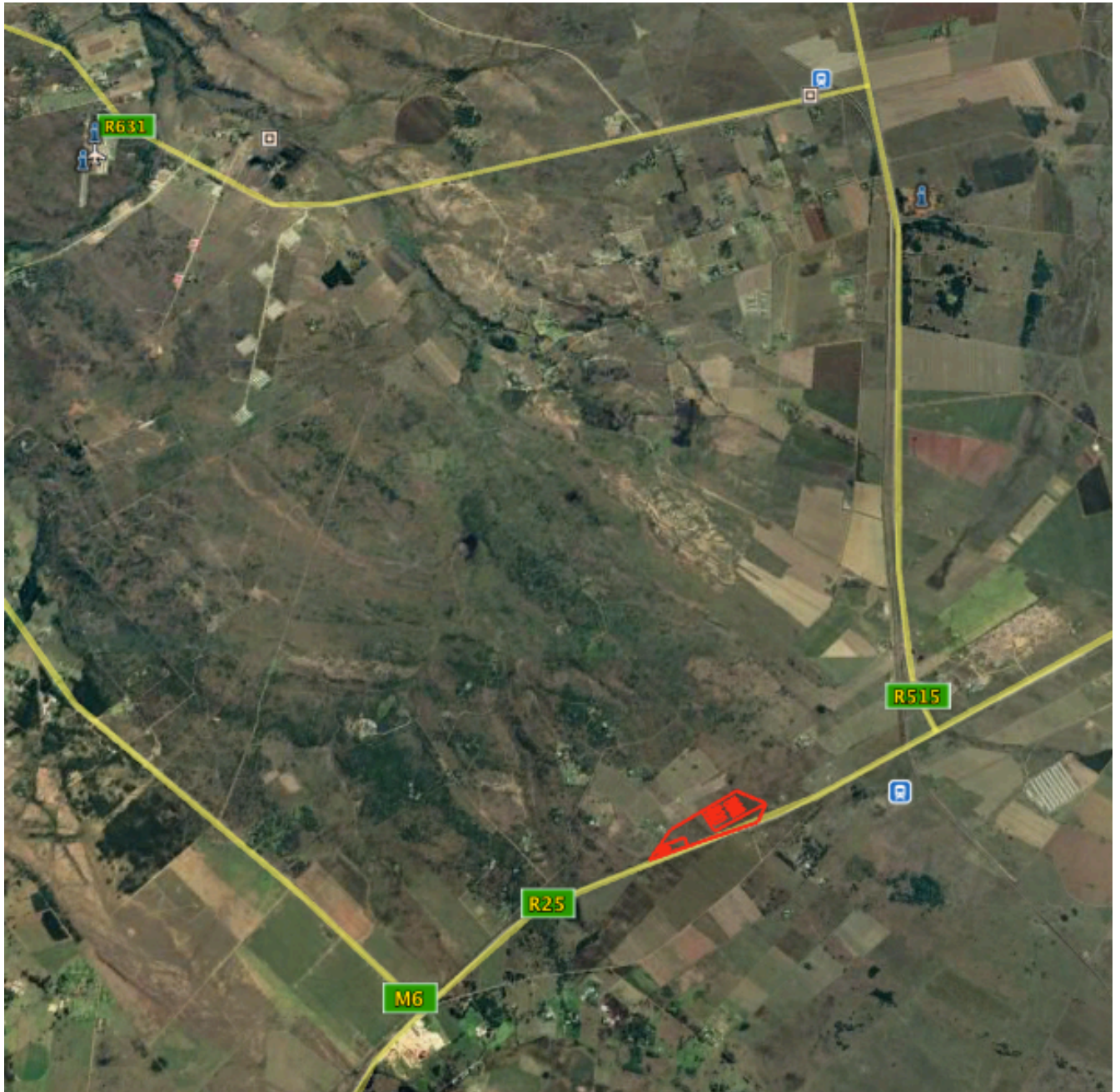


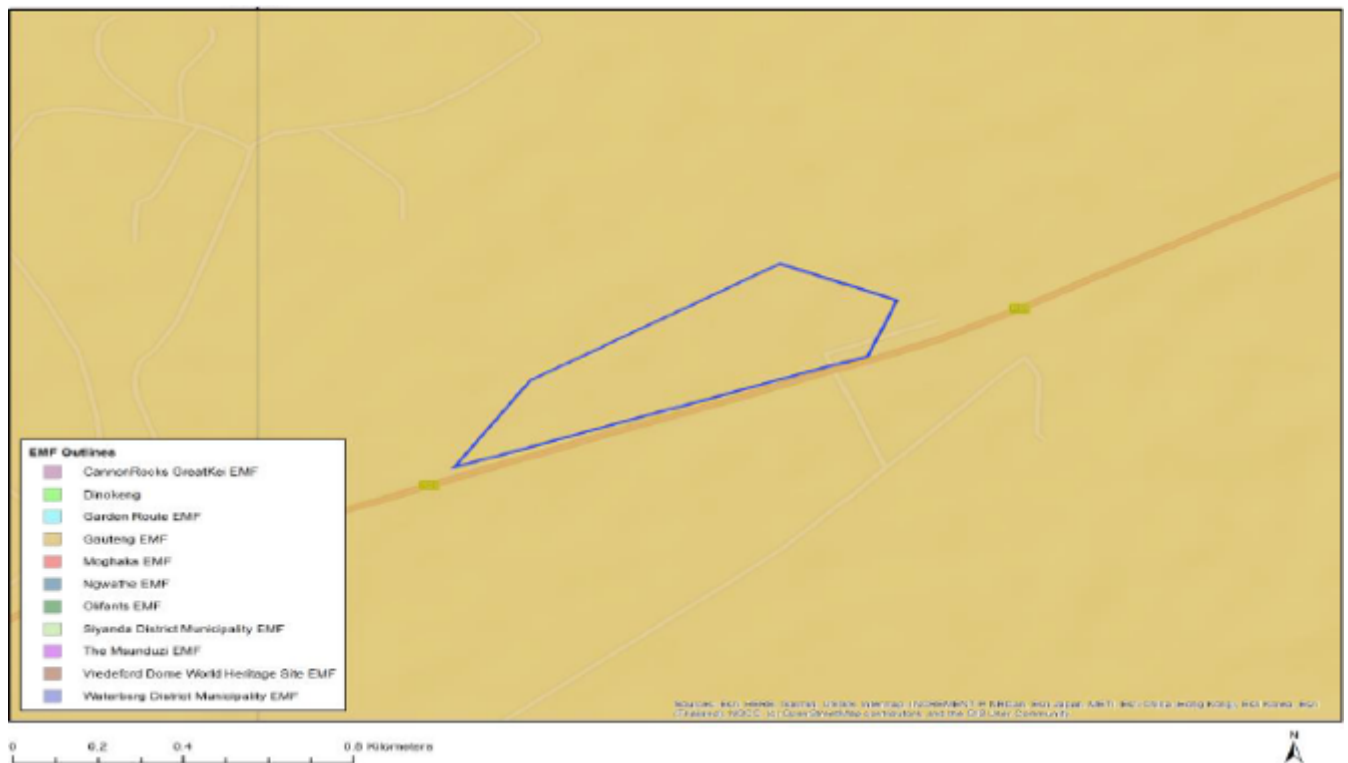
Figure 4-Major roads leading to site denoted in red

## 1.4. Condition Description, History and Developmental Context of the Affected Area

### 1.4.1. Spatial Planning and Land Use

The site is zoned an Agricultural – a small holding. In terms of the environmental sensitivity layer the site falls within:

- Gauteng Environmental Management Framework Zone with development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification (*Figure 5*)
- It is within a Gauteng EMF Zone 5 and the Strategic Transmission Corridor (*Figure 6*)
- It is within 23km of approved solar power generation site (*Figure 7*)
- The site is within an area that was previously used for agricultural activities in form of plough fields and has a structure that was built in the Mid 1990 [according to questions posed to the nearby neighbours] (*see Figure 8- 11*)



*Figure 5-Site within Gauteng EMF*

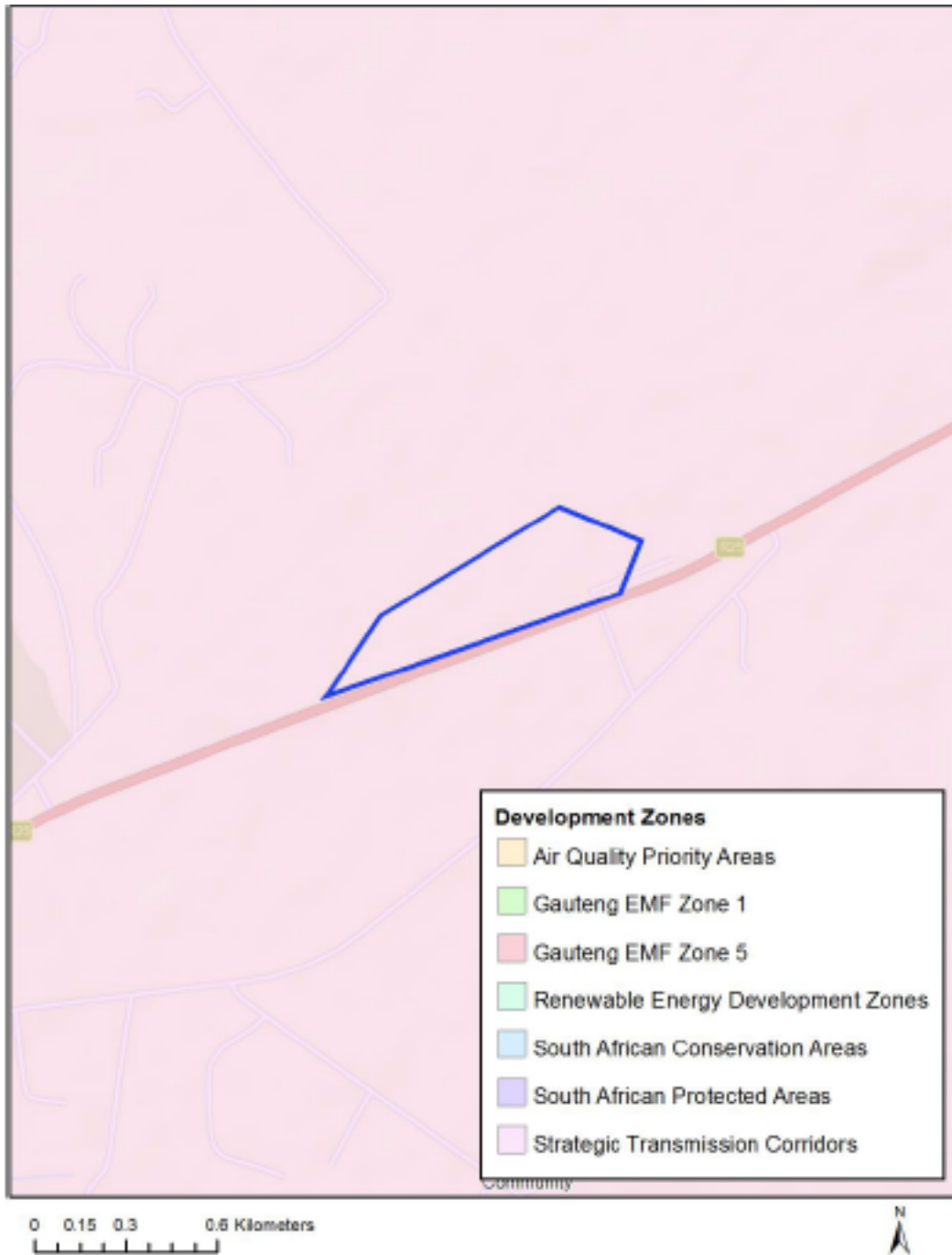


Figure 6-Site within the Gauteng EMF Zone 5 and the Strategic Transmission Corridor

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	12/12/20/1923/2	Solar PV	Approved	24.5

Figure 7- Solar development consideration



*Figure 8- general landscape view of the site facing west*



*Figure 9- Stones packed along the wester and north west fence line of the site*



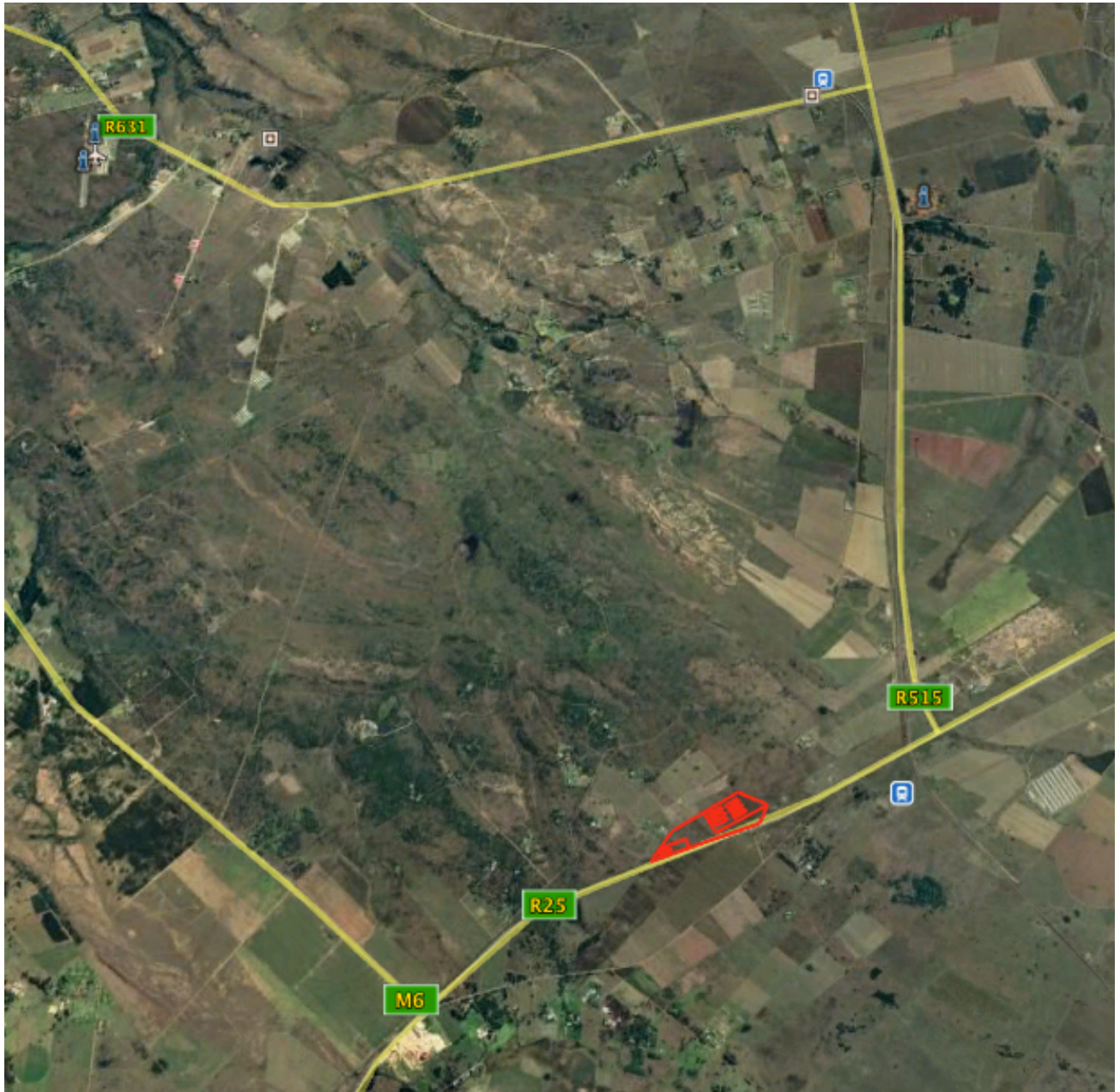
*Figure 10- Exposed area from grass cover*



*Figure 11- stone walled structure on the western end of the site*

#### **1.4.2. Accessibility of the Area**

The site which is situated to the south-east of Pretoria Central Business District ""CB"" can be access via the M6 and R515 from the M4 in the north linking Pretoria and Emalahleni. The R25 linking Midrand in Johannesburg (in the south-west) and Bronkhorstspuit in the north-east (*Figure 12*).



*Figure 12-Access routes to site*

### **1.4.3. Regional Context: Archaeology and Heritage**

The study area falls within Gauteng Province, a rich archaeological, heritage and palaeontological landscape.

#### ***Stone Age***

The Stone Age is divided into the Early Stone Age (ESA) ( $\pm 2$  Ma to  $\pm 300$  ka), the Middle Stone Age (MSA) ( $\pm 300$  ka to  $\pm 40$  ka) and the Later Stone Age (LSA) ( $\pm 40$  ka to  $\pm 2$  ka). The Stone Age refers to humans that mainly used stone as their technological marker. The ESA is characterized by two technological industries which are the Oldowan ( $\pm 2$  Ma to  $\pm 1.5$  Ma) and Acheulean ( $\pm 1.5$  Ma to 300 ka (Klein 2000; Lombard *et al.*, 2012). The Oldowan industry is characterised by flakes produced from

pebbles, cobbles and percussive tools (Klein 2000; Roche *et al.* 2009; Birkholtz 2011). In current debates two species of human ancestors, an early form of *Homo* and *Paranthropus robustus* have been identified who are thought to have been skilled enough to craft these stone tools (Esterhuysen & Smith 2007).

The Acheulean industry is characterised by large hand axes, cleavers and other bifacial tools (Klein 2000). In South Africa this stone tool complex is associated to *Homo ergaster*. In South Africa the Acheulean stone tool complex is often associated with *Homo ergaster*, who compared to modern humans in stature, brain size and body as well as facial proportions (Esterhuysen & Smith 2007). Unlike most places in South Africa, the Gauteng Province has unearthed significant evidence associated to the ESA period.

The Gauteng Province hosts one of the most significant heritage sites in the world (*Table. 2*), the Cradle of Humankind. The site provides researcher's the opportunity to understand more about past people's heritage, human evolution, palaeoenvironments and paleoclimates. This information can aid in understanding the worlds' social and cultural dynamics and predicting future environments and climates. The sites are namely: Sterkfontein located approximately 30 km away from the study area where some of the prominent skeletal remains such as Mrs Ples and Acheulean and Oldowan stones tools have been found (Mitchell 2002; Reynolds & Kibii 2011); Rising Star Cave a site where several hominin species such as *Homo Naledi* was found (Berger *et al.*, 2015); Swartkrans where Oldowan stone tools where excavated (Sutton 2012); Roodekop where two ESA sites as well as mixed MSA/ LSA occurrences were reported (Van Ryneveld 2015); and Farm Kaalfontein (366JR), near the Willem Prinsloo Agricultural Museum, yielded some of the oldest and largest Stone Age implements in South Africa (Kruger 2016) (see *Table. 2*).

The MSA is widely debated to be the phase that marked a change in hominin species to anatomically modern humans (Wadley 2007). Unlike hominin species, these modern humans manufactured a wider range of tools with technologies more advanced than those from earlier periods. This enabled skilled hunter-gatherer bands to adapt to different environments. Henceforth, rock shelters and caves were used for occupation and reoccupation over very long periods of time (Van Schalkwyk 2016). Evidence of ochre and ostrich water flasks found in MSA sites across southern Africa inform archaeologists about the emergence of symbolic behaviour and distinctive stone tools yielded evidence that this region is the origin of cognitive modern humans. The MSA period marked a change in stone tool technological techniques from the Prepared Core Technique to the Micro Lithics Technique, which became a dominant feature or trait in the LSA (Wadley 2007; Du Piesanie 2014). A greater variety of tools with diverse sizes and shapes appeared by 250 000 BP. The MSA stone tool assemblage include blades, flakes, scrapers and pointed tools that could have been hafted and used as spears or arrowheads (Wadley 2007; Birkholtz 2011; Du Piesanie 2014). According to Tomose (2013), other archaeological site traits associated with the MSA and modern human behaviour can be seen in the early forms of symbolism in form of inscriptions or markings which can be defined as an early form of art in southern Africa. Moreover, the adoption of the use of fire and evidence of fossil bones are further traits that can be associated with the MSA and modern humans (Tomose 2013). In the Gauteng Province, evidence of this period has been excavated at Primrose Ridge area in adjacent Germiston; Henley-On-Klip south of Germiston (Pelser 2015); Swartkrans and at Melville Koppies (Bergh 1999) (*Table 1*)

Table 1: Archaeological sites located in the Gauteng Province

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
1.	Arkleton, 852 Schoeman Street, Arcadia, Pretoria	Historical Building	26646
2.	Broederstroon	Iron Age	26950 26955 25266 39395 108214
3.	115 Charles Street, Brooklyn, Pretoria	Historic Dwelling-House	26716
4.	Coopers Cave	Early Stone Age	5528 3042
5.	Drimolen Cave	Early Stone Age	2949
6.	Dutch Reformed Church, Kirkness Street, Pretoria East, Pretoria	Historical Building	26726
7.	145 Eastwood Street, Pretoria	Historical Building	29761
8.	Faerie Glen-Wapadrand Country Estate 01	Iron Age	45093
9.	Farm Kaalfontein (366JR)	Early Stone Age	MAPID_02267
10.	Fort Klapperkop, Groenkloof, Pretoria	Battlefield Building (Historical Building)	26699
11.	Fort Schanskop, Groenkloof, Pretoria	Battlefield Building (Historical Building)	26668
12.	Freedom Park	Memorial (World War I, World War II as well as during the apartheid era)	93204
13.	Gladysvale Cave	Early/ Middle Stone Age	6283
14.	Haasgat	Early Stone Age	3597 4920 6712
15.	Hatherley 311 JR	Iron Age	89624
16.	Henley-On-Klip	Middle Stone Age	105242 34776
17.	Jeppe High School for Boys	Historical building	26923
18.	Klipriviersberg Nature Reserve	Iron Age	2766 5605
19.	Kromdraai	Early Stone Age	4154 4564
20.	Kruger House, Church Street West, Pretoria	Historical building	26718



NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
21.	Leenhoff House, 799 Schoeman Street, Arcadia, Pretoria.	Historical building	26697
22.	Lion House, 20 Roberts Avenue, Kensington,	Historical building	26892
23.	Magsa Flats, 734 Arcadia Road, Arcadia, Pretoria	Historical building	26652
24.	Malapa	Early Stone Age	4771
25.	Maropeng	Early Stone Age	3035 5143 4937
26.	Mea Vota, 62 Rissik Street, Sunnyside, Pretoria	Historical building	26689
27.	Melville Koppies	Middle/ Late Stone Age, Iron Age	1526
28.	Melrose House, 275 Jacob Mare Street, Sunnyside, Pretoria	Historical building	26717
29.	Meyersdal Nature Estate	Iron Age	44807
30.	Modderfontein	Iron Age	46048
31.	Moerdyk House, 274 Pomona Street, Muckleneuk, Pretoria	Historical building	26698
32.	Mooiplaats 367JR	Iron age	94485
33.	Motsetsi Cave	Early Stone Age	2464
34.	Old Arts Building, University of Pretoria, Pretoria	Historical building	26725
35.	Old Merensky Library, University of Pretoria, Lynnwood Road, Pretoria	Historical building	26709
36.	Olifantsvlei	Iron Age	34927
37.	Oost-Eind Primary School, 70 Meintjies Street, Sunnyside, Pretoria	Historical building	26654
38.	Orange Court, Arcadia, Pretoria	Historical building	26712
39.	Pioneer Museum, Silverton, Pretoria	Historical building	26702
40.	Platberg	Late Iron Age	16490- 16508 19181- 19197 26272 32491
41.	Plovers Lake	Middle Stone Age	2462 2262

NO.	ARCHAEOLOGICAL SITE	TYPE OF SITE	SAHRIS ID
42.	Portion 22 of Brakfontein 399 JR, Rooihuiskraal Battlefield, Verwoerdburg, Pretoria	Battlefield (Historical Period)	26710
43.	Primrose Ridge	Middle Stone Age	9066
44.	Redan	Late Stone Age	1599
45.	Rietfontein	Iron age	33792
46.	Rietvlei Nature Reserve	Iron Age	35116
47.	Rising Star Cave	Early Stone Age	11621 11598
48.	Rondegeluk, Pretorius Street, Pretoria	Historical building	26677
49.	Roodekop	Early/ Middle/ Late Stone Age	35099-35106
50.	Sammy Marks and Kynoch Building, Church Street, Pretoria	Historical building	26711
51.	Scott House, Kensington	Historical building	26850
52.	Sterkfontein Caves	Early/Middle Stone Age	6620 4640 2752
53.	Swartkrans Cave	Early/ Middle Stone Age	25281
54.	Suikerbosrand	Iron Age	26932
55.	Swavelpoort	Iron Age	94515
56.	Tweefontein	Iron Age	42339
57.	Vlakfontein	Late Iron Age	24905 25718 32458 32382 41218- 41222 45054 90446
58.	Voortrekker Monument	Historical building	26660
59.	Wonder Caves	Early Stone Age	5014
60.	Zwartkoppies	Iron Age	44785

The Later Stone Age (LSA) is the third phase identified in South Africa's archaeological history. It incorporates the period from 25 000 years BP. up to the Iron Age, Historical Periods and contact between hunter-gatherers and Iron Age farmers or European colonists. The LSA is associated with modern humans and is characterised by microlithic stone tools, flakes and scrapers from industries such as Smithfield and Robberg (Binneman 1995; Birkholtz 2011; Lombard *et al.*, 2012). Moreover, the LSA is associated with rock engravings and rock paintings (Mitchell 2002; Wadley 2007).

There was also a development of an economic system, whereby hunter-gatherers inland hunted fauna and gathered plants which can be seen by seed remains in archaeological assemblages. Furthermore, evidence of symbolic behaviour has been found in southern African archaeological sites during this time. Symbolic behaviour of LSA period is shown by deliberate burial (Hall 1990), decorating using ostrich eggshell beads and the use of ochre (Hall & Binneman 1987). Within the Gauteng Province, LSA sites have been recorded in Melville Koppies; and LSA rock art sites are found across the landscape of the Magaliesberg area, to the north and east of Mamelodi, and in Redan (Bergh 1999; Tomose 2013; Kruger 2016).

### **Iron Age**

The Iron Age is divided into the Early Iron Age (EIA) (AD 200 – 900), the Middle Iron Age (MIA) (AD 900 – 1300), and the Late Iron Age (LIA) (AD 1300 – 1840). The Iron Age is characterised by farming communities who domesticated animals, cultivated plants, produced various ceramic vessels, smelted iron for weapons and manufactured tools (Tomose 2013; Kruger 2016). There is also evidence of small-scale mining of copper, iron and gold in the northern areas of Southern Africa (Freide 1980). The Iron Age groups migrated with their material culture and it can be observed in the archaeological record. The material culture expresses the identity of the groups as it forms part of the group's distinct patterns and cultural symbols (Huffman 2002, 2007; Kruger 2016). Ceramic style is used in Iron Age archaeology to distinguish the different Iron Age groups that lived in the southern African landscape.

The EIA is characterised by the first settlements of Bantu farming communities in southern Africa (Badenhorst 2010). These farmers mainly cultivated plants, herded domestic animals primarily sheep and goats, and produced metal as well as ceramic vessels. Furthermore, these farmers lived in houses located on valley floors in the eastern regions of the country (Badenhorst 2010; Tomose 2013), to mainly cater subsistence for their crops and livestock. Other Iron Age traits include stonewalls, pits and burials, as well as cattle dung (Tomose 2013). During the EIA, three streams of pottery are identified in Africa, namely: the Kalundu Tradition which is referred as the western stream, the Kwale Branch which is the eastern stream, and the Nkope Branch which is the central stream (Huffman 2007a). Both the Nkope and Kwale streams form part of the Urewe Tradition (Mitchell 2002; Huffman 2002, 2007a), which can be traced back to east Africa (Boeyens 2003). Several ceramics that are associated with the EIA have been found in areas surrounding Pretoria and Johannesburg as well as the region between Musina and Nelspruit, such as the Mzonjani facies (AD 450 – 740) of the Kwale Branch and Urewe Tradition. These facies are characterised by punctuates on the rim and spaced motives on the shoulder (Evers 1975, 1977; Huffman 2007b).

The MIA is a period that is mainly focussed in the Mapungubwe region, in southern Africa. The inhabitants that lived in the Mapungubwe region were mainly farmers and traders of gold. The MIA

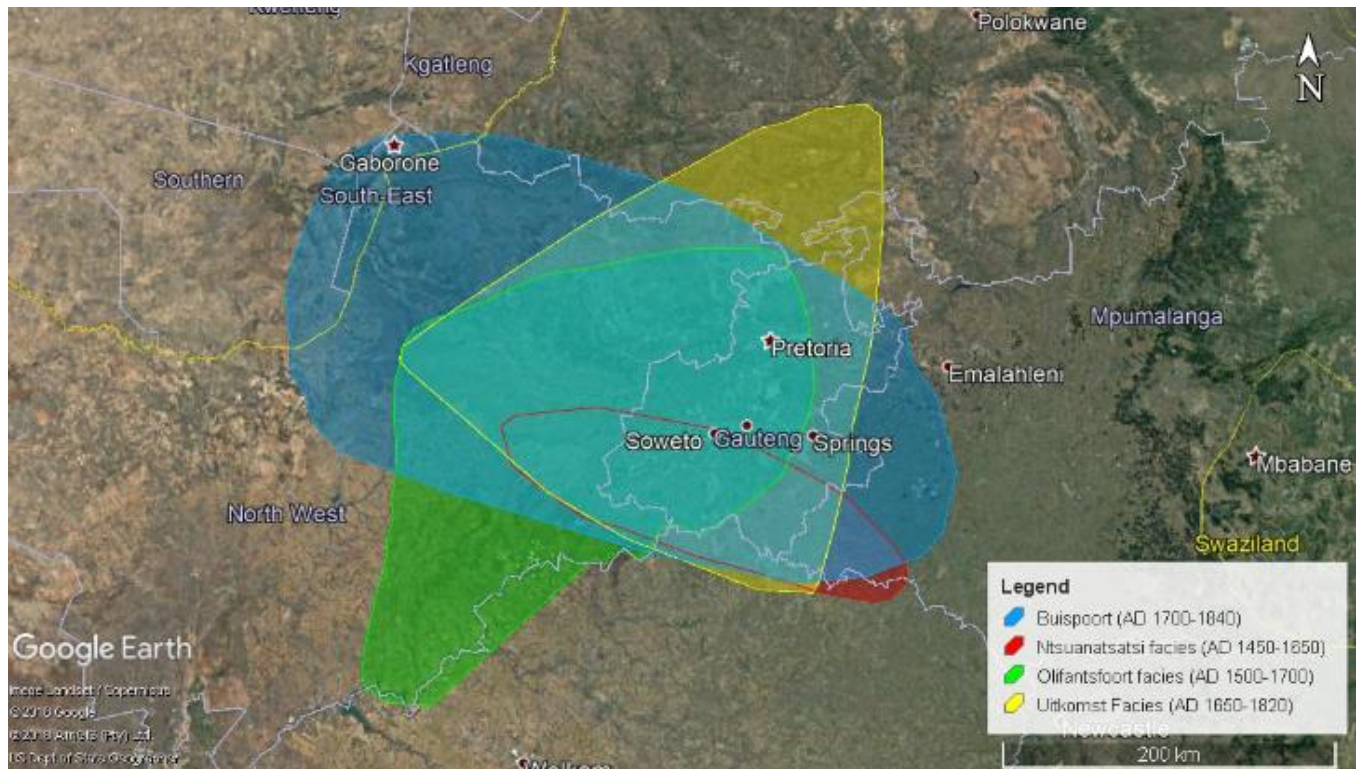
saw an increase in the population size of the southern African communities such as those who settled at Mapungubwe (Badenhorst 2010). This was brought on by the success of the established trading networks of ivory and gold for goods such as beads and cloth in the trans-Indian Ocean (Badenhorst 2010).

The LIA is mainly characterised by the domestication of cattle, hilltop settlements and the making of ceramics. Studies conducted on the LIA classification of stone wall settlement patterns have been done by Maggs (1976), Mason (1986), and Huffman (2002). Mason (1968) focused his research on stone wall sites located in the Magaliesberg and Johannesburg region, it is also in this area that the 19th century Tswana town, Marothodi is located (Anderson 2009). Mason (1986) published a review of his stone wall settlement types following more research that was conducted in the area. It is believed to be the period when Sotho-Tswana speaking groups migrated from east Africa to southern Africa due to climatic conditions in the region (Boeyens 2003). Ceramics of the Moloko Branch are associated with the Sotho-Tswana groups (Evers 1983; Huffman 2002; Mitchell & Whitelaw 2005; Anderson 2009). The abundance of Moloko ceramic style of the Sotho-Tswana groups found in the Limpopo Province and Botswana regions indicates that this ceramic style replaced the earlier Eiland ceramics around (AD 1000-1300) (Mitchell 2002; Boeyens 2003; Huffman 2007b). This is evidenced by tracing the Moloko ceramics back to the EIA of the Urewe Tradition (Boeyens 2003; Huffman 2007b).

Huffman (2002) was able to identify three Stone Settlement basic types of LIA sites, all of which being of the Central Cattle Pattern (CCP). These include; firstly, Group I- which is associated with the southern Sotho-Tswana BaFokeng group and dates to the period AD1500-1650. Huffman (2002) calls these type of sites Type N settlements and they are identified by circular periphery stone walls. Secondly, Group II- which is associated with the western Sotho-Tswana BaKwena group and dates to the period AD1650-1820. These sites are identified by circular periphery stone walls and are complemented by single homestead and cattle outpost sites. Lastly, Group III- like Group I is associated with the southern Sotho-Tswana BaFokeng group, but dates to the period AD1650-1820. These sites are also called Type N settlements and are also identified by circular periphery stone walls. However, unlike Group I, Group II and II sites are larger and more complex. Similar to Group II, Group III's Stone Settlement sites have single homestead and cattle outpost sites (Huffman 2002). In the Gauteng Province, Group III sites dominate in the Klipriviersberg Nature Reserve area, with a few Group II sites identified (Van Ryneveld 2015).

The finds of stone walls and ceramics that are associated with Sotho-Tswana groups showed that during the LIA period, the central highveld was occupied by the Sotho-Tswana people (Huffman 2002; Anderson 2009). Moloko ceramics were found in Vlakfontein, south of Johannesburg. Furthermore, stone wall sites were found in Magaliesburg, the area where Marothodi, a 19th century Tswana town was located (Anderson 2009). Several LIA ceramic styles have been found throughout the Gauteng Province (*Figure. 6*). Ceramics of the Ntsuanatsatsi facies (AD 1450 to 1650) of the Blackburn Branch and Urewe Tradition, have been found near the Potchefstroom and Johannesburg regions (Mason 1986; Huffman 2007b). Ntsuanatsatsi facies are characterised by broad band stamping in the neck with stamped arcades on the shoulder (Huffman 2007b). The Uitkomst facies (AD 1650 – 1820) of the same branch is seen as the successors to the Ntsuanatsatsi facies and contains elements of both Nguni (Ntsuanatsatsi facies) and Sotho-Tswana speakers (Olifantspoort facies) pottery styles (Huffman,

2007b). They are characterised by stamped arcades and blocks of parallel incisions and cord impressions, which represents contact between these two groups. In terms of the Iron Age facies it falls within Uitkomst and Buispoort (*Figure 13*)



*Figure 13-Iron age ceramic sequences found throughout the Gauteng Province.*

Uitkomst ceramics are located to the north of the Potchefstroom region and in the Gauteng region (Huffman, 2007). The Olifantspoort facies (AD 1500-1700) of the Moloko Branch has been found around the Potchefstroom, Rustenburg and Pretoria regions (Mason 1986; Mitchell 2002; Huffman 2007). Mason (1974) has also found pottery similar to the Olifantspoort facies on the slopes of Platberg, near Klerksdorp. Olifantspoort pottery is characterised by multiple bands of fine stamping and narrow incision separated by colour (Huffman 2007b). Buispoort ceramics (AD 1700 – 1840), of the Moloko Branch, have been found to the north of Potchefstroom and in the Gauteng Province (Mason 1962, 1986; Boeyens 2000; Huffman 2007). Buispoort ceramics are characterised by rim notching, broadly incised chevrons and white band" (Huffman 2007a).

In the Gauteng Province, evidence of Iron Age habitation can be found at various places including the stone-walled sites on the Klipriviersberg Nature Reserve (more than 100 individual sites), Melville Koppies, Suikerbosrand (see *Table 2*), Lonehill, Bruma Lake and Hearn Drive (Van Schalkwyk 2016). Moreover, there is evidence of LIA iron smelting in the Broederstroom, a site near Hartbeespoort Dam (Friede 1980).

### ***Historical Period***

The Historical Period dates from AD 1600 and is generally the period related to colonial settlement in South Africa. During the Anglo-Boer war several battles took place in and around the Pretoria region.

During 1815 to 1840 Mzilikazi, a Zulu who departed from Shaka Zulu, migrated with his followers north and invaded the interior of South Africa. This led to a series of battles and wars between the Zulu's, Voortrekkers and Sotho-Tswana communities in the Orange Free State and southern Transvaal (Gutteridge 2008). The chaos of these battles displaced many indigenous communities in the interior of Southern Africa. In October 1836, the Voortrekkers engaged in a battle with 3000 of Mzilikazi's warriors on Vegkop hill (Zvobgo 2009). The Voortrekkers who were assisted by the Sotho-Tswana and Griqua groups defeated Mzilikazi's Matabele, who fled to the Limpopo Province and settled in Zimbabwe (Zvobgo 2009).

Following disputes with the British, the Dutch-speaking Voortrekkers migrated north into the interior of southern Africa from the Cape Colony in 1836's in search of creating a homeland, independent of British rule. This migration of approximately 12000 – 140000 Voortrekkers is referred to as the Great Trek. The Voortrekkers migrated north and east into a region that was later called the Orange Free State (Hodge 2008). By 1841 Lukas Cornelius Badenhorst settled in the Pretoria region on a farm that was called Elandspoort and later renamed to Groenkloof (Preller 1938; Van Schalwyk *et al.*, 1992). Other white settlers such as David Botha settled on the farm Hartebeestpoort in Silverton and Doorn Erasmus settled in Wonderboom (Van Schalkwyk 2012). The area the Voortrekkers settled on was later called Pretoria, after A. H. Pretorius (Miller 2013). Pretoria was officially proclaimed as a town in the 1850's and surveyed in 1859 by A. F. du Toit (Van Schalkwyk *et al.*, 1992; Van Schalkwyk 2009; Miller 2013; Paterson 2014). As a result of the expansion and developments that took place in Pretoria several smaller suburbs were incorporated into the city, including Arcadia which was incorporated into Pretoria during 1889 (Paterson 2014).

### ***Conclusions on Literature Review***

It is concluded that the site falls within one of South African regions (Gauteng) that is rich in archaeological and heritage resources; from stone age, to iron age and the historic period.

## 2. TERMS OF REFERENCE FOR THE APPOINTMENT OF HERITAGE SPECIALIST

The HIA is conducted in terms of Sections 38 (1) and 3 (3) of the NHRA, No. 25 of 1999. NGT Infraco is appointed as the lead cultural resources management (CRM) consultant to conduct and manage the HIA and the associated heritage public participation process (H-PPP). The appointment of NGT Infraco is based on NGT experience and expertise in the field of **Conservation** (one of the three pillars of NGT Infraco, others being expertise and experience in **Infrastructure** and **Built Environment**) in which heritage and environment resources conservation form core of its business. But, also based on its understanding of the socio-economic benefits associated with conservation efforts.

### 2.1. NGT Infraco

#### 2.1.1. Overview

NGT Infraco is a through the line **Planning, Construction** and **Maintenance** company. We provide services in infrastructure and property development and conservation. We also offer Logistics and Supply Chain Management as additional services to our business offering.

#### 2.1.2. Our Strategic Objectives

To become a successful, sustainable business that lives up to our values. Our values are encapsulated in our name NGT:

- N: Nurturing relationships that are built with the public, corporate sector and the communities served
- G: Growing sustainable and equitable economies and communities
- T: Treasuring our heritage built environment and infrastructure

#### 2.1.3. Management

Nathi Tomose founded NGT Infraco in 2013. He is the current Managing Director of the company. Nathi has over 13 years' experience and expertise in infrastructure, built environment, and conservation sectors working as a consultant and a construction project manager. His international experience includes France, United States of American, Peoples Republic of China and the Democratic Republic of Congo. He holds a Master of Science, BSc Honours and BA in Humanities from Wits University.

## 2.2. Legal Requirements for Completion of the Study

The NHRA, No. 25 of 1999 sets norms and standards for the management of heritage resources in South Africa. Section 35 and 38 (3) of the NHRA, No. 25 of 1999 informs the current HIA study. Table 2 below gives a summary of all the relevant legislations that informed the current study.

Table 2: Legislation and relevance to this HIA Study

<b>LEGISLATION (INCL. POLICIES, BILLS AND FRAMEWORK)</b>	
<b>Heritage</b>	<ul style="list-style-type: none"> <li>• Heritage resources in South Africa are managed through the National Heritage Resources Act (NHRA), No. 25 of 1999. This Act sets guidelines and principles for the management of the <i>nation estate</i>.</li> <li>• Section 34 becomes relevant in terms of structures.</li> <li>• Section 35 becomes relevant in terms of archaeology and palaeontology.</li> <li>• Section 36 becomes relevant for the management of burial grounds and graves.</li> <li>• Section 38 of the Act becomes relevant to this development based on the nature and character of the programme</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• The NEMA, No. 107 of 1998.</li> <li>• The cultural environment in South Africa is managed through Section 24 of the NEMA, No. 107 of 1998.</li> </ul>



### 3. METHODOLOGY

#### 3.1. Approach to the Study

Nkosinathi Tomose is responsible for compiling the current HIA report and the H-PPP, during its Review and Quality Control (RQC) process. This involved reviewing the First Draft HIA (Revision 01) and revising the Second Draft (Revision 02). The RQC is a standard process at NGT Infraco and forms part of its quality management systems. This process considers if:

- The study addresses project objectives in line with the project work scope
- The Study follows the necessary steps in conducting and completing the work in terms of the required legislation
- The quality of the content of the Study
- The work is conducted, concluded and delivered to the client and the project proponent within the prescribed timeframes and schedule of works:
  - This is an essential factor in project management because it can result in significant project risks such as financial escalations and unrest due to delayed service delivery, especially in public projects.
  - Reputation risks to the appointed Principal Agent
- That document management systems include compliance to non-disclosures and document pathway between the consultant, the Principal-Agent, stakeholders and authorities.

##### 3.1.1. Step I – Literature Review (Desktop Phase)

Background information search for the proposed development took place following client's appointment letter from the client. Sources used included, but not limited to, published HIA studies, academic books, academic journal articles and the internet about the site and the broader area in which it is located. Interpretation of legislation (the NHRA, No. 25 of 1999) and local by-laws forms formed the study's backbone.

##### 3.1.2. Step II – Physical Survey

- The survey of the project area was conducted in May 2020
  - Nkosinathi Tomose led the survey
- The survey was conducted on foot, and the site was accessed using a bakkie;
- The surveys aimed to identify archaeological, burial grounds and graves, and built environment heritage sites and features in and around the area proposed for development area;
- To record and document the sites using applicable tools and technology;
- The survey also paid attention to disturbed area (e.g. trenches), exposed earth surface, areas with stone mounds, as well as the area with built environment features and trees (e.g. *Figure 14 to Figure 18*)

The following technological tools were used for documenting and recording identified resources on site:

- Garmin GPS (i.e. Garmin 62s) – to take Latitude and Longitude coordinates of the identified sites and track the site.
- Canon SLR – to take photos of the affected environment and the identified sites.



*Figure 14-Old trench on site*



*Figure 15-Stones packed along the western and north-west fence line of the site*



*Figure 16-- Exposed area from the grass cover*



*Figure 17-Stone walled structure on the western end of the site*



Figure 18- Area with trees

### 3.1.3. Step III - Site Grading and Impact Significance Ratings

The following site classification minimum standards as prescribed by the SAHRA (2006) and approved by ASAPA for the Southern African Developing Community (SADC) region were used to grade the identified heritage resources or sites (*Table. 3*).

#### 3.1.3.1. Site Grading

Table 3: Site significance classification standards as prescribed by SAHRA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	High Significance	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	High Significance	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of the site should be retained)
Generally Protected A (GP. A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP. B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP. A)	-	Low Significance	Destruction

### 3.1.3.2. Ratings in terms of Section 3 (3) of the NHRA, No. 25 of 1999

Cultural and natural landscape rating including architectural and archaeological resources in terms of the importance (Table 4)

Table 4: Significance criteria in Section 3(3) of the National Heritage Resources Act.

No	Criteria Used
1	The importance of the cultural heritage in the community or pattern of South Africa's history (Historical and political significance)
2	Possession of uncommon, rare or endangered aspect of South African natural and cultural heritage significance
3	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)
4	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic sense)
5	What is the state of the architectural and structural integrity of the street and streetscape?
6	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)
7	Strong or unique association with a specific community or cultural group for social, cultural or spiritual reasons (Social value)
8	Strong or unique association with the life and work of a person, group or organization of importance in the history of South Africa (Historic significance)
9	The significance of the site relating to the history of slavery in South Africa.

### 3.1.3.3. Historical Significance Rating

Table 5- Rating in terms of the history of the area

No	Criteria Used
1	Is the street or streetscape associated with a historical person or group?
2	Is the street or streetscape associated with a historical event?
3	Is the street or streetscape associated with a religious, economic, social, political or educational activity?
4	Is the street or streetscape of archaeological significance? Are any of the buildings on the site older than 60 years?

### 3.1.3.4. Landscape Architectural Significance Rating (artefactual significance)

Table 6- Landscape and landscape features a rating

No	Criteria Used
1	Is the street and streetscape an important example of a Johannesburg streetscape precinct?
2	Is the street or streetscape an outstanding example of a particular style or period?
3	Does the street or streetscape contain fine landscaping details and reflect exceptional craftsmanship?
4	Is the street or streetscape an example of an exceptional industrial, engineering or technological development?
5	What is the state of the architectural and structural integrity of the street and streetscape?
6	Is the street or streetscape's current and future use in sympathy with its original usage (for which they were designed)?
7	Were the alterations to the street or streetscape was done in sympathy with the original design?

### 3.1.3.5. Spatial Significance Rating

Table 7- Spatial Rating

No	Criteria Used
1	Can the street be considered a landmark in the city?
2	Does the street or any of the adjacent buildings contribute to the character of the neighbourhood?
3	Do any of the buildings contribute to the character of the streetscape?
4	Does the street relate to the urban network of adjacent streets and streetscapes?

### 3.2. Limitations and Assumptions

Although a comprehensive survey of the site took place; some archaeological material and unmarked graves are subterranean and may have been missed. As such, they may have not been identified during the survey. If the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should construction activities unearth such resources, the development activities should immediately stop, and an archaeologist is contacted to conduct a site visit, assess the resources and recommend the finds' mitigation measures. SAHRA and PHRA-G should also be informed immediately of such discoveries. In this case, no archaeological material of graves should be moved from the site until the heritage specialist has been able to assess the site's significance and archaeological material, subject to SAHRA approval.

Some areas of the site were covered in high thatch grass; as such, should any stone tool material be discovered during site clearance – they should be reported to the SAHRA APM unit. Construction activities should be stopped until a qualified Stone Age Archaeologist conducts assesses the discovered resources. The resources are mitigated following the receipt of the mitigation permit by the SAHRA APM Unit.

## 4. RESULTS

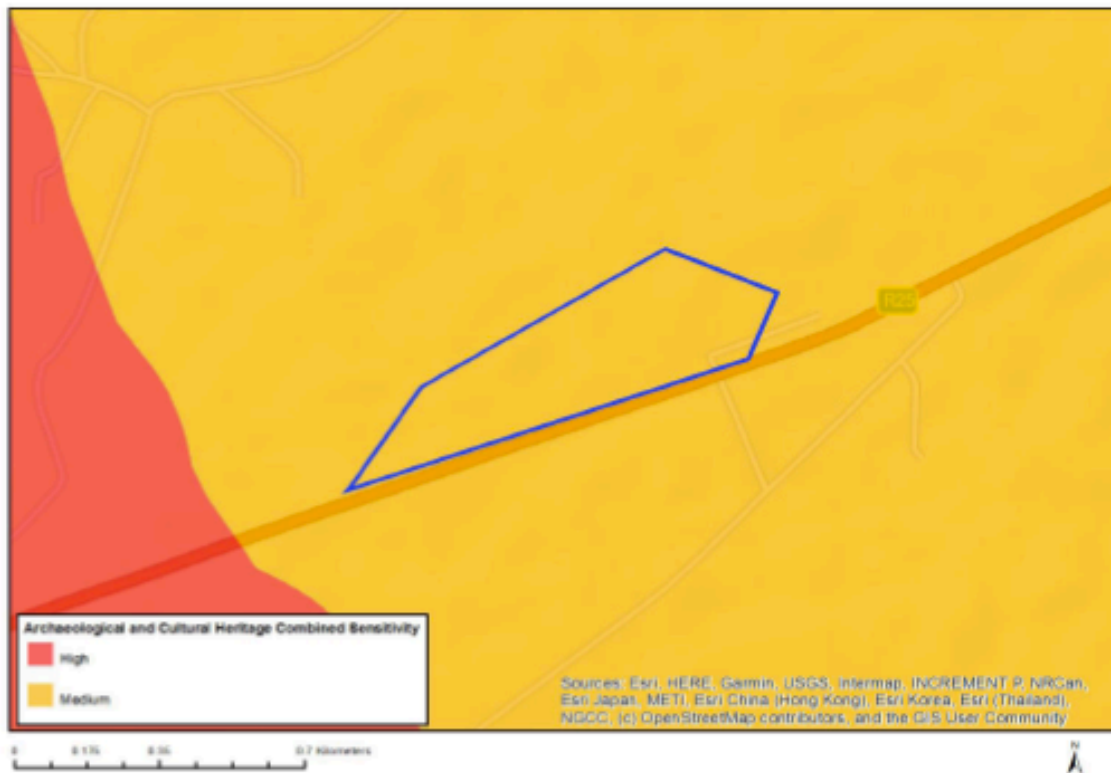
The background information yielded information about the history and heritage of the study area. The survey confirmed some of the known heritage resources and other forms, such as the material culture

associated with the stone enclosure, were discovered. Below is the list of heritage resources found on site:

**4.1. Archaeological and Cultural Heritage Combined Sensitivity**

The National Environmental Toolkit identifies the study area on Medium Archaeological and Heritage Sensitivity (Figure 19). The survey on-site yielded:

- One MSA stone tool and one of the roads on-site, a survey around where the MSA tool was found did not yield any other stone tool materials (Figure 20). The scatter is graded to be of Low Archaeological and Heritage Significance (Table 8)
  - **GPS Coordinates: 25°54' 53.8" S and 28° 3' 37.2" E**
- It also yielded a stone and cement structure that is said to have been built in the 1990s (Figure 21). The structure is graded of No/Low Heritage Significance.
  - **Site GPS coordinates: 25°54' 53.8" S and 28° 3' 25.2"E**
- In terms of the Council of Geosciences and SAHRA Palaeontological Sensitivity Layer, the site falls within an area that is characterised by rocks of High and Low Palaeontological Significance (Figure 22). The resources are graded to be of High/Low Heritage Significance (Table 10)



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

**Sensitivity Features:**

Sensitivity	Feature(s)
Medium	Mountain or ridge

*Figure 19- Archaeological and Heritage Sensitivity*

*Table 8: Grading of MSA stone scatter*

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
Generally Protected C (GP. A)	-	Low Significance	Destruction



*Figure 20-MSA flake*

*Table 9:Grading of stonewalled structure*



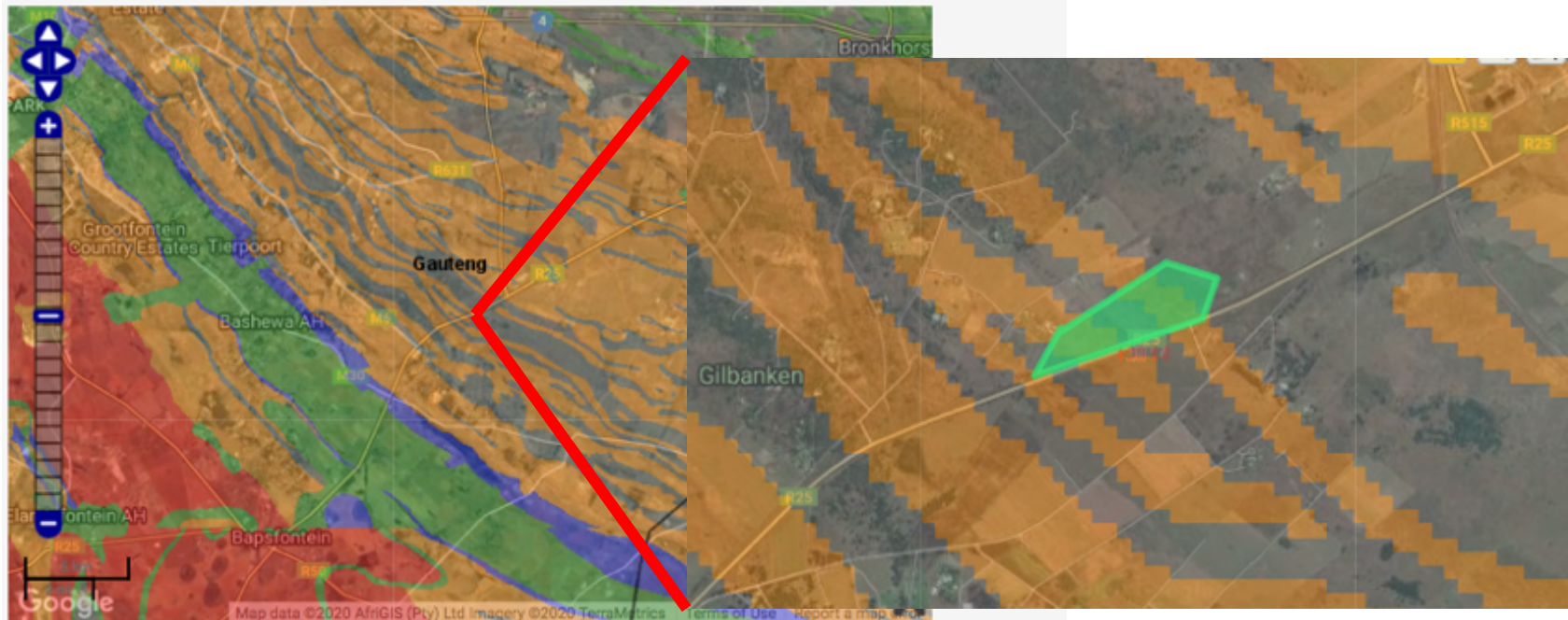
FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
Generally Protected C (GP. A)	N/A	N/A	Destruction



*Figure 21-Stone wall structure on site*

*Table 10:Grading of Palaeontological Resources*

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
Generally Protected A (GP. A)	-	<b>High / Medium Significance</b>	Mitigation before destruction



1 in 250 000 geological formation layers are courtesy of the Council for GeoScience

For more information, go to [How to Use the Palaeontological \(fossil\) Sensitivity Map](#)

Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

*Figure 22-Palaeontological Layer*

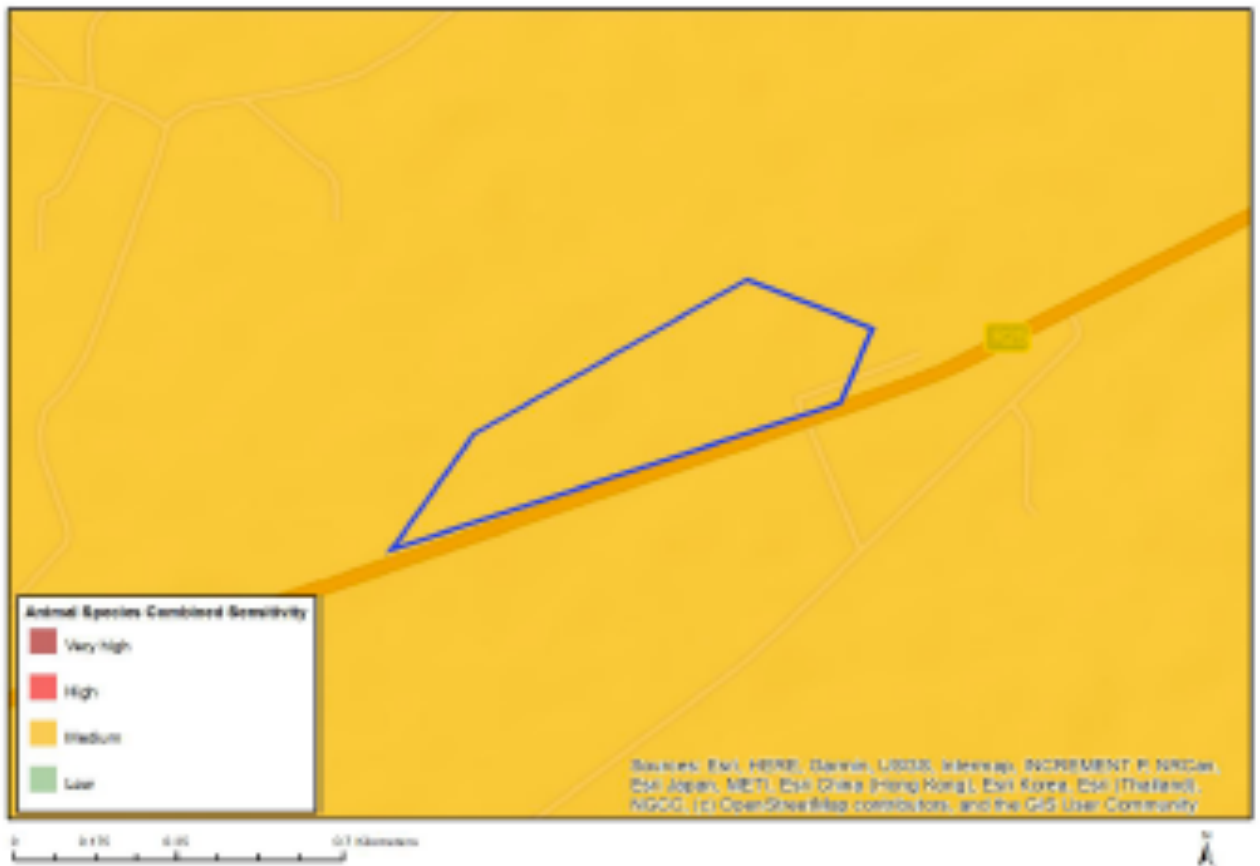
#### **4.1.1. Conclusions Archaeology, Heritage and Palaeontology**

- The site survey yielded an MSA stone scatter, which lacked context and was considered low heritage significance.
- No burial grounds and graves were found
- The built environment structure is not historical and not of heritage significance
- The palaeontological layer by the Council of GeoScience and SAHRA also show the site to be situated in an area that contains a combination of High and Low fossiliferous rocks

#### **4.2. Site in Terms of its Natural Setting and the Potential to Contribute to Landscape**

- The site falls within the High Agricultural Sensitivity area with a small land pocket of Medium Sensitivity; this means the land should support agricultural activities with the proposed development (*Figure 23*).
- It is Medium in terms of Animal Combine Sensitivity (*Figure 24*)
- Low Sensitivity in terms of Aquatic Biodiversity Sensitivity (*Figure 25*)
- High in terms of Terrestrial Biodiversity Sensitivity (*Figure 26*)
- Medium in terms of Plant Combined Sensitivity (*Figure 27*)





Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

**Sensitivity Features:**

Sensitivity	Feature(s)
Medium	Insecta-Aloeides dentatib dentatis

*Figure 24-Animal Sensitivity*



*Figure 25-Aquatic Biodiversity Sensitivity*





Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

**Sensitivity Features:**

Sensitivity	Feature(s)
Medium	Sensitive species 275
Medium	<i>Brachycorythis coriaca subsp. transvaalensis</i>

Figure 27-Plant species combined sensitivity

**4.2.1. Conclusions in Terms Natural Setting and Potential to Contribute Cultural Landscape:**

Although high in terms of terrestrial biodiversity – no plants or trees of cultural and medicinal significance were identified. Furthermore, no natural features such as water bodies (springs and wetlands), mountain or forest used for cultural practices were identified on-site.



#### 4.3. Significance of the site and associated heritage resources in terms of Section 3 (3)

This section of the Act states that without limiting the generality of subsections (subsection (1) and (2) of the NHRA, No. 25 of 1999 a place or object is to be considered part of the national estate if it has cultural significance or other unique value because of:

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's 30 natural or cultural heritage;
- (c) it's potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects; 35
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or unique association with a particular community or cultural group 40 for social, cultural or spiritual reasons;
- (h) its strong or unique association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa.

The assessment of the site (Kloofendale Nature Reserve with all its heritage resources) heavily relied on this section of the Act since the evaluation did not only look at heritage features and objects in isolation but as a collective forming part of the broader cultural landscape (*Table 8*).

**Table 11: Significance criteria in terms of Section 3(3) of the National Heritage Resources Act.**

No	Criteria Used	Site Grading	Site Significance Rating	Definition of Site Significance	Impact Significance from Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect effect)	Mitigation Measures to be Considered
1	The importance of the cultural heritage in the community or pattern of South Africa's history (Historical and political significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological, heritage and palaeontological resources and should be granted a Positive Review Comment from an archaeological perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of Positive Impacts:</b> • N/A	
2	Possession of uncommon, rare or endangered aspect of South African natural and cultural heritage significance	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological and palaeontological resources. It should be granted a Positive Review Comment from an archaeological heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N/A	
3	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> N/A	
4	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological and palaeontological resources. It should be granted a Positive Review Comment from an archaeology and heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> N/A	<b>Nature of positive Impacts:</b> N/A	
5	What is the state of the architectural and structural integrity of the street and streetscape?	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> N	<b>Nature of positive Impacts:</b>	

No	Criteria Used	Site Grading	Site Significance Rating	Definition of Site Significance	Impact Significance from Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect effect)	Mitigation Measures to be Considered
6	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A •	<b>Nature of positive Impacts:</b> • N.A •	
7	Strong or unique association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A •	<b>Nature of positive Impacts:</b> • N.A •	
8	Strong or unique association with the life and work of a person, group or organization of importance in the history of South Africa (Historic significance)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A •	
9	The significance of the site relating to the history of slavery in South Africa.	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	<ul style="list-style-type: none"> <li>The proposed development will not impact any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological a heritage perspective.</li> </ul>
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A	

## 4.2. Historical Significance Rating

### ***Significance criteria in terms of historical, artefactual and spatial significance.***

As the criteria set out in the National Heritage Resources Act, tend to approach heritage from the national significance level, and few heritage sites and features fall within this category, the second set of criteria is used to determine the regional and local importance of heritage sites. Three sub-categories are used to determine this significance:

- Historical significance – this category determines the social context in which a heritage site and resource need to be assessed. These criteria focus on the history of the place in terms of its significance in time and its role in a particular community (human context).
- Architectural significance – This set of criteria aims to assess the artefactual importance of the heritage resource, its physical condition, and its meaning as an object.
- Spatial significance – focuses on the physical context in which the object and place exist and how it contributed to the landscape, the region, the precinct and neighbourhood.

As the criteria set out in the National Heritage Resources Act tend to approach heritage from the national significance level, and few heritage sites and features fall within this category, the second set of criteria are used to determine the regional and local significance of heritage sites. Three sub-categories are used to determine this significance (*Table 9*).

*Table 12-Assessment of impacts on the history of the area*

No	Criteria Used	Site Grading	Significance Rating	Definition of Site Significance	Impact Significance from Proposed Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect effect)	Mitigation Measures to be Considered
1	Is the site associated with a historical person or group?	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	The proposed development will not impact any archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N./A	
2	Is the site associated with a historical event?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	The proposed development will not impact archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N./A	
3	Is the site associated with a religious, economic, social, political or educational activity?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	The proposed development will not impact archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N.A	
4	Is the site of archaeological significance? Are any of the buildings or built environment features on the site older than 60 years?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	The proposed development will not impact archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N/A	

#### **4.3. Landscape Architectural Significance Rating (artefactual significance)**

This section assesses the impact significance on the receiving environment landscape and associated landscape feature such as streets and streetscapes (Table 10)

*Table 13- Assessment of impact on the receiving environment landscape and landscape features such as streets and streetscapes*

No	Criteria Used	Site Grading	Significance Rating	Definition of Site Significance	Impact Significance from Proposed Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect effect)	Mitigation Measures to be Considered
1	Is the street and streetscape an excellent example of a CoTMM or precinct?	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	N/A
					<b>Positive Impacts:</b> • N/A	<b>Nature of Positive Impacts:</b> • N/A	
2	Is the street or streetscape an outstanding example of a particular style or period?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
3	Does the street or streetscape contain fine landscaping details and reflect exceptional craftsmanship?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b> N/A	<b>Nature of Positive Impacts:</b> N/A	
4	Is the street or streetscape an example of an exceptional industrial, engineering or technological development?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
5	What is the state of the architectural and structural integrity of the street and streetscape?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
6	Is a street or streetscape current and future use in sympathy with its original usage for which they were designed)?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	
7	Were the alterations to the street or streetscape was done in sympathy with the original design?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	N/A
					<b>Positive Impacts:</b>	<b>Nature of Positive Impacts:</b>	

#### 4.4. Spatial Significance Rating

*In this selection of the impact assessment, the focus is on the heritage features such as buildings, monuments, memorials and other characteristics as single units. The valuation focuses on evaluating significance in terms of spatial pattern in the landscape, city, town, village, neighbourhood or precinct forming part of the broader cultural landscape. The assessment is for the following features, not as the single units in the landscape (Table 11):*

*Table 14- Assessment of spatial pattern of heritage resources in the landscape*

No	Criteria Used	Site Grading	Significance Rating	Definition of Site Significance	Impact Significance from Proposed Activities (negative or positive impact)	Nature of Impact (Direct vs Indirect effect)	Mitigation Measures to be Considered
1	Can the site be considered a landmark in the local community, city and region (province)	N/A	N/A	N/A	<b>Negative Impacts:</b> • N/A	<b>Nature of Negative Impacts:</b> • N/A	The proposed development will not impact archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N. A	
2	Does the street or any of the adjacent buildings contribute to the character of the neighbourhood?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> • N/A	The proposed development will not impact archaeological, heritage and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N/ A	
3	Do any of the buildings, features and objects contribute to the character of the landscape or streetscape?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	The proposed development will not impact archaeological and palaeontological resources. It should be granted a Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N./A	
4	Does the street relate to the urban network of adjacent streets and streetscapes?	N/A	N/A	N/A	<b>Negative Impacts:</b> N/A	<b>Nature of Negative Impacts:</b> N/A	The proposed development will not impact archaeology. It should be should archaeological Positive Review Comment from an archaeological and heritage perspective.
					<b>Positive Impacts:</b> • N/A	<b>Nature of positive Impacts:</b> • N/A	

## 5. DISCUSSION

The study area's physical survey area yielded one MSA stone scatter that lacked context and was assessed as low heritage importance (*Figure 28*). The stone-walled structure found to the western section of the site is recent in age and not of cultural heritage importance. According to the semi-structured interviews with the neighbours to determine if they know of any graves on site and the age of the stone-walled structure, they all suggested that there are no known graves and that the structure dates to 1990s (*Figure 29*). The site contains rock material that arises have Palaeontological Significance. The Palaeontological Desktop study of the site has been concluded it shows the site has sections that are sensitive, a palaeontological protocol on how palaeontological resources should be treated during the construction phase of the project is included as Annexure 1 (see also *Figure 29*)

When assessed in terms of Section 3 (3) of the NHRA, No. 25 of 1999 for spatial, landscape and architectural significance and the site in terms of the natural setting and its potential to contribute to the cultural landscape the, following results are yielded:

- SuperChicks site is situated in an area with High Terrestrial Biodiversity and Medium Combined Plant Sensitivity; however, when assessed in terms of plant species that contribute to cultural landscape – no medicinal or cultural significance vegetation was identified during the survey.
- The site also did not contain any natural features that may contribute to the cultural landscape such as a mountain, forest, cave or water bodies such as springs off associated cultural and rituals by traditional healers and churches.
- In terms of Agricultural Sensitivity, the site is in line with the proposed development activities – ideal for agricultural activities with Medium Animal Sensitivity.

Based on the findings, the following conclusions and recommendations are made about SuperChicks Poultry Farm in Pretoria East.

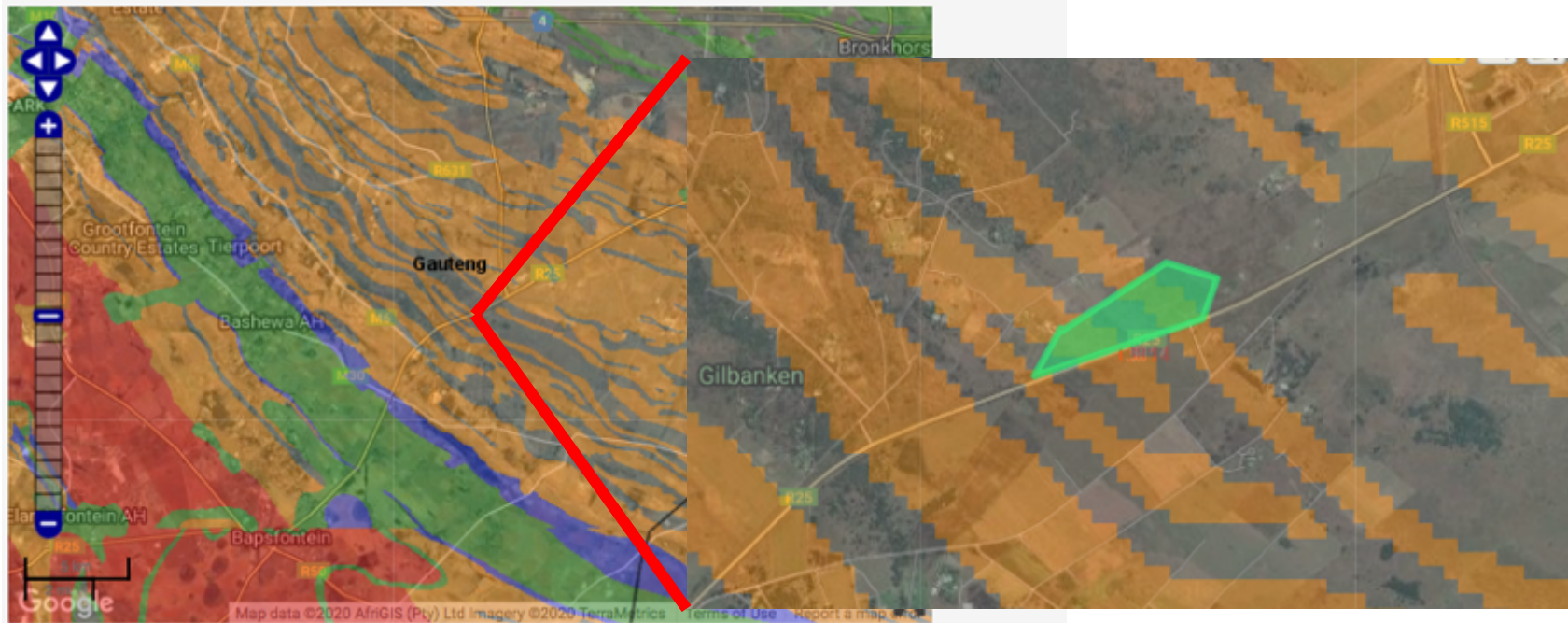




*Figure 28-MSA flake*



*Figure 29-Stone wall structure on site*



1 in 250 000 geological formation layers are courtesy of the Council for GeoScience  
 For more information, go to [How to Use the Palaeontological \(fossil\) Sensitivity Map](#)

Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

*Figure 30-Palaeontological Layer*

## 6. CONCLUSIONS AND RECOMMENDATIONS

- It is concluded that the survey of SuperChicks Poultry Farm yielded one MSA stone tool in the form of a flake that is a scatter without any context. When assessed, this scatter is of Low Archaeological and Heritage Significance. This resource triggered Section 35 of the NHRA, No. 25 of 1999
- It also yielded a stone-walled structure that is recent in age and not of Cultural Heritage Significance; the structure was built in the mid-1990s and is less than 60 years in age and not protected in Section 34 of the NHRA, No.; 25 of 1999.
- No other archaeological and heritage resources were found on site. It has, however, been found that the site falls within an area that contains a combination of Low and Highly Sensitive Palaeontological Resources. The Palaeontological Sensitivity Layer is in terms of the Council of Geoscience and SAHRA Palaeontological Sensitivity Layer. Section 35 of the NHRA, No. 25 is again triggered. Palaeontological Resources Management Protocol is developed and concluded in this report as Annexure 1. The Protocol contains recommendations on how the Paleontologically Resources should be treated during the construction phase of the project. It is also concluded that the development to proceed subject to adoption and implementation of the recommendation contained in Annexure 1.
- In terms of the natural environment and its potential to contribute to the cultural landscape, the SuperChicks site did not yield any natural environmental features of cultural heritage significance. Such sites often include mountains, forest, caves or water bodies such as wetlands and springs that may have a cultural association. The trees on site are not of any cultural significance like Morula trees in the Northern Regions of South Africa.
- It also did not yield plant species that are of medicinal importance in terms of terrestrial biodiversity, which, when assessed, contains some of the essential terrestrial biodiversity species.
- An informal interview with occupants of the homestead situated east of the site regarding potential graves on site established no graves on site. People were buried in a centralised cemetery in the area.
- Based on these conclusions made about the site, the following recommendation is made.

### Recommendations:

- It is recommended that both PHRA-G and SAHRA exercise their discretion and grant the project a **Positive Review Comment** and allow the proposed development to continue as planned.
- The scatter found on site is of Low Archaeological and Heritage Significance, and the stone-walled structure is less than 60 years and not any cultural importance.
- With regards to Palaeontological Sensitivity Assessment, the development can proceed as planned with monitoring of the construction activities by a qualified palaeontologist - the monitoring should take place during foundation trenching.

**Disclaimer:**

Although a comprehensive survey of the site took place; some archaeological material and unmarked graves are subterranean and may have been missed. As such, they may have not been identified during the survey. If the proposed development activities bring these materials to the surface, they should be treated as **Chance Finds**. Should construction activities unearth such resources, the development activities should immediately stop, and an archaeologist is contacted to conduct a site visit, assess the resources and recommend the finds' mitigation measures. SAHRA and PHRA-G should also be informed immediately of such discoveries. In this case, no archaeological material of graves should be moved from the site until the heritage specialist has been able to assess the site's significance and archaeological material, subject to SAHRA approval.

Some areas of the site were covered in high thatch grass; as such, should any stone tool material be discovered during site clearance – they should be reported to the SAHRA APM unit. Construction activities should be stopped until a qualified Stone Age Archaeologist conducts assesses the discovered resources. The resources are mitigated following the receipt of the mitigation permit by the SAHRA APM Unit.

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## ANNEXURE 1: PALAEOLOGICAL RESOURCES MANAGEMENT PROTOCOL

### Introduction

This document is aimed to inform workmen and foremen working on a construction and/or mining site. It describes the procedure to follow in instances of accidental discovery of palaeontological material during construction/mining activities. This protocol does not apply to resources already identified under an assessment undertaken under section 38 of the NHRA no 25 of 1999.

Fossils are rare and irreplaceable. Fossils tell us about the environmental conditions that existed in a specific geographical area millions of years ago. As heritage resources that inform us of the history of a place, fossils are public property that the State is required to manage and conserve on behalf of all the citizens of South Africa. Fossils are therefore protected by the NHRA and are the property of the State. Ideally, a qualified person should be responsible for the recovery of fossils noticed during construction/mining to ensure that all relevant contextual information is recorded. Heritage Authorities often rely on workmen and foremen to report finds, and thereby contribute to our knowledge of South Africa's past and contribute to its conservation for future generations.

Training workmen and foremen need to be trained in the procedure to follow in instances of accidental discovery of fossil material, in a similar way to the Health and Safety protocol. A brief introduction to the process to follow in the event of possible accidental discovery of fossils should be conducted by the designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO.

It is recommended that copies of the attached poster and procedure are printed out and displayed on-site so that workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place.

Actions to be taken: one person in the team must be identified and appointed as responsible for the implementation of the attached protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on-site should follow the protocol correctly in order to not jeopardise the conservation and well-being of the fossil material. Once a workman notices possible fossil material, he/she should report this to the ECO or site agent.

Procedure to follow if it is likely that the material identified is a fossil:

- I. The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found;
- II. The ECO or site agent must inform SAHRA of the find immediately. This information must include photographs of the findings and GPS co-ordinates;
- III. The ECO or site agent must compile a Preliminary Report and fill in the Fossil Discoveries: SAHRA Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including:
  - The date
  - A description of the discovery
  - A description of the fossil and its context (e.g. position and depth of find)

- Where and how the find has been stored
  - Photographs to accompany the preliminary report (the more the better):
    - A scale must be used
    - Photos of location from several angles
    - Photos of vertical section should be provided
    - Digital images of hole showing vertical section (side);
    - Digital images of fossil or fossils.
- IV. Upon receipt of this Preliminary Report, SAHRA will inform the ECO or site agent whether or not a rescue excavation or rescue collection by a palaeontologist is necessary.
- V. Exposed finds must be stabilised where they are unstable, and the site capped, e.g. with a plastic sheet or sand bags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation.
- VI. If the find cannot be stabilised, the fossil may be collected with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove all fossil material and any breakage of fossil material must be avoided at all costs.

No work may continue in the vicinity of the find until SAHRA has indicated, in writing, that it is appropriate to proceed.