
PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT

**UPGRADE OF THE N10-4,
GRADOCK [KM16] TO KNUSTFORD [KM29],
EASTERN CAPE, SOUTH AFRICA**

DATE: 2012-06-04



REPORT TO:

TAMARIN ARTHUR (SRK Consulting)

Tel: 041 509 4800; Fax: 041 509 4850;

Postal Address: P.O. Box 21842, Port Elizabeth, 6000;

E-mail: tarthur@srk.co.za

MARIAGRAZIA GALIMBERTI (South African Heritage Resources Agency – SAHRA, APM Unit)

Tel: 021 462 4505; Fax: 021 462 4509;

Postal Address: P.O. Box 4637, Cape Town, 8000;

E-mail: mgalimberty@sahra.org.za

PREPARED BY:

KAREN VAN RYNEVELD (ArchaeoMaps Archaeological Consultancy)

Tel: 084 871 1064; Fax: 086 515 6848;

Postal Address: Postnet Suite 239, Private Bag X3, Beacon Bay, 5205;

E-mail: kvanryneveld@gmail.com

PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT
UPGRADE OF THE N10-4, CRADOCK [KM1.6] TO KNUTSFORD [KM29],
EASTERN CAPE, SOUTH AFRICA

EXECUTIVE SUMMARY

TERMS OF REFERENCE:

SRK has been appointed by the project proponent, SANRAL, to prepare the BIA and EMP for the proposed *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project*, Eastern Cape. The project comprises of an approximate 27.4km upgrade of the N10-4, including 2 intersection upgrades, the development of an agricultural underpass and construction of a climbing lane. Two borrow pits will be utilized for construction purposes. ArchaeoMaps was appointed by SRK to prepare the Phase 1 AIA for the project.

THE PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT:

PROJECT AREA: N10-4 between Cradock [km1.6] and Knutsford [km29], situated between Cradock and Middelburg, Eastern Cape [1:50,000 Map Ref: 3125CD, 3225AB and 3225BA].

GAP ANALYSIS: Phase 1 AIA assessment covered the proposed approximate 27.4km line route, including the 2 intersection upgrades, the agricultural underpass and the climbing lane areas as well as the 2 proposed borrow pit study sites.

METHODOLOGY: Two day field assessment; GPS co-ordinates – Garmin Oregon 550; Photographic documentation – Pentax K20D. Archaeological and cultural heritage site significance assessment and mitigation recommendations – SAHRA 2007 system.

SUMMARY:

Code	Site	Period	Co-ordinates	Recommendations
N10-4 between Cradock [km1.6] and Knutsford [km29]				
N10-4	Site N10-4.1	Colonial Period – Farm Gate	S32°06'18.3"; E25°32'52.7"	<i>N/A (In situ Conservation)</i>
N10-4	Site N10-4.2	Colonial Period – Farmstead	S32°02'35.4"; E25°30'15.8"	<i>N/A (In situ Conservation)</i>
N10-4	Site N10-4.3	Colonial Period – Farmstead	S32°02'19.8"; E25°30'14.5"	<i>N/A (In situ Conservation)</i>
N10-4	Site N10-4.4	Stone Age – MSA	S32°01'12.9"; E25°29'45.3"	<i>In situ Conservation</i> <ul style="list-style-type: none"> • Construction Phase: Temporary visual demarcation & Temporary sign posting • Post-construction Phase: Permanent sign posting
N10-4	Site N10-4.5	Colonial Period – Farmstead	S31°57'57.4"; E25°28'30.0"	<i>N/A (In situ Conservation)</i>
N10-4	Site N10-4.6	Colonial Period – Farmstead	S31°57'45.2"; E25°28'21.4"	<i>N/A (In situ Conservation)</i>
N10-4	Site N10-4.7	Colonial Period – Farmstead	S31°57'38.3"; E25°28'39.5"	<i>N/A (In situ Conservation)</i>
N10-4/BP1 (S32°03'36.6"; E25°31'39.9")				
-	Site N10-4/BP1.1	Stone Age – MSA (& LSA)	S32°03'36.1"; E25°31'39.9"	<i>Site Destruction</i> <i>(under SAHRA Site Destruction Permit)</i>
N10-4/BP2 (S31°57'28.6"; E25°29'12.9")				
-	Site N10-4/BP2.1	Colonial Period – Stone Wall	S31°57'22.2"; E25°29'05.3"	<i>In situ Conservation</i> <ul style="list-style-type: none"> • Construction Phase: Temporary visual demarcation & Temporary sign posting • Post-construction Phase: Permanent sign posting
-	Site N10-4/BP2.2	Colonial Period – Stone Wall	S31°57'29.6"; E25°29'21.2"	<i>In situ Conservation (alteration to layout)</i> <ul style="list-style-type: none"> • Construction Phase: Temporary visual demarcation & Temporary sign posting • Post-construction Phase: Permanent sign posting OR <i>Phase 2 archaeological mitigation and monitoring to precede and coincide with development (current layout)</i>

RECOMMENDATIONS:

With reference to cultural heritage compliance, as per the requirements of the NHRA 1999, it is recommended that the proposed *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project*, to be situated in the Eastern Cape, proceeds as applied for provided the developer complies with the abovementioned recommendations.

PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT

**UPGRADE OF THE N10-4,
CRADOCK [KM1.6] TO KNUSTFORD [KM29],
EASTERN CAPE, SOUTH AFRICA**

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1) TERMS OF REFERENCE

SRK Consulting (SRK) has been appointed by the project proponent, the South African National Roads Agency (SANRAL), to prepare the Basic Impact Assessment (BIA) and Environmental Management Plan / Program (EMP) for the proposed *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project*, Eastern Cape. The project comprises of an approximate 27.4km upgrade of the National Road 10 Section 4 (N10-4), including 2 intersection upgrades, the development of an agricultural underpass and the construction of a climbing lane. Two borrow pits will be utilized for construction purposes. ArchaeoMaps Archaeological Consultancy was appointed by SRK to prepare the Phase 1 Archaeological Impact Assessment (AIA) for the project.

❖ *Development Location, Details & Impact*

The *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project* is situated along the N10 between Cradock and Middelburg in the Inxuba Yethemba Local Municipal area of the Eastern Cape [1:50,000 Map Ref: 3125CD, 3225AB and 3225BA].

The project starts at the N10-4 [km1.6] (S32°09'52.6"; E25°36'24.7") in the Cradock Industrial area and extends to the N10-4 [km29] (S31°56'57.1"; E25°28'12.5") at the Knutsford turnoff at the property Het Fortuin 66. The existing N10 consists of a surfaced carriageway 7.4m wide flanked by surfaced shoulders, each of which is 2.2m wide, culminating in a road prism width of about 11.8m. The existing in-situ base of the road prism will be re-worked and stabilized and a new 150mm thick base layer will be added followed by a Cape Seal surfacing premix. Widening of the road shoulders is not anticipated. The existing base layer and surfacing will be crushed and new material added to provide a rehabilitated cement stabilized sub-base layer. The base layers will be added over the sub-base layer using crushed stone material imported from a commercial source (SRK 2012).

Two intersections (N10-4/IS1 & N10-4/IS2) along the road will be widened to accommodate a refuge and slip lane. This widening will remain within the existing road reserve, approximately 25m wide. The agricultural underpass (N10-4/AU1) will require elevation of the road by approximately 2m, with construction contained within the existing road reserve. The climbing lane (N10-4/CL1) at the pass just north of Cradock will be constructed within the existing road reserve. Two borrow pits (N10-4/BP1 & N10-4/BP2) will be utilized for construction purposes (SRK 2012).

No widening or reconstruction of bridges is proposed, but 2 culverts along the road may require upgrading. Culvert upgrade impact will be restricted to the road reserve (SRK 2012).



Figure 1: Cradock and Middelburg, Eastern Cape



Figure 2: General locality of the Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project, situated between Cradock and Middelburg in the Eastern Cape

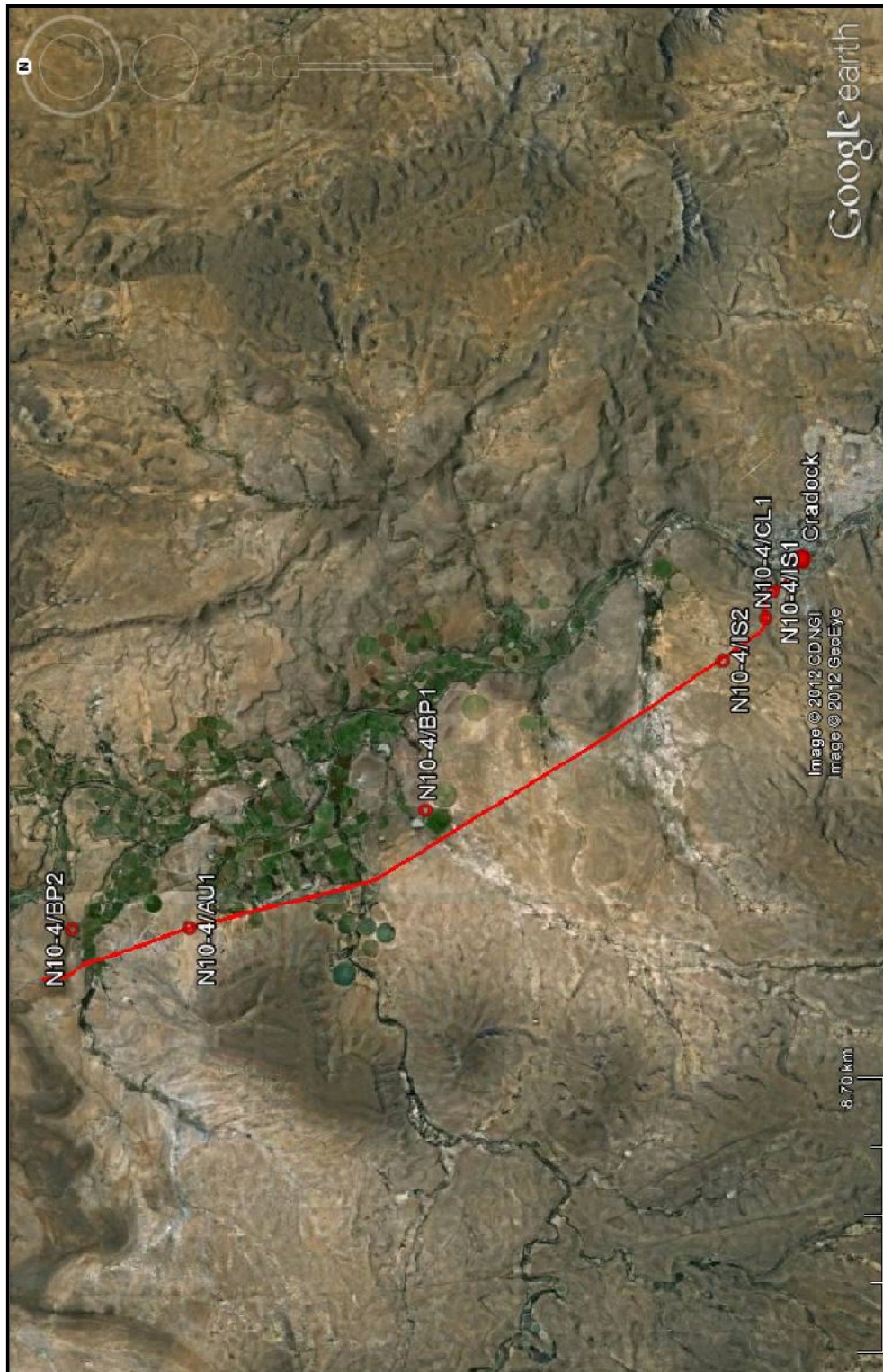


Figure 3: Close-up of the *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29]* Project study site and associated development nodes

2) THE ARCHAEOLOGICAL IMPACT ASSESSMENT

❖ *Archaeological Legislative Compliance*

The Phase 1 Archaeological Impact Assessment (AIA) was done for purposes of compliance to the South African Heritage Resources Agency's (SAHRA) requirements in terms of the National Heritage Resources Act, No 25 of 1999 (NHRA 1999), with specific reference to Section 38.

The Phase 1 AIA was requested as specialist sub-section with findings and recommendations thereto to be included in the Basic Impact Assessment (BIA) and Environmental Management Plan / Program (EMP), of the project in compliance with requirements of the Minerals and Petroleum Resources Development Act, No 28 of 2002 (MPRDA 2002) and the National Environmental Management Act, No 107 of 1998 (NEMA 1998) and associated Regulations (2006 and 2010).

The Phase 1 AIA aimed to locate, identify and assess the significance of cultural heritage resources, inclusive of archaeological deposits / sites, built structures older than 60 years, burial grounds and graves, graves of victims of conflict and basic cultural landscapes or views as defined and protected by the NHRA 1999, that may be affected by the proposed development.

This report comprises of a basic AIA, including a basic pre-feasibility and Phase 1 AIA assessment only. The report does not include any specialist cultural heritage components inclusive of socio-cultural consultation, historical architecture or cultural landscapes.

❖ *Methodology & Assessor Accreditation*

The Phase 1 AIA was conducted over a 2 day period (2012-05-23 and 05-24) by one archaeologist. The assessment was done by foot and vehicle, and limited to a Phase 1 surface survey; no excavation or sub-surface testing was done. GPS co-ordinates were taken with a Garmin Oregon 550 (Datum: WGS84). Photographic documentation was done with a Pentax K20D camera. A combination of Garmap and Google Earth software was used in the display of spatial information.

SAHRA ARCHAEOLOGICAL AND CULTURAL HERITAGE SITE SIGNIFICANCE ASSESSMENT			
SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	Site conservation or extensive mitigation prior to development / destruction
High / Medium Significance	Generally Protected A	-	Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B	-	Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C	-	On-site sampling, monitoring or no archaeological mitigation required prior to or during development / destruction

Table 1: SAHRA archaeological and cultural heritage site significance assessment

Archaeological and cultural heritage site significance assessment and associated mitigation recommendations were done according to the system prescribed by SAHRA (2007).

The assessment was done by Karen van Ryneveld (ArchaeoMaps):

- Qualification: MSc Archaeology (2003) WITS University.
- Accreditation:
 1. 2004 – Association of Southern African Professional Archaeologists (ASAPA) – Professional Member.
 2. 2005 – ASAPA CRM Section: Accreditation – Field Director (Stone Age, Iron Age, Colonial Period).
 3. 2010 – ASAPA CRM Section: Accreditation – Principle Investigator (Stone Age).

Karen van Ryneveld is a SAHRA listed CRM archaeologist.

❖ *Coverage and Gap Analysis*

The Phase 1 AIA covered the total of the *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project* study site including the 27.4km line route with an assessment corridor limited to the width of the road reserve and including the following significant development nodes along the line route:

1. Upgrade of Intersection 1 (N10-4/IS1);
2. Upgrade of Intersection 2 (N10-4/IS2);
3. Establishment of an agricultural underpass (N10-4/AU1); and
4. Construction of a climbing lane (N10-4/CL1).

The 2 borrow pits (N10-4/BP1 & N10-4/BP2) that will be utilized during the project were included in the assessment.

Vegetation cover did hamper surface visibility across the majority of the line route; surface visibility across the line route can be described as fair to poor. Better visibility at the borrow pits provided for a surface visibility description of N10-4/BP1 as good and at N10-4/BP2 as good to fair.

2.1) PRE-FEASIBILITY ASSESSMENT

Based on the basic introductory literature assessment of South African archaeology (see Appendix – A) the probability of archaeological and cultural heritage sites within the proposed *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project* study site can briefly be described as:

1. **EARLY HOMININ** : Probability – *None*

2. **STONE AGE**
 - a. ESA : Probability – *Medium*
 - b. MSA : Probability – *Medium*
 - c. LSA : Probability – *Medium* (Human remains may be expected; should they be identified they will be of both scientific and social significance)
 - i. Rock Art : Probability – *Low-Medium*
 - ii. Shell Middens : Probability – *None*

3. **IRON AGE**
 - a. Early Iron Age : Probability – *None*
 - b. Middle Iron Age : Probability – *None*
 - c. Later Iron Age : Probability – *Medium* (Human remains expected to be in direct association with archaeological and contemporary sites – of scientific / social significance)

4. **COLONIAL PERIOD**
 - a. Colonial Period : Probability – *High* (Human remains expected to be primarily associated with formal cemeteries)
 - i. Iron Age / Colonial Period Contact : Probability – *Medium*
 - ii. Industrial Revolution : Probability – *High*

A number of archaeological Cultural Resources Management (CRM) projects have been done in the greater Cradock / Middelburg area. Projects recorded in the SAHRA (2009) Report Mapping Project and situated in fair proximity to the *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project* study site can be summarized as:

- Binneman, J. (Albany Museum). 2000. *Eskom Poseidon (Cookhouse) – Grass-Ridge (Port Elizabeth) proposed powerline: First phase desktop data survey of cultural heritage resources*. (SAHRA Ref – 2000-SAHRA-0060);
- Binneman, J. (Albany Museum). 2007a. *A Phase 1 archaeological heritage impact assessment for the proposed new entrance gate with associated infrastructure and the construction and upgrade of roads in the Mountain Zebra National Park, Cradock District*. (SAHRA Ref – 2007-SAHRA-0561);
- Binneman, J. (Albany Museum). 2007b. *Phase 1 archaeological heritage impact assessment for the proposed construction of an overhead power line to LKCF 001 (FRS143) on the farm Samekoms 392, Cradock District*. (SAHRA Ref – 2007-SAHRA-0182);

- Nel, J. (Archaic Heritage Project Management). 2008. *Final report: Heritage resources scoping survey and preliminary assessment Transnet Freight Line EIA, Eastern Cape and Northern Cape*. (SAHRA Ref – 2008-SAHRA-0632);
- Philip, L., Koortzen, C. & Henderson, Z.L. (National Museum Bloemfontein). 2008. *Assessment of area of proposed construction operation and maintenance of the Cypress Grove to Tafelberg road (Chris Hani magisterial district, Inxuba Yethemba Municipality, Eastern Cape) in terms of archaeological and other heritage sites*. (SAHRA Ref – 2008-SAHRA-0337).
- Van Ryneveld, K. (National Museum Bloemfontein). 2006. *Archaeological site inspection: Borrow pit 76.0 quarry impact on archaeological 'Michausdal' deposits, Cradock District, Eastern Cape*. (SAHRA Ref – 2006-SAHRA-0308); and
- Van Ryneveld, K. (ArchaeoMaps). 2008. *Phase 1 archaeological impact assessment: Utilization of 17 quarries for upgrading of the DR 2629, Road nr 654 and the DR 2631, Middelburg area, Eastern Cape, South Africa*. (SAHRA Ref – 2008-SAHRA-0586).

Additional CRM projects by ArchaeoMaps, in the general vicinity of the study site, but not included in the SAHRA (2009) database, are listed as:

- Van Ryneveld, K. (ArchaeoMaps). 2007. Phase 1 archaeological impact assessment – Cradock weir residential development, Portion of Erf 1, Cradock, Eastern Cape, South Africa. (Unpublished report to JSP2 Developments);
- Van Ryneveld, K. 2011. (ArchaeoMaps). 2011a. Phase 1 archaeological impact assessment – Middelburg provision of water, Grootfontein 81, Middelburg, Eastern Cape, South Africa. (Unpublished report to Sektor Consulting); and
- Van Ryneveld, K. 2011. (ArchaeoMaps). 2011b. Cultural heritage impact assessment – Upgrade of the National Route 10 Section 3 (N10/3) from Baviaans River to Rietvlei (Vriscgewaagd) between Cookhouse and Cradock, Eastern Cape, South Africa. (Unpublished report to MPM Environmental Consultants).

A number of Stone Age sites have been recorded in CRM reports, situated in the general vicinity of the *Upgrade of the N10-4, Cradock [km1.6] to Knutsford [km29] Project* study site (Van Ryneveld 2006, 2007). Low densities of lithic artefacts, as a norm associated with particularly large areas of distribution or coverage is regarded as a typical landscape feature across much of the Karoo (Van Ryneveld 2008, 2011a). Stone Age sites and low density occurrences are often ascribed to the MSA, but includes in cases an ESA or LSA component. The LSA is further evidenced by rock art re-drawings in the local Cradock Museum from the Farm Waterfall, located in the Cradock District. At present no pre-Colonial Iron Age sites are known from the immediate area, but Iron Age occupation associated with Colonial Period times are fairly well recorded. Cradock was founded in 1818 when a Dutch Reformed church, with its design based on that of St-Martin-in-the-Fields in London, was built and the town named after Sir John Cradock, governor of the Cape from 1811-1813. The *Great Trek* is believed to have originated from Cradock and the surrounding areas and much of the towns early 1900's history is closely tied with Ostrich farming (http://en.wikipedia.org/wiki/Cradock_Eastern_Cape).

[The Albany Museum, the SAHRA accredited Regional Data Recording Centre for the Eastern Cape region was contacted with regards to database access (SAHRA 2007). At the time of submission of this report database access could not be obtained, based on research department policy compilation procedures (E-mail correspondence with Dr. Johan Binneman, Head of Archaeology, Albany Museum – 2012-01-16, 01-31, 02-05 and 04-10)].

2.2) THE PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT

2.2.1) The N10-4 Cradock [km1.6] to Knutsford [km29] Line Route

One known site, the 'Oukop' Hill, Colonial Period Anglo Boer War lookout is situated at the southern beginning of the line route. The formally protected site, situated adjacent to the proposed line route and the Cradock Correctional Services intersection will not be impacted on. In addition to 'Oukop' Hill 7 archaeological and cultural heritage sites were identified, situated along the line route portion of the proposed development. Six of the 7 identified sites comprise of Colonial Period sites, with Site N10-4.1 being the remains of a Colonial Period farm gate and all other identified Colonial Period sites, including Sites N10-4.2, N10-4.3, N10-4.5, N10-4.6 and N10-4.7 representing the localities of early farmsteads with CSG records relating to Site N10-4.7 indicating a maximum age of establishment of the farmsteads at 1886. Development will not impact on any of the Colonial Period farmsteads, the record of which for purposes of this report, mainly serve to describe the greater cultural receiving environment of the project study site. All recorded Colonial period farmsteads are, at least still partially, in use. Site N10-4.4 represents the foot slopes of a low density Middle Stone Age (MSA) occurrence. Low density Stone Age occurrences are a known feature of the pre-Colonial landscape across much of the Karoo and the possibility of the odd Stone Age artefact being encountered along the line route during construction cannot be excluded. The limited presence of Stone Age resources along the line route can be ascribed to the immediate local geology and geography, specifically referring to higher lying areas, immediate access to water and suitable raw material sources as the most prominent draw cards to an area during Stone Age times. A number of Stone Age sites, including Later Stone Age (LSA) Rock Art sites are however known from the greater Cradock area.



Figure 4: Summary of Phase 1 AIA assessment findings along the proposed line route



Figure 5: Image galley – Line route

- *The N10-4/IS1 - Correctional Services Intersection - S32°09'39.1"; E25°36'09.8"*



Figure 6: Locality of N10-4/IS1

No archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the Phase 1 AIA of the N10-4/IS1 area (the Cradock Correctional Services interchange). The general study site, situated in the Cradock Industrial area, is testimony to the rich Colonial Period history of Cradock. The hill to the east of the study site is known as 'Oukop' Hill. The hill was used as a lookout during the Anglo-Boer War (1899-1902) and it is believed that rock etchings made by the soldiers during this time can still be found on the greater hill area (<http://www.stay-gamereserves.com/Cradock.html>), at present formally fenced with an access gate. The hill will not be impacted on by the development. The immediate study site proved to be largely transformed, with the road reserve anthropogenically sterile with reference to protected cultural remains while the surrounding hills, east and north-west of the Cradock Correctional Services turnoff yielded mainly a type of decomposed dolerite, a raw material not suitable for Stone Age knapping purposes, offering at least in part an explanation for the lack of Stone Age resources in the immediate area.

RECOMMENDATIONS:

It is recommended that the upgrading of the N10-4/IS1 area proceeds as applied for without the developer having to comply with additional cultural heritage compliance requirements.

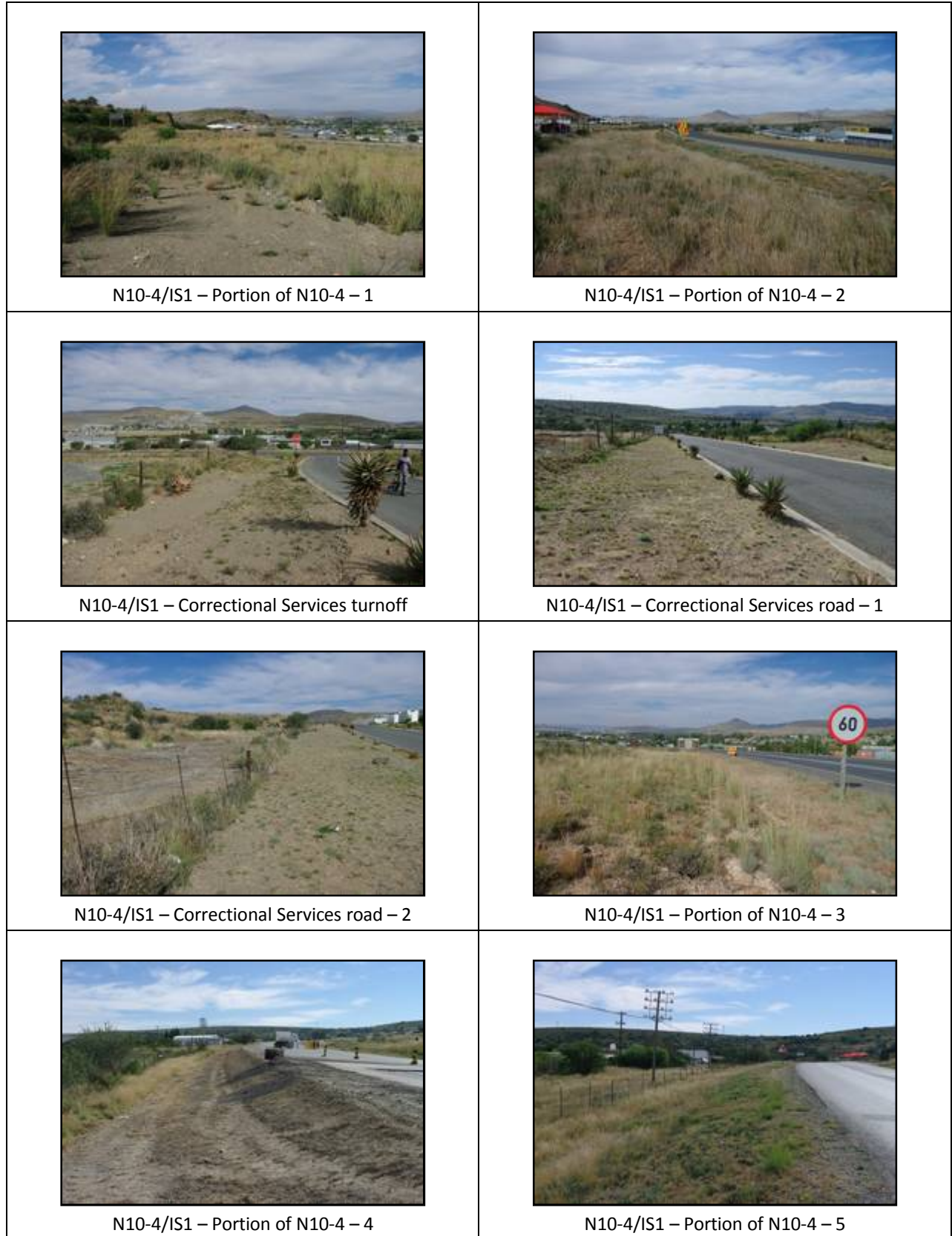


Figure 7: Image gallery – N10-4/IS1

- *The N10-4/CL1 - The Climbing Lane - S32°09'31.3"; E25°35'36.7"*



Figure 8: Locality of N10-4/CL1

No archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the Phase 1 AIA of the proposed N10-4/CL1 area (the climbing lane). An additional climbing lane, approximately 1,2km in length (with start and end co-ordinates being S32°09'31.2"; E25°35'58.4" and S32°09'22.4"; E25°35'16.4" respectively) will be constructed within the current road reserve in order to accommodate increasing traffic on the N10.

RECOMMENDATIONS:

It is recommended that development of the N10-4/CL1 climbing lane proceeds as applied for without the developer having to comply with additional cultural heritage compliance requirements.

- *The N10-4/IS2 - R61 Graaff-Reinett Intersection - S32°08'46.7"; E25°34'44.5"*



Figure 9: Locality of N10-4/IS2

No archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the Phase 1 AIA of the N10-4/IS2 area (the R61 Graaff-Reinett interchange). While the western parts of the study site proved simply anthropogenically sterile the eastern part of the road reserve is characterized by large scale disturbance associated with the earlier N10 alignment.

RECOMMENDATIONS:

It is recommended that the upgrading of the N10-4/IS2 area proceeds as applied for without the developer having to comply with additional cultural heritage compliance requirements.



Figure 10: Image gallery – N10-4/IS2

- *The N10-4/AU1 - Agricultural Underpass - S31°59'30.9"; E25°29'14.8"*



Figure 11: Locality of N10-4/AU1

No archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the Phase 1 AIA of the proposed N10-4/AU1 area (the agricultural underpass). Thick vegetation along the road reserve obscured surface visibility along the north-western part of the study site, while the eastern part was characterized by overgrown remains of the former N10 alignment.

RECOMMENDATIONS:

It is recommended that development of the N10-4/AU1 agricultural underpass proceeds as applied for without the developer having to comply with additional cultural heritage compliance requirements.

❖ Site N10-4.1 - Colonial Period (Farm Gate) - S32°06'18.3"; E25°32'52.7"



Figure 12: Locality of Site N10-4.1

Site N10-4.1 is situated at S32°06'18.3"; E25°32'52.7". The site comprises of the remains of an early farm entrance built of brick and mortar and may represent either an early access gate to the property Edina 207 or to Rietfontein 206. The farm entrance remains can reasonably be inferred to pre-date 60 years of age, implying that the structure is formally protected by the NHRA 1999. The site, situated outside the road reserve, will not be impacted on by development.

RECOMMENDATIONS:

Site N10-4.1, comprising of a structure older than 60 years, receives automatic SAHRA protection as a site of *High Significance* with a *Provincial Grade 2 Field Rating*. The site is however architecturally ascribed a *Low Significance*. The site will not be impacted on by development. It is recommended that development proceeds in the vicinity of Site N10-4.1 without the developer having to comply with additional cultural heritage compliance requirements.



Figure 13: Image gallery – Site N10-4.1

❖ Site N10-4.2 - Colonial Period (Farmstead) - S32°02'35.4"; E25°30'15.8"



Figure 14: Locality of Site N10-4.2

Site N10-4.2 is situated at S32°02'35.4"; E25°30'15.8", today on the property De Nova 123/12 but originally part of the farm Riversdal 123. The site comprises of the Colonial Period farmstead, including a residence and outbuilding. The date of construction is not known, but the structures evidently pre-dates 60 years of age, implying that the site is formally protected by the NHRA 1999. The site may well represent the early Riversdal 123 farmstead. (No CSG record for the property could be located; registration details of the property are thus not known). The site, vacant at the time of the assessment, is still in general use and will not be impacted on by development.

RECOMMENDATIONS:

Site N10-4.2 Colonial Period farmstead, comprising of structures older than 60 years, receives automatic SAHRA protection as a site of *High Significance* with a *Provincial Grade 2 Field Rating*. The site is architecturally ascribed a *Medium Significance*. The site will not be impacted on by development. It is recommended that development proceeds in the vicinity of Site N10-4.2 without the developer having to comply with additional cultural heritage compliance requirements.



View of Site N10-4.2 – 1



View of Site N10-4.2 – 2

Figure 15: Image gallery – Site N10-4.2

❖ Site N10-4.3 - Colonial Period (Farmstead) - S32°02'19.8"; E25°30'14.5"



Figure 16: Locality of Site N10-4.3

Site N10-4.3 is situated at S32°02'19.8"; E25°30'14.5" on the property Riversdal 123 and is inferred to represent a Colonial Period second farmstead. The farmstead comprises of the residence as well as a number of outbuildings, of unknown date, but well pre-dating 60 years of age (No CSG record for property). The site is thus formally protected by the NHRA 1999. The site, still in use, will not be impacted on by development and is reported on for purposes of proximity to the study site only.

RECOMMENDATIONS:

The Site N10-4.3 Colonial Period farmstead, comprising of the residence and outbuildings pre-dates 60 years of age and is formally protected by the NHRA 1999. The site receives automatic SAHRA protection as a site of *High Significance* with a *Provincial Grade 2 Field Rating*. The site is architecturally ascribed a *Medium Significance*. The site will not be impacted on by development. It is recommended that development proceeds in the vicinity of Site N10-4.3 without the developer having to comply with additional cultural heritage compliance requirements.



Figure 17: Image gallery – Site N10-4.3

❖ Site N10-4.4 - Stone Age (MSA) - S32°01'12.9"; E25°29'45.3"



Figure 18: Locality of Site N10-4.4

Site N10-4.4, situated at S32°01'12.9"; E25°29'45.3, is characterized by the foot slopes of a limestone rich rise, identified approximately 100m east of a large existing borrow pit situated on the rise. The portion of the rise visible within the road reserve continues for approximately 80m. Here fine grained granite and shale geological deposits and raw material are associated with a rather low density of Stone Age artefacts. Recorded artefact ratios (artefacts: m²) averages approximately 2:1, but variation in artefact density across the rise, outside the scope of this project, can reasonably be inferred. Artefacts seem to be reminiscent of the later Middle Stone Age (MSA), with medium to smaller size flake and blade types dominating the assemblage, and with artefacts as a rule produced from the available fine grained granite. Despite being produced from a raw material source with fair knapping qualities the assemblage can in general be described as of a fairly poor technological standard. The presence of a sub-surface component to the Site N10-4.4 low density Stone Age occurrence could not be established; neither could occurrence size, being primarily situated on the privately owned neighboring property. Development does not necessitate direct impact on the portion of the occurrence situated within the road reserve, but measures ensuring its conservation would be necessary.

RECOMMENDATIONS:

The Site N10-4.4 low density Stone Age occurrence, partially present within the road reserve is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*. Continuation of the occurrence can reasonably be inferred to cover a large portion of the neighboring privately owned property. Development does not necessitate

direct impact on the portion of the occurrence situated within the road reserve and the following measures ensuring its' in situ conservation should be taken:

❖ **SITE N10-4.4:**

In situ Conservation

- **Construction Phase:** Temporary visual demarcation & Temporary sign posting –

The site should be visually clearly demarcated by means of danger tape or construction netting during the construction phase. In addition temporary signage should be erected indicating the site as a 'No entry: Heritage / Archaeological site' area.

- **Post-construction Phase:** Permanent sign posting –

The site should be permanently sign-posted.

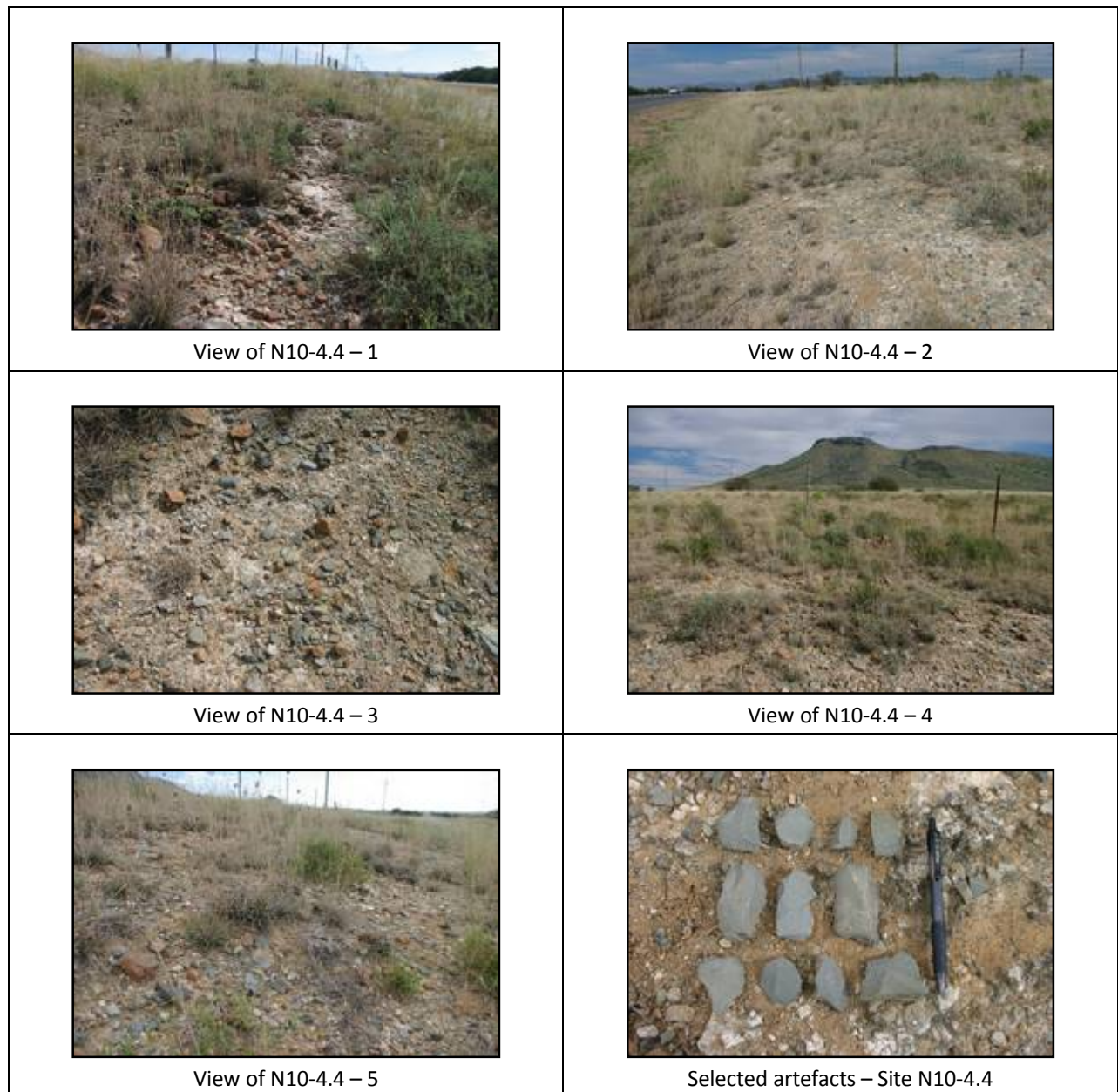


Figure 19: Image gallery – Site N10-4.4

❖ Site N10-4.5 - Colonial Period (Farmstead) - S31°57'57.4"; E25°28'30.0"



Figure 20: Locality of Site N10-4.5

Site N10-4.5, located at S31°57'57.4"; E25°28'30.0", demarcates the locality of the Colonial Period Fortuinplaas farmstead, originally situated on the property Geduld 566 and comprising of the main residence and a number of outbuildings that can reasonably be inferred to date to the time of original construction of the main residence. The main residence constitutes the altered and renovated original structure. The date of the original structure is not known, but can reasonably be inferred to pre-date 60 years of age, implying that the site is formally protected by the NHRA 1999. The Fortuinplaas section of the property was subdivided in 1956 (CSG record nr 4920/66), but the farmstead itself would more closely date to the time of registration of the original farm. The Fortuinplaas Colonial Period farmstead will not be impacted on by development.

RECOMMENDATIONS:

Site N10-4.5, the Colonial Period Fortuinplaas farmstead, comprising of structures older than 60 years, receives automatic SAHRA protection as a site of *High Significance* with a *Provincial Grade 2 Field Rating*. Despite alterations and renovations at the site, the site is architecturally ascribed a *Medium Significance*. The site will not be impacted on by development. It is recommended that development proceeds in the vicinity of Site N10-4.5 without the developer having to comply with additional cultural heritage compliance requirements.



View of Site N10-4.5

Figure 21: Image gallery – Site N10-4.5

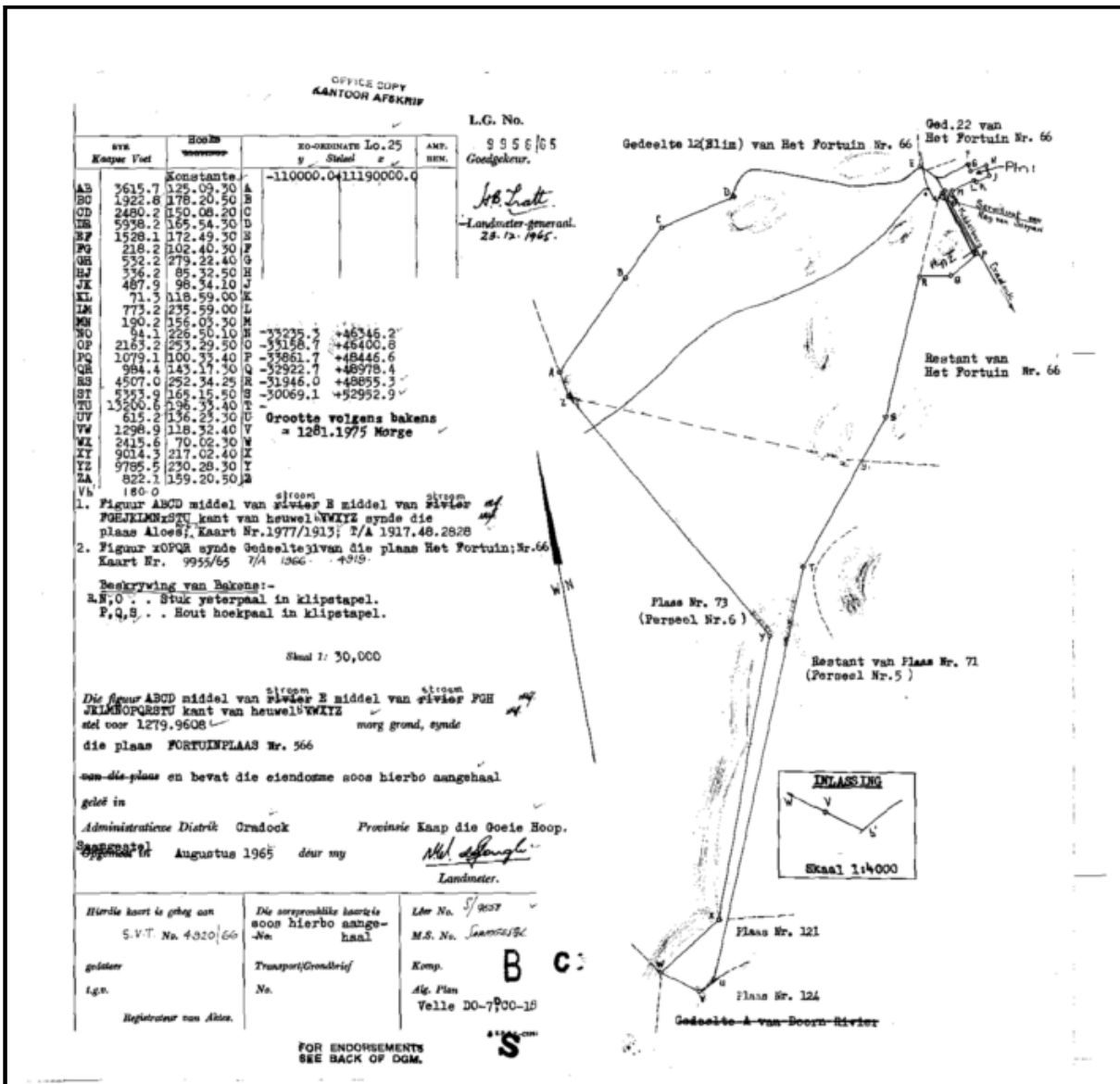


Figure 22: 1956 record of the subdivision of Fortuinplaas on the property Geduld 566 (CSG record nr 4920/66)

❖ Site N10-4.6 - Colonial Period (Farmstead) - S31°57'45.2"; E25°28'21.4"



Figure 23: Locality of Site N10-4.6

The Site N10-4.6 Colonial Period farmstead and outbuilding is situated on the property Elim. Both buildings comprises of structures older than 60 years, but with the exact date of construction unknown. Both structures are thus formally protected by the NHRA 1999, but neither will be impacted on by the proposed development. The Elim residence is still in use, while the outbuilding has evidently been derelict for some time prior to the assessment. (No CSG record could be located for purposes of registration details of the properties / farm portions).

RECOMMENDATIONS:

The Site N10-4.6 Colonial Period farmstead, comprising of the residence and an outbuilding pre-dates 60 years of age and is formally protected by the NHRA 1999. The site receives automatic SAHRA protection as a site of *High Significance* with a *Provincial Grade 2 Field Rating*. The residence is architecturally ascribed a *Medium Significance*, the outbuilding an architectural *Low Significance* rating. The site will not be impacted on by development. It is recommended that development proceeds in the vicinity of Site N10-4.6 without the developer having to comply with additional cultural heritage compliance requirements.



Site N10-4.6 – Residence



Site N10-4.6 – Outbuilding

Figure 24: Image gallery – Site N10-4.6

❖ Site N10-4.7 - Colonial Period (Farmstead) - S31°57'38.3"; E25°28'39.5"



Figure 25: Locality of Site N10-4.7

The extensive Site N10-4.7 Colonial Period Burnside farmstead (S31°57'38.3"; E25°28'39.5") is situated on the property Burnside, a portion of the original farm Het Fortuin 66. The farmstead comprises of the main residence and a number of related outbuildings. Het Fortuin 66 was registered in 1886 (CSG record number B613/1886), with the Burnside portion thereof subdivided in 1994 (CSG record nr G8824/1994). The Site N10-4.7 Burnside farmstead represents the original Het Fortuin farmstead inferred to date to shortly after registration of the farm and providing a maximum general date for Colonial Period farmsteads reported on along the line route. The farmstead thus predates 60 years of age and so does many of the widespread associated outbuildings; the site is by implication formally protected by the NHRA 1999. The site will not be impacted on by the proposed development.

RECOMMENDATIONS:

The Site N10-4.7 Colonial Period farmstead, comprising of the main residence and outbuildings pre-dates 60 years of age and is formally protected by the NHRA 1999. The site receives automatic SAHRA protection as a site of *High Significance* with a *Provincial Grade 2 Field Rating*. The site is architecturally ascribed a *Medium-High Significance*. The site will not be impacted on by development. It is recommended that development proceeds in the vicinity of Site N10-4.7 without the developer having to comply with additional cultural heritage compliance requirements.

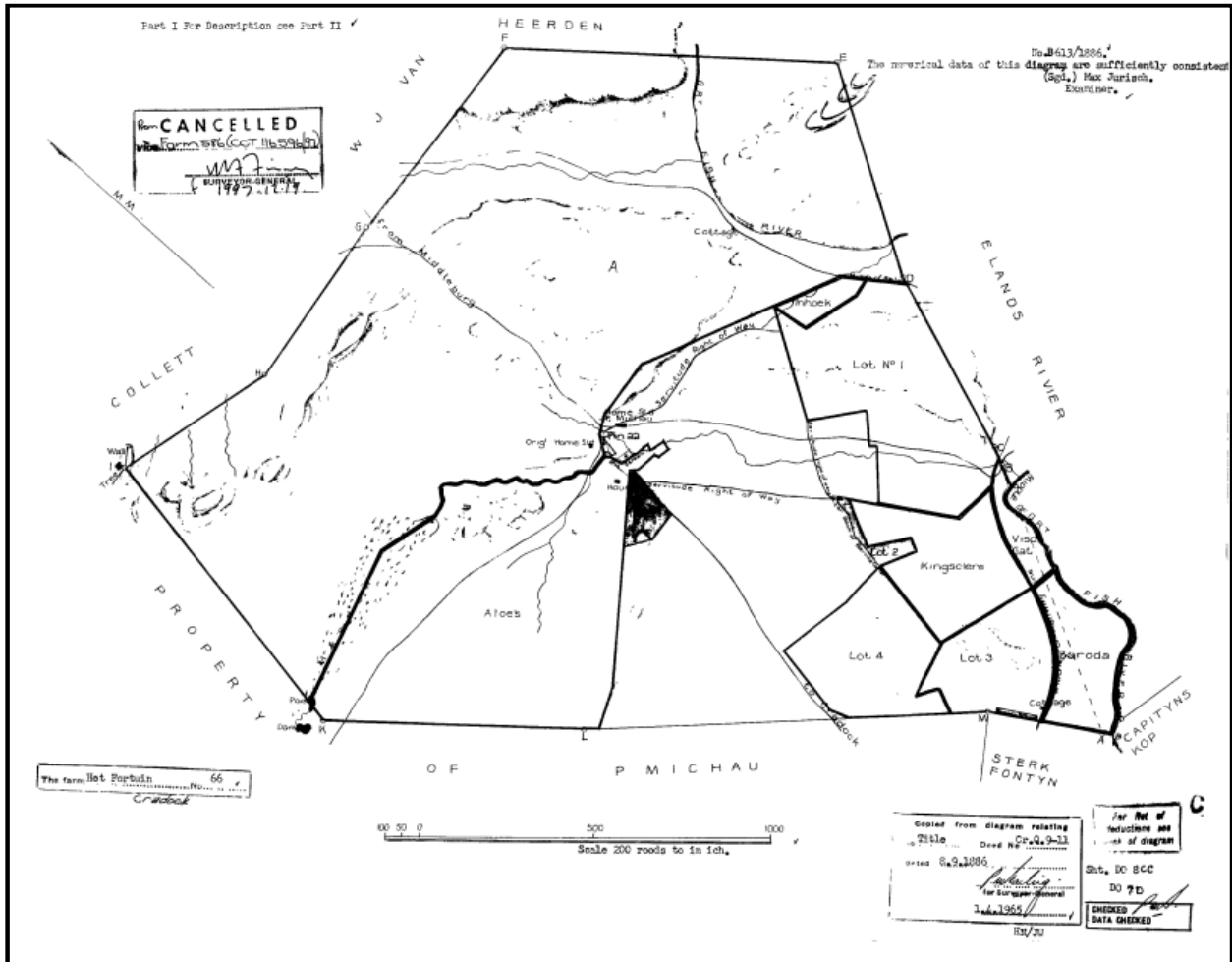


Figure 28: Het Fortuin 66, registered in 1886 (CSG record nr B613/1886)

2.2.2) N10-4/BP1 - Borrow Pit 1 - S32°03'36.6"; E25°31'39.9"



Figure 29: Locality of N10-4/BP1

Proposed new borrow pit N10-4/BP1 is situated at S32°03'36.6"; E25°31'39.9" on the property Morelig 127 [1:50,000 Map Ref: 3225BA].

❖ Site N10-4/BP1.1 - Stone Age (MSA & LSA) - S32°03'36.1"; E25°31'39.9"

The total of the proposed borrow pit N10-4/BP1 study site, measuring approximately 270x200m in size, is characterized by a surfacing gravel substrate, occurring in patches across the extent of the study site. A low quantity of Stone Age artefacts is routinely associated with the surfacing patches of gravel. Artefact densities within gravel occurrences vary quite noticeably with recorded artefact ratios (artefacts: m²) ranging from 1-5:1, where present, but providing for a general artefact ratio across the study site of <1:1. Artefacts are typologically ascribed to the Middle Stone Age (MSA), characterized by the predominance of flake and blade types, while a few smaller lithics may be indicative of either on site knapping (production *debitage*) or may in fact represent a Later Stone Age (LSA) admixture; particularly low artefact quantities however doesn't allow a more substantial interpretation. Technologically artefacts seem to be of a fair standard, produced from a mixture of baked shale and granite, but without an evident raw material source in the immediate vicinity. The low density Site N10-4/BP1.1 MSA (and LSA) Stone Age occurrence can reasonably be expected to extend for a significant area beyond the boundaries of the proposed borrow pit study site and existing farming development have evidently already impacted thereon. No attempt was made to determine the actual extend of the low density Stone Age occurrence; low density Stone Age occurrences are a known landscape feature across much of the Karoo, often stretching for particularly large areas on end. Slight sub-surface disturbances, including scraped access roads and a number of animal burrows indicates that the occurrence is surface restricted.

RECOMMENDATIONS:

The Site N10-4/BP1.1 low density MSA (and LSA) Stone Age occurrence is ascribed a SAHRA *Low Significance* and a *Generally Protected C Field Rating*. Based on particularly low artefact quantities characterizing the occurrence, the lack of a sub-surface stratigraphic component and the vast extend of many a low density Stone Age occurrence across the Karoo, it is recommended that development of proposed borrow pit N10-4/BP1 proceed provided that partial destruction of the occurrence be done under a SAHRA Site Destruction Permit.

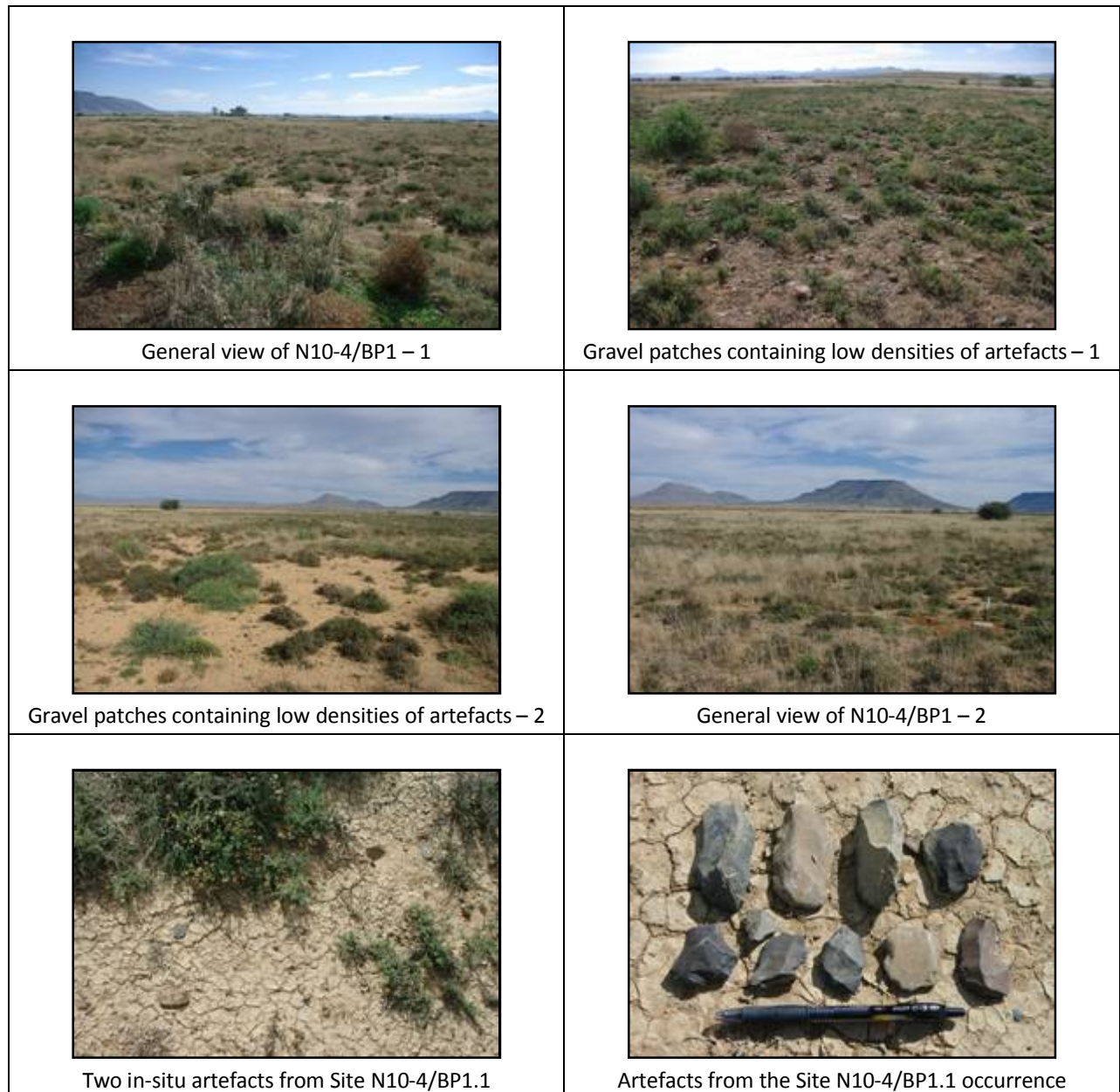


Figure 30: Image gallery – N10-4/BP1

2.2.3) N10-4/BP2 - Borrow Pit 2 - S31°57'28.6"; E25°29'12.9"



Figure 31: Locality of N10-4/BP2 (Red line and green infill – borrow pit N10-4/BP2; Green line and white infill – proposed new N10-4/BP2 study site)

Proposed borrow pit N10-4/BP2 is situated at S31°57'28.6"; E25°29'12.9" on the property Het Fortuin 66 [1:50,000 Map Ref: 3125CD].

❖ Site N10-4/BP2.1 - Colonial Period (Stone Wall) - S31°57'22.2"; E25°29'05.3"

Site N10-4/BP2.1 (S31°57'22.2"; E25°29'05.3") demarcates the locality of a Colonial Period stone wall, recorded for approximately 640m, but extending both east and west of the recorded area and following the aeriably visible linear vegetation alignment. The stone wall follows an early farm portion and later farm sub-division alignment of the property Het Fortuin 66. However, the size of the wall remains excessive as a farm or farm camp boundary and it is inferred that an original farm or farm camp boundary may well have been reinforced as defense mechanism during times of political upheaval for example during the time of the Boer Wars (1st Boer War – 1880-1881, 2nd or Anglo Boer War – 1899-1902).

Proposed development of borrow pit N10-4/BP2 has clearly taken the presence of the Colonial Period wall into account and the northern boundary of the proposed borrow pit site is situated more than 30m south of the Site N10-4/BP2.1 stone wall. The wall will not be impacted on and formalization (formal fence) of the borrow pit study site will ensure the continued conservation of the wall. However, due to close proximity it is recommended that additional conservation measures be put in place to ensure the conservation of the Site N10-4/BP2.1 stone wall.

❖ *Site N10-4/BP2.2 - Colonial Period (Stone Wall) - S31°57'29.6"; E25°29'21.2"*

Site N10-4/BP2.2 (S31°57'29.6"; E25°29'21.2) demarcates the locality of a 2nd Colonial Period stone wall, situated just east of the existing borrow pit area of impact and running for approximately 100m towards the north-east following the ridge contour, where decay have taken its obvious toll on the site remains but remains again continue further to the north-east along the aerially visible vegetation alignment and cross cutting the Site N10-4/BP2.1 wall remains. Again it is inferred that the origin of the wall may well have been for farming purposes (due to its extensive extension towards the north-east), but reinforcement thereof during times of political turmoil may well have proven very useful specifically relating to the view over the valley to the south from the site.

The current development proposal will directly impact on the Site N10-4/BP2.2 Colonial Period stone wall. It is recommended that the developer considers revision of the study site in order to ensure an at least 30m conservation barrier between the borrow pit and Site N10-4/BP2.2. Slight extension of the study site towards the west will not impact on any cultural heritage remains (See Figure 30). Should a change to the study site not prove a viable development option the developer should ensure that Phase 2 archaeological mitigation (archaeological excavation, documentation and analysis) precede development in order to record necessary data relating to the stone wall prior to destruction.

[No direct reference for use of the Sites N10-4/BP2.1 and N10-4/BP2.2 Colonial Period stone walls during times of political turmoil could be found, but a number of references highlight the prominence of Cradock in the military history of South Africa: Cradock was founded after the Frontier War of 1812 by then governor of the Cape, Sir John Cradock, as a stronghold to secure the Eastern area of Cape Colony, making Cradock (named in 1814/1818 after Sir John Cradock) the 4th oldest town in the Eastern Cape. The 1st fort was built in 1813 on the farm Buffelshoek by the Deputy Landdrost of Graaff-Reinett, Andries Stockenstrom (<http://www.stay-gamereserves.com/Cradock.html>). During the 1st weeks of the Anglo Boer War, Boer success led to the sieges of Mafikeng, Kimberley and Ladysmith as well the Boer invasion of the Eastern Cape, prompting General Redvers Buller, British Commander in South Africa to split his army corps into 3 parts. Buller himself were to be in command of the relieve of Ladysmith, Lieutenant General Lord Methuen in command of the relieve in Kimberley and General John French and Lieutenant General Sir William Gatacre were to contain the Eastern Cape invasion at Naauwpoort and Stormberg respectively. On 10 December 1899 the defeated Stormberg garrison withdrew to Queenstown, leaving the area to be occupied by the Boers (http://www.shieldtours.co.za/anglo_boer_war-eastern_cape.htm). During the 2nd Boer invasion of the Cape, December 1900 – April 1901, it is recorded that (http://www.shieldtours.co.za/anglo_boer_war-eastern_cape.htm): *'In the 2nd week of February Kritzinger began to withdraw, as had Hertzog in the west, closely followed by British columns. On 18 February Kritzinger was at Bethesda Road. On the 23rd he attacked an important railway bridge on the Fish River, north of Cradock. On 6 March, Boers occupied Pearston and there was a skirmish north of Aberdeen. On 7 April a British patrol was attacked near Aberdeen and 75 captured.'* And *'Kritzinger's commando of about 2,000 men, reinforced partly by Cape rebels and partly from the Free State, split into smaller groups of 50-300 men. Separate commandos were led by Kritzinger, Scheepers, Malan, Myburgh, Fouche, Lotter, van Reenen and Lategan in a theatre of operations from north of Steynsburg to south of Middelburg, including the Cradock, Murraysburg and Graaff-Reinett districts.'*

RECOMMENDATIONS:

Colonial Period stone wall remains within the proposed study site and in direct proximity thereto necessitates further conservation or Phase 2 archaeological mitigation measures prior to development. Both Colonial Period stone walls, Site N10-4/BP2.1 and Site N10-4/BP2.2 are ascribed SAHRA *Low Significances* and *Generally Protected C Field Ratings*. While Site N10-4/BP2.1 will be conserved by the development additional conservation measures are necessary. Site N10-4/BP2.2 will within the current development design be impacted on. It is recommended

that the developer firstly considers alteration of the study site in order to ensure that the stone wall be conserved. Should a revised development area not be feasible the developer should ensure that adequate Phase 2 archaeological mitigation be done before development impacts on the site. Recommended conservation and Phase 2 mitigation for borrow pit N10-4/BP2 is summarized as:

❖ **SITE N10-4/BP2.1:**

In situ Conservation

- **Construction Phase:** Temporary visual demarcation & Temporary sign posting –

The site should be visually clearly demarcated by means of danger tape or construction netting during the construction phase. In addition temporary signage should be erected indicating the site as a '*No entry: Heritage / Archaeological site*' area.

- **Post-construction Phase:** Permanent sign posting –

The site should be permanently sign-posted.

❖ **SITE N10-4/BP2.2:**

In situ Conservation (alteration to layout)

- **Construction Phase:** Temporary visual demarcation & Temporary sign posting –

The site should be visually clearly demarcated by means of danger tape or construction netting during the construction phase. In addition temporary signage should be erected indicating the site as a '*No entry: Heritage / Archaeological site*' area.

- **Post-construction Phase:** Permanent sign posting –

The site should be permanently sign-posted.

OR

Phase 2 archaeological mitigation and monitoring to precede and coincide with development (current layout)

- **Phase 2 archaeological mitigation:** Archaeological excavation, recording and analysis –

Phase 2 archaeological mitigation should be done under a SAHRA excavation permit issued to an ASAPA accredited CRM archaeologist. Upon submission of a Phase 2 archaeological mitigation report to SAHRA the developer can, under a SAHRA Site Destruction Permit, proceed to legally destroy the site.

[Preliminary consultation between the environmental consultant and project engineers indicated that conservation of the Site N10-4/BP2.2 Colonial Period stone wall feature, in accordance with SAHRA conservation requirements and implying alteration to the proposed N10-4/BP2 study site will be the preferred heritage management option (Pers. Comm: Tamarin Arthur, 2012-05-30)].



View of N10-4/BP2 – 1



View of N10-4/BP2 – 2



View of N10-4/BP2 – 3



View of N10-4/BP2 – 4



View of N10-4/BP2 – 5



View of N10-4/BP2 – 6



View of N10-4/BP2 – 7



View of N10-4/BP2 – 8

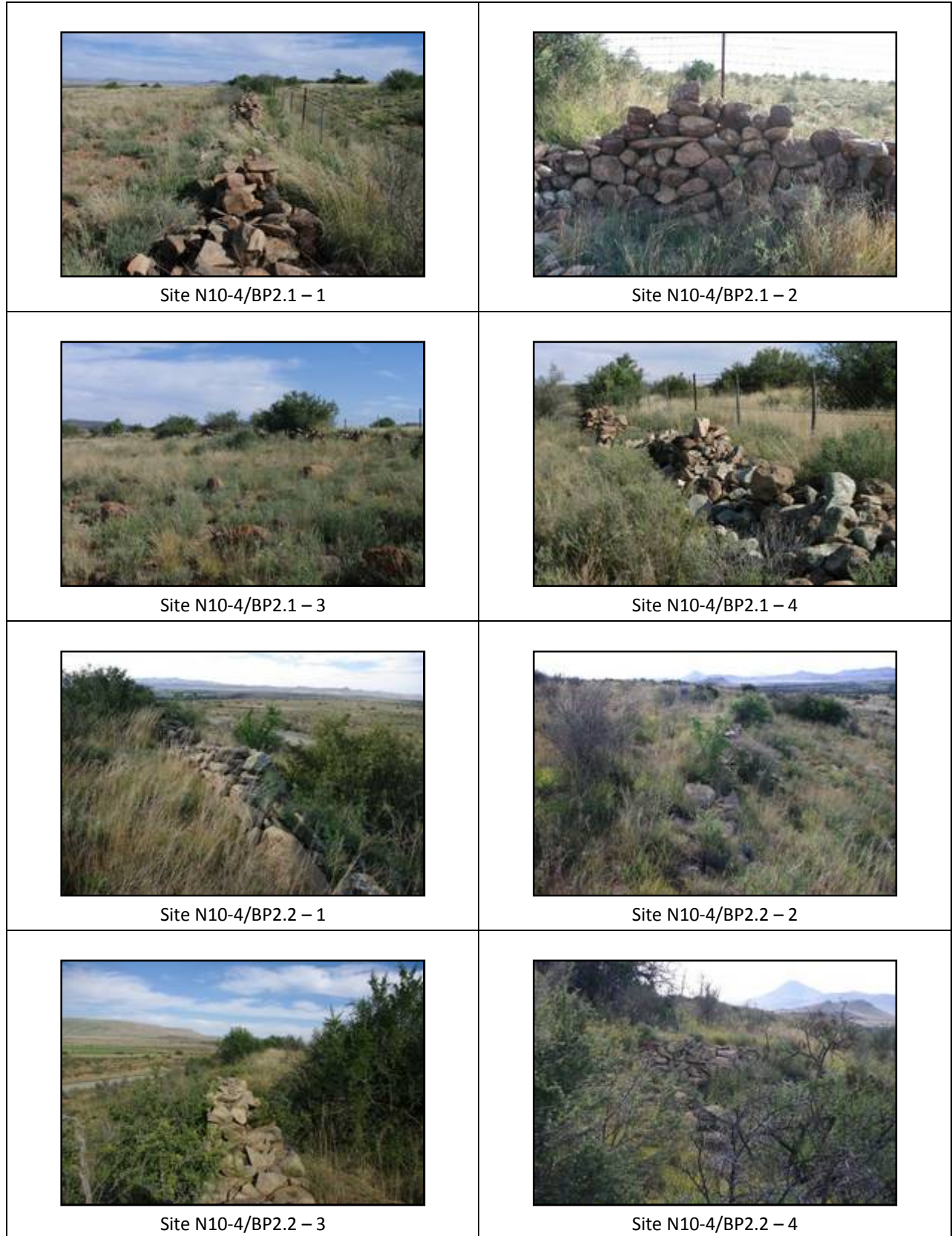


Figure 32: Image gallery – N10-4/BP2

3) CONCLUSION AND RECOMMENDATIONS

With reference to cultural heritage compliance, as per the requirements of the NHRA 1999, it is recommended that the proposed *Upgrade of the N10-4 Cradock [km1.6] to Knutsford [km29] Project*, to be situated between Cradock and Middelburg in the Eastern Cape, proceeds as applied for, provided the developer complies with the following recommendations:

❖ LINE ROUTE:

- 1) **Site N10-4.1:** N/A (In situ conservation or conservation 'as is');
- 2) **Site N10-4.2:** N/A (In situ conservation);
- 3) **Site N10-4.3:** N/A (In situ conservation);
- 4) **Site N10-4.4:** In situ conservation (Construction Phase: Temporary visual demarcation & Temporary sign posting; Post-construction Phase: Permanent sign posting);
- 5) **Site N10-4.5:** N/A (In situ conservation);
- 6) **Site N10-4.6:** N/A (In situ conservation); and
- 7) **Site N10-4.7:** N/A (In situ conservation).

❖ N10-4/BP1 (BORROW PIT 01):

- 8) **Site N10-4/BP1.1:** Development to proceed: Site destruction under a SAHRA Site Destruction Permit.

❖ N10-4/BP2 (BORROW PIT 02):

- 9) **Site N10-4/BP2.1: In situ conservation** (Construction Phase: Temporary visual demarcation & Temporary sign posting; Post-construction Phase: Permanent sign posting);
- 10) **Site N10-4/BP2.2: In situ conservation** (Construction Phase: Temporary visual demarcation & Temporary sign posting; Post-construction Phase: Permanent sign posting); **OR**
Phase 2 archaeological mitigation (Archaeological excavation, documentation and analysis followed by site destruction under a SAHRA Site Destruction Permit).

[Preliminary consultation between the environmental consultant and project engineers indicated that conservation of the Site N10-4/BP2.2 Colonial Period stone wall feature, in accordance with SAHRA conservation requirements and implying alteration to the proposed N10-4/BP2 study site will be the preferred heritage management option].

UPGRADE OF THE N10-4 CRADOCK [KM1.6] – KNUTSFORD [KM29]					
(BETWEEN CRADOCK AND MIDDELBURG), EASTERN CAPE					
MAP CODE	SITE	TYPE / PERIOD	DESCRIPTION	CO-ORDINATES	PRELIMINARY RECOMMENDATIONS
N10-4 between Cradock [km1.6] and Knutsford [km29]					
N10-4	N10.4.1	Colonial Period	Farm Gate	S32°06'18.3"; E25°32'52.7"	In situ Conservation
N10-4	N10-4.2	Colonial Period	Farmstead	S32°02'35.4"; E25°30'15.8"	In situ Conservation
N10-4	N10-4.3	Colonial Period	Farmstead	S32°02'19.8"; E25°30'14.5"	In situ Conservation
N10-4	N10-4.4	Stone Age	MSA	S32°01'12.9"; E25°29'45.3"	In situ Conservation <ul style="list-style-type: none"> • Construction Phase: Temporary visual demarcation & Temporary sign posting • Post-construction Phase: Permanent sign posting
N10-4	N10-4.5	Colonial Period	Farmstead	S31°57'57.4"; E25°28'30.0"	In situ Conservation
N10-4	N10-4.6	Colonial Period	Farmstead	S31°57'45.2"; E25°28'21.4"	In situ Conservation
N10-4	N10-4.7	Colonial Period	Farmstead	S31°57'38.3"; E25°28'39.5"	In situ Conservation
N10-4/BP1 (S32°03'36.6"; E25°31'39.9")					
-	N10-4/BP1.1	Stone Age	MSA (& LSA)	S32°03'36.1"; E25°31'39.9"	Site Destruction (under SAHRA Site Destruction Permit)
N10-4/BP2 (S31°57'28.6"; E25°29'12.9")					
-	N10-4/BP2.1	Colonial Period	Stone wall	S31°57'22.2"; E25°29'05.3"	In situ Conservation <ul style="list-style-type: none"> • Construction Phase: Temporary visual demarcation & Temporary sign posting • Post-construction Phase: Permanent sign posting
-	N10-4/BP2.2	Colonial Period	Stone wall	S31°57'29.6"; E25°29'21.2"	In situ Conservation (alteration to layout) <ul style="list-style-type: none"> • Construction Phase: Temporary visual demarcation & Temporary sign posting • Post-construction Phase: Permanent sign posting OR Phase 2 archaeological mitigation and monitoring to precede and coincide with development (current layout)

Table 2: Development and Phase 1 AIA assessment findings – co-ordinate details

NOTE: Should any archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, and not reported on in this report be identified during the course of development the developer should immediately cease operation in the vicinity of the find and report the site to SAHRA / an ASAPA accredited CRM archaeologist.

- ❖ **Sign Posting:** Sign posting is not at present defined by SAHRA and the following can be used as guideline: Signs should indicate that the sites are formally protected under the NHRA 1999 and that any damage thereto or impact thereon is prohibited by law. In addition the signs should indicate a reference for purposes of future identification. Sign boards can be in the region of approximately 60-80cm x 40-50cm in size which will provide for a reasonable size sign with clear legible lettering. Sign boards are usually done by professional sign writers (durability) on a metal board and fixed to a treated wooden or metal pole. Sign boards can be in a basic color (black / white / green / blue) with any font type (lettering in black / white). It is recommended that sign posts be done in English.

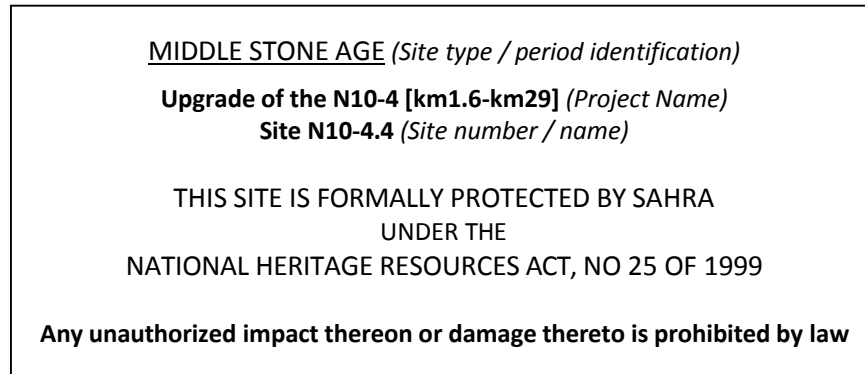


Figure 33: Recommended heritage sign posting

4) REFERENCES

1. http://en.wikipedia.org/wiki/Cradock_Eastern_Cape.
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3. <http://www.stay-gamereserves.com/Cradock.html>.
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INTRODUCTION TO THE ARCHAEOLOGY OF SOUTH AFRICA

Archaeologically the southern African cultural environment is roughly divided into the Stone Age, the Iron Age and the Colonial Period, including its subsequent Industrial component. This cultural division has a rough temporal association beginning with the Stone Age, followed by the Iron Age and the Colonial Period. The division is based on the identified primary technology used. The hunter-gatherer lifestyle of the Stone Age is identified in the archaeological record through stone being the primary raw material used to produce tools. Iron Age people, known for their skill to work iron and other metal, also practiced agriculture and animal husbandry. Kingdoms and civilizations associated with the Iron Age are indicative of a complex social hierarchy. The Colonial Period is marked by the advent of writing, in southern Africa primarily associated with the first European travelers (Mitchell 2002).

During the latter part of the Later Stone Age (LSA) hunter-gatherers shared their cultural landscape with both pastoralists and Iron Age people, while the advent of the Colonial Period in South Africa is marked by a complex cultural mosaic of people; including LSA hunter-gatherers, pastoralists, Later Iron Age farming communities and Colonial occupation.

1) Early Hominin Evolution

DNA studies indicate that humans and chimpanzees shared a common ancestor between 6-8Mya (Sibley & Ahlquist 1984). By 4Mya, based on fossil evidence from Ethiopia and Kenya, hominins (humans and their immediate fossil ancestors and relatives) had already evolved. The earliest fossils are ascribed to *Ardipithecus ramidus* (4.4Mya), succeeded by *Australopithecus anamensis* (4.2-3.9Mya). These fossils are inferred to lie at the base from which all other hominins evolved (Leakey *et al.* 1995; White *et al.* 1994).

In South Africa the later hominins are classed into 3 groups or distinct genera; *Australopithecus* (gracile australopithecines), *Paranthropus* (robust australopithecines) and *Homo*. South Africa has 3 major hominin sites: Taung in the North-West Province, where Raymond Dart identified the first *Australopithecus* fossil in 1924 (Dart 1925); The Cradle of Humankind (Sterkfontein Valley) sites in Gauteng, the most prolific hominin locality in the world for the period dating 3.5-1.5Mya which have yielded numerous *Australopithecus*, *Paranthropus* and limited *Homo* fossils (Keyser *et al.* 2000; Tobias 2000); and Makapansgat in the Limpopo Province, where several more specimens believed to be older than most of the Cradle specimens were discovered (Klein 1999).

A. africanus, represented at all 3 sites are believed to have been present on the South African landscape from about 3Mya. From approximately 2.8Mya they shared, at least in the Cradle area, the landscape with *P. robustus* and from roughly 2.3Mya with early forms of *Homo* (Clarke 1999). Global climatic cooling around 2.5Mya may have stimulated a burst of species turnover amongst hominins (Vrba 1992); the approximate contemporary appearance of the first stone tools suggests that this was a critical stage in human evolution. But exactly which early hominin population is to be accredited as the ancestor of *Homo* remains elusive.

H. ergaster is present in the African palaeo-anthropological record from around 1.8Mya and shortly thereafter the first exodus from Africa is evidenced by *H. erectus* specimens from China, Indonesia and even Europe (Klein 1999).

2) The Stone Age

2.1) The Earlier Stone Age

In South Africa the only Earlier Stone Age (ESA) Oldowan lithic assemblage comes from Sterkfontein Cave. The predominant quartz assemblage is technologically very simple, highly informal and inferred to comprise exclusively of multi-purpose tools (Kuman *et al.* 1997). The latter part of the ESA is characterized by the Acheulean Industrial Complex, present in the archaeological record from at least 1.5Mya. Both *H. ergaster* and *P. robustus* may be accredited with the production of these tools. The association between stone tools and increased access to meat and marrow supporting the greater dietary breadth of *Homo* may have been vital to *Homo's* evolutionary success; and the eventual extinction of the robust australopithecines (Klein 1999).

Probably the longest lasting artefact tradition ever created by hominins, the Acheulean is found from Cape Town to north-western Europe and India, occurring widely in South Africa. Despite the many sites it is still considered a 'prehistoric dark age' by many archaeologists, encompassing one of the most critical periods in human evolution; the transition from *H. ergaster* to archaic forms of *H. Sapiens* (Klein 1999).

The Acheulean industry is characterized by handaxes and cleavers as *fosilles directeurs* (signature artefact types), in association with cores and flakes. Handaxes and cleavers were multi-purpose tools used to work both meat and plant matter (Binneman & Beaumont 1992). Later Acheulean

flaking techniques involved a degree of core preparation that allowed a single large flake of predetermined shape and size to be produced. This *Victoria West technique* indicates an origin within the Acheulean for the *Levallois technique* of the Middle Stone Age (Noble & Davidson 1966). The lithic artefact component was supplemented by wood and other organic material (Deacon 1970).

2.2) The Middle Stone Age

The Middle Stone Age (MSA), dating from approximately 500kya to 40-27/23kya is interpreted as an intermediate technology between the Acheulean and the Later Stone Age (LSA) (Goodwin & van Riet Lowe 1929). The MSA is typologically characterized by the absence of handaxes and cleavers, the use of prepared core techniques and the production of blades, triangular and convergent flakes, with convergent dorsal scars and faceted striking platforms, often produced by means of the *Levallois technique* (Volman 1984). The widespread occurrence of MSA technology across Africa and its spread into much of Eurasia in Oxygen Isotope Stage (OIS) 7 is viewed as part of a process of population dispersal associated with both the ancestors of the later Neanderthals in Europe and anatomically modern humans in Africa (Foley & Lahr 1997).

After the riches offered by the Cradle sites and Makapansgat, southern Africa's Middle Pleistocene fossil record is comparatively poor. Early Middle Pleistocene fossil evidence suggests an archaic appearance and fossils are often assigned to *H. heidelbergensis* and *H. sapiens rhodesiensis* (Rightmire 1976). Modern looking remains, primarily from Border Cave (KwaZulu-Natal) and Klasies River Mouth (Eastern Cape) raised the possibility that anatomically modern humans had, by 120kya, originated south of the Sahara before spreading to other parts of the world (Brauer 1982; Stringer 1985). Subsequent studies of modern DNA indicated that African populations are genetically more diverse and probably older than those elsewhere (Cann *et al.* 1994). Combined, the fossil and genetic evidence underpins the so-called *Out of Africa 2* model (arguing that gene flow and natural selection led regional hominin populations along distinct evolutionary trajectories after *Homo's* expansion from Africa in the Lower Pleistocene *Out of Africa 1* model) of modern human origins and the continuing debate as to whether it should be preferred to its *Multiregional* alternative (arguing that modern humans evolved more or less simultaneously right across the Old World) (Mellars & Stringer 1989; Aitken *et al.* 1993; Nitecki & Nitecki 1994).

Persuasive evidence of ritual activity or bodily decoration is evidenced by the widespread presence of red ochre at particularly MSA 2 sites (after Volman's 1984 MSA 1-4 model; Hensilwood & Sealy 1997), while evidence from Lion Cave, Swaziland, indicates that specularite may have been mined as early as 100kya (Beaumont 1973). Evidence for symbolic behavioral activity is largely absent; no evidence for rock art or formal burial practices exists.

2.3) The Later Stone Age

Artefacts characteristic of the Later Stone Age (LSA) appear in the archaeological record from 40/27-23kya and incorporates microlithic as well as macrolithic assemblages. Artefacts were produced by modern *H. sapien* or *H. sapien sapien*, who subsisted on a hunter-gatherer way of life (Deacon 1984; Mitchell 2002).

According to Deacon (1984) the LSA can temporally be divided into 4 broad units directly associated with climatic, technological and subsistence changes:

1. Late Pleistocene microlithic assemblages (40-12kya);
2. Terminal Pleistocene / early Holocene non-microlithic assemblages (12-8kya);
3. Holocene microlithic assemblages (8kya to the Historic Period); and
4. Holocene assemblages with pottery (2kya to the Historic Period) closely associated with the influx of pastoralist communities into South Africa (Mitchell 2002).

Elements of material culture characteristic of the LSA reflect modern behavior. Deacon (1984) summarizes these as:

1. Symbolic and representational art (paintings and engravings);
2. Items of personal adornment such as decorated ostrich eggshell, decorated bone tools and beads, pendants and amulets of ostrich eggshell, marine and freshwater shells;
3. Specialized hunting and fishing equipment in the form of bows and arrows, fish hooks and sinkers;
4. A greater variety of specialized tools including bone needles and awls and bone skin-working tools;
5. Specialized food gathering tools and containers such as bored stone digging stick weights, carrying bags of leather and netting, ostrich eggshell water containers, tortoiseshell bowls and scoops and later pottery and stone bowls;
6. Formal burial of the dead in graves (sometimes covered with painted stones or grindstones and accompanied by grave goods);
7. The miniaturization of selected stone tools linked to the practice of hafting for composite tools production; and
8. A characteristic range of specialized tools designed for making some of the items listed above.

Rock Art

Rock Art is one of the most visible and informative components of South Africa's archaeological record. Research into LSA ethnography (as KhoiSan history) has revolutionized our understanding of both painted and engraved (petroglyph) images, resulting in a paradigm shift in Stone Age archaeology (Deacon & Dowson 2001). Paintings are concentrated in the Drakensberg / Maluti mountains, the eastern Free State, the Cape Fold Mountains, the Waterberg Plateau and the Soutpansberg mountains. Engravings on the other hand are found throughout the Karoo, the western Free State and North-West Province (Mitchell 2002). Both forms of LSA art drew upon a common stock of motifs, derived from widely shared beliefs and include a restricted range of naturalistically depicted animals, geometric imagery, human body postures and non-realistic combinations of human and animal figures (anthropomorphic figurines). LSA Rock Art is closely associated with spiritual or magical significance (Lewis-Williams & Dowson 1999).

Aside from LSA or KhoiSan Rock Art, thus art produced by both hunter-gatherer and pastoralist and agro-pastoralist groups, Rock Art produced by Iron Age populations are known to be present towards the north of the country.

Shell Middens ('Strandloper' Cultures)

South Africa's nearly 3,000km coastline is dotted by thousands of shell middens, situated between the high water mark and approximately 5km inland, bearing witness to long-term exploitation of shellfish mainly over the past 12,000 years. These LSA shell middens are easily distinguishable from natural accumulations of shells and deposits can include bones of animals eaten such as shellfish, turtles and seabirds, crustaceans like crabs and crayfish and marine mammal remains of seals, dolphins and occasionally whales. Artefacts and hearth and cooking remains are often found in shell midden deposits. Evidence exist that fish were speared, collected by hand, reed baskets and by means of stone fish traps in tidal pools (Mitchell 2002).

Shell midden remains were in the past erroneously assigned to 'Strandloper cultures'. Deacon & Deacon (1999) explain that '*no biological or cultural group had exclusive rights to coastal resources.*' Some LSA groups visited the coast periodically while others stayed year round and it is misleading to call them all by the same name. Two primary sources of archaeological enquiry serves to shed more light on the lifestyles of people who accumulated shell middens, one being the analysis of food remains in the middens itself and the other being the analysis of LSA human skeletal remains of people buried either in shell middens or within reasonable proximity to the coast.

Shell middens vary in character ranging from large sites tens of meters in extent and with considerable depositional depth to fairly small ephemeral collections, easily exposed and destroyed by shifting dune action. Shell middens are also found inland, along rivers where fresh water mussels occur. These middens are often fairly small and less common; in the Eastern Cape often dated to within the past 3,000 years (Deacon & Deacon 1999).

In addition shell middens are not exclusively assigned to LSA cultures; shellfish were exploited during the Last Interglacial, indicating that the practice was most probably continuous for the past 120,000 years (MSA shell middens). Along the coast of KwaZulu-Natal evidence exist for the exploitation of marine food resources by Iron Age communities. These shell middens are easily distinguished from Stone Age middens by particularly rich, often decorated ceramic artefact content. Colonial Period shell middens are quite rare and extremely ephemeral in character; primarily the result of European shipwreck survivors and reported on along the coast of KwaZulu-Natal and the Transkei, Eastern Cape.

3) The Iron Age

For close to 2 millennia people combining cereal agriculture with stock keeping have occupied most of southern Africa's summer rainfall zone. The rapid spread of farming, distinctive ceramics and metallurgy is understood as the expansion of a Bantu-speaking population, in archaeological terms referred to as the Iron Age.

3.1) The Early Iron Age

Ceramic typology is central to current discussions of the expansion of iron using farming communities. The most widely used approach is that of Huffman (1980), who employs a multidimensional analysis (vessel profile, decoration layout and motif) to reconstruct different ceramic types. Huffman (1998) argues that ceramics can be used to trace the movements of people, though not necessarily of specific social or political groupings. Huffman's Urewe Tradition coincides largely with Phillipson's (1977) Eastern Stream. A combined Urewe Tradition / Eastern Stream model for the Early Iron Age can be summarized as:

1. The Kwale branch (extending along the coast from Kenya to KwaZulu-Natal);
2. The Nkope branch (located inland and reaching from southern Tanzania through Malawi and eastern Zambia into Zimbabwe); and
3. The Kalundu branch (stretching from Angola through western Zambia, Botswana and Zimbabwe into South Africa).

In southern Africa, recent work distinguishes two phases of the Kwale branch: The earlier Silver Leaves facies (250-430AD) occurring as far south as the Northern Province. The later expression or Mzonjani facies (420-580AD) occurs in the Northern Province as well as along the KwaZulu-Natal coastal belt (Huffman 1998). Since the Silver Leaves facies is only slightly younger than the Kwale type site in Kenya, very rapid movement along the coast, perhaps partly by boat, is inferred (Klapwijk 1974). Subsequently (550-650AD) people making Mzonjani derived ceramics settled more widely in the interior of South Africa.

Assemblages attributable to the Nkope branch appear south of the Zambezi but north of South Africa from the 5th Century. Ziwa represents an early facies, with Gokomere deriving jointly from Ziwa and Bambata. A subsequent phase is represented by the Zhizo facies of the Shashe-Limpopo basin, and by Taukome (Huffman 1994). Related sites occur in the Kruger National Park (Meyer 1988). Zhizo (7th – 10th Century) is ancestral to the Toutswe tradition which persisted in eastern Botswana into the 13th Century.

Kalundu origins need further investigation; its subsequent development is however better understood. A post Bambata phase is represented by the 5th – 7th Century sites of Happy Rest, Klein Africa and Maunatlana in the Northern Province and Mpumalanga (Prinsloo 1974, 1989). Later phases are present at the Lydenburg Heads site (Whitelaw & Moon 1996) and by the succession of Mzuluzi, Ndondonwane and Ntshekane in KwaZulu-Natal (7th – 10th Centuries) (Prins & Grainger 1993). Later Kalundu facies include Klingbeil and Eiland in the northern part of the country (Evers 1980) with Kgopolwe being a lowveld variant in Mpumalanga (10th – 12th Century). Broadhurst and other sites indicate a still later survival in Botswana (Campbell 1991).

Despite the importance accorded to iron agricultural implements in expanding the spread of farming and frequent finds of production debris, metal objects are rare. Metal techniques were simple, with no particular sign of casting, wire drawing or hot working. Jewelry (bangles, beads, pendants etc.) constitute by far the largest number of finds but arrows, adzes, chisels, points and spatulae are known (Miller 1996).

Early Iron Age people were limited to the Miombo and Savannah biomes; excluded from much of the continent's western half by aridity and confined in the south during the 1st millennium to bushveld areas of the old Transvaal. Declining summer rainfall restricted occupation to a diminishing belt close to the East Coast and north of S33° (Maggs 1994); sites such as Canasta Place (800AD), Eastern Cape, mark the southern-most limit of Early Iron Age settlement (Nogwaza 1994).

The Central Cattle Pattern

The Central Cattle Pattern (CCP) was the main cognitive pattern since the Early Iron Age (Huffman 1986). The system can be summarized as opposition between male pastoralism and female agriculture; ancestors and descendants; rulers and subjects; and men and women. Cattle served as the primary means of transaction; they represented symbols exchanged for the fertility of wives, legitimacy of children and appeasement of ancestors. Cattle were also used as tribute to rulers confirming sub-ordination and redistribution as loan cattle by the ruler to gain political support. Cattle represented healing and fertilizing qualities (Huffman 1998; Kuper 1980).

This cognitive and conceptual structure underlies all cultural behavior, including the placement of features in a settlement. The oppositions of male and female, pastoralism and agriculture, ancestors and descendants, rulers and subjects, cool and hot are represented in spatial oppositions, either concentric or diametric (Huffman 1986).

A typical CCP village comprise of a central cattle enclosure (byre) where men are buried. The *Kgotla* (men's meeting place / court) is situated adjacent to the cattle enclosure. Surrounding the enclosure is an arc of houses, occupied according to seniority. Around the outer perimeter of the houses is an arc of granaries where women keep their pots and grinding stones (Huffman 1986). The model varies per ethnic group which helps to distinguish ethnicity throughout the Iron Age, but more studies are required to recognize the patterns.

3.2) The Middle Iron Age

The hiatus of South African Middle Iron Age activity was centered in the Shashe-Limpopo Valley and characterized by the 5-tier hierarchical Mapungubwe State spanning some 30,000km². By the 1st millennium ivory and skins were already exported overseas, with sites like Sofala and Chibueni, Mozambique, interfacing between interior and transoceanic traders. Exotic glass beads, cloth and Middle Eastern ceramics present at southern African sites mark the beginning of the regions incorporation into the expanding economic system that, partly tied together with maritime trading links across the Indian Ocean, increasingly united Africa, Asia and Europe long before Da Gama or Columbus (Eloff & Meyer 1981; Meyer 1998).

Occupation was initially focused at Bambandanyalo and K2. The Bambandanyalo main midden (1030-1220AD) stands out above the surrounding area, reaching more than 6m in places and covering more than 8ha the site may have housed as many as 2,000 people (Meyer 1998). The CCP was not strictly followed; whether this is ideologically significant or merely a reflection of local topography remains unclear. The

midden, the size of which may reflect the status of the settlement's ruler, engulfed the byre around 1060-1080AD, necessitating relocation of the cattle previously kept there. The re-organization of space and worldview implied suggests profound social changes even before the sites' abandonment in the early 13th century, when the focus of occupation moved to Mapungubwe Hill, 1 km away (Huffman 1998).

Excavations at Mapungubwe Hill, though only occupied for a few decades (1220-1290AD), yielded a deep succession of gravel floors and house debris (Eloff & Meyer 1981). Huffman (1998) suggests that the suddenness with which Mapungubwe was occupied may imply a deliberate decision to give spatial expression to a new social order in which leaders physically removed themselves from ordinary people by moving onto more inaccessible, higher elevations behind the stone walls demarcating elite residential areas. Social and settlement changes speak of considerable centralization of power and perhaps the elaboration of new ways of linking leaders and subjects.

At Bambandanyalo and Mapungubwe elite burial grave goods include copper, bone, ivory and golden ornaments and beads. Social significance of cattle is reinforced by their importance among the many human and animal ceramic figurines and at least 6 'beast burials' (Meyer 1998).

Today the drought prone Shashe-Limpopo Valley receives less than 350mm of rainfall per annum, making cereal cultivation virtually impossible. The shift to drier conditions in the late 1200's across the Shashe-Limpopo basin and the eastern Kalahari may have been pivotal in the break-up of the Mapungubwe polity, the collapse of Botswana's Toutswe tradition and the emergence of Great Zimbabwe (1220-1550AD), southern Africa's best known and largest (720ha) archaeological site (Meyer 1998).

South of the Limpopo and north of the Soutpansberg, Mapungubwe derived communities survived into the 14th Century, contemporary with the establishment of Sotho-speaking makers of Maloko pottery.

3.3) *The Later Iron Age*

South African farming communities of the 2nd millennium experienced increased specialization of production and exchange, the development of more nucleated settlement patterns and growing political centralization, albeit not to the same extent as those participating in the Zimbabwe tradition. However, together they form the background to the cataclysmic events of the late 18th / early 19th Century *Mfecane* (Mitchell 2002).

Archaeological evidence of settlement pattern, social organization and ritual practice often differ from those recorded ethnographically. The Moloko ceramic tradition seems to be ancestral to modern Sotho-Tswana speakers (Evers 1980) and from about 1,100AD a second tradition, the Blackburn tradition, appears along South Africa's eastern coastline. Blackburn produced mostly undecorated pottery (Davies 1971), while Mpambanyoni assemblages, reaching as far south as Transkei, includes examples of rim notching, incised lines and burnished ochre slip (Robey 1980). At present, no contemporary farming sites are known further inland in KwaZulu-Natal or the Eastern Cape.

Huffman (1989) argues that similarities between Blackburn and early Maloko wares imply a related origin, presumably in the Chifumbaze of Zambia or the Ivuna of Tanzania, which contains a range of ceramic attributes important in the Blackburn as well as beehive grass huts similar to those made by the Nguni. This is one of the few suggestions of contact between Sotho-Tswana and Nguni speakers on the one hand and farming communities who, if Huffman is correct, were already long established south of the Limpopo. Both ethnographic and archaeological data demonstrate that Sotho-Tswana and Nguni are patrilineal and organize their settlements according to the CCP (Kuper 1980).

From 1,300AD there is increasing evidence for the beginning of agro-pastoralist expansion considerably beyond the area of previous occupation. It is also to this time that the genealogies of several contemporary Bantu speaking groups can be traced (Wilson & Thompson 1969). Associated with this expansion was the regular employment of stone, rather than wood, as building material, an adaptation that has greatly facilitated the discovery and identification of settlements. Maggs (1976) describes 4 basic settlement types all characterized by the use of semi weathered dolomite to produce hard binding *daga* for house floors and a wall building tradition employing larger more regular stones for the inner and outer faces and smaller rubble for the infill. As with the more dispersed homesteads of KwaZulu-Natal and the Eastern Cape, sites tend to be in locally elevated situations, reflecting a deep seated Sotho and Nguni preference for benign higher places rather than supernaturally dangerous riverside localities; another important contrast to both 1st millennium (Maggs 1976) and later Zulu Kingdom settlement patterns (Hall & Maggs 1979).

The lack of evidence for iron production in the interior and eastern part of South Africa emphasize exchange relationships between various groups and associated more centralized polities. By the 19th Century iron production in KwaZulu-Natal was concentrated in particular clans and lineages and associated with a range of social and religious taboos (Maggs 1992). South of Durban comparatively few smelting sites are known (Whitelaw 1991), a trend even more apparent in Transkei (Feely 1987). However, metal remained the most important and archaeologically evident item traded between later farming communities. (Other recorded trade items include glass and ostrich eggshell beads; Indian Ocean seashells; siltstone pipes; *dagga*, and later on tobacco; pigments including ochre, graphite and specularite; hides and salt.)

Rising polity settlements are particularly evident in the north of the country and dated to the 17th Century, including Molokwane, capital of the Bakwena chiefdom (Pistorius 1994) and Kaditshwene, capital of a major section of the Hurutshe, whose population of 20,000 in 1820 almost equals contemporary Cape Town in size (Boeyens 2000). The agglomeration of Tswana settlements in the north of the country was fuelled by both population growth and conflict over access to elephant herds for ivory and long distance trade with the East Coast. During this period ceramic decoration became blander and more standardized than the earlier elaborate decoration that included red ochre and graphite coloring.

The *Mfecane* refers to the wars and population movements of the early 19th Century which culminated in the establishment of the Zulu Kingdom and came to affect much of the interior, even beyond the Zambezi: The late 18th Century was marked by increasing demands for ivory (and slaves) on the part of European traders at Delagoa Bay; as many as 50 tones of ivory were exported annually from 1750-1790. As elephant populations declined, competition increased both for them and for the post 1790 supply of food to European and American whalers calling at Delagoa Bay (Smith 1970). Cattle raiding, conflict over land and changes in climatic and subsistence strategies characterized much of the cultural landscape of the time.

Competition for access to overseas trade encouraged some leaders to replace locally organized circumcision schools and age-sets with more permanently maintained military regiments. These were now used to gain access through warfare to land, cattle and stored food. By 1810 three groups, the Mthethwa, Ndwandwe and Ngwane dominated northern KwaZulu-Natal (Wright 1995). The Mthethwa paramourcy was undermined by the killing of its leader Dingiswayo in *circa* 1818, which led to a brief period of Ndwandwe dominance. In consequence one of Dingiswayo's former tributaries, Shaka, established often forceful alliances with chiefdoms further south. Shaka's Zulu dominated coalition resisted the Ndwandwe who in return fled to Mozambique. As the Zulu polity expanded it consolidated its control over large areas, incorporating many communities into it. Others sought refuge from political instability by moving south of the Thukela River, precipitating a further *domino effect* as far as the Cape Colony's eastern border (Wright 1995).

4) *The Colonial Period*

In the 15th Century Admiral Zheng He and his subordinates impressed the power of the Ming Dynasty rulers in a series of voyages as far afield as Java, Sri Lanka, southern Arabia and along the East African coast, collecting exotic animals *en route*. But nothing more came of his expeditions and China never pursued opportunities for trade or colonization (Mote 1991).

Portuguese maritime expansion began around the time of Zheng He's voyages; motivated by a desire to establish a sea route to the riches of the Far East. By 1485 Diogo Cao had reached Cape Cross, 3 years later Bartolomeu Dias rounded the Cape of Good Hope and less than a decade later Vasco da Gama called at several places along South Africa's coast, trading with Khoekhoen (Khoi) at Mossel Bay before reaching Mozambique and crossing the ocean to India. His voyage initiated subsequent Portuguese bases from China to Iraq. In Africa interest was focused on seizing important coastal trading towns such as Sofala and gaining access to the gold of Zimbabwe. Following the 1510 Portuguese-Khoekhoen battle at Table Bay, in which the viceroy of India was killed, Portuguese ships ceased to call along the South African coast (Elphick 1985).

A number of shipwrecks, primarily along the eastern coast attest to Portuguese activity including the Sao Joao, wrecked in 1552 near Port Edward and the Sao Bento, destroyed in 1554 off the Transkei coast. Survivors' accounts provided the 1st detailed information on Africa's inhabitants (Auret & Maggs 1982).

By the late 1500's Portuguese supremacy of the Indian Ocean was threatened. From 1591 numerous Dutch and English ships called at Table Bay and in 1652 the Dutch East Indian Company (VOC) established a permanent base, with the intent to provide fresh food and water to VOC ships. In an attempt to improve the food supply a few settlers (free burghers) were allowed to establish farms. The establishment of an intensive mixed farming economy failed due to shortages of capital and labor, and free burghers turned to wheat cultivation and livestock farming. While the population grew slowly the area of settlement expanded rapidly with new administrative centers established at Stellenbosch (1676), Swellendam (1743) and Graaf-Reinet (1785). By the 1960's the Colony's frontier was too long to be effectively policed by VOC officials (Elphick 1985).

From the 1700's many settlers expanded inland over the Cape Fold Mountain Belt. The high cost of overland transport constrained the ability to sell their produce while settlement of the interior was increasingly made difficult by resident KhoiSan groups, contributing due to a lack of VOC military support to growing Company opposition in the years before British control of the Cape (1795 / 1806) (Davenport & Saunders 2000).

In 1820 a major British settlement was implanted on the eastern frontier of the Cape Colony, resulting in large numbers of the community moving into the interior, initially to KwaZulu-Natal, and then after Britain annexed Natal (1843), further into the interior to beyond the Vaal River. Disruptions of the *Mfecane* eased their takeover of African lands and the *Boers* (farmers) established several Republics. A few years later the 2nd South African War saw both the South African and Orange Free State Republics annexed by Britain, a move largely motivated by British desire to control the goldfields of the Witwatersrand. With adjacent regions of the sub-continent also falling, directly or indirectly, under

British rule and German colonization of Namibia, European control of the whole of southern Africa was firmly established before the 1st World War (Davenport & Saunders 2000).

❖ **Xhosa Iron Age Cultures meets Colonists in the Eastern Cape**

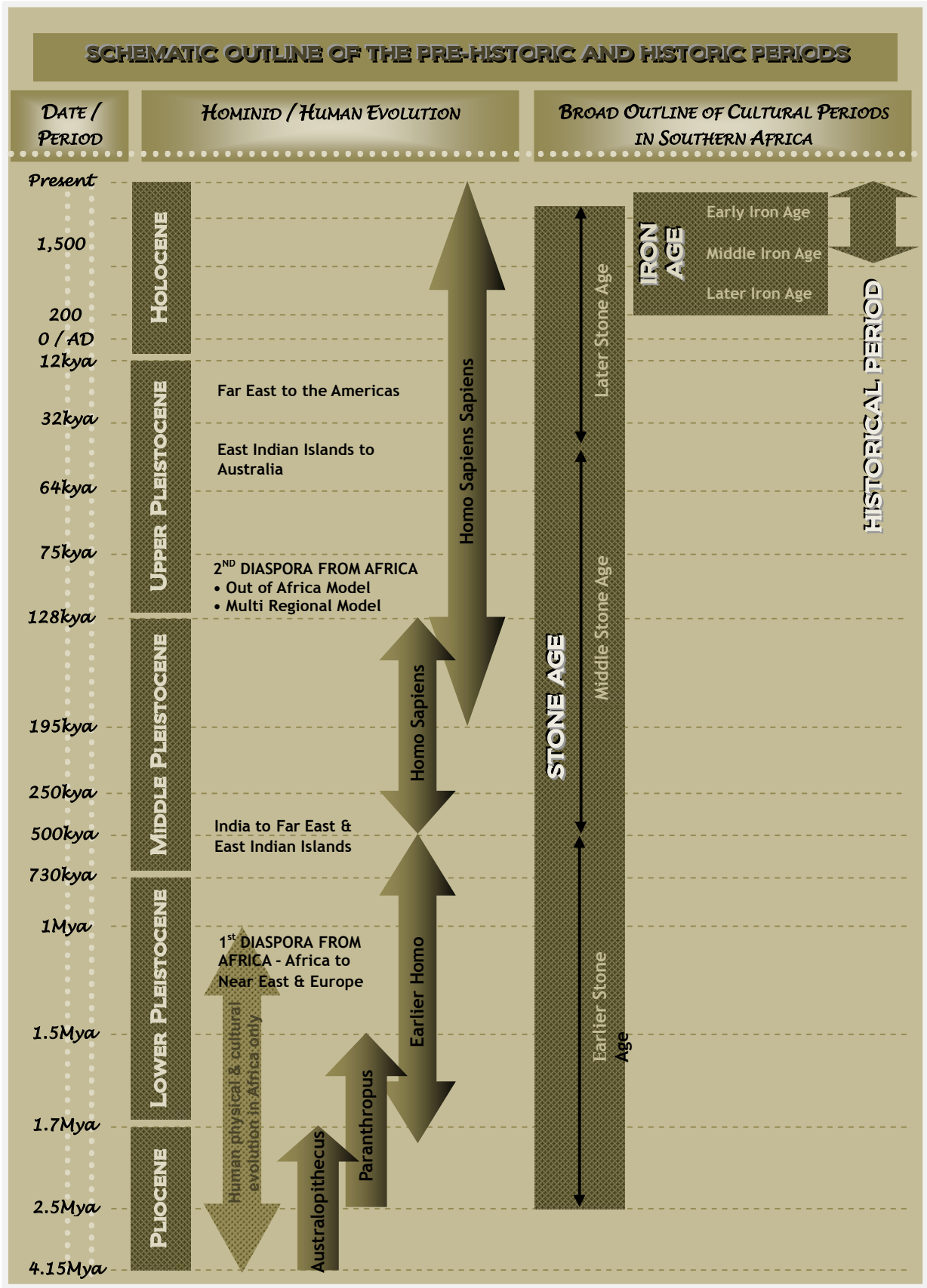
From the late 1600's conflict between migrants from the Cape (predominantly Boers) and Xhosa people in the region of the Fish River were strife, ultimately resulting in a series of 9 Frontier Wars (1702-1878) (Milton 1983). Both cultures were heavily based and reliant on agriculture and cattle farming. As more Cape migrants, and later settlers from Britain (1820) and elsewhere arrived, population pressures and competition over land, cattle and good grazing became intense. Cattle raiding became endemic on all sides, with retaliatory raids launched in response. As missionaries arrived with evangelical messages, confrontations with hostile chiefs who saw them as undermining traditional Xhosa ways of life resulted in conflicts which flared into wars.

As pressures between the European settlers and the Xhosa grew, settlers organized themselves into local militia, counteracted by Xhosa warring skills: But both sides were limited by the demands of seasonal farming and the need for labor during harvest. Wars between the Boers and the Xhosa resulted in shifting borders, from the Fish to the Sundays River, but it was only after the British annexed the Cape in 1806 that authorities turned their attention to the Eastern regions and petitions by the settlers about Xhosa raids. British expeditions, in particular under Colonel John Graham in 1811 and later Harry Smith in 1834, were sent not only to secure the frontier against the Xhosa, but also to impose British authority on the settlers, with the aim to establish a permanent British presence. Military forts were built and permanently manned. Over time the British came to dominate the area both militarily and through occupation with the introduction of British settlers. The imposition of British authority led to confrontations not only with the Xhosa but also with disaffected Boers and other settlers, and other native groups such as the Khoikhoi, the Griqua and the Mpondo. The frontier wars continued over a period of about 150 years; from the 1st arrival of the Cape settlers, and with the intervention of the British military ultimately ending in the subjugation of the Xhosa people. Fighting ended on the Eastern Cape frontier in June 1878 with the annexation of the western areas of the Transkei and administration under the authority of the Cape Colony (Milton 1983).

❖ **The Industrial Revolution**

The Industrial Revolution refers roughly to the period between the 18th - 19th Centuries, typified by major changes in agriculture, manufacturing, mining, transport, and technology. Changing industry had a profound effect on socio-economic and socio-cultural conditions across the world: The Industrial Revolution marks a major turning point in human history; almost every aspect of daily life was eventually influenced in some way. Average income and population size began to exhibit unprecedented growth; in the two centuries following 1800 the world's population increased over 6-fold, associated with increasing urbanization and demand of resources. Starting in the latter part of the 18th century, the transition from manual labor towards machine-based manufacturing changed the face of economic activity; including the mechanization of the textile industries, the development of iron-making techniques and the increased use of refined coal. Trade expansion was enabled by the introduction of canals, improved roads and railways. The introduction of steam power fuelled primarily by coal and powered machinery was underpinned by dramatic increases in production capacity. The development of all-metal machine tools in the first two decades of the 19th century facilitated the manufacture of more production machines in other industries (More 2000).

Effects of the Industrial Revolution were widespread across the world, with its enormous impact of change on society, a process that continues today as 'industrialization'.



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EXTRACTS FROM THE NATIONAL HERITAGE RESOURCES ACT, NO 25 OF 1999

DEFINITIONS**Section 2**

In this Act, unless the context requires otherwise:

- ii. *“Archaeological”* means –
 - a) material remains resulting from human activity 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;
 - b) 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 10 m of such representation;
 - c) 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,... 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.
- viii. *“Development”* means any physical intervention, excavation or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –
 - a) construction, alteration, demolition, removal or change of use of a place or structure at a place;
 - b) carrying out any works on or over or under a place;
 - c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
 - d) constructing or putting up for display signs or hoardings;
 - e) any change to the natural or existing condition or topography of land; and
 - f) any removal or destruction of trees, or removal of vegetation or topsoil;
- xiii. *“Grave”* means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;
- xxi. *“Living heritage”* means the intangible aspects of inherited culture, and may include –
 - a) cultural tradition;
 - b) oral history;
 - c) performance;
 - d) ritual;
 - e) popular memory;
 - f) skills and techniques;
 - g) indigenous knowledge systems; and
 - h) the holistic approach to nature, society and social relationships.
- xxx. *“Palaeontological”* 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 use, and any site which contains such fossilised remains or trace;
- xli. *“Site”* means any area of land, including land covered by water, and including any structures or objects thereon;
- xliv. *“Structure”* means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith;

NATIONAL ESTATE**Section 3**

- 1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.
- 2) Without limiting the generality of subsection 1), the national estate may include –
 - a) places, buildings, structures and equipment of cultural significance;
 - b) places to which oral traditions are attached or which are associated with living heritage;
 - c) historical settlements and townscapes;
 - d) landscapes and natural features of cultural significance;
 - e) geological sites of scientific or cultural importance
 - f) archaeological and palaeontological sites;
 - g) graves and burial grounds, including –
 - i. ancestral graves;
 - ii. royal graves and graves of traditional leaders;
 - iii. graves of victims of conflict
 - iv. graves of individuals designated by the Minister by notice in the Gazette;
 - v. historical graves and cemeteries; and
 - vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
 - h) sites of significance relating to the history of slavery in South Africa;
 - i) movable objects, including –
 - i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;

- ii. objects to which oral traditions are attached or which are associated with living heritage;
- iii. ethnographic art and objects;
- iv. military objects;
- v. objects of decorative or fine art;
- vi. objects of scientific or technological interest; and
- vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

STRUCTURES

Section 34

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

ARCHAEOLOGY, PALAEOLOGY AND METEORITES

Section 35

- 3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
- 4) No person may, without a permit issued by the responsible heritage resources authority –
 - a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
 - b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
 - c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
 - d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- 5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may –
 - a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
 - b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
 - c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph a) to apply for a permit as required in subsection 4); and
 - d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.
- 6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated, serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

BURIAL GROUNDS AND GRAVES

Section 36

- 3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority –
 - a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
 - b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
 - c) bring onto or use at a burial ground or grave referred to in paragraph a) or b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
- 4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction of any burial ground or grave referred to in subsection 3a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- 5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection 3b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority –
 - a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
 - b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

- 6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority –
- a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
 - b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-internment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

HERITAGE RESOURCES MANAGEMENT

Section 38

- 1) Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorised as –
 - a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
 - b) the construction of a bridge or similar structure exceeding 50 m in length;
 - c) any development or other activity which will change the character of a site –
 - i. exceeding 5 000 m² in extent; or
 - ii. involving three or more existing erven or subdivisions thereof; or
 - iii. involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
 - iv. the costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
 - d) the rezoning of a site exceeding 10 000 m² in extent; or
 - e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.
- 2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection 1) –
 - a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
 - b) notify the person concerned that this section does not apply.
- 3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection 2a) ...
- 4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development decide –
 - a) whether or not the development may proceed;
 - b) any limitations or conditions to be applied to the development;
 - c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
 - d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
 - e) whether the appointment of specialists is required as a condition of approval of the proposal.

APPOINTMENT AND POWERS OF HERITAGE INSPECTORS

Section 50

- 7) Subject to the provision of any other law, a heritage inspector or any other person authorised by a heritage resources authority in writing, may at all reasonable times enter upon any land or premises for the purpose of inspecting any heritage resource protected in terms of the provisions of this Act, or any other property in respect of which the heritage resources authority is exercising its functions and powers in terms of this Act, and may take photographs, make measurements and sketches and use any other means of recording information necessary for the purposes of this Act.
- 8) A heritage inspector may at any time inspect work being done under a permit issued in terms of this Act and may for that purpose at all reasonable times enter any place protected in terms of this Act.
- 9) Where a heritage inspector has reasonable grounds to suspect that an offence in terms of this Act has been, is being, or is about to be committed, the heritage inspector may with such assistance as he or she thinks necessary –
 - a) enter and search any place, premises, vehicle, vessel or craft, and for that purpose stop and detain any vehicle, vessel or craft, in or on which the heritage inspector believes, on reasonable grounds, there is evidence related to that offence;
 - b) confiscate and detain any heritage resource or evidence concerned with the commission of the offence pending any further order from the responsible heritage resources authority; and
 - c) take such action as is reasonably necessary to prevent the commission of an offence in terms of this Act.
- 10) A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the responsible heritage resources authority.