

**SPECIALIST STUDY REPORT
POTENTIAL IMPACT ON THE ARCHAEOLOGICAL SITES ALONG THE PROPOSED N3 TOLL ROAD**

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EXECUTIVE SUMMARY

The archaeological survey of the proposed N3 Toll Road was originally undertaken in 1996. Since then, the route has been re-aligned changing the management plans of each site, as suggested in the 1996 report. Of the twenty-five sites originally recorded, only nine will now be effected.

The construction of the road will damage or destroy all of the archaeological sites. However, with correct management plan, these sites can be positively effected.

I regard only one site as being of high significance and that no mitigation can alter the negative effect the road will have on that site. This site should not be effected by the road, and the road should be diverted. All of the other sites can be mitigated in a positive manner.

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1. INTRODUCTION

1.1. Background and brief

The archaeological survey of the proposed study area was conducted in 1996 (Anderson 1996). This survey recorded twenty-five archaeological sites and noted the occurrence of five palaeontological areas that would be potentially affected by the proposed road. Many of these sites would require some form of mitigation. In addition to these sites, the survey also noted the occurrences of stone walled markers and stone posts (these are probably old boundary markers). These were not recorded, but management measures were suggested.

The aim of any archaeological management plan is to assess each site and to save as much archaeological information that a specific site may yield.

The terms of reference, as stated in the handout, for this study are:

- Evaluate the potential impacts of construction, operation and maintenance of the proposed N3 Toll Road on cultural, recreational and religious resources along the road reserve;
- Re-assess the location of the identified historical and archaeological sites with respect to the new, final road alignment;
- Assess the significance of the sites relative to the provisional road alignment;
- Critically evaluate the nature and effectiveness of mitigation measures necessary to reduce the impact of the road and associated infrastructure;
- Once the positions of the borrow pits and quarries are known, investigate the sites with archaeological and cultural interest;
- Investigate the road reserves where road widening is to take place and report on any archaeological and cultural sites which will be impacted by the construction activities;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or religious importance along the proposed N3 Toll Road.

Some comment is, however, required for these terms of references. First, I am only qualified to deal with archaeological and/or some historical aspects. Religious and cultural features, especially where extant communities are involved, should be studied by someone else. It is only when a grave, for example, is not claimed by living descendants, and that grave is older than sixty years, can become archaeological.

Second, the phrase 'critically evaluate' is a theoretical issue in archaeology, and would entail a detailed discussion of the costs and benefits of using various archaeological techniques. This is, in one sense, beyond the scope, and need, for this report. And I have omitted the critical discussion from this report.

Third, I have not commented on, nor budgeted for, the borrow pits and quarries, since I require to see the size distance, etc. of these before any comment can be made. A separate budget will be need for these once they have been finalised.

1.2. Study area

The proposed route for the road passes through several vegetation types, water sources and geological formations. These environmental features determine the likelihood of locating certain archaeological sites, especially the Iron Age sites. The large rivers such as the Meulrivier, Wilge River, Great Gift River, as well as perennial streams and rock pools are freshwater sources for past and present inhabitants of the affected area.

The vegetation (Maggs 1976) from south to north is:

- Southern Tall Grassveld;
- Highland Sourveld and Dohne Sourveld;
- Highland Sourveld to Cymbopogon-Themedra Veld Transition ;
- Themedra Veld to Cymbopogon-Themedra Veld Transition (patchy); and,
- Cymbopogon-Themedra Veld (sandy).

The geological groups and formations in the Harrismith district are, from south to north (Maggs 1976):

- Ecca Group
- Vryheid Formation;

- Volksrust Formation.
 - Beaufort Group
 - Adelaide Formation;
 - Tarkastad Formation (not occurring in area of the road).
- These formations include (Maggs 1976):
 - alternating shales;
 - mudstone;
 - sandstone;
 - dolerite;
 - lava; and,
 - quartzites

The combination of the geology, soils and hydrology initially indicated that certain areas were archaeologically sensitive, especially for farming communities who are reliant on environmental factors. For example, Sweetveld grasslands with sandstone or dolerite for building material appear to be favoured landscapes. Grazing of cattle is an important aspect when considering Iron Age settlements. The Southern Tall Grassveld and Themeda are good grazing areas, as is the mixture of Sweetveld and Sourveld grasslands. Some of the Sourveld grasslands may be viable grazing areas for part of the summer. Similarly soil types effect vegetation types and thus the location of potential Iron Age farming areas. The location of iron ore, or iron bearing deposits also affects the location of archaeological sites.

The sandstone outcrops and river sources also indicate that hunter-gatherer (Stone Age) occupations will occur in the affected area.

The shale deposits in the Harrismith district are known to have palaeontological sites.

2. STUDY APPROACH

Both a desktop analysis and a foot survey were undertaken as part of the original project. The desktop analysis took place at the Natal Museum, since this museum is the provincial repository for all known archaeological sites in KwaZulu-Natal. The National Museum, at Bloemfontein, was consulted regarding archaeological sites in the Harrismith magisterial district.

The desktop analysis is undertaken to determine already recorded sites and the probability of archaeological sites occurring in a given area. This is achieved by analysing existing records of archaeological sites in the area, as well as noting the geology, topography, soil types and water sources. This method of site 'detection' is fairly accurate when dealing with agriculturist sites, since ecology and farming are interrelated.

A desktop analysis also includes the use of aerial photographs to determine the location of sandstone outcrops and structures with or without stone walling. These are easily identifiable through the use of a magnifying glass. This approach allowed me to identify sensitive areas along the route of the proposed road.

Definition of an archaeological site:

Archaeological sites have been defined using various criteria. I use the definition used by the Natal Museum for a recent project to determine site significance and predictive modelling (Wahl 1996). These definitions vary according to the type of site analysed, and are:

Stone Age

"ten or more stone artefacts; or fewer than ten stone artefacts but which occur in association with other Stone Age and/or Iron Age artefacts";
 "other...artefacts" include art, beads, grinding stones, engravings, pottery, and places of spiritual/religious importance.

Iron Age

more than "ten sherds, but [including] sites with fewer than ten sherds, but that occur in association with other Iron Age and/or Stone Age artefacts";
 "other artefacts" include engravings, graves, grindstones, stone walling, settlements, and places of spiritual/religious importance (Wahl 1996:11).

Archaeological sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

- **State of preservation of:**
 - Organic remains
 - Faunal
 - Botanical
 - Rock art
 - Walling
 - Presence of a cultural deposit
 - Features:
 - Ash Features
 - Graves
 - Middens
 - Cattle byres
 - Bedding and ash complexes
- **Spatial arrangements:**
 - Internal housing arrangements
 - Intra-site settlement patterns
 - Inter-site settlement patterns
- **Features of the site:**
 - Are there any unusual, unique or rare artefacts or images at the site?
 - Is it a type site?
 - Does the site have a very good example of a specific time period, feature, or artefact?
- **Research:**
 - Providing information on current research projects
 - Salvaging information for potential future research projects
- **Inter- and intra-site variability**
 - Can this particular site yield information regarding intra-site variability, ie spatial relationships between various features and artefacts?
 - Can this particular site yield information about a community's social relationships within itself, or between other communities.
- **Archaeological Experience:**
 - The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.
- **Educational:**
 - Does the site have the potential to be used as an educational instrument?
 - Does the site have the potential to become a tourist attraction?
 - The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. These test-pit excavations may require further excavations if the site is of significance. Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Mapping records the spatial relationship between features and artefacts. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context.

The sites recorded in this survey include:

- Human burials - the intentional internment of a person in a defined grave.
- Monument - the erection of a feature in commemoration of a specific person, group of people, or an activity.
- Markers - individual or a cluster of objects used to demarcate a boundary.
- Rock art - the use of a painting medium on a rock face to depict an image.
- Palaeontological sites - the remains of fossilised flora and fauna.
- Settlements - the construction of houses for domestic activities.

Stone walling - the erection of walls for livestock pens or boundaries

Gardens – trees / plants planted for specific socio-political reasons, or to depict a cultural attribute, and thus have cultural significance.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

All archaeological and historical sites are protected by the National Monuments Act of 1969 which makes it an offence to alter in any way such sites without a permit from the National Monuments Council (NMC). As from 1 April 1998, the KwaZulu-Natal Heritage Act of 1998 replaced the old heritage legislation in KwaZulu-Natal. The new heritage compliance agency, Amafa aKwaZulu-Natali, may require an assessment of the impact of any development on heritage resources, where such an assessment is not required by other legislation. The NMC and its successor in KwaZulu-Natal (Amafa) may hold developers responsible for any damage accrued to a site in cases where they have deviated from the permit requirements. It is the responsibility of the developers to apply for a permit should development have a negative impact on archaeological or historical sites.

The Amafa aKwaZulu-Natali legislation only applies to the KwaZulu-Natal side of the N3 Toll Road. The National Monuments Act applies to the Free State side of the Toll Road.

The following is a description of the archaeological / historical sites that will be affected by the new N3 Toll Road.

BD1

The site is on a flat section of a sandstone koppie overlooking the southern banks of the Meulrivier. There are thirteen circular stone structures ranging from 2m to 4m in diameter. The largest structure is a 10m x 10m square wall with a semicircular wall attached to the eastern wall, and is 3m in diameter. There are three more circular structures on the floodplains below the koppie. Two structures are 3m in diameter and one is 7m in diameter, and they are probably livestock pens. Two possible graves are associated with this settlement.

Two possible graves exist approximately 50m from the main livestock pen of this site. The graves consist of sandstone cairns beside a sandstone boulder and are approximately 2m long and 1m wide in an east-west orientation. The graves do not appear to have been excavated deeply into the soil. These are probably Sotho graves.

Two sherds with a red burnish and one fragment of a European ceramic plate were observed between the structures. Important spatial information can be studied at this site.

BD2

This site is situated in a sandstone outcrop facing the Meulrivier, directly below BD1. BD2 is a small overhang 5m wide, 2m deep and 2m high. The remains of a stone wall enclose part of the site. The art consists of four separate panels of images in red or white paint and are as follows:

The main panel consists of several human figures, of which one is an identifiable male, in dancing, or trance, postures. Several humans hold sticks in their hands, while one holds a bow. Only one human is partly faded, while the others are well preserved.

The second panel consists of two human figures facing left or forward. The heads of these human figures have exfoliated from the rock face.

The third panel consists of two white human figures which superimpose two faded red humans. The left white human has a quiver on his back and appears to be holding either a bow or two sticks. The second white human is partially faded..

The fourth panel is faded and smeared and consists of red and white paint. The images may be human.

Several of the images in these panels are of a special quality. They depict classic shamanistic features and are in a relatively well preserved condition.

SVK1

The graveyard belongs to the Wessels family who lived on the farm Somersvlakte before and after 1890 AD. Some buildings of the nearby farmhouse appear to be older than 100 years old and coincide with the dates of the graves.

There are two rows of graves in a north-south orientation surrounded by a fence and bluegum trees. The northern row of four graves have no headstones, nor any other identifying features, and appear to predate the southern row of graves. The southern row of four graves have marble headstones and epitaphs. These are in various stages of preservation.

The graves are, as follows:

- No headstone, nor gravestone. Parts of the grave are forming a sink-hole.
- No headstone, nor gravestone. Parts of the grave are forming a sink-hole.
- Flat sandstone slab forming the gravestone with a small sandstone headstone. There are two dead bushes which grew on the grave.
- Flat sandstone gravestone and a possible headstone.
- Grave of Ms Wessels who died in 1898. Marble headstone with a praying angel.
- Grave of Mr Wessels who died in 1942. Marble headstone depicting an open book; ceramic flowers on the grave.
- Grave of Mrs Eager (née Wessels) who died in 1939. Marble headstone depicting an open book; ceramic flowers on the grave.
- Grave of Mr Wessels who died in 1922. Marble headstone depicting an open book and a pedestal above the book.

Approximately 30m east of these graves is a dip for domestic animals. According to Mr Du Plessis, it is over fifty years old. The site is surrounded by dry stone walling with two entrances or exits. The dip itself is in a key-hole shape and appears to have been cut out of the sandstone bedrock. This feature may be unique.

ALP1

This site consists of a livestock pen, two rectangular features upslope of the livestock pen and possibly four graves on the downslope side of the pen. The livestock pen is 4m in diameter and has no stone walling. The two rectangular features are 10m x 5m and approximately 20m from the livestock pen. The site appears to be a family settlement. A cultural deposit probably exists at this site.

SPF1

SPF1 is a grove of oak trees in the shape of a Union Jack planted by Sir Percy Fitzpatrick between 1910 and 1920. The trees should be viewed in conjunction with Sir Fitzpatrick's house, in that they are unique examples of British architecture in the middle of the Free State. These trees were planted in order to make a socio-political statement and I therefore consider them as a cultural resource. The trees, and the associated farmstead are unique to the area, province, and probably the country.

KFN1

This site was first surveyed when the grass had not yet been burnt, making visibility difficult. There are at least two settlements at this site and they may or may not relate to each other. The main settlement is a group of ± 30 stone-walled circles of various sizes. Some of these circles have secondary walling. A similar settlement near Bergville (cf. Maggs 1982) dates to 1700-1800 AD, and KFN1 is at least of a similar age if not younger. The walling at the site is generally well preserved and a cultural deposit may be present. KFN1 has the potential to provide additional information on local settlement patterns and for this reason is of research interest.

The second settlement appears to be more recent and contain modern debris. The graves may be associated with this phase of the settlement.

KFN2.

This site has approximately four stone-walled features near the base of the hill. These features may be cattle pens with a diameter between 5 m to 10 m. One of the larger stone-walled features has an entrance facing uphill indicating that it probably pre-dates AD 1829. There is another stone-walled feature at the summit of the hill.

The site may date to the Late Iron Age and may be associated with either KFN1 or KFN3. The site has is of low significance. A cultural deposit probably exists within these walls. This site was first surveyed when the grass ad not yet been burnt, making visibility difficult.

KFN3

The settlement layout of KFN3 differs to that of KFN1, though it may be part of the same complex of settlements. The site consists of ±15 circular and rectangular stone-walled features. Some of these features have secondary walling. There is a rectangular stone-walled cattle pen to the north of the site. A cultural deposit probably exists within these walls. This site was first surveyed when the grass ad not yet been burnt, making visibility difficult.

Our knowledge of this type of settlement layout is derived from aerial photographs and it has not yet been researched in detail in KwaZulu-Natal. The site is therefore of research interest and of high significance.

KFN4

The site consists of two stone-walled enclosures, each with adjoining enclosures (secondary enclosures). A cultural deposit may exist within these stone-walled features. This site was first surveyed when the grass ad not yet been burnt, making visibility difficult.

4. IDENTIFICATION OF RISK RESOURCES

All of the archaeological sites will be affected by the construction phase of the N3 Toll Road. The construction phase will effectively destroy these sites. Thus, no operational phase is noted below. I take the position that the archaeological sites are presently at no risk and in a stable archaeological environment. Any changes to this environment would thus change their risk status.

The risk of the construction phase is that the sites will be damaged or altered and will thus require a permit from the National Monuments Council or Amafa aKwaZulu-Natali, and some form of mitigation.

The impact of the road on most of the sites will be local, permanent, high intensive, and have a high likelihood of occurring at all of the identified archaeological sites.

The impact of the road on the archaeological sites will be high negative unless mitigation occurs, when it shall be high positive.

The degree of confidence for the above is high.

The following sites are of high significance: SPF1.

The following sites are of moderate significance: BD1, SVK1, ALP1, KFN1, KFN2, KFN3, KFN4, BD2

Table 1: Impacts Archaeological Sites without management/mitigation actions

Site	Extent	Duration	Intensity	Probability of occurrence	Significance	Status	Confidence	Legislation & permits
SPF 1	local	permanent	high	high	high	neg	high	yes
BD1	local	permanent	high	high	moderate	neg	high	yes
BD2	local	permanent	high	high	moderate	neg	high	yes
SVK 1	local	permanent	high	high	moderate	neg	high	yes
ALP 1	local	permanent	high	high	moderate	neg	high	yes
KFN 1	local	permanent	high	high	moderate	neg	high	yes
KFN 2	local	permanent	high	high	moderate	neg	high	yes
KFN 3	local	permanent	high	high	moderate	neg	high	yes
KFN 4	local	permanent	high	high	moderate	neg	high	yes

5. RECOMMENDED MANAGEMENT / MITIGATION ACTIONS

The mitigation required for a site varies from site to site. However, using the criteria for significance, several mitigatory measures can be standardised to a degree.

BD1: All structural details need to be accurately mapped and photographed and small-scale test-pit excavations should be undertaken to determine the extent of the cultural deposit. The site may require further excavation if the initial excavations yield valuable information.

BD2: The art needs to be traced, photographed and removed.

SVK1: A person with experience in the exhumation and reburial of skeletal remains in relation to the extant communities would be required to handle the negotiations and processes of these graves. I am not qualified to undertake such a task.

ALP1: All structural details need to be accurately mapped and photographed and small-scale test-pit excavations should be undertaken to determine the extent of the cultural deposit. The site may require further excavation if the initial excavations yield valuable information.

SPF1: I do not believe that this site should be damaged in any manner. The road should bypass the gardens. I believe that they could be used as a tourist attraction and be viewed in the same sense as the original farmyard owned by Sir Percy Fitzpatrick. The National Monuments Council would need to be informed regarding the gardens, and the management of them.

KFN1: All structural details need to be accurately mapped and photographed and small-scale test-pit excavations should be undertaken to determine the extent of the cultural deposit. The site may require further excavation if the initial excavations yield valuable information.

KFN2: All structural details need to be accurately mapped and photographed and small-scale test-pit excavations should be undertaken to determine the extent of the cultural deposit. The site may require further excavation if the initial excavations yield valuable information.

KFN 3: All structural details need to be accurately mapped and photographed and small-scale test-pit excavations should be undertaken to determine the extent of the cultural deposit. The site may require further excavation if the initial excavations yield valuable information.

KFN4: All structural details need to be accurately mapped and photographed

The monitoring of the archaeological sites in both provinces is the responsibility of their respective heritage agencies. That is, it is for the agency to ensure that the work has been correctly undertaken and that the developer has complied with the permit requirements. However, for this project most of the sites will be destroyed by the construction phase and thus no post-mitigation monitoring would be necessary and/or possible. Only SPF1 would require monitoring if it has been agreed that no impact should occur.

Table 2: Impacts Archaeological Sites with management/mitigation actions

Site	Extent	Duration	Intensity	Probability of occurrence	Significance	Status	Confidence	Legislation & permits
SPF 1	local	permanent	high	high	high	pos	high	yes
BD1	local	permanent	high	high	moderate	pos	high	yes
BD2	local	permanent	high	high	moderate	pos	high	yes
SVK 1	local	permanent	high	high	moderate	pos	high	yes
ALP 1	local	permanent	high	high	moderate	pos	high	yes
KFN 1	local	permanent	high	high	moderate	pos	high	yes
KFN 2	local	permanent	high	high	moderate	pos	high	yes
KFN 3	local	permanent	high	high	moderate	pos	high	yes
KFN 4	local	permanent	high	high	moderate	pos	high	yes

6. DISCUSSION

The original archaeological survey recorded several archaeological sites along the proposed route. The archaeological sites along this route are protected by two pieces of legislation: the National Monuments Act of 1969, and the KwaZulu-Natal Heritage Act of 1998. The former is for the Free State, and the latter for KwaZulu-Natal.

The new re-aligned route only impacts on nine archaeological, or cultural, sites. However, with a proper management plan, these sites can be saved and the impact of the road reduced to a positive factor. Only one site, SPF1 is of high significance and the impact will remain high negative. I suggest that the road is re-aligned to bypass the Gardens.

The management plan is to record as much information from each site. I suggest that a two phase operation is undertaken for those sites requiring excavations, since only excavations can reveal the real significance of a site. In other instances, minimum mitigation is suggested.

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