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Dear Mr Van Schalkwyk

PROPOSED CONSTRUCTION OF GRAVEL ACCESS ROADS AND BRIDGE CULVERTS IN THE UMZIMVUBU LOCAL MUNICIPALITY, EASTER CAPE

HERITAGE IMPACT ASSESSMENT TERMS OF REFERENCE

The accompanying terms of reference (Appendices 1, 2, 3 and 4) have been prepared for the undertaking of a Level 1 Heritage Impact Assessment of the areas to be impacted by the Umzimvubu Local Municipalities proposed construction of a number of gravel roads and bridge culverts.

It is imperative that the specialist study is completed by the end of May 2017 (from a project implementation perspective). Should the appointed specialist require any further information regarding the terms of reference or proposed development, they can contact me on 083 291 7181 or 035 340 2715.

Yours sincerely,



ACER (Africa) Environmental Consultants
Keagan Kruger
Environmental Consultant

APPENDIX 1 PROJECT DESCRIPTION

1. INTRODUCTION

The Umzimvubu Local Municipality has recently appointed ACER (Africa) Environmental Consultants (ACER) as the Environmental Assessment Practitioner (EAP) responsible for obtaining environmental authorisation, and the relevant permits and licenses required for the proposed construction of several new gravel access roads and bridge culverts in the Mzimvubu Local Municipality, Eastern Cape.

The Umzimvubu Local Municipality has identified a need to construct and upgrade a number of gravel access roads and stream crossings, in order to improve access and safety for communities within the municipality. The proposed new and upgraded gravel access roads and crossings will typically entail the following specifications:

- ❑ New 5 m wide gravel access roads consisting of G5 gravel and compacted to a height of approximately 200 mm.
- ❑ The construction of concrete causeways approximately 5.5 m in length and 4.5 m wide with a peak flow of $8.96\text{m}^3 / \text{s}$, comprising of prefabricated pipes (10 x 600 mm diameter and 4 x 900mm diameter pipes) attached along the length of the bridge.
- ❑ Concrete drive strips for the steeper sections.
- ❑ The construction of stormwater infrastructure such as cut-out drains and dish drains where required along the alignment.
- ❑ The placement of road traffic signs.

The proposed gravel access roads and concrete causeways which are spread across the municipality have been split into six (6) separate applications, as described below. The appointed specialists will be required to cost for the undertaking of one (1) field trip, and the production of six (6) individual reports for each of the sections as described under Section 2 below.

2. PROJECT DESCRIPTION

2.1 MPUNGUTYANA GRAVEL ACCESS ROAD AND CONCRETE CAUSEWAY

The remote village of Mpungutyana is situated approximately 19 km north of Mount Frere. At present the only access road connecting the Mpungutyana village to the surrounding settlements is dilapidated and in a state of despair. The Umzimvubu Local Municipality has therefore identified the need to upgrade the existing the access road and stream crossings, which will improve access and safety for all communities commuting to and from the village of Mpungutyana.

The proposed development entails the construction of approximately 3.6 km of new gravel access road from Mpungutyana (A - 30°42'11.99"S / 28°58'27.91"E) to Mgungundlovu (B - 30°43'22.24"S / 28°59'16.56"E). A concrete causeway will be constructed at the watercourse crossing (30°42'37.52"S / 28°59'4.25"E).



Figure 1 Locality of the proposed Mpungutyana access road and concrete causeway.

2.2 BRIDGELINK TO BOTTOMAN GRAVEL ACCESS ROAD AND CONCRETE CAUSEWAYS

The remote villages of Dundee and Mnqwane are situated approximately 9 km north-east of Mount Ayliff in the Umzimvubu Local Municipality, Eastern Cape. Currently no formal access roads exist. As such, the proposed development of a gravel access road and concrete causeways will have significant positive socio-economic impacts such as improved access and safety for all people commuting to and from these communities.

The proposed development entails the construction of approximately 837 m of new gravel access road from the southern parts of the Dundee settlement (A - 30°44'54.86"S / 29°25'34.76"E) to the northern parts of Mnqwane (B - 30°45'16.54"S / 29°25'23.63"E). Concrete causeways will be constructed at the watercourse crossings at the following approximate locations:

- ❑ Crossing 1: 30°44'59.82" S / 29°25'30.48" E
- ❑ Crossing 2: 30°45'7.41" S / 29°25'29.47" E
- ❑ Crossing 3: 30°45'14.23" S / 29°25'27.99" E



Figure 2 Locality of the proposed Bridgeline to Bottoman access road and concrete causeway.

2.3 BROOKSNEK GRAVEL ACCESS ROADS AND CONCRETE CAUSEWAY

Brooksnek Mission is located near the Eastern Cape and KwaZulu-Natal border, approximately 10 km south-west of the town of Kokstad and 22 km north-east of Mount Ayliff in the Umzimvubu Local Municipality. The existing gravel access road to and from Brooksnek Mission is dilapidated and highly eroded and the existing crossing over the Mvalweni River is not accessible or passable with non four-wheel drive vehicles. The proposed gravel access roads upgrade and the construction of the culvert bridge crossing will have significant positive socio-economic impacts such as increased safety and will serve as an alternative access road between Brooksnek and communities adjacent to N2.

In total, approximately 6.28 km of gravel road will be upgraded and formalised and will be comprised of the following sections and crossing points:

- ❑ Approximately 4,603 m of gravel road upgrades from A (30°38'10.87"S / 29°28'52.26"E) to B (30°38'10.17"S / 29°28'34.48"E).
- ❑ Approximately 558 m of gravel road upgrades from C (30°38'10.88"S / 29°28'52.27"E) to D (30°38'10.19"S / 29°28'34.49"E).
- ❑ Approximately 204 m of gravel road upgrades from E (30°37'55.11"S / 29°28'33.87"E) to F (30°37'56.43"S / 29°28'26.85"E).
- ❑ Approximately 645 m of gravel road upgrades from G (30°37'54.35"S / 29°28'59.91"E) to H (30°37'52.05"S / 29°29'1.45"E).
- ❑ Approximately 180 m of gravel road upgrades from I (30°37'50.57"S / 29°29'3.16"E) to J (30°37'45.10"S / 29°29'3.47"E).
- ❑ Approximately 57 m of gravel road upgrades from K (30°37'49.65"S / 29°29'14.99"E) to L (30°37'47.84"S / 29°29'15.03"E).
- ❑ The construction of a concrete causeway across the Mvalweni River (30°38'57.64"S / 29°29'9.48"E).

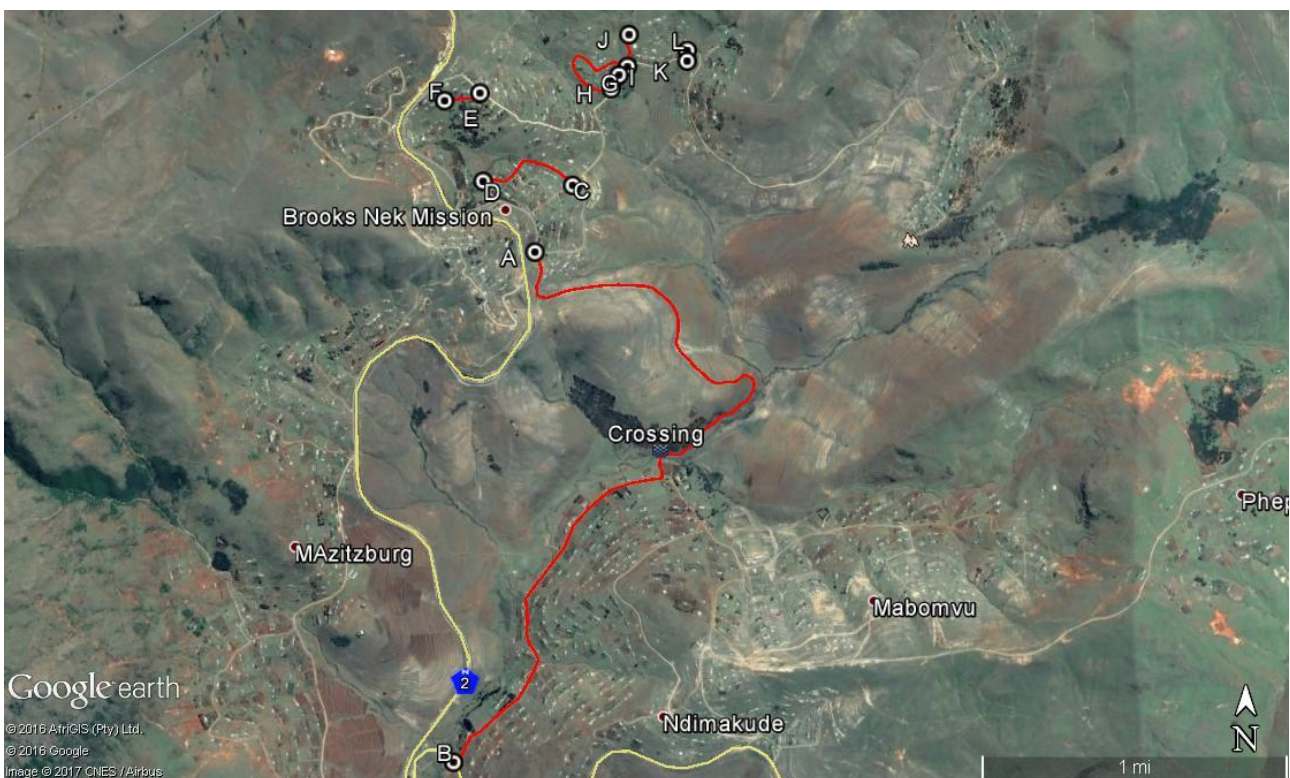


Figure 3 Locality of the proposed Brooksnek gravel access roads and concrete causeway.

2.4 MTHONJENI TO KWA-DUMA ACCESS ROAD AND CONCRETE CAUSEWAY

The remote village of Mthonjeni is situated approximately 14.2 km north-west of Mount Frere in the Umzimvubu Local Municipality in the Eastern Cape. The existing access roads connecting the communities of Mthonjeni to Kwa-Duma are barely accessible and severely eroded. The Umzimvubu Local Municipality has identified the need to upgrade and construct new sections of access road as well as a concrete causeway at the existing informal stream crossing, this will improve safety and provide vehicle access for communities commuting to and from the surrounding areas.

The new and upgraded sections of gravel access roads and the proposed crossing are proposed as follows:

- ❑ The upgrading and formalizing of approximately 0.9 km of existing gravel road from A ($30^{\circ}49'32.86''\text{S} / 28^{\circ}51'26.12''\text{E}$) to B ($30^{\circ}49'15.39''\text{S} / 28^{\circ}51'21.36''\text{E}$), and from C ($30^{\circ}49'10.29''\text{S} / 28^{\circ}51'41.66''\text{E}$) to D ($30^{\circ}49'8.00''\text{S} / 28^{\circ}51'50.86''\text{E}$).
- ❑ The construction of approximately 1.1 km of new gravel road upgrades from B ($30^{\circ}49'15.39''\text{S} / 28^{\circ}51'21.36''\text{E}$) to C ($30^{\circ}49'10.29''\text{S} / 28^{\circ}51'41.66''\text{E}$).
- ❑ The construction of a concrete causeway at the existing informal stream crossing point ($30^{\circ}49'18.35''\text{S} / 28^{\circ}51'36.78''\text{E}$).



Figure 4 Locality of the proposed Mthonjeni – Kwa-Duma gravel access road and concrete causeway.

2.5 PHUKA BRIDGE CULVERT, NEW GRAVEL ACCESS ROAD AND UPGRADES

The proposed new and gravel road upgrades and Phuka bridge culvert is approximately 16.5 km north-east of Mount Ayliff in the Umzimvubu Local Municipality, Eastern Cape. The proposed new and upgraded gravel road sections will serve to improve and provide where there was not before, access to the adjacent National Road 2 (N2). Therefore providing significant positive socio-economic impacts including increased safety and improved accessibility between the surrounding areas.

The proposed development will involve the following:

- ❑ The upgrading and formalisation of two sections of adjoining gravel roads; the first being from the N2 at A ($30^{\circ}41'26.26''\text{S} / 29^{\circ}26'57.60''\text{E}$) for a distance of approximately 761 m to B ($30^{\circ}41'26.47''\text{S} / 29^{\circ}27'21.37''\text{E}$), and an adjoining section which connects to the first at C ($30^{\circ}41'27.78''\text{S} / 29^{\circ}27'14.54''\text{E}$) and extends south for approximately 318 m to D ($30^{\circ}41'36.83''\text{S} / 29^{\circ}27'9.88''\text{E}$).
- ❑ The construction of a new gravel access road of approximately 398 m in length, from E ($30^{\circ}41'13.18''\text{S} / 29^{\circ}27'32.60''\text{E}$) to F ($30^{\circ}41'8.74''\text{S} / 29^{\circ}27'45.04''\text{E}$).
- ❑ The new Phuka Bridge concrete causeway at the watercourse crossing ($30^{\circ}41'12.30''\text{S} / 29^{\circ}27'42.28''\text{E}$).

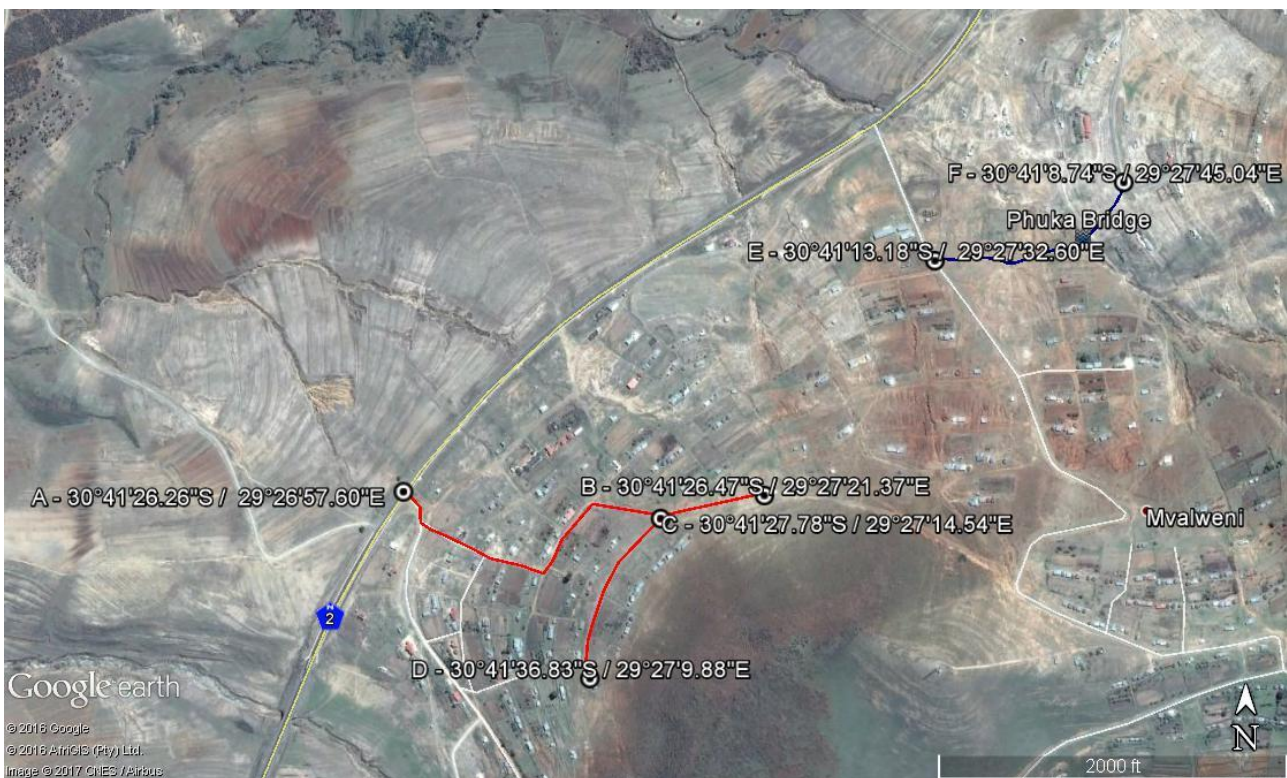


Figure 5 Locality of the proposed Phuka bridge access road and culvert bridge crossing and existing roads.

2.6 SILVER CITY GRAVEL ACCESS ROADS AND CONCRETE CAUSEWAYS

The Umzimvubu Local Municipality has identified the need for access roads to be constructed to the Silver City village within the town of Mount Frere, as well as the need to upgrade several existing gravel roads. The proposed access roads will allow local communities to easily and safely access the surrounding areas of the town.

The project development will involve the construction of two new gravel access roads on the south-eastern periphery of the town:

- ❑ The construction of a new gravel access road of approximately 373 m in length from A (30°54'11.92"S / 28°59'3.83"E) to B (30°54'14.19"S / 28°59'16.66"E), including the construction of a concrete causeway (30°54'15.21"S / 28°59'10.95"E).
- ❑ The construction of a new gravel access road of approximately 651 m in length from C (30°54'34.63"S / 28°58'51.23"E) to D (30°54'39.87"S / 28°59'13.21"E), including the construction of a concrete causeway (30°54'39.06"S / 28°59'5.48"E).

The proposed development will include the formalisation and upgrading of approximately 2,340 m of existing gravel access roads within the town of Mount Frere.

- ❑ Formalisation and upgrade of 412 m of existing gravel road from the N2 at E (30°54'58.30"S / 28°59'19.16"E) to F (30°55'3.11"S / 28°59'6.40"E).
- ❑ Formalisation and upgrade of 1,296 m of existing gravel road from G (30°54'59.85"S / 28°59'15.93"E) to the N2 at H (30°55'2.23"S / 28°59'17.56"E).
- ❑ Formalisation and upgrade of 626 m of existing gravel road from I (30°55'17.06"S / 28°59'4.04"E) to J (30°55'18.36"S / 28°59'23.06"E).

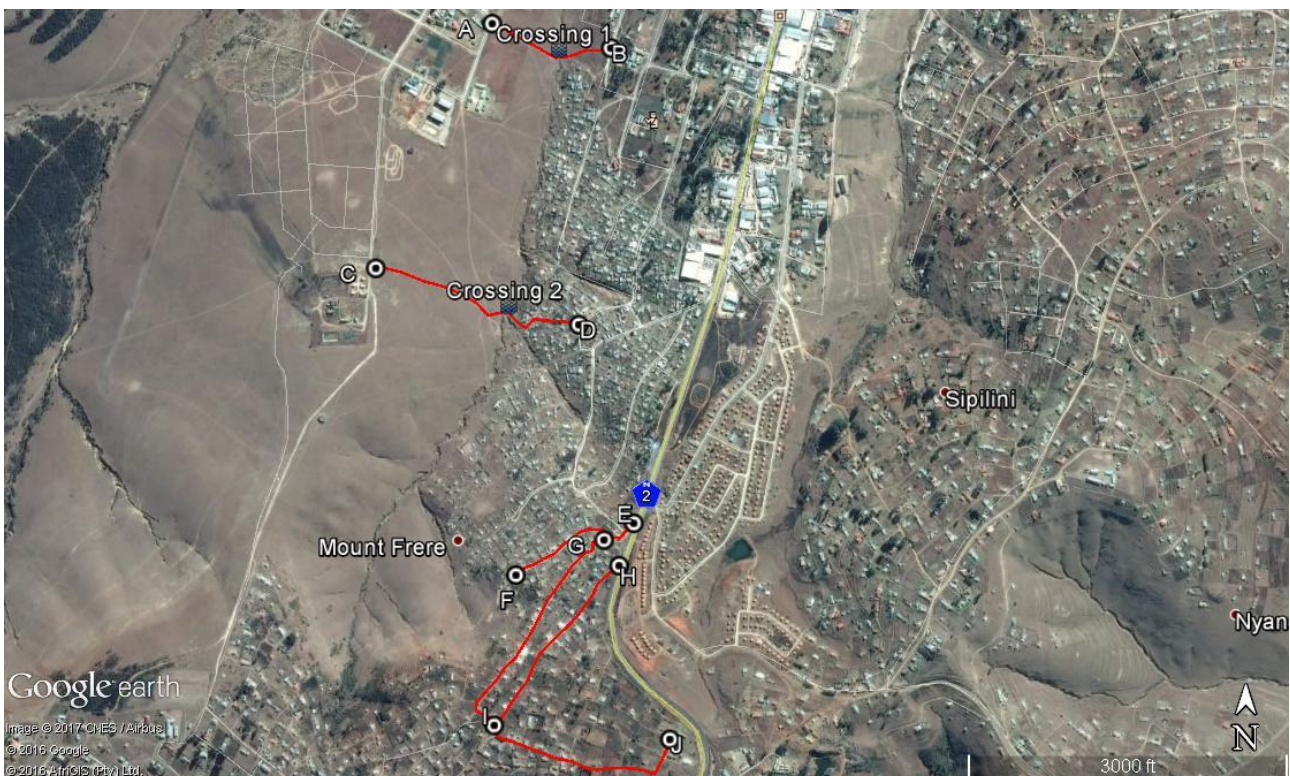


Figure 6 Location of the proposed gravel access roads and concrete causeways and the existing gravel roads to be upgraded and formalised.

3. PROPOSED WORK PLAN

In order to fast track the specialist investigation, it is proposed that all the specialist assessments be completed and draft reports submitted to ACER by the end May 2017. Please indicate if this time frame is problematic for your specialist study.

4. USE OF EXISTING INFORMATION AND SUPPORTING DOCUMENTS

All specialists are required to apprise themselves of existing information. Upon appointment, specialists must undertake a literature review and desktop investigation to collate relevant information and assess gaps in knowledge. The following material will be provided:

- Locality Maps are provided in Appendix 4 to this document.
- Google Earth (kml) files of the road alignments and crossing points will be provided separate to this document.

5. PROJECT SCHEDULE AND DELIVERABLES

The following deliverables are required:

- One draft and one final copy report for each of the 6 applications – electronically (MS Word).
- A final report for each of the 6 applications will be required approximately two weeks after submission of the draft report (once comments have been provided by the client and ACER).
- All applications to the relevant heritage authority (the cost for submission of these applications must be included in your cost estimate)

6. ON-SITE PROCEDURES

Please be advised that the site falls within rural areas within the Eastern Cape, and as the following health and safety rules must be adhered to:

- Beware of passing vehicles.
- Obey all road safety regulations and traffic signs.
- Be observant for snakes, stray dogs and opportunistic larcenists.
- Ensure sufficient protection from the sun and an adequate supply of fresh water.
- Stopping or parking of vehicles is not allowed on the N2. If specialists need to assess a specific area on the side of the road, please take the nearest off-ramp and pull off at the nearest side-road, find a safe place to park the vehicle, and walk back to the location, staying well clear of the road and Armco barrier.
- Walking is not allowed on the N2.
- Specialists are required to wear conspicuous clothing that can be seen by motorists, such as a high visibility/reflective vests, at all times.

7. CONCLUDING REMARKS

ACER is responsible for the submission of a Basic Assessment Report (BAR) and the Water Use License Application (WULA) to the respective authorities for decision making. This specialist study will form an integral component of both submissions and will help to ensure that the approach can be shown to meet current environmental management best practice in terms of sustainable development.

APPENDIX 2 TERMS OF REFERENCE

In order to assess potential environmental impacts of the proposed project and to meet the requirements of the National Environmental Management Act (Act No. 107 of 1998) (as amended) and the EIA Regulations published there under, ACER has undertaken an initial Scoping exercise, which is to be followed by the Basic Assessment and Water Use Licensing processes. Arising from the preliminary investigations is the following question:

What are the potential impacts of the project on the heritage resources within the proposed development area?

Heritage resources that may be impacted on by the proposed project must be identified according to the following specified process (as per the National Heritage Resources Act, 1999). This requires a Level 1 Heritage Resources Assessment (excluding consultation) to attend to the following:

- ❑ The identification and mapping of all heritage resources in the area affected, as defined in Section 2 of the National Heritage Resources Act, 1999, including archaeological and paleontological sites on or close (within 100 m) of the proposed developments.
- ❑ The assessment of the significance of such resources in terms of the heritage assessment criteria as set out in the regulations.
- ❑ An assessment of the impact of development on such heritage resources.
- ❑ An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development.
- ❑ The consideration of the impacts on cultural heritage resources, including historical sites arising from the proposed development.
- ❑ Information must be provided on the following:
 - Results of an overview survey of the study area and the identification of cultural heritage resources that may be affected by the proposed infrastructure or which may affect the construction and operation of the proposed infrastructure.
 - Recommendations on alternatives where additional alternatives could be identified to avoid negative impacts.
 - Recommended mitigation measures for enhancing positive impacts and avoiding or minimizing negative impacts and risks (to be implemented during design, construction and operation).
- ❑ Formulation of a protocol or heritage management plan to be followed for the identification, protection or recovery of cultural heritage resources during construction and operation.
- ❑ The early identification of any red flag and fatal flaw issues or impacts.
- ❑ Discuss any other sensitivities and important issues from a specialist perspective that are not identified in these terms of reference.

Due the disturbed nature of the proposed gravel road alignments, the likelihood that any sites will be impacted is low. It is therefore anticipated that the appointed Heritage Specialist will be responsible for the following:

- ❑ The submission of a letter of recommendation for exemption from a full Phase 1 report.
- ❑ All correspondence and communications with the Heritage Authority.
- ❑ The obtaining of a Record of Decision (RoD) or final comment from the Heritage Authority.

In addition, in terms of Appendix 6 of the EIA Regulations (2014) all specialist studies must contain:

- ❑ Details of the specialist who prepared the report; and the expertise of that specialist to compile a specialist report, including a curriculum vitae.
- ❑ A declaration that the specialist is independent in a form as may be specified by the competent authority.
- ❑ An indication of the scope of, and the purpose for which, the report was prepared.
- ❑ An indication of the quality and age of base data used for the specialist report.
- ❑ A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.
- ❑ The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment.
- ❑ A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.
- ❑ Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure.
- ❑ Inclusive of a site plan identifying site alternatives.
- ❑ An identification of any areas to be avoided, including buffers.
- ❑ A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers.
- ❑ A description of any assumptions made and any uncertainties or gaps in knowledge.
- ❑ A description of the findings and potential implications of such findings on the impact of the proposed activity or activities.
- ❑ Any mitigation measures for inclusion in the EMPr.
- ❑ Any conditions for inclusion in the environmental authorisation.
- ❑ Any monitoring requirements for inclusion in the EMPr or environmental authorisation.
- ❑ A reasoned opinion of whether the proposed activity, activities or portions thereof should be authorised, regarding the acceptability of the proposed activity or activities; and if so, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan.
- ❑ A description of any consultation process that was undertaken during the course of preparing the specialist report.
- ❑ A summary and copies of any comments received during any consultation process and where applicable all responses thereto.
- ❑ Any other information requested by the competent authority.
- ❑ Where a government notice gazetted the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.

APPENDIX 3 ASSESSMENT CONVENTIONS

Impacts must be identified and, as far as possible, assessed according to the following criteria:

- ❑ **Direct impacts** are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
- ❑ **Indirect impacts** of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- ❑ **Cumulative impacts** are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.
- ❑ **Nature** – the evaluation of the nature of the impact. Most negative impacts will remain negative, however, after mitigation, significance should reduce:
 - **Positive.**
 - **Negative.**
- ❑ **Spatial extent** – the size of the area that will be affected by the impact:
 - **Site specific.**
 - **Local** (limited to the immediate areas around the site; <2 km from site).
 - **Regional** (would include a major portion of an area; within 30 km of site).
 - **National or International.**
- ❑ **Duration** – the timeframe during which the impact will be experienced:
 - **Short-term** (0-3 years or confined to the period of construction).
 - **Medium-term** (3-10 years).
 - **Long-term** (the impact will only cease after the operational life of the activity).
 - **Permanent** (beyond the anticipated lifetime of the project).
- ❑ **Intensity** – this provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium or high):
 - **Negligible** (inconsequential or no impact).
 - **Low** (small alteration of systems, patterns or processes).
 - **Medium** (noticeable alteration of systems, patterns or processes).
 - **High** (severe alteration of systems, patterns or processes).
- ❑ **Frequency** – this provides a description of any repetitive, continuous or time-linked characteristics of the impact:
 - **Once off** (occurring any time during construction).
 - **Intermittent** (occurring from time to time, without specific periodicity).
 - **Periodic** (occurring at more or less regular intervals).
 - **Continuous** (without interruption).
- ❑ **Probability** – the likelihood of the impact occurring:
 - **Improbable** (very low likelihood that the impact will occur).
 - **Probable** (distinct possibility that the impact will occur).
 - **Highly probable** (most likely that the impact will occur).
 - **Definite** (the impact will occur).

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- **Irreplaceability** – of resource loss caused by impacts:
 - **High** irreplaceability of resources (the project will destroy unique resources that cannot be replaced).
 - **Moderate** irreplaceability of resources (the project will destroy resources, which can be replaced with effort).
 - **Low** irreplaceability of resources (the project will destroy resources, which are easily replaceable).

 - **Reversibility** – the degree to which the impact can be reversed/the ability of the impacted environment to return/be returned to its pre-impacted state (in the same or different location):
 - Impacts are **non-reversible** (impact is permanent).
 - **Low** reversibility.
 - **Moderate** reversibility of impacts.
 - **High** reversibility of impacts (impact is highly reversible at end of project life).

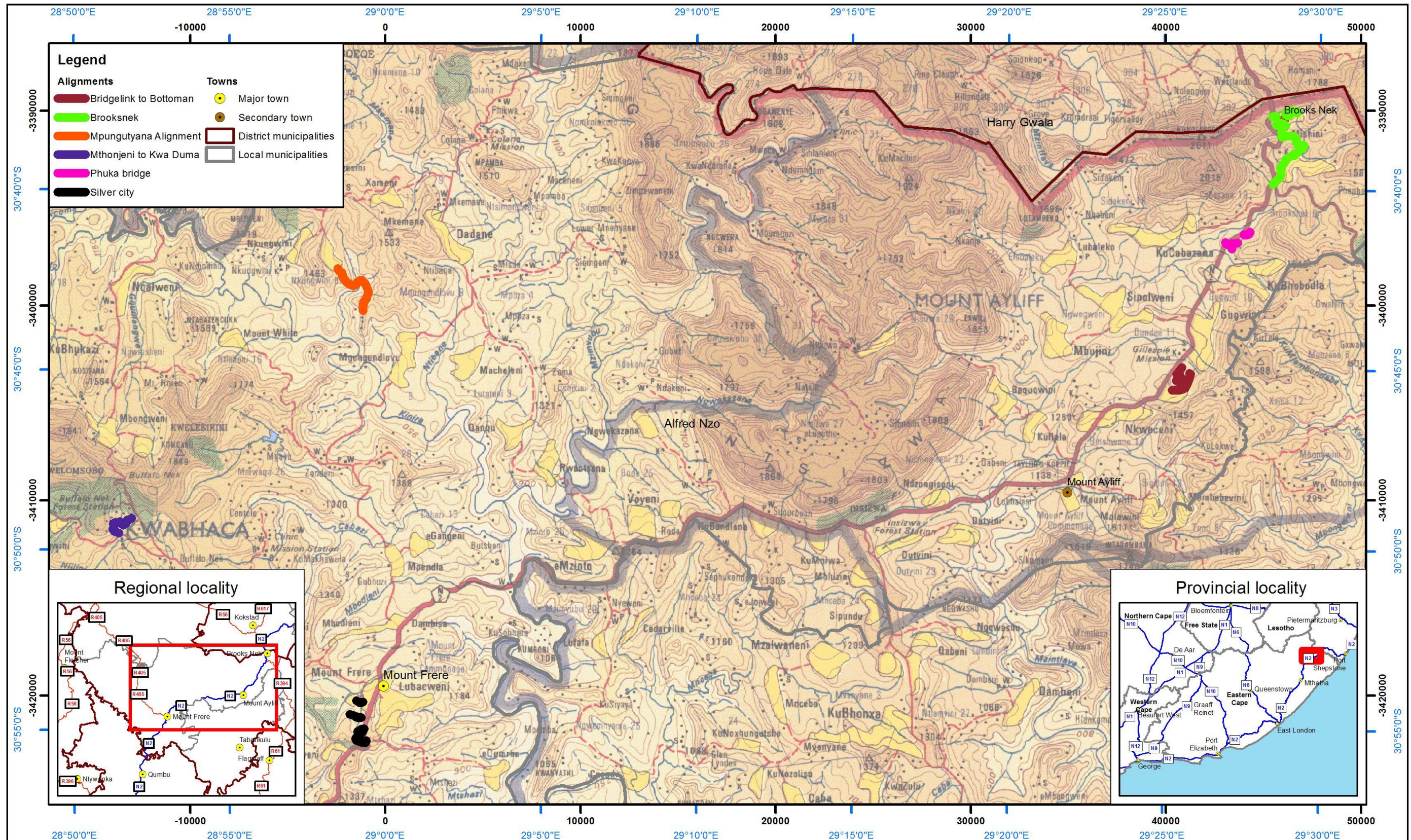
 - **Significance** – the significance of the impact on components of the affected environment (and, where relevant, with respect to potential legal infringement) is described:

Please note that this excludes positive impacts on the environment. In these cases, the level of significance should be denoted as Low, Medium or High.

- **Low** (the impact will not have a significant influence on the environment and, thus, will not be required to be significantly accommodated in the project design).
 - **Medium** (the impact will have an adverse effect or influence on the environment, which will require modification of the project design, the implementation of mitigation measures or both).
 - **High** (the impact will have a serious effect on the environment to the extent that, regardless of mitigation measures, it could block the project from proceeding).
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- **Confidence** – the degree of confidence in predictions based on available information and specialist knowledge:
 - **Low.**
 - **Medium.**
 - **High.**

The specialist must evaluate the implications of each of the project components, and also evaluate the “no development” option where the project does not proceed.

APPENDIX 4
LOCALITY MAP



Mapping and layout by:

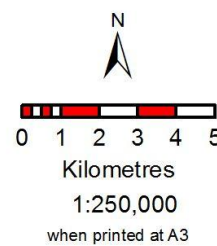


For



Local Municipality
Umzimvubu (EC442)

District Municipality
Alfred Nzo (DC44)



Projection: Transverse Mercator (W29)
Datum: Hartebeesthoek 1994
False Easting: 0
False Northing: 0
Central Meridian: 29
Scale Factor: 1.0000
Latitude Of Origin: 0.0000
Units: Meter

Locality Map

Date of print
25 April, 2017