CTS HERITAGE

# HERITAGE SCREENER

| | |
|---|---|
| CTS Reference Number: | **CTS22_035** |
| SAHRIS Reference: | |
| Client: | **Savannah Environmental (Pty) Ltd** |
| Date: | **March 2022** |
| Title: | **Proposed development of an Access Road for the approved Wolf WEF in the Cacadu Region, Eastern Cape** |

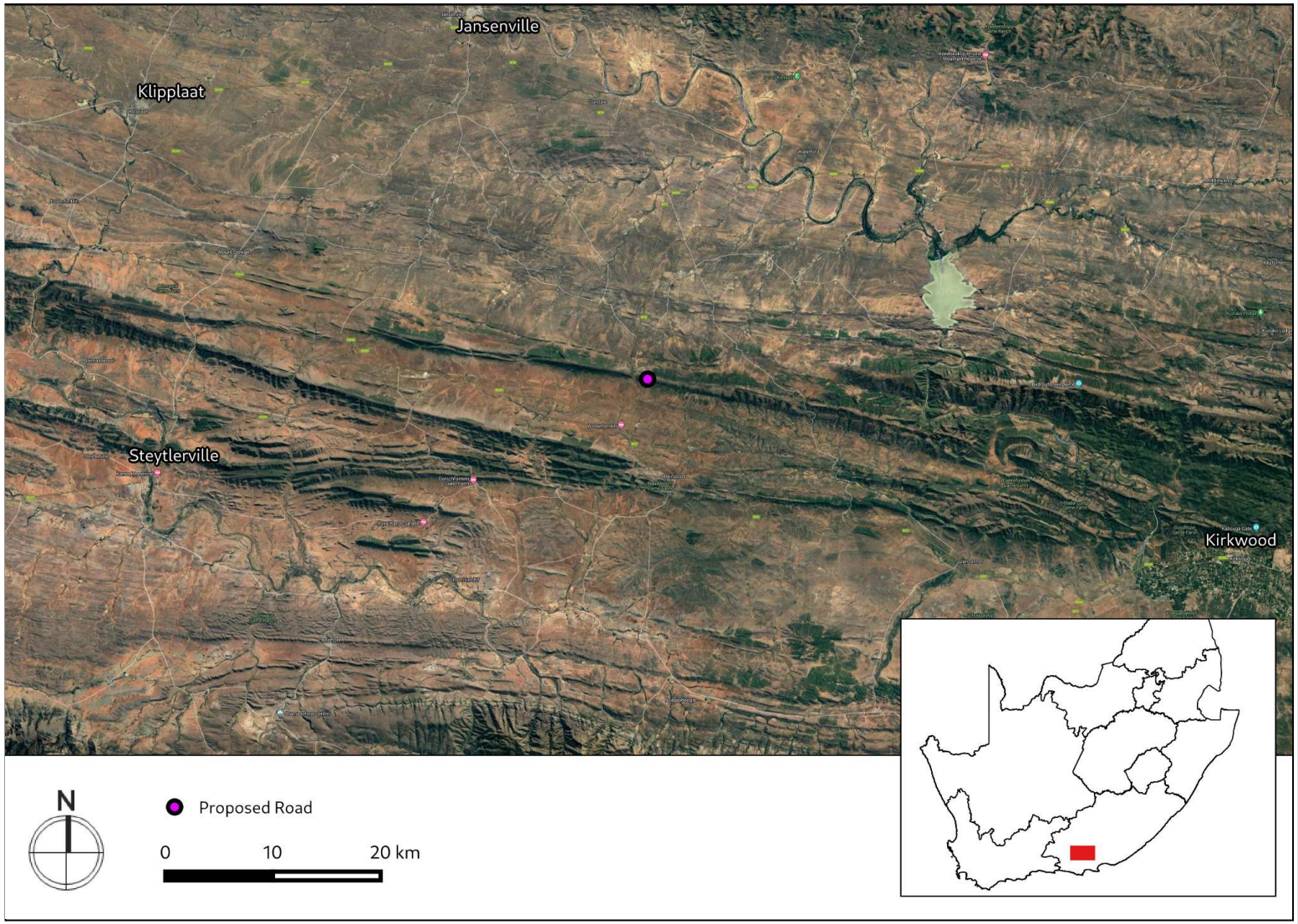


**Figure 1a**. Satellite map indicating the location of the proposed development in the Eastern Cape

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## 1. Proposed Development Summary

Red Rocket South Africa (Pty) Ltd is proposing the development of a wind energy facility, known as the Wolf Wind Farm, on a site in the Eastern Cape. The project has been selected as a Preferred Bidder project in Round 5 of the REIPPP. A new access road to the site is required for technical reasons. A Basic Assessment process is required in support of an Application for Authorisation for this access road in terms of the EIA Regulations. This access road forms part of the already approved Wolf Wind Farm and associated infrastructure awarded under the REIPPPP Bid Window 5. The WEF consist of 17 turbines.

## 2. Application References

| | |
|---|---|
| **Name of relevant heritage authority(s)** | SAHRA |
| **Name of decision making authority(s)** | DFFE |

## 3. Property Information

| | |
|---|---|
| **Latitude / Longitude** | 33°14'56.35"S 24°51'4.94"E |
| **Erf number / Farm number** | Portion 1 and 2 of Farm 287 |
| **Local Municipality** | Sarah Baartman District |
| **District Municipality** | Dr Beyers Naude Municipality |
| **Current Use** | Agriculture |
| **Current Zoning** | Agriculture |

## 4. Nature of the Proposed Development

| | |
|---|---|
| **Total Length of Road** | Approximately 2.5km |
| **Depth of excavation (m)** | 0-17m below natural ground level |
| **Height of development (m)** | Height from 670-950m above sea level. Road is never raised above NGL. |

## 5. Category of Development

| | |
|---|---|
| **x** | **Triggers: Section 38(8) of the National Heritage Resources Act** |
| | **Triggers: Section 38(1) of the National Heritage Resources Act** |
| x | 1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length. |
| | 2. Construction of a bridge or similar structure exceeding 50m in length. |
| | 3. Any development or activity that will change the character of a site- |
| | a) exceeding 5 000m$^2$ in extent |
| | b) involving three or more existing erven or subdivisions thereof |
| | c) involving three or more erven or divisions thereof which have been consolidated within the past five years |
| | 4. Rezoning of a site exceeding 10 000m$^2$ |
| | 5. Other (state): |

## 6. Additional Infrastructure Required for this Development

| |
|---|
| NA |

## 7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)

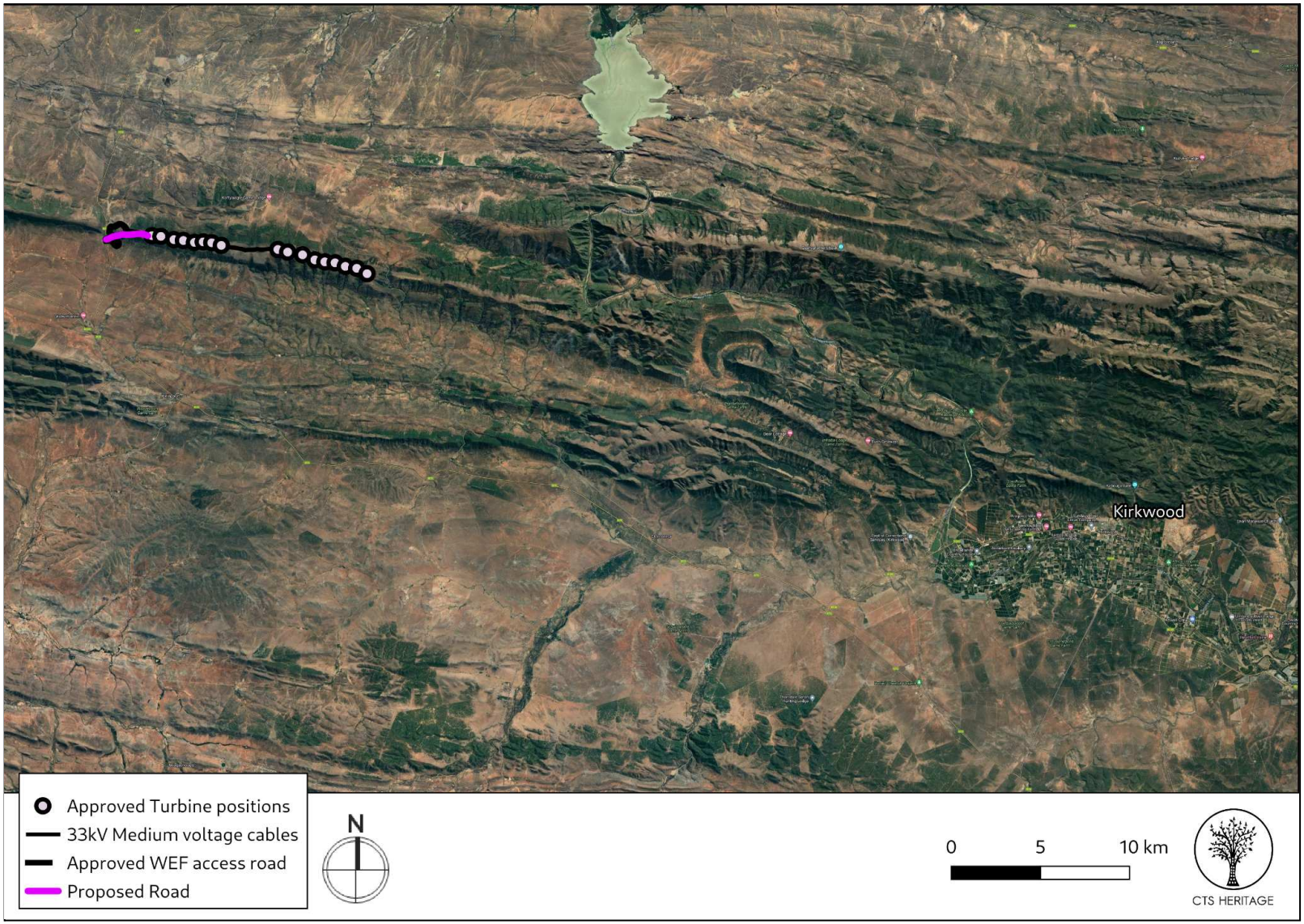


**Figure 1b. Overview Map**. Satellite image (2020) indicating the proposed development area relative to Kirkwood

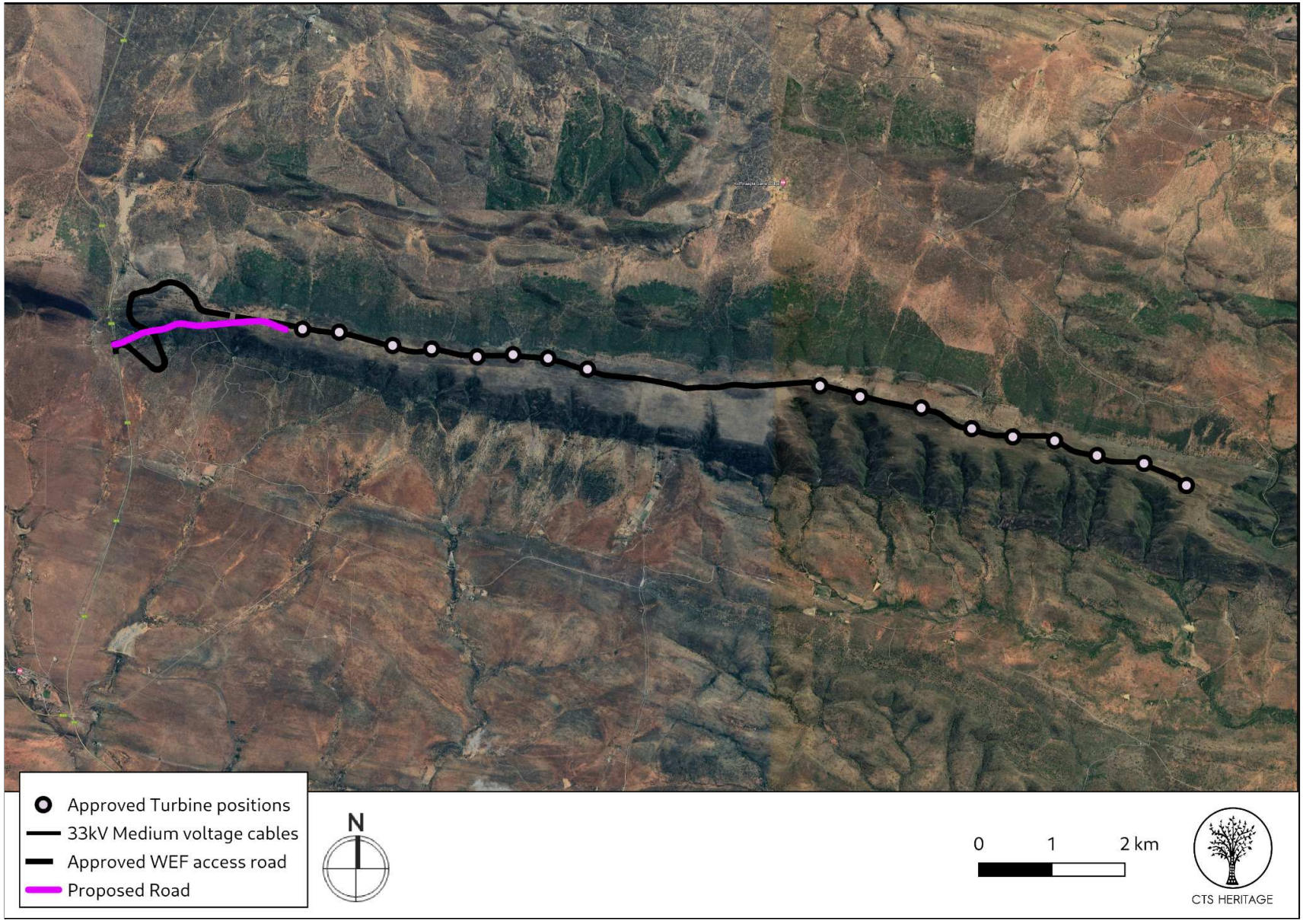


**Figure 1c. Overview Map**. Satellite image (2020) indicating the proposed development area

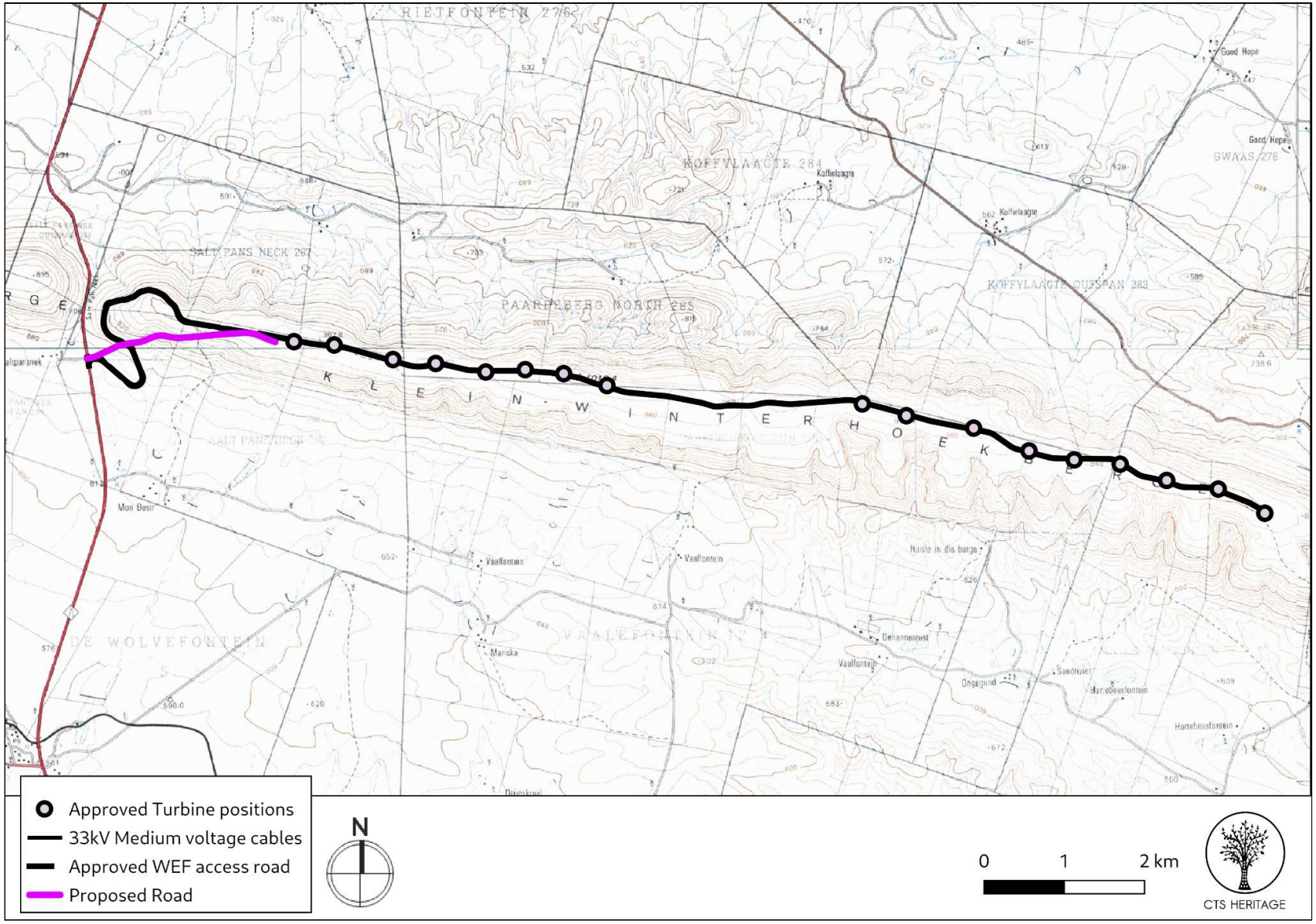


**Figure 1d. Overview Map**. Extract from 1:50 000 Topo

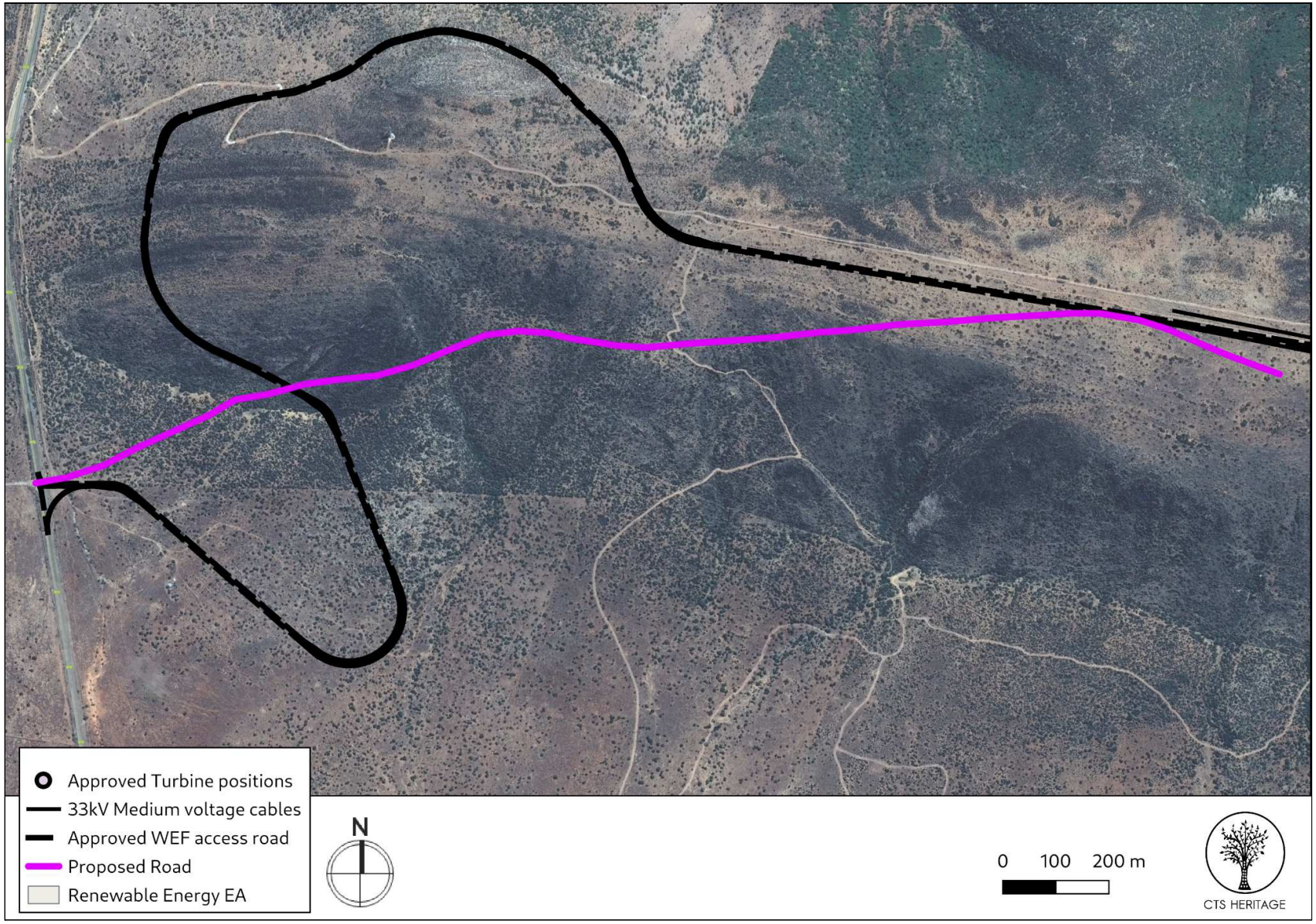


**Figure 1e. Overview Map**. Proposed road development

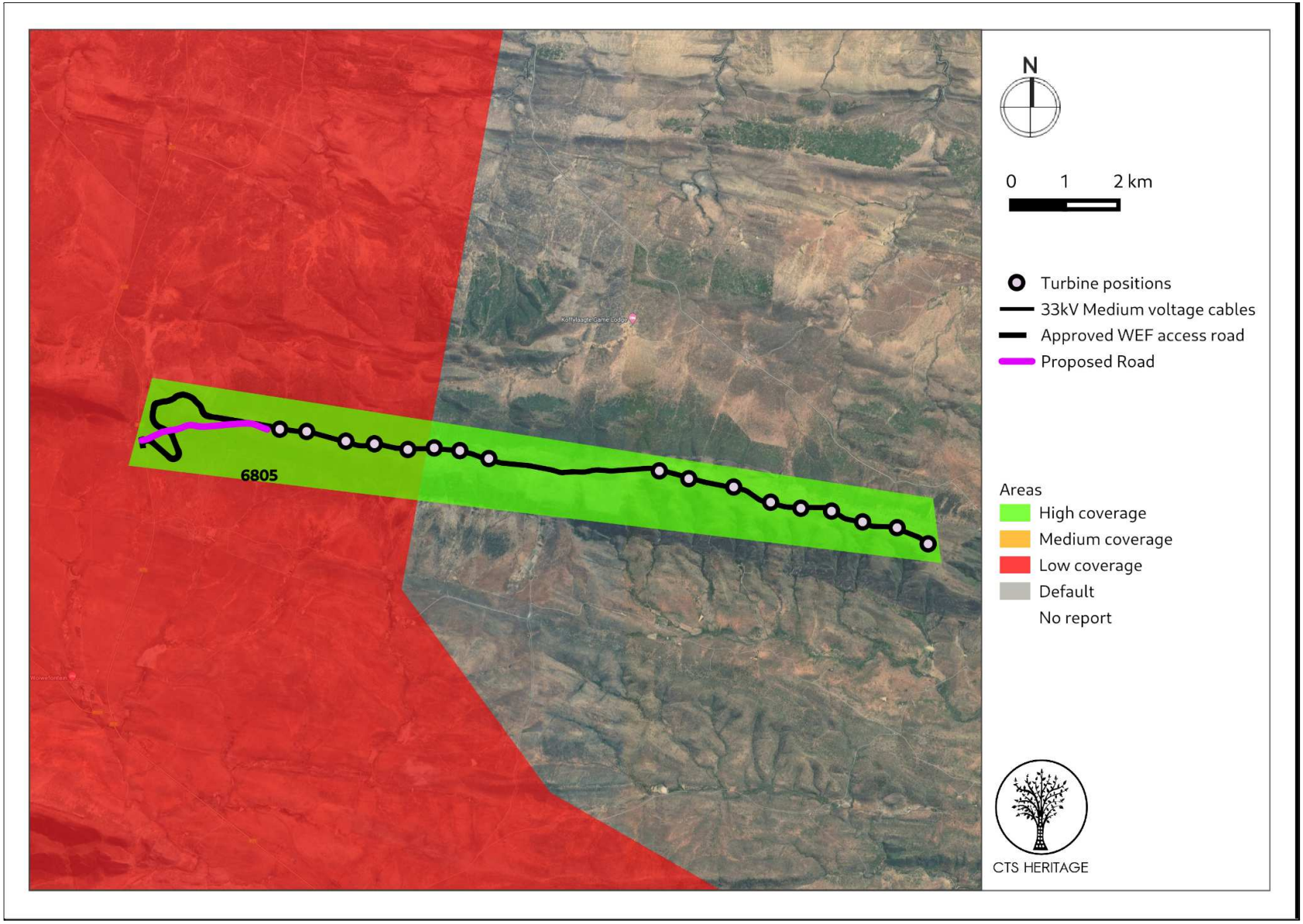


**Figure 2. Previous HIAs Map.** Previous Heritage Impact Assessments covering the proposed development area with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

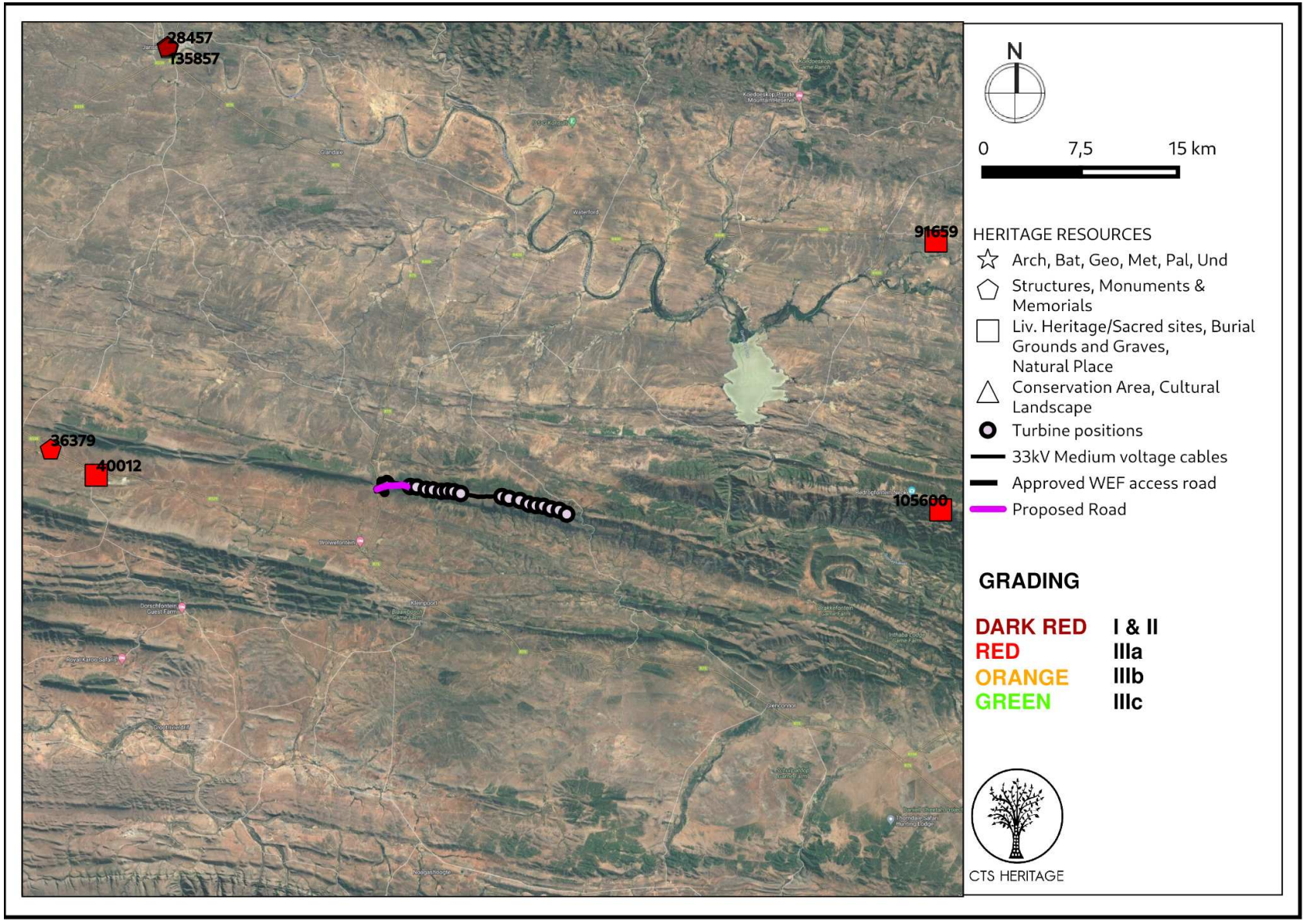


**Figure 3. Heritage Resources Map.** Heritage Resources previously identified within the study area, with SAHRIS Site IDs indicated in the insets below. Please See Appendix 4 for full description of heritage resource types.

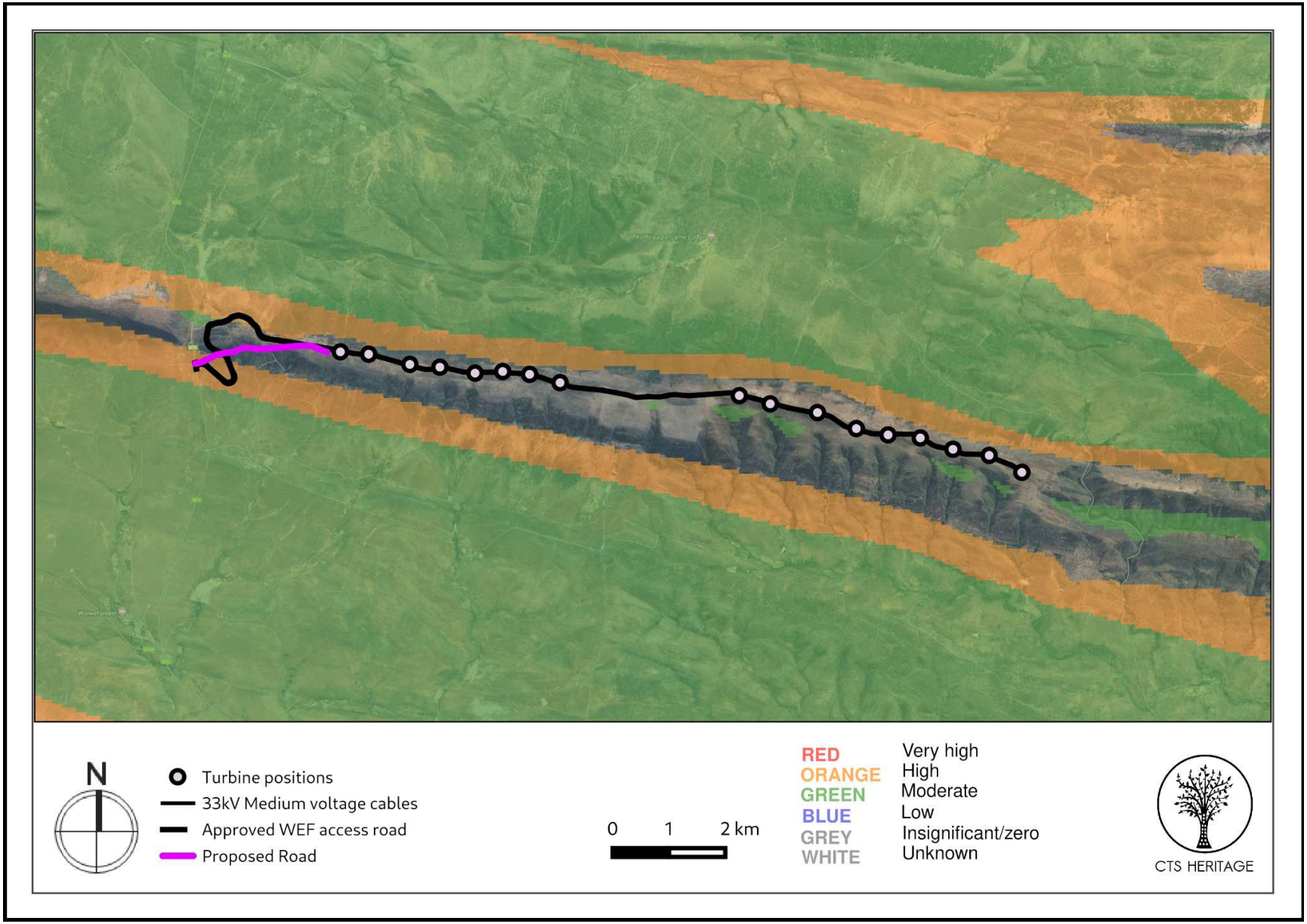


**Figure 4a. Palaeosensitivity Map**. Indicating fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

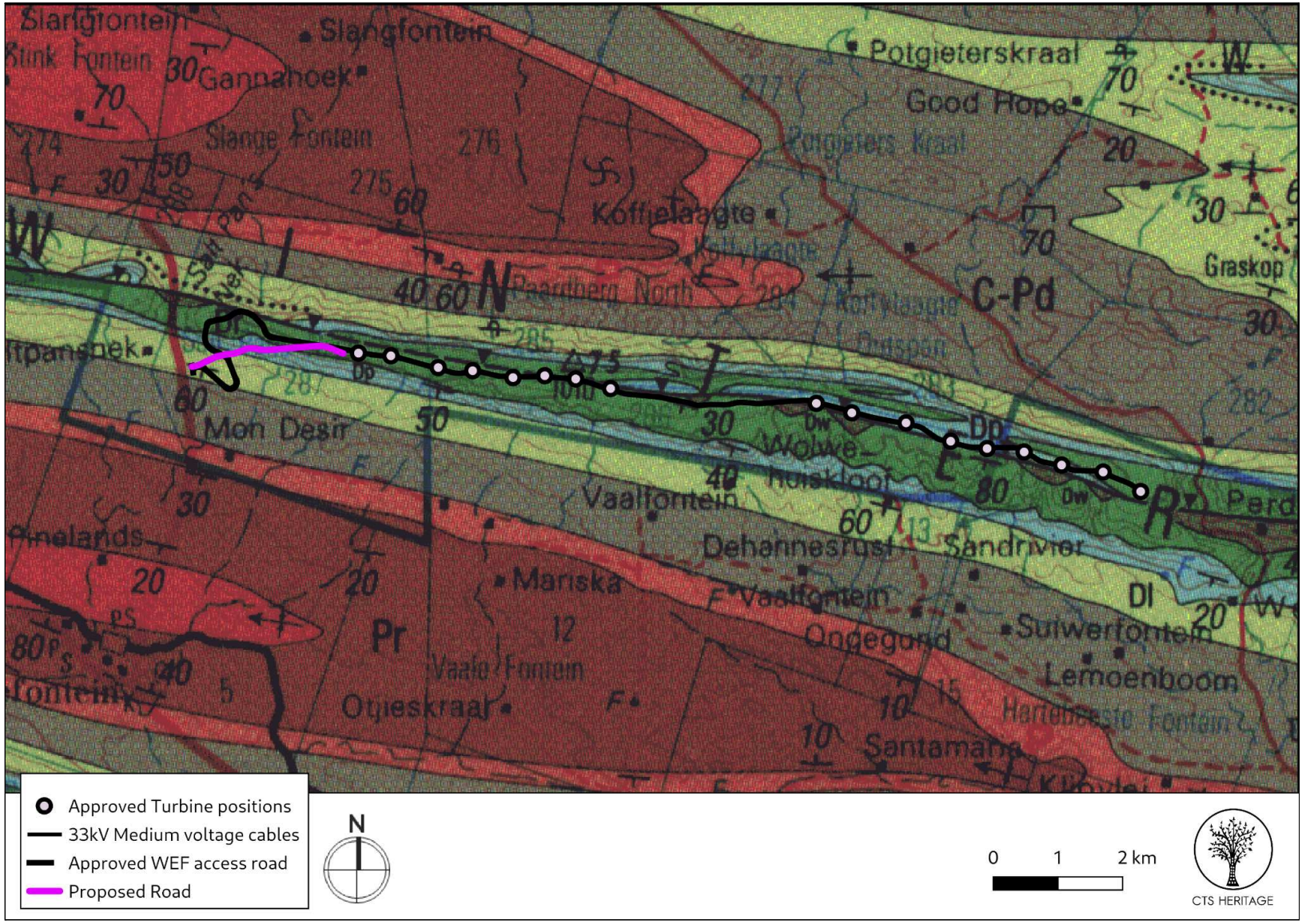


**Figure 4b. Geology Map**. Extract from 1: 250 000 geological map 3324 Port Elizabeth (Council for Geoscience, Pretoria) showing that the area proposed for development is underlain by sediments of the Witpoort (Dw, blue) and Rooirand (Dr, dark green) Members of the Witpoort Formation and the Lake Mentz Subgroup and Kommadagga Subgroup (Cl / Dl, pale green)

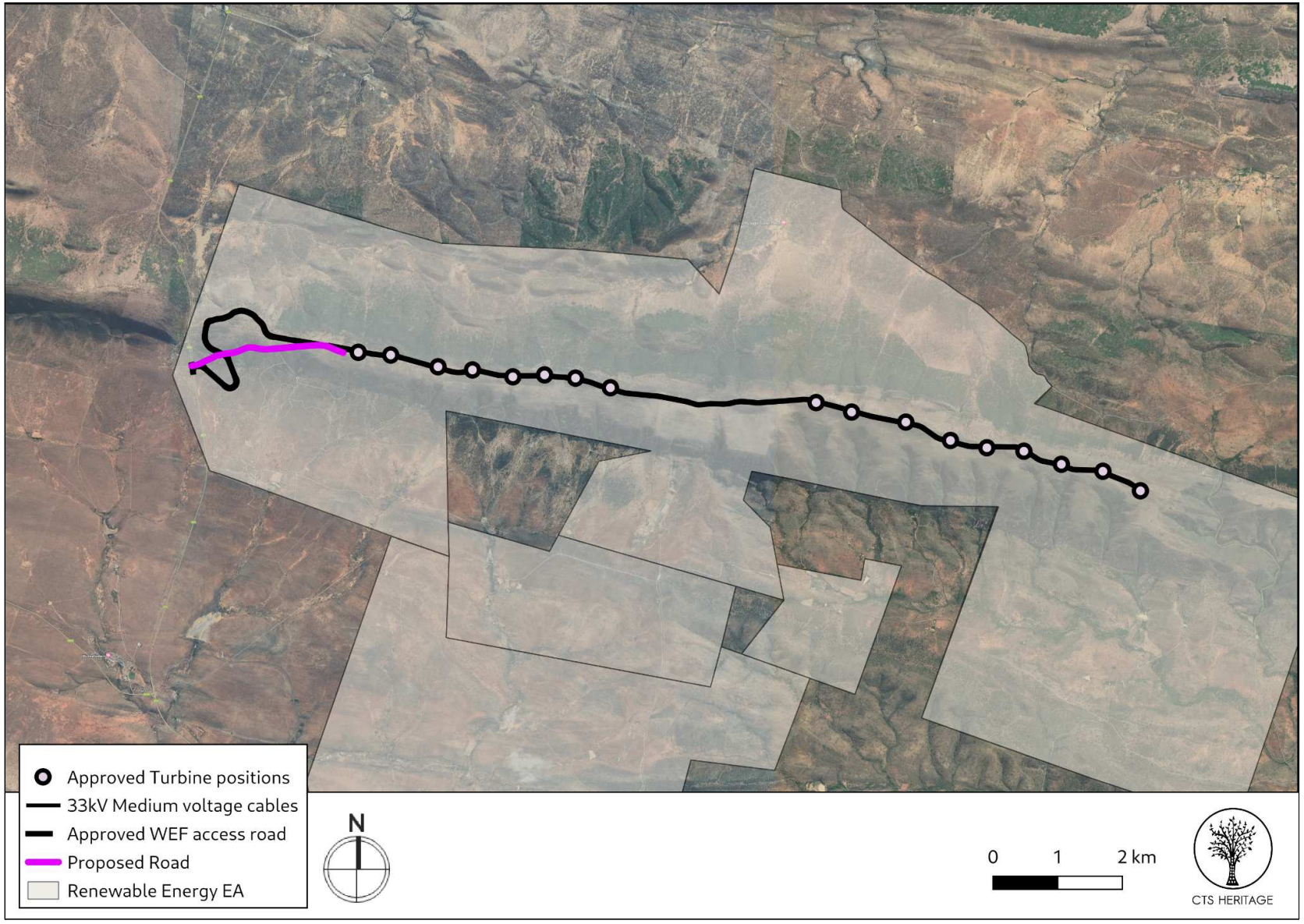


**Figure 5. Cumulative Impact Map**. Indicating other Renewable Energy Facilities that have been granted Environmental Authorisation (EA). Each project will have associated road and OHL infrastructure.


**Figure 6.1. Google Street View**. Overlooking the area proposed for the road infrastructure


**Figure 6.2 Google Street View**. Overlooking the area proposed for the road infrastructure

## 8. Heritage Assessment

This application is for the proposed amendment to the alignment of a road associated with the approved Wold Wind Energy Facility located north of Wolwefontein and west of Kirkwood in the Eastern Cape. As part of the initial Environmental Authorisation process, the area proposed for the Wolf WEF, including this proposed road, was assessed for impacts to heritage resources by the ACO (2014). The results if the assessment completed by the ACO (2014) are used here to infer the likely impact to heritage resources from the proposed road.

**Built Environment and the Cultural Landscape**

At the beginning of the 19th century, the Sundays River formed the eastern border of the then Cape Colony. The broader area around Kirkwood was consequently the scene of many armed conflicts - Khoi against Xhosa, Khoi and Xhosa together against the Boers and British together and finally the Boers against the British during the Second Anglo-Boer War. Historic period remains are also found in the area, with early farmhouses, churches and several farm burial grounds having been noted, ranging from formal, enclosed graves to informal stone-packed burial mounds (Van Ryneveld 2016, NID 374575). In their assessment conducted for the Wolf WEF, the ACO (2014) identified no built environment heritage resources within the study area that would be directly impacted by this proposed development. It is therefore not anticipated that the proposed development will negatively impact on any existing built environment heritage resources or known graves.

Importantly, the ACO (2014) noted that the broader context within which this development occurs has high levels of cultural landscape significance. As noted in ACO (2014), “The construction of a major transmission line (Eskom’s 765 kW Gamma-Grassridge) has been approved but not yet built. It will cross the western side of the study area through Soutpans Poort and is expected to be a major new visual intrusion. In terms of the assessment checklist published by Baumann, Winter, Aikman (2005) the landscape is largely intact as a natural landscape and intrusions within the last 60 years have been moderate. The aesthetic qualities can be described as being of generally scenic (not dramatic) significance while certain niche areas are highly significant – especially the landscapes on the northern side of the Klein Winterhoek ridge as well as the Perdepoort which contains some dramatic scenery with a distinct character.” Furthermore, as the proposed development consists of an expansion of existing infrastructure, there is no “change of character” to the site and no negative impact to the cultural landscape is anticipated from the proposed amendment to the road alignment.

**Archaeology**

The previous heritage studies that have been conducted in the broader area have identified isolated and scattered artefacts of the Early, Middle and Later Stone Age (Binneman, 2010; NID 7159). Generally, archaeological artefacts in this region are found in road cuttings, tracks and paths as the dense vegetation of the area largely obscures their presence elsewhere. ESA material known from the area includes handaxes and cleavers that are usually found in river gravels, although *in situ* ESA tools have been found in spring deposits near Addo (Binneman 2016, NID 365749). MSA flake and blade tools are similarly usually found in secondary contexts, and may be found with associated fossil bone material (Binneman 2010). LSA sites, though present, are usually obscured by the dense vegetation in this region. When found, they are usually represented by limited numbers of stone tools and bone fragments, and organic preservation is generally poor (Binneman 2016). Cave sites in the nearby mountains, on the contrary, often contain well-preserved deposits and rock paintings. Khoe sites, dating to the past 2 000 years, also occur in the area, and their sites are marked by the presence of indigenous ceramics and domesticated animal bone. These groups were also responsible for the creation of large middens of freshwater mussels, sometimes associated with human burials, that can be found on the banks of the Sunday’s River (Binneman 2016). Burials and graves associated with pre-colonial as well as historic communities are also to be found in the area (Binneman 2013, NID 175196).

As per the assessment completed by the ACO (2014), “The high windy ridge that will be the site of the proposed 29 turbines is not conducive to human habitation. Sources of water are scarce and it is highly exposed to strong wind and cold in the winter months. There are no features that would have served as wind breaks or shelters. The lower slopes and ravines hold much greater potential being more sheltered, closer to water sources. There is also the possibility of rock overhangs in the ravines which may have attracted human occupation, however these areas will not be affected by the development proposal. The field survey revealed no evidence of any definable archaeological sites. Occasional waste artefacts dating to the Early Stone were recorded (to our surprise) on the top of the ridge, however these do not represent archaeological sites but are better described as ancient

human litter that resulted from short visits to the ridge-top by prehistoric people – possibly hunting and foraging trips for specific plants and animals. The artefactual material is highly dispersed with occurrences taking place at a single instance every 60-100 m."

The ACO (2014) report goes on to note that "Although indications are that impacts to archaeological material are likely to be of low significance, it must be noted that it has not been possible to assess the potential impacts of road construction on archaeological sites." and as such, it was recommended that existing farm tracks be re-used or upgraded to minimise the amount of change to un-transformed landscape and during the detailed planning phase, drawings of proposed road alignments, infrastructure and near-final turbine positions should be submitted to an archaeologist for review and field-proofing. Micro-adjustment of alignments is likely to be sufficient to achieve adequate mitigation.

**Palaeontology**

The area proposed for development is underlain by sediments of unknown and high palaeontological sensitivity belonging to the Witpoort (Dw, blue) and Rooirand (Dr, dark green) Members of the Witpoort Formation and the Lake Mentz Subgroup and Kommadagga Subgroup (Cl / Dl, pale green) according to the Council of GeoScience Map 3324 (Figure 4a and 4b). As part of the assessment completed for the Wolf WEF, Almond (2014) completed an assessment of the likely impacts to palaeontological heritage. According to Almond (2014) "These shallow marine quartzites are largely unfossiliferous but occasional lagoonal mudrock horizons recorded from within the Witpoort Formation elsewhere in the Eastern Cape have yielded outstanding fossil assemblages of fish, plants and even very early tetrapods (air-breathing limbed vertebrates)."

Amond (2014) found that "the potentially fossiliferous rock units within the study area are for the most part very poorly exposed, due to pervasive cover by superficial sediments (colluvium / scree, soil, alluvium, calcretes, surface gravels) and vegetation; often highly deformed due to intense folding and faulting (including thrust faults) within this sector of the Cape Fold Belt, with the frequent development of a pervasive tectonic cleavage within mudrock units that are most likely to have once contained fossils (cleavage often destroys fossils and also makes them more difficult to observe and collect); and often highly weathered, ferruginised and permeated by secondary calcrete near surface." Furthermore, he recorded no fossils within the study area during his field assessment. Almond (2014) concluded that "Given the low palaeontological sensitivity of the broader Wolf WEF study area, as determined from fieldwork, as well as the inferred very low impact significance of the project for fossil heritage conservation, no specialist palaeontological mitigation is recommended here, pending the discovery of substantial new fossil remains during construction."

**Conclusion**

As per the previous heritage studies completed, the proposed road development is not anticipated to impact significant built environment or palaeontological heritage resources. While the cultural landscape within which the proposed development is located has heritage value, as this road forms part of an approved WEF, it is not anticipated that this road will have a negative impact on the broader sense of place.

While no archaeological resources of heritage significance were identified during the assessment completed in 2014, the specialists noted that the impacts of the road development on archaeological heritage have not been assessed. The recommend that existing farm tracks be re-used or upgraded to minimise the amount of change to un-transformed landscape and during the detailed planning phase, drawings of proposed road alignments, infrastructure and near-final turbine positions should be submitted to an archaeologist for review and field-proofing. Micro-adjustment of alignments is likely to be sufficient to achieve adequate mitigation.

To this end, it is recommended that, prior to construction, a walkdown of the final road layout be completed by an archaeologist to ensure that no significant archaeological heritage is impacted by the proposed road development.

**Table 2: Impact Assessment Table**

| **NATURE:** Significant archaeological, built environment and palaeontological heritage resources may be impacted by the construction phase of the proposed development | | | | |
|---|---|---|---|---|
| | | **Archaeology and Heritage** | | **Palaeontology** |
| **MAGNITUDE** | **M (6)** | While no archaeological resources of heritage significance were identified during the assessment completed in 2014, the specialists noted that the impacts of the road development on archaeological heritage have not been assessed and it is possible that archaeological resources will be impacted. | **L (1)** | Almond noted in his 2014 assessment that the area proposed for development has low palaeontological sensitivity |
| **DURATION** | **H (5)** | Where manifest, the impact will be permanent. | **H (5)** | Where manifest, the impact will be permanent. |
| **EXTENT** | **L (1)** | Localised within the site boundary | **L (1)** | Localised within the site boundary. |
| **PROBABILITY** | **L (1)** | Probability is low | **L (1)** | Probability is low |
| **SIGNIFICANCE** | **L** | (1+5+6)x1=12 | **L** | (1+5+1)x1=7 |
| **STATUS** | | Neutral | | Neutral |
| **REVERSIBILITY** | **L** | Any impacts to heritage resources that do occur are irreversible | **L** | Any impacts to heritage resources that do occur are irreversible |
| **IRREPLACEABLE LOSS OF RESOURCES?** | **L** | Possible | **L** | Possible |
| **CAN IMPACTS BE MITIGATED** | | Yes | | Yes |
| **MITIGATION:**<br>● Prior to construction, a walkdown of the final road layout be completed by an archaeologist to ensure that no significant archaeological heritage is impacted by the proposed road development.<br>● Any substantial fossil remains (e.g. vertebrate bones and teeth, shells) encountered during excavation should be reported to ECPHRA for possible mitigation by a professional palaeontologist. | | | | |
| **RESIDUAL RISK:**<br>● If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to ECPHRA so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue<br>● Should substantial fossil remains such as vertebrate bones and teeth, plant-rich fossil lenses, fossil wood or dense fossil burrow assemblages be exposed during construction, the responsible ECO/EO/Environmental Representative should safeguard these, preferably in situ, and alert ECPHRA, i.e. The Eastern Cape Provincial Heritage Resources Authority, as soon as possible so that appropriate action can be taken by a professional palaeontologist, at the Proponent's expense. Mitigation would normally involve the scientific recording and judicious sampling or collection of fossil material as well as associated geological data (e.g. stratigraphy, sedimentology, taphonomy) by a suitably qualified palaeontologist. | | | | |

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# APPENDIX 1

## List of heritage resources within the development area

| Site ID | Site no | Full Site Name | Site Type | Grading |
|---|---|---|---|---|
| 28457 | 9/2/046/0007 | Dutch Reformed Church, 23 Main Street, Jansenville | Building | Grade II |
| 91659 | SKOE014 | Skoenmakers 014 | Burial Grounds & Graves | Grade IIIa |
| 40012 | GRA004 | Grassridge 004 | Burial Grounds & Graves | Grade IIIa |
| 36379 | WIL003 | Willowmore 003 | Transport infrastructure | Grade IIIa |
| 105600 | BOSCHK1 | Boschkraal 1 | Burial Grounds & Graves | Grade IIIa |
| 135857 | DC10/NAMM/0014 | World War Memorial, Main Street, Jansenville | Monuments & Memorials | |

CTS HERITAGE

# APPENDIX 2

## Reference List with relevant AIAs and PIAs

| Heritage Impact Assessments | | | | |
|---|---|---|---|---|
| **Nid** | **Report Type** | **Author/s** | **Date** | **Title** |
| 6805 | AIA Phase 1 | Len van Schalkwyk, Elizabeth Wahl | 01/09/2007 | Heritage Impact Assessment of Gamma Grassridge Power Line Corridors and Substation, Eastern, Western and Northern Cape Provinces, South Africa |
| 594044 | HIA Phase 1 | Tim Hart | 01/05/2014 | HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED WOLF WIND ENERGY FACILITY: CACADU REGION, EASTERN CAPE |
| 594046 | PIA Phase 1 | John Almond | 01/08/2014 | Palaeontological specialist assessment: combined desktop and field-based study PROPOSED WOLF WIND ENERGY FACILITY NEAR JANSENVILLE, EASTERN CAPE |

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# APPENDIX 3 - Keys/Guides

## Key/Guide to Acronyms

| | |
|---|---|
| **AIA** | Archaeological Impact Assessment |
| **DARD** | Department of Agriculture and Rural Development (KwaZulu-Natal) |
| **DEA** | Department of Environmental Affairs (National) |
| **DEADP** | Department of Environmental Affairs and Development Planning (Western Cape) |
| **DEDEAT** | Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape) |
| **DEDECT** | Department of Economic Development, Environment, Conservation and Tourism (North West) |
| **DEDT** | Department of Economic Development and Tourism (Mpumalanga) |
| **DEDTEA** | Department of economic Development, Tourism and Environmental Affairs (Free State) |
| **DENC** | Department of Environment and Nature Conservation (Northern Cape) |
| **DMR** | Department of Mineral Resources (National) |
| **GDARD** | Gauteng Department of Agriculture and Rural Development (Gauteng) |
| **HIA** | Heritage Impact Assessment |
| **LEDET** | Department of Economic Development, Environment and Tourism (Limpopo) |
| **MPRDA** | Mineral and Petroleum Resources Development Act, no 28 of 2002 |
| **NEMA** | National Environmental Management Act, no 107 of 1998 |
| **NHRA** | National Heritage Resources Act, no 25 of 1999 |
| **PIA** | Palaeontological Impact Assessment |
| **SAHRA** | South African Heritage Resources Agency |
| **SAHRIS** | South African Heritage Resources Information System |
| **VIA** | Visual Impact Assessment |

## Full guide to Palaeosensitivity Map legend

| | | |
|---|---|---|
| | **RED**: | VERY HIGH - field assessment and protocol for finds is required |
| | **ORANGE/YELLOW**: | HIGH - desktop study is required and based on the outcome of the desktop study, a field assessment is likely |
| | **GREEN**: | MODERATE - desktop study is required |
| | **BLUE/PURPLE**: | LOW - no palaeontological studies are required however a protocol for chance finds is required |
| | **GREY**: | INSIGNIFICANT/ZERO - no palaeontological studies are required |
| | **WHITE/CLEAR**: | UNKNOWN - these areas will require a minimum of a desktop study. |

CTS HERITAGE

# APPENDIX 4 - Methodology

The Heritage Screener summarises the heritage impact assessments and studies previously undertaken within the area of the proposed development and its surroundings. Heritage resources identified in these reports are assessed by our team during the screening process.

The heritage resources will be described both in terms of **type**:

- Group 1: Archaeological, Underwater, Palaeontological and Geological sites, Meteorites, and Battlefields
- Group 2: Structures, Monuments and Memorials
- Group 3: Burial Grounds and Graves, Living Heritage, Sacred and Natural sites
- Group 4: Cultural Landscapes, Conservation Areas and Scenic routes

and **significance** (Grade I, II, IIIa, b or c, ungraded), as determined by the author of the original heritage impact assessment report or by formal grading and/or protection by the heritage authorities.

Sites identified and mapped during research projects will also be considered.

**DETERMINATION OF THE EXTENT OF THE INCLUSION ZONE TO BE TAKEN INTO CONSIDERATION**

The extent of the inclusion zone to be considered for the Heritage Screener will be determined by CTS based on:

- the size of the development,
- the number and outcome of previous surveys existing in the area
- the potential cumulative impact of the application.

The inclusion zone will be considered as the region within a maximum distance of 50 km from the boundary of the proposed development.

**DETERMINATION OF THE PALAEONTOLOGICAL SENSITIVITY**

The possible impact of the proposed development on palaeontological resources is gauged by:

- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

**DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON**

Each report assessed for the compilation of the Heritage Screener is colour-coded according to the level of coverage accomplished. The extent of the surveyed coverage is labeled in three categories, namely low, medium and high. In most instances the extent of the map corresponds to the extent of the development for which the specific report was undertaken.

**Low coverage** will be used for:

- desktop studies where no field assessment of the area was undertaken;
- reports where the sites are listed and described but no GPS coordinates were provided.
- older reports with GPS coordinates with low accuracy ratings;
- reports where the entire property was mapped, but only a small/limited area was surveyed.
- uploads on the National Inventory which are not properly mapped.

**Medium coverage** will be used for

- reports for which a field survey was undertaken but the area was not extensively covered. This may apply to instances where some impediments did not allow for full coverage such as thick vegetation, etc.
- reports for which the entire property was mapped, but only a specific area was surveyed thoroughly. This is differentiated from low ratings listed above when these surveys cover up to around 50% of the property.

**High coverage** will be used for

- reports where the area highlighted in the map was extensively surveyed as shown by the GPS track coordinates. This category will also apply to permit reports.

**RECOMMENDATION GUIDE**

The Heritage Screener includes a set of recommendations to the applicant based on whether an impact on heritage resources is anticipated. One of three possible recommendations is formulated:

**(1) The heritage resources in the area proposed for development are sufficiently recorded - The surveys undertaken in the area adequately captured the heritage resources. There are no known sites which require mitigation or management plans. No further heritage work is recommended for the proposed development.**

This recommendation is made when:

- enough work has been undertaken in the area
- it is the professional opinion of CTS that the area has already been assessed adequately from a heritage perspective for the type of development proposed

**(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for the proposed development.**

This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:

- improvement on some components of the heritage assessments already undertaken, for instance with a renewed field survey and/or with a specific specialist for the type of heritage resources expected in the area
- compilation of a report for a component of a heritage impact assessment not already undertaken in the area

- undertaking mitigation measures requested in previous assessments/records of decision.

**(3) The heritage resources within the area proposed for the development have not been adequately surveyed yet - Few or no surveys have been undertaken in the area proposed for development. A full Heritage Impact Assessment with a detailed field component is recommended for the proposed development.**

**Note:**
The responsibility for generating a response detailing the requirements for the development lies with the heritage authority. However, since the methodology utilised for the compilation of the Heritage Screeners is thorough and consistent, contradictory outcomes to the recommendations made by CTS should rarely occur. Should a discrepancy arise, CTS will immediately take up the matter with the heritage authority to clarify the dispute.

## APPENDIX 5 -Summary of Specialist Expertise

**Jenna Lavin**, an archaeologist with an MSc in Archaeology and Palaeoenvironments, and currently completing an MPhil in Conservation Management , heads up the heritage division of the organisation, and has a wealth of experience in the heritage management sector. Jenna's previous position as the Assistant Director for Policy, Research and Planning at Heritage Western Cape has provided her with an in-depth understanding of national and international heritage legislation. Her 8 years of experience at various heritage authorities in South Africa means that she has dealt extensively with permitting, policy formulation, compliance and heritage management at national and provincial level and has also been heavily involved in rolling out training on SAHRIS to the Provincial Heritage Resources Authorities and local authorities.

Jenna is on the Executive Committee of the Association of Professional Heritage Practitioners (APHP), and is also an active member of the International Committee on Monuments and Sites (ICOMOS) as well as the International Committee on Archaeological Heritage Management (ICAHM). In addition, Jenna has been a member of the Association of Southern African Professional Archaeologists (ASAPA) since 2009. Recently, Jenna has been responsible for conducting training in how to write Wikipedia articles for the Africa Centre's WikiAfrica project.

Since 2016, Jenna has drafted over 50 Heritage Impact Assessments throughout South Africa.