

# HERITAGE IMPACT ASSESSMENT

In terms of Section 38(8) of the NHRA for the

## **Proposed Development of the 240MW Draailoop Solar PV Energy Facility near Banderlierkop in the Limpopo Province**

**Prepared by CTS Heritage**



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**For**

**DRAAILOOP SOLAR PV (PTY) LIMITED**

**June 2024**

**Updated December 2025**



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## EXECUTIVE SUMMARY

### 1. Site Name:

Draailoop Solar PV Energy Facility

### 2. Location:

Near Bandelierkop

- Portion 1 of Farm 425
- Remainder of Farm 430
- Farm 431

### 3. Locality Plan:

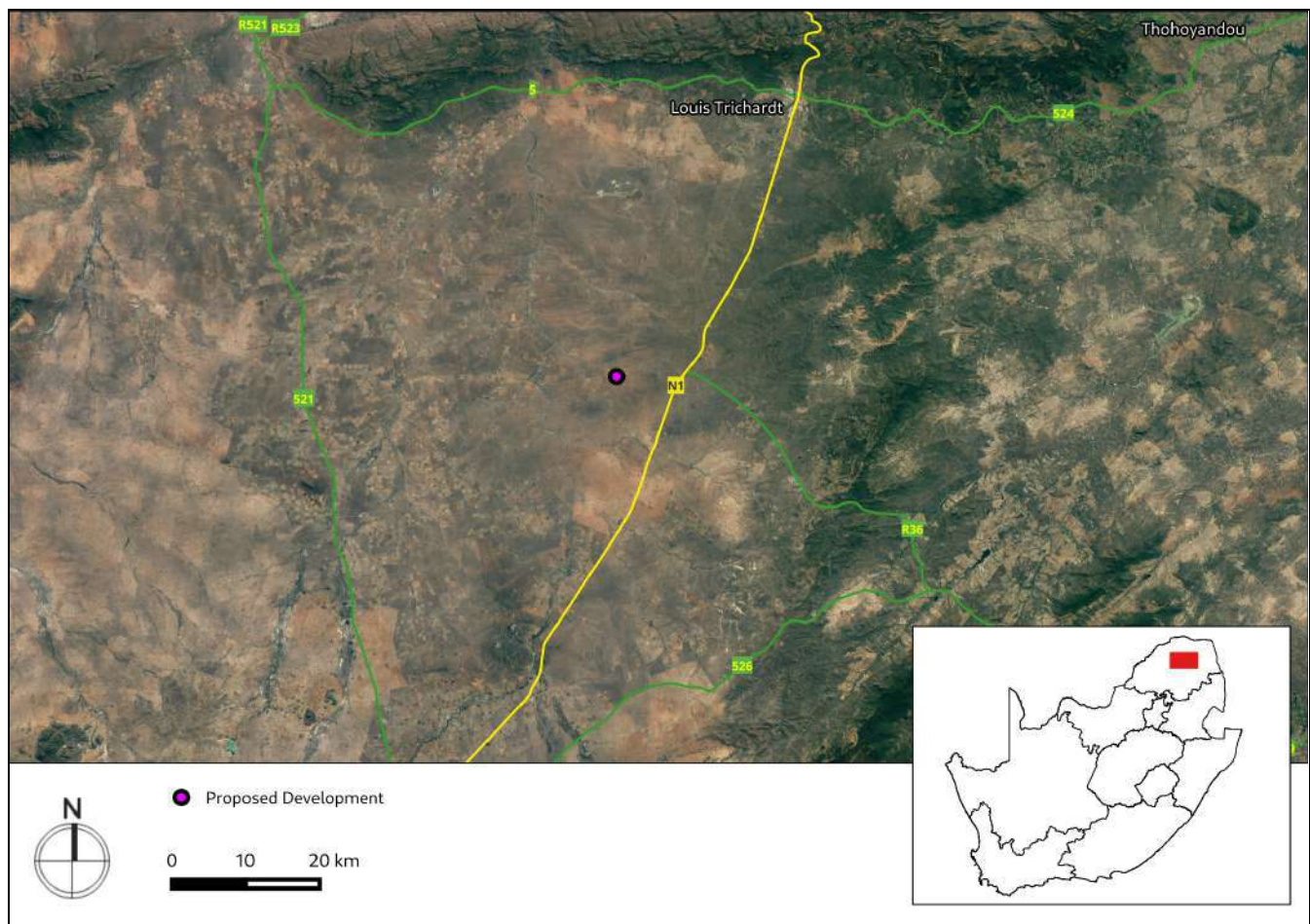


Figure A: Location of the proposed development area

#### 4. Description of Proposed Development:

The applicant, Draailoop Solar PV (Pty) Ltd, is proposing the construction of a Solar Photovoltaic (PV) Energy Facility and associated infrastructure, known as Draailoop Solar PV, on Portion 1 of Farm 425, Remainder of Farm 430 and Farm 431 located South of Louis Trichardt in the Makhado Local Municipality, Vhembe District, Limpopo Province.

A study site of approximately 857ha is being assessed as part of this Environmental Process and the infrastructure associated with an up to 240 Megawatt (MW) PV facility.

#### 5. Anticipated Impacts on Heritage Resources:

The survey proceeded with no major constraints and limitations, and the project area was comprehensively surveyed for heritage resources. Some significant archaeological material remains were documented within the grid area and the proposed PV facilities. The archaeological observations are somewhat expected here due to the number of Iron Age Sites known from the broader vicinity of the development area. These archaeological resources are associated with granite koppies in the area. A number of granite koppies are known from the southern portion of the grid alignment and these koppies should be considered to be archaeologically sensitive. It is recommended that no development take place within or on the koppies.

A number of significant archaeological resources and burial grounds were identified within the area proposed for development. Recommendations regarding appropriate buffer areas for these significant resources are outlined in Tables 3.1 and 3.2.

***The final layout of the proposed Draailoop PV facility and its associated grid alignment adhere to the mitigation measures outlined in this report and as such, no significant impact is anticipated.***

It is recommended that the property owner and developer sign a Heritage Agreement with a Conservation Management Plan (CMP) for the ongoing conservation of the significant archaeological sites and burials identified within the area proposed for development. The recommendation for a CMP for the identified features must be endorsed by SAHRA before the CMP is drafted and a Heritage Agreement is signed. The Heritage Agreement and CMP are legally binding documents related to the approval of the development. As such, the process for the heritage agreement and CMP must be initiated only if Environmental Authorisation is granted for the project.

The Heritage Impact Assessment process must assess impacts to heritage resources resulting from the proposed activity. Impacts to places associated with cultural activities can be mitigated through the identification and protection of these places using mechanisms such as buffers to ensure that the design of the development

respects these places. Opportunities for ongoing cultural activities within the development area can be negotiated with the landowner and developer through the recommended Conservation Management Plan.

It is clear that the CPA holds important knowledge regarding the oral history of the Batlokwa ba Chatleka community. It is recommended that engagement with an appropriate academic institution take place urgently to ensure that this oral history is accurately recorded and documented through an academic process.

The CPA has identified burials and spaces within the area proposed for development as associated with their living heritage. In lieu of specific location information from the CPA, additional research was undertaken to identify places that have or may have cultural heritage value. An additional site visit was also undertaken to ground-truth the identified sites. The results of this analysis are included in the report.

#### 6. Recommendations:

Based on the outcomes of this report, it is not anticipated that the proposed development of the solar energy facility and grid connection infrastructure will negatively impact on significant heritage resources on condition that:

- The mitigation measures outlined in Tables 3.1 and 3.2 are implemented. This is adhered to in the layout provided
- The granite koppies within the development area are considered to be sensitive and are excluded from the development footprint. This is adhered to in the layout provided
- A Conservation Management Plan is drafted for the ongoing conservation of the significant archaeological sites and burials identified within the area proposed for development
- Although all possible care has been taken to identify sites of cultural importance during the investigation of the study area, it is always possible that hidden or subsurface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils, burials or other categories of heritage resources are found during the proposed development, work must cease in the vicinity of the find and SAHRA must be alerted immediately to determine an appropriate way forward.



### **Details of Specialist who prepared the HIA**

**Jenna Lavin**, an archaeologist with an MSc in Archaeology and Palaeoenvironments, and since 2016 heads up the heritage division of the organisation. She 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. Prior to joining CTS Heritage, 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 a member 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. Since 2016, Jenna has drafted over 250 Screening and Heritage Impact Assessments throughout South Africa.

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| 1                                                       | Archaeological Impact Assessment 2025 |
| 2                                                       | Results of Consultation               |

## 1. INTRODUCTION

### 1.1 Background Information on Project

The applicant, Draailoop Solar PV (Pty) Ltd, are proposing the construction of a Solar Photovoltaic (PV) Energy Facility and associated infrastructure, known as Draailoop Solar PV, on Portion 1 of Farm 425, Remainder of Farm 430 and Farm 431 located South of Louis Trichardt in the Makhado Local Municipality, Vhembe District, Limpopo Province.

A study site of approximately 857ha is being assessed as part of this Environmental Process and the infrastructure associated with an up to 240 Megawatt (MW) PV facility.

The proposed Draailoop Solar PV Project will include the following components:

- Solar Field
  - Solar Arrays: PV modules;
  - Single axis tracking technology maximum height of 5m (aligned north- south);
  - Solar module mounting structures comprised of galvanised steel and aluminium;
  - Foundations which will likely be drilled and concreted into the ground;
  - Solar measurement and weather stations;
  - Central/string Inverters and MV transformers in in field;
  - DC coupled Battery Energy Storage system (BESS) containers distributed through PV field located adjacent to inverters ;
    - Lithium Ion battery Cells, Modules, Racks and containers.
    - Power Conversion Equipment.
    - Battery Management System.
    - Energy Management System.
- Associated Infrastructure
  - Medium Voltage (MV =22/33 kV) overhead powerlines and underground cables;
  - MV Collector stations;
  - Access road;
  - Internal gravel roads;
  - Fencing;
  - General maintenance area;
  - Storm water channels and berms;
  - Water storage tanks and pipelines;
  - Temporary work area during the construction phase (i.e. laydown area) (up to 7ha);
  - O&M buildings (up to 1ha);
  - Storerooms;
  - Diesel storage area (up to 0.25ha).

- Project IPP Substation (up to 1ha);
  - 132kV substation;
  - HV transformer;
  - Substation Control Building;
  - HV metering, Scada and protection building;
  - MV collector switchgear buildings;
  - Compensation equipment (Filters capacitors reactors statcoms).
- AC coupled BESS installation at project substation and laydown area (up to 6ha):
  - Solid State Battery technology - either Lithium-Ion or Sodium Sulphide (NaS)
    - Battery Cells, Modules, Racks and containers;
    - Power Conversion Equipment;
    - Battery Management System;
    - Energy Management System;
    - MV transformers;
    - MV cabling and collector stations;
    - Fencing;
    - Offices, workshop;
    - Fire Protection systems.

This environmental application process includes Electrical Grid Connection Infrastructure required to connect the Draailoop Solar PV to the National Grid via the existing Tabor Main Transmission Substation (MTS). This Electrical Grid Infrastructure includes:

- Onsite Switching Station (SS) (up to 1ha), adjacent to the IPP Substation.
- 132kV Overhead Power Line (OHPL) – 30m height from the switching station to the existing Eskom Tabor Substation;
- Access Road to Switching Station;
- Maintenance access road below or adjacent to the power line.

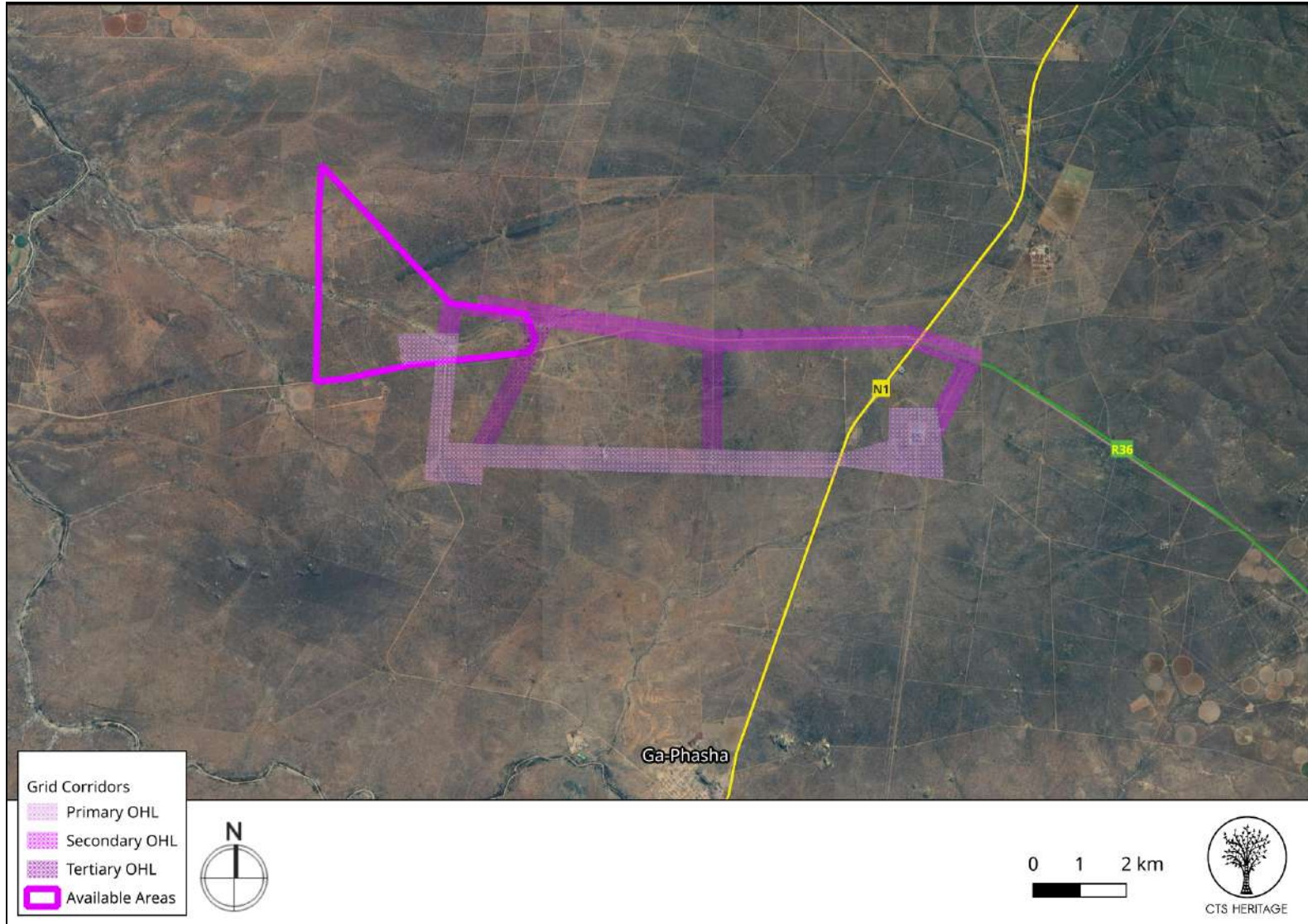
Three Grid connection alternatives are under investigation as part of this environmental process. Different land portions are affected by the various grid connection alternatives.

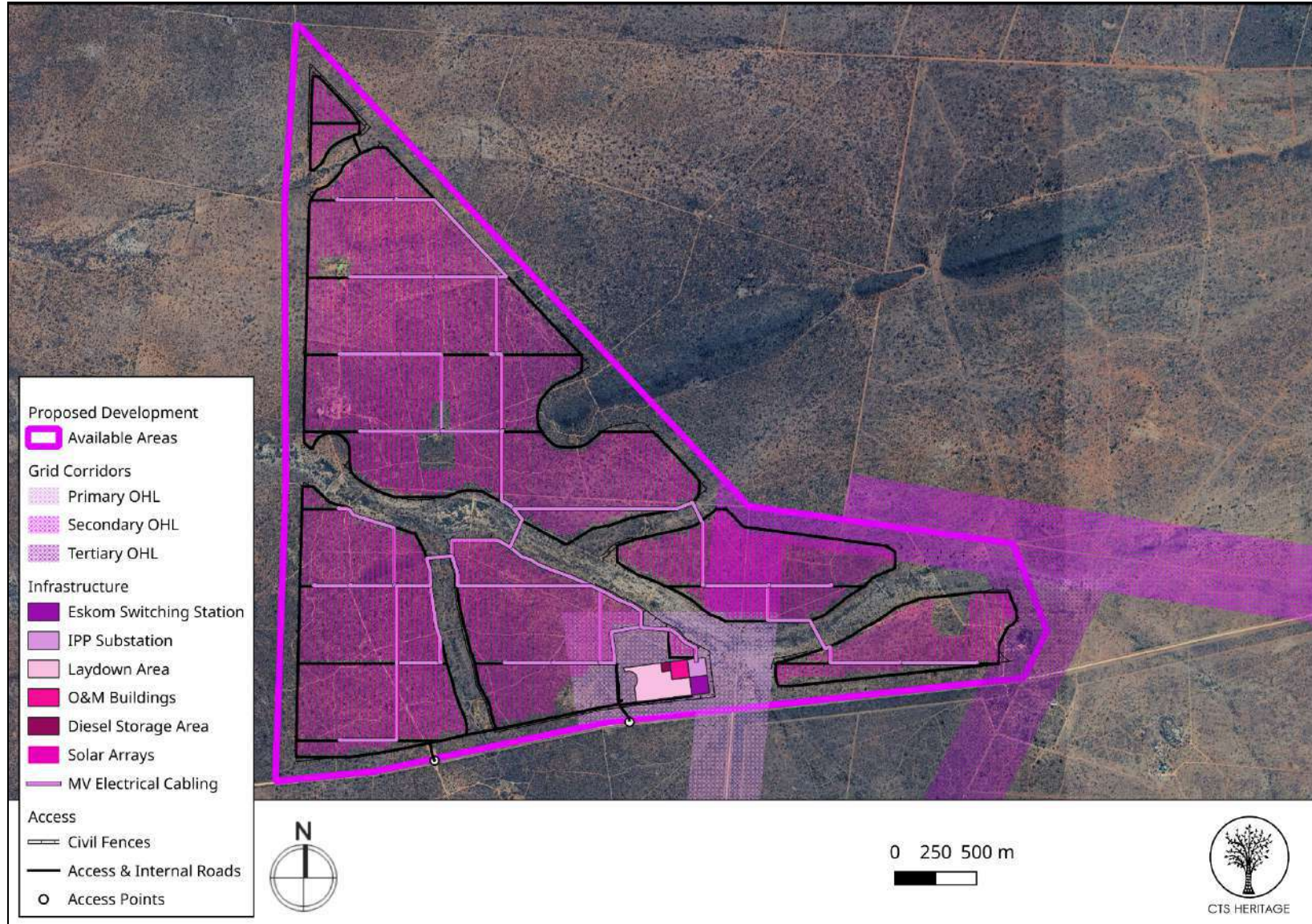
## 1.2 Description of Property and Affected Environment

The proposed Draailoop Solar PV Energy Facility lies about 12km southwest of Bandelierkop in Limpopo. The N1 highway linking Louis Trichardt to Polokwane runs along much of the grid connection routes that terminate at the Eskom Tabor substation. The PV areas are located on three farms, namely Draailoop, Bethel and Klipput and the various grid routes link the PV areas to Tabor substation over several farms adjacent to the N1 highway.

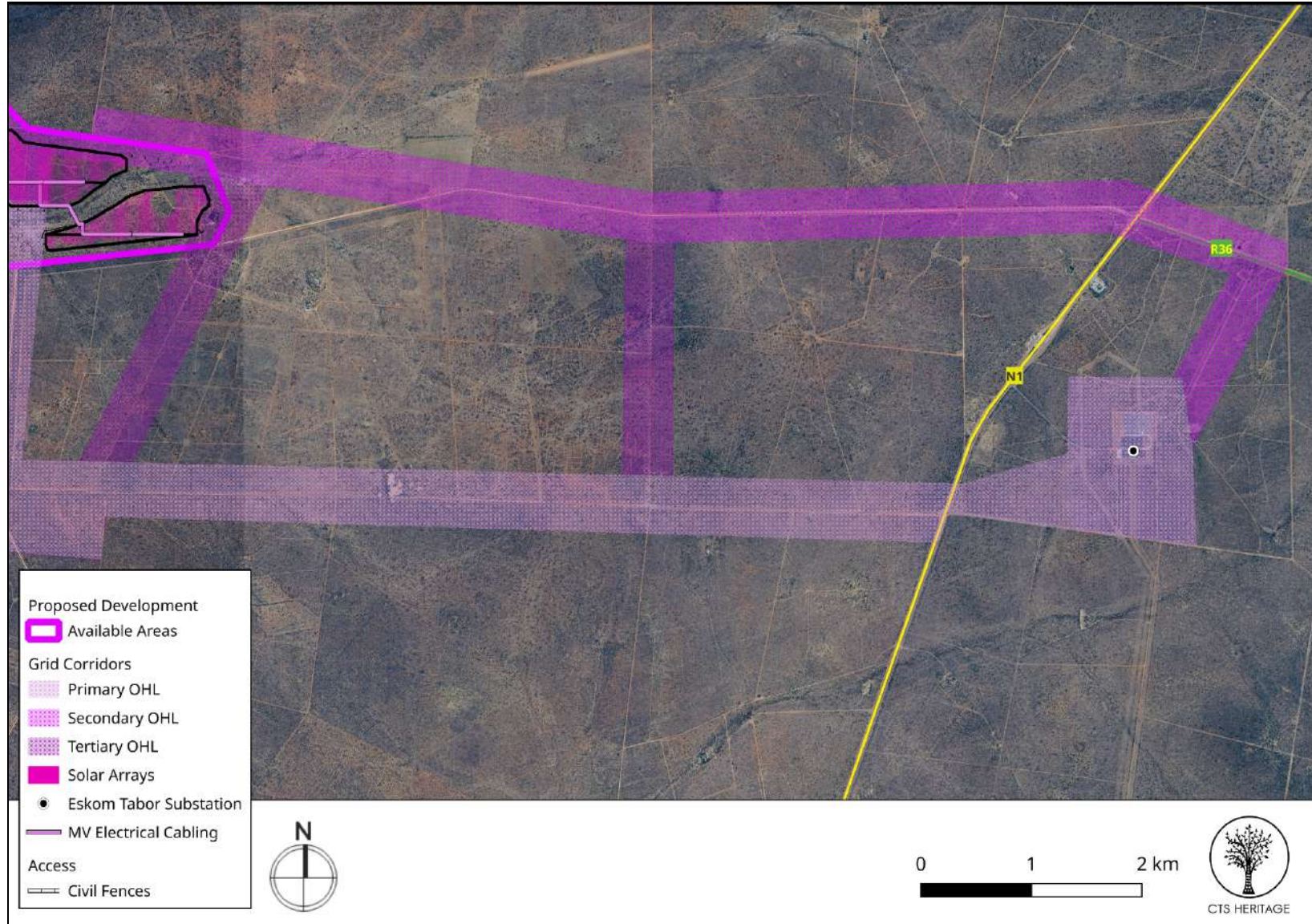
The area has several cattle ranches and game farms that are used for tourism and hunting. Wild buffalo are present within the PV areas, and surveying has to be carried out with a staff escort. Besides buffalo, there are giraffes, eland, kudu and various smaller antelope species within the game farms. A series of modern cattle kraals and feeding areas are ubiquitous in the area and are linked via grid-form internal gravel roads and fenced enclosures. The game farms typically have lodges, staff accommodation and various facilities related to the hunting and tourism business such as lapas, chalets and viewing hides.

The terrain is generally flat in the PV areas, with more hilly ground east of the N1 highway on Langgedacht farm, where a proposed grid connection route is planned. Several granite outcrops dot the area, with the largest and most prominent one located at the Tropic of Capricorn monument in Ga-Phasha. The veld consists of bushveld dominated by acacia trees and grassland.





**Figure 1.2 Overview Map.** Satellite image (2025) indicating the proposed PV Areas at closer range.



**Figure 1.3 Overview Map.** Satellite image (2025) indicating the proposed Grid Areas at closer range.



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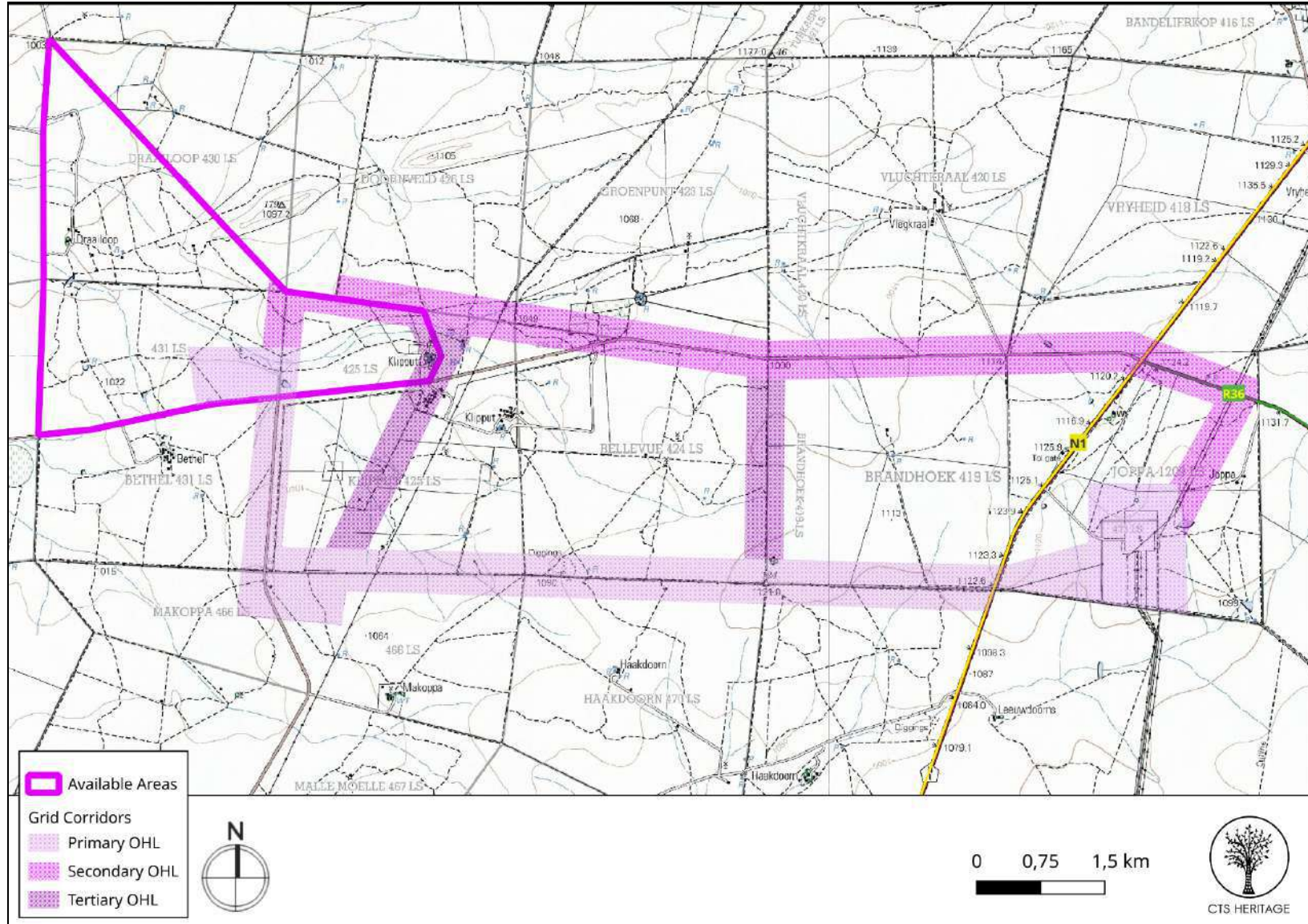


Figure 1.4 Overview Map. 1:50 000 Topo Map for the development area

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Unit 5 off Rectory Lane, 112 St Georges Street, Simon's Town, 7975  
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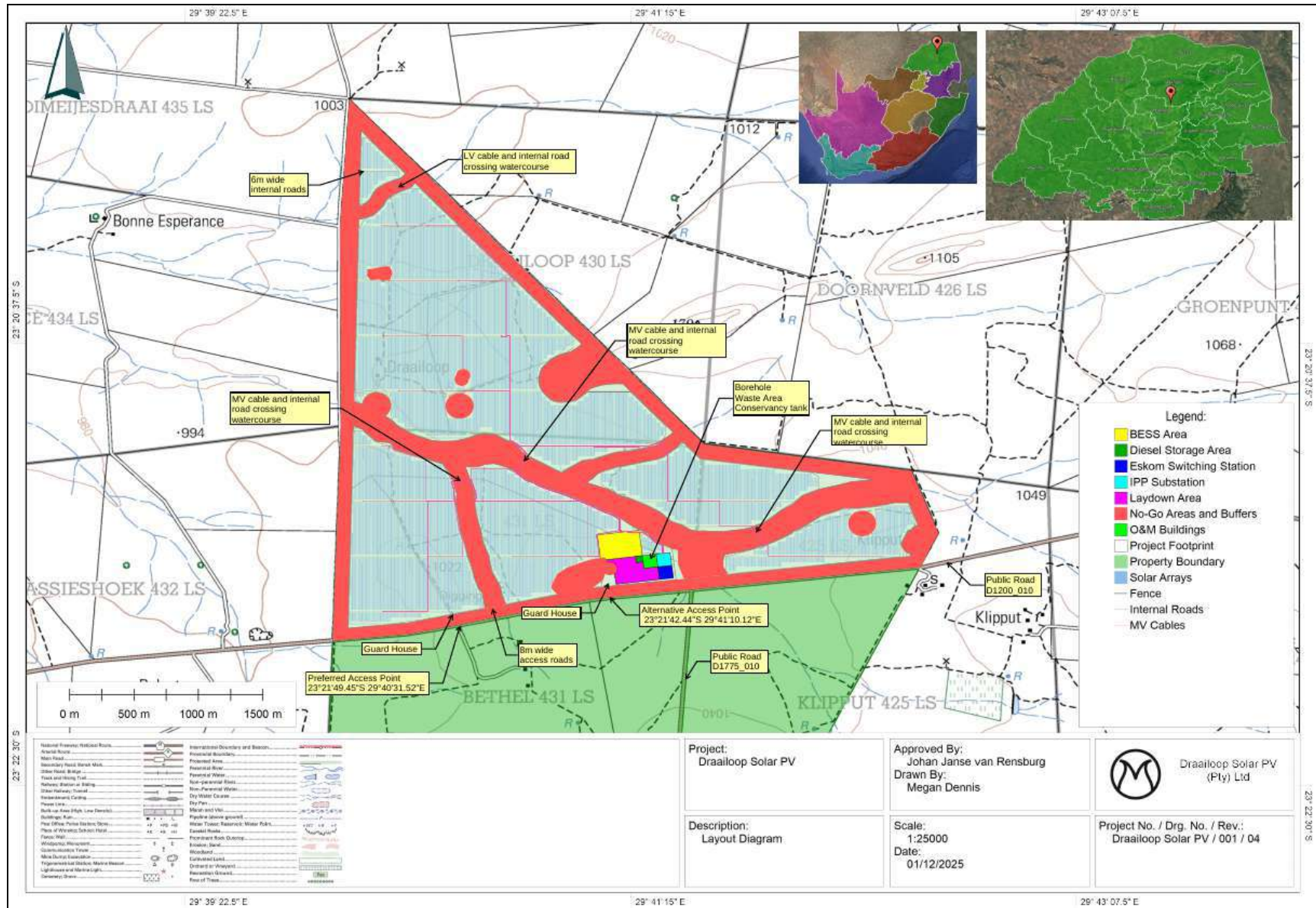


Figure 1.5 Layout Diagram provided by client

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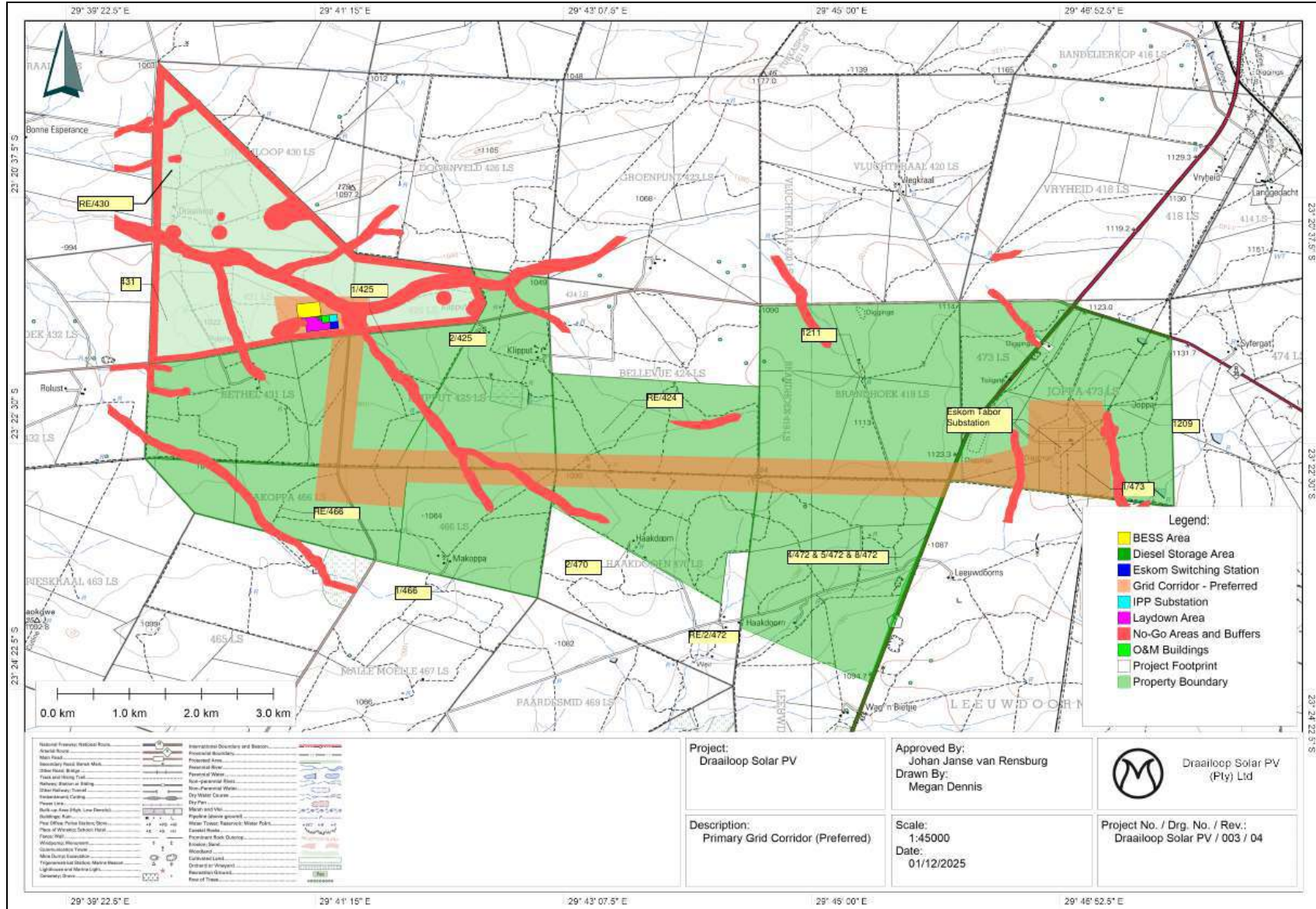


Figure 1.6 Primary OHL Corridor Layout Diagram provided by client

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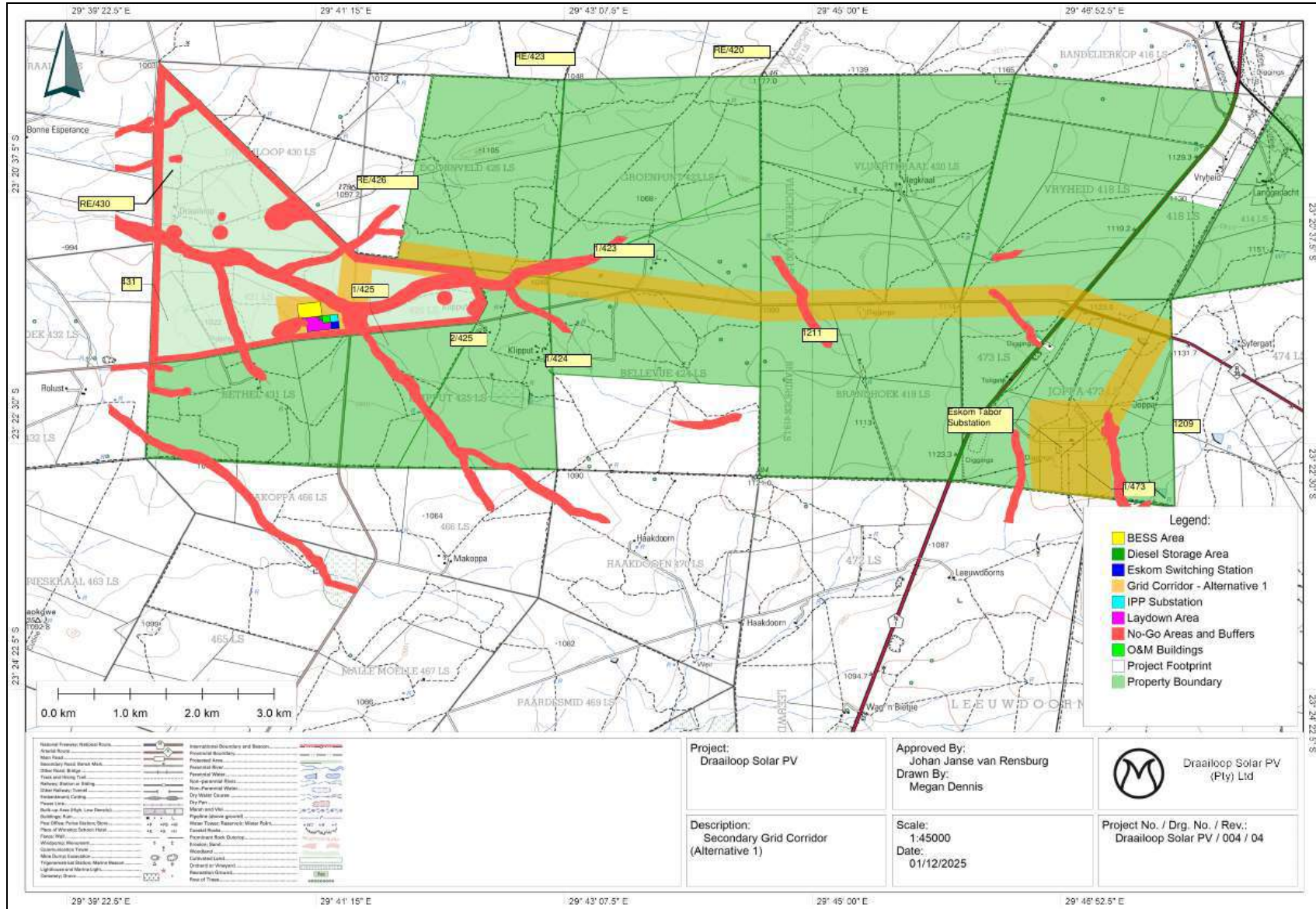


Figure 1.7 Secondary OHL Corridor Layout Diagram provided by client

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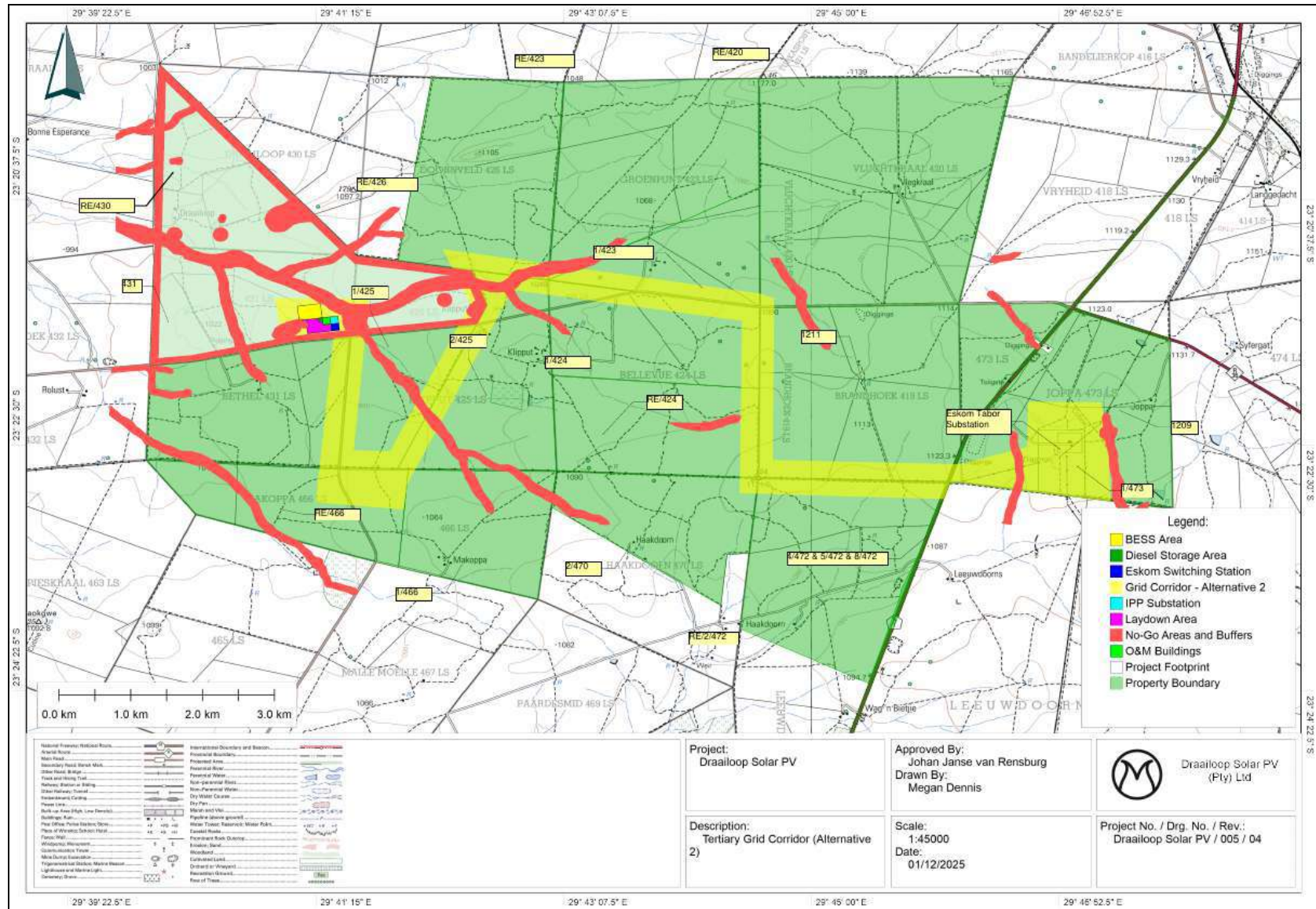


Figure 1.8 Tertiary OHL Corridor Layout Diagram provided by client

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### **1.3. Legislative Framework**

#### **1.3.1 Relevant Acts, Ordinances and By-laws (National, Provincial and Municipal)**

##### National Heritage Resources Act 25 of 1999

- to introduce an integrated and interactive system for the management of the national heritage resources;
- to promote good government at all levels, and empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations;
- to lay down general principles for governing heritage resources management throughout the Republic;
- to introduce an integrated system for the identification, assessment and management of the heritage resources of South Africa;
- to establish the South African Heritage Resources Agency together with its Council to coordinate and promote the management of heritage resources at national level;
- to set norms and maintain essential national standards for the management of heritage resources in the Republic and to protect heritage resources of national significance;
- to control the export of nationally significant heritage objects and the import into the Republic of cultural property illegally exported from foreign countries;
- to enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources;
- to provide for the protection and management of conservation-worthy places and areas by local authorities;
- Section 7 provides a system for evaluating cultural significance - the grading system

##### Integrated Coastal Management Act 24 of 2008

- Integrated coastal and estuarine management, including heritage sites within 1km of the coastline

##### National Environmental Management Act 107 of 1998

- Management of all environmental resources including heritage through the linking clause of S. 38(8) of the NHRA
- There is no specialist specific protocol - so the general protocol is used for impacts to heritage resources



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**Table 1: National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) - Requirements for Specialist Reports (Appendix 6).**

| <b>A specialist report prepared in terms of the Environmental Impact Regulations of 2017 must contain:</b> |                                                                                                                                                                                                                      | <b>Relevant section in report</b> |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| ai                                                                                                         | Details of the specialist who prepared the report,                                                                                                                                                                   | Page 3                            |
| aii                                                                                                        | The expertise of that person to compile a specialist report including a curriculum vitae                                                                                                                             | Page 3                            |
| b                                                                                                          | A declaration that the person is independent in a form as may be specified by the competent authority                                                                                                                | Attached by EAP                   |
| c                                                                                                          | An indication of the scope of, and the purpose for which, the report was prepared                                                                                                                                    | Section 2.1                       |
| ci                                                                                                         | An indication of the quality and age of the base data used for the specialist report: SAHRIS palaeosensitivity map accessed – date of this report                                                                    | Section 2.1 and Section 9         |
| cii                                                                                                        | A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change                                                                                        | Section 5.1                       |
| d                                                                                                          | The date and season of the site investigation and the relevance of the season to the outcome of the assessment                                                                                                       | Section 2.2                       |
| e                                                                                                          | A description of the methodology adopted in preparing the report or carrying out the specialised process                                                                                                             | Section 2                         |
| f                                                                                                          | The specific identified sensitivity of the site related to the activity and its associated structures and infrastructure                                                                                             | Section 5                         |
| g                                                                                                          | An identification of any areas to be avoided, including buffers                                                                                                                                                      | Section 5                         |
| h                                                                                                          | 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;                             | Section 5                         |
| i                                                                                                          | A description of any assumptions made and any uncertainties or gaps in knowledge;                                                                                                                                    | Section 2.3                       |
| j                                                                                                          | A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment                                              | Section 5                         |
| k                                                                                                          | Any mitigation measures for inclusion in the EMPr                                                                                                                                                                    | Section 8                         |
| l                                                                                                          | Any conditions for inclusion in the environmental authorisation                                                                                                                                                      | Section 8                         |
| m                                                                                                          | Any monitoring requirements for inclusion in the EMPr or environmental authorisation                                                                                                                                 | Section 8                         |
| ni                                                                                                         | A reasoned opinion as to whether the proposed activity or portions thereof should be authorised                                                                                                                      | Section 7                         |
| nii                                                                                                        | If the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan | Section 8                         |
| o                                                                                                          | A description of any consultation process that was undertaken during the course of carrying out the study                                                                                                            | Section 6                         |
| p                                                                                                          | A summary and copies of any comments that were received during any consultation process                                                                                                                              | N/A                               |
| q                                                                                                          | Any other information requested by the competent authority.                                                                                                                                                          | N/A                               |
| 2                                                                                                          | Where a government notice gazetted by 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.       | N/A                               |

#### NEMA: Protected Areas Act 57 of 2003

- Management of declared World Heritage Sites and buffer areas within South Africa
- The purpose of the National Environmental Management: Protected Areas Act (Act 57 of 2003) (NEMPAA) is to, inter alia, provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. To this end, it provides for the declaration and management of various types of protected areas.
- Section 39 of NEM:PAA requires the preparation and submission of a management plan for a protected area declared in terms of the Act. The objective of a management plan, as stated in Section 41 of NEM:PAA, is to ensure the protection, conservation and management of the protected area concerned in a manner that is consistent with the objectives of NEMPAA and for the purpose it was declared.
- Section 50(5) of NEM:PAA states that *"no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority."*
- The management authority for a WHS is established through a NEM:PAA process. The MA is located within and funded by the DFFE.
- The MA is tasked with ensuring that activities within the WHS and its buffer area comply with the approved Conservation Management Plan developed for the WHS.

#### World Heritage Convention Act 49 of 1999

- Provides for the incorporation of the World Heritage Convention into South African law;
- Provides for the enforcement and implementation of the World Heritage Convention in South Africa;
- Provides for the recognition and establishment of World Heritage Sites;
- Provides for the establishment of Authorities and the granting of additional powers to existing organs of state;
- Provides for the powers and duties of such Authorities, especially those safeguarding the integrity of World Heritage Sites;
- Provides for where appropriate, the establishment of Boards and Executive Staff Components of the Authorities;
- Provides for integrated management plans over World Heritage Sites;
- Provides for land matters in relation to World Heritage Sites;
- Provides for financial, auditing and reporting controls over the Authorities;
- Provides for the establishment of the World Heritage Convention Committee of South Africa which is responsible for liaison with the World Heritage Convention Committee of UNESCO
- Declared WHS within this assessment area - Richtersveld Cultural Landscape WHS

### 1.3.2 Relevant International Treaties and Conventions

#### UNESCO Convention on the Protection of World Cultural and Natural Heritage, 1972

- Provides a system for the protection of natural and cultural heritage sites which demonstrate importance for all the peoples of the world
- Provides a system for the identification of Outstanding Universal Value (OUV)

#### Burra Charter or the Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (1979)

- Defines the basic principles and procedures to be followed in the conservation of Australian heritage places but is widely used across the world and very much in South Africa today.
- Accepts the philosophy and concepts of the ICOMOS Venice Charter, but wrote them in a form which would be practical and useful in Australia. The Charter is periodically revised and updated (most recent, 2013)
- Recognised as having pioneered the understanding of cultural heritage as going beyond the mere preservation of the built environment.

#### NARA Document on Authenticity (1994)

- Addresses the need for a broader understanding of cultural diversity and cultural heritage in relation to conservation in order to evaluate the value and authenticity of cultural property more objectively.
- "authenticity is an essential element in defining, assessing, and monitoring cultural heritage."
- "authenticity" varies from culture to culture - when authenticity is being assessed for a particular cultural heritage, its underlying cultural context should be considered

#### Convention for the Safeguarding of Intangible Cultural Heritage (2003)

- Intangible Cultural Heritage means the practices, representations, expressions, knowledge, and skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage.
- This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.
- For the purposes of this Convention, consideration will be given solely to such intangible cultural heritage as is compatible with existing international human rights instruments, as well as with the requirements of mutual respect among communities, groups and individuals, and of sustainable development

### 1.3.3 Relevant Guidelines (promulgated and proposed)

HWC Grading: Purpose and Management Implications (2016)

- Although emanating from the Western Cape, this document provides clarity on the grading system outlined in Sections 7 and 8 of the NHRA
- Provides the basis for grading recommendations for heritage resources and the outcomes thereof

SAHRA Minimum Standards: Archaeological And Palaeontological Components Of Impact Assessment Reports, 2007

- Outlines the minimum requirements for impact assessments submitted to SAHRA in terms of section 38 of the NHRA

SAHRA Minimum Standards: Palaeontological Component of Heritage Impact Assessment Reports, 2012

- Outlines the minimum requirements for palaeontological impact assessments submitted to SAHRA in terms of section 38 of the NHRA

### 1.3.4 Any discipline specific permitting requirements

The NHRA describes a number of general protections that apply to heritage resources including:

- Section 34 permit for impacts to structures older than 60 years
- Section 35 permit for impacts to archaeological heritage, palaeontological heritage and meteorites
- Section 36 permit for impacts to burial grounds and graves that fall outside of a municipal cemetery
- Section 38 HIA process for impacts resulting from developments

The NHRA also describes a number of formal protections that apply to heritage resources that have been protected through the placement of a notice in a National or Provincial gazette

- Section 27 permit for impacts to National and Provincial Heritage Sites
- Section 28 permit for impacts to a site that is provisionally protected
- Section 29 permit for impacts to a buffer area around a National or Provincial Heritage Site
- Section 30 and 31 permits for impacts to sites placed on the heritage register or heritage areas

### 1.3.5 Any relevant IFC, Equator Principles or World Bank requirements

#### ***IFC Performance Standard 7: Indigenous Peoples***

Indigenous Peoples, as social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalised and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural



and cultural resources, and may restrict their ability to participate in and benefit from development. Indigenous Peoples are particularly vulnerable if their lands and resources are transformed, encroached upon, or significantly degraded.

Their languages, cultures, religions, spiritual beliefs, and institutions may also come under threat. As a consequence, Indigenous Peoples may be more vulnerable to the adverse impacts associated with project development than non-indigenous communities. This vulnerability may include loss of identity, culture, and natural resource-based livelihoods, as well as exposure to impoverishment and diseases. Private sector projects can create opportunities for Indigenous Peoples to participate in, and benefit from project-related activities that may help them fulfil their aspiration for economic and social development. Furthermore, Indigenous Peoples may play a role in sustainable development by promoting and managing activities and enterprises as partners in development. The government often plays a central role in the management of Indigenous Peoples' issues, and clients should collaborate with the responsible authorities in managing the risks and impacts of their activities.

The primary objectives of Performance Standard 7 are:

- To ensure that the development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples;
- To anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimize and/or compensate for such impacts;
- To promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner;
- To establish and maintain an ongoing relationship based on Informed Consultation and Participation (ICP) with the Indigenous Peoples affected by a project throughout the project's life cycle.
- To ensure the Free, Prior, and Informed Consent (FPIC) of the Affected Communities of Indigenous Peoples when the circumstances described in this Performance Standard are present;
- To respect and preserve the culture, knowledge, and practices of Indigenous Peoples; and
- There is no universally accepted definition of "Indigenous Peoples." Indigenous Peoples may be referred to in different countries by such terms as "Indigenous ethnic minorities," "aboriginals," "hill tribes," "minority nationalities," "scheduled tribes," "first nations," or "tribal groups."

The term "Indigenous Peoples" is used in a generic sense to refer to a distinct social and cultural group possessing the following characteristics in varying degrees:

- Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;

- Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- Customary cultural, economic, social, or political institutions that are separate from those of the mainstream society or culture; or
- A distinct language or dialect, often different from the official language or languages of the country or region in which they reside.

Projects shall seek input from competent professionals to ascertain whether a particular group is considered as Indigenous Peoples. Compliance with this IFC Performance Standard is ensured through other aspects of the impact assessment process such as social surveys and public participation and as such, this IFC PS is not addressed in this report.

### ***IFC Performance Standard 8 - Cultural Heritage (2012)***

This principle recognises the importance of cultural heritage for current and future generations. Consistent with the Convention Concerning the Protection of the World Cultural and Natural Heritage, this Performance Standard aims to ensure that clients protect cultural heritage in the course of their project activities. In addition, the requirements of this Performance Standard on a project's use of cultural heritage are based in part on standards set by the Convention on Biological Diversity.

The primary objectives of Performance Standard 8 are:

- To protect cultural heritage from the adverse impacts of project activities and support its preservation; and
- To promote the equitable sharing of benefits from the use of cultural heritage. Cultural heritage refers to:
  - Tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values;
  - Unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls; and
  - Certain instances of intangible forms of culture that are proposed to be used for commercial purposes, such as cultural knowledge, innovations, and practices of communities embodying traditional lifestyles.

With respect to intangible cultural heritage, where a project proposes to use the cultural heritage, including knowledge, innovations, or practices of local communities for commercial purposes, the client will inform these communities of

- (i) their rights under national law;

- (ii) the scope and nature of the proposed commercial development; and
- (iii) the potential consequences of such development.

The client will not proceed with such commercialisation unless it

- (i) enters into a process of ICP as described in Performance Standard 1 and which uses a good faith negotiation process that results in a documented outcome and
- (ii) provides for fair and equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions.

No such commercialisation is anticipated as part of this project.

### 1.3.6 Discussion

#### NATIONAL HERITAGE RESOURCES ACT (1999)

Heritage resources significant enough to be considered part of the national “estate” in Section 3(2) of the NHRA, and may include *inter alia*:

- Places, buildings, structures and equipment of cultural significance;
- Places to which oral traditions are attached or which are associated with living heritage;
- Historical settlements and townscapes;
- Landscapes and natural features of cultural significance;
- Geological sites of scientific or cultural importance;
- Archaeological sites and objects;
- Graves and burial grounds;
- Sites of significance relating to the history of slavery in South Africa;
- Moveable objects including military objects, fine art, books records, documents, archaeological and paleontological objects, and materials.

Cultural heritage significance means aesthetic, historical, scientific, architectural, spiritual, technological or/and social significance. The process of deciding why a place is of heritage significance is called heritage assessment. Understanding heritage significance is essential to making sound decisions about the future of the heritage resource, to assess development proposals and to ensure the appropriate level of heritage management.

A culturally significant resource or site is considered part of the national estate if it has cultural significance or any other special values due to:

- Its importance in the community, or pattern of South Africa’s history;
- Its possession of uncommon, rare or endangered aspects of South Africa’s natural or cultural history;



- Its potential to yield information that will contribute to an understanding of South Africa natural or cultural heritage;
- Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- Its strong association with a particular community or cultural group for social, cultural or spiritual reasons;
- Its strong and special association with the life or work of a person, group or organisation of importance in the history of south Africa;
- Sites of significance in relations to the history of slavery (Section 3[3] NHRA).

The National Heritage Resources Act (Act 25 of 1999) provides a mechanism for the management of heritage resources of cultural significance. The NHRA envisages a three tier system of management of heritage resources, namely National, Provincial and Local.

Specific management tools are available to Local Authorities for heritage resource management. In terms of section 8(4) of the National Heritage Resources Act, "A local authority is responsible for the identification and management of Grade III heritage resources and heritage resources which are deemed to fall within their competence in terms of this Act".

Registered Conservation Bodies play an extremely important role in assisting with the identification of heritage resources which are important to the community, and can provide local knowledge in determining their significance. The benefits to Local Authorities in implementing heritage management in terms of the NHRA include the protection of local resources, giving certainty to local property owners as to what is and is not protected, and enabling them to have their applications dealt with at a local level. The specific management tools provided for in the NHRA include:

- Grading (Sections 7 and 8 of the NHRA)
- Surveys (Section 30 of the NHRA)
- Heritage Registers (Section 30 of the NHRA)
- Heritage Areas (Section 31 of the NHRA)

### ***Grading***

The NHRA requires that all heritage resources be graded in order to assign the appropriate level of management responsibility (i.e. Local, Provincial or National spheres of governance) to a heritage resource and to indicate its significance. Significance is key to assessing grading and is the primary tool in defining heritage management.

The identification of significant heritage resources is a requirement of the National Heritage Resources Act, No 25 of 1999 (NHRA). NHRA Section 7 (1) makes provision for the establishment of a system of grading places and objects which form part of the national estate, and which distinguishes between at least the following categories:

- Grade I: Heritage resources with qualities so exceptional that they are of special national significance and thus should be declared national heritage sites;
- Grade II: Heritage resources which although forming part of the national estate can be considered to have special qualities which make them significant within the context of a province or a region and thus should be declared provincial heritage sites; and
- Grade III: Other conservation-worthy heritage resources, which should be entered on the provincial heritage register and protected in terms of the local planning system. Grade III resources are further categorised into IIIA, IIIB and IIIC resources of High Local, Moderate Local and Contextual Significance respectively.

This system needs to prescribe certain assessment criteria, consistent with the criteria set out in section 3(3) of the NHRA. These must be used to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and cost of its protection so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated.

Grading is an important step in the process towards (but not necessarily leading to) the formal protection of a heritage resource, such as declaration as a National Heritage Site, Provincial Heritage Site, or, in the case of Grade III heritage resources, the placing of a heritage resource on the Heritage Register. It is not an end in itself, but a means of establishing an appropriate level of management to proceed with future formal protection.

In terms of grading, we will be following the recommended grading system included in the HWC Grading Policy document.

### ***Legislative Mandate***

The National Heritage Resources Act (NHRA, Act 25 of 1999) primarily employs two mechanisms to ensure the effective conservation and management of significant heritage resources. These mechanisms are the Formal Protections detailed in Part I of Chapter II of the NHRA and the General Protections detailed in Part II of Chapter II of the NHRA. Formal Protections include the declaration of National and Provincial Heritage Sites, Heritage Areas as well as the establishment of the Heritage Register. The General Protections include permitting requirements for alterations to structures that are older than 60 years (Section 34) and permit requirements for impacts to archaeological and palaeontological heritage resources (Section 35), amongst others.



Applications for renewable energy developments, in general, fall under section 38 of the NHRA, a section that falls within Part II of Chapter II - the General Protections. This section of the heritage legislation is triggered by developments of a certain scale, size or nature such as the change of character to a site exceeding 5000m<sup>2</sup> or a linear development exceeding 300m. Section 38(8) of the NHRA specifically deals with such developments that also trigger other legislation that requires an assessment of impacts, for example, in terms of NEMA.

Section 38(8) of the NHRA requires that any assessment of impacts from such developments also include an assessment of impacts to heritage resources that satisfies certain criteria detailed in section 38(3) of the NHRA. Section 38(8) also requires heritage authorities to comment on such heritage impact assessments, and that the relevant decision-making authorities (such as the DFFE) take this comment into consideration prior to issuing the authorisation (such as the Environmental Authorisation or equivalent). This is to ensure that any significant heritage resources that may be impacted by the proposed development are identified and appropriately managed or mitigated against impacts prior to authorisation.

In terms of section 38(3) of the NHRA, it is required that impacts to all heritage resources be assessed in an HIA. "All heritage resources" includes archaeological heritage, palaeontological heritage, the built environment as well as the cultural landscape more broadly. This HIA is drafted to satisfy this requirement.

## **2. METHODOLOGY**

### **2.1 Purpose of HIA**

The purpose of this Heritage Impact Assessment (HIA) is to satisfy the requirements of section 38(8), and therefore section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

### **2.2 Summary of Steps Followed**

- A Desktop Study was conducted of relevant reports previously written (please see the reference list for the age and nature of the reports used)
- An archaeologist conducted an assessment of archaeological resources likely to be disturbed by the proposed development. The archaeologists conducted their site visit from 24 to 27 July 2024.
- As a result of the consultation process undertaken, gaps were identified in the heritage process and a subsequent site visit was undertaken on 25 and 26 November 2025.
- The identified resources were assessed to evaluate their heritage significance and impacts to these resources were assessed.
- Alternatives and mitigation options were discussed with the Environmental Assessment Practitioner

### **2.3 Assumptions and Uncertainties**

- The *significance* of the sites and artefacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.
- It should be noted that archaeological and palaeontological deposits often occur below ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted, and it would be required that the heritage consultants are notified for an investigation and evaluation of the find(s) to take place.

However, despite this, sufficient time and expertise was allocated to provide an accurate assessment of the heritage sensitivity of the area.

### **2.4 Constraints & Limitations**

The presence of wild buffalo on certain areas of the PV farms required a staff escort and it was not possible to roam freely on foot throughout these sections. The grid connections, for the most part, did not have dangerous game animals and these were easily navigated using the existing jeep tracks within the farms and connecting roads before completing smaller sections on foot where no tracks exist. The vegetation cover ranges from thick to

light and a number of older ploughed fields can be seen on the historical satellite imagery which accounts for the cleared areas observed during the survey as well as the generally low artefact counts in the previously ploughed fields. The highest sensitivities were located at the granite outcrops and these have not been heavily disturbed as the agricultural fields were established around them.

## 2.5 Impact Assessment Methodology

Direct, indirect and cumulative impacts of the issues identified through the Basic Assessment process were assessed in terms of the following criteria:

- The nature, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The extent, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high).
- The duration, wherein it will be indicated whether:
  - The lifetime of the impact will be of a very short duration (0 – 1 years) – assigned a score of 1.
  - The lifetime of the impact will be of a short duration (2 – 5 years) – assigned a score of 2.
  - Medium-term (5 – 15 years) – assigned a score of 3.
  - Long term (> 15 years) – assigned a score of 4.
  - Permanent – assigned a score of 5.
- The consequences (magnitude), quantified on a scale from 0 – 10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The probability of occurrence, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1 – 5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The significance, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high.
- The status, which will be described as either positive, negative or neutral.
- The degree to which the impact can be reversed.
- The degree to which the impact may cause irreplaceable loss of resources.
- The degree to which the impact can be mitigated.

The significance is calculated by combining the criteria in the following formula:

$$S = (E + D + M) \times P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area).
- 30 – 60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated).
- > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

### 3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

#### 3.1 Desktop Assessment

##### 3.1.1 Background

This application is for the proposed development of a PV facility cluster located near Bandelierkop, south of Louis Trichardt, in the Limpopo Province. According to Raper et al (2018) in the Dictionary of Southern African Place Names, Bandolierskop is a “*Village some 35 km south-west of Louis Trichardt, on the route from Pietersburg to Beit Bridge. Afrikaans for ‘bandolier hill’; said to have been named after an incident in which a burgher, Jan du Preez, was sent back to fetch the bandolier he had left behind when the commando struck camp.*”

##### 3.1.2 History, Background, Archaeology and Built Heritage

Van Schalkwyk (2007, SAHRIS NID 8026) provides a very detailed background and history of the surrounding area. Only the relevant points are summarised here:

##### Stone Age

- Early Stone Age and Middle Stone Age tools in the area are often found near rivers and outcrops, but these surface finds are of low significance. The study area falls in a relatively flat area, with three smaller koppies around the edges (Molemole and Maokgwe in Figure 3.2).
- The Late Stone Age saw recurring occupations in rock shelters and caves, particularly in areas like Soutpansberg and the Limpopo River.
- Evidence includes ostrich eggshell beads, bone arrowheads, small stones, and wood fragments.
- Rock art from this period indicates complex religious beliefs.

##### Iron Age

- Iron Age settlements start appearing around AD 300, with notable sites like Silver Leaves near Tzaneen.
- By AD 800, villages in the Limpopo River valley expanded due to East Coast trade.
- Climate changes and trade shifts by AD 1250 led to the abandonment of some areas.
- Large-scale occupation occurred in the 16th century, with farmers moving into previously unsuitable areas due to warmer and wetter climates.
- Defensive stone-walled settlements were built on hilltops near water and arable land.

##### Historic Period

- European settlers arrived in the early 19th century as hunters, traders, and missionaries, followed by settlers. “*The first European group to pass close by the area were that of Coenraad de Buys in 1821 and 1825, followed by groups of Voortrekkers after 1844 (Bergh 1999: 12-14).*” (Pelser 2019, SAHRIS NID 523228).
- Schoemansdal was one of the first European settlements. “*Schoemansdal (originally Zoutpansbergdorp) was established in 1848, and finally abandoned as a result of conflict with local groups in July 1867 (Bergh 1999: 131; 187). The town of Louis Trichardt was formally established in February 1899 (Bergh 1999: 147).*”

(Pelser 2019, SAHRIS NID 523228)

- Gold discovery at Eersteling spurred mining activity.
- The region saw skirmishes during the Anglo-Boer War, such as at Rhenosterpoort and Fort Marabastad, but none of these skirmishes appear to have taken place in the study area. Pelser (2019, SAHRIS NID 523228) mentions “*During the Anglo-Boer war (1899- 1902) there was a skirmish between British and Boer forces at Fort Edward near Louis Trichardt between 20 and 28 March 1902 (Bergh 1999: 54).*” Elim is located approximately 30km from the study area in a northeasterly direction.

### Ethno-Historical Sequence

- The northern section of Van Schalkwyk’s study area (2007) was predominantly inhabited by Tlokwa people, originally from Tlokweng near Potchefstroom, who moved north before 1700.
- The southern section of Van Schalkwyk’s study area (2007) was notably diverse, with Ndebele and Sotho-speaking groups from various origins.
- The Berlin Mission Society established schools and hospitals from the mid-1800s, contributing to the social and political development of the Sotho-speakers and documenting their early colonial history. Their activity continued until 1962.

Archaeological sites spanning the Earlier, Middle and Later Stone Age have been found in the region despite the limited amount of impact assessments in the near vicinity. In 2001, Roodt conducted an HIA that partially intersects with the study area (SAHRIS NID 6243). Roodt described the environment as “*arid bushveld which is generally in a good condition, although the area on the Farm Joppa has been encroached by Dichrostachys (sickle bush), indicating recent over-exploitation.*” During the field survey, two Iron Age sites were identified (SAHRIS ID 36961 and 36962). Site 1 consists of a single potsherd, but it was noted that the full extent could not be determined due to the limited scope of the survey. Site 2 consists of an ash midden with associated pottery and dung deposits. The sites as well as mitigations suggested by Roodt are discussed in Table 2 below. Roodt also noted that neither site warrants specific protection status. In another AIA by Stegman and Roodt (2008, SAHRIS NID 7266) located approximately 10km south of the study area, no archaeological resources were noted.

**Table 2: Known sites from SAHRIS located within the study area (Roodt 2001, SAHRIS NID 6243)**

| SAHRIS ID, Site No and Name                     | Description                                                                                                                                                                                                                                                                                                                                                                                                     | Grade | Mitigation                                                                                                                                                                                                                                       |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>62101</b><br>BAN001,<br>Banderlierkop<br>001 | Site 1: This site contained only one decorated potsherd. Decoration is limited, with the result that the cultural identity could not be identified positively. The extent of this site could not be established within the scope of this scoping exercise.                                                                                                                                                      | IIIb  | Site 1 is to be re-evaluated during the construction phase when the clearing of bush and earthworks has commenced. This will allow for an informed decision on whether or not mitigation for cultural, resource management measures is required. |
| <b>62102</b><br>BAN002,<br>Banderlierkop<br>002 | Site 2: This site contains clear deposits of grayish ash deposits with pottery as well as possible dung deposits. Previous damage had been done to the Site by the existing road and access road for the existing powerline. A preliminary identification of the pottery would suggest it being of a variant of the Moloko type pottery (early Sotho/Tswana), which could date to the 15 <sup>th</sup> century. | IIIb  | A phase two assessment of Site 2 to be mitigated before construction work commences.                                                                                                                                                             |

There are several historical werfs located within the study area, such as Klipput and Draailoop. These werfs are likely to have heritage value and may conserve small farm graveyards, which need further inspection. There is also Ga-Phasha cemetery located just north of Ga-Pasha (Figure 3.2). All burials are considered to have high levels of local social and spiritual significance and as such, are graded IIIA. Due to this high level of significance, it is recommended that a no-development buffer of 100m is implemented around these sites. Often, informal burials can be located on the outskirts of formal cemetery areas. As such, this buffer is recommended to ensure the retention of the sense of place for this burial site, and to ensure that no hidden and unmarked burials are unintentionally impacted by the proposed development. Based on the layout provided, no impact to the identified cemetery or any possible buried remains is anticipated.

### 3.1.3 Palaeontology

According to the SAHRIS Palaeosensitivity Map the development sites are underlain by sediments of very LOW fossil sensitivity (Figure 4). The proposed development is underlain with **Matok Granite** (Coarse-grained, porphyritic, pink and grey biotite granite, in places hornblende granite), and **Goudplaats-Hout River Gneiss** (Leucocratic, strongly migmatised biotite gneiss and greyish, weakly migmatised biotite gneiss; minor leucogneiss and dark grey biotite gneiss). Both these formations have **Insignificant or Zero** Palaeontological sensitivity.

The third formation that is present in the study area is the **Bandelierkop Formation** ( Predominantly volcanic igneous rocks, plus some igneous intrusions, minor sediments such as banded iron formation, chert, quartzite, conglomerate, and schists) which has **Low** Palaeontological Sensitivity. According to the Palaeotechnic report for Limpopo (Groenewald & Groenewald, 2014) this formation is known for “*Archaean microfossils and microbial trace fossils (bacterial borings) which have been recorded from cherts and volcanic glasses in similar-aged greenstone belts elsewhere in RSA (e.g. Fig Tree Group & Onverwacht Group of Barberton Greenstone Belt, Mpumalanga & Swaziland). “Fly speck carbon” in sedimentary Uitkyk Fm of the Pietersburg Greenstone Belt, Limpopo, may be fossilised microbes, or alternatively of inorganic origin (e.g. an inorganic precipitate induced by radioactive irradiation).*”

It is unlikely that the proposed development will have a significant impact on palaeontological resources and no further assessments are required.

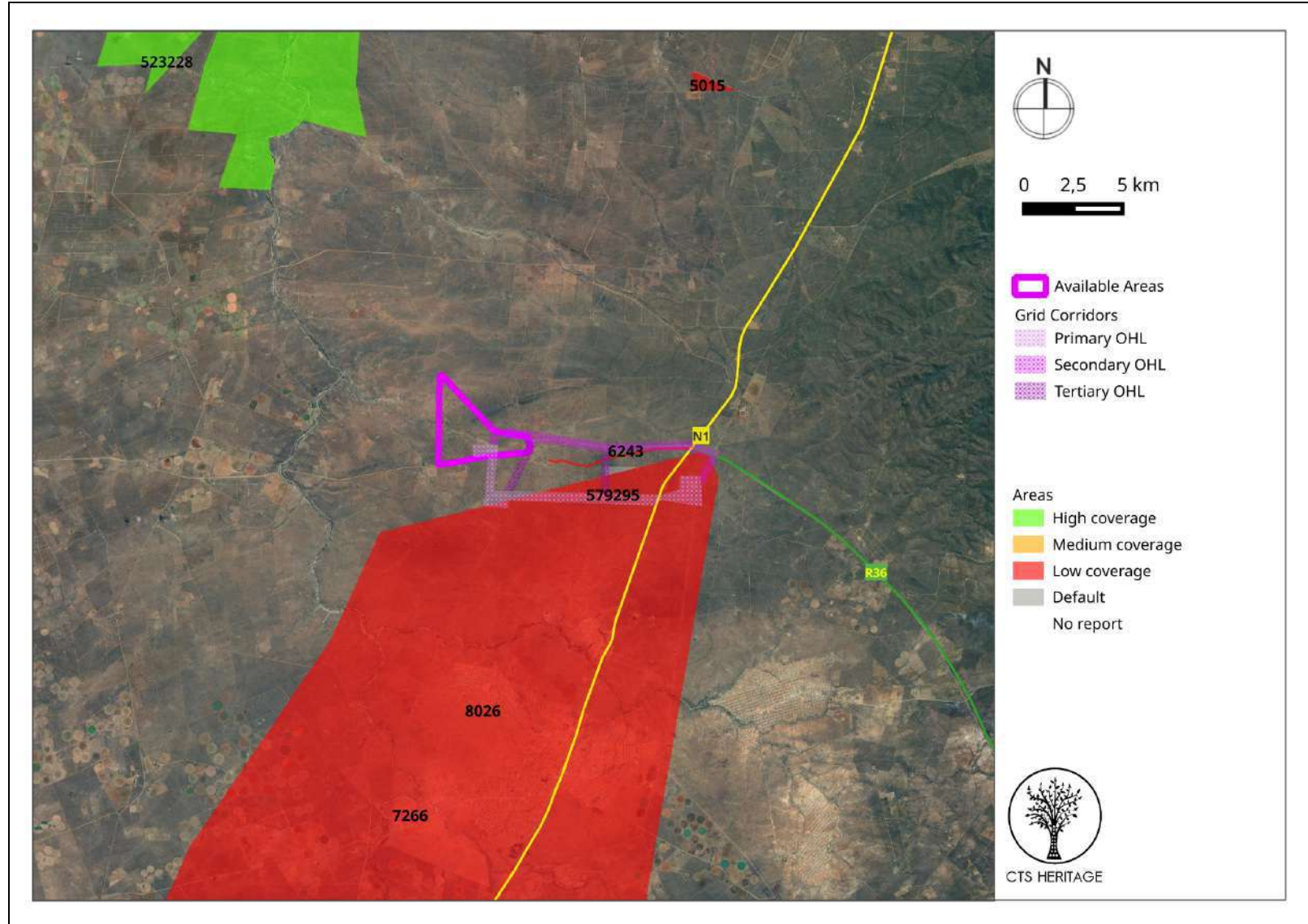
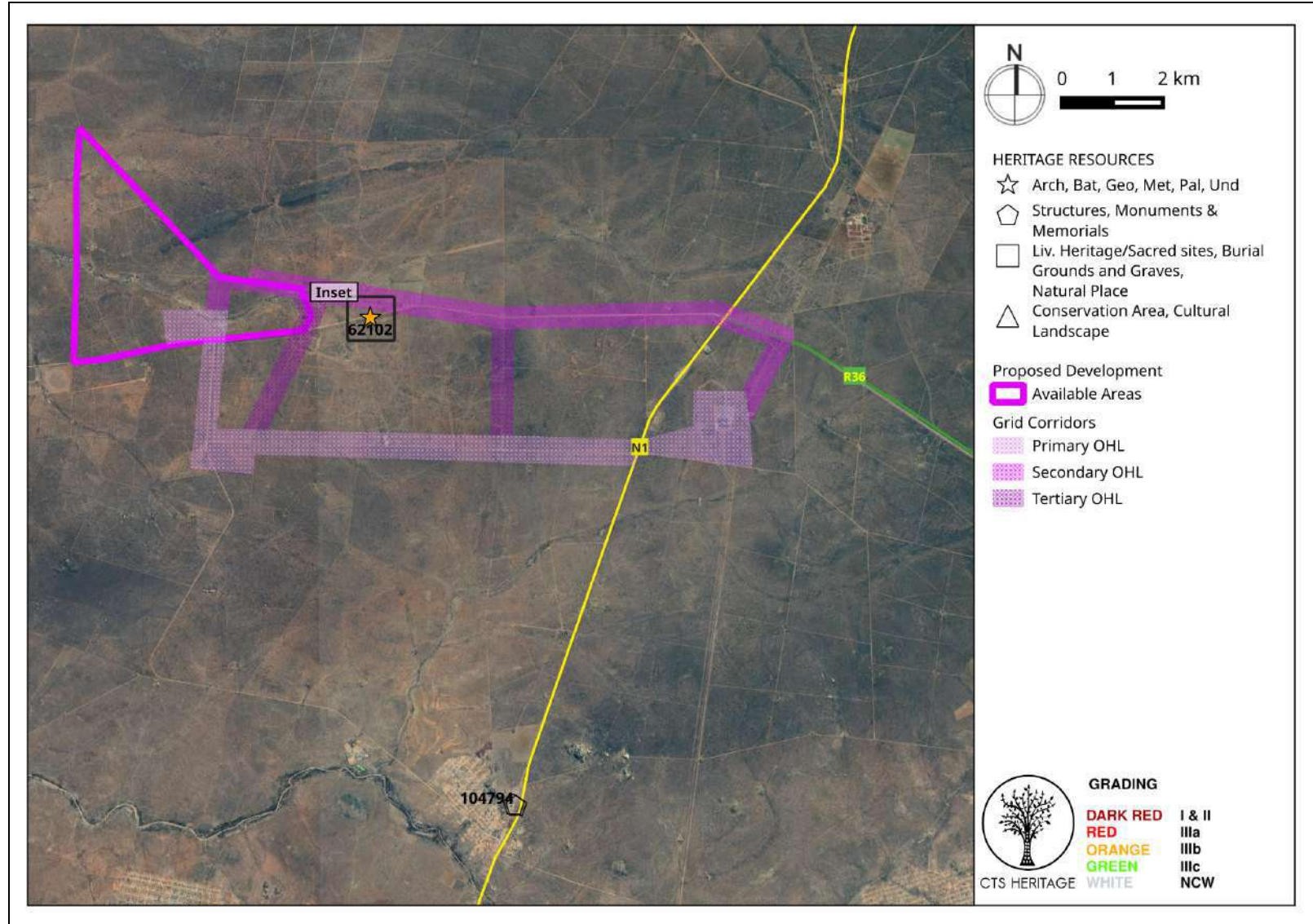
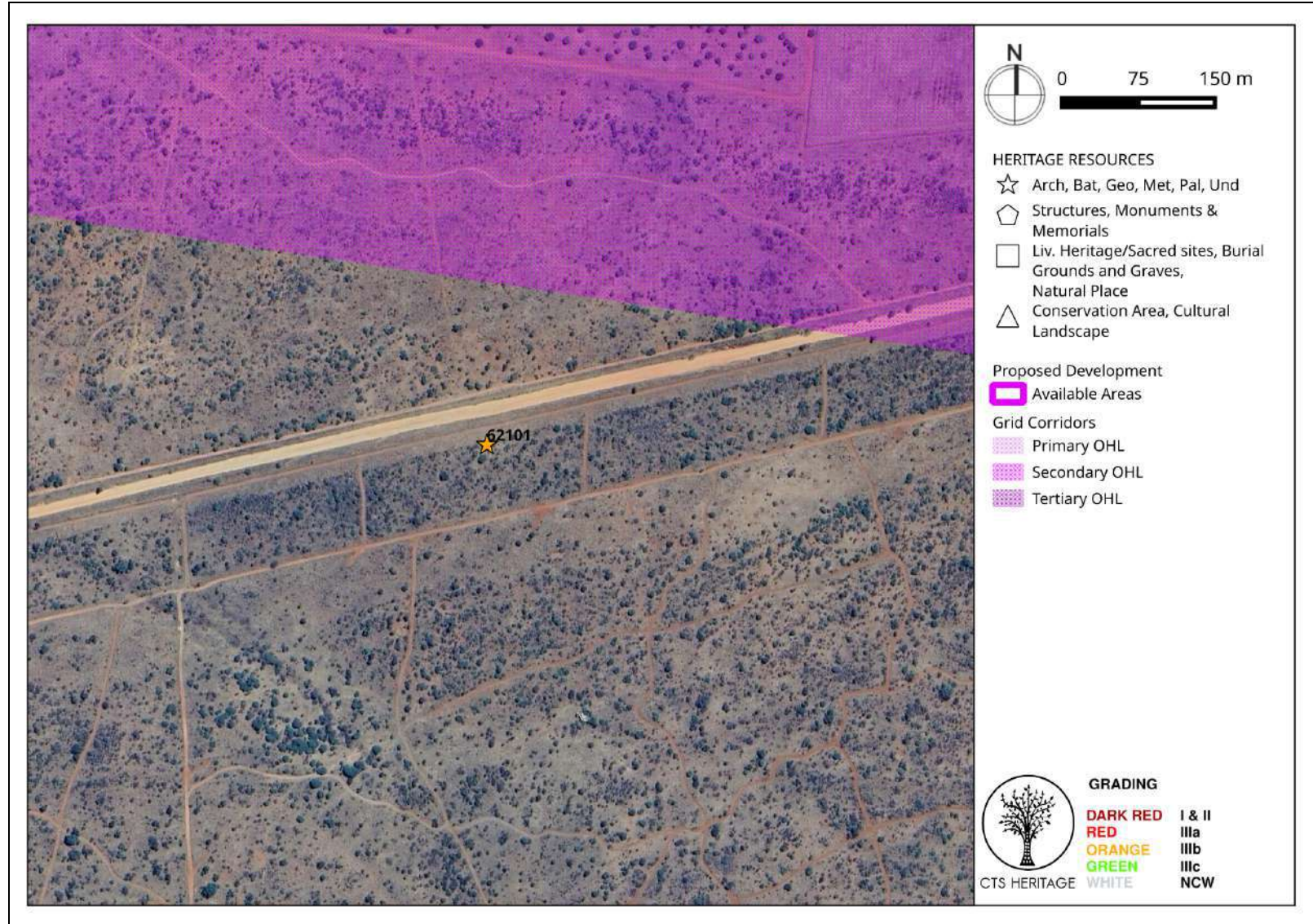


Figure 2: Spatialisation of heritage assessments conducted in proximity to the proposed development



**Figure 3.1 Heritage Resources Map.** Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated.



**Figure 3.2 Heritage Resources Inset Map A.** Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated.



CTS HERITAGE

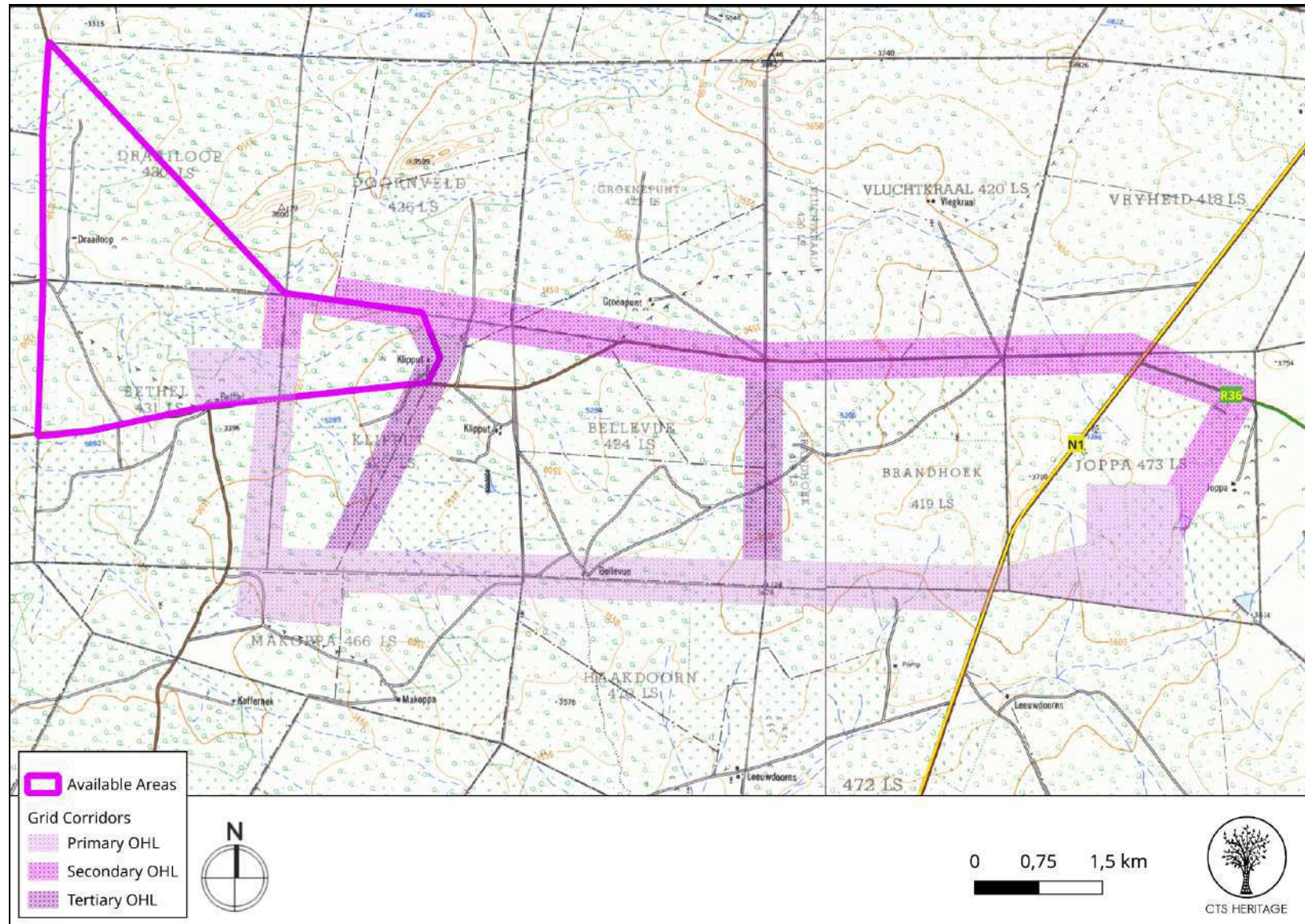
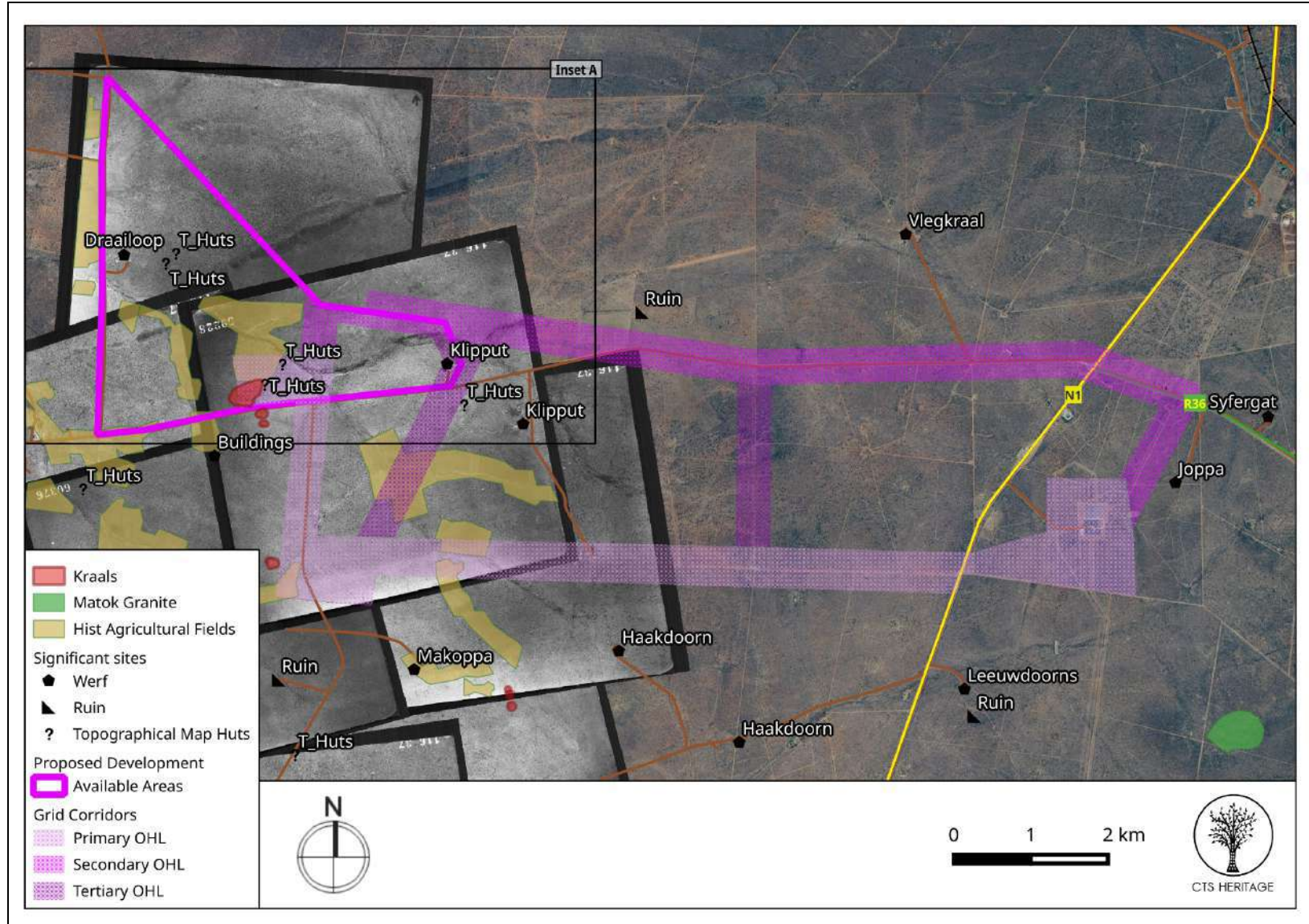
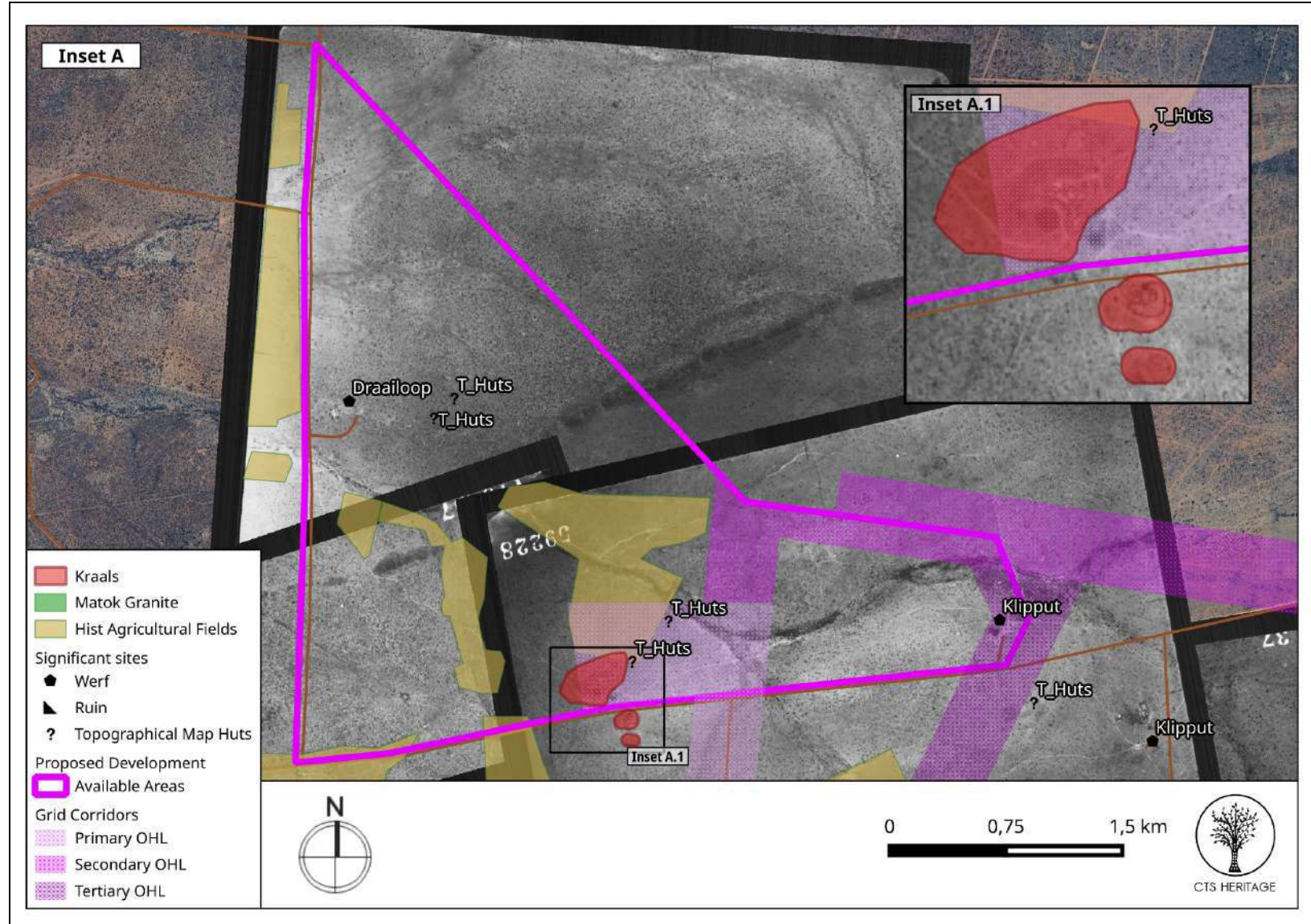


Figure 3.3 First Edition Topo Map. First Edition Topo Map indicating historical farm werfs that still exist

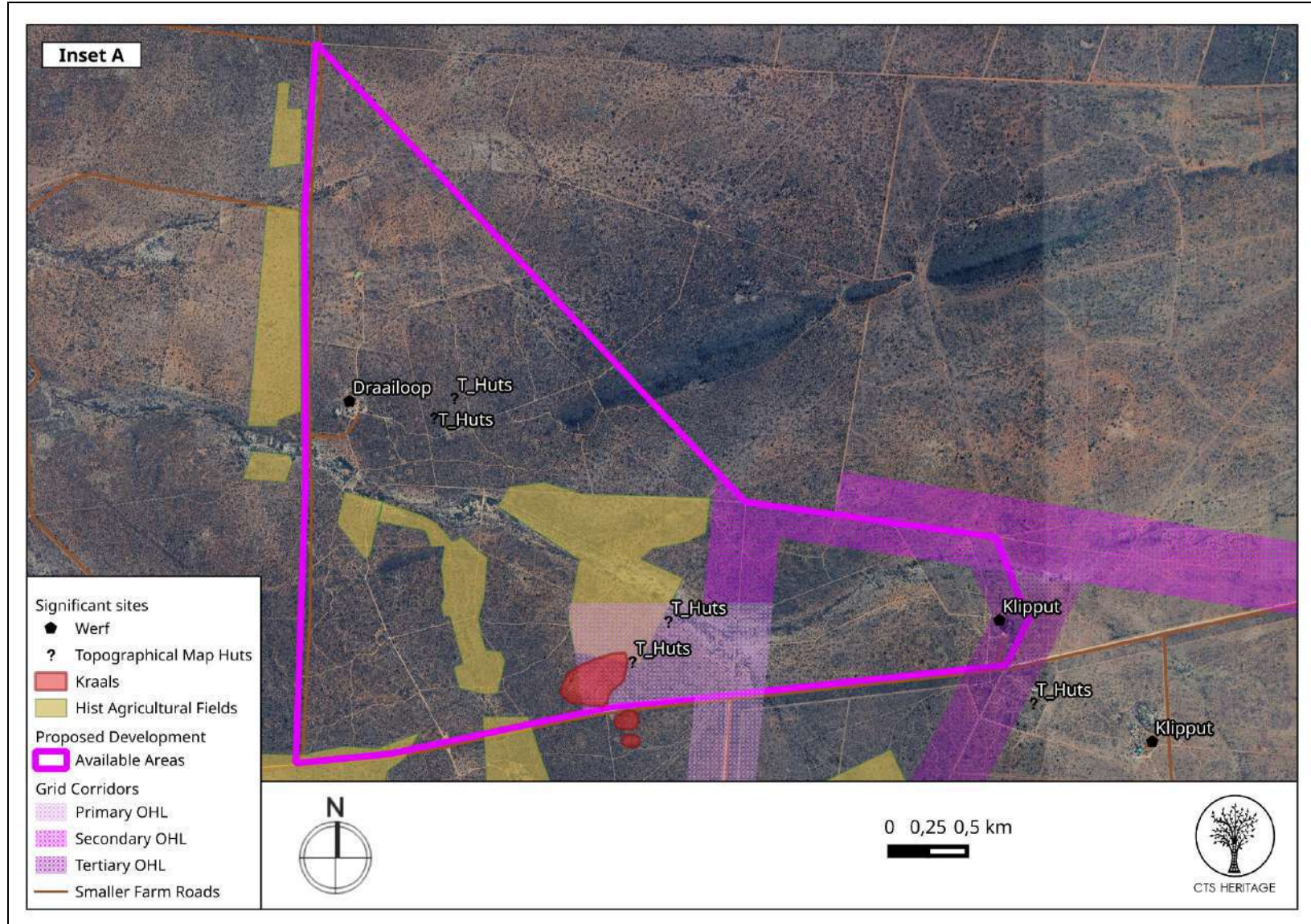


**Figure 3.4 Georectified Historical Aerial Photographs (1937)** indicating existence of kraals and agricultural fields in 1937



**Figure 3.5 Georectified Historical Aerial Photographs (1937)** indicating existence of kraals and agricultural fields in 1937





**Figure 3.7 Cultural Landscape Map.** Map indication sensitive receptors near the proposed development, extracted from the Topo 1:50 000 map.

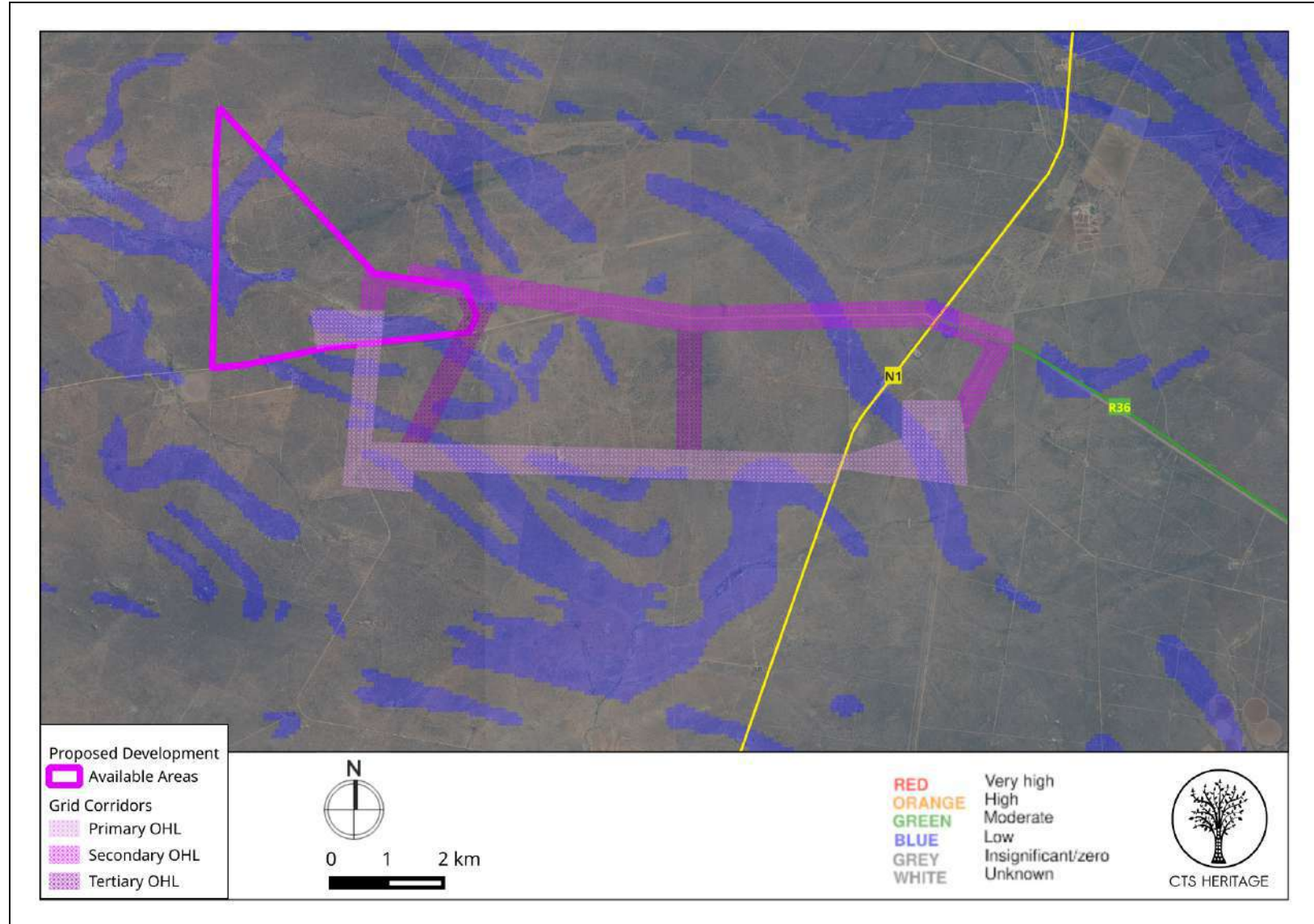


Figure 4: Palaeontological sensitivity of the proposed development area

### 3.2 Land Claims

There is an ongoing land claims process for properties impacted by this proposed development (KRP 5564, gazetted through notice 948 of 2006 on 14 July 2006). The issue of the land claim was raised through the consultation process undertaken for the proposed development.

In a comment received from Mr Malefo dated 13 November 2025, it is noted that *“This land, the entire Tabor cluster encompassing Draailoop, Bethel, Klipput and Makoppa and the farms beyond, is not merely a “site” for a PV project. It is the cradle and the graveyard of the Chatleka people and related communities.”*

The land claim is disputed by the current owners and is going through a legal process in terms of the relevant legislation. Following the receipt of comments on the Heritage Impact Assessment, a public engagement was held with the affected community and elders were requested to identify the location of sites of ongoing cultural value to ensure that the heritage impact assessment is comprehensive and addresses all resources present within the development area.

### 3.3 Intangible Heritage

Intangible heritage refers to the practices, knowledge, skills, and expressions—such as oral traditions, performing arts, social practices, rituals, and craftsmanship—that communities recognize as part of their cultural identity. It is often called “living heritage” because it is transmitted from generation to generation and adapts over time, providing communities with a sense of continuity and belonging. The NHRA recognises “Places to which oral traditions are attached or which are associated with living heritage” as part of the National Estate. This can include:

- **Practices and knowledge:** This includes knowledge and skills concerning nature and the universe, as well as traditional craftsmanship and artisanal practices.
- **Expressions:** Examples include oral traditions like myths and stories, performing arts such as music and dance, social practices, rituals, and festive events.
- **Transmission:** It is passed down through generations, constantly being recreated and evolving in response to changing environments and social contexts.
- **Significance:** Intangible heritage is important for reinforcing cultural identity, promoting social cohesion, and fostering respect for cultural diversity.

The Heritage Impact Assessment process must assess impacts to heritage resources resulting from the proposed activity. Impacts to places associated with cultural activities can be mitigated through the identification and protection of these places using mechanisms such as buffers to ensure that the design of the development



respects these places. Opportunities for ongoing cultural activities within the development area can be negotiated with the landowner and developer through the recommended Conservation Management Plan.

It is clear that the CPA holds important knowledge regarding the oral history of the Batlokwa ba Chatleka community. It is recommended that engagement with an appropriate academic institution take place urgently to ensure that this oral history is accurately recorded and documented through an academic process.

The CPA has identified burials and spaces within the area proposed for development as associated with their living heritage. In lieu of specific location information from the CPA, additional research was undertaken to identify places that have or may have cultural heritage value. An additional site visit was also undertaken to ground-truth the identified sites. The results of this analysis are included in the report.

#### **4. IDENTIFICATION OF HERITAGE RESOURCES**

##### **4.1 Summary of Findings of Specialist Reports**

###### **4.1.1 Archaeology (Appendix 1)**

The most significant findings were made on the granite outcrops at Bethel/Makoppa and near the grid connection route through Klipput. Later Stone Age fine line paintings have not been recorded in great numbers in the immediate area and the site found in the small granite outcrop is similar to sites further north in the Soutpansberg. The other granite outcrop at Klipput is much larger and a number of modern chalets and historical stone kraals have been built right up against the outcrop. A small shelter containing hundreds of Iron Age pottery sherds was found and isolated stone tool flakes and more sherds can be found all over the outcrop. Another Iron Age find was made at Langgedacht in the grid connection route which consisted of isolated pottery sherds and quartz flakes.

The majority of the farm werfs date to the late 19th and early 20th century with several alterations and newer buildings present. Historical graveyards related to the families at Draailoop and Klipput were recorded with separate graves and ruined dwellings at Bethel and Klipput for farmworkers and their relatives. It was surprising to see relatively low artefact counts but later checks through the historical satellite imagery showed the large number of previously ploughed fields in the PV areas which are now fallow for the game farming and hunting businesses. This explains the highly disturbed and unnaturally level ground present across much of the PV areas.

Following the receipt of additional information emanating from the Public Participation Process, further analysis was completed using historic aerial imagery and an additional site visit was undertaken. A number of additional burial sites and settlement areas were identified. These additional observations are included in Table 3.2 and are mapped in Figures 5.1 to 5.6.

## 4.2 Heritage Resources Identified

In terms of the heritage resources identified in the archaeological field assessment, see Table 3.1 and 3.2 below and Appendix 1 for full descriptions and images.

**Table 3.1: Artefacts identified during the field assessment development area**

| POINT ID | Description                                                                                                                                              | Density  | Type                         | Period                      | Co-ordinates |           | Grading | Mitigation     |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------|-----------------------------|--------------|-----------|---------|----------------|
| 9        | Grave, recently formalised with palisade fencing and headstone, 1871-1959. Mathedimosa Motatanye                                                         | n/a      | Graves/<br>Burial<br>Grounds | Historic                    | -23,385478   | 29,68764  | IIIA    | 100m<br>Buffer |
| 11       | Upper grindstone, granite, on granite outcrop, quartz flakes. Rock art on overhanging surface 2x1m. At least 3 faded human figures, holding hunting bags | 10 to 30 | Artefacts,<br>Rock Art       | LSA                         | -23,38966    | 29,68092  | IIIA    | 50m<br>Buffer  |
| 12       | Thin walled LSA pottery and quartz core on top of outcrop. Ochre burnish                                                                                 | 0 to 5   | Artefacts                    | LSA                         | -23,389924   | 29,68069  | IIIC    | 20m<br>Buffer  |
| 25       | Haasbroek family graves. 9 graves 1950s to 1990s.                                                                                                        | n/a      | Graves/<br>Burial<br>Grounds | Modern                      | -23,34813    | 29,669737 | IIIA    | 100m<br>Buffer |
| 36       | Quartz core, flakes, IA pottery                                                                                                                          | 5 to 10  | Artefacts                    | LSA, Iron<br>Age            | -23,347638   | 29,820919 | IIIC    | 20m<br>Buffer  |
| 37       | Mathoko graves, 2. 2012 and 2013 surrounded by fence and near ruins. IA pottery MSA quartzite flakes                                                     | 10 to 30 | Artefacts,<br>Graves         | MSA,<br>Iron Age,<br>Modern | -23,361102   | 29,708584 | IIIA    | 100m<br>Buffer |
| 38       | 2 farmers graves, 1929, Venter family, fenced                                                                                                            | n/a      | Graves/<br>Burial<br>Grounds | Historic                    | -23,365774   | 29,716675 | IIIA    | 100m<br>Buffer |
| 41       | Klipput stone walled kraals, large stones in rectangular walls, historical                                                                               | n/a      | Ruin                         | Historic                    | -23,36267    | 29,71548  | IIIB    | 100m<br>Buffer |
| 44       | Little shelter with deposit and lots of IA pottery sherds                                                                                                | 30+      | Artefacts                    | Iron Age                    | -23,361959   | 29,715563 | IIIA    | 50m<br>Buffer  |
| 45       | Tropic of Capricorn monument                                                                                                                             | n/a      | Monument                     | Modern                      | -23,437303   | 29,745109 | IIIC    | 20m<br>Buffer  |
| 46       | Roadside monument marking Simon Matime, 2018                                                                                                             | n/a      | Memorial                     | Modern                      | -23,44253    | 29,74376  | IIIC    | 20m<br>Buffer  |



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**Table 3.2: Observations noted during the November 2025 field assessment (outlined in Yellow on Figure xxx)**

| POINT ID | Description                                                                                                                             | Density | Type                  | Period               | Co-ordinates |           | Grading | Mitigation  |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|----------------------|--------------|-----------|---------|-------------|
| R2       | Matjutla family graves, 4 with clear brick construction and headstones, at least another 14 with stone cairns, more ephemerally marked. | n/a     | Graves/Burial Grounds | Historical           | -23.362824   | 29.687466 | IIIA    | 100m Buffer |
| R3       | Ruined hut floor marked with stones, historical.<br>Another stone-lined hut floor                                                       | n/a     | Ruin                  | Historical           | -23.364072   | 29.685965 | IIIC    | 50m Buffer  |
| R4       | Mudstone brick ruin                                                                                                                     | n/a     | Ruin                  | Historical           | -23.363013   | 29.686233 | IIIC    | 50m Buffer  |
| R6       | Broken concrete slabs, feeding kraal                                                                                                    | n/a     | Ruin                  | Historical           | -23.378351   | 29.686723 | IIIC    | 50m Buffer  |
| R6       | Historical ruined building, stone-lined foundations                                                                                     | n/a     | Ruin                  | Historical           | -23.378508   | 29.68694  | IIIC    | 50m Buffer  |
| R7       | Concrete floor with stone lining                                                                                                        | n/a     | Ruin                  | Historical           | -23.379104   | 29.687003 | IIIC    | 50m Buffer  |
| R8       | Stone-lined foundation and concrete hut floor                                                                                           | n/a     | Ruin                  | Historical           | -23.378587   | 29.686715 | IIIC    | 50m Buffer  |
| R10      | Single stone cairn marked grave in cleared area, old kraal                                                                              | n/a     | Graves/Burial Grounds | Historical           | -23.384729   | 29.686522 | IIIA    | 100m Buffer |
| R11      | Another stone cairn grave                                                                                                               | n/a     | Graves/Burial Grounds | Historical           | -23.38484    | 29.686505 | IIIA    | 100m Buffer |
| R12      | Clearing, ash dumps, stone-lined ruined foundation                                                                                      | n/a     | Ruin                  | Historical           | -23.385234   | 29.687277 | IIIC    | 50m Buffer  |
| R13      | Unknown grave marked with stone lining                                                                                                  | n/a     | Graves/Burial Grounds | Historical           | -23.385538   | 29.687498 | IIIA    | 100m Buffer |
| R14      | Kleinboy Mathedimisa grave, 1871-1959                                                                                                   | n/a     | Graves/Burial Grounds | Historical           | -23.385454   | 29.687652 | IIIA    | 100m Buffer |
| R15      | Ruined homes, stone lined                                                                                                               | n/a     | Ruin                  | Historical           | -23.385521   | 29.687819 | IIIC    | 50m Buffer  |
| R19      | Open area where old kraals were, Iron Age pottery                                                                                       | n/a     | Settlement Ruin       | Iron Age, Historical | -23.392155   | 29.71474  | IIIC    | 50m Buffer  |
| R19      | Possible grave, granite coring                                                                                                          | n/a     | Graves/Burial Grounds | Historical           | -23.392143   | 29.714917 | IIIA    | 100m Buffer |
| R20      | Grave with stone headstone, cairn                                                                                                       | n/a     | Graves/Burial Grounds | Historical           | -23.393812   | 29.71469  | IIIA    | 100m Buffer |
| R21      | Another stone marked grave with head and footstones                                                                                     | n/a     | Graves/Burial Grounds | Historical           | -23.393751   | 29.714942 | IIIA    | 100m Buffer |
| R22      | Historical glass bottle and more pottery                                                                                                | 10-30   | Artefacts             | Historical, Iron Age | -23.39403    | 29.715237 | IIIC    | 50m Buffer  |
| R23      | Old lower grindstone                                                                                                                    | 0-5     | Artefacts             | Iron Age             | -23.394095   | 29.715176 | IIIC    | 50m Buffer  |
| R24      | Jan Madikana grave, 1901-1961, fenced with headstone, very overgrown                                                                    | n/a     | Graves/Burial Grounds | Historical           | -23.356464   | 29.703776 | IIIA    | 100m Buffer |
| R26      | Mudbrick ruin                                                                                                                           | n/a     | Ruin                  | Historical           | -23.359666   | 29.686085 | IIIC    | 50m Buffer  |
| R27      | Iron Age settlement, pottery, quartz flakes, open disturbed ground                                                                      | n/a     | Ruin, Settlement      | Iron Age, Historical | -23.360299   | 29.683569 | IIIC    | 50m Buffer  |
| R28      | Stone-lined hut floor                                                                                                                   | n/a     | Ruin                  | Iron Age, Historical | -23.360328   | 29.683257 | IIIC    | 50m Buffer  |
| R29      | Selabe grave in wrought iron fence, Kleinboi Moley, + 4 other graves marked by stone cairns                                             | n/a     | Graves/Burial Grounds | Historical           | -23.348157   | 29.675556 | IIIA    | 100m Buffer |
| R31      | Ruin, stone-lined, metal sheets                                                                                                         | n/a     | Ruin                  | Historical           | -23.345994   | 29.675811 | IIIC    | 50m Buffer  |
| R32      | Another stone-lined ruin                                                                                                                | n/a     | Ruin                  | Historical           | -23.34628    | 29.6757   | IIIC    | 50m Buffer  |

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### 4.3 Mapping and Spatialisation of Heritage Resources

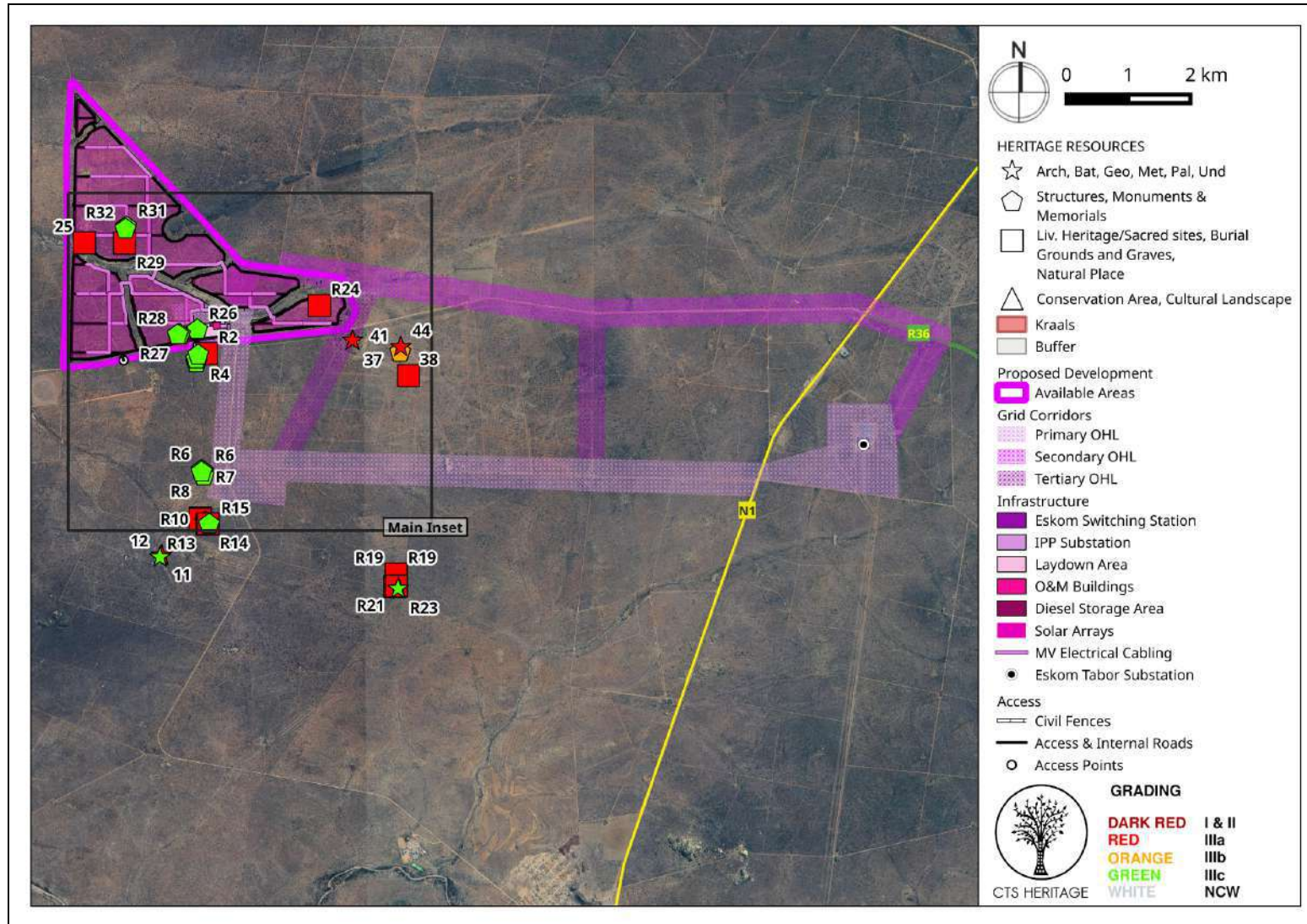


Figure 5.1: All heritage resources within proximity to the development area

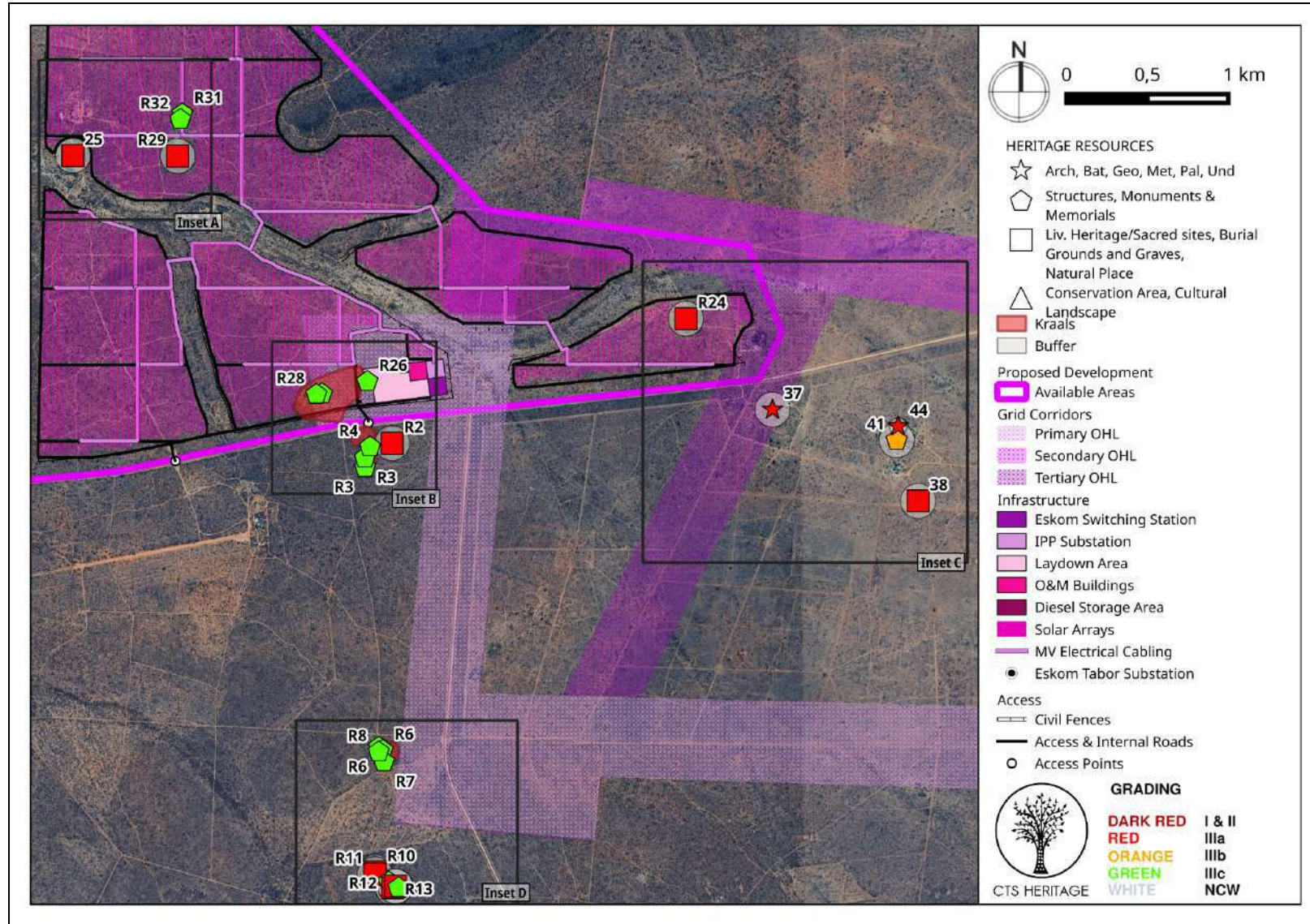


Figure 5.2: Main Inset Map of heritage resources identified within the PV development area

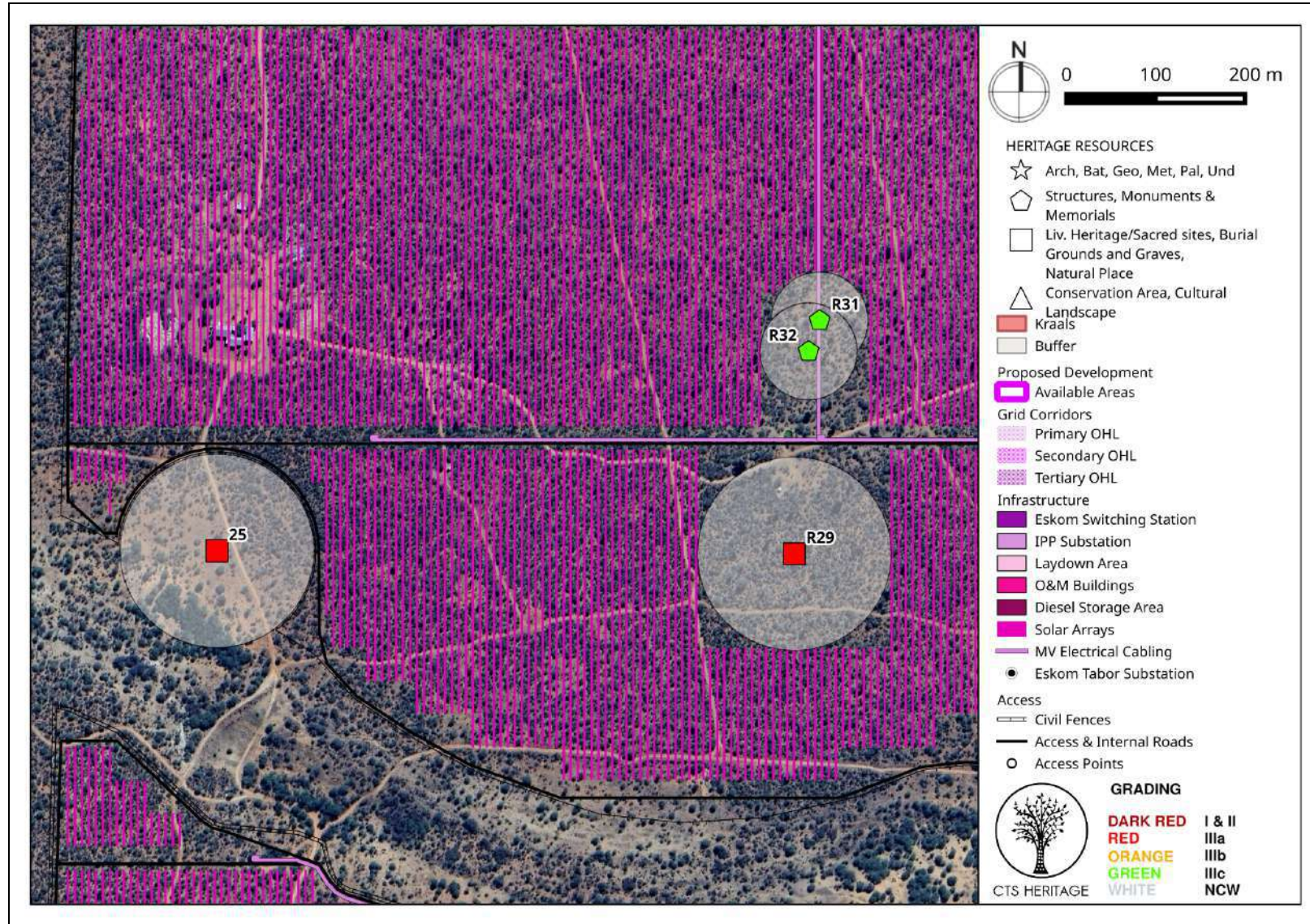


Figure 5.3: Inset Map A of heritage resources identified within the PV development area

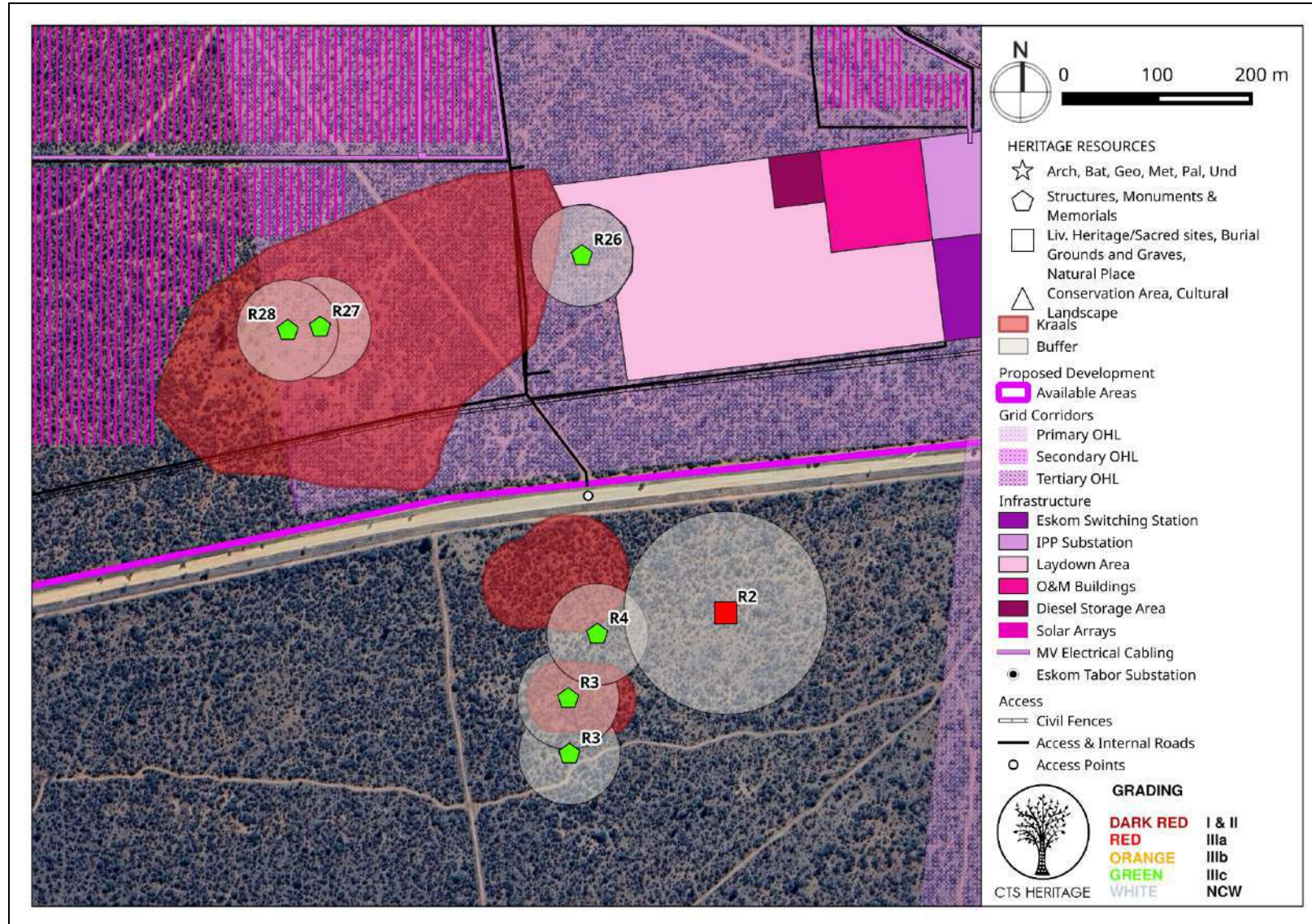


Figure 5.4: Inset Map B of heritage resources identified within the PV development area

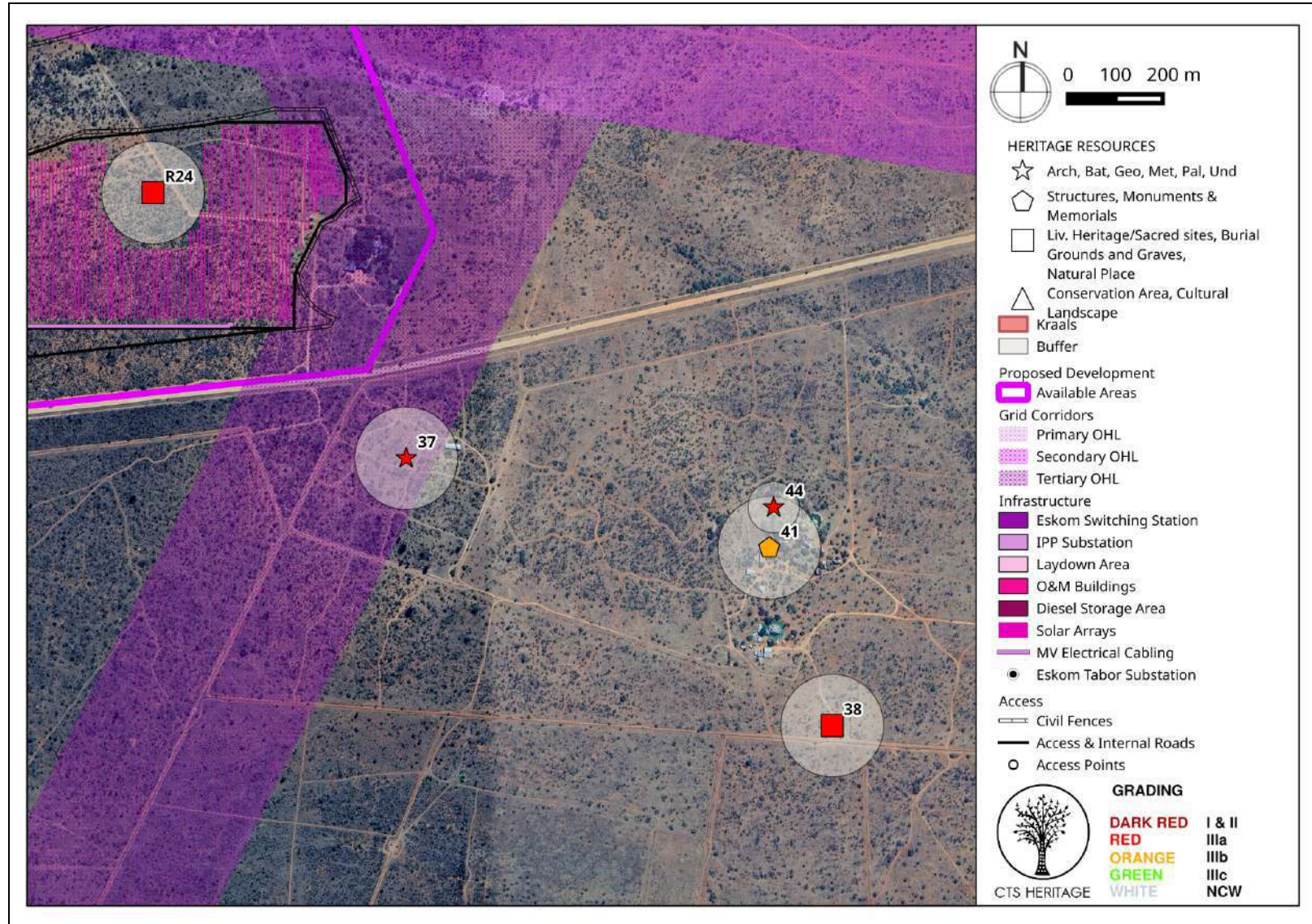


Figure 5.5: Inset Map C of heritage resources identified within the PV development area

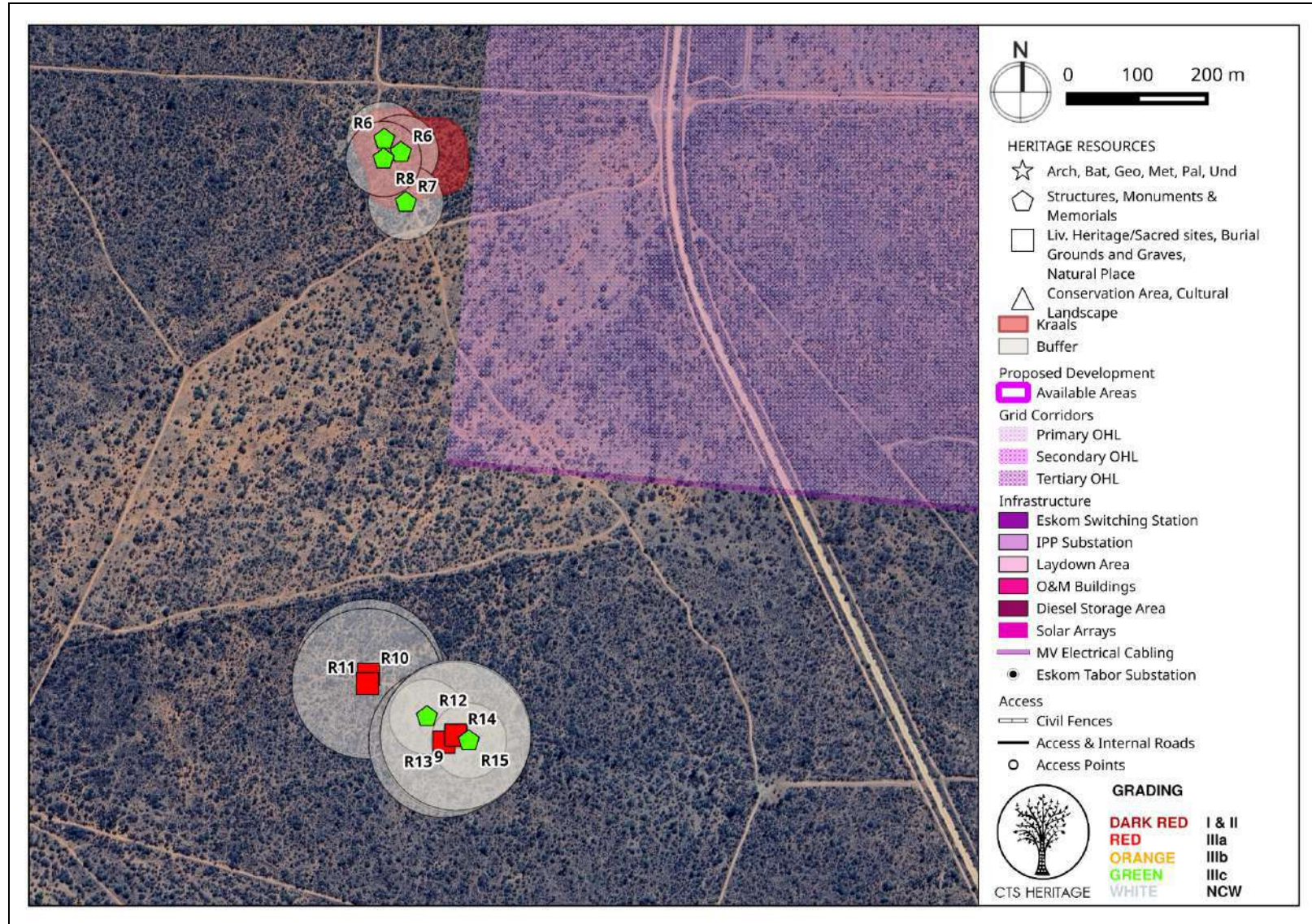


Figure 5.6: Inset Map D of heritage resources identified within the PV development area

## **5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT**

### **5.1 Assessment of Impact to Heritage Resources**

Due to the nature of heritage resources, impacts to archaeological and palaeontological heritage resources are unlikely to occur during the PLANNING, OPERATIONAL and DECOMMISSIONING phases of the project. Potential impacts to the cultural landscape throughout the OPERATIONAL phase are discussed in the section below that deals with Cumulative Impacts. The impacts discussed here pertain to the CONSTRUCTION phase of the project.

#### **5.1.1 Cultural Landscape and VIA**

A Visual SSVR was completed for the proposed development, the results of which are summarised below.

Sense of place refers to a unique experience of an environment by a user, based on his or her cognitive experience of the place. Visual criteria, specifically the visual character of an area (informed by a combination of aspects such as topography, level of development, vegetation, noteworthy features, cultural/historical features, etc.), plays a significant role.

An impact on the sense of place is one that alters the visual landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light.

The Visual SSVR determines that the Scenic Quality of the development area is rated as Medium to High. The undulating bushveld landscape does have value due to its extensive coverage without development or transformation by agriculture or human settlement. The terrain is primarily gently undulating, with a small ridgeline in the northern areas and a rocky outcrop in the southern portion of the property. The landscape maintains its value largely because it remains undeveloped by agriculture or settlements. Aside from the Eskom OHPL corridor, which shows some signs of landscape degradation, structural developments are characterised as rural, agricultural, or game farm-related, and are non-imposing.

The Visual SSVR concludes that the majority of the property is suitable for PV development and with the incorporation of the recommended setbacks and No-Go areas, would not result in degradation of significant landscape / visual resources. As such, the project is not defined as a Fatal Flaw. The visual impacts of the proposed development are more thoroughly assessed in the VIA.

### 5.1.2 Archaeology

The field assessment proceeded with limited constraints and the area was satisfactorily surveyed for impacts to archaeological heritage resources. The area proposed for development has been subject to cultivation and agricultural practices for a significant amount of time and as such, most of the recorded observations consist of modern farming buildings and associated infrastructure. These observations have no cultural value from a heritage perspective and as such, are determined to be Not Conservation-Worthy. These are not considered further here.

As is expected in such rural areas, a number of burial grounds and graves were identified (Sites 009, 025, 037 and 038). These burials range from historic to recent and are all located outside of municipal cemeteries. Due to their high levels of local social and spiritual significance, burials have high levels of local cultural value and are graded IIIA. It is recommended that a no-development buffer of 100m is implemented around such burials in order to retain their sense of place as well as to ensure that no associated unmarked human remains are accidentally impacted by development activities.

Interestingly, the field assessment identified rock art and Iron Age resources within the development area. These observations include rock shelters with associated buried archaeological deposit and rock art (Site 011 and 044, graded IIIA) as well as scatters of Iron Age pottery shards (Sites 012 and 016, Graded IIIC). The field assessment also identified one historic stone-walled kraal (Site 041). This site has been graded IIIB.

These significant archaeological observations are indicative of the potential for additional associated buried archaeology located in close proximity to these sites. Due to their scientific value, these sites may not be negatively impacted by the proposed development and appropriate no-development buffers for these sites are recommended in the table above.

Following the receipt of additional information emanating from the Public Participation Process, further analysis was completed using historic aerial imagery and an additional site visit was undertaken. A number of additional burial sites and settlement areas were identified. These additional observations are included in Table 3.2 and are mapped in Figures 5.1 to 5.6.

### ***PV Facilities***

A number of significant heritage resources fall within the proposed PV area. These sites include burial grounds and ruins, as well as Iron Age archaeological heritage. It is recommended that these resources and their recommended buffers are excluded from the development footprint. Additionally, it is recommended that access to the burials and other resources of cultural value are guaranteed for the duration of the life of the PV facility.

It is recommended that the conservation of the identified heritage resources be managed for the duration of the life of the PV facilities through the drafting of a Conservation Management Plan that is submitted to SAHRA for approval.

***The final layout of the proposed Draailoop PV facility and its associated grid alignment adhere to the mitigation measures outlined in this report and as such, no significant impact is anticipated.***

**Table 3.1 Impacts of the proposed development to archaeological resources**

| <b>NATURE:</b> The construction phase of the project will require excavation, which may impact on archaeological heritage resources if present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |                                                                                                        |              |                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | <b>Without Mitigation</b>                                                                              |              | <b>With Mitigation</b>                                                                                 |
| <b>MAGNITUDE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>H (8)</b> | Archaeological heritage resources of significance were identified within the development footprint     | <b>L (1)</b> | Archaeological heritage resources of significance were identified within the development footprint     |
| <b>DURATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>H (5)</b> | Where an impact to a resource occurs, the impact will be permanent.                                    | <b>H (5)</b> | Where an impact to resources occurs, the impact will be permanent.                                     |
| <b>EXTENT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>L (1)</b> | Localised within the site boundary                                                                     | <b>L (1)</b> | Localised within the site boundary                                                                     |
| <b>PROBABILITY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>M (3)</b> | It is possible that significant heritage resources will be impacted if the layout provided is followed | <b>L (1)</b> | It is unlikely that significant heritage resources will be impacted if the layout provided is followed |
| <b>SIGNIFICANCE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>L</b>     | $(8+5+1) \times 3 = 42$                                                                                | <b>L</b>     | $(1+5+1) \times 1 = 7$                                                                                 |
| <b>STATUS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              | Neutral                                                                                                |              | Neutral                                                                                                |
| <b>REVERSIBILITY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>L</b>     | Any impacts to heritage resources that do occur are irreversible                                       | <b>L</b>     | Any impacts to heritage resources that do occur are irreversible                                       |
| <b>IRREPLACEABLE LOSS OF RESOURCES?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>M</b>     | Possible                                                                                               | <b>L</b>     | Unlikely                                                                                               |
| <b>CAN IMPACTS BE MITIGATED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | Yes                                                                                                    |              | Yes                                                                                                    |
| <b>MITIGATION:</b> <ul style="list-style-type: none"> <li>- The mitigation measures recommended in Table 3.1 and 3.2 are implemented</li> <li>- The conservation of these sites into the future must be ensured. This can be managed through the development of a Heritage Management Plan to be implemented for the duration of the project.</li> <li>- Should any buried archaeological resources or human remains or burials be uncovered during the course of development activities, work must cease in the vicinity of these finds. The South African Heritage Resources Agency (SAHRA) must be contacted immediately in order to determine an appropriate way forward.</li> </ul> |              |                                                                                                        |              |                                                                                                        |
| <b>RESIDUAL RISK:</b><br>Should any significant resources be impacted (however unlikely) residual impacts may occur, including a negative impact due to the loss of potentially scientific cultural resources.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                                                                                                        |              |                                                                                                        |

### 5.1.3 Palaeontology

According to the SAHRIS Palaeosensitivity Map the development sites are underlain by sediments of very LOW fossil sensitivity (Figure 4). The proposed development is underlain with **Matok Granite** (Coarse-grained, porphyritic, pink and grey biotite granite, in places hornblende granite), and **Goudplaats-Hout River Gneiss** (Leucocratic, strongly migmatized biotite gneiss and greyish, weakly migmatized biotite gneiss; minor leucogneiss and dark grey biotite gneiss). Both these formations have **Insignificant or Zero** Palaeontological sensitivity.

The third formation that is present in the study area is the **Bandelierkop Formation** ( Predominantly volcanic igneous rocks, plus some igneous intrusions, minor sediments such as banded iron formation, chert, quartzite, conglomerate, and schists) which has **Low** Palaeontological Sensitivity. According to the Palaeotechnic report for Limpopo (Groenewald & Groenewald, 2014) this formation is known for “*Archaeal microfossils and microbial trace fossils (bacterial borings) which have been recorded from cherts and volcanic glasses in similar-aged greenstone belts elsewhere in RSA (e.g. Fig Tree Group & Onverwacht Group of Barberton Greenstone Belt, Mpumalanga & Swaziland). “Fly speck carbon” in sedimentary Uitkyk Fm of the Pietersburg Greenstone Belt, Limpopo, may be fossilised microbes, or alternatively of inorganic origin (e.g. an inorganic precipitate induced by radioactive irradiation).*”

It is unlikely that the proposed development will have a significant impact on palaeontological resources and no further assessments are required.



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**Table 3.2: Impacts of the proposed development of the PV facilities to palaeontological resources**

|                                                                                                                                                                                       |              |                                                                                                 |              |                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------|
| <b>NATURE:</b> The construction phase of the project will require excavation, which may impact on palaeontological heritage resources if present.                                     |              |                                                                                                 |              |                                                                                                 |
|                                                                                                                                                                                       |              | <b>Without Mitigation</b>                                                                       |              | <b>With Mitigation</b>                                                                          |
| <b>MAGNITUDE</b>                                                                                                                                                                      | <b>L (1)</b> | The area proposed for development is underlain by sediments of LOW palaeontological sensitivity | <b>L (1)</b> | The area proposed for development is underlain by sediments of LOW palaeontological sensitivity |
| <b>DURATION</b>                                                                                                                                                                       | <b>H (5)</b> | Where an impact to resources occurs, the impact will be permanent.                              | <b>H (5)</b> | Where an impact to resources occurs, the impact will be permanent.                              |
| <b>EXTENT</b>                                                                                                                                                                         | <b>L (1)</b> | Localised within the site boundary                                                              | <b>L (1)</b> | Localised within the site boundary                                                              |
| <b>PROBABILITY</b>                                                                                                                                                                    | <b>L (1)</b> | The potential impact to fossil heritage resources is extremely low                              | <b>L (1)</b> | The potential impact to fossil heritage resources is extremely low                              |
| <b>SIGNIFICANCE</b>                                                                                                                                                                   | <b>H</b>     | $(8+5+1) \times 1 = 14$                                                                         | <b>H</b>     | $(8+5+1) \times 1 = 14$                                                                         |
| <b>STATUS</b>                                                                                                                                                                         |              | Negative                                                                                        |              | Positive                                                                                        |
| <b>REVERSIBILITY</b>                                                                                                                                                                  | <b>L</b>     | Any impacts to heritage resources that do occur are irreversible                                | <b>L</b>     | Any impacts to heritage resources that do occur are irreversible                                |
| <b>IRREPLACEABLE LOSS OF RESOURCES?</b>                                                                                                                                               | <b>H</b>     | Possible                                                                                        | <b>H</b>     | Possible                                                                                        |
| <b>CAN IMPACTS BE MITIGATED</b>                                                                                                                                                       |              | Yes                                                                                             |              | Yes                                                                                             |
| <b>MITIGATION:</b>                                                                                                                                                                    |              |                                                                                                 |              |                                                                                                 |
| - The attached Chance Fossil Finds Procedure must be implemented                                                                                                                      |              |                                                                                                 |              |                                                                                                 |
| <b>RESIDUAL RISK:</b>                                                                                                                                                                 |              |                                                                                                 |              |                                                                                                 |
| Should any significant resources be impacted (however unlikely) residual impacts may occur, including a negative impact due to the loss of potentially scientific cultural resources. |              |                                                                                                 |              |                                                                                                 |

## 5.2 Sustainable Social and Economic Benefit

Based on the findings of the Scoping SIA the proposed Draailoop Solar PV and associated infrastructure, including the BESS, will create several social and socio-economic benefits, including creation of employment and business opportunities during both the construction and operational phases. The project will also create economic development opportunities for the local community. The proposed development also represents an investment in clean, renewable energy infrastructure, which, given the negative environmental and socio-economic impacts associated with a coal-based energy economy and the challenges created by climate change, represents a significant positive social benefit for society. The Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) has resulted in significant socio-economic benefits, both at a national level and at a local, community level. These benefits are linked to Direct Foreign Investment, local employment and procurement and investment in local community initiatives.

Based on the outcomes of this heritage assessment, the anticipated socio-economic benefits to be derived from the project outweigh any anticipated negative impacts to heritage resources.

## 5.3 Proposed Development Alternatives

Draailoop Solar PV will consist of a PV project and associated infrastructure net generation (contracted) capacity of up to 240MWAC. It will furthermore include DC and/or AC coupled BESS components. In terms of the guidelines on consideration of alternatives, alternatives can include:

- Site Alternatives
- Technology Alternatives
- Layout Alternatives (discussed below)
- In compliance with the regulations, as a minimum, the No-Go Alternative will be considered and assessed.

### ***Layout Alternatives***

The following layout alternatives have been considered thus far in this environmental process. Further refinement of the Study Area (Layout Alternative 2) will take place during the Environmental Impact Reporting Phase of the environmental process and the preferred alternative (Layout Alternative 3) will be determined for each of the projects.

Alternative 1 - Initial site: Farm 431 and the Remainder of Farm 466 located South of Louis Trichardt in the Makhado Local Municipality, was selected as the preferred site for the Development of the Draailoop Solar PV. The initial site consisted of the entire extent of these properties. The initial site did not consider any environmental sensitive areas and was driven primarily by other factors

Alternative 2 - Study Area. Following the identification of the initial site, the study area was determined by excluding all obvious constraints and physical attributes such as main roads.

Following the identification study area, the following specialists undertook Site sensitivity verifications of this area. These participating specialists undertook a site sensitivity analysis of the extent of the study area. This site sensitivity analysis along with the outcome of the initial public participation process will be used to inform the preferred mitigated alternative that will be presented during the environmental impact assessment phase of this environmental process.

The EGI (Eskom component) for Draailoop Solar PV is being assessed as part of this environmental impact assessment process. Three alternative grid connection alternatives are under consideration. These alternatives are mapped throughout this report.

**The preferred grid connection is also preferred from a heritage perspective. The tertiary grid connection is not preferred due to possible impacts to Site 037.**

### ***Access Road Alternatives***

The proposed access intends to utilise the existing access point from the North via the existing S129 between Louis Trichardt or from the South via S560 or S132. Unless the Traffic Impact Assessment or relevant transport authorities raise concerns with the existing access, no alternatives will be considered (as the utilisation and upgrading of existing road infrastructure will have a significantly lower physical impact than the development of new infrastructure). The details of the internal road network will also be finalised once Layout Alternative 3 (preferred layout) is developed.

### **The no-go alternative**

The no-go Alternative (or status quo) proposes that Draailoop Solar PV does not go ahead and that the area in proximity to the existing Eskom Tabor Substation and within the Strategic EGI corridor will remain undeveloped as it is currently. The land on which the Draailoop Solar PV is proposed is currently vacant and used for limited game and livestock grazing activities, however due to a combination of factors, it has little potential for irrigated crop cultivation (this has been confirmed by the Agricultural Specialist). The solar-power generation potential of the Makhado Municipal area, particularly in proximity to the existing Tabor substation and within the strategic EGI is significant and will persist should the no-go alternative occur.

The no-go alternative will limit the potential associated with the land and the area as a whole for ensuring energy security locally, as well as the meeting of renewable energy targets on a provincial and national scale. Should the no-go alternative be approved, the positive impacts associated with Draailoop Solar PV (increased revenue for the farmer, economic investment, local employment and generation of electricity from a renewable resource) will

not be realised. The no-go alternative will be used as a baseline from which to determine the level and significance of potential impacts associated with the proposed Draailoop Solar PV.

## 5.4 Site Verification Statement

### *PV facilities*

According to the DFFE Screening Tool analysis for the PV Facility, the development area has MEDIUM levels of sensitivity for impacts to palaeontological heritage and LOW levels of sensitivity for impacts to archaeological and cultural heritage resources. The results of this assessment in terms of site sensitivity are summarised below:

- The cultural value of the broader area has medium significance in terms of its living heritage (MEDIUM)
- Significant archaeological resources were identified in the broader development area (MEDIUM)
- The geology underlying the development area has zero sensitivity for impacts to significant fossils (LOW)

As per the findings of this assessment, and its supporting documentation, the outcome of the sensitivity verification disputes the results of the DFFE Screening Tool for Palaeontology - this should be LOW - and for archaeology and cultural heritage - this should be MEDIUM. This evidence is provided in the body of this report.

### *Grid Alignment*

According to the DFFE Screening Tool analysis for the Grid Alignment, the development area has MEDIUM levels of sensitivity for impacts to palaeontological heritage and HIGH levels of sensitivity for impacts to archaeological and cultural heritage resources. The results of this assessment in terms of site sensitivity are summarised below:

- The cultural value of the broader area has medium significance in terms of its living heritage (MEDIUM)
- Significant archaeological resources were identified in the broader development area (MEDIUM)
- The geology underlying the development area has zero sensitivity for impacts to significant fossils (LOW)

As per the findings of this assessment, and its supporting documentation, the outcome of the sensitivity verification disputes the results of the DFFE Screening Tool for Palaeontology - this should be LOW - and for archaeology and cultural heritage - this should be MEDIUM. This evidence is provided in the body of this report.

## 5.5 Cumulative Impacts

The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present or reasonably foreseeable future activities that will affect the same environment. It is important to note that the cumulative impact assessment for a particular project, like what is being done here, is not the same as an assessment of the impact of all surrounding projects. The cumulative assessment for this project is an assessment only of the impacts associated with this project, but seen in the context of all surrounding impacts. It is concerned with this project's contribution to the overall impact, within the context of the overall impact. But it is not simply the overall impact itself.



The most important concept related to a cumulative impact is that of an acceptable level of change to an environment. A cumulative impact only becomes relevant when the impact of the proposed development will lead directly to the sum of impacts of all developments causing an acceptable level of change to be exceeded in the surrounding area. If the impact of the development being assessed does not cause that level to be exceeded, then the cumulative impact associated with that development is not significant.

In terms of cumulative impacts to heritage resources, impacts to archaeological and palaeontological resources are sufficiently dealt with on a case by case basis. The primary concern from a cumulative impact perspective would be to the cultural landscape. The cultural landscape is defined as the interaction between people and the places that they have occupied and impacted. In some places in South Africa, the cultural landscape can be more than 1 million years old where we find evidence of Early Stone Age archaeology (up to 2 million years old), Middle Stone Age archaeology (up to 200 000 years old), Later Stone Age archaeology (up to 20 000 years old), evidence of indigenous herder populations (up to 2000 years old) as well as evidence of colonial frontier settlement (up to 300 years old) and more recent agricultural layers.

Modern interventions into such landscapes, such as renewable energy development and its associated grid connection infrastructure, constitutes an additional layer onto the cultural landscape which must be acceptable in REDZ areas and in Strategic Transmission Corridors. The primary risk in terms of negative impact to the cultural landscape resulting from renewable energy development lies in the eradication of older layers that make up the cultural landscape. There are various ways that such impact can be mitigated.

The area proposed for development is presently dominated by agricultural activities and as such, the pattern of settlement within this landscape reflects this. At this stage, there is the potential for the cumulative impact of proposed renewable energy facilities and its associated grid infrastructure to negatively impact the cultural landscape due to a change in the landscape character from rural to semi-industrial. That being said, based on the information available, the area proposed for development has insufficient value to warrant formal protection in terms of the provisions of section 27 of the NHRA.

## 6. RESULTS OF PUBLIC CONSULTATION

As this application is made in terms of NEMA, the public consultation on the HIA took place with the broader public consultation process required for the Environmental Impact Assessment process and was managed by the lead environmental consultants on the project.

In November 2025, a number of comments were received raising concerns regarding the quality of the HIA completed for this project. These concerns are summarised below, and a full record of the comments received is included as Appendix 2.

1. **Failure to Assess Living Cultural Landscape:** *The HIA focuses almost exclusively on archaeological artefacts (stone tools, ceramics) and fails entirely to assess the **Living Cultural Landscape, Oral History, and Intangible Heritage** of the Batlokwa ba Chatleka community. This omission is a direct contravention of the National Heritage Resources Act (NHRA) requirements.*
2. **Omission of Ancestral Graves and Sites:** *The assessment failed to adequately consult with the CPA's elders and leadership, resulting in the exclusion of numerous **unmarked ancestral graves**, burial grounds, and sacred sites that are of profound significance to our community. The report does not reflect the spiritual and historical memory of the land.*
3. **Procedural Flaws and Exclusion:** *The process has been exclusionary. We demand a transparent and inclusive engagement process, with our elders actively involved in defining, identifying, and verifying all heritage resources on the ancestral land.*
4. **HIA Recommendations are Insufficient:** *We demand the **rejection** of the current HIA and all associated Environmental Authorisation processes until a comprehensive, participatory Living Heritage Assessment is undertaken. This new assessment must include a binding commitment to a **Conservation Management Plan (CMP)**, developed in collaboration with the Chatleka CPA, prior to any future consideration of construction.*

Based on the provided Heritage Impact Assessment (HIA) reports for the Draailoop, Bethel, Makoppa, and Klippot Solar PV Facilities, I must note with serious concern that **the documents do not contain detailed evidence of specific public consultation undertaken as part of the heritage impact assessment process.**

### What is Missing from the Reports

The HIA reports do **not** provide documentation of:

1. **Specific heritage-focused consultation activities** conducted with affected communities
2. **Engagement with land claimants** regarding heritage resources and impacts
3. **Documented outcomes** of consultations specifically addressing heritage concerns (as distinct from general environmental issues)
4. **Community input** on the significance of identified heritage resources, including:
  - i. The burial sites (Sites 9, 25, 37, 38)

- ii. *Rock art and archaeological sites (Sites 11, 44)*
- iii. *Historical structures and cultural landscapes*
- 5. **Consultation with descendants** or communities associated with identified graves and burial grounds
- 6. **Engagement processes** ensuring participation of vulnerable and disadvantaged persons in heritage matters

### **Critical Heritage Issues Requiring Community Consultation**

Given the findings in these reports, the following would have warranted specific community engagement:

- **Multiple burial grounds** identified within development areas (graded IIIA due to high local social and spiritual significance)
- **Rock art sites** with Later Stone Age paintings
- **Iron Age archaeological resources** associated with granite koppies
- **Cultural landscape impacts** affecting the sense of place for communities
- **Access provisions** to burial sites for the operational life of the facilities

### **Updates to the reports and process**

Following receipt of the concerns raised by the Batlokwa ba Chatleka community, a community engagement session was undertaken on 25 November 2025.

Additional direct engagement was undertaken with the CPA, who provided additional “commitments” from the heritage consultants, including a dedicated oral history record, a GPR survey, provision of transport and compensation for the CPA elders, as well as the drafting of an amended HIA.

Unfortunately, representatives of the CPA were not in attendance at the community engagement session and as such, the heritage consultant was unable to record any oral histories or discuss aspects of living heritage that are of concern. There were not many heritage-specific concerns that emerged from the open day. A few participants did ask about the features on the maps, but there were not any additional concerns raised.

Following the receipt of additional information emanating from the Public Participation Process, further analysis was completed using historic aerial imagery and an additional site visit was undertaken. A number of additional burial sites and settlement areas were identified. These additional observations are included in Table 3.2 and are mapped in Figures 5.1 to 5.6. The HIA report has been updated to address the concerns raised through the PPP.

## **7. CONCLUSION**

The survey proceeded with no major constraints and limitations, and the project area was comprehensively surveyed for heritage resources. Some significant archaeological material remains were documented within the grid area and the proposed PV facilities. The archaeological observations are somewhat expected here due to the number of Iron Age Sites known from the broader vicinity of the development area. These archaeological

resources are associated with granite koppies in the area. A number of granite koppies are known from the southern portion of the grid alignment and these koppies should be considered to be archaeologically sensitive. It is recommended that no development take place within or on the koppies.

A number of significant archaeological resources and burial grounds were identified within the area proposed for development. Recommendations regarding appropriate buffer areas for these significant resources are outlined in Tables 3.1 and 3.2.

***The final layout of the proposed Draailoop PV facility and its associated grid alignment adhere to the mitigation measures outlined in this report and as such, no significant impact is anticipated.***

It is recommended that the property owner and developer sign a Heritage Agreement with a Conservation Management Plan (CMP) for the ongoing conservation of the significant archaeological sites and burials identified within the area proposed for development. The recommendation for a CMP for the identified features must be endorsed by SAHRA before the CMP is drafted and a Heritage Agreement is signed. The Heritage Agreement and CMP are legally binding documents related to the approval of the development. As such, the process for the heritage agreement and CMP must be initiated only if Environmental Authorisation is granted for the project.

The Heritage Impact Assessment process must assess impacts to heritage resources resulting from the proposed activity. Impacts to places associated with cultural activities can be mitigated through the identification and protection of these places using mechanisms such as buffers to ensure that the design of the development respects these places. Opportunities for ongoing cultural activities within the development area can be negotiated with the landowner and developer through the recommended Conservation Management Plan.

It is clear that the CPA holds important knowledge regarding the oral history of the Batlokwa ba Chatleka community. It is recommended that engagement with an appropriate academic institution take place urgently to ensure that this oral history is accurately recorded and documented through an academic process.

The CPA has identified burials and spaces within the area proposed for development as associated with their living heritage. In lieu of specific location information from the CPA, additional research was undertaken to identify places that have or may have cultural heritage value. An additional site visit was also undertaken to ground-truth the identified sites. The results of this analysis are included in the report.

## **8. RECOMMENDATIONS**

Based on the outcomes of this report, it is not anticipated that the proposed development of the solar energy facility and grid connection infrastructure will negatively impact on significant heritage resources on condition that:

- The mitigation measures outlined in Tables 3.1 and 3.2 above are implemented. This is adhered to in the layout provided.



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- The granite koppies within the development area are considered to be sensitive and are excluded from the development footprint. This is adhered to in the layout provided
- A Conservation Management Plan is drafted for the ongoing conservation of the significant archaeological sites and burials identified within the area proposed for development
- Although all possible care has been taken to identify sites of cultural importance during the investigation of the study area, it is always possible that hidden or subsurface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils, burials or other categories of heritage resources are found during the proposed development, work must cease in the vicinity of the find and SAHRA must be alerted immediately to determine an appropriate way forward.



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## 9. REFERENCES

| Heritage Impact Assessments |                                                |            |             |                                                                                                                     |
|-----------------------------|------------------------------------------------|------------|-------------|---------------------------------------------------------------------------------------------------------------------|
| NID                         | Author(s)                                      | Date       | Type        | Title                                                                                                               |
| 6243                        | Frans Roodt                                    | 01/09/2001 | AIA Phase 1 | Archaeological Impact Assessment: Proposed New 132 kV Eskom Overhead Powerline Bandelierkop                         |
| 7266                        | Liesl Stegmann,<br>Frans Roodt,<br>Frans Roodt | 01/09/2008 | AIA Phase 1 | Phase 1 Heritage Resources Scoping Report Demarcation of 500 Residential Erven in Makgato, Limpopo                  |
| 8026                        | Johnny Van Schalkwyk                           | 16/04/2007 | AIA Phase 1 | Heritage Impact Assessment for the Planned Tabor-Witkop Power Line, Limpopo Province                                |
| 523228                      | Anton Pelser                                   | 31/03/2019 | AIA Desktop | DESKTOP HIA REPORT FOR THE BANDELIERKOP PRA LOCATED ON VARIOUS FARMS IN THE VHEMBE DISTRICT OF THE LIMPOPO PROVINCE |



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## APPENDICES



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## APPENDIX 1: Archaeological Assessment (2025)



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## APPENDIX 2: Results of Consultation

# ARCHAEOLOGICAL SPECIALIST STUDY

In terms of Section 38(8) of the NHRA for a

## **Proposed Development of the Tabor Solar Cluster (Approx 630MW) near Banderlierkop in the Limpopo Province**

**Prepared by**



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Jenna Lavin  
Nic Wiltshire  
Mabeth Crafford

In Association with

**Mulilo**

August 2024

Updated December 2025



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## EXECUTIVE SUMMARY

Cape EAPrac has been appointed by Mulilo Renewable Project Developments (Mulilo) to facilitate the Full Scoping & Impact Assessment process for the proposed Tabor Solar Cluster (approximately 630MW) near Bandelierkop, Limpopo South Africa.

This Solar Cluster is to be divided into four (4x) PV projects (average 160MW each), with each project to obtain a standalone Environmental Authorisation. Each solar project will have its own grid connection i.e. four (4x) grid connections, although routing may be similar for parts of the grid lines, to also obtain its own standalone Environmental Authorisation.

The survey proceeded with no major constraints and limitations, and the project area was comprehensively surveyed for heritage resources. Some significant archaeological material remains were documented within the grid area and the proposed PV facilities. The archaeological observations are somewhat expected here due to the number of Iron Age Sites known from the broader vicinity of the development area. These archaeological resources are associated with granite koppies in the area. A number of granite koppies are known from the southern portion of the grid alignment and these koppies should be considered to be archaeologically sensitive. It is recommended that no development take place within or on the koppies.

A number of significant archaeological resources and burial grounds were identified within the area proposed for development. Recommendations regarding appropriate buffer areas for these significant resources are outlined in tables 1 and 2.

### ***Recommendations***

Based on the outcomes of this report, it is not anticipated that the proposed development of the solar energy facility and grid connection infrastructure will negatively impact on significant archaeological heritage on condition that:

- The mitigation measures outlined in Table 1 and 2 are implemented
- The granite koppies within the development area are considered to be sensitive and are excluded from the development footprint
- A Conservation Management Plan is drafted for the ongoing conservation of the significant archaeological sites and burials identified within the area proposed for development
- Although all possible care has been taken to identify sites of cultural importance during the investigation of the study area, it is always possible that hidden or subsurface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils, burials or other categories of heritage resources are found during the proposed development, work must cease in the vicinity of the find and SAHRA must be alerted immediately to determine an appropriate way forward.



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## 1. INTRODUCTION

### 1.1 Background Information on Project

Cape EAPrac has been appointed by Mulilo Renewable Project Developments (Mulilo) to facilitate the Full Scoping & Impact Assessment process for the proposed Tabor Solar Cluster (approximately 630MW) near Bandelierkop, Limpopo South Africa.

This Solar Cluster is to be divided into four (4x) PV projects (average 160MW each), with each project to obtain a standalone Environmental Authorisation. Each solar project will have its own grid connection i.e. four (4x) grid connections, although routing may be similar for parts of the grid lines, to also obtain its own standalone Environmental Authorisation.

#### Solar Field

- Solar Arrays: PV modules
- Single axis tracking technology maximum height of 5m (aligned north-south);
- Solar module mounting structures comprised of galvanised steel and aluminium;
- Foundations which will likely be drilled and concreted into the ground; and
- Solar measurement and weather stations.
- Central/string Inverters and MV transformers in in field
- DC coupled Battery Energy Storage system (BESS) containers distributed through PV field located adjacent to inverters
  - Lithium Ion battery Cells, Modules, Racks and containers,
  - Power Conversion Equipment
  - Battery Management System
  - Energy Management System

#### Associated Infrastructure

- Medium Voltage (MV =22/33 kV) overhead powerlines and underground cables;
- MV Collector stations
- Access road;
- Internal gravel roads;
- Fencing;
- General maintenance area;
- Storm water channels and berms;
- Water storage tanks and pipelines;
- Temporary work area during the construction phase (i.e. laydown area).
- O&M buildings, store

#### Project IPP Substation

- 132kV substation 200m x 200m
- HV transformer



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- Substation Control Building
- HV metering, Scada and protection building
- MV collector switchgear buildings
- Compensation equipment (Filters capacitors reactors statcoms)

**AC coupled BESS installation (400m x 400m) at project substation and laydown area**

- Solid State Battery technology - either Lithium-Ion or Sodium Sulphide (NaS)
- Battery Cells, Modules, Racks and containers
- Power Conversion Equipment
- Battery Management System
- Energy Management System
- MV transformers
- MV cabling and collector stations
- Fencing
- Offices, workshop
- Fire Protection systems

**The four (4x) grid connection corridors for each project (which will be handed over to Eskom post-construction, may include:**

- Onsite Switching Station (SS), adjacent to the IPP Substation.
- 132kV Overhead Power Line (OHPL) – 30m height from the switching station to the existing Eskom Tabor Substation.
- Access Road to SS
- Maintenance access road below or adjacent to the power line.



## 1.2 Description of Property and Affected Environment

The proposed Tabor Solar project lies about 12km southwest of Bandelierkop in Limpopo. The N1 highway linking Louis Trichardt to Polokwane runs along much of the grid connection routes that terminate at the Eskom Tabor substation. The PV areas are located on three farms, namely Draailoop, Bethel and Makoppa and the various grid routes link the PV areas to Tabor substation over several farms adjacent to the N1 highway.

The area has several cattle ranches and game farms that are used for tourism and hunting. Wild buffalo are present within the PV areas and surveying has to be carried out with a staff escort. Besides buffalo, there are giraffes, eland, kudu and various smaller antelope species within the game farms. A series of modern cattle kraals and feeding areas are ubiquitous in the area and are linked via grid-form internal gravel roads and fenced enclosures. The game farms typically have lodges, staff accommodation and various facilities related to the hunting and tourism business such as lapas, chalets and viewing hides.

The terrain is generally flat in the PV areas with more hilly ground east of the N1 highway on Langgedacht farm where a proposed grid connection route is planned. Several granite outcrops dot the area with the largest and most prominent one located at the Tropic of Capricorn monument in Ga-Phasha. The veld consists of bushveld dominated by acacia trees and grassland.

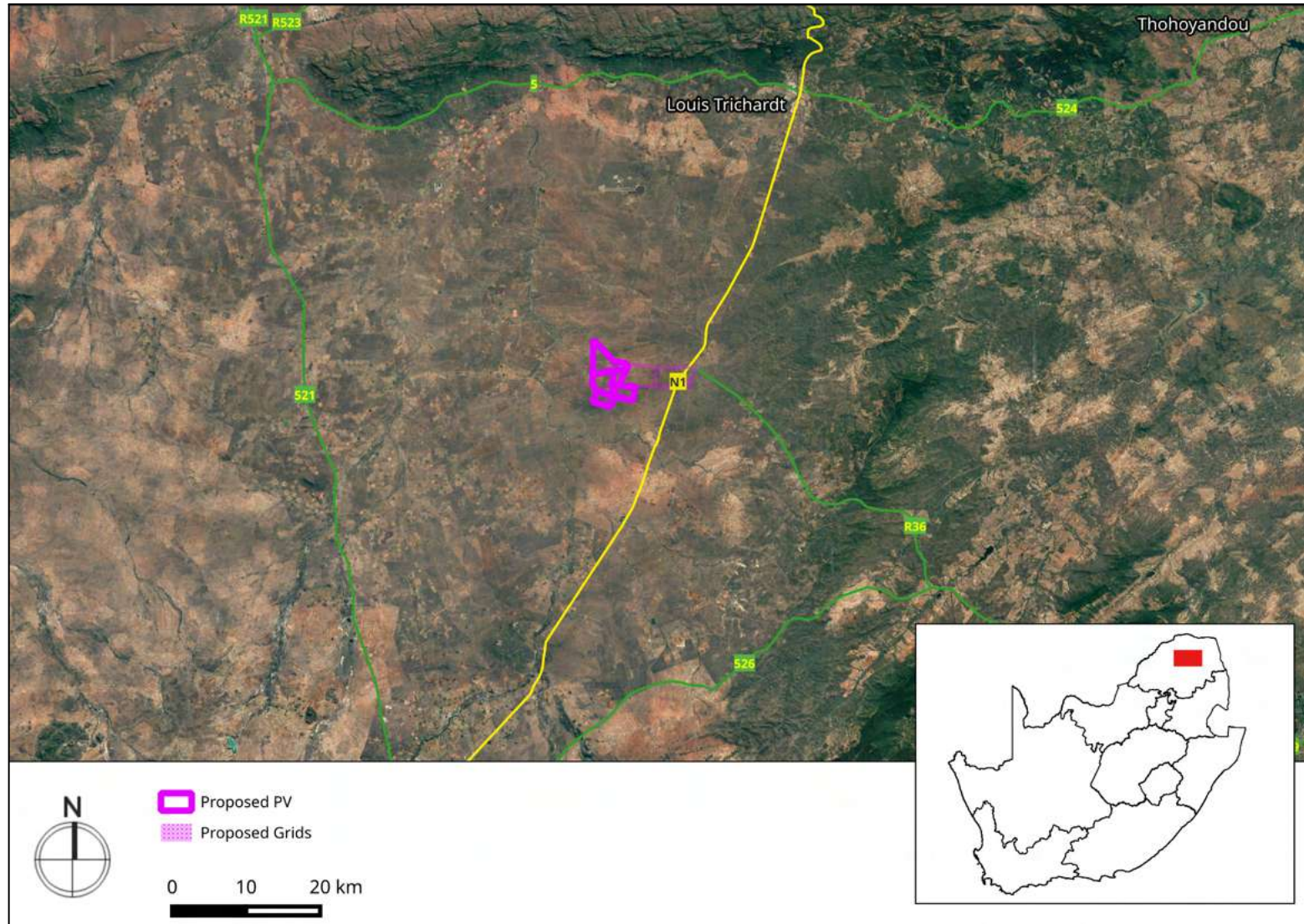


Figure 1.1: Satellite image indicating proposed location of development

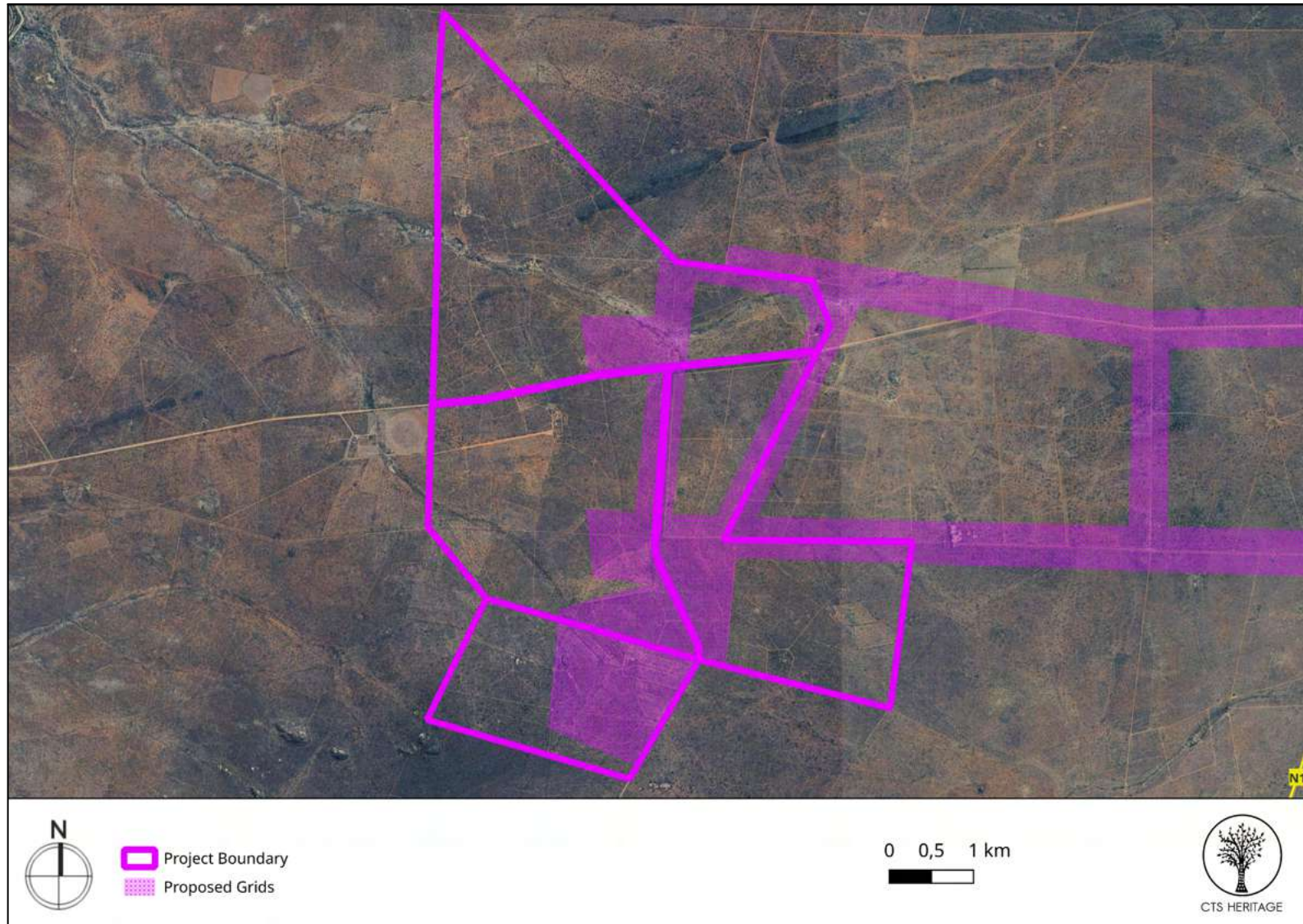


Figure 1.2: Proposed project boundary

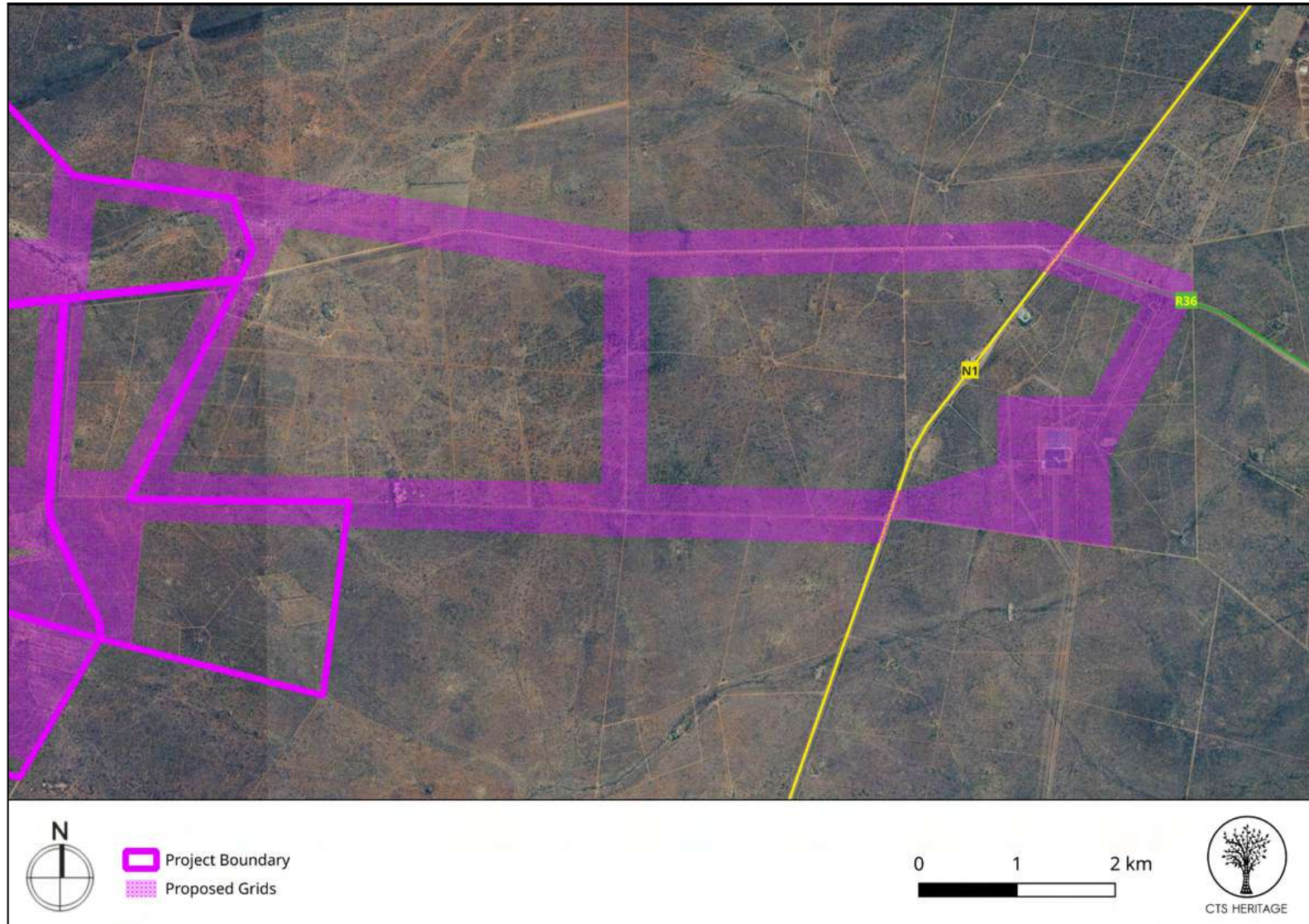


Figure 1.3: Proposed grids



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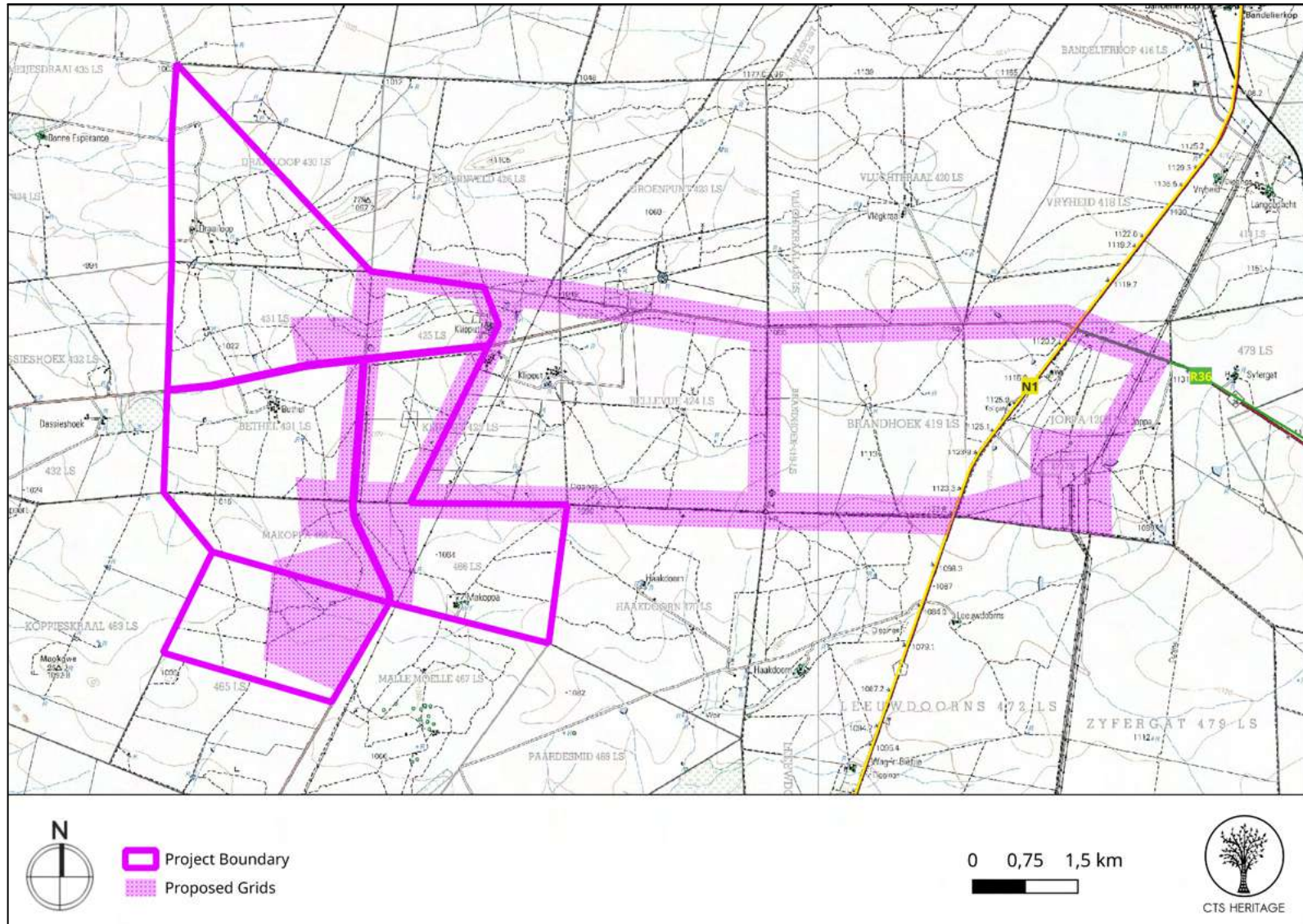


Figure 1.4: Proposed project boundary indicated on the 1:50 000 Topo Map

## **2. METHODOLOGY**

### **2.1 Purpose of Archaeological Study**

The purpose of this archaeological study is to satisfy the requirements of section 38(8), and therefore section 38(3) of the National Heritage Resources Act (Act 25 of 1999) in terms of impacts to archaeological resources.

### **2.2 Summary of Steps Followed**

- An archaeologist conducted a survey of the site and its environs from 24 to 27 July 2024 to determine what archaeological resources are likely to be impacted by the proposed development of the PV facility and grid connection.
- As a result of the consultation process undertaken, gaps were identified in the heritage process and a subsequent site visit was undertaken on 26 November 2025.
- The area proposed for development was assessed on foot, photographs of the context and finds were taken, and tracks were recorded using a GPS.
- The identified resources were assessed to evaluate their heritage significance in terms of the grading system outlined in section 3 of the NHRA (Act 25 of 1999).
- Alternatives and mitigation options were discussed with the Environmental Assessment Practitioner.

### **2.3 Constraints & Limitations**

The presence of wild buffalo on certain areas of the PV farms required a staff escort and it was not possible to roam freely on foot throughout these sections. The grid connections, for the most part, did not have dangerous game animals and these were easily navigated using the existing jeep tracks within the farms and connecting roads before completing smaller sections on foot where no tracks exist. The vegetation cover ranges from thick to light and a number of older ploughed fields can be seen on the historical satellite imagery which accounts for the cleared areas observed during the survey as well as the generally low artefact counts in the previously ploughed fields. The highest sensitivities were located at the granite outcrops and these have not been heavily disturbed as the agricultural fields were established around them.

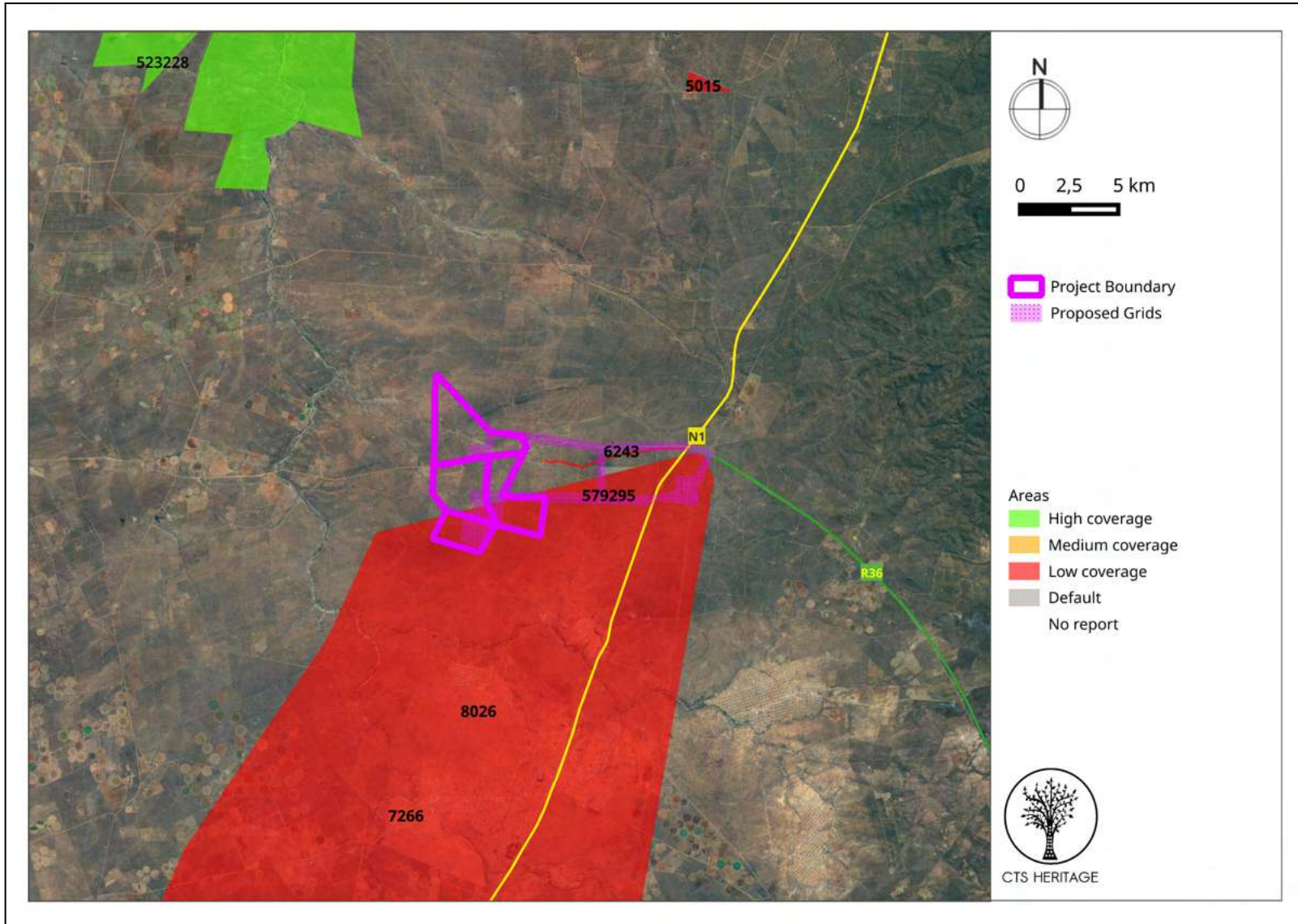


Figure 2: Close up satellite image indicating proposed location of development in relation to heritage studies previously conducted



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### 3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

#### 3.1 Background

This application is for the proposed development of a PV facility cluster located near Bandelierkop, south of Louis Trichardt, in the Limpopo Province. According to Raper et al (2018) in the Dictionary of Southern African Place Names, Bandolierskop is a “*Village some 35 km south-west of Louis Trichardt, on the route from Pietersburg to Beit Bridge. Afrikaans for ‘bandolier hill’; said to have been named after an incident in which a burgher, Jan du Preez, was sent back to fetch the bandolier he had left behind when the commando struck camp.*”

#### 3.2 History, Background, Archaeology and Built Heritage

Van Schalkwyk (2007, SAHRIS NID 8026) provides a very detailed background and history of the surrounding area. Only the relevant points are summarised here:

##### Stone Age

- Early Stone Age and Middle Stone Age tools in the area are often found near rivers and outcrops, but these surface finds are of low significance. The study area falls in a relatively flat area, with three smaller koppies around the edges (Molemole and Maokgwe in Figure 3.4).
- The Late Stone Age saw recurring occupations in rock shelters and caves, particularly in areas like Soutpansberg and the Limpopo River.
- Evidence includes ostrich eggshell beads, bone arrowheads, small stones, and wood fragments.
- Rock art from this period indicates complex religious beliefs.

##### Iron Age

- Iron Age settlements start appearing around AD 300, with notable sites like Silver Leaves near Tzaneen.
- By AD 800, villages in the Limpopo River valley expanded due to East Coast trade.
- Climate changes and trade shifts by AD 1250 led to the abandonment of some areas.
- Large-scale occupation occurred in the 16th century, with farmers moving into previously unsuitable areas due to warmer and wetter climates.
- Defensive stone-walled settlements were built on hilltops near water and arable land.

##### Historic Period

- European settlers arrived in the early 19th century as hunters, traders, and missionaries, followed by settlers. “*The first European group to pass close by the area were that of Coenraad de Buys in 1821 and 1825, followed by groups of Voortrekkers after 1844 (Bergh 1999: 12-14).*” (Pelser 2019, SAHRIS NID 523228).
- Schoemansdal was one of the first European settlements. “*Schoemansdal (originally Zoutpansbergdorp) was established in 1848, and finally abandoned as a result of conflict with local groups in July 1867 (Bergh 1999: 131; 187). The town of Louis Trichardt was formally established in February 1899 (Bergh 1999: 147).*” (Pelser 2019, SAHRIS NID 523228)
- Gold discovery at Eersteling spurred mining activity.
- The region saw skirmishes during the Anglo-Boer War, such as at Rhenosterpoort and Fort Marabastad, but

none of these skirmishes appear to have taken place in the study area. Pelsaert (2019, SAHRIS NID 523228) mentions “During the Anglo-Boer war (1899- 1902) there was a skirmish between British and Boer forces at Fort Edward near Louis Trichardt between 20 and 28 March 1902 (Bergh 1999: 54).” Elim is located approximately 30km from the study area in a northeasterly direction.

### Ethno-Historical Sequence

- The northern section of Van Schalkwyk’s study area (2007) was predominantly inhabited by Tlokwa people, originally from Tlokweng near Potchefstroom, who moved north before 1700.
- The southern section of Van Schalkwyk’s study area (2007) was notably diverse, with Ndebele and Sotho-speaking groups from various origins.
- The Berlin Mission Society established schools and hospitals from the mid-1800s, contributing to the social and political development of the Sotho-speakers and documenting their early colonial history. Their activity continued until 1962.

Archaeological sites spanning the Earlier, Middle and Later Stone Age have been found in the region despite the limited amount of impact assessments in the near vicinity. In 2001, Roodt conducted an HIA that partially intersects with the study area (SAHRIS NID 6243). Roodt described the environment as “*arid bushveld which is generally in a good condition, although the area on the Farm Joppa has been encroached by Dichrostachys (sickle bush), indicating recent over-exploitation.*” During the field survey, two Iron Age sites were identified (SAHRIS ID 36961 and 36962). Site 1 consists of a single potsherd, but it was noted that the full extent could not be determined due to the limited scope of the survey. Site 2 consists of an ash midden with associated pottery and dung deposits. The sites as well as mitigations suggested by Roodt are discussed in Table 1 below. Roodt also noted that neither sites warrant specific protection status. In another AIA by Stegman and Roodt (2008, SAHRIS NID 7266) located approximately 10km south of the study area, no archaeological resources were noted.

**Table 1: Known sites from SAHRIS located within the study area (Roodt 2001, SAHRIS NID 6243)**

| SAHRIS ID | Site no and Full Site Name | Description                                                                                                                                                                                                                                                                                                                                                                                                     | Grade | Mitigation                                                                                                                                                                                                                                       |
|-----------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 36961     | BAN001, Banderlierkop 001  | Site 1: This site contained only one decorated potsherd. Decoration is limited, with the result that the cultural identity could not be identified positively. The extent of this site could not be established within the scope of this scoping exercise.                                                                                                                                                      | IIIb  | Site 1 is to be re-evaluated during the construction phase when the clearing of bush and earthworks has commenced. This will allow for an informed decision on whether or not mitigation for cultural, resource management measures is required. |
| 36962     | BAN002, Banderlierkop 002  | Site 2: This site contains clear deposits of grayish ash deposits with pottery as well as possible dung deposits. Previous damage had been done to the Site by the existing road and access road for the existing powerline. A preliminary identification of the pottery would suggest it being of a variant of the Moloko type pottery (early Sotho/Tswana), which could date to the 15 <sup>th</sup> century. | IIIb  | A phase two assessment of Site 2 to be mitigated before construction work commences.                                                                                                                                                             |

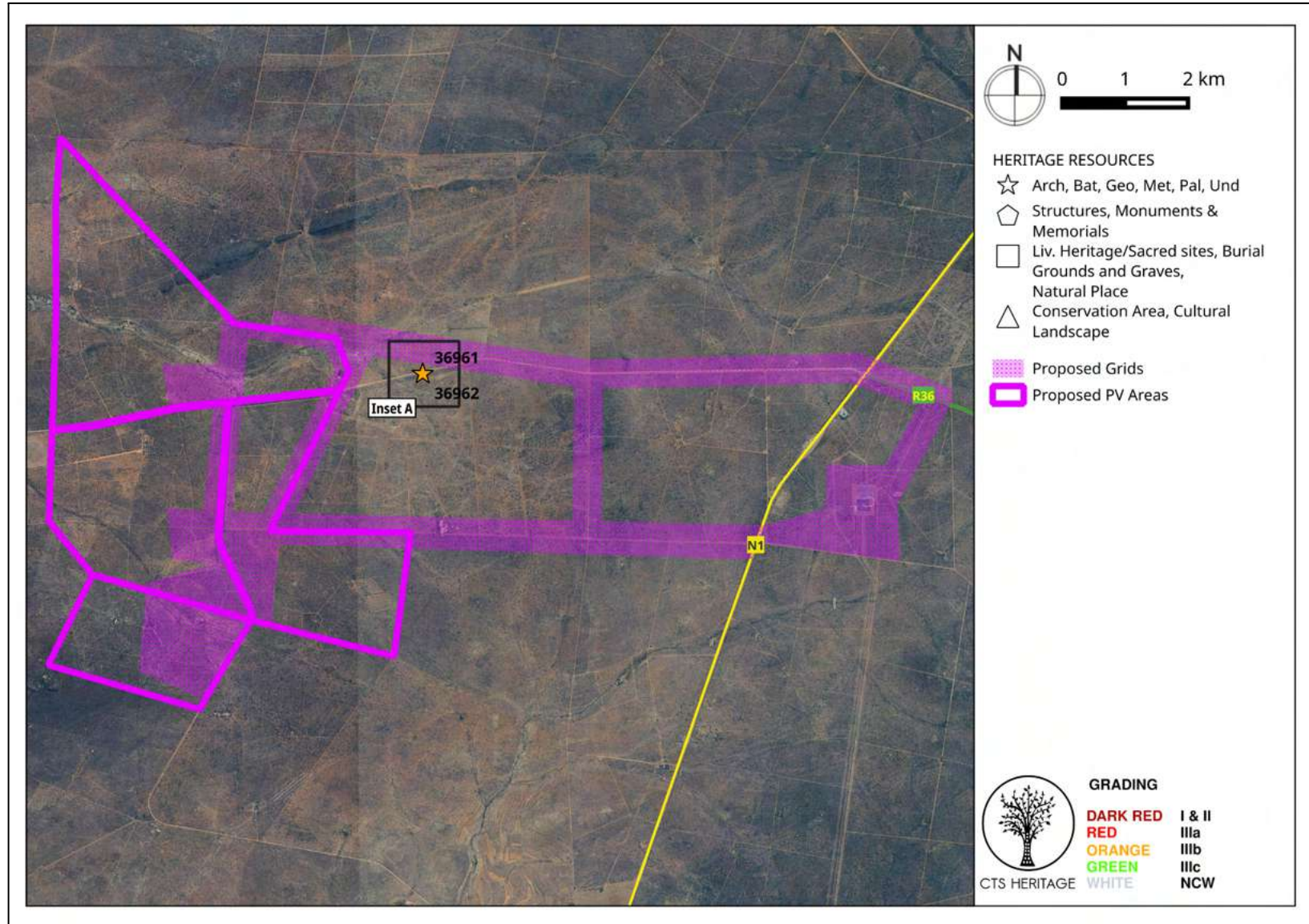


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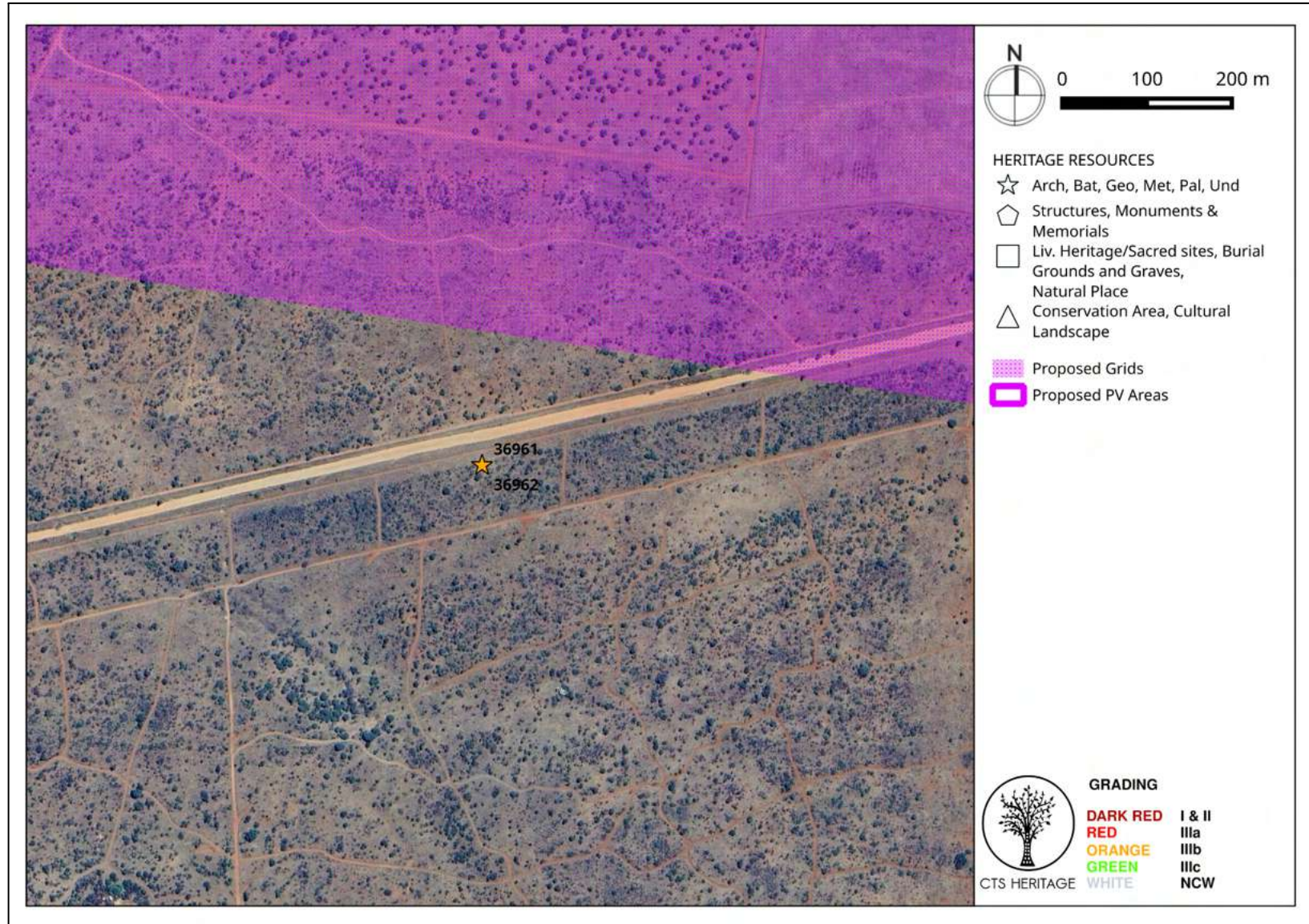
|        |                                                                          |                                                                                                                                                                                                                                                                                                                             |     |     |
|--------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| 135469 | Tropic of Capricorn,<br>Tropic of Capricorn,<br>Mphakane 1,<br>Ga-Phasha | <ul style="list-style-type: none"> <li>On the face of it, the huge rock outcrop on which the needle marking the Tropic of Capricorn is situated resembles the many huge rock outcrops that can be found all over the Capricorn District Municipality, especially in the Botlokwa and Moletjie areas.<sup>1</sup></li> </ul> | n/a | n/a |
| 136466 | DC35/NAMM/0045,<br>Tropic of Capricorn,<br>Mphakane 1, Ga<br>phasha      | <ul style="list-style-type: none"> <li>Most of the details on the Inscriptions are not visible as its damaged beyond recognition. The Tropic of Capricorn is one of the five major circles of latitude marked on maps of Earth.</li> </ul>                                                                                  | n/a | n/a |

There are several historical werfs located within the study area, such as Klipput and Draailoop. These werfs are likely to have heritage value and may conserve small farm graveyards, which need further inspection. There is also Ga-Phasha cemetery located just north of Ga-Pasha (Figure 3.4). All burials are considered to have high levels of local social and spiritual significance and as such, are graded IIIA. Due to this high level of significance, it is recommended that a no-development buffer of 100m is implemented around these sites. Often, informal burials can be located on the outskirts of formal cemetery areas. As such, this buffer is recommended to ensure the retention of the sense of place for this burial site, and to ensure that no hidden and unmarked burials are unintentionally impacted by the proposed development.

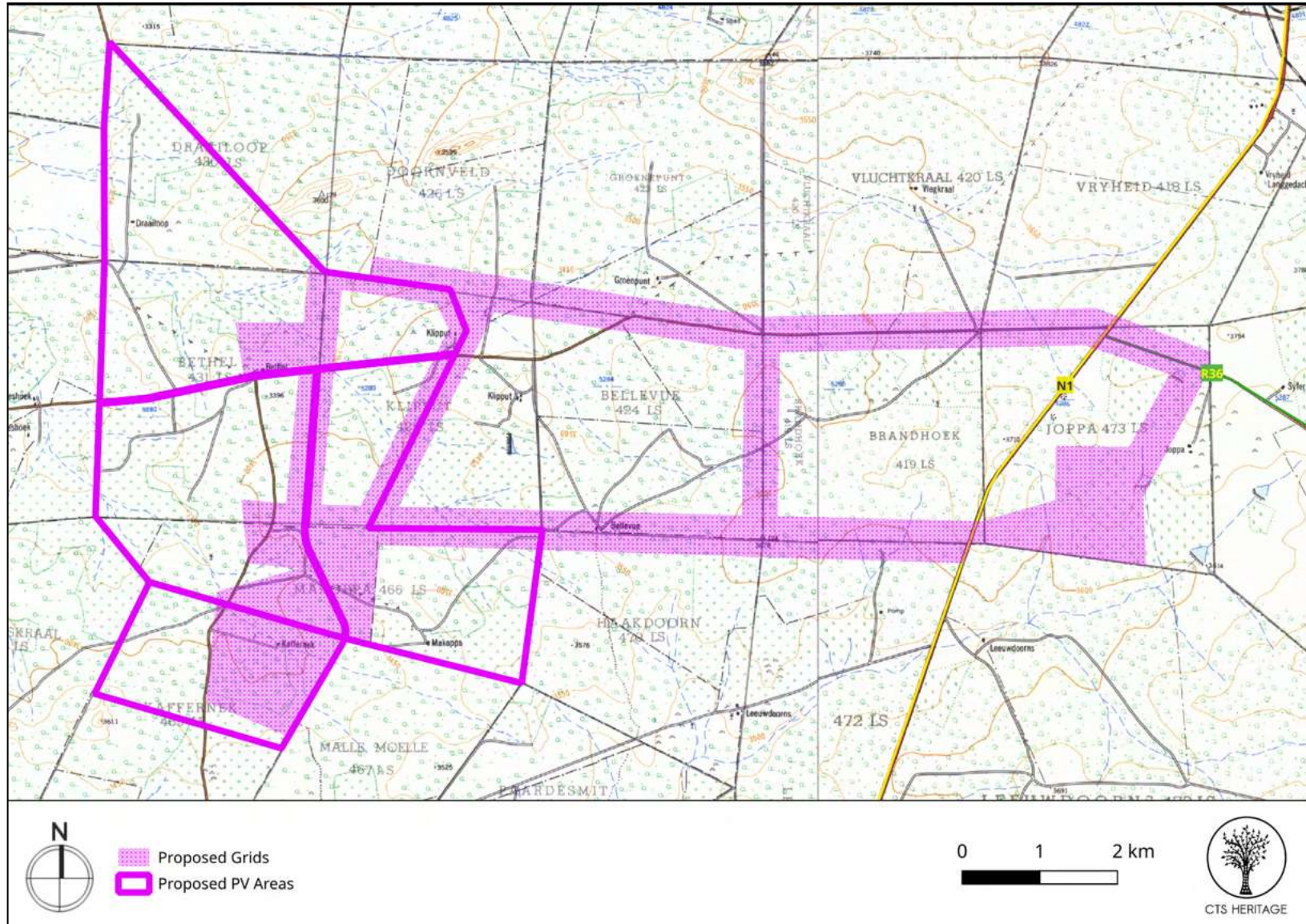
<sup>1</sup> <https://www.sabcnews.com/sabcnews/sas-abandoned-tropic-of-capricorn/>



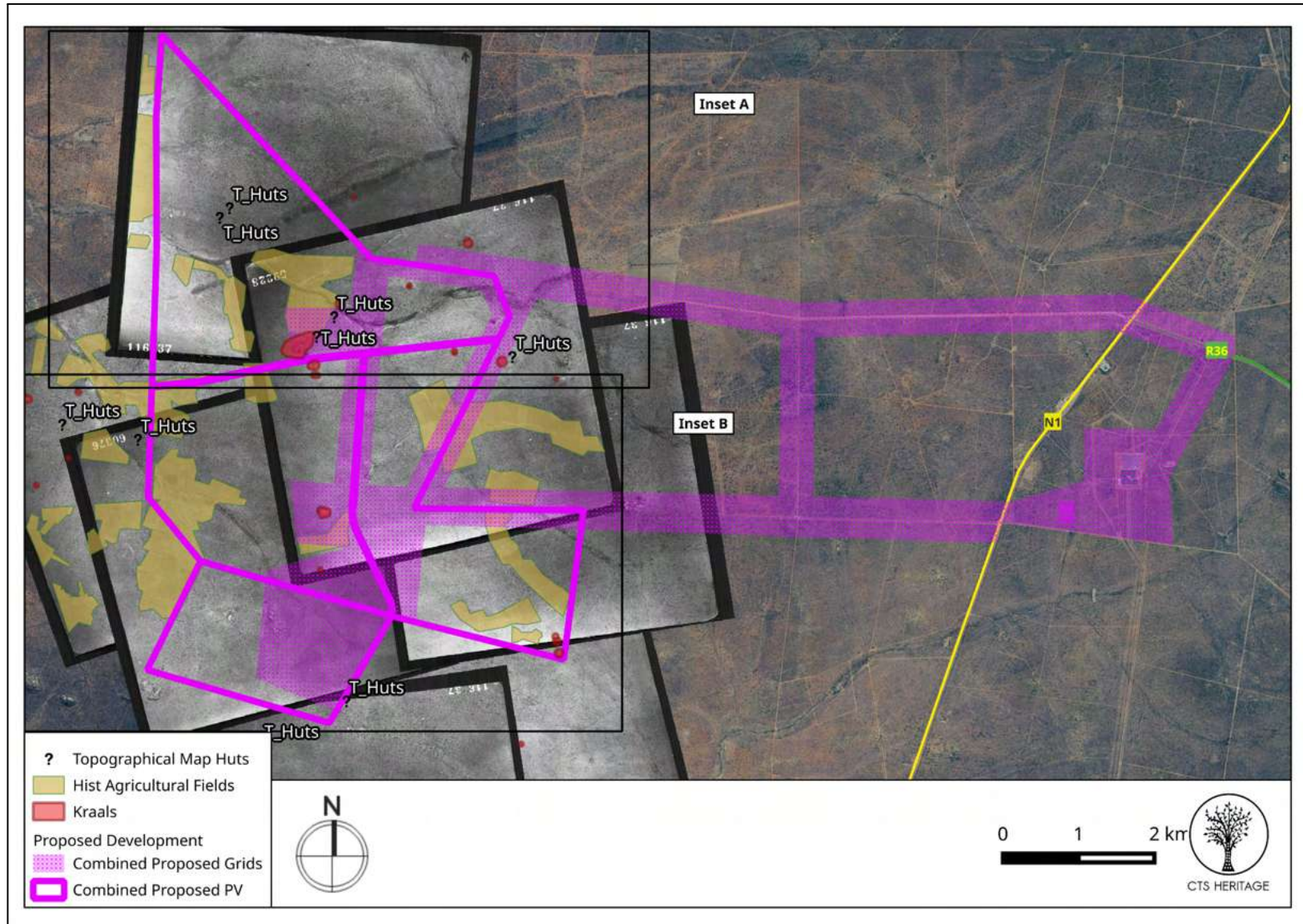
**Figure 3.1 Heritage Resources Map.** Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated.



**Figure 3.2 Heritage Resources Inset Map A.** Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated.

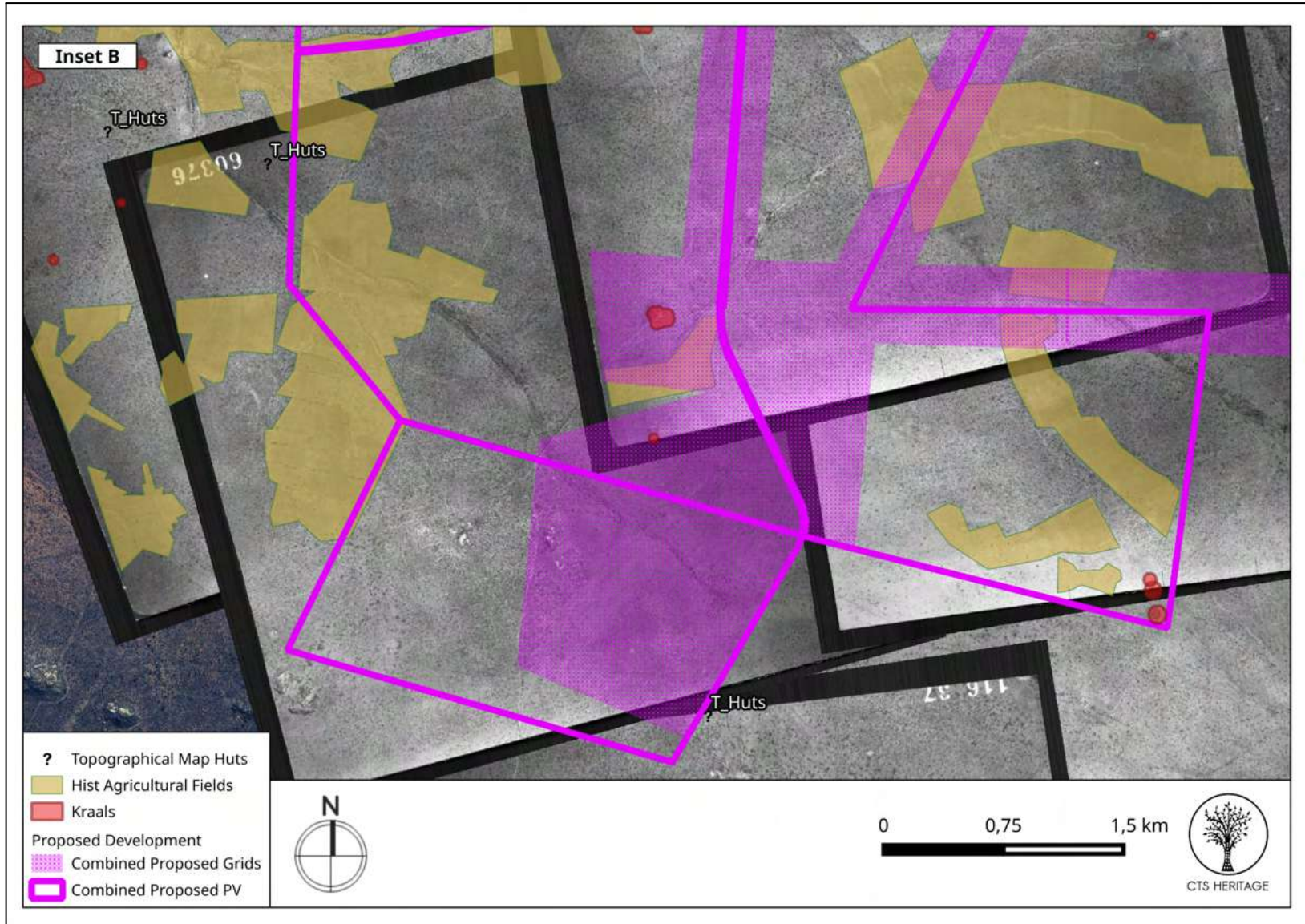


**Figure 3.3 First Edition Topo Map.** First Edition Topo Map indicating historical farm werfs that still exist

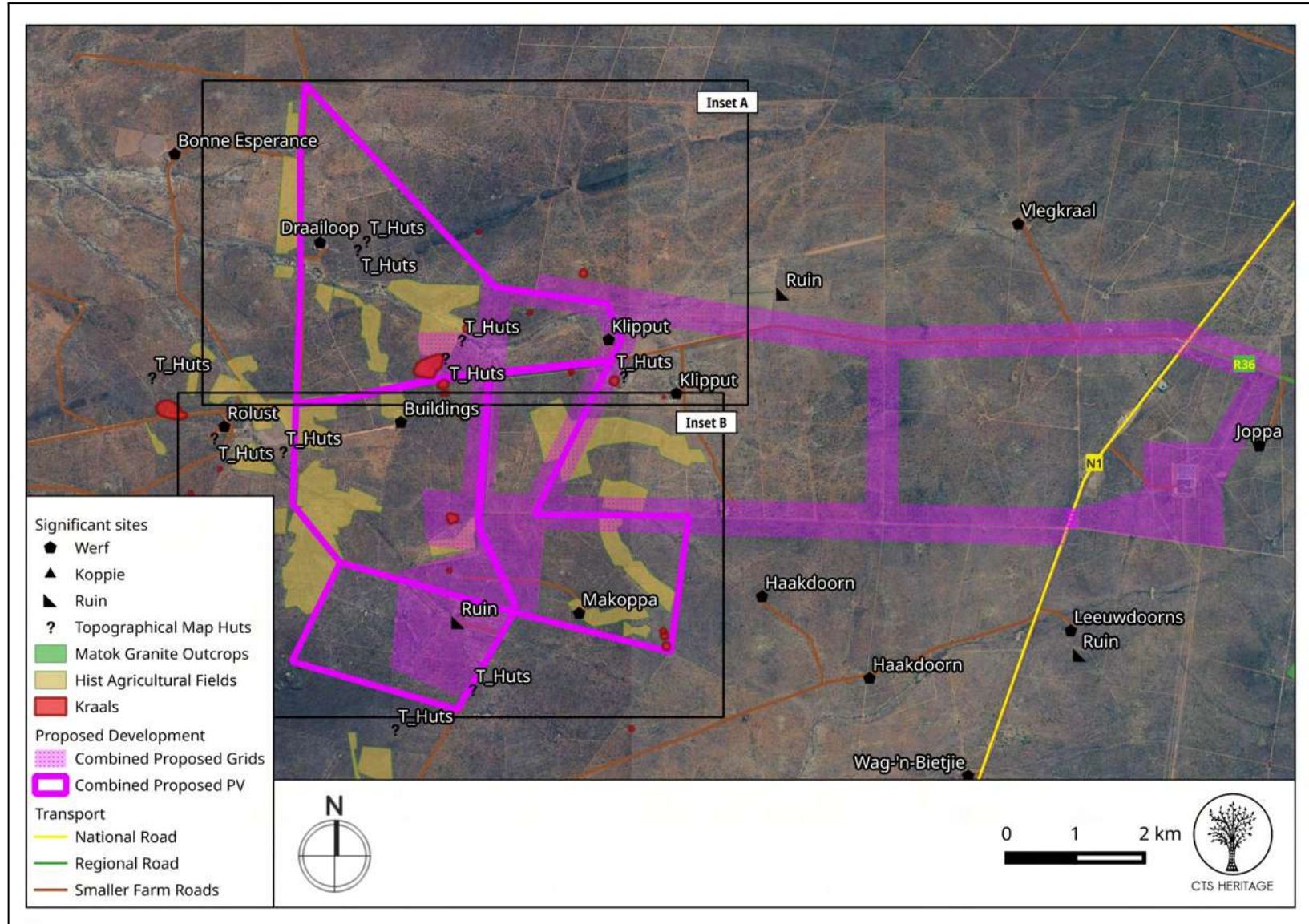


**Figure 3.4 Georectified Historical Aerial Photographs (1937) indicating existence of kraals and agricultural fields in 1937**

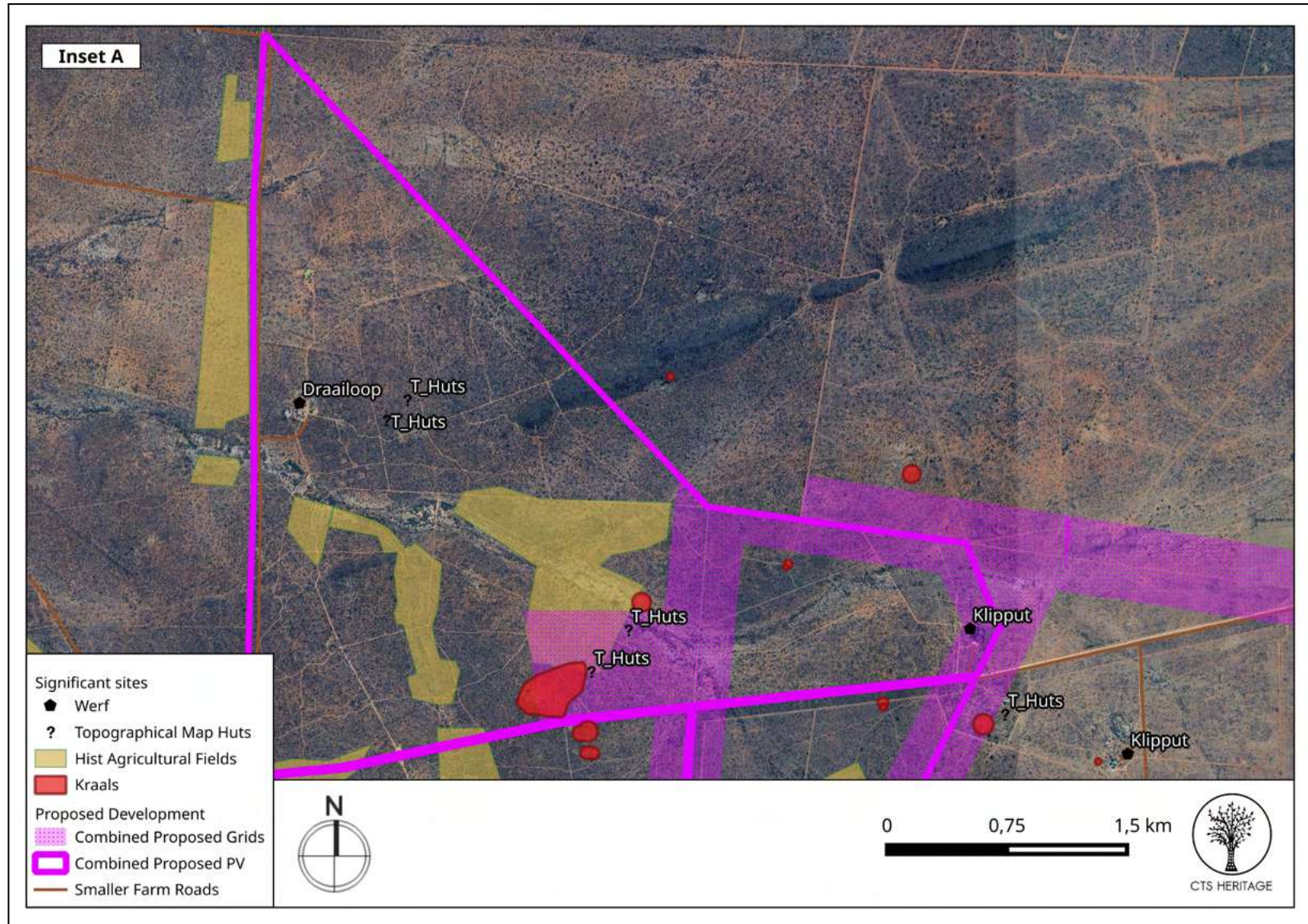




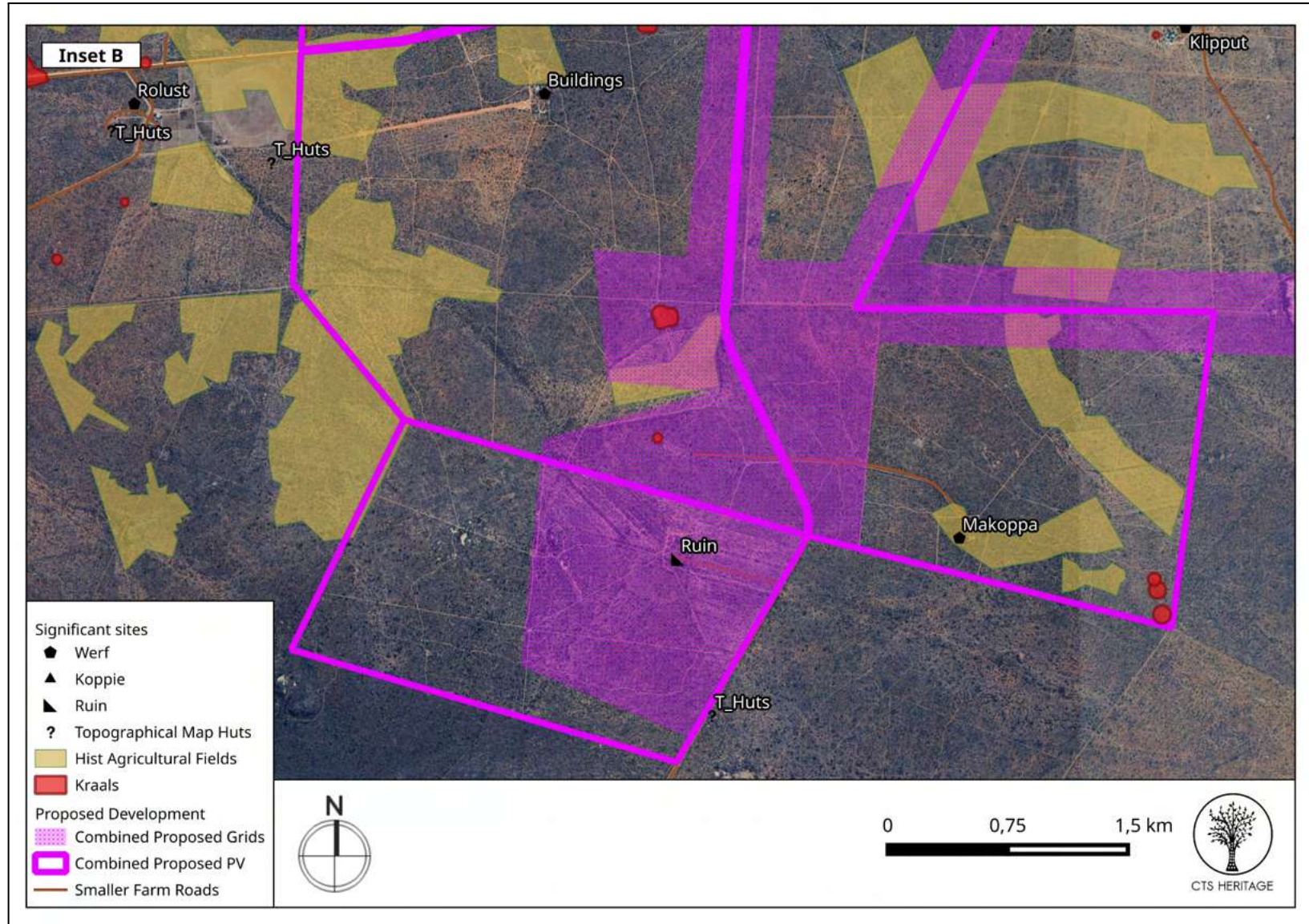
**Figure 3.6 Georectified Historical Aerial Photographs (1937) indicating existence of kraals and agricultural fields in 1937**



**Figure 3.7 Cultural Landscape Map.** Map indication sensitive receptors near the proposed development, extracted from the Topo 1:50 000 map.



**Figure 3.8 Cultural Landscape Map.** Map indication sensitive receptors near the proposed development, extracted from the Topo 1:50 000 map.



**Figure 3.9 Cultural Landscape Map.** Map indication sensitive receptors near the proposed development, extracted from the Topo 1:50 000 map.



### 3.3 Land Claims

There is an ongoing land claims process for properties impacted by this proposed development (KRP 5564, gazetted through notice 948 of 2006 on 14 July 2006). The issue of the land claim was raised through the consultation process undertaken for the proposed development.

In a comment received from Mr Malefo dated 13 November 2025, it is noted that *“This land, the entire Tabor cluster encompassing Draailoop, Bethel, Klipput and Makoppa and the farms beyond, is not merely a “site” for a PV project. It is the cradle and the graveyard of the Chatleka people and related communities.”*

The land claim is disputed by the current owners and is going through a legal process in terms of the relevant legislation. Following the receipt of comments on the Impact Assessment process, a public engagement was held with the affected community and elders were requested to identify the location of sites of ongoing cultural value to ensure that the heritage impact assessment is comprehensive and addresses all resources present within the development area. Both this report and the HIA’s for the Draailoop, Bethel, Klipput and Makoppa PV Facilities have been updated following this engagement.



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#### **4. IDENTIFICATION OF HERITAGE RESOURCES**

##### **4.1 Field Assessment**

The most significant findings were made on the granite outcrops at Bethel/Makoppa and near the grid connection route through Klipput. Later Stone Age fine line paintings have not been recorded in great numbers in the immediate area and the site found in the small granite outcrop is similar to sites further north in the Soutpansberg. The other granite outcrop at Klipput is much larger and a number of modern chalets and historical stone kraals have been built right up against the outcrop. A small shelter containing hundreds of Iron Age pottery sherds was found and isolated stone tool flakes and more sherds can be found all over the outcrop. Another Iron Age find was made at Langgedacht in the grid connection route which consisted of isolated pottery sherds and quartz flakes.

The majority of the farm werfs date to the late 19th and early 20th century with several alterations and newer buildings present. Historical graveyards related to the families at Draailoop and Klipput were recorded with separate graves and ruined dwellings at Bethel and Klipput for farmworkers and their relatives. It was surprising to see relatively low artefact counts but additional GIS work on the historical satellite imagery showed the large number of previously ploughed fields in the PV areas which are now fallow for the game farming and hunting businesses. This explains the highly disturbed and unnaturally level ground present across much of the PV areas.

A follow-up visit on 26th November 2025 took place as a miscommunication occurred between the current owners and the heritage team about the location of all the graves known to the landowner. Three additional locations with 20th century graves were recorded and these are being visited about once a year by the relatives of the deceased. A few additional ruined buildings were also recorded in November and an older Iron Age settlement was visited that was identified from the 1930s satellite imagery. This site holds older graves that are no longer being visited as well as pottery and historical glass fragments - dating the settlement to at least the late Iron Age.



Figure 4.1: View of the grid connection route in the southern area north of Matoks and south of Ga-Phasha.



Figure 4.2: View from a small granite outcrop south of the Mononono River.



Figure 4.3: View along the N1 highway.



Figure 4.4: Typical view along the grid connection routes - gravel roads and game fences.



Figure 4.5: View along the grid connection route.



Figure 4.6: View from granite outcrop with the rock art site in Bethel farm.



Figure 4.7: View across the bushveld in the PV areas.



Figure 4.8: View in the grid connection route at Makoppa.



Figure 4.9: View of euphorbia and acacia trees.



Figure 4.10: View down one of the grid connection routes.



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Figure 4.11: View near the N1 highway at Brandhoek.



Figure 4.12: Tabor substation.



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Figure 4.13: View of the bushveld at Langgedacht in overgrazed areas.



Figure 4.14: Maize fields at Langgedacht in the grid connection routes.



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Figure 4.15: View of more hilly ground near some granite outcrops on Langgedacht.



Figure 4.16: Granite outcrop at Langgedacht along the grid connection route.



Figure 4.17: View from granite outcrop at Langgedacht along the grid connection route.



Figure 4.18: View along the grid connection route at Klipput.



Figure 4.19: View of the Klipput granite outcrop with the Iron Age site.

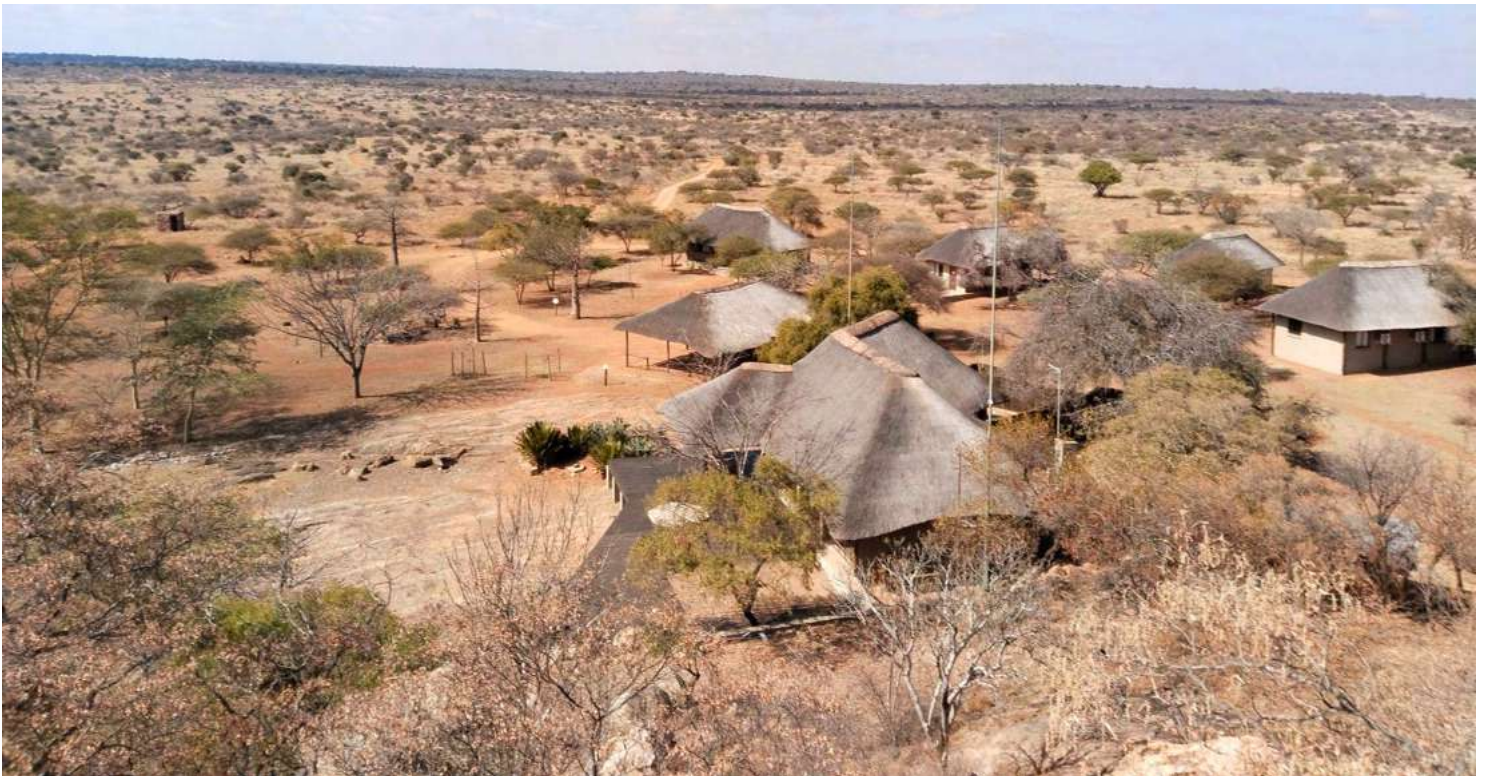


Figure 4.20: View from Klipput granite outcrop looking down on the modern chalets.



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Figure 4.21: View of Tabor substation.

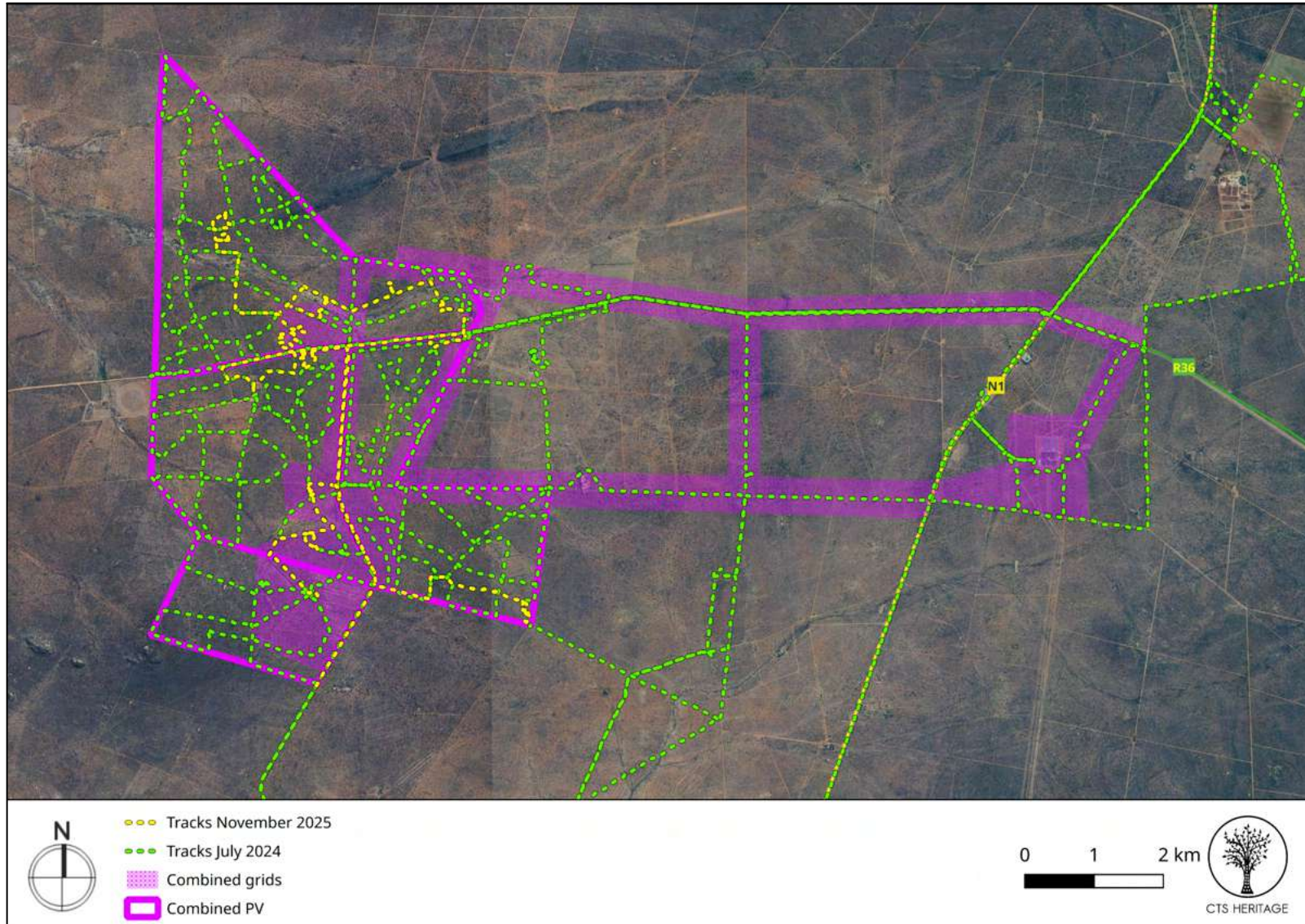


Figure 5. Track paths of archaeological field assessment



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## 4.2 Archaeological Survey - July 2024 and November 2025

### 4.2.1 Archaeological Resources Identified - July 2024

**Table 1: Observations noted during the July 2024 field assessment (outlined in Green on Figure xxx)**

| POINT ID | Description                                                                                                                                              | Density  | Type                   | Period                | Co-ordinates |           | Grading | Mitigation  |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------|-----------------------|--------------|-----------|---------|-------------|
| 1        | Modern homesteads linked to small modern stock kraals                                                                                                    | n/a      | Structure              | Modern                | -23,454587   | 29,734555 | NCW     | n/a         |
| 2        | Modern buildings, house and factory buildings near brickmaking business                                                                                  | n/a      | Structure              | Modern                | -23,452394   | 29,737957 | NCW     | n/a         |
| 3        | Modern concrete block buildings                                                                                                                          | n/a      | Structure              | Modern                | -23,452022   | 29,730464 | NCW     | n/a         |
| 4        | Quartz core near granite outcrop                                                                                                                         | 0 to 5   | Artefacts              | LSA                   | -23,444218   | 29,725283 | NCW     | n/a         |
| 5        | Half built modern farm building                                                                                                                          | n/a      | Structure              | Modern                | -23,440769   | 29,725698 | NCW     | n/a         |
| 6        | Bethel hunting camp, modern chalets                                                                                                                      | n/a      | Structure              | Modern                | -23,366833   | 29,679938 | NCW     | n/a         |
| 7        | Ruin, concrete plaster, brick foundations, early 20th c.                                                                                                 | n/a      | Ruin                   | Modern                | -23,378553   | 29,686901 | NCW     | n/a         |
| 8        | Concrete block building, modern                                                                                                                          | n/a      | Structure              | Modern                | -23,386147   | 29,691458 | NCW     | n/a         |
| 9        | Grave, recently formalised with palisade fencing and headstone, 1871-1959. Mathedimosa Motatanye                                                         | n/a      | Graves/ Burial Grounds | Historic              | -23,385478   | 29,68764  | IIIA    | 100m Buffer |
| 10       | Bricks and stones, ruined kraals                                                                                                                         | n/a      | Ruin                   | Modern                | -23,385634   | 29,687749 | NCW     | n/a         |
| 11       | Upper grindstone, granite, on granite outcrop, quartz flakes. Rock art on overhanging surface 2x1m. At least 3 faded human figures, holding hunting bags | 10 to 30 | Artefacts, Rock Art    | LSA                   | -23,38966    | 29,68092  | IIIA    | 50m Buffer  |
| 12       | Thin walled LSA pottery and quartz core on top of outcrop. Ochre burnish                                                                                 | 0 to 5   | Artefacts              | LSA                   | -23,389924   | 29,68069  | IIIC    | 20m Buffer  |
| 13       | Ruined kraal                                                                                                                                             | n/a      | Ruin                   | Modern                | -23,391219   | 29,687129 | NCW     | n/a         |
| 14       | Modern building for pump                                                                                                                                 | n/a      | Structure              | Modern                | -23,389326   | 29,685808 | NCW     | n/a         |
| 15       | Hunting hide and concrete dam                                                                                                                            | n/a      | Structure              | Modern                | -23,386063   | 29,697894 | NCW     | n/a         |
| 16       | Makoppa werf, lodge, kraals, farm buildings, 20th c.                                                                                                     | n/a      | Structure              | Modern                | -23,389953   | 29,704329 | NCW     | n/a         |
| 17       | Stone lined foundations of kraal                                                                                                                         | n/a      | Ruin                   | Historic              | -23,391516   | 29,713923 | NCW     | n/a         |
| 18       | Radial core, quartz, in jeep track                                                                                                                       | 0 to 5   | Artefacts              | MSA                   | -23,391717   | 29,715893 | NCW     | n/a         |
| 19       | Klipput werf, modern buildings                                                                                                                           | n/a      | Structure              | Modern                | -23,357507   | 29,707808 | NCW     | n/a         |
| 20       | Quartz core, siltstone flake                                                                                                                             | 0 to 5   | Artefacts              | MSA                   | -23,350861   | 29,692594 | NCW     | n/a         |
| 21       | Modern lapa and viewing spot                                                                                                                             | n/a      | Structure              | Modern                | -23,346417   | 29,682921 | NCW     | n/a         |
| 22       | Quartzite flakes                                                                                                                                         | 0 to 5   | Artefacts              | MSA                   | -23,346214   | 29,681962 | NCW     | n/a         |
| 23       | Concrete dam and modern hut                                                                                                                              | n/a      | Structure              | Modern                | -23,347036   | 29,675491 | NCW     | n/a         |
| 23       | Concrete dam and modern hut                                                                                                                              | n/a      | Structure              | Modern                | -23,347564   | 29,675418 | NCW     | n/a         |
| 24       | Draailoop werf, modern buildings                                                                                                                         | n/a      | Structure              | Modern                | -23,346189   | 29,669899 | NCW     | n/a         |
| 25       | Haasbroek family graves. 9 graves 1950s to 1990s.                                                                                                        | n/a      | Graves/ Burial Grounds | Modern                | -23,34813    | 29,669737 | IIIA    | 100m Buffer |
| 26       | Klipput school                                                                                                                                           | n/a      | Ruin                   | Modern                | -23,360904   | 29,709404 | NCW     | n/a         |
| 27       | Klipput modern ruins                                                                                                                                     | n/a      | Ruin                   | Modern                | -23,360954   | 29,708227 | NCW     | n/a         |
| 28       | Ruins of modern building                                                                                                                                 | n/a      | Ruin                   | Modern                | -23,41785    | 29,717395 | NCW     | n/a         |
| 29       | Modern ruins, 20th c.                                                                                                                                    | n/a      | Ruin                   | Modern                | -23,400024   | 29,740046 | NCW     | n/a         |
| 30       | Haakdoorn. Mid 20th c house, corrugated iron roof.                                                                                                       | n/a      | Ruin                   | Modern                | -23,39767    | 29,740959 | NCW     | n/a         |
| 31       | Quartz source, debitage                                                                                                                                  | 5 to 10  | Artefacts              | MSA                   | -23,379224   | 29,743185 | NCW     | n/a         |
| 32       | St Brendan's mission school                                                                                                                              | n/a      | Structure              | Modern                | -23,428711   | 29,717598 | NCW     | n/a         |
| 33       | Brandhoek red painted buildings, corrugated iron roofs, ruin                                                                                             | n/a      | Ruin                   | Modern                | -23,376791   | 29,743956 | NCW     | n/a         |
| 34       | Quartz point in jeep track                                                                                                                               | 0 to 5   | Artefacts              | LSA                   | -23,379174   | 29,752151 | NCW     | n/a         |
| 35       | Makgale game lodge buildings, modern                                                                                                                     | n/a      | Structure              | Modern                | -23,330681   | 29,831191 | NCW     | n/a         |
| 36       | Quartz core, flakes, IA pottery                                                                                                                          | 5 to 10  | Artefacts              | LSA, Iron Age         | -23,347638   | 29,820919 | IIIC    | 20m Buffer  |
| 37       | Mathoko graves, 2. 2012 and 2013 surrounded by fence and near ruins. IA pottery MSA quartzite flakes                                                     | 10 to 30 | Artefacts, Graves      | MSA, Iron Age, Modern | -23,361102   | 29,708584 | IIIA    | 100m Buffer |



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|    |                                                                            |        |                        |                  |            |           |      |             |
|----|----------------------------------------------------------------------------|--------|------------------------|------------------|------------|-----------|------|-------------|
| 38 | 2 farmers graves, 1929, Venter family, fenced                              | n/a    | Graves/ Burial Grounds | Historic         | -23,365774 | 29,716675 | IIIA | 100m Buffer |
| 39 | Klipput werf, mostly modern buildings                                      | n/a    | Structure              | Modern, Historic | -23,364273 | 29,715467 | NCW  | n/a         |
| 40 | Klipput lodge, modern chalets                                              | n/a    | Structure              | Modern           | -23,362637 | 29,716199 | NCW  | n/a         |
| 41 | Klipput stone walled kraals, large stones in rectangular walls, historical | n/a    | Ruin                   | Historic         | -23,36267  | 29,71548  | IIIB | 100m Buffer |
| 42 | Quartz flakes on granite outcrop                                           | 0 to 5 | Artefacts              | LSA              | -23,361927 | 29,716063 | NCW  | n/a         |
| 43 | Large IA pottery sherd                                                     | 0 to 5 | Artefacts              | Iron Age         | -23,361759 | 29,71568  | NCW  | n/a         |
| 44 | Little shelter with deposit and lots of IA pottery sherds                  | 30+    | Artefacts              | Iron Age         | -23,361959 | 29,715563 | IIIA | 50m Buffer  |
| 45 | Tropic of Capricorn monument                                               | n/a    | Monument               | Modern           | -23,437303 | 29,745109 | IIIC | 20m Buffer  |
| 46 | Roadside monument marking Simon Matime, 2018                               | n/a    | Memorial               | Modern           | -23,44253  | 29,74376  | IIIC | 20m Buffer  |
| 47 | Quartz core                                                                | 0 to 5 | Artefacts              | MSA              | -23,365087 | 29,696401 | NCW  | n/a         |
| 48 | Quartz flakes, cores                                                       | 0 to 5 | Artefacts              | LSA              | -23,35859  | 29,681766 | NCW  | n/a         |
| 49 | Quartz points and flakes                                                   | 0 to 5 | Artefacts              | LSA              | -23,381078 | 29,784511 | NCW  | n/a         |
| 50 | Microlith and core, quartz                                                 | 0 to 5 | Artefacts              | LSA              | -23,373565 | 29,668838 | NCW  | n/a         |
| 51 | MSA point, quartz                                                          | 0 to 5 | Artefacts              | MSA              | -23,355514 | 29,803042 | NCW  | n/a         |

#### 4.2.2 Archaeological Resources Identified - November 2025

Table 2: Observations noted during the November 2025 field assessment (outlined in Yellow on Figure xxx)

| POINT ID | Description                                                                                                                             | Density | Type                  | Period     | Co-ordinates |           | Grading | Mitigation  |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|------------|--------------|-----------|---------|-------------|
| R1       | Ruined structures marked on old topo map, completely demolished today                                                                   | n/a     | Observation           | Historical | -23.399102   | 29.689714 | NCW     | N/A         |
| R2       | Matjutla family graves, 4 with clear brick construction and headstones, at least another 14 with stone cairns, more ephemerally marked. | n/a     | Graves/Burial Grounds | Historical | -23.362824   | 29.687466 | IIIA    | 100m Buffer |
| R3       | Ruined hut floor marked with stones, historical. Another stone-lined hut floor                                                          | n/a     | Ruin                  | Historical | -23.364072   | 29.685965 | IIIC    | 50m Buffer  |
| R4       | Mudstone brick ruin                                                                                                                     | n/a     | Ruin                  | Historical | -23.363013   | 29.686233 | IIIC    | 50m Buffer  |
| R5       | White ceramics, metal sheets and rusted drums                                                                                           | 10-30   | Artefacts             | Historical | -23.362752   | 29.685999 | NCW     | N/A         |
| R6       | Rusted metal, dispersed rocks                                                                                                           | 0-5     | Artefacts             | Historical | -23.378335   | 29.6867   | NCW     | N/A         |
| R6       | Broken concrete slabs, feeding kraal                                                                                                    | n/a     | Ruin                  | Historical | -23.378351   | 29.686723 | IIIC    | 50m Buffer  |
| R6       | Historical ruined building, stone-lined foundations                                                                                     | n/a     | Ruin                  | Historical | -23.378508   | 29.68694  | IIIC    | 50m Buffer  |
| R7       | Concrete floor with stone lining                                                                                                        | n/a     | Ruin                  | Historical | -23.379104   | 29.687003 | IIIC    | 50m Buffer  |
| R8       | Stone-lined foundation and concrete hut floor                                                                                           | n/a     | Ruin                  | Historical | -23.378587   | 29.686715 | IIIC    | 50m Buffer  |
| R9       | Stone-lined field boundaries seen in the area                                                                                           | n/a     | Ruin                  | Historical | -23.3831     | 29.687006 | NCW     | N/A         |
| R10      | Single stone cairn marked grave in cleared area, old kraal                                                                              | n/a     | Graves/Burial Grounds | Historical | -23.384729   | 29.686522 | IIIA    | 100m Buffer |
| R11      | Another stone cairn grave                                                                                                               | n/a     | Graves/Burial Grounds | Historical | -23.38484    | 29.686505 | IIIA    | 100m Buffer |
| R12      | Clearing, ash dumps, stone-lined ruined foundation                                                                                      | n/a     | Ruin                  | Historical | -23.385234   | 29.687277 | IIIC    | 50m Buffer  |
| R13      | Unknown grave marked with stone lining                                                                                                  | n/a     | Graves/Burial Grounds | Historical | -23.385538   | 29.687498 | IIIA    | 100m Buffer |
| R14      | Kleinboy Mathedimisa grave, 1871-1959                                                                                                   | n/a     | Graves/Burial Grounds | Historical | -23.385454   | 29.687652 | IIIA    | 100m Buffer |
| R15      | Ruined homes, stone lined                                                                                                               | n/a     | Ruin                  | Historical | -23.385521   | 29.687819 | IIIC    | 50m Buffer  |
| R16      | Ruined concrete block building                                                                                                          | n/a     | Ruin                  | Historical | -23.390593   | 29.687466 | NCW     | N/A         |
| R17      | Concrete block and stone ruin                                                                                                           | n/a     | Ruin                  | Historical | -23.391039   | 29.687798 | NCW     | N/A         |
| R18      | Stone-lined kraal/hut, previously recorded at #17                                                                                       | n/a     | Ruin                  | Historical | -23.39151    | 29.71389  | NCW     | N/A         |



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|     |                                                                                                |       |                          |                         |            |           |      |             |
|-----|------------------------------------------------------------------------------------------------|-------|--------------------------|-------------------------|------------|-----------|------|-------------|
| R19 | Open area where old kraals were, Iron Age pottery                                              | n/a   | Settlement<br>Ruin       | Iron Age,<br>Historical | -23.392155 | 29.71474  | IIIC | 50m Buffer  |
| R19 | Possible grave, granite coring                                                                 | n/a   | Graves/Burial<br>Grounds | Historical              | -23.392143 | 29.714917 | IIIA | 100m Buffer |
| R20 | Grave with stone headstone, cairn                                                              | n/a   | Graves/Burial<br>Grounds | Historical              | -23.393812 | 29.71469  | IIIA | 100m Buffer |
| R21 | Another stone marked grave with head and<br>footstones                                         | n/a   | Graves/Burial<br>Grounds | Historical              | -23.393751 | 29.714942 | IIIA | 100m Buffer |
| R22 | Historical glass bottle and more pottery                                                       | 10-30 | Artefacts                | Historical,<br>Iron Age | -23.39403  | 29.715237 | IIIC | 50m Buffer  |
| R23 | Old lower grindstone                                                                           | 0-5   | Artefacts                | Iron Age                | -23.394095 | 29.715176 | IIIC | 50m Buffer  |
| R24 | Jan Madikana grave, 1901-1961, fenced with<br>headstone, very overgrown                        | n/a   | Graves/Burial<br>Grounds | Historical              | -23.356464 | 29.703776 | IIIA | 100m Buffer |
| R25 | Brick ruins near windmill                                                                      | n/a   | Ruin                     | Historical              | -23.357149 | 29.688031 | NCW  | N/A         |
| R26 | Mudbrick ruin                                                                                  | n/a   | Ruin                     | Historical              | -23.359666 | 29.686085 | IIIC | 50m Buffer  |
| R27 | Iron Age settlement, pottery, quartz flakes, open<br>disturbed ground                          | n/a   | Ruin,<br>Settlement      | Iron Age,<br>Historical | -23.360299 | 29.683569 | IIIC | 50m Buffer  |
| R28 | Stone-lined hut floor                                                                          | n/a   | Ruin                     | Iron Age,<br>Historical | -23.360328 | 29.683257 | IIIC | 50m Buffer  |
| R29 | Selabe grave in wrought iron fence, Kleinboi Moley,<br>+ 4 other graves marked by stone cairns | n/a   | Graves/Burial<br>Grounds | Historical              | -23.348157 | 29.675556 | IIIA | 100m Buffer |
| R30 | Small fire pit, modern                                                                         | n/a   | Structure                | Modern                  | -23.347207 | 29.676545 | NCW  | N/A         |
| R31 | Ruin, stone-lined, metal sheets                                                                | n/a   | Ruin                     | Historical              | -23.345994 | 29.675811 | IIIC | 50m Buffer  |
| R32 | Another stone-lined ruin                                                                       | n/a   | Ruin                     | Historical              | -23.34628  | 29.6757   | IIIC | 50m Buffer  |

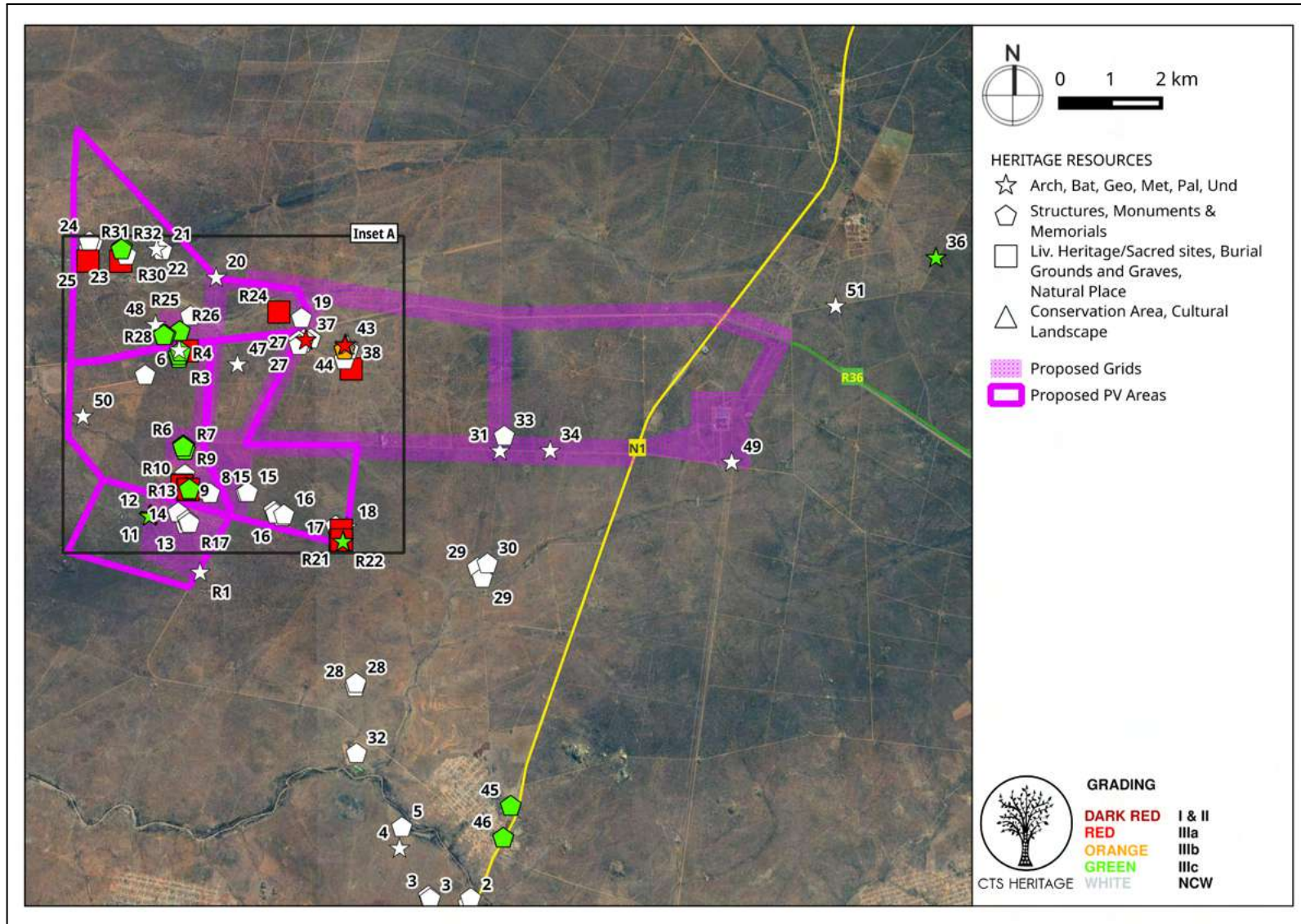


Figure 6.1: Map of all sites and observations noted within the development area

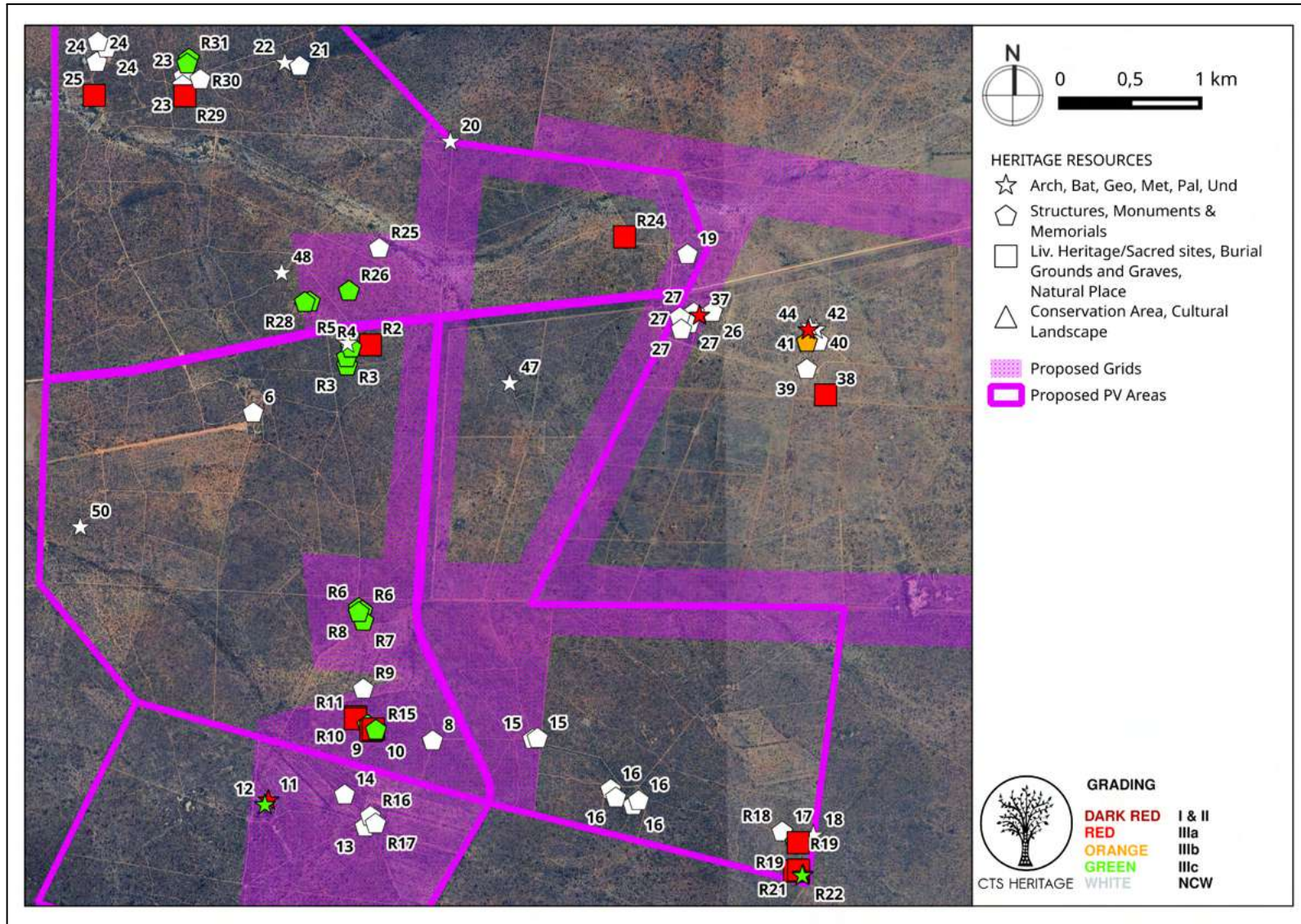


Figure 6.2: Inset Map A of all sites and observations noted within the development area

#### 4.3.1 Selected photographic record - July 2024

(a full photographic record is available upon request)



Figure 7.1: Observation 001 and 002



Figure 7.2: Observation 003 and 004



Figure 7.3: Observation 007 and 008



Figure 7.4: Observation 009



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Figure 7.5: Observation 011



Figure 7.6: Observation 012



Figure 7.7: Observation 020 and 022



Figure 7.8: Observation 025



Figure 7.9: Observation 036



Figure 7.10: Observation 037



Figure 7.11: Observation 038



Figure 7.12: Observation 041



Figure 7.13: Observation 044



Figure 7.14: Observation 045



Figure 7.15: Observation 046

#### 4.3.2 Selected photographic record - November 2025

(a full photographic record is available upon request)



Figure 8.1: Observation R2



Figure 8.2: Observation R3



Figure 8.3: Observation R4



Figure 8.4: Observation R6



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Figure 8.5: Observation R7



Figure 8.6: Observation R8



Figure 8.7: Observation R10



Figure 8.8: Observation R11



Figure 8.9: Observation R12



Figure 8.10: Observation R13



Figure 8.11: Observation R14



Figure 8.12: Observation R15



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Figure 8.13: Observation R19



Figure 8.14: Observation R20



Figure 8.15: Observation R21



Figure 8.16: Observation R22



Figure 8.17: Observation R23



Figure 8.18: Observation R24



Figure 8.19: Observation R26



Figure 8.20: Observation R27



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Figure 9.21: Observation R28



Figure 9.22: Observation R29



Figure 9.23: Observation R31



Figure 9.24: Observation R32

## **5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT**

### **5.1 Assessment of Impact to Archaeological Resources**

The field assessment proceeded with limited constraints and the area was satisfactorily surveyed for impacts to archaeological heritage resources. The area proposed for development has been subject to cultivation and agricultural practices for a significant amount of time and as such, most of the recorded observations consist of modern farming buildings and associated infrastructure. These observations have no cultural value from a heritage perspective and as such, are determined to be Not Conservation-Worthy. These are not considered further here.

As is expected in such rural areas, a number of burial grounds and graves were identified (Sites 009, 025, 037 and 038). These burials range from historic to recent and are all located outside of municipal cemeteries. Due to their high levels of local social and spiritual significance, burials have high levels of local cultural value and are graded IIIA. It is recommended that a no development buffer of 100m is implemented around such burials in order to retain their sense of place as well as to ensure that no associated unmarked human remains are accidentally impacted by development activities.

Interestingly, the field assessment identified rock art and Iron age resources within the development area. These observations include rock shelters with associated buried archaeological deposit and rock art (Site 011 and 044, graded IIIA) as well as scatters of Iron Age pottery shards (Sites 012 and 016, Graded IIIC). The field assessment also identified one historic stone-walled kraal (Site 041). This site has been graded IIIB.

These significant archaeological observations are indicative of the potential for additional associated buried archaeology located in close proximity to these sites. Due to their scientific value, these sites may not be negatively impacted by the proposed development and appropriate no development buffers for these sites are recommended in the table above.

Following the receipt of additional information emanating from the Public Participation Process, further analysis was completed using historic aerial imagery and an additional site visit was undertaken. A number of additional burial sites and settlement areas were identified. These additional observations are included in Table 2 above and are mapped in Figures 8.1 to 8.7.

#### ***PV Facilities***

Sites 9, 11, 12 and 25 as well as sites R2, R3, R4, R6, R7, R8, R10, R11, R12, R14, R15, R19, R20, R21, R22, R23, R24, R26, R27, R28, R29, R31 and R32 fall within the proposed PV areas. These sites include a number of burial grounds (both recent and historic). It is recommended that these burials and their recommended buffers are excluded from the development footprint. Additionally, it is recommended that access to these burials is guaranteed for the duration of the life of the PV facility.



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The archaeological observations include rock shelters with associated buried archaeological deposit and rock art (Site 011, graded IIIA) as well as scatters of Iron Age pottery shards (Sites 012, Graded IIIC). These significant archaeological observations are indicative of the potential for additional associated buried archaeology located in close proximity to these sites. Due to their scientific value, these sites may not be negatively impacted by the proposed development and appropriate no development buffers for these sites are recommended in the table above.

It is recommended that the conservation of both the burials and the archaeological sites be managed for the duration of the life of the PV facilities through the drafting of a Conservation Management Plan that is submitted to SAHRA for approval.

### ***Grid Alignment***

Sites 9, 11, 12 and 37 as well as sites R6, R7, R8, R10, R11, R12, R14, R15, R26, R27 and R28 fall within the proposed grid alignment. These sites include a number of burial grounds (both recent and historic) as well as the remnants and ruins of past structures. Impact to these sites can be avoided through careful placement of pylon footings to avoid impact within the recommended buffer areas.

There are archaeological resources associated with granite koppies in the area. A number of granite koppies are known to be located south of the area proposed for development and these koppies should be considered to be archaeologically sensitive. It is recommended that no development take place within or on the koppies.

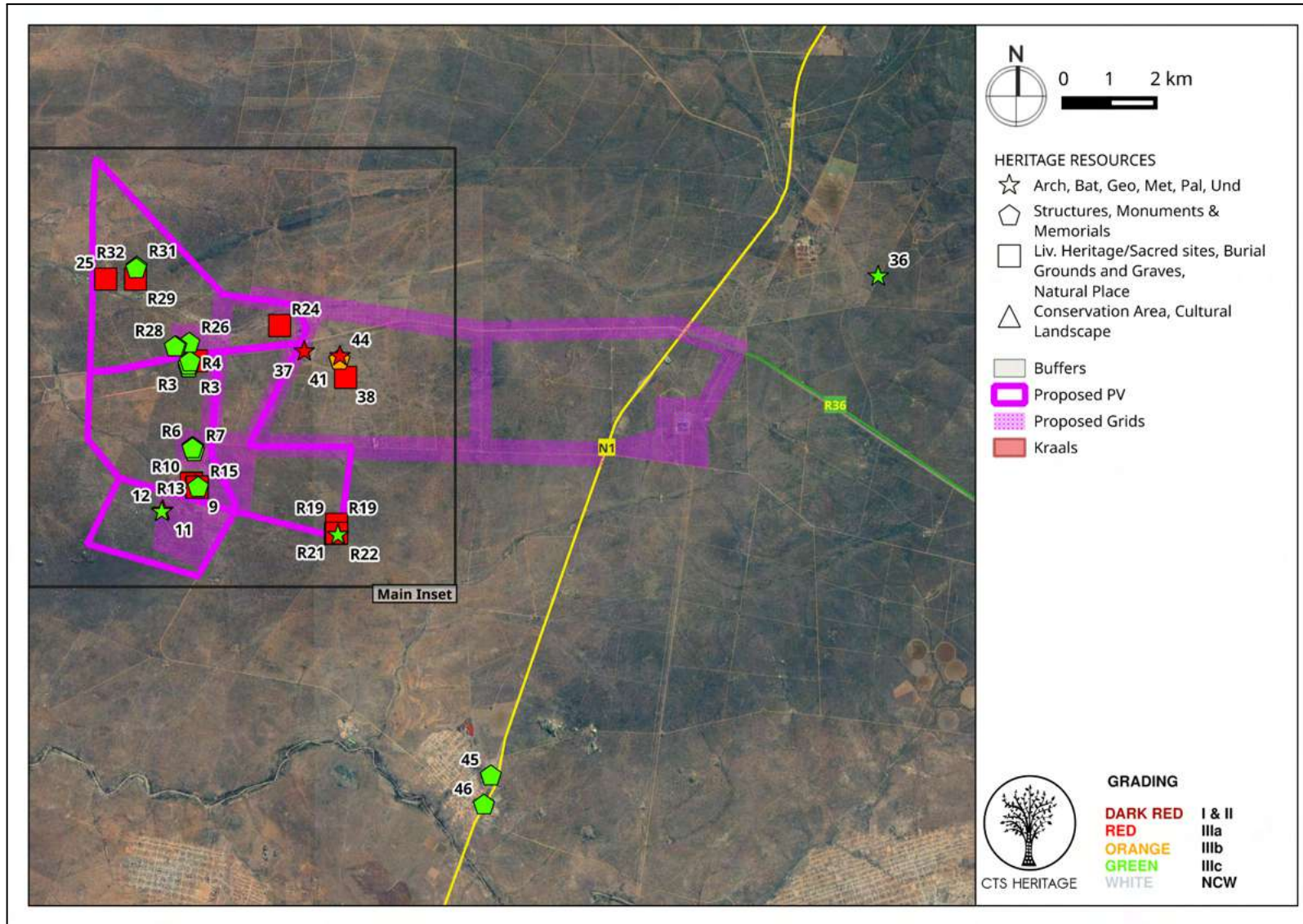


Figure 8.1: Map of all sites and observations noted within the development area as well as proposed mitigation measures

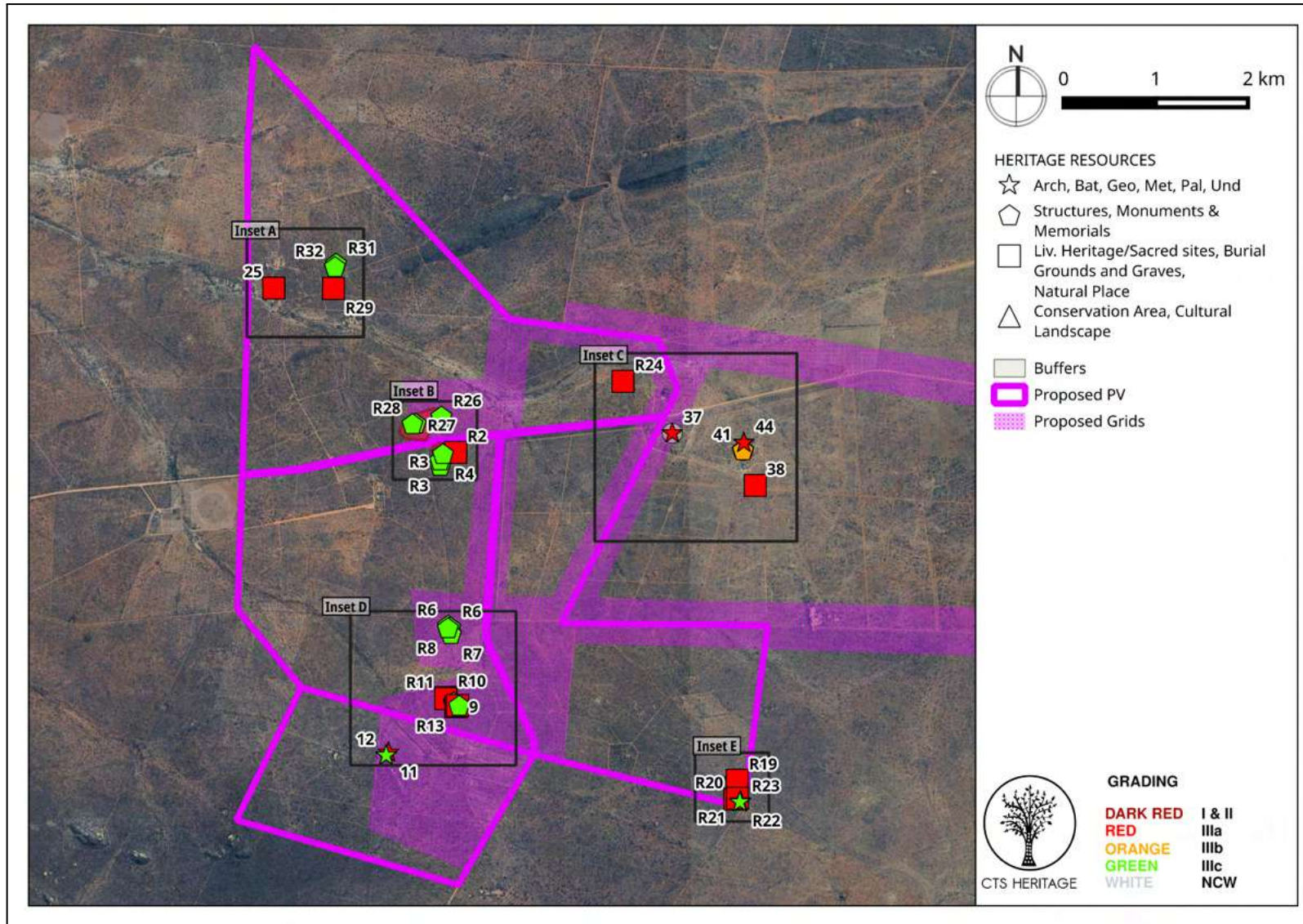


Figure 8.2: Main Inset Map of sites and observations noted within the development area as well as proposed mitigation measures

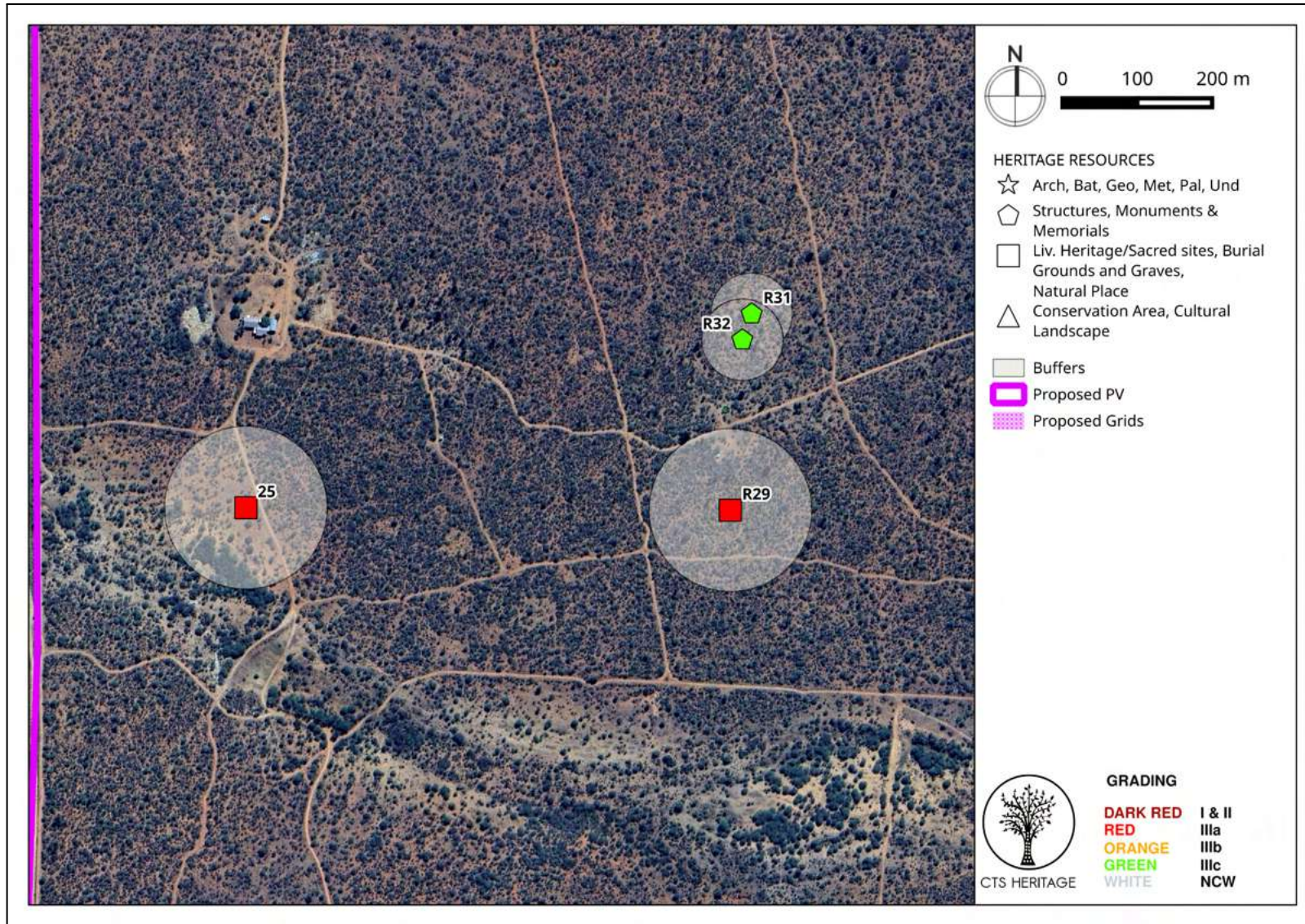


Figure 8.3: Inset Map A of all sites and observations noted within the development area as well as proposed mitigation measures

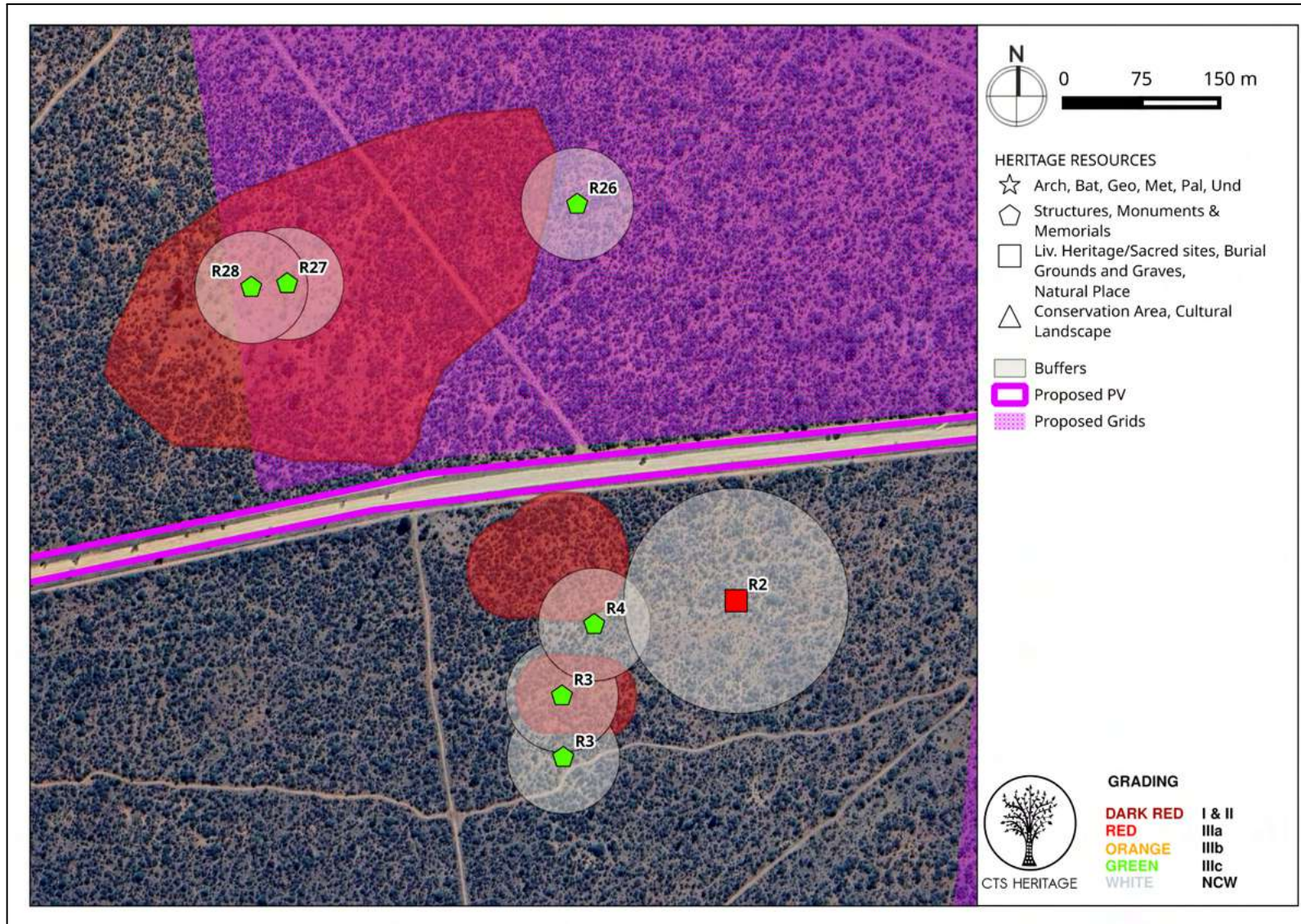


Figure 8.4: Inset Map B of sites and observations noted within the development area as well as proposed mitigation measures

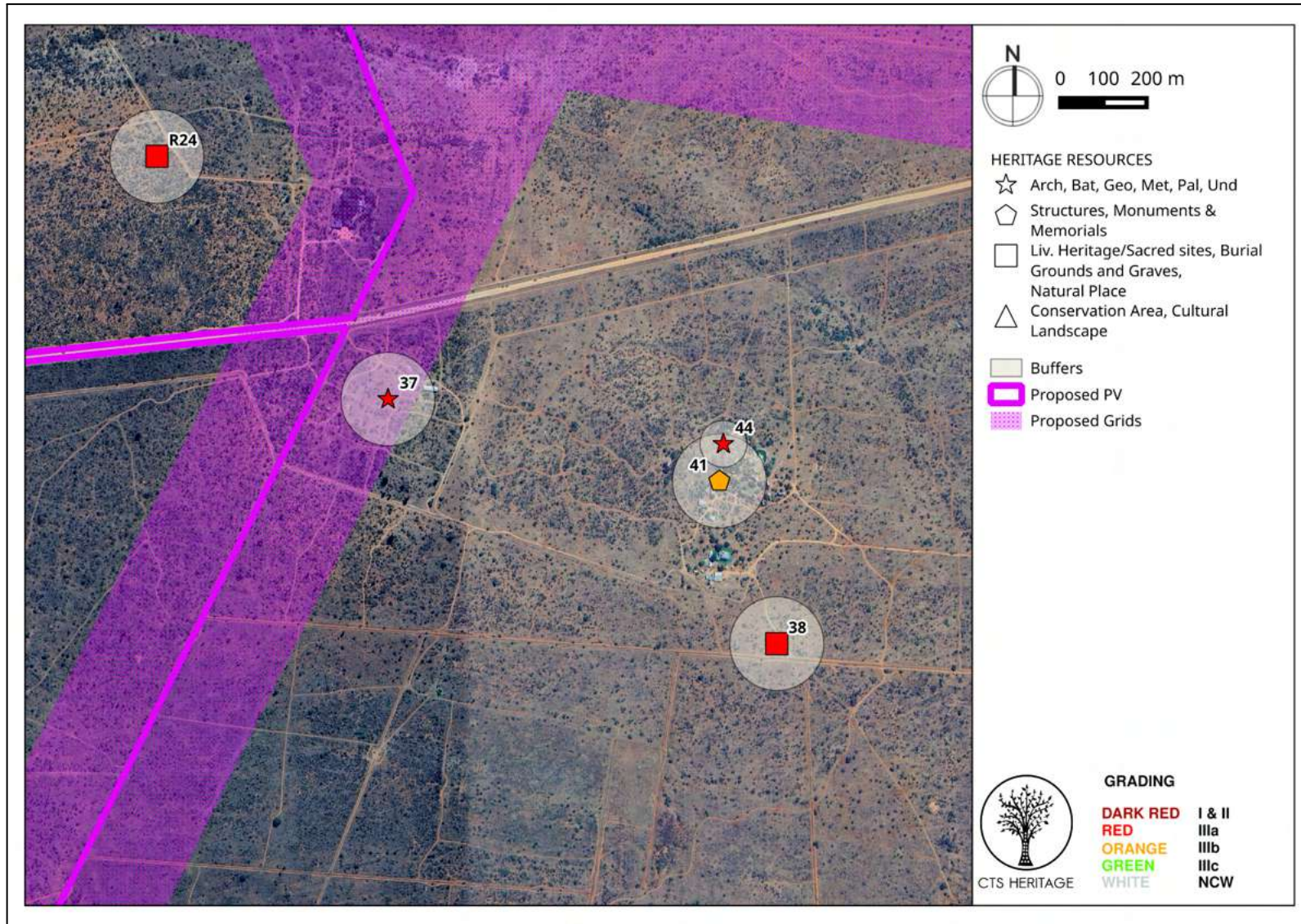


Figure 8.5: Inset Map C of all sites and observations noted within the development area as well as proposed mitigation measures

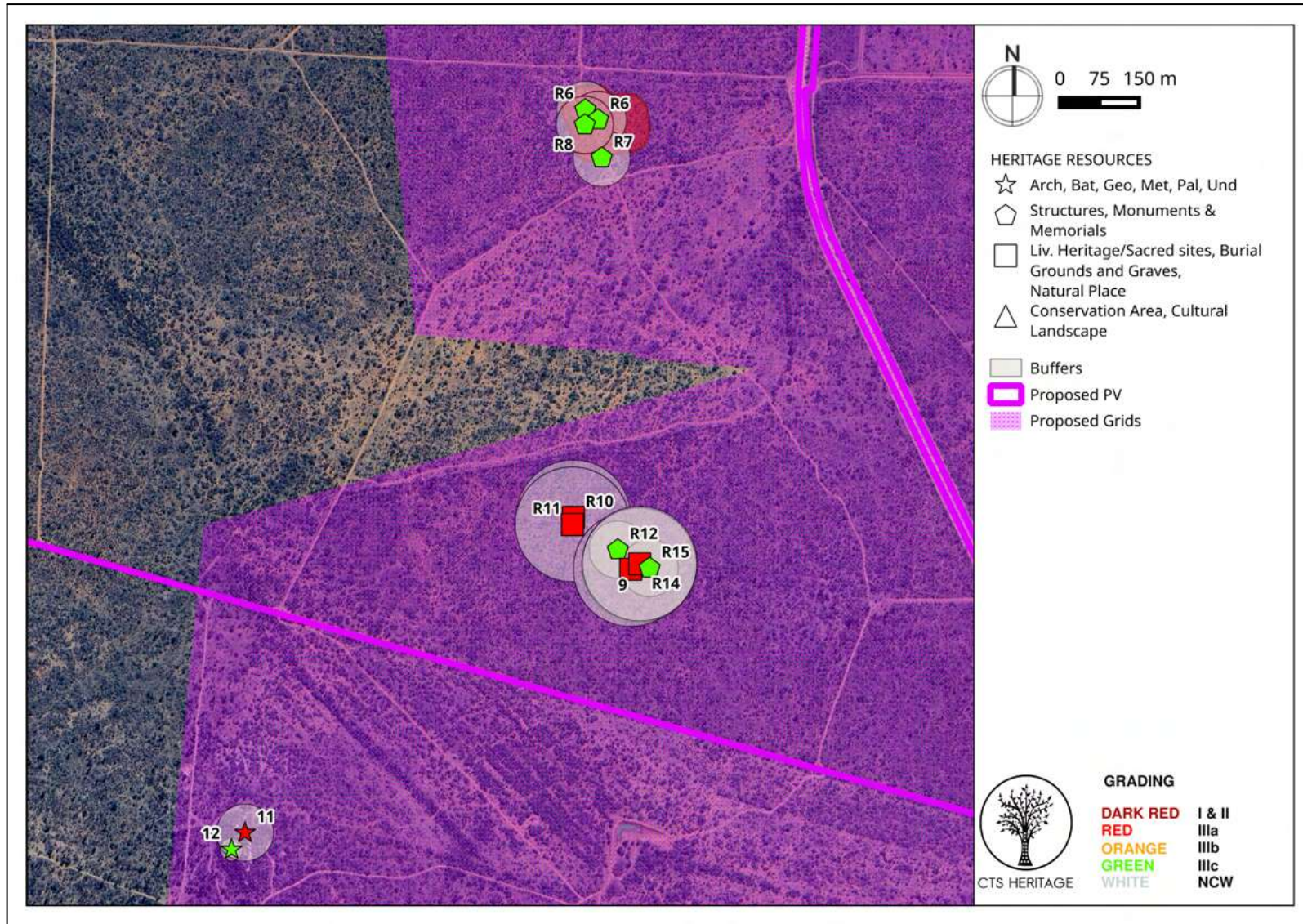


Figure 8.6: Inset Map D of sites and observations noted within the development area as well as proposed mitigation measures

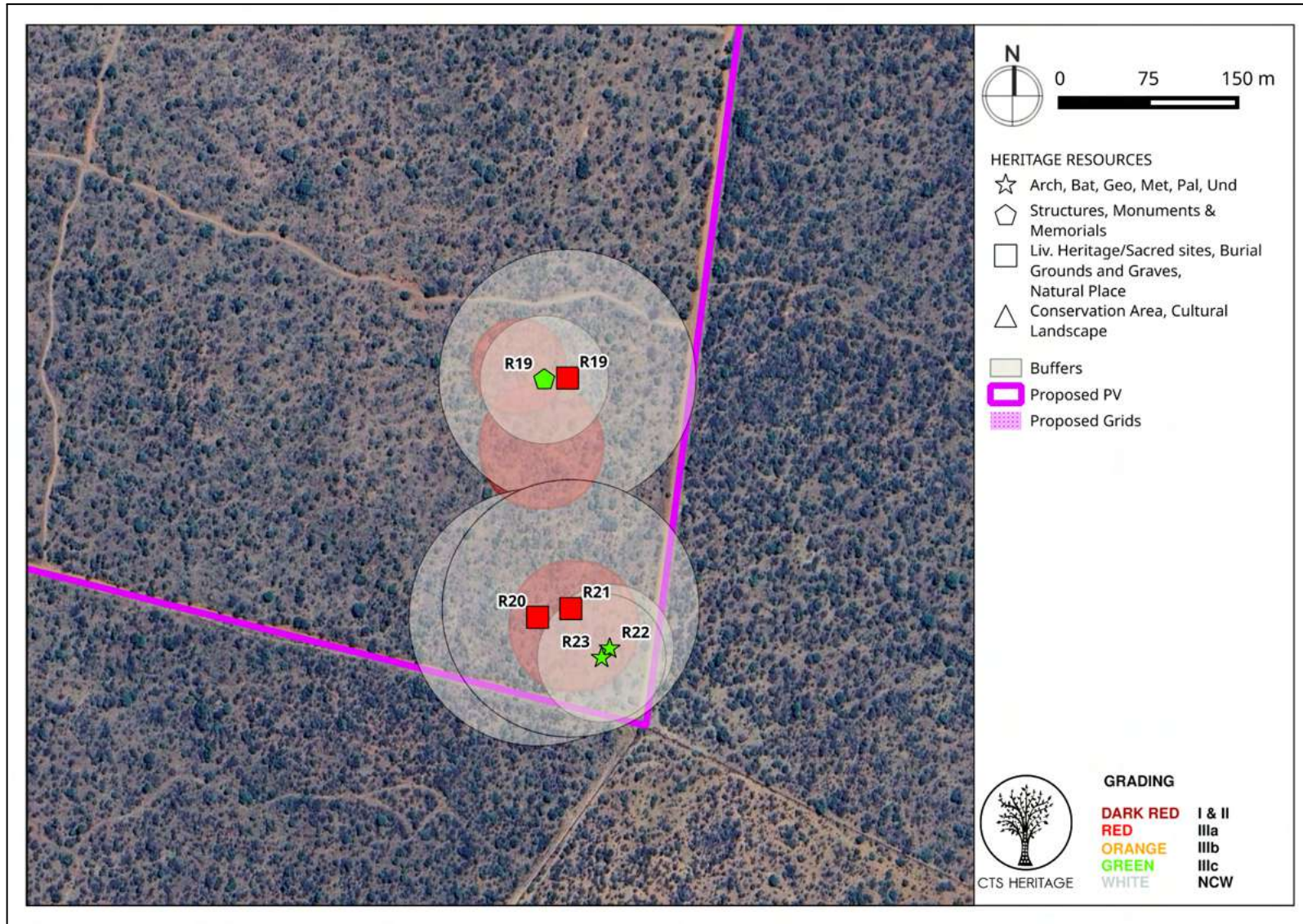


Figure 8.7: Inset Map E of all sites and observations noted within the development area as well as proposed mitigation measures



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## 6. CONCLUSION AND RECOMMENDATIONS

The survey proceeded with no major constraints and limitations, and the project area was comprehensively surveyed for heritage resources. Some significant archaeological material remains were documented within the grid area and the proposed PV facilities. The archaeological observations are somewhat expected here due to the number of Iron Age Sites known from the broader vicinity of the development area. These archaeological resources are associated with granite koppies in the area. A number of granite koppies are known from the southern portion of the grid alignment and these koppies should be considered to be archaeologically sensitive. It is recommended that no development take place within or on the koppies.

A number of significant archaeological resources and burial grounds were identified within the area proposed for development. Recommendations regarding appropriate buffer areas for these significant resources are outlined in the table above.

### ***Recommendations***

Based on the outcomes of this report, it is not anticipated that the proposed development of the solar energy facility and grid connection infrastructure will negatively impact on significant archaeological heritage on condition that:

- The mitigation measures outlined in Table 1 and 2 above are implemented
- The granite koppies within the development area are considered to be sensitive and are excluded from the development footprint
- A Conservation Management Plan is drafted for the ongoing conservation of the significant archaeological sites and burials identified within the area proposed for development
- Although all possible care has been taken to identify sites of cultural importance during the investigation of the study area, it is always possible that hidden or subsurface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils, burials or other categories of heritage resources are found during the proposed development, work must cease in the vicinity of the find and SAHRA must be alerted immediately to determine an appropriate way forward.



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## 7. REFERENCES

| Heritage Impact Assessments |                                                |            |             |                                                                                                                     |
|-----------------------------|------------------------------------------------|------------|-------------|---------------------------------------------------------------------------------------------------------------------|
| Nid                         | Author/s                                       | Date       | Report Type | Title                                                                                                               |
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| 7266                        | Liesl Stegmann,<br>Frans Roodt,<br>Frans Roodt | 01/09/2008 | AIA Phase 1 | Phase 1 Heritage Resources Scoping Report Demarcation of 500 Residential Erven in Makgato, Limpopo                  |
| 8026                        | Johnny Van Schalkwyk                           | 16/04/2007 | AIA Phase 1 | Heritage Impact Assessment for the Planned Tabor-Witkop Power Line, Limpopo Province                                |
| 523228                      | Anton Pelser                                   | 31/03/2019 | AIA Desktop | DESKTOP HIA REPORT FOR THE BANDELIERKOP PRA LOCATED ON VARIOUS FARMS IN THE VHEMBE DISTRICT OF THE LIMPOPO PROVINCE |