ARCHAEOLOGICAL SPECIALIST STUDY

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

THE PROPOSED DEVELOPMENT OF A PV CLUSTER NEAR LICHTENBURG, NORTH WEST PROVINCE

Prepared by

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And

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CTS HERITAGE

In Association with

Savannah Environmental

September 2021

EXECUTIVE SUMMARY

The development of solar energy facilities is proposed on a site near Lichtenburg, in the North West Province. The development (and project area) will consist of three (3) PV facilities and associated infrastructure respectively. The proposed developments require Environmental Authorisation in terms of the National Environmental Management Act (Act 107 of 1998) from the Department of Forestry, Fisheries, and the Environment (DFFE). A full impact assessment will be required to be undertaken for each of the proposed projects.

The findings of this field assessment largely correlate with the findings of Van der Walt (2014) and a number of additional heritage resources were identified. The stone age archaeological resources identified were all *ex situ* and are of low heritage significance. These have been graded IIIC in the tables and maps provided and no additional mitigation is recommended for these sites. They have been sufficiently recorded in this report.

A number of stone structures were identified within the development area. It is likely that a number of these are burial sites (LICBUR?1, LICBUR2, LICBUR6, LICBUR10, LI9, LI13 and LI14). These have been graded IIIA in the tables and maps provided and a no-development buffer of 10m is recommended around these sites. Furthermore, it is recommended that a management plan is developed to ensure the ongoing conservation of these sites for the duration of the lifespan of the development.

Lastly, it is possible that archaeological resources may be located beneath the ground surface which may be impacted during the course of development. Recommendations in this regard are included below.

Recommendations

There is no objection to the proposed development of the PV cluster and associated grid connection in terms of impacts to archaeological heritage on condition that:

- A 10m no-go and no development buffer is implemented around the potential burial sites LICBUR?1, LICBUR2, LICBUR6, LICBUR10, LI9, LI13 and LI14.
- A management plan is developed for the ongoing and long-term management of the burials within the development area.
- Should any buried archaeological resources 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.

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1. INTRODUCTION

1.1 Background Information on Project

Three 75MW PV facilities (Barleria PV, Dicoma PV and Setaria PV), collectively referred to as the PV Cluster, are concurrently being considered on the project site (within Portion 1, Portion 9, and Portion 10 of the Farm Houthaalboomen 31) and are assessed through separate Environmental Impact Assessment (EIA) processes and separate Heritage Impact Assessments (HIAs). These facilities are located on a site approximately 5km north west of the town of Lichtenburg in the North West Province. Each solar PV facility will comprise several arrays of PV panels and associated infrastructure and will have a contracted capacity of up to 75MW. The development area is situated within the Ditsobotla Local Municipality within the Ngaka Modiri Molema District Municipality. The site is accessible via an existing gravel road which provides access to the development area off the R505, located east of the development area. Each facility development area (approximately 176ha) as well as two alternative grid connection solutions (within a 100m wide corridor) have been considered in the Scoping phase and now assessed in the EIA Phase.

1.2 Description of Property and Affected Environment

The footprint for each proposed PV facility and related grid connection infrastructure is located across several properties, approximately 5.5km North-West of the town of Lichtenburg, in the North West Province of South Africa. The landscape falls within the semi-arid southern African Grassland Biome, and the vegetation across the project area is characterised largely by grassland (dense in several portions) and shrubland that is evident on undulating plains with chert bedrock outcropping in multiple locations (see Mucina et al., 2006), which served as a source of raw-material for Pleistocene and Holocene occupants of the area. Nodules were also used as demarcation/protection within potential grave structures documented within the project area (see below).

The topography of the project area is generally flat, with extensive disturbance in the form of clearing for crop farming and bioturbation in the form of rodent activity in the upper 0.5-2m of sandy topsoil. Indeed, much of the area has been affected by historical farming related activities, with prominent evidence in the form of extensive mounds of chert nodules that were recently cleared from the land surface by farmers and accumulated in strategic locations within different grazing camps (Figure 5). The surface sediments are generally bioturbated sandy soils, which appear to be aeolian in terms of original deposition, with inclusions of primary nodules of chert (5-30cm in maximum diameter) deriving from the local bedrock.

The general land use within the combined project footprint is predominantly stock farming, with evidence of smaller antelope (Bushbuck, Steenbok and Duiker) as well as bushpig in addition to burrowing rodents (molerats, hares and meerkats) within the project footprint. The majority of identified archaeological Stone Age remains occur within these disturbed upper sandy soil contexts and therefore have limited potential for modern scientific analyses (due to the *ex situ* spatial contexts of the finds and limited possibility of radiometric dating). Where topsoil has been extensively removed through grazing and clearing, the stone artefacts are randomly oriented (multiple specimens on end),

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indicating redeposited or reworked archaeological contexts (Figure 12).

Chert bedrock outcrops in several places across the combined project area including in the North-West, North-East and South-West regions of the combined project footprint (Figure 7). Stone Age exploitation traces in the form of simple cortical flakes and cores associated with the outcrops indicate these chert outcrops were sources of raw-material for Pleistocene hunter-gatherer populations, and the expedient nature of the technology (roughing out and primary flakes abundant) indicate that much of the archaeology was likely the result of Stone Age groups testing the available rock nodules for faults and incipient fractures within their mobility cycles, and then moving on. Limited evidence for occupational artefact scatters was identified.

The relatively intensive current and historical use of substantial portions of the landscape, and relatively abundant recently abandoned building structures (in the North-West and South West areas), in combination with the presence of a previously identified grave within the footprint raise the potential for historical graves and isolated burials, and several stone structures were documented within this survey that need to be avoided (see sensitivity ranking), or removed with caution (see below). However, the rock clearing activities and extensive grass cover made potential grave locations impossible to exhaustively assess across the project area (particularly in cases where above surface material indicators may have been affected by rock clearing). The recommendation is therefore to err on the side of caution and avoid elongated stone structures comparable to the entities identified within this report, if exposed in future development of the property.

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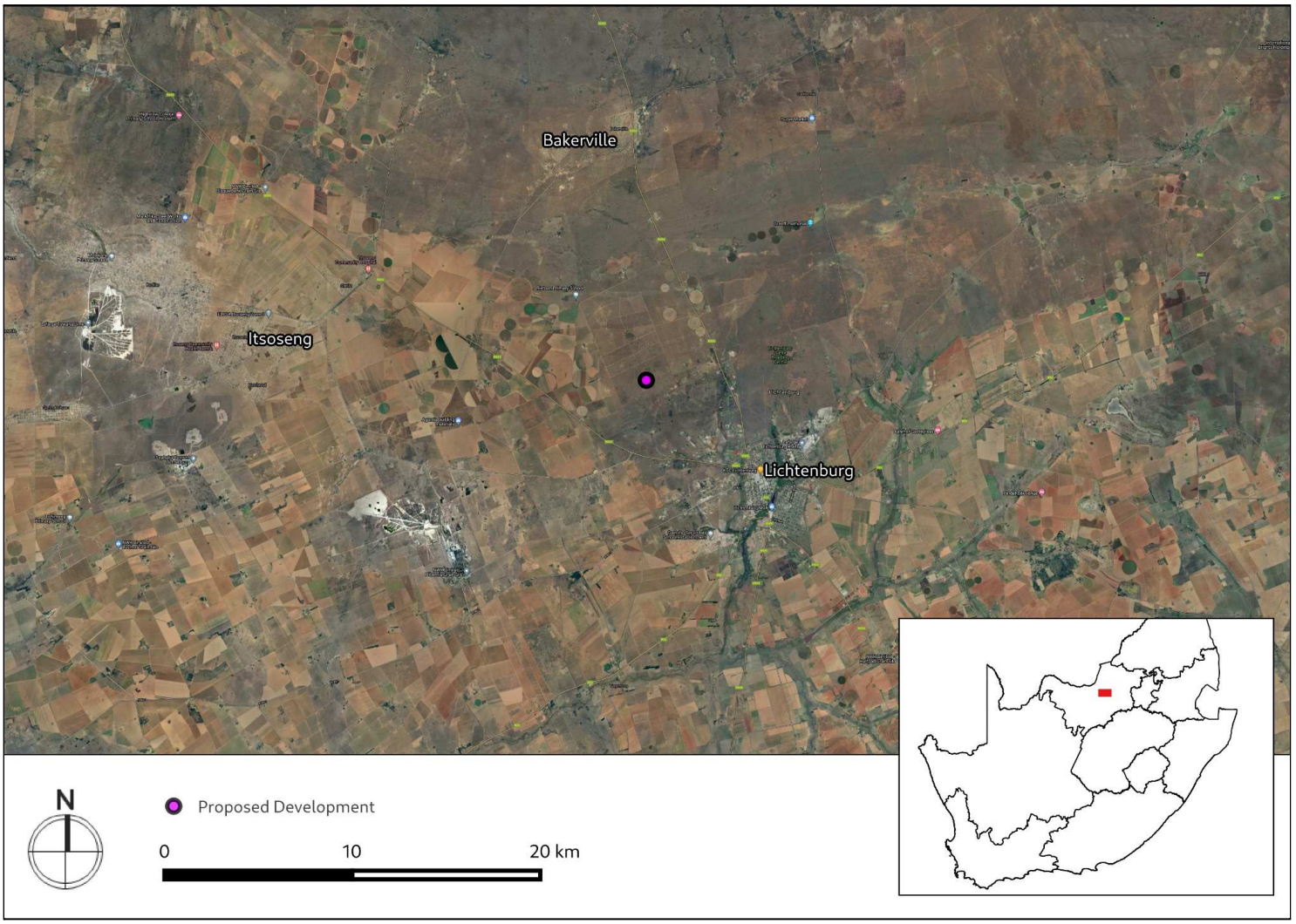

Figure 1.1: Close up satellite image indicating proposed location of study area

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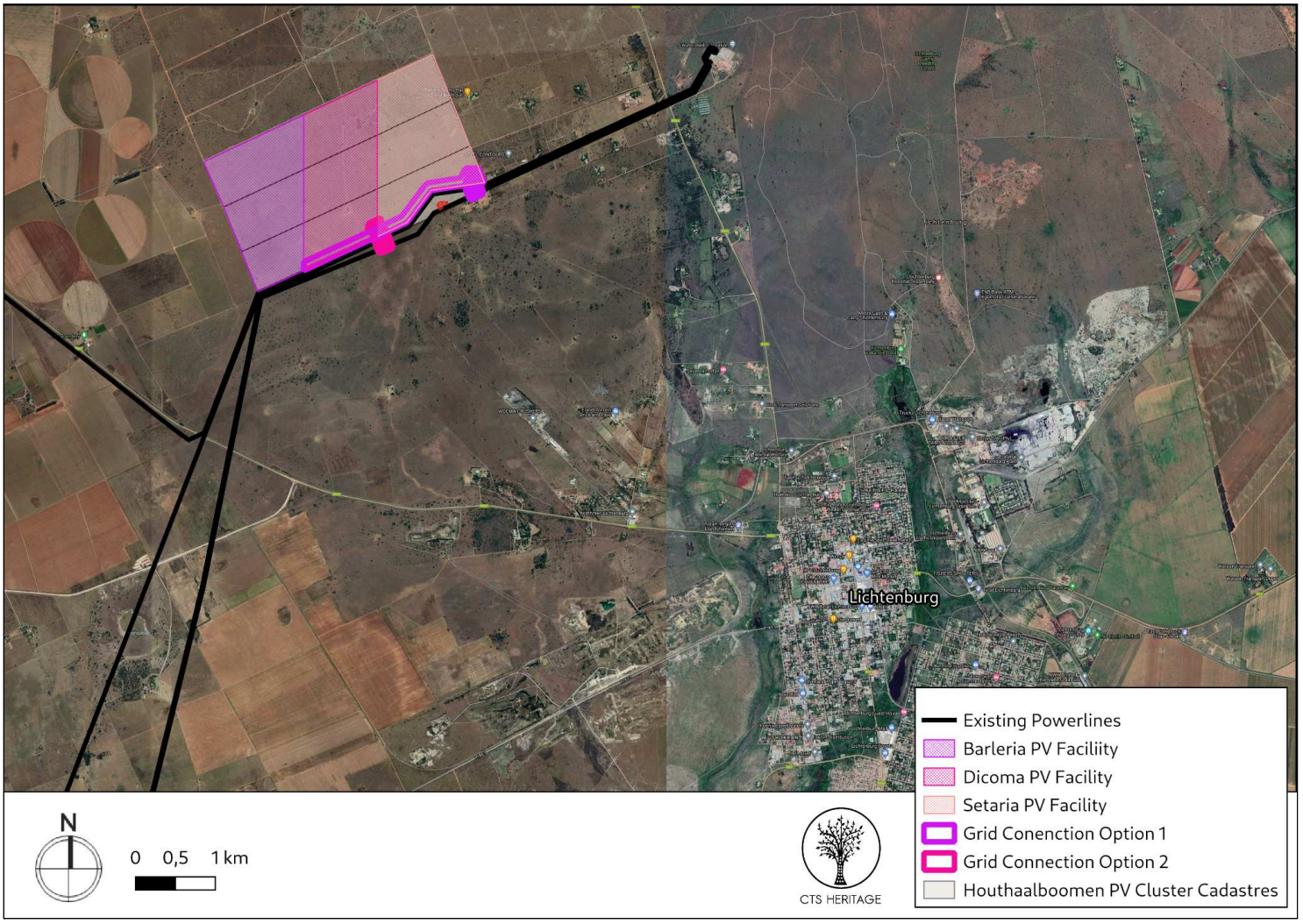

Figure 1.2: Study Area

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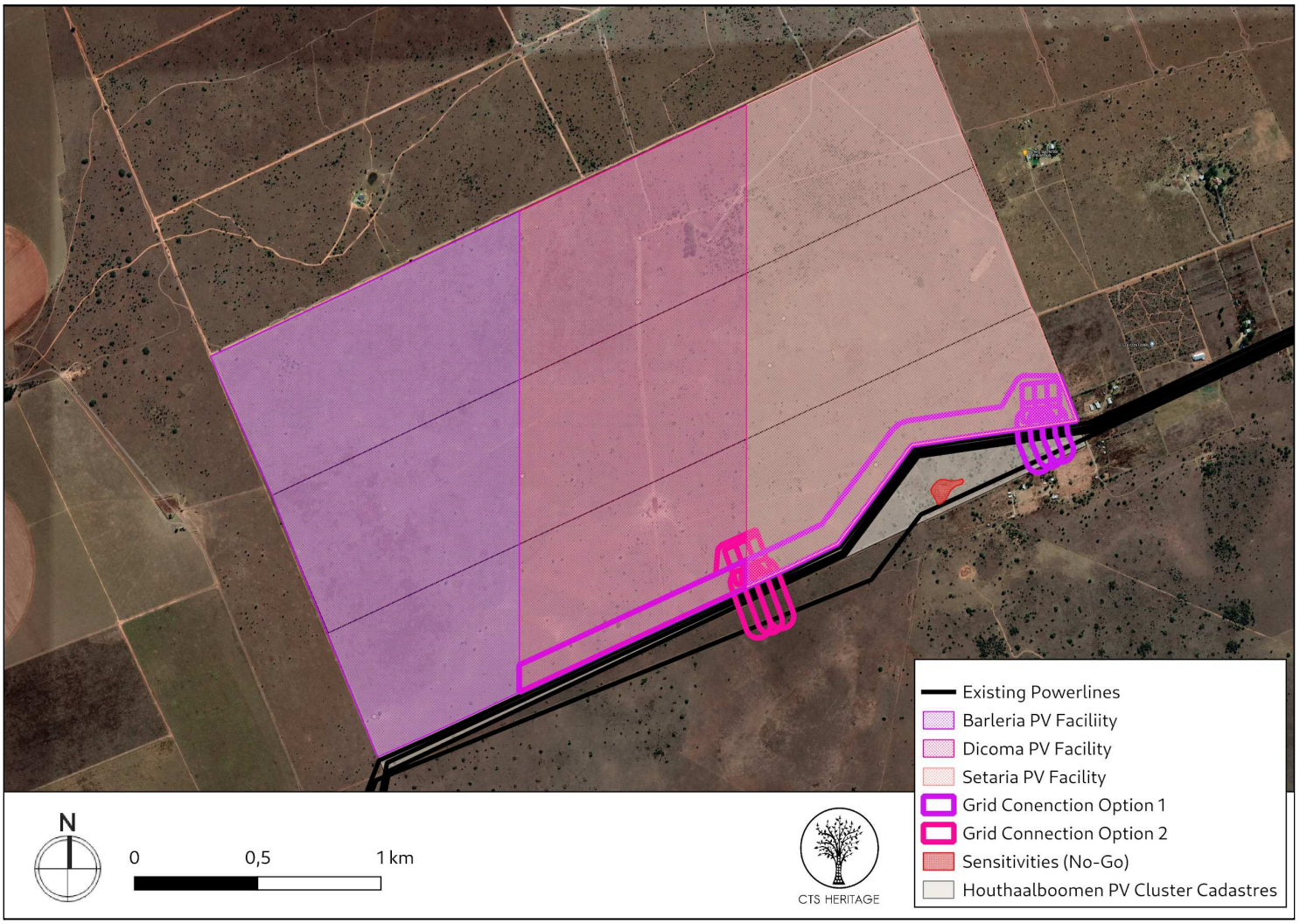

Figure 1.3: Study Area

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 on 17 July 2021 to determine what archaeological resources are likely to be impacted by the proposed development.
- The study area was assessed on foot in transects, photographs of the archaeological contexts and representative 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.

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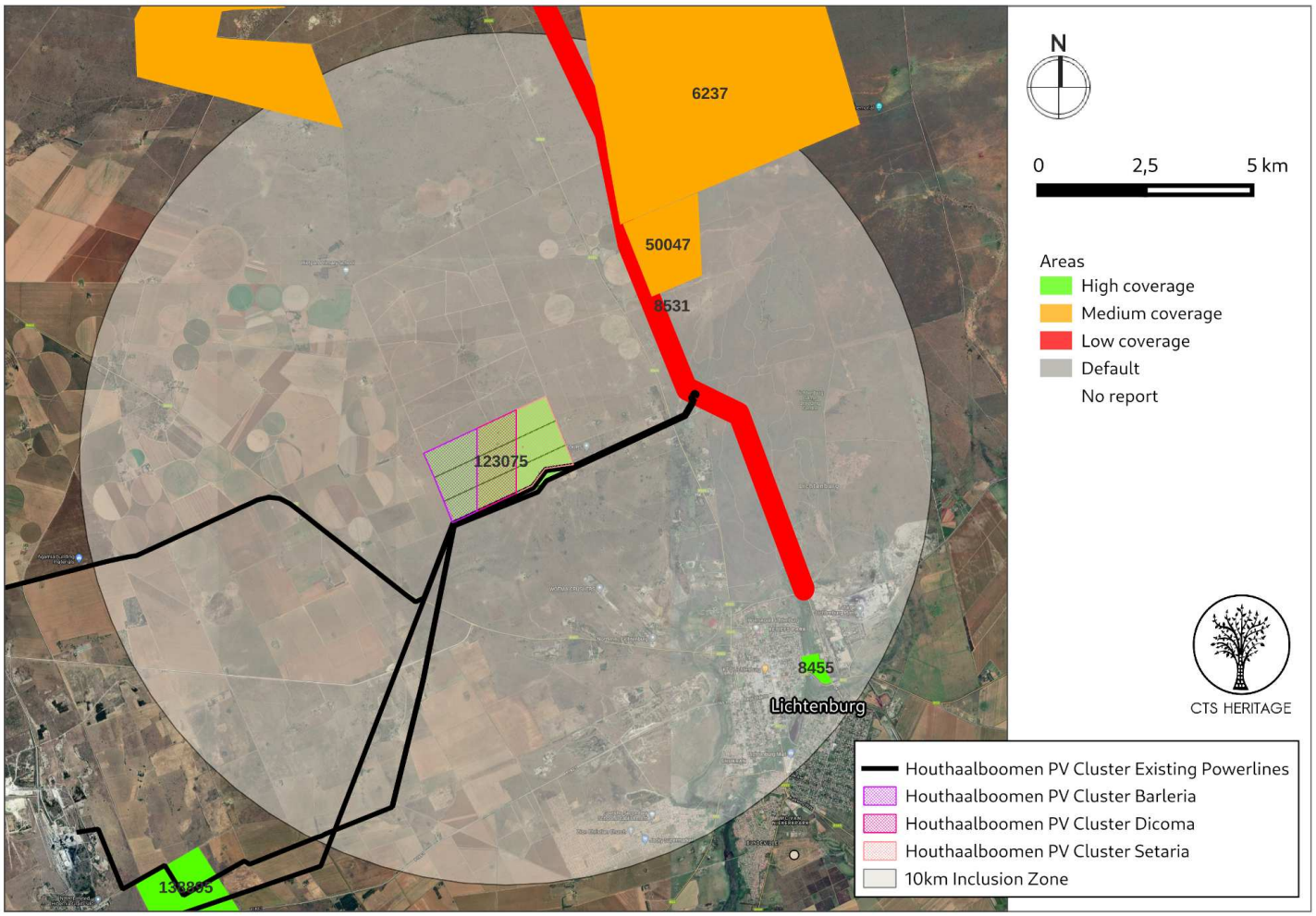

Figure 2: Close up satellite image indicating proposed location of the study area in relation to heritage studies previously conducted

2.3 Constraints & Limitations

The following constraints and limitations were experienced:

1. Dense grass and shrubs cover portions of the project area, and this inhibited the visibility of surface archaeology (Figure 4). This is not regarded as a substantial problem in relation to the Stone Age archaeological remains, which in most cases have generally limited scientific importance due to the disturbed contexts they occur in. It is clear that the Stone Age sensitivity and scientific potential of the project area has been comprehensively assessed. However the inability to assess some of the footprint area at ground surface level should be regarded as a constraint to the documentation of potential graves, given the identified presence of several characteristic structures.
2. Previous rock clearing activities by farmers may have affected surface archaeology including the possible above-surface presence of material evidence of graves.

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3. Access was acquired to assess the eastern portion of the connection route area (Figure 5). However, when this portion was being assessed large numbers of cattle with calves were present on the property, with several bulls amongst them. When the cattle showed aggressive behaviour towards the consultants, this portion was abandoned. This section was subsequently reviewed from the neighbouring property and from the far eastern portion which was accessible from a separate property (Figure 5: see track). The latter portion of the project area is considered to have limited to no potential for *in situ* Stone Age archaeological remains.

3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

The area proposed for development was thoroughly assessed for impacts to heritage resources in an Archaeological Impact Assessment conducted by Van der Walt (2014, SAHRIS NID 123075). This report is referred to below in order to determine the likely heritage sensitivity of the area proposed for the development of the PV cluster and grid connection alternatives.

The proposed PV cluster development is located within an area that has already approved PV facilities within a belt of approved renewable energy facilities. In terms of impacts to heritage resources, it is preferred that this kind of infrastructure development is concentrated in one location and is not sprawled across an otherwise culturally significant landscape. The construction of the proposed development is therefore unlikely to result in unacceptable risk or loss, nor will the proposed development result in a complete change to the sense of place of the area or result in an unacceptable increase in impact. Furthermore, Van der Walt (2014) notes that "Visual impacts to scenic routes and sense of place are not assessed to be high from a heritage perspective."

Archaeology and Built Environment Heritage

Lichtenburg town was established in 1873 and named "Town of Light". General Del la Rey was buried in Lichtenburg after a fatal shooting incident at Langlaagte. During the 1800's, more and more farmers settled in the area. During the Second Boer War, the strategically important town of Lichtenburg was occupied by both Boer and Briton for short spells. In November 1900, a large British force under Col. Robert Baden-Powell was transferred to Lichtenburg and secured the town, and much of the territory with it. In addition, the town is known from Rudyard Kipling's poem, Lichtenberg, which relays the story of a foreign combatant in the second South African War. In 1926, Lichtenburg experienced a gold rush that lasted approximately 10 years. Lichtenburg district is now mostly a farming area, combining cattle and crop-farming and large areas of former diamond mine diggings are now used as grazing.

According to van Schalkwyk et al (1995, SAHRIS NID 6237) in their report completed for the Bakerville Diamond Fields, "land use in the area goes back to the Early Stone Age, as can be determined by the number of stone artifacts found near the old mining commissioners office. This material seems to be disturbed from its primary context because of the mining activities. It is postulated that similar occurrences will be found in other parts of the diggings, but that this material would have been disturbed out of context." As a result of the dominant land use in the area, many of the heritage resources identified by van Schalkwyk et al (1995) are associated with past and present agriculture, and

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consist of farming implements, a few windmills, and dipping-troughs. One such trough, located at Elandsputte on the farm Uitgevonden 355JP, was the site where the first diamond was discovered. This structure is a proclaimed national monument (now Provincial Heritage Site). Van Schalkwyk et al (1995) identified a number of burial grounds within their surveyed area. Heritage resources known from this area include burial grounds and graves, archaeological artefacts and old structures, often associated with farming activities or diamond mining. An archaeological field assessment was conducted for the Lichtenburg PV facilities located immediately adjacent to this proposed development (CTS Heritage, 2018). The field assessment noted that the area assessed had been disturbed and transformed by agricultural activities in a similar way to the area proposed for this development. Pre-existing agricultural plough fields, grazing areas and farm buildings were identified in the development area. Furthermore, throughout the farming areas several heaps of rocks that were removed from the agricultural fields were identified. During the field assessment of the site *no archaeological resources, graves or burial grounds were identified* in the project area assessed in CTS Heritage's report (2018).

The exact area proposed for development was previously assessed by Van der Walt (2014, SAHRIS NID 123075). Van der Walt (2014) notes that "The site lies on a featureless flat plain. The entire development footprint was extensively utilised for crop farming and ploughing through the years resulted in a lateral and downward migration of artefacts making it virtually impossible to identify knapping or manufacture sites and site extent of artefact concentrations. In some areas borrowing animals brought MSA artefacts to the surface where the sand cover is more than a metre and a half thick and the possibility of finding subsurface material cannot be excluded. Most of the Stone Age archaeology in the study area consists of low densities of scattered (and possibly mixed) MSA and LSA artefacts. These find spots are documented as "occurrences" and are of low significance but more substantial and higher density scatters of MSA material do occur, and were recorded as "sites"." The archaeological sites are described as "Medium density scatters of tools. Blades, flakes, cores. MSA mainly of chert." and are graded IIIC i.e. low local significance. Van der Walt (2014) also identified a single unmarked grave (approximately 27 years old) and farm labour housing dating to the 1990's. He further notes that "Cultural landscape elements were noted in the northern portion of the study area consisting of the mentioned farm labourer dwelling together with a windmill, stone walled cattle kraal and a recently constructed kraal." (Van der Walt, 2014).

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Table 1: Sites previously identified in and near the proposed study area

SAHRIS ID	Site No.	Site Name	Site Type	Grading
130171	2626AA/ Solar/ Farm Zamenkomst 04/ Site 1	Old farm house	Structures, Structures	Grade IIIc
128694	ZKT1	Zamenkomst 1	Building	Grade IIIc
26803	9/2/235/0005	Nederduitse Gereformeerde Church, 27 Gerrit Maritz Street, Lichtenburg	Building	Grade II
51468	**WSF 01**	**Watershed Solar Facility 01**	**Artefacts**	**Grade IIIc**
51470	**WSF 02**	**Watershed Solar Facility 02**	**Artefacts**	**Grade IIIc**
51472	**WSF 03**	**Watershed Solar Facility 03**	**Burial Grounds & Graves**	**Grade IIIa**
128308	Grave of Vic Hamman	Grave of Vic Hamman	Burial Grounds & Graves	
138616	FHDN-001	FARM HOUTHAALDOORNS 2	Palaeontological	
138617	FHDN-002	FARM HOUTHAALDOORNS 2	Palaeontological	
138618	FHDN-003	FARM HOUTHAALDOORNS 2	Palaeontological	
138619	FHDN-004	FARM HOUTHAALDOORNS 2	Palaeontological	
138620	FHDN-005	FARM HOUTHAALDOORNS 2	Palaeontological	
138621	FHDN-006	FARM HOUTHAALDOORNS 2	Palaeontological	
138624	FHDN-009	FARM HOUTHAALDOORNS 2	Palaeontological	
138625	FHDN-010	FARM HOUTHAALDOORNS 2	Palaeontological	
138626	FHDN-011	FARM HOUTHAALDOORNS 2	Palaeontological	
138627	FHDN-012	FARM HOUTHAALDOORNS 2	Palaeontological	
138628	FHDN-013	FARM HOUTHAALDOORNS 2	Burial Grounds & Graves	Grade IIIa
137491	Gereformeerde kerk Lichtenburg	Gereformeerde kerk Lichtenburg	Monuments & Memorials	

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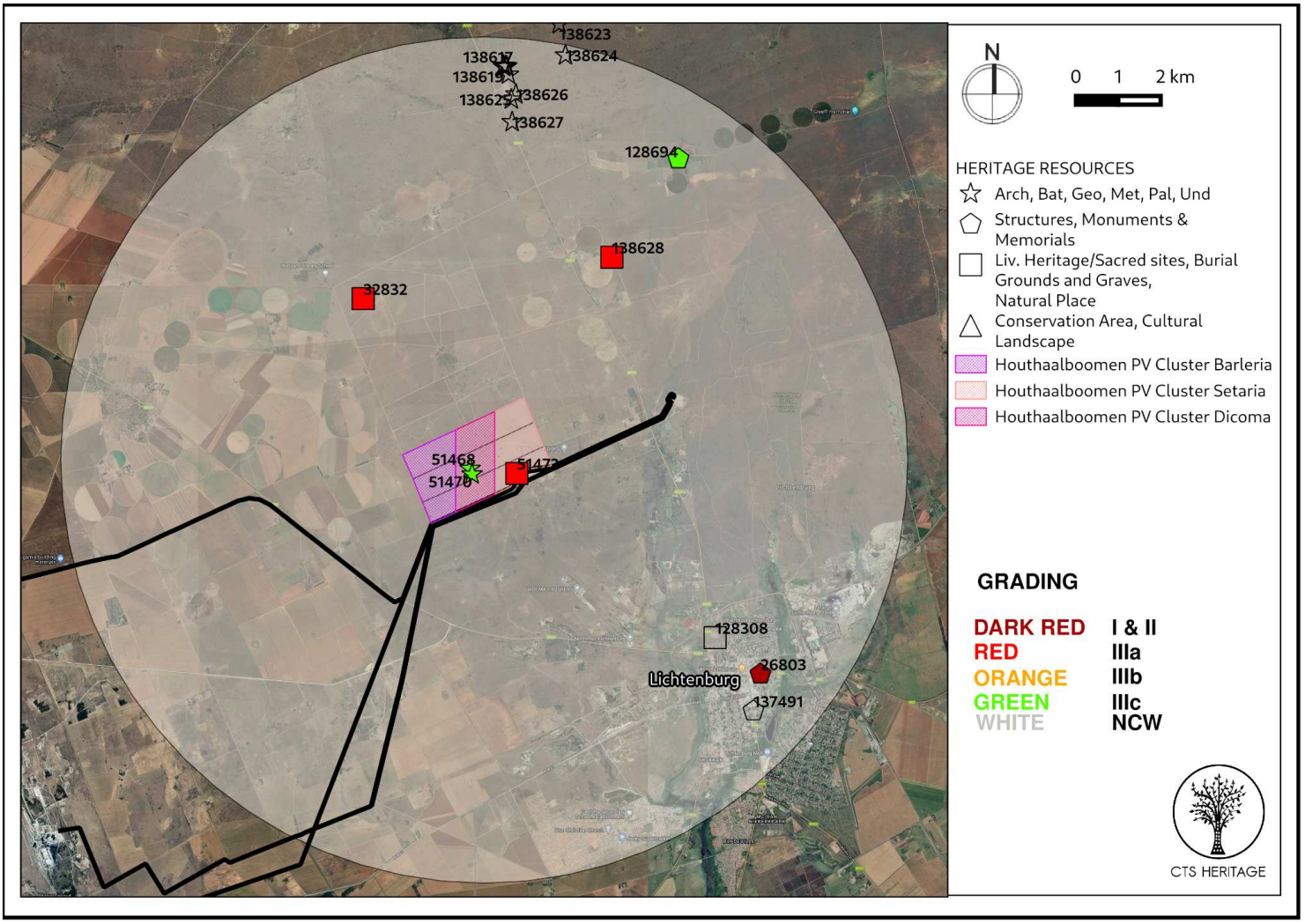

Figure 3.1. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see Heritage Screening Assessment for insets)

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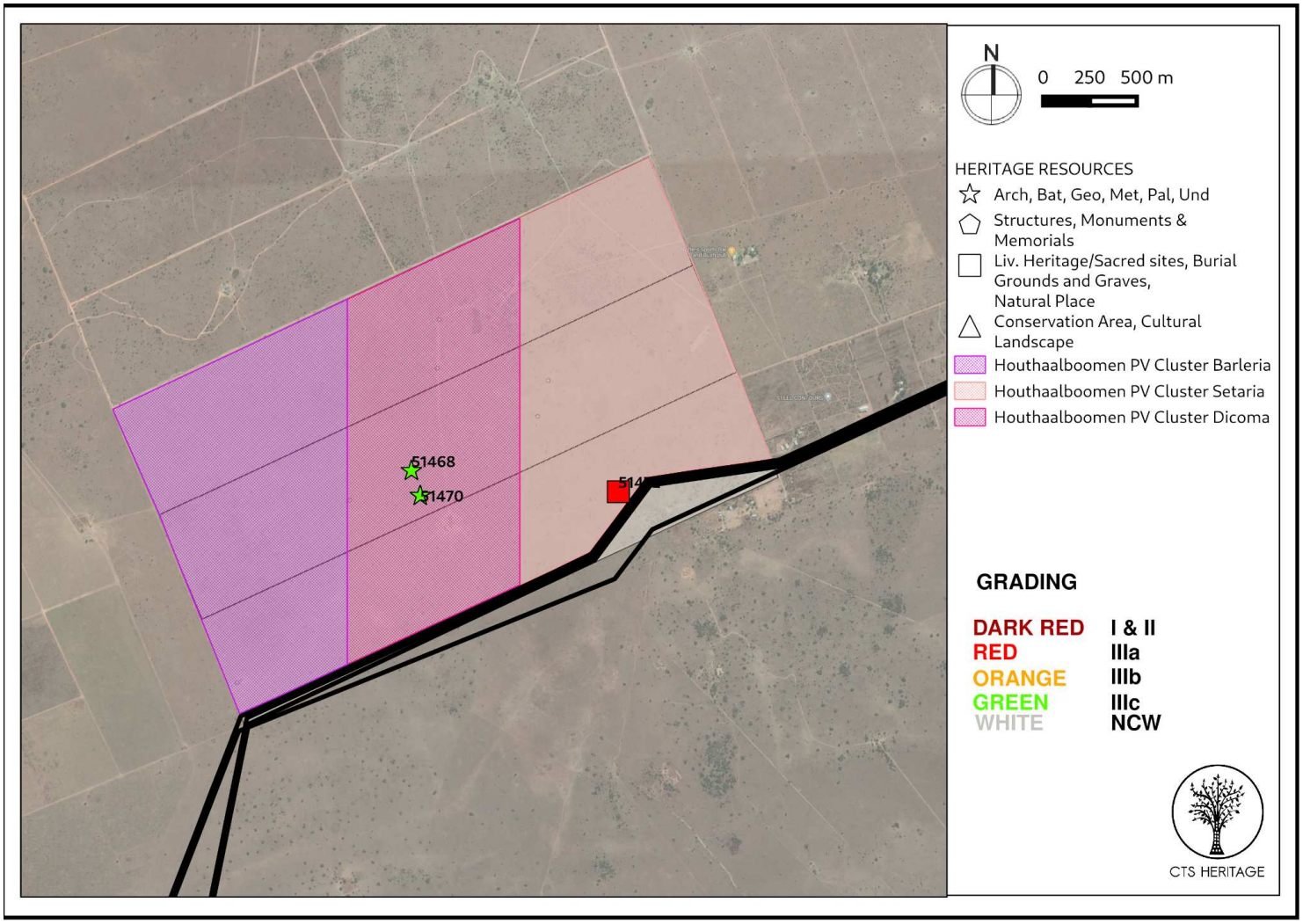

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4. IDENTIFICATION OF HERITAGE RESOURCES

4.1 Field Assessment

Stone Age Archaeology

Field assessment suggests that the area was occupied or traversed intermittently by Stone Age groups potentially through periods in both the Middle Stone Age (MSA – 300ka:~40ka) and the Later Stone Age (LSA: 40ka: ~2ka), although artefacts that could be clearly linked with chrono-cultural periods were scarce, which is likely a function of the proximity to primary sources of raw-material. The abundance of high-quality chert rocks in the project area was likely the resource that attracted groups there and resulted in them leaving behavioural traces in the form of stone artefacts.

Indeed the majority of the stone artefacts identified look to be the result of expedient 'testing' of rocks for quality, and the so-called products in many of the scatters were likely transported away. In this sense no evidence of substantial densities of finds or occupational debris were identified, and the stone artefacts present are evidenced to have been produced by mobile groups moving through the area. The raw-materials exploited for stone artefact manufacture were exclusively local cherts. The presence of primary and secondary sources of chert in association with stone artefacts, are suggestive of the landscape resources that probably drew Stone Age groups to the region over an extended expanse of human evolutionary history.

Stone Structures

The structures with spatial layouts of potential graves are ranked in terms of sensitivity below in Table 2. None have headstones or inscriptions, however due to their layout and orientation, it is likely that these structures represent burials.

The other structures (see table) are less typical for human graves and have a range of sizes and orientations. These structures were recorded due to their proximity to abandoned building remains and other human made structures, and are considered to be potentially sensitive due to their spatial association to historical human occupation and activity, rather than their morphology and orientation. In terms of material form, the latter cannot definitively be identified as graves.

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Figure 4: Images depicting the parameters affecting archaeological visibility and efficiency in the survey: (a-d) Dense grass cover; (c) Human for scale; (e-f) Examples of chert nodules accumulated through agricultural clearing and track construction.

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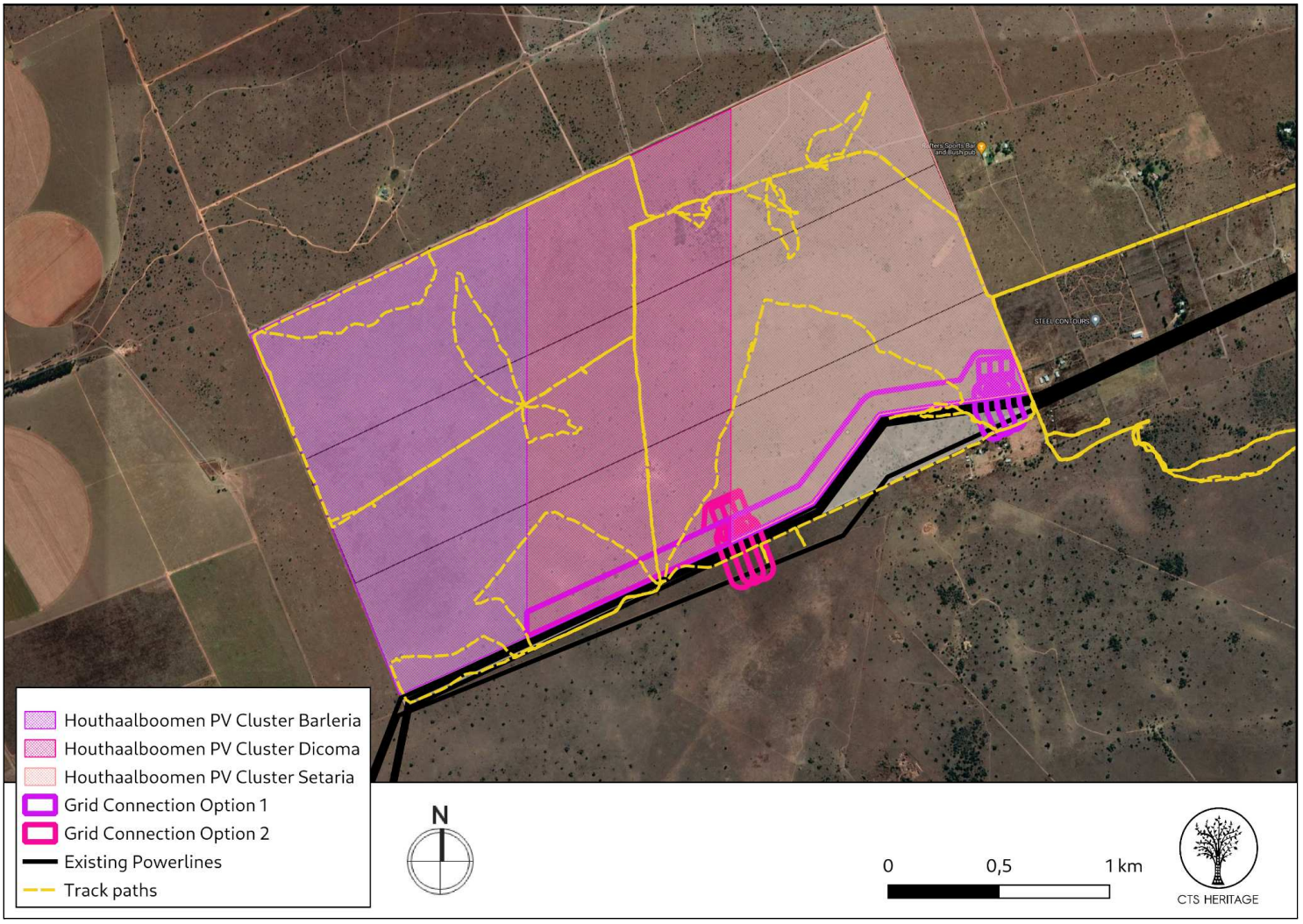

Figure 5: Overall track paths of foot survey

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4.2 Archaeological Resources identified

Table 2: Observations noted during the field assessment

Site No.	Site Name	PV Area	Description	Co-ordinates		Grading	Mitigation
LCTB 001	LIC CHERT1	**Setaria**	Chert raw material source	26,103104	-26,097456	NCW	None required
LCTB 002	LIC HOUSE	**Dicoma**	Historic house	26,099023	-26,098134	IIIC	None required
LCTB 003	**LIC BUR?1**	**Dicoma**	**Stone structure - likely burial**	**26,096115**	**-26,098202**	**IIIA**	**10m no-development buffer**
LCTB 004	**LICBUR2**	**Dicoma**	**Stone structure - likely burial**	**26,09602**	**-26,100536**	**IIIA**	**10m no-development buffer**
LCTB 005	LI 5	**Dicoma**	Flake with cortical platform and bi-directional core	26,095902	-26,102629	IIIC	None required
LCTB 006	LIC5	**Dicoma**	Bifacial point	26,093677	-26,103923	IIIC	None required
LCTB 007	LI CHERT3	**Dicoma**	Chert raw material source	26,09389	-26,104075	NCW	None required
LCTB 008	LIC7	**Barleria**	Sparse stone artefact scatter	26,084219	-26,109369	IIIC	None required
LCTB 009	LIC8	**Barleria**	Artefact scatter with unworked chert nodules exposed through top-soil removal	26,080669	-26,106448	IIIC	None required
LCTB 010	LIC9	**Dicoma**	Sparse stone artefact scatter	26,096485	-26,106449	IIIC	None required
LCTB 011	LIC10	**Dicoma**	Platform rejuvenation flake	26,096685	-26,108293	IIIC	None required
LCTB 012	LIC11	**Dicoma**	Sparse stone artefact scatter	26,096994	-26,11293	IIIC	None required
LCTB 013	**LICBUR6**	**Barleria**	**Stone structure - likely burial**	**26,085323**	**-26,115651**	**IIIA**	**10m no-development buffer**
LCTB 014	LIC12	**Dicoma**	Sparse stone artefact scatter	26,097733	-26,112259	IIIC	None required
LCTB 015	LIC13	**Setaria**	Sparse stone artefact scatter	26,109219	-26,107903	IIIC	None required
LCTB 016	**LICBUR10**	**Setaria**	**Stone structure - likely burial**	**26,109238**	**-26,105839**	**IIIA**	**10m no-development buffer**
LCTB 017	LI1	**Setaria**	Artefacts with evidence of post-depositional disturbance, and scraper on a flake with cortex including carinated blade core	26,104159	-26,095615	IIIC	None required
LCTB 018	LI2	**Setaria**	Cores with ephemeral removals	26,104759	-26,095804	IIIC	None required

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LCTB 019	LI 3	**Dicoma**	MSA and LSA retouched flakes	26,095999	-26,098162	IIIC	None required
LCTB 020	LI4	**Dicoma**	Hammerstone	26,096096	-26,09936	IIIC	None required
LCTB 021	LI8	**Dicoma**	MSA and LSA notched flakes, artefacts with evidence of post-depositional disturbance and Cores with ephemeral removals	26,092861	-26,10562	IIIC	None required
LCTB 022	**LI9**	**Dicoma**	**Stone structure - likely burial**	**26,091343**	**-26,106886**	**IIIA**	**10m no-development buffer**
LCTB 023	LIC8	**Dicoma**	Sparse stone artefact scatter	26,096008	-26,095638	IIIC	None required
LCTB 024	WADAP	**Dicoma**	Sparse stone artefact scatter	26,096995	-26,112918	IIIC	None required
LCTB 025	LI10	**Dicoma**	Chert raw material source	26,094757	-26,11079	NCW	None required
LCTB 026	LI12	**Setaria**	Stone cores with ephemeral removals near raw-material source.	26,100504	-26,105609	IIIC	None required
LCTB 027	**LI13**	**Setaria**	**Stone structure - likely burial**	**26,101384**	**-26,102843**	**IIIA**	**10m no-development buffer**
LCTB 028	**LI14**	**Setaria**	**Stone structure - likely burial**	**26,10195**	**-26,101126**	**IIIA**	**10m no-development buffer**
LCTB 029	LI15	**Setaria**	Cores with ephemeral removals	26,108559	-26,103651	IIIC	None required

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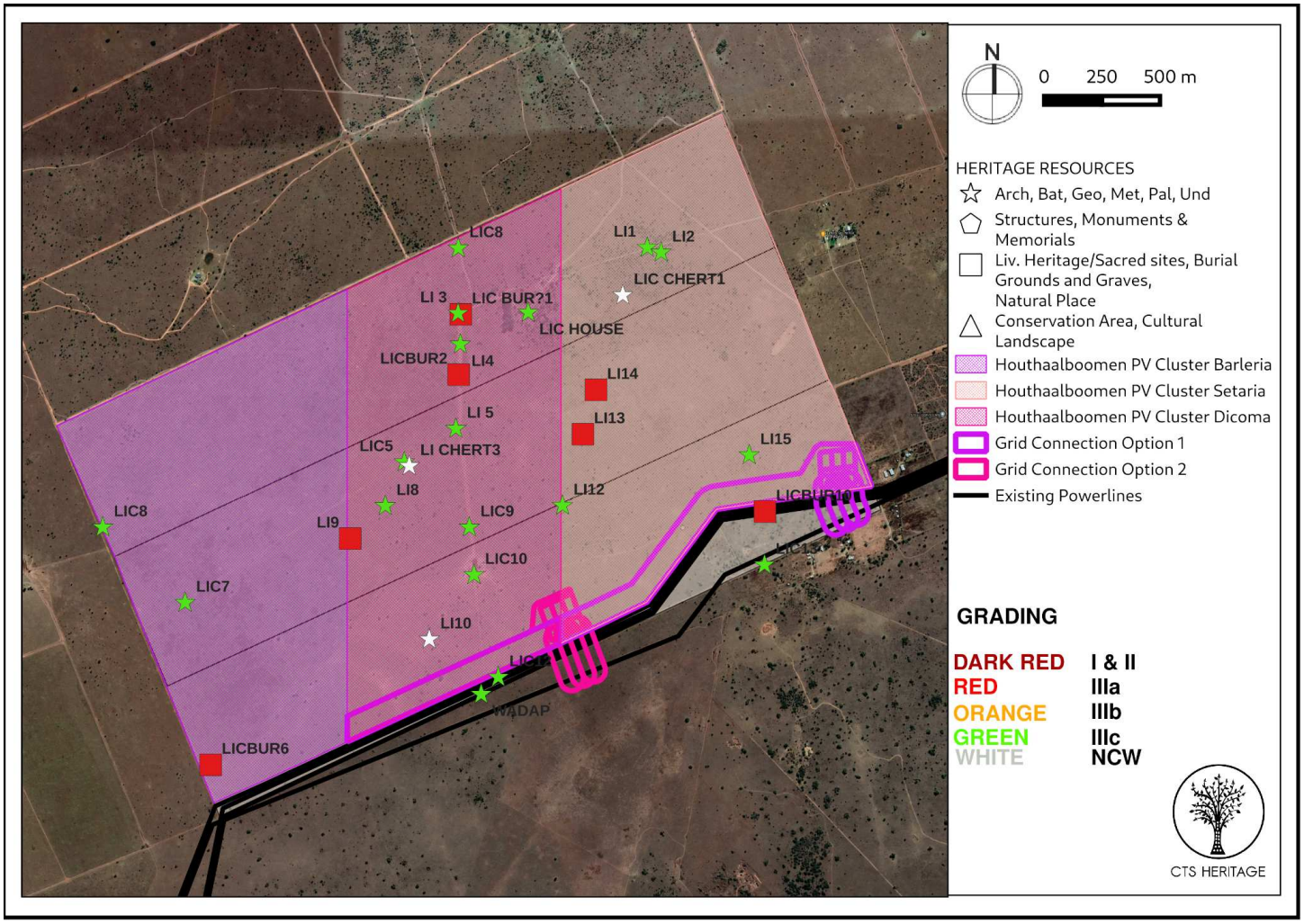

Figure 6: Map of field observations relative to the proposed development

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4.3 Selected photographic record

(a full photographic record is available upon request)

Figure 7: (a,b,e,f) Primary outcrops of chert with exploitation traces; (c-d) Secondary chert nodules accumulated through agricultural activities

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Figure 8: Two elongated structures oriented NE-SW, likely to be adult graves.

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LIC_bur1_a

LIC_bur1_b

LIC_bur1_c

Figure 9: Human accumulations of stone near a historical building remnant

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Figure 10: Artefact scatter with unworked chert nodules exposed through top-soil removal (LIC8).

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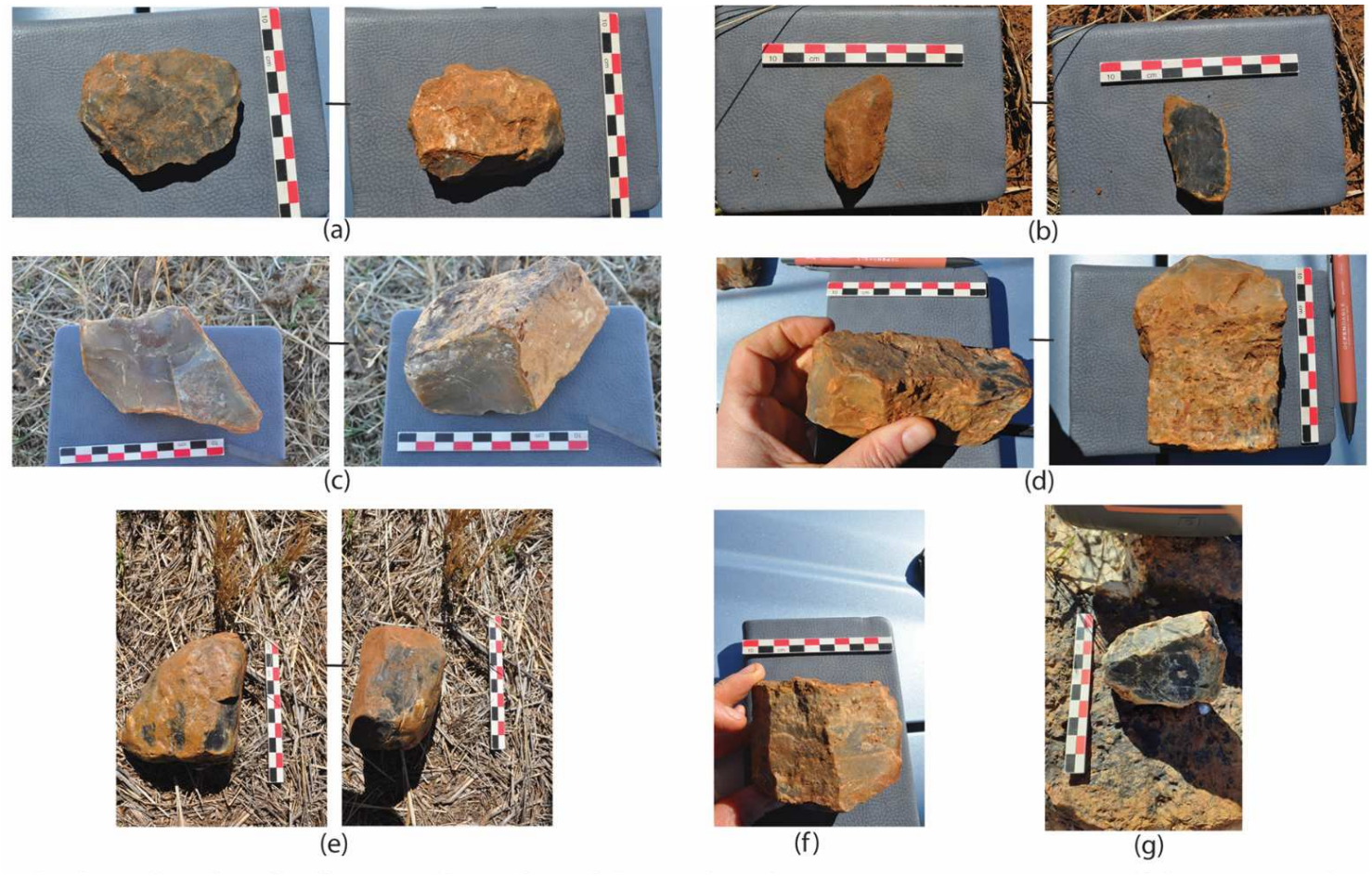

Figure 11: Artefacts representing initial production stages (testing): (a) scraper on a flake with cortex (LI1); (b) flake with cortical platform (LI5); (c,d,f,g) Cores with ephemeral removals (LI2, LIC8, LI15) and (e) Hammerstone (LI4).

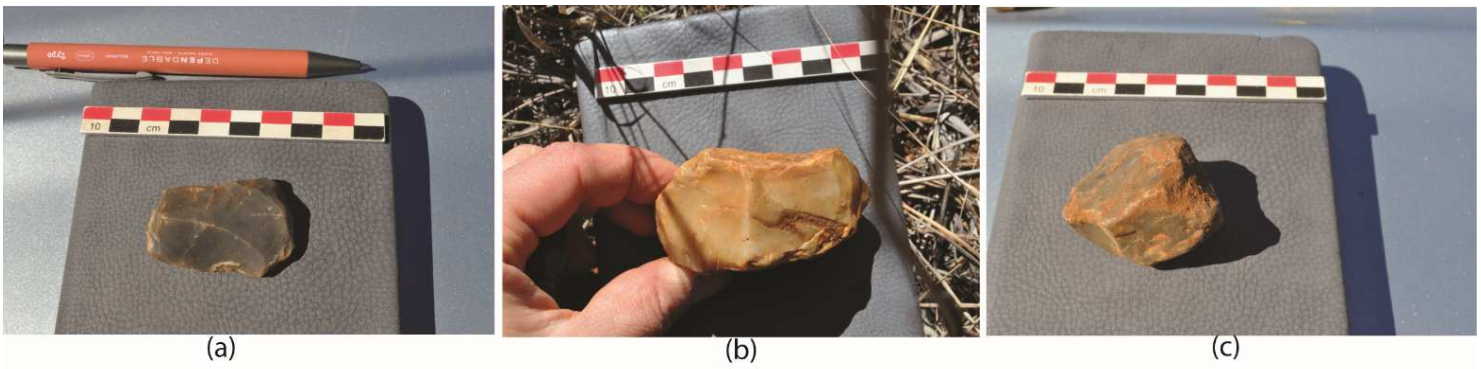

Figure 12: Artefacts with evidence of post-depositional disturbance (a, b: LI1) and (c: LI8)

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Figure 13: MSA and LSA artefacts including (a) Notched flakes (LI8); (b) Retouched flake (LI3); (c) Bifacial point (LI5); (d) Carinated blade core (LI1).

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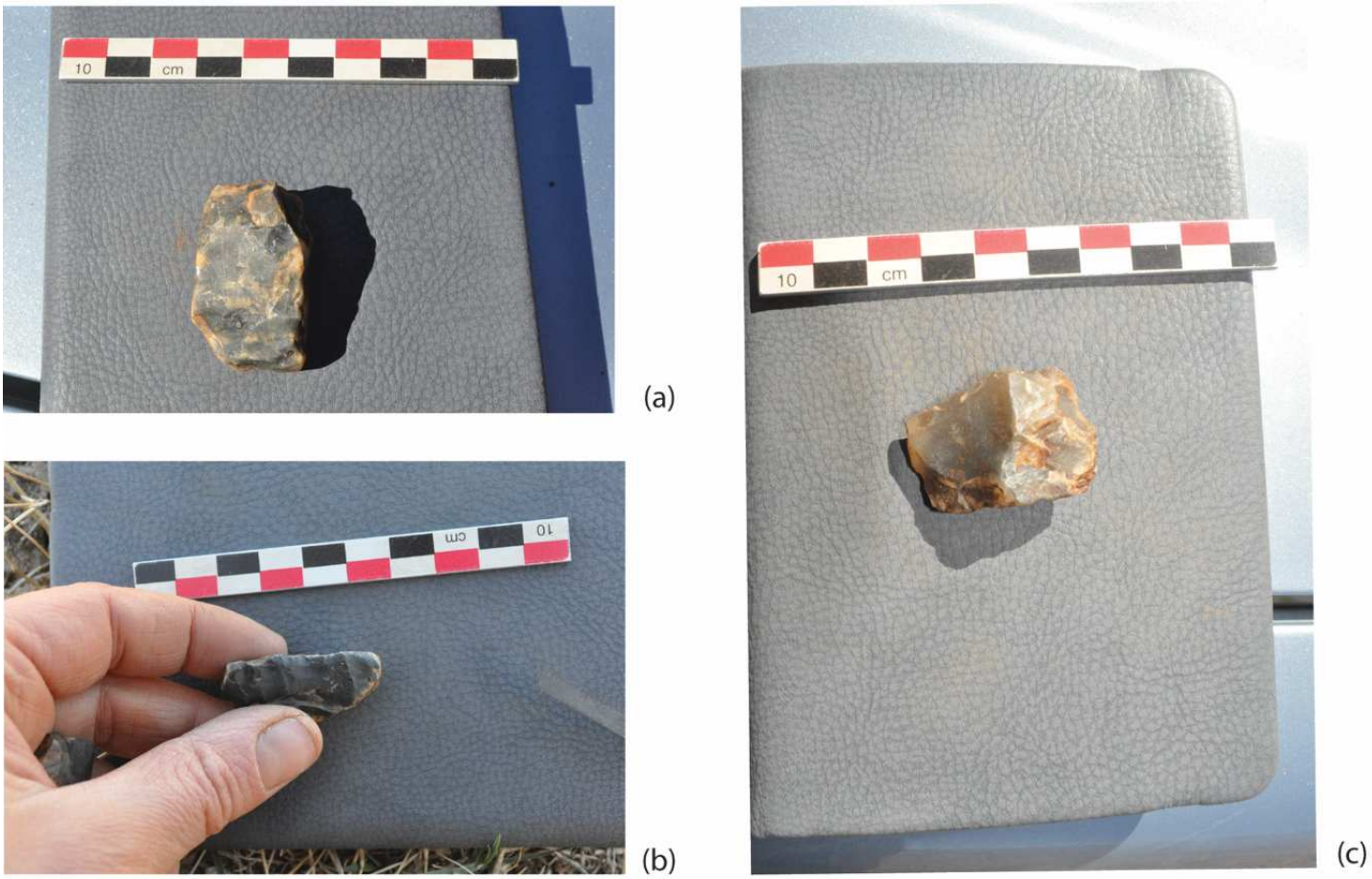

Figure 14: MSA and LSA artefacts including (a) Bipolar core (LI1); (b) Platform rejuvenation flake (LIC10); (c) Bi-directional core (LI5).

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Figure 15: Additional images of stone structures

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Figure 16: Additional images of stone structures (LI14 and LICBUR2)

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5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT

5.1 Assessment of impact to Archaeological Resources

All Stone Age finds identified in the field assessment were documented in *ex-situ* contexts, which is further supported by the extensive evidence for rock clearing, and the palimpsests of artefacts documented in several places. The potential for finding a dateable *in-situ* archaeological horizon based on current surface observations appears to be low. The documented Stone Age archaeology is therefore classified as scientifically LOW-SIGNIFICANCE, or Grade IIIC.

As such, it is unlikely that the proposed development will negatively impact on significant stone age archaeological heritage. However, it is possible that significant *in situ* deposits may exist beneath the ground surface. A recommended protocol for such a scenario is included in the recommendations below.

A number of stone structures were identified within the study area. Some of these structures are likely to represent human burial (LICBUR?1, LICBUR2, LICBUR6, LICBUR10, LI9, LI13 and LI14) and as such, these structures are conservatively graded IIIA (high local significance). It is recommended that a 10m no-development buffer zone around each structure or set of structures is implemented.

Not all the stone structures identified are likely human burials. Some of these less typical stone structures should be avoided where possible, and construction in the vicinity should proceed with caution. If human remains are exposed during construction, activities should cease immediately and the on-duty Environmental Control Officer should protect these (in the primary exposed context). A recommended protocol for such a scenario is included in the recommendations below

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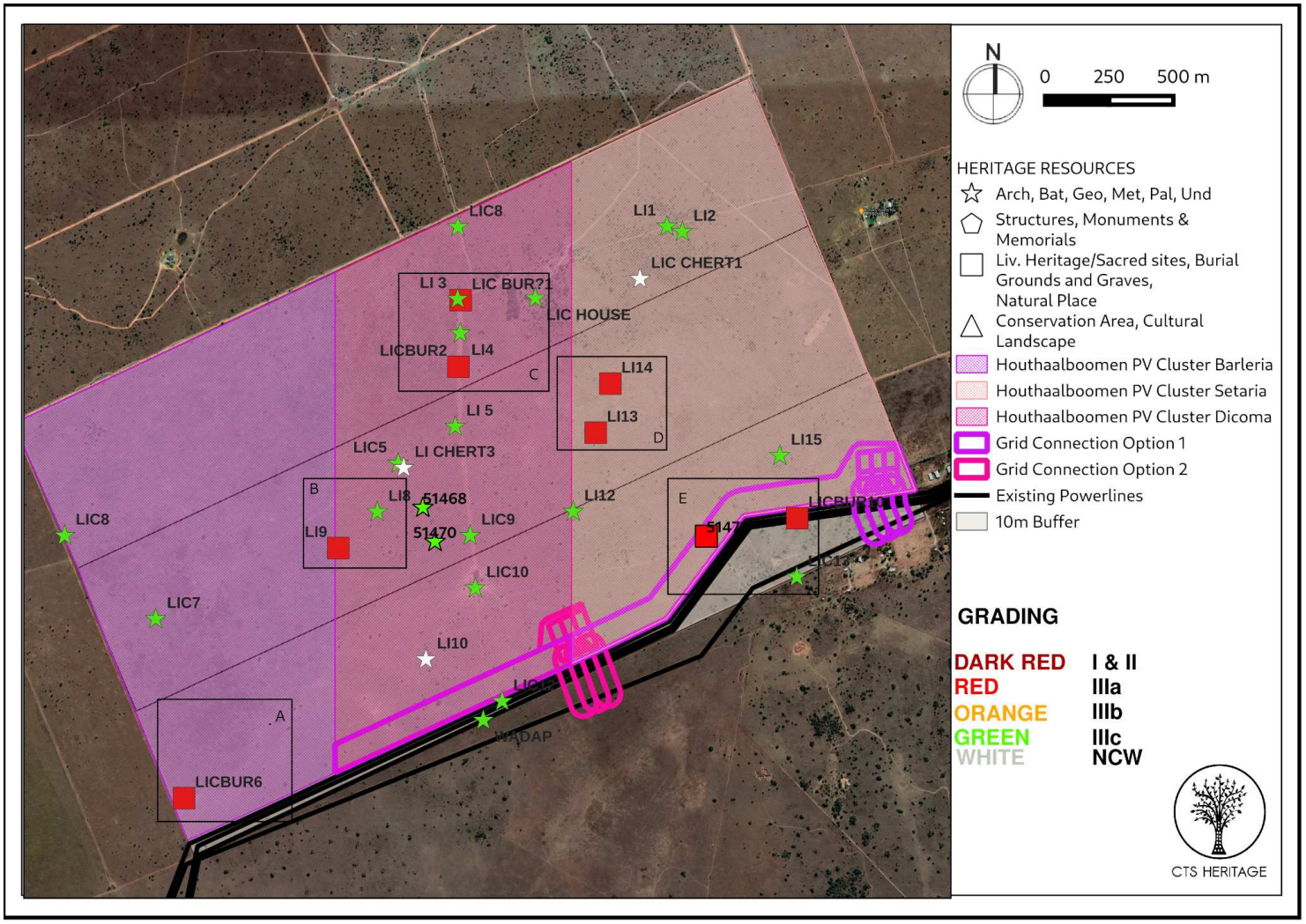

Figure 17.1: Map of heritage resources identified during the field assessment, relative to the study area and associated archaeological sensitivity

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Figure 17.2: Inset A

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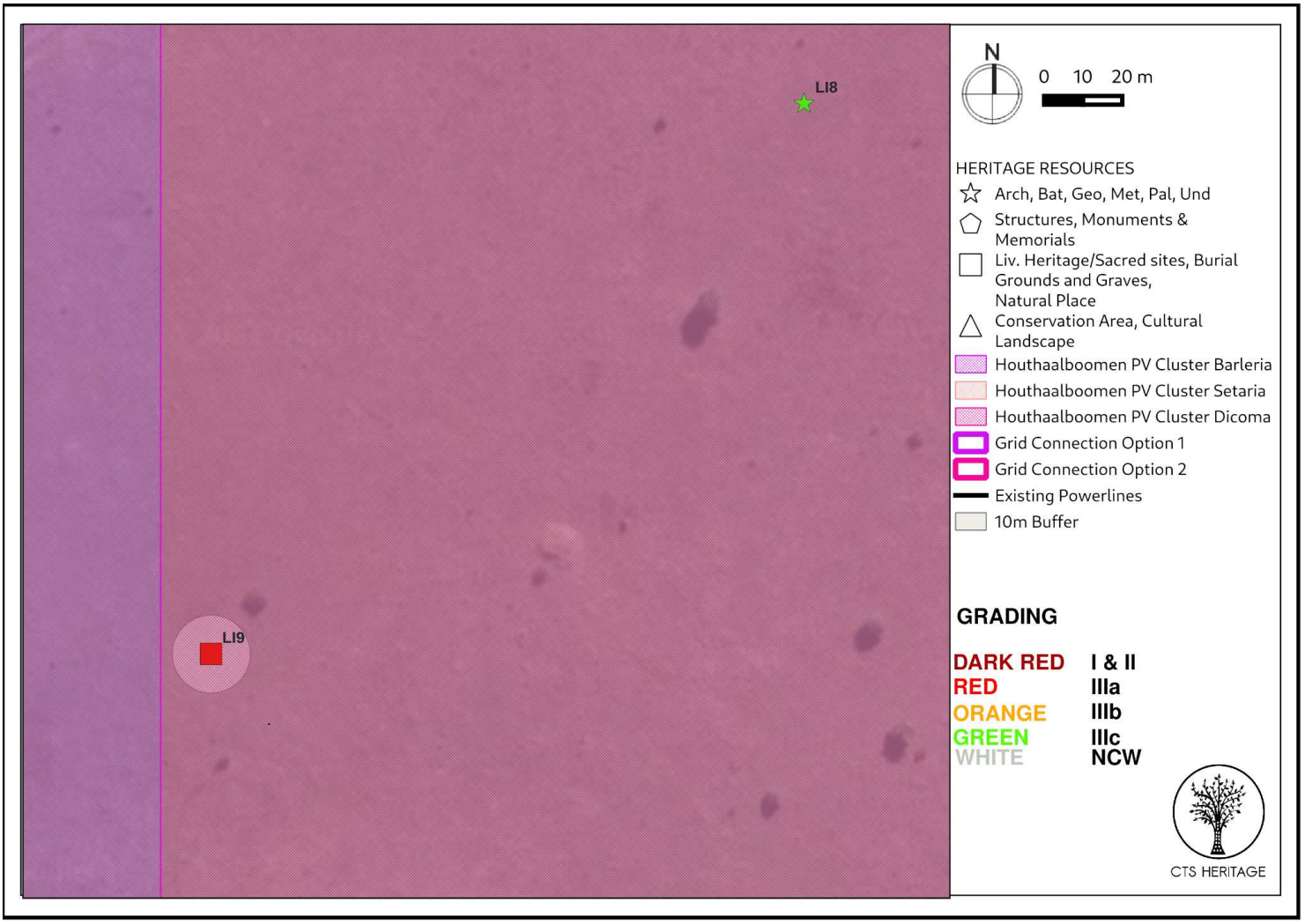

Figure 17.3: Inset B

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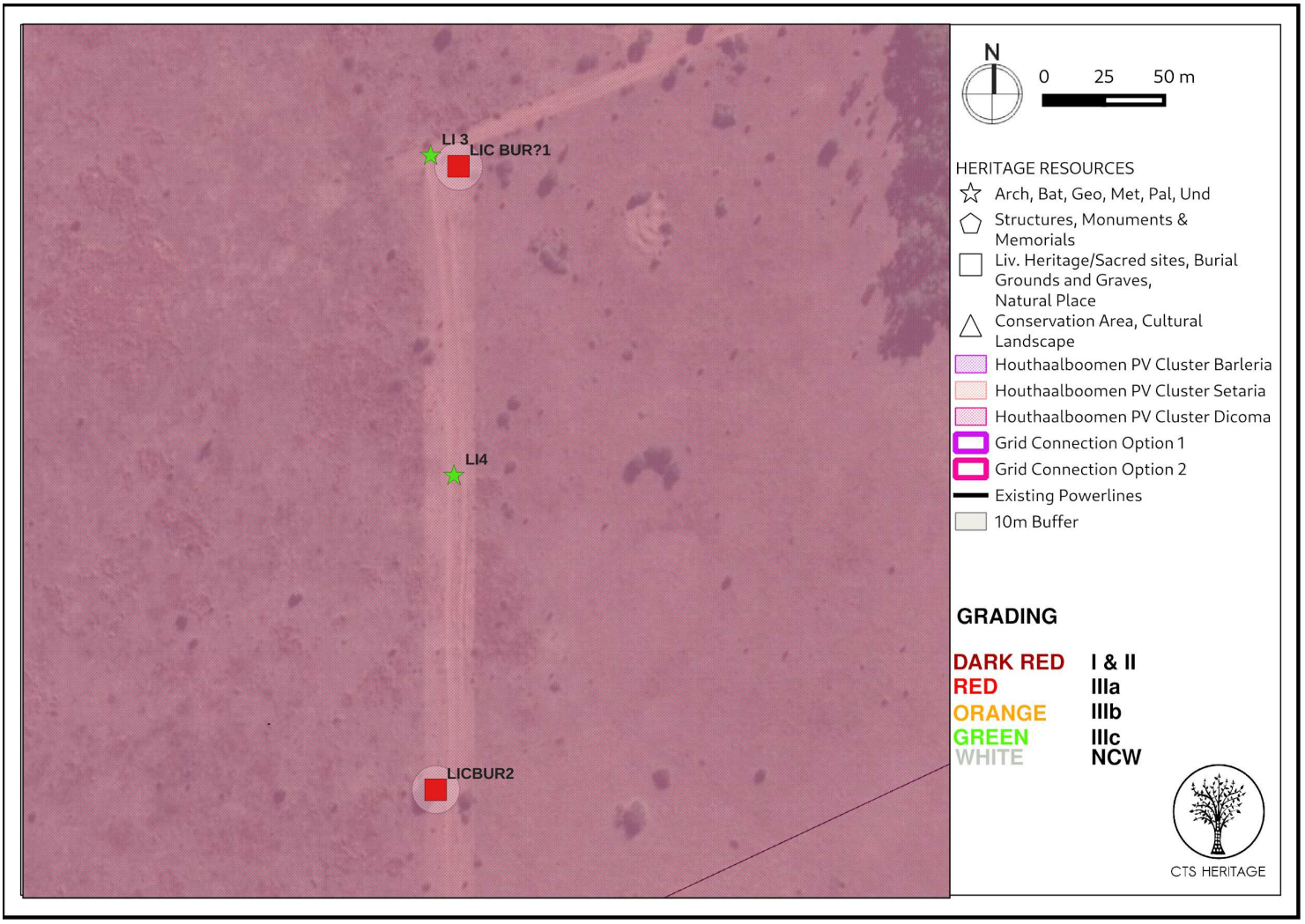

Figure 17.4: Inset C

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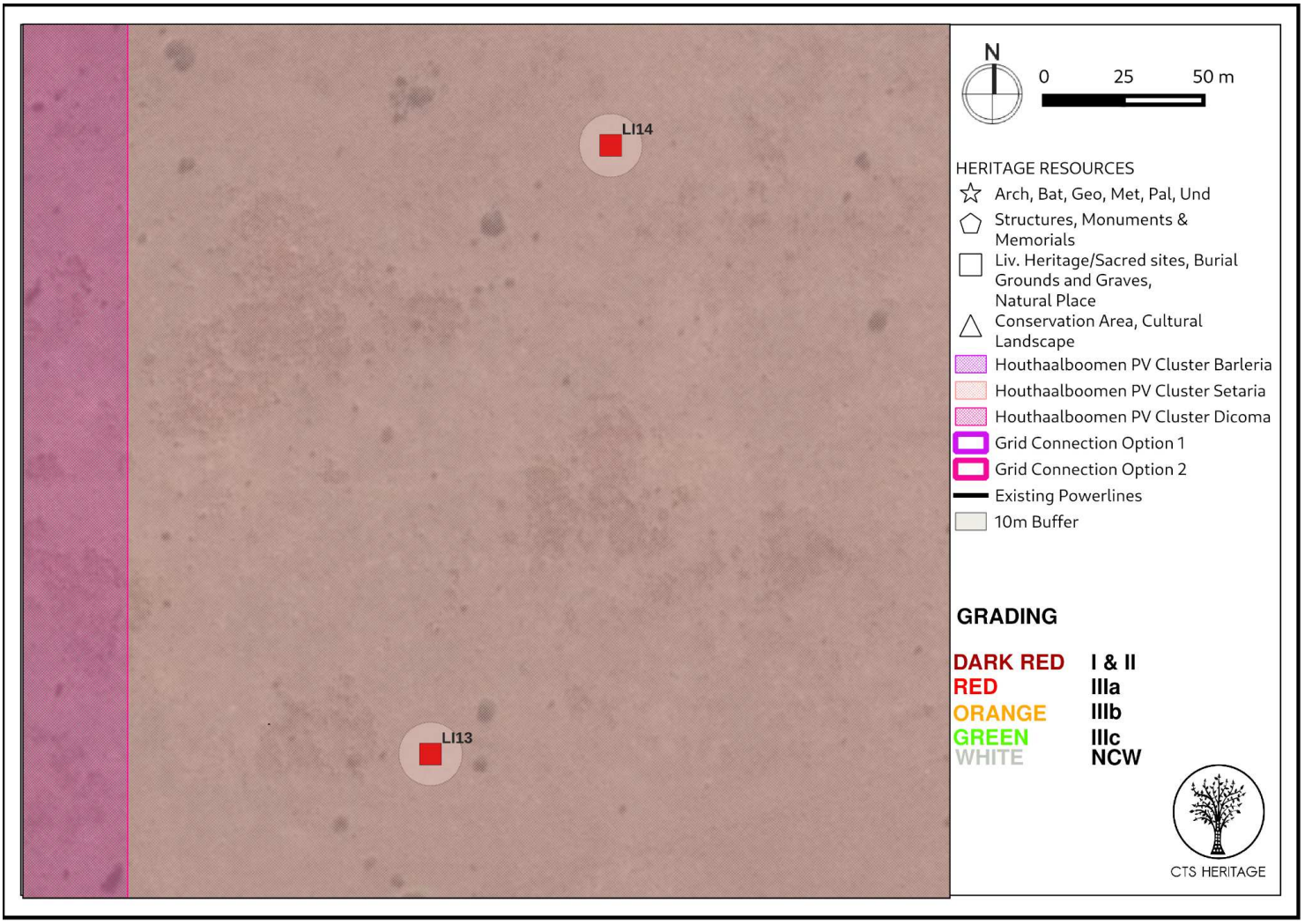

Figure 17.5: Inset D

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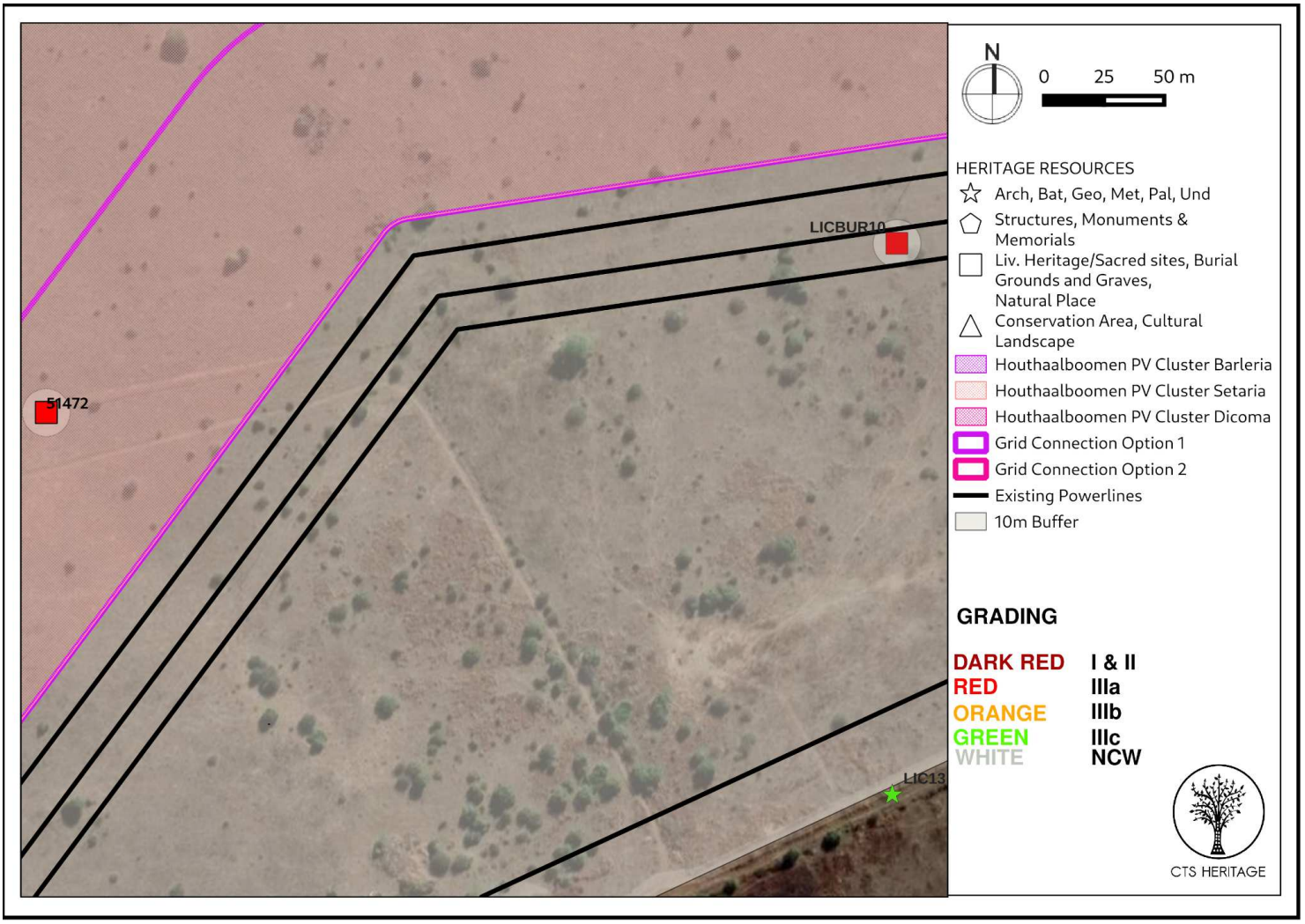

Figure 17.6: Inset E

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6. CONCLUSION AND RECOMMENDATIONS

The findings of this field assessment largely correlate with the findings of Van der Walt (2014) and a number of additional heritage resources were identified. The stone age archaeological resources identified were all *ex situ* and are of low heritage significance. These have been graded IIIC in the tables and maps provided and no additional mitigation is recommended for these sites. They have been sufficiently recorded in this report.

A number of stone structures were identified within the development area. It is likely that a number of these are burial sites (LICBUR?1, LICBUR2, LICBUR6, LICBUR10, LI9, LI13 and LI14). These have been graded IIIA in the tables and maps provided and a no-development buffer of 10m is recommended around these sites. Furthermore, it is recommended that a management plan is developed to ensure the ongoing conservation of these sites for the duration of the lifespan of the development.

Lastly, it is possible that archaeological resources may be located beneath the ground surface which may be impacted during the course of development. Recommendations in this regard are included below.

Recommendations

There is no objection to the proposed development of the PV cluster and associated grid connection in terms of impacts to archaeological heritage on condition that:

- A 10m no-go and no development buffer is implemented around the potential burial sites LICBUR?1, LICBUR2, LICBUR6, LICBUR10, LI9, LI13 and LI14.
- A management plan is developed for the ongoing and long-term management of the burials within the development area.
- Should any buried archaeological resources 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.

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7. REFERENCES

Heritage Impact Assessments				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
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8330	AIA Phase 1	Francois P Coetzee	01/03/2008	Cultural Heritage Survey of the PPC Slurry Operation, near Zeerust, North West Province
8455	HIA Phase 1	Udo Kusel	25/07/2008	Cultural Heritage Resources Impact Assessment of Portion 151 of Lichtenburg Town and Townlands 27 IP (Lichtenburg Extension 10) North West Province
8531	HIA Phase 1	Johnny Van Schalkwyk	01/11/2008	Heritage Impact Report for the Proposed 88 kV Power Line from Watershed Substation, Lichtenburg, to the Mmabatho Substation, North West Gauteng Province
50047	HIA Phase 1	M Hutten	01/05/2012	Heritage Impact Assessment for the Proposed Lichtenburg Solar Park North of Lichtenburg, North West Province
50048	PIA Phase 1	Bruce Rubidge	14/07/2012	Palaeontological Assessment - Lichtenburg Solar Park
110338	HIA Phase 1	Julius CC Pistorius	01/06/2011	A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR THE PROPOSED MAFIKENG CEMENT PROJECT NEAR ITSOSENG IN THE NORTH-WEST PROVINCE OF SOUTH AFRICA
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138895		Jaco van der Walt, John E Almond	14/10/2013	Archaeological Impact Assessment for the Proposed Hibernia Solar Project near the town of Lichtenburg in the North West Province of South Africa & Paleontological Report: Recommended Exemption From Further Palaeontological Studies: Proposed Hibernia Pv S

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- Lavin, J. 2018. HERITAGE IMPACT ASSESSMENT In terms of Section 38(8) of the NHRA for the DEVELOPMENT OF THE LICHTENBURG 1, 2 and 3 PV SOLAR ENERGY FACILITY AND ASSOCIATED INFRASTRUCTURE ON A SITE NEAR LICHTENBURG, NORTH WEST PROVINCE. Unpublished Report.
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