CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	**CTS21_172**
SAHRIS Ref:	
Client:	**Environamics**
Date:	**August 2021**
Title:	**Proposed development of a 132kV overhead power line and substation connecting the authorised Gamma SPP to the existing Mookodi-Magopela 132kV power line near Vryburg**

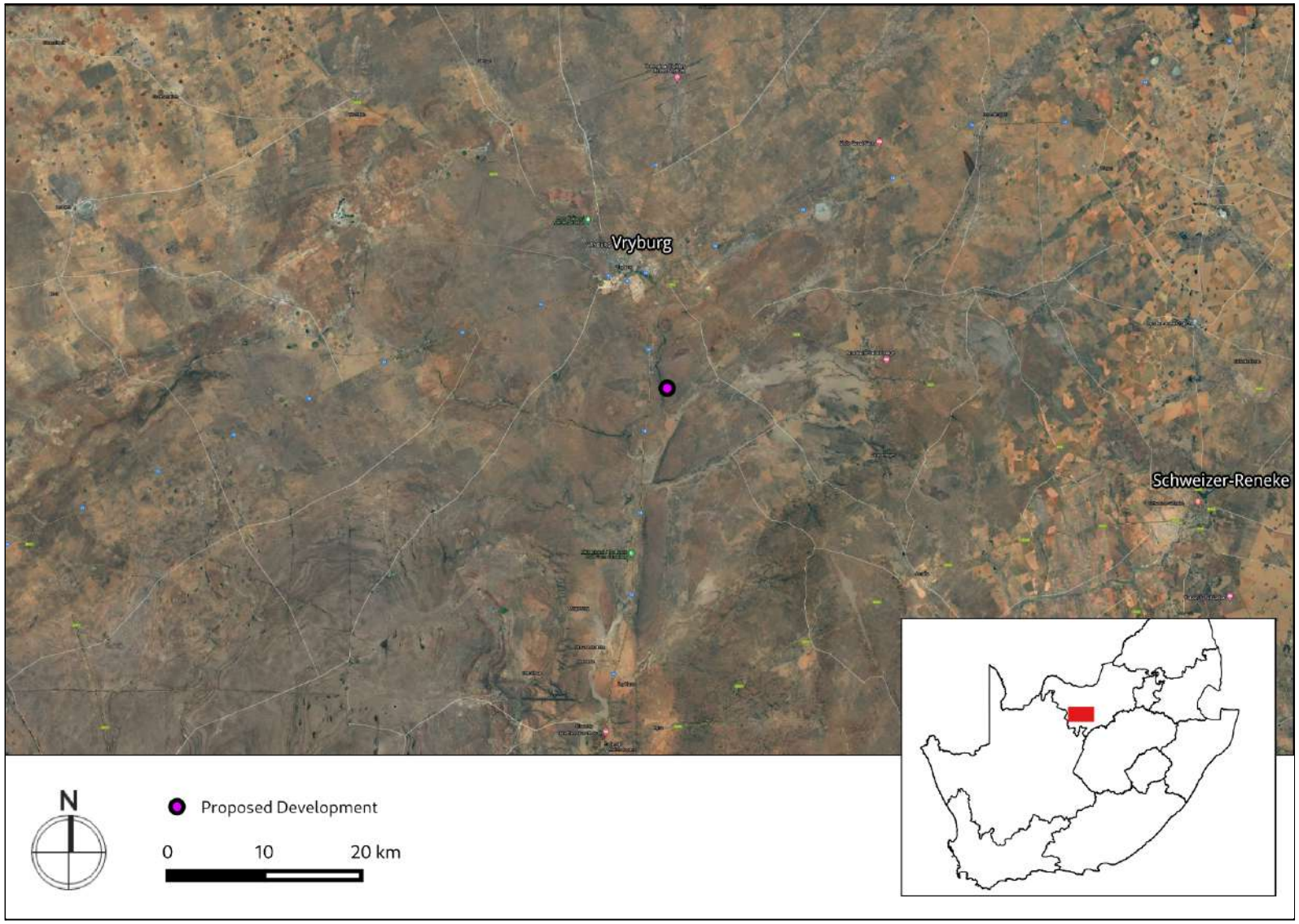

Figure 1a. Satellite map indicating the location of the proposed development in the North West Province

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1. Proposed Development Summary

The activity entails the development of a 132kV overhead power line and substation connecting the authorised Gamma SPP to the existing Mookodi-Magopela 132kV power line. The grid connection corridor currently under assessment for the placement of the power line route, and substation, and to be submitted for authorisation, is 100m wide and ~4,5km long. The grid connection corridor will cross several farms, the Harts River as well as the N18 and falls within the Naledi Local Municipality of the Dr Ruth Segomotsi Mompati District Municipality, North West Province. Various properties are affected by the grid connection corridor. The project entails the development of an overhead power line of approximately 4,5km to be constructed within a 100m wide corridor.

2. Application References

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

3. Property Information

Latitude / Longitude	27° 4'22.10"S 24°46'5.70"E
Erf number / Farm number	The Remaining Extent of the farm Hartsboom No. 734 Portion 2 of the farm Hartsboom No. 734 Portion 1 of the farm Hartsboom No. 734 Portion 1 of the Farm Champions Kloof No. 731 Portion 2 of the Farm Champions Kloof No. 731 Portion 10 of the Farm Champions Kloof No. 731 Portion 9 of the Farm Champions Kloof No.731 Portion 5 of the Farm Champions Kloof No. 731 Remaining Extent of Portion 3 of the Farm Champions Kloof No. 731 Remaining Extent of Portion 4 of the Farm Champions Kloof No. 731
Local Municipality	Naledi Local Municipality
District Municipality	Dr Ruth Segomotsi Mompati District Municipality
Province	North West
Current Use	Agricultural

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4. Nature of the Proposed Development

Total Surface Area	~4.5km in length x 100m corridor
Depth of excavation (m)	2.5m max
Height of development (m)	32m max

5. Category of Development

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

6. Additional Infrastructure Required for this Development

Grid connection and substations as well as the service road that will be associated with the power line

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

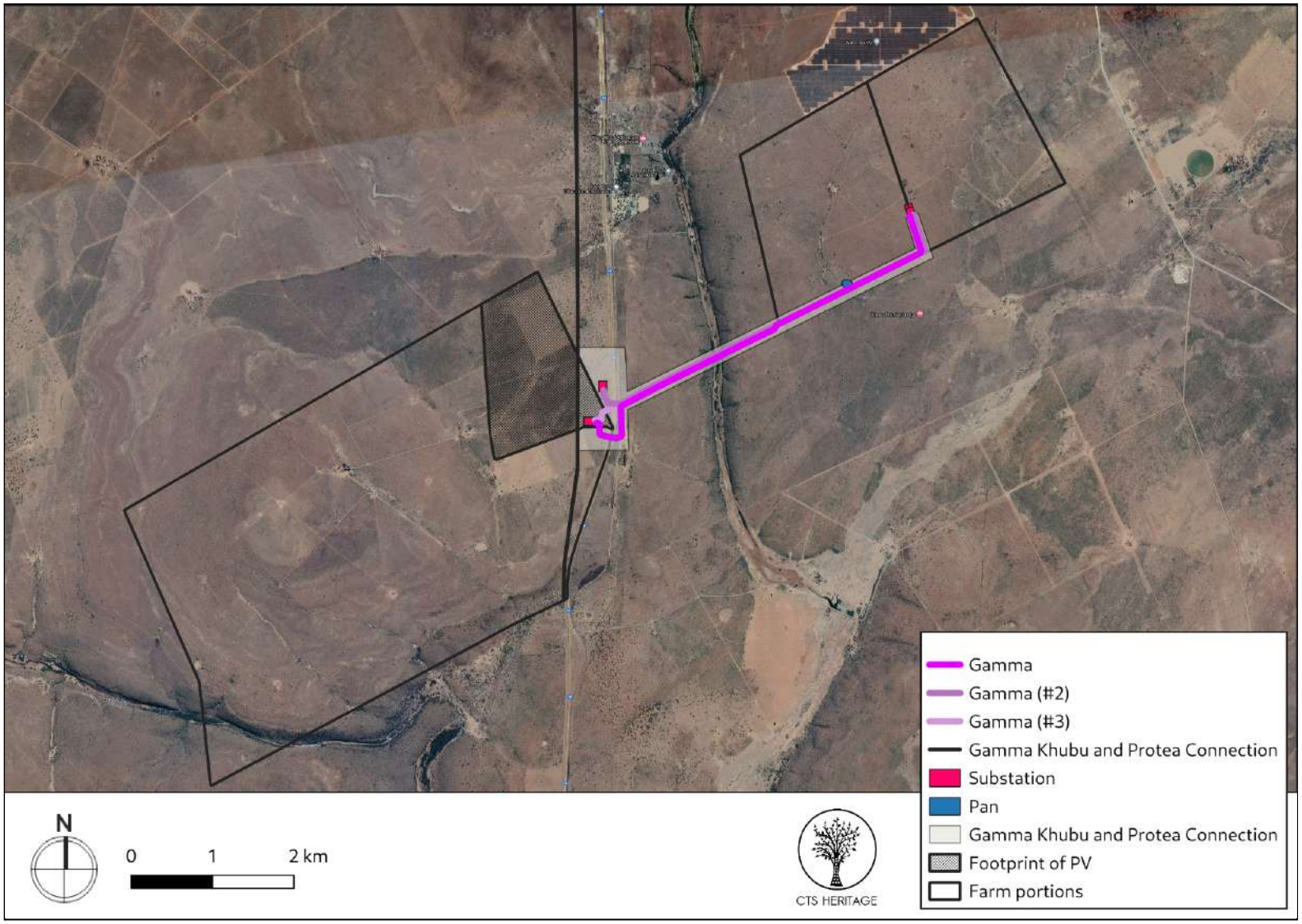

Figure 1b. Overview Map. Satellite image (2019) indicating the proposed development area at closer range.

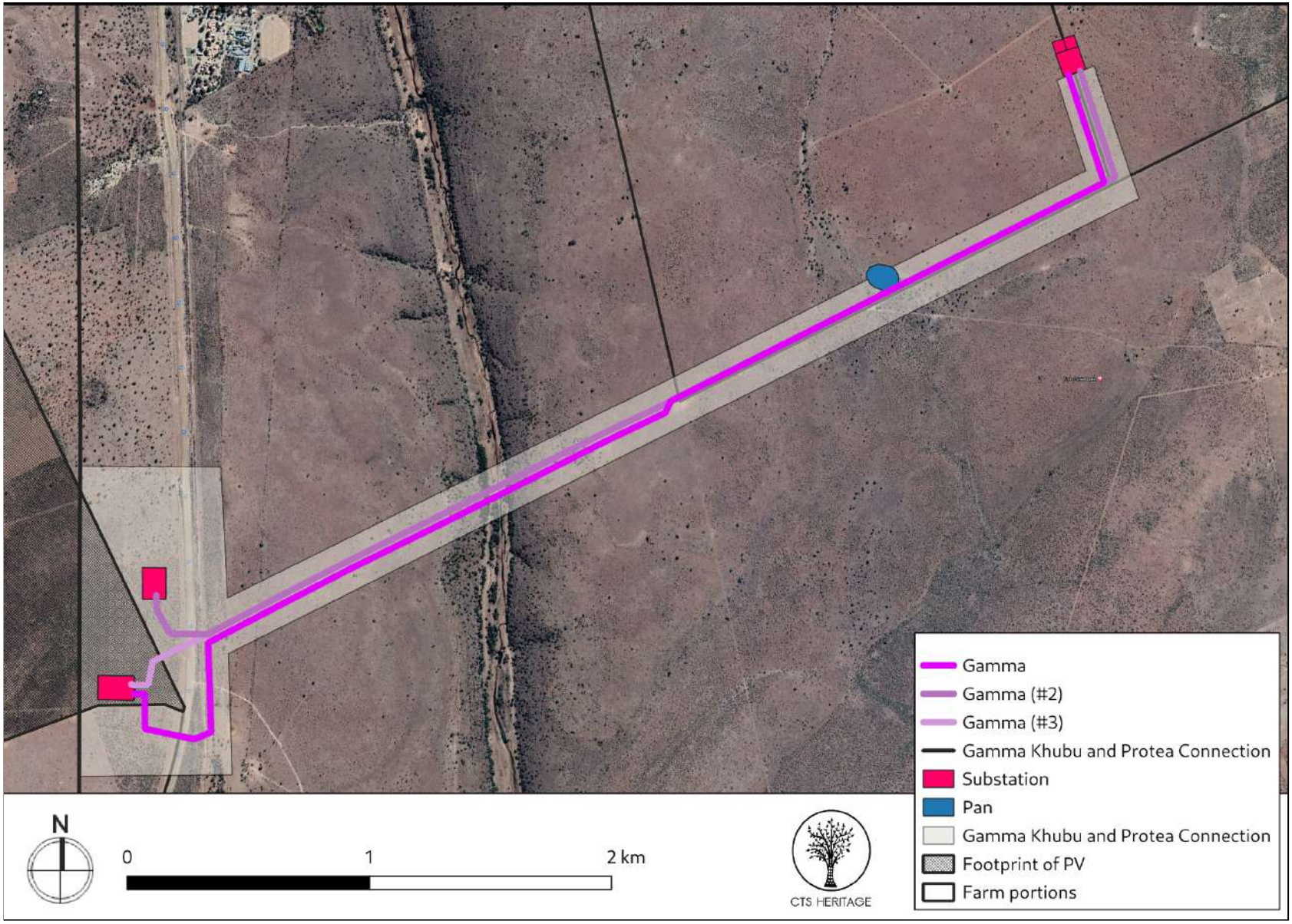

Figure 1c. Overview Map. Satellite image (2019) indicating the proposed development area at closer range.

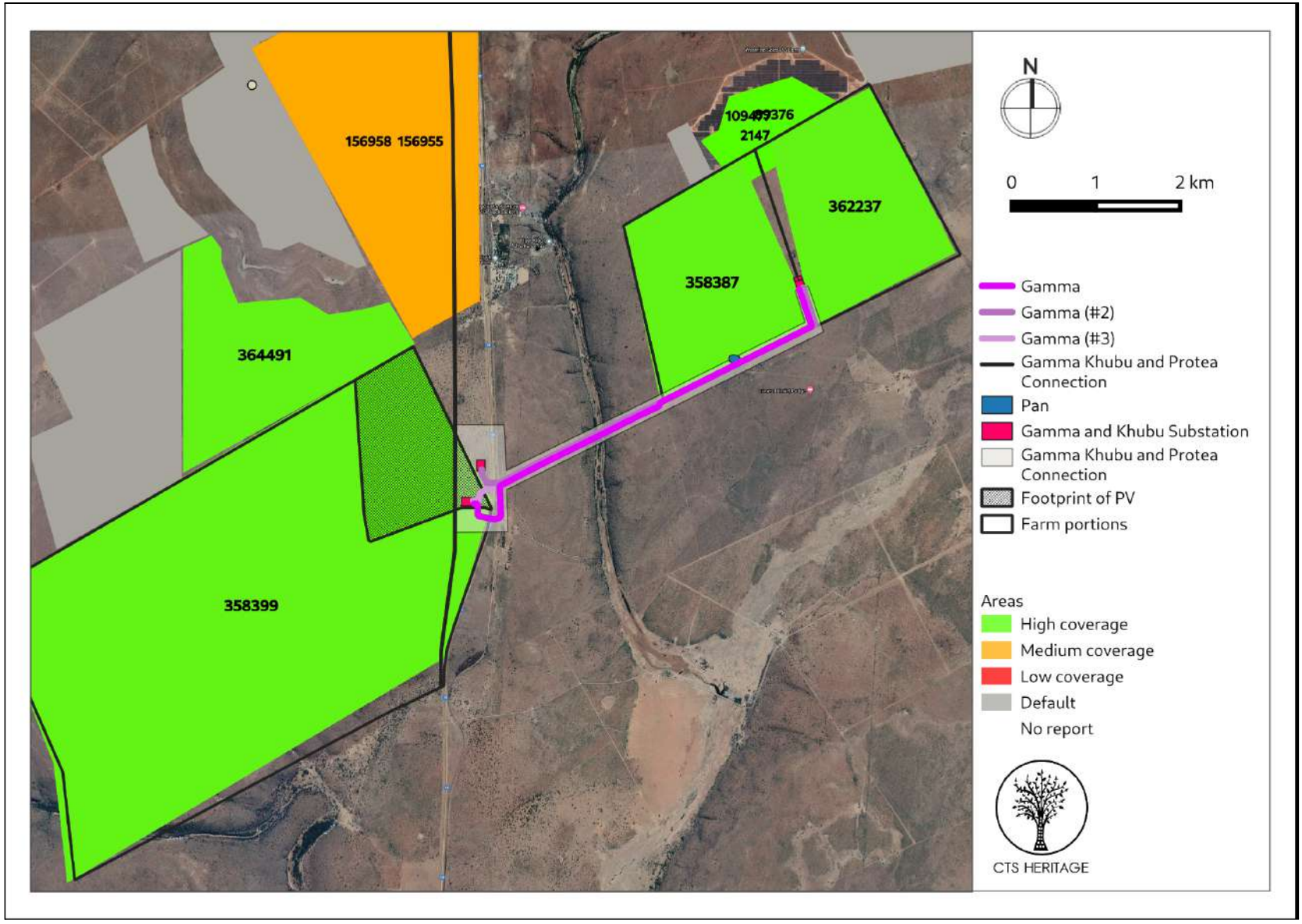

Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 5km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

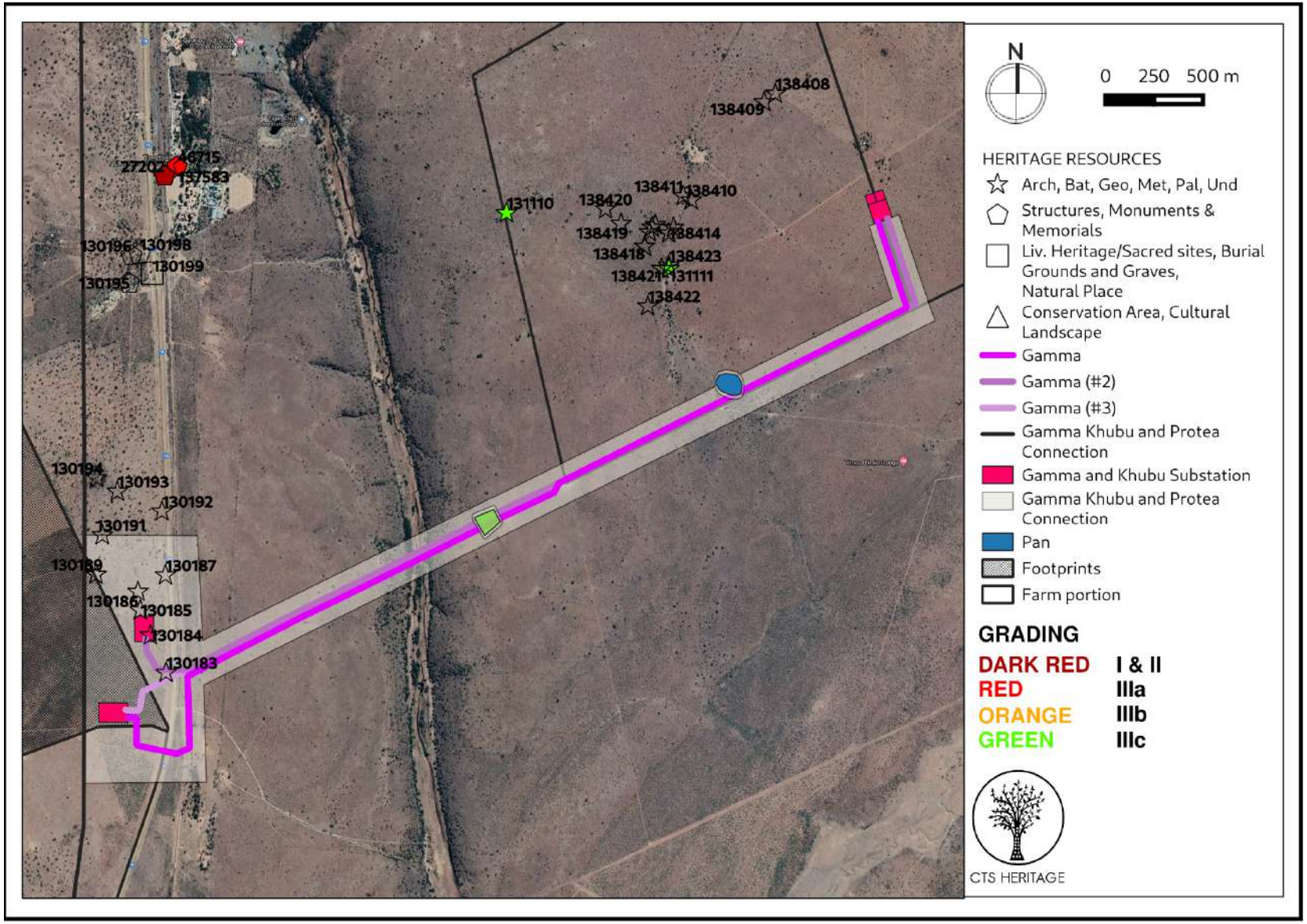

Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area. See insets A and B below with SAHRIS Site IDs indicated. Please See Appendix 4 for a full description of heritage resource types. Ruin indicated in green with proposed 20m buffers

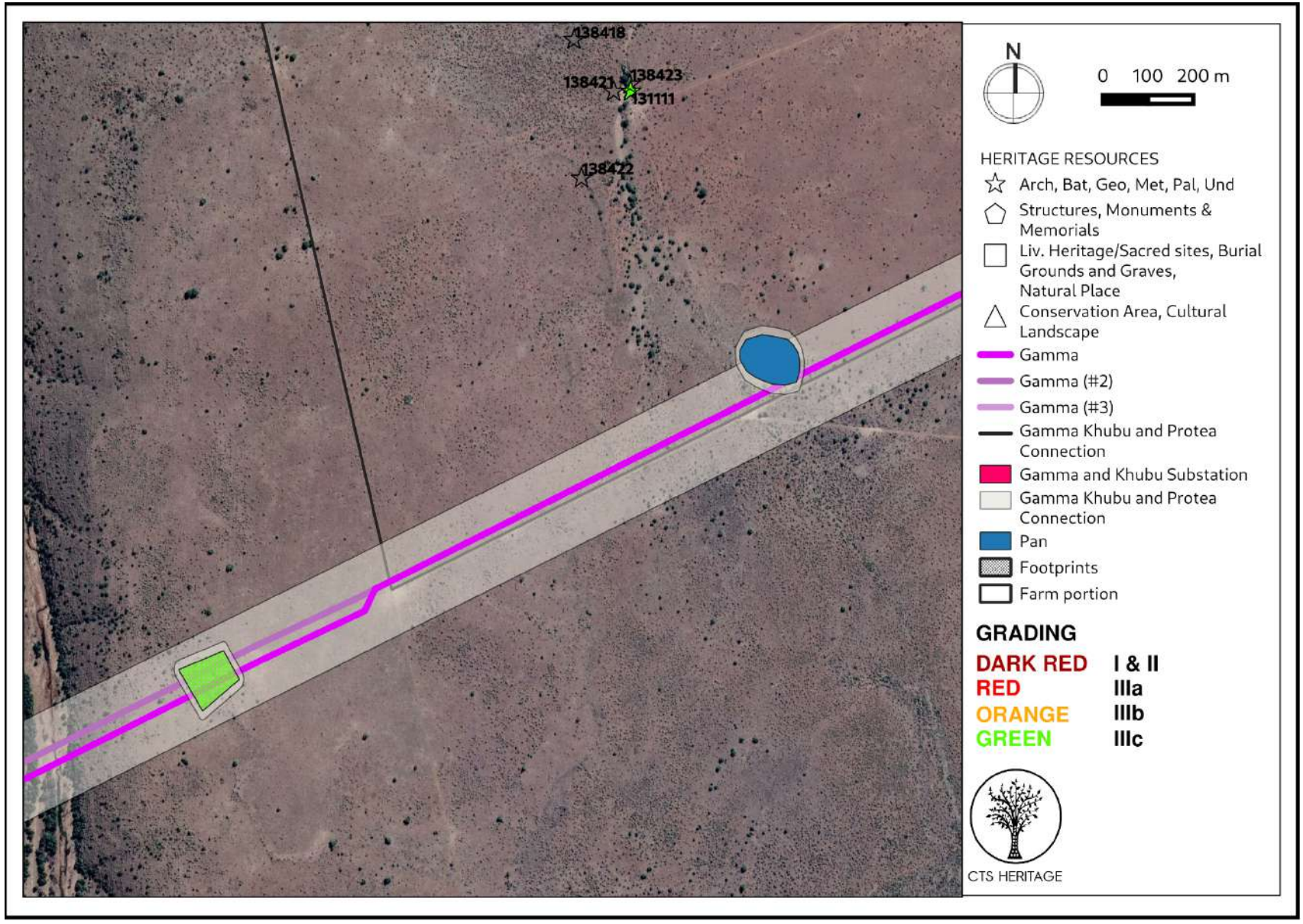

Figure 3a. Heritage Resources Map. Heritage resources inset A with 20m buffers indicated

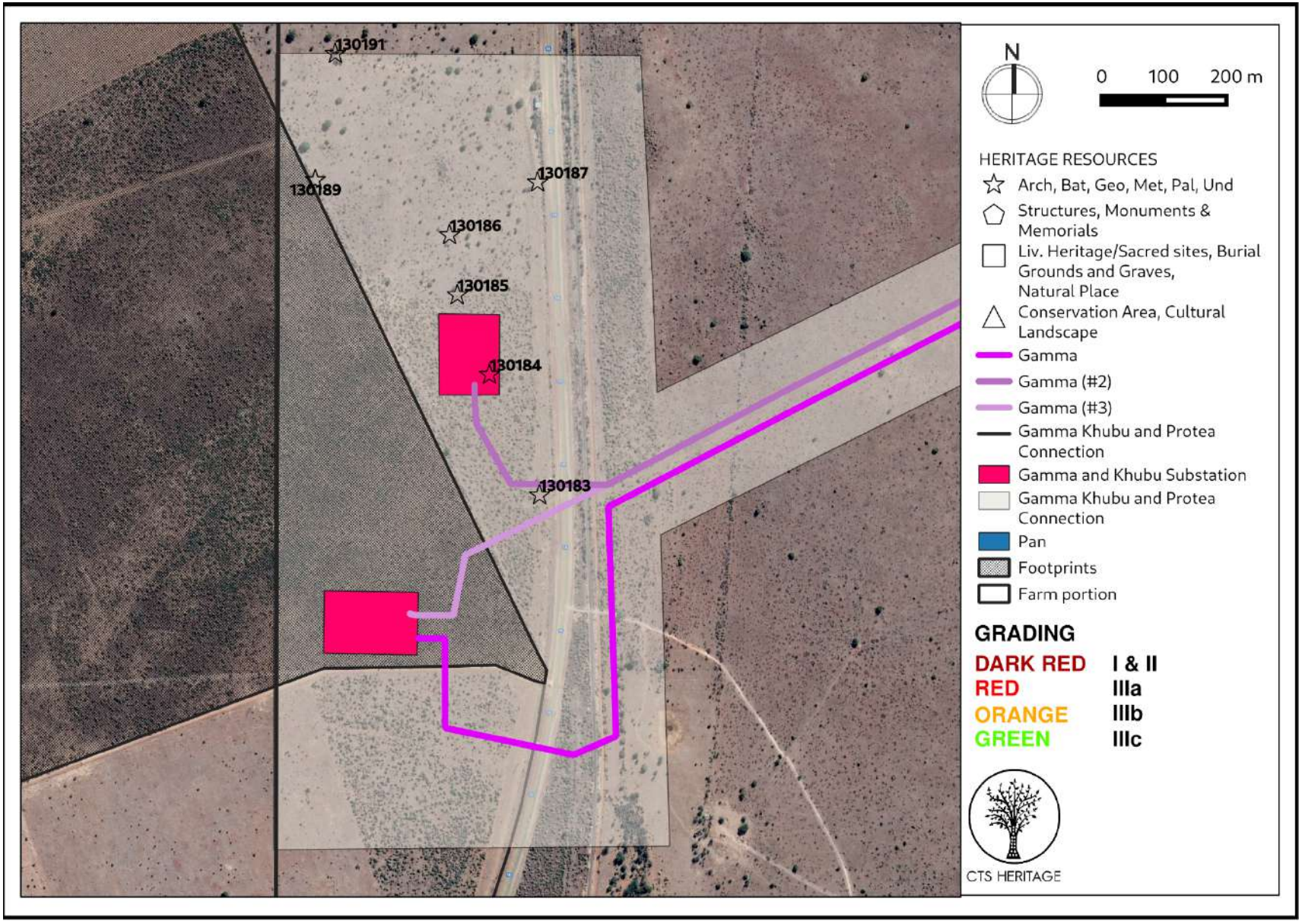

Figure 3b. Heritage Resources Map. Heritage resources inset B

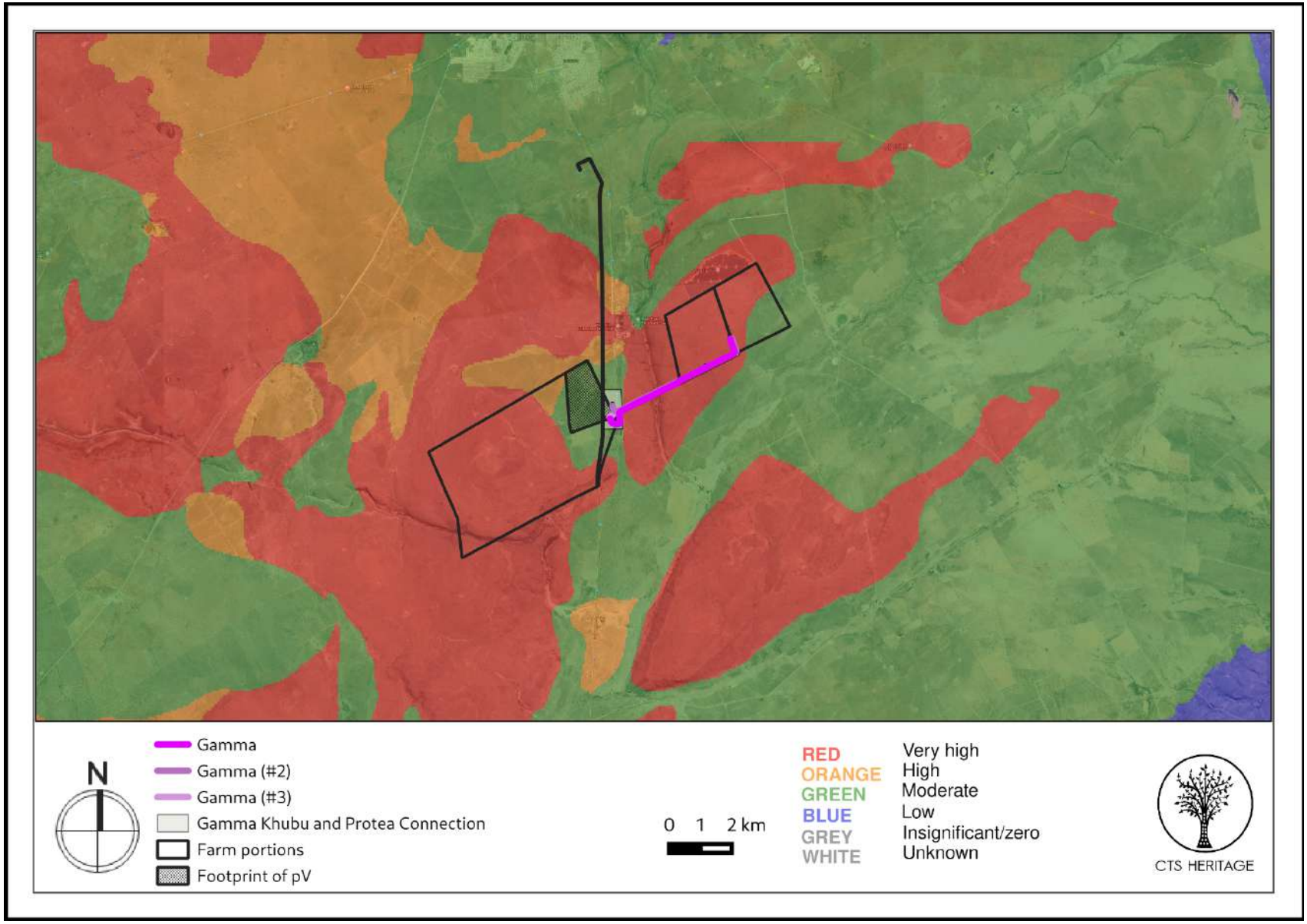

Figure 4a. SAHRIS Palaeosensitivity Map. Indicating the fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

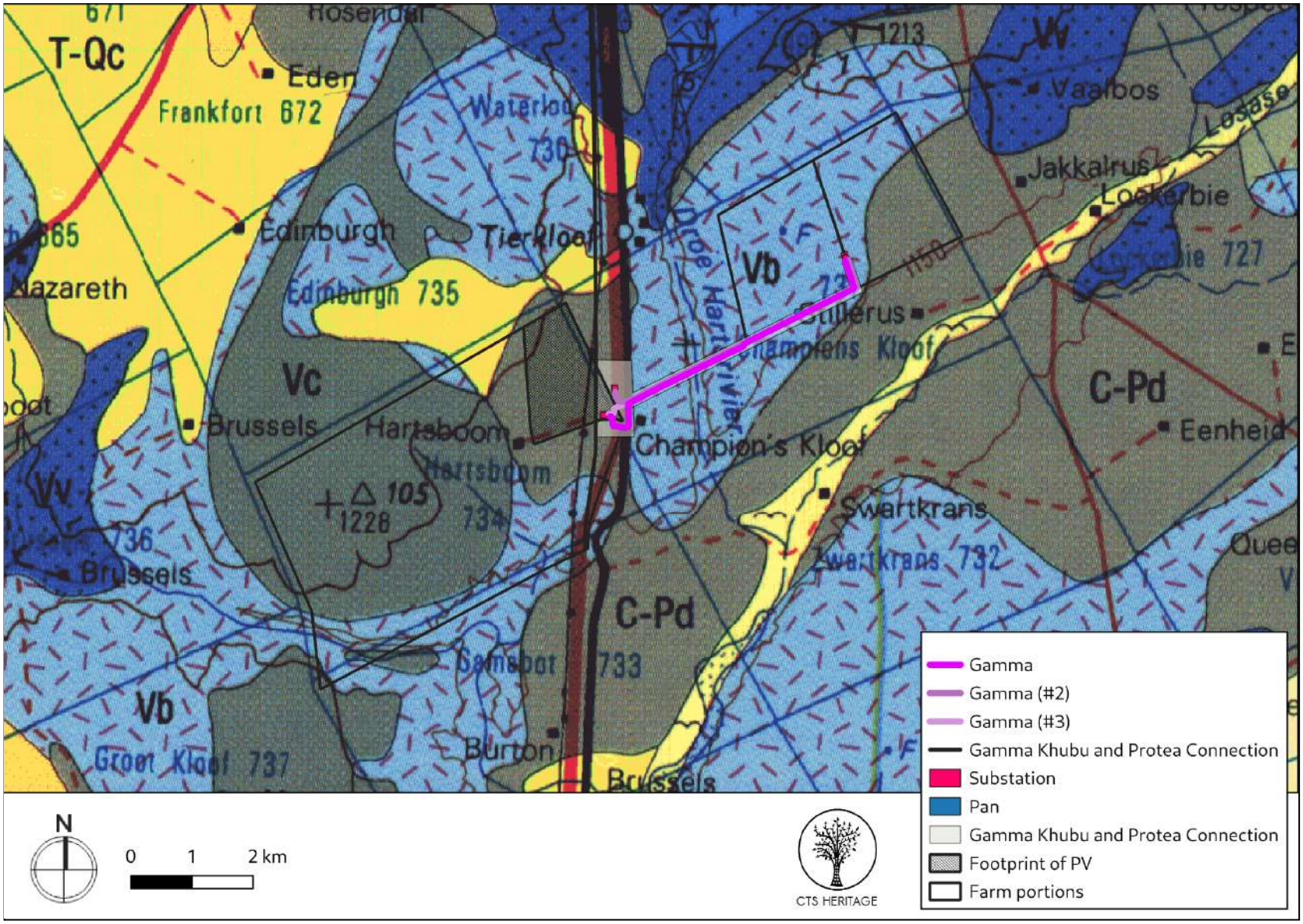

Figure 4b. Geology Map. Extract from the Council for GeoScience Map 2724 for Christiana indicating that the area proposed for development is underlain by Vb - Boomplaas Formation and Vc - Clearwater Formation of the Ghaap Group

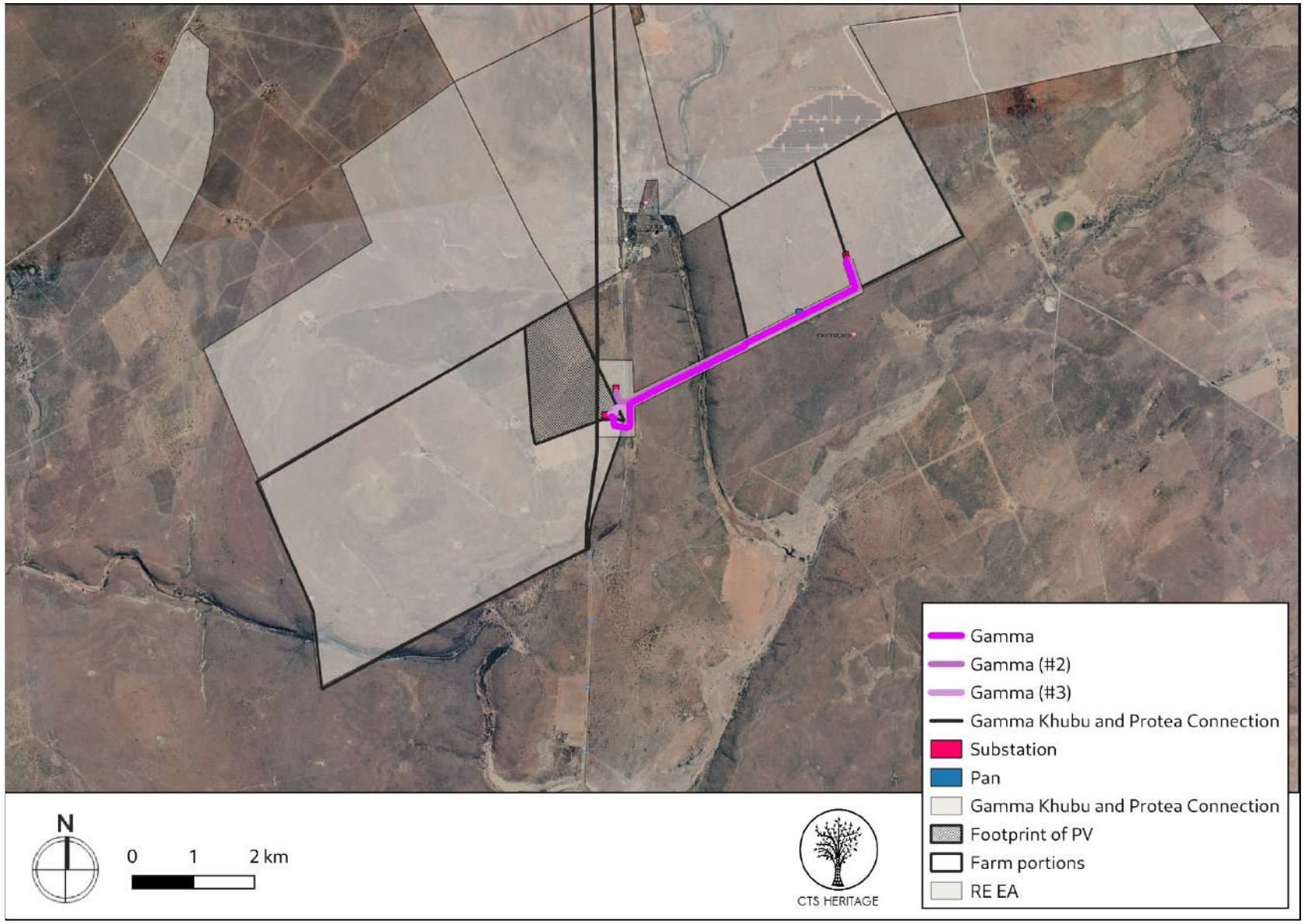

Figure 5. Environmental Authorisations. EAs granted for Renewable Energy

Figure 6.1. Palaeontology. Fossils and Stromatolites identified by the EAP during the walkdown of the line

Figure 6.2. Palaeontology. Stromatolites identified by the EAP during the walkdown of the line

Figure 6.3. Palaeontology. Stromatolites identified by the EAP during the walkdown of the line

Figure 6.4. Archaeology. Heritage resources identified by the EAP during the walkdown of the line

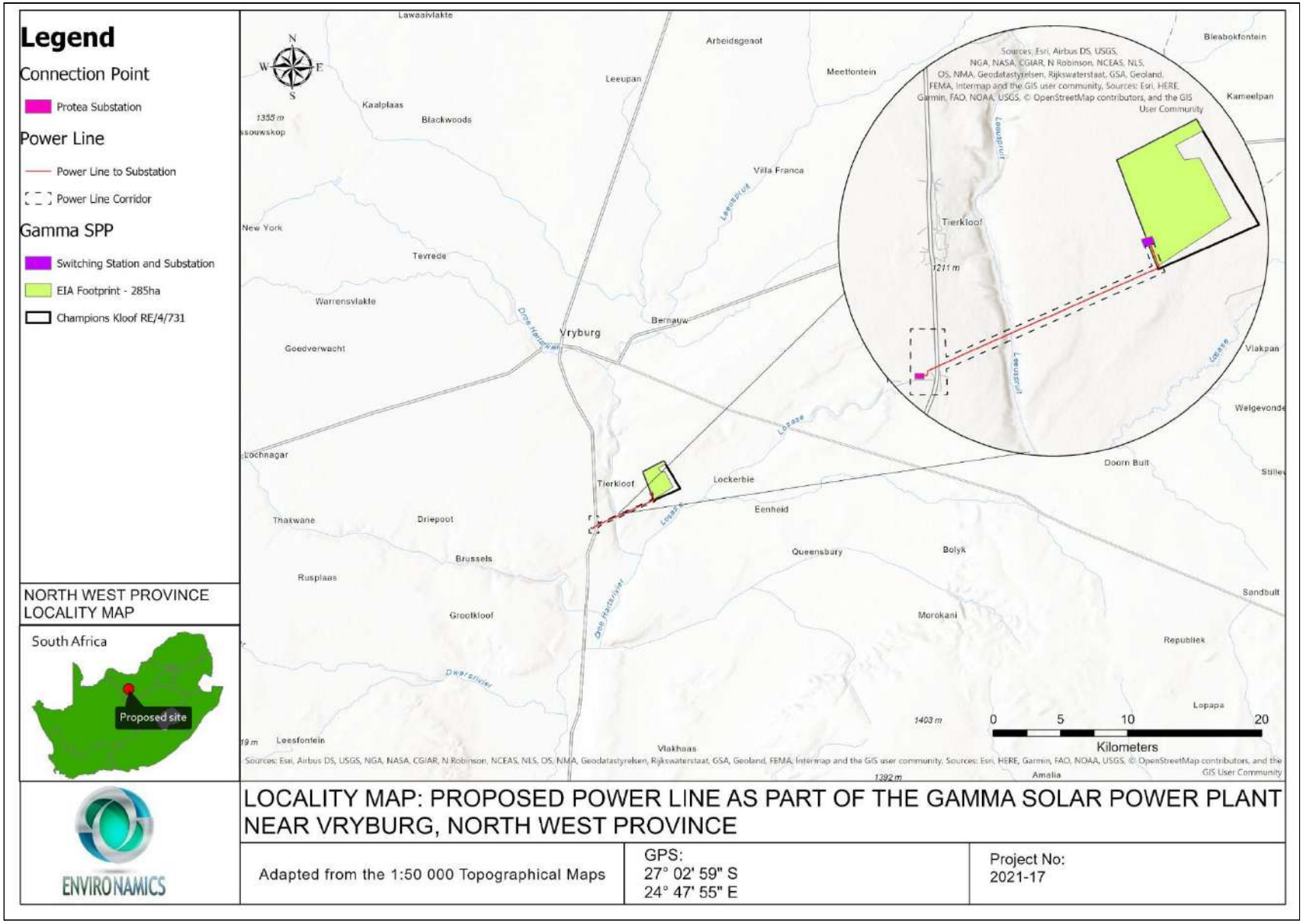

Figure 7. Locality Map. From client

8. Heritage statement and character of the area

Background

The activity entails the development of a 132kV overhead power line and substation connecting the authorised Gamma SPP to the existing Mookodi-Magopela 132kV power line. The Gamma Solar Power Plant received an Environmental Authorisation (EA) from the Department of Forestry, Fisheries and the Environment (DFFE), previously known as the Department of Environmental Affairs (DEA), on 29 November 2016 (ref.: 14/12/16/3/3/2/917). The assessment below relies on the heritage assessment studies completed for the approved Gamma Solar Power Plant as well as other heritage assessments completed in the vicinity in order to ascertain the likely impacts to heritage resources associated with the proposed development.

Archaeology and Built Environment Heritage

Vryburg town was established in 1882 as the capital town of the independent Boer Republic of Stellaland. During its short history, the small state became a focal point for conflict between the British Empire and the South African Republic, the two major players vying for control of the territory. After a series of claims and annexations, British fears of Boer expansionism led to its demise and, among other factors, set the stage for the Second Boer War. Before the proclamation of the republic, the area was under the control of competing Korana and Tswana groups, while the United Kingdom laid claim to it as a part of the emerging protectorate of British Bechuanaland. Two of the indigenous groups were under the leadership of chiefs Mankoroane and Montšioa, whom the British regarded as "friendly," and two others under the leadership of chiefs Moshette (a Motswana) and Massouw (a Korana). When a feud erupted between Mankoroane and another chief, each side resorted to recruiting volunteers, promising them land in return for their assistance. After a settlement was negotiated with mediation from the Transvaal Republic, large portions of Mankoroane's land were given to Boer mercenaries who had fought on his adversary's side, and the new inhabitants decided to declare independence and establish the Republic of Stellaland. During the Second Boer War, a concentration camp was established at Vryburg, however the location

According to van Schalkwyk et al (2018, SAHRIS NID 510838) "Very little habitation of the central highveld area took place during Stone Age times. Tools dating to the Early Stone Age period are mostly found in the vicinity of larger watercourses, e.g. the Vaal River or the Harts River and especially in sheltered areas such as at the Taung fossil site. During Middle Stone Age (MSA) times (c. 150 000 – 30 000 BP), people became more mobile, occupying areas formerly avoided. In many cases, tools dating to this period are found on the banks of the many pans that occur all over." Van Schalkwyk (2018, SAHRIS NID 510838) notes that Later Stone Age artefacts and rock art are also known from the area. Iron Age people started to settle in the area in the 1500s. According to Van Schalkwyk (2018, SAHRIS NID 510838), "By the 16th century things changed, with the climate becoming warmer and wetter, creating condition that allowed Late Iron Age (LIA) farmers to occupy areas previously unsuitable, for example the treeless plains of the Free State and North West Province." including the proposed development area. "The earliest Iron Age settlers who moved into the North West Province region were Tswana-speakers such as the Tlhaping, Hurutshe, Fokeng, Kgatla and Rolong. In the region of the study area, it was mostly the booRapulana and booRatlou sections of the Rolong (Breutz 1959)."

Despite the overall archaeological sensitivity of the broader landscape, the archaeological survey conducted by Van Schalkwyk (2016, SAHRIS NID 362237) identified only one heritage resource of significance in his assessment for the authorised Gamma SPP. This site is described as "A small pan area where tools and flakes dating to the Middle Stone Age were identified. They were made from hardened shale. The material occurs all along the rim of the pan at a density of approximately one tool/flake per 10m2 ." Although the site identified by Van Schalkwyk (2016) is located well away from the proposed powerline corridor, there is an existing pan located within the powerline corridor which may be associated with similar Middle Stone Age artefacts. It is therefore recommended that a no-development buffer of 20m is implemented around the pan to ensure that any significant archaeological resources are not impacted. Furthermore, it is clear from the satellite imagery that a ruin of an old farmstead is located within the proposed powerline corridor (Figure 3X and Figure 6.4). Although it is unlikely that the ruin itself has any cultural significance, it is possible that there are buried archaeological deposits located in proximity to the ruin, associated with

the occupation of the farmstead. It is therefore recommended that a no-development buffer of 20m is implemented around the ruin to ensure that such buried archaeological deposits are not impacted by the proposed development. No pylon footings or access roads may be placed within these 20m buffers.

Palaeontology

According to the SAHRIS Palaeosensitivity Map, the area proposed for the powerline development is underlain by sediments of very high palaeontological sensitivity (Figure 4a). Additionally, in a field assessment completed by the EAP, stromatolite fossils were identified within the proposed alignment corridor (Figure 6.1 to 6.3). According to the extract from the CGS 2724 Christiana Map, the development area for the proposed powerline is underlain by sediments of the Boomplaas and Clearwater Formations of the Ghaap Group. In 2016, Dr Almond completed a palaeontological assessment for the proposed Khubu and Gamma Solar Power Plants (SAHRIS ID 358386 and 358387). In his reports, Dr Amond notes that “Densely-packed, well-preserved stromatolite assemblages are recorded within the Boomplaas Formation carbonate rocks in a small area of low-relief bedrock exposure just west of the farmstead. A range of stromatolitic growth forms is represented here. The Boomplaas Formation stromatolites recorded in the Vryburg area represent some of the oldest examples of these microbially-generated fossils in South Africa but they have yet to be comprehensively described while their stratigraphic and geographical distributions are poorly understood.” Dr Almond (2016) recommended that the Boomplaas Formation bedrocks be excluded from the solar plant footprint, with a buffer zone of 20 m. The ECO should ensure that this area is clearly demarcated (e.g. using security tape) during the construction phase to prevent damage to the fossils by vehicles or personnel. It is similarly recommended that a final walkdown of the approved powerline route is conducted by a palaeontologist to identify and demarcate any exposures of the Boomplaas Formation stromatolites located within the powerline alignment. Further, it is recommended that any exposures identified through this process are demarcated with security tape and protected with a no-go buffer of 20m. No pylon footings or access roads may be placed within the 20m buffer.

Cumulative Impacts

The proposed powerline development will form part of the infrastructure required for the Gamma Solar development and is located in close proximity to the substation and operations and maintenance facilities associated with the Gamma Solar development. Furthermore, the proposed powerline is located within an already approved solar facility development footprint which is also located within a belt of approved renewable energy facilities (Figure 5). 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 powerline is therefore unlikely to result in unacceptable risk or loss, nor will the proposed powerline development result in a complete change to the sense of place of the area or result in an unacceptable increase in impact. No additional cumulative impacts have been identified.

Conclusion

There is no objection to the proposed development of powerline on heritage grounds on condition that:

- A 20m no-development buffer is implemented around the pan located within the corridor. No pylon footings or access roads may be placed within the 20m buffer.
- A 20m no-development buffer is implemented around the ruin located within the corridor. No pylon footings or access roads may be placed within the 20m buffer.
- a final walkdown of the approved powerline route is conducted by a palaeontologist to identify and demarcate any exposures of the Boomplaas Formation stromatolites located within the powerline alignment. Further, it is recommended that any exposures identified through this process are demarcated with security tape and protected with a no-go buffer of 20m. No pylon footings or access roads may be placed within the 20m buffer.
- If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/excavation can be undertaken.

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APPENDIX 1

List of heritage resources located in the vicinity of the development area

Site ID	Site no	Full Site Name	Site Type	Grading
27202	9/2/103/0003	Tiger Kloof, Waterloo 730, District Vryburg	Building, Structures	Grade II
46715	MOOK010	Mookodi 010	Building	Grade IIIa
105719	Stromatolite occurrences	Stromatolite occurrences on Farm Waterloo 992	Palaeontological	
105827	Waterloo 002	Waterloo 002	Artefacts	
138395	GAM-001	Gamma PV	Palaeontological	
138396	GAM-002	Gamma PV	Palaeontological	
138413	KB-005	Khubu	Palaeontological	
138414	KB-006	Khubu	Palaeontological	
138397	GAM-003	Gamma PV	Palaeontological	
138398	GAM-004	Gamma PV	Palaeontological	
138415	KB-007	Khubu	Palaeontological	
138399	GAM-005	Gamma PV	Palaeontological	
138416	KB-008	Khubu	Palaeontological	
138400	GAM-006	Gamma PV	Palaeontological	
138417	KB-009	Khubu	Palaeontological	
138401	GAM-007	Gamma PV	Palaeontological	

138418	KB-010	Khubu	Palaeontological	
138402	GAM-008	Gamma PV	Palaeontological, Artefacts	
138419	KB-011	Khubu	Palaeontological	
138403	GAM-009	Gamma PV	Deposit	
138420	KB-012	Khubu	Palaeontological	
138404	GAM-010	Gamma PV	Deposit	
138421	KB-013	Khubu	Palaeontological	
138405	GAM-011	Gamma PV	Palaeontological	
138422	KB-014	Khubu	Palaeontological	
138406	GAM-012	Gamma PV	Palaeontological	
138423	KB-015	Khubu	Palaeontological	
138424	PT-001	PROTEA	Artefacts	Grade IV
138408	KB-001	Khubu	Palaeontological	
138409	KB-002	Khubu	Artefacts	
138410	KB-003	Khubu	Artefacts	
138411	KB-004	Khubu	Palaeontological	
138453	HTM-001	HARTSBOOM 734	Artefacts	Grade IIIc
138454	CK731-001	CHAMPIONS KLOOF 731	Artefacts	

130183	2724BA/ Solar/ Farm Waterloo 730/ Site 001	Archaeological site	Archaeological	Grade IV
130184	2724BA/ Solar/ Farm Waterloo 730/ Site 002	Archaeological site	Archaeological	Grade IV
130185	2724BA/ Solar/ Farm Waterloo 730/ Site 003	Archaeological site	Archaeological	Grade IV
130186	2724BA/ Solar/ Farm Waterloo 730/ Site 004	Archaeological site	Archaeological	Grade IV
130187	2724BA/ Solar/ Farm Waterloo 730/ Site 005	Archaeological site	Archaeological	Grade IV
130188	2724BA/ Solar/ Farm Waterloo 730/ Site 006	Arhaeological site	Archaeological	
130189	2724BA/ Solar/ Farm Waterloo 730/ Site 006	Arhaeological site	Archaeological	Grade IV
130191	2724BA/ Solar/ Farm Waterloo 730/ Site 007	Archaeological site	Archaeological	Grade IV
130192	2724BA/ Solar/ Farm Waterloo 730/ Site 009	Archaeological site	Archaeological	Grade IV
130193	2724BA/ Solar/ Farm Waterloo 730/ Site 011	Archaeological site	Archaeological	Grade IV
130194	2724BA/ Solar/ Farm Waterloo 730/ Site 014	Archaeological site	Archaeological	Grade IV
130195	2724BA/ Solar/ Farm Waterloo 730/ Site 018	Building	Structures	Grade IV

130196	2724BA/ Solar/ Farm Waterloo 730/ Site 019	Building	Structures	Grade IV
130198	2724BA/ Solar/ Farm Waterloo 730/ Site 020	Homestead	Structures	Grade IV
130199	2724BA/ Solar/ Farm Waterloo 730/ Site 021	Grave yard	Burial Grounds & Graves	Grade IV
131110	KUU01	Khubu	Geological	Grade IIIc
131111	KUU02	Khubu	Artefacts	Grade IIIc
130959	WTLS002	Waterloo South	Artefacts	
137583	Educational Institution	Educational Institution	Monuments & Memorials	

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APPENDIX 2

Reference List

Heritage Impact Assessments				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
2147	HIA Phase 1	Johnny Van Schalkwyk	01/06/2012	Heritage impact assessment for the PROPOSED DEVELOPMENT OF PHOTOVOLTAIC POWER PLANTS ON FOUR DIFFERENT LOCATIONS IN NORTH WEST AND NORTHERN CAPE PROVINCES
89376	HIA Phase 1	Johnny Van Schalkwyk	01/10/2012	Heritage impact assessment for the PROPOSED DEVELOPMENT OF A PHOTOVOLTAIC POWER PLANT ON A PORTION OF THE FARM WATERLOO 992, VRYBURG REGION, NORTH WEST PROVINCE
109477	PIA Phase 1	John E Almond	01/01/2013	PALAEONTOLOGICAL HERITAGE ASSESSMENT: COMBINED DESKTOP & FIELD-BASED STUDY Proposed PV Solar Facility on a portion of the farm Waterloo 992 near Vryburg, Naledi Local Municipality, North-West Province
156955	AIA Phase 1	Jaco van der Walt	11/12/2013	Archaeological Impact Assessment for the Proposed Tiger Kloof Photovoltaic Solar Energy Facility near Vryburg, North West Province
156958	Palaeontological Specialist Reports	John E Almond	30/11/2013	Proposed Tiger Skloof Photovoltaic Solar Energy Facility near Vryburg, Naledi Local Municipality, North-West Province
358386	Palaeontological Specialist Reports	John Edward Almond		Palaontological Heritage Assessment: Combined Desktop & Field-Based Study Proposed Gamma Solar Power Plant on the Remaining Extent of Portion 4 (Bos Kop), Farm Champions Kloof 731, North-West Province
358387	Palaeontological Specialist Reports	John Edward Almond		Palaeontological Heritage Assessment: Combined Desktop & flied-Based Study Proposed Khubu Solar Plant on Portion 5 (Shadow Eve) (Portion of Portion 4|). Farm Champions Kloof 731 near Vryburg. Naledi Local Municipality. North-West Province
358388	Heritage Impact Assessment Specialist Reports	Johnny Van Schalkwyk		Cultural heritage Impact assessment for the Development of the Proposed Khubu Solar Power Plant in the Portion 5 of the Farm CHampions Kloof 731, Vryburg Region, North West Province

358399	Palaeontological Specialist Reports	John E Almond		Palaeontology Heritage Assessment: Combined Desktop & Field-Based Study Proposed Protea Solar Power Plant on the Remaining Extent of Farm Hartsboom 734 near Vryburg, North West Province
343610	Archaeological Specialist Reports	Jaco van der Walt	09/11/2015	Archaeological Scoping Report for the Proposed Woodhouse Solar 1 and Woodhouse Solar 2 PV Facilities close to Vryburg, NW Province
343610	Archaeological Specialist Reports	Jaco van der Walt	09/11/2015	Archaeological Scoping Report for the Proposed Woodhouse Solar 1 and Woodhouse Solar 2 PV Facilities close to Vryburg, NW Province
343611	Palaeontological Specialist Reports	Elize Butler	25/09/2015	Palaeontological Impact Assessment of the Proposed Woodhouse PV Solar Energy Facilities and Associated Infrastructure on the Remaining Extent of Farm Woodhouse 729, near Vryburg, NW Province
343611	Palaeontological Specialist Reports	Elize Butler	25/09/2015	Palaeontological Impact Assessment of the Proposed Woodhouse PV Solar Energy Facilities and Associated Infrastructure on the Remaining Extent of Farm Woodhouse 729, near Vryburg, NW Province
361687	Heritage Impact Assessment		31/01/2016	Cultural heritage impact assessment for THE DEVELOPMENT OF THE PROPOSED PROTEA SOLAR POWER PLANT ON A PORTION OF THE FARM HARTSBOOM 734, VRYBURG REGION, NORTH WEST PROVINCE
362237		Johnny Van Schalkwyk	29/01/2016	Cultural heritage impact assessment for THE DEVELOPMENT OF THE PROPOSED GAMMA SOLAR POWER PLANT ON PORTION 4 OF THE FARM CHAMPIONS KLOOF 731, VRYBURG REGION, NORTH WEST PROVINCE
364174		Elize Butler	30/04/2016	Paleontology report - Draft EIA
364175		Jaco van der Walt		Archaeology report - Draft EIA
364176		Elize Butler		Palaeontology report- Draft EIA

364260		Jaco van der Walt		Archaeology report - Draft EIA
364491	Heritage Impact Assessment	Wouter Fourie	26/05/2016	75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY â€“ SENDAWO SOLAR 1 Heritage Impact Assessment
364706	Heritage Impact Assessment	Wouter Fourie	26/05/2016	75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY â€“ SENDAWO SOLAR 2 Heritage Impact Assessment
364708	Heritage Impact Assessment	Wouter Fourie	26/05/2016	75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY â€“ SENDAWO SOLAR 3 Heritage Impact Assessment
364708	Heritage Impact Assessment	Wouter Fourie	26/05/2016	75MW SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY â€“ SENDAWO SOLAR 3 Heritage Impact Assessment
364718	Heritage Impact Assessment	Wouter Fourie	19/05/2016	SENDAWO POWERLINE ALTERNATIVES â€“ SENDAWO PROJECTS Heritage Impact Assessment
364718	Heritage Impact Assessment	Wouter Fourie	19/05/2016	SENDAWO POWERLINE ALTERNATIVES â€“ SENDAWO PROJECTS Heritage Impact Assessment
365017	Heritage Impact Assessment	Johnny Van Schalkwyk	01/03/2016	Cultural heritage impact assessment for THE EXTENSION OF THE PROPOSED SOLAR POWER PLANT ON A PORTION OF THE FARM WATERLOO 992, VRYBURG REGION, NORTH WEST PROVINCE
367821		John Almond	07/01/2013	Palaeontological Heritage Assessment: Combined Desktop & Field-based Study Proposed PV Solar Facility on a portion of the farm Waterloo 992 near Vryburg, Naledi Local Municipality, North West Province
374639	Archaeological Specialist Reports	Jaco van der Walt	30/04/2016	Archaeological Assessment - Final EIR
374641	Palaeontological Specialist Reports	Elize Butler	10/04/2016	Palaeontological Assessment - Final EIR
374673	Archaeological	Jaco van der	30/04/2016	Archaeological Assessment - FEIR

	Specialist Reports	Walt		
374960	Palaeontological Specialist Reports	Elize Butler	10/04/2016	Palaeontology report - FEIR

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APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

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

Full guide to Palaeosensitivity Map legend

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

CTS HERITAGE

APPENDIX 4 - Methodology

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

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

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

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

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

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

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

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

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

DETERMINATION OF THE PALAEONTOLOGICAL SENSITIVITY

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

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

DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

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

Low coverage will be used for:

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

Medium coverage will be used for

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

High coverage will be used for

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

RECOMMENDATION GUIDE

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

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

This recommendation is made when:

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

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

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

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

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

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

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