

CTS HERITAGE

HERITAGE SCREENER

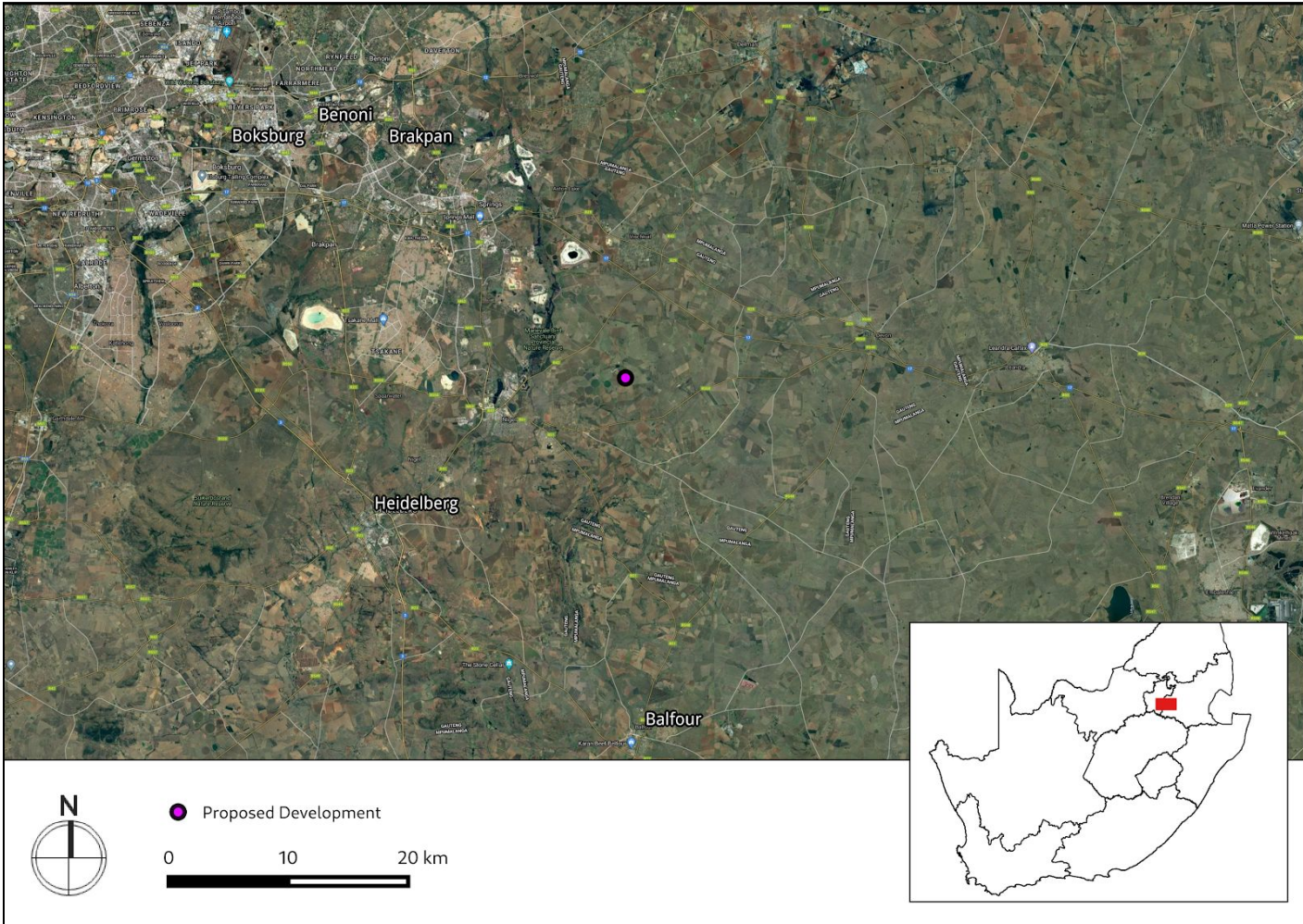
CTS Reference Number:	CTS20_087	
SAHRIS Case No.	15137	
Client:	Enviroworks	
Date:	June 2020	
Title:	Proposed development of a cattle feedlot on Portion 2 and 3 of the Leeuwenfontein farm No. 284, Gauteng	
		<p>Figure 1a. Satellite map indicating the location of the proposed development in the North West Province</p>
Recommendation by CTS Heritage Specialists	<p>RECOMMENDATION:</p> <p>As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. It is recommended, however, that the attached Chance Fossil Finds protocol be adopted during any excavation activities in the unlikely event that fossil material is encountered.</p>	

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

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1. Proposed Development Summary

This application is for the construction of a feedlot on an existing cattle farm. The feedlot basically consists of poles and cables and only the apron at the feed bunker and water troughs are concrete cement. The proposed activity includes the levelling of soil and the landscaping of the floor to ensure a flat area. Associated infrastructure such as a hospital already exists as well as an access road.

2. Application References

Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	Department of Economic Development, Environment, Conservation and Tourism (North West Provincial Government)

3. Property Information

Latitude / Longitude	26°23'29.76"S 28°34'32.52"E
Erf number / Farm number	Portion 2 and 3 of the Leeuwenfontein farm No. 284
Local Municipality	Lesedi
District Municipality	Sedibeng
Previous Magisterial District	Nigel
Province	Gauteng
Current Use	Agriculture

4. Nature of the Proposed Development

Total Surface Area	Approximately 10.44ha
Depth of excavation (m)	<1m
Height of development (m)	4m

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5. Category of Development

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

6. Additional Infrastructure Required for this Development

NA

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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.

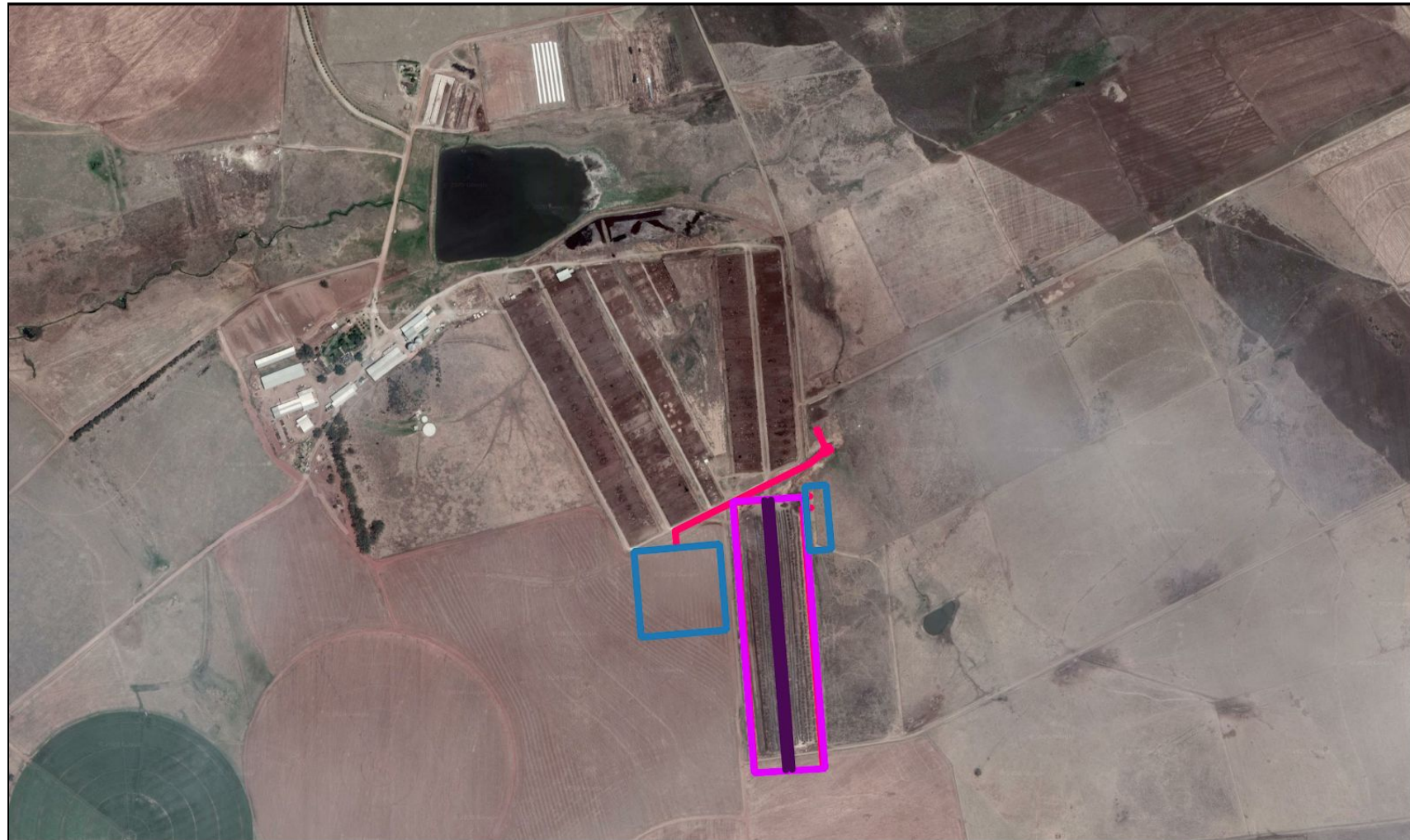
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- Proposed Voerbak
- Proposed Furrow
- Proposed Kraal
- Proposed Dam

0 250 500 m



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

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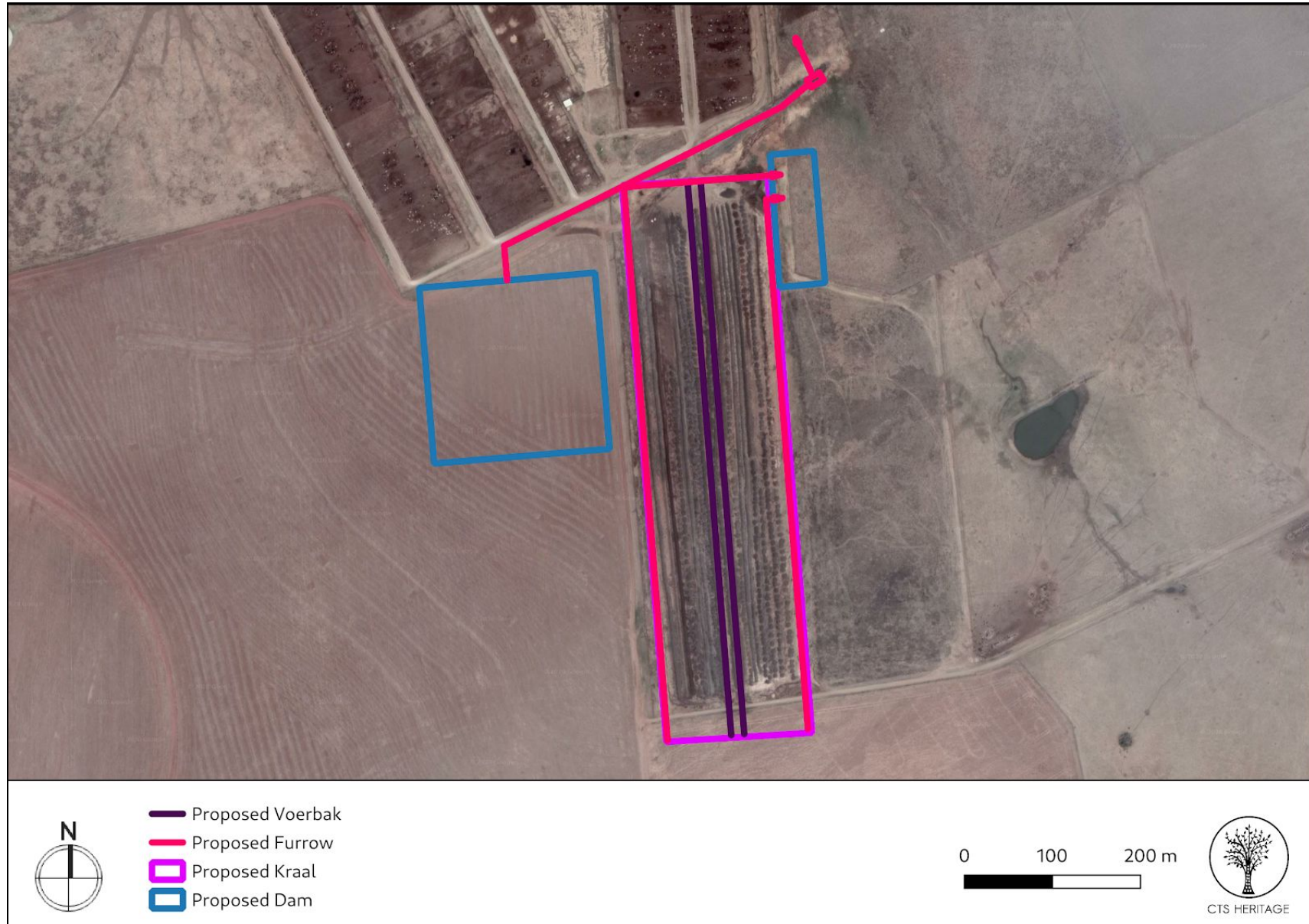


Figure 1d. Overview Map. Satellite image (2019) indicating the proposed development area at closer range.

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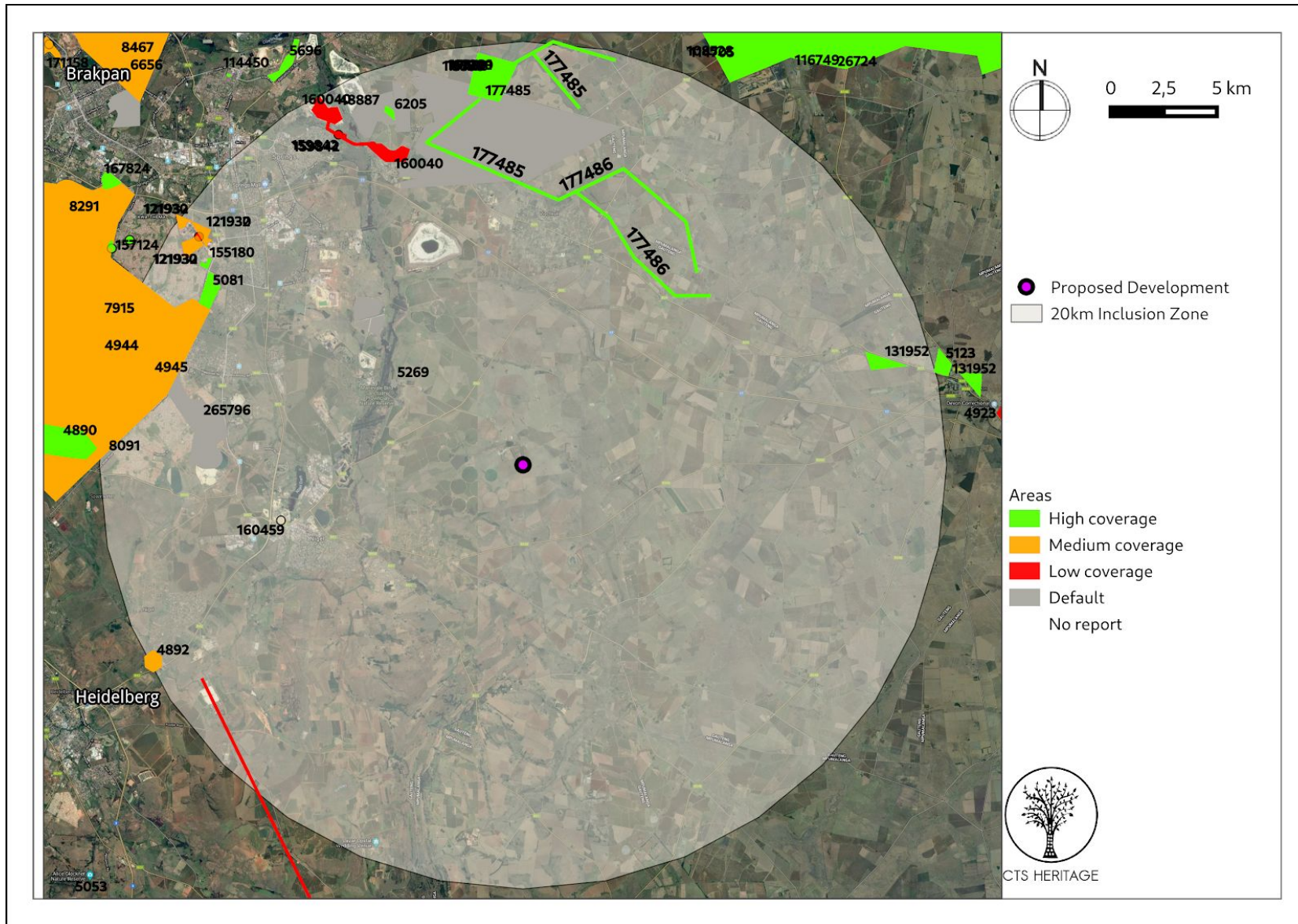


Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 5km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

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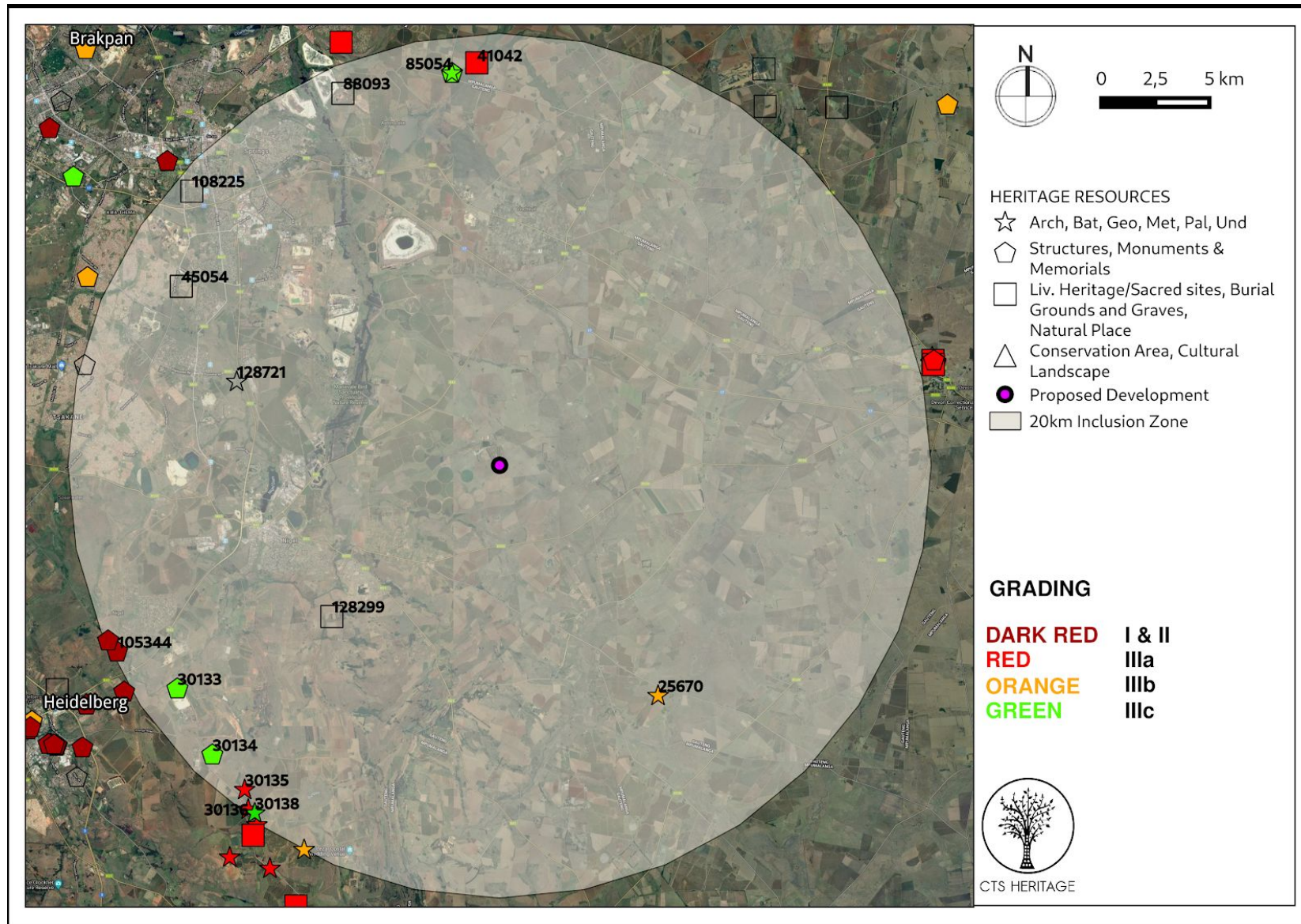


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area. See insets a to d below with SAHRIS Site IDs indicated. Please See Appendix 4 for full description of heritage resource types.

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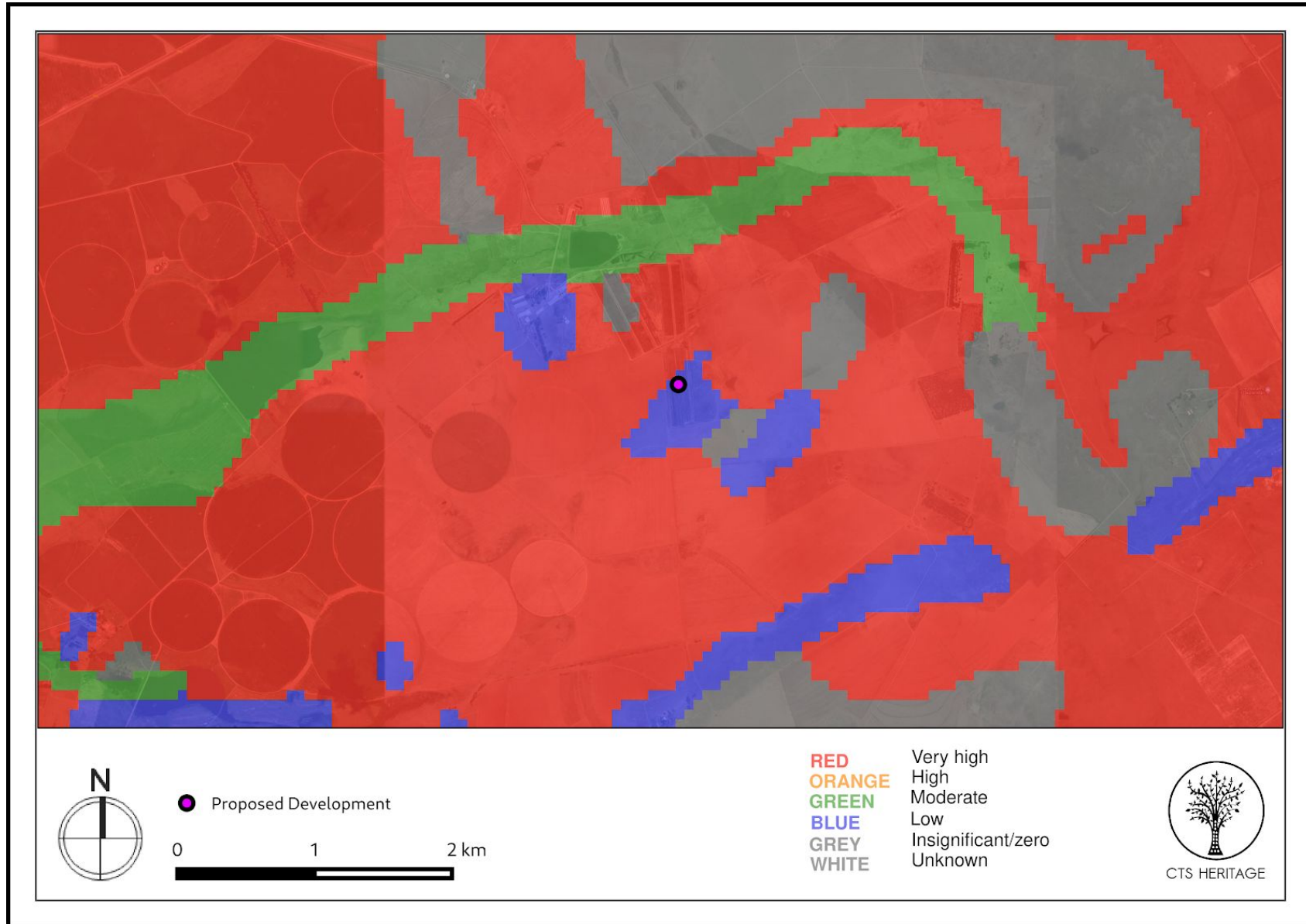


Figure 4a. SAHRIS Palaeosensitivity Map. Indicating moderate fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

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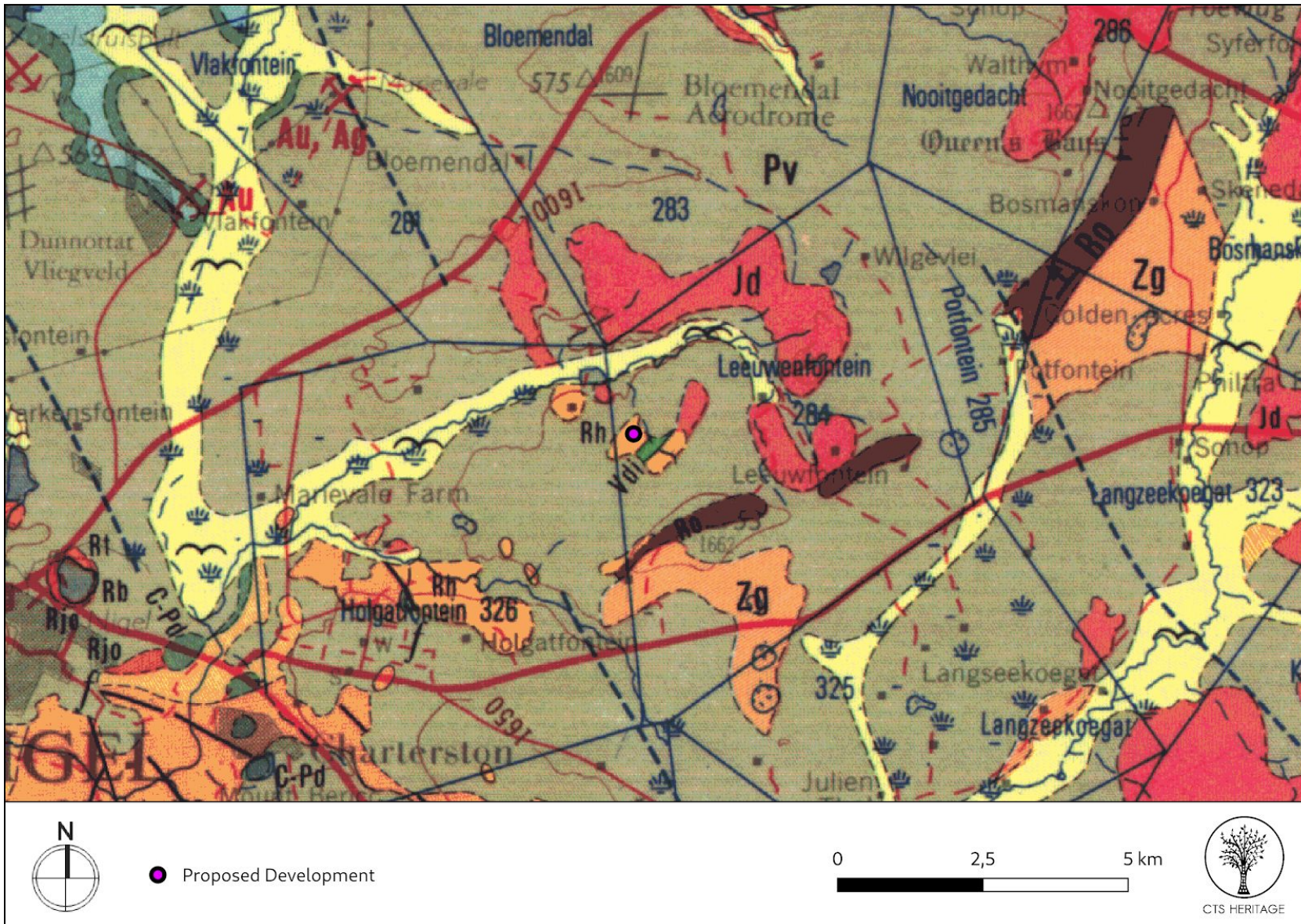


Figure 4b. Geology Map. Extract from the CGS 2628 East Rand Map indicating that the development area is underlain by the following sediments: Rh: Hospital Hill Formation of the West Rand Group and Pv: Vryheid Formation of the Ecca Group

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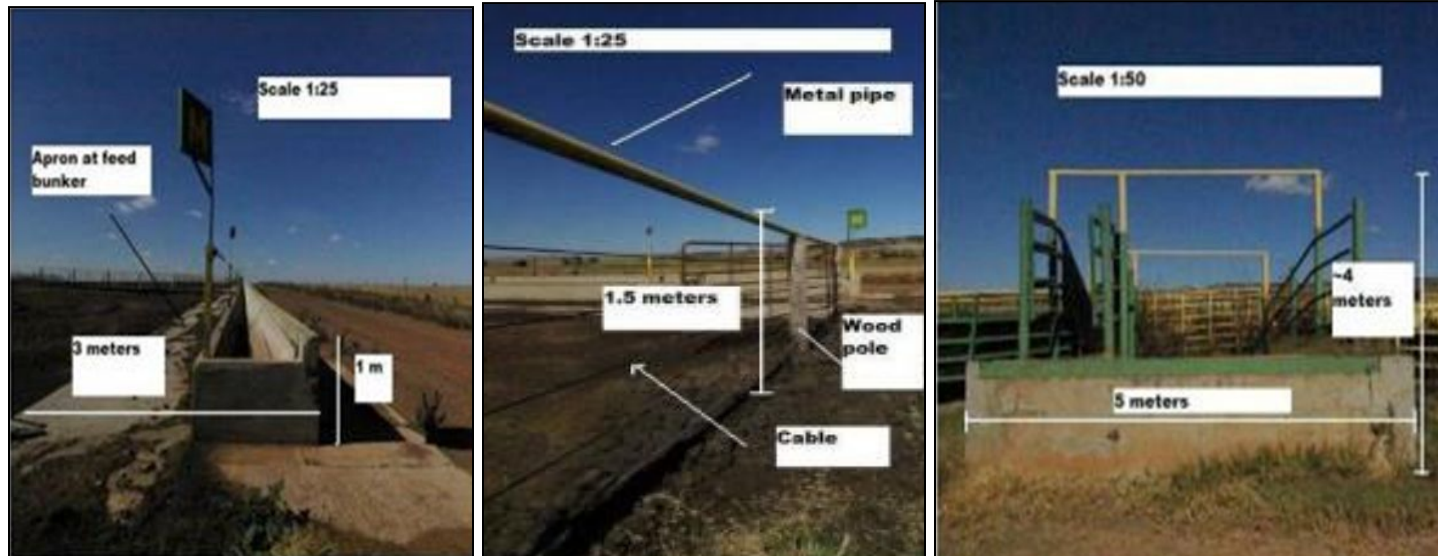


Figure 5a. Site Images. Examples of proposed infrastructure

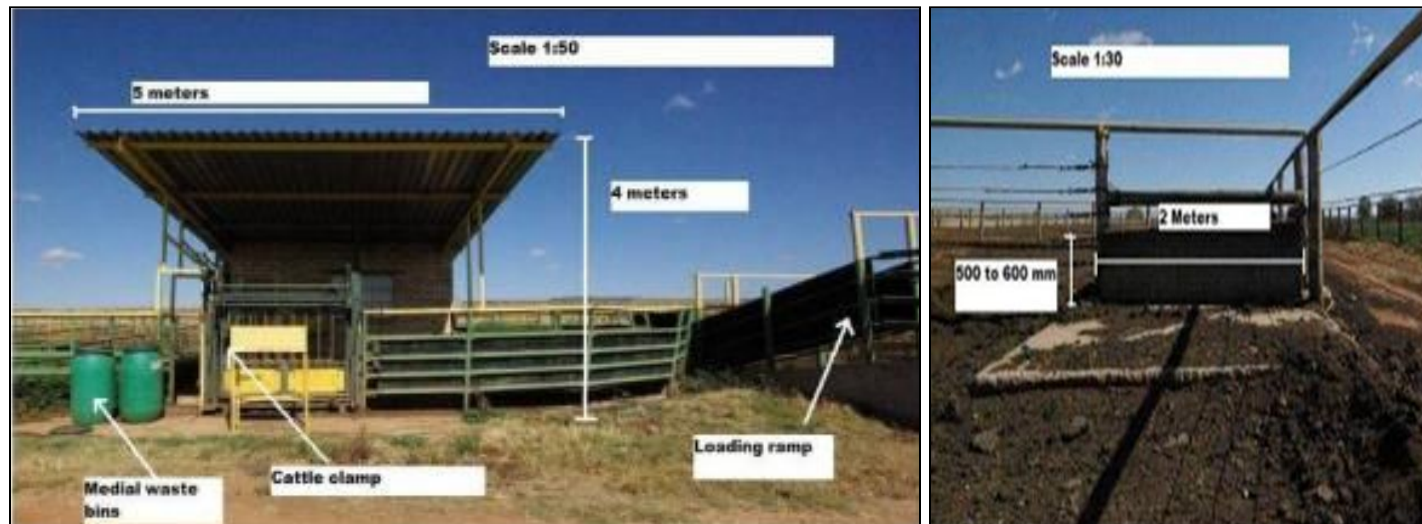


Figure 5b Site Images. Examples of proposed infrastructure

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8. Heritage statement and character of the area

The area proposed for development is located in the rural agricultural landscape situated approximately 10km north east of Nigel in Gauteng, on the edge of the East Rand. The town of Nigel grew around a mine established on the farm Varkensfontein after gold was discovered here in 1886. In general, the East Rand has a rich history of both mining and colonial expansion, however there are no known resources associated with historic mining practices or with colonial expansion in the area proposed for development. According to Gailgher (2013, SAHRIS NID 131952), “the cultural landscape for this area is richly associated with the colonial period as well as its violent past. A unique stone architectural heritage was established in the Eastern Highveld from the second half of the 19th century well into the early 20th century. During this time period stone was used to build farmsteads and dwellings, both in urban and in rural areas. Although a contemporary stone architecture also existed in the Karoo and in the Eastern Free State Province of South Africa a wider variety of stone types were used in the Eastern Highveld. These included sandstone, ferricrete (ouklip.), dolerite (blouklip.), granite, shale and slate.” However, no such structures are located within the area proposed for development. As such, it is unlikely that the proposed development will negatively impact heritage associated with mining, highveld stone architecture or colonial expansion in this area.

The East Rand is known to conserve archaeological resources from the Early, Middle and Later Stone Age. According to Gaigher (2013, SAHRIS NID 131952); “The Late Stone Age in this area also contains sites with rock art from the San and Khoi San cultural groups. Early to Middle Stone Age sites are uncommon in this area, however rock-art sites and Late Stone Age sites are much better known.” Furthermore, Gaigher (2013, SAHRIS NID 131952) notes that “Although the Early Iron Age is not known from this specific area (EIA sites are known from Lydenburg and Bambata), several Late Iron Age sites of Sotho and Ndebele origin is found here Stone walled sites are also spread out along the range of hills running from Randfontein in the west through Johannesburg to Heidelberg in the east. These sites are associated with the ancestors of the Sotho-Tswana peoples.” There are no known Stone Age or Iron Age resources known from this property (Figure 3), however this is likely due to there having been no archaeological field assessment conducted of this area. The majority of known heritage resources located within 20km of the study area are burial grounds and graves or the ruins of settlements. That being said, the subject property is a working cattle farm and the area proposed for development has been extensively disturbed in the past (Figure 1d). As such it is unlikely that the proposed establishment of additional cattle kraals on the property will negatively impact on any significant archaeological heritage resources.

According to the SAHRIS Palaeosensitivity Map (Figure 4a), the area proposed for development is underlain by sediments of very high and low palaeontological sensitivity. According to the CGS Map for the East Rand, the sediments underlying the study area include the Hospital Hill Formation of the West Rand Group (low) the Vryheid Formation of the Ecca Group (very high). The Vryheid Formation is coal-bearing and has influenced the evolution of this landscape through coal mining impacts. The Vryheid Formation is known for its abundant plant fossils of Glossopteris and other plants as well as trace fossils. This includes rich fossil plant assemblages of the Permian Glossopteris Flora (lycopods, rare ferns and horsetails, abundant glossopterids, cordaitaleans, conifers, ginkgoaleans), rare fossil wood and diverse palynomorphs as well as abundant, low diversity trace fossils, rare insects, possible conchostracans, non-marine bivalves and fish scales (SAHRIS Fossil Heritage Browser). However, due to the limited excavation associated with this proposed development, it is very unlikely that any fossiliferous sediments will be impacted and as such, impact to significant fossil heritage is very unlikely. It is recommended, however, that the attached Chance Fossil Finds protocol be adopted during any excavation activities in the unlikely event that fossil material is encountered.

RECOMMENDATION:

As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. It is recommended, however, that the attached Chance Fossil Finds protocol be adopted during any excavation activities in the unlikely event that fossil material is encountered.



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APPENDIX 1

List of heritage resources within the 20km Inclusion Zone from SAHRIS

Site ID	Site no	Full Site Name	Site Type	Grading
25670	RF -01	Rietfontein 532 JQ	Ruin > 100 years	Grade IIIb
41044	DROO02	Droogenfontein 02	Structures, Settlement	Grade IIIc
41042	DROO01	Droogenfontein 01	Burial Grounds & Graves	Grade IIIa
105344	NZASM_SEL_090	Culvert west of Blesbokspruit	Transport infrastructure	Grade II
45054	VLAK01	Vlakfontein 103 IR 01	Burial Grounds & Graves	Grade IIIa
108225	Portion of the Remainder of Portion 93 of the Farm Rietfontein 128-IR	Portion of the Remainder of Portion 93 of the Farm Rietfontein 128-IR	Place	
128721	Kwathema to Grundlingh WWTW Bulk Outfall Sewer		Archaeological	
128299	Alra Park Cemetery	Portion 83 of the farm Bultfontein 192IR	Burial Grounds & Graves	Grade IIIa
85053	DROGEN001	Droogenfontein 001	Burial Grounds & Graves	Grade IIIa
85054	DROGEN002	Droogenfontein 002	Settlement	Grade IIIc
88093	Ukufisa Colliery Graves	Ukufisa Colliery Graves	Burial Grounds & Graves	Grade IIIa
30133	UMLANDO-GLK001		Building	Grade IIIc
30134	UMLANDO-GLK002		Structures	Grade IIIc
30135	UMLANDO-GLK003		Settlement, Stone walling	Grade IIIa
30136	UMLANDO-GLK004		Settlement	Grade IIIa
30138	UMLANDO-GLK006		Artefacts	Grade IIIc

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APPENDIX 2

Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
6205	AIA Phase 1	Anton Pelser, Anton van Vollenhoven	01/09/2008	A Report on a Basic Archaeological and Cultural Resources Assessment for Apollo Bricks on the Farm Grootvaly 124 JR near Springs, Gauteng
8091	AIA Phase 1	Jaco van der Walt	06/08/2008	Archaeological Impact Assessment for the Proposed Tsakane Primary School, Tsakane Extension 9, Gauteng Province
167990	PIA Phase 1	Heidi Fourie	15/05/2014	Palaeontological Impact Assessment: Phase 1 Field study for Ngululu Resources opencast coal mine, Nkangala District Municipality, Mpumalanga Province Farm: Portion 26, 46 and 47 Droogenfontein 242 IR.
177485	HIA Phase 1	Anton Pelser	30/04/2014	REPORT ON A PHASE 1 HIA FOR A PROPOSED COAL MINE ON PORTIONS 26, 46 & 47 OF THE FARM DROOGENFONTEIN 242IR, DELMAS DISTRICT, MPUMALANGA
177486	PIA Phase 1	Heidi Fourie	15/05/2014	Palaeontological Impact Assessment: Phase 1 Field study_Portion 26 of farm Droogefontein 242 IR, Delmas, Mpumalanga.
265796				
155180	Heritage Impact Assessment Specialist Reports	Anton van Vollenhoven	01/11/2013	REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT FOR A PROPOSED SHOPPING MALL DEVELOPMENT CLOSE TO SPRINGS, GAUTENG PROVINCE
155591	HIA Phase 1	Anton Pelser	01/10/2013	REPORT ON A PHASE 1 HIA FOR A PROPOSED COAL MINE ON PORTIONS 26, 46 & 47 OF THE FARM DROOGENFONTEIN 242IR, DELMAS DISTRICT, MPUMALANGA
159842	AIA Desktop	Jaco van der Walt	20/02/2014	Archaeological Scoping Report For The Proposed Witwatersrand Gold Fields: Acid Mine Drainage (Phase 1): Eastern Basin, Gauteng
160040	Heritage Statement	Justin du Piesanie	25/03/2014	Notification of Intent to Develop - Authorisation of Sludge Disposal Facility and Pipelines Associated with Treatment of Acid Mine Drainage in the Eastern Basin of the Witwatersrand, Gauteng Province
160459	HIA Phase 1	Nkosinathi Godfrey	10/02/2014	A HERITAGE IMPACT ASSESSMENT STUDY FOR THE PROPOSED FORTUNE METALIKS SOUTH AFRICA

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		Tomose		NIGEL STEEL PROCESSING PLANT, PRETORIUSSTAD, NIGEL, EKURHULENI METROPOLITAN MUNICIPALITY, GAUTENG PROVINCE, SOUTH AFRICA.
162229	HIA Phase 1	Anton Pelser	16/04/2014	UPDATED REPORT ON A PHASE 1 HIA FOR A PROPOSED COAL MINE ON PORTIONS 26, 46 & 47 OF THE FARM DROOGENFONTEIN 242IR, DELMAS DISTRICT, MPUMALANGA
48887	AIA Phase 1	Anton van Vollenhoven	01/04/2012	A Report On A Heritage Impact Assessment For The Steynol Umthombo Project Near Springs In The Gauteng Province
121930			08/04/2013	DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED NEW TONK METER ROAD GLB+ / CLASS B WASTE DISPOSAL FACILITY AT RIETFONTEIN, SPRINGS
121932			08/04/2013	DEIAR FOR THE PROPOSED NEW TONK METER ROAD GLB+ / CLASS B WASTE DISPOSAL FACILITY AT RIETFONTEIN, SPRINGS
131952	Heritage Impact Assessment Specialist Reports	Stephan Gaigher	28/02/2013	HIA for the three Alternative site for the Relocation of the Devon Landfill Site
3538	Archaeological Permit Report	Heidi Fourie	06/01/2007	Heidi Fourie Transvaal Museum Fieldtrip Report 3 May - 18 May 2007
4892	AIA Phase 1	Jaco van der Walt	02/06/2008	Heritage Impact Assessment: Application for Mining Permits for the Arup Transnet Nmmp Alliance Borrow-Pits, Gauteng
4944	AIA Phase 1	Johnny Van Schalkwyk, M Naude	01/04/1995	A Survey of Cultural Resources Along the proposed Pwv 16 Road Corridor, Brakpan District
4945	AIA Phase 1	Johnny Van Schalkwyk	08/10/2004	Heritage Impact Assessment: Vlakfontein Ptn 35 & 36
5081	AIA Phase 1	Polke Birkholtz	14/01/2008	Heritage Impact Assessment Proposed Selcourt Ext 5 Residential Development on Portion 3 of the Farm Vlakfontein 103 IR, Ekurhuleni Metropolitan Municipality, Gauteng Province
5269	AIA Phase 1	Jaco van der Walt	15/04/2008	Archaeological Impact Assessment: Sluice Gate Upgrade at the Marrievale Nature Reserve, Nigel, Gauteng

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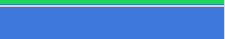
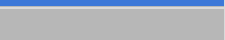

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APPENDIX 3 - Keys/Guides

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.

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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.

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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

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- 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.

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