HERITAGE IMPACT ASSESSMENT FOR THE NCT TIMBER LOADING AREA

FOR THE INDEPENDENT ENVIRONMENTAL ADVISOR CC

DATE: 7 NOVEMBER 2022

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Abbreviations

HP	Historical Period
IIA	Indeterminate Iron Age
LIA	Late Iron Age
EIA	Early Iron Age
ISA	Indeterminate Stone Age
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
HIA	Heritage Impact Assessment
PIA	Palaeontological Impact Assessment

INTRODUCTION

NCT timber loading area situated on the corner of the D390 and D588. The site is approximately 3.3km from the N3 travelling on the R603 before turning onto the D588 in the Cato Ridge area. The proposed development will be a round log loading zone to acts as a buffer when there are problems on the highways or ports. This will allow NCT to have a log storage facility that will give them more control over their transport costs.

The development area will only transform the existing undeveloped land, previously used for crop farming, into a network of gravel wearing coarse roads to allow timber trucks to collect and transport the timber. The timber loading areas will remain unchanged and the logs will simply be placed in the designated areas. The existing buildings foot prints will be unchanged and be converted into an office, guard house and ablutions facility where the trucks will be weighed coming in and out of the development

Umlando was requested to undertake an HIA of the proposed road upgrades developments. Figures 1 – 4 show the location of the road upgrades.

FIG. 1 GENERAL LOCATION OF THE PROPOSED DEVELOPMENT

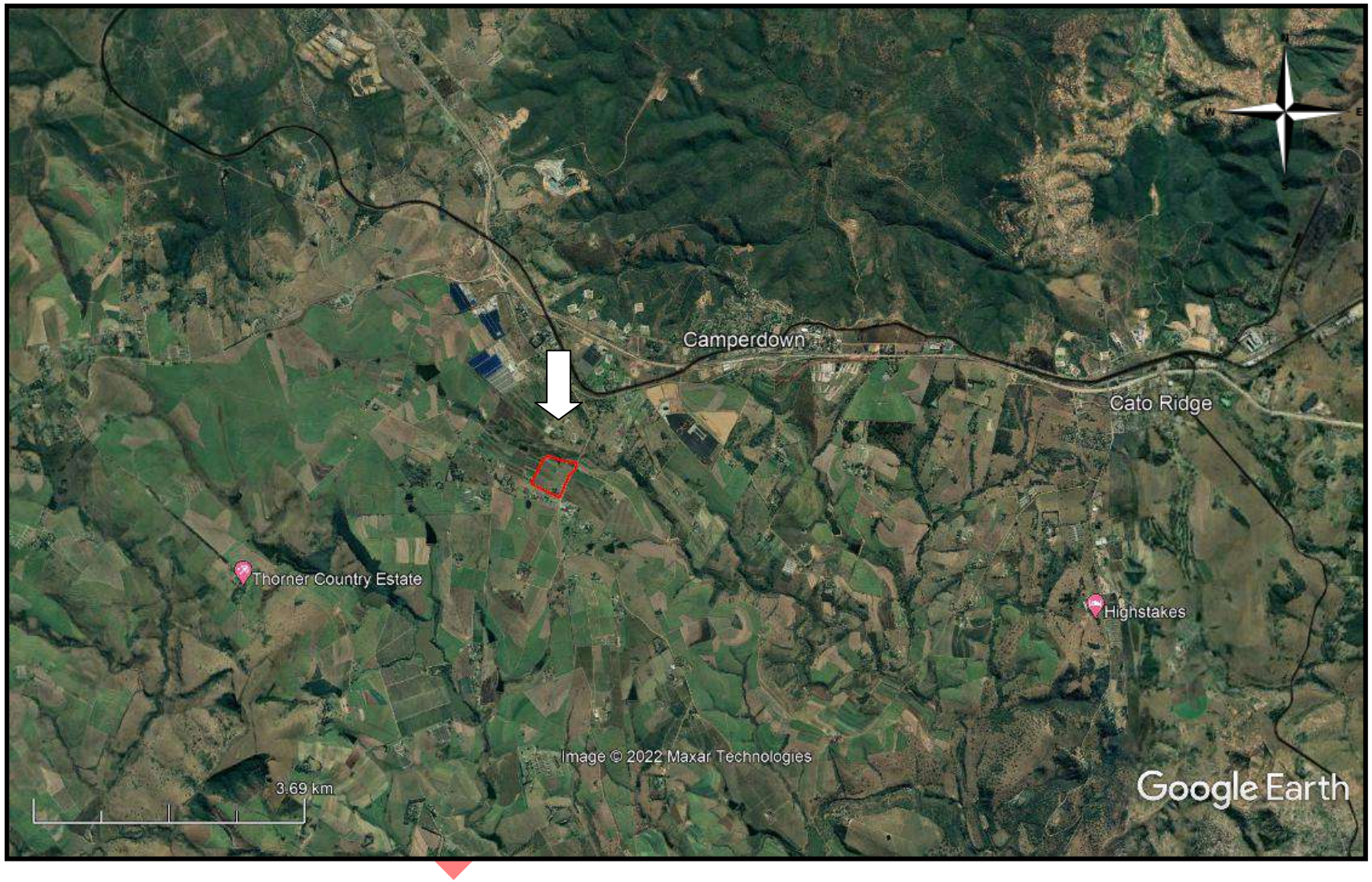


FIG. 2: AERIAL OVERVIEW OF THE PROPOSED DEVELOPMENT

FIG. 3: TOPOGRAPHICAL MAP OF THE PROPOSED DEVELOPMENT (2000)

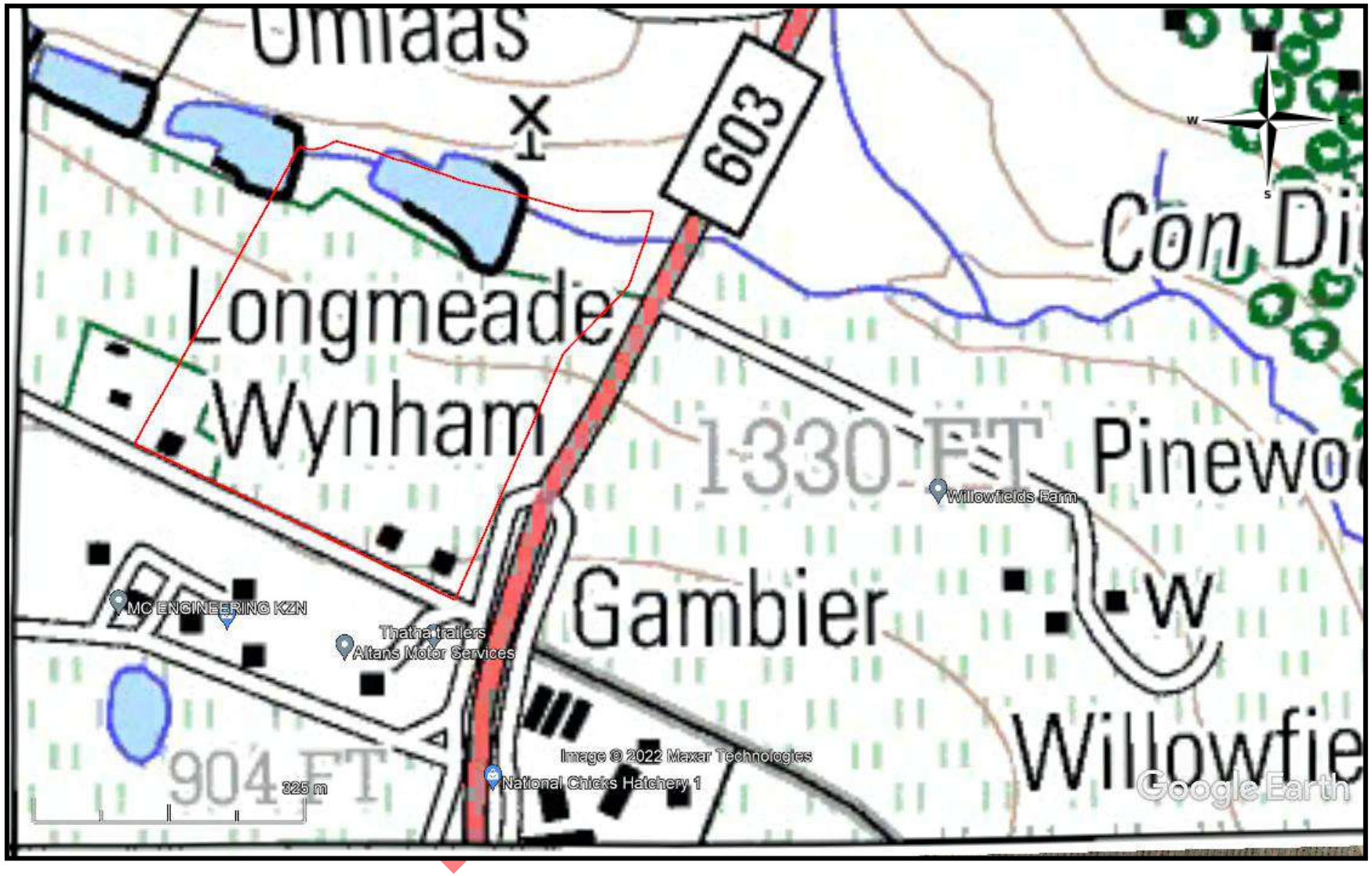


FIG. 4: SCENIC VIEWS OF THE STUDY AREA

KWAZULU NATAL AMAFA AND RESEARCH INSTITUTE, ACT 05, 2018,

The KwaZulu Natal Amafa And Research Institute, Act 05, 2018, Chapter 8 (pp 29 – 32) defines heritage resources.

"General protection: Structures.

37.(1)(a)No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Institute having been obtained on written application to the Council.

(b)Where the Institute does not grant approval, the Institute must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.

The Institute may, by notice in the *Gazette*, exempt—

(a) A defined geographical area; or

(b) defined categories of sites within a defined geographical area, from the provisions of subsection where the Institute is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.

(3) A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.

General protection: Graves of victims of conflict.

38. No person may damage, alter, exhume, or remove from its original position

(a) the grave of a victim of conflict;

(b) a cemetery made up of such graves; or

(c) any part of a cemetery containing such graves, without the prior written approval of the Institute having been obtained on written application to the Council.

General protection: Informal and private burial grounds

39.(1) or burial ground older than 60 years, or deemed to be of heritage significance by a heritage authority -

(a) not otherwise protected by this Act; and

(b) not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, removed from its original position, or otherwise disturbed without the prior written approval of the Institute having been obtained on written application to the Council.

The Institute may only issue written approval once the Institute is satisfied that—

(a) the applicant has made a concerted effort to consult with communities and individuals who by tradition may have an interest in the grave; and

(b) the applicant and the relevant communities or individuals have reached agreement regarding the grave.

General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—

40 (1) No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Institute having been obtained on written application to the Council.

(2) Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Institute without delay.

(3) The Institute may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit

any activity considered by the Institute to be inappropriate within 50 metres of a rock art site.

(4) No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Institute having been obtained on written application to the Council.

(5) No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Institute having been obtained on written application to the Council.

(6)(a) The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vests in the Provincial Government and the Institute is regarded as the custodian on behalf of the Provincial Government.

(b) The Institute may establish and maintain a provincial repository or repositories for the safekeeping or display of —

(i) archaeological objects;

(ii} palaeontological material;

(iii) ecofacts;

(iv) objects related to battlefield sites;

(v) material cultural artefacts; or

(vi) meteorites,

(7) The Institute may, subject to such conditions as the Institute may determine, loan any object or material referred to in subsection (6) to a national or provincial museum or institution.

(8) No person may, without the prior written approval of the Institute having been obtained on written application to the Institute, trade in, export or attempt to export from the Province ~

(a} any category of archaeological object;

{b) any palaeontological material;

(c) any ecofact;

{d) any object which may reasonably be regarded as having been recovered from a battlefield site;

(e) any material cultural artefact; or

{f) any meteorite.

(9){a) A person or institution in possession of an object or material, referred to in paragraphs (a) ~(f) of subsection (8), must submit full particulars of such object or material, including such information as may be prescribed, to the Institute.

(b} An object or material referred to in paragraph (a) must, subject to paragraph (c) and the directives of the Institute, remain under the control of the person or institution submitting the particulars thereof.

(c) The ownership of any object or material referred to in paragraph (a) vests in the Provincial Government and the Institute is regarded as the custodian on behalf of the Provincial Government."

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the database that has been collated by Umlando. This databases contains archaeological site locations and basic information from several provinces (information from Umlando surveys and some colleagues), most of the national and provincial monuments and battlefields in Southern Africa (http://www.vuvuzela.com/googleearth/monuments.html) and cemeteries in southern Africa (information supplied by the Genealogical Society of Southern Africa). We use 1st and 2nd edition 1:50 000 topographical and 1937 aerial photographs where available, to assist in general location and dating of buildings and/or graves. The database is in Google Earth format and thus used as a quick reference when undertaking desktop studies. Where required we would consult with a local data recording centre, however these tend to be fragmented between different institutions and areas and thus difficult to access at times. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan.

All sites are grouped according to low, medium, and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips, and decorated sherds are sampled, while bone, stone, and shell are mostly noted. Sampling usually occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features.

Defining significance

Heritage sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. State of preservation of:

1.1. Organic remains:

1.1.1. Faunal

1.1.2. Botanical

1.2. Rock art

1.3. Walling

1.4. Presence of a cultural deposit

1.5. Features:

1.5.1. Ash Features

1.5.2. Graves

1.5.3. Middens

1.5.4. Cattle byres

1.5.5. Bedding and ash complexes

2. Spatial arrangements:

2.1. Internal housing arrangements

2.2. Intra-site settlement patterns

2.3. Inter-site settlement patterns

3. Features of the site:

3.1. Are there any unusual, unique or rare artefacts or images at the site?

3.2. Is it a type site?

3.3. Does the site have a very good example of a specific time period, feature, or artefact?

4. Research:

4.1. Providing information on current research projects

4.2. Salvaging information for potential future research projects

5. Inter- and intra-site variability

5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?

5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?

6. Archaeological Experience:

6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.

7. Educational:

7.1. Does the site have the potential to be used as an educational instrument?

7.2. Does the site have the potential to become a tourist attraction?

7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

8. Other Heritage Significance:

8.1. Palaeontological sites

8.2. Historical buildings

8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites

8.4. Graves and/or community cemeteries

8.5. Living Heritage Sites

8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). Sites may also be mapped

and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts. Table 1 lists the grading system.

TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES

SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	
High / Medium Significance	Generally Protected A		Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B		Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C		On-site sampling monitoring or no archaeological mitigation required prior to or during development / destruction

RESULTS

DESKTOP STUDY

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. The general area has known archaeological sites. These are open Stone Age scatters of low significance (fig. 5). Anderson (2021a, 2021b) surveyed two nearby farms where only isolated stone tools were noted.

The Farm Camperdown 1330 was first surveyed in 1853 (fig. 6). It was probably sold thereafter for farming. Camperdown town was laid out in 1865

The 1937 aerial photograph indicates that there are no buildings on the property (fig. 7). The 1944 aerial photograph indicates that there are no buildings within the study area (fig. 8).

The 1967 aerial photograph (fig. 9) and 1968 topographical map (fig. 10) indicates that there are built structures within the study area. Since these structures date between 1944 and 1967, I requested for a Built Environment assessment of the buildings. L. Napier undertook the Built Environment study and it is discussed below.

The desktop study, with the results of other surveys, indicates that this area has been under cultivation for some time, and that only isolated artefacts occur. These stone tools are found all over the area and have low significance.

No further archaeological mitigation is required. A field survey was not recommended due to the desktop study results.

FIG. 5: LOCATION OF KNOWN HERITAGE SITES IN THE GENERAL AREA

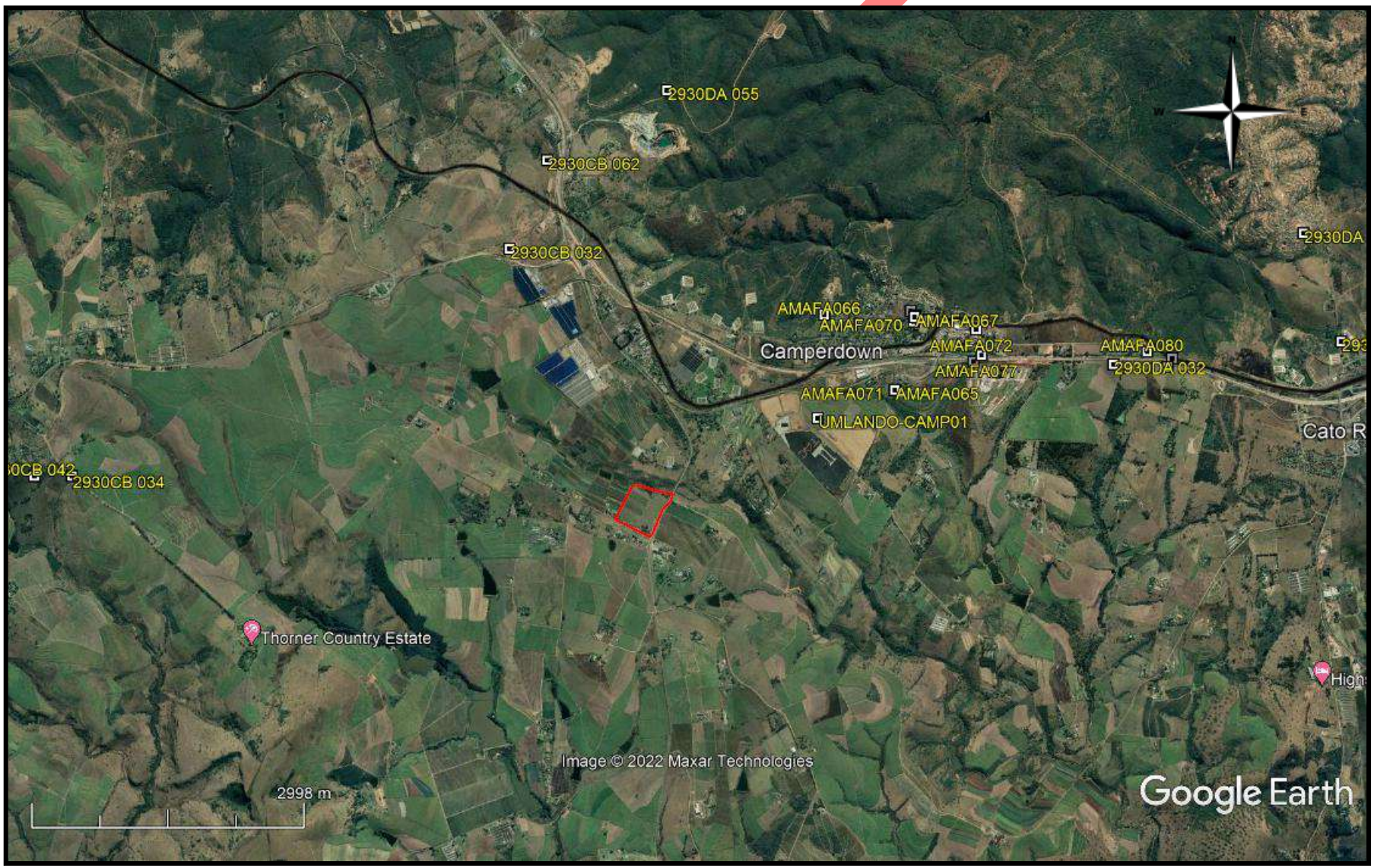


FIG. 6: SURVEYOR GENERAL DIAGRAM OF CAMPERDOWN 1330 (1853)

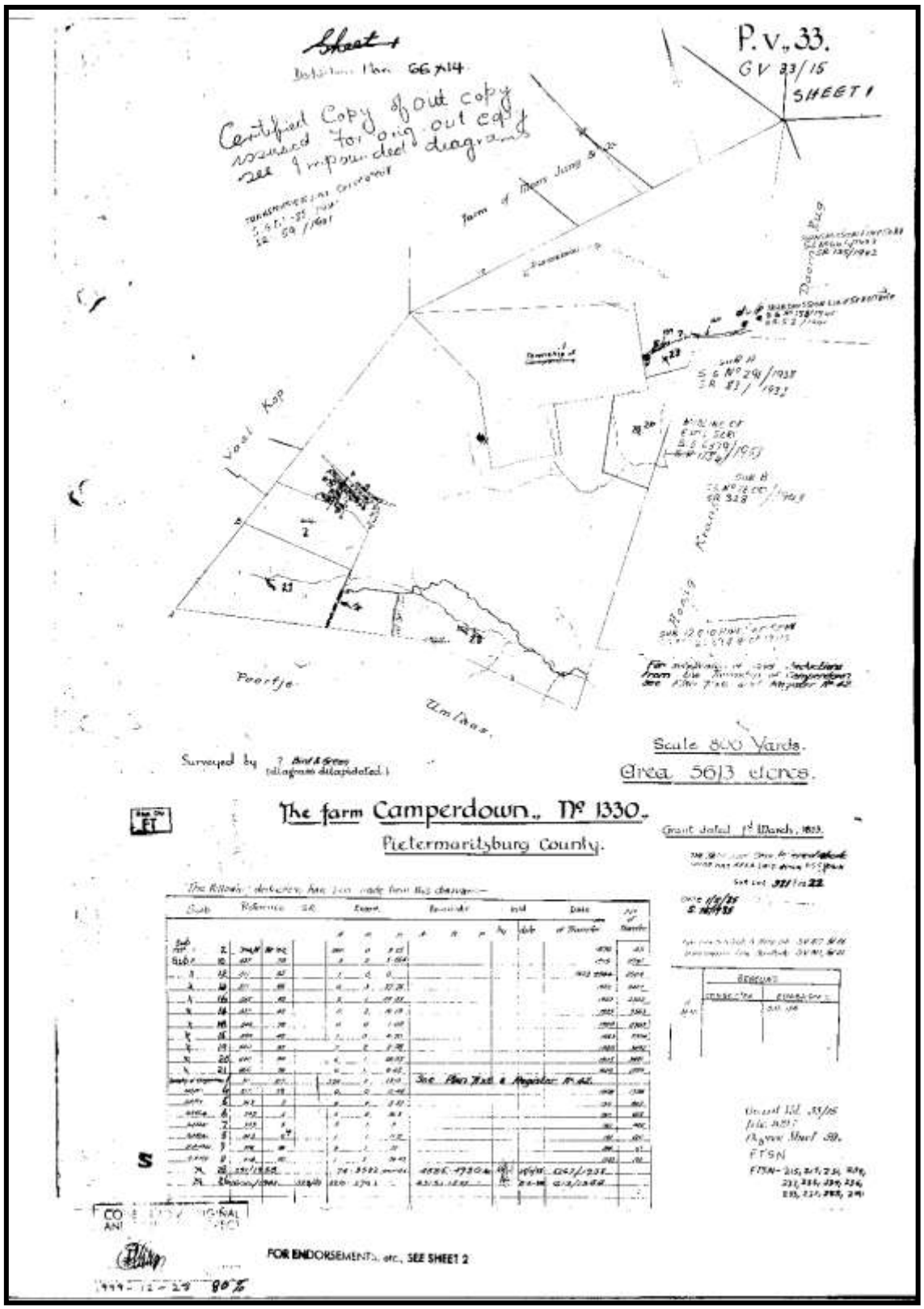


FIG. 7: LOCATION OF THE STUDY AREA IN 1937[1]

[1] 117B_027_05447

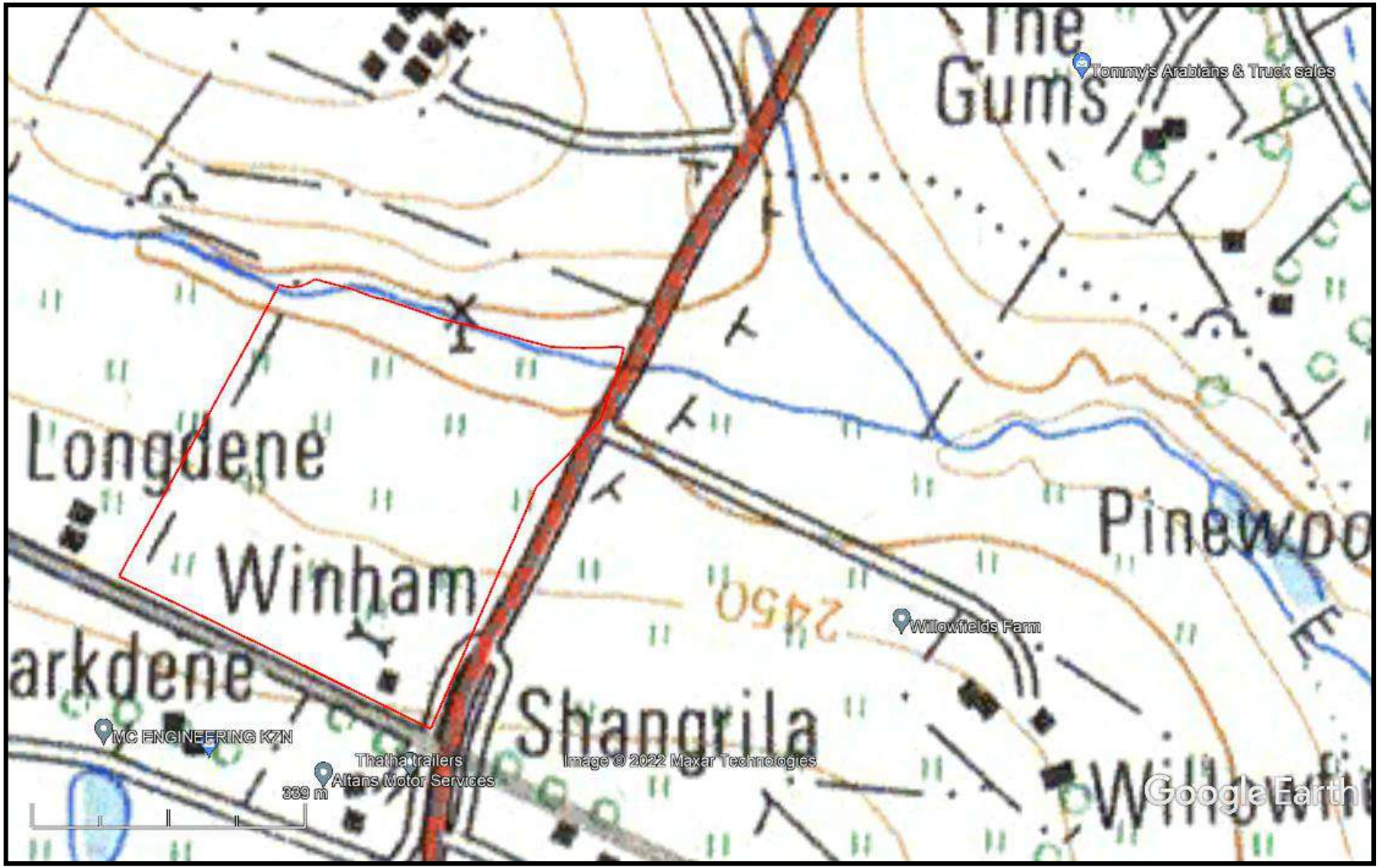
FIG. 8: LOCATION OF THE STUDY AREA IN 1944[2]

[2] 60_046_13063

FIG. 9: LOCATION OF THE STUDY AREA IN 1967[3]

[3] 573_012_08748

FIG. 10: LOCATION OF THE STUDY AREA IN 1968



PALAEONTOLOGICAL SENSITIVITY

The area is in an area of medium to no palaeontological sensitivity (fig. 11). Dr Alan Smith undertook a desktop PIA for the adjacent study area in 2021. This area has the same geological profile (Appendix A). He states:

> "The Dwyka Tillite Group is classified green in the SAHRIS Paleosensitivity Map... This rock was not deposited in a fossil-friendly setting. Life is common in modern ice-covered oceans, but for some reason body fossils are not common in this region of the planet during the world-wide Dwyka Glaciation. This may have been due to the continuous "rain" of silt depositing from the melting ice sheet restricting the growth of organisms. Trace fossils are found but these are not of great palaeontological interest. Although the chances are very low, they are not zero, and a "Chance find Protocol" has been inserted"

FIG. 11: PALAEONTOLOGICAL SENSITIVITY MAP

COLOUR	SENSITIVITY	REQUIRED ACTION
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	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

BUILT ENVIRONMENT STUDY

The homestead closest to the R603 appears on an aerial taken in 1967, therefore making the original structures between 55 and 65 years old.

The homestead in the SW corner of the Portion is less than 60 years old as they do not appear on the aerials from 1967.

The buildings of the older homestead are of clay brick construction, with painted bag-washed walls.

Outbuildings are agricultural, including sheds and a grain silo. A gum-pole and mud-brick construction shed exists in the garden of the house.

A few structures that appear on the 1967 aerial photograph to the NE of the house no longer exist.

Buildings built prior to 1962 will require screening before any alteration or demolition. The findings of this study indicate low significance. There are no building records to confirm their age. Therefore they are Graded as “Not Conservation Worthy”.

RECOMMENDATIONS AND MITIGATION

No further archaeological mitigation is required. The area has been repeatedly ploughed since 1937 and this will result in open scatters of artefacts of low significance, if they occurred in the study area. Other recorded sites indicate there is a general scatter of stone tools in Camperdown.

A Chance Find Protocol was initiated for the palaeontology, although fossils are not expected to occur.

The built environment noted that the houses are of low significance. However, the main house is older than 62 years in age. Any modifications to, or destruction of, the main building will require a permit from KZNARI.

CONCLUSION

A heritage survey was undertaken for the proposed NCT timber loading area. The archaeology and palaeontology was restricted to a desktop study, while the Built Environment report included a site visit...

Since the study area was an old agricultural field, a desktop archaeological survey was conducted. The general area is known to contain open scatters of mostly Early Stone Age and Middle Stone Age stone tools. Previous surveys on nearby properties confirmed this.

The palaeontology is of medium sensitivity. However, there is a low chance of finding any significant fossils in these fossiliferous layers. In addition to this, there will not be any deep excavations.

A Chance find protocol was initiated for the archaeology and palaeontology. If any artefacts or fossils are noted on site, then they need to be reported to KZNARI and/or the heritage practitioner associated with the project.

The buildings on the property are all of low significance. However the main farmhouse is older than 60 years in age and thus requires a permit if it will be demolished or modified in any manner.

No further mitigation is required for this project, apart from the Built Environment permit if needed.

REFERENCES

Anderson, G. 2021a. Heritage Survey Of Portion 2 Honig Krantz, Camperdown, KZN. For The Independent Environmental Advisor.

Anderson, G. 2021b. HIA Survey Of Portion 45 Of Camperdown 1330, KZN. For The Independent Environmental Advisor.

Surveyor General map

GV33/15

1:50 000 Topographical Maps

2930DA 1968, 2000 Cato Ridge

Aerial Photographs

117B_027_05447

60_046_13063

573_012_08748

Database

KZN Museum

SHARIS

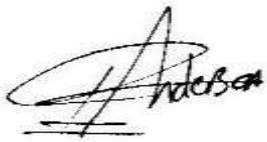
Umlando

EXPERIENCE OF THE HERITAGE CONSULTANT

Gavin Anderson has a M. Phil (in archaeology and social psychology) degree from the University of Cape Town. Gavin has been working as a professional archaeologist and heritage impact assessor since 1995. He joined the Association of Professional Archaeologists of Southern Africa in 1998 when it was formed. Gavin is rated as a Principle Investigator with expertise status in Rock Art, Stone Age and Iron Age studies. In addition to this, he was worked on both West and East Coast shell middens, Anglo-Boer War sites, and Historical Period sites.

DECLARATION OF INDEPENDENCE

I, Gavin Anderson, declare that I am an independent specialist consultant and have no financial, personal or other interest in the proposed development, nor the developers or any of their subsidiaries, apart from fair remuneration for work performed in the delivery of heritage assessment services. There are no circumstances that compromise the objectivity of my performing such work.



Gavin Anderson
Archaeologist/Heritage Impact Assessor

APPENDIX A
PIA DESKTOP

Camperdown Business Park Development Desk-Top Palaeontological Impact Assessment

FOR

UMLANDO: Archaeological Surveys & Heritage Management
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29 August 2021

Declaration of Independence

This report has been compiled by Dr Alan Smith (Pr. Sc. Nat.) of Alan Smith Consulting, Durban. The views expressed in this report are entirely those of the author, if not then the source has been duly acknowledged. No other interest was displayed during the decision making process for the Project.

Specialist: Dr Alan Smith

Signature: 

EXECUTIVE SUMMARY

According to the Palaeontological Sensitivity Map this area is coded grey and green. Grey (Karoo Dolerite) is not fossiliferous. Green (Dwyka Tillite Group) is not known to be fossiliferous.

The possibility of finding fossils on this proposed development site is very low, but not zero, consequently a “Chance Find Protocol” has been inserted into this report. This Protocol will only commence if palaeontological material is found.

1. BACKGROUND

It is proposed to build a Business Park Development at Camperdown, KwaZulu-Natal. South Africa's unique and non-renewable palaeontological heritage is protected by the National Heritage Resources Act (Act No 25 of 1999, section. As such palaeontological investigations are required prior to any construction.

2. PROPOSED PROJECT

The location of the proposed project is shown in Figure one.

Figure 1: Location map of proposed Business Park Development (red border). Image source Naidu Consulting (2014)Google Earth.

3. GEOLOGY

Perusal of the 2930 Durban 1: 250 000 geological map indicated that there should be Dwyka Group and Karoo Dolerite rocks at this site (Figure 2).

Dwyka Group

The Dwyka Tillite Group is the lithified product of sediments laid down during the Late Palaeozoic (or Dwyka) Ice Glaciation (or Ice Age) (Visser, 1990). This glacial deposit accumulated during the Permian, a time when southern Africa (at the time part of the Gondwana Supercontinent) was located near the South Pole. This glaciation was a global event which began at 327 Ma (million years ago) and ended about 260 Ma (Fielding et al., 2008).

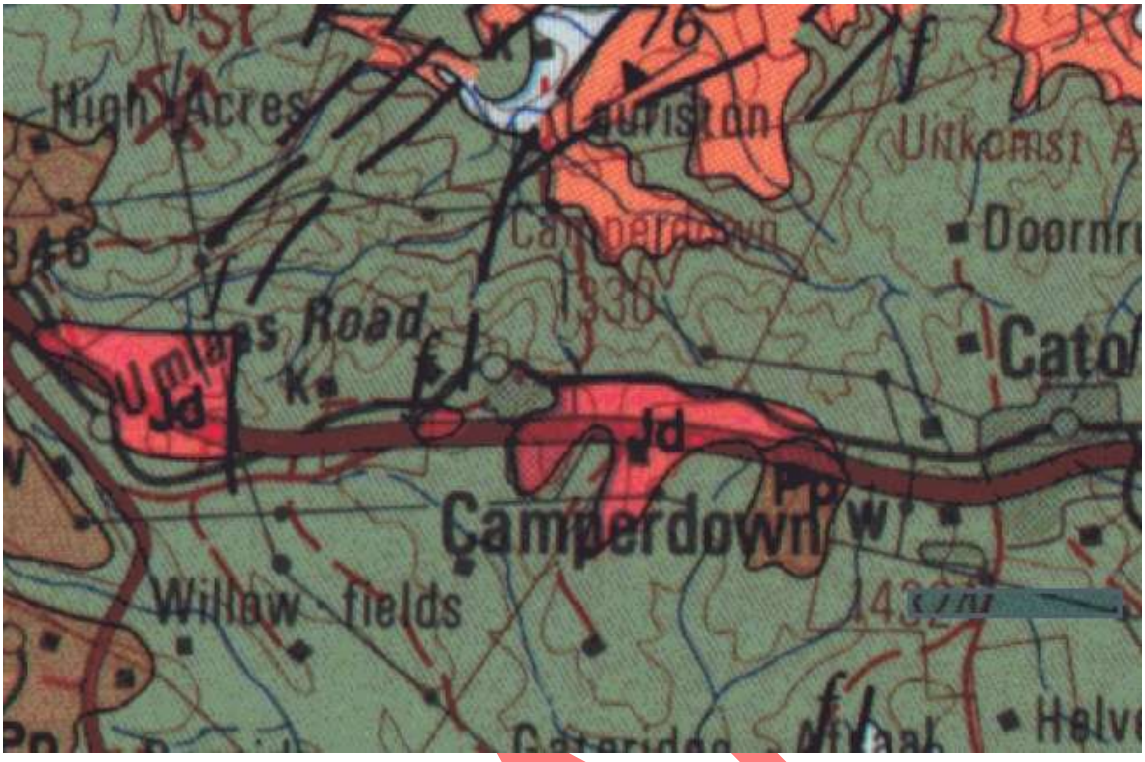

Figure 2: Extract from the Durban 2930 1: 250 000 scale Geological Map. Grey is Dwyka Group and red (Jd) is Karoo intrusive volcanic rocks.

The Dwyka Group comprises two Formations. The Elandsvlei Formation is the most common and is likely to be found at this site. This Formation is characterized by massive debrites, which ranges in composition from boulders to silt. This unsorted material was deposited in a deep marine setting due to sediment melting from an ice sheet which was retreating across the Karoo Sea. The process involved is summarized in Figure 3.

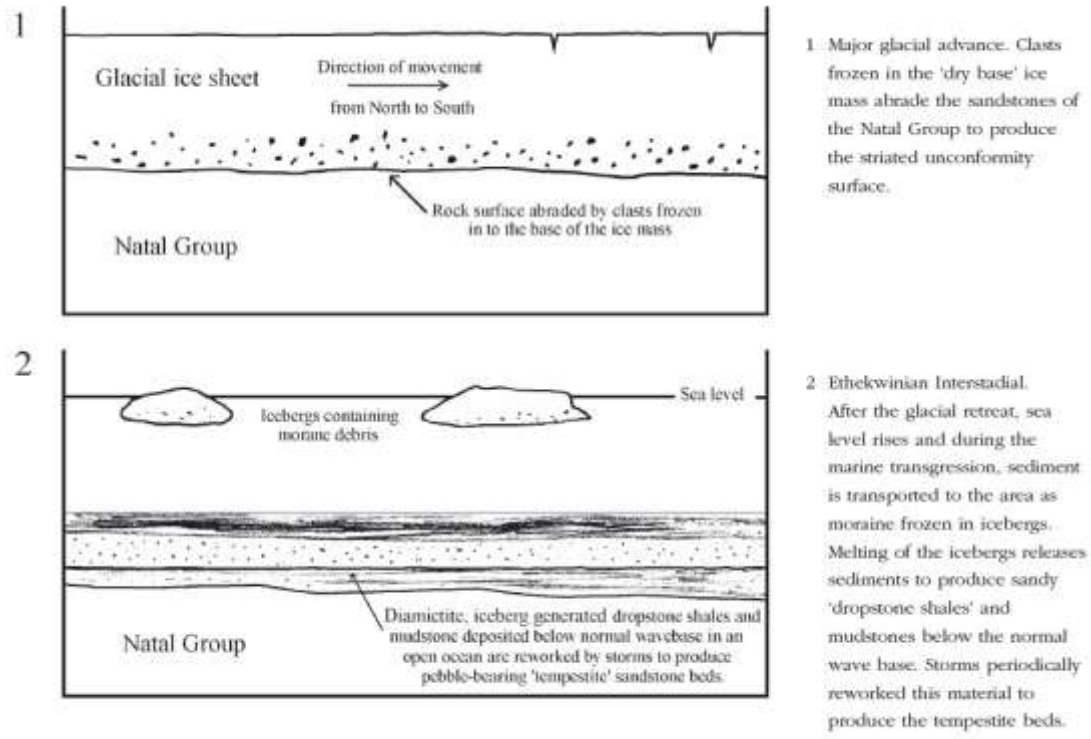

Figure 3: The process by which glacial deposits are formed (from Dunlevey & Smith, 2011).

The other is the Mbizane Formation which may also be located here. This formation overlies the Elandsvlei Formation. This unit comprises sediment that was deposited along the shoreline by retreating glaciers This rock may contain varves, wave ripples and glacio-tectonic folds produced by action of the ice sheet (Dunlevey and Smith, 2012).

Karoo Dolerite

The Karoo Dolerite is an intrusive igneous rock emplaced in 184 Ma (Hastie et al. 2014). This was part of the Karoo volcanism event which was the prelude to the break up of the supercontinent Gondwana into the southern hemisphere continents we know today. The Karoo Dolerite rocks present in this area were was emplaced as dykes and sills.

4. PALAEONTOLOGY

The Dwyka Tillite Group is classified green in the Sahris Paleosensitivity Map (Figure 4). This rock was not deposited in a fossil-friendly setting. Life is common in modern ice-covered oceans, but for some reason body fossils are not common in this region of the planet during the world-wide Dwyka Glaciation. This may have been due to the continuous "rain" of silt depositing from the melting ice sheet restricting the growth of organisms. Trace fossils are found but these are not of great palaeontological interest. Although the chances are very low, they are not zero, and a "Chance find Protocol" has been inserted (see Section 5).

Figure 4: Extract form the Sahris paleosensitivity map. The Dwyka Group is green and Karoo Dolerite is grey.

Karoo Dolerite may be present on this site but as this is an igneous rock and is not fossiliferous.

5. CHANCE FIND PROTOCOL

I recommend a “Chance Find Protocol. This protocol is based on that of Groenevald (2017). This Protocol will ONLY kick-in if palaeontological material is found.

In the case of any unusual structures, the Palaeontologist must be notified immediately by the ECO and/or EAP, and a site visit must be arranged at the earliest possible time with the Palaeontologist.

In the case of the ECO or the Site Manager becoming aware of suspicious looking palaeo-material

- The construction must be halted in that specific area and the Palaeontologist must be given enough time to reach the site and remove the material before excavation continues.

- Mitigation will involve the attempt to capture all rare fossils and systematic collection of all fossils discovered. This will take place in conjunction with descriptive, diagrammatic and photographic recording of exposures, also involving sediment samples and samples of both representative and unusual sedimentary or biogenic features. The fossils and contextual samples will be processed (sorted, sub-sampled, labeled, boxed) and documentation consolidated, to create an archive collection from the excavated sites for future researchers.

Functional responsibilities of the Developer

1. At full cost to the project, and guided by the appointed Palaeontological Specialist, ensure that a representative archive of palaeontological samples and other records is assembled to characterize the palaeontological occurrences affected by the excavation operation.

2. Provide field aid, if necessary, in the supply of materials, labour and machinery to excavate, load and transport sampled material from the excavation areas to the sorting

areas, removal of overburden if necessary, and the return of discarded material to the disposal areas.

3. Facilitate systematic recording of the stratigraphic and palaeo-environmental features in exposures in the fossil-bearing excavations, by described and measured geological sections, and by providing aid in the surveying of positions where significant fossils are found.

4. Provide safe storage for fossil material found routinely during excavation operations by construction personnel. In this context, isolated fossil finds in disturbed material qualify as “normal” fossil finds.

5. Provide covered, dry storage for samples and facilities for a work area for sorting, labeling and boxing/bagging samples.

6. Costs of basic curation and storage in the sample archive at the Museum in Durban (labels, boxes, shelving and, if necessary, specifically-tasked temporary employees) as specified by or agreed with AMAFA. Documentary record of palaeontological occurrences

7. The contractor will in collaboration with the Palaeontologist, make the excavation plan available to the appointed specialist, in which appropriate information regarding plans for excavations and work schedules must be indicated on the plan of the excavation sites. This must be done in conjunction with the appointed specialist:

8. Initially, all known specific palaeontological information will be indicated on the plan. This will be updated throughout the excavation period

9. Locations of samples and measured sections are to be pegged, and routinely accurately surveyed. Sample locations, measured sections, etc., must be recorded three-dimensionally if any “significant fossils” are recorded during the time of excavation. Functional responsibilities of the appointed palaeontologist

10. Establishment of a representative collection of fossils and a contextual archive of appropriately documented and sampled palaeoenvironmental and sedimentological geodata at the Museum in Durban.

11. Undertake an initial evaluation of potentially affected areas and of available exposures in excavations.

12. On the basis of the above, and evaluation during the early stages of excavation development, in collaboration with the contractor management team, more detailed practical strategies to deal with the fossils encountered routinely during excavation, as well as the strategies for major finds.

13. Informal on-site training in responses applicable to “normal” fossil finds must be provided for the ECO and environmental staff by the appointed specialist.

14. Transport of material from the site to the Museum in Durban.

15. Reporting on the significance of discoveries, as far as can be preliminarily ascertained. This report is in the public domain and copies of the report must be deposited at ESI, AMAFA, and the South African Heritage Resources Authority (SAHRA). It must fulfill the reporting standards and data requirements of these bodies.

16. Reasonable participation in publicity and public involvement associated with palaeontological discoveries. In the event of construction exposing new palaeontological material, not regarded as normative/routine as outlined in the initial investigation, such as a major fossil plant find, the following procedure must be adhered to:

17. The appointed specialist or alternates (AMAFA, SAHRA; University) must be notified by the responsible officer (e.g. the ECO or contractor manager), of major or unusual discoveries during excavation, found by the Contractor Staff.

18. Should a major in situ occurrence be exposed, excavation will immediately cease in that area so that the discovery is not disturbed or altered in any way until the appointed specialist or scientists from the ESI at WITS University, or its designated

representatives at AMAFA, have had reasonable opportunity to investigate the find. Such work will be at the expense of the Developer.

6. CONCLUSIONS & RECOMMENDTIONS

The possibility of finding fossils is very low, however it is not zero, and consequently a “Chance Find” Protocol has been inserted into this report.

7. REFERENCES

Dunlevey, JN & Smith, AM (2011). Sedimentological evidence for an interglacial in the Permo-Carboniferous Dwyka Group, Coedmore Quarry, Durban, South Africa. South African Journal of Geology, 114, 159-166

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Sahris Palaeosensitivity map

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8. DETAILS OF SPECIALIST

Dr Alan Smith Pr. Sc. Nat., I.A.H.S.

Private Consultant: ***Alan Smith Consulting, 29 Brown's Grove, Sherwood, Durban, 4091***

&

Honorary Research Fellow: ***Discipline of Geology, School of Agriculture, Earth and Environmental Sciences, University of KwaZulu-Natal, Durban***.

Role: Specialist Palaeontological Report production

Expertise of the specialist:

- MSc in stromatolites (University of KwaZulu-Natal)
- PhD in Geology (University of KwaZulu-Natal).
- Expert in Vryheid Formation (Ecca Group) in northern KZN, this having been the subject of PhD.
- Scientific Research experience includes: Fluvial geomorphology, palaeoflood hydrology, Cretaceous deposits.
- Experience includes understanding Earth Surface Processes in both fluvial and coastal environments (modern & ancient).
- Alan has published in both national and international, peer-reviewed journals. He has published more than 50 journal articles with 420 citations (detailed CV available on request).
- Attended and presented scientific papers and posters at numerous international and local conferences (UK, Canada, South Africa) and is actively involved in research.

Selected recent palaeo-related work includes:

- Desktop PIA: Proposed middle income housing units on Portion 23 of Farm Lot H Weston 13026, Bruntville, Mpofana Local Municipality. Client: UMLANDO.
- Desktop PIA: Proposed ByPass Pipeline for Ulundi bulk water pipeline upgrade. Client: UMLANDO.
- Fieldwork PIA: Bhekuzulu Epangweni KZN water reticulation project, Cathkin Park. Client: Mike Webster, HSG Attorneys.

- Desktop PIA: Zuka valley, Ballito. Client: Mike Webster, HSG Attorneys.
- Mevamhlope proposed quarry palaeontology report. Client: Enviropro.
- Desktop PIA: Proposed Lovu Desalination site. Client: eThembeni Cultural Heritage.
- Desktop PIA: Tinley Manor phase 2 North & South banks: eThembeni Cultural Heritage
- Desktop PIA: Tongaat. Client: eThembeni Cultural Heritage.
- Palaeontological Assessment Reports (3) to Scatec Solar SA (Pty) Ltd on an Appraisal of Inferred Palaeontological Sensitivity for a Potential Photo Voltaic Park at (1) Farm Rooilyf near Groblershoop, N Cape; (2) Farm Riet Fountain No. Portions 1 and 6, 18km SE of De Aar, N Cape; and (3) Dreunberg, near Burgersdorp, Eastern Cape. Client: Sustainable Development Projects.

APPENDIX B
BUILT ENVIRONMENT STUDY

HERITAGE IMPACT ASSESSMENT

Assessment of Structures and proposed development

at

Portion 84 of 1330FT

Camperdown, KwaZulu Natal

Date 26 September 2022

PREPARED FOR: Independent Environmental Advisor CC

PREPARED BY:

Lindsay Napier Architect
Architectural Heritage Consultant
P.O.Box 474 Hillcrest 3650
Cell: 083 6608521
Email : lanapier@mindscope.co.za

CONTENTS page

1. BACKGROUND INFORMATION

Lindsay Napier Architect was appointed by the Umlando Heritage Surveys, on behalf of the property owners and developers, to prepare a Heritage Impact Assessment of Portion 84 of farm 1330FT, Camperdown as a guide for the rezoning of land from agriculture to light industrial/logistics.

Report details

Client Name :	Umlando Heritage Surveys
Document Title:	Heritage Impact Assessment of proposed development on Portion 84 of farm 1330FT, Camperdown
Reference :	Screening report
File Name :	NCT-Camperdown-1330-HIA-2BE-2022-09-26
Address:	Portion 84 of farm 1330FT, Camperdown
Cadastral descriptions:	Portion 84 of farm 1330FT, Camperdown
Consolidation :	Nil
Zoning :	Current : Agricultural - Proposed : light industrial/logistics & residential
Municipality:	Umgungundlovu District Municipality

2. TERMS OF REFERENCE

The report refers to KZN Amafa and Research Institute Act no.5 of 2018, which aims to protect heritage resources in Kwa Zulu Natal.

Clause 37 : General Protection : *"Structures – No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without prior written approval of the Council having been obtained on written application to the Council."*
The report is an assessment of existing structures only.

An **Heritage Impact Assessment Report** of the development site generally covers the following:

1. *The identification and mapping of all heritage resources in the development site and in the surrounding area*
2. *An assessment of the significance of the resources,*
3. *An assessment of the impact of the development on the resources,*
4. *An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development,*
5. *Public consultation*
6. *Possible alternatives if the development adversely affects the heritage resources.*

The report is an independent view and makes recommendations to the Heritage authority based on its findings. The authority will consider the recommendations and make a decision based on conservation principles.

3. METHODS

Lindsay Napier is an architect experienced in assessment of protected buildings in KZN. She has previous experience in recording historic buildings, surveying townscapes and designing for protected buildings. The properties were inspected by Lindsay Napier on 20/09/2022.

Satellite images from Google Maps and Google Earth were used to establish the development of the area. SG diagrams were used to analyse the history of the property boundaries and age of structures.

Research was conducted at the KZN Deeds office and at the Natal Archives.

Publications, interviews and websites referenced:

1. Natal Repository archives
2. KZN Deeds office
3. Braby's Natal Directory 1942
4. Braby's Natal Directory 1908
5. https://en.wikipedia.org/wiki/Camperdown,_KwaZulu-Natal
6. http://www.cdngiportal.co.za/CDNGIPortal/

4. HISTORICAL, CULTURAL AND SOCIAL SIGNIFICANCE

The farm is situated on the R603 towards Eston.

The Farm Camperdown no.1330 was surveyed in 1853 by Bird and Greene, the SG Diagram dated 1 March 1853. Sgt Bird was the Government Surveyor. It was bounded by the farms Poortjie, Vaal Kop and Honig Krans and the "township of Camperdown".

The land in Cato Ridge and Camperdown was originally owned by the Dutch Voortrekkers, "Uitkomst" was owned by Potgieter, who bequeathed the land (approx.. 1840) to George Cato "in consideration for his sufferings and indignities to which he had been subjected by the Boers". The farm became "Cato's Ridge" later known as "Cato Ridge". Further North-West was the farm "Camperdown" which was bequeathed by the Republic of Natalia to a British settler, John Vanderplank in 1838 after he helped the Boers fight the Zulus under Chief Parate at Camperdown. He went into farming Wattle for use in the tanning industry and later for pulp and paper.

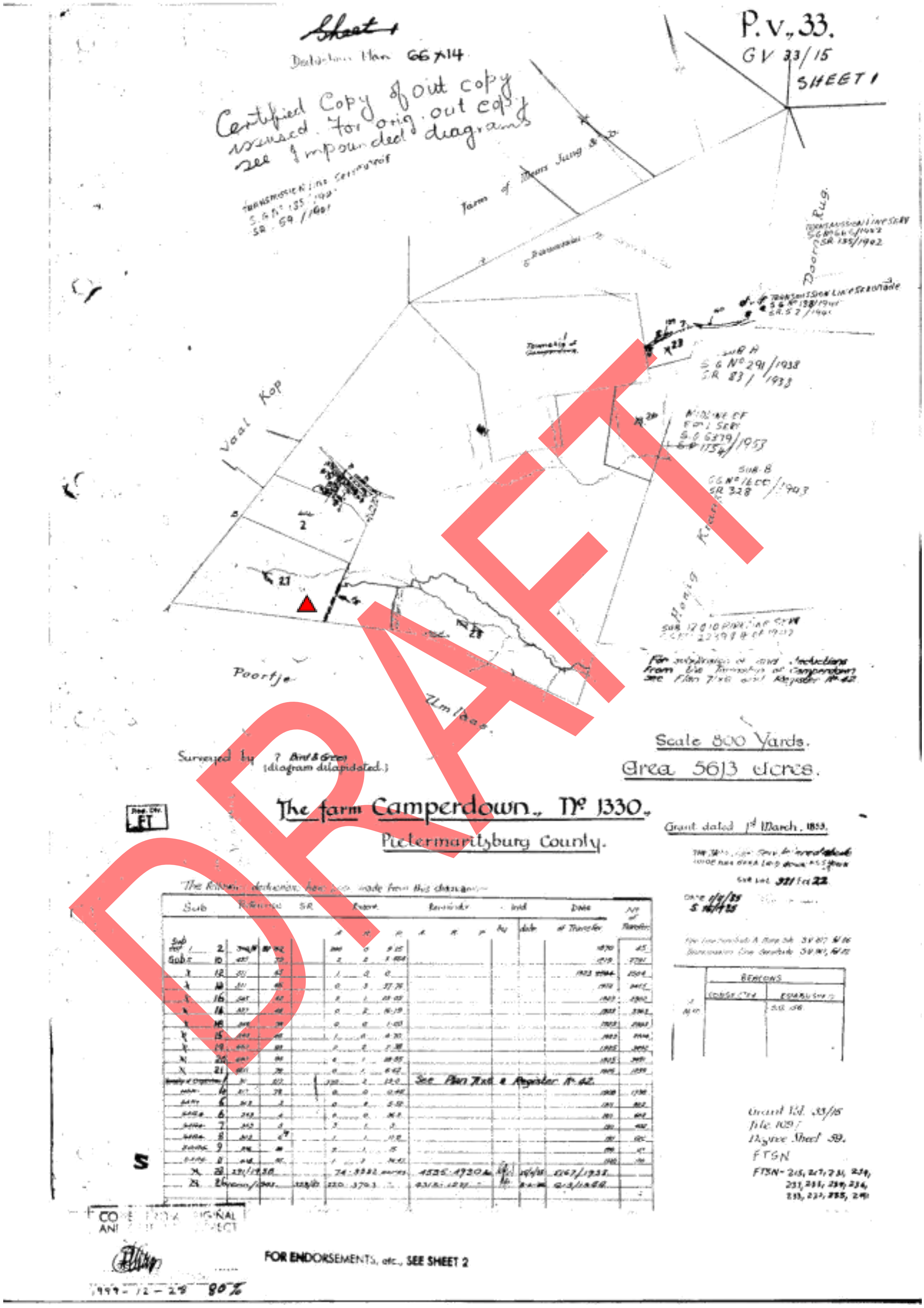
1921 The estate of Emma Amelia van Der Plank widow of John Van Der Plank bequeaths the farm 1330 to their children and grandchildren.
Deed of transfer 2037/1901 Estate of John Van Der Plank 18 October 1901

T386/1922 31 January 1922
Winnifred Aimee Van Der Plank (daughter)

Other Heritage resources in the area :

The property was surrounded by agricultural land and adjacent farms have been rezoned and development commenced for logistics use.
The area has not been recently surveyed for Heritage structures.
Notable protected structures in the area that display settler heritage are :

1. Residential buildings on Bishops Street, Camperdown
2. The German Church, Alice St, Cato Ridge
3. Paddington Primary School, Cato Ridge
4. Church of the Ressurection Chapel
5. Remains of railway shunting yards


Sheet 1
P.V. 33.
GV 33/15
SHEET 1
Certified Copy of out copy issued for orig. out copy see impounded diagrams
Voal Kop
Poortje
Scale 800 Yards.
Area 5613 acres.
The farm Camperdown, No 1330.
Pietermaritzburg County.
Grant dated 1st March, 1853.
FOR ENDORSEMENTS, etc., SEE SHEET 2
DRAFT

5. CONTEXT :

2021 Aerial (Google maps) Ptn 84 shown in yellow.
Camperdown is in the top right corner North of the N3 Freeway.

Ref: Google Earth 2022

6. STRUCTURES AND ARCHITECTURAL SIGNIFICANCE

Homestead aerial view
Consisting of main house, garage, two farm buildings, a water reservoir, shed and a grain silo.

Main house NE elevation
Clay brick construction, with painted bag-washed walls. Windows are steel framed.
Estimated to be between 55 and 65 years old.
Evidence of vertical settlement cracks are signs of an original centre structure that has been added onto (centre of photo).

NW side of the house

Main house from the driveway

Interior

Farm buildings (West of the house)

Shed in garden (gum-pole and mud-brick)

Garage

Brick silo

7. ASSESSMENT AND RECOMMENDATIONS

The following tables are a summary of the significance statements in the report, measured on Local, regional, national and international importance (refer to Appendix A for explanations) :

All structures		**Grading : NCW**		
Significance	**Importance**			
	Local	Regional	National	International
Architectural	Low	Low	low	low
Historical	Low	low	low	low
Technical	Low	low	low	low
Scientific	Low	low	Low	low
Contextual	Low	low	low	low
Social	low	low	low	low

Grading Reference :

Grade I (National Heritage Resources)

Grade II (KZN Provincial Landmarks) listed in Schedule 2 of the KZN Amafa and Research Institute Act 2018

Grade	IIIA	KZN Heritage Landmarks
	IIIB	Generally protected by age (over 60 years of age)
	IIIC	Generally protected by age (over 60 years of age) (Chapter 8. clause 37) with contextual significance

NCW : Not Conservation Worth

No structures appear on the portion in the 1937 and 1944 aerial photographs.

The homestead closest to the R603 appears on an aerial taken in 1967, therefore making the original structures between 55 and 65 years old.

The homestead in the SW corner of the Portion is less than 60 years old as they do not appear on the aerials from 1967.

The buildings of the older homestead are of clay brick construction, with painted bag-washed walls.

Windows are steel framed.

Outbuildings are agricultural, including sheds and a grain silo. A gum-pole and mud-brick construction shed exists in the garden of the house.

A few structures that appear on the 1967 aerial photograph to the NE of the house no longer exist.

Buildings built prior to 1962 will require screening before any alteration or demolition. The findings of this study indicate low significance. There are no building records to confirm their age. Therefore they are Graded as “Not Conservation Worthy”.

APPENDIX A: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES

Significance

According to the NHRA, Section 2(vi) the significance of heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. **Historic value**
   - Is it important in the community, or pattern of history
   - Does it have strong or special association with the life or work of a person, group or organisation of importance in history
   - Does it have significance relating to the history of slavery
2. **Aesthetic value**
   - It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group
3. **Scientific value**
   - Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage
   - Is it important in demonstrating a high degree of creative or technical achievement at a particular period
4. **Social value**
   - Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
5. **Rarity**
   - Does it possess uncommon, rare or endangered aspects of natural or cultural heritage
6. **Representivity**
   - Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects.
   - Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.
   - Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.
7. **Sphere of Significance**

	International	National	Provincial	Regional	Local	Specific community
High						
Medium						
Low						

8. **Significance rating of feature**
   1. Low
   2. Medium
   3. High

Significance of impact:

- **low:** where the impact will not have an influence on or require to be significantly accommodated in the project design
- **medium:** where the impact could have an influence which will require modification of the project design or alternative mitigation
- **high:** where it would have a "no-go" implication on the project regardless of any mitigation

Certainty of prediction:

- Definite: verify assessment	More than 90% sure of a particular fact. Substantial supportive data to
- Probable: impact occurring	More than 70% sure of a particular fact, or of the likelihood of that
- Possible: impact occurring	Only more than 40% sure of a particular fact, or of the likelihood of an
- Unsure: occurring	Less than 40% sure of a particular fact, or the likelihood of an impact

Recommended management action:

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

1 = no further investigation/action necessary
2 = controlled sampling and/or mapping of the site necessary
3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
4 = preserve site at all costs
5 = retain graves

Legal requirements:

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.