

**HERITAGE SURVEY OF PORTION 3 OF THE FARM
HARTEBEESTFONTEIN 2192, BERGVILLE, KZN**

**FOR THE INDEPENDENT ENVIRONMENTAL
ADVISOR**

DATE: 5 MARCH 2018

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TABLE OF CONTENT

INTRODUCTION	4
KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008	9
METHOD	11
Defining significance.....	12
RESULTS	15
DESKTOP STUDY	15
PALAEONTOLOGICAL IMPACT ASSESSMENT	23
RESULTS	24
MITIGATION.....	39
CONCLUSION.....	40
REFERENCES	41
EXPERIENCE OF THE HERITAGE CONSULTANT	42
DECLARATION OF INDEPENDENCE	42
APPENDIX A	43
PHOTOGRAPHS OF VARIOUS FEATURES RECORDED DURING THE SURVEY	43

TABLE OF FIGURES

FIG. 1 GENERAL LOCATION OF THE STUDY AREA.....	5
FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA (2016)	6
FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE STUDY AREA.....	7
FIG. 4: SCENIC VIEWS OF THE STUDY AREA	8
TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES	14
FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA	16
FIG. 6: ORIGINAL SURVEYOR GENERAL MAP (1913).....	17
FIG. 7: STUDY AREA IN 1937	18
FIG. 8: STUDY AREA IN 1969	19
FIG. 9: LOCATION OF CIRCULAR FEATURES IN THE STUDY AREA	20
FIG. 10: SCHEMATIC OF A TRADITIONAL ZULU HOMESTEAD.....	22
FIG. 11: PALAEONTOLOGICAL SENSITIVITY MAP OF THE STUDY AREA	23
FIG. 12: LOCATION OF UNDEVELOPED LAND	26
FIG. 13: LOCATION OF VARIOUS (NON) CONFIRMED FEATURES IN THE STUDY AREA ...	27
TABLE 2: LOCATION AND DESCRIPTION OF FEATURES	28
TABLE 3: SUMMARY OF NUMBER OF FEATURES REVIEWED	36

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

Umlando was appointed by The Independent Environmental Advisor to undertake an assessment of Portion 3 of the Farm Hartebeestfontein 2192. The landowner had converted a large section of land without the correct authorization. Umlando was asked to assess the damage to possible heritage resources in the area as part of the environmental enquiry.

The landowner/manager had buffered all obvious stone walling, graves, and other heritage related features. This did, however, exclude non-obvious features such as graves not identified by farm workers, house floors etc.

Google Earth imagery (2008, 210, 2016), 1937 aerial photographs and 1969 photographs were used to determine if there was any stone walling in the study area before ploughing began. A survey was undertaken from the 14 – 15th February 2018 on the farm.

Fig.'s 1 – 4 show the location of the development.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

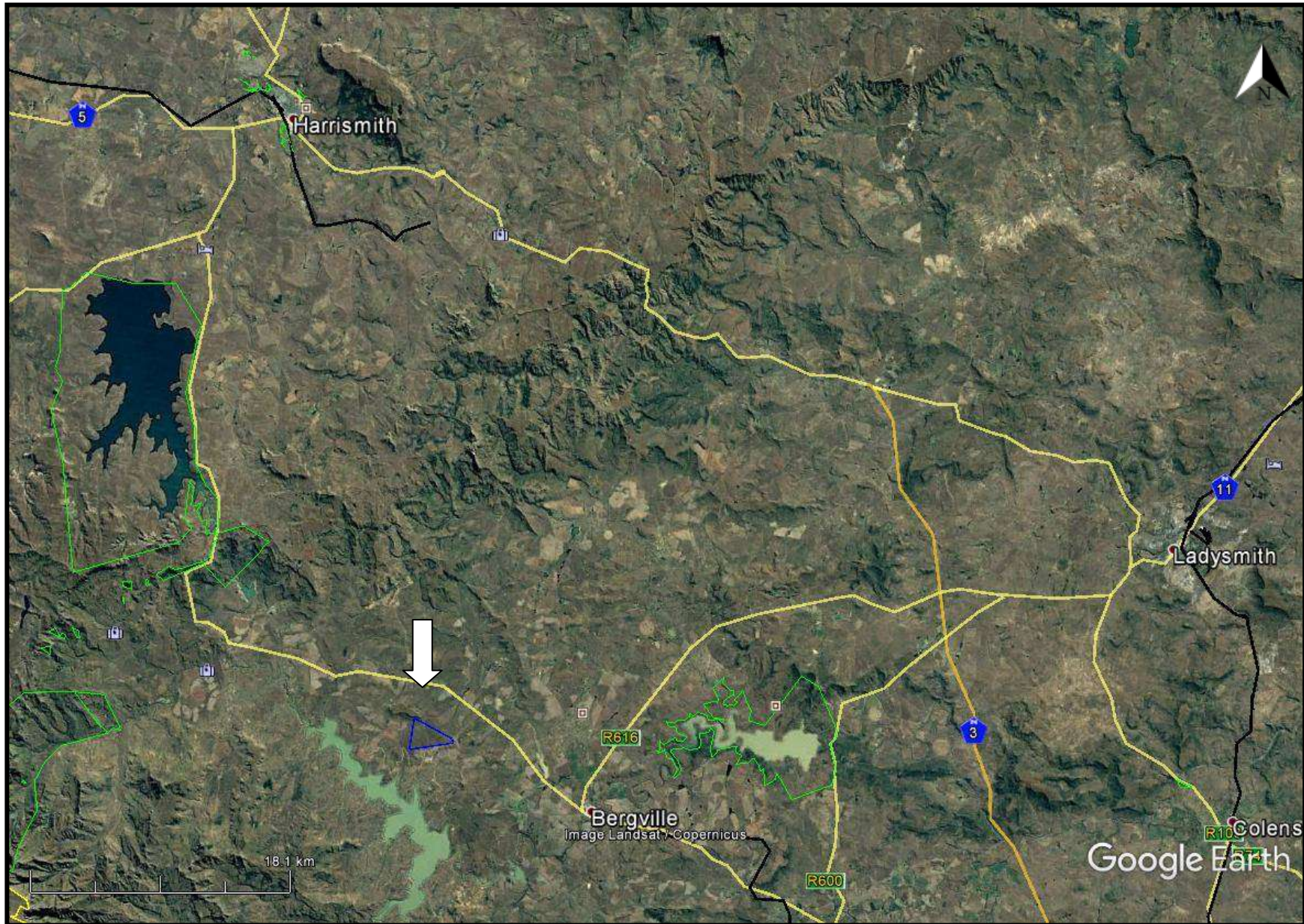


FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA (2016)

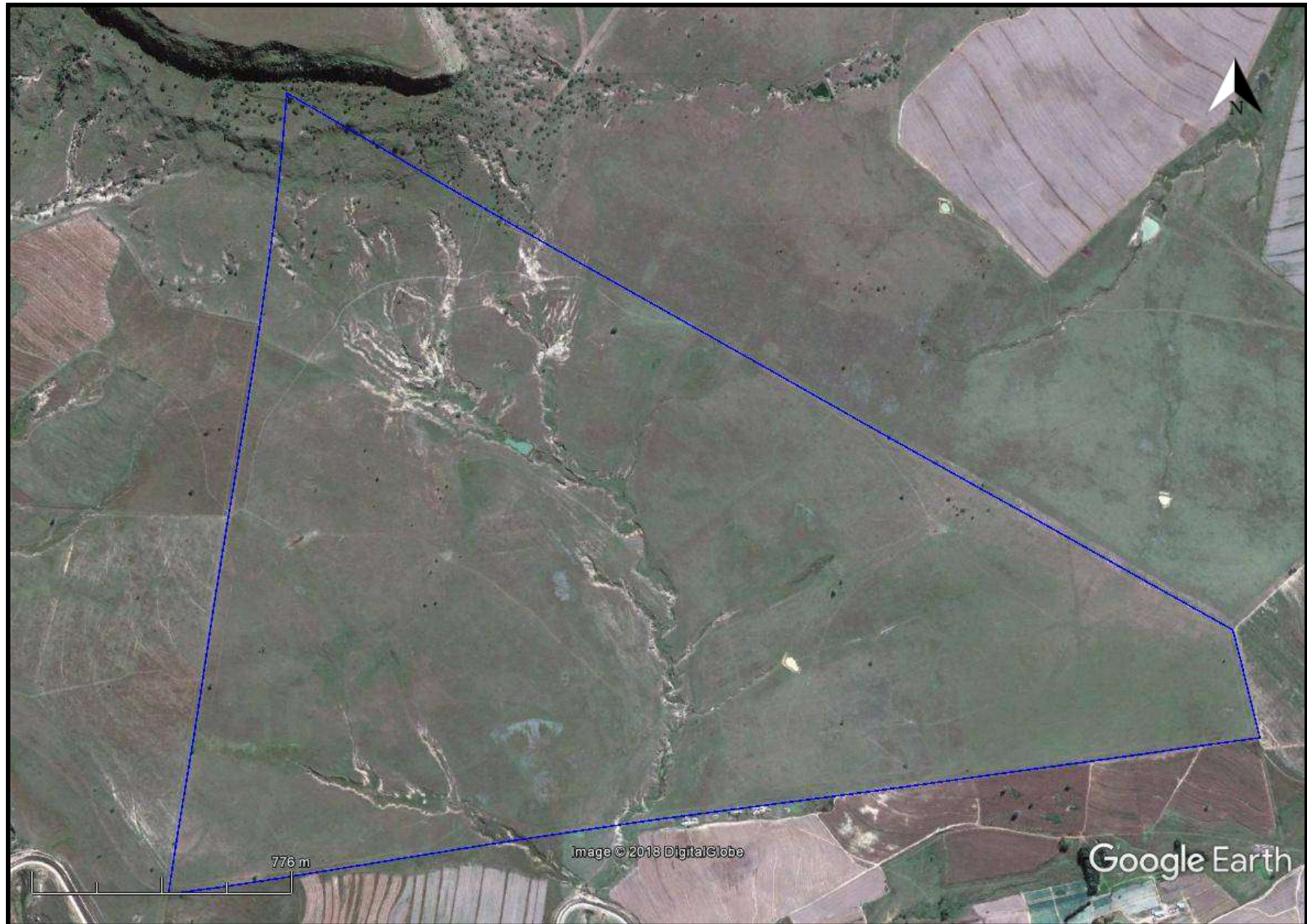


FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE STUDY AREA

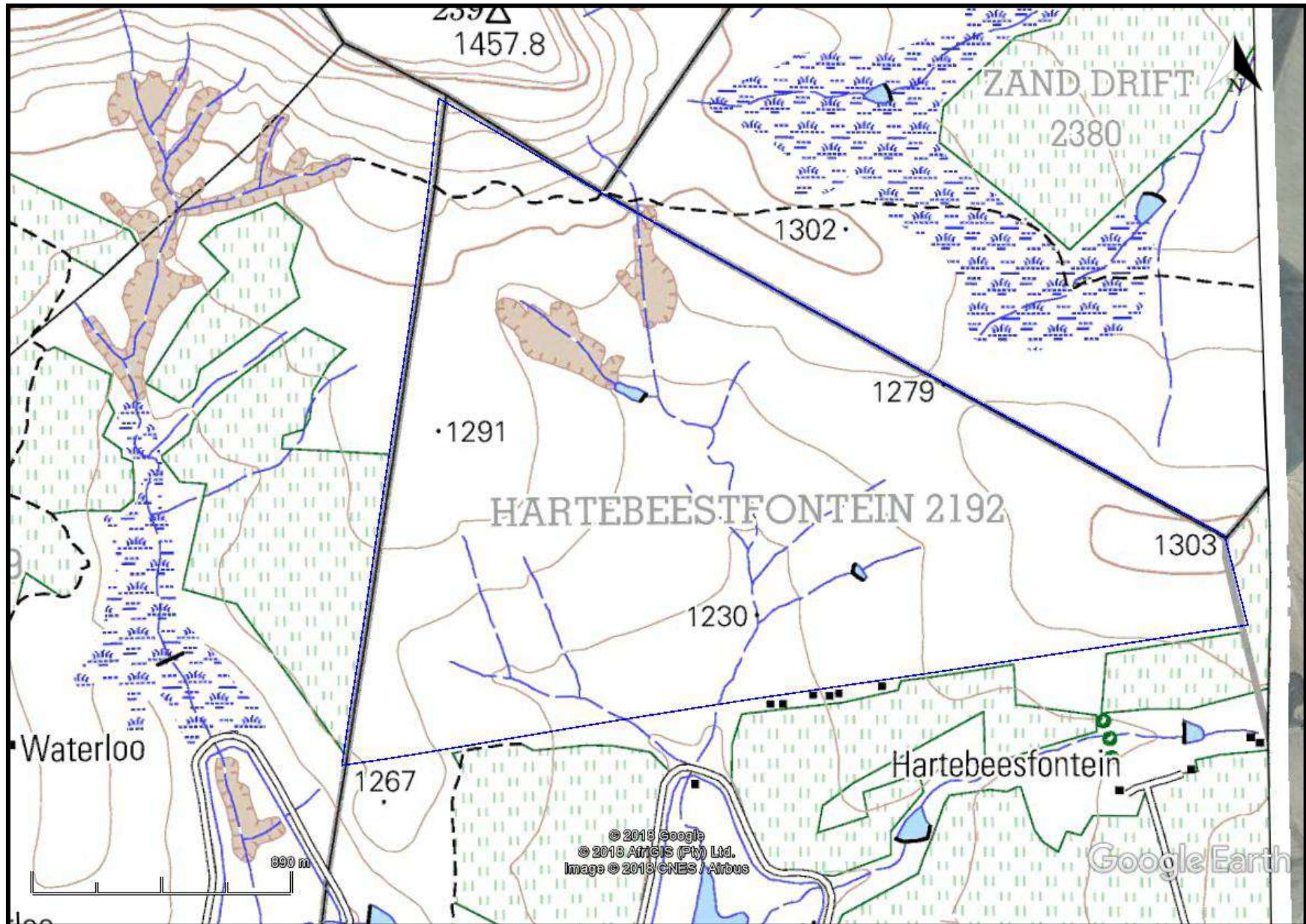


FIG. 4: SCENIC VIEWS OF THE STUDY AREA



KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008

“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 the prior written approval of the Council having been obtained on written application to the Council.
- Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- The Council may, by notice in the *Gazette*, exempt—
- A defined geographical area; or
- defined categories of sites within a defined geographical area, from the provisions of subsection where the Council 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.
- 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.—No person may damage, alter, exhume, or remove from its original position—

- the grave of a victim of conflict;
- a cemetery made up of such graves; or
- any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.
- General protection: Traditional burial places.—
- No grave—
- not otherwise protected by this Act; and
- 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 Council having been obtained on written application to the Council.

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

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

- 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 Council having been obtained on written application to the Council.
- 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 Council without delay.
- The Council 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 Council to be inappropriate within 50 metres of a rock art site.
- 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 Council having been obtained on written application to the Council.
- 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 Council having been obtained on written application to the Council.
- 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, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government.” (KZN Heritage Act of 2008)

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. These 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.

The above significance ratings allow one to grade the site according to SAHRA's grading scale. This is summarised in Table 1.

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 archaeological database indicates that there are archaeological sites in the general area (fig. 5). These sites include all types of Stone Age and Iron Age sites. No sites occur in the study area.

No national monuments, battlefields, or historical cemeteries are known to occur in the study area.

The farm was first surveyed in 1913. No houses are indicated on the SG diagram (fig. 6).

The 1937 aerial photographs indicated that there are two settlements dating to at least 1944: HTB085 and HTB086 (fig. 7). Several stone walled features are visible on these maps.

Figure 8 indicates that by 1969 there are no human settlements in the study area.

I used Google Earth imagery to locate any circular feature on the landscape. These were divided into two categories: definite stone walling and possible stone walling (fig. 9). These would be circular shapes on the landscape that could indicate cattle byres (or kraals). Since these are the easiest to note on aerial photographs they were used as indicators of a homestead.

FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

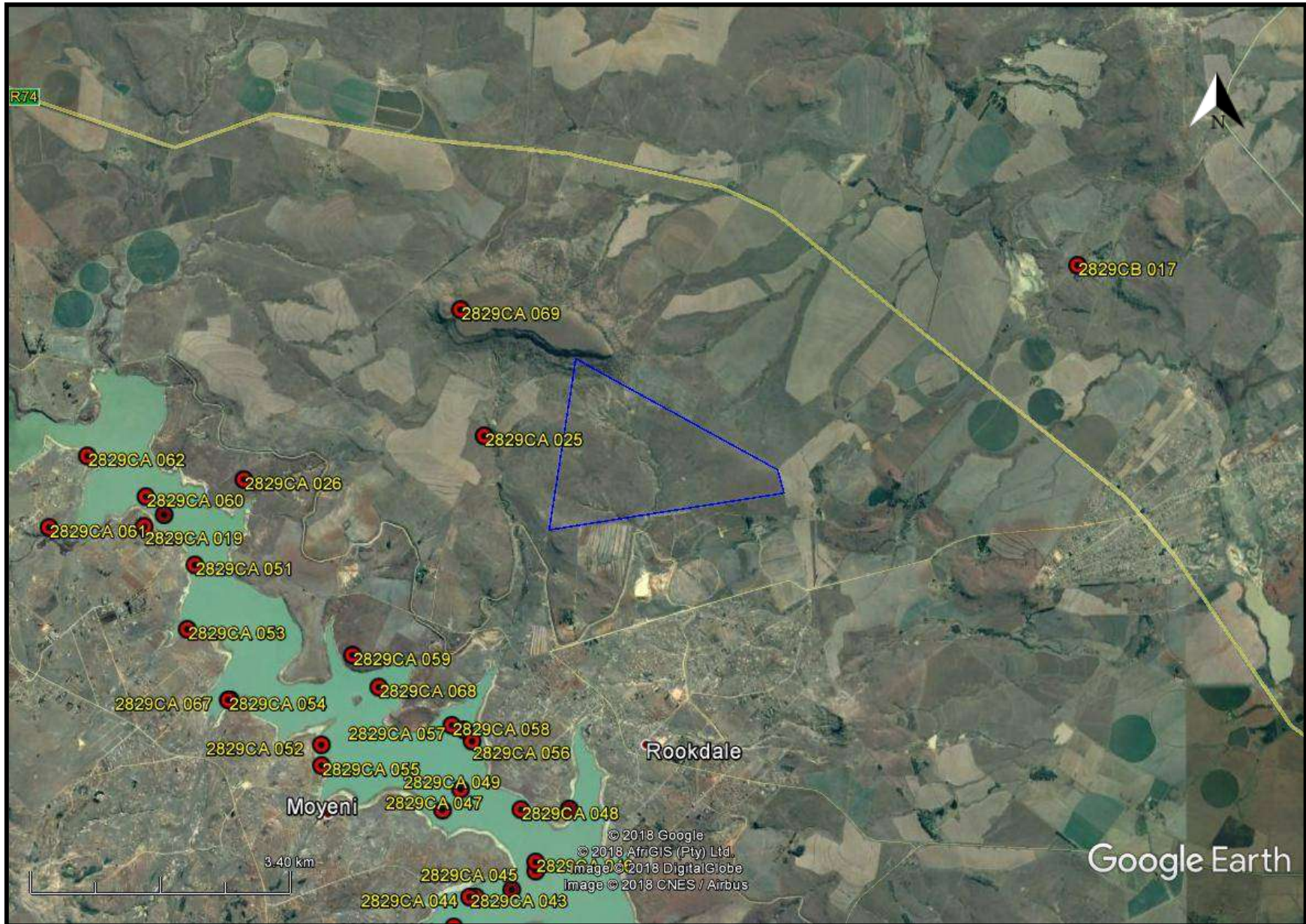


FIG. 6: ORIGINAL SURVEYOR GENERAL MAP (1913)

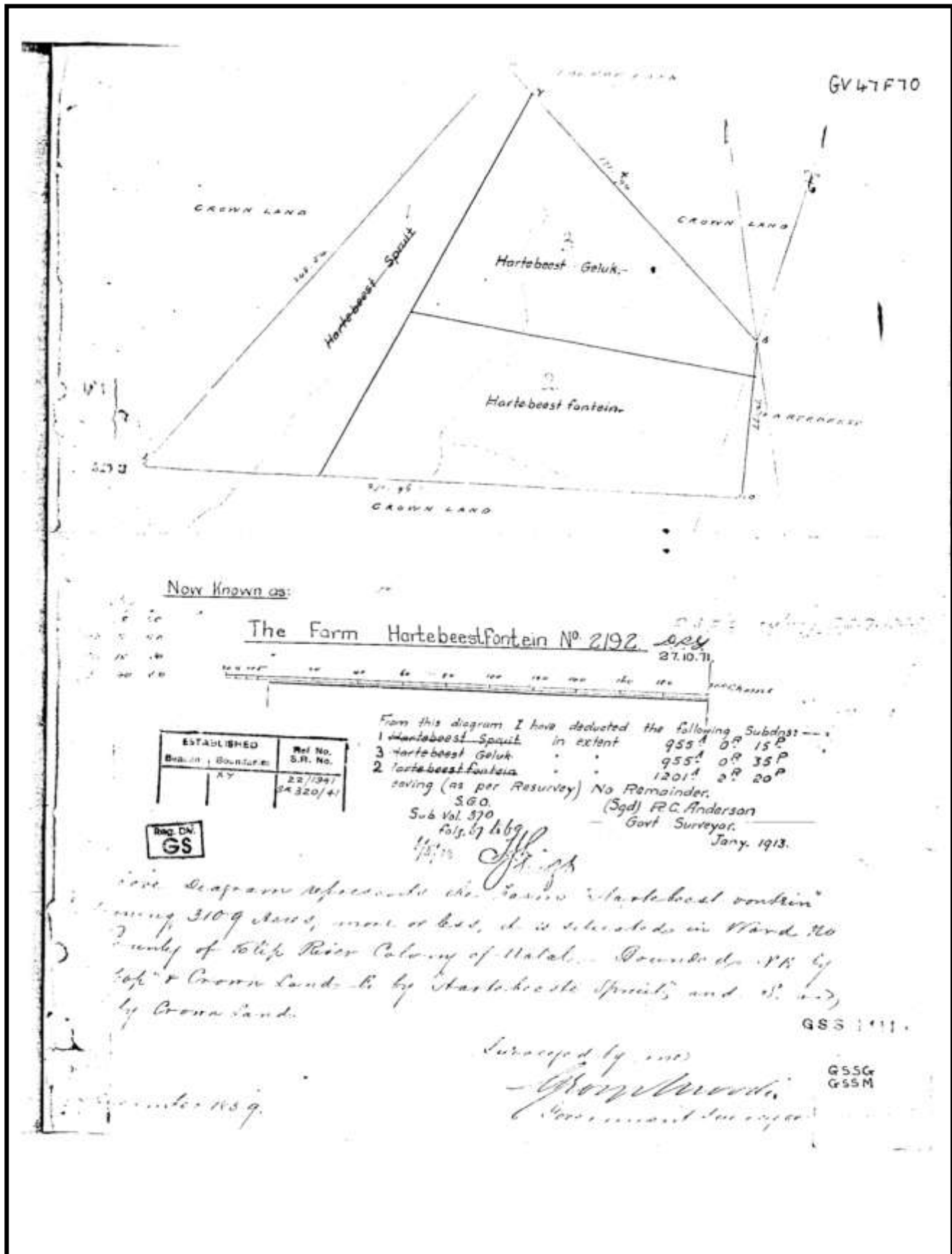


FIG. 7: STUDY AREA IN 1937

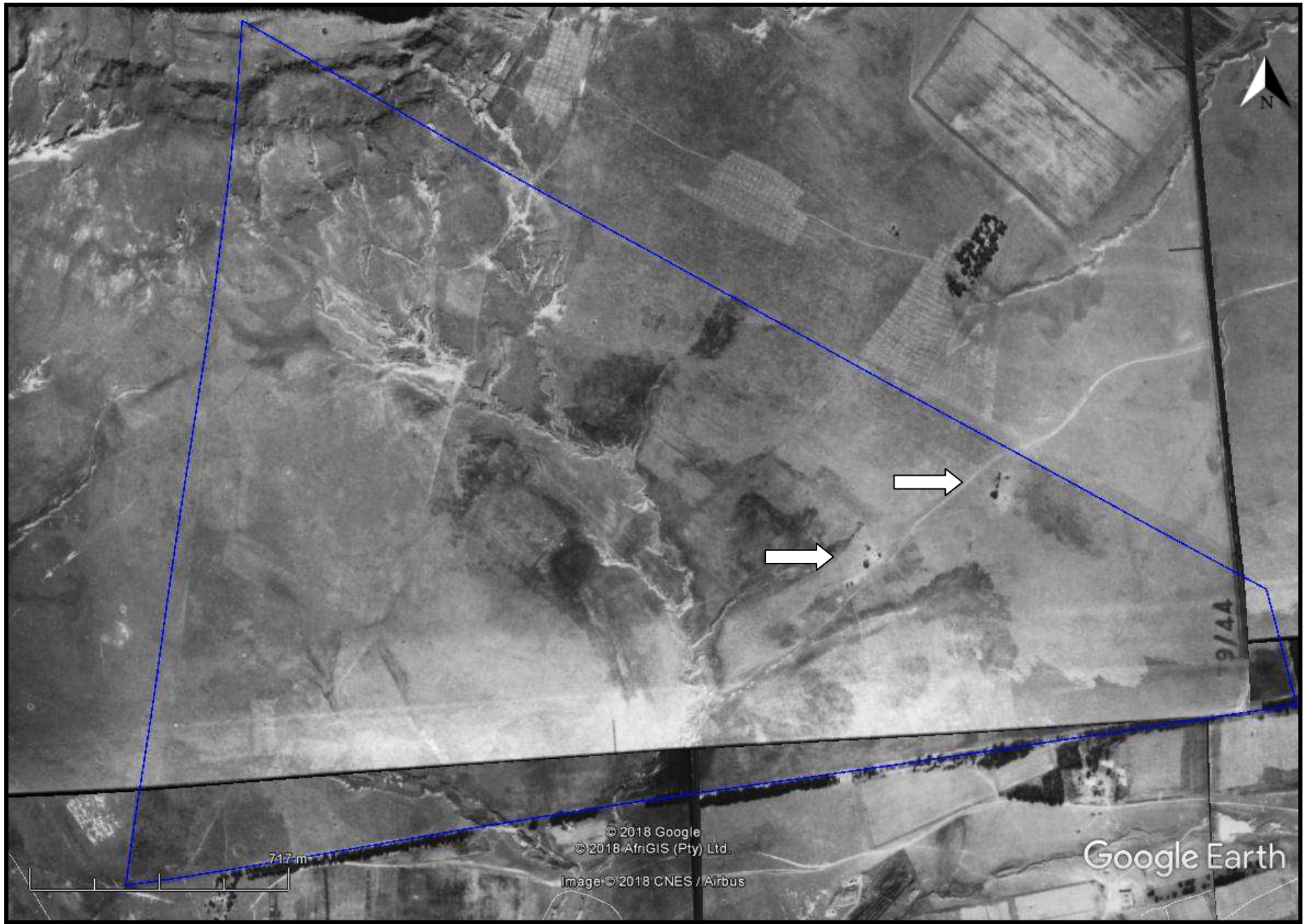


FIG. 8: STUDY AREA IN 1969

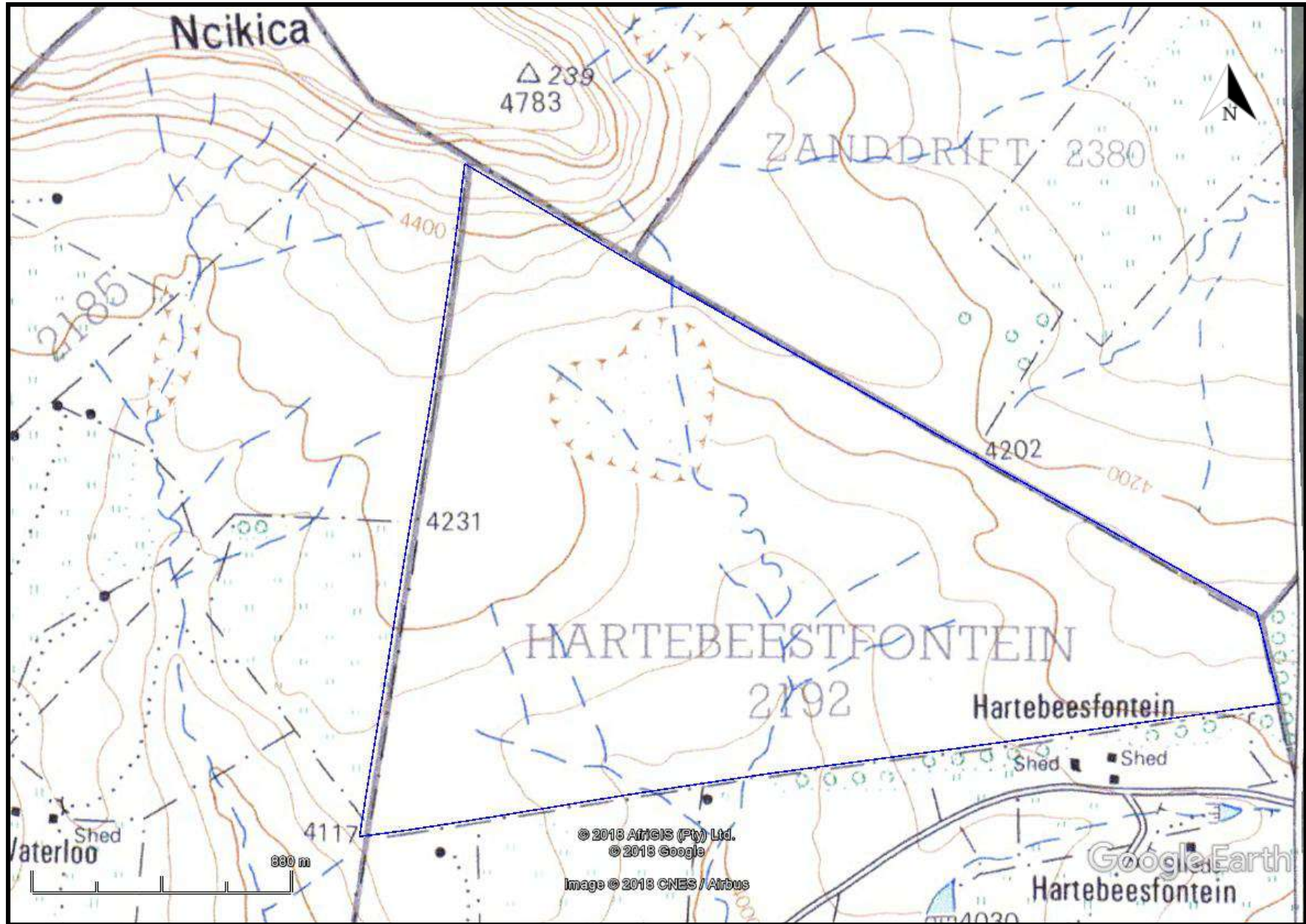
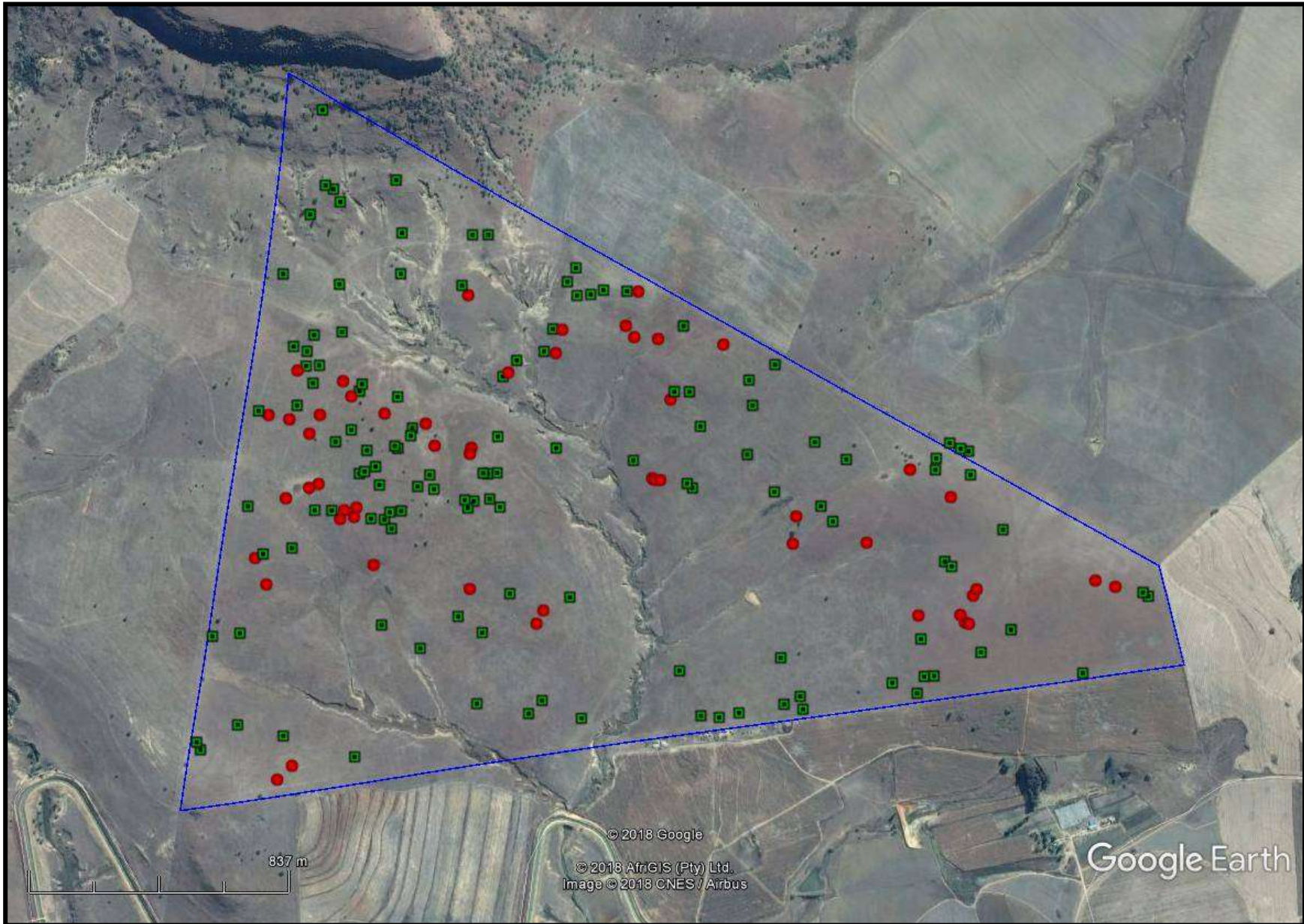


FIG. 9: LOCATION OF CIRCULAR FEATURES IN THE STUDY AREA¹



¹ Red = definite walling; green = possible walling

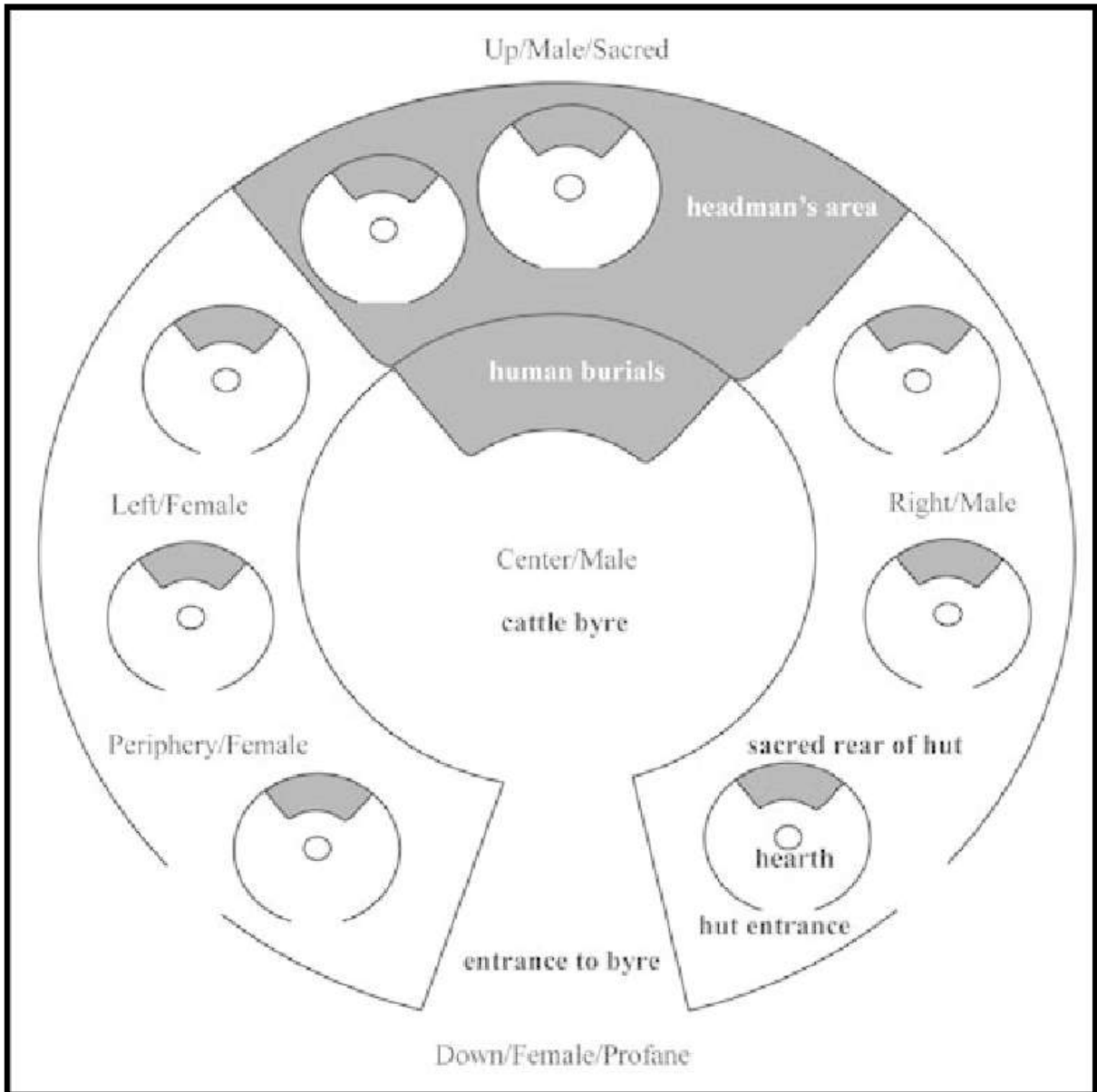
A typical homestead would include:

- A cattle byre, or large circular stone wall
- 2 or more houses (and house floors foundations) behind the byre
- Graves
- Granary floors/pits
- Ancestral house and/or beer drinking house

Thus, a cattle byre is an indicator of a much larger settlements that can extend for a 50m diameter or more (see fig. 10 - https://www.researchgate.net/figure/dealized-layout-of-a-Zulu-homestead_fig5_233488222). I used three Google Earth Images: 2008, 2010 and 2016. This gave a variety of results due to the images been taken at different times of the day or months of the year. This in turn allowed for the less obvious circular features to be confirmed or omitted: if the circle appeared in all three maps then it was confirmed as a feature, otherwise it was placed in a possible category. The historical maps added additional information. The locations of these 'definite' and 'probable' features would then be confirmed in the field.

Table 2 summarises the results of the desktop and fieldwork. Figure 11 shows the locations of the various types of sites.

FIG. 10: SCHEMATIC OF A TRADITIONAL ZULU HOMESTEAD.



PALAEONTOLOGICAL IMPACT ASSESSMENT

The entire area is classified as having very high palaeontological sensitivity (fig. 11). This would normally trigger a full palaeontological survey. However, since less than the upper 20cm of the surface is disturbed machine farming activity is unlikely to damage any palaeontological deposits. Any finds on the surface would be chance finds and need to be reported to Amafa KZN.

FIG. 11: PALAEONTOLOGICAL SENSITIVITY MAP OF THE STUDY AREA



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.

RESULTS

The field survey was undertaken on 14th - 15th February 2018. Most of the study area had been tilled with just under half of the arable area remaining undeveloped (fig. 12). Archaeological visibility was good in the undeveloped area, apart for photography where the grass hid many of the features from the camera. The undeveloped area is referred to as the control area. This will allow me to observe what types of general sites and/or features exist in the area.

Examples of individual features are:

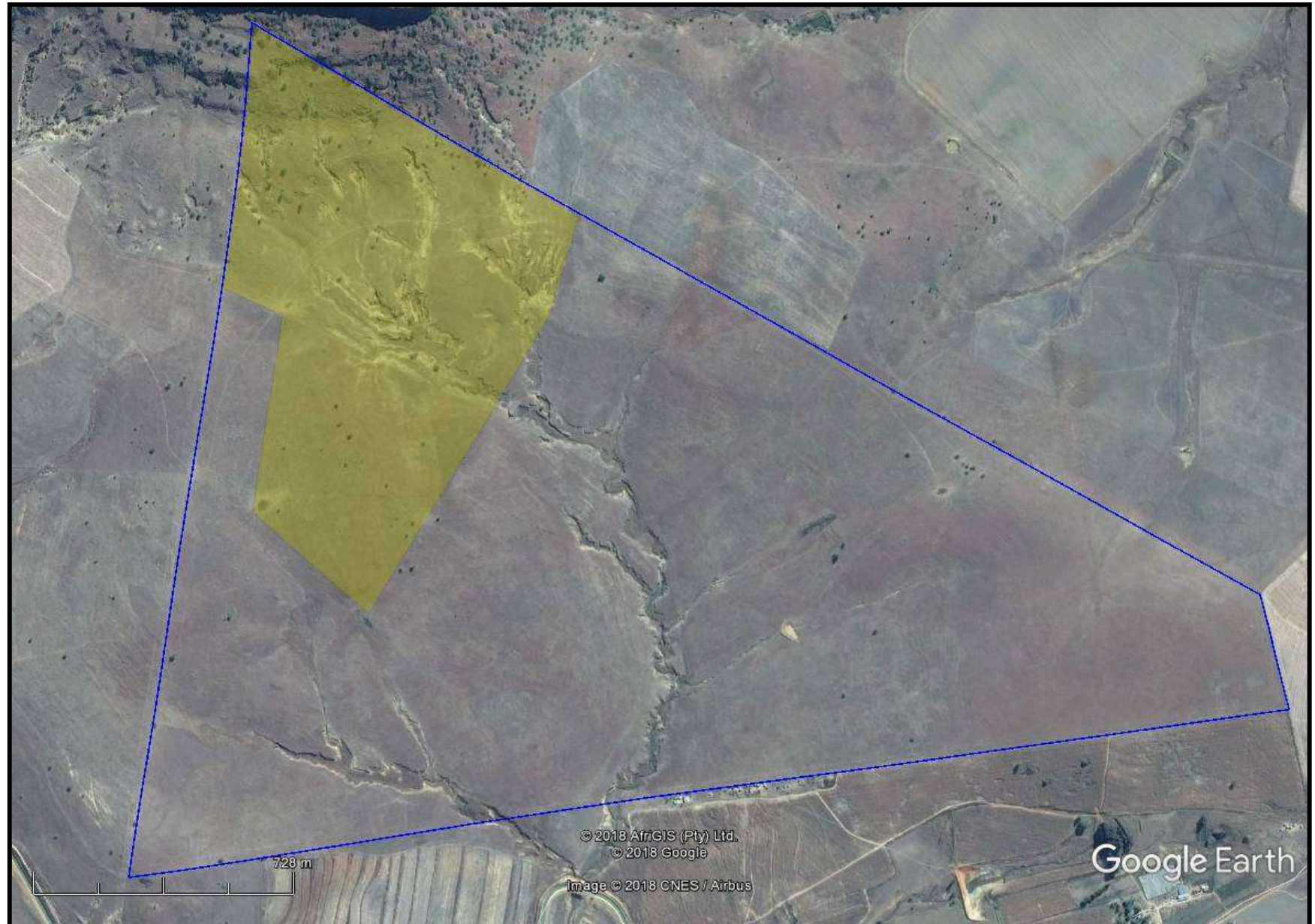
- Stone wall cattle byre, or the byre itself without walling
- Secondary walling
- House floors
- Granary floor or pit
- Graves
- Fire pits, etc.
- Several features form a site.

The spatial patterns of LIA settlements have been well documented (Davies 1974; Maggs 1976, 1982; Maggs, *et al* 1986; Mack *et al* 1991). I used these spatial parameters in my analyses of the study area. The survey started in the control area as this would be a test for the accuracy of the 'definite' and 'possible' sites. It would also note any features/sites not observed in the desktop study. The survey then continued into the existing agricultural fields on the western half of the study area. All sites noted from the desktop in the western half were visited. The farm manager knew where the remaining stone walling in the agricultural fields were located. To save time, and the problems of walking through dense maize fields, we visited all of the sites that had been buffered before farming began. Thus if the feature was not buffered, then it presumably no longer exists.

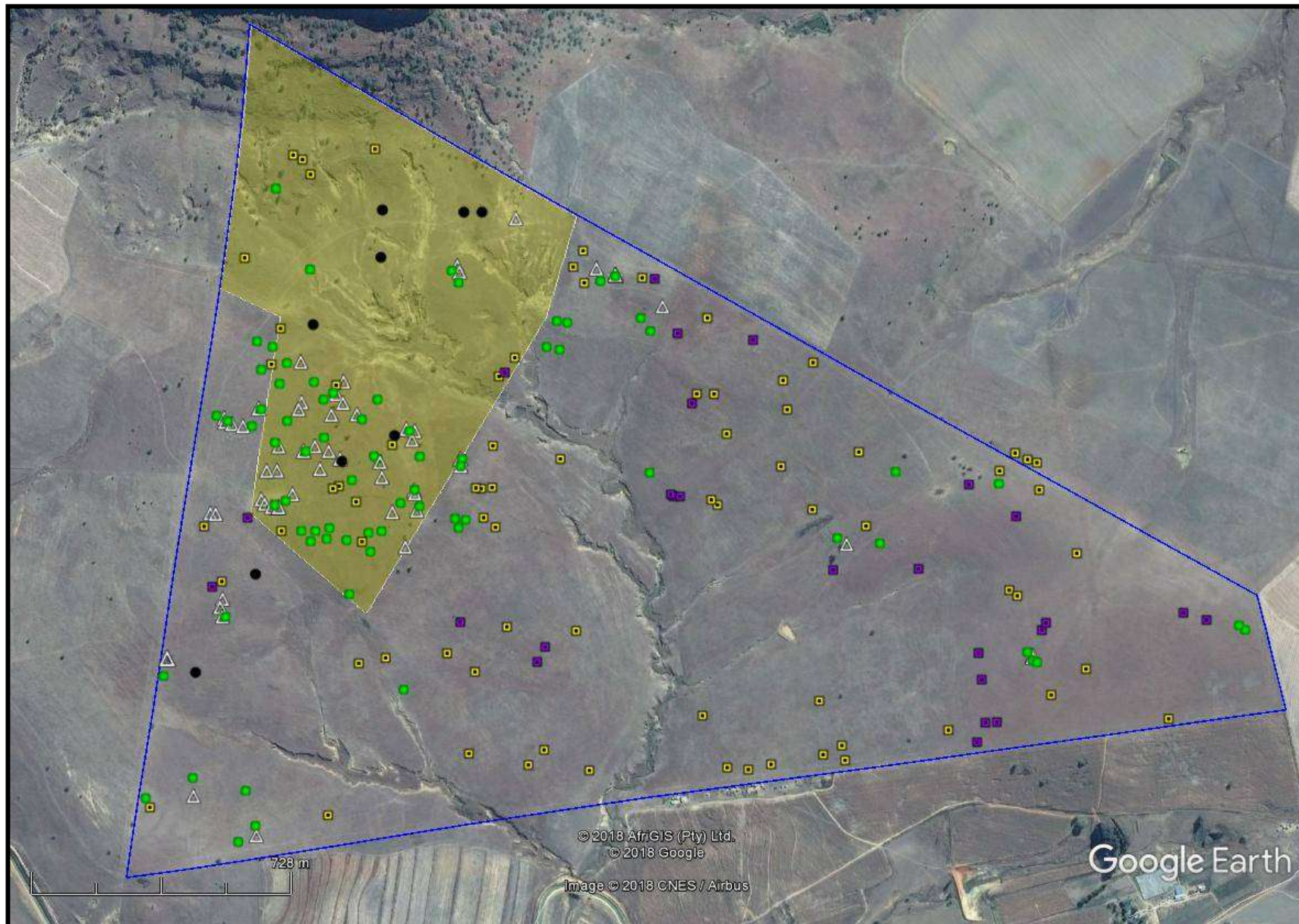
The northwestern corner was not surveyed, as it will not be converted into agricultural fields.

I have tabulated the results due to the large number of features recorded during the survey. Detailing each feature with a photograph would be excessive for a field report. Tables 2 and 3 summarise the results of the survey, while Figure 13 illustrates the results. Appendix A shows select photographs of various features.

FIG. 12: LOCATION OF UNDEVELOPED LAND²



² Yellow polygon = undeveloped area

FIG. 13: LOCATION OF VARIOUS (NON) CONFIRMED FEATURES IN THE STUDY AREA³

³ White triangle: new recording; Green circle: confirmed definite that still exists; Black circle: confirmed site 'does not exist', e.g. outcrop, spring, etc.; Purple square: not locate definite site; Yellow Square: not locate possible site; Yellow polygon: area not damaged

TABLE 2: LOCATION AND DESCRIPTION OF FEATURES

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
HTB001	28.673063060	29.221332567	Possible	No	No	Not located
HTB002	28.672274239	29.221853083	Possible	No	No	Not located
HTB003	28.674686719	29.224157184	Possible	Yes	No	Not a site
HTB004	28.676468208	29.231628310	Definite	Yes	No	Circular stone walling not damaged. 15m diameter
HTB005	28.676152714	29.231356988	Definite	Yes	No	Wetland
HTB006	28.676258326	29.229311133	Definite	Yes	No	Poorly preserved walling, fossil tree fragments on surface
HTB007	28.676220942	29.229020951	Possible	Yes	No	Poorly preserved walling, fossil tree fragments on surface
HTB008	28.679580241	29.229107620	Possible	Yes	No	Not located
HTB009	28.678375175	29.235443752	Possible	Yes	No	Not located
HTB010	28.680206286	29.240465602	Definite	Yes	No	No walling (anymore). Scatters of pottery, and loose rocks
HTB011	28.679902693	29.238454029	Possible	No	No	Not located
HTB012	28.679766571	29.235282736	Possible	No	No	Not located
HTB013	28.681223262	29.219257040	Possible	No	No	Not located
HTB014	28.683594670	29.226302784	Definite	No	No	Not located
HTB015	28.684219960	29.228674024	Definite	No	No	Not located
HTB017	28.682306707	29.236745210	Definite	No	No	Not located
HTB018	28.684604941	29.223465510	Possible	No	No	Not located
HTB019	28.684818847	29.218930732	Possible	Yes	No	Porcupine den
HTB020	28.685276583	29.224696308	Possible	Yes	No	Not a site
HTB021	28.685932970	29.233100172	Possible	No	No	Not located
HTB022	28.688365649	29.222571747	Possible	No	No	Not located
HTB023	28.688616520	29.220555481	Definite	Yes	No	Not an LIA wall and appears to be recent
HTB024	28.689000327	29.220085340	Definite	Yes	No	Destroyed, pottery. 35m diameter on map. Query if it was LIA stone walling
HTB025	28.687753000	29.220284000	Possible	Yes	No	Damaged cairn
HTB026	28.672378175	29.222098421	Possible	No	No	

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
HTB027	28.672719654	29.222299168	Possible	No	No	Not located
HTB028	28.674710104	29.220438721	Possible	No	No	Not located
HTB029	28.675293233	29.226298006	Definite	Yes	No	Walling damaged in past, #451 & #453 = possible graves
HTB030	28.675004728	29.226114610	Possible	Yes	No	Circular stone walling #451 & #453 = possible graves
HTB031	28.675290300	29.229797535	Possible	No	No	Not located
HTB032	28.674902637	29.229493774	Possible	No	No	Not located
HTB033	28.674515476	29.229770126	Possible	No	No	Not located
HTB034	28.675141521	29.230651483	Possible	Yes	No	Part of HTB164? 3 x graves and pottery shards
HTB035	28.675177144	29.231406860	Possible	No	No	Not located
HTB036	28.675200697	29.231756218	Definite	No	No	Not located
HTB037	28.676517159	29.232393075	Definite	No	No	Not located
HTB038	28.676320016	29.222271089	Possible	Yes	No	Not a site
HTB039	28.677419135	29.220849518	Definite	Yes	No	Circular stone walling 20m diameter
HTB040	28.677760782	29.221355030	Possible	No	No	Not a site
HTB041	28.678144170	29.222561689	Definite	Yes	No	Circular stone walling 20m diameter
HTB042	28.677718453	29.222297743	Definite	Yes	No	x3 Circular stone walling
HTB043	28.677783664	29.222911214	Possible	No	No	Not located
HTB044	28.677458446	29.227564596	Definite	No	No	Not located
HTB045	28.677557437	29.227398885	Possible	No	No	Not located
HTB046	28.677100288	29.227846982	Possible	No	No	Not located
HTB047	28.676911695	29.229097059	Definite	No	No	Natural outcrop
HTB048	28.678223044	29.232794149	Definite	No	No	Not located
HTB049	28.677994469	29.233408375	Possible	No	No	Not located
HTB050	28.677989608	29.232924655	Possible	No	No	Not located
HTB051	28.679412268	29.237443423	Possible	No	No	Not located
HTB052	28.678966351	29.233761504	Possible	No	No	Not located
HTB053	28.679929012	29.231604002	Possible	No	No	x3 graves?
HTB054	28.680502083	29.232282769	Definite	No	No	Not located
HTB055	28.680503340	29.232466081	Definite	No	No	Not located
HTB056	28.680343162	29.225057652	Possible	Yes	No	Circular stone walling 11m wide, southwest entrance

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
HTB057	28.680625297	29.223459139	Possible	No	No	Not located
HTB058	28.680243166	29.222991848	Possible	No	No	Not located
HTB059	28.680302426	29.222824713	Possible	No	No	Not located
HTB060	28.680611802	29.221517304	Definite	Yes	No	High walling with secondary enclosures. 8m in diameter
HTB061	28.680715067	29.221217148	Definite	Yes	No	Circular stone walling. 5m diameter
HTB062	28.681333316	29.221397359	Possible	No	No	Not located
HTB063	28.681010865	29.220466884	Definite	No	No	Not located
HTB064	28.681350080	29.222326325	Definite	Yes	No	2 x Low Circular stone walling. 22m in diameter
HTB065	28.681596844	29.222193388	Definite	Yes	No	Low Circular stone walling, 11m diameter
HTB066	28.681343207	29.221938243	Possible	Yes	No	Robbed stone walling 16m in diameter
HTB067	28.681538841	29.222634947	Definite	Yes	No	Low stone walling. 8m diameter
HTB068	28.681275733	29.222713402	Definite	Yes	No	Low stone wall. 6m diameter
HTB069	28.681571446	29.223183375	Possible	Yes	No	Not located
HTB070	28.681600951	29.223615127	Possible	Yes	No	Low stone walling 10m diameter
HTB071	28.681855000	29.223833000	Possible	Yes	No	Not a site
HTB072	28.681084877	29.226459945	Possible	Yes	No	Natural Spring
HTB073	28.681052858	29.226167081	Possible	Yes	No	Natural Spring
HTB074	28.681278499	29.226265065	Possible	Yes	No	Natural Spring
HTB075	28.681259137	29.227293944	Possible	No	No	Not located
HTB076	28.681022935	29.226964032	Possible	No	No	Not located
HTB077	28.680453552	29.232204314	Definite	No	No	Not located
HTB078	28.680711463	29.233513149	Possible	No	No	Not located
HTB079	28.680586740	29.233341319	Possible	No	No	Not located
HTB080	28.680195641	29.241283676	Possible	Yes	No	Does not exist. Scatters of pottery and upper grinding stone
HTB081	28.680976667	29.241760103	Definite	No	No	Not located
HTB082	28.680335702	29.242397463	Possible	No	No	Not located
HTB083	28.679598011	29.242084483	Possible	No	No	just outside boundary
HTB084	28.679872351	29.241308989	Possible	Yes	No	No walling visible. Scatters of pottery and upper grinding stone
HTB085	28.681659121	29.238032671	Possible	Yes	No	20th century?

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
HTB086	28.681531000	29.236851000	Definite	Yes	#440	20th century house foundations, 2 x graves
HTB087	28.682899140	29.223236181	Definite	Yes	No	Outcrop
HTB088	28.682401925	29.220655896	Possible	Yes	No	Not a site
HTB089	28.682697220	29.219457367	Definite	No	No	Not located
HTB090	28.682567887	29.219725588	Possible	No	No	Not located
HTB091	28.683447484	29.219797421	Definite	Yes	No	Circular stone walling, 20m diameter
HTB092	28.684472004	29.224211499	Possible	No	No	Not located
HTB093	28.684832929	29.226699583	Possible	No	No	Not located
HTB094	28.685533069	29.236367606	Possible	No	No	Not located
HTB095	28.682777518	29.241591794	Possible	No	No	Not located
HTB096	28.682915485	29.241810311	Possible	No	No	Not located
HTB097	28.681872524	29.243421480	Possible	No	No	Not located
HTB098	28.684318196	29.240752934	Definite	No	No	Not located
HTB099	28.683745125	29.242472481	Definite	No	No	Not located
HTB100	28.683564411	29.242585050	Definite	No	No	Not located
HTB101	28.684294140	29.242079873	Definite	Yes	No	House foundations, #449 & #450 graves associated with this site
HTB102	28.684503352	29.242230495	Definite	Yes	No	House foundations, #449 & #450 graves associated with this site
HTB103	28.684541155	29.242349099	Definite	Yes	No	House foundations, #449 & #450 graves associated with this site
HTB104	28.684967207	29.240847230	Possible	No	No	Not located
HTB105	28.684688341	29.243701100	Possible	No	No	Not located
HTB106	28.683314212	29.246356739	Definite	No	No	Not located
HTB107	28.683486795	29.246995188	Definite	No	No	Not located
HTB108	28.683631802	29.247887442	Possible	No	No	No site ,some pottery on surface
HTB109	28.686015615	29.241280658	Possible	No	No	Not located
HTB110	28.686517440	29.240748324	Possible	No	No	Not located
HTB111	28.673554743	29.224223820	Possible	No	No	Not site
HTB112	28.678792762	29.220592109	Definite	Yes	No	Damaged stone walling, pottery. 15m diameter
HTB113	28.678539880	29.219616121	Possible	Yes	No	Destroyed
HTB114	28.678666027	29.221563153	Definite	Yes	No	Low Circular stone walling, 20m diameter
HTB115	28.679407490	29.222072018	Possible	Yes	No	Sunken kraal

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
HTB116	28.678384311	29.220848847	Possible	Yes	No	Destroyed
HTB117	28.678671727	29.219924994	Definite	Yes	No	Damaged stone walling, cannot find exact location apart from scattered stones. 18m diameter on map
HTB118	28.686029697	29.240966421	Possible	No	No	Not located
HTB119	28.678140566	29.224039251	Possible	Yes	No	Stone wall
HTB120	28.681389391	29.223788548	Possible	No	No	Not located
HTB121	28.680107296	29.223340452	Possible	Yes	No	Remains of small walling, 2m – 3m in diameter
HTB122	28.679759530	29.226321308	Definite	Yes	No	Natural Spring
HTB123	28.679587198	29.226369672	Definite	Yes	No	Natural Spring
HTB124	28.679531543	29.225201486	Definite	Yes	No	Stone wall
HTB125	28.679648302	29.223065609	Possible	No	No	Not a site
HTB126	28.678625878	29.223613953	Definite	Yes	No	Sunken kraal (20m in diameter) and secondary walling (#403, 10m in diameter), stone cairns, pottery
HTB127	28.686860511	29.236478331	Possible	No	No	Not located
HTB128	28.678906756	29.224917758	Definite	Yes	No	Stone wall, east entrance, possible grave
HTB129	28.686785577	29.228631780	Possible	No	No	Not located
HTB130	28.673600592	29.226469081	Possible	Yes	No	Natural
HTB131	28.673596820	29.226969816	Possible	Yes	No	Natural
HTB132	28.679257706	29.227226386	Possible	No	No	Not located
HTB133	28.679591389	29.224049645	Possible	Yes	No	Circular stone walling 15m diameter
HTB134	28.679527000	29.223948000	Possible	Yes	No	Grave
HTB135	28.676864002	29.221160319	Possible	Yes	No	Grave?
HTB136	28.676730646	29.220731668	Possible	Yes	No	Grave?
HTB137	28.676406769	29.221386630	Possible	No	No	Not located
HTB138	28.679194087	29.221230978	Definite	Yes	No	Larger secondary enclosure attached to primary. Possible grave in middle. Entrance SE
HTB139	28.672118168	29.224080658	Possible	No	No	Not located
HTB140	28.676847741	29.228728674	Possible	Yes	No	Not a site
HTB141	28.677665144	29.235321796	Possible	No	No	Not located
HTB142	28.679236332	29.224450300	Possible	No	No	Not located
HTB143	28.679018235	29.224503441	Possible	No	No	Not a site

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
HTB144	28.679072885	29.222571580	Possible	Yes	No	Low stone wall 21m in diameter
HTB145	28.680669000	29.224672000	Possible	Yes	No	Sunken wall 6m in diameter
HTB146	28.681356451	29.224147713	Possible	Yes	No	Part of H126: Bilobial stone wall with tertiary walling attached on the outside. 35m diameter
HTB147	28.680748427	29.225187153	Possible	Yes	#409	bilobial wall 15m and 10m diameter, entrance north
HTB148	28.681224938	29.237650959	Possible	No	No	Not located
HTB149	28.682270497	29.239109075	Definite	No	No	Not located
HTB150	28.683825927	29.229542641	Possible	No	No	Not located
HTB151	28.683717884	29.227603488	Possible	No	No	Not located
HTB152	28.684367063	29.225926353	Possible	No	No	Not located
HTB153	28.684906522	29.218045687	Possible	Yes	No	No longer exists
HTB154	28.687422853	29.218828389	Possible	Yes	No	No features, but has part fossil tree on surface
HTB155	28.687910261	29.217516035	Possible	Yes	No	Not located
HTB156	28.688127520	29.217641177	Possible	No	No	Not located
HTB157	28.687162176	29.228186952	Possible	No	No	Not located
HTB158	28.687211545	29.233796960	Possible	No	No	Not located
HTB159	28.687253958	29.234386124	Possible	No	No	Not located
HTB16	28.684593542	29.228449306	Definite	No	No	Not located
HTB160	28.686220637	29.239945840	Possible	No	No	Not located
HTB161	28.685333580	29.242759813	Possible	No	No	Not located
HTB162	28.683739007	29.248059103	Possible	Yes	No	Not located
HTB163	28.674982851	29.222203782	Possible	Yes	No	Natural
HTB164	28.675259538	29.230243284	Possible	Yes	No	Large stone wall under Acacia. 2 x stone cairns, (cheap) porcelain sherd.
HTB165	28.676145924	29.233216429	Possible	No	No	Not located
HTB166	28.676684294	29.234484024	Definite	No	No	Not located
HTB167	28.677233392	29.236152945	Possible	No	No	Not located
HTB168	28.677981393	29.222826390	Possible	Yes	No	Circular stone walling, entrance facing east, 11m diameter
HTB169	28.677280247	29.221136263	Possible	No	No	Not located
HTB170	28.677260131	29.221555777	Possible	Yes	No	Low Circular stone walling 10m diameter
HTB171	28.680283315	29.227201659	Possible	No	No	Not located

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
HTB172	28.680293290	29.226752641	Possible	Yes	No	Spring?
HTB173	28.680308796	29.226897061	Possible	No	No	Not located
HTB174	28.680823278	29.236161830	Possible	No	No	Not located
HTB175	28.679438923	29.241747782	Possible	No	No	just outside
HTB176	28.679674035	29.242340801	Possible	No	No	on border
HTB177	28.686874341	29.226510990	Possible	No	No	Not located
HTB178	28.687305003	29.229904991	Possible	No	No	Not located
HTB179	28.687117584	29.235025076	Possible	No	No	Not located
HTB180	28.686629757	29.236998679	Possible	No	No	Not located
HTB181	28.686992275	29.237087863	Possible	No	No	Not located
HTB182	28.685918218	29.246029090	Possible	No	No	Not located
#403	28.678510	29.223467	GPS	Yes	Yes	Stone wall, east entrance
#406	28.679128	28.679128	GPS	Yes	Yes	Secondary walling to HTB128
#407	28.680438	29.225055	GPS	Yes	Yes	Grave? At HTB56
#409	28.680858	29.225112	GPS	Yes	Yes	bilobial wall 11m diameter, entrance north
#410	28.681745	29.224788	GPS	Yes	Yes	Circular stone walling 15m diameter
#411	28.680896	29.224439	GPS	Yes	Yes	Rock outcrop
#415	28.679671	29.224105	GPS	Yes	Yes	Grave attached to HTB133
#426 and #399	28.680936	29.219567	GPS	Yes	Yes	Bilobial Circular stone walling with enclosures inside primary enclosure. 15m diameter
#425	28.683212	29.219652	GPS	Yes	Yes	Grave?
#430	28.678799	29.220342	GPS	Yes	Yes	Damaged Grave?, 2 x pottery shards
#431	28.678749	29.220035	GPS	Yes	Yes	Grave or field clearance. Possibly related to HTB113 or HTB117
#432	28.678602	29.219820	GPS	Yes	Yes	Grave or field clearance. Possibly related to HTB113 or HTB117
#433	28.678700	29.219837	GPS	Yes	Yes	Grave or field clearance. Possibly related to HTB113 or HTB117
#434	28.677235	29.221931	GPS	Yes	Yes	Broken walling near outcrop
#435	28.678220	29.221955	GPS	Yes	Yes	Low Circular stone walling, 15m diameter
#436	28.678387	29.221875	GPS	Yes	Yes	Grave?
#437	28.678520	29.222771	GPS	Yes	Yes	Grave?
#454	28.687869	29.218840	GPS	Yes	Yes	Pottery and possible grave

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
#439	28.688854	29.220580	GPS	Yes	Yes	Shale/Dolerite cairn: possible grave
#440	28.681686	29.237104	GPS	Yes	Yes	2 x graves
#441	28.674962	29.230125	GPS	Yes	Yes	cairn
#442	28.67511	29.230646	GPS	Yes	Yes	Grave
#443	28.675118	29.230652	GPS	Yes	Yes	Grave
#444	28.675133	29.230671	GPS	Yes	Yes	Grave
#445	28.675881	29.231960	GPS	Yes	Yes	Grave
#451	28.674895	29.226267	GPS	Yes	Yes	Grave?
#452	28.67503	29.226325	GPS	Yes	Yes	Lower grinding stone
#453	29.226267	29.226155	GPS	Yes	Yes	Grave?
#400	28.680580	29.220838	GPS	Yes	Yes	Juvenile grave?
#402	28.679407	29.222005	GPS	Yes	Yes	Sunken circular stone wall, 20m diameter
#405	28.678867	29.224821	GPS	Yes	Yes	Grave?
#411	28.680896	29.224439	GPS	Yes	Yes	Outcrop
#412	28.677713	29.223101	GPS	Yes	Yes	Circular stone walling 16m diameter
#414	28.678234	29.223087	GPS	Yes	Yes	Cairn
#415	28.679671	29.224105	GPS	Yes	Yes	Grave attached to HTB133
#451F	28.673751	29.227898	GPS	Yes	Yes	Gully with fossil remains
#455	28.684477	29.218148	GPS	Yes	Yes	Pottery scatter
#456	28.679881	29.221279	GPS	Yes	Yes	Grave?
#457	28.680776	29.221248	GPS	Yes	Yes	Grave?
#458	28.679287	29.222321	GPS	Yes	Yes	Grave?
#425	28.683212	29.219652	GPS	Yes	Yes	Grave?
#424	28.679887	29.220992	GPS	Yes	Yes	Cairn
#423	28.680688	29.220930	GPS	Yes	Yes	House floors
#422	28.680767°	29.221125	GPS	Yes	Yes	Sunken circular stone wall, 15m diameter
#421	28.680777	29.221307	GPS	Yes	Yes	Grave?
#420	28.680773	29.221319	GPS	Yes	Yes	Grave?
#419	28.680453	29.221701	GPS	Yes	Yes	Cairn
#416	28.680043	29.22415	GPS	Yes	Yes	Circular stone walling 17m diameter
#417	28.679594	29.223011	GPS	Yes	Yes	Grave?
#418	-28.679406	29.222700	GPS	Yes	Yes	Cairn

Name	South	East	Desktop Status	Survey Confirmation	New Survey Find	Description
#438	28.679844	29.222459	GPS	Yes	Yes	Cairn
#429	28.678371	29.220774	GPS	Yes	Yes	2 x graves associated with HTB116
#427	28.683012	29.219726	GPS	Yes	Yes	Grave?

TABLE 3: SUMMARY OF NUMBER OF FEATURES REVIEWED

	Definite	Possible	Total
Confirmed	31	46	77
Not located	21	81	102
GPS	53	0	53
Total	105	127	232

The results show that those desktop sites noted as 'definite sites' were mostly confirmed as sites, barring a few areas of natural rock outcrops, porcupine dens, natural springs and a wetland. Few of the 'possible sites' were proper sites in the control area, and by extrapolation this can be extended to the developed land. These sites should thus be omitted from the study. However, several 'definite' sites in the developed area no longer exist. In general, the landscape in the study area was densely occupied during the Late Iron Age. No sorghum grinding stones were noted; however, sites dating to Moor Park (Davies 1974) should occur, especially at the sunken cattle byres. These settlements would date to 1200 – 1350 ACE. Most of the sites would post-date 1550 ACE as they were associated with maize grinding stones.

The orientations of the entrances to the cattle byres vary (where noted) and there is no clear pattern. The main cattle byres also varied in construction. Most were single circular structures, while others had secondary walling on the outside, secondary enclosure inside or attached to the outer primary enclosure. This shows a wide variation of architectural styles on the same landscape, suggesting a long period of human occupation.

The erosion gullies yielded a range of Late Stone Age tools (on cryptocrystalline silicates) as well as petrified wood and possible *Lystrosaurus spp.* remains (Dr. G Groenewald pers com.). The stone tools are of low significance. The palaeontological remains would need to be assessed if they were to be affected by farming activity. This activity is unlikely to damage palaeontological layers as only the upper 20cm of soil is tilled.

The control area is a good example of the type of settlements that occurred in the area. Many of these are of medium to high significance due to possible human graves. The control area should not be disturbed unless proper mitigation is undertaken. This would involve mapping and the excavations of graves, houses, and cattle byres. This would be a costly mitigation.

Pottery sherds and upper and lower grinding stones were found over the entire study area. No decorated sherds were noted. The sherds were all thin-walled in a range of reds, orange and brown. This indicates that these are LIA sherds. The occasional stone tool was noted.

There are a total of 232 individual features noted for the study area (Table 3). 77 Features noted at the desktop level were recorded during the survey. An additional 53 features, or sites, were recorded. 102 features were not located. Of these 'not located' features, 81 were possible features and thus cannot be considered sites, even though most of the "possible" sites in the control area were sites: it cannot be proven or disproven at this stage. 21 'definite' features have stone walling that is presumed damaged/destroyed: this is a low figure in the totality. However, these are settlements that would have had various features associated with a settlement (discussed above).

The next question to ask is how much damage has occurred at these 21 sites? Apart from the obvious surface features such as walling and cairns, the tilling only disturbed the upper 20cm of the deposit. This is noted by the wide distribution of pottery shards found over the entire study area. That is, tilling has only partially damaged the sites and many of the subsurface features would still be intact. The overall effect is that it is reminiscent of Iron Age sites in sugarcane fields: some surface features have been disturbed over the years, but much of the site is still intact 30cm below the surface. It is mainly the stone walled features that have been removed.

The removal of graves markers from tilling is of concern. However, if one looks at the control area, there were few marked graves in comparison to the number of settlements recorded. Many of the graves were also possible graves. That is, a stone cairn that has the shape and general size of a human grave, but

could also be a different type of feature. They are treated as graves until proven otherwise.

This does not detract from the fact that the sites were damaged in the first place, and that basic information has been irretrievably lost. Some credit should be given to the landowner/manager who tried to save (obvious) heritage sites by not ploughing them, as well as any potential graves. The manager spent two mornings with me where the nature of a site and its extent was shown and explained. The issue here is that only the cattle byers were 'saved'.

MITIGATION

The fact that at least 21 definite features have been damaged on the surface is of concern. This means that 21 settlements have been partially effected. This excludes the 'possible sites'.

I suggest that some form of remedial action is required to identify and manage the damaged sites. I suggest that the agricultural fields are surveyed after harvesting, where there will be minimal vegetation. The survey will focus on the definite and possible features. Potential, and/or disturbed, graves will be demarcated and buffered, as would other sensitive areas. This would allow for some form of analyses of the damaged sites as if it occurred before tilling began. This is important as much modern agricultural activity has occurred in the general area without any HIA, and many sites have been lost.

Any fossils located in the study area are 'Chance Finds' and need to be reported to Amafa KZN. The co-ordinates of the find and a photograph is required. Amafa KZN must decide if they want this recorded via an email or uploaded onto SAHRIS. This does not mean that every fragment of a petrified tree needs to be reported. Most of the fossils are located further uphill in the erosion gullies and are thus unlikely to be effected.

CONCLUSION

A heritage survey was undertaken for the Farm Hartebeestfontein 2192. A portion of the Erf was tilled without an EIA being undertaken, and thus there was no HIA. The Bergville area is archaeologically known to be highly sensitive for LSA, LIA and HP sites. A desktop study indicated that there were possibly 187 archaeological features on the Farm Hartebeestfontein 2196.

The survey noted that 207 of 387 hectares, or just over half) of the study area had already been cleared for agricultural activity. A control area, that was undisturbed, was surveyed to determine the accuracy of the desktop study. The desktop study was fairly accurate, although rock outcrops, springs, termite mounds, porcupine dens, and similar natural features were also noted as possible sites.

The survey indicated that at least 21 features had been permanently damaged, and probably more. These features were stone walled cattle byres, and thus by extension the rest of the settlement was also damaged. I argued that tilling only effects the upper 20cm (in this case) of the surface, and thus much of the site could still exist, with the exception of walling and cairns.

As part of the mitigation I suggest that the areas converted for agriculture be resurveyed once the area is harvested. This will determine how much of the settlement remains, as only the known undamaged sites were surveyed.

The action by the landowner/manager were probably accidental, and they did attempt to save known heritage sites. Unfortunately, this concentrated on obvious cattle byres and known graves only. I believe an educational and mitigatory approach, rather than a punitive measure, would benefit the heritage of the area. Educational in that landowners are made (more) aware of these types of settlements.

Several fossils were noted in the study area. Most of these occur at least 1m below the surface and in the erosion gullies. Any fossils on the surface would be considered as 'chance finds' and need to be reported.

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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 Principal 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
PHOTOGRAPHS OF VARIOUS FEATURES RECORDED DURING THE
SURVEY

HTB138



HTB128



HTB147



HTB120



HTB039



HTB091



#439



#439



HTB031



HTB101 - 103



PALAEONTOLOGICAL LEVELS IN THE DONGA



POSSIBLE *LYSTOSAURUS* SPP⁴



⁴ Dr G. Groenwelad pers. com. Size = 10cm wide