SITE INSPECTION AND DOCUMENTATION OF HISTORIC STONE WALLS ON STANDVASTIGHEID 210/REM FOR THE PROPOSED KARUSA WIND ENERGY FACILITY, SUTHERLAND MAGISTERIAL DISTRICT, WESTERN CAPE

Required as pre-construction mitigation by SAHRA.

SAHRA Case ID: 218

Report for:

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EXECUTIVE SUMMARY

This report has been commissioned in order to fulfil a requirement to map and record stone walls on the farm Standvastigheid 210, between Matjiesfontein and Sutherland, prior to a permit application for the demolition of small sections for the purposes of road construction. The road is required as part of a wind energy facility development in order to bypass a significant heritage building which is currently occupied.

The two sections where demolition was envisaged (referred to as KSW2 & KSW3) were poorly preserved. At KSW2 the wall was tumbled with the height varying between 0.5 m and 1.0 m. Much rock lay against the sides of the intact walling obscuring the base. At KSW3 it was found that two walls intersected to form a T-junction. However, one of the walls and a short section of the other lay within the road reserve and most of their rocks had long since been stripped away for use elsewhere on the farm.

Because of the very limited information available at these two places, a wider survey of the walls on the property was conducted. This yielded far more information about the walls, their structure and construction method. They were found to have been made with two rock 'skins' containing a fill of rubble. This is a standard historical dry-stone building technique. The walls were found to be in the region of 0.8 m to 1.0 m wide at the base. The lower parts were vertical but the remainder tapered to a width of about 0.5 m at the top. The overall height varied between about 1.2 m and 1.4 m. The two skins were capped with larger stone slabs.

Recommendations were made to slightly shift the road alignments in order to impact on sections of walling that were in even poorer condition and which preserved even less historical information. In both instances a feasible alternative could be designed through micrositing and both are now considered as part of the preferred alignment and will be implemented by the developer.

In order to gauge the necessity for a watching brief, the entire length of the proposed road was examined on foot and no other heritage resources were found to be present. The largely rocky nature of the substrate suggested that nothing would be revealed beneath the surface, while no artefacts were observed in the short sections crossing ploughed fields.

The recommendations of the study are as follows:

- The proposed demolitions should be allowed to continue with no further heritage work required and the destruction permit should be granted by SAHRA;
- Either alignment could be used because of the poor state of preservation of the walls (however, it is noted here that the developer has elected to implement the alternative alignments that minimise the impacts to heritage);
- The demolished sections should be kept as short as possible; and
- SAHRA should not require any further heritage work on this project. Specifically, it is requested that the requirement for a watching brief during road construction should be withdrawn as there is no chance of any further heritage resources being impacted.

Abbreviations

APHP: Association of Professional Heritage Practitioners

ASAPA: Association of Southern African Professional Archaeologists

CRM: Cultural Resources Management

GPS: global positioning system

NEMA: National Environmental Management Act (No. 107 of 1998)

NHRA: National Heritage Resources Act (No. 25) of 1999

SAHRA: South African Heritage Resources Agency

SAHRIS: South African Heritage Resources Information System

Contents

1. INTRODUCTION

ASHA Consulting (Pty) Ltd was appointed by ACED Renewables Hidden Valley (Pty) Ltd (ACED) to conduct a survey and assessment of a new road alignment and some historic walling at the site of their authorised and soon-to-be-constructed Karusa Wind Energy Facility on the remainder of the farm Standvastigheid 210. The farm lies to the east of the R354 between Matjiesfontein and Sutherland (Figures 1 & 2). A previous assessment had identified the walling within the alignment of a proposed road but had not recorded them sufficiently to allow for their destruction without further assessment.

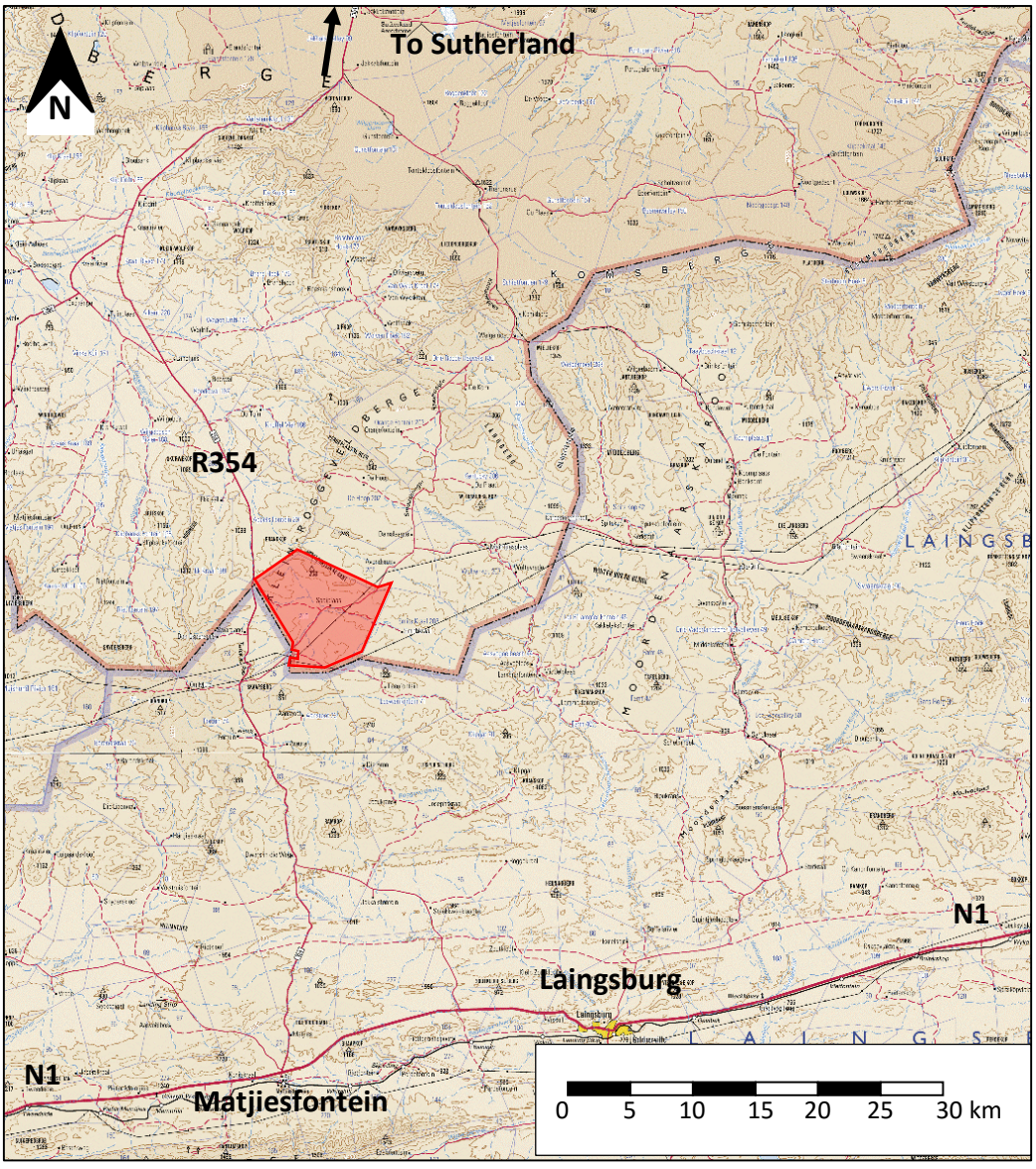

Figure 1: *1:250 000 Map showing the location of Standvastigheid 210/Rem (red polygon) along the R354 between Matjiesfontein and Sutherland (3220 & 3320; Mapping information supplied by Chief Directorate: National Geo-Spatial Information. Website: wwwi.ngi.gov.za).*

1.1. Project description

Although it is proposed to construct a wind energy facility on the farm, the only aspect of the greater project relevant to the present study is the rerouted access road (Figure 3). It is a public road and is being rerouted because it passes within a few meters of an occupied historic farm house and large numbers of trucks will be required to use the road during the construction period. The section of new road to be built is approximately 1.9 km long and will pass some 500 m south of the house in question.

1.1.1. Alternatives

During the survey it was noted that less damage to the historical walling could be incurred through shifting the alignments at both KSW2 and KSW3 by some 15 m. After consultation with the developer and engineers it was concluded that this was feasible and alternative alignments were generated in order to specifically try to reduce the degree of impacts. These alternatives are now regarded as being preferred for implementation and will be discussed below.

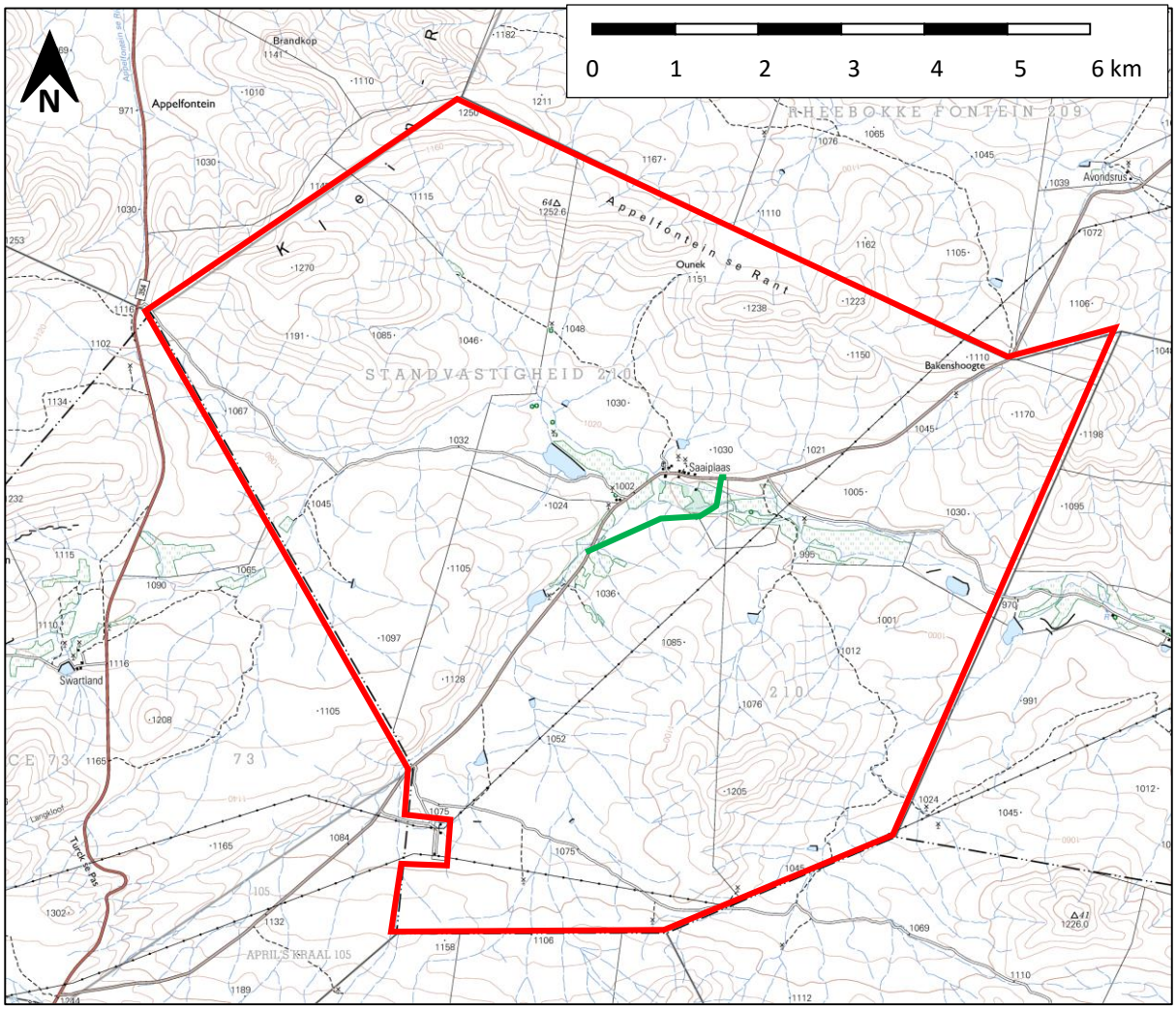

Figure 2: *1:50 000 Map showing the location of the proposed road (green line) on Standvastigheid 210/Rem (red polygon) (3220DC; Mapping information supplied by Chief Directorate: National Geo-Spatial Information. Website: wwwi.ngi.gov.za).*

1.2. Terms of reference

ASHA Consulting was requested by ACED to conduct a field assessment and provide the necessary reporting to meet the requirements of SAHRA as presented below, and to submit a permit application on their behalf for the destruction of two sections of historic stone walling.

The South African Heritage Resources Agency (SAHRA) has issued several comments pertaining to this project. Of relevance here is that dated 1 March 2016. It included the following two requirements which are addressed by this report:

- Upon the issuing of a positive EA[1] for the proposed development from the Department of Environmental Affairs, a destruction permit application must be submitted to relevant heritage authority for the destruction of the structures KSW2 and KSW3, located within the Karusa WEF. The destruction permit must include a permit application report where the structures are recorded in detail (mapped and photographed). This must be completed prior to the construction phase of the project; and
- As no clear description or photographs of KSW2 and KSW3 were provided in the submitted report, a Watching Brief must be conducted during the construction phase of the detour road that will pass through the areas in which KSW2 and KSW3 were recorded. The Watching Brief will include the on-site presence of a qualified archaeologist during the construction. A Watching Brief report detailing the results of the on-site monitoring must be submitted to SAHRA. Should the applicant feel this is unnecessary, a motivation letter written by a qualified archaeologist may be submitted to SAHRA.

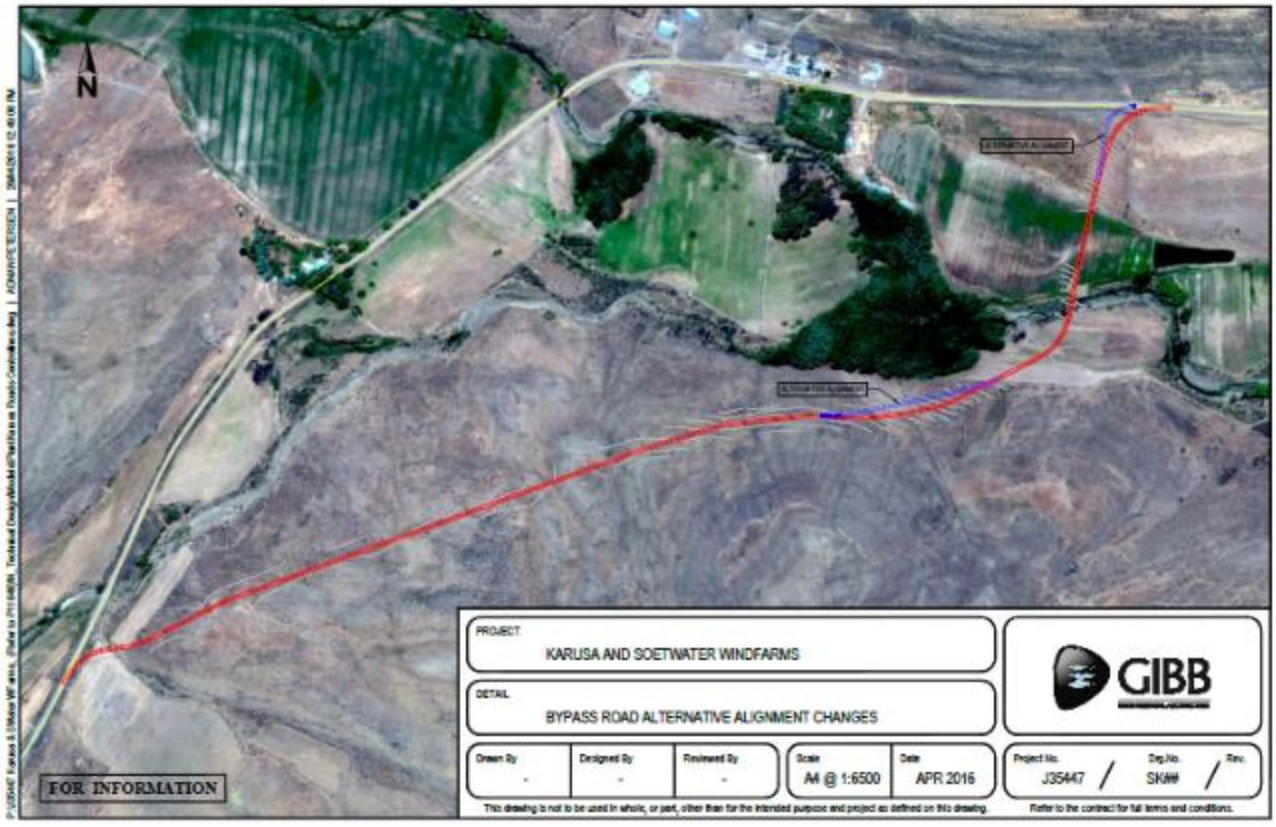

Figure 3: *Aerial view of the study area showing the newly proposed road alignment (red line) along with two alternatives (blue lines) proposed after completion of the fieldwork and which will be implemented. The farmstead lies at the northern edge of this image.*

[1] It should be noted that the Environmental Authorisation (EA) was issued on 12 August 2014 and acknowledged by SAHRA in a separate comment dated 14 April 2016.

1.3. Scope and purpose of the report

This report is intended to meet the requirements of SAHRA for recording of the historic walling such that a destruction permit can be issued. It is also intended to demonstrate that the Watching Brief suggested by SAHRA is not required and to motivate for this.

1.4. The author

Dr Jayson Orton has an MA (UCT, 2004) and a D.Phil (Oxford, UK, 2013), both in archaeology, and has been conducting Heritage Impact Assessments and archaeological specialist studies in the Western Cape and Northern Cape provinces of South Africa since 2004 (Please see curriculum vitae included as Appendix 1). He has also conducted research on aspects of the Later Stone Age in these provinces and published widely on the topic. He is an accredited heritage practitioner with the Association of Professional Heritage Practitioners (APHP) and also holds archaeological accreditation with the Association of Southern African Professional Archaeologists (ASAPA) CRM section (Member #233) as follows:

- Principal Investigator: Stone Age, Shell Middens & Grave Relocation; and
- Field Director: Colonial Period & Rock Art.

1.5. Declaration of independence

ASHA Consulting (Pty) Ltd and its consultants have no financial or other interest in the proposed development and will derive no benefits other than fair remuneration for consulting services provided.

2. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources as follows:

- Section 34: structures older than 60 years;
- Section 35: palaeontological, prehistoric and historical material (including ruins) more than 100 years old;
- Section 36: graves and human remains older than 60 years and located outside of a formal cemetery administered by a local authority; and
- Section 37: public monuments and memorials.

Following Section 2, the definitions applicable to the above protections are as follows:

- Structures: “any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith”;
- Palaeontological material: “any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace”;
- Archaeological material: a) “material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures”; b) “rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose

rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation"; c) "wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation"; and d) "features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found";

- Grave: "means a place of interment and includes the contents, headstone or other marker of such a place and any other structure on or associated with such place"; and
- Public monuments and memorials: "all monuments and memorials a) "erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government"; or b) "which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual."

While landscapes with cultural significance do not have a dedicated Section in the NHRA, they are protected under the definition of the National Estate (Section 3). Section 3(2)(c) and (d) list "historical settlements and townscapes" and "landscapes and natural features of cultural significance" as part of the National Estate. Furthermore, Section 3(3) describes the reasons a place or object may have cultural heritage value; some of these speak directly to cultural landscapes.

The historic walling assessed in this report falls within the definition of archaeological material and is thus protected under Section 35 of the NHRA.

3. METHODS

3.1. Literature survey and information sources

Due to the very specific nature of this project, no literature survey was conducted. The maps and historical aerial images were sourced from the Chief Directorate: National Geo-Spatial Information.

3.2. Field survey

Although the brief was to map and record the walling in the vicinity of the two locations that required demolition for the purposes of road construction (named KSW2 and KSW3), it was deemed prudent to examine the wider context of the walling as well in order to better understand the construction technique. The proposed road alignment was also examined. During the survey the positions of finds were recorded on a hand-held GPS receiver set to the WGS84 datum. Photographs were taken at times in order to capture representative samples of both the affected heritage and the landscape setting of the proposed road.

3.3. Assumptions and limitations

The field study was carried out at the surface only and hence any completely buried archaeological sites would not be readily located. However, no subsurface archaeology is expected because the

terrain was either very rocky or, where it was sandy (i.e. along the alluvial terraces) it had been ploughed and archaeological artefacts were absent.

4. PHYSICAL ENVIRONMENTAL CONTEXT

4.1. Site context

The road development site lies on a working farm between 5 and 6 km east of the R354. Cultivated lands and a large grove of poplar trees occur along the river with the remainder of the farm being largely natural used only for grazing. Large power lines traverse the property to the south of the proposed road. Further power lines traverse the southern edge of the property and an electrical substation lies in the south-western corner on what is now Portion 2 of the farm and owned by Eskom.

4.2. Site description

Starting in the west, the proposed road deviates from the present gravel access road and crosses about 60 m of arable land before entering a long stretch of very rocky terrain with low, scrubby vegetation (Figures 4 & 5). It runs for 1.2 km before intersecting the first stone wall (designated KSW2 by Booth (2015); Figure 6). Thereafter the alignment follows rocky terrain for another 150 m before crossing 140 m of arable alluvial terrace to the edge of the river. Between the arable lands the river crossing is some 35 m long through bushes and reeds, although the river channel itself is less than 10 m wide. To the north of the river the road will cross 140 m of arable land before running up a rocky slope for 140 m, across the next stone wall at KSW3 (actually two section of wall at 90° to one another) and on to the main gravel access road.

Figure 4: *Looking towards the northeast along the western-most section of the new road alignment (white dashed line) where it leaves the main gravel road.*

Figure 5: *Looking west along the western-most section of the new road alignment (white dashed line) towards the main gravel road which runs just in front of the trees in the background.*

Figure 6: *Looking towards the west along the new road alignment (white dashed line) where it would cross the historic stone walling at KSW2. The alternative alignment that is to be implemented crosses the walling at the arrow.*

Figure 7: *Looking towards the southwest along the new road alignment (white dashed line) where it crosses the alluvial terrace on the southern bank of the river (out of view to the right) towards the historic stone walling at KSW2.*

Figure 8: *Looking towards the north along the new road alignment (white dashed line) where it crosses the alluvial terrace on the north bank of the river then runs up the rocky slope to meet the main gravel road.*

5. FINDINGS

This section describes the stone walling recorded in the study area during the course of the project. All GPS co-ordinates and their descriptions are listed in Appendix 2. Figure 9 shows the walk- and drive-paths as well as the positions of all the GPS co-ordinates recorded. See also Appendix 3 for enlarged views. Although the focus was necessarily on the two areas where stone walling was to be impacted as per the terms of reference, other heritage resources were also noted for context and are briefly presented in Appendix 5).

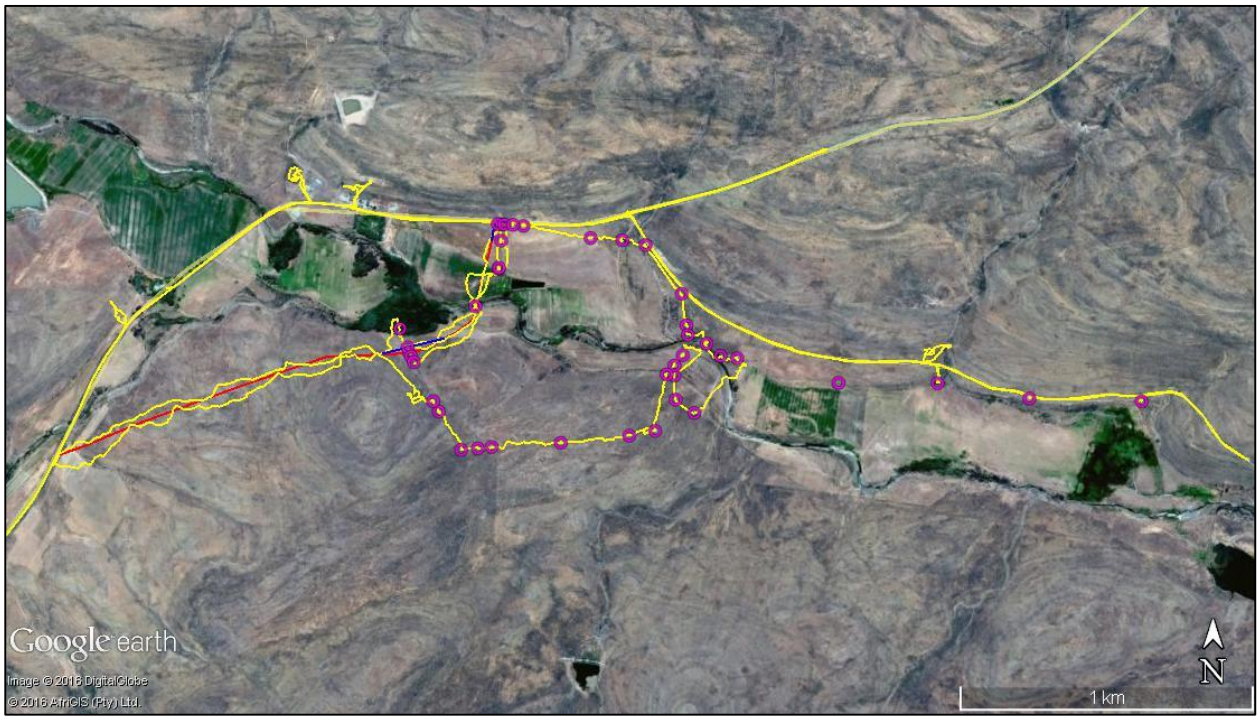

Figure 9: *Aerial view of the broader study area showing the walk- and drive-paths (yellow) and the positions of all GPS co-ordinates taken along the stone walls (pink symbols).*

5.1. General observations on stone walling

The farm Standvastigheid 210 has many kilometres of historic stone walling present on it (Figure 10), although only two very short sections will be impacted by the development. The farmer commented that the farm had once bred horses and that the walling had served to keep them out of the arable lands. In total 2.8 km of this walling was examined on foot walking alongside the wall in order to gain a better understanding of its shape, size and construction methods. Many areas were badly tumbled such that little or no evidence relating to its construction remained. This approach was considered necessary because, although the walls had been reported previously (Booth 2012, 2015), they were not described in detail.

The walling is, in general, very poorly preserved with the full height only evident in a few areas. The farmer noted on site that over the years stones had been stripped from the wall along the road nearest the house for use elsewhere on the farm. This section was within the road reserve and was no doubt targeted because of the ease of access. It seems likely that rocks have been taken from many other parts of the wall as well with the capping slabs being most frequently targeted.

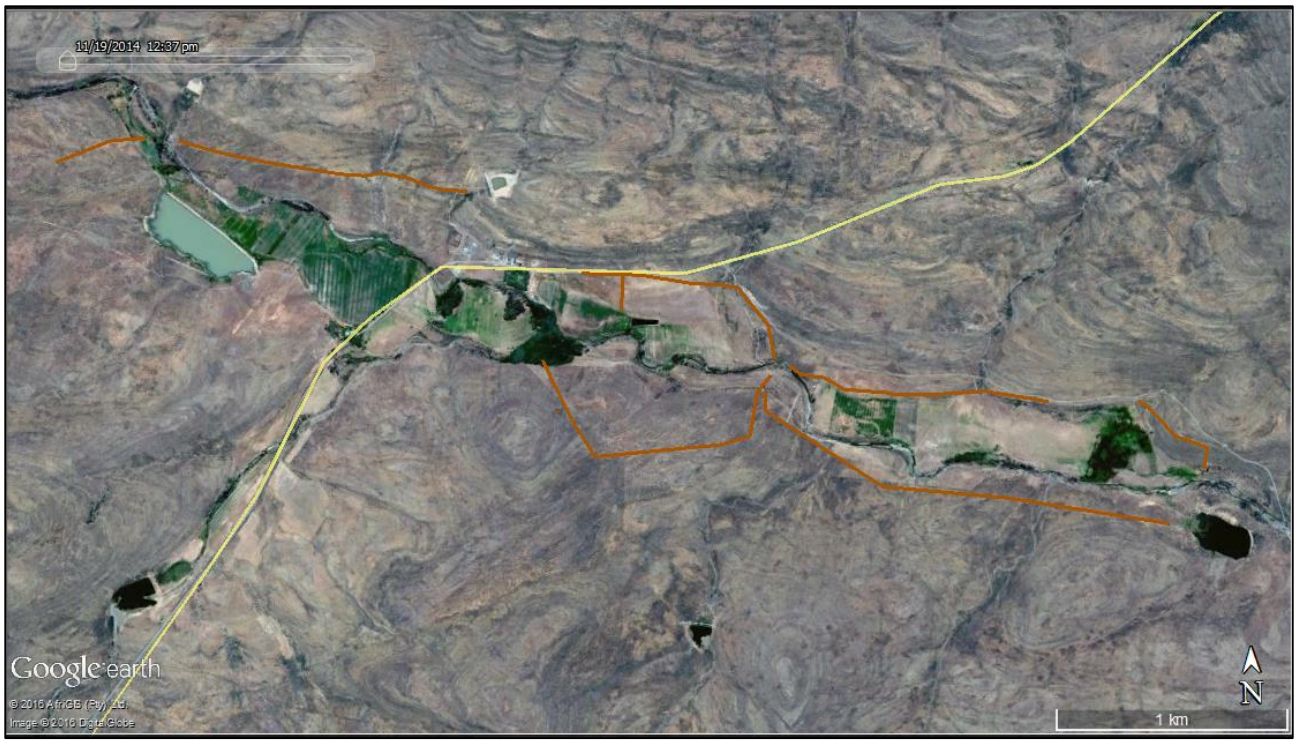

Figure 10: *Aerial view of the broader study area showing the positions of all stone walling either seen on the ground or identified from aerial photography. Note that the nature and preservation states of the walling vary greatly throughout the area and this map does not differentiate these conditions.*

The nature of dry-packed stone walling and the stones of which it is made are such that it will never be exactly the same dimensions throughout. Figure 11 shows a schematic cross-section as would be seen through intact sections of walling. The lower half of the walling has vertical sides and is variably about 0.8 m to 1.0 m wide (although the base was difficult to measure accurately). Near the top it tapers gently to be approximately 0.5 m wide. The full height varies between 1.2 m and 1.4 m.

The structure is typically historical in its construction technique with two skins of rocks on the outside and a fill of 'rubble' in between (Figure 12). The top of the wall was capped with large slabs that stretched across the entire width of the wall (Figure 13), although for the most part these slabs were missing, even in the collapsed areas. The rocks used in the construction are mostly unmodified blocks collected from the surrounding landscape, but it is clear that at least some blocks were dressed in order to get them to the desired shape (Figures 14 & 15). Most of the rocks were angular, although in general they were of mixed shapes with blocks, slabs and rounded rocks all included. In one area, however, it was noted that a distinct change in rock type occurred with rounded and sub-angular rocks being used to the east and almost exclusively slabs to the west (Figure 16). This may have been the result of sourcing rocks from different places. The rubble fill contains rock fragments and, towards the base, probably some finer gravel and sand. The rock fragments would be largely gravel collected from the surrounding landscape, but could very likely include dressing flakes chipped off the rocks during construction. The limited number of such flakes alongside the wall suggests they were collected up and dropped into the wall cavity.

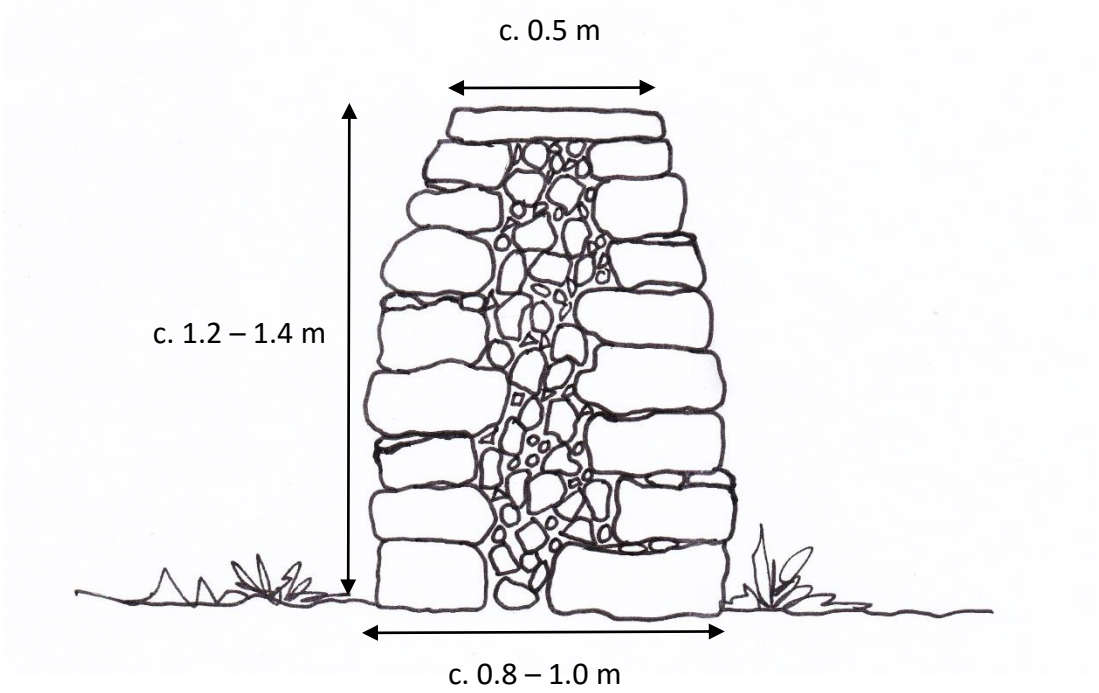

Figure 11: *Schematic cross-section through the Standvastigheid stone walls showing an undamaged section.*

Figure 12: *View of the top of the wall where the capping slabs are missing and showing the 'rubble fill between the two stone 'skins' (waypoint 067).*

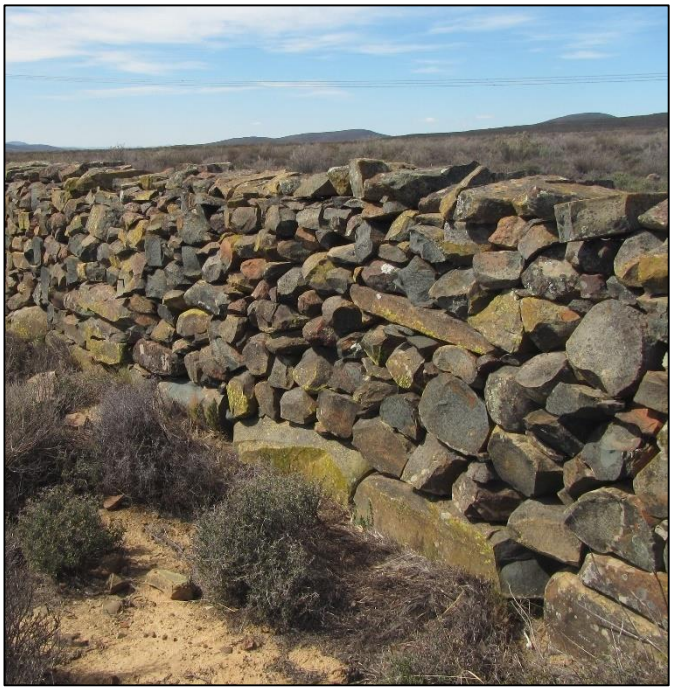

Figure 13: *View of the wall where the full height is preserved. The cap stone slabs are visible on the top (waypoint 079).*

Figure 14: *Close-up photograph of a section of walling showing a dressed stone in the centre (waypoint 079).*

Figure 15: *Three stone dressing flakes found alongside the wall (waypoint 079). Scale in cm.*

Figure 16: *View of the wall at a section where the type of rock used changes from rounded and sub-angular rocks to slabs (waypoint 082).*

Interestingly, the wall builders also made use of the low cliff running along the northern side of the river. A low wall has been built along the top of this cliff in order to incorporate the cliff within the wall (Figure 17). The walls along the cliff are, however, very poorly preserved and even absent in places, whether by design or because the rocks have been removed is unknown.

Figure 17: *View of the low cliff running along the north side of the river in one area and with a low stone wall along it in places (waypoint 100).*

Unfortunately the wall has been badly damaged in a number of places and for a number of reasons. This damage has no doubt been effected over many years. Although it is not possible to tell when individual rocks ,may have been removed from the walls, the earliest significant damage is likely to have been during the 20th century and appears to post-date 1939 at which point historical aerial photography (Job 139A) shows the walling to be intact in the area examined (Figure 18B, C, D). Sections of walling were broken down when the wire wire fences were erected (e.g. waypoints 068 & 080), probably when the farm became more focused on sheep farming than on the breeding of horses. Other damage has resulted where sections of walling have been completely removed from the alluvial terraces close to the river (e.g. SW of waypoint 064 and NE of 091. This is presumably once they had become obsolete and it was more desirable to not waste any arable land. In one place (waypoints 092 to 093) there was a 54 m long, low mound of rocks at the edge of the lands and this obviously represents wall rocks that have been moved to the side to make way for agriculture. The next series of aerial photography dates to 1963 (Job 491) but unfortunately, due to the scale and the positioning of the flight paths, the photographs are not overly helpful. The only section of walling clearly visible is the SW-NE wall crossing the alluvial terrace on the north side of the river (just south of KSW3) which, at that time, was clearly still intact. The visibility is due to the stone wall contrasting with the ploughed soil.

More recent damage has occurred with the construction of Eskom power lines across the property. A service track runs alongside the lines and in two places the walling has been demolished to allow this track to pass though (e.g. waypoints 081 & 102). The rocks have just been pushed to the side. The servitude for these lines was registered in 1989 so the destruction must have occurred in or shortly after that year.

5.2. KSW2

This is the western section of walling that needs to be crossed by the new road and is located at waypoint 069 (Figure 19). This section was partly standing and partly tumbled (Figure 20). The capping stones were all absent. The partly tumbled sections were reduced to about 0.5 m to 0.6 m high but with jumbled rocks on both sides, while the better-preserved parts of the wall here were

about 1.0 m high. The standing sections, although incomplete, showed no difference in construction methods from the generic example provided in Figure 11 above.

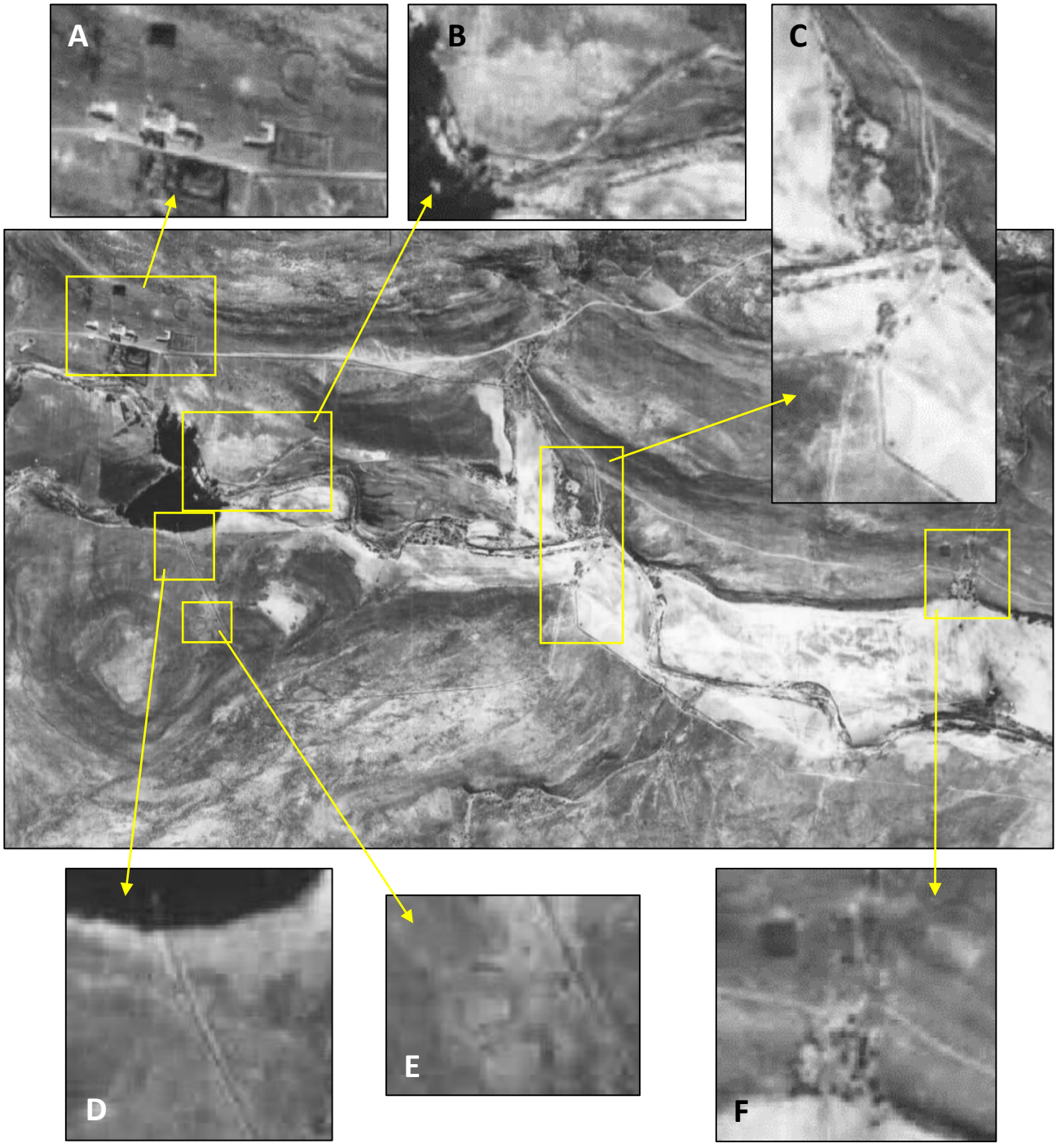

Figure 18: *1939 aerial photography (Job 139A, strip 018, frame 25375) showing a number of features of the farm and its stone walling. A: The farm complex with the round kraal visible and the rectangular one appearing to be a different shape to today. B: Alluvial terrace over which the new road will run and showing the SW-NE trending stone wall to still be intact. C: Area where the stone walls run down to the river in order to facilitate a crossing point. D: Section of walling where today a chunk has been demolished to allow a fence to pass through. E: Stone feature just outside wall. F: Stone feature just north of access road which appears to be a different shape to today.*

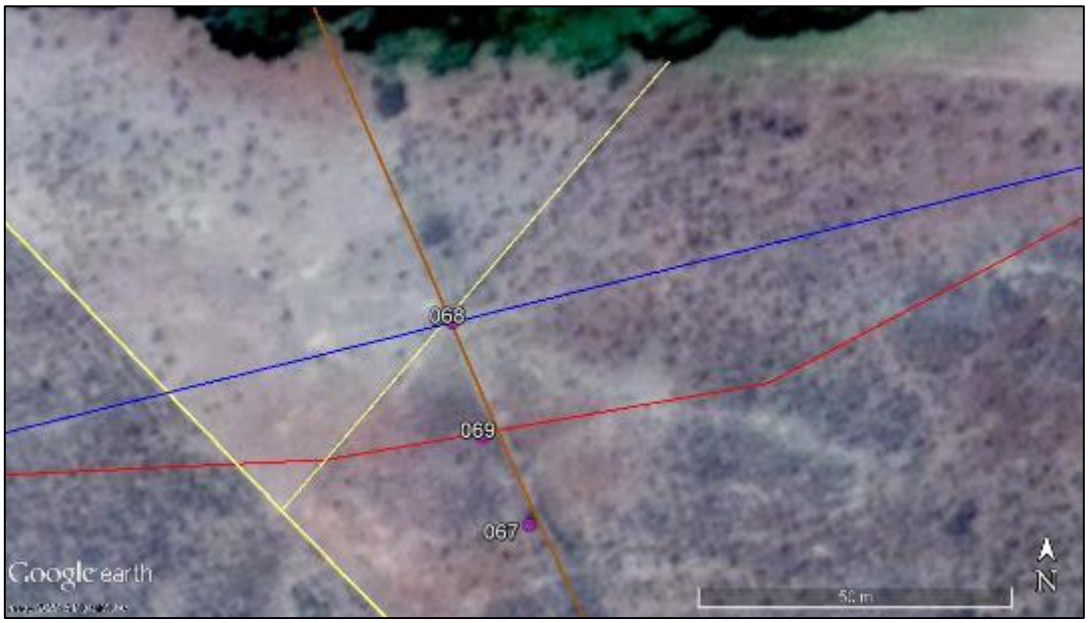

Figure 19: *Aerial view of the vicinity of KSW2 showing the stone wall alignment (brown), the fence lines (yellow), the proposed road alignment (red) and the newly proposed alternative alignment (blue).*

Figure 20: *View towards the west-southwest of the section of walling at KSW2 (waypoint 069).*

Some 15 m to the north of this point was where the wall is completely broken down to allow the wire fence line to cross (waypoint 068; Figure 21). As a result of this survey a recommendation was made to move the road alignment 15 m to the north to take advantage of this area where the wall was already completely demolished. This alternative is shown in Figure 19 and has now been instated as the preferred alternative and will be the routing for construction.

Figure 21: *View towards the west-southwest showing the place where the stone walling has been demolished to ground level to allow for the erection of a wire fence (waypoint 068). This is the point through which the new road will now pass.*

5.3. KSW3

This section of wall lies alongside the main public access road to the north of the river and is located at the north-eastern end of the proposed new road alignment. It is almost completely broken down to ground level. There are actually two walls intersecting at this point (at waypoint 061) and the road alignment crosses through both of them, running just to the southeast of the meeting point (Figure 22). The east-west wall lies within the road reserve and it is this section that has been virtually entirely demolished and removed as noted previously (Figures 23 & 24).

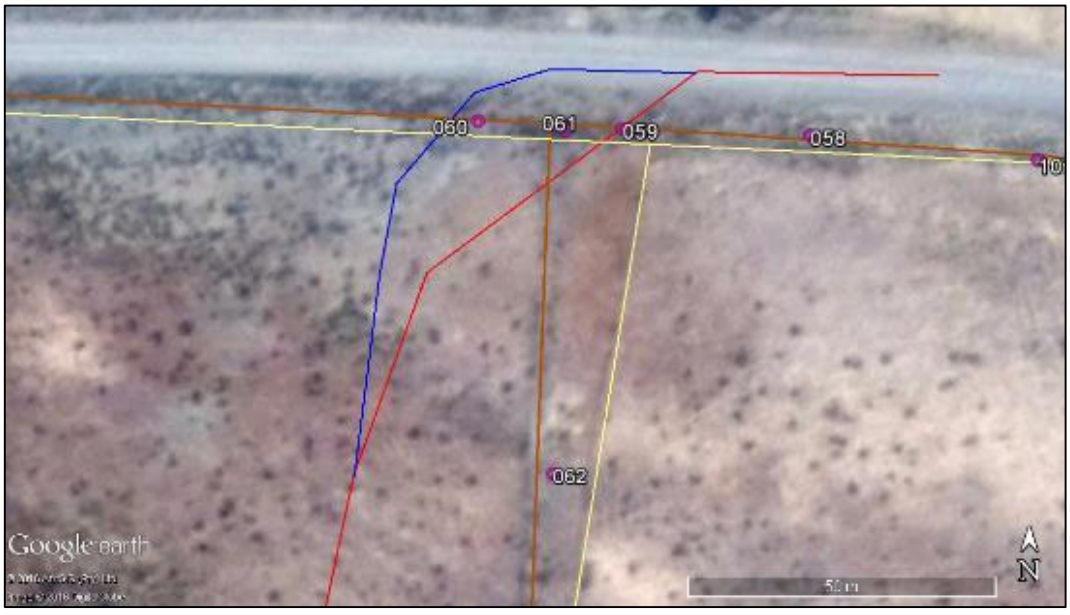

Figure 22: *Aerial view of the vicinity of KSW3 showing the stone wall alignments (brown), the fence lines (yellow), the proposed road alignment (red) and the newly proposed alternative alignment (blue).*

The wall in this area is only about 0.1 m high at most here with only the very lowest course of rocks and some smaller loose fragments still present. Towards the east, however, there are progressively

more and more rocks present as evident in the distance in Figure 24. When the wall crosses to the south side of the fence (out of the road reserve) it is far better preserved, but is still in very poor shape being mostly tumbled. This is some 70 m east of the proposed new road crossing point. Towards the west the wall essentially fades out.

Figures 23 & 24: *View towards the west (left) and east (right) along the remains of the walling at KSW3 with the position that the new road would have crossed marked by the dashed white lines.*

The section of walling running at 90 degrees to the road is somewhat better preserved but is still largely destroyed (Figures 25 & 26). It varies between about 0.2 m and 0.4 m high with many tumbled rocks lying alongside it. The two walls in this area are far too poorly preserved to be able to establish their original height, but one can still see that the width conforms to that observed elsewhere and the two skins and a rubble fill were still evident. There is no reason to suspect that these walls were built any differently to the schematic diagram in Figure 11 above.

Because of the T-junction in the walling which preserves structural information concerning the layout of the walls, it was suggested that the bend of the new road could be moved some 15 m towards the northwest in order to bypass this junction. This alternative alignment is shown in Figure 22. It is now considered the preferred alignment and will be implemented during construction.

Figure 25: *View towards the southwest along the originally proposed road alignment (white dashed line). The alternative alignment that will be implemented lies out of view just to the right.*

Figure 26: *View towards the south along the wall running away from the gravel road. The remains of the east-west wall are in the immediate foreground of the photograph (arrowed). The new preferred alternative to be implemented will cross through the right hand part of this view to avoid the wall in the centre.*

6. CONCLUDING DISCUSSION

The study had two aims. The first was to record the two places where historic walling needed to be demolished in order to construct a new road. It was found that the walling was in variable but poor condition in these areas and through conducting a wider survey of the walling in the area their structure and construction technique were better understood. They are built in the typical historical manner using two skins of rocks which had the intervening space filled with rubble. More unusual, though, is the shape of the walls. They have a thick base and, from about halfway up, they taper to about half thickness. The top was capped with flat rock slabs which would have 'sealed' the cavity to a degree and prevented heavy rains from washing the gravel fill out. The survey also revealed a number of other historical archaeological features in the area including features assumed to have been kraals. It is clear from this and other surveys in the area (Booth 2012; Hart 2015) that stone was a valuable building material and in this respect one thinks of the corbelled stone houses of the Northern Cape which were made exclusively out of stone because nothing else was available (Kramer 2012). The stone must have been sourced from all over the landscape and it is no wonder that is has been removed from the walling in places and reused elsewhere over the years.

The proposed demolition of two short sections of walling will not have a detrimental effect on the overall heritage resource. The proposed realignments will result in an even smaller impact if these are utilised as is now planned.

The second aim was to examine the entirety of the proposed alignment and assess the need for a Watching Brief during construction. It was determined that the road alignment will have no impact on other heritage resources at all. The vast majority of the alignment runs over exposed bedrock and in those sections where alluvial soils will be traversed no archaeological or other heritage remains were noted.

7. RECOMMENDATIONS

- The proposed demolitions should be allowed to continue with no further heritage work required and the destruction permit should be granted by SAHRA;
- Either alignment could be used because of the poor state of preservation of the walls (however, it is noted here that the developer has elected to implement the alternative alignments that minimise the impacts to heritage);
- The demolished sections should be kept as short as possible; and
- SAHRA should not require any further heritage work on this project. Specifically, it is requested that the requirement for a watching brief during road construction should be withdrawn as there is no chance of any further heritage resources being impacted.

8. REFERENCES

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Booth, C. 2012. An archaeological walk-through for the proposed Karusa Wind Energy Facility situated on the farms: De Hoop 202, Standvastigheid 210, Portion 1 of the farm Rheebokke Fontein 209, Portion 2 of the farm Rheebokke Fontein 209, Portion 3 of the farm Rheebokke Fontein 209 and the remainder of the farm Rheebokke Fontein 209, near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province. Unpublished report prepared for Savannah Environmental (Pty) Ltd. Grahamstown: Albany Museum.

Cushman, D.A. 2001. History of the .303 British Calibre Service Ammunition Round. Accessed online at: http://www.dave-cushman.net/shot/303hist.html on 28 April 2016.

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Hart, T. 2015. Heritage Impact Assessment for the proposed Komsberg East and West Wind Energy Facilities and grid connections to be situated in the Western Cape Province, escarpment area, Moordenaars Karoo. Unpublished report prepared for Arcus Consulting. St James: ACO Associates.

Kramer, P. 2012. The history, form and context of the 19th century corbelled buildings of the Karoo. MPhil dissertation. Rondebosch: University of Cape Town.

APPENDIX 1 – Curriculum Vitae

Curriculum Vitae

Jayson David John Orton

ARCHAEOLOGIST AND HERITAGE CONSULTANT

Contact Details and personal information:

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Birth date and place: 22 June 1976, Cape Town, South Africa
Citizenship: South African
ID no: 760622 522 4085
Driver's License: Code 08
Marital Status: Married to Carol Orton
Languages spoken: English and Afrikaans

Education:

SA College High School	Matric	1994
University of Cape Town	B.A. (Archaeology, Environmental & Geographical Science)	1997
University of Cape Town	B.A. (Honours) (Archaeology)*	1998
University of Cape Town	M.A. (Archaeology)	2004
University of Oxford	D.Phil. (Archaeology)	2013

*Frank Schweitzer memorial book prize for an outstanding student and the degree in the First Class.

Employment History:

Spatial Archaeology Research Unit, UCT	Research assistant	Jan 1996 – Dec 1998
Department of Archaeology, UCT	Field archaeologist	Jan 1998 – Dec 1998
UCT Archaeology Contracts Office	Field archaeologist	Jan 1999 – May 2004
UCT Archaeology Contracts Office	Heritage & archaeological consultant	Jun 2004 – May 2012
School of Archaeology, University of Oxford	Undergraduate Tutor	Oct 2008 – Dec 2008
ACO Associates cc	Associate, Heritage & archaeological consultant	Jan 2011 – Dec 2013
ASHA Consulting (Pty) Ltd	Director, Heritage & archaeological consultant	Jan 2014 –

Memberships and affiliations:

South African Archaeological Society Council member	2004 –
Assoc. Southern African Professional Archaeologists (ASAPA) member	2006 –
ASAPA Cultural Resources Management Section member	2007 –
UCT Department of Archaeology Research Associate	2013 –
Heritage Western Cape APM Committee member	2013 –
UNISA Department of Archaeology and Anthropology Research Fellow	2014 –
Fish Hoek Valley Historical Association	2014 –

Professional Accreditation:

ASAPA membership number: 233, CRM Section member

Principal Investigator: Coastal shell middens (awarded 2007)
Stone Age archaeology (awarded 2007)
Grave relocation (awarded 2014)

Field Director: Rock art (awarded 2007)
Colonial period archaeology (awarded 2007)

Fieldwork and project experience:

Extensive fieldwork as both Field Director and Principle Investigator throughout the Western and Northern Cape, and also in the western parts of the Free State and Eastern Cape as follows:

Phase 1 surveys and impact assessments:

- Project types
  - Notification of Intent to Develop applications (for Heritage Western Cape)
  - Heritage Impact Assessments (largely in the Environmental Impact Assessment or Basic Assessment context under NEMA and Section 38(8) of the NHRA, but also self-standing assessments under Section 38(1) of the NHRA)
  - Archaeological specialist studies
  - Phase 1 test excavations in historical and prehistoric sites
  - Archaeological research projects
- Development types
  - Mining and borrow pits
  - Roads (new and upgrades)
  - Residential, commercial and industrial development
  - Dams and pipe lines
  - Power lines and substations
  - Renewable energy facilities (wind energy, solar energy and hydro-electric facilities)

Phase 2 mitigation and research excavations:

- ESA open sites
  - Duinefontein, Gouda
- MSA rock shelters
  - Fish Hoek, Yzerfontein, Cederberg, Namaqualand
- MSA open sites
  - Swartland, Bushmanland, Namaqualand
- LSA rock shelters
  - Cederberg, Namaqualand, Bushmanland
- LSA open sites (inland)
  - Swartland, Franschhoek, Namaqualand, Bushmanland
- LSA coastal shell middens
  - Melkbosstrand, Yzerfontein, Saldanha Bay, Paternoster, Dwarskersbos, Infanta, Knysna, Namaqualand
- LSA burials
  - Melkbosstrand, Saldanha Bay, Namaqualand, Knysna
- Historical sites
  - Franschhoek (farmstead and well), Waterfront (fort, dump and well), Noordhoek (cottage), variety of small excavations in central Cape Town and surrounding suburbs
- Historic burial grounds
  - Green Point (Prestwich Street), V&A Waterfront (Marina Residential), Paarl

APPENDIX 2 – GPS co-ordinates

Waypoint	GPS co-ordinates	Description
058	S32 53 51.4 E20 37 47.7	Wall along road. The majority of rocks have been removed in recent times for use in erosion control measures.
059	S32 53 51.4 E20 37 46.5	A point at which the planned road alignment would cross a wall.
060	S32 53 51.4 E20 37 45.6	Wall along road. The majority of rocks have been removed in recent times for use in erosion control measures. Towards the west the wall fades out along the road and has had all its rocks removed.
061	S32 53 51.4 E20 37 46.2	A T-junction in the walling. The wall running southwards away from the road is still partly standing in places but most has tumbled. The section along the road has been stripped of its rocks down to ground level.
062	S32 53 53.2 E20 37 46.1	Point on the wall running south from the T-junction.
063	S32 53 56.2 E20 37 45.8	Point where the wall turns towards the southwest (when facing south).
064	S32 53 56.3 E20 37 45.7	The end of the wall a few meters beyond the turn. It is presumed the rest of the wall running towards the southwest has been removed.
065	S32 54 00.5 E20 37 42.7	A single fragment of refined earthenware found in the river and obviously washed downstream from elsewhere.
066	S32 54 06.6 E20 37 34.6	Standing walling running down (northwards) towards the river and poplar grove. 60 m to the south of this point is a spot where a fence line passes through the wall. Although this spot was not actually seen up close, it is assumed that the wall is broken down there. Aerial photography, although slightly blurred, supports this assumption.
067	S32 54 06.0 E20 37 34.2	Point south of the proposed road crossing. Wall at full height here with capping slabs present.
068	S32 54 05.0 E20 37 33.8	Point at which the farm fence crosses the wall. The wall is broken right down to ground level and the rocks have been moved away to the side.
069	S32 54 05.5 E20 37 33.9	The point at which the road was planned to cross the wall.
070	S32 54 02.9 E20 37 32.8	Point at which the last vestige of walling is visible at the north end of this section of walling. This is within the poplar grove.
071	S32 54 10.0 E20 37 34.7	A small 'alcove' built onto the north-western side of a large stone enclosure.
072	S32 54 09.9 E20 37 35.0	The northern corner of a stone enclosure. A small enclosure of 2 m by 4 m is built inside this corner of the enclosure.
073	S32 54 10.7 E20 37 35.5	The eastern corner of the enclosure.
074	S32 54 11.1 E20 37 34.5	The southern corner of the enclosure.
075	S32 54 10.3 E20 37 34.1	The western corner of the enclosure.
076	S32 54 10.9 E20 37 37.1	Point on the wall.
077	S32 54 12.1 E20 37 37.9	Point along the wall where it is standing to full height.
078	S32 54 16.3 E20 37 40.8	A corner point from which the wall runs towards the north and towards the east.
079	S32 54 16.2 E20 37 43.0	The western end of a 40 m long section of very well-preserved walling standing to full height (1.3 m). A few stone dressing flakes were noted on the ground here (although the ground was not specifically searched for such flakes).

080	S32 54 16.0 E20 37 44.8	Point at which the farm fence crosses the wall and the end of the standing walling referred to in 079 above. The wall is broken right down to ground level and the rocks have been moved away to the side.
081	S32 54 15.5 E20 37 53.9	Point at which the walling has been broken down for an Eskom service road to pass through. The wall is broken right down to ground level and the rocks have been moved away to the side.
082	S32 54 14.8 E20 38 03.0	The western end of a section of wall that is built with mostly cobbles instead of the usual dominance of slabs. This point is 45 m east of a slight corner in the wall.
083	S32 54 14.0 E20 38 05.5	Eastern point on a low section of walling forming an alcove against the main wall. Only the 'foundation' remains visible. It was not possible to be totally certain that this was a stone alignment.
084	S32 54 13.8 E20 38 05.3	Point on the above alcove.
085	S32 54 14.0 E20 38 04.9	Point on the above alcove.
086	S32 54 14.2 E20 38 04.9	Point on the above alcove.
087	S32 54 14.5 E20 38 04.9	Point where the above alcove meets the main wall.
088	S32 54 14.2 E20 38 06.4	Corner of the stone wall.
089	S32 54 08.0 E20 38 07.9	Point where the walling turns slightly towards the northeast. It is located on a scarp forming the edge of the river floodplain.
090	S32 54 07.0 E20 38 08.9	The wall crosses the lands here but most of it has been removed to just above ground level.
091	S32 54 05.9 E20 38 10.0	The northern-most end of this section of walling.
092	S32 54 04.8 E20 38 10.2	West end of a line of rocks that have been pushed to the edge of the agricultural field. |The rocks are no doubt from the demolished walling.
093	S32 54 05.2 E20 38 12.2	East end of the above line of rocks.
094	S32 54 08.1 E20 38 08.9	The northern end of another wall alignment. The wall is largely broken down to close to ground level in this area.
095	S32 54 10.8 E20 38 09.1	The corner of the wall where the north-south wall turns towards the east.
096	S32 54 12.3 E20 38 11.5	The last point where this wall was followed. From aerial photography it continues another 520 m towards the southeast before turning eastwards for another 1.2 km.
097	S32 54 06.7 E20 38 17.3	An area with two wind pumps, two cement dams (one partially broken down) and some stone-lined furrows.
098	S32 54 06.2 E20 38 17.2	The walling is small here and runs along the scarp which is formed by a low cliff-line. The wall continues eastwards from here.
099	S32 54 05.9 E20 38 15.0	Point at which the walling turns. It runs east and northwest along the scarp which is formed by a low cliff-line.
100	S32 54 04.6 E20 38 13.1	The north-western end of this section of walling along the low cliff.
101	S32 54 03.6 E20 38 10.7	The southern end of a section of walling located across the river and directly north of point 091.
102	S32 54 02.6 E20 38 10.5	Point at which the walling has been broken down for an Eskom service road to pass through. The wall is broken right down to ground level and the rocks have been moved away to the side.
103	S32 53 59.1 E20 38 09.9	Point at which the north-south wall turns towards the northwest. This point is about 14 m from the gravel road. The wall is very tumbled here.
104	S32 53 53.7 E20 38 05.1	Point at which the walling turns towards the west away from the gravel road. This point is about 8 m from the gravel road. The wall is very tumbled here.
105	S32 53 53.2 E20 38 02.1	Point on the wall where it has been broken down for a farm track to pass through. The remaining course(s) of stones have acted as a silt trap and the wall now presents as a large bump in the farm track.

106	S32 53 52.9 E20 37 57.9	Moderately preserved wall with some standing at full height and some parts tumbled. The wall makes a very slight turn here towards the northwest and towards the gravel road.
107	S32 53 51.6 E20 37 49.0	Point where the wall meets the road and bends slightly towards the west again to run along the road.
108	S32 54 11.0 E20 39 10.5	This point is well to the east again and marks the north-western end of a low wall built on the low cliff line. The cliff runs towards the west here as well but there is no wall on it in that direction.
109	S32 54 10.7 E20 38 55.7	About 380 m west of 108 there is just a single line of rocks on the top edge of the cliff. It almost seems like token value only just to mark the alignment. This point is very close to the edge of the gravel road.
110	S32 54 09.0 E20 38 43.6	In this area the wall has collapsed and the majority of rocks have been removed.
111	S32 54 05.3 E20 38 41.8	Northwest corner of a rectangular stone feature. The walls are mostly broken down and it seems likely that most stone has been removed.
112	S32 54 05.3 E20 38 43.0	Northeast corner of a rectangular stone feature.
113	S32 54 05.6 E20 38 43.0	Southeast corner of a rectangular stone feature.
114	S32 54 05.7 E20 38 41.8	Southwest corner of a rectangular stone feature.
115	S32 54 04.8 E20 38 45.3	The remains of a small in-stream dam built over a shelf of bedrock. There is also ledge flaking here where precolonial people have removed flakes.
116	S32 54 09.0 E20 38 30.5	Point where a low wall was visible on the cliff edge (as seen from the road).
117	S32 53 47.2 E20 37 27.5	Stone-built kraal located on the hill behind the farmhouse.
118	S32 53 47.0 E20 37 27.1	Collapsed stone feature downslope of the stone kraal.
119	S32 54 02.0 E20 36 55.7	Roofed animal enclosure with a small labourers' cottage and the remains of a stone kraal.

APPENDIX 3 – Aerial views

Figure A3.1: *Aerial view of the farm complex and surrounds. Points labelled with their names were positioned on Google Earth and not visited and/or recorded in detail.*

Figure A3.2: *Aerial view of the main area in which the stone walling was examined. See enlargements below.*

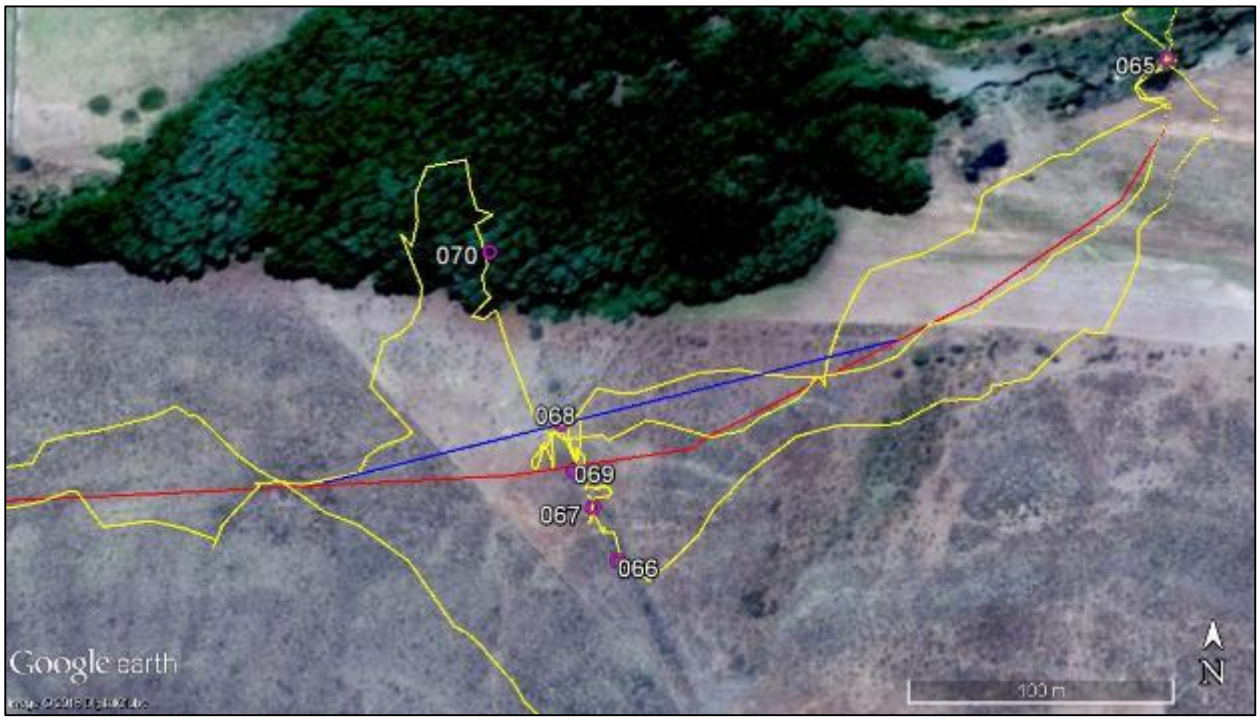


Figure A3.3: *Aerial view of the vicinity of KSW2 showing the originally proposed new road alignment in red and the newly proposed alternative in blue.*

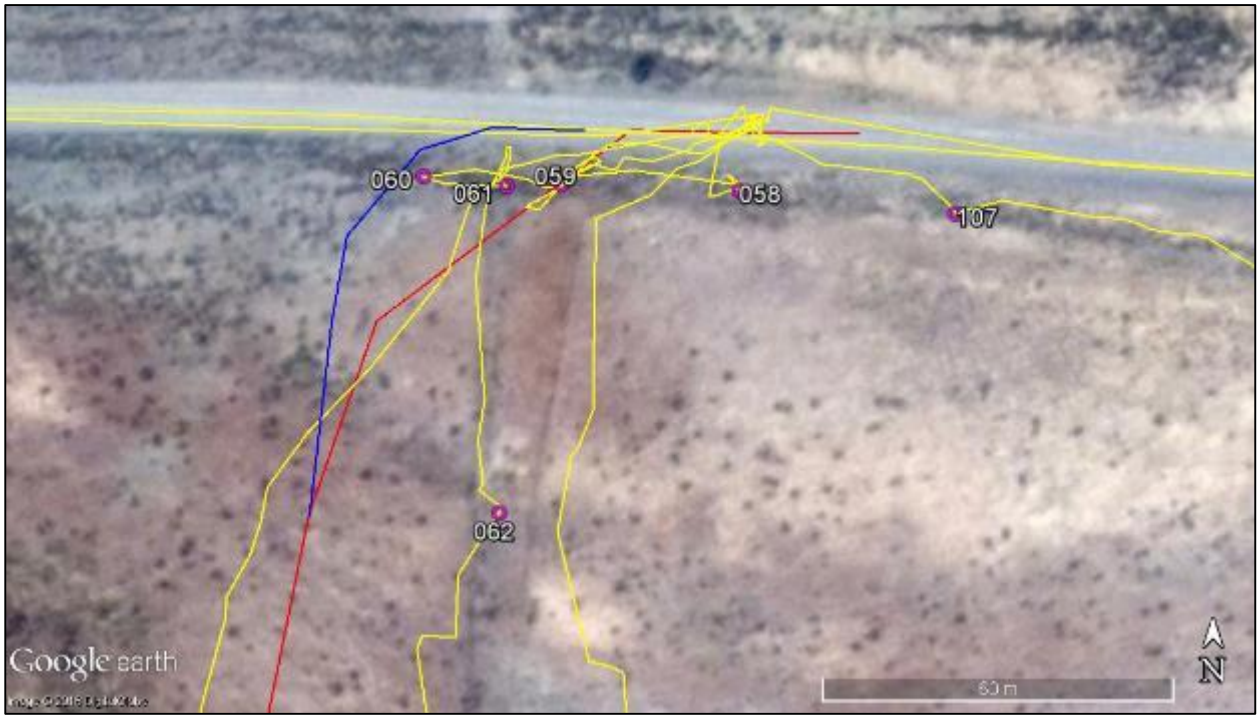


Figure A3.4: *Aerial view of the vicinity of KSW3 showing the originally proposed new road alignment in red and the newly proposed alternative in blue.*

Figure A3.5: *Aerial view of the stone kraal located alongside the wall 150 m to the south of KSW2.*

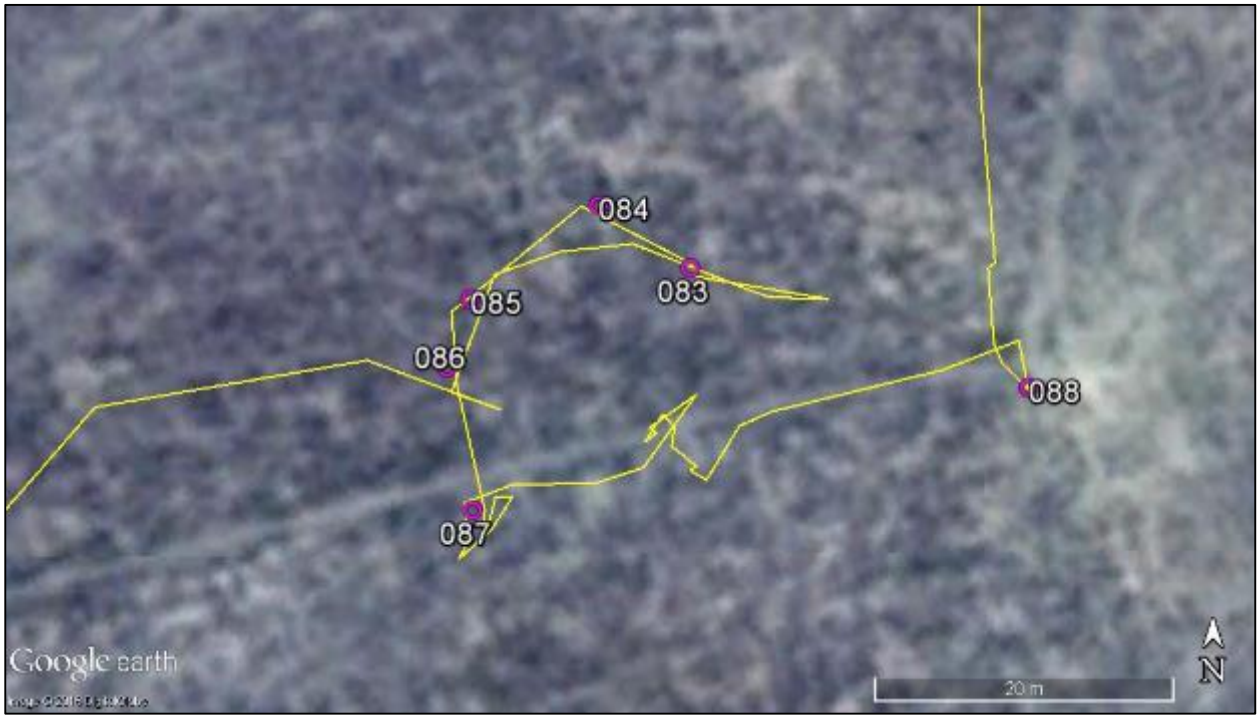
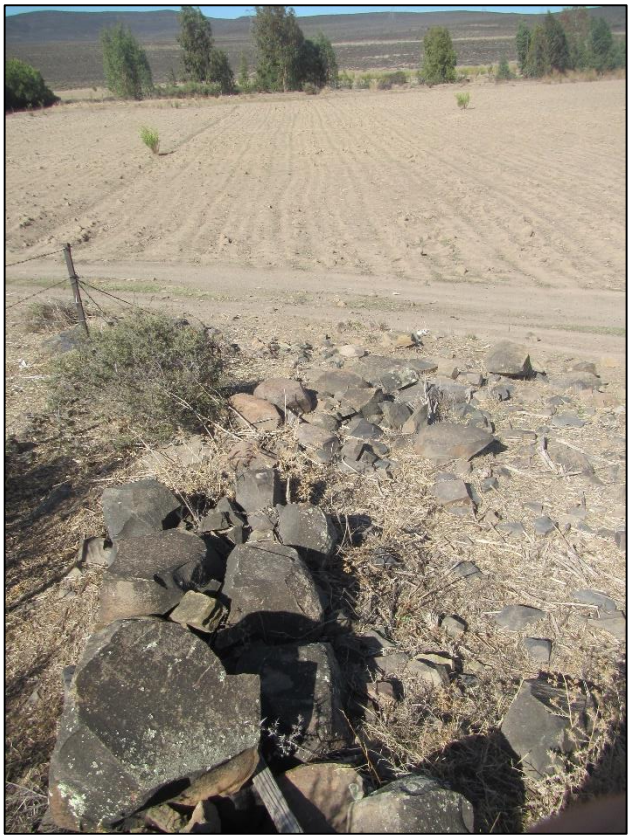


Figure A3.6: *Aerial view of the stone feature located alongside the wall 850 m to the southeast of KSW2.*

Figure A3.7: *Aerial view of the stone features located to the north of the access road 1.8 km to the east of KSW2.*

APPENDIX 4 – Photograph catalogue

This appendix presents photographs of the walling that did not appear in the main report.



View towards the Southwest across the arable lands from waypoint 063 showing the area from which walling has been completely removed.

View towards the south of the northern-most wall stones visible in the poplar grove at waypoint 070.

View towards the west of the walling at waypoint 067.

View towards the east across the ruined kraal at waypoints 071 to 075 (visible in foreground at centre and middle ground towards the right) with the main wall in the background.

View towards the east showing a place at waypoint 080 where the wall has been demolished to facilitate wire fence construction.

View towards the southwest showing a place at waypoint 081 where the walling has been demolished for an Eskom service road to pass through it.

View towards the east along the edge of the river floodplain at waypoint 098 showing the light stone walling running along the top of the low cliff line.

View towards the southwest from waypoint 108 showing the stone walling extending from the point where the natural cliff line ends. A few rocks are also evident on top of the low cliff in the foreground.

APPENDIX 5 – Other finds

Besides the dry stone walling described above, a number of other historical features were also noted and recorded. Because most were not mentioned in Booth (2012, 2015), these are briefly described here for the record. They are largely stone-built features which shows the value of this material to the early settlers of the area. Their locations are mapped in Appendix 3.

Some 150 m to the south of KSW2 there was a dry-packed stone structure that is assumed to be a kraal (Figures A5.1 & A5.2). It was located about 30 m to the west of the main stone wall and was approximately square measuring some 28 m in each direction. Inside the northern corner was a small 'room', while outside the north-western wall was an 'alcove'.

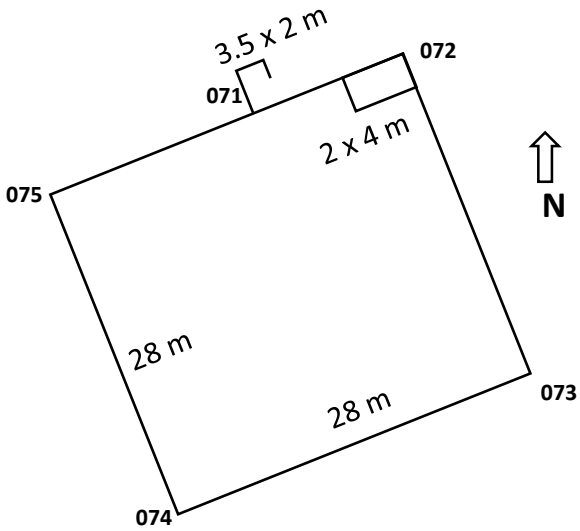


Figure A5.1: *Schematic plan view of the stone feature found at waypoints 071 to 075.*

Figure A5.2: *View towards the west along the north-western wall with the small 'room' in the foreground and the 'alcove' in the background.*

Further to the east, against the northern side of the wall, there was a suggestion of a semi-circular enclosure whose walling had been stripped down to ground level, but the traces were too ephemeral to be certain. Close to waypoint 087 and alongside the wall a .303 callibre rifle cartridge was found. Such cartriges were manufactured from the late 1880s until the early 1970s (Cushman 2001). Although it is not known what age this example is, it seems fairly certain, given its condition, that it was made towards the end of this date range. Its headstamp shows "U 58" and "MK . 7".

At waypoint 097 there are some cement dams (one broken down) and a wind pump. On the ground were noted some stone-lined furrows. The cement dams are obviously far younger than the stone walling on the farm and it may well be that the furrows, which are related to the dams, are made from capping slabs removed from the walling in the past (Figure A5.3).

Another small stone feature, presumably once a kraal, was located well to the east of the proposed road alignment. It was a long rectangle. Interestingly, the historical aerial view of the site shows a very clear square (Figure 18F). Nearby an alignment of rocks across a stream suggests an attempt to

make a pool in the stream, while there is evidence of 'ledge-flaking' in the river where precolonial people sourced rock for stone artefacts (waypoint 115). This flaking was not caused by rocks bouncing down the river because the flaking is concentrated in certain places only with other proximate 'ledges' completely unflaked (Figure A5.4). Further evidence of precolonial people in the valley occurs in the form of a bored stone (digging stick weight) recovered from the arable lands in the past and now kept at the farm house.

Figure A5.3: *The cement dam and stone-lined water furrows at waypoint 097.*

Figure A5.4: *The flaked rock ledges in the river at waypoint 115.*

The main farm complex has a number of significant heritage resources associated with it and its presence serves as excellent motivation for the rerouting of the access road. The two most important are the main farm house and the graveyard. The house is built immediately alongside the main gravel road through the area (Figure A5.5). It is because of this proximity that the new road alignment has been proposed. The house is a well restored Karoostyle building with elements of Cape Dutch architecture and that has high cultural significance. Although it is not listed by Fransen (2004), the same gable style is evident on another historic house from near Loxton in the Karoo region. A number of other buildings, all predating 1939 (see Figure 18A) are present around the house, including two intact stone kraals and a ruined one.

Figure A5.5: *View of the main farm house looking towards the northeast. The road to the right is the main public road through the farm.*

The graveyard was briefly described by Booth (2012) but further details are noted here for the record. The graveyard is a large, fenced area of some 90 m by 95 m surrounded by poplar trees (Figure A5.6). Although there is still much open space, there are approximately 106 graves present. The oldest graves are those of three Conradie children, all of whom died before their second birthday. These date to 1867, 1867 and 1869. The graveyard obviously started out as a farm graveyard but in 1923 it was surveyed and separated from the remainder of the farm to become Portion 1 (SG Diagram 750/23). This presumably indicated an intention that it should serve a wider area and might explain its great size. The majority of named graves are Conradie (10 graves, 1867-2014), but Smith (1880, 1884 & 1895), Du Plessis (1901), Visagie (1925) and Muller (1927 & 1931) are also represented. The vast majority of the graves are unmarked and must represent farm labourers. Most have stones packed over them with one serving as a headstone.

Figure A5.6: *View of the Standvastigheid graveyard.*