HERITAGE IMPACT ASSESSMENT OF THE PROPOSED ST JAMES/MAKHOSINI 88KV POWERLINE AND 20 MVA MAKHOSINI 88/22KV SUBSTATION, NORTHERN KWAZULU-NATAL

ACTIVE HERITAGE cc.

For: Ludloko Developments

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LIST OF ABBREVIATIONS AND ACRONYMS

EIA	Early Iron Age
ESA	Early Stone Age
HISTORIC PERIOD	Since the arrival of the white settlers - c. AD 1820 in this part of the country
IRON AGE	Early Iron Age AD 200 - AD 1000 Late Iron Age AD 1000 - AD 1830
IIA	Intermediate Iron Age
ISA	Intermediate Stone Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998 and associated regulations (2006).
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999) and associated regulations (2000)
SAHRA	South African Heritage Resources Agency
STONE AGE	Early Stone Age 2 000 000 - 250 000 BP Middle Stone Age 250 000 - 25 000 BP Late Stone Age 30 000 - until c. AD 200

EXECUTIVE SUMMARY

A heritage impact assessment and survey of the proposed St James/Makhosini 88kv Powerline and 20MVA Makhosini 88/22kv Substation, Northern KwaZulu-Natal twelve heritage sites along the proposed power lines. Five of these occur adjacent to the preferred corridor whist the other seven occur adjacent to the alternatively proposed corridor. No heritage sites occur at the Substation. A buffer of 25m – 50m must be maintained around each site identified. It would be relatively easy to shift the powerline alignment slightly to accommodate such buffer zones. There is no need for mitigation and rescue excavation of relevant sites. This study support the proposed powerline route rather than the alternative powerline route as fewer heritage sites occur adjacent to the preferred route. In addition, some of the heritage sites identified adjacent to the preferred powerline route are located more than 200m from the powerline trajectory and will not be affected by the development. It should be noted, however, that the general area is rich in archaeological and historical sites. Construction work may expose material and attention is drawn to the South African Heritage Resources Act, 1999 (Act No. 25 of 1999) and the KwaZulu-Natal Heritage Act (Act no 4 of 2008) which, requires that operations that expose archaeological or historical remains should cease immediately, pending evaluation by the provincial heritage agency.

1 BACKGROUND INFORMATION ON THE PROJECT

Table 1. Background information

Consultant:	Eskom Holdings SOC Limited has appointed Ludloko Developments, an independent environmental company of consults to apply for the authorisation to construct a new 20MVA 88/22kV substation and associated power line from the relevant authority and to undertake a basic assessment study in accordance to the NEMA of 1998 EIA regulations document GNR543. Ludloko Developments sub consulted Active Heritage cc to conduct the heritage survey of the project area.
Type of development:	The Makhosini area situated about 36km away from Nquthu gets its electricity supply from Network Breaker (NB 111) located in Nquthu. NB 111 network from St James substation in Nquthu is experiencing severe voltage regulation problems caused by a high customer base and exacerbated by the long distance (36km) from St James. Currently there is an expected electrification of 15000 new connections around the Makhosini area. The other St James Network Breakers are experiencing overload problems. NB 108, for example cannot handle all the electrification connections that need to be fed from it. Electrification connection load of NB 108 needs to be split into two networks so that it can handle that load. St James NB110 and NB 111 need to be de-loaded in order to function accordingly. To deal with these electrification problems that are currently experienced and to provide the needed electrification it has been proposed that a new Makhosini 20MVA 88/22kV substation needs to be established by creating a new 88kV feeder bay at St James substation and building a new 36km 88kV line from St James to the planned Makhosini substation site. The new Makhosini substation will be of great use because it will be linked and provide back feeding or support to other existing power lines such as Bloedrivier-Craigside 88kV line 1 and Malonjeni-Leksand 88kV line and St James Emondlo 88kV busbars. At the proposed Makhosini substation there a feeder/line bay for a future Makhosini Benedict 88kV line.
Rezoning or subdivision:	Rezoning
Terms of reference	To carry out a Heritage Impact Assessment

Legislative requirements:	The Heritage Impact Assessment was carried out in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and following the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) and the KwaZulu-Natal Heritage Act, 1997 (Act No. 4 of 2008).

1.1. Details of the area surveyed:

The proposed substation area is situated in Ward 3 near the school Gezahlale Lower Primary School. The area near Fort Louis and Gezahlale Lower primary School is one of the rural areas at the border of Nquthu Local Municipality and Nkandla Local Municipality. That area is under iNkosi J.Z Jiyane of Jama Tribal Council. The Nquthu Local Municipality is one of the three local municipalities under the Umzinyathi District Municipality while Nkandla is one of the six local municipalities under uThungulu District Municipality in the province of KwaZulu Natal. The study area begins from the town of Nquthu and stretches for about 36km to the proposed new site for the Makhosini substation (Figs 1 & 2).

Two alternative corridors were investigated for the location of the power line. Location of the corridors was determined by the location of suitable corridor with enough distance between the power lines and structures such as houses and road reserves. The width of the powerline corridor is determined by the availability of open space, terrain and land status. Preliminary investigations show that the corridor with yellow colour as shown on the map below is the preferred corridor. This is due to availability of open space, availability and minimal physical and environmental constraints along the corridor. Three substation sites were identified. Substation site 2 is the preferred site.

The GPS coordinates for powerline corridors and substations are:

1). PREFERRED OPTION 1: OUTGOING CORRIDOR FROM NQUTHU

A	28°12'56.9192"	30°38'32.1634"
B	28°13'07.1304"	30°38'24.0613"
C	28°13'58.8821"	30°38'38.3756"
D	28°14'21.0944"	30°39'00.9704"
E	28°14'28.5949"	30°39'38.3607"
F	28°14'05.3261"	30°40'13.9397"

G 28°14'09.4377" 30°40'21.7397"

2) ENTIRE CORRIDOR OPTION 2: FROM ST JAMES SUBSTATION TO MAKHOSINI SUBSTATION:

Nqu1	28°12'49.9610"	30°39'59.5390"
Nqu2	28°12'36.3378"	30°39'54.4474"
Nqu3	28°12'23.5073"	30°40'21.5861"
Nqu4	28°12'24.2755"	30°40'30.4211"
Nqu5	28°12'12.5953"	30°40'36.3600"
Nqu6	28°11'59.6528"	30°40'58.2159"
Nqu7	28°11'57.1422"	30°41'08.2333"
Nqu8	28°11'58.4143"	30°41'10.5396"
Nqu9	28°12'19.0130"	30°41'12.2029"
Nqu10	28°12'44.5103"	30°40'56.9466"
Nqu11	28°13'18.4656"	30°40'47.0907"
Nqu12	28°13'21.1258"	30°40'45.6157"
Nqu13	28°13'25.7444"	30°40'48.1325"
Nqu14	28°14'03.7049"	30°41'10.5035"
Nqu15	28°14'09.5754"	30°41'35.0982"
Nqu16	28°14'09.9931"	30°41'33.0430"
Nqu17	28°14'43.7908"	30°42'39.2318"
Nqu18	28°16'24.9214"	30°42'43.2886"
Nqu19	28°16'37.6441"	30°42'53.5653"
Nqu20	28°16'54.0974"	30°43'01.4843"
Nqu21	28°16'58.8635"	30°43'07.9166"
NQU22	28°17'07.9126"	30°43'06.1449"
NQU23	28°17'23.2432"	30°43'05.3339"
Nqu24	28°17'30.3458"	30°43'03.1034"
NQU25	28°17'30.8152"	30°43'06.9654"
NQU26	28°18'07.1187"	30°43'00.5572"
NQU27	28°18'18.0555"	30°42'55.6467"
NQU28	28°18'54.2207"	30°43'00.9463"
NQU29	28°19'23.6868"	30°43'18.4521"
Nqu30	28°18'35.8156"	30°43'03.1730"
Nqu31	28°19'33.6837"	30°43'12.5385"
Nqu32	28°20'45.0253"	30°44'41.4414"
Nqu33	28°21'53.9584"	30°46'16.4648"
Nqu34	28°20'18.3800"	30°44'19.6231"
Nqu35	28°21'56.8211"	30°47'17.6044"
Nqu36	28°22'04.0094"	30°47'45.0603"
Nqu37	28°22'02.8890"	30°47'56.2268"
Nqu38	28°22'07.3419"	30°48'20.4570"
Nqu39	28°21'45.8340"	30°48'40.8408"
Nqu40	28°21'38.9121"	30°49'02.5193"
Nqu41	28°21'35.6677"	30°49'30.3603"

Nqu42	28°21'21.9073"	30°50'06.4795"
Nqu43	28°21'30.2654"	30°50'48.1748"
Nqu44	28°21'46.7178"	30°52'33.2975"
Nqu45	28°22'06.5583"	30°53'02.3608"
Nqu46	28°22'31.2591"	30°53'18.3838"
Nqu47	28°23'45.9879"	30°53'39.6852"
Nqu48	28°24'12.6217"	30°55'11.1346"
Nqu49	28°24'00.4185"	30°53'50.1407"
Nqu50	28°24'54.0815"	30°56'38.2169"
Nqu51	28°24'18.7670"	30°55'21.3799"

1.2. Relevant Legislation:

According to the National Heritage Resources Act, 1999 (NHRA) (Act No. 25 of 1999), the heritage resources of South Africa include:

a. places, buildings, structures and equipment of cultural significance;
b. places to which oral traditions are attached or which are associated with living heritage;
c. historical settlements and townscapes;
d. landscapes and natural features of cultural significance;
e. geological sites of scientific or cultural importance;
f. archaeological and palaeontological sites;
g. graves and burial grounds, including-
i. ancestral graves;
ii. royal graves and graves of traditional leaders;
iii. graves of victims of conflict;
iv. graves of individuals designated by the Minister by notice in the Gazette;
v. historical graves and cemeteries; and
vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
h. sites of significance relating to the history of slavery in South Africa;
i. movable objects, including-
i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
ii. objects to which oral traditions are attached or which are associated with living heritage;
iii. ethnographic art and objects;

iv. military objects;
v. objects of decorative or fine art;
vi. objects of scientific or technological interest; and
vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

2 SCOPE OF WORK

This study aims to identify and assess the significance of any heritage and archaeological resources occurring on or adjacent to the proposed development. Based on the significance, the impact of the development on the heritage resources will be determined and appropriate actions to reduce the impact on the heritage resources put forward. In terms of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of:

a. its importance in the community, or pattern of South Africa's history;
b. its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
c. its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
d. its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
e. its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
f. its importance in demonstrating a high degree of creative or technical achievement at a particular period;
g. its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
h. its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
i. sites of significance relating to the history of slavery in South Africa.

3 BACKGROUND TO HISTORY OF THE AREA

3.1 Archaeology

Portions of the greater Nqutu area have been systematically surveyed for archaeological heritage sites in the past. These were mostly conducted by archaeologists attached to the then Natal Museum as well as by Amafa staff. Sixty sites are recorded in the data base of the KwaZulu-Natal Museum. These include fourteen Early Stone Age sites, eight Middle Stone Age sites, ten Later Stone Age sites, three rock painting sites, and forty Later Iron Age sites. The majority of the Early Stone Age sites occur in open air context in large dongas. Middle and Later Stone Age sites occur in context in four rock shelters. Two of these shelters also contain typical San fine line paintings. The majority of the known Later Iron Age sites are situated to the south east of Nqutu. They were located during a large scale survey of the area by archaeologists who were interested in the Later Iron Age ecology of Zululand (Hall 1980). They are demarcated by characteristic stone walling. Three stone walling typologies have been identified in the area namely Type A, C, and D (ibid).

The San were the owners of the land for almost 30 000 years but the local demography started to change soon after 2000 years ago when the first Bantu-speaking farmers crossed the Limpopo River and arrived in South Africa. Around 800 years ago, if not earlier, Bantu-speaking farmers also settled in the greater Nqutu area. Although some of the sites constructed by these African farmers consisted of stone walling not all of them were made from stone. Sites located elsewhere in the KwaZulu-Natal show that many settlements just consisted of wattle and daub structures. These Later Iron Age sites were most probably inhabited by Nguni-speaking groups who were the direct ancestors of the Zulu (Bryant 1965). However after 1840 some Southern Sotho-speaking Tlokwe people also settled in the area. With the expansion of the Zulu kingdom of King Shaka in the early 1820's the study area became firmly incorporated into this pre-capitalist kingdom. It is not surprising that this area played such a central part in the colonial period history of KwaZulu-Natal. The Battle of Blood River, between Boer and Zulu, took place to west of the study area in 1838, but it was the Anglo-Zulu war of 1879 that was to a large part acted out in the immediate vicinity of the project area. These battle field sites as well as associated graves and buildings of the era are proclaimed heritage sites and are protected by provincial heritage legislation (Derwent 2006).

3.2 Anglo-Zulu War

The Anglo-Zulu War was a military conflict between the British Empire and the Kingdom of Zululand, taking place from January 8 to July 4, 1879, in South Africa. The root cause of the Anglo-Zulu War was the discovery of diamonds in the region, in the land near the Vaal River, in 1867. This led to an increased British interest in the area. But there were two obstacles: the Boers (politically organized in the Orange Free State and the Republic of Transvaal), and the Kingdom of Zululand, which arose in the first half of the 19th century. During the 1870s, West Griqualand, which was the territory where diamonds had been discovered, was annexed to the British Empire. In December 1878, the British High Commissioner, Sir Henry Bartle Frere, sent an ultimatum to Cetshwayo, the King of Zululand. Having obtained no answer to the ultimatum, 15,000 British troops, under the command of Lord Chelmsford, began the invasion of Zululand by January 8, 1879.

The Anglo-Zulu War was savage and comprises a series of eight battles, beginning with the Battle of Isandlwana, at which 22,000 Zulu warriors defeated 1,800 British soldiers on January 22, 1879. Isandlwana was an unexpected blow to the morale of the British empire as it the was the scene of the defeat of Imperial & Colonial forces on 22 January 1879 mostly from the 24 Regiment, Natal Carbineers and Natal Native Regiments. This epic battle took place in the southern section of the project area and a memorial on the site commemorates the brave warriors who gave their lives on this day (Derwent 2006). The defence of Rorke's Drift on 22 January 1879, to the south of the project area, followed the defeat of the British forces at Isandlwana and commenced at 16.30 pm and went on through the night to about 4 am. The Mission Station at the foot of the Oskarberg was held by 1st & 2nd Company of the 24th Regiment. It had been left under the command of Major Henry Spalding. The battle eventually left about 370 Zulu dead (4000 under the command of Prince Dabulamanzi kaMpande), and 17 British soldiers dead out of a force of about 100 men. The Zulu's eventually withdrew. Having overcome three military defeats (Battle of Isandlwana, Battle of Intombe, and Battle of Hlobane), the British began gaining the upper hand as they obtained decisive victories in the last four battles of the war: Battle of Kambula (March 29), Battle of Gingindlovu (April 2), Battle of Eshowe (April 3), and Battle of Ulundi (July 4, 1879). After the defeat at Isandhlwana, the British were determined to take revenge and defeat the Zulu's led by King Cetshwayo kaMpande, and crossed the

White Umfolozi on 4 July 1879 with a force of approximately 5124 men. Led by Lord Chelmsford a, battle took place that day which led to the Zulu defeat. Fort Marshall, situated within the northern section of the project area, was occupied between May & July 1879 by the 24th Regiment. There are 11 soldiers buried there, most dying of wounds from the battle of Ulundi. The ramparts and graves are still visible. As a result of the British victory over the Zulus, the Kingdom of Zululand lost its independence and it became part of a British Colony (ibid).

4 BACKGROUND INFORMATION OF THE SURVEY

4.1 Methodology

A desktop study was conducted of the archaeological databases housed in the KwaZulu-Natal Museum. In addition, the available archaeological literature covering the greater Nqutu area was also consulted. The SAHRIS website was consulted to obtain background information on previous heritage surveys and assessments in the area.

A ground survey, following standard and accepted archaeological procedures, was conducted. Both proposed powerline line trajectories were visited and surveyed by foot.

In addition, members of local communities were approached to ask for the location of potential grave sites as well as other heritage features in the area. A Mr Xaba of the Isandlwana Heritage Committee was approached to obtain the opinion of this local committee regarding the location of the proposed powerline trajectories close to the northern boundary of the Isandlwana Battle Site. Amafa was also approached to get any input from special interests groups. None of these stakeholders had any objections with the proposed powerline trajectories.

4.2 Restrictions encountered during the survey

4.2.1 Visibility

Visibility was good.

4.2.2 Disturbance

No disturbance of any heritage sites or features was noted.

4.3 Details of equipment used in the survey

GPS: Garmin Etrek
Digital cameras: Canon Powershot A460
All readings were taken using the GPS. Accuracy was to a level of 5 m.

5 DESCRIPTION OF SITES AND MATERIAL OBSERVED

5.1 Locational data

Province: KwaZulu-Natal
Towns: Nquthu, Babanango

5.2 Description of the general area surveyed

The study area comprises of sometimes dense rural residential area intercepted by fields used for crop production, open areas used for grazing livestock, secondary roads, steel and wooden power line structures, vleis, small earth dams, water ways and streams as well as rivers. Most residential areas are on undulating terrain with gentle slopes. In some areas particularly along the water ways and streams the area is distinctively incised by dongas and sheet erosion scars. The area where the proposed new Makhosini substation is to be built is a flat open area adjacent to a gravel district road which traverses south and links to R68 that is 32km from Nkandla village. No erosion was observed on areas adjacent to the site proposed for substation construction. Erosion in the area, especially along the power line corridor is of major environmental concern and efforts have been made to select areas that will not cause any further erosion when the power line and substation are constructed.

5.3 Description of sites

Thirteen heritage sites were located during the survey (Fig 3). Their context and significance is summarised in Table 2.

Table 2. Heritage sites located during the ground survey in close association with proposed power line corridors.

No	Heritage category	Description	Significance	Type of Mitigation	GPS coordinates	Survey method
1	Cemetery 1 (Figs 3 & 4)	Large modern cemetery that serves the town of Nqutu. It contains more than 200 individual graves. The graves are marked and most appears to be younger than 60 years. The cemetery is situated directly adjacent to the R68 about 2 km from Nquto CBD. However, the cemetery is situated more than 40m to the south of the proposed powerline routes	Medium to high locally. (see table 3). All graves are protected by KZN provincial heritage legislation.	Not applicable as the cemetery is situated more than 40 m to the south of the preferred powerline trajectory. However, it is important to maintain a buffer zone of at least 25m around the cemetery during the construction phase.	S 28º13' 0.54" E 30º37' 55.34"	Ground survey and desktop (aerial photographs)
2	Cemetery 2 (Figs 3 & 4)	Large modern cemetery that serves the town of Nquto. It contains more than 200 individual and marked graves. This cemetery is situated approximately 1.3km to the north of the proposed powerline trajectories.	Medium to high locally. (see table 3). All graves are protected by KZN provincial heritage legislation	Not applicable as the cemetery is situated more than1,3km to the north of the alternative proposed powerline trajectory. However, it is important to maintain a buffer zone of at least 25m	S 28º11' 58.74" E 30º 39' 54.98"	Ground survey and desktop (aerial photographs)

				around the cemetery during the construction phase.		
3	ESA and MSA open air site (Figs 3 & 4)	Extensive erosion donga on both sides of the R68. Artefacts are plentiful and occurs in donga and none on adjacent surfaces. No stratification. Hand axes, points, cores etc. Early and Middle Stone Ages. The artefacts are representative of the later part of the Early Stone Age (possibly Sangoan) and early, or pre-Howieson's Poort phase of the Middle Stone Age. The raw materials vary from hornfels to quartzite to sandstone. Most of the artefacts are heavily rolled, indication their exposure to water transportation. These tools were probably washed into the gully from the higher-lying area to the south of the road, and are not in context. However, this site is situated more than 300m to the south of the	Medium to high (see Table 3). The artefacts are not, in context. According to the SAHRIS website this site has been recorded by Albert Van Jaarsveld but no national or provincial site number is provided.	Not applicable as the powerline trajectory occurs more than 300m to the north of the site. This site is not threatened by the proposed development. However, maintain 50 m buffer zone around site	S 28º 14' 24.66" E 30º 41' 31.65 "	Ground and Desktop aerial photograph survey

		preferred powerline				
4	Grave Site 1 (Figs 3 & 4)	Individual grave in association with local homestead. It appears to be younger than 60 years old. The grave covers an area of 2m x 1.6m.	Locally high (see Table 3). The grave is younger than 60 years however, all graves are protected by KZN heritage legislation.	Not applicable as the grave occurs 60m to the west of the preferred powerline trajectory. This site is not threatened by the proposed development. However, maintain 25 m buffer zone around site	S 28º15' 18.13" E 30º 42' 38.89"	Ground Survey and desktop (SAHRIS website).
5	Isandhlwana Battle Site (Figs 3 & 16)	Well known iconic battle site associated with the Anglo-Zulu War of 1879. Much has been written about the Battle of Isandhlwana from a historical perspective. The site was surveyed in 2006 by Van Jaarsveld. Apart from the Battlefield and associated graves there are various buildings with heritage status on the site. A Middle Stone Age open-air site occurs close to the main entrance of Isandhlwana.	High status (Table 3). The Site has provincial heritage status.	Given the high conservation status of this site mitigation is not an option. However, there is no need for special conservation measures as the battlefield is located more than 4km to the south of the proposed and preferred powerline trajectory. Various stakeholders contacted also had no issue with the proposed powerline	S 28º21' 20" E 30º39' 10"	Ground survey and desktop (SAHRIS website, aerial photographs, literature survey).

		Middle Iron Age stone walling occur on the summit of Isandhlwana Hill. However, all these sites occur more than 4km to the south of the preferred powerline trajectory and merits no further discussion here.		trajectory.		
6	Later Iron Age Stone walling – cluster of sites 1 (Figs 3 & 6)	Eight singular stone built circles. Scattered over an area of 220m x 190m. The stone circles range in size from 9m diameter to 23 m diameter. This cluster of sites was recorded by Dr Martin Hall in the 1970's. They most probably relate to early Nguni settlement predating the Zulu Kingdom of King Shaka (Hall 1981).	High significance locally (Table 3)	Mitigation would be necessary as the alternative powerline runs through this cluster of stone walls. Alternatively, the powerline trajectory can be shifted approximately 200m to the west or 300m to the east of its present trajectory. This powerline refers to the alternative powerline corridor as defined by the developers. It is important to maintain a buffer of at least 50m around this site.	S 28º 17' 29.64" E 30º44' 09.37"	Desktop (aerial photographs and literature)

7	Later Iron Age and Historical Era Stone walling 1. Cluster of Sites (Figs 3, 6 & 11)	A cluster of circular (single and bilobal) as well as square stone walling. It appears that the circular stone walling may be older than the square walling. The round circles most probably relate to the Later Iron Age period and the square structures to the later historical period. It appears that this site was also recorded by Dr Martin Hall (1981). This cluster of sites covers an area of 900m X 320m.	High locally (see Table 3).	The alternative proposed powerline route runs through this cluster of sites. The powerline trajectory will have to move either 300m to the west or 700m to the east of its present projection. No mitigation is necessary. This site is situated along the alternative powerline corridor route as indicated by the developer.	S 28º 18' 18.32" E 30º44' 22.12"	Desktop (aerial photographs and literature survey)
8	Historical Era Stone Walling 1 – cluster of Sites (Figs 3, 7, 12)	A cluster of square stone walling structures. Approximately 12 structures covering an area of 220m x 150m. It appears that these structures may date back to the first decades of the 20th century. They most probably represent the remains of Zulu homesteads (Umuzi).	Medium locally (see Table 3)	The alternative proposed powerline route runs through this cluster of sites. The powerline trajectory will have to move 200m of its present projection. No mitigation is necessary. However, the developer should maintain a buffer zone of at least 25m around this site. This site is situated along the alternative powerline	S 28º 19' 10.29" E 30º 44' 23.01"	Desktop (aerial photographs and literature survey)

				corridor route as indicated by the developer		
9	Historical Era Stone Walling 2 – cluster of Sites (Figs 3, & 7, 12)	A cluster of square stone walling structures. Approximately 14 structures covering an area of 327m x 268m. It appears that these structures may date back to the first decades of the 20th century. They most probably represent the remains of Zulu homesteads (Umuzi).	Medium locally. (see Table 3).	The alternative proposed powerline route runs 100m to the west of this cluster of sites. No mitigation is. However, the developer should maintain a buffer zone of at least 25m around the Site. This site is situated along the alternative powerline corridor route as indicated by the developer	S 28º19' 17.65" E 30º44' 41.40"	Desktop (aerial photographs and literature survey)
10	Historical Era Stone Walling 3 – cluster of Sites (Figs 3, 7 11).	A cluster of square stone walling structures. Approximately 11 structures covering an area of 240m x 80m. It appears that these structures may date back to the first decades of the 20th century. They most probably represent the remains of Zulu homesteads (Umuzi).	Medium locally. (see Table 3).	The alternative proposed powerline route runs through this cluster of sites. The powerline trajectory will have to move 200m of its present projection. No mitigation is necessary. However, the developer should maintain a buffer zone of at least 25m around this site. This site is	S 28º 19' 37.15" E 30º 14' 44.78"	Desktop (aerial photographs and literature survey)

				situated along the alternative powerline corridor route as indicated by the developer		
11	Cemetery 4 (Figs 3 & 4)	Large rural cemetery. It contains more than 200 individual graves. The graves are marked and most appears to be younger than 60 years. The cemetery covers an area of 180m x 70m. The cemetery is situated 165m to the west of the proposed alternative powerline route.	Medium to high locally (Table 3). All graves are protected by KZN heritage legislation.	No mitigation is necessary. The cemetery is situated more than 160m from the proposed powerline. However, the developer should maintain a buffer zone of at least 25m around the Cemetery.	S 28º198' 14. 78" E 30º44' 22.89"	Desktop (aerial photographs and literature survey)
12	Later Iron Age Cluster of Stone Walling Circles (Figs 3, 6, & 11)	Nine singular stone built circles. Scattered over an area of 220m x 180m. The stone circles range in size from 10m diameter to 23 m diameter. This cluster of sites was recorded by Dr Martin Hall in the 1970's. They most probably relate to early Nguni settlement predating the Zulu Kingdom of King Shaka (Hall 1981).	High locally (Table 3)	No mitigation is necessary if the developers can shift the proposed powerline trajectory approximately 50m to the north of its present position. The site is situated approximately 10 m to the south of the preferred powerline route.	S 28º21' 42.93" E 30º 53' 13.77"	Ground survey and desktop study.

13	Fort Marshall (Figs 3, 6 & 15)	Fort Marshall was occupied between May & July 1879 by the 24th Regiment. There are 11 soldiers buried there, most dying of wounds from the battle of Ulundi. The ramparts of the Fort and some graves are still visible. This Fort is located on the Battlefield Route and a tourist feature.	High (Table 3). This site is a declared provincial heritage site.	Not applicable as the proposed powerline trajectory will not have any impact on the Fort. The Fort is situated more than 500m to the east of the proposed powerline trajectory (alternative powerline route). However, it is important to maintain a 50m buffer zone around this site.	S 28º22' 25.46' E 30º54' 50.68"	Ground survey and Desktop survey.

6 STATEMENT OF SIGNIFICANCE (HERITAGE VALUE)

6.1 Field Rating

The field rating criteria as formulated by SAHRA (Table 3) has been applied to all the heritage sites identified (Table 2). Two of the sites identified have provincial heritage status namely 1) Isandhlwana Battle Site and 2) Fort Marshall. They are both rated as Provincial (Grade 11). The two Iron Age Stone Walling Clusters as well as the Stone Age site are rated as Local Grade 111a. The Cemeteries are all rated as Local Grade 111b. The Historical Era Stone Walling Site clusters are rated as Generally Protected A. All these sites may not be altered or destroyed and developments within the area should be conducted in a sensitive manner involving the local community and the provincial heritage agency Amafa and other relevant stakeholders.

Table 3. Field rating and recommended grading of sites (SAHRA 2005)

Level	Details	Action
National (Grade I)	The site is considered to be of National Significance	Nominated to be declared by SAHRA
Provincial (Grade II)	This site is considered to be of Provincial significance	Nominated to be declared by Provincial Heritage Authority
Local Grade IIIA	This site is considered to be of HIGH significance locally	The site should be retained as a heritage site
Local Grade IIIB	This site is considered to be of HIGH significance locally	The site should be mitigated, and part retained as a heritage site
Generally Protected A	High to medium significance	Mitigation necessary before destruction
Generally Protected B	Medium significance	The site needs to be recorded before destruction
Generally Protected C	Low significance	No further recording is required before destruction

7 SUMMARY

- The heritage impact assessment survey identified thirteen heritage sites adjacent to the proposed powerline corridors.
- Five heritage sites occur in the near vicinity of the preferred powerline corridor/trajectory.
- Eight heritage sites occur in the near or immediate vicinity of the alternative powerline corridor/trajectory.
- Four of the heritage sites identified occur in the direct path of the alternative powerline corridor or trajectory.
- No heritage sites were located in the immediate environs of the relevant substation.
- None of the heritage sites identified along the preferred powerline trajectory occur in the direct path of this proposed powerline.
- It is important to maintain a buffer zone of at least 25m around each heritage site identified.

- All the heritage sites identified are protected by heritage legislation and may not be altered or changed without mitigation.
- The proposed powerline trajectories was also presented to the Local Isandhlwana Heritage Committee and this community organisation was satisfied that this iconic Battle Site will not be affected in a negative way by the proposed development.

8 RECOMMENDATIONS

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- Thus study support the notion of the developers that the preferred powerline trajectory is actually the best option. None of the heritage sites situated along this route will be compromised by the proposed powerline.
- Option two (the alternative powerline trajectory) is more problematic as three heritage sites are located directly within the path of the proposed powerline.
- However, there is no need for mitigation as it will be possible to shift the powerline trajectory in each instance in order to maintain a buffer zone around the relevant Site.
- It is important to maintain a buffer zone of at least 25m around each Heritage Site during the planning and construction phases of this project.
- Only existing roads may be used during the construction phase. A new heritage survey must be initiated should the developer decide to construct access roads in the study area.
- It should also be pointed out that the KwaZulu-Natal Heritage Act requires that operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

9 RISK PREVENTATIVE MEASURES ASSOCIATED WITH CONSTRUCTION

Construction work and excavations may yield archaeological and heritage material. If any heritage features are exposed by construction work then all work should stop immediately and the provincial heritage agency, Amafa, should be contacted for further evaluation.

10 MAPS AND PHOTOGRAPHS

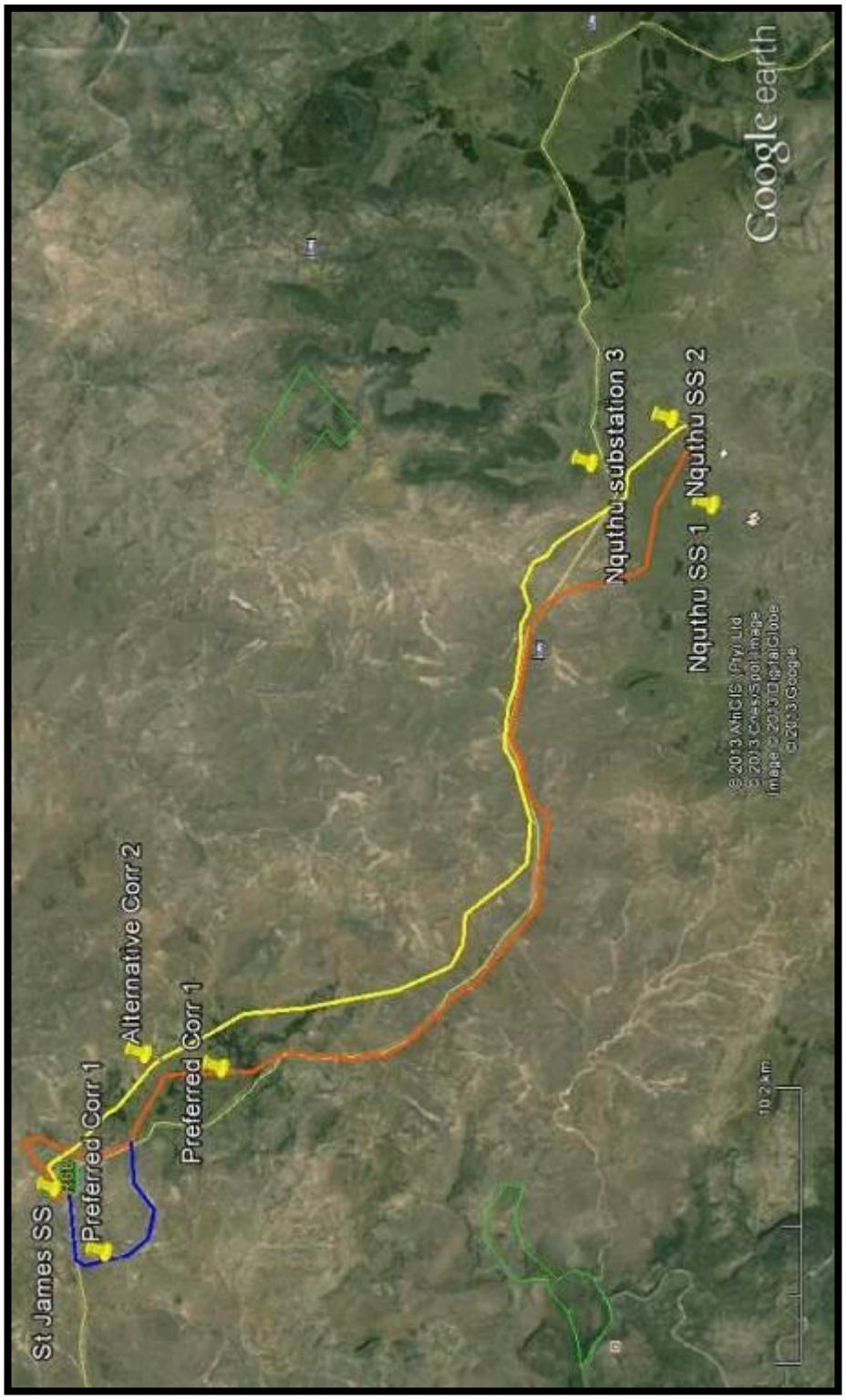

Figure 1. Google aerial photograph showing the location of the proposed powerline trajectories in the study area. The preferred corridor is indicated by the orange line and the alternative corridor is indicated by the yellow line.

Figure 2. Google aerial photograph showing the location of the St James Substation and the associated powerline corridors.

Figure 3. Google aerial photograph showing the location of heritage sites along the proposed powerline corridors.

Figure 4. Google aerial photograph showing the distribution of heritage sites in the northern section of the study area.

Figure 5. Google aerial photograph showing the distribution of heritage sites in the central section of the study area.

Figure 6. Google aerial photograph showing the distribution of heritage sites in the central section of the study area.

Figure 7. Google aerial photograph showing the distribution of heritage sites in the southern section of the study area.

Figure 8. Cemetery 1.

Figure 9. Cemetery 2

Figure 10. Cemetery 3

Figure 11. Aerial photograph of Later Iron Age Site Cluster 1.

Figure 12. Aerial photograph of Later Iron Age Site Cluster 2.

Figure 13. Aerial photograph of Iron Age and Historical era Stone Walling – most probably Zulu homesteads built in the early 20th century.

Figure 14. Square stone structure most probably indicating early 20th century Zulu homestead.

Figure 15. Grave of fallen British soldier at Fort Marshall.

Figure 16. Isandhlwana Battle Site

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