

Appendix 3.6

Archaeological Assessment

Phase 1a Archaeological Impact Assessment

Basic Assessment Report in terms of NEMA

Basic Assessment Application for the proposed extension of the electrical grid corridor for the Impofu Wind Farms (East, West and North), between the Chatty and DEDISA Substations, Gqeberha (Port Elizabeth), Eastern Cape

Conducted in terms of Section 38 of the National Heritage Resource Act (No. 25 of 1999)

prepared for

CEN Integrated Environmental Management Unit, C/o Belinda Clark, 36 River Road, Walmer, Port Elizabeth 6070, Telephone / Fax: 041 – 581-2983 / 086 504 2549, E: steenbok@aerosat.co.za/bclark@telkomsa.net, and **Red Cap Impofu(Pty) Ltd**, C/o Jessica Els, Unit B2, Mainstream Shopping Centre, Hout Bay, Cape Town, 7806;T: +27 21 790 1392; E: lance@red-cap.co.za

prepared by



Dr.Peter Nilssen, PO Box 2635, Mossel Bay, 6500
044 690 4359 | 082 7835896 |peter@carm.co.za

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1. Executive Summary

Red Cap Impofu (Pty) Ltd proposes to extend their electrical grid connection corridor from the approved termination point around the Chatty substation via the Grassridge substation and terminating around the DEDISA substation. A new switching station is also proposed just north of the Chatty substation. The application for a Basic Assessment for the grid extension proposal are being facilitated by CEN Integrated Environmental Management Unit.

Presented here is the archaeological component of the Basic Assessment application processes, as triggered by Section 38 of the National Heritage Resources Act (Act 25 of 1999; NHRA), that is being undertaken in order to ensure compliance with heritage legislation as well as that of the National Environmental Management Act (Act 107 of 1998; NEMA).

The general study area for the project is under industrial, rural, agricultural and urban development. Large parts of the surrounding landscape are transformed by a wide variety of development activities. The development site is situated north of Gqeberha (Port Elizabeth) in the Eastern Cape Province. Among other developments, the development site includes several electrical grid connection projects, and therefore, the bulk of the site falls within an existing industrial landscape. Because of the excellent local wind regime, the proposed grid extension for the approved Impofu Wind Farms is situated in one of the best areas for wind farming in South Africa. The development aims to assist in meeting the ever-increasing demand for energy through distributing this renewable resource.

The scope of the impact assessment for the extension to the grid connection includes:

- the 132 kV overhead power line route and corridor from the Chatty substation via the Grassridge substation and terminating around the DEDISA substation, and
- a new switching station to be located just north of the Chatty substation.

The Public Participation Process, in terms of the National Heritage Resources Act, will be advertised and run as part of the Basic Assessment and Water Use Authorisation processes. Interested & Affected Parties will be provided the opportunity to give feedback regarding this and other specialist reports for the proposed grid extension development.

The overall purpose of a Phase 1a Archaeological Impact Assessment is to evaluate the sensitivity of archaeological resources in the affected area, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

Prior to undertaking the field work, a detailed desktop study and literature review was done to determine the types of archaeological resources that are known and expected to occur in the area. Besides the limitations of impenetrable vegetation in parts of the study area, civil unrest, and the large extent of the development site, an archaeological survey of most of the development site was conducted over a two day period in May 2021.

No significant archaeological heritage resources or sites were identified in the study area. The impacts and recommendations regarding archaeological heritage resources identified in the development site are summarised as follows:

1) Isolated Stone Age Artefacts. **Recommendation:** No further studies or mitigation of these finds is required and even though they are protected by the NHRA, it is recommended that a permit for their disturbance or destruction is not required from the EC PHRA;

2) Temporally Mixed Scatter of Human-related Refuse. **Recommendation:** Even though this locality is of low significance and requires no further investigation or mitigation, the presence of subsurface archaeological remains cannot be ruled out entirely, and therefore it is recommended that, if a pylon for the proposed grid extension needs to be installed here, then it should be placed to the north of this scatter as suggested with the ellipse in Figure 9;

3) Circular Feature in Calcrete Blocks and Chunks. **Recommendation:** To caution on the safe side, and since we do not currently know the origin or meaning of this feature, it is recommended that it be avoided. If a pylon for the proposed grid extension is required here, then it is recommended that it be placed at least 20 m from this feature.

In the event of any archaeological resources or human remains being exposed or unearthed during construction activities, then such work must cease immediately and the area in question should be closed to access. The Eastern Cape PHRA must be notified immediately and the find must be dealt with by a suitably qualified professional and in accordance with the NHRA.

All of the above recommendations must be included in the Environmental Management Program for the proposed Impofu Grid Extension.

From this assessment and given the mitigation requirements there are no fatal flaws from an archaeological standpoint and there are no objections to the proposed Impofu Grid Extension project proceeding.

2. Name, Expertise and Declaration

I, Peter Nilssen (PhD in archaeology, University of Cape Town 2000), herewith confirm that I am a Professional member - in good standing - of the Association of South African Professional Archaeologists (ASAPA), including the Cultural Resource Management section of the same association since 1989 (ASAPA professional member # 097). I am an accredited Principal Investigator for archaeozoology (specialist analysis), coastal, shell midden and Stone Age archaeology; Field Director for Colonial Period archaeology; and Field Supervisor for Iron Age archaeology and Rock Art. I have worked as a professional archaeologist in Cultural Resource Management since 1989 and have completed more than 200 heritage-related impact assessments and mitigation projects that were approved by provincial and national heritage authorities. My CV accompanies this report.

As the appointed independent specialist (archaeologist) for this project hereby declare that I:

- act as an independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct;
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2014 (specifically in terms of regulation 13 of GN No. R. 982) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- am aware that a false declaration is an offence in terms of regulation 48 of GN No. R. 982.



Signature of the specialist:

Name of company: Dr Peter Nilssen

Professional Archaeologist and Specialist Heritage Practitioner

Date: **22 June 2021**

3. NEMA requirements for Specialist Reports

Appendix 6	Specialist Report content as required by the NEMA 2014 EIA Regulations, as amended	Section
1 (1)(a)	(i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	Title page & Section 2; as well as the accompanying CV
(b)	a declaration that the specialist is independent in a form as may be specified by the competent authority;	Section 2
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	Section 4.3
(cA)	an indication of the quality and age of the base data used for the specialist report;	desktop study up to 2018 and fieldwork data obtained in September 2017 and July 2019; see Section 4.6 and section 5
(cB)	a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 4.4 & Sections 6 & 7
(d)	the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 4.6 and Section 5
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process, inclusive of equipment and modelling used;	Section 4.6
(f)	details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 4.6 and Section 5
(g)	an identification of any areas to be avoided, including buffers;	Sections 5, 6 & 7
(h)	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Section 5 and associated Figures and Plates
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 4.7
(j)	a description of the findings and potential implications of such findings on the impact of the proposed activity, or activities;	Section 5
(k)	any mitigation measures for inclusion in the EMPr;	Sections 5, 6 & 7
(l)	any conditions for inclusion in the environmental authorisation;	Section 7
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 7
(n)	a reasoned opinion- (i) whether the proposed activity or portions thereof should be authorised; and (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 7
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	Not yet done
(p)	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Not yet done
(q)	any other information requested by the competent authority.	Not at this time
2	Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	Sections 4.3 & 4.5

4. Introduction

4.1. Background to Development Proposal

Red Cap Impofu (Pty) Ltd (details on title page; hereafter Red Cap) proposes to extend their electrical grid connection corridor from the approved termination point around the Chatty substation (33°50'11.93"S 25°31'20.86"E) via the Grassridge substation (33°43'12.04"S 25°37'57.22"E) and terminating around the DEDISA substation (33°44'33.87"S 25°40'34.80"E). A new switching station is also proposed just north of the Chatty substation (Cohen & Clark 2021). The location and extent of the proposed grid extension is shown in Figures 1, 2 and 3.

A Basic Assessment (BA) application must be submitted to the National Department of Forestry, Fisheries and Environment (DFFE), in terms of EIA Regulations (2014 as amended) under Section 24 of the National Environmental Management Act (No. 107 Of 1998). This application and the public participation and consultation processes are being facilitated by CEN Integrated Environmental Management Unit (details on title page; hereafter CEN, Cohen & Clark 2021). All project background information and proposal specifications presented in this report were supplied by CEN and Red Cap. Some sections below are taken verbatim from CEN's documents for the grid extension application that was issued to participating specialists.

The archaeological component of the BA process, as triggered by Section 38 of the National Heritage Resources Act (Act 25 of 1999; NHRA), is being undertaken by the present author in order to ensure compliance with heritage legislation as well as that of the National Environmental Management Act (Act 107 of 1998; NEMA). The following clauses of the NHRA are relevant to the requirement for a heritage impact assessment for the proposed grid extension development: Section 38(1) (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length; (c) any development or other activity which will change the character of a site (i) exceeding 5 000 m² in extent; or (ii) involving three or more existing Erven or subdivisions thereof. See Appendix A for more information on heritage legislation relevant to this project and to heritage resources discussed in this report.

4.2 Proposed Development Description

Environmental Authorisations (EA) have been issued for each of the Impofu Wind Farms (East, West and North) and Grid Connection between the Wind Farms and the Chatty Substation in Gqeberha (Port Elizabeth) (DFFE Reference 14/12/16/3/3/1/2018). The approved corridor for the grid connection extends from the onsite collector switching station at the Impofu West Wind Farm near Oyster Bay to around the Chatty substation in Gqeberha (Port Elizabeth). Red Cap proposes to extend their electrical grid connection corridor from the approved termination point around the Chatty substation (33°50'11.93"S 25°31'20.86"E), via the Grassridge substation (33°43'12.04"S 25°37'57.22"E) and terminating around the DEDISA substation (33°44'33.87"S 25°40'34.80"E). A new switching station is also proposed just north of the Chatty substation.

An existing servitude will be utilised as far as possible for infrastructure between the Chatty and Grassridge substations. However, a corridor will be applied for to allow for the placement of the switching station outside the Chatty substation, and to secure a new servitude between the Grassridge and DEDISA substations. The maximum width of the corridor that will

be assessed is ~1.8 km. The power line will be a 132 kV line, with predominantly steel monopole supporting structures (except for long spans), and a height of 32 m. A 31 m wide servitude is required for the electrical infrastructure in the corridor.

Figure 2 shows the location of the approved (but not yet constructed) Impofu Wind Farms and Electrical Grid to the Chatty Substation. Figure 3 is an aerial image showing the alignment of the extended electrical grid corridor between the Chatty and DEDISA substations.

The proposed corridor traverses a number of 'sensitive environments' that are referenced in the Listing Notices under the EIA Regulations (2014 as amended):

- National Threatened Ecosystems: Endangered Ecosystem – Albany Alluvial Vegetation
- Important Bird Areas: the SW extent of the corridor is adjacent to the 'Swartkops Estuary – Redhouse and Chatty Salt pans IBA'
- Numerous watercourses and wetlands occur in the area, associated with the Swartkops and Coega catchments.
- East Cape Biodiversity Conservation Plan (2019): There are not terrestrial Critical Biodiversity Areas (CBAs) plotted in the area, however aquatic CBAs and Ecological Support Areas (ESAs) occur.
- Protected Areas: the corridor crosses the Swartkops Valley Nature Reserve and Addo Elephant National Park is within 10 km of the corridor (to the SE)
- The corridor traverses CBAs in the NMBM Bioregional Plan (2015)
- As the corridor approached the Grassridge Substation, it enters the Coega Special Economic Zone (SEZ). The corridor area traverses CBAs in the SEZ's Open Space Management Plan. Sensitive areas include Mesic Succulent Thicket, Bontveld, Riparian Zone, Ecological Process Areas, and the location of Species of Special Concern.

The environmental assessment process and specialist studies will advise on infrastructure alignment within the corridor, placement of structures, structure types (e.g. monopoles versus lattice-type pylons), and construction methods to avoid and/or reduce impact on sensitive environments.

Pylons

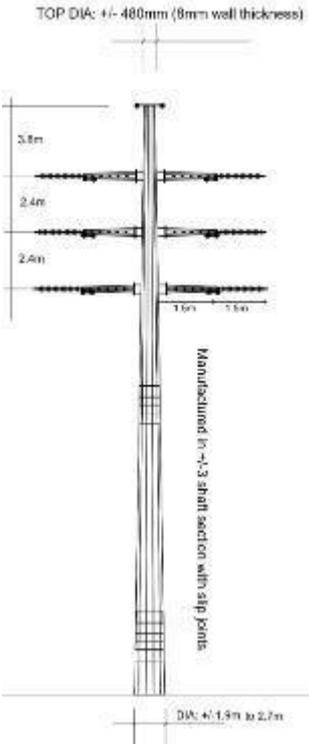
There are six potential types of pylons that may be used for the 132 kV HV overhead lines. Descriptions are given in the table below. The spans (distance between pylons) on the monopole structure (without stays) will be on average 260 m, whilst the spans between the triple poles in the case of valley crossings may be up to 500 m and with the lattice structures over 500m. The type of pylon and distance of the spans depend on the topography and alignment of the line.

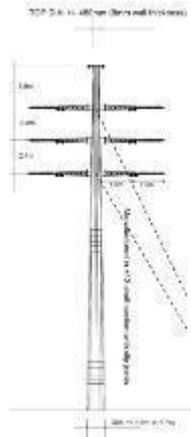
These are not alternative 'technology' types as all options may be used along the grid corridor route at some stage or another depending on topography, line alignment and other constraints. However, option 6 (the lattice structure) would only be used if a landowner specifically asked for it or if it is required to get the power line over a significant river crossing or gorge rather than using the triple monopole option. Thus, if the lattice structure is used at all, it will be for very short sections.

Of interest from an archaeological perspective are disturbances to sediments and hence the depths and extents of required excavations for the construction and installation of

various pylon types. For the intermediate poles it would be about 1.3m to 1.7m deep and about 36m² to 81m² in extent. For the Strain versions it would be about 1.8m to 3.7m deep and about 36m² to 81m² in extent. The lattice structures will have bases covering an area of about 225m². The depth and extent of required disturbances to sediments for the installation of stays or anchors is not presently known, as this will depend on the soil and stability conditions. A further potential impact to archaeological resources involves the service road for maintenance of the overhead power line.

	Pylon Type	Description and purpose	Graphic
1.	Monopole intermediate Double Circuit with Twin Tern Conductors	<p>Self-supporting galvanised steel Suspension structure with no stays/anchors.</p> <p>For general use as intermediate structures between turning/angle points.</p> <p>Height: 26-32 m Base diameter: 1.2m to 1.5m</p>	

2.	<p>Monopole strain (0°-30° angle) Double Circuit with Twin Tern Conductor</p>	<p>Self-supporting galvanised steel Strain Angle structure with no stays/anchors.</p> <p>For general use up to 30° turning/angle points</p> <p>Height: 26-32 m Base diameter: 1.9m to 2.7m</p>		
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Pylon Type	Description and purpose	Graphic
3.	<p>Monopole strain (30°-90° angle) Double Circuit with Twin Tern Conductor</p> <p>Self-supporting galvanised steel Strain Angle structure with additional stays/anchors.</p> <p>For general use between 30° to 90° at turning/angle points.</p> <p>Height: 26-32 m Base diameter: 1.9m to 2.7m 5 to 7 stays/anchors</p>	 

4.	<p>Monopole strain (30°-90° angle) 2 x Single Circuit Twin Tern Conductor</p>	<p>2 x Strain Angle galvanised steel structure with stays/anchors.</p> <p>Two single circuit monopoles installed 10m apart to accommodate a twin Tern Conductor attachment each.</p> <p>For general use between 30° to 90° at turning/angle points and where it is acceptable for the landowner.</p> <p>Height: 20m – 24m 5 to 7 stays/anchors</p>	
5.	<p>Triple pole structure. 2 x Single circuit with Twin Tern Conductor</p>	<p>For long spans (>350m to 500m) across valleys and rivers.</p> <p>Strain structure with three single monopoles per circuit.</p> <p>5-9 stays per triple pole structure depending on angle configuration.</p> <p>Typical 18 to 16m in length.</p> <p>In a double circuit configuration it will be a triple pole structure per circuit placed at 10m-15m apart</p>	
<p>Pylon Type Description and purpose</p>			<p>Graphic</p>

6.	Strain Lattice Tower (247 type) for Double Circuit Twin Tern Conductor	<p>For very long spans (>500m) across valleys and rivers.</p> <p>Lattice structure with four legs</p> <p>Height: 28m to 32m</p> <p>Base of the tower with 4 legs in general 15m x 15m area.</p>	
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4.3. Purpose and Scope of the Study

The overall purpose of a Phase 1a Archaeological Impact Assessment (AIA) is to assess the sensitivity of archaeological resources in the affected area, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures. Note that the AIA presented here considers archaeological materials of prehistoric and historic origin as well as the cultural landscape. A separate palaeontological study was undertaken by Dr John Almond. This study was undertaken according to best practice principles and meets standards required by the heritage authorities in terms of the National Heritage Resources Act, No. 25 of 1999.

The objectives of the Archaeological Impact Assessment are:

- To assess the nature and sensitivity of archaeological resources in the affected parts of the receiving environment;
- To identify the impact of the proposed development on such resources as well as options for mitigation and/or management in order to minimize potential negative impacts and to make recommendations for mitigation / management where necessary; and
- To identify archaeological resources and issues that may require further investigation.

This archaeological study and the palaeontological study undertaken by Dr Almond form the basis for community consultation in terms of Section 38 (3) (e) of the NHRA. This draft Basic Assessment Report will be made available to all Interested and Affected Parties (I&APs) as part of the Public Participation Process being undertaken by CEN for the BA application process. These heritage authorities (SAHRA and EC PHRA), conservation bodies and interest

groups will be given the opportunity to provide feedback as part of the official community consultation to fulfil NHRA requirements.

Posters advertising the development have been placed at visible locations along the corridor, in three languages (i.e. English, Afrikaans, and isiXhosa). Where the corridor passes through/adjacent to settlements, flyers have been hand delivered (e.g. in the Motherwell and Chatty areas). The project has been advertised under the legal section of the Herald and in the Port Elizabeth Express in 3 languages. This round of public participation is part of the pre-application process.

The next step will be to submit a formal application form and Draft Basic Assessment Report (DBAR) to the authorities. Registered interested and affected parties (IAPs) and state departments will be notified of the availability of the DBAR for a 30 day comment period. The report will describe the project proposal and the surrounding environment, and will identify and assess the significance of potential impacts of the development on the biophysical and socio-economic environment. Comments received on the draft report will be collated, and the report updated to a Final BAR for submission to the National DFFE for their review. All reports and information related to the project will be added to the EAP's website on the project tab at <https://environmentcen.co.za/projects/>

The DFFE screening report for the grid extension project was obtained by Red Cap on 1 December 2020. The report indicated that the affected area's environmental sensitivity rating for the Archaeological and Cultural Heritage Theme is High Sensitivity, and identified the need for a specialist Archaeological and Cultural Heritage Impact Assessment. The Palaeontology Theme is rated as Very High Sensitivity, and the required Palaeontology Impact Assessment is being undertaken by Dr John Almond.

Archaeological assessments ideally entail detailed foot surveys of development impact areas, but due to the large size of the study area and impenetrable vegetation cover in several areas, it was not viable to cover the entire area of the proposed grid extension on foot. Nevertheless, the archaeological survey and assessment covered the bulk of the development site including the length of the grid extension alignment and corridor from the Chatty substation via the Grassridge substation and ending at the DEDISA substation, as well as the area earmarked for a new switching station just north of the Chatty substation.

Since archaeological resources occur on ground surfaces or in sub-surface sediments, only those aspects of the grid development that will impact on surface or subsurface sediments are considered relevant. The pylon types described above, for example, will have no direct impact on archaeological resources, but may have a visual impact on the aesthetic character and value of the surroundings and cultural landscape.

4.4. Study Area

The location and extent of the development site for the proposed grid extension corridor is shown in Figures 1, 2 and 3, while examples of the receiving environment are shown in the Google Earth images in Figures 5, 6 and 7 as well as Plates 1, 2, 3, 5, 6, 7, 9, 10 & 11. A detailed description of the geology, geography and ecology of the development site is given by other specialists on the project, namely the palaeontologist and terrestrial ecologists. A

description of the receiving environment in the Coega IDZ is also available (Coega Development Corporation [CDC] 2014).

The proposed corridor is situated on a coastal plain with undulating low lying hills that are cut by the Swartkops and Coega rivers and their associated tributaries (Figure 3). Numerous drainage lines and water sources are present. The receiving environment is significantly transformed by human related activities, specifically those associated with modern urban and industrial developments. The main urban centres in the immediate surroundings include Uitenhage, Despatch, Gqeberha (Port Elizabeth) and the suburbs of Chatty and Motherwell. Outside of the urban centres, the most common land use is rural, agricultural and industrial.

The study area is more than 5km from the shoreline and thus lies outside the archaeologically sensitive coastal zone. While some historic period remains as well as Stone Age artefacts have been recorded, no significant archaeological resources are known or expected to occur along the proposed grid extension route and corridor. The most likely heritage resources present in this area are historic period infrastructure, structures, cemeteries, graves and cultural materials associated with the historic period, and Stone Age and pastoralist artefacts in open and disturbed contexts. If rock shelters are present, they may contain Stone Age or pastoralist remains as well as rock art.

The proposed new switching station will be located immediately north of the Chatty Substation, from where the proposed grid extension runs in a NE direction down slope toward the R367 road and then continues toward the flood plain of the Swartkops River (Figure 5 and Plate 1 & 2). Although vegetated with thicket, this area contains a lot of modern litter and dumps of building rubble. After crossing the Swartkops River, the grid extension continues in a NE direction, running immediately NW and alongside existing overhead power lines and crosses dense thicket in the Swartkops Nature Reserve until it reaches Motherwell. This stretch becomes more degraded, disturbed and covered in litter and rubble as one nears Motherwell (Figure 5 and Plates 2 & 3).

After crossing the R334 road immediately north of Motherwell, the grid extension corridor continues in a NE direction through an informal settlement where the environment is degraded and littered all the way to the point where it crosses the R335 road (Figure 6 and Plate 5). Beyond the R335 road, still in a NE direction, the grid extension route drops down toward the Coega River, crossing some agricultural lands and also bypassing what appeared to be quarry and brickworks to the NW of the grid alignment. Vegetation is dominated by thicket and this stretch is less degraded. Several examples of the remains from people processing *Aloe spp.* for its sap were seen. After crossing the Coega River and catchment area, the route climbs up slope to the NE till it reaches the larger grid extension corridor near the Grassridge substation (Figure 6 and Plates 6 & 7). From the Coega River toward the Grassridge substation, the vegetation becomes more open and exposed ground surfaces are more common. Although this area is less degraded, it is still partly transformed by vehicle, pedestrian and animal tracks as well as the existing overhead power lines and supporting pylons.

After entering the larger grid extension corridor south of the Grassridge substation and now in the Coega IDZ, the preferred power line route turns slightly east and runs in a roughly ENE direction till it reaches Grassridge where it hugs the SE boundary of the existing substation and then turns east again to follow a roughly easterly trajectory (Figure 6). Before crossing a railway line and associated service road, the corridor turns south and runs in a SSE direction for roughly 1km and then turns again to run in a SSW direction until it reaches the DEDISA

Substation. The final section of the grid extension corridor curves around the boundary of the DEDISA Substation and terminates immediately south of it (Figure 6). The vegetation cover in this area is variable and although still bushy with clumps of thicket, large areas are open with exposed ground surfaces (Plate 9). Denser thicket occurs in the eastern portion of the larger grid extension corridor, but areas with exposed ground surfaces are open to archaeological inspection (Plates 10 & 11). A detailed description of the receiving environment in the Coega IDZ is available (Coega Development Corporation (CDC) 2014).

Although extensive parts of the larger grid extension corridor (in the Coega IDZ) are not developed, there are several developments in the area including the Grassridge and DEDISA substations, a smaller substation where the railway line enters the larger grid extension corridor from the NE, several overhead power lines leading to, from and between the substations, the railway line and service road, vehicle tracks and fencing. The immediate surroundings of the existing substations are significantly disturbed and transformed.

4.5 Legal Requirements

The following legal requirements - relevant to heritage - apply to the proposed grid connection extension development:

- The National Environmental Management Act, No. 107 of 1998 (NEMA as amended): An Environmental Authorisation is required for Listed Activities in Regulations pursuant to NEMA, and specialist assessments are required to inform the Basic Assessment associated with the Application for Environmental Authorisation for the project;
- The National Heritage Resources Act, No. 25 of 1999 (NHRA): A full Heritage Impact Assessment is not required by the Eastern Cape Provincial Heritage Resources Authority for the proposed project. Only archaeological and palaeontological studies are required (ECPHRA e-mail of 28 January 2021).

The archaeological component of the BA process is being undertaken to comply with the following clauses of Section 38(1) of the NHRA which trigger the requirement for a heritage impact assessment: (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length; (c) any development or other activity which will change the character of a site (i) exceeding 5 000 m² in extent; or (ii) involving three or more existing Erven or subdivisions thereof. Because of these triggers, ECPHRA was approached by this author, and ECPHRA confirmed in terms of Section 38(2) (a) that a heritage study was required, and ECPHRA requested in terms of Section 38(3) that archaeological and palaeontological impact assessments be undertaken and that these studies be done by separate specialists, one for the archaeological component, and one for the palaeontological component. See Section 38(3) in Appendix A for further details required for the heritage study in terms of the NHRA No 25 of 1999.

4.6. Approach to the Study - Methodology

This assessment was conducted according to best practice principles and in accordance with guidelines and minimum standards required by heritage authorities in respect of the NHRA (HWC 2007, 2016a, 2016b, SAHRA 2007, 2010, 2012, 2017, 2018), and as set out in Section 13, GN.R982 of NEMA (General requirements for EAPs and Specialists).

4.6.1. Desktop & Literature Review (see Section 5.1)

This author has considerable work experience in the coastal region of the Eastern Cape Province and is familiar with the main types of heritage resources that occur in the area (Nilssen 2003, 2010, 2013, 2014, 2015, 2016 and 2019, Nilssen & Van Ryneveld 2012, and Nilssen & Smith 2015). A desktop study and literature review was undertaken, which relied in part on this author's experience in the area and also focused on the SAHRIS database up to 2021, which is by no means exhaustive. Previous heritage and archaeological studies in the immediate surroundings have already provided detailed descriptions of the history, heritage and archaeological record of the area (see section on Archaeological Background below). While giving a broad overview of the archaeological record presented in the reports listed in the reference section below, the focus is on identifying key heritage resources and concerns already identified in earlier studies and how they inform the assessment being conducted here.

The desktop study also involved a detailed inspection of aerial imagery available through Google Earth. The main aim of examining aerial imagery was to determine which development activities encroached upon potentially sensitive areas, and to locate man-made structures or ruins.

4.6.2. Archaeological Survey (see Section 5.2)

Although some areas are inaccessible due to impenetrable vegetation, and the grid extension route and corridor are too large to undergo a detailed archaeological foot survey, the affected area could be sufficiently covered for the purpose of this assessment through a combination of vehicle and foot survey. Overall, areas that were covered during the survey provided good archaeological visibility due to exposed ground surfaces. This is in contrast to reports of poor archaeological visibility due to dense grass cover, which may be due to the current drought in the area (see e.g. Binneman 2010).

Apart from two points that could not be crossed by vehicle, namely the Swartkops River and the railway line running between the Grassridge and DEDISA substations, the vast bulk of the grid extension route could be accessed via roads and single vehicle tracks with a 2x4 bakkie.

The archaeological site inspection and survey was conducted over two days on 25 and 26 May 2021, and focused on identifying heritage resources of both prehistoric and historic origin. Based on the desktop study and literature review, the chance of finding significant archaeological sites was expected to be low. It was anticipated, however, that isolated Stone Age artefacts or low density scatters of Stone Age artefacts would be seen.

4.6.3. Consultation (see Section 5.3)

Posters advertising the development have been placed at visible locations along the corridor, in three languages (i.e. English, Afrikaans, and isiXhosa). Where the corridor passes through/adjacent to settlements, flyers have been hand delivered (e.g. in the Motherwell and Chatty areas). The project has been advertised under the legal section of the Herald and in the Port Elizabeth Express in 3 languages. This round of public participation is part of the preapplication process.

The next step will be to submit a formal application form and Draft Basic Assessment Report (DBAR) to the authorities. Registered interested and affected parties (IAPs) and state departments will be notified of the availability of the DBAR for a 30 day comment period. The report will describe the project proposal and the surrounding environment, and will identify and assess the significance of potential impacts of the development on the biophysical and socio-economic environment. Comments received on the draft report will be collated, and the report updated to a Final BAR for submission to the National DFFE for their review. All reports and information related to the project will be added to the EAP's website on the project tab at <https://environmentcen.co.za/projects/>

4.7. Assumptions, Limitations and Gaps in Knowledge

This assessment assumes that all background information and layout plans provided by Red Cap and CEN are correct and current. This assessment is specifically for the grid extension route and corridors (Figure 3), as well as the new switching station near the Chatty Substation.

The most significant limitations of this study are that parts of the study area are inaccessible due to impenetrable vegetation cover, and the extent of the study area is too large for a comprehensive archaeological foot survey. Nevertheless, based on the desktop study and literature review, the chances of important archaeological sites occurring in the development site are low.

As in all environments with soft geological sediments, the presence of sub-surface archaeological remains cannot be ruled out and such materials may be exposed during vegetation clearing and earthmoving activities associated with development.

5. Results

5.1. Archaeological Background

Most of the references cited and literature consulted during the desktop study are heritage-related impact assessments for a variety of developments that are relevant to the current study and are listed in the reference section below. Figure 9 shows the cases and reports on the SAHRIS website when accessed in May 2021. Where available, all cases and reports in the immediate surroundings of the study area were consulted (see References).

A good summary of the archaeological background of the Coega area and immediate surroundings is presented in the archaeological impact assessment done for the Coega Industrial Development Zone (IDZ) by Dr Johan Binneman. The below section includes selected and re-arranged excerpts from Dr Binneman's 2010 report (Binneman 2010, pg 37), but the original study should be consulted for context, his complete overview, and for references cited that are not included in the text or reference section below.

"The oldest evidence for prehistoric people living in the wider region comes from the river gravels which line the Coega River valley/estuary. Large stone tools, called handaxes and cleavers, dating from the Earlier Stone Age, approximately 1,5 million years to 250 000 years ago, were found mixed with river gravels. There were no other cultural material or food remains,

i.e., bones of animals preserved. These stone tools were in secondary context (disturbed or transported from their original place of manufacture) and provided limited information.

One of South Africa's most important Earlier Stone Age finds and excavations (Deacon 1970) was conducted a few kilometres west of the surveyed area, at Amanzi Springs. In a series of spring deposits a large number of stone tools were found *in situ* to a depth of 3-4 metres. Remarkably wood and seed material preserved in the spring deposits, possibly dating to between 250 000 to 800 000 years old, were found.

The oldest evidence for prehistoric groups living along the Coega River coast is a few weathered Middle Stone Age stone tools. These stone tools, points and blades, were manufactured between 30 000 and 250 000 years ago (late Pleistocene). No other cultural or food remains (shellfish, marine fauna or terrestrial fauna) were preserved. Fossil bone (bone hardened by ground water and minerals) was found in limestone or calcrete deposits some 5 kilometres inland from the Coega estuary associated with Middle Stone Age stone tools.

Occurrences of fossil bone remains and Middle Stone Age stone tools were also reported south of Coega Kop (Gess 1969). During excavations the remains were found in the surface limestone, but the bulk of the bone remains were found some 1-1,5 metres below the surface. The excavations exposed a large number and variety of bones, teeth and horn cores. The bone remains included warthog, leopard, hyena, rhinoceros and ten different antelope species. A radiocarbon date of older than 37 000 years was obtained for the site.

The majority of the archaeological remains found during the surveys were accumulations or heaps of shell (shell middens) and stone tools. These remains date from the past 10 000 years (Holocene). These accumulations of shell, called shell middens, are often concentrated opposite or near rock outcrops where an abundant and a wide range of shellfish species are to be found in the intertidal zone. Shell middens are usually, but not as a rule, less abundant opposite sandy beaches, mainly because there is only one shellfish species available, namely *Donax serra* (white sand mussel) which burrows under the sand. Shell middens are not always visible because they are covered by dunes and vegetation and are often encountered during building operations in coastal towns and holiday resorts. Shell middens contain a wealth of information, not only about past subsistence and cultural patterns, but also of past environments. Archaeological evidence indicates that people of different cultural groups exploited the shoreline for food for many thousands of years.

Shell middens represent the campsites/living sites of indigenous people who exploited the shoreline for food. Most people refer to them simply as 'strandloper' remains. However, 'strandlopers' were not a distinct ethnic/cultural group, and the term rather describes a way of life or socio-economic activities. Shell middens are simply prehistoric 'rubbish' dumps of food waste, mainly the shells of the different species collected, deposited by people living along the coast. Apart from the shells, remains of marine fish, mammals and birds, terrestrial fauna and plant foods are also present in the middens. Mixed with the food waste are also cultural materials such as stone tools, pottery, bone tools and shell ornaments. Human burials are often found in shell middens.

From the records of early travellers and settlers in southern Africa it is evident that the indigenous population in the Eastern Cape consisted of at least three distinct cultural groups exploiting marine resources at the time of contact. Popularly these groups are known as Bushman (hunter-gatherers), Hottentots (Khoekoen pastoralists) and Bantu-speaking people (agropastoralists/mixed farmers). Hunter-gatherers lived in most of southern Africa for the past

20 000 years in small bands within roughly defined territories. Their movements within these territories depended on the seasonal availability of food resources at different times and places; this also included the coastal resources. Khoekoen pastoralists settled in the Eastern Cape coastal region some 1 800 years ago (AD 100), they possessed domestic stock (sheep, goats and cattle) and produced ceramic vessels (clay pots). Although little is known about the early black mixed farmers in the Eastern Cape, we know that they were already living in the Great Kei River valley and along the East London coast 1250 years ago (AD 700). Thus, from the historical and prehistoric observations it is clear that the term 'strandlopers' refers not to a specific ethnic group or culture, but to several groups.

The oldest shell middens in the area contain microlithic stone tools (small scrapers, bladelets, borers and chisels). Usually these stone tools were manufactured of fine grained raw materials such as chalcedony and silcrete and are also found in caves and shelters further inland in the adjacent Cape mountains. These stone tools were made by huntergatherer people from a time period called the Wilton Period, and date between 8 000 years old and historical times. Middens with silcrete stone tools were most probably created by inland groups who visited the coast from time to time or on a regular seasonal basis and may date older than 5 000 years. This also explains the presence of silcrete tools along the coast because there are no silcrete outcrops along the coast and the raw material was brought to the coast by inland visitors.

The majority of the middens along the Coega River coast were probably the remains of groups who were permanent residents of the coast and manufactured stone tools of locally available quartzite and shale beach cobbles. These middens are estimated to date within the past 4 000 years. The few ceramic fragments (clay pot sherds) indicate that possibly Khoekoen pastoralists were also living or passed through the area. Unfortunately no evidence of their campsites or remains of domesticated animals such as sheep and cattle could be positively identified. The few pot sherds date within the past 1 800 years.

All three of these groups exploited the sandy beaches as well as the dune fields and the adjacent vegetated habitats. Unfortunately, little food remains (marine fish and birds and terrestrial fauna), apart from shellfish remains were recovered from the shell middens. However, food remains recovered from the middens provide us with some insights of the prehistoric groups' subsistence patterns. They collected mainly *Donax serra* (white sand mussel) from the sandy beaches, but also collected the little *Perna perna* (brown mussel) that was available from the few rocks present along this part of the coast.

Both the fish species identified, *Pomadasys commersoni* (spotted grunter) and cf. *Rhabdosargus holubi* (Cape stumpnose), are commonly found in estuaries, and it is assumed that they captured the fish in the shallow waters of the Coega River estuary. The presence of *Nassarius kraussiana* shells (also called tick shells and often made into beads), which only occurs in estuaries, support this assumption.

The remains of sub-adult marine birds, *Phalacrocorax carbo lucidus* (white breasted cormorant) and *Spheniscus demersus* (jackass penguin) were also found in the shell middens. These birds were either easy to catch or were collected as beach wash-ups. It is also possible that prehistoric groups timed their stay at the coast to exploit this food resource, because marine birds are most vulnerable at the sub-adult stage.

Hunting or trapping of small bovids such as cf. *Raphicerus sp.* (grysbok and steenbok) probably took place in the adjacent dunes and scrubland. The remains of tortoise (*Homopus*

areolatus - padlopertjie) indicate that this was also an important food resource, not only for its flesh, but also for its carapace which can be used as a container. The many ostrich eggshell fragments recovered from the middens also underline the importance of ostrich eggs in the subsistence of prehistoric groups. The egg provided food and the shells were used as water containers and the fragments of broken eggs were made into beads.

The little food waste found, such as terrestrial mammal fauna, fish and other marine fauna, and the relatively small size of the middens, may suggest relatively short stays of a few days or a week or two. During this period the staple food was mainly shellfish. Trips to the coast were probably made on a seasonal basis to supplement the mineral content in their diet.

Apart from the thousands of stone tools which occurred in the area, no other cultural remains were found. These stone tools date within the last 5 000 years, but were in secondary context. Originally the tools must have been deposited on dunes or soil horizons much higher than their present position, and the hard calcrete floor acted as catchments for them.

Shell middens and the remains of at least 12 clay pots were reported by Rudner (1968) west of the Coega River Mouth. A large number of shell middens were also situated east of Coega River Mouth. Several of the middens were sampled and excavated just before the harbour was constructed. Many middens, ceramic pot sherds (from Later Stone Age Khoekoen pastoralist origin - last 2 000 years) and other archaeological material, are situated between the Coega and Sunday's River Mouths. These remains date mainly of Holocene Later Stone Age (last 10 000 years). Human remains have also been found in the dunes along the coast.

Despite the relatively little cultural and food remains recovered from the shell middens, the surveys provided important data and contributed to our understanding of prehistoric settlement and subsistence strategies in an area about which we previously knew little.

Relatively little information is available on the history of the Coega area and there are only a few brief references to past inhabitants and events to provide information on possible historical archaeological sites and/or material.

The Coega (or Koega) River was first mentioned by historical travellers in 1752 (Theal 1896). The name Coega is of Khoekhoen origin and means literally 'seacow' or hippopotamus (Nienaber & Raper 1977). In November 1776, Anders Sparrman (1785) found a community of Cochoqua Khoekhoen (remnants of the Cochoqua who had fled the Cape after their defeat in the second Khoekhoen-Dutch War one hundred years previously), living on the Coega River. They were caring for the stock of a Dutch burger. Nearby was a group of Gonaqua Khoekhoen, led by a captain named Tadi, who were also tending to the stock of a Dutch farmer. The nearby Coega Kop is shown on maps dating back to 1834 (Port Elizabeth Museum) and is reported to have been used as a navigation beacon by sailing ships wishing to enter Port Elizabeth harbour in the past. The 'kop' which has been quarried since the 1920s by SA Railways and Harbours for the development of the Port Elizabeth Harbour (Skead 1993) is likely to disappear soon with the continuation of intensive quarrying.

The salt pan behind Coega Kop (not the present locality of the salt works at the river estuary) was being mined for its salt as early as 1820. However, this salt pan is likely to have been destroyed with developments in the area. A map of 1851 which indicated that the original road between Port Elizabeth and Grahamstown closely followed the present National road across the Coega River also revealed the presence of a 'Junction Post' on the crossing. While Coetzee's (1995) definitive book on the forts of the Eastern Cape failed to indicate the presence

of this military post, it is likely to represent one of Cradock/Somerset's temporary earthen fortifications established between 1812 and 1819 to protect the eastern frontier. This post, in all likelihood, no longer exists.

Two well eroded fragments of Willow pattern porcelain fragments were recovered from near the Coega River Mouth (before the harbour was constructed), which may have washed-up from a nearby nineteenth century shipwreck. Bennie (2002) has reported on several ships that floundered between the mouth of the Coega and Zwartkops River, between 1817 and 1880. There is also evidence of wreck material just off the Island of Jahleel" (Binneman 2010, pg 3-7).

Further historical events in the surroundings include, among others, settlement by Bantu-speaking agropastoralists from around AD700, the 9 Frontier Wars between 1702 and 1887, further colonial expansion and associated conflicts after 1820, and the Apartheid Struggle as commemorated by the Red Location Museum that has been closed since 2013 (Smuts & van Schalkwyk 2018).

Although numerous heritage sites and heritage resources occur in the surrounding area, only one of these, the historic farmstead at Totteridge Park (SAHRIS Site Number 9/2/095/0024), is a Provincial Heritage Site (Smuts and van Schalkwyk 2018). Although ungraded, the Redhouse Village Hall (SAHRIS Site Number 9/2/073/0052) is listed on the Eastern Cape Heritage Register, and Red Location (SAHRIS Site Number 9/2/073/0067) "should carry at least a Grade IIIa rating, if not higher" (Smuts & van Schalkwyk 2018, pg 12). According to van Ryneveld, Redhouse Village Hall is listed as a Provincial Heritage Site at https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Port_Elizabeth (van Ryneveld 2016). None of these sites, or any known significant heritage site, occurs within the development site for the proposed grid extension.

Archaeological finds made during previous heritage related studies in the immediate surroundings of the current study area are dominated by seemingly random, thinly scattered, but widely distributed Stone Age artefacts of Early Stone Age, Middle Stone Age and Later Stone Age origin (e.g., Binneman 2010, Kaplan 2008 & 2020, Van Ryneveld 2016 & 2018 [and references therein], and Webley 2003, 2006, 2007 & 2008). Away from the coast and river gravels, Stone Age specimens of Middle Stone Age origin are most common, followed by lower numbers of Later Stone Age pieces and even fewer Early Stone Age specimens. These finds occur mostly in disturbed or derived contexts and are lacking in any associated organic (bone, shell, etc) or cultural remains. As a result these finds are considered to be of low significance and when rated, are given a rating of Grade IIIc.

Other archaeological resources documented in the surrounding area during heritage impact assessments are remains of the historic period including bridges, farmsteads, homesteads and other structures, cemeteries and industrial developments (Van Ryneveld 2016 & 2018 [and references therein], Kaplan 2008, Nel 2008, and Webley 2008).

Cultural Landscape

Human occupation and use of the landscape and its features result in a visually more or less evident modification of that landscape. Human use of the environment, however, may have no visually detectible altering effect at all, but nevertheless, this imprinting of human behaviour on the environment, and the relationship between people and the landscape is what

is implied by the term “cultural landscape”(see UNESCO 2008 for definitions, significance and preservation of cultural landscapes).

Although this area has been occupied by hominins and humans for at least 1.5 million years, the nomadic hunter-gatherer and, to a lesser extent, early pastoralist lifestyles of prehistoric inhabitants leaves little to no physical evidence of their presence in the landscape and has a negligible modifying effect on it. This is in stark contrast to the significant alteration to the environment made over the past few hundred years by colonial agricultural and urban settlements of the area.

Cultural landscapes are defined and informed by several elements including, but not limited to; natural landscape features, palaeontology, archaeology / anthropology, oral histories, public memory, the built environment and social and written histories. The value of cultural landscapes is determined through professional interpretation and opinion, community and public values as well as environmental and heritage legislation.

The cultural landscape of the affected environment includes three broad layers, with the most recent, colonial settlement and development over the past few hundred years having the most visually evident modifying effect on the landscape. Impacts related to this cultural layer include roads and associated bridges, single vehicle tracks, railway lines and associated bridges and structures, agricultural clearings for grazing and cultivation, variety of farming activities, variety of farmsteads, structures and infrastructure, quarries, dams, fencing, overhead power lines, transmission/receiver masts, wind turbines, extensive urban development and associated infrastructure, harbours/ports, industrial developments and so on.

The second layer underlying the historic / colonial period and dating to the last 2000 years is the indigenous pastoralist and agropastoralist period, which in turn is underlain by the third layer comprised of the three Stone Age periods spanning the period from a few hundred years ago to the early periods of stone tool making archaic humans at least 1.5 million years ago.

Although the prehistoric cultural landscape is the least evident and often invisible, temporally, it makes up for the overwhelming bulk of human occupation of the region. Given that most of the archaic human (Early Stone Age) and human (Middle Stone Age to recent) occupation of this area involves the Stone Age era, it can be argued that the most significant cultural layer in this area involves the pre-colonial cultural landscape and its sense of place.

Large stretches of South Africa's coastline are rich and varied cultural landscapes that house the highest quantity and quality of archaeological Stone Age sites in the world. With ever increasing coastal developments and resulting degradation of the coastal strip, it follows that as much as possible of this cultural landscape should be protected for future generations and scientists. Since the development site for the proposed grid extension is situated more than 5km from the current shoreline and contains no known significant archaeological sites, it will have no negative impact on the coastal zone and its associated cultural landscape.

Considering the presence of existing industrial developments including electrical infrastructure such as the substations and overhead power lines, the proposed grid extension will be a minor addition to this latest, industrial layer of the cultural landscape and will have a negligible impact overall.

5.2. Archaeological Survey

The field work component of this study was conducted on 25 and 26 May 2021 after permission to enter the Coega IDZ area was obtained from the Coega Development Corporation. Due to civil unrest affecting access to certain parts of the development site, the archaeological survey was started at the DEDISA Substation. A distance of more than 200km was travelled during fieldwork of which about 20km were covered on foot. Wherever possible, areas with exposed ground surfaces were inspected on foot. Figures 4, 5, 6 and 7 show the areas covered by the archaeological survey.

For security reasons the stretch running through Motherwell was not covered and a small area north of the Swartkops River was excluded due to the disturbed nature of sediments in the floodplain. As mentioned earlier, even though some areas are inaccessible due to impenetrable thicket vegetation cover, sufficient ground surfaces were open to archaeological inspection for the purpose of this assessment.

Only three observations were made and these are all considered to be of low significance.

1. Isolated Stone Age Artefacts

Along the entire length of the development site is an ephemeral and random scatter of Stone Age stone artefacts. The artefacts displayed no obvious spatial pattern of occurrence and were found in a variety of contexts including alluvial gravels (often including pieces and nodules of calcrete), exposed calcrete surfaces, embedded in calcretes and soft sediments, and exposed on soft and hard sandy surfaces. In general, they were more common among gravels, but numbers are so low that no occurrences were considered to comprise an archaeological site.

These stone artefacts occur in isolation or in very low densities (mostly less than 1 artefact per square meter) and are not associated with any other organic (bone and shell) or cultural remains. Most are of indeterminate age, but it appears that pieces typical of the Middle Stone Age are most common, including specimens with prepared or faceted striking platforms as well as blades and convergent flakes (points). Specimens included hammer stones, flakes, convergent flakes, flaked cobbles, flaked pieces, blades and a variety of cores. Apart from the occasional piece in chalcedony or silcrete, the vast bulk of identified specimens are in quartzite.

No formal tools or artefacts of definitive Early Stone Age or Later Stone Age origin were seen, but their presence can be expected. A few heavily patinated and weathered pieces suggested an Early Stone Age origin. Given their mostly disturbed contexts, temporally mixed nature, and the absence of any other associated remains, these finds are considered to be of low significance and are given a rating of Grade IIIc. Examples of these Stone Age specimens, occurring throughout the study area, are shown in Plates 4, 8, 12, 13 & 14.

Recommendation: No further studies or mitigation of these finds is required and even though they are protected by the NHRA, it is recommended that a permit for their disturbance or destruction is not required from the EC PHRA.

2. Temporally Mixed Scatter of Human-related Refuse

At S33.72880° E25.67302° and including the area indicated by the white polygon in Figure 9 is an ephemeral surface scatter of temporally mixed human-related (anthropogenic) refuse (also see Figure 7). A few pieces of naturally occurring land snail shell fragments and tortoise carapace plates and bones were also noted. The area is situated immediately west of a wire framed pylon and under an existing overhead power line (Plate 15). Although the scatter is of very low density, it is spread over an area of roughly 8000 m². The scatter lies atop a mostly soft sandy surface exposed in a single vehicle track, animal tracks, and between bushes and thicket. The scatter is truncated by a small intermittent stream that is currently dry and no *in situ* anthropogenic material was seen in exposed profiles of the stream banks. From inspection of a few small mammal burrows in the area, it appears that the scatter does not have a subsurface component and is limited to the scatter visible on the surface. Nevertheless, it cannot be certain whether or not some anthropogenic material may be buried in subsurface sediments, or covered by vegetation.

Examples of the densest parts of the scatter of remains are shown in Plate 16 while examples of some of the anthropogenic remains are shown in Plates 17, 18 and 19. The most visible and common pieces are fragments of white mussel shell. While an unidentified shell of a sea snail was seen, the only other identifiable marine shell fragment belonged to a brown mussel. It is possible that a fresh water bivalve is also represented. Apart from the tortoise bone mentioned above, the only other identifiable faunal remains are some teeth of a large bovid that is most likely cattle, though eland cannot be ruled out. Although a large fragment of a thoracic vertebra might also be from cattle, it cannot be certain as these may be similar to eland or other large antelope. Several Stone Age stone artefacts were seen, but none of these are formal tools and consist of flaked pieces and flaked cobbles, flakes, chips and chunks. Most of these are in quartzite, though a few pieces in chalcedony and silcrete were also noted. At least one blade is likely of Middle Stone Age origin, while most of the pieces are of indeterminate age, at least some are likely to be of Later Stone Age origin. No specimens of the Early Stone Age were seen. Several pieces of glass, including a complete bottle, as well as ceramic fragments of modern origin were recorded. Also included are a few pieces of metal (including a large nut), some plastic bottles and bottle tops, and modern textiles. The contents of the scatter include materials from the Stone Age, historic period and anthropocene (current era), and therefore, the materials are referred to as a temporally mixed scatter. As such, the materials are considered to be of low significance and are given a rating of Grade IIIc.

The open context and poor conditions for fossilisation at this locality suggests that the organic remains, especially the few bone fragments, are of historic origin. The low density of materials, especially shell, precludes the scatter from being defined as a midden or shell midden. This locality is roughly 7km from the current shore line and it is unlikely, although not unheard of, that prehistoric people would have carried shellfish to this locality. It is more likely that the organic remains are associated with the historic and modern debris, which may stem from the construction of the existing overhead lines or the nearby railway line. The low densities of remains do not represent a rubbish dump and are therefore not likely associated with a construction or “workman’s” camp. Alternatively, the historic remains may be from transient camps associated with earlier farming activities.

Recommendation: Even though this locality is of low significance and requires no further investigation or mitigation, the presence of subsurface archaeological remains cannot be ruled out entirely, and therefore it is recommended that, if a pylon for the proposed grid

extension needs to be installed here, then it should be placed to the north of this scatter as suggested with the ellipse in Figure 9.

3. Circular Feature in Calcrete Blocks and Chunks

East of the NE corner of the Grassridge substation and immediately east of a single vehicle track at S33.72042° E25.63673°, is a circular feature made of calcrete blocks and chunks (Figures 7 & 10 and Plate 20). This feature is approximately 12 meters in diameter and is visible via Google Earth. Apart from a small pile of concrete rubble, no other human-related material remains were seen in or near the circular feature. Due to the absence of any ruins or evidence for a vertical component to the feature, it is unlikely to have been a structure associated with human occupation or farming activity (such as a kraal). It is more likely that the feature is a marker of sorts and at best might be associated with ritual or other activity. It is possible that the CDC is aware of this feature and may be able to shed further light on it. At present, from an archaeological perspective, the feature is considered to be of low significance and is given a rating of Grade IIIc.

Recommendation: To caution on the safe side, and since we do not currently know the origin or meaning of this feature, it is recommended that it be avoided. If a pylon for the proposed grid extension is required here, then it is recommended that it be placed at least 20 m from this feature.

Table 1. Description, location, rating and recommendations for identified archaeological occurrences.

Point Name	Age & Material	Location - WGS 84 Lat/Lon dec.degrees	Rating	Mitigation or Management
1		entire length of development site	Low / Grade IIIc	none
2	isolated & low density Stone Age artefacts temporally mixed scatter of human-related refuse circular feature of calcrete blocks & chunks	S34.11512° E24.61196°	Low / Grade IIIc	avoid, place pylon to north (see Figure 9)
3		S33.98194° E24.63909°	Low / Grade IIIc	avoid - 20 m buffer

5.3. Consultation

At this stage of the project there are no results concerning the public participation or community consultation process.

6. Sources of Risk, Impact Identification and Assessment

Vegetation clearing and earthmoving activities associated with the construction phase (installation of pylons and construction of switching station north of Chatty substation) of development have potential to impact archaeological resources and ultimately the cultural landscape, and therefore, only the construction phase is considered as a potential risk. There will be no impacts during the operational and decommissioning phases of the development. Only known impacts associated with the construction phase of the switching station and grid extension route and corridor are assessed.

Since the no-go option will involve continued and unknown impacts of natural processes on archaeological resources, and because the proposed development impacts can be controlled and monitored, then the grid extension development may actually be preferred over the no-go option. At this stage, however, there is no preference of one over the other.

The positive impact of this project is that we now have a larger area that has been investigated for archaeological resources and hence we have a better understanding of the archaeological record in the Coega IDZ and development site. The project has also provided an opportunity to conserve any important archaeological resources if they were to occur in the area. This is not possible if uncontrolled piecemeal developments as well as natural processes were to take place.

Currently there is no anticipated or known cumulative impact on archaeological resources or the cultural heritage value of the development site. Since the entire development site already contains overhead power lines and other vertical (wind turbines & large industrial structures) developments, the addition of the grid extension will have a negligible or no additional impact on the aesthetic value of the area.

Note that a negative impact rating without mitigation can become a positive impact rating with mitigation as the mitigation can have a positive influence on archaeological resources. For example, the mitigation measure of archaeological monitoring during the construction phase may result in the recording of previously undocumented heritage remains, which is a positive impact on the archaeological record and our understanding of it. If mitigation results in an archaeological resource being conserved or if something new is learned about a resource as a result of mitigation, then the impact can go from negative (without mitigation) to positive (with mitigation).

Table 2. Impact table for 1. Isolated Stone Age Artefacts.

Project phase	Construction			
Impact	Isolated Stone Age Artefacts - not conservation worthy			
Description of impact	Disturbance & destruction during construction phase			
Mitigatability	Low	Mitigation is not feasible and will not reduce the significance of impacts		
Potential mitigation	none, no further studies or mitigation required			
Assessment	Without mitigation		With mitigation	
Nature	Negative		Neutral	
Duration	Permanent (4)	Impact is permanent, or in excess of 20 years		#N/A
Extent	Footprint (1)	Limited to specific isolated parts of the site		#N/A
Intensity	Very low (2)	The archaeological heritage value of the area negligibly altered		#N/A
Probability	Definite (4)	There is a high likelihood that the impact will occur		#N/A
Confidence	High	Determination is based experience and specialist knowledge		#N/A
Reversibility	Low	Archaeological resources are nonrenewable		#N/A

Resource irreplaceability	Low	The archaeological record is irreplaceable, but this resource is of low to no significance		#N/A
Significance	Negligible to none - negative		#N/A	
Comment on significance	Resource is of low significance and hence impact is negligible to neutral			
Cumulative impacts	low to none			

Significance value = (extent + duration + Intensity) x probability
Significance value = (1 + 4 + 2) x 4
Significance value = 28

According to the methodology provided by CEN, the significance value of 28 is Medium Significance, meaning that, “The impacts are important and require attention; mitigation is required to reduce the negative impacts.” However, the resource is considered to be of low heritage value and mitigation is not feasible. Because the heritage value of this archaeological resource is considered to be low, mitigation will not necessarily reduce the negative impacts. Nevertheless, as stated above, the negative impacts will not reduce the archaeological or heritage value of the area due to the low heritage value of this category of archaeological remains. In this instance, the formula for calculating significance is misleading and not really meaningful.

Table 3. Impact table for 2. Temporally Mixed Scatter of Human-related Refuse

Project phase	Construction			
Impact	Temporally mixed scatter of human-related refuse			
Description of impact	damage or destruction as a result of grid connection construction			
Mitigatability	High	Mitigation exists and reduces significance of impacts		
Potential mitigation	If pylon required here, then place it outside polygon shown in Figure 9 and in suggested ellipse also shown in Figure 9. With mitigation there is no impact			
Assessment	Without mitigation		With mitigation	
Nature	Negative to neutral		Neutral – no impact	
Duration	Permanent (4)	Impact may be permanent, or in excess of 20 years	No impact	#N/A
Extent	Footprint (1)	Limited to this specific locality within the development site	No impact	#N/A
Intensity	Very low (2)	Archaeological resource of low significance and hence heritage value of area is not altered	No impact	#N/A
Probability	Probable (2)	There is a possibility that the impact will occur to the extent that provisions must therefore be made.	No impact	#N/A
Confidence	High	Determination is based on experience and specialist knowledge	High	#N/A
Reversibility	Low	Archaeological resources are nonrenewable	Low	#N/A
Resource irreplaceability	Low	The archaeological record is irreplaceable, but this resource is of low to no significance	Low	#N/A
Significance	Negligible to none - negative		#N/A	

Comment on significance	with mitigation there is no impact and the resource is conserved
Cumulative impacts	low to none

Significance value = (extent + duration + Intensity) x probability

Significance value = (1 + 4 + 2) x 2

Significance value = 14

According to the methodology provided by CEN, the significance value of 14 is Low Significance, meaning that, “The impacts are less important, but some mitigation is required to reduce the negative impacts.” With mitigation – placing pylon outside of the extent of the resource – there is no impact.

Table 4. Impact table for 3. Circular Feature in Calcrete Blocks and Chunks

Project phase	Construction			
Impact	Circular Feature in Calcrete Blocks and Chunks			
Description of impact	damage or destruction as a result of grid connection construction			
Mitigatability	High	Mitigation exists and reduces significance of impacts		
Potential mitigation	If pylon required here, then place it 20 meters away from the circular feature. With mitigation there is no impact			
Assessment	Without mitigation		With mitigation	
Nature	Negative to neutral		Neutral – no impact	
Duration	Permanent (4)	Impact may be permanent, or in excess of 20 years	No impact	#N/A
Extent	Footprint (1)	Limited to this specific locality within the development site	No impact	#N/A
Intensity	Very low (2)	Archaeological resource of low significance and hence heritage value of area is not altered	No impact	#N/A
Probability	Probable (2)	There is a possibility that the impact will occur to the extent that provisions must therefore be made.	No impact	#N/A
Confidence	High	Determination is based on experience and specialist knowledge	High	#N/A
Reversibility	Low	Archaeological resources are nonrenewable	Low	#N/A
Resource irreplaceability	Low	The archaeological record is irreplaceable, but this resource is of low to no significance	Low	#N/A
Significance	Negligible to none - negative		#N/A	
Comment on significance	with mitigation there is no impact and the resource is conserved			
Cumulative impacts	low to none			

Significance value = (extent + duration + Intensity) x probability

Significance value = (1 + 4 + 2) x 2

Significance value = 14

According to the methodology provided by CEN, the significance value of 14 is Low Significance, meaning that, “The impacts are less important, but some mitigation is required to reduce the negative impacts.” With mitigation – placing pylon 20m away from the circular feature – there is no impact.

7. Conclusions and Recommendations

No significant archaeological heritage resources or sites were identified in the study area. The impacts and recommendations regarding archaeological heritage resources identified in the development site are summarised as follows:

1) Isolated Stone Age Artefacts. **Recommendation:** No further studies or mitigation of these finds is required and even though they are protected by the NHRA, it is recommended that a permit for their disturbance or destruction is not required from the EC PHRA;

2) Temporally Mixed Scatter of Human-related Refuse. **Recommendation:** Even though this locality is of low significance and requires no further investigation or mitigation, the presence of subsurface archaeological remains cannot be ruled out entirely, and therefore it is recommended that, if a pylon for the proposed grid extension needs to be installed here, then it should be placed to the north of this scatter as suggested with the ellipse in Figure 9;

3) Circular Feature in Calcrete Blocks and Chunks. **Recommendation:** To caution on the safe side, and since we do not currently know the origin or meaning of this feature, it is recommended that it is avoided. If a pylon for the proposed grid extension is required here, then it is recommended that it be placed at least 20 m from this feature.

In the event of any archaeological resources or human remains being exposed or unearthed during construction activities, then such work must cease immediately and the area in question should be closed to access. The Eastern Cape PHRA must be notified immediately and the find must be dealt with by a suitably qualified professional and in accordance with the NHRA.

All of the above recommendations must be included in the Environmental Management Program for the proposed Impofu Grid Extension.

From this assessment and given the mitigation requirements there are no fatal flaws from an archaeological standpoint and there are no objections to the proposed Impofu Grid Extension project proceeding.

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9. Figures and Plates (on following pages)

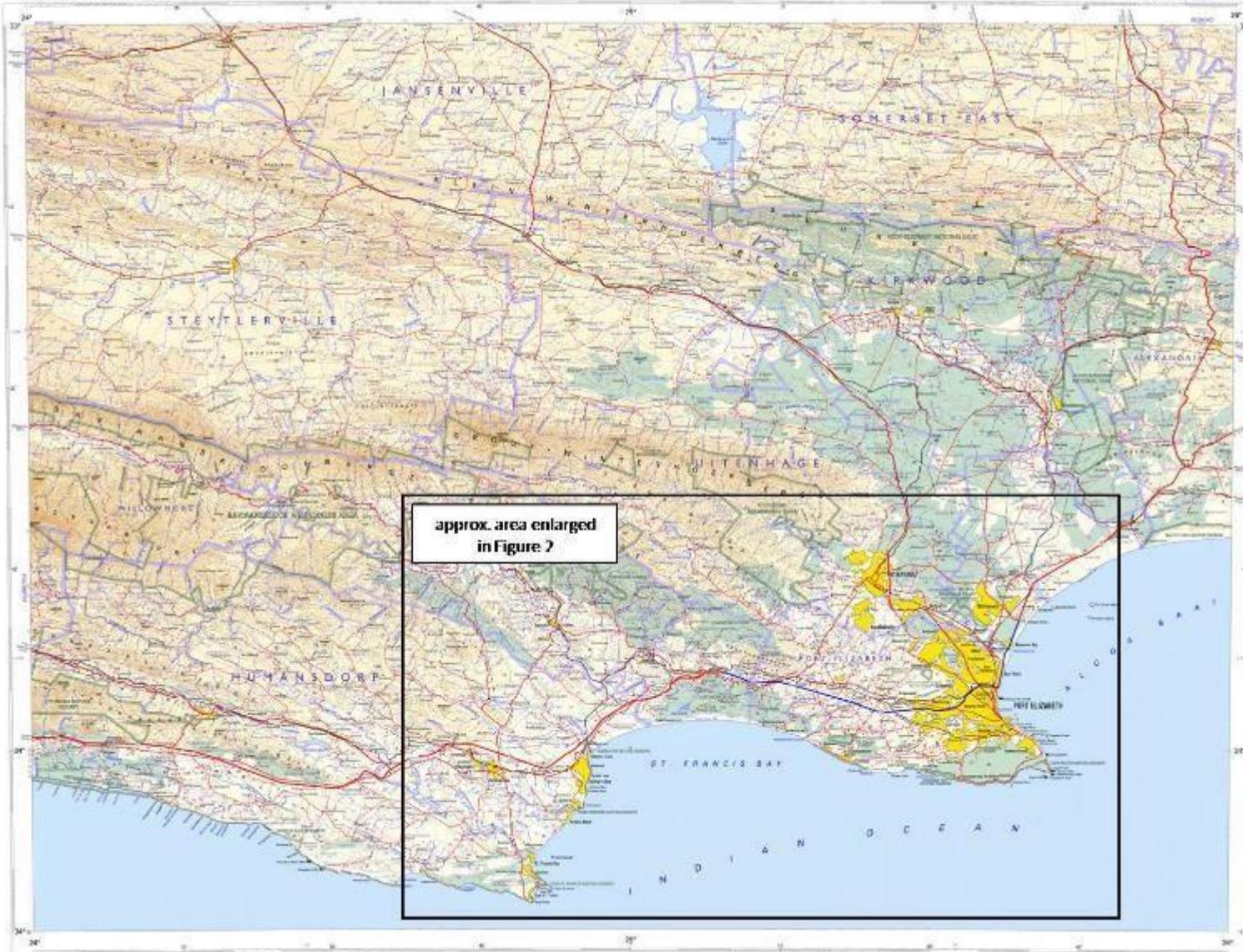


Figure 1. General location of the Impofu Wind Farms, Grid Connection, and Grid Extension in the Cape St Francis and Gqeberha(Port Elizabeth) region of the Eastern Cape Province. Map – 3324 Port Elizabeth 1:250 000 - courtesy of The Chief Directorate, Surveys & Mapping, Mowbray.

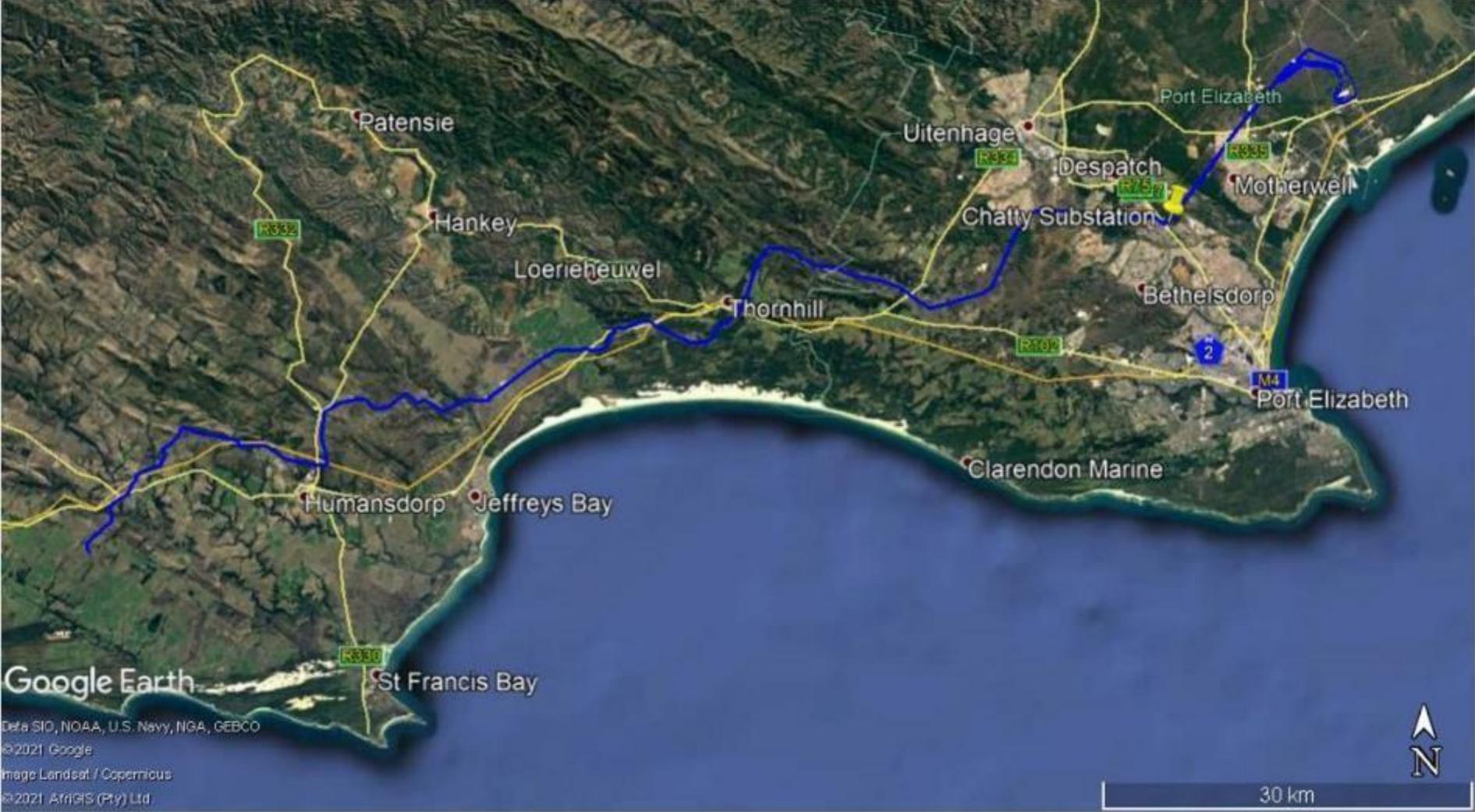


Figure 2. Area enlarged from Figure 1 with the Impofu Wind Farms Grid Connection indicated by the blue line. The approved power line starts at the

Impofu Wind Farms in the West and ends at the Chatty Substation (labelled yellow marker). The Grid Extension under study here starts at the Chatty Substation and ends at the DEDISA Substation to the North-East (see enlarged area in Figure 3). Courtesy of Google Earth 2021.



Figure 3. Area enlarged from Figure 2 showing the Grid Extension (blue line and blue polygon) that starts at the Chatty Substation, bypasses the Grassridge Substation and ends at the DEDISA substation. Courtesy of Red Cap, CEN and Google Earth 2021.

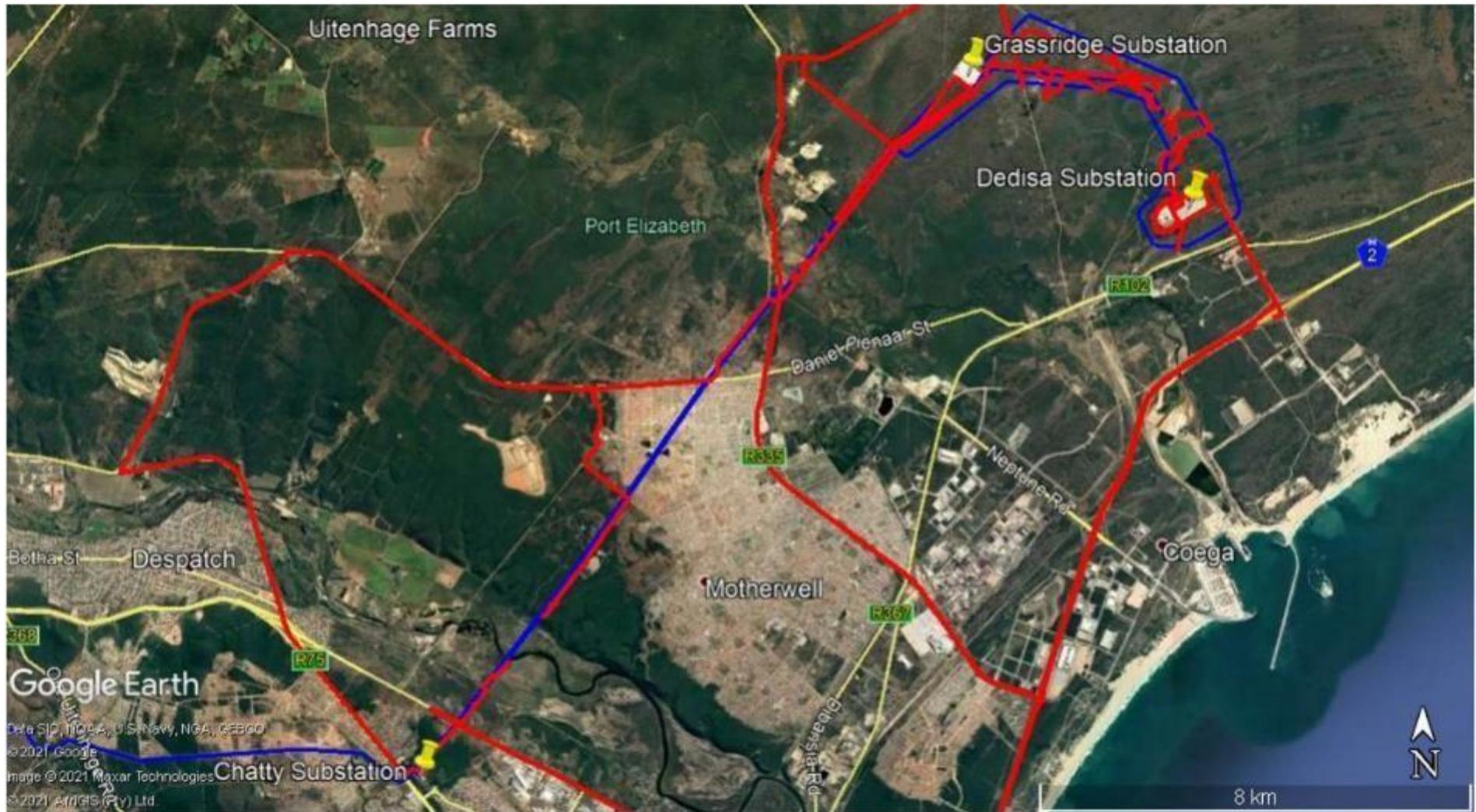


Figure 4. Area enlarged from Figure 2 showing the Grid Extension (blue line and blue polygon) as well as transit and survey tracks that were fixed with a GPS unit during the archaeological investigation (red lines). Enlarged portions of the Grid Extension route and corridors are shown in Figures 5, 6 and 7. Courtesy of Red Cap, CEN and Google Earth 2021.



Figure 5. Area enlarged from Figure 4 showing the western portion of the Grid Extension (blue line) from the Chatty Substation to Motherwell. Also shown are transit and survey tracks (red lines) that were fixed via GPS during the archaeological field work. Note that, due to civil unrest in the area

at the time of undertaking the field work, the portion of the Grid Extension running through Motherwell was not covered. The Grid Extension route crosses the Swartkops River that runs diagonally in a south-westerly direction between Chatty and Motherwell. Courtesy of Red Cap, CEN and Google Earth 2021.

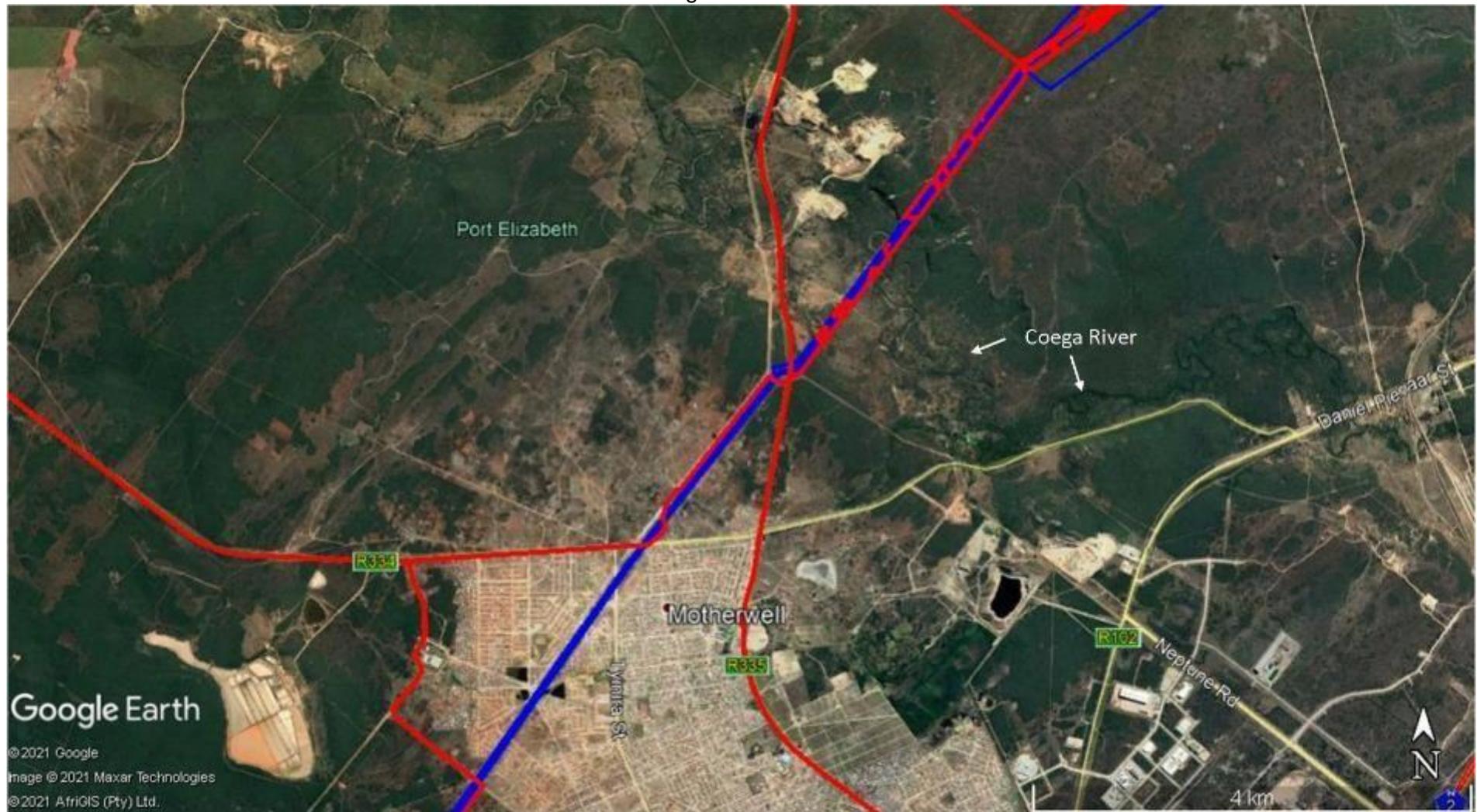


Figure 6. Area enlarged from Figure 4 showing the central portion of the Grid Extension (blue line and polygon) from Motherwell to the start of the larger Grid Extension corridor (blue polygon) that is situated north of the Coega River and to the South-East of the Grassridge Substation. Also shown are transit and survey tracks (red lines) that were fixed via GPS during the archaeological field work. Note that, due to civil unrest in the area at the time of undertaking the field work, the portion of the Grid Extension running through Motherwell was not covered. Courtesy of Red Cap, CEN and Google Earth 2021.

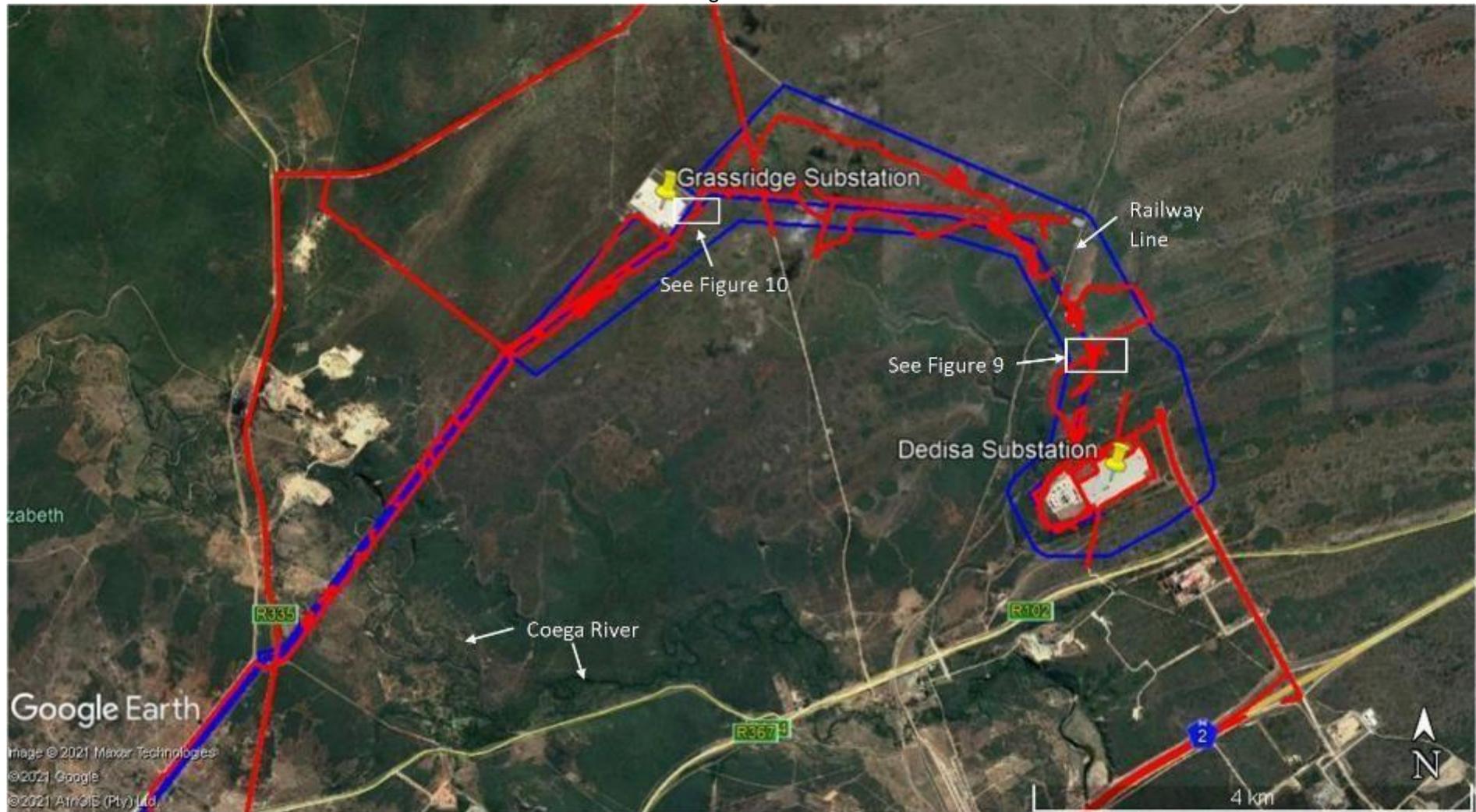


Figure 8. Red lines and polygons represent cases and reports of environmental applications and heritage-related impact assessments on the SAHRIS map in May 2021 (<https://sahris.sahra.org.za/map/reports>). The proposed grid extension route and corridor are shown in blue.

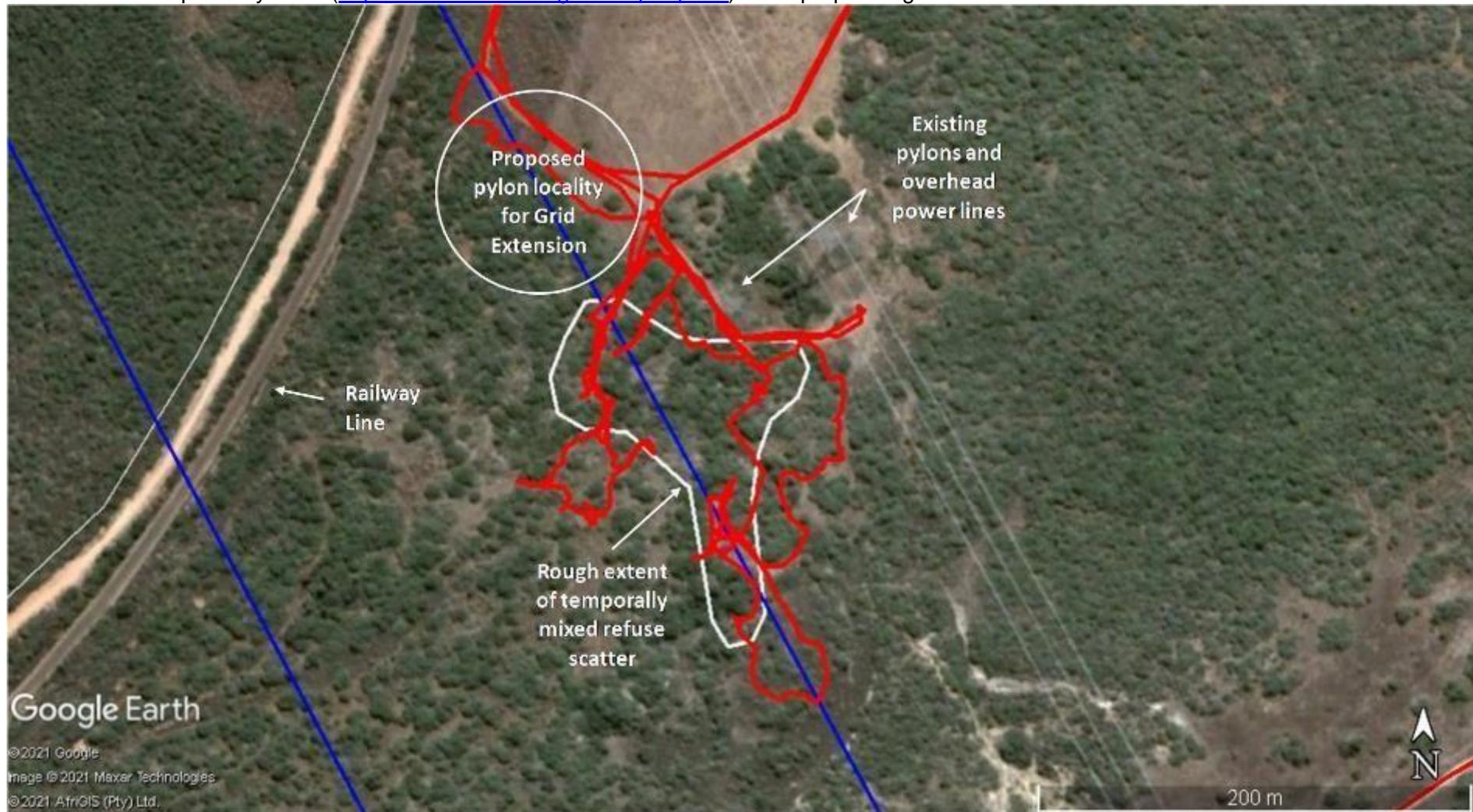


Figure 9. Area enlarged from Figure 7 showing the approximate extent of a temporally mixed scatter of refuse (white polygon), the location of existing overhead power lines and pylons as well as the proposed pylon site for the proposed Grid Extension (white ellipse). The blue line on the right

indicates the proposed alignment of the Grid Extension. Also shown are vehicle and foot survey tracks (red lines) that were fixed via GPS during field work. Courtesy of Red Cap, CEN and Google Earth 2021.

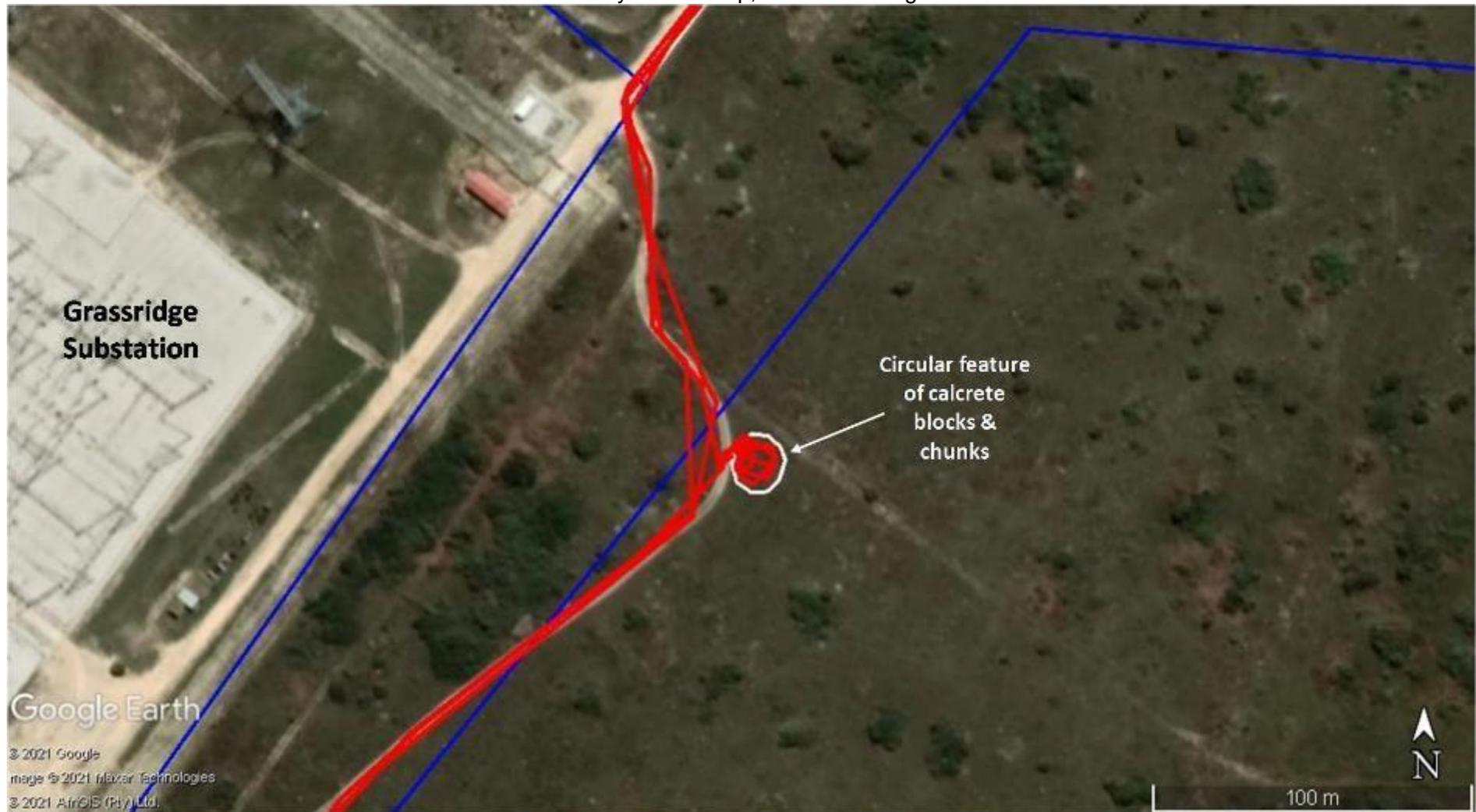


Figure 10. Area enlarged from Figure 7 showing the location of a circular feature made of calcretes blocks and chunks (white ellipse). Apart from a small pile of concrete rubble, no other human-related material remains were seen inside or in the immediate vicinity of the circular feature. The blue

line on the right indicates the proposed alignment of the Grid Extension. Also shown are vehicle and foot survey tracks (red lines) that were fixed via GPS during field work. Courtesy of Red Cap, CEN and Google Earth 2021.

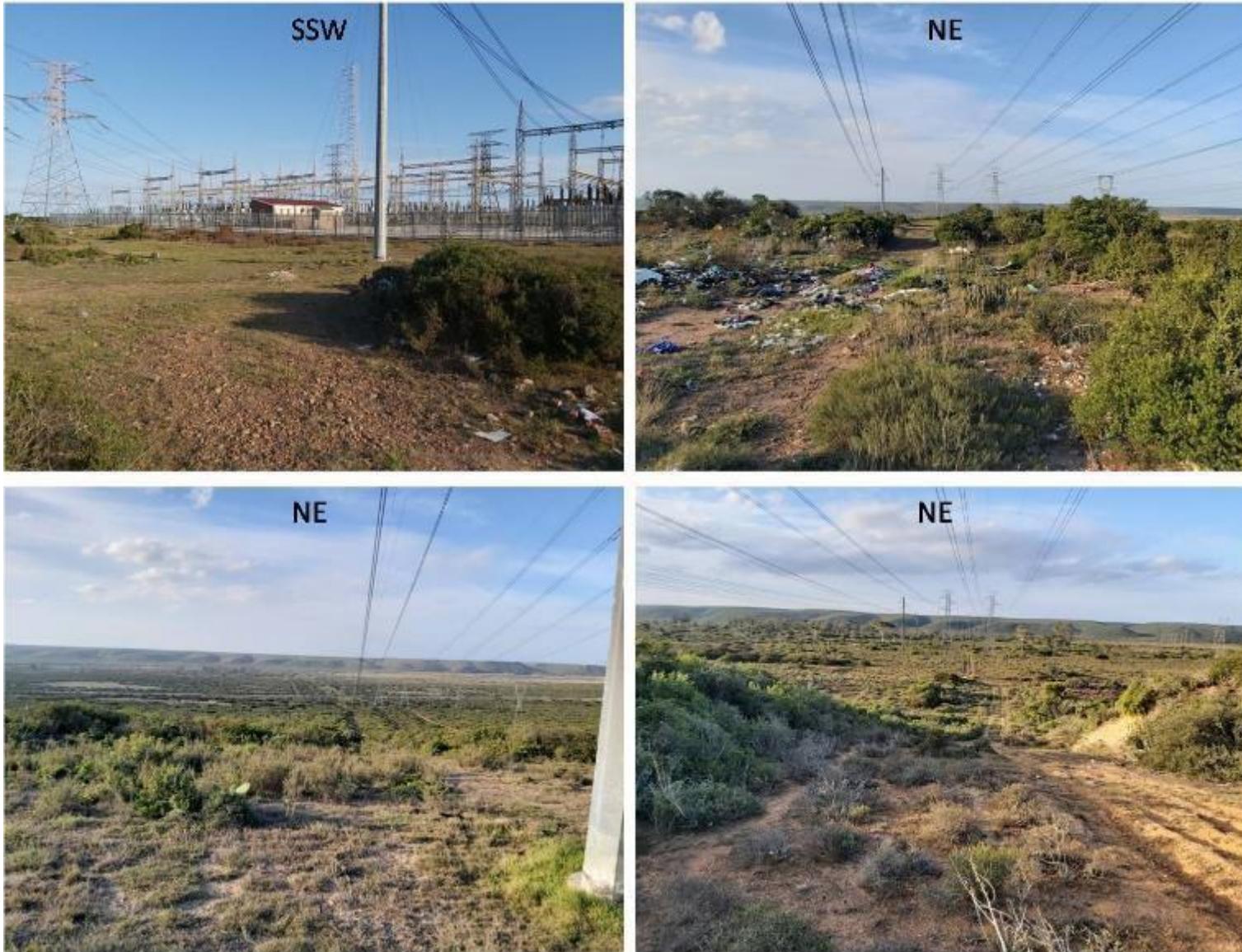


Plate 1. Examples of the receiving environment between the Chatty Substation and Motherwell showing existing developments & disturbances, exposed surfaces, topography and vegetation cover. Chatty Substation (top L) and Swartkops River floodplain (bottom). Directions of views are indicated with abbreviated compass bearing names.

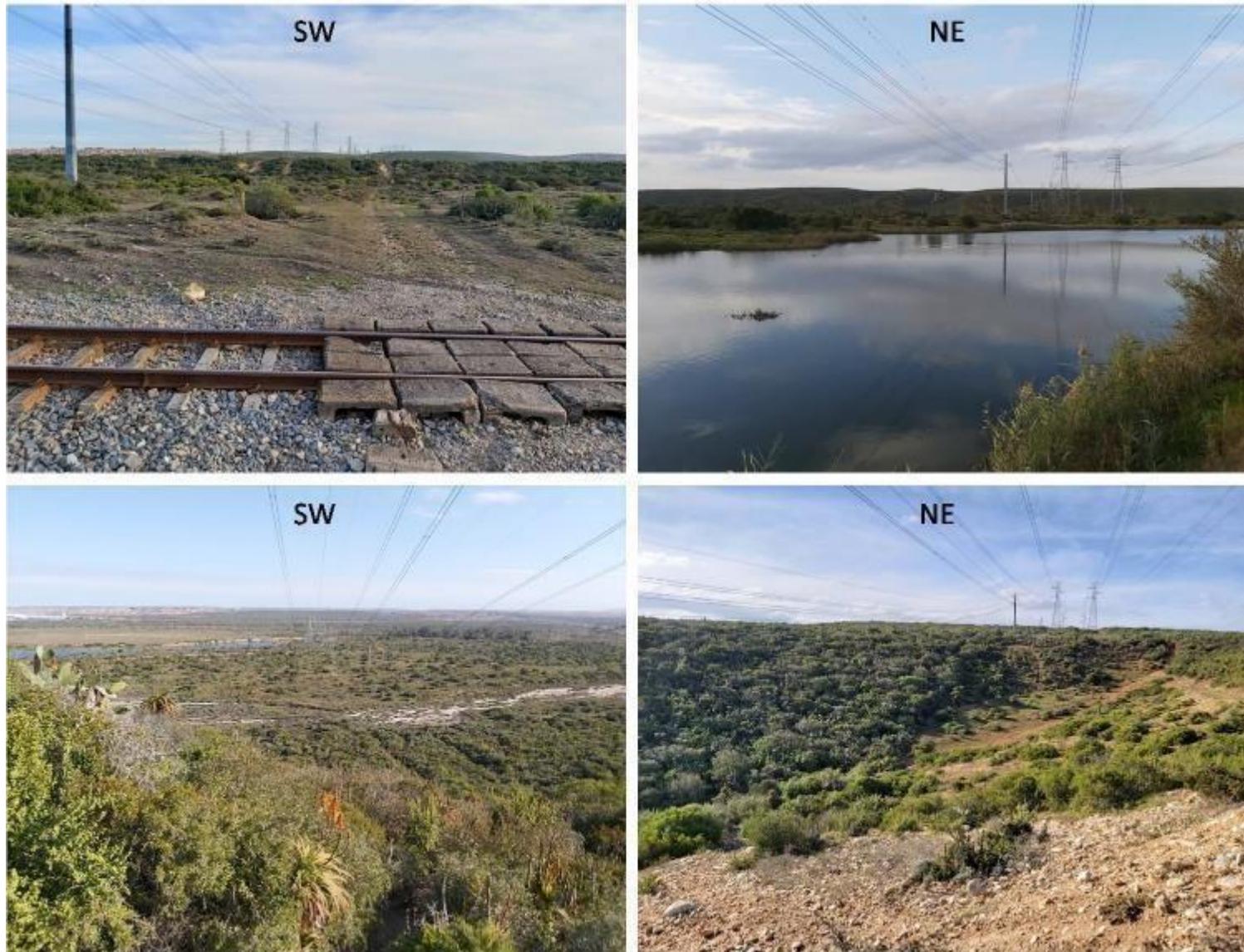


Plate 2. Examples of the receiving environment between the Chatty Substation and Motherwell showing existing developments & disturbances, exposed surfaces, topography and vegetation cover. Swartkops River (top R) and floodplain (bottom L). Directions of views are indicated with abbreviated compass bearing names.



Plate 3. Examples of the receiving environment between the Chatty Substation and Motherwell showing existing developments & disturbances, exposed surfaces, topography and vegetation cover. Directions of views are indicated with abbreviated compass bearing names.



Plate 4. Examples of Stone Age artefacts seen along the Chatty to Motherwell stretch of the Grid Extension alignment. The GPS unit is 10cm long.

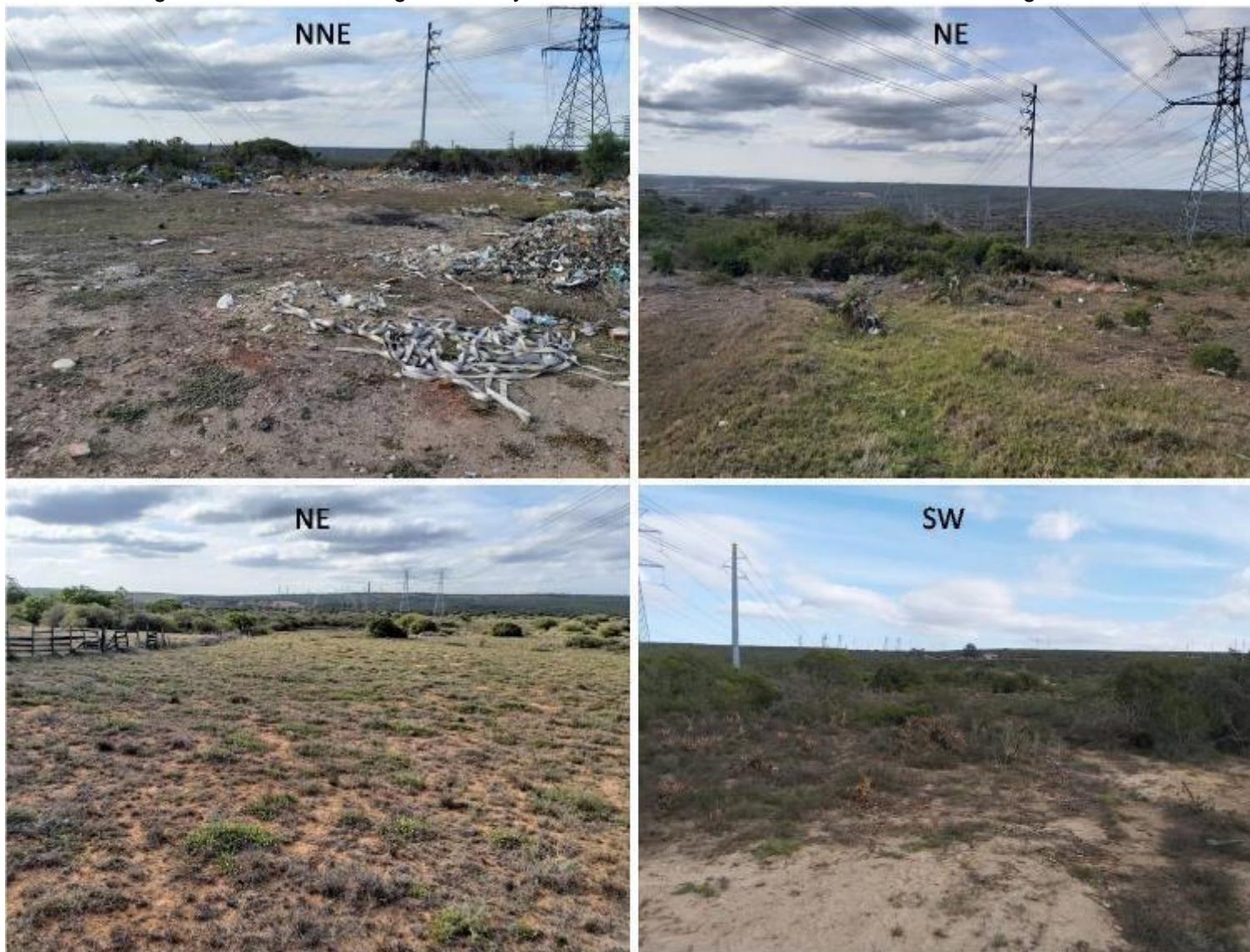


Plate 5. Examples of the receiving environment between Motherwell and the larger Grid Extension corridor, as shown in Figure 6, showing existing developments & disturbances, exposed surfaces, topography and vegetation cover. Directions of views are indicated with abbreviated compass bearing names.

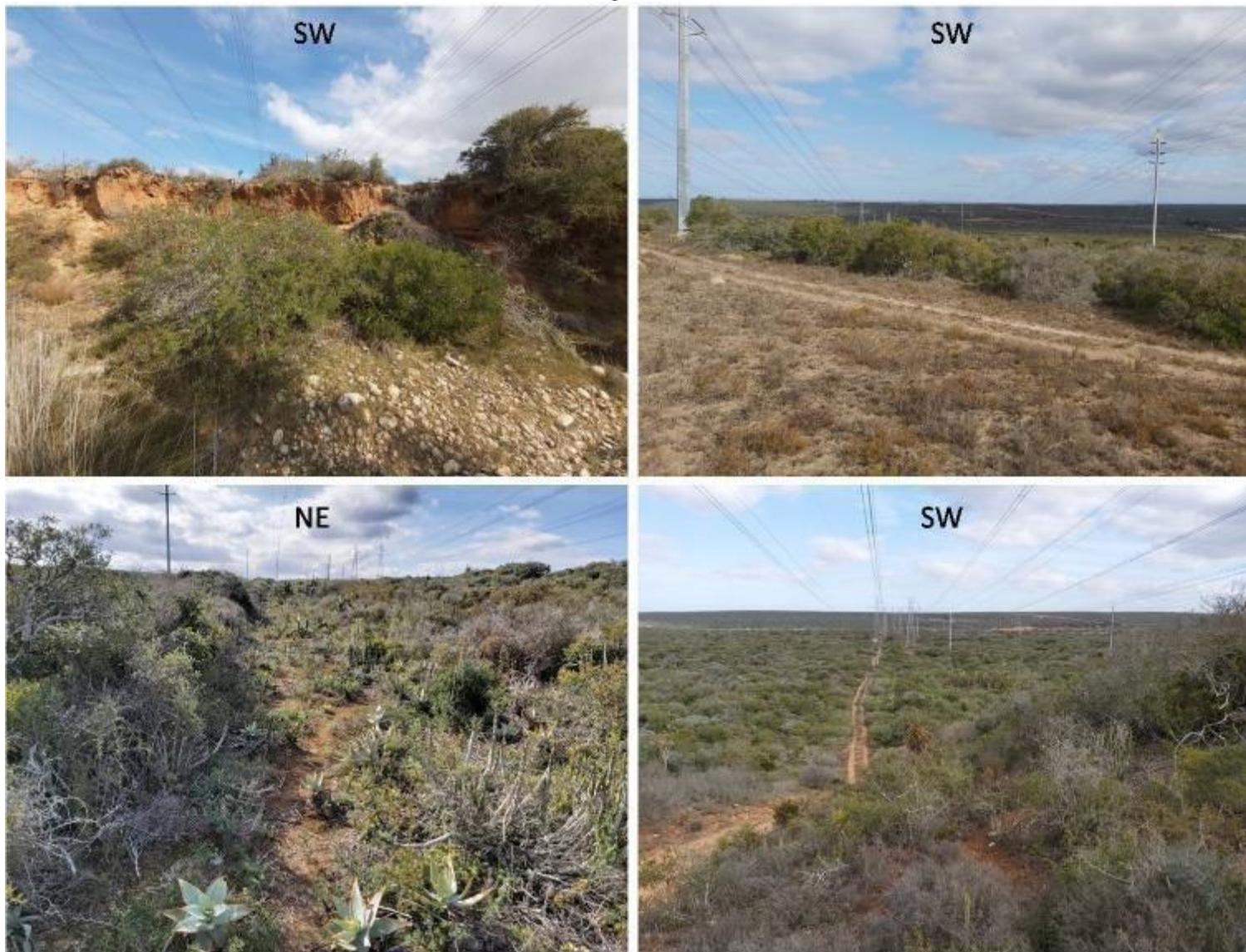


Plate 6. Examples of the receiving environment between Motherwell and the larger Grid Extension corridor, as shown in Figure 6, showing existing developments & disturbances, exposed surfaces, topography and vegetation cover. Directions of views are indicated with abbreviated compass bearing names.

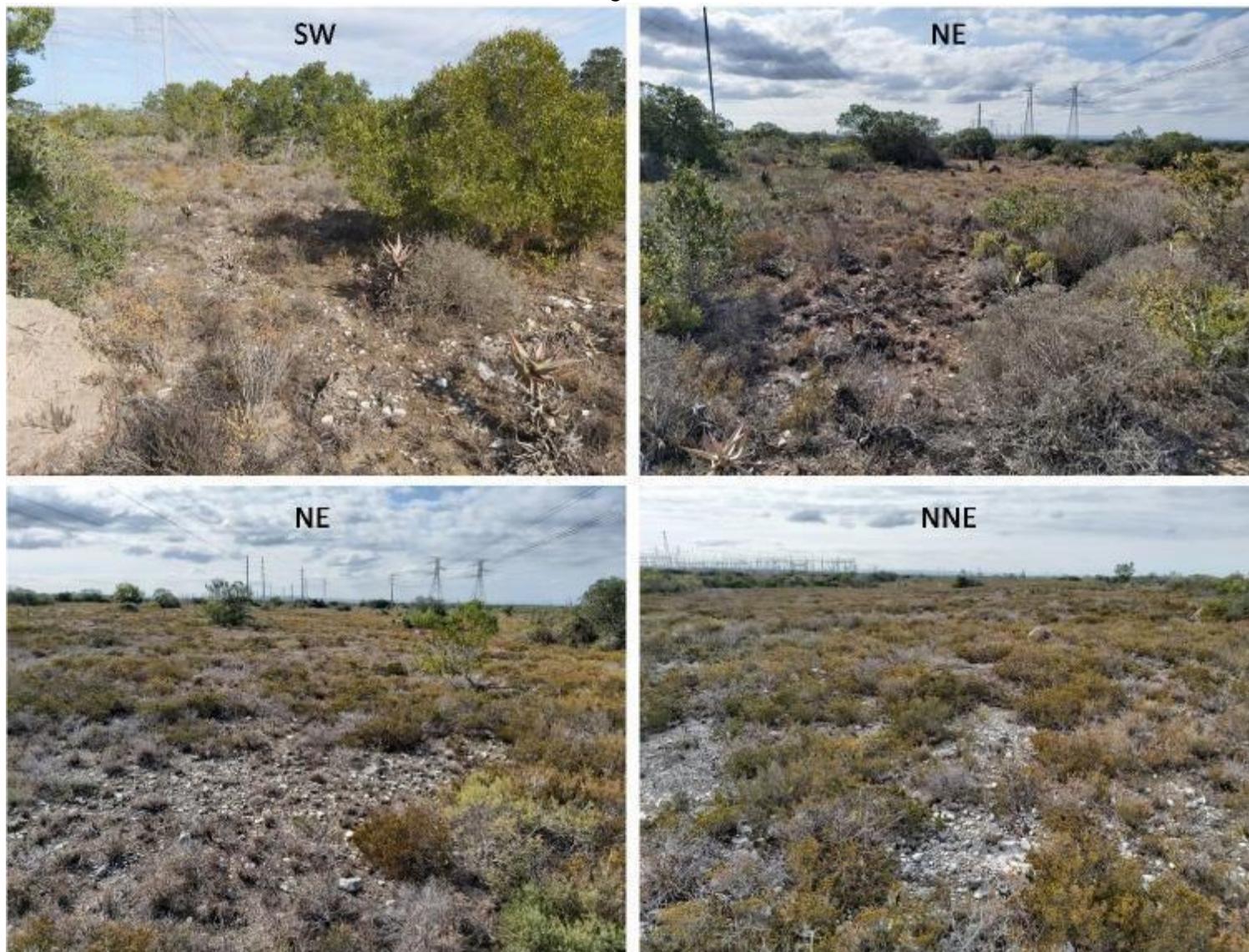


Plate 7. Examples of the receiving environment between Motherwell and the larger Grid Extension corridor, as shown in Figure 6, showing existing developments, exposed surfaces, topography and vegetation cover. The Grassridge Substation is visible in the bottom right image. Directions of views are indicated with abbreviated compass bearing names.



Plate 8. Examples of a few Stone Age artefacts seen along the Motherwell to Grassridge stretch of the Grid Extension alignment. The GPS unit is 10cm long.

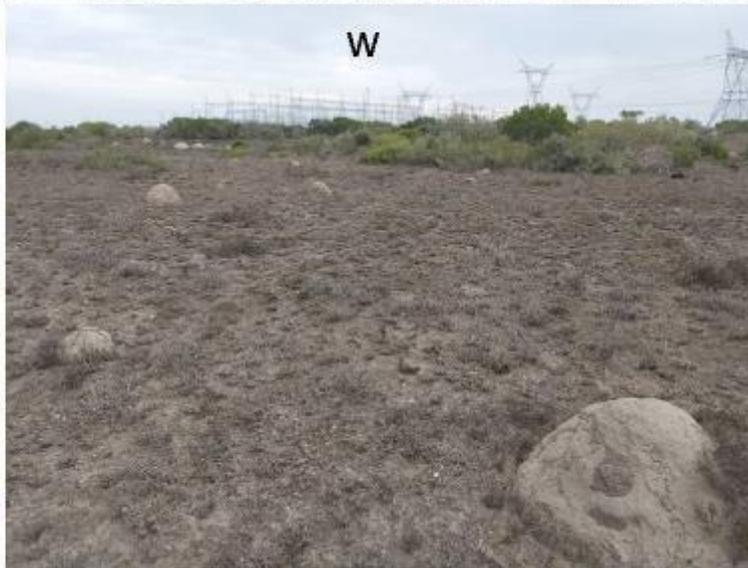


Plate 9. Examples of the receiving environment in the larger Grid Extension corridor, as shown in Figure 7, including the Grassridge (top L) and DEDISA Substations, showing existing developments & disturbances, exposed surfaces, topography and vegetation cover. Directions of views are indicated with abbreviated compass bearing names.

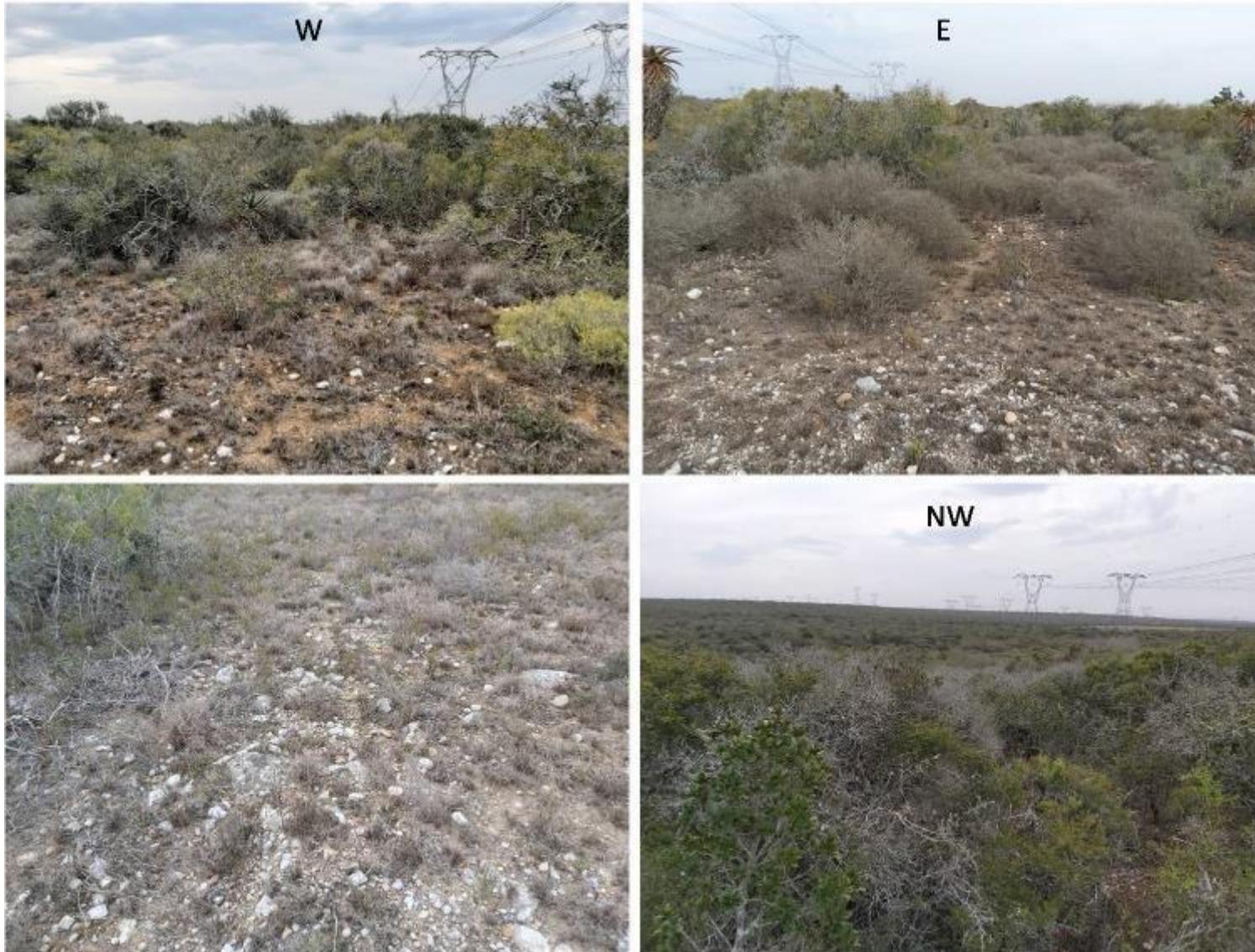


Plate 10. Examples of the receiving environment in the larger Grid Extension corridor, as shown in Figure 7, including the Grassridge and DEDISA Substations, showing existing developments, exposed surfaces, topography and vegetation cover. Directions of views are indicated with abbreviated compass bearing names.

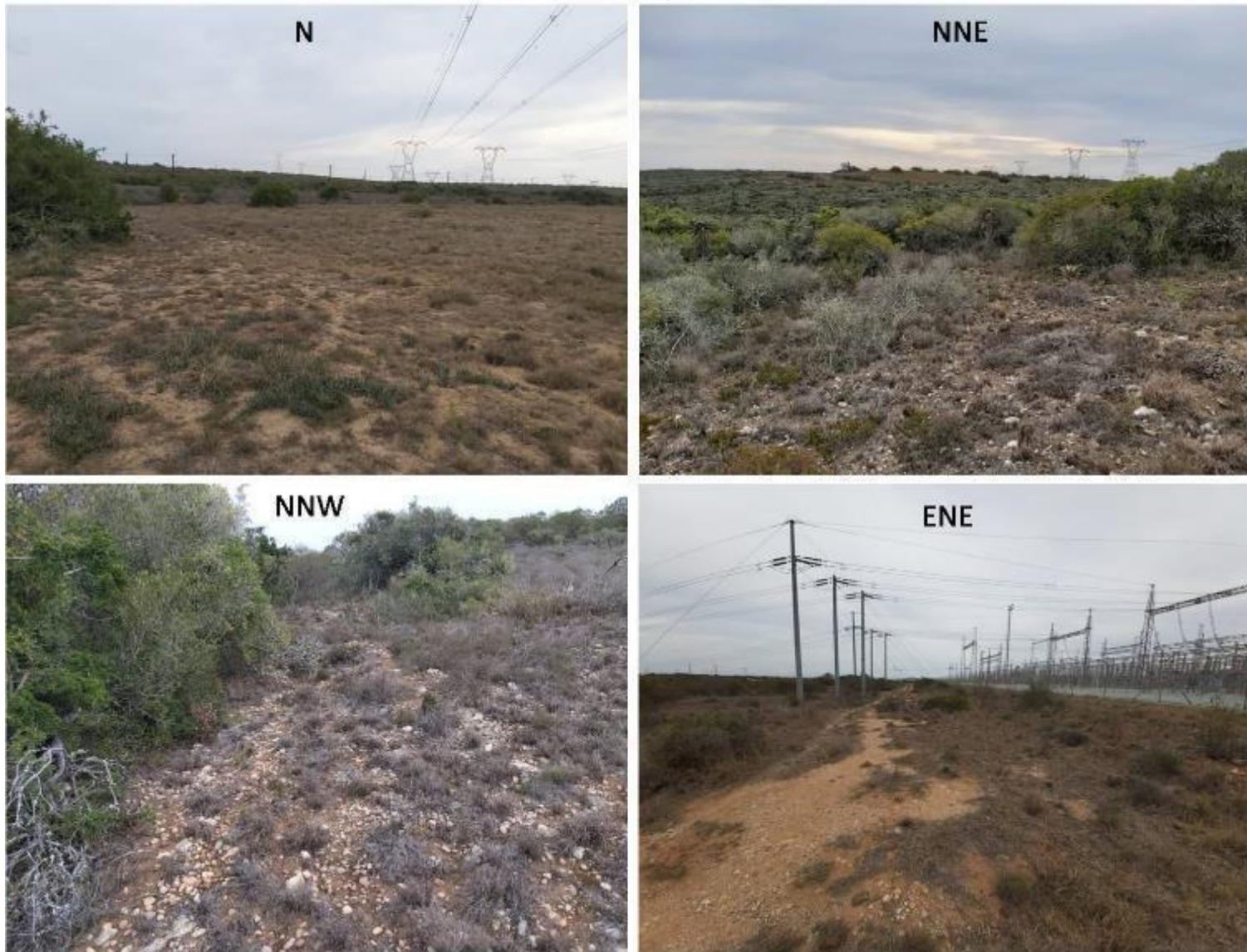


Plate 11. Examples of the receiving environment in the larger Grid Extension corridor, as shown in Figure 7, including the Grassridge and DEDISA Substations (bottom R), showing existing developments, exposed surfaces, topography and vegetation cover. Directions of views are indicated with abbreviated compass bearing names.



Plate Examples of

12. Stone Age artefacts seen in the larger Grid Extension corridor, as shown in Figure 7, including the Grassridge and DEDISA Substations.

Plate Examples of



Plate Examples of

13. Stone Age artefacts seen in the larger Grid Extension corridor, as shown in Figure 7, including the Grassridge and DEDISA Substations. The GPS unit is 10cm long.

Plate Examples of



Plate Examples of

14. Stone Age artefacts seen in the larger Grid Extension corridor, as shown in Figure 7, including the Grassridge and DEDISA Substations. The GPS unit is 10cm long.

Plate Examples of



Plate 15. Context at the locality of a temporally mixed scatter of human-related refuse as indicated in Figures 7 and 9. The scatter of refuse occurs beyond the bushes in the foreground and to the right of and beyond the pylon at the left of the image. A small intermittent stream bisects the scatter

as shown by the survey tracks in Figure 9. This view is towards the South-East



Plate 16. Examples of the low density surface scatter of material remains seen at the locality indicated in Figure 9. Materials include marine shell (dominated by white mussel), naturally occurring land snail shells, fragments of animal bones, Stone Age artefacts, colonial period and modern ceramics, glass, modern metal and modern fabrics and plastics. The GPS unit is 10cm long.

Plate Examples of



17. a few items seen at the temporally mixed scatter of human-related refuse, including animal bones, teeth (cow molar in top R image), glass and fragment of modern ceramic. GPS unit is 10cm long.



Plate Examples of

18. a few items seen at the temporally mixed scatter of human-related refuse, including fragment of white mussel shell (centre of top L image), a glass bottle and Stone Age artefacts of indeterminate age. GPS unit is 10cm long.



19. a few items seen at the temporally mixed scatter of human-related refuse, including modern fabrics and plastic (top L), white mussel shell (top R), and Stone Age artefacts of indeterminate age (top R and bottom). GPS unit is 10cm long.



Plate 20. Circular feature of calcretes blocks and chunks situated adjacent to the Grassridge Substation as indicated in Figures 7 and 10. No human-related refuse or material remains other than the small pile of concrete rubble shown above (and white ellipse in top left image) were seen in association with this feature. The diameter of the circle is approximately 12m and is visible on Google Earth.

Plate Examples of

Appendix A

Legislation regarding the general protection of heritage resources taken from the National Heritage Resources Act (Act 25 of 1999)

Provisional protection

29. (1) SAHRA, or a provincial heritage resources authority, may, subject to subsection (4), by notice in the Gazette or the Provincial Gazette, as the case may be—

(a) provisionally protect for a maximum period of two years any—

(i) protected area;

(ii) heritage resource, the conservation of which it considers to be threatened and which threat it believes can be alleviated by negotiation and consultation; or

(iii) heritage resource, the protection of which SAHRA or the provincial heritage resources authority wishes to investigate in terms of this Act; and

(b) withdraw any notice published under paragraph (a).

(2) A local authority may, subject to subsection (4), by notice in the Provincial Gazette—

(a) provisionally protect for a maximum period of three months any place which it considers to be conservation-worthy, the conservation of which the local authority considers to be threatened and which threat it believes can be alleviated by negotiation and consultation; and

(b) withdraw any notice published under paragraph (a): Provided that it notifies the provincial heritage resources authority within seven days of such provisional protection.

(3) A provincial heritage resources authority may, by notice in the Provincial Gazette, revoke a provisional protection by a local authority under subsection (2) or provisionally protect a place concerned in accordance with subsection (1).

(4) A heritage resources authority or a local authority may not provisionally protect any heritage resource unless it has notified the owner of the resource in writing of the proposed provisional protection.

(5) A heritage resource shall be deemed to be provisionally protected for 30 days from the date of service of a notice under subsection (4) or until the notice is withdrawn or the resource is provisionally protected by notice in the Gazette or the Provincial Gazette, whichever is the shorter period.

(6) A heritage authority or a local authority may at any time withdraw a notice which it has issued under subsection (4).

(7) SAHRA shall inform the relevant provincial heritage authority and local authority within 30 days of the publication or withdrawal of a notice under subsection (1).

(8) A provincial heritage resources authority shall inform the relevant local authority within 30 days of the publication or withdrawal of a notice under subsection (1).

(9) A local authority shall inform the provincial heritage authority of the withdrawal of a notice under subsection (2)(b).

(10) No person may damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of a provisionally protected place or object without a permit issued by a heritage resources authority or local authority responsible for the provisional protection.

Legislation relevant to Heritage Areas taken from the National Heritage Resources Act (Act 25 of 1999)

Heritage areas

31. (1) A planning authority must at the time of revision of a town or regional planning scheme, or the compilation or revision of a spatial plan, or at the initiative of the provincial heritage resources authority where in the opinion of the provincial heritage resources authority the need exists, investigate the need for the designation of heritage areas to protect any place of environmental or cultural interest.

(2) Where the provincial heritage resources authority is of the opinion that the need exists to protect a place of environmental or cultural interest as a heritage area, it may request a planning authority to investigate its designation in accordance with proposals submitted by the provincial heritage resources authority with its request. The planning authority must inform the provincial heritage resources authority within 60 days of receipt of such a request whether it is willing or able to comply with the request.

(3) Where the planning authority informs the provincial heritage resources authority that it is willing and able, the provincial heritage resources authority must assist the planning authority to investigate the designation of the place as a heritage area.

(4) Where the planning authority does not so inform the provincial heritage resources authority, or informs the provincial heritage resources authority that it is not so willing and able, the provincial heritage resources authority may investigate the designation of the place as a heritage area and, with the approval of the MEC, designate such place to be a heritage area by notice in the Provincial Gazette.

(5) A local authority may, by notice in the Provincial Gazette, designate any area or land to be a heritage area on the grounds of its environmental or cultural interest or the presence of heritage resources, provided that prior to such designation it shall consult— (a) the provincial heritage resources authority; and

(b) owners of property in the area and any affected community, regarding inter alia the provisions to be established under subsection (7) for the protection of the area.

(6) The MEC may, after consultation with the MEC responsible for local government, publish regulations setting out the process of consultation referred to in subsection (5).

(7) A local authority must provide for the protection of a heritage area through the provisions of its planning scheme or by-laws under this Act, provided that any such protective provisions shall be jointly approved by the provincial heritage resources authority, the provincial planning authority and the local authority, and provided further that—

- (a) the special consent of the local authority shall be required for any alteration or development affecting a heritage area;
 - (b) in assessing an application under paragraph (a) the local authority must consider the significance of the area and how this could be affected by the proposed alteration or development; and
 - (c) in the event of any alteration or development being undertaken in a heritage area without the consent of the local authority, it shall have the power to require the owner to stop such work instantly and restore the site to its previous condition within a specified period. If the owner fails to comply with the requirements of the local authority, the local authority shall have the right to carry out such restoration work itself and recover the cost thereof from the owner.
- (8) A local authority may erect signage indicating its status at or near a heritage area.
- (9) Particular places within a heritage area may, in addition to the general provisions governing the area, be afforded further protection in terms of this Act or other heritage legislation.

Legislation relevant to archaeology and palaeontology taken from the National Heritage Resources Act (Act 25 of 1999)

Archaeology, palaeontology and meteorites

35. (1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority—

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

(5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may—

(a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;

(b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;

(c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and

(d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

(6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or a meteorite is situated, serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

(7) (a) Within a period of two years from the commencement of this Act, any person in possession of any archaeological or palaeontological material or object or any meteorite which was acquired other than in terms of a permit issued in terms of this Act, equivalent provincial legislation or the National Monuments Act, 1969 (Act No. 28 of 1969), must lodge with the responsible heritage resources authority

lists of such objects and other information prescribed by that authority. Any such object which is not listed within the prescribed period shall be deemed to have been recovered after the date on which this Act came into effect.

- (b) Paragraph (a) does not apply to any public museum or university.
- (c) The responsible authority may at its discretion, by notice in the Gazette or the Provincial Gazette, as the case may be, exempt any institution from the requirements of paragraph (a) subject to such conditions as may be specified in the notice, and may by similar notice withdraw or amend such exemption.
- (8) An object or collection listed under subsection (7)—
 - (a) remains in the ownership of the possessor for the duration of his or her lifetime, and SAHRA must be notified who the successor is; and
 - (b) must be regularly monitored in accordance with regulations by the responsible heritage authority.

Legislation relevant to burial grounds and graves taken from the National Heritage Resources Act (Act 25 of 1999) **Burial grounds and graves**

36. (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) **destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or**

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and reinterment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

(5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—

(a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

(b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

(6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—

(a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and

(b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

(7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.

(b) The Minister must publish such lists as he or she approves in the Gazette.

(8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.

(9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

Legislation relevant to the proposed activity under consideration taken from the National Heritage Resources Act (Act 25 of 1999) **Heritage resources management**

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—
- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;**
 - (b) the construction of a bridge or similar structure exceeding 50 m in length;**
 - (c) any development or other activity which will change the character of a site—**
 - (i) exceeding 5 000 m² in extent; or**
 - (ii) involving three or more existing erven or subdivisions thereof; or**
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or**
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;**
 - (d) the re-zoning of a site exceeding 10 000 m² in extent; or**
 - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.**
- (2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection (1)—
- (a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or (b) notify the person concerned that this section does not apply.**
 - (3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:**
 - (a) The identification and mapping of all heritage resources in the area affected;**
 - (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;**
 - (c) an assessment of the impact of the development on such heritage resources;**
 - (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;**
 - (e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;**
 - (f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and (g) plans for mitigation of any adverse effects during and after the completion of the proposed development.**
 - (4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development, decide— (a) whether or not the development may proceed;**
 - (b) any limitations or conditions to be applied to the development;**
 - (c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;**
 - (d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and**
 - (e) whether the appointment of specialists is required as a condition of approval of the proposal.**



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number:
NEAS Reference Number:
Date Received:

(For official use only)

DEA/EIA/

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

EXTENSION OF THE ELECTRICAL GRID CORRIDOR FOR THE IMPOFU WIND FARMS (EAST, WEST AND NORTH) BETWEEN THE CHATTY AND DEDISA SUBSTATIONS, GQEBERHA (PORT ELIZABETH), EASTERN CAPE).

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	Dr Peter Nilssen		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition
			100
Specialist name:	Peter Nilssen		
Specialist Qualifications:	PhD, University of Cape Town, obtained in 2000		
Professional affiliation/registration:	Association of Southern African Professional Archaeologists, Professional and CRM member in good standing, Reg # 097		
Physical address:	41, 21 st Avenue, Mossel Bay, Western Cape, 6500		
Postal address:	PO Box 2635, Mossel Bay		
Postal code:	6500	Cell:	0827835896
Telephone:		Fax:	
E-mail:	peter@carm.co.za		

2. DECLARATION BY THE SPECIALIST

I, Peter Nilssen, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Peter Nilssen

Signature of the Specialist

Dr Peter Nilssen

Name of Company:

5 June 2021

Date

Details of Specialist, Declaration and Undertaking Under Oath

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Peter Nilssen, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Peter Nilssen
Signature of the Specialist

Dr. P.J. Nilssen
Name of Company

08 June 2021
Date

FRANK JAYI ZANA
Signature of the Commissioner of Oaths

08 JUNE 2021
Date

I certify that the DEPONENT has comprehended the contents of this affidavit, that he/she does not have any objection to taking the oath, and that he/she considers it to be binding on his/her conscience, and which was sworn to and signed before me and that the administering oath complied with the regulations contained in Government Gazette No. R1258 of 21 July 1972, as amended.

FRANK JAYI ZANA
SIGNATURE FULL NAMES
Commissioner of Oaths
Designation: MANAGER Office: Republic of South Africa
Date: 08/06/2021
Place: Mossel Bay
Business Address: S.A Post Office 500 KAD