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**PHASE 1 ARCHAEOLOGICAL HERITAGE IMPACT ASSESSMENT OF THE
PROPOSED CONSTRUCTION OF A WATER PIPELINE ON THE FARM
WANHOOP NO. 19, BAVIAANS MUNICIPALITY, WESTERN CAPE PROVINCE,
WITH FINAL AMENDMENTS***

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Date: October 2007
* March 2008

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Note: This report follows the minimum standard guidelines required by the South African Heritage Resources Agency for compiling Archaeological Heritage Phase 1 Impact Assessment (AHIA) reports.

SUMMARY

Purpose of the study

To conduct a Phase 1 Archaeological Heritage Impact Assessment of the construction of a water pipeline on the Farm Wanhoop, Baviaans Municipality; to evaluate the importance of the archaeological heritage sites, the potential impact of the development and to make recommendations to minimize possible damage to these sites.

The investigation

The investigation was conducted on the Farm Wanhoop at the entrances of two river gorges where additional boreholes will be drilled, and along the proposed route of the pipeline which stretches over a distance of approximately two kilometres. The farm is used for general agricultural activities, stock grazing and game farming. Only a few weathered Middle Stone Age stone tools and a few isolated pot shards were found. There are no buildings older than 60 years or any graves on the property.

Cultural sensitivity

The area investigated is of low cultural sensitivity and development may proceed. It is highly unlikely that any archaeological or historical material would be located during development, but material may be exposed after the top soil is removed, for example human remains.

Recommendations

1. Once the exact route for the pipeline has been plotted, an archaeologist must check the route and divert the pipeline if possible to miss archaeological sites. If the pipeline cannot be re-routed, the material must be excavated or/and collected before construction starts.

2. If any concentrations of archaeological material are exposed during construction, it should be reported immediately to Heritage Western Cape so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material.

Community consultation

Consultation with the Gamtkwa KhoiSan Council was conducted as required by the National Heritage Resources Act No. 25 of 1999, Section 38(3e). They will communicate their recommendations to Anton Bok Aquatic Consultants cc.

PROJECT INFORMATION

Status

The report is part of an Environmental Impact Assessment.

The type of development

Construction of a water pipeline on the Farm Wanhoop No. 19, Baviaans Municipality, Western Cape Province

The Developer

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The Consultant

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Terms of reference

The original proposal was to conduct a Phase 1 Archaeological Heritage Impact Assessment of the construction of a water pipeline on the Farm Wanhoop, Baviaans Municipality; to describe and evaluate the importance of the archaeological heritage sites, the potential impact of the development and to make recommendations to minimize possible damage to these sites.

BRIEF ARCHAEOLOGICAL BACKGROUND

Literature/research review

Little is known about the archaeology of the drier inland areas north of the eastern extension

of the Cape Fold belt, because no systematic research has been conducted there. However, more general information is available for the adjacent Cape Mountains which can be extended to the Wanhoop area, which is located in and next to the foot hills of these mountains .

The oldest evidence of the early inhabitants are large stone tools made from river cobbles, called handaxes and cleavers (also known as the Acheulian Industry), which can be found throughout the region, usually near water sources such as rivers, springs or wetlands. These stone tools belong to a time period known as the Earlier Stone Age and date between approximately 1 million and 250 000 years old.

The Acheulian handaxes and cleavers were replaced by a different stone tool industry, the so-called flake and blade industries of the Middle Stone Age (MSA). This time period, between 250 000-30 000 years ago, witnesses the emergence of the first modern humans and by approximately 120 000 years ago, the first anatomically modern humans. These long pointed flakes and blades can be found throughout the region in virtually all of the varying habitats, also at the Wanhoop sites. Unfortunately these open-air occurrences are difficult to date, and few caves and shelters in the region have well-preserved MSA deposits for relative dating. Little is known of the MSA in the Baviaans/Kouga Mountain region, but recent research found deposits dating to between 55 000 and 70 000 years old.

Some 25 000 years ago the MSA gave way to the Later Stone Age (LSA) a time period marked by large scale technological changes. The period between 20 000 and 14 000 years ago experienced extremely cold climatic conditions (Last Glacial Maximum - the last ice age). The cold temperatures created favourable conditions for grassland expansion, which in turn gave rise to large herds of grazing animals. The mammal remains from archaeological sites indicate that there were several large grazing animal species living on the grassland, for example giant buffalo, giant hartebeest and the Cape horse. After 14 000 years ago the climate started to warm up again and caused the previously exposed grassland to disappear, causing the extinction of many grassland species including the giant buffalo, hartebeest and the Cape horse.

Between 10 000 and 8 000 years ago the terrestrial environment became more closed (bushier) giving rise to small browsing territorial animals that lived in small groups or pairs. Recently the remains of an extinct goat-like bovid dating from this time period, was identified from several archaeological sites in the area. This was the last of the remaining Last Glacial grazing animals to disappear from the archaeological deposits in the Baviaanskloof/Kouga region.

In comparison with previous time periods, the LSA is characterised by several 'new' technological innovations while other cultural artefacts became more common, such as rock art. New microlithic stone tool types (some fixed to handles with mastic) emerged along with bows and arrows, containers (such as tortoise shell bowls and ostrich eggshell flasks which were sometimes decorated), decorative items, bone tools and much more. For the first time people were buried in caves and shelters and often these burials are associated with grave goods and marked by painted stones.

Excellent preservation of organic material in some caves and shelters yielded remarkable botanical artefacts, such as digging sticks (4 500 years old), fire sticks (5 800), decorated wooden sticks (9 200) and almost complete mummified human remains dating to some 2 000 years ago. Other interesting features are 'storage pits' (hollows lined with plant material) which were used to store seeds for later use, and 'postholes' (often with post still *in situ*). It would appear that shelters were divided, presumably into small family living areas (Binneman 1993, 1997, 1998, 1999, 2000).

For most of the past 20 000 years San hunter-gatherers lived in the cave rock shelters of the region and many still display paintings along the walls. In general the paintings are not well-preserved and appear to be of a similar 'style' throughout the region with the dominant colours being red and maroon, and red with black, with yellow and white being present to a lesser degree. The paintings do not, for example, represent only a hunting scene or some or other daily activity, but each painting had a particular symbolic meaning for the painters.

The first real change in the socio-economic landscape came some 2 000 years ago when Khoi pastoralists settled in the region. They were the first food producers in this area and introduced domesticated animals (sheep, goats and cattle) and ceramic vessels to the region. Not long after their arrival, the first Europeans rounded the Cape and greatly altered the prehistoric socio-economic landscape.

References

- Binneman, J.N.F. & Hall, S.L. 1993. The context of four painted stones from the Eastern Cape. *Southern African Field Archaeology* 2:89-95.
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Museum/University databases and collections

The Albany Museum in Grahamstown houses collections and information from the wider region.

Relevant impact assessments:

None

DESCRIPTION OF THE PROPERTY

Area surveyed

Location data

Farm Wanhoop No. 19, Baviaans Municipality, Cacadu District Municipality, Eastern Cape.

The Farm Wanhoop (some 1025 ha) is approximately 35 km south of Willom^wore, situated along the north facing foothills of the Baviaanskloof Mountains and is used for general agricultural activities, stock grazing and game farming (Map 1 - 3). The immediate environment is natural open veld which consists mainly of low shrubs, bushes and grass. The land slopes gently from the mountains and the dry riverbeds are relatively shallow. The stream banks are lined with deposits of river cobble and pebbles. Occasional Middle Stone Age stone tools are found in these river gravels. In general the topsoil is relatively shallow and the underlying shale bedrock is exposed over large areas which rule out deep buried archaeological material/sites. Closer to the steep foothills the topsoil appears to be deeper. A few stone tools were eroding from these soils and washed down slope. The proposed development will take place at the entrances of the two river gorges and a pipeline (trench will be 3 metres wide) will be contracted over a distance of approximately two kilometres.

Map

1:50 000 - 3323 BC Willomore (east)

ARCHAEOLOGICAL INVESTIGATION

Methodology

The investigation was conducted by two people on foot. The new boreholes will be located just inside the entrances to Grootkloof (23.30.75S; 33.30.85E) and Wilgekloof (23.31.95S; 33.30.48E). These are two dry river gorges and boreholes are in the flood plains next to the existing stream beds. The surrounding cliffs were investigated for possible rock art and the river gorges for archaeological sites and material. No rock art was found, but the occasional 'rough' weathered quartzite Middle Stone Age stone tools were found in the river gravels on the banks of the streams. These were in secondary context and of low cultural significance. Both areas were also disturbed during drilling and other construction activities (Figs 1 & 2).

The route for the proposed pipeline from Grootkloof to the existing pipeline traverses open natural veld and was investigated on foot. Only a few weathered quartzite Middle Stone Age stone tools were found at one area where river gravels were exposed in a vehicle track next to the existing pipeline route (33.29.982S; 23.30.725E). These were of low cultural value (Figs 3, 4 & 5).

The route for the proposed pipeline from Wilgekloof to the existing pipeline which was also investigated on foot, is approximately 2000 metres long. The proposed route also traverses open natural veld, but slightly higher against the mountain slope to avoid stream channels. Where it turns down slope towards the existing pipeline, it passes through an area of soil erosion (Fig. 6). A few Later Stone Age pot shards, stone tools and a lower grinding stone were found in secondary context at certain locations (Figs 7 & 8). These were plotted with GPS readings, but are of low cultural value.

Description of the archaeological material

GPS readings were taken with a Garmin Plus II

Later Stone Age pottery sherds and stone implements

A few Later Stone Age pot shards and stone tools and a isolated large upper grinding stone were located at three different location close together in an area where top soil erosion took place and washed the material down slope. The coordinates were:

Pottery 1- 33.30.268S; 23.31.092E

Pottery 2 - 33.30.270S; 23.31.095E

Grindstone - 33.30.273S; 23.31.097E

The few pottery fragments and stone tools are of low significance, but may indicate that larger accumulations may be covered by sand and vegetation. Notwithstanding, the pipeline should be diverted around this area to avoid damage to possible sites.

RECOMMENDATIONS

1. Once the final route for the pipeline has been finalised, it must be inspected by an archaeologist and if any sites or materials are found, the pipeline be diverted around this area, or the materials must be collected before construction started.
2. If any concentrations of archaeological material are exposed during construction, all work in that area should cease and it should be reported immediately to the nearest museum/archaeologist or

to the South African Heritage Resources Agency, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material (See Appendix A for a list of possible archaeological sites that maybe found in the area).

Conclusions

Although the surrounding Cape Fold Mountains are rich in archaeological heritage sites, the Grootkloof/Wilgekloof and other Wanhoop areas investigated are relatively poor in cultural material. Apart from the Middle Stone Age stone tools found in the river gravels, it is unlikely that any other archaeological or historical heritage remains of any value will be found *in situ* or be of any contextual value. However, material may be exposed after the top soil is removed (i.e. human remains).

AMENDMENTS AND RECOMMENDATIONS, MARCH 2008

The plotted route for the pipeline was visited on 3 March 2008 and the route was investigated on foot again. Another occurrence of pottery fragments were found close to the sites previously found at the coordinates 33.30.273S; 23.31.079E. After the wider area was investigated thoroughly for more sites, it was decided to move the pipeline at least 30 metres away from the concentration of archaeological material (see Map 4).

Recommendations

If any concentrations of archaeological material are exposed during construction, all work in that area should cease and it should be reported immediately to the nearest museum/archaeologist or to the South African Heritage Resources Agency, so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material (See Appendix A for a list of possible archaeological sites that maybe found in the area).

GENERAL REMARKS AND CONDITION

Note: This report is a phase 1 archaeological heritage impact assessment/investigation only and does not include or exempt other required heritage impact assessments (see below).

The National Heritage Resources Act (Act No. 25 of 1999, section 35) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, reflect the true state of affairs. Many sites/features may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, (such as during any phase of construction work), archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act No. 25 of 1999.

It must also be clear that Archaeological Specialist Reports (AIAs) will be assessed by the relevant heritage resources authority. The final decision rests with the heritage resources authority, which should grant a permit or a formal letter of permission for the destruction of any cultural sites.

APPENDIX A: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers

1. Caves and shelters

Often these features were inhabited by people in the past, such as the San and KhoiSan, and contain valuable archaeological deposits. These deposits and remains such as stone artefacts, bone, pot shards and ornaments are protected by legislation and must not be damaged by digging or collected. Contact the nearest archaeologist for information and advise regarding the protection and conservation of these features.

2. Rock art - paintings and engravings

Rock paintings are often found in caves, rock shelters and also in the open on boulders. They are easy to recognize and must be treated with care. No water or any other substances must be applied to the paintings. Rock engravings are pictures scratched, scraped and pecked into the dark surface of rocks with sharp objects to expose the lighter under surface. Contact the nearest archaeologist to provide information and advice regarding the protection and conservation of rock art.

3. Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general human remains are buried in a flexed position on their side, but are also found buried in a sitting position with a flat stone capping. Developers are requested to be on alert for the possibility of uncovering such remains.

4. Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m² in extent, should be reported to an archaeologist.

5. Large stone cairns

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

6. Stone artefacts

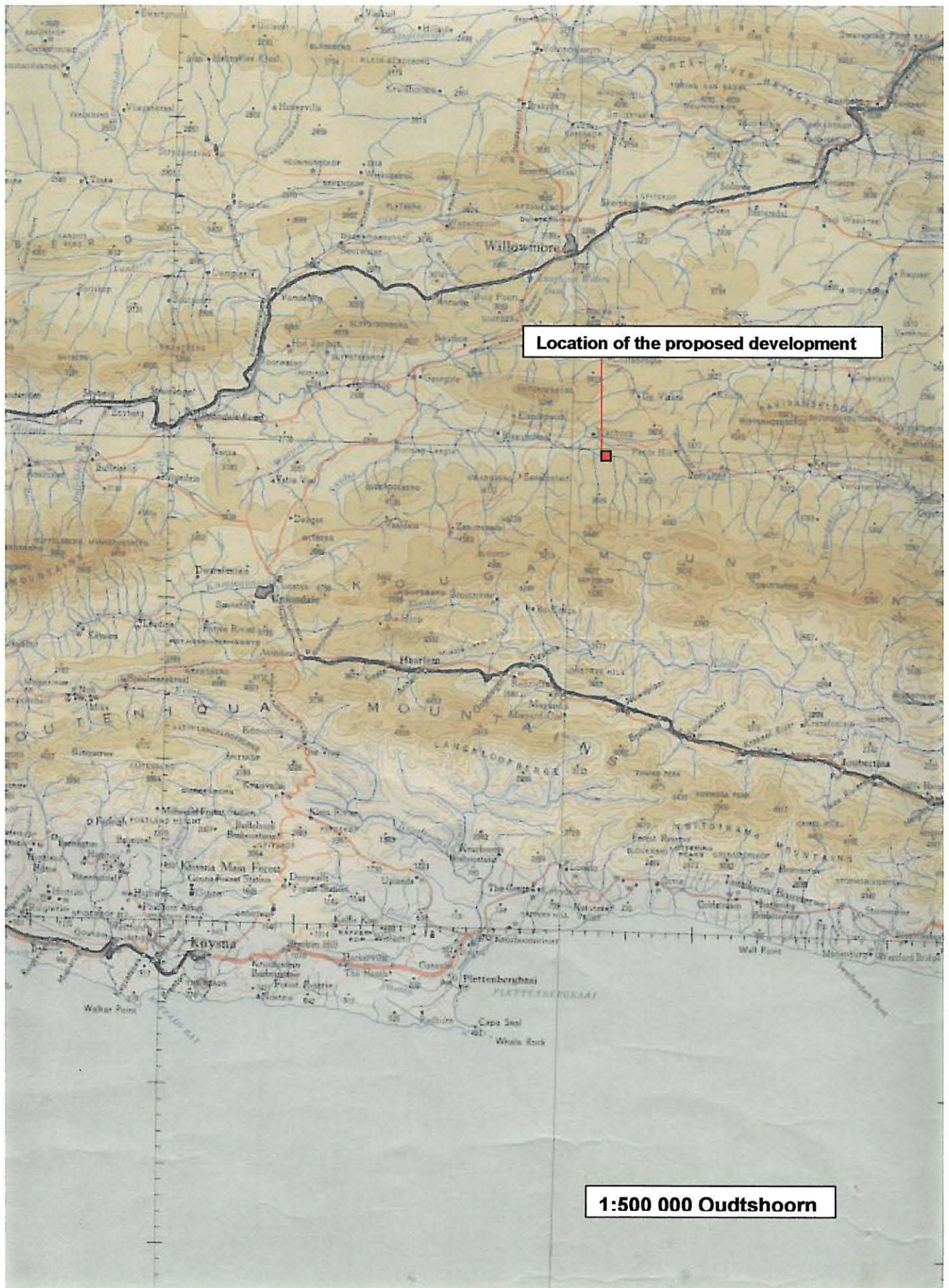
These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified.

7. Fossil bone

Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

8. Historical artefacts or features

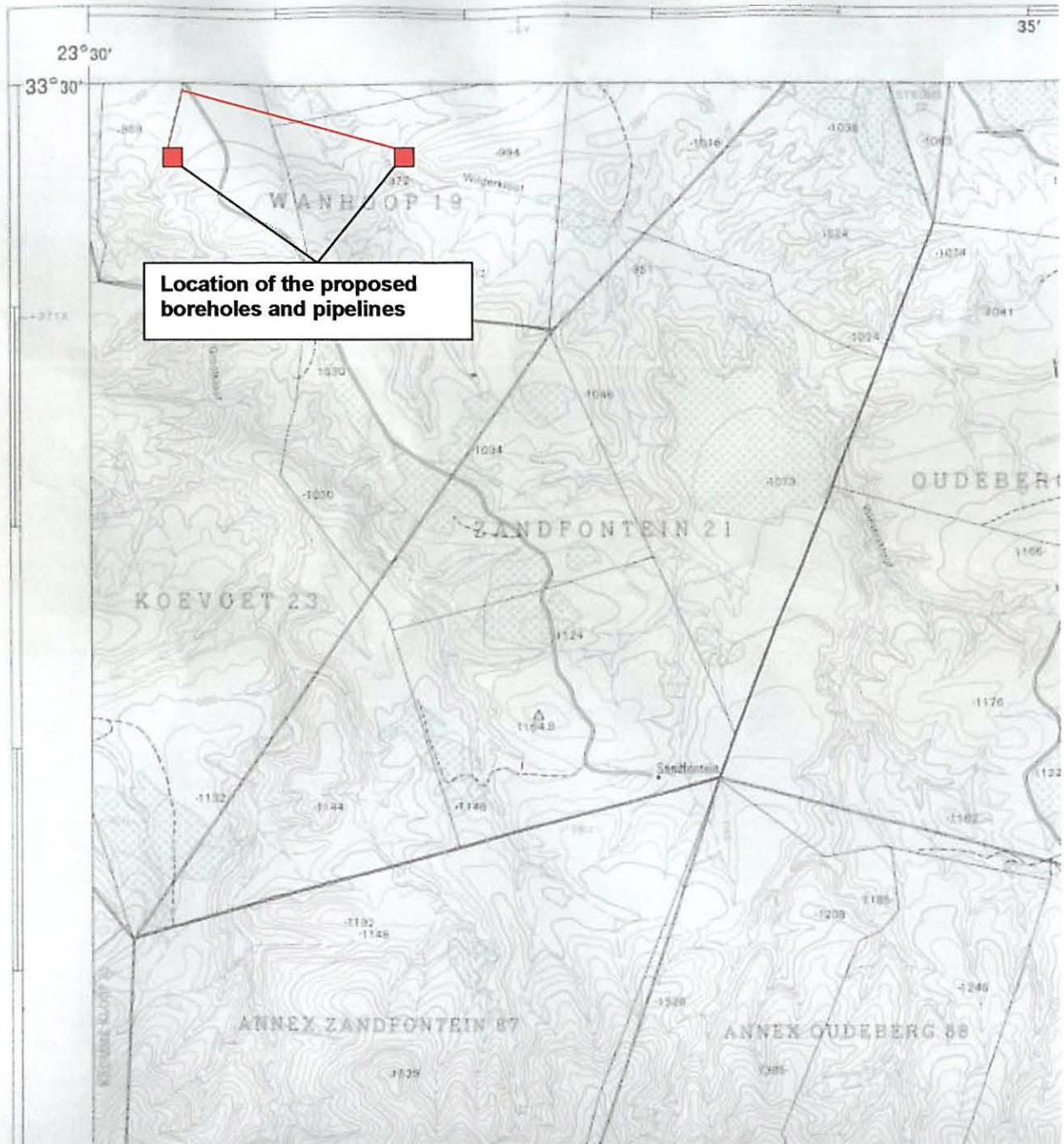
These are easy to identify and include foundations of buildings or other construction features and items from domestic and military activities.



Map 1. Location of the proposed pipeline.

3323DA VOORKLOOF

1:50 000



Map 2. Location of the proposed pipeline (red lines), which will run approximately between the boreholes (two red squares).

