

**ALTON SOUTH TRANSNET RAILWAY, RICHARDS
BAY, KWAZULU-NATAL**

FOR EXIGENT ENVIRONMENTAL

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INTRODUCTION

The RBIDZ intends to link Phase 1F to the existing Transnet Railway line that is located in Alton South. The estimated length of the proposed railway line is 2 500 metres with a servitude of 11 metres. Two single 6 m tracks are to be installed with a peak height of 1 m to the right of the centre line and a 1:50 cross-fall from this peak height to the edge of formation on the other side. One staging line will serve to stage either full or empty wagons while the other will serve as a run-around for the locomotive. From the staging line, a single line will enter towards an off-loading facility. The off-loading facility will be at a specific point with a run-around for the shunting locomotive as well as a staging line for the locomotive. Oil absorbent mats will be installed on the ballast. During the construction of tracks, a ditch of approximately 1 m is dug which is backfilled and compressed where the tracks are to be placed. On top of that, appropriate sleepers are placed diagonally across the entire railway, tracks are then placed on top of the sleepers and bolted down. A 12 m culvert (4 of 3m * 2m, 7.32m long) standard concrete portal culvert (1.2m long) with wing-walls will be installed to accommodate the two tracks over watercourses. The track instalment is followed by installing the electronics that controls the track movements. A 4.5 m gravel service road is required adjacent to the proposed track for service and construction vehicles. For potential evening procedures, lighting in the form of strategically placed 15 m hinged light poles will be installed along the extension.

Umlando was subcontracted by Exigent Environmental to undertake the heritage impact assessment.

Figures 1 – 3 indicate the location of the proposed line.

FIG. 1 GENERAL LOCATION OF THE STUDY AREA

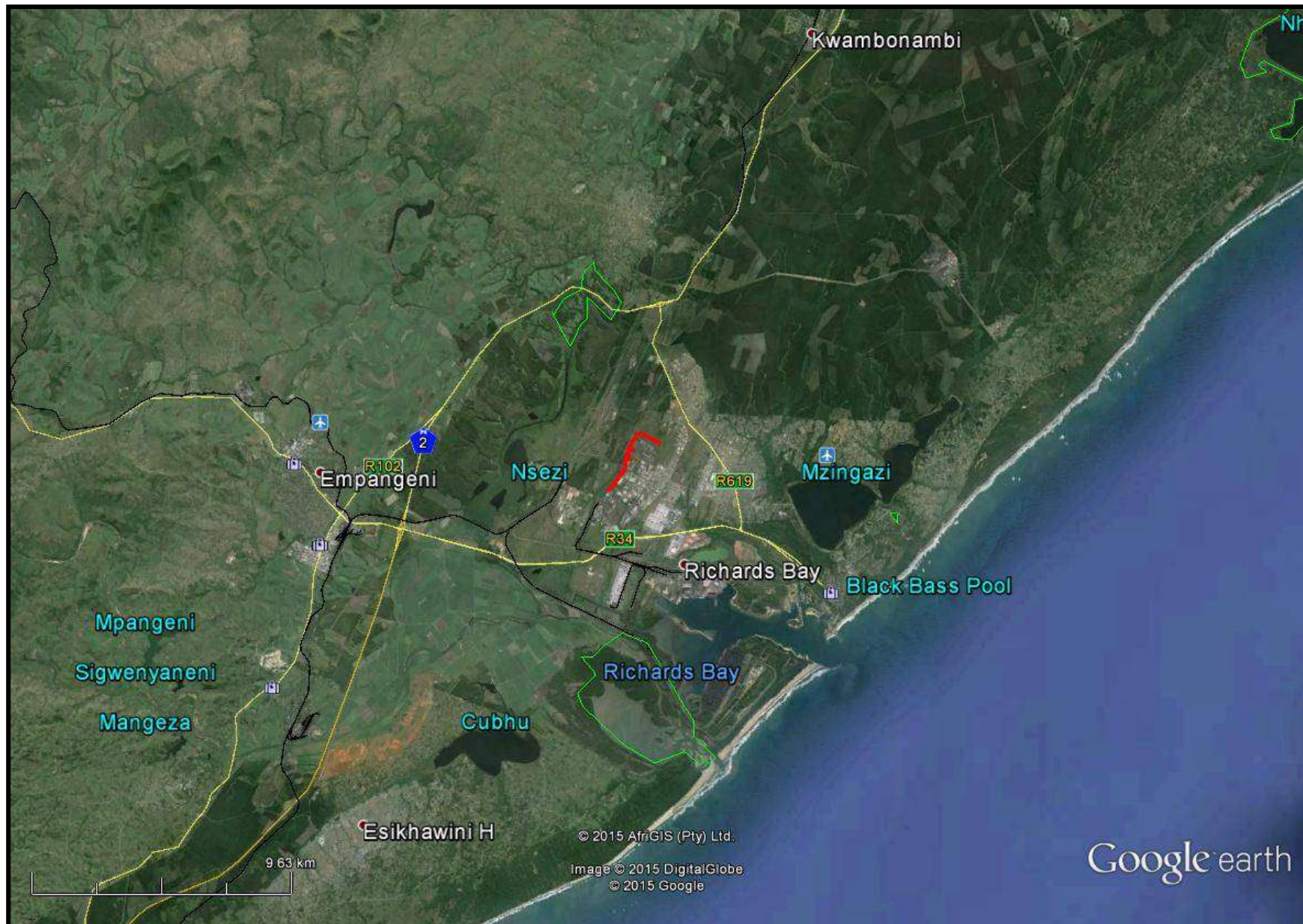
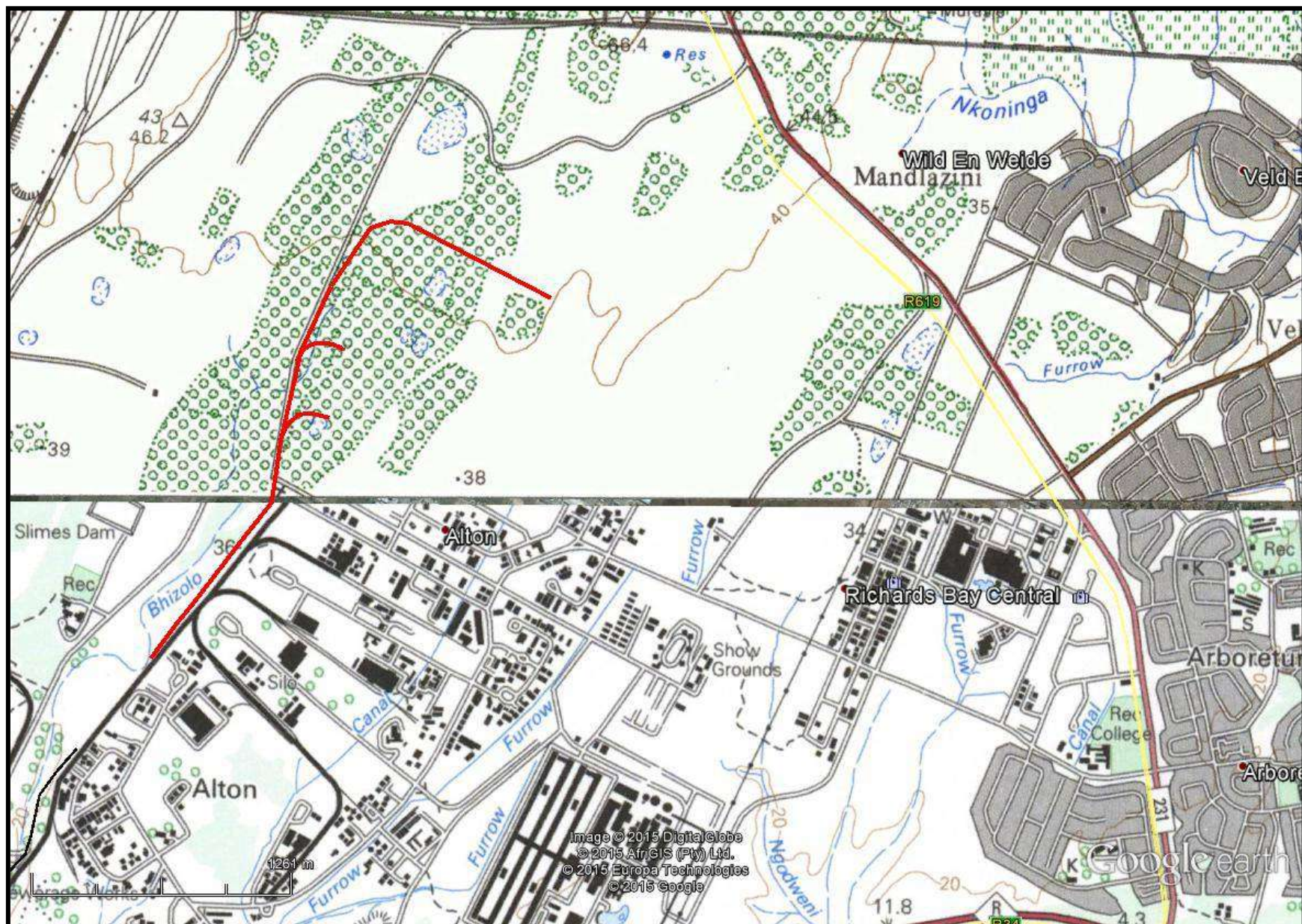


FIG. 2: AERIAL VIEW OF STUDY AREA



FIG. 3: TOPOGRAPHICAL MAP OF THE STUDY AREA



KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008

“General protection: Structures.—

- No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Council having been obtained on written application to the Council.
- Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- The Council may, by notice in the *Gazette*, exempt—
 - A defined geographical area; or
 - defined categories of sites within a defined geographical area, from the provisions of subsection where the Council is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.

General protection: Graves of victims of conflict.—No person may damage, alter, exhume, or remove from its original position—

- the grave of a victim of conflict;
- a cemetery made up of such graves; or
- any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.
- General protection: Traditional burial places.—
 - No grave—
 - not otherwise protected by this Act; and
 - not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, removed from its original position, or otherwise disturbed without the prior written approval of the Council having been obtained on written application to the Council.

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

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

General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—

- No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Council without delay.
- The Council may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Council to be inappropriate within 50 metres of a rock art site.
- No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or

- use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Council having been obtained on written application to the Council.
- The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government.” (KZN Heritage Act of 2008)

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the database that has been collated by Umlando. These databases contains archaeological site locations and basic information from several provinces (information from Umlando surveys and some colleagues), most of the national and provincial monuments and battlefields in Southern Africa (<http://www.vuvuzela.com/googleearth/monuments.html>) and cemeteries in southern Africa (information supplied by the Genealogical Society of Southern Africa). We use 1st and 2nd edition 1:50 000 topographical and 1937 aerial photographs where available, to assist in general location and dating of buildings and/or graves. The database is in Google Earth format and thus used as a quick reference when undertaking desktop studies. Where required we would consult with a local data recording centre, however these tend to be fragmented between different institutions and areas and thus difficult to access at times. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan.

All sites are grouped according to low, medium, and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips, and decorated sherds are sampled, while bone, stone, and shell are mostly noted. Sampling usually occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features.

Defining significance

Heritage sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. State of preservation of:

- 1.1. Organic remains:
 - 1.1.1. Faunal
 - 1.1.2. Botanical
- 1.2. Rock art
- 1.3. Walling
- 1.4. Presence of a cultural deposit
- 1.5. Features:
 - 1.5.1. Ash Features
 - 1.5.2. Graves
 - 1.5.3. Middens
 - 1.5.4. Cattle byres
 - 1.5.5. Bedding and ash complexes

2. Spatial arrangements:

- 2.1. Internal housing arrangements
- 2.2. Intra-site settlement patterns
- 2.3. Inter-site settlement patterns

3. Features of the site:

- 3.1. Are there any unusual, unique or rare artefacts or images at the site?
- 3.2. Is it a type site?
- 3.3. Does the site have a very good example of a specific time period, feature, or artefact?

4. Research:

- 4.1. Providing information on current research projects
- 4.2. Salvaging information for potential future research projects

5. Inter- and intra-site variability

- 5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?
- 5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?

6. Archaeological Experience:

- 6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.

7. Educational:

- 7.1. Does the site have the potential to be used as an educational instrument?
- 7.2. Does the site have the potential to become a tourist attraction?
- 7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

8. Other Heritage Significance:

- 8.1. Palaeontological sites
- 8.2. Historical buildings

- 8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites
- 8.4. Graves and/or community cemeteries
- 8.5. Living Heritage Sites
- 8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

RESULTS

DESKTOP STUDY

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. The archaeological database indicates that there are archaeological sites in the general area (fig. 4). These sites include all types of Stone Age and Iron Age sites. No sites occur in the study area. The noted sites in Fig. 4 were all recorded by Umlando (Anderson and Anderson 2008a-c,2009,2011,2013a-c,2014).

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

The 1937 aerial photographs indicate that there area was grassland mixed with open sand dunes and wetlands (fig. 5). Five human settlements occur within 100m of the line. Settlements of this age may have human burials nearby. Table 1 lists the locations of these sites. A 50m sensitivity radius should be placed around these sites.

The 1942 topographical map indicates that the 1937 settlements no longer exist (fig. 6). Of interest is an historical mission near the line and in an area to be effected by future expansion in Richards Bay. The mission no longer exists, but it should have left some physical traces.

TABLE 1: LOCATION OF SETTLEMENTS IN 1937

NAME	LATITUDE	LONGITUDE	DESCRIPTION
a1	-28.737179071	32.020074111	Settlement
a2	-28.739644013	32.020240628	Settlement
a3	-28.744110901	32.016010609	Settlement
a4	-28.738186343	32.018976827	Settlement
a5	-28.738125517	32.020660545	Settlement

FIG. 4: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

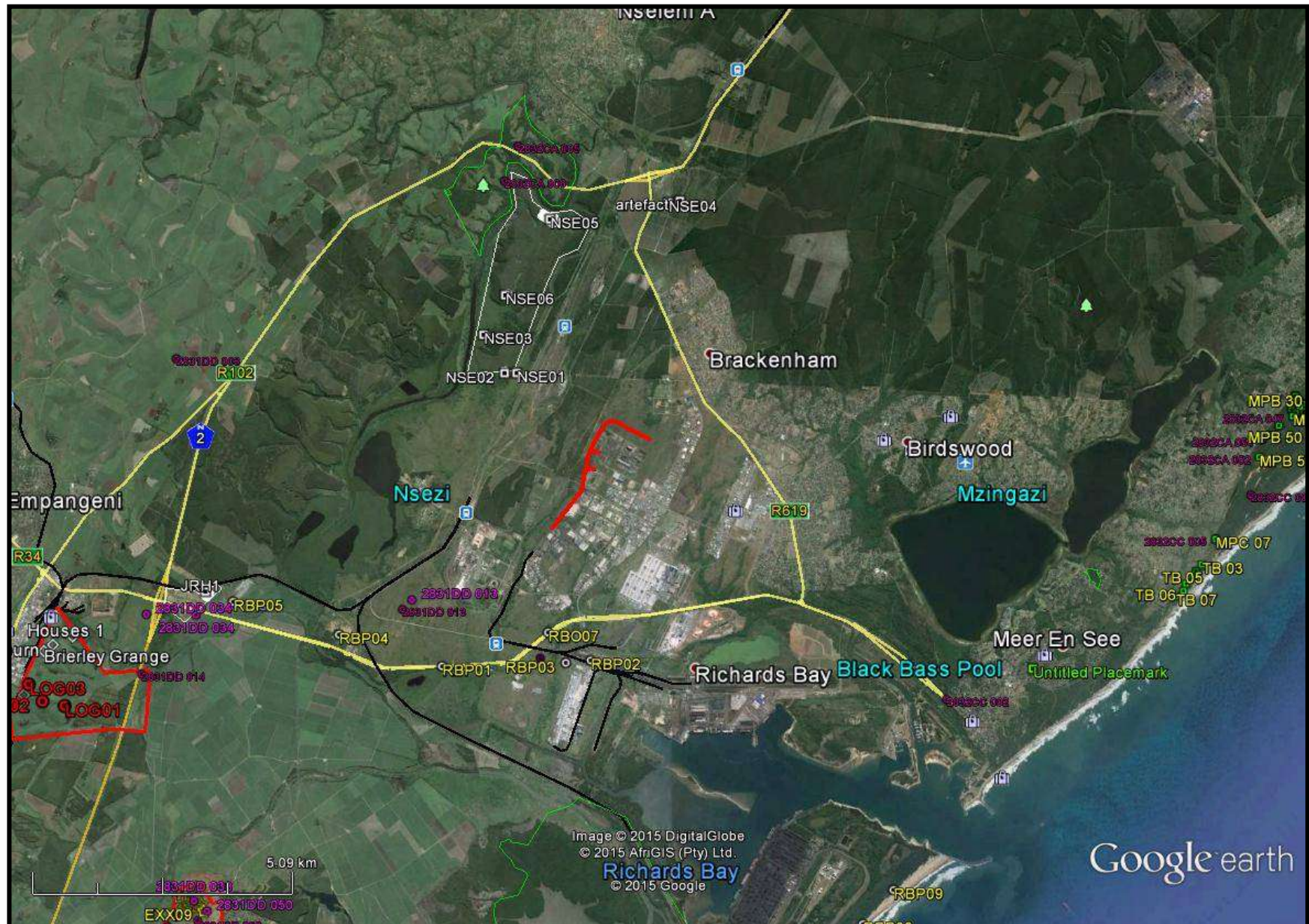


FIG. 5: STUDY AREA IN 1937

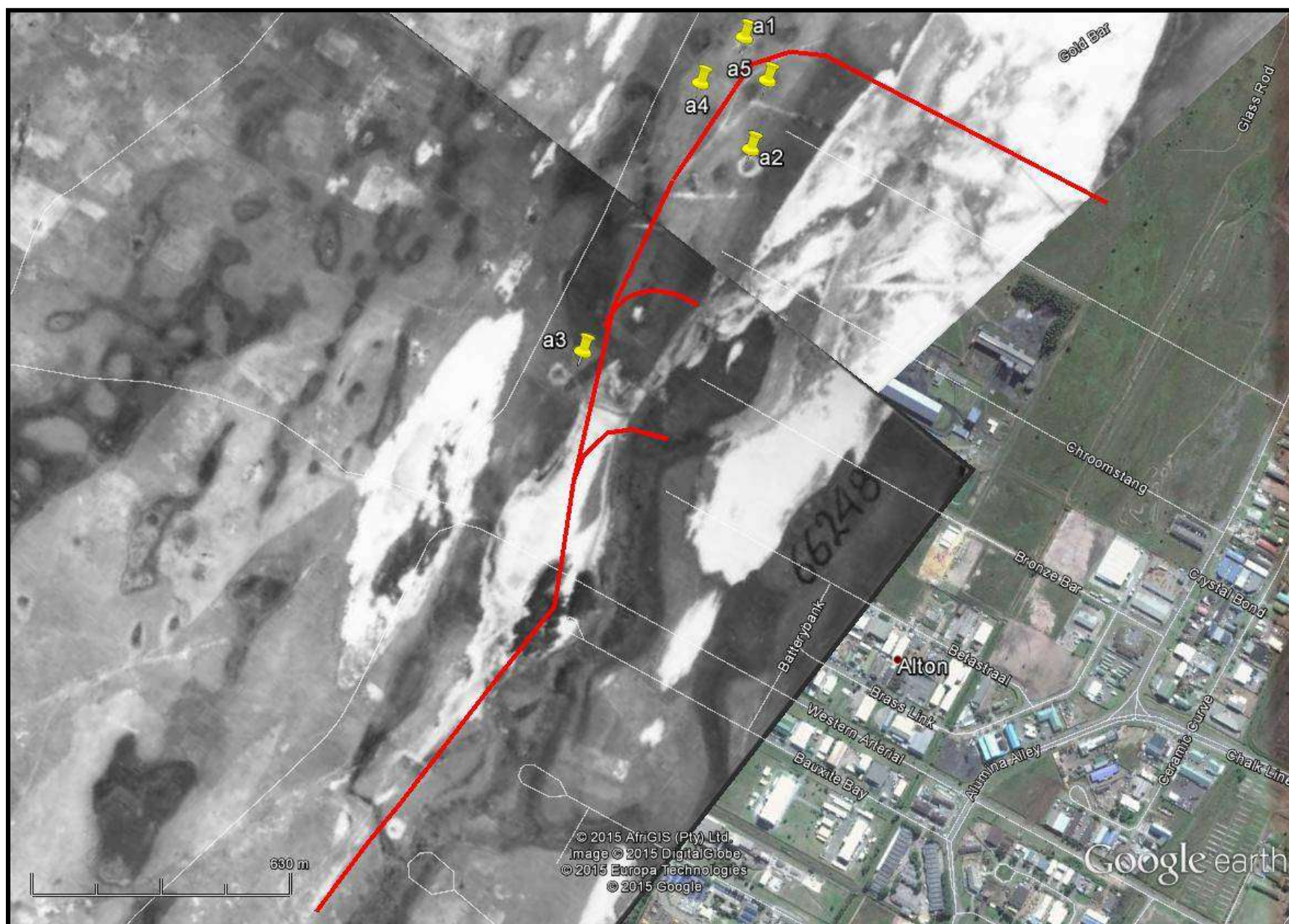
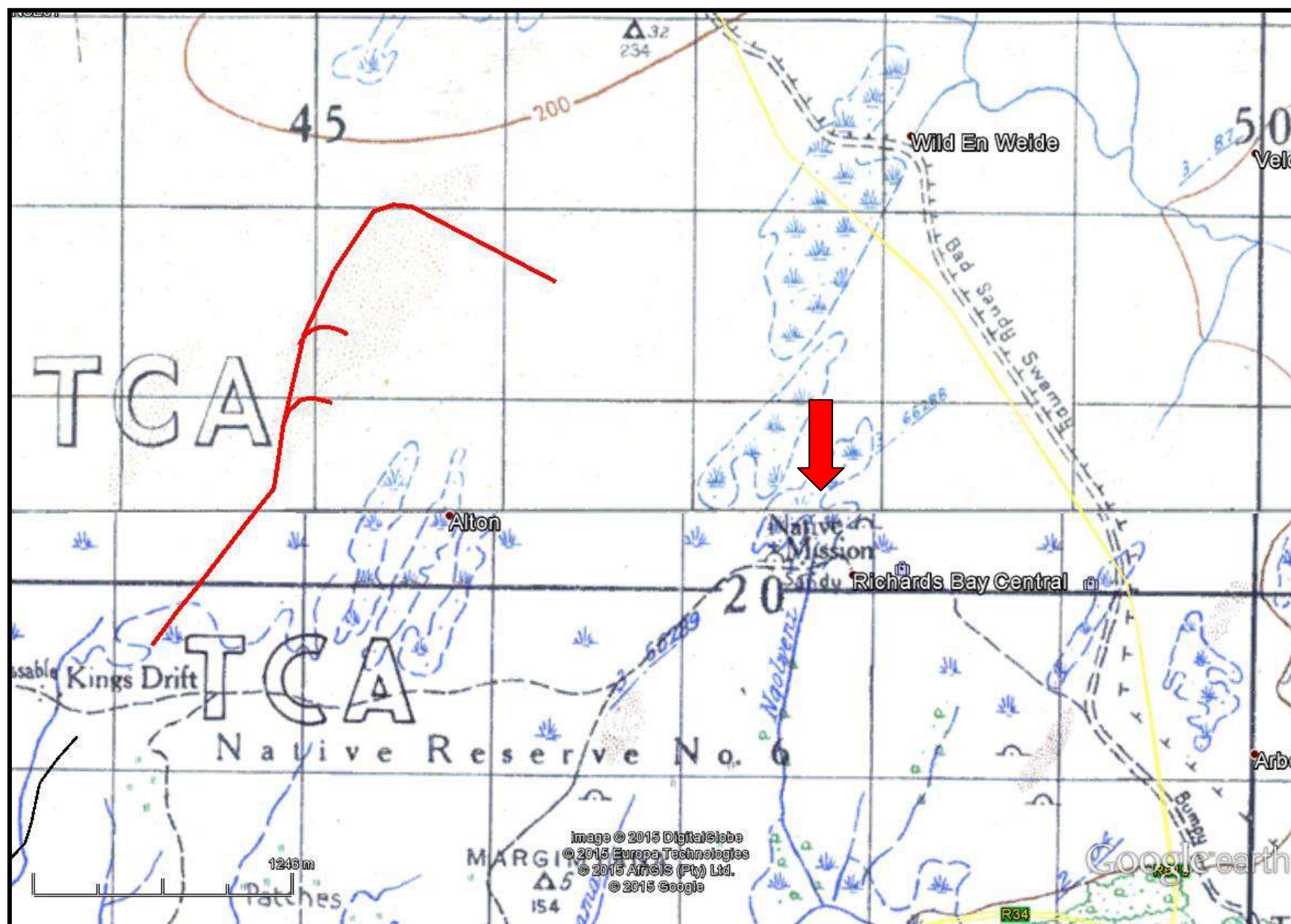


FIG. 6: STUDY AREA IN 1942



FIELD SURVEY

Figure 7 shows various aspects of the railway route. Parts of the route have been disturbed by previous activity, e.g. roads, (illegal) sand mining, afforestation, existing pipelines and the end of the existing railway. The northern section of the line is covered in grasslands with small hills and is mostly undisturbed.

No sites per se were recorded during the survey. A recurring theme is an ephemeral layer of stone tools ~1m below the surface. A similar scenario was noted in other areas in Richards Bay (see fig. 4; Anderson and Anderson 2008a-c, 2009, 2011, 2013a-c, 2014).). These are most noticeable in the sand winning areas and road cuttings. Fig. 8 shows some of the stone tools. The tools are mostly Middle Stone Age and Late Stone Age tools on quartz, dolerite and quartzite. The tools consist of various (utilised) flakes and irregular cores. There is no archaeological deposit and the tools appear to be in a secondary context.

The tools are considered as occurrences of stone tools and not a site. One Late Iron Age pottery sherds was noted.

The northern section of the line has more recent artefacts of the last 10 – 20 years, with the pottery similar to that of the roadside curios markets (fig. 9)

The areas noted from the 1937 map were surveyed, however no artefacts and features could be observed.

Significance: The artefacts are of low significance.

Mitigation: No mitigation is required.

Management plan: The areas mapped from the 1937 aerial photographs need to be noted as sensitive for human graves. If any human graves are

uncovered during the construction period then Amafa KZN and the SAPS need to be informed.

FIG. 7: SCENIC VIEWS OF THE RAILWAY LINE ROUTE



FIG. 8: MSA AND LSA TOOLS ALONG THE RAILWAY ROUTE



FIG. 9: MODERN POTTERY SHERD



CONCLUSION

A heritage survey was undertaken for the Phase 1F Alton South railway line. The line mostly follows various existing servitudes, while the northern section occurs in less disturbed areas.

Several stone tools, dating to the Middle Stone Age and the Late Stone Age, and one pottery sherd was observed along the railway line route. These artefacts are too ephemeral to constitute a site.

The historical maps noted five areas that could

No further HIA mitigation and management is required for this project.

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