PEOPLE OF THE HEATH:

UNDERSTANDING AND CONSERVING PETERSFIELD'S PREHISTORIC BARROWS

GEOPHYSICAL SURVEYS JUNE 2016

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ADVISORY BODIES

Document Title:	**PEOPLE OF THE HEATH: UNDERSTANDING AND CONSERVING PETERSFIELD'S PREHISTORIC BARROWS** **GEOPHYSICAL SURVEYS – JUNE 2016**
Document Type:	**Archaeological Recording**
Client Names:	**People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows** **Petersfield Museum**
Site Code:	**PH16C**
National Grid Reference:	**SU 75814 23062 (Barrows 9 and 10)**
Dates of the survey:	**30th June – 1st July 2016**
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Position:	**Leaders, Geophysical Survey Team**
Date:	**July 2016**

This report has been prepared for the "People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows" project

Copies have been provided for George Anelay, West Sussex Archaeology (Fieldwork Director) and Stuart Needham (Research Director) for dissemination to the Heath Barrow Cemetery Partnership, and for Historic England (as required by the Section 42 Licence)

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Photo front cover – Barrow 10 from the southwest during the survey

SUMMARY

A geophysical survey using an earth resistance meter has been carried out on two barrows which are part of the Petersfield Heath group.

The survey of Barrow 9 showed a patch of high resistance on the top. This is most likely due to a large oak tree which stands there. Between this barrow and barrow 10 is a linear depression which again is clear on the geophysical results. This is straight and is artificial, either a drainage channel or a field drain. Barrow 10 had an area of strong resistance covering the upper part of the mound. This has been seen previously on Barrow 13 and in that case it was thought to be associated with the backfilling and levelling following excavation in the 19 th century.

1. INTRODUCTION

1.1 THE CIRCUMSTANCES OF THE SURVEY

Petersfield Heath is situated on the east side of the town of Petersfield in Hampshire. It is home to a nationally important Bronze Age barrow cemetery comprising a total of at least 21 barrows, known as the Petersfield Heath group. Round barrow cemeteries of this type date from approximately 1900-1500 BC although some individual monuments may be earlier. They can contain different types of round barrow and often may contain additional burials between the mounds.

The Petersfield Heath group has been recognised for over 200 years, and early maps such as the first edition Ordnance Survey of 1810 indicate that the cemetery was once far more extensive with additional barrows to the east and possibly the north which are now destroyed by modern housing.

Apart from Ordnance Survey maps, the barrows have not been extensively surveyed and remain little understood. In the 1930s Stuart Piggott produced a plan of their locations on the Heath (Fig. 1) (Grinsell 1939). At least one barrow, number 4, was planned in detail by Piggott. There is a possibility that some of the monuments have been degraded or erased over time. The site was also developed as a golf course which led to the introduction of raised tees which look confusingly like barrows! Extensive tree planting took place on the barrow mounds. Dredged material from the Heath Pond may also have been left in dumps on the Heath in the past.

The National Heritage List for England (HeritageGateway 1999) describes both barrows as bowl barrows.

1.2 THE AIMS OF THE PROJECT

This monument complex deserves to be better understood and therefore Petersfield Museum has sponsored the project “People of the Heath: Understanding and Conserving Petersfield's Prehistoric Barrows”. The project is largely funded by the Heritage Lottery Fund and the South Downs National Park Authority. This community project is investigating the Mesolithic and Bronze Age prehistory of the Heath. This archaeological survey is directed by George Anelay and Stuart Needham. The aims of the project are:-

1. To understand the evolution of Petersfield Heath, with special reference to the Bronze Age funerary complex.
2. To place this complex in the broader settlement and land use patterns of the region during the Neolithic and Bronze Ages.

As part of this project, an advisory committee was formed and first met on 30th May 2012. The committee included interested parties such as Hampshire County Council, University of Reading, Petersfield Town Council; Petersfield Tomorrow; East Hampshire District Council, Chichester District Council; Historic England; Friends of Petersfield Heath; Petersfield Area Historical Society. and the South Downs National Park Authority. The committee supported the proposal from the archaeological directors to undertake geophysical surveying of the Heath barrows and the areas in between.
The nature of Petersfield Heath (peaty soils overlying sandy sub-soils and variable water content) is such that it was not certain that geophysical surveying would give adequate results. A pilot study was proposed to test the available geophysical methods (magnetometry and earth resistance) for identifying features associated with the barrows such as banks, ditches and trackways. This study indicated that twin probe earth resistance measurement was the technique of choice, giving clear results despite the nature of the Heath soils (Haskins and Haskins 2012).

Part of the main project is to introduce local inhabitants to the use of geophysical techniques before undertaking archaeological investigations. To meet these requirements time is made available during the surveys to train and explain the techniques to inexperienced volunteers from the community who wish to be involved. In addition, members of the survey team would explain the activities to members of the public passing by.

1.3 THE LOCATION OF THE SURVEY

The area selected for this survey is shown (Figure 2). The position of the grids was aligned with two markers placed by the Project co-Director in charge of field work. The two barrows had until the previous autumn been covered with woodland comprising mature trees (mainly silver birch and oak) with holly and gorse scrub underneath. This was cleared by volunteers in the autumn and a brushwood cutter was used to clear this year's growth a week prior to the survey. The surface was covered in a layer of leaf litter of fairly uniform depth. There was evidence of animal disturbance on barrow 10.

The space between barrow 10 and the road was partly filled with material from the scrub clearance and could not be surveyed. Areas of bracken and brambles had been left standing around the edge of the barrows which were not surveyed. The cricket ground lies just to the north-west of barrow 9. A small area was included in the survey.

2. METHODOLOGY

2.1 LICENCE

A Historic England licence was obtained to carry out this geophysics survey. This was necessary as both barrows are Scheduled Ancient Monuments and are protected under the Ancient Monuments and Archaeological Areas Act 1979 (as amended), section 42.

2.2 SCRUB CLEARANCE

Barrows 9 and 10 were cleared in late 2015 by Community Payback Volunteers working under the guidance of the Friends of the Heath. The Friends of the Heath arranged for this year's growth to be cut with a brushwood cutter about a week before the survey.

2.3 LAYING OUT GRIDS

The grids for the area were laid out using two markers placed by the Project co_Director. One was positioned on the top of Barrow 10 whilst the second was placed 60m. away to the west of Barrow 9 (Figure 3).

2.4 EARTH RESISTANCE (TWIN PROBE) SURVEY

Earth resistance surveying was carried out using a Geoscan Research RM15 twin probe earth resistance meter. The pilot study (Haskins and Haskins 2012) had shown this to be the most appropriate technique on the soils of the Heath. This technique measures fluctuations in the soil resistivity due to the presence of varying amounts of water. Dry materials such as sand will contain less water than soil and will exhibit higher resistivity, whilst ditches and peat may contain more water leading to lowered resistivity. Walking lines were laid out at 1m intervals and the instrument was moved in 0.5m steps to produce the plot. All grids were walked in a south -north direction and walking up and back along the lines in a zig-zag manner. When an obstacle was encountered such as a large tree or tree stump, dummy logs were acquired.

Data were collected and stored for later download to a computer. Data were processed using a program (Geoplot, Geoscan Research) to construct an intensity plot of the variation in resistivity across the grids (Figure 4). .

2.5 LOCATING TREES ON THE BARROWS

The positions of trees, tree stumps and gorse bushes, were taken from the dummy logging acquired during the survey. (Figure 4)

3. FIELDWORK RESULTS

3.1 WEATHER AND OTHER ENVIRONMENTAL CONCERNS

Following a very wet autumn and winter, spring 2016 was drier and the very boggy areas of the Heath had dried out. The weeks prior to the survey had been a mixture of dry sunny days and days of heavy rain and showers. The days immediately prior to the survey had been showery and the ground was damp on the morning of 30th June. June 30th remained dry during the survey but there was rain overnight. The second day, 1st July, was dry apart from 5 minutes of very light drizzle about 1pm.

3.2 TWIN PROBE RESISTIVITY SURVEYS OF BARROWS 9 AND 10

The twin probe resistivity survey requires the operator to push the probes into the ground at regular intervals to make a reading. There was no problem in doing this across both barrows as the ground was soft.

The density plot for Barrows 9 and 10 is shown in Figure 4. There was a footpath running east/west to the south of Barrow 9 which formed an edge to the survey.

There were a number of mature trees and tree stumps (Figure 4 - shown in blue). Most of the survey area was covered with scrub (holly and gorse mainly) which means that the surface is disturbed by roots. Also there was evidence of burrowing animals especially on Barrow 10.

The resistivity on the top of Barrow 10 was relatively high and this reduced the contrast visible on Barrow 9. The survey across Barrow 9 alone is shown in Figure 5. Apart from a small area of higher resistance covering the top of Barrow 9, there is also a line of reduced resistance running southwest to northeast across the southeast corner of the site.

An earlier topographical survey had been carried out across the site. By pasting the current survey plot on top of this it is obvious the two correspond closely (Figure 6).

3.3 COMMUNICATING WITH THE PUBLIC

An important aspect of this project is to inform the public who are passing by. The team were able to explain what was happening to members of the public passing through the survey area and some expressed an interest in taking part in the excavations later in the year. They were referred to the web site for more information.

4. DISCUSSION

4.1 CARRYING OUT THE SURVEY

The survey of the Barrows had some issues. The barrows had been covered with an impenetrable copse beforehand and although much of this had been cleared, there were many remaining mature trees. There was a thick layer of mulch from leaf litter. It was thought that this in particular reduced the ability to obtain good contrast across the barrow. The undercover was recovering and as well as the mulch the area was covered by bramble, holly, gorse and bracken. This constrained the edges of the survey area.

The areas of higher resistance atop the barrows represent very different conditions from the main area across the site. A similar effect was seen on the flank and top of Barrow 13 (Haskins and Haskins 2015). Later excavation showed this to be due to the backfilling and levelling of a robber trench so it could be the same on Barrow 10.

The platform on the west side of Barrow 10 appears to have similar resistance to the general background and suggests it is the same sandy subsoil underlying the Heath.

The line of lower resistance visible between the two Barrows corresponds to a depression in the surface. This is unlikely to be a natural feature. It is probably an old drainage ditch or possibly a collapsed field drain.

4.2 SELECTION OF VOLUNTEERS

For this survey, an open invitation was made. Eight experienced volunteers took part. Some of these had been trained in earlier surveys and returned to improve their skills. There was one novice and one volunteer who had only limited previous experience on another site.

4.3 RECOMMENDATIONS

The complex picture shown by Barrow 10 and the ditch between the Barrows deserves further investigation by excavation.

ACKNOWLEDGEMENTS

We acknowledge the help and guidance given by George Anelay and Stuart Needham as directors of the project.

We acknowledge the huge effort by the Friends of Petersfield Heath led by Richard Warton (who also organised the participation of community payback volunteers in this) to clear the tall vegetation and bramble covering the areas before the survey could go ahead. Also Jordan Bleach who organised further brushcutting just before the survey.

We thank the Remote Sensing Team (Andy Payne, Neil Linford and Paul Linford), Heritage Protection Department, Historic England, Fort Cumberland, Portsmouth for their advice. We also thank the Chichester City Walls Project Trust for the loan of their resistivity meter, with especial thanks to James Kenny for organising this.

Special thanks to Carl Raven and Lyn Pease who supported MIH in the survey (NJH was unable to fully participate in field activities). We thank all the other volunteer surveyors involved in this survey:-Peter Benson, Peter Gilliard, Peter Harding, Phelim McIntyre, Helen Poulter, Tim Pullen, Gary Shipp and Chris Wilkins. This was another excellent survey.

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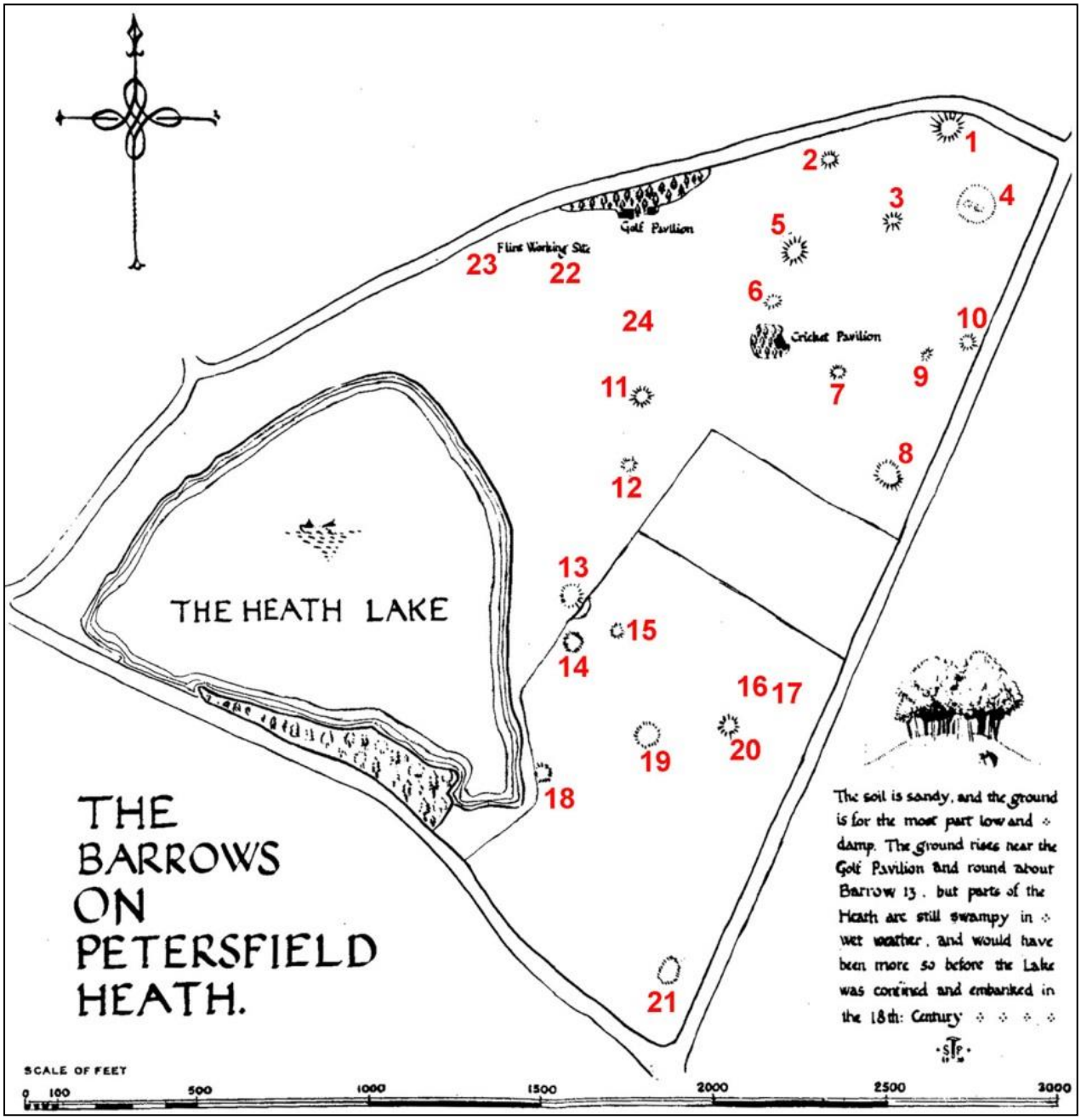

Figure 1: Piggott's plan of the heath and his numbering system.

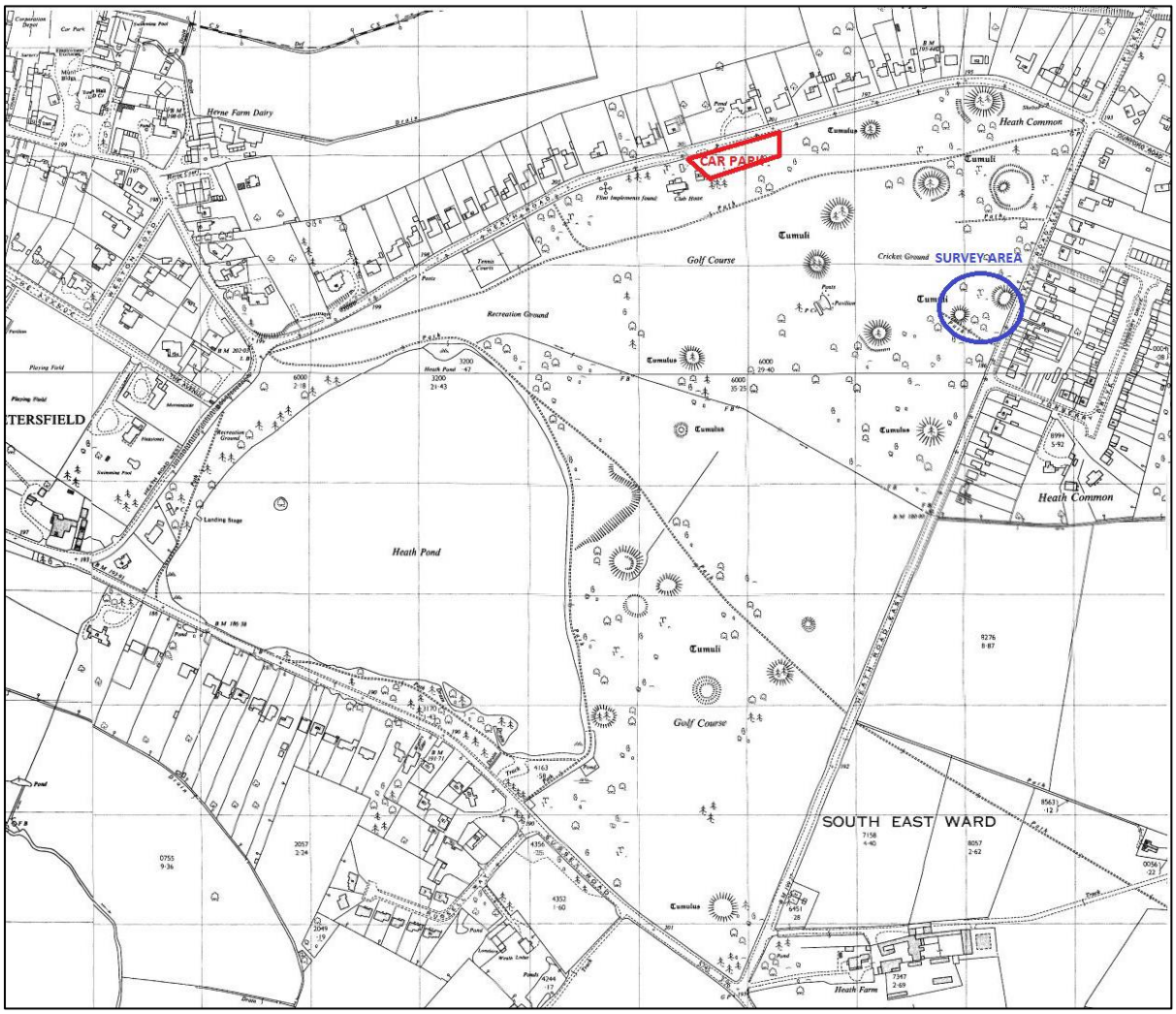

Figure 2: Map of the Heath showing the survey area

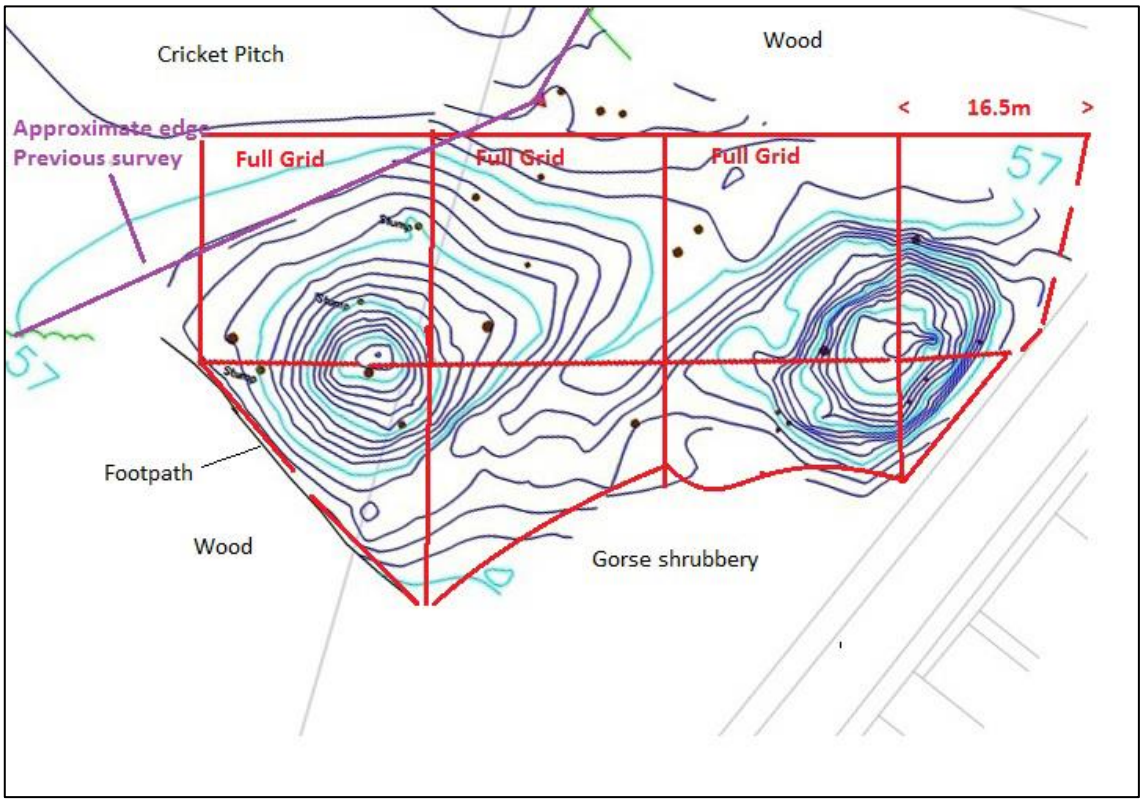

Figure 3: Approximate positions of the survey grids

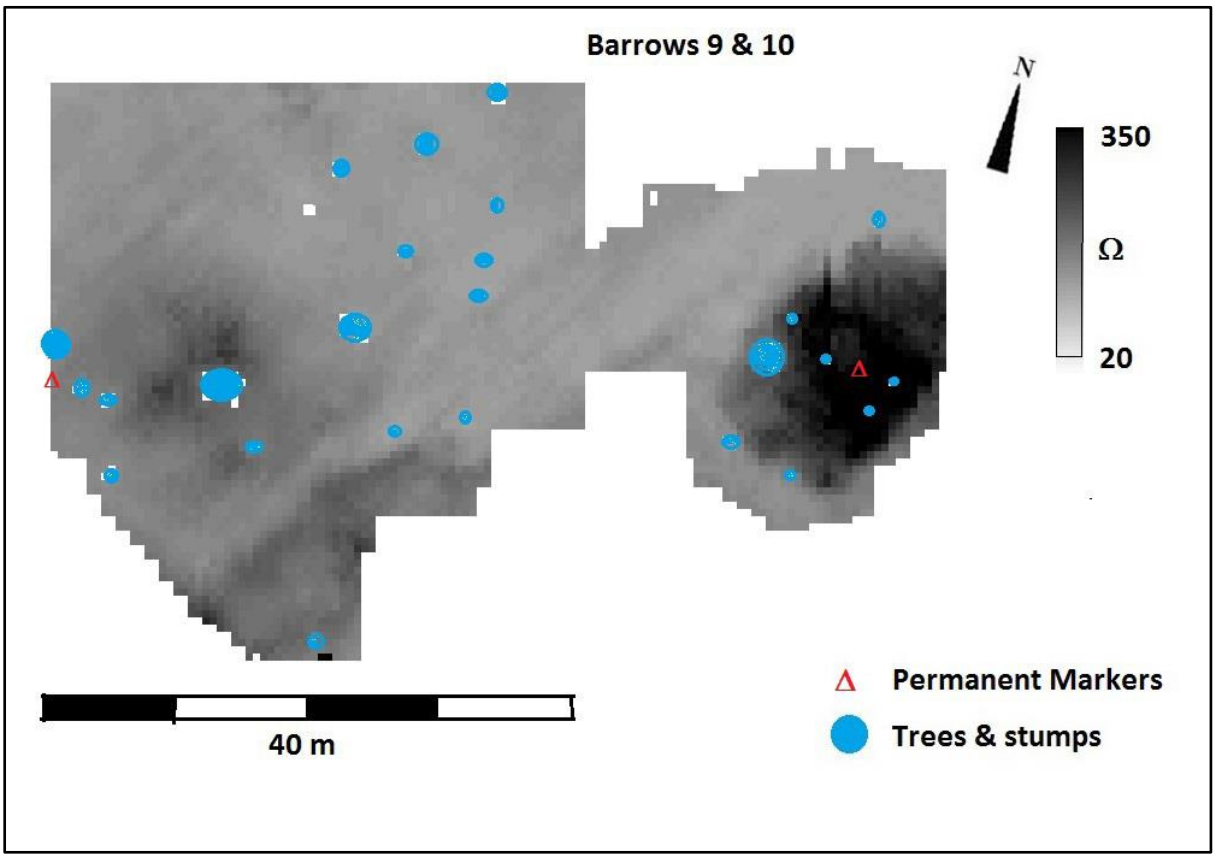

Figure 4; Resistivity plot across Barrows 9 and 10

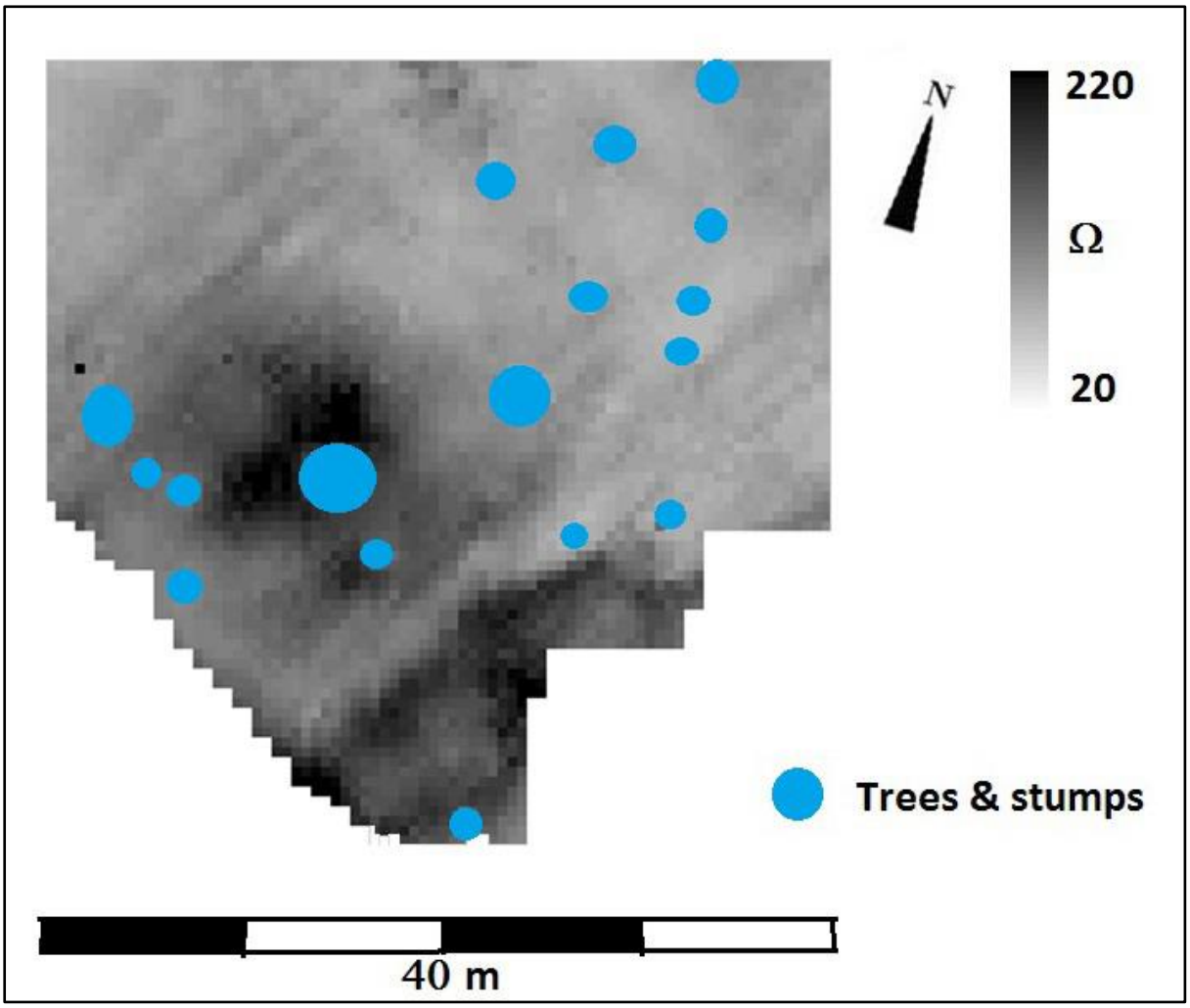

Figure 5: Plot across Barrow 9 to highlight the contrast

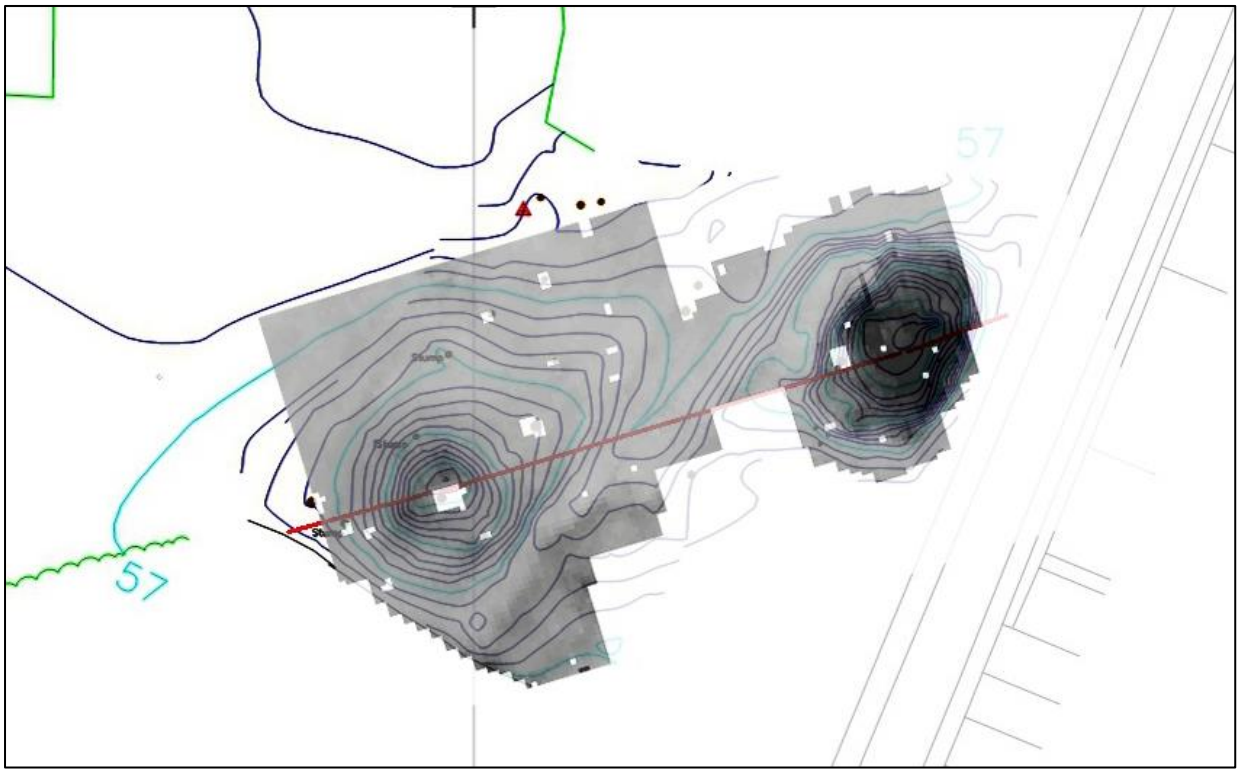

Figure 6: Pasting the survey plot on the topographical survey showing close correspondence between the two