

138 ST ALBANS ROAD, SANDRIDGE
GEOPHYSICAL SURVEY

Authors: Mark Blagg-Newsome	
NGR: TL 1613 0948	Report No: 5363
District: East Hertfordshire	Site Code: AS 1138
Approved: Claire Halpin MCI fA	Project No: 2671
	Date: 19th April 2017

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OASIS SUMMARY SHEET

Project details			
Project name	138 St. Albans Road, Sandridge: Geophysical Survey		
<p><i>On 6th March 2017, Archaeological Solutions Ltd carried out a magnetic gradiometer survey on 0.1 hectares of land at 138 St. Albans Road, Sandridge (NGR TL 1613 0948). The survey was commissioned to confirm the location and survival of two large ditch features representing part of the Beech Bottom Dyke scheduled ancient monument (SAM 23), recorded during a trial trench evaluation of the site (Williamson et al. 2008).</i></p> <p><i>Despite significant modern magnetic disturbance, two positive linear responses (1 and 2) were identified on a SW-NE alignment that correspond with the previously excavated ditches of the Beech Bottom Dyke SAM.</i></p>			
Project dates (fieldwork)	6th March 2017		
Previous work (Y/N/?)	Y	Future work	N
P. number	2671	Site code	AS 1138
Type of project	Geophysical Survey		
Site status	Scheduled Ancient Monument (SAM 23)		
Current land use	Grassed area		
Planned development	-		
Main features (+dates)	Two positive linear responses (1 and 2) were identified on a SW-NE alignment that correspond with the previously excavated ditches of the Beech Bottom Dyke SAM		
Significant finds (+dates)	-		
Project location			
County/ District/ Parish	Hertfordshire	East Hertfordshire	Sandridge
HER/ SMR for area	Hertfordshire HER		
Post code (if known)	AL4 9LL		
Area of site	c.0.1ha		
NGR	TL 1613 0948		
Height AOD (max/ min)	c.97m AOD		
Project creators			
Brief issued by	Historic England/ St. Albans City & District Council		
Project supervisor/s	Mark Blagg-Newsome		
Funded by	Taylor French Developments		
Full title	138 St. Albans Road, Sandridge: Geophysical Survey		
Authors	Blagg-Newsome, M.		
Report no.	5363		
Date (of report)	April 2017		

138 St. Albans Road, Sandridge

GEOPHYSICAL SURVEY

SUMMARY

On 6th March 2017, Archaeological Solutions Ltd carried out a magnetic gradiometer survey on 0.1 hectares of land at 138 St. Albans Road, Sandridge (NGR TL 1613 0948). The survey was commissioned to confirm the location and survival of two large ditch features representing part of the Beech Bottom Dyke scheduled ancient monument (SAM 23), recorded during a trial trench evaluation of the site (Williamson et al. 2008).

Despite significant modern magnetic disturbance, two positive linear responses (1 and 2) were identified on a SW-NE alignment that correspond with the previously excavated ditches of the Beech Bottom Dyke SAM.

1 INTRODUCTION

1.1 On 6th March 2017, Archaeological Solutions Ltd carried out a magnetic gradiometer survey on 0.1 hectares of land at 138 St. Albans Road, Sandridge (NGR TL 1613 0948). The survey was commissioned to confirm the location and survival of two large ditch features representing part of the Beech Bottom Dyke scheduled ancient monument (SAM 23), recorded during a trial trench evaluation of the site (Williamson *et al.* 2008).

1.2 The project was carried out based on advice from Historic England and St. Albans City & District Council (SADC), and a specification compiled by AS (9th February 2017). The geophysical survey was carried out in accordance with the Historic England document *Geophysical Survey in Archaeological Field Evaluation* (2008), and ClfA, *The use of Geophysical Techniques in Archaeological Evaluations* and *ClfA Standards and Guidance for Archaeological Geophysical Survey* (2014).

Objectives

1.3 The evaluation of the site by geophysical survey was designed to locate the two ditches identified as part of Beech Bottom Dyke (SAM 23) in order to confirm their survival following unmonitored groundworks on the site.

Planning policy context

1.4 The National Planning Policy Framework (NPPF 2012) states that those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are heritage assets.

The NPPF aims to deliver sustainable development by ensuring that policies and decisions that concern the historic environment recognise that heritage assets are a non-renewable resource, take account of the wider social, cultural, economic and environmental benefits of heritage conservation, and recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. The NPPF requires applications to describe the significance of any heritage asset, including its setting that may be affected in proportion to the asset's importance and the potential impact of the proposal.

1.5 The NPPF aims to conserve England's heritage assets in a manner appropriate to their significance, with substantial harm to designated heritage assets (i.e. listed buildings, scheduled monuments) only permitted in exceptional circumstances when the public benefit of a proposal outweighs the conservation of the asset. The effect of proposals on non-designated heritage assets must be balanced against the scale of loss and significance of the asset, but non-designated heritage assets of demonstrably equivalent significance may be considered subject to the same policies as those that are designated. The NPPF states that opportunities to capture evidence from the historic environment, to record and advance the understanding of heritage assets and to make this publicly available is a requirement of development management. This opportunity should be taken in a manner proportionate to the significance of a heritage asset and to impact of the proposal, particularly where a heritage asset is to be lost.

2 DESCRIPTION OF THE SITE

2.1 The site lies within the southern limits of the parish of Sandridge on the northern outskirts of the city of St. Albans. The survey area is situated to the rear of 138 St Albans Road, Sandridge, and was formerly the St Albans Van Hire vehicle rental depot, comprising workshop/reception buildings, other outbuildings and vehicle storage areas. The site is bounded to the north-east and south-west by adjacent residential properties, whereas the north-west boundary of the site is formed by the Beech Bottom Dyke, which is designated as a Scheduled Ancient Monument (SAM 23).

2.2 The survey area consists of a grassed area of c.0.1ha to the rear of the newly constructed dwellings, acting as a preservation area associated with SAM 23. Part of the site in the NE consists of a metalled surface for vehicle access.

2.3 The site is located in an area of Batcombe Association soils which overlie geology of plateau drift and clay with flints (SSEW 1983). Batcombe Association soils are described as fine silty over clayey and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 The site was subject to a previous phase of archaeological trial trench evaluation by AS in 2008 (Williamson *et al.* 2008), prior to the determination of the planning application. Two trenches were excavated in the northern portion of the site (Trenches 1 and 2), which revealed the remains of Beech Bottom Dyke (Fig.7). At their south-eastern ends, only the north-eastern edge of a large ditch was revealed. A significant amount of redeposited natural material, probably related to levelling works, was visible inside the ditch. This affected the existing bank, which was removed and deposited inside the ditch. The north-western ends of Trenches 1 and 2 sloped down. Inside Trench 2 the slope was quite gentle but in Trench 1 it became steeper, closer to the trench end. It was not possible to reach the natural drift in this part of the trench and these features could represent part of a second ditch of the Beech Bottom Dyke earthworks that is no longer visible in the terrain south-west of the site. The surviving earthworks were covered by a large amount of modern material used to level the site and it is highly probable that underneath the modern disturbance, original deposits are still intact.

3.2 It was proposed to construct a new residential development on the site, largely outside the area of the SAM. Within the area of the SAM itself, in the rear part of the site, the development was to be limited to a car parking area. For this area, it is understood that the following was proposed:

The existing levels would remain unaltered. All existing hardsurfacing (tarmacadam) would be removed and replaced with pea gravel and timber edgings for the car park area. The remainder of the site covering the Scheduled Monument would be grassed. No new planting is proposed on the Scheduled Monument.

3.3 Should this development plan have been followed, it is expected that the features identified by the trial trench evaluation remain intact. The present magnetic gradiometer survey is designed to identify linear anomalies in the location of the ditches in order to confirm their survival.

4 METHOD OF WORK

Introduction

4.1 The magnetic survey was performed using a dual sensor Grad601-2 Magnetic gradiometer manufactured by Bartington instruments Ltd. The gradiometer measures small distortions in the earth's magnetic field caused by the presence of magnetically susceptible buried objects. The instrument is capable of detecting changes in magnetic field strength of the order of 0.1 nanoTesla (nT) in the field.

Survey Methodology

4.2 A survey grid was established on the site (**Fig. 3**) The exact spatial location of the survey grid was recorded using a Leica GS09 GPS smart rover. Geophysical data were collected systematically in a zig-zag pattern within each grid square along traverses spaced at 1 m apart. The gradiometer was configured to record measurements at 0.25m intervals along each traverse, giving a total of 3600 measurements per grid square.

4.3 The area of hard standing in the NE of the site could not be surveyed, although it is likely that the surface material would have caused significant magnetic interference.

Data Processing

4.4 The remedial processing of the data can enhance anomalous responses caused by potential archaeological features and eliminate magnetic noise from natural/modern sources. Data processing also allows for the correction of spatial errors introduced during the survey and inherent instrument heading errors. The survey data were processed using Terrasurveyor LITE software, where the following data processing routines were applied:

Despike: Removal of random, high amplitude 'iron spikes' present in the data caused by ferrous debris in the near surface.

Interpolation: The overall appearance of the data were improved (smoothed) by adding interpolated data points between each traverse using a binomial function.

Display and interpretation

4.5 The processed data are displayed as a greyscale magnetic map (**Fig. 5**) and the interpretation of anomalous magnetic responses undertaken manually with recourse to documented responses from subsequently excavated features and excavation data from the trial trench evaluation of the site (Williamson *et al.* 2008). A graphical interpretative plan of the site identifying potential archaeological features (**Fig. 6**) was then produced in AutoCAD LT2015.

5 RESULTS

5.1 The unprocessed data from the magnetic survey are shown in **Fig. 4**, displayed as a plot showing the extreme ranges in amplitude recorded by the survey. The processed data, following the application of the data processing methodology described in 4.4 above, are shown in **Fig. 5**. The processed data revealed some anomalous responses of potential archaeological significance,

the interpretation of which is described below.

5.2 The survey data were significantly influenced by magnetic interference, which created two large areas of very high amplitude responses (**3** and **4**). These high amplitude responses mean that smaller magnetic contrasts in the data, such as those indicative of cut and infilled features of archaeological origin, were difficult to pinpoint in the final data plot (**Fig. 5**).

5.3 However, it was possible to identify two weakly positive linear anomalies (**1** and **2**) on a SW-NE alignment within the survey area. The locations of these compare well with the excavated data from the 2008 trial trench evaluation (**Fig. 7**). It is likely that these responses represent surviving elements of the previously recorded ditches that form part of the Beech Bottom Dyke SAM. Although the responses are not seen to extend across the entire survey area, this is more likely the effect of modern magnetic disturbance, rather than destruction of the buried features.

6 CONCLUSIONS

6.1 The survey has been successful in locating the previously excavated ditches that form part of the Beech Bottom Dyke SAM and confirming that they are likely to remain undisturbed *in situ*.

6.2 The survey data showed significant areas of modern magnetic interference and disturbance, which has reduced the visibility of weaker responses from the archaeological features.

6.3 In tandem with the geophysical survey two test pits were excavated in the grassed area (Mark Blagg-Newsome 2017). The pits revealed topsoil overlying a sequence of made ground and modern surfaces (Fig.7). A third pit was excavated in the western corner of the site to characterise the extent of the deposits recorded in Test Pits 1 and 2. The hard standing in the grassed area had not been removed and, therefore, the underlying earthworks of Beech Bottom Dyke remain intact.

ACKNOWLEDGEMENTS

Archaeological Solutions Ltd (AS) would like to thank Taylor French Developments for funding the project and for their assistance.

AS would also like to acknowledge the input and advice of Mr Simon West of St Albans City & District Council, and Ms Deborah Priddy of Historic England.

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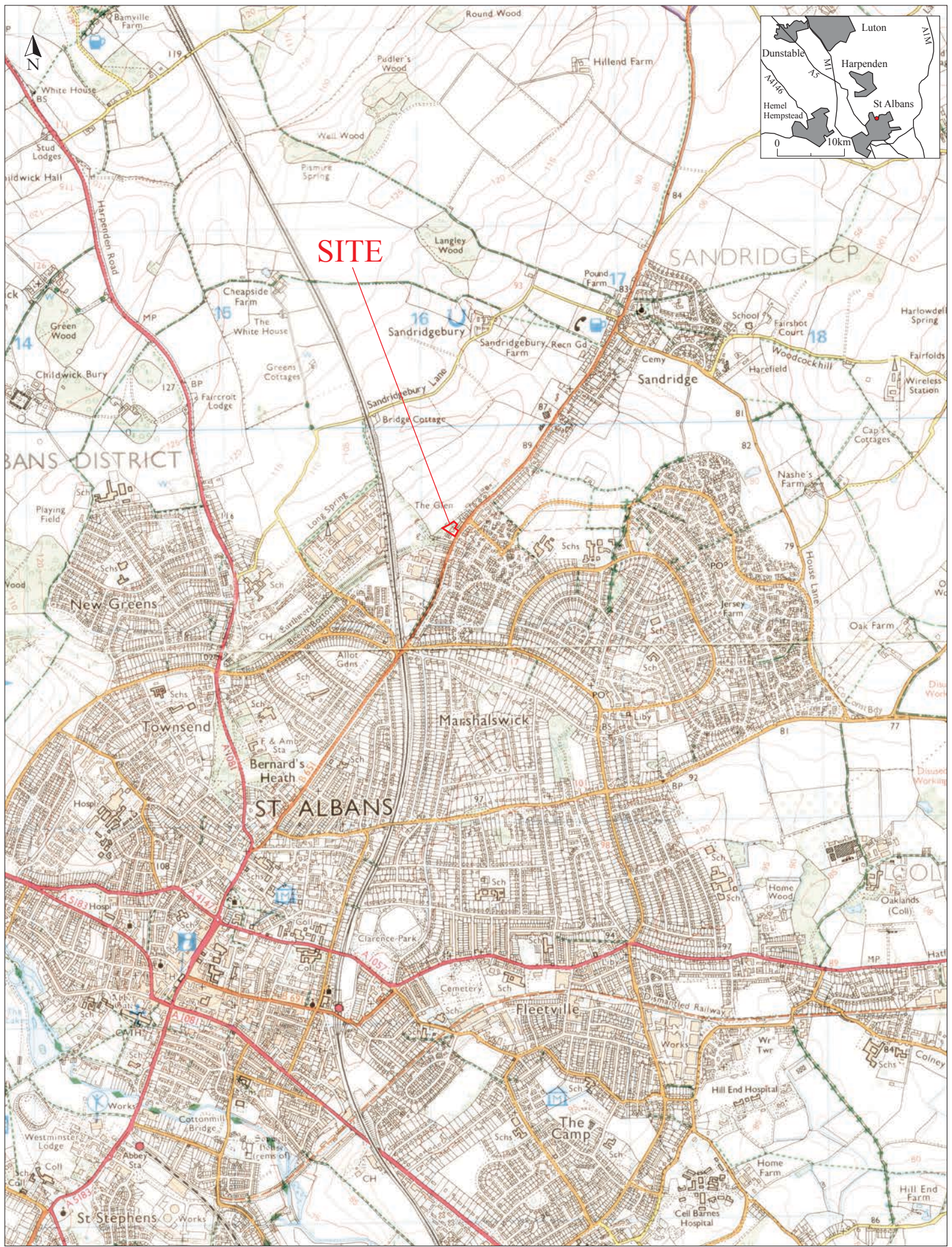
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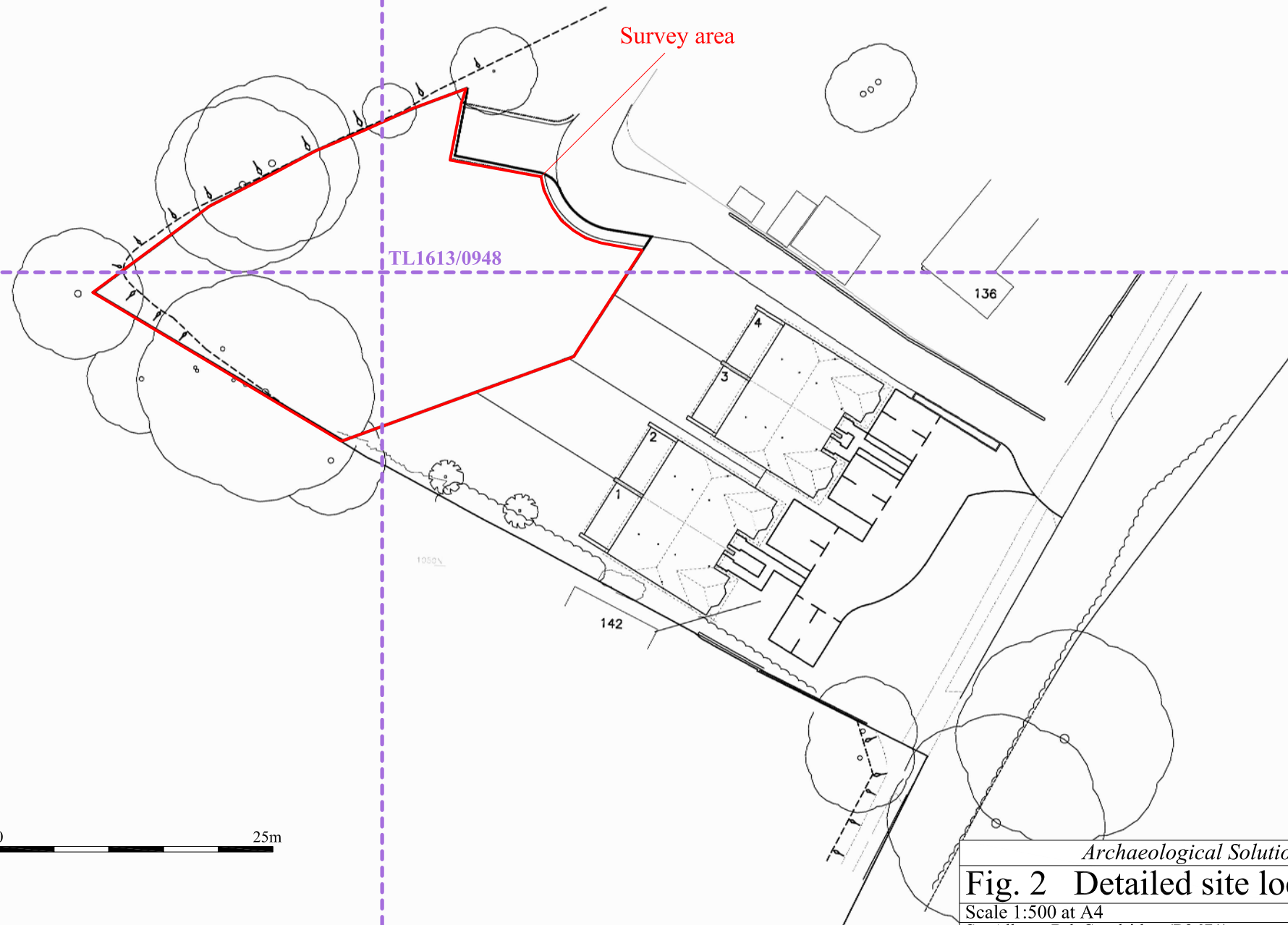
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Williamson, A, Rozwadowski, M & Sparrow, P, 2008, *St Albans Van Hire, 138 London Road, Sandridge, St Albans, Hertfordshire; An Archaeological Evaluation*, AS Report 2995)



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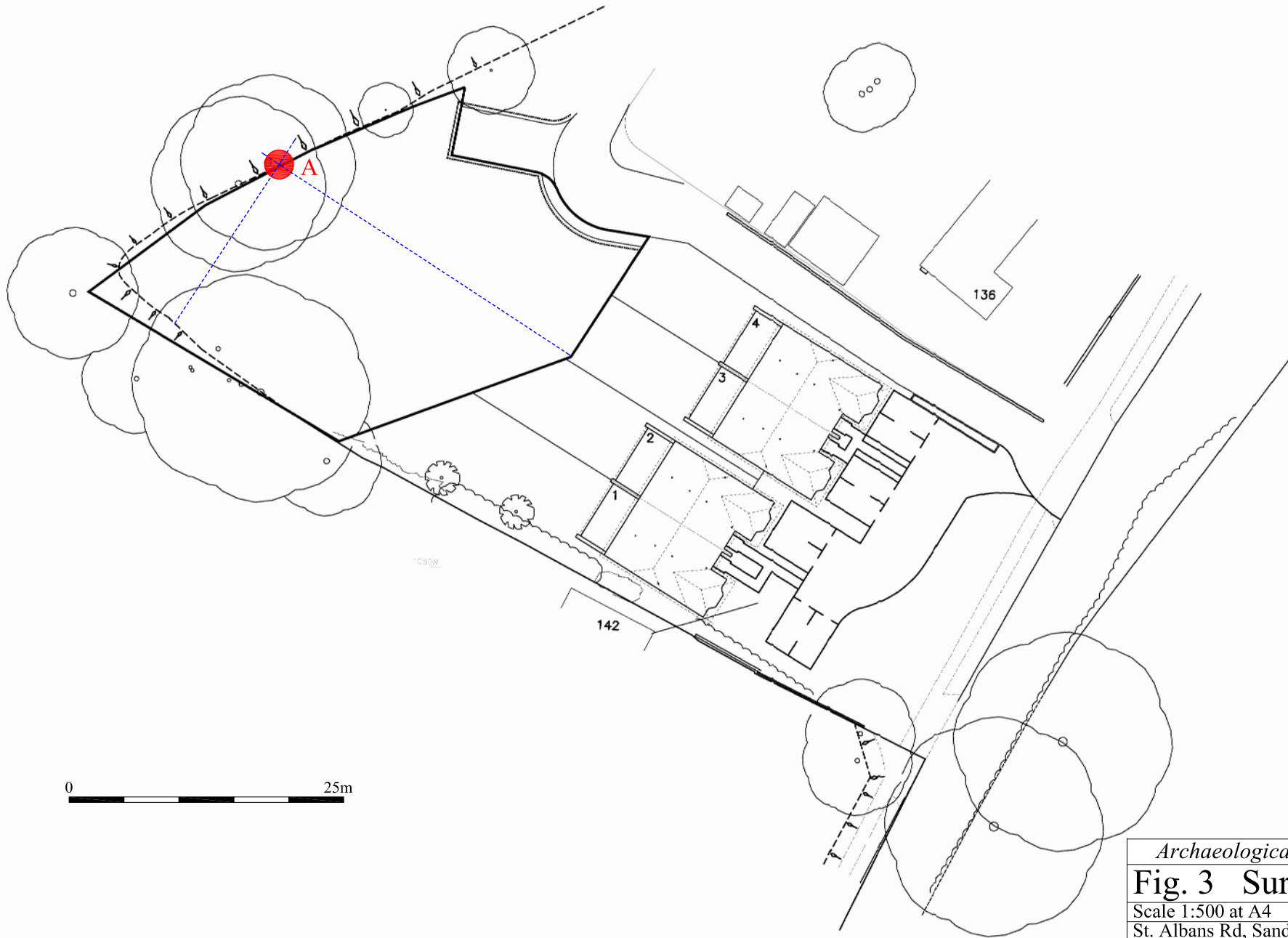
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Fig. 1 Site location plan
 Scale 1:25000 at A4



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Fig. 2 Detailed site location plan
Scale 1:500 at A4
St. Albans Rd, Sandridge (P2671)



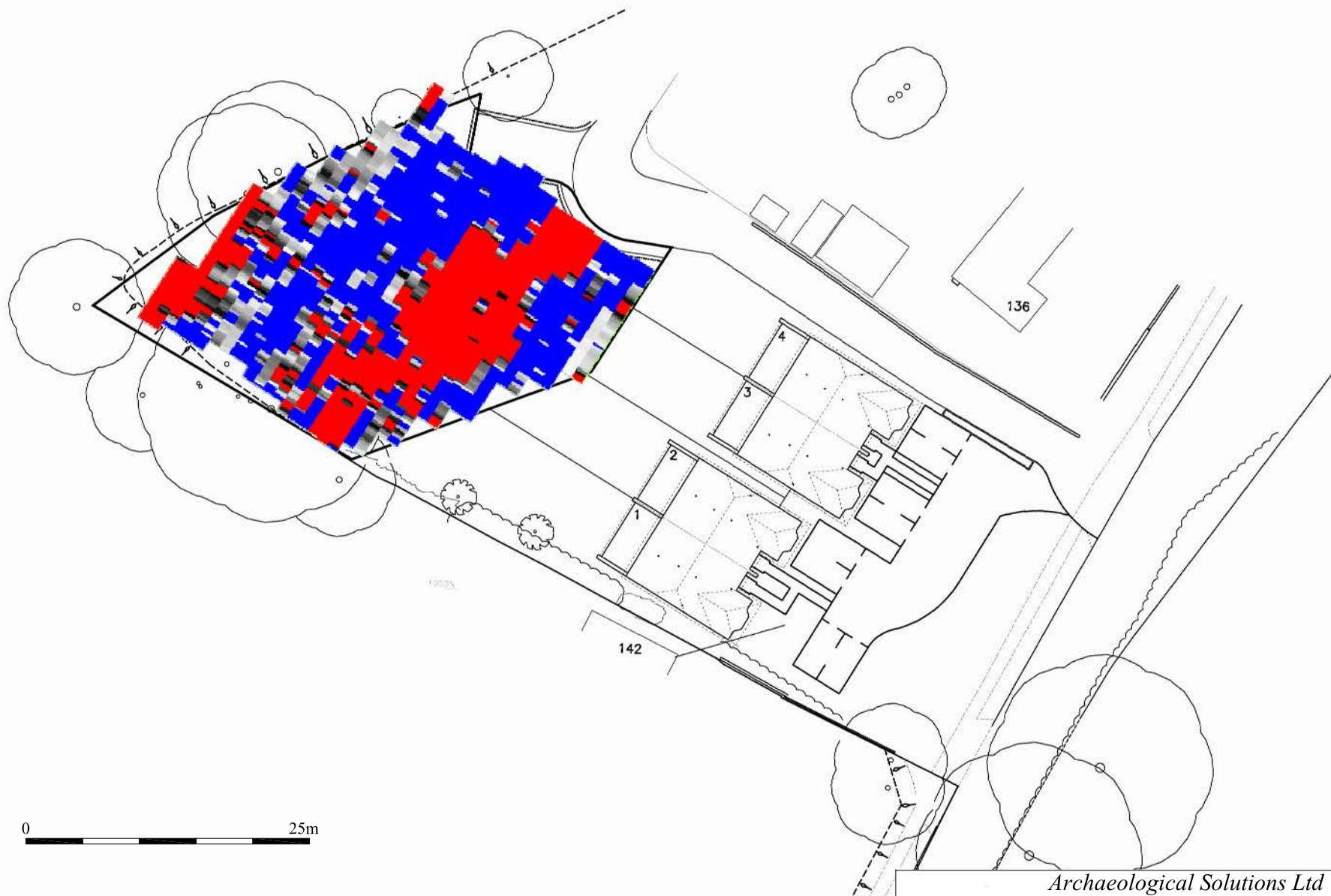
Point co-ordinates	
A	516120.90, 209496.44



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Fig. 3 Survey grid
Scale 1:500 at A4
St. Albans Rd, Sandridge (P2671)

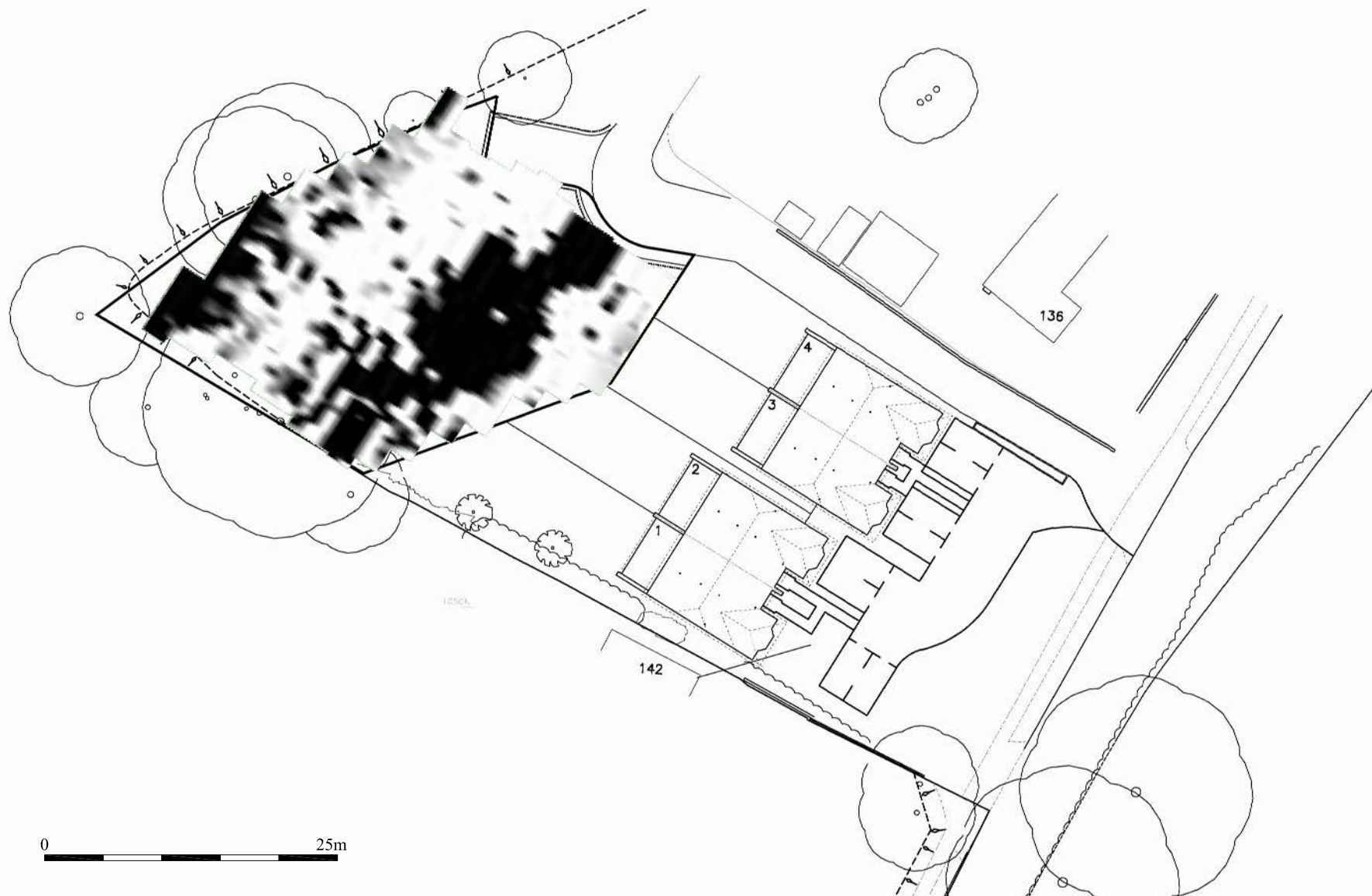


Plotting parameters
Maximum +100nT (Red)
Minimum -100nT (Blue)



0 25m

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Fig. 4 Colour plot of gradiometer data
Scale 1:500 at A4
St. Albans Rd, Sandridge (P2671)



0 25m



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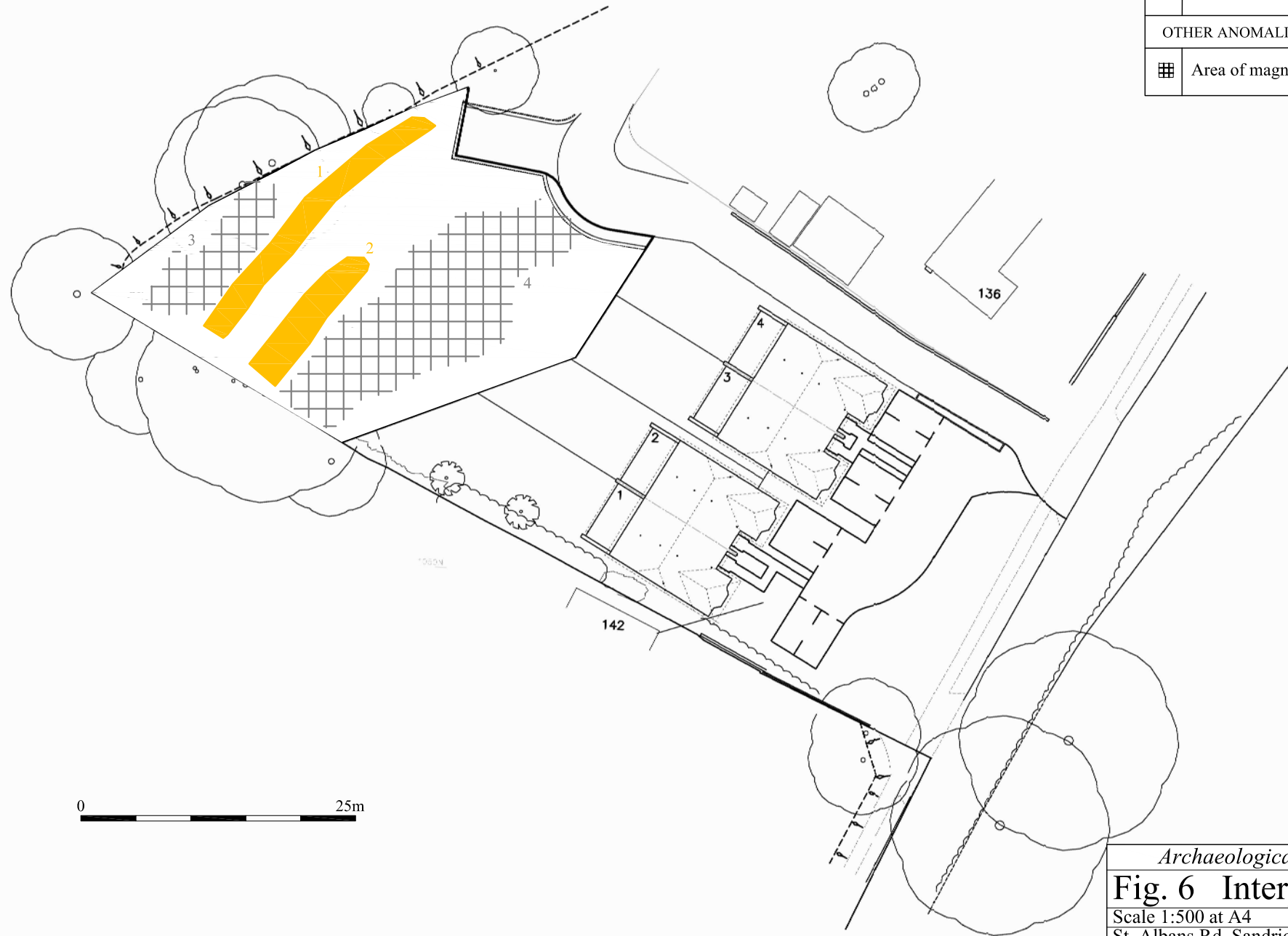
Fig. 5 Minimally processed gradiometer data

Scale 1:500 at A4

St. Albans Rd, Sandridge (P2671)





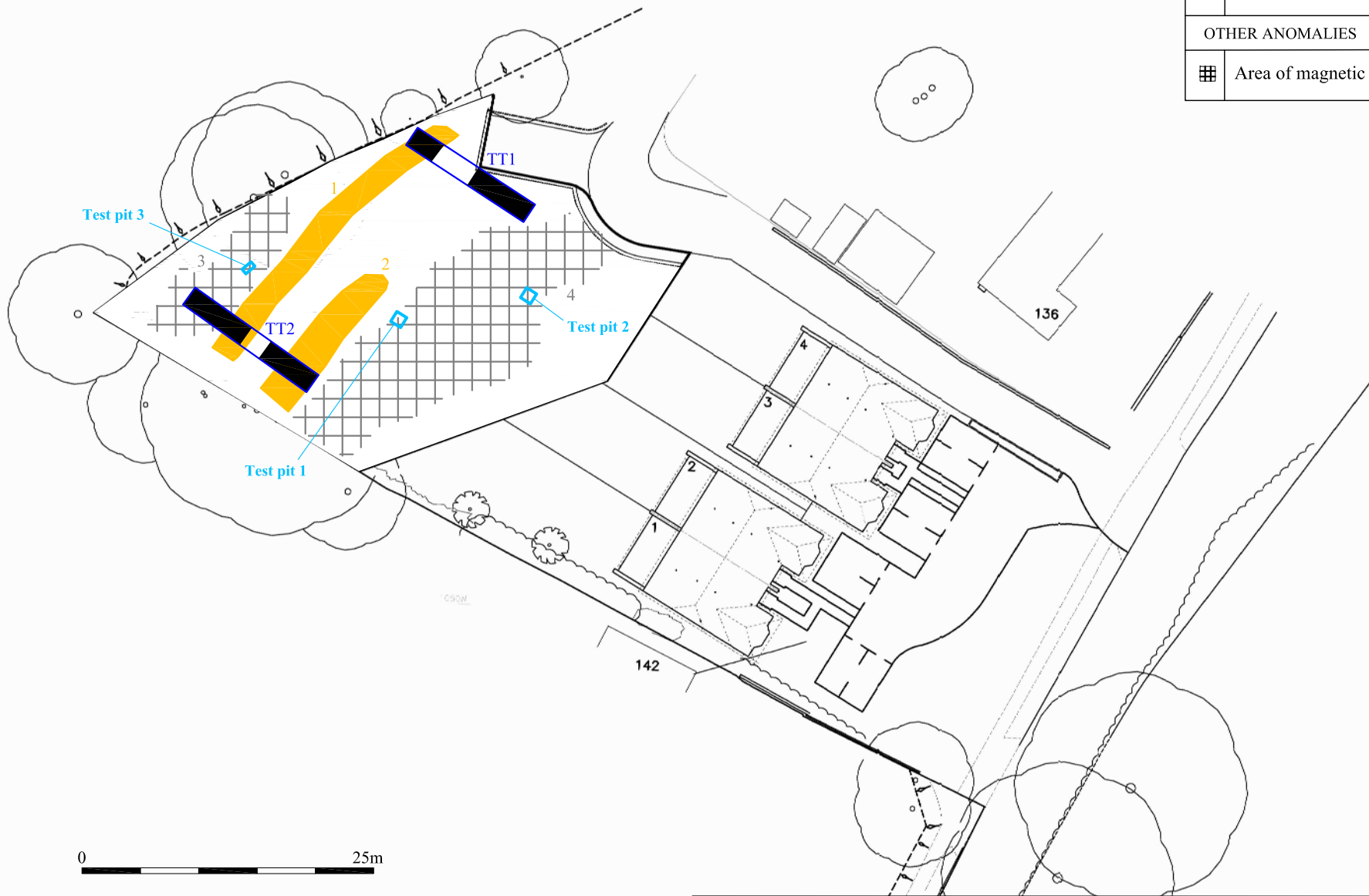
KEY	
ARCHAEOLOGY	
	Positive anomaly, probable cut feature of archaeological origin
OTHER ANOMALIES	
	Area of magnetic disturbance



0 25m

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Fig. 6 Interpretation plot
Scale 1:500 at A4
St. Albans Rd, Sandridge (P2671)

KEY	
ARCHAEOLOGY	
	Positive anomaly, probable cut feature of archaeological origin
OTHER ANOMALIES	
	Area of magnetic disturbance



0 25m

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Fig. 7 Interpretation plot with original trench locations

Scale 1:500 at A4
St. Albans Rd, Sandridge (P2671)