

## **GEOPHYSICAL SURVEY REPORT**

**Land off Tythe Barn Lane, Dickens Heath, Solihull**

Client

**University of Leicester Archaeological Services  
(ULAS)**

For

**Persimmon Homes**

Survey Report

**SUMO-03401**

OAIS Ref. No.

**sumogeop1-427727**

Date

**August 2021**



**Survey Report 03401: Land off Tythe Barn Lane, Dickens Heath, Solihull**

**Survey dates** 27 July 2021

**Field co-ordinator** Jay Griffiths BA

**Field Team** Jordan Morris BA

**Report Date** 04 August 2021

**CAD Illustrations** Thomas Cockcroft MSc

**Report Author** Thomas Cockcroft MSc

**Project Manager** Simon Haddrell BEng AMBCS PCIfA

**Report approved** Dr John Gater BSc DSc(Hon) MCIfA FSA

**SUMO Geophysics Ltd**  
Cowburn Farm  
Market Street  
Thornton  
Bradford  
BD13 3HW

T: 01274 835016

**SUMO Geophysics Ltd**  
Vineyard House  
Upper Hook Road  
Upton upon Severn  
Worcestershire  
WR8 0SA

T: 01684 592266

[www.sumoservices.com](http://www.sumoservices.com)  
[geophysics@sumoservices.com](mailto:geophysics@sumoservices.com)

---

## TABLE OF CONTENTS

1	LIST OF FIGURES	1
2	SURVEY TECHNIQUE	1
3	SUMMARY OF RESULTS	2
4	INTRODUCTION	2
5	RESULTS	3
6	DATA APPRAISAL & CONFIDENCE ASSESSMENT	3
7	CONCLUSION	3
8	REFERENCES	4

Appendix A     Technical Information: Magnetometer Survey Methods, Processing and Presentation

Appendix B     Technical Information: Magnetic Theory

Appendix C     OASIS Data Collection Sheet

### 1. LIST OF FIGURES

Figure 01	NTS	Site Location
Figure 02	1:1200	Magnetometer Survey - Greyscale Plot
Figure 03	1:1200	Magnetometer Survey - Colour Plot
Figure 04	1:1200	Magnetometer Survey - Interpretation
Figure 05	1:2000	Magnetometer Survey - Greyscale Plot / Interpretation / 1904 OS Mapping / Google Earth
Figure 06	1:2000	Magnetometer Survey - Greyscale Plot / Interpretation / 1904 OS Mapping / LiDAR
Figure 07	1:1200	Minimally Processed Data - Greyscale Plots
Figure 08	1:1000	XY Trace Plots (clipped at +/-15nT)

### 2. SURVEY TECHNIQUE

Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site.

Bartington Grad 601-2

Traverse Interval 1.0m

Sample Interval 0.25m

### 3 SUMMARY OF RESULTS

- 3.1 A magnetometer survey of 3.4 ha of land off Tythe Barn Lane, Dickens Heath has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Trends of uncertain origin are present within the dataset; they are likely to be due to a combination of agricultural and natural processes. Ridge and furrow cultivation plus relatively modern ploughing is also visible in the dataset.

### 4 INTRODUCTION

- 4.1 **SUMO Geophysics Ltd** were commissioned to undertake a geophysical survey of an area outlined for residential development. This survey forms part of an archaeological investigation being undertaken by **University of Leicester Archaeological Services (ULAS)** on behalf of **Persimmon Homes**.

#### 4.2 Site details

NGR / Postcode	SP 10820 77027 / B90 1PH
Location	The site is located 2.5 km north-west of Cheswick Green and 2.6 km south-west of Shirley. The survey area is bounded to the south by Tythe Barn Lane, to the west by Akamba Heritage Centre and to the east by houses off Whitchurch Lane.
HER	Warwickshire HER
OASIS Ref. No.	sumogeop1-427727
District	Solihull
Parish	Dickens Heath Civil Parish
Topography	Flat
Current Land Use	Arable Agriculture
Geology (BGS 2021)	Bedrock: Mercia Mudstone Group – mudstone Superficial: Glaciofluvial Deposits, Mid Pleistocene - sand and gravel Till, Mid Pleistocene - diamicton
Soils (CU 2021)	Soilscape 17: Slowly permeable seasonally wet acid loamy and clayey soils.
Archaeology (ULAS 2021)	An archaeological desk-based assessment has been prepared by University of Leicester Archaeological Services (ULAS). Historically Dickens Heath was a hamlet within Hockley Heath in the Hemlingford Hundred. The Historic Environment Records for Solihull and Worcestershire contain no known archaeological sites in the survey area. There is a possible prehistoric enclosure to the north of the site, and extant medieval ridge and furrow in the vicinity. The site also lies adjacent to the Stratford-upon-Avon Canal. There is low potential for archaeological remains from Prehistoric, Roman and Post-Medieval periods. There is low to moderate potential for Medieval remains such as ridge and furrow earthworks.
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	3.4 ha

#### 4.3 Aims and Objectives

To locate and characterise any anomalies of possible archaeological interest within the study area.

## 5 RESULTS

### 5.1 ***Probable / Possible Archaeology***

5.1.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest.

### 5.2 ***Uncertain***

5.2.1 A number of trends have been detected in the survey which lack the defined morphology of anomalies that would normally be interpreted as being of archaeological interest. They are isolated and may be due to underlying geology or agricultural processes, hence the uncertain categorisation.

### 5.3 ***Agricultural – Ridge and Furrow / Ploughing***

5.3.1 Broad and parallel linear anomalies aligned north-south have been recorded in the eastern half of the survey area which indicate a past ridge and furrow agricultural regime. Numerous closely spaced, parallel and magnetically weak linear trends aligned east-west are visible across the whole dataset. Two linear bands at the western extent of the survey are ploughing headlands.

5.3.2 The ploughing is visible on aerial imagery and in the Lidar data pot of the area (see Figures 05 and 06). The Lidar plot seems to indicate the ridge and furrow cultivation is also present in the western half of the field; no field divisions are visible on historic mapping.

### 5.4 ***Ferrous / Magnetic Disturbance***

5.4.1 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

## 6 DATA APPRAISAL & CONFIDENCE ASSESSMENT

6.1 Historic England guidelines (EH 2008) Table 4 states that the typical magnetic response on the local soils / geology is generally poor. The results from this survey indicate the presence of ridge and furrow ploughing plus uncertain linear trends; as a consequence, there is no *a priori* reason why archaeological features would not have been detected, if present.

## 7 CONCLUSION

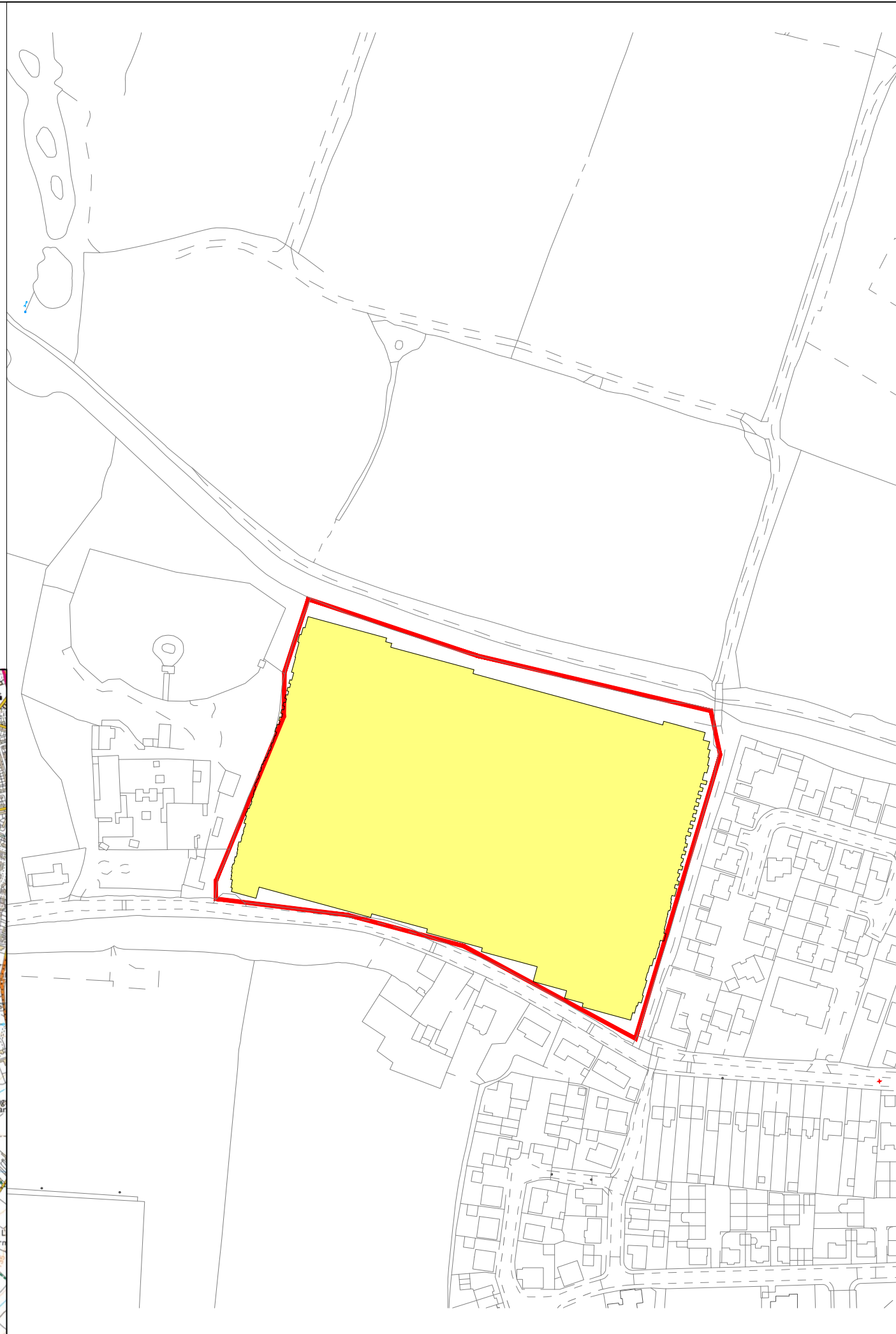
7.1 The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Linear trends have been detected in the survey and classified as uncertain; they are likely to have been caused by a combination of agricultural and natural processes. Ridge and furrow ploughing plus relatively modern ploughing is also visible in the magnetic data.

## 8 REFERENCES

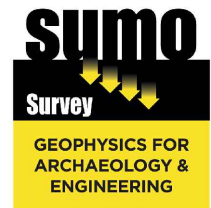
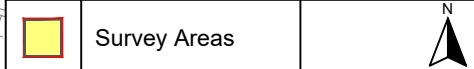
- BGS 2021 British Geological Survey, Geology of Britain viewer [accessed 04/08/2021] *website*: (<http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps>)
- ClfA 2014 *Standard and Guidance for Archaeological Geophysical Survey*. Amended 2016. ClfA Guidance note. Chartered Institute for Archaeologists, Reading  
[http://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics\\_2.pdf](http://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics_2.pdf)
- CU 2021 The Soils Guide. Available: [www.landis.org.uk](http://www.landis.org.uk). Cranfield University, UK. [accessed 04/08/2021] *website*: <http://mapapps2.bgs.ac.uk/ukso/home.html>
- EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology*, European Archaeological Council, Guidelines 2.
- EH 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage, Swindon  
<https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/>
- ULAS 2021 *An archaeological desk-based assessment for land north of Tythe Barn Lane, Dickens Heath, Solihull, West Midlands*. University of Leicester Archaeological Services (ULAS), Leicester



Survey Area



Reproduced from Ordnance Survey's 1:25 000 map of 1998 with the permission of the controller of Her Majesty's Stationery Office. Crown Copyright reserved. Licence No: 100018665



Title: Site Location

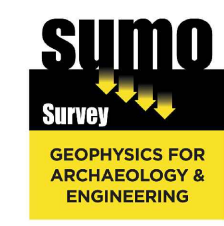
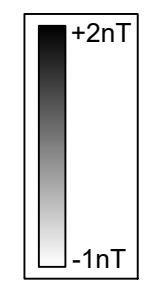
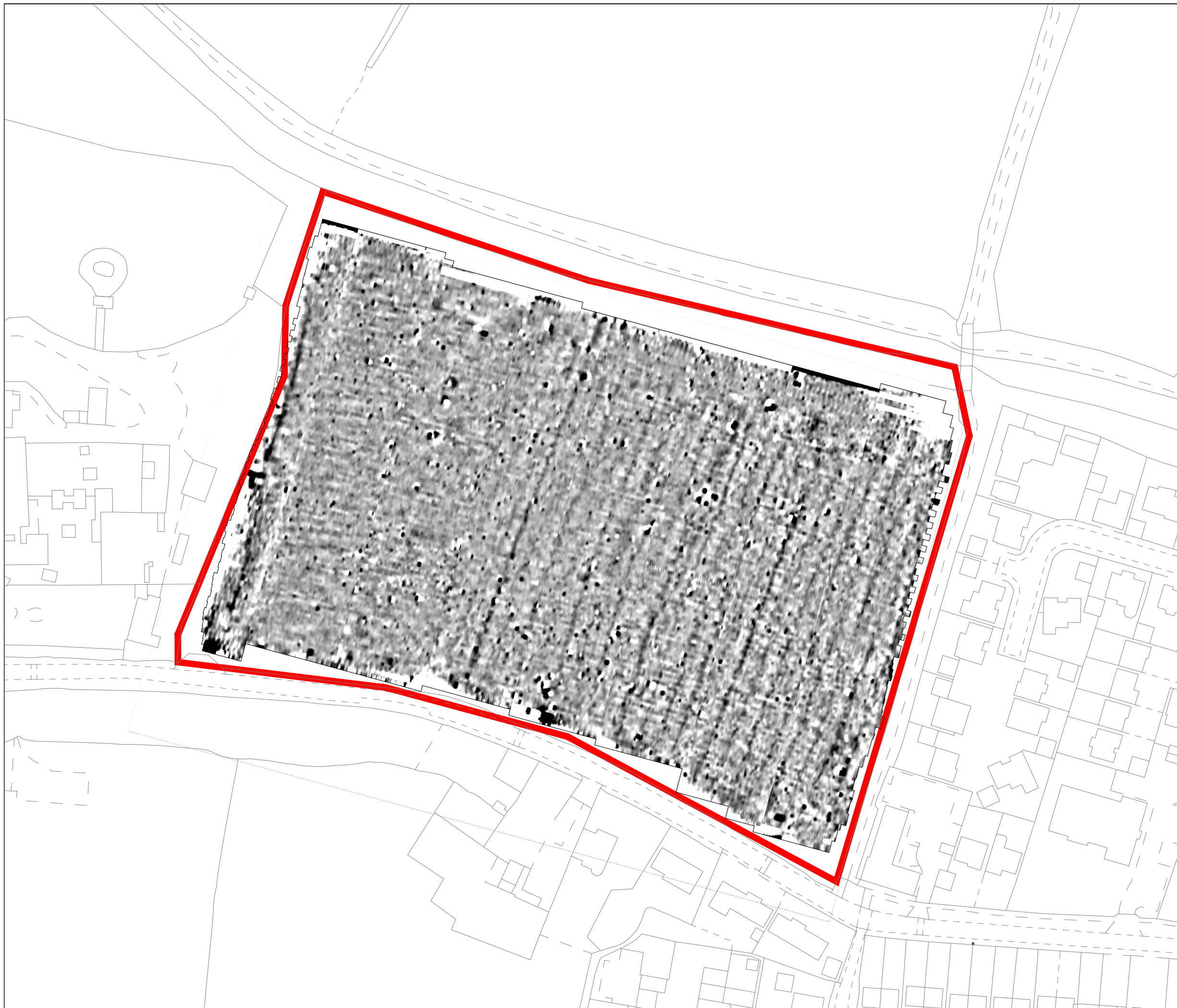
Client: University of Leicester Archaeological Services (ULAS)

Project: 03401 - Land off Tythe Barn Lane, Dickens Heath, Solihull

Scale: NOT TO SCALE

Fig No: 01





Title:  
Magnetometer Survey - Greyscale Plot

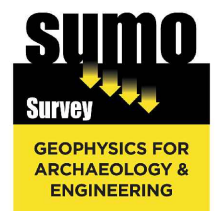
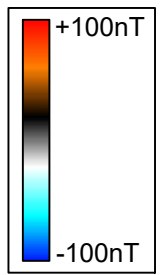
Client:  
University of Leicester Archaeological Services  
(ULAS)

Project:  
03401 - Land off Tythe Barn Lane, Dickens  
Heath, Solihull

Scale:  
0 metres 60  
1:1200 @ A3

Fig No:  
02





Title:  
Magnetometer Survey - Colour Plot

Client:  
University of Leicester Archaeological Services  
(ULAS)

Project:  
03401 - Land off Tythe Barn Lane, Dickens  
Heath, Solihull

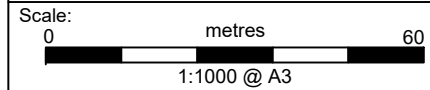
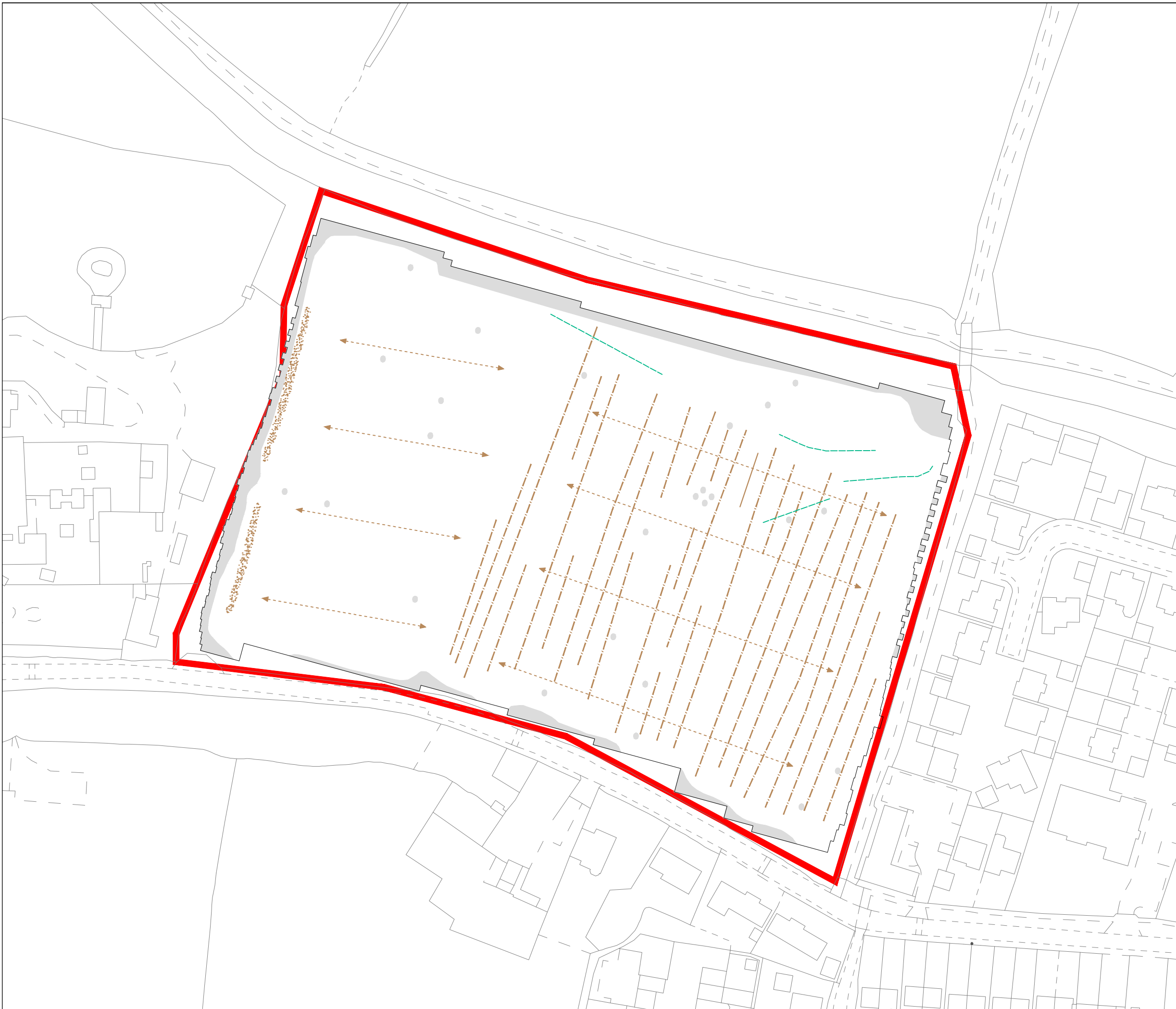





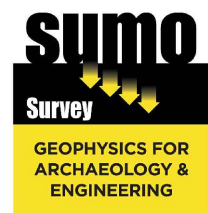


Fig No:  
03



**KEY**

	Uncertain Origin (Trend)
	Agriculture (Ridge and Furrow)
	Agriculture (Headland)
	Agriculture (Plough)
	Ferrous



Title:  
Magnetometer Survey - Interpretation

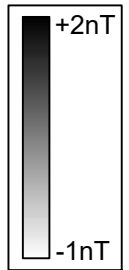
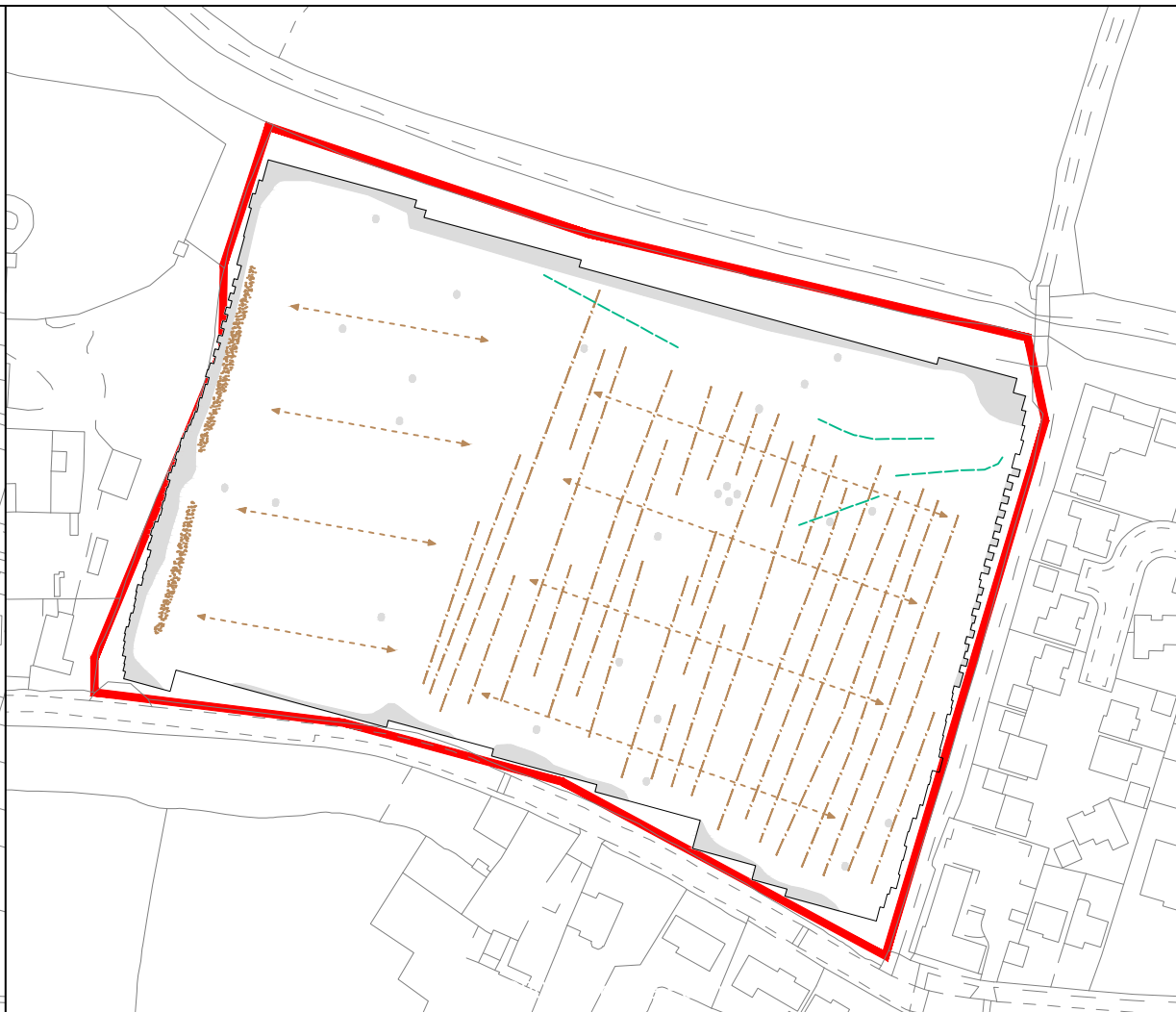
Client:  
University of Leicester Archaeological Services (ULAS)

Project:  
03401 - Land off Tythe Barn Lane, Dickens Heath, Solihull






Scale: 0 metres 60  
1:1200 @ A3

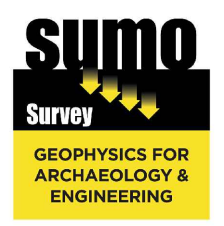
Fig No: 04





**KEY**

	Uncertain Origin (Trend)
	Agriculture (Ridge and Furrow)
	Agriculture (Headland)
	Agriculture (Plough)
	Ferrous



Title: Magnetometer Survey - Greyscale Plot / Interpretation / 1904 OS Mapping (ULAS 2021) / Google Earth (ULAS 2021)

Client: University of Leicester Archaeological Services (ULAS)

Project: 03401 - Land off Tythe Barn Lane, Dickens Heath, Solihull

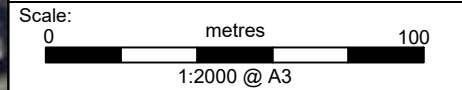
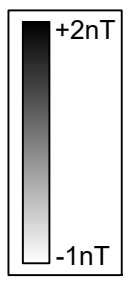
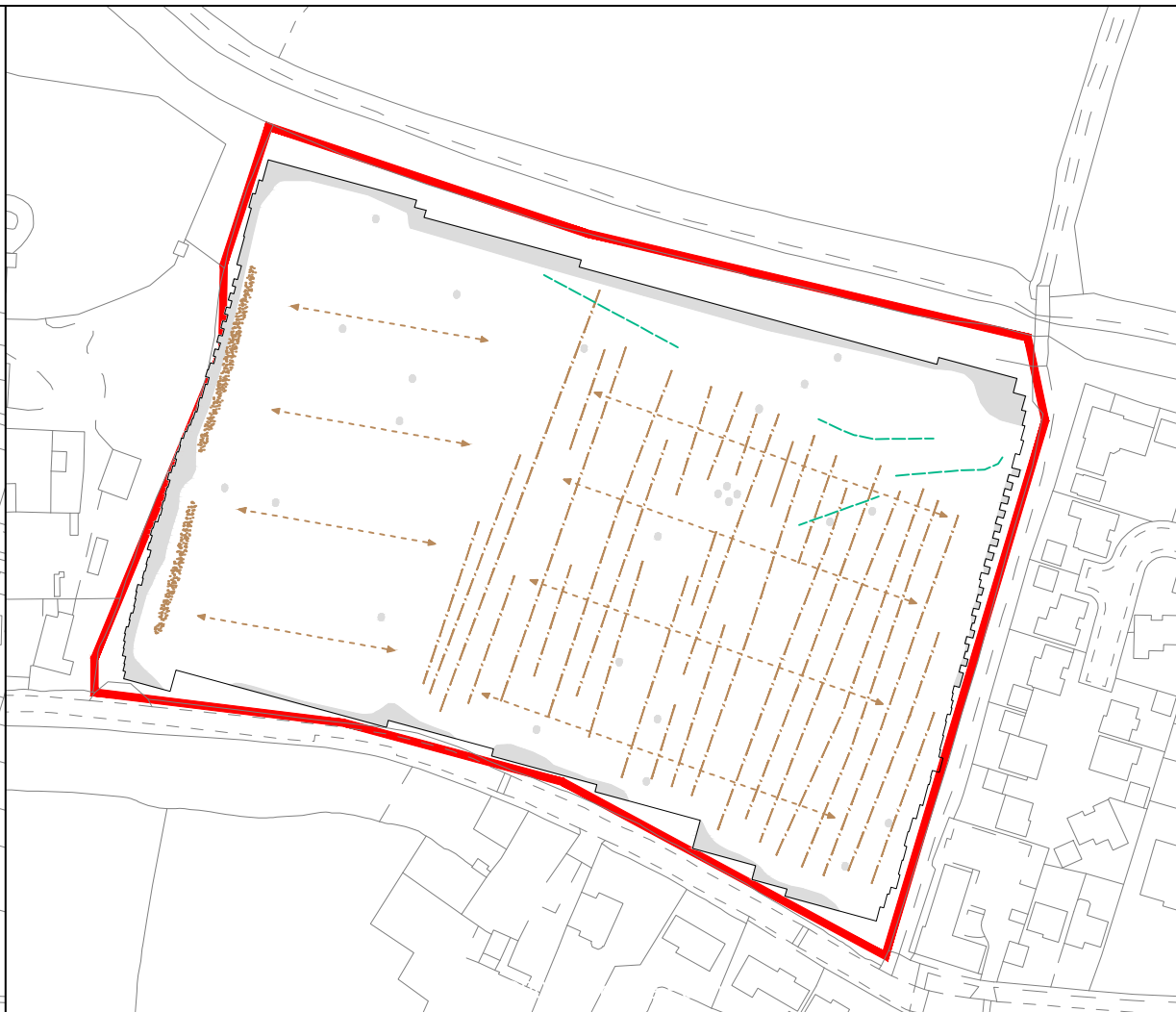







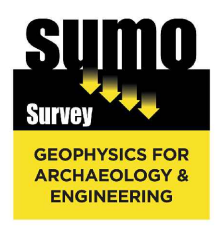
Fig No: 05





**KEY**

	Uncertain Origin (Trend)
	Agriculture (Ridge and Furrow)
	Agriculture (Headland)
	Agriculture (Plough)
	Ferrous



Title: Magnetometer Survey - Greyscale Plot / Interpretation / 1904 OS Mapping (ULAS 2021) / LiDAR (ULAS 2021)

Client: University of Leicester Archaeological Services (ULAS)

Project: 03401 - Land off Tythe Barn Lane, Dickens Heath, Solihull

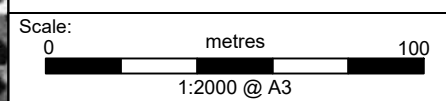
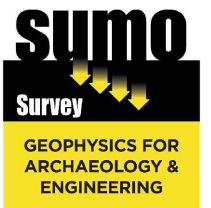
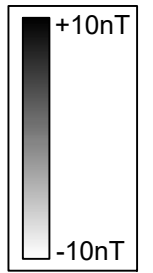
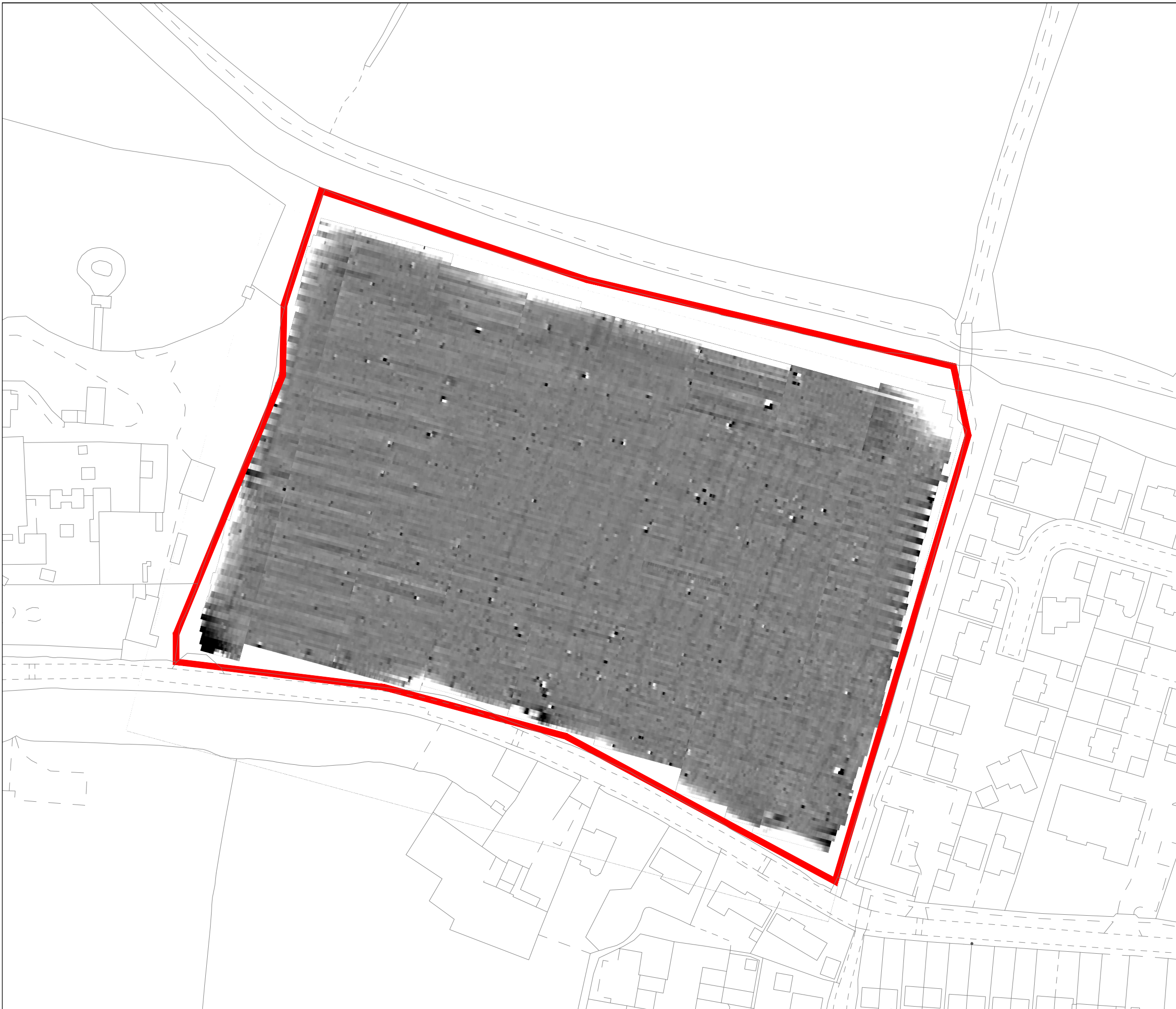


Fig No: 06





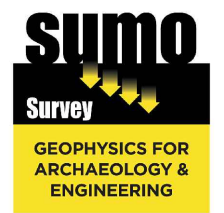
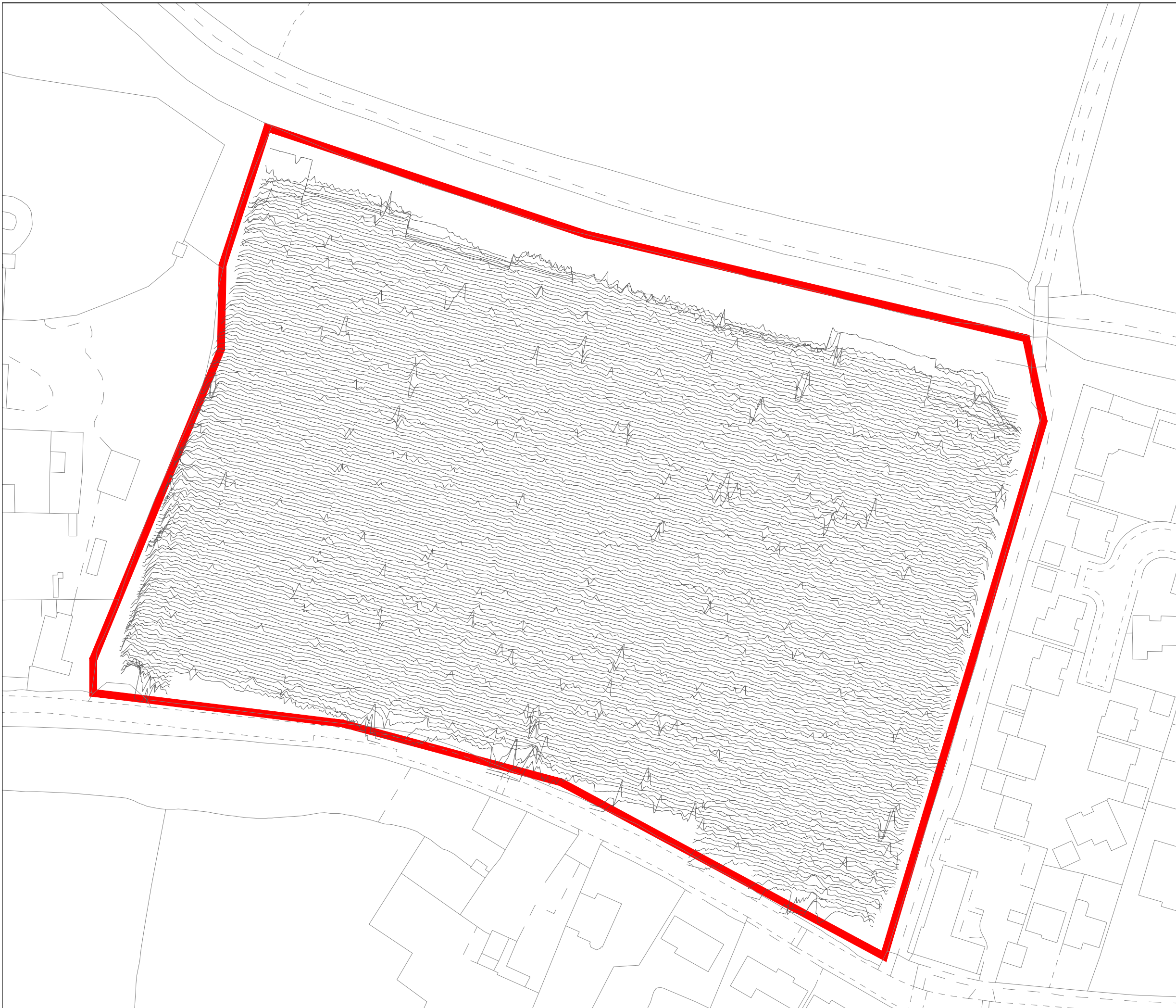
Title:  
Minimally Processed Data - Greyscale Plots

Client:  
University of Leicester Archaeological Services  
(ULAS)

Project:  
03401 - Land off Tythe Barn Lane, Dickens  
Heath, Solihull

Scale:  
0 metres 50  
1:1000 @ A3

Fig No:  
07



Title:  
XY Trace Plots (clipped at +/-15nT)

Client:  
University of Leicester Archaeological Services  
(ULAS)

Project:  
03401 - Land off Tythe Barn Lane, Dickens  
Heath, Solihull

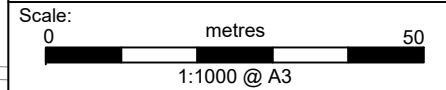


Fig No:  
08



## Standards & Guidance

This report and all fieldwork have been conducted in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage), the Chartered Institute for Archaeologists (CIfA 2014) and the European Archaeological Council (EAC 2016).

## Grid Positioning

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1m	0.25m

## Instrumentation: **Bartington Grad 601-2**

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted vertically, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths. The Bartington instrument can collect two lines of data per traverse with gradiometer units mounted laterally with a separation of 1.0m. The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each site survey, data is transferred to the office for processing and presentation.

## Data Processing

Zero Mean	This process sets the background mean of each traverse within each grid to zero.
Traverse	The operation removes striping effects and edge discontinuities over the whole of the data set.
Step Correction (De-stagger)	When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

## Display

Greyscale/ Colourscale Plot	This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly, all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.
--------------------------------	---

## **Presentation of results and interpretation**

The presentation of the results includes a 'minimally processed data' and a 'processed data' greyscale plot. Magnetic anomalies are identified, interpreted and plotted onto the 'Interpretation' drawings.

When interpreting the results, several factors are taken into consideration, including the nature of archaeological features being investigated and the local conditions at the site (geology, pedology, topography etc.). Anomalies are categorised by their potential origin. Where responses can be related to other existing evidence, the anomalies will be given specific categories, such as: Abbey Wall or Roman Road. Where the interpretation is based largely on the geophysical data, levels of confidence are implied, for example: Probable, or Possible Archaeology. The former is used for a confident interpretation, based on anomaly definition and/or other corroborative data such as cropmarks. Poor anomaly definition, a lack of clear patterns to the responses and an absence of other supporting data reduces confidence, hence the classification Possible.



## Interpretation Categories

In certain circumstances (usually when there is corroborative evidence from desk-based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall, etc.*) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

<i>Archaeology / Probable Archaeology</i>	This term is used when the form, nature and pattern of the responses are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
<i>Possible Archaeology</i>	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
<i>Industrial / Burnt-Fired</i>	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
<i>Former Field Boundary (probable &amp; possible)</i>	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
<i>Ridge &amp; Furrow</i>	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases, the response may be the result of more recent agricultural activity.
<i>Agriculture (ploughing)</i>	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
<i>Land Drain</i>	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains may lead and empty into larger diameter pipes, which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
<i>Natural</i>	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
<i>Magnetic Disturbance</i>	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present.
<i>Service</i>	Magnetically strong anomalies, usually forming linear features are indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) or the fill of the trench can cause weaker magnetic responses which can be identified from their uniform linearity.
<i>Ferrous</i>	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.
<i>Uncertain Origin</i>	Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of <i>Possible Archaeology / Natural</i> or (in the case of linear responses) <i>Possible Archaeology / Agriculture</i> ; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

## Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.1 nanoTeslas (nT) in an overall field strength of 48,000 (nT), can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns; material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried feature. The difference between the two sensors will relate to the strength of a magnetic field created by this feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity and disturbance from modern services.

# OASIS DATA COLLECTION FORM: England

[List of Projects](#) | [Manage Projects](#) | [Search Projects](#) | [New project](#) | [Change your details](#) | [HER coverage](#) | [Change country](#) | [FAQs](#) | [Log out](#)

## Printable version

**OASIS ID: sumogeop1-427727**

### Project details

Project name	Land off Tythe Barn Lane, Dickens Heath, Solihull
Short description of the project	A magnetometer survey of 3.4 ha of land off Tythe Barn Lane, Dickens Heath has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Trends of uncertain origin are present within the dataset; they are likely to be due to a combination of agricultural and natural processes. Ridge and furrow cultivation plus relatively modern ploughing is also visible in the dataset.
Project dates	Start: 27-08-2021
Previous/future work	Not known / Not known
Any associated project reference codes	SUMO-03401 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 4 - Character Undetermined
Monument type	RIDGE AND FURROW PLOUGHING Post Medieval
Monument type	PLOUGHING Modern
Significant Finds	NONE None
Methods & techniques	"Geophysical Survey"
Development type	Housing estate
Prompt	Planning condition
Position in the planning process	Not known / Not recorded
Solid geology (other)	Mercia Mudstone Group – mudstone
Drift geology (other)	Glaciofluvial Deposits, Mid Pleistocene - sand and gravel / Till, Mid Pleistocene - diamicton
Techniques	Magnetometry

### Project location

Country	England
Site location	WEST MIDLANDS SOLIHULL DICKENS HEATH Land off Tythe Barn Lane, Dickens Heath, Solihull
Postcode	B90 1PH
Study area	3.4 Hectares

Site coordinates SP 10820 77027 52.390780418977 -1.840986639659 52 23 26 N 001 50 27 W Point

### Project creators

Name of Organisation Sumo Geophysics

Project brief originator ULAS

Project design originator Sumo Geophysics

Project director/manager Simon Haddrell

Project supervisor Thomas Cockcroft

Type of sponsor/funding body Client Business

Name of sponsor/funding body University of Leicester Archaeological Services (ULAS)

### Project archives

Physical Archive Exists? No

Digital Archive recipient Warwickshire HER

Digital Archive ID SUMO-03401

Digital Contents "Survey"

Digital Media available "Geophysics","Images vector","Survey","Text"

Paper Archive Exists? No

### Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title Land off Tythe Barn Lane, Dickens Heath, Solihull

Author(s)/Editor(s) Cockcroft, T

Other bibliographic details SUMO-03401

Date 2021

Issuer or publisher SUMO Geophysics Ltd

Place of issue or publication Upton-Upon-Severn

Description 6 pages of A4 descriptive text 8 pages of A3 figures

Entered by thomas cockcroft (tom.cockcroft@sumoservices.com)

Entered on 5 August 2021



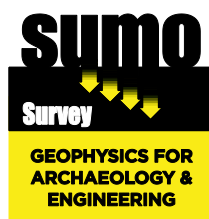
# OASIS:

Please e-mail [Historic England](#) for OASIS help and advice

© ADS 1996-2012 Created by [Jo Gilham and Jen Mitcham, email](#) Last modified Wednesday 9 May 2012

Cite only: <http://www.oasis.ac.uk/form/print.cfm> for this page

[Cookies](#) [Privacy Policy](#)



- Archaeological
- Geophysical
- Laser Scanning
- Measured Building
- Topographic
- Utility Mapping

SUMO Services Ltd, incorporated under the laws of England and Wales,  
Company Registration No.4275993.  
Registered Office Unit 8 Hayward Business Centre, New Lane, Havant, Hampshire, PO9 2NL