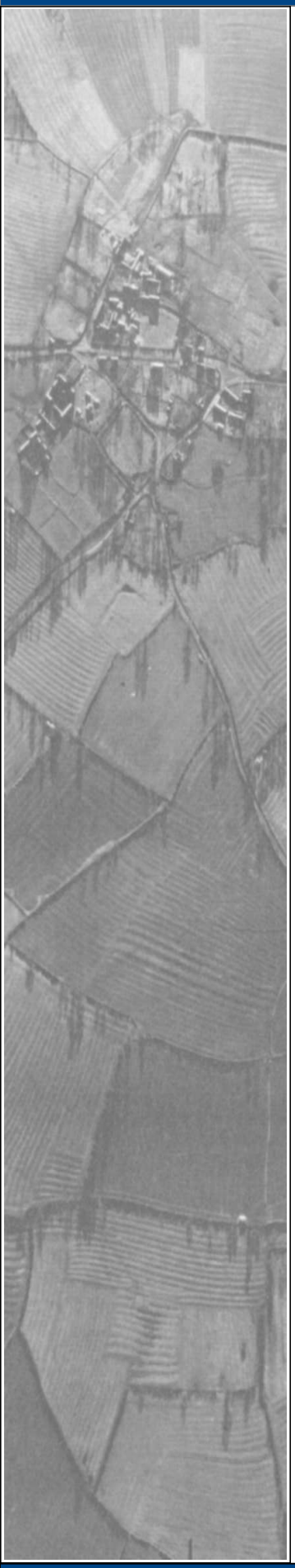

Cadenham Farms
Foxham
Wiltshire

MAGNETOMETER SURVEY REPORT

for

Cadenham Farms Partnership

Kerry Donaldson & David Sabin

December 2021

Ref. no. J898

ARCHAEOLOGICAL SURVEYS LTD

Cadenham Farms
Foxham
Wiltshire

MAGNETOMETER SURVEY REPORT

for

Cadenham Farms Partnership

Fieldwork by David Sabin BSc (Hons) MCIfA
Report by Kerry Donaldson BSc (Hons)
Report checked by David Sabin
Primary archive location - Archaeological Surveys Ltd, Yatesbury, Wiltshire

Survey date – 10th December 2021
Ordnance Survey Grid Reference – **ST 97650 76656, ST 97387 76598, ST 97443 76465 & ST 98300 76395**

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SUMMARY

A geophysical survey was carried out by Archaeological Surveys Ltd over four small areas of land ahead of a tree planting scheme at Cadenham Farms, Foxham, Wiltshire. The results indicate the presence of a number of strongly magnetic discrete anomalies that could have an association with burning. While one group in the south western part of the site could be associated with a modern bonfire, the discrete anomalies within the site are generally dispersed and do not have any clearly defined associated features. There are a small number of positive linear anomalies, with some evidence for truncation by ridge and furrow and/or land drainage. Weaker pit-like anomalies could be natural in origin and the majority of the areas contain anomalies associated with agricultural activity.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Victoria Nye on behalf of the Cadenham Farms Partnership to undertake a magnetometer survey of four small areas of land at Cadenham Farms in Foxham. The areas have been selected for a tree planting scheme.

1.2 Survey objectives and techniques

1.2.1 The objective of the survey was to use magnetometry to locate geophysical anomalies that may be archaeological in origin so that they may be assessed prior to tree planting. The methodology is considered an efficient and effective approach to archaeological prospection.

1.2.2 Geophysical survey can provide useful information on the archaeological potential of a site; however, the outcome of any survey relies on a number of factors and as a consequence results can vary. The success in meeting the aims and objectives of a survey is, therefore, often impossible to predetermine.

1.3 Standards, guidance and recommendations for the use of this report

1.3.1 The survey and report follow the recommendations set out by: European Archaeological Council (2015) *Guidelines for the Use of Geophysics in Archaeology;* Institute for Archaeologists (2002) *The use of Geophysical Techniques in Archaeological Evaluations.* The work has been carried out to the Chartered Institute for Archaeologists (2014) (updated 2020) *Standard and Guidance for Archaeological Geophysical Survey.*

1.3.2 Archaeological Surveys Ltd provide a detailed geophysical survey report and

it is recommended that where possible the contents should be considered in full. The Summary provides a brief overview of the results with more detail available in the Discussion and/or Conclusion. The *List of anomalies* within the Results provides a detailed assessment of the anomalies within separate categories which can be useful in inferring a level of confidence to the interpretation. Quality and factors influencing the interpretation of anomalies is also set out within the results.

1.3.3 It is recommended that the full report should always be considered when using data and interpretation plots; where this is not possible, in the field for example, the abstraction and interpretation plots should retain their colour coding and be used with a corresponding legend.

1.3.4 Where targeting of anomalies by excavation is to be carried out, care should be taken to place trenches over solid lines or features visible on the abstraction and interpretation plots. Archaeological Surveys abstraction and interpretation avoids the use of dashed or dotted line formats, and broken or fragmented lines used in interpretive plots may well correspond closely with truncation of archaeological features.

1.4 Site location, description and survey conditions

1.4.1 The site is located within four separate pasture fields to the south of Cadenham Farms. They are centred on Ordnance Survey National Grid Reference (OS NGR) Area 1 – ST 97650 76656, Area 2 – ST 97387 76598, Area 3 – ST 97443 76465 and Area 4 – ST 98300 76395, see Figs 01 and 02.

1.4.2 The geophysical survey covers approximately 1.4ha with 0.217ha outlined for planting within Area 1, 0.577ha for Area 2, 0.429ha for Area 3 and 0.205ha for Area 4. The areas are located on generally level ground within small pasture fields bounded by thorn hedgerows.

1.4.3 The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data. Waterlogged ground was encountered within Area 3 but this did not impede the survey. Weather conditions during the survey were fine.

1.5 Site history and archaeological potential

1.5.1 Although there are no heritage assets within the survey areas, ridge and furrow is extant across much of the site. Area 4 is bounded by the disused Wilts & Berks Canal and the survey areas lie within agricultural land associated with Cadenham Manor. This is recorded on the Wiltshire Historic Environment Record as relating to a medieval moated farmstead with a partially extant 17th century farmstead with a regular courtyard plan.

1.6 Geology and soils

1.6.1 The underlying geology is mudstone from the Oxford Clay Formation (BGS, 2017).

1.6.2 The overlying soil across Areas 1, 2 and 3 in the western part of the site is from the Evesham 2 association and is a typical calcareous pelosol. It consists of a slowly permeable, calcareous clayey soil. The overlying soil across Area 4 in the western part of the site is from the Denchworth association and is a pelo-stagnogley soil. It consists of a slowly permeable, seasonally waterlogged, clayey soil (Soil Survey of England and Wales, 1983).

1.6.3 Magnetometry carried out over similar geology and soil has produced good results. The site is, therefore, considered suitable for magnetic survey.

2 METHODOLOGY

2.1 Technical synopsis

2.1.1 Magnetometry survey records localised magnetic fields that can be associated with features formed by human activity. Magnetic susceptibility and magnetic thermoremnance (also known as thermoremanence) are factors associated with the formation of localised fields.

2.1.2 Iron minerals within the soil may become altered by burning and the break down of biological material; effectively the magnetic susceptibility of the soil is increased, and the iron minerals become magnetic in the presence of the Earth's magnetic field. Accumulations of magnetically enhanced soils within features, such as pits and ditches, may produce magnetic anomalies that can be mapped by magnetic prospection.

2.1.3 Magnetic thermoremnance can occur when ferrous minerals have been heated to high temperatures such as in a kiln, hearth, oven etc. On cooling, a permanent magnetisation may be acquired due to the presence of the Earth's magnetic field. Certain natural processes associated with the formation of some igneous and metamorphic rock may also result in magnetic thermoremnance.

2.1.4 The localised variations in magnetism are measured as sub-units of the Tesla, which is a SI unit of magnetic flux density. These sub-units are nano Teslas (nT), which are equivalent to 10^{-9} Tesla (T). Additional details are set out in 2.2 below and within Appendix A.

2.2 Equipment configuration, data collection and survey detail

2.2.1 The detailed magnetic survey was carried out using a SENSYS MAGNETO®MXPDA 5 channel cart-based system. The instrument has 5 fluxgate gradiometers (FGM650) spaced 0.5m apart with readings recorded at 20Hz. The

cart is pushed at walking speed and not towed. Each sensor is not zeroed in the field as the vertical axis alignment is precisely fixed leaving sensor offsets that are removed during data processing. The fixing of the vertical alignment ensures the sensors are not unduly influenced by localised magnetic fields and that the vertical component of a magnetic anomaly is measured. The gradiometers have a measurement range of ±8000nT, although the recorded range is ±3000nT, and resolution is around 0.1nT. They are linked to a Leica GS10 RTK GNSS with data recorded by SENSYS MAGNETO®MXPDA software on a rugged PDA computer system.

2.2.2 Due to the fixed offsets within the fluxgate sensors, as a result of the manufacturing and tensioning process, the survey data do not provide a visually useful dataset until a zero median traverse algorithm is applied. It is recognised that this has the potential to affect some anomalies detrimentally by removing linear features orientated parallel to survey transects. However, this has not been noted as a particular problem with the system due to the high resolution data collection, generally long length of traverses and variability within the magnetic characteristics of a linear anomaly.

2.2.3 Data are collected along a series of parallel survey transects to achieve 100% coverage of the surveyable land. The length of each transect is variable and relates to the size of the survey area and other factors including ground conditions. A visual display allows accurate placing of transects and helps maintain the correct separation between adjacent traverses. Data are not collected within fixed grids and data points are considered to be random even though the data are collected in a systematic manner covering all accessible areas (Aspinall, Gaffney and Schmidt, 2009).

2.2.4 Fluxgate sensors are highly sensitive to temperature change and this manifests as drift during the course of a survey. This can be particularly noticeable during the morning as temperatures rise and the equipment warms or cools. Sensor drift within the course of a traverse will appear as a line trending from negative to positive after processing with a zero median traverse algorithm. To remove the potential for temperature drift, data were collected after a 20 minute stabilisation period and traverses were limited to a time of generally <100s.

2.3 Data processing and presentation

2.3.1 Magnetic data collected by the MAGNETO®MXPDA cart-based system are initially prepared using SENSYS MAGNETO®DLMGPS software. The software effectively allocates a geographic position for each data point and can compensate for fixed offsets present within the FGM650 sensors. The offsets are positive or negative values present on all fluxgate gradiometer sensors. Some systems use manual or electronic balancing to effectively zero the sensors; however, this is a short term measure that is prone to drift through temperature changes and vibration and can easily be incorrectly set due to localised magnetic fields. The FGM650 sensors are very accurately aligned to the vertical magnetic gradient and are highly stable showing

negligible drift on long traverses. The offset values are removed using TerraSurveyor software.

2.3.2 Survey tracks are analysed and georeferenced raw data (UTM Z30N) are then exported in ASCII format for further analysis and display within TerraSurveyor. The removal of the offset values (compensation) of the sensors is also carried out in TerraSurveyor using a zero median traverse function. Data are then considered to be minimally processed. Note: without the zero median traverse function it is not possible to create a meaningful data plot as all sensors have a different offset value. Although a zero median traverse algorithm can remove anomalies aligned with the survey tracks, in practice this rarely occurs due to the use of long traverses, high resolution measurement and variability within the magnetic susceptibility of long linear features.

2.3.3 The minimally processed data are collected between limits of ±3000nT and clipped for display at ±3nT. Data are interpolated to a resolution of effectively 0.5m between tracks and 0.15m along each survey track.

2.3.4 Appendix C contains metadata concerning the survey and data attributes and is derived directly from TerraSurveyor. Reference should be made to Appendix B for further information on processing.

2.3.5 A TIF file is produced by TerraSurveyor software along with an associated world file (.TFW) that allows automatic georeferencing (OSGB36 datum) when using GIS or CAD software. The main form of data display used in the report is the minimally processed greyscale plot. With regard to the Sensys MXPDA, minimally processed data are considered by the manufacturer to be data that are compensated by SENSYS MAGNETO DLMGPS software, see 2.3.1 and 2.3.2. Note: traceplots are not considered to be appropriate as they do not provide an accurate or useful assessment of the magnetic anomalies due to the very high density of data collection. In addition, traceplots cannot be meaningfully plotted against base mapping and in areas of complexity traces may be lost or highly confused. Traceplots may be used to demonstrate characteristic magnetic profiles across discrete features where it is considered beneficial.

2.3.6 The raster images are combined with base mapping using ProgeCAD Professional 2021, creating DWG (2018) file formats. All images are externally referenced to the CAD drawing in order to maintain good graphical quality. The CAD plots are effectively georeferenced facilitating relocation of features using GNSS, resection method, etc.

2.3.7 An abstraction and interpretation is drawn and plotted for all geophysical anomalies located by the survey. Anomalies are abstracted using colour coded points, lines and polygons. All plots are scaled to landscape A3 for paper printing. Appendix E sets out CAD layer names with colour and graphic content for each interpretation category, see 3.3.

2.3.8 A brief summary of each anomaly, with an appropriate reference number, is

set out in list form within the results (Section 3) to allow a rapid and objective assessment of features within each survey area.

2.3.9 A digital archive is produced with this report, see Appendix D below. The main archive is held at the offices of Archaeological Surveys Ltd.

3 RESULTS

3.1 General assessment of survey results

3.1.1 The detailed magnetic survey was carried out over a total of four survey areas covering approximately 1.4ha.

3.1.2 Magnetic anomalies located can be generally classified as positive and negative anomalies of an uncertain origin, linear anomalies of an agricultural origin and strong discrete dipolar anomalies relating to ferrous objects.

3.1.3 Anomalies located within each survey area have been numbered and are described in 3.4 to 3.7 below.

3.2 Statement of data quality and factors influencing the interpretation of anomalies

3.2.1 Data are considered representative of the magnetic anomalies present within the site. There are no significant defects within the dataset.

3.2.2 There are few clear anomalies within the survey areas that would allow a qualitative assessment of the data with regard to the suitability of the site for magnetic prospection. However, there are numerous anomalies relating to former cultivation and the majority of these have moderately strong magnetic contrast. The calcareous pelosol soil in the western part of the site is known to be capable of supporting very good results from magnetometry, the pelo-stagnogley of Area 4 can be associated with weaker anomalies.

3.3 Data interpretation

3.3.1 The list of sub-headings below attempts to define a number of separate categories that reflect the range and type of features located during the survey. A general explanation of the characteristics of the magnetic anomalies is set out for each category in order to justify interpretation, see Table 1.

Interpretation category	Description and origin of anomalies
Anomalies with an uncertain origin	The category applies to a range of anomalies where there is not enough evidence to confidently suggest an origin. Anomalies in this category may well be related to archaeologically significant features, but equally relatively modern features, geological/pedological features and agricultural features should be considered. Morphology may be unclear or uncharacteristic and there may be a lack of additional supporting information. Positive anomalies are indicative of magnetically enhanced soils that may form the fill of 'cut' features or may be produced by accumulation within layers or 'earthwork' features; soils subject to burning may also produce positive anomalies.

	Negative anomalies are produced by material of comparatively low magnetic susceptibility such as stone and subsoil.
Anomalies with an agricultural origin	The anomalies are often linear and form a series of parallel responses or are parallel to extant land boundaries. Where the response is broad, former ridge and furrow is likely; narrow response is often related to modern ploughing. This category does not include agricultural features of early date or considered to be of archaeological potential (e.g. animal stockades, enclosures, farmsteads, etc).
Anomalies associated with magnetic debris	Strong discrete dipolar anomalies are responses to ferrous objects within the topsoil.
Anomalies with a modern origin	The magnetic response is often strong and dipolar indicative of ferrous material and may be associated with extant above surface features such as wire fencing, cables, pylons etc. Often a significant area around these features has a strong magnetic flux which may create magnetic disturbance; such disturbance can effectively obscure low magnitude anomalies if they are present. Fluxgate sensors may respond erratically adjacent to strong magnetic sources. Buried services may produce characteristic multiple dipolar anomalies dependant upon their construction.

Table 1: List and description of interpretation categories

3.4 List of anomalies - Area 1

Area centred on OS NGR 397653 176656, see Fig 03.

Anomalies with an uncertain origin

(1) – Two small, strongly positive, discrete anomalies are located towards the eastern side of Area 1 and just outside the area outlined for planting. They have a response of 40-75nT, which may suggest an association with burning. This could be related to industrial activity, or possibly the removal of trees. Naturally formed features can also become highly magnetised through periodic episodes of drying and waterlogging in certain conditions. As there are no clearly defined associated archaeological features, it is not possible to determine if they relate to features with an anthropogenic or natural origin.

(2) – Discrete, positive anomalies with a range of responses of 3-10nT indicate the presence of pit-like features. It is, however, not possible to determine if they are of anthropogenic or natural origin. Naturally formed features could include tree throw pits.

(3) – Negative linear anomalies could be associated with agricultural activity, although this is uncertain.

3.5 List of anomalies - Area 2

Area centred on OS NGR 397386 176596, see Fig 04.

Anomalies with an uncertain origin

(4) – A discrete, strongly magnetic anomaly with a response of up to 37nT is located in the south eastern corner of Area 2. It is similar to anomalies (1) seen in Area 1 to

the east and likely to have a similar origin.

(5) – The survey area contains a number of discrete, pit-like anomalies. It is not clear if they relate to cut features, tree throw pits, or features caused by ground disturbance through agricultural activity.

Anomalies with an agricultural origin

(6) – A series of parallel, negative linear anomalies relate to agricultural activity.

3.6 List of anomalies - Area 3

Area centred on OS NGR 397442 176463, see Fig 04.

Anomalies with an uncertain origin

(7) – A strongly magnetic, discrete anomaly is located in the southern half of the survey area. Similar in size and shape to anomalies (1) and (4) seen in Areas 1 and 2, it also has a response of up to 75nT, which again is indicative of intense burning.

(8) – A linear ditch-like anomaly close to the northern edge appears to be partially truncated by other linear anomalies associated with ridge and furrow which may imply an earlier date.

(9) – The survey area contains a number of weakly positive linear and discrete anomalies. They generally lack a coherent morphology and cannot be confidently interpreted.

Anomalies with an agricultural origin

(10) – Parallel linear anomalies relate to ridge and furrow and/or later agricultural activity.

Anomalies with a modern origin

(11) – Magnetic disturbance from an adjacent fence.

3.7 List of anomalies - Area 4

Area centred on OS NGR 398300 176390, see Fig 05.

Anomalies with an uncertain origin

(12) – A positive curvilinear anomaly appears to contain a number of discrete, strongly magnetic responses, with smaller, weaker, discrete features outside. The

strong responses are indicative of intense burning, and it is possible that the anomalies could have been derived from a recent bonfire, but this is not certain.

(13) – A discrete, strongly magnetic response is located in the northern part of Area 4. Similar to anomalies (1), (4) and (7), it is not clear what has caused the strongly magnetically enhanced response.

(14) – Discrete positive responses can be seen within the survey area, with a large number appearing to be associated with ground disturbance by the ridge and furrow. This part of the site is situated close to the Cade Burna watercourse and magnetically enhanced features can be associated with areas of waterlogged soils, which have episodes of drying and it is possible that these have a natural origin.

Anomalies with an agricultural origin

(15) – Parallel linear anomalies appear to be associated with ridge and furrow and/or later periods of agricultural activity. They appear to have disturbed or been infilled with magnetically enhanced material.

4 CONCLUSION

4.1.1 The geophysical survey has located a number of small, discrete anomalies with a strongly magnetic response within each of the four survey areas. Although one cluster of such responses within the south eastern part of the site could be related to a modern bonfire, the others are discrete features and their high magnitude is consistent with intense burning. Such responses can be associated with industrial activity, but there are no clearly defined associated features, rather, they are generally isolated anomalies, although there are several. Alternative interpretations could include an association with burning during tree removal and a number of weaker pit-like responses are also evident within each of the survey areas, which could relate to tree throw pits or deliberate tree removal. Other anomalies are generally weak and indistinct and lack a coherent morphology although there is some evidence for truncation of some linear anomalies by the ridge and furrow and/or possible land drainage.

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Appendix A – basic principles of magnetic survey

Iron minerals are always present to some degree within the topsoil and enhancement associated with human activity is related to increases in the level of magnetic susceptibility and thermoremnant material. Magnetic susceptibility is an induced magnetism within a material when it is in the presence of a magnetic field. This can be thought of as effectively permanent due to the presence of the Earth's magnetic field. Thermoremnant magnetism occurs when ferrous material is heated beyond a specific temperature known as the Curie Point. Demagnetisation occurs at this temperature with re-magnetisation by the Earth's magnetic field upon cooling.

Enhancement of magnetic susceptibility can occur in areas subject to burning and complex fermentation processes on biological material; these are frequently associated with human settlement. Thermoremnant features include ovens, hearths, and kilns. In addition thermoremnant material such as tile and brick may also be associated with human activity and settlement.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil can create an area of enhancement compared with surrounding soils and subsoils into which the feature is cut. Mapping enhanced areas will produce linear and discrete anomalies allowing an assessment and characterisation of hidden subsurface features.

It should be noted that areas of negative enhancement can be produced from material having lower magnetic properties compared to the topsoil. This is common for many sedimentary bedrocks and subsoils which were often used in the construction of banks and walls etc. Mapping these 'negative' anomalies may also reveal archaeological features.

Magnetic survey or magnetometry can be carried out using a fluxgate gradiometer and may be referred to as gradiometry. The SENSYS gradiometer is a passive instrument consisting of two fluxgate sensors mounted vertically 65cm apart. The instrument is carried about 10-20cm above the ground surface and the upper sensor measures the Earth's magnetic field as does the lower sensor but this is influenced to a greater degree by any localised buried magnetic field. The difference between the two sensors will relate to the strength of the magnetic field created by the buried feature.

There are a number of factors that may affect the magnetic survey and these include soil type, local geology and previous human activity. Situations arise where magnetic disturbance associated with modern services, metal fencing, dumped waste material etc., obscures low magnitude fields associated with archaeological features.

Appendix B – data processing notes

Clipping

Minimum and maximum values are set and replace data outside of the range with those values. Extreme values are removed improving colour or greyscale contrast associated with data values that may be archaeologically significant. Different ranges are applied to data in order to determine the most suitable for anomaly abstraction and display.

Zero Median/Mean Traverse

The median (or mean) of data from each traverse is calculated ignoring data outside a threshold value, the median (or mean) is then subtracted from the traverse. The process is used to equalise differences between the offset values of the gradiometer sensors. The process can remove archaeological features that run along a traverse but with the high resolution datasets created by the Sensys FGM650 sensors and the method of data collection this has not been a notable problem. In fact, the removal of offsets using software avoids carrying out a balancing procedure on site, which inevitably can never be done in magnetically clean conditions and results in improperly aligned fluxgate sensors and/or electronic adjustment values.

Appendix C – survey and data information

Area 1

Filename: J898-mag-Area1-proc.xcp
Instrument Type: Sensys DLMGPS
Units:
UTM Zone: 30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 397628.71, 176704.41m
Southeast corner: 397677.76, 176612.61 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Dimensions
Survey Size (meters): 49.1 m x 91.8 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 77100, Recorded: 77100
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.89
Mean: 0.04
Median: -0.01
Composite Area: 0.45028 ha
Surveyed Area: 0.2906 ha
PROGRAM
Name: TerraSurveyorPre
Version: 3.0.36.24
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00

Area 2

Filename: J898-mag-Area2-proc.xcp
Northwest corner: 397341.68, 176667.79 m
Southeast corner: 397432.88, 176527.24 m
Dimensions
Survey Size (meters): 91.2 m x 141 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 201000, Recorded: 201000
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.95
Mean: 0.05
Median: -0.01
Composite Area: 1.2818 ha
Surveyed Area: 0.675 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00

Area 3

Filename: J898-mag-Area3-proc.xcp
Northwest corner: 397406.29, 176540.59 m
Southeast corner: 397477.09, 176388.64 m
Dimensions
Survey Size (meters): 70.8 m x 152 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 160096, Recorded: 160096
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.32
Mean: 0.04
Median: 0.05
Composite Area: 1.0758 ha
Surveyed Area: 0.5188 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00

Area 4

Filename: J898-mag-Area4-proc.xcp
Northwest corner: 398274.00, 176428.73 m
Southeast corner: 398317.80, 176364.23 m
Dimensions
Survey Size (meters): 43.8 m x 64.5 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 58500, Recorded: 58500
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.15
Mean: 0.07
Median: -0.03
Composite Area: 0.28251 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00

Appendix D – digital archive

Archaeological Surveys Ltd hold the primary digital archive at their offices in Wiltshire. Data are backed-up onto an on-site data storage drive and at the earliest opportunity data are copied to CD ROM for storage on-site and off-site.

A PDF copy will be supplied to the Wiltshire Historic Environment Record with greyscale images and abstraction layers made available on request. The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS).

Archive contents:

File type	Naming scheme	Description
Data	J898-mag-**[area number/name]**.asc J898-mag-**[area number/name]**.xcp J898-mag-**[area number/name]**-proc.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data
Graphics	J898-mag-**[area number/name]**-proc.tif	Image in TIF format
Drawing	J898-**[version number]**.dwg	CAD file in 2018 dwg format
Report	J898 report.odt	Report text in LibreOffice odt format

Table 2: Archive metadata

Appendix E – CAD layers for abstraction and interpretation plots

The table below sets out Archaeological Surveys Ltd CAD layer names with associated colours and graphical content. Where CAD files are available layers may be extracted for further CAD/GIS use. Note: hatched polygon boundaries are contained within layers with the RGB colour code 254, 255, 255 (near white) in order to prevent their visibility.

Report sub-heading and associated CAD layer names	Colour with RGB index	Layer content
Anomalies with an uncertain origin		
AS-ABST MAG POS LINEAR UNCERTAIN	255,127,0	Line, polyline or polygon (solid)
AS-ABST MAG NEG LINEAR UNCERTAIN	Blue 0,0,255	Line, polyline or polygon (solid)
AS-ABST MAG POS DISCRETE UNCERTAIN	255,127,0	Solid donut, point or polygon (solid)
Anomalies with an agricultural origin		
AS-ABST MAG AGRICULTURAL	Green 0,255,0	Line or polyline
AS-ABST MAG RIDGE AND FURROW	0,127,63	Line, polyline or polygon (cross hatched ANSI37)
Anomalies associated with magnetic debris		
AS-ABST MAG STRONG DIPOLAR	132, 132, 132	Solid donut, point or polygon (solid)
Anomalies with a modern origin		
AS-ABST MAG DISTURBANCE	132, 132, 132	Polygon (hatched ANSI31)

Table 3: CAD layering

Appendix F – copyright and intellectual property

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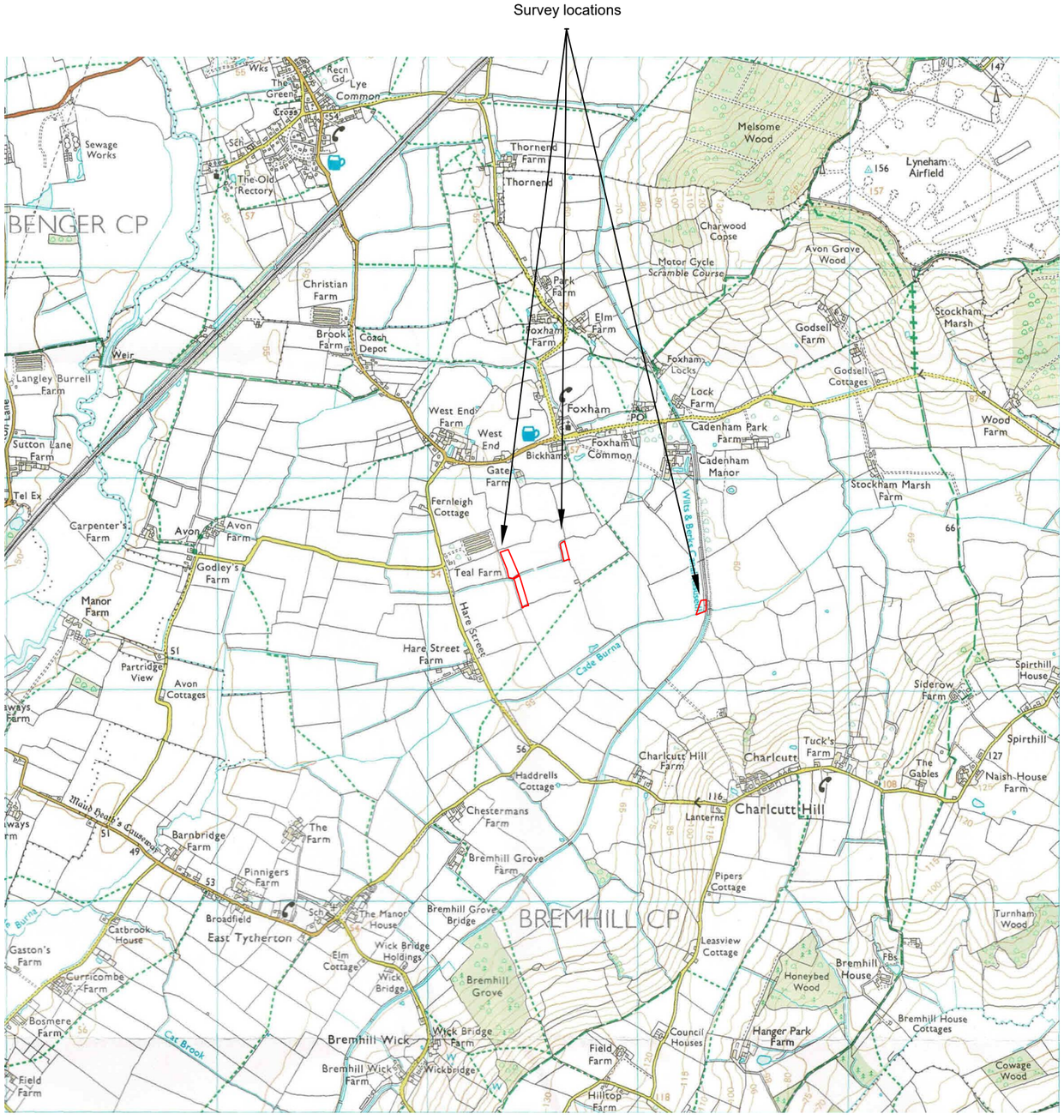
Wiltshire

Map of survey area



Survey location

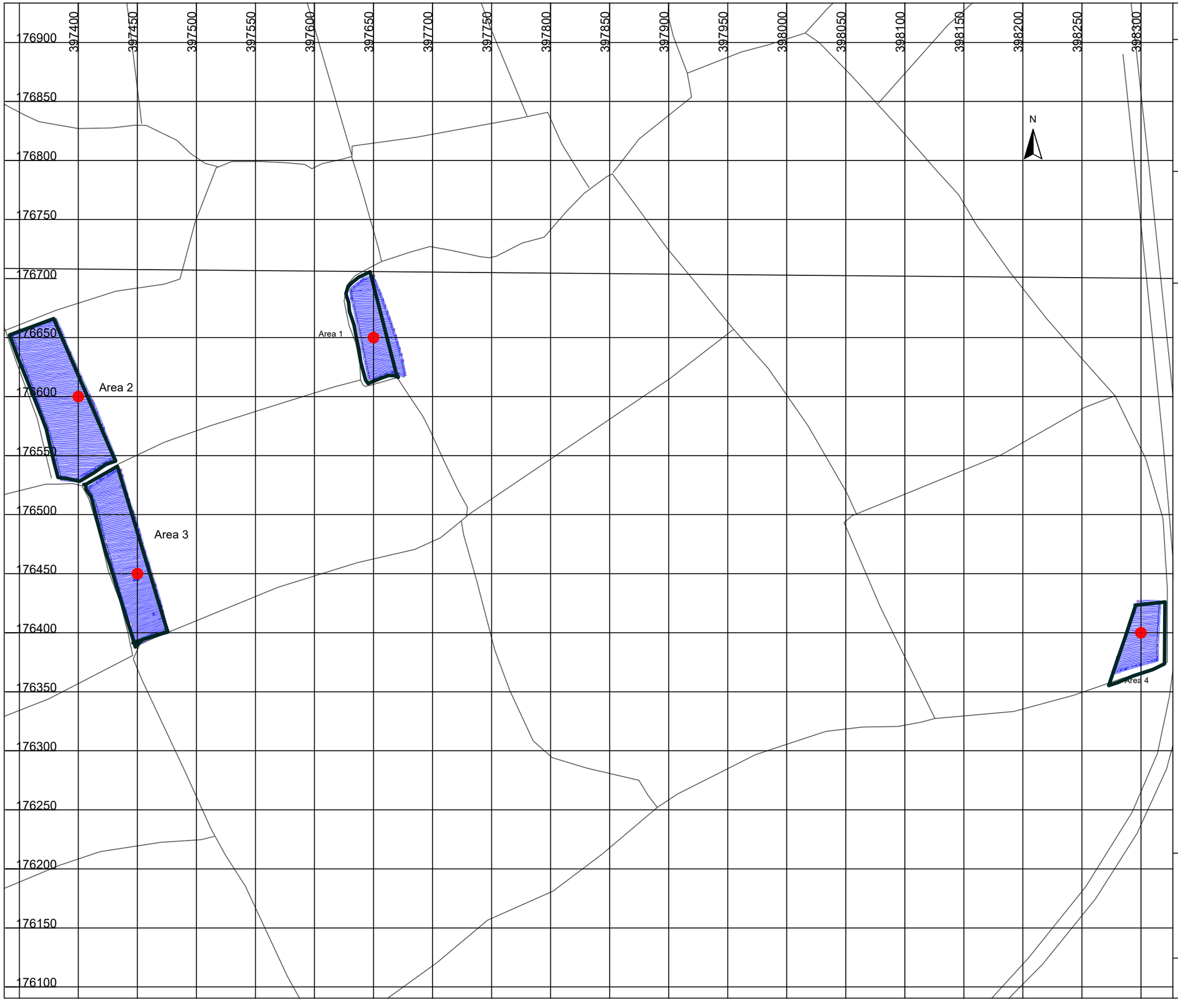
Site centred on OS NGR
ST 97840 76530

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 01



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Referencing information

Referencing grid to OSGB36 datum at 50m intervals

- Survey tracks
- Survey track start
- Survey track stop
- Area 1 - 397650 176650
- Area 2 - 397400 176600
- Area 3 - 397450 176450
- Area 4 - 398300 176400

Proposed tree planting area

SCALE 1:3000

0m 20 40 60 80 100m

SCALE TRUE AT A3

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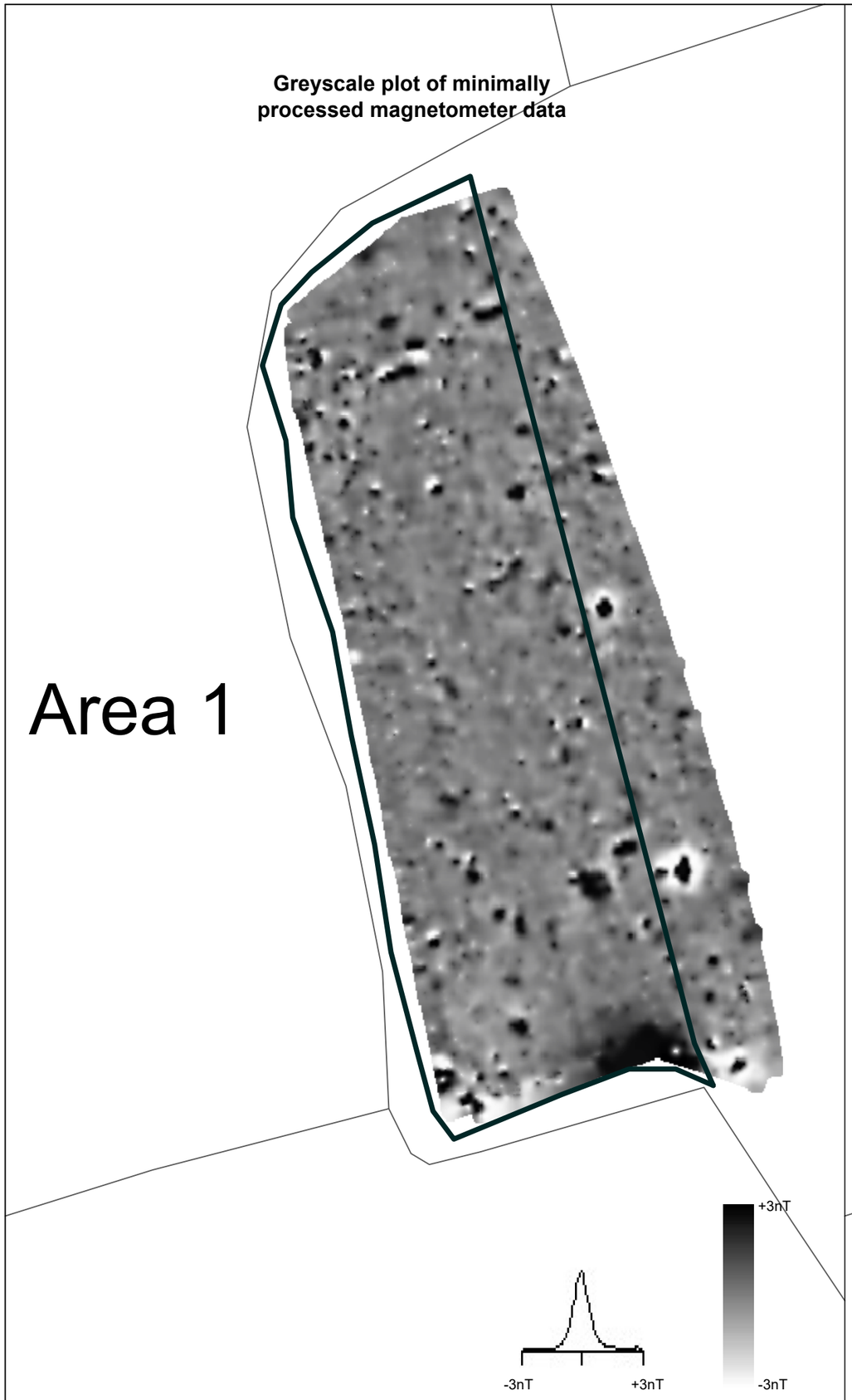
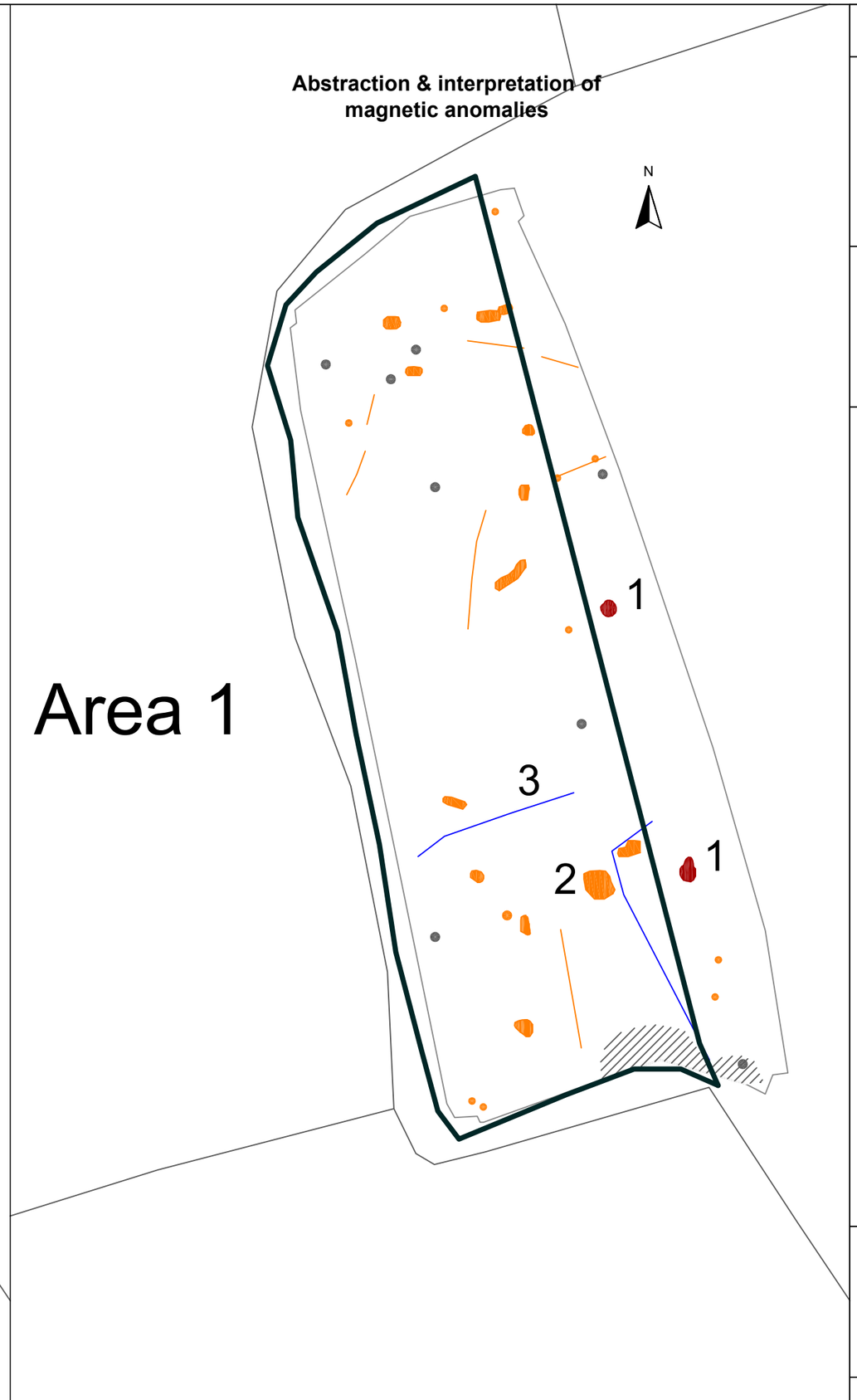
Greyscale plot of minimally processed magnetometer data



Abstraction & interpretation of magnetic anomalies



Greyscale plot of minimally processed magnetometer data & abstraction & interpretation of magnetic anomalies - Area 1

- Positive linear anomaly - of uncertain origin
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Negative linear anomaly - material of low magnetic susceptibility
- Strong discrete positive response - possible association with burning
- Discrete positive response - possible pit-like feature
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object
- Proposed tree planting area

SCALE 1:500

0m 5 10 15 20 25m

SCALE TRUE AT A3

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Greyscale plot of minimally processed magnetometer data

Area 2

Area 3

-3nT Area 2 +3nT

-3nT Area 3 +3nT

+3nT

-3nT

Abstraction & interpretation of magnetic anomalies

N

Area 2

Area 3

4
5
6
7
8
9
10
11

Greyscale plot of minimally processed magnetometer data & abstraction & interpretation of magnetic anomalies - Areas 2 & 3

- Positive linear anomaly - of uncertain origin
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Negative linear anomaly - material of low magnetic susceptibility
- Strong discrete positive response - possible association with burning
- Discrete positive response - possible pit-like feature
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object
- Proposed tree planting area

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

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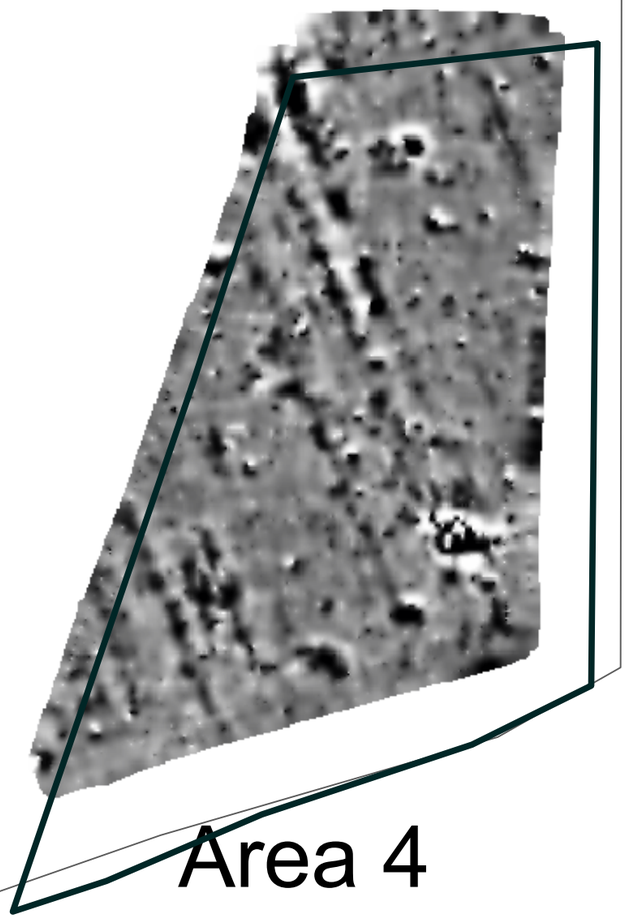
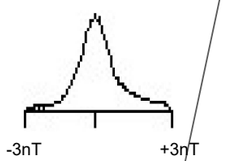
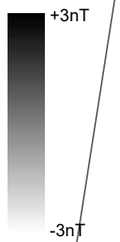
KTD	DJS	FIG 04

Greyscale plot of minimally processed magnetometer data

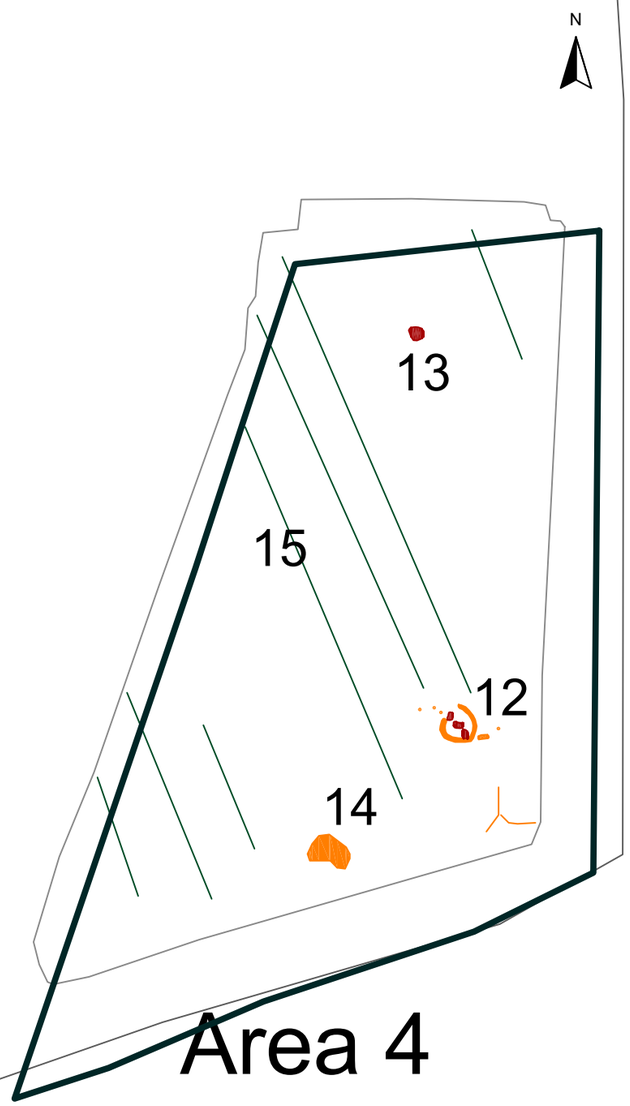


Area 4





Abstraction & interpretation of magnetic anomalies



Area 4

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Greyscale plot of minimally processed magnetometer data & abstraction & interpretation of magnetic anomalies - Area 4

- Positive linear anomaly - of uncertain origin
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Negative linear anomaly - material of low magnetic susceptibility
- Strong discrete positive response - possible association with burning
- Discrete positive response - possible pit-like feature
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object
- Proposed tree planting area

SCALE 1:500

0m 5 10 15 20 25m

SCALE TRUE AT A3

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KTD	DJS	FIG 05