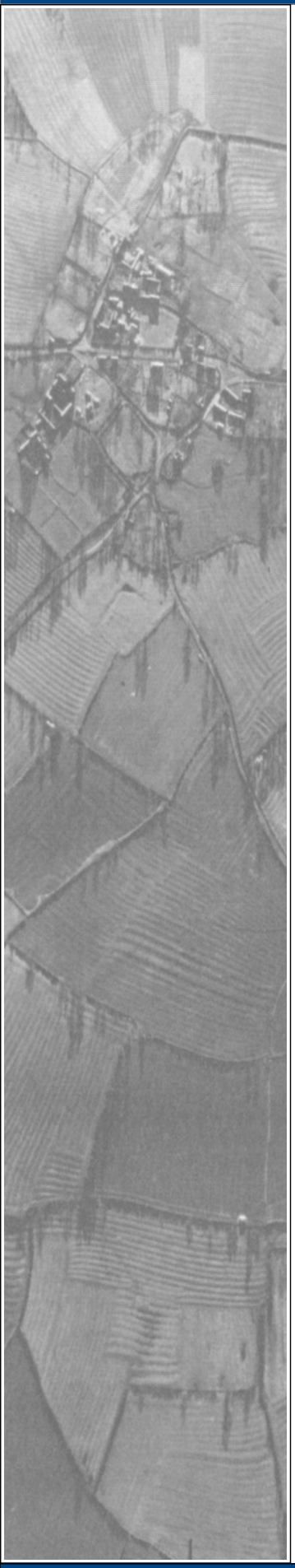

Land South of Woodhayes Way
Henstridge
Somerset

MAGNETOMETER SURVEY REPORT

for

Cotswold Archaeology

Kerry Donaldson & David Sabin

October 2023

Ref. no. J986

ARCHAEOLOGICAL SURVEYS LTD

Land South of Woodhayes Way
Henstridge
Somerset

MAGNETOMETER SURVEY REPORT

for

Cotswold Archaeology

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

Survey dates – 4th & 5th October 2023
Ordnance Survey Grid Reference – **ST 72530 19290**

Somerset HER PRN: 48593

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SUMMARY

A geophysical survey, comprising detailed magnetometry, was carried out by Archaeological Surveys Ltd on the southern edge of Henstridge in Somerset. The results indicate the presence of a number of linear anomalies, with two possibly being truncated by former quarrying in the north western part of the site. Two other parallel, positive linear anomalies in the southern part of the site also appear to relate to linear, ditch-like features. In the north eastern part of the site are a group of discrete anomalies that appear to form an oval layout of pit-like features, but they cannot be confidently interpreted.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Cotswold Archaeology to undertake a magnetometer survey of an area of land to the south of Woodhayes Way, Henstridge, Somerset. The site has been outlined for a proposed residential development to be known as Townsend Landings. The survey forms part of an archaeological assessment.

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 development of the site. 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, recommendations and limitations

1.3.1 Archaeological Surveys Ltd is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA) and both company directors are Members of the Chartered Institute for Archaeologists (MCIfA) and have therefore been assessed for their technical competence and ethical suitability and abide by the CIfA Codes of Conduct. 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.

1.3.5 Magnetic anomalies may relate to features within the topsoil, subsoil or within the underlying solid or superficial geology. Anomalies are created by contrasting magnetic susceptibility; however, this is not necessarily consistent with changes in soil texture or colour and may not be contained within well defined features. Magnetic contrast and the magnitude of anomalies does not necessarily correlate with the volume or thickness of magnetic material present. The vertical component of the magnetic field is measured by the magnetometer and this falls rapidly with distance from the sensor, it may not be possible to distinguish weak features within the topsoil from deeper features containing more magnetic material.

1.3.6 Interpretation of anomalies relies on detailed analysis of the data. The morphology of anomalies and their magnitude are important factors in the interpretation process. Wherever possible, supporting information is used, e.g. LiDAR, early mapping and desk-based assessments. However, anomalies often cannot be confidently interpreted without intrusive investigation and as such are categorised as of uncertain origin; this classification may include anomalies relating to archaeological features.

1.4 Site location, description and survey conditions

1.4.1 The site lies to the west of the A357 Stalbridge Road and to the south of Woodhayes Way on the southern edge of Henstridge in Somerset. It is centred on Ordnance Survey National Grid Reference (OS NGR) ST 72510

19275, see Figs 01 and 02.

1.4.2 The geophysical survey covers approximately 7ha split between 5 grassland fields. The land slopes down towards the north east from approximately 90m AODN at the south western site limit to approximately 77m AODN along the north eastern edge. Field boundaries are mainly hedgerows, there is an electricity substation immediately adjacent to the eastern corner of the site. The smaller north eastern fields contained long grass with areas of nettles and thistles. In the northern part of the site there is a dilapidated wooden agricultural building, dumped household waste and a small excavated area with spoil.

1.4.3 The ground conditions across the site were generally considered to be suitable for the collection of magnetometry data. However, long grass, nettles and thistles impeded survey within several small zones in the north eastern part of the site. Sources of magnetic disturbance were identified during the survey and these include metal objects dumped in the northern part of the site, an electricity substation immediately south east and steel gates. Weather conditions during the survey were fine.

Plate 1: Eastern part of the site looking north east

1.5 Site history and archaeological potential

1.5.1 The site lies to the south of the medieval core of Henstridge, which was a royal estate in the 10th century, and close to the hamlet of Townsend which is also a settlement with medieval origins. The 1839 Henstridge tithe map indicates that the field layout has remained unchanged since the early 19th century and the first edition Ordnance Survey map records an old quarry and

a lime kiln on the western edge of the site.

1.6 Geology and soils

1.6.1 The underlying geology is limestone from the Cornbrash Formation (BGS, 2023).

1.6.2 The overlying soil across the site is from the Sherborne association (343d) and is a brown rendzina. It consists of a shallow, well drained, brashy, calcareous, clayey soil over limestone (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 magnetic 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 positive magnetic anomalies that can be mapped by magnetic prospection. In addition, where soil is displaced by material of comparatively low magnetic susceptibility, such as many types of sedimentary rock, anomalies of negative value may occur which could be indicative of structural remains.

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® MX V3 6 channel cart-based system. The instrument has 6 fluxgate gradiometers (FGM650) spaced 0.5m apart with readings recorded at 20Hz. 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 recorded range of ±3000nT, and resolution is approximately 0.1nT. They are linked to a Leica GS10 RTK GNSS with data recorded by SENSYS MonMX software on a rugged notebook 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® MX V3 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 ±5nT. Data are interpolated to a resolution of effectively 0.5m between tracks and 0.15m along each survey track.

2.3.4 Additional data processing has been carried out in the form of high pass filtering. This effectively removes low frequency variation along a traverse that has been caused by large magnetic bodies, cultivation or rapid temperature change. Data treated to additional processing have been compared to unprocessed data to ensure that no significant anomalies have been removed.

2.3.5 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.

2.3.6 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. 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.

2.3.7 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.

2.3.8 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.

2.3.9 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.

2.3.10 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 5 survey areas covering approximately 7ha with the results considered as a whole.

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, anomalies associated with land management, anomalies associated with quarrying, areas of magnetic debris and disturbance, strong discrete dipolar anomalies relating to ferrous objects and linear anomalies relating to buried services or pipes. Anomalies located within the site have been numbered and are described in 3.4 below.

3.2 Data quality and factors affecting the interpretation or formation 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. A large zone of magnetic disturbance was encountered in the vicinity of the substation, adjacent to the south eastern part of the site, and this has the potential to obscure more significant anomalies. Disturbance relating to above ground modern ferrous objects within the site is of limited extend and unlikely to obscure other anomalies.

3.2.2 Although the survey has not located many anomalies associated with the fill of former cut features, e.g. pits and ditches, a linear ditch-like feature in the southern part of the site infers that the soils are capable of supporting useful magnetic contrast. Linear anomalies in the north western part of the site, that may relate to ditch-like features, are weak and poorly defined; however, these are adjacent to an area of former quarrying, and the soil across the whole field appears to be contaminated with ferrous material which has affected the clarity of the anomalies. A small field in the north eastern part of the site also appears to be contaminated with ferrous material which may affect the clarity

of anomalies. The debris may well have been introduced through manuring, soil improvers containing ferrous waste, dumping or a combination of these.

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 relating to land management	Anomalies are mainly linear and may be indicative of the magnetically enhanced fill of cut features (i.e. ditches). The anomalies may be long and/or form rectilinear elements and they may relate to topographic features or be visible on early mapping. Associated agricultural anomalies (e.g. headlands, plough marks and former ridge and furrow) may support the interpretation.
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	Magnetic debris often appears as areas containing many small dipolar anomalies that may range from weak to very strong in magnitude. They often occur where there has been dumping or ground make-up and are related to magnetically thermoremnant materials such as brick or tile or other small fragments of ferrous material. This type of response is occasionally associated with kilns, furnace structures, hearths and nail spreads from former wooden structures or rooves and may, therefore, be archaeologically significant. It is also possible that the response may be caused by natural material such as certain gravels and fragments of igneous or metamorphic rock. 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.
Anomalies with a natural origin	Naturally formed magnetic anomalies are caused by localised variability in the magnetic susceptibility of soils, subsoils and other drift or solid geologies. Anomalies may be amorphous, linear or curvilinear and may appear 'fluvial' or discrete; the latter are almost impossible to distinguish from pit-like anomalies with an anthropogenic origin. Fluvial, glacial and periglacial processes may be responsible for their formation within drift material and subsoil. Igneous and metamorphic activity can lead to anomalies within more solid geology.
Anomalies associated with ground disturbance/quarrying	Magnetically variable anomalies which may be negative indicating a response to geology/drift deposits and/or positive indicating an increased depth of topsoil. Very strongly magnetic anomalies are a response to highly magnetic material of modern origin which can be used to infill a quarry depression. It should be considered that former quarry pits may be of archaeological potential.

Table 1: List and description of interpretation categories

3.4 List of anomalies

Area centred on OS NGR 372510 119275, see Figs 03 – 05.

Anomalies with an uncertain origin

(1) – Situated towards the north western edge of the site are two positive linear anomalies and a discrete response. They appear to lead towards, but not into an area of quarrying (12) located in the north western corner; however, it is not possible to determine if these relate to cut, linear ditches that have been truncated by the later quarrying or if they have an association with the quarry.

(2) – Two positive linear anomalies are located in the southern part of the site. They lie to the east of a broad linear bank (6) but have a curving or sinuous form. They appear to relate to linear, ditch-like features.

(3) – In the north eastern corner of the site are broad, weakly positive anomalies. It is not possible to determine if the anomalies relate to natural variations in the underlying geology, or if they relate to magnetic enhancement associated with possible occupation on land close to the medieval settlement of Townsend.

(4) – A group of discrete positive responses appear to form an oval in the northern central part of the site. Those to the south are stronger at 15-20nT than those to the north at 5-10nT, but patches of magnetic debris are evident along the southern edge of the field. It is possible that these anomalies relate to associated pit-like features and an archaeological origin should be considered.

(5) – The site contains a number of positive linear and discrete anomalies. They are generally weak, short and fragmented and have a poorly defined morphology.

Anomalies associated with land management

(6) – A weakly positive linear anomaly with associated negative response relates to a low linear bank within the field. This is likely to be an unmapped boundary feature.

(7) – A weakly positive linear anomaly extends across the western part of the site, along the line of a footpath. Although no boundary has been mapped in this position, the anomaly would suggest the response to a former linear ditch.

Anomalies with an agricultural origin

(8 & 9) – A small number of linear anomalies in the north eastern part of the site relate to ridge and furrow (8). A narrow series of parallel linear anomalies in the north western part of the site (9) relates to more modern agricultural activity.

Anomalies with a natural origin

(10) – A number of positive and/or negative discrete anomalies are located in the

north eastern part of the site. These relate to soil-filled natural features, such as tree throw pits within the underlying Cornbrash geology.

(11) – A magnetically variable band is located in the southern part of the site. This appears to relate to variations within the underlying geology and could be fluvial in origin.

Anomalies associated with quarrying

(12) – An area of magnetically variable responses, with a large number of strong dipolar anomalies, relates to former quarrying with backfill containing modern ferrous material. This may extend further to the north east and north west than abstracted, although there is no clearly defined response.

Anomalies associated with magnetic debris

(13) – The site contains numerous strong, discrete, dipolar anomalies, with concentrations within two of the fields. These relate to ferrous and other magnetically thermoremnant objects that have been introduced into the topsoil through the process of manuring, soil improving and dumping.

Anomalies with a modern origin

(14 & 15) – A linear anomaly extends through the site with a north west to south east orientation (13), although it is seen as a negative response in the north and a positive response in the south, with no discernable response in between. A similar negative linear anomaly (15) is located in the south eastern part of the site with a north to south orientation within the southern field. These relate to pipes/drains/services.

4 CONCLUSION

4.1.1 A number of positive linear and discrete anomalies have been located by the geophysical survey. These include two linear, ditch-like features in the northern western part of the site that may have been associated with, or truncated by, a quarry. Two parallel linear anomalies in the southern part of the site also appear to relate to linear, ditch-like features, situated close to a former boundary bank. A group of discrete, pit-like anomalies form an oval in the northern part of the site, although it is possible that they have archaeological potential, their origin is uncertain.

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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.

High Pass Filter

Removes low frequency anomalies within the data that are not considered to be archaeologically significant and may be natural in origin. A window passes over the data, the mean of all the data within the window is subtracted from the centre value. The size of the window is adjusted as is the weighting which may be uniform or Gaussian. The process is used to improve the visibility of anomalies of interest.

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

Minimally processed data
Filename: J986-mag-proc.xcp
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 372333.00, 119449.45 m
Southeast corner: 372696.45, 119087.05 m
Collection Method: Randomised
Sensors: 6
Dummy Value: 32702
Dimensions
Survey Size (meters): 363 m x 362 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 2005590, Recorded: 2005596

Stats
Max: 5.53
Min: -5.50
Std Dev: 1.91
Mean: 0.06
Median: 0.00
Composite Area: 13.171 ha
Surveyed Area: 6.6367 ha
PROGRAM
Name: TerraSurveyor
Version: 3.0.37.0
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (UTM to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -5.00 to 5.00 nT

Filtered data
Stats
Max: 5.53
Min: -5.50
Std Dev: 1.75
Mean: 0.05
Median: -0.01
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (UTM to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 300
5 Clip from -5.00 to 5.00 nT

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 Somerset Historic Environment Record with greyscale images and abstraction layers made available on request. The report will also be uploaded to OASIS, the online system for reporting archaeological investigations and linking research outputs and archives and the digital data will be archived with the Archaeology Data Service (ADS).

Archive contents:

File type	Naming scheme	Description
Data	J986-mag.asc J986-mag.xcp J986-mag-proc.xcp J986-mag-proc-hpf.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed TerraSurveyor filtered data
Graphics	J986-mag-proc.tif J986-mag-proc-hpf.tif	Image in TIF format
Drawing	J986-**[version number]**.dwg	CAD file in 2018 dwg format
Report	J986 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)

AS-ABST MAG POS UNCERTAIN	255,127,0	Polygon (cross hatched ANSI37)
AS-ABST MAG NEG UNCERTAIN	Blue 0,0,255	Polygon (cross hatched ANSI37)
Anomalies relating to land management		
AS-ABST MAG BOUNDARY	127,0,0	Line, polyline or polygon (solid or cross hatched ANSI37)
Anomalies with an agricultural origin		
AS-ABST MAG AGRICULTURAL	Green 0,255,0	Line or polyline
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)
AS-ABST MAG SERVICE	132, 132, 132	Line or polyline
Anomalies with a natural origin		
AS-ABST MAG NATURAL FEATURES	204,178,102	Polygon (cross hatched ANSI37)
Anomalies associated with ground disturbance/quarrying		
AS-ABST MAG QUARRYING/ GROUND DISTURBANCE	255,255, 127 or 255,223,127	Polygon (net)

Table 3: CAD layering

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Specialist Geophysical Surveyors

Geophysical Survey
Land South of Woodhayes Way
Henstridge
Somerset

Map of survey area

N

Survey location

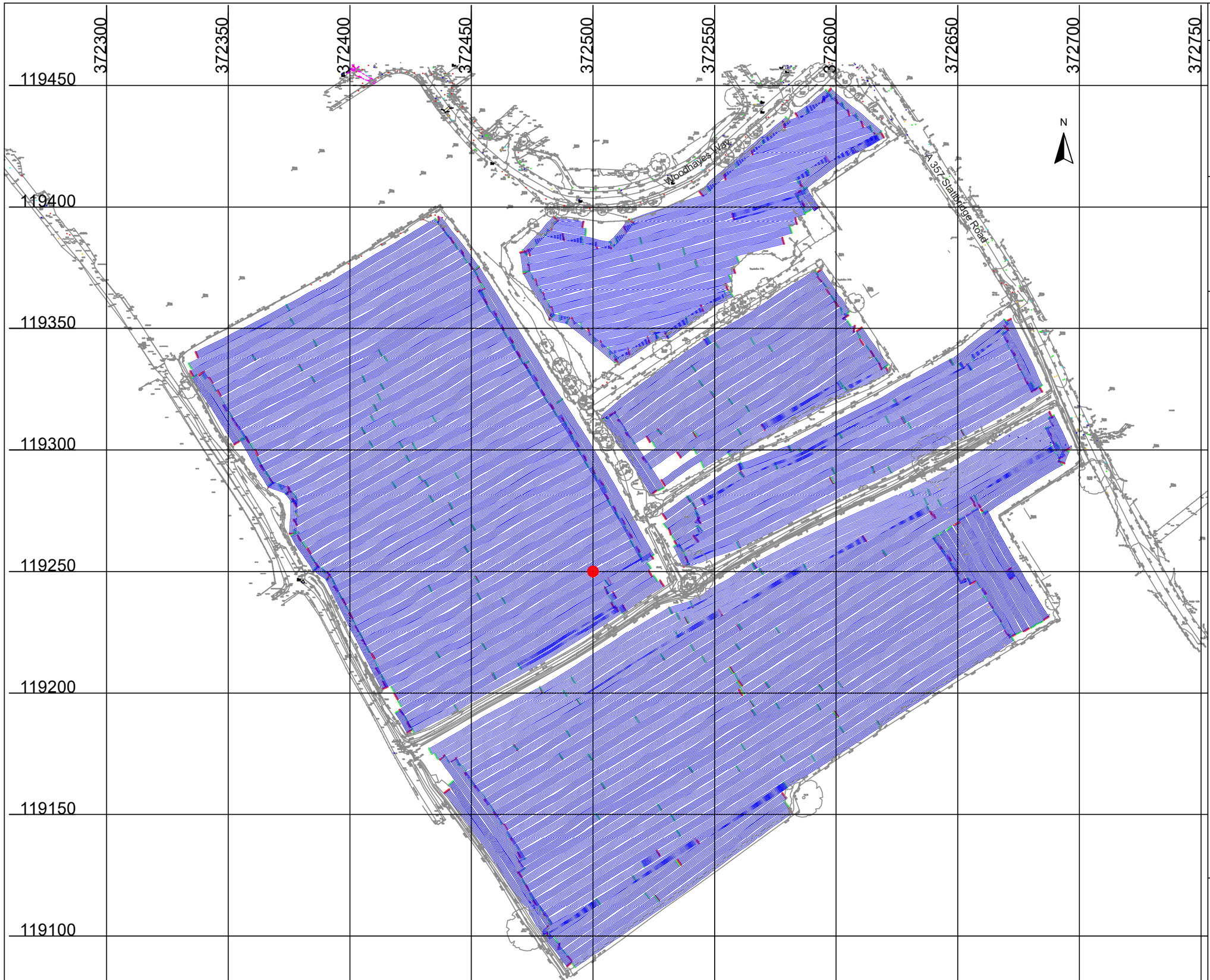
Survey location

Site centred on OS NGR
ST 72510 19275

SCALE 1:25 000

0m 500m 1000m

KTD | DJS | FIG 01



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Referencing information

Referencing grid to OSGB36 datum at 50m intervals

- 372500 119250
- Survey tracks
- Survey track start
- Survey track stop

SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 02

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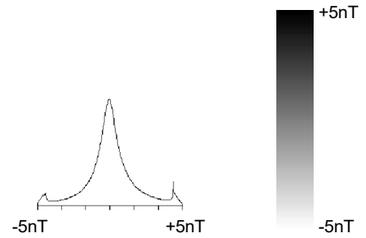
Greyscale plot of minimally processed magnetometer data



SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 03

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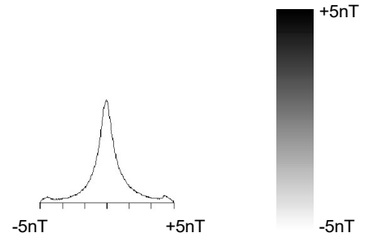
Greyscale plot of filtered magnetometer data



SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 04

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Abstraction and interpretation of magnetic anomalies

- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Positive linear anomaly - former field boundary
- Linear anomaly - of agricultural origin
- Discrete positive response - possible pit-like feature
- Discrete positive/negative response - of natural origin
- Broad positive/negative anomaly - former boundary earthwork
- Positive anomaly - magnetically enhanced material
- Negative anomaly - material of low magnetic susceptibility
- Variable magnetic response - former quarry
- Variable magnetic response - of natural origin
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipe / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 05