



**Land off The Causeway
Petersfield
Hampshire**

MAGNETOMETER SURVEY REPORT

for

Landgage Heritage

Kerry Donaldson & David Sabin

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ARCHAEOLOGICAL SURVEYS LTD

**Land off The Causeway
Petersfield
Hampshire**

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for

Landgag Heritage

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Primary archive location - Archaeological Surveys Ltd, Yatesbury, Wiltshire

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SUMMARY

A geophysical survey, comprising detailed magnetometry, was carried out by Archaeological Surveys Ltd over a small area of land on the southern edge of Petersfield in Hampshire, ahead of a proposed residential development. The results indicate the presence of a possible ditch or drain within the central part of the site. Other anomalies are weak and indistinct and lack a coherent morphology. Widespread magnetic debris could relate to material derived from the adjacent former Petersfield Brick and Tile Works, situated within the north eastern part of the site within an overgrown, unsurveyable area of trees.

1 INTRODUCTION

1.1 *Survey background*

- 1.1.1 Archaeological Surveys Ltd was commissioned by Landgage Heritage, on behalf of Thakeham Homes, to undertake a magnetometer survey of an area of land on the southern edge of Petersfield in Hampshire. The site has been outlined for a proposed residential development, and the survey forms part of an archaeological assessment.
- 1.1.2 The geophysical survey was carried out in accordance with a Written Scheme of Investigation (WSI) produced by Archaeological Surveys (2022).

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 and recommendations for the use of this report*

- 1.3.1 Archaeological Surveys Ltd is a Registered Organisation with the Chartered Institute for Archaeologists 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 CfA 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.

1.4 Site location, description and survey conditions

- 1.4.1 The site is located on land to the west of The Causeway, on the southern edge of Petersfield in Hampshire. It is centred on Ordnance Survey National Grid Reference (OS NGR) SU 73885 22225, see Figs 01 and 02.
- 1.4.2 The geophysical survey covers approximately 1.3ha of a 2.6ha site. Only the open, grassed areas were suitable for survey, other areas contained trees, buildings and hardstanding. The main part of the survey area lies within a small field of pasture on level ground with short grass at the time of survey. The eastern side of the site is on slightly sloping ground that rises to the east and contained long grass and other vegetation. The northern part of the survey lies within a small paddock that was very overgrown.
- 1.4.3 The ground conditions across the site were variable, the northern and eastern parts of the site were difficult to traverse due to the height and density of vegetation. Weather conditions during the survey were fine.



Plate 1: Main part of the survey area looking south

1.5 Site history and archaeological potential

1.5.1 The north eastern part of the site was the location of the Petersfield Brick and Tile works in the 1930s and which is now overgrown. Land immediately to the north of the main survey area and west of the brickworks site was subject to trial trench evaluation ahead of residential development (Wessex Archaeology, 2011). The remains of a post medieval water meadow water management system was revealed during the evaluation, it consisted of two ditches reinforced by two sandstone block walls.

1.6 Geology and soils

1.6.1 The underlying solid geology across the site is mudstone from the Gault Formation with overlying head deposits within the majority of the surveyable area (BGS, 2017).

1.6.2 The overlying soil across the survey area 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 The underlying geology and soils are frequently associated with low magnetic contrast and low levels of magnetic susceptibility. However, cut features of archaeological potential may be located where human activity has altered the magnetic characteristics of the soil sufficiently. The underlying geology and soils are, therefore, considered acceptable 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 ± 8000 nT, although the recorded range is ± 3000 nT, 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 $\pm 3000\text{nT}$ and clipped for display at $\pm 3\text{nT}$. 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 the 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 1.3ha.
- 3.1.2 Magnetic anomalies located can be generally classified as positive and negative anomalies of an uncertain origin, anomalies associated with land

management, anomalies of natural origin, areas of magnetic debris and disturbance and strong discrete dipolar anomalies relating to ferrous objects. Anomalies located within each survey area have been numbered and are described in 3.4 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; however, it contains few magnetic anomalies suitable for qualitative assessment.
- 3.2.2 Widespread magnetic debris relating to spreads of ferrous and magnetically thermoremnant material is generally unlikely to obscure more significant anomalies, with the exception of the south eastern part of the site where it is indicative of modern ground make-up.

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 <u>there is not enough evidence to confidently suggest an origin</u> . Anomalies in this category <u>may well be related to archaeologically significant features, but equally relatively modern features, geological/pedological features and agricultural features should be considered</u> . 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 | Land drains can appear in a classic herringbone pattern of interconnected multiple dipolar linear anomalies, or as parallel linear anomalies. The multiple dipolar response indicates ceramic land drains. |
| 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 <u>may, therefore, be archaeologically significant</u> . 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 <u>almost impossible to distinguish from pit-like anomalies with an anthropogenic origin</u> . 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. |

Table 1: List and description of interpretation categories

3.4 List of anomalies

Area centred on OS NGR 473885 122225, see Fig 03.

Anomalies with an uncertain origin

(1) – A weakly positive linear anomaly extends through the centre of the survey area, generally parallel with the long axis of the site. It corresponds to a linear feature visible on LiDAR imagery. Such an anomaly could relate to a ditch or drain; however, it is not possible to determine the date of the anomaly.

(2 & 3) – A small number of short, weakly positive (2) and negative (3) linear anomalies can be seen within the site. They could relate to cut features, although they lack a coherent morphology and cannot be confidently interpreted.

Anomalies associated with land management

(4) – A weak, multiple dipolar linear anomaly extends through the north eastern part of the survey area. Such an anomaly would usually be a response to a land drain or pipe.

Anomalies with a natural origin

(5) – Weakly positive amorphous anomalies relate to naturally formed features, such as bands within the underlying clay geology or former fluvial features.

Anomalies associated with magnetic debris

(6) – Magnetic debris can be seen within and around the margins of the site. The area in the south east of the site contains only strongly magnetic debris indicative of ground make-up.

(7) – The entire site contains strong, discrete, dipolar anomalies which are a response to ferrous and other magnetically thermoremanent objects, such as brick/tile within the topsoil. The survey area is situated close to the site of a former brickworks, and debris from such an industry could be the cause of the material.

Anomalies with a modern origin

(8) – Magnetic disturbance from ferrous material within adjacent fencing

4 CONCLUSION

4.1.1 Detailed magnetometry located a linear anomaly that correlates with a linear feature visible in LiDAR data and could relate to a ditch or drain in the centre

of the site. Other anomalies are weak and lack a coherent morphology. Widespread magnetic debris has also been encountered and such material could have been derived from the former Petersfield Brick and Tile Works, situated just the north east within the unsurveyable part of the site.

5 REFERENCES

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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 thermoremanent 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. Thermoremanent 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. Thermoremanent features include ovens, hearths, and kilns. In addition thermoremanent 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

| | | | |
|----------------------------------|--|--|------------------|
| Filename: | J917-mag-proc.xcp | Stats | |
| Description: | Imported as Composite from: J917-mag.asc | Max: | 3.32 |
| Instrument Type: | Sensys DLMGPS | Min: | -3.30 |
| Units: | | Std Dev: | 1.78 |
| UTM Zone: | 30U | Mean: | 0.00 |
| Survey corner coordinates (X/Y): | OSGB36 | Median: | 0.03 |
| Northwest corner: | 473831.98, 122321.25 m | Composite Area: | 2.6319 ha |
| Southeast corner: | 473968.63, 122128.65 m | Surveyed Area: | 1.3115 ha |
| Direction of 1st Traverse: | 90 deg | PROGRAM | |
| Collection Method: | Randomised | Name: | TerraSurveyorPre |
| Sensors: | 5 | Version: | 3.0.36.24 |
| Dummy Value: | 32702 | GPS based Proce4 | |
| Dimensions | | 1 Base Layer. | |
| Survey Size (meters): | 137 m x 193 m | 2 Unit Conversion Layer (Lat/Long to UTM). | |
| X&Y Interval: | 0.15 m | 3 DeStripe Median Traverse: | |
| Source GPS Points: | Active: 391593, Recorded: 391593 | 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 Hampshire Historic Environment Record and 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 | J917-mag-[area number/name].asc J917-mag-[area number/name].xcp J917-mag-[area number/name]-proc.xcp | Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data |
| Graphics | J917-mag-[area number/name]-proc.tif | Image in TIF format |
| Drawing | J917-[version number].dwg | CAD file in 2018 dwg format |
| Report | J917 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) |
| Anomalies relating to land management | | |
| AS-ABST MAG LAND DRAIN |  Cyan 0,255,255 | Line or polyline |
| Anomalies associated with magnetic debris | | |
| AS-ABST MAG DEBRIS |  132, 132, 132 | Polygon (cross hatched ANSI37) |
| 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) |
| <i>Anomalies with a natural origin</i> | | | |
| AS-ABST MAG NATURAL FEATURES |  | Yellow 255,255,0 | Polygon (cross hatched ANSI37) |

Table 3: CAD layering

Appendix F – copyright and intellectual property

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**Geophysical Survey
Land off The Causeway
Petersfield
Hampshire**

Map of survey area



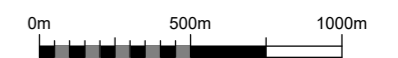
Site boundary
Surveyable areas



● Survey location

Site centred on OS NGR
SU 73885 22225

SCALE 1:25 000



SCALE TRUE AT AS

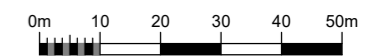
**Geophysical Survey
Land off The Causeway
Petersfield
Hampshire**

Referencing information

Referencing grid to OSGB36 datum at 50m intervals

- 473900 122150
- Survey tracks
- - - Survey track start
- - - Survey track stop
- ⏏ Development boundary

SCALE 1:1250

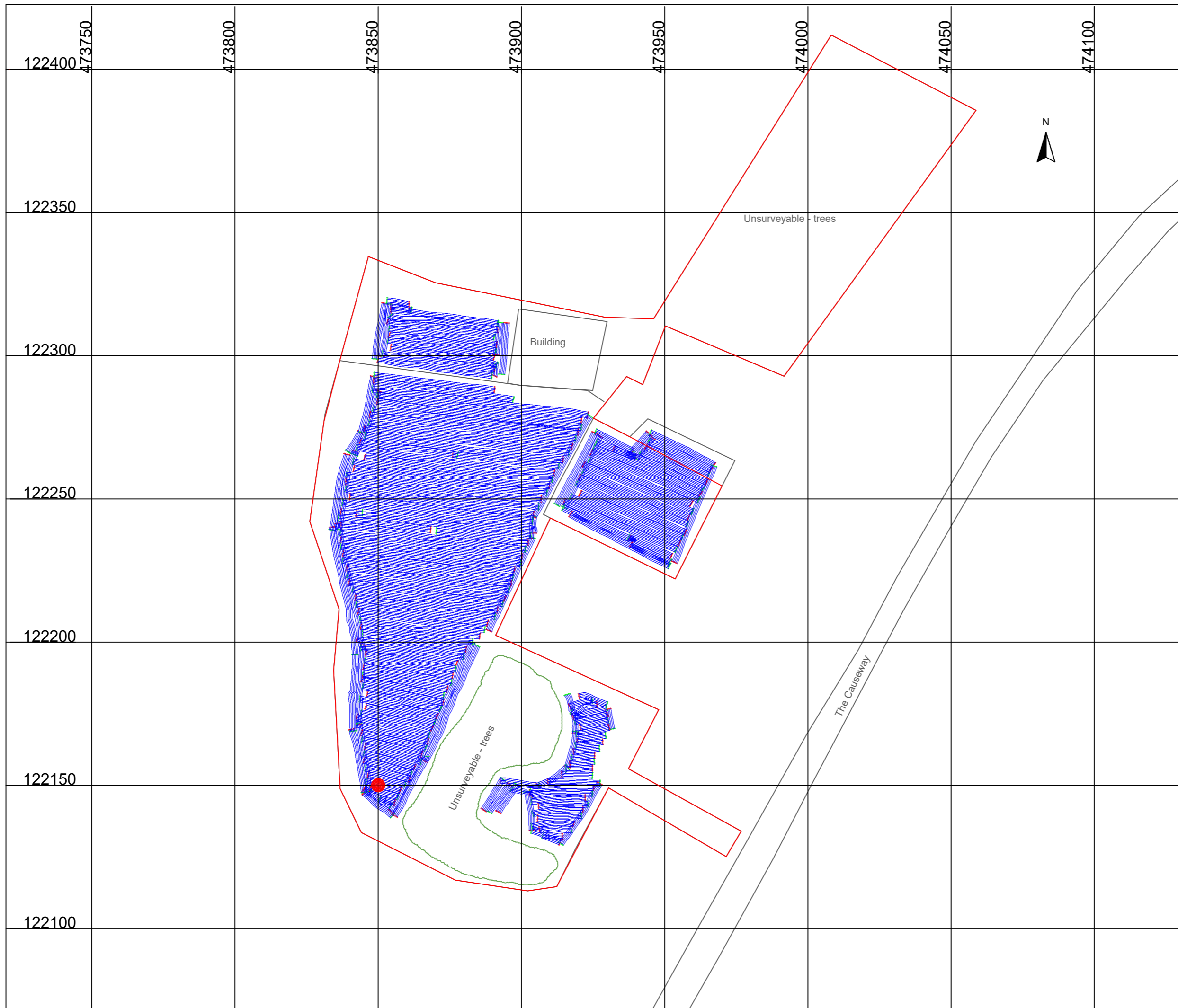


SCALE TRUE AT A3

DRAWN BY
KTD








CHECKED BY
DJS

FIG 02

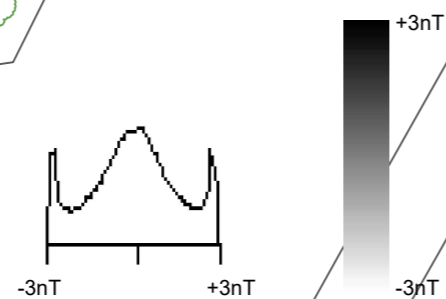
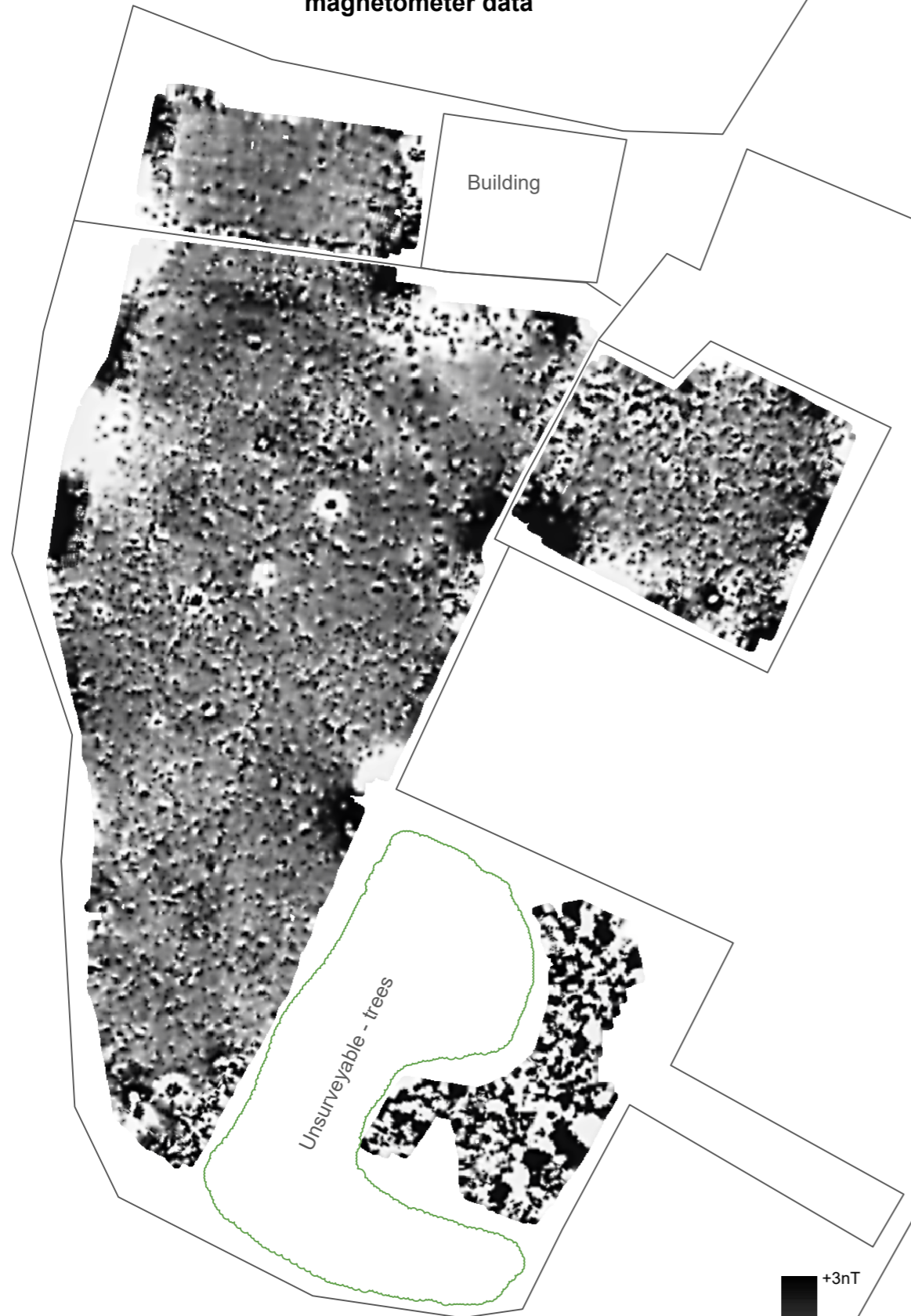


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Hampshire**

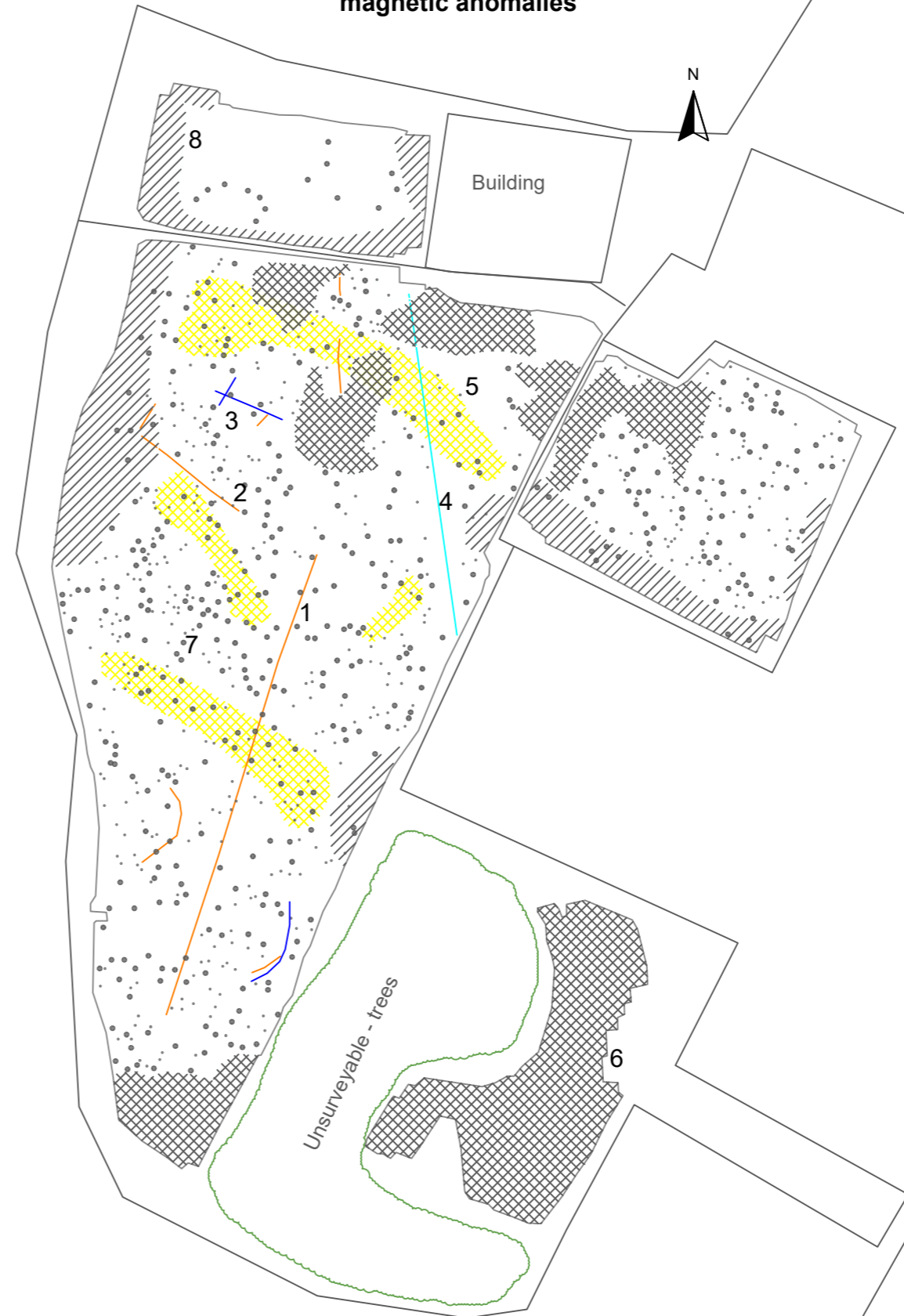
Greyscale plot of processed magnetometer data & abstraction & interpretation of magnetic anomalies

-  Positive linear anomaly - possible ditch-like feature
-  Negative linear anomaly - material of low magnetic susceptibility
-  Positive/weak multiple dipolar linear anomaly - possible land drain
-  Weakly positive/magnetically variable response - of natural origin
-  Magnetic debris - spread of magnetically thermoremnant/ferrous material
-  Magnetic disturbance from ferrous material
-  Strong dipolar anomaly - ferrous object

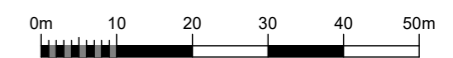
Greyscale plot of processed magnetometer data



Abstraction & interpretation of magnetic anomalies



SCALE 1:1000



SCALE TRUE AT AS

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KTD

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FIG 03