

LS00/01



SOUTH OXFORD GARDEN NEIGHBOURHOOD, OXFORDSHIRE

GEOPHYSICAL SURVEY

commissioned by Magdalen Development Company Ltd
and Thames Water Properties

November 2016

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PROJECT SUMMARY

Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey, covering approximately 187 hectares on land south of Oxford, Oxfordshire, to provide baseline information on the archaeological potential of the site. Numerous archaeological sites are known to the immediate north of the survey area including late prehistoric settlement and Roman pottery production sites. The survey has identified six areas of archaeological potential (AAP), including a central complex of anomalies indicative of settlement, located in close proximity to a findspot of Iron Age pottery and coins (AAP1). Five circular anomalies, possible barrows, and two rectangular enclosures are clearly identified within an east/west 'corridor' to the west of the settlement complex (AAP2 and AAP3). The eastern extent of the complex is less well defined although a broad area of faint and fragmented linear and rectilinear anomalies (AAP4) is identified extending north-eastwards towards Grenoble Road and the known Iron Age and Roman sites beyond. Two areas of archaeological potential have been identified in the eastern half of the survey. A small cluster of linear anomalies aligned oblique to the current pattern of land division may locate the remnants of a possible field system between Sandfordbrake Farm and Sandfordbrake Electricity Sub-station (AAP5). A more extensive concentration of anomalies (AAP6), including a clear circular anomaly, in the north-eastern corner of the site adjacent to Grenoble Road, and in close proximity to Roman Way, is also considered to be of probable archaeological origin.

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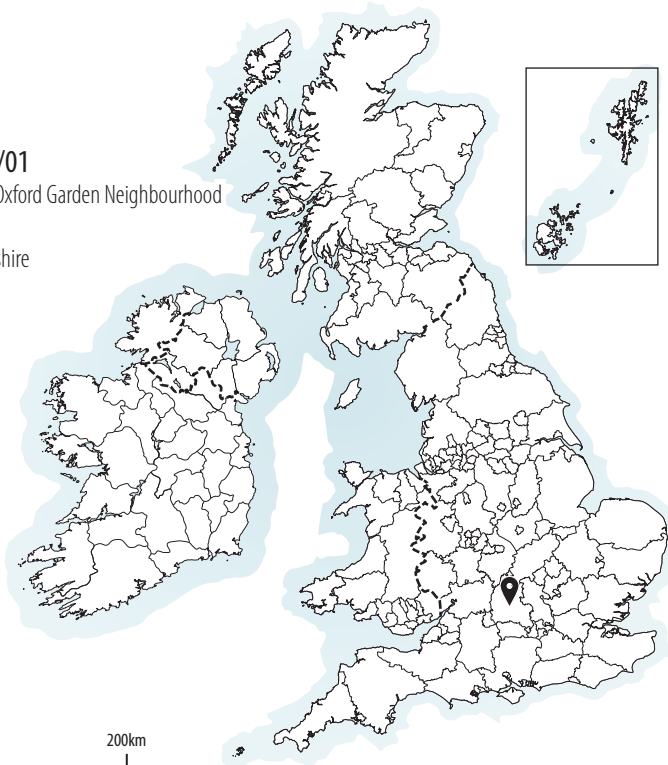
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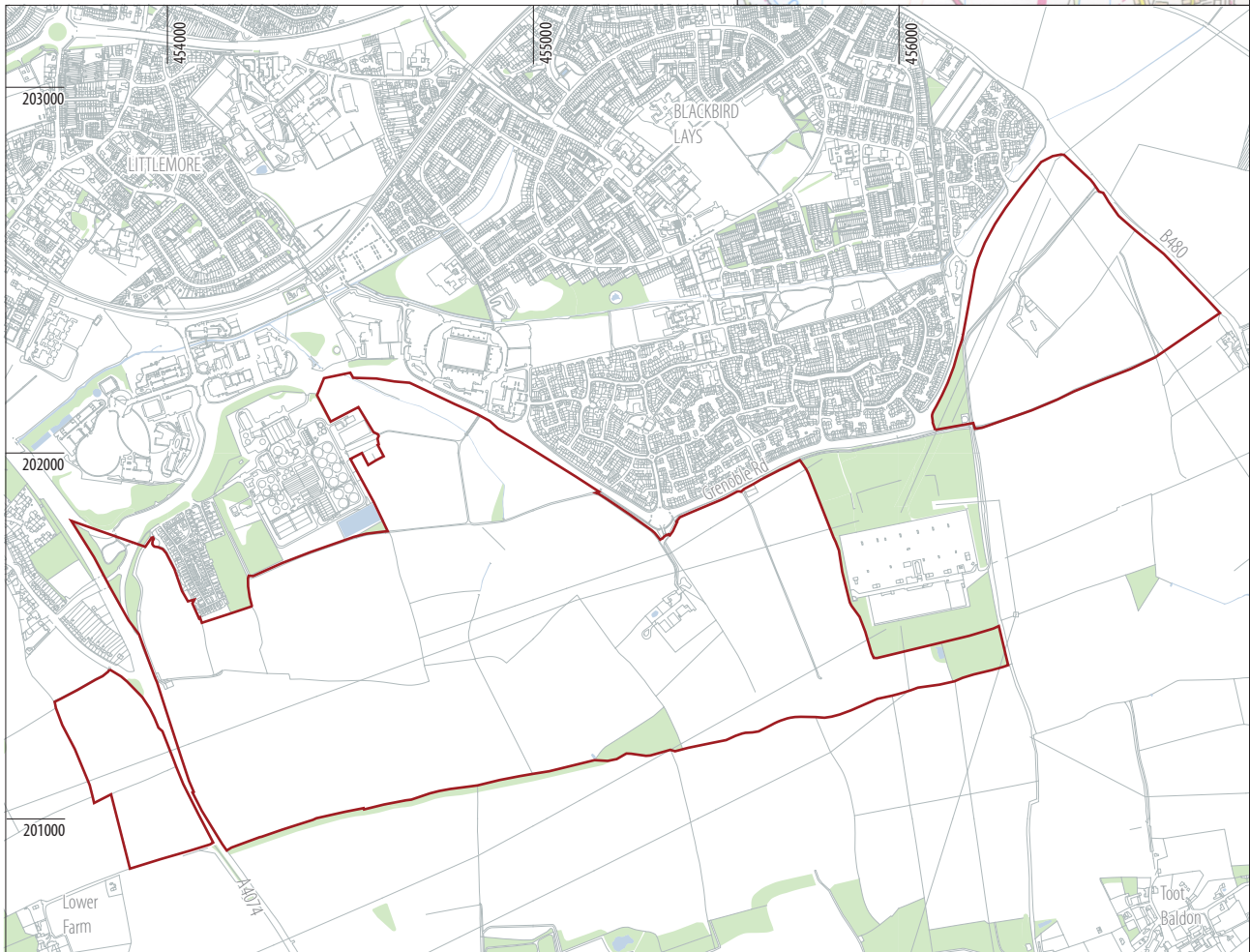
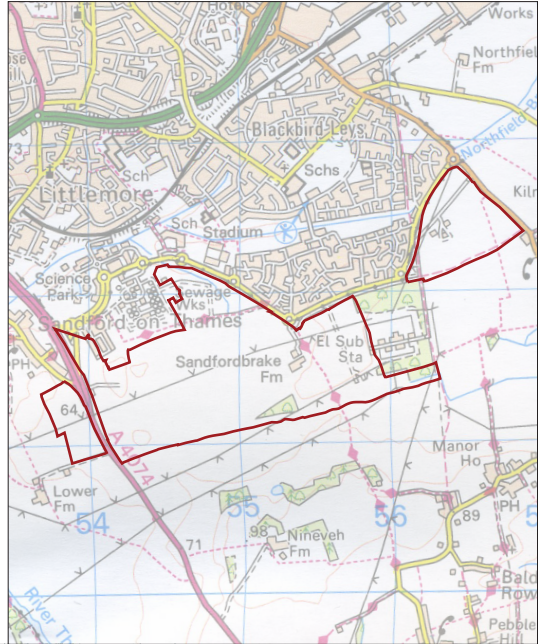
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LS00/01
 South Oxford Garden Neighbourhood
 Oxford
 Oxfordshire



0 200km



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KEY
 proposed development area

0 1,000m
 1:20,000 @ A4

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ILLUS 1 Site location

SOUTH OXFORD GARDEN NEIGHBOURHOOD, OXFORDSHIRE

GEOPHYSICAL SURVEY

1 INTRODUCTION

Headland Archaeology (UK) Ltd was commissioned by The Environmental Dimension Partnership (The Consultant) on behalf of Magdalen Development Company Ltd and Thames Water Properties (The Client) to undertake a geophysical (magnetometer) survey of a large block of land on the southern periphery of Oxford, Oxfordshire (Illus 1). The surveys form part of a baseline study being carried out in order to assess the potential archaeological constraints to development within the proposed South Oxford Garden Neighbourhood site.

The work was undertaken in accordance with a Written Scheme of Investigation (Headland Archaeology 2016), submitted to and approved by Richard Oram (Planning Archaeologist at Oxfordshire County Council) with guidance within the National Planning Policy Framework (DCLG 2012) and in line with current best practice (English Heritage 2008).

The survey was carried out between March 9th and May 9th 2016 in order to provide information on the archaeological potential of the site.

1.1 SITE LOCATION, TOPOGRAPHY AND LAND-USE

The proposed development area (PDA) covers a large block of land which extends from Watlington Road in the east to the A4074 in the west. The majority of the PDA, centred at NGR 454900,201500, comprises a contiguous block of fifteen fields (F1 to F15) covering 157 hectares. This part of the site is bound to the north by Grenoble Road and by Oxford STW water treatment plant and a caravan park to the north-west. To the west is the A4074 which connects Oxford and Reading; F1 and F2 lie immediately west of the road. The southern boundary is defined by the historic boundary between the parishes of Nuneham Courtney and Sandford-on-Thames. The eastern boundary is defined by the course of Roman Way (Blackberry Lane) which links Dorchester-on-Thames and Alchester. The majority of the fields were under arable cultivation (see Illus 2 to Illus 10 inclusive) although F3 and F7 to F13 inclusive were under pasture.

Hardstanding and modern landscaping around Sandfordbrake Farm, patches of woodland and overgrown vegetation and waterlogging prevented survey over a few small areas.

The smaller, eastern part of the site, centred at NGR 456500, 202400 comprised four arable fields (F16–F19 inclusive) covering 30 hectares. It is bound to the north and the north-west by Grenoble Road, to the south-west by Blackberry Lane (Roman Way), to the east by Watlington Road and to the south by field boundaries.

The PDA is located on the lower slopes on the south side of the valley of Littlemore Brook and the land generally slopes towards the north. However, there are gentle undulations within the landscape with the lowest point of the PDA being at 62m above Ordnance Datum (AOD) and the highest point – a spur of higher ground which projects southwards from Blackbird Leys towards Sandfordbrake Farm, being at 70m AOD.

1.2 GEOLOGY AND SOILS (SEE ILLUS 12)

The underlying bedrock across most of the site consists of mudstone classified in the Kimmeridge Clay and Ampt Hill Clay Formations (see Illus 12). North of this is a band of Littlemore Member (limestone and mudstone) and in the far north of the PDA is sandstone classified in the Beckley Sand Member. Two pockets of Alluvium (clay, silt, sand and gravel) are recorded adjacent to Littlemore Brook. Head (clay, silt, sand and gravel) covers most of the remainder of the PDA (NERC 2016).

The soils across the majority of the PDA are classified in the Soilscape 18 association which are characterised as slowly permeable, seasonally wet, slightly acid but base-rich loams and clays. In the north, the soils are classified in the Soilscape 6 association, characterised as freely draining, slightly acid loams and in the north-east in the Soilscape 22 association; loams with naturally high groundwater (Cranfield University 2016).



ILLUS 2 General view of Field 1, looking south-west **ILLUS 3** General view of Field 4, looking south-west **ILLUS 4** General view of Field 5, looking south-west **ILLUS 5** General view of Field 14 (north), looking north-west

2 ARCHAEOLOGICAL BACKGROUND (SEE ILLUS 13)

The PDA is located within an extensive archaeological landscape with evidence for buried archaeological remains from the Mesolithic to the Post-Medieval periods.

A desk-based assessment (Environmental Dimension Partnership 2010) identified evidence for the presence of buried archaeological remains within the PDA (see Illus 13) including a findspot of Iron Age coins and pottery (HER 1427) to the north-west of Sandfordbrake Farm in F13. The remains of an Iron Age settlement and associated field system (EOX 1607A) was identified during groundworks for the Blackbird Leys estate, immediately north of Grenoble Road with a double-ditched Iron Age enclosure with an associated north-east/south-west aligned rectilinear field system seen to continue south of the road and into the PDA.

The evidence for Roman activity within the PDA comprises a spread of pottery and kiln waste in F11 which was identified during a site walkover in 2010 (EDP3). Similar material was identified during archaeological works associated with the construction of Grenoble Road (EOX1588/EOX1589), where limited investigation confirmed the material was associated with an enclosure ditch. It was concluded that there was probably a kiln site nearby, possibly to the south of the road within the PDA. There is an established pattern of Roman activity in the vicinity, with at least 17 kilns and associated enclosure ditch systems having been identified within 0.5km of the PDA (Illus

13 - EOX1607C, D and E). The pottery industry appears to have been focused on the Roman road, known as 'Roman Way' (Blackberry Lane), from Alchester to Dorchester-on-Thames, as well as minor thoroughfares branching off it to the west. One such possible Roman road is the current boundary which marks the southern limit of the site and which divides the parishes of Nuneham Courtney and Sandford-on-Thames. A small quantity of Roman pottery within a single feature was also recovered during a watching brief (EOX 1579) just beyond the north-eastern corner of the PDA.

Medieval activity in the immediate vicinity is indicated by Minchery Farmhouse (LB1/109) approximately 100m north of the PDA. This building was originally founded in the 12th century by Benedictine nuns.

Analysis of historic mapping shows that the pattern and division of land within the PDA has remained largely unchanged since the publication of the first edition Ordnance Survey (OS) map in 1875. Aside from the removal of a number of internal field boundaries, the main alterations include the relocation of Sandfordbrake Farm from the south of F15 (EDP1) to the north of F14, the construction and demolition of a late Victorian brickworks (HER 11590), immediately east of F3, the demolition of Black Barn from within the north-east of F8 and the demolition of part of an isolation hospital from within the west of F17. Further analysis of aerial photographs undertaken as part of the desk-based assessment has shown that during the post-war period the sewage works to the immediate north-west of the PDA extended some way into the site with the presence of a series of rectangular tanks.



ILLUS 6 General view of Field 16, looking north-east

ILLUS 7 General view of Field 7, looking south-west

ILLUS 8 General view of Field 8, looking north-west

ILLUS 9 General view of Field 10, looking south-west

3 AIMS, METHODOLOGY AND PRESENTATION

The main aim of the geophysical survey was to provide sufficient information to enable an assessment to be made of the impact of any proposed development on any potential sub-surface archaeological remains.

The general archaeological objectives of the geophysical survey were:

- › to provide information about the nature and possible interpretation of any magnetic anomalies identified;
- › to therefore model the presence/absence and extent of any buried archaeological features; and
- › to prepare a report summarising the results of the survey.

3.1 MAGNETOMETER SURVEY

Magnetic survey methods rely on the ability of a variety of instruments to measure very small magnetic fields associated with buried archaeological remains. Features such as a ditch, pit or kiln can act like a small magnet, or series of magnets, that produce distortions (anomalies) in the Earth's magnetic field. In mapping these slight variations, detailed plans of sites can be obtained as buried features often produce reasonably characteristic anomaly shapes and strengths (Gaffney and

Gater 2003). Further information on soil magnetism and the interpretation of magnetic anomalies is provided in Appendix 1.

The majority of the survey was undertaken using four Bartington Grad601 sensors mounted at 1m intervals (1m traverse interval) onto a rigid carrying frame. The system is programmed to take readings at a frequency of 10Hz (allowing for a 10–15cm sample interval) on roaming traverses 4m apart. These readings are stored on an external weatherproof laptop and later downloaded for processing and interpretation. The system is linked to a Trimble R8s Real Time Kinetic (RTK) differential Global Positioning System (dGPS) outputting in NMEA mode to ensure a high positional accuracy for each data point.

MLGrad601 and MultiGrad601 (Geomar Software Inc.) software has been used to collect and export the data. Terrasurveyor V3.0.28.4 (DWConsulting) software has been used to process and present the data.

Standard dual sensor Bartington Grad601 instruments were used to survey the smaller fields within the site. Data collected with this system was processed using Geoplot V4 software. Readings were taken at 0.25m intervals on zig-zag traverses 1m apart within 30m by 30m grids, so that 3600 readings were recorded in each grid. The site grid was laid out using a Trimble VRS differential Global Positioning System (Trimble GeoXR model).



ILLUS 10 View of area unsuitable for survey in the north-east of Field 5, looking north looking south



ILLUS 11 View of area unsuitable for survey in the south of Field 15,

3.2 REPORTING

A general site location plan is shown in Illus 1 at a scale of 1:20,000. Illus 2 to Illus 11 are general site condition photographs. A large scale (1:10,000) survey location plan showing the geological detail (bedrock and superficial) is presented in Illus 12. Illus 13 details the field numbers and archaeological and cultural heritage information (after EDP). Illus 14 shows the contour data overlain on the greyscale data. Illus 15 and Illus 16 shows the processed data and overall interpretation.

Detailed data plots (greyscale and XY trace) and interpretative illustrations are presented at a scale of 1:2500 in Illus 17 to Illus 40 inclusive with 1:1000 plots and interpretations of areas of archaeological potential (AAP) displayed in Illus 41 to Illus 58 inclusive.

Technical information on the equipment used, data processing and magnetic survey methodology is given in Appendix 1. Appendix 2 details the survey location information and Appendix 3 describes the composition and location of the site archive. A copy of the OASIS entry (Online Access to the Index of Archaeological Investigations) is reproduced in Appendix 4.

The survey methodology, report and any recommendations comply with the Written Scheme of Investigation (Headland Archaeology 2016) and guidelines outlined by Historic England (English Heritage 2008) and by the Chartered Institute for Archaeologists (Cifa 2014). All illustrations reproduced from Ordnance Survey mapping are with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).

The illustrations in this report have been produced following analysis of the data in 'raw' and processed formats and over a range of different display levels. All illustrations are presented to most suitably display and interpret the data from this site based on the experience and knowledge of management and reporting staff.

4 RESULTS AND DISCUSSION

A fairly uniform magnetic background has been recorded throughout the PDA with only minor background variations apparent, mainly concentrated along the course of the tributary of

the Littlemore Brook which runs north/south through the centre of the PDA; the variation probably being caused by the presence of alluvial superficial deposits. Against this background numerous linear and discrete anomalies have been identified and these are discussed below and cross-referenced to specific examples on the interpretive figures, where appropriate.

4.1 FERROUS AND MODERN ANOMALIES

Ferrous anomalies, characterised as individual 'spikes', are typically caused by ferrous (magnetic) material, either on the ground surface or in the plough-soil. Little importance is normally given to such anomalies, unless there is any supporting evidence for an archaeological interpretation, as modern ferrous debris or material is common on most sites, often being present as a consequence of manuring or tipping/infilling. On this site, ferrous spikes appear more frequently within the north of the PDA in fields F7 to F12 inclusive, almost certainly as a consequence of these fields having formed part of the sewage treatment facility during the 20th century before later remediation and return to agricultural production.

Pairs of 'spike' responses in F3 (A – see Illus 17–19) also relate to the modern usage of this area and are due to footings for sports furniture, probably goalpost sockets.

Four 'spike' anomalies (B - see Illus 35–40) are identified in F16 and F19. The anomalies do not correspond to any features visible on the ground surface nor to any features depicted on historical mapping. It is probable that they locate buried steel-reinforced footings, perhaps to support an unmapped small structure or telegraph pole.

High magnitude dipolar linear anomalies recorded on various alignments in F1, F4, F13, F15 and F19 (C-I - see Illus 20–28, Illus 32–34 and Illus 38–40) are caused by sub-surface pipes or culverts. It is worthy of note that any weaker anomalies of archaeological potential, if present, may be masked or obscured within areas affected by these high magnitude anomalies. This is particularly relevant in the area which borders Roman Way along the western edge of F19.

Parallel broad negative linear bands of magnetic disturbance, J, can be seen traversing across the centre of the main part of the PDA on a north-east/south-west alignment (see Illus 20–34). This disturbance is particularly prominent in F13 and is due to magnetic interference from low hanging overhead electricity cables. The cables are carried by large pylons which manifest in the data as broad areas of magnetic disturbance, K. To the east of one of these pylons, within the south of F13 (see Illus 23–28), high magnitude linear anomalies, L, may be due to associated buried cables. In contrast to the larger pylons, wooden telegraph poles, M, manifest as smaller areas of magnetic disturbance and are identified throughout the PDA.

High magnitude linear anomalies N, O and P (F13; see Illus 23–28) correspond to metalled farm tracks. The anomalies are caused by ferrous material (e.g. brick, concrete, clinker etc.) within the surface of the track. Similar linear anomalies, Q, R and S, have been identified within the same, and adjoining fields, each seemingly orientated towards field entrances. On this basis, these anomalies are also thought to be due to former tracks.

Within the east of F1 (see Illus 20–22) a broad area of magnetic disturbance, T, corresponds to a pond which is recorded on the first edition OS map. The disturbance is caused by ferrous material used to back-fill the pond. A second former pond, U, is identified within the south-west of F15 (see Illus 32–34).

The broad area of magnetic disturbance, V, which covers the south-western corner of F4 (see Illus 17–19) corresponds to the site of a former brickworks as recorded on the 1913 edition OS map. It is also recorded on the Oxfordshire Historic Environment Record (see Illus 13 - HER 11590). The disturbance is caused by a spread of magnetically enhanced material, probably brick rubble. Any weaker anomalies of archaeological potential, if present, are likely to be masked by magnetic disturbance of this magnitude.

South of the former brickworks in F4, the area of magnetic disturbance, (W – Illus 20–22), located towards the centre of the field is caused by an extant agricultural brick-built structure. The magnetic disturbance, X, in the north-eastern corner of F4, correlates with the position of a former building depicted on the first edition OS mapping (see Illus 26–28) and is likely to be due to building material mixed into the plough-soil.

A broad area of high magnitude magnetic disturbance, Y, is identified spanning the north-east of F8 and the north-west of F15 (see Illus 23–25). The disturbance covers the sites of two former buildings which are also recorded on the first edition OS mapping. The southernmost building is named 'Black Barn'. As above the disturbance is likely to be caused by the spreading of demolition material throughout the plough-soil. A notably elevated magnetic background, Z, is also noted extending south-eastwards from the area of disturbance. This is also likely to be caused by modern material within the plough-soil, probably being redistributed by ploughing.

Within the north-west of F11 (see Illus 23–35), a broad area of magnetic disturbance, Aa, is located adjacent to Grenoble Road, and less than 100m south of Minchery Farmhouse (LB1/109). Given the extent and magnitude of the disturbance it is likely that it is modern in origin, perhaps being associated with the construction of

Grenoble Road. Any weaker anomalies of archaeological potential, if present, may be masked by this elevated background.

The broad area of magnetic disturbance, Ab, in the north-west of F15 (see Illus 29–31) does not correspond to any features depicted on historic mapping, nor was there any obvious cause visible during the course of the survey. Nevertheless, the disturbance is likely to be modern in origin, being due to a spread of dumping or infilling.

Towards the east of the PDA, in the west of F17 (see Illus 38–40), a circular area of magnetic disturbance, Ac, corresponds to the site of an isolation hospital which is first shown on the 1914 edition Ordnance Survey map. No clear pattern is discernible amongst the magnetic disturbance but it is thought to be caused by buried demolition material and possibly in situ structural remains. An area of rubble within the east of this field, manifests in the data as magnetic disturbance, Ad (see Illus 35–37). A building is shown in this location on modern Ordnance Survey maps.

Other areas of disturbance around the perimeter of the survey area and along the field edges is due to ferrous material within, and close to, the field boundaries.

4.2 AGRICULTURAL ANOMALIES

Several field boundaries have been removed since the publication of the first edition OS map. These are identified as Ae (F3; see Illus 17–19), Af (F4; see Illus 26–28), Ag (F5; see Illus 20–22), Ah (F11; see Illus 23–25), Ai (F13; see Illus 23–25), Aj and Ak (F15; see Illus 32–34) and Al (F16; see Illus 35–37). The anomalies are thought to be caused by soil-filled ditches. Two linear anomalies, Am and An (F13; see Illus 23–25), are not shown on any historical Ordnance survey maps but are interpreted as possible former field boundaries based upon their linearity and orientation parallel with, and at right angles to, surrounding ploughing trends. It is possible that they may relate to earlier systems of field division.

Broad, slightly sinuous linear anomalies are recorded in several parts of the site. These anomalies are characteristic of ridge and furrow cultivation with the striped appearance being due to the contrast between former ridges and the soil-filled furrows. The majority of the ridge and furrow anomalies correspond to features which were identified from 1940s aerial photographs (see Illus 15; EDP 2010).

More closely spaced linear trend anomalies, for example in F12 (see Illus 23–25) and in the east of F13, reflect recent ploughing. Other linear trend anomalies aligned obliquely to the direction of modern cultivation are likely to be caused by field drains.

4.3 GEOLOGICAL ANOMALIES

Minimal magnetic background variation has been detected across the PDA. Some areas of minor variation are visible as faint trends along the tributary of Littlemore Brook (see Illus 23–25). These are probably due to the presence of alluvial deposits. Occasional discrete areas of magnetic enhancement are identified across the PDA and are due to localised variations in the depth and composition of the soils.

4.4 ARCHAEOLOGICAL AND POSSIBLE ARCHAEOLOGICAL ANOMALIES

Unless specified all the linear anomalies described are likely to be due to soil filled cut features, such as ditches, forming patterns of enclosure and land division. It is very difficult to confidently discriminate between discrete archaeological anomalies, such as pits, which form no particular shape, and those that are due to localised geological variation or to deeply buried ferrous material. For this reason most of the discrete anomalies within enclosures have been ascribed a possible archaeological origin with those outside, except where the responses are particularly broad or of high magnitude, interpreted as of non-archaeological origin.

Six general Areas of Archaeological Potential (AAP's) have been identified. The data and interpretations of these areas is presented at a scale of 1:1,000.

Area of Archaeological Potential 1 (see Illus 23–28 and Illus 47–49)

This area is centred upon NGR 454787, 201540 and covers F7 extending into F8, F5 and F13. Numerous linear and curvilinear anomalies have been identified forming at least nine irregularly shaped probable enclosures (E1–E9) and two trackways (TR1 and TR2) within a semi-circular complex on the western side of a minor unnamed, watercourse, a tributary of Littlemore Brook. The northern and western limits of the complex are clearly defined, with the southern and eastern limits less so. It is possible that the complex extends beyond the watercourse into the south-west of F13 where faint linear anomalies Ao – At are identified on a north-west/south-east alignment, perhaps indicating a system of enclosures on this alignment. However, interpretation is hampered by the presence of numerous ploughing trends, on various alignments, by magnetic interference associated with a subsurface pipe, G, and possibly by the presence of alluvium which may be 'masking' the response from any archaeological features in this vicinity.

Numerous discrete anomalies are identified within the complex, perhaps being due to pits and spreads of archaeological material. Of particular interest is a fragmented circular anomaly, RH1, within the west of E9. The anomaly, centred at NGR 454747, 201567, measures 13m in diameter and may indicate a circular enclosure or a roundhouse. Faint curvilinear trend anomalies, RH2 and RH3, are identified immediately east of this, and may also indicate roundhouses or small circular enclosures.

Areas of Archaeological Potential 2 and 3 (see Illus 17–19, Illus 26–28 and Illus 41–46 inclusive)

To the west of AAP1 and extending westwards to the A4074 across F4 and F3 are five circular anomalies, RB1–RB5, and two rectangular anomalies, E10 and E11. A fragmented curvilinear, anomaly, Au bounds these other anomalies to the north.

The circular anomalies are characteristically similar, each being largely devoid of internal anomalies which, if present, might have

suggested occupational activity. Each measures between 12m and 14m in diameter, with the exception of RB5 at 18m diameter. Given the absence of obvious internal anomalies these circular anomalies, soil-filled ditches, are interpreted as the remnants of round barrows. The two rectangular anomalies are interpreted as enclosures. E10, centred at NGR 454299, 201509, measures 20m from east to west and 23m from north to south and E11, centred at NGR 454367, 454367, measures 19m from east to west and 32m from north to south. Both rectangular enclosures contain pit-type anomalies within their interiors, perhaps indicating occupational activity. The linear ditch type anomaly, Au, perhaps marks the northern boundary of this activity.

Area of Archaeological Activity 4 (see Illus 23–28 inclusive; Inset 4 Illus 50–52)

To the north-east of AAP1, in F11 and F13, numerous anomalies are identified within a relatively elevated magnetic background. The magnetic background is exacerbated by ploughing trends, which appear on several alignments, and by magnetic disturbance, Y, associated with demolition material from the former Black Barn. Whilst no clear archaeological pattern is discernible within this elevated background several linear and rectilinear anomalies are identified and it is possible that these anomalies, Av–Ay, are due to plough-damaged archaeological remains and possibly form part of the main settlement complex AAP1 located immediately to the south and west.

Two clusters of anomalies, Az and Ba, within the north-east corner of F13 and the south-east corner of F11, are located close to the site of pottery and kiln waste which was identified during a site walkover (EDP3; see Illus 13) and which was originally identified during the construction of Grenoble Road (EOX1588/EOX1589). No anomalies which could be confidently interpreted as kilns have been identified but the location of the two clusters of anomalies combined with the close proximity of pottery and kiln waste clearly suggests that this area may be on the periphery of a site of industrial activity and that an archaeological origin for these anomalies is probable.

A low-magnitude curvilinear anomaly, Bb, towards the centre of F11 is ascribed some archaeological potential, perhaps being due to a ditch. However, no clear archaeological potential is visible and an agricultural origin cannot be dismissed.

Area of Archaeological Potential 5 (see Illus 29–34 and Illus 53–55)

In F15 low magnitude rectilinear anomalies, Bc – Bf, are identified on a slightly elevated position in the east of the field. The anomalies are aligned on a north/south orientation, oblique to the historical pattern of land division, and are also located close to the former site of Sandfordbrake Farm. These anomalies may be remnants of a much earlier system of field division and enclosure and are therefore interpreted as of possible archaeological origin.

Area of Archaeological Potential 6 (see Illus 35–37 and Illus 56–58)

A clear area of archaeological potential is identified in F16, extending for approximately 150m on a south-easterly alignment from Grenoble Road across the field and into F17. Roman pottery recovered from an archaeological feature during a watching brief (EOX 1579; see Illus 13) was recovered from a feature on the opposite side of the Grenoble Road. A complex of linear, curvilinear and discrete anomalies is identified with the most clearly defined anomaly, Bg, centred at NGR 456290, 202611 and measuring 16m in diameter. The magnetic anomalies become weaker further away from the field edge but there is clearly archaeological activity extending across the full width of F16. To the north-east of the probable enclosure, linear anomalies Bh and Bi are also high in magnitude and suggestive of settlement. South-east of the circular enclosure fainter linear anomalies, Bj – Bl, may indicate a continuation of archaeological anomalies although no clear pattern is discernible.

A regular pattern of anomalies, Bm – Bq, is also identified on a north-west/south-east alignment within the centre of F17, possibly forming a former field system, and likely associated with the activity identified to the north in F16. Two identical pit-type responses, Br and Bs are identified in the south-west corner of the fields and a sub-oval area of enhanced anomalies, Bt, may be due to a spread of material. However, the anomalies are located within a field which is criss-crossed by field drains and ridge and furrow anomalies and interpretation is cautious as it is possible that some of the linear anomalies may be due to field drains.

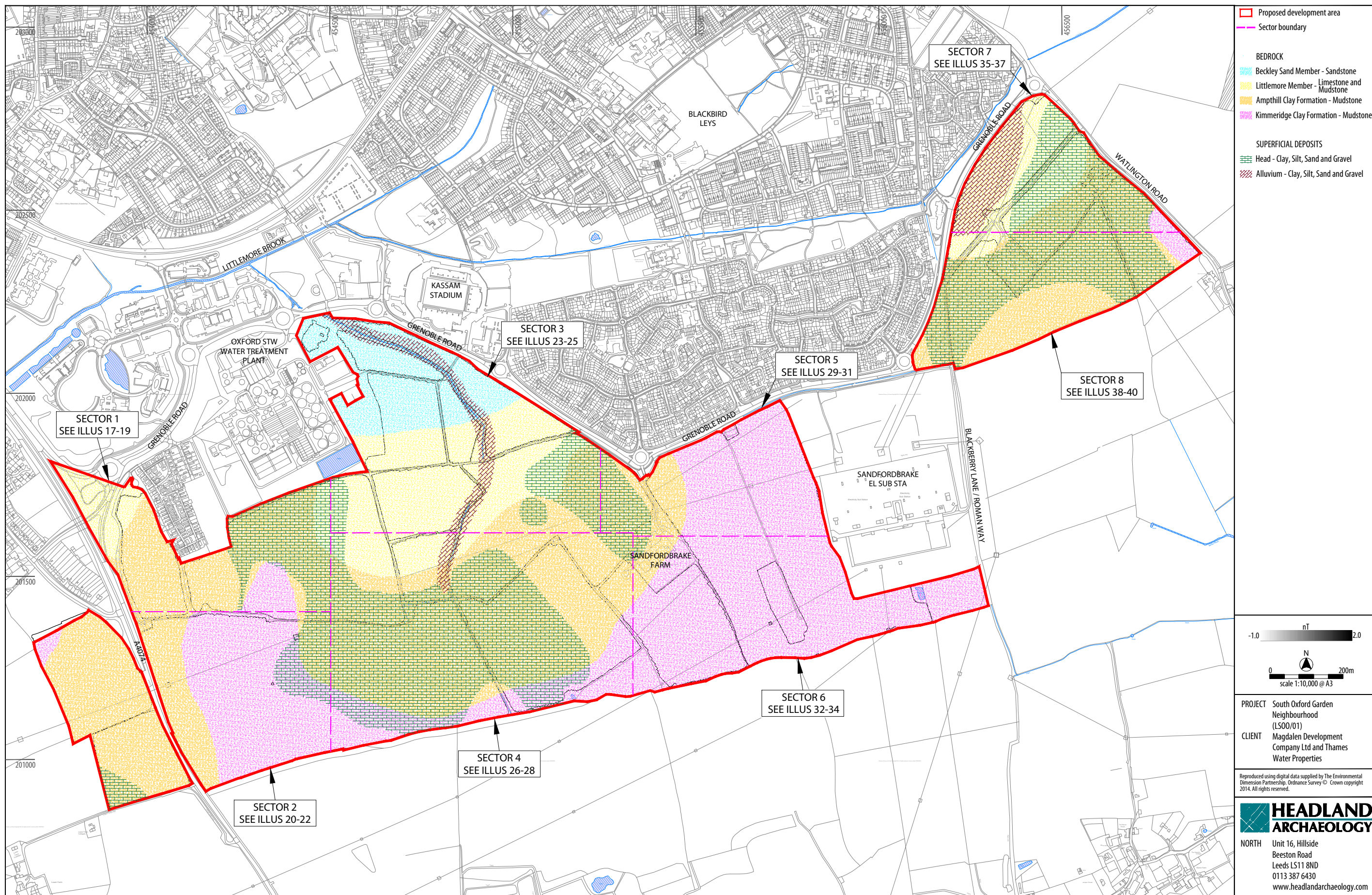
5 CONCLUSION

The geophysical has successfully evaluated the PDA identifying anomalies indicative of probable multi-period archaeological activity and defining the extent of six areas which are interpreted as having clear archaeological potential. These include two previously unknown occupation sites, five probable round barrows and two rectangular enclosures and an area of possible industrial activity. Two other areas of possible, but less coherent, archaeological activity are also identified. In addition, the survey has identified a plethora of anomalies indicative of agricultural and modern activity.

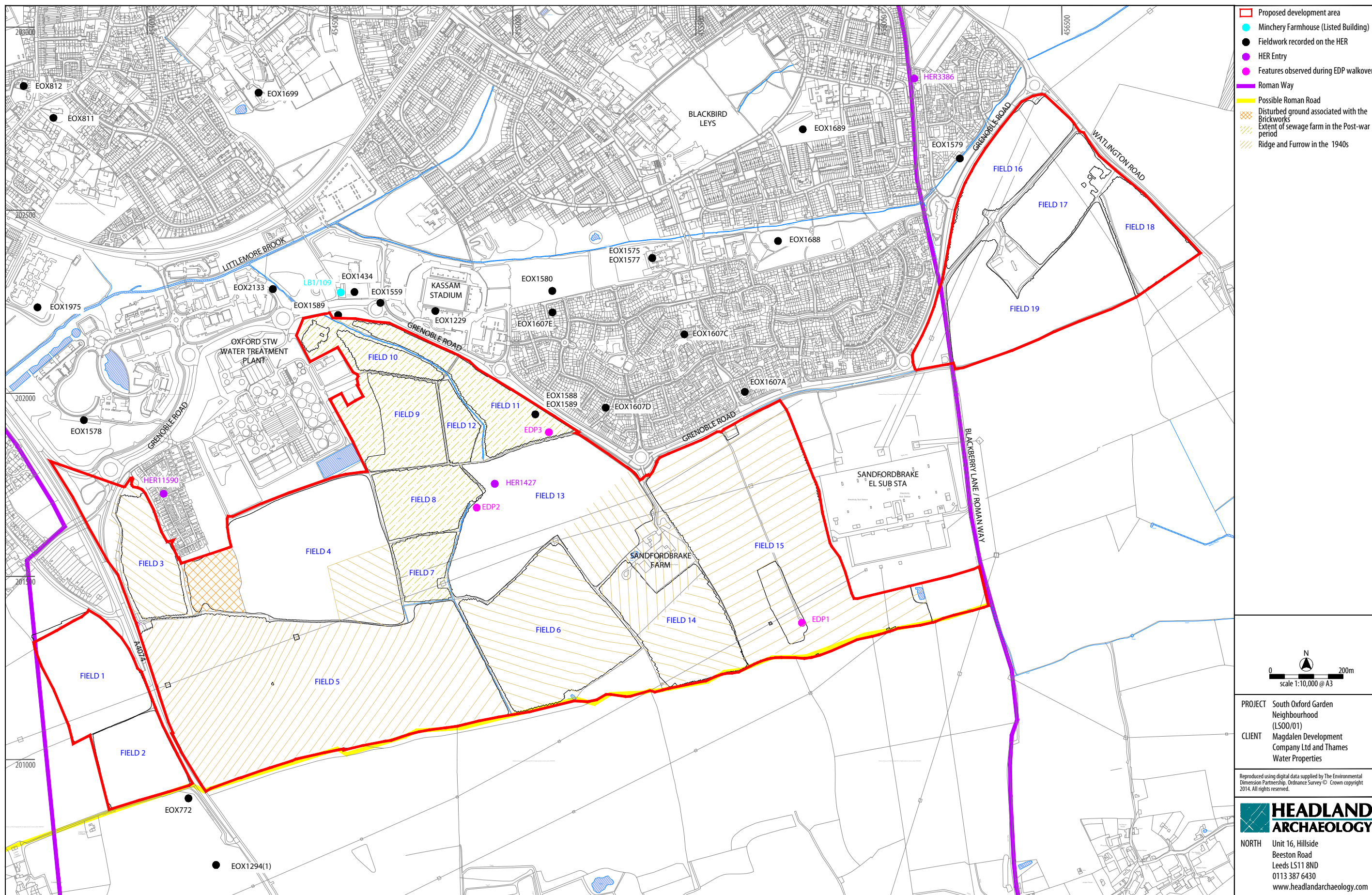
Based on the results and interpretation of the geophysical data, six areas of archaeological potential have been noted. In these areas the potential is assessed as moderate to high. Nevertheless it is also recognised that there are significant parts of the site where no anomalies of likely archaeological origin are identified and here the archaeological potential is assessed as low.

6 REFERENCES

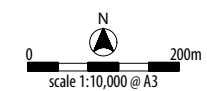
- Chartered Institute for Archaeologists (CIfA) 2014 *Standard and guidance for archaeological geophysical survey* [online document] Accessed from www.archaeologists.net/sites/default/files/CifAS&GGeophysics_1.pdf
- Cranfield University 2016 *Cranfield Soil and Agrifood Institute Soilscales* [online] Accessed 01 July 2016 from www.landis.org.uk/soilscales/
- Department of Communities and Local Government (DCLG) 2012 *National Planning Policy Framework* [online document] Accessed from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60777/2116950.pdf
- English Heritage 2008 *Geophysical Survey in Archaeological Field Evaluation: Research and Professional Services Guidelines (2nd edition)* [online document] Accessed from content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf
- Environmental Dimension Partnership, 2010 *Proposed South Oxford Strategic Development Area (SDA); Findings of Archaeological Desk-based Assessment* Unpublished Client document ref. H_EDP881_07a_150110_AC_cm
- Gaffney, C & Gater, J 2003 *Revealing the Buried Past: Geophysics for Archaeologists* The History Press: Stroud
- Headland Archaeology 2016 *South Oxford Garden Neighbourhood; Geophysical Survey Written Scheme of Investigation* Unpublished document
- Natural Environment Research Council (NERC) 2016 *British Geological Survey* [online] Accessed 01 July 2016 from www.bgs.ac.uk/



Illus 12
 Survey location showing geology detail (after British Geological Survey 2016)



- ▭ Proposed development area
- Minchery Farmhouse (Listed Building)
- Fieldwork recorded on the HER
- HER Entry
- Features observed during EDP walkover
- Roman Way
- Possible Roman Road
- ▨ Disturbed ground associated with the Brickworks
- ▨ Extent of sewage farm in the Post-war period
- ▨ Ridge and Furrow in the 1940s



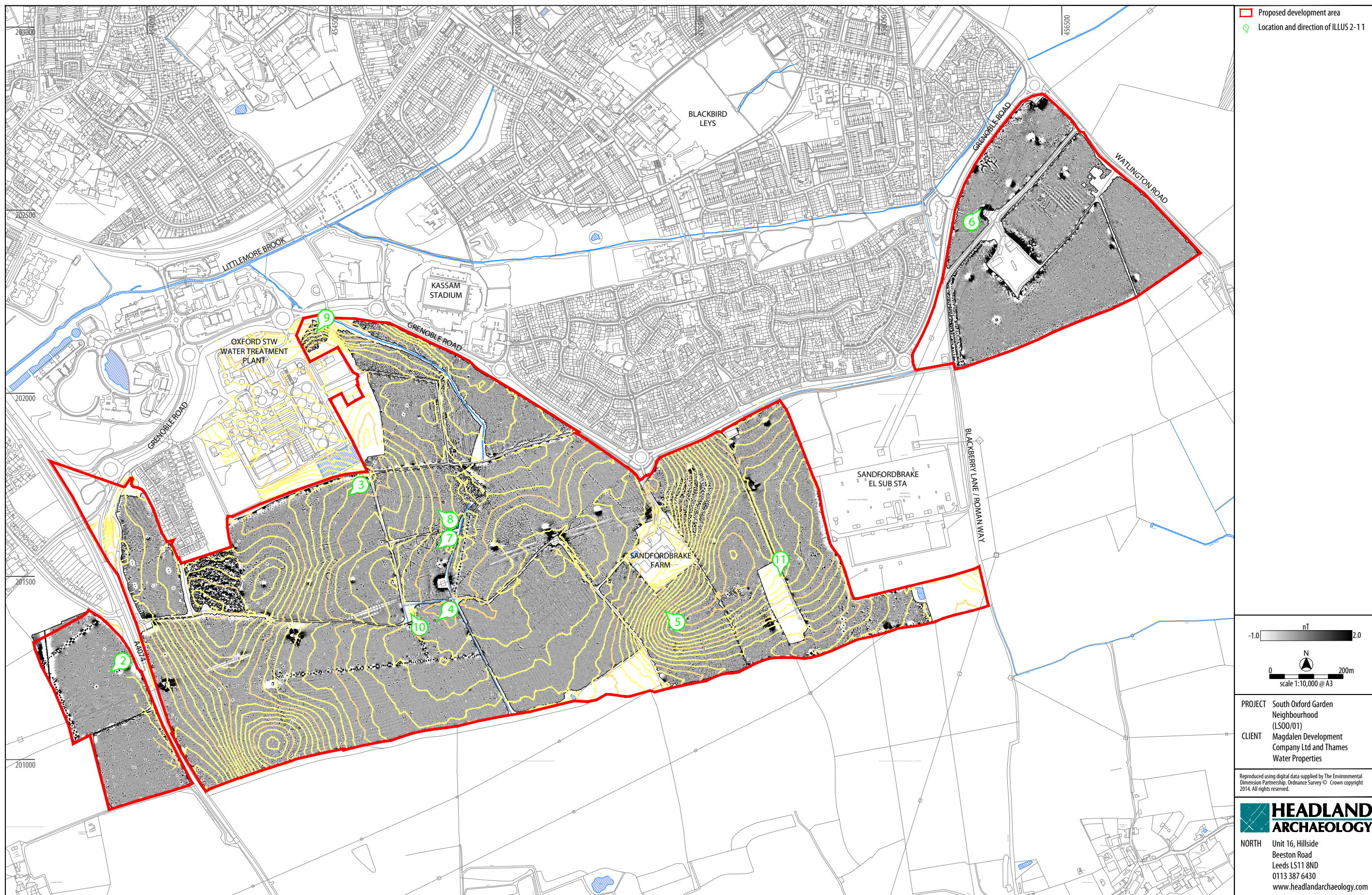
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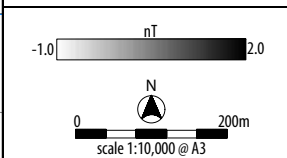


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Illus 13 Survey location showing field names and known Archaeological and Cultural Heritage Information (after EDP 2010)



▭ Proposed development area
● Location and direction of ILLUS 2-11



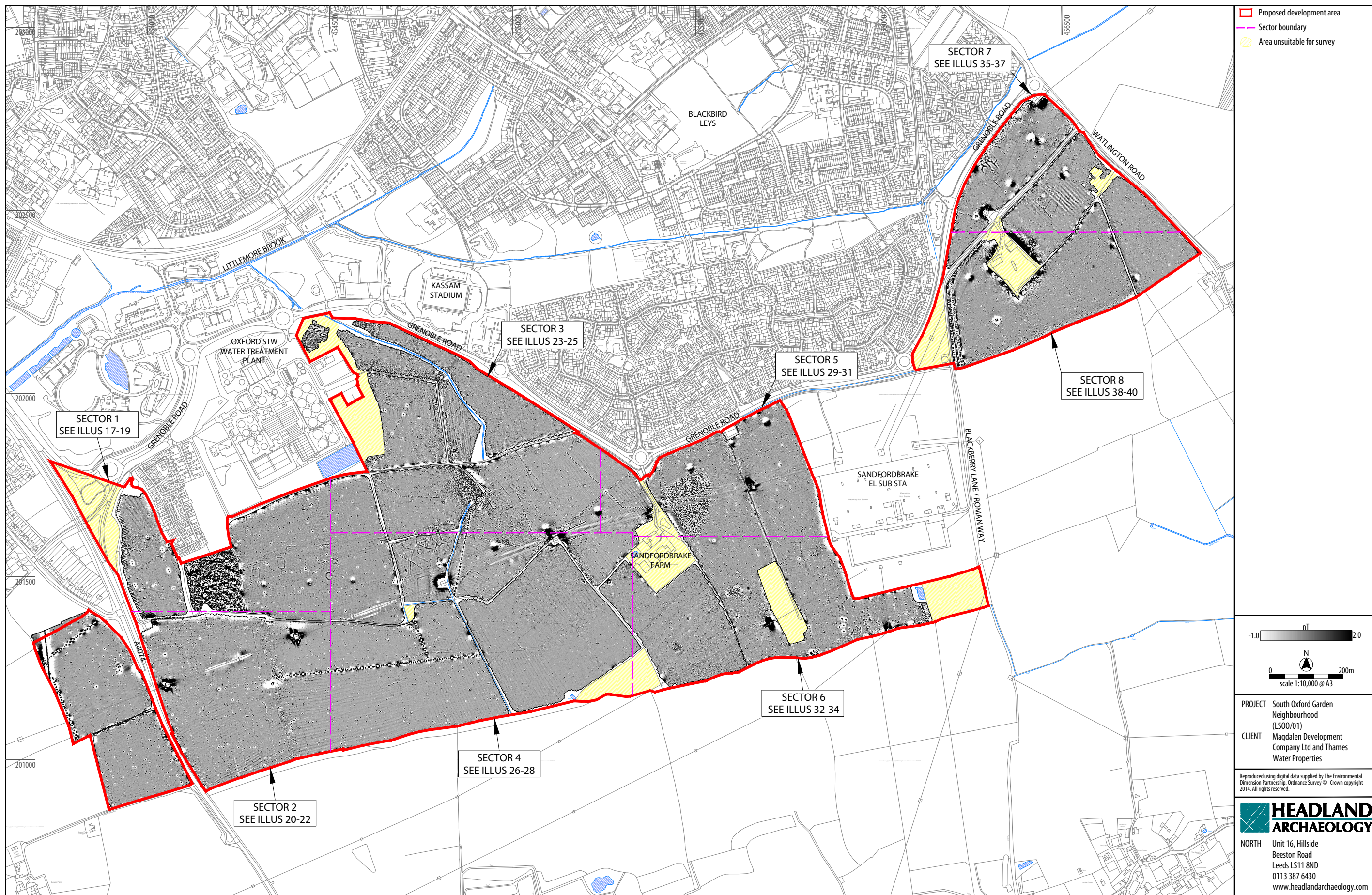
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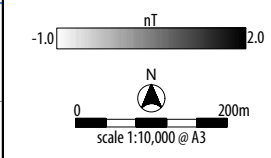
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Illus 14
 Survey location showing contour data, location and direction of Illus 2-11



- ▭ Proposed development area
- - - Sector boundary
- Area unsuitable for survey



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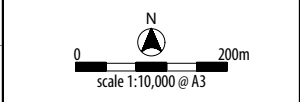
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Illus 15
 Survey location showing processed greyscale magnetometer data



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Magnetic Disturbance	Ferrous Material
● Magnetic Disturbance	Overhead Cables
— Dipolar Linear	Service Pipe
— Linear	Modern Track
— Linear Trend	Ridge and Furrow
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
● Magnetic Enhancement	Geology
— Linear Trend	Archaeology?
● Magnetic Enhancement	Archaeology?
● Magnetic Enhancement	Archaeology

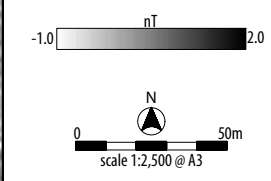
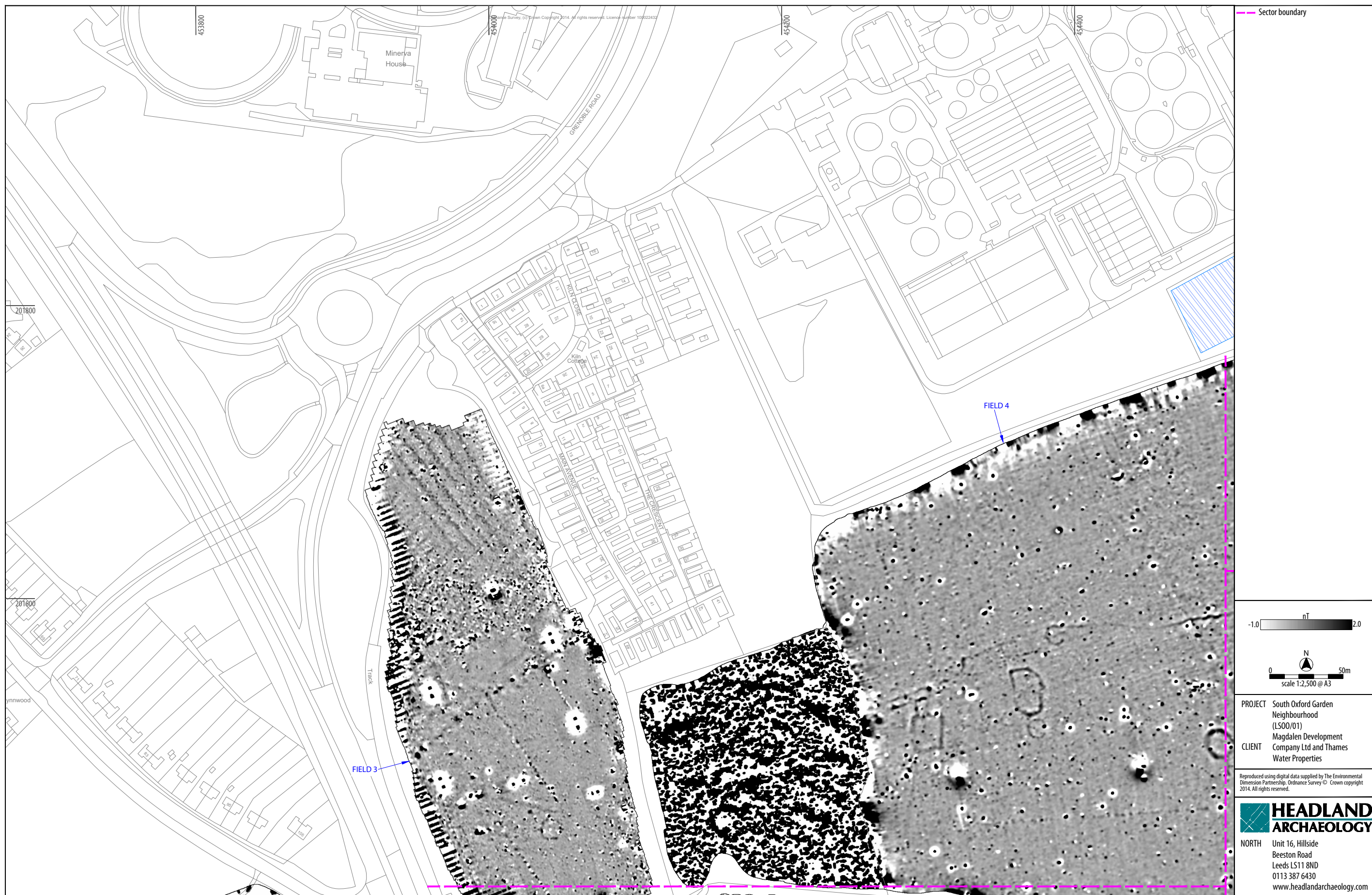


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Illus 16 Overall interpretation of magnetometer data showing areas of archaeological potential (Illus 41 - Illus 58)



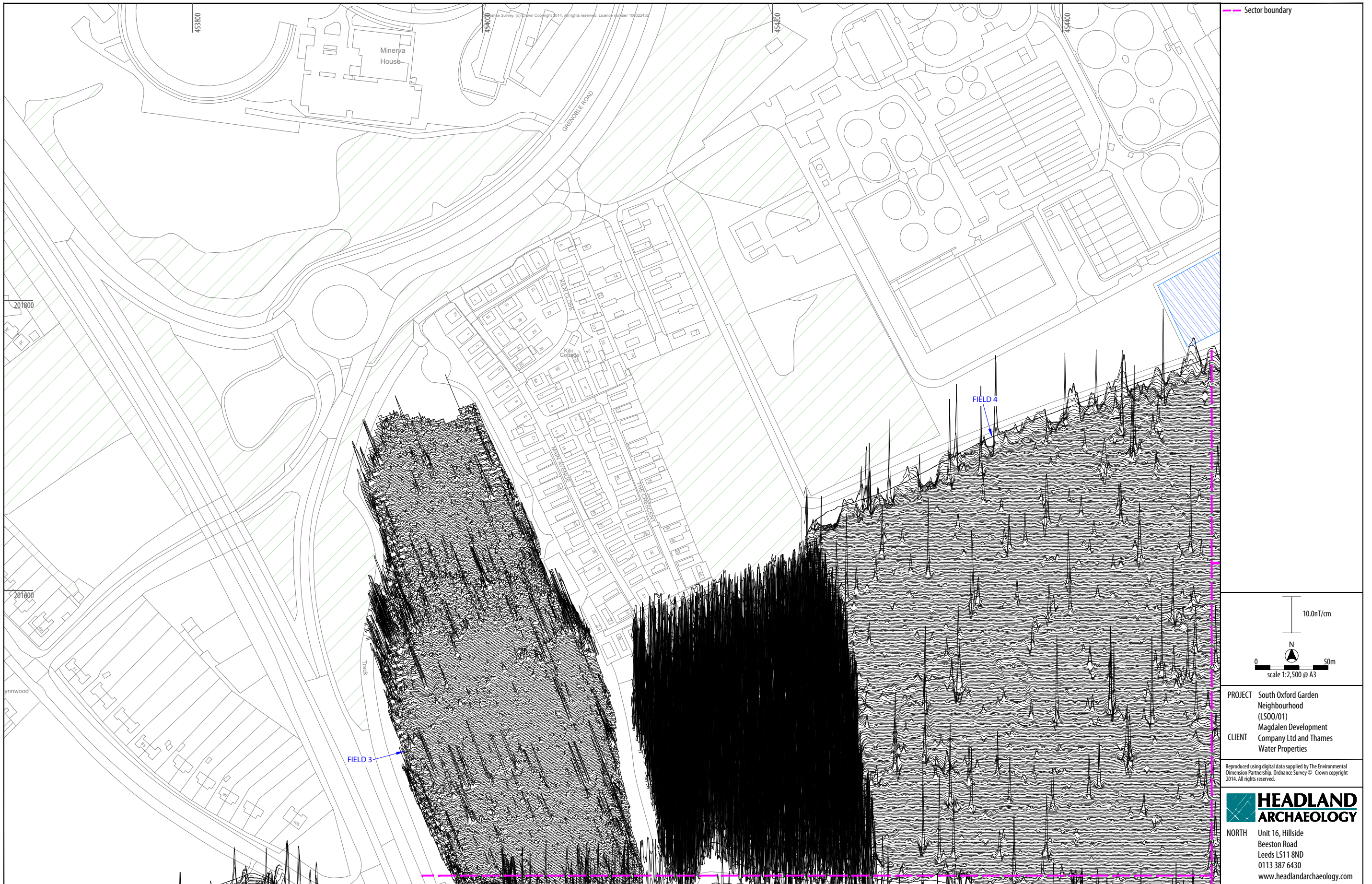
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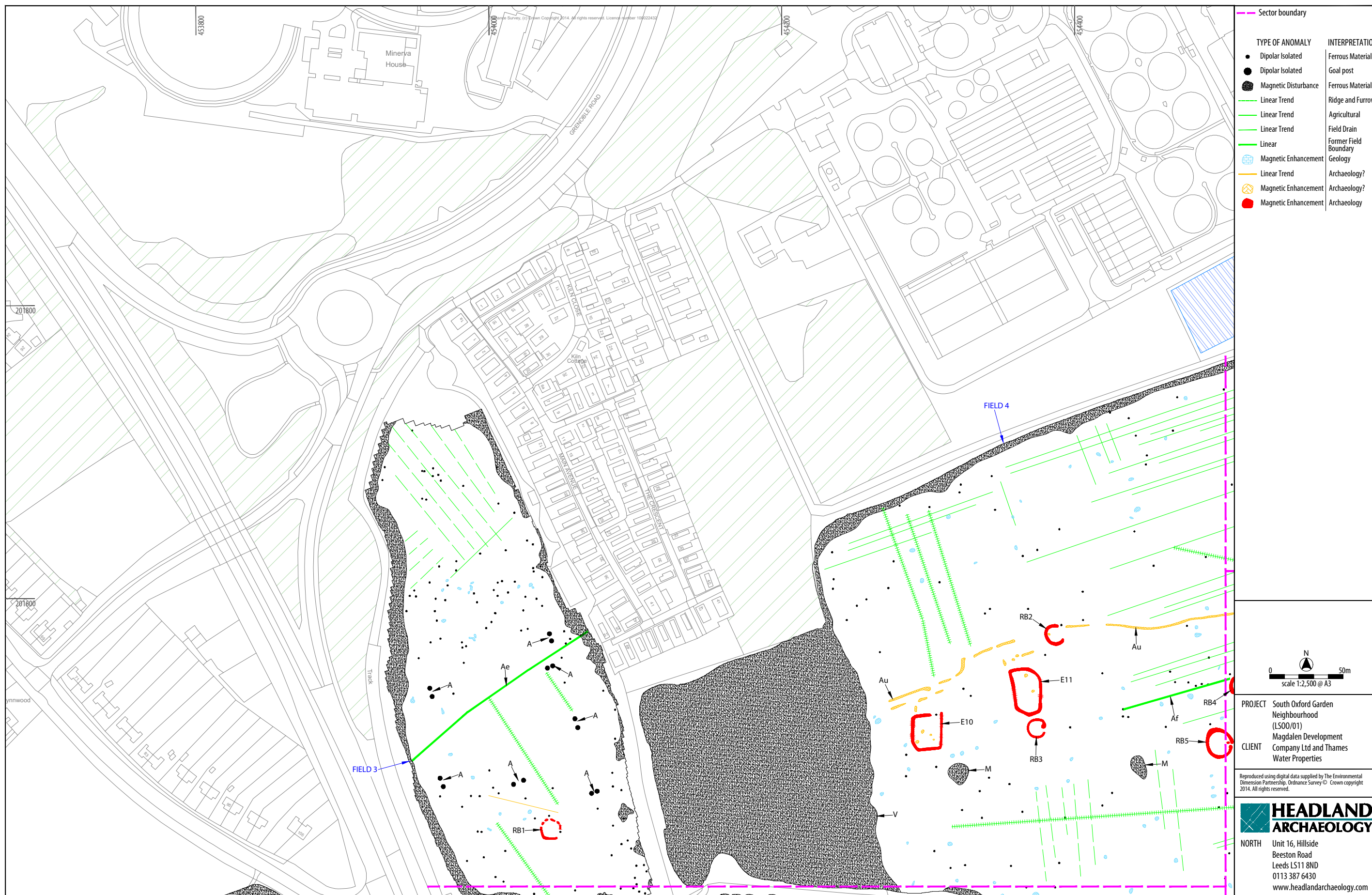
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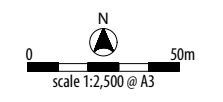
Illus 17
Processed greyscale magnetometer data; Sector 1



Illus 18
XY trace plot of magnetometer data; Sector 1



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Dipolar Isolated	Goal post
● Magnetic Disturbance	Ferrous Material
— Linear Trend	Ridge and Furrow
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
● Magnetic Enhancement	Geology
— Linear Trend	Archaeology?
● Magnetic Enhancement	Archaeology?
● Magnetic Enhancement	Archaeology

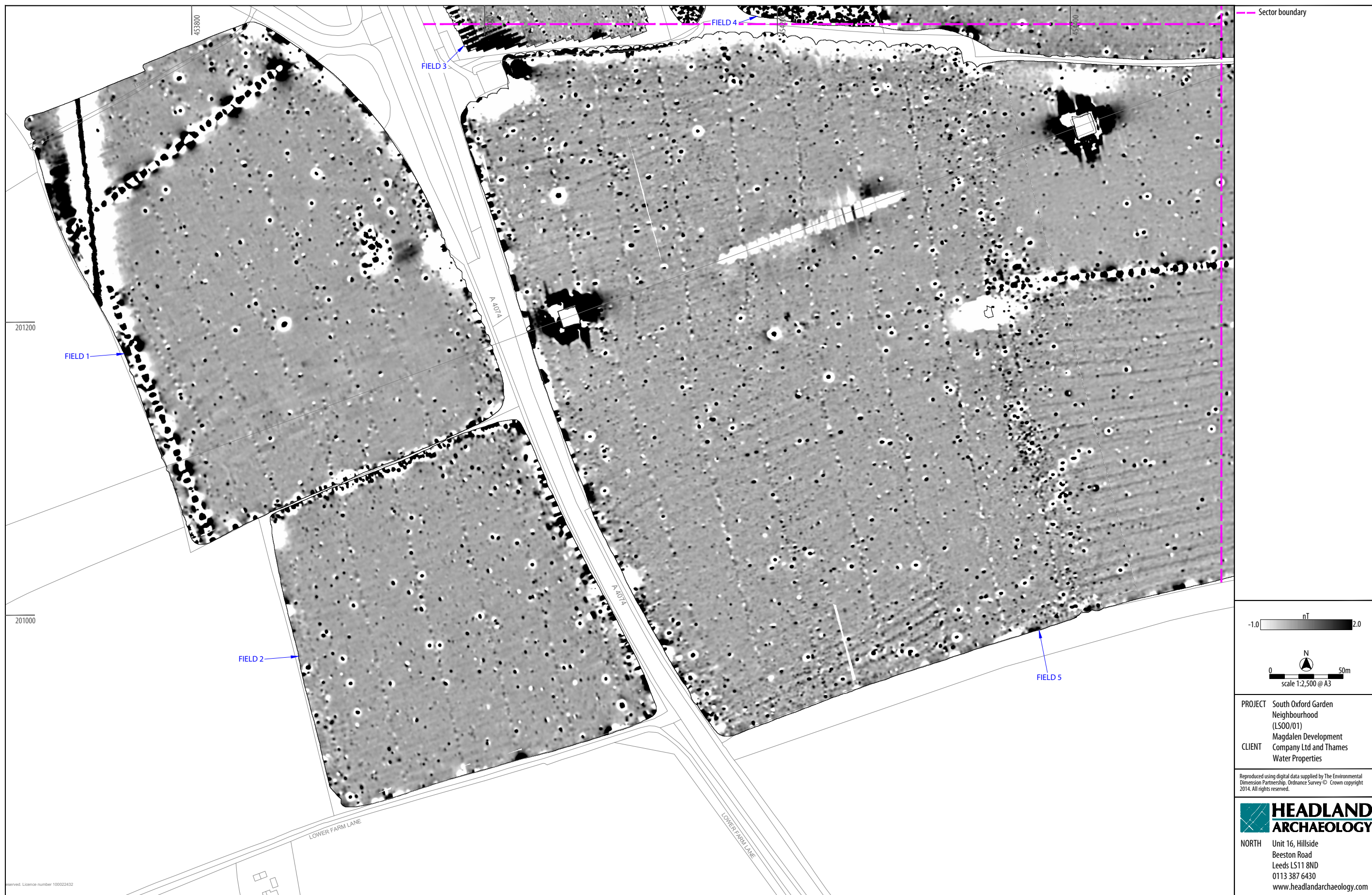


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Illus 19 Interpretation of magnetometer data; Sector 1



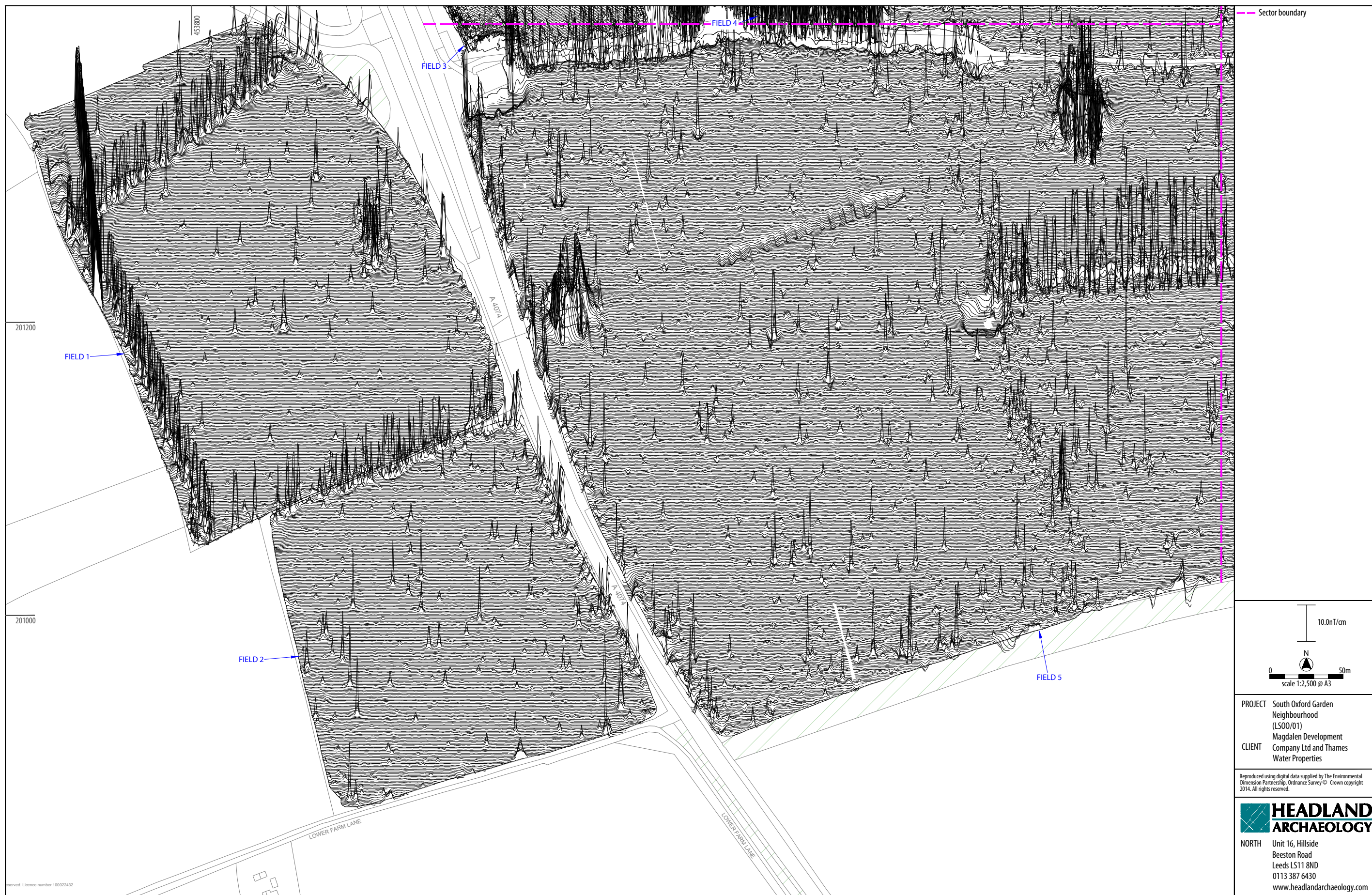
Illus 20
Processed greyscale magnetometer data; Sector 2

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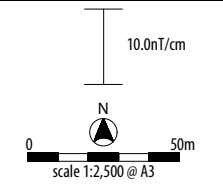
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Sector boundary



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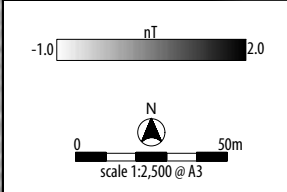
Illus 21
XY trace plot of magnetometer data; Sector 2



Illus 22 Interpretation of magnetometer data; Sector 2



— Sector boundary

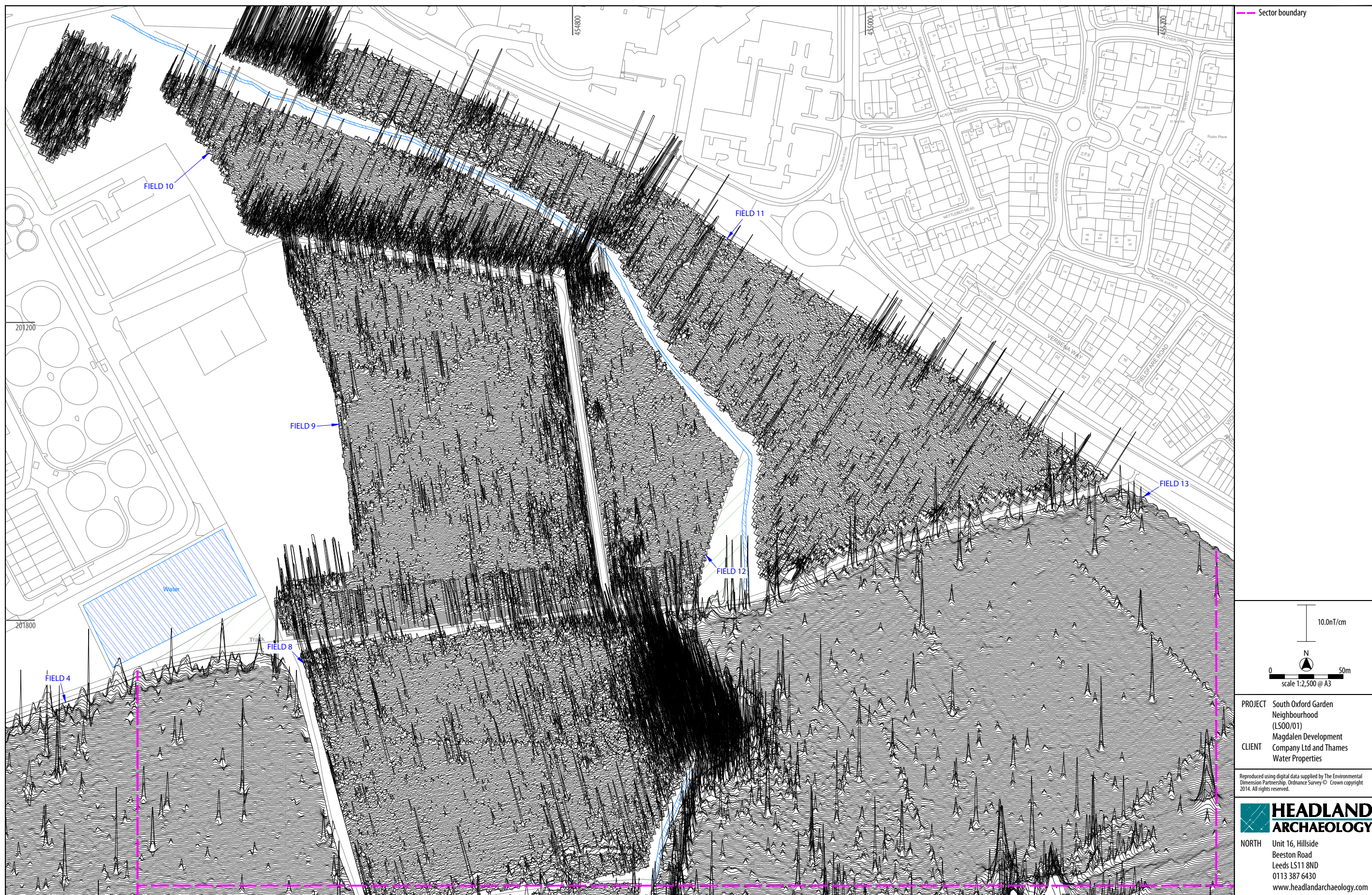


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Illus 23
 Processed greyscale magnetometer data; Sector 3



Illus 24
XY trace plot of magnetometer data; Sector 3

Sector boundary

10.0nT/cm

0 50m

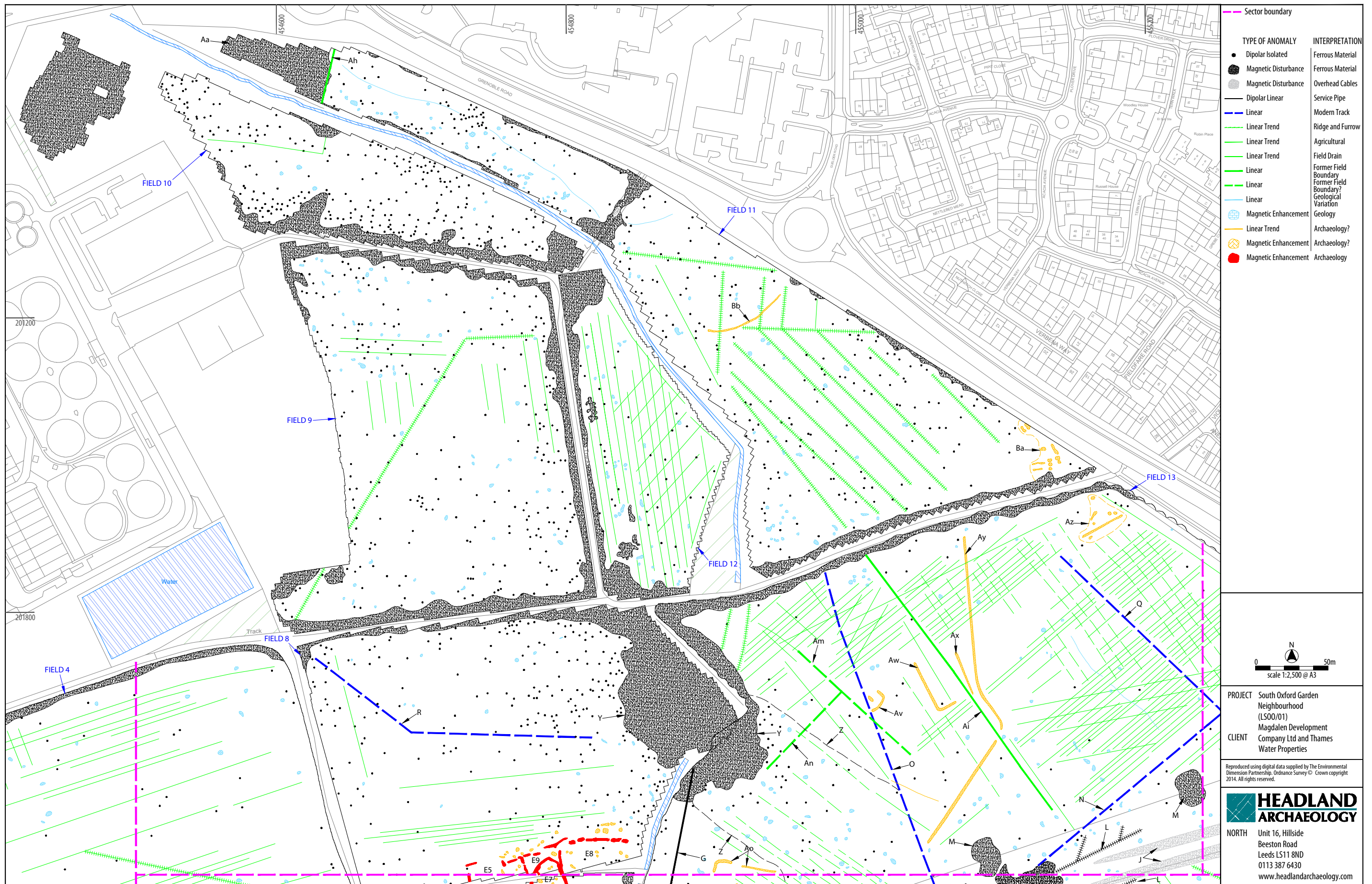
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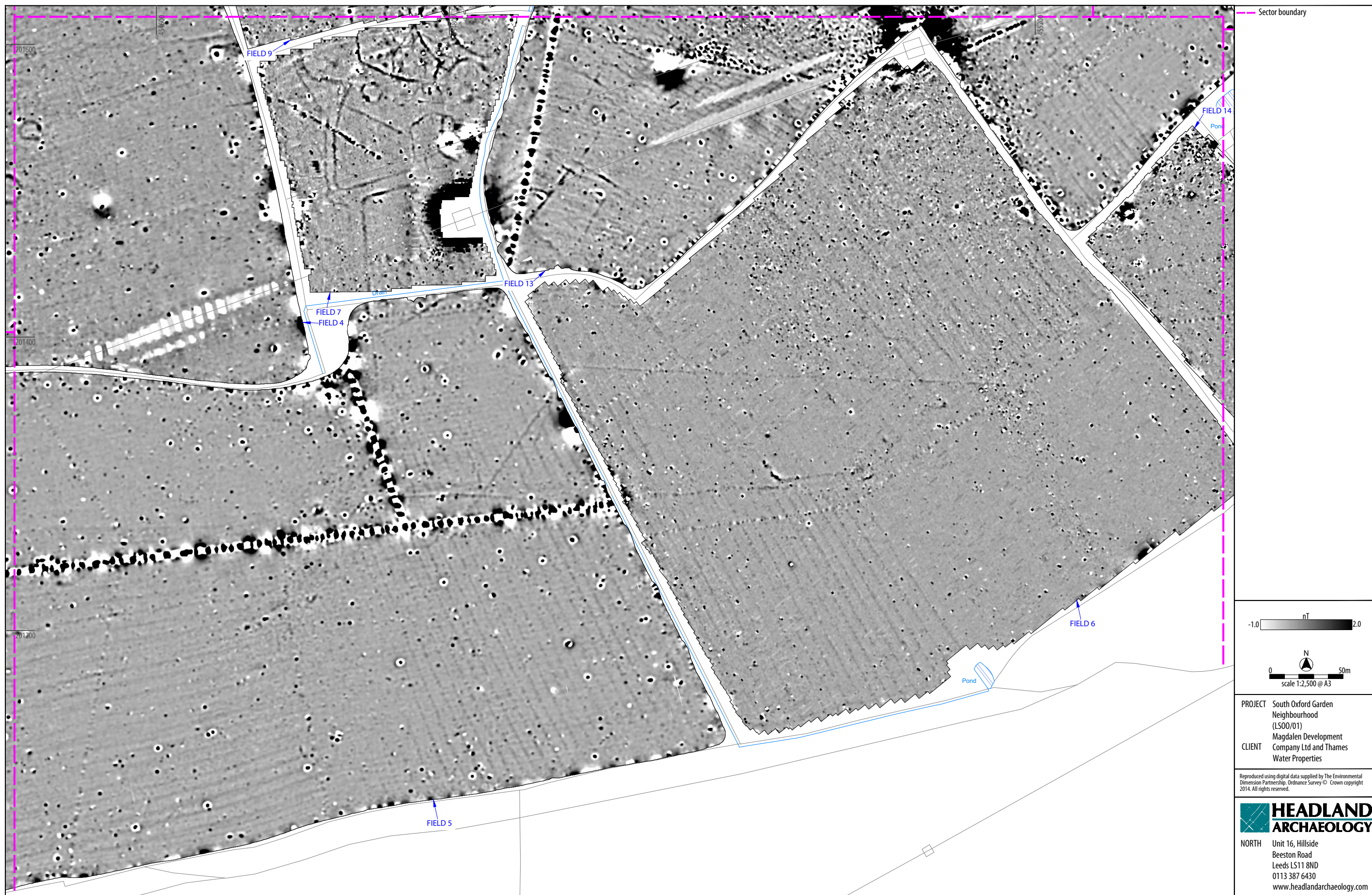


Illus 25 Interpretation of magnetometer data; Sector 3

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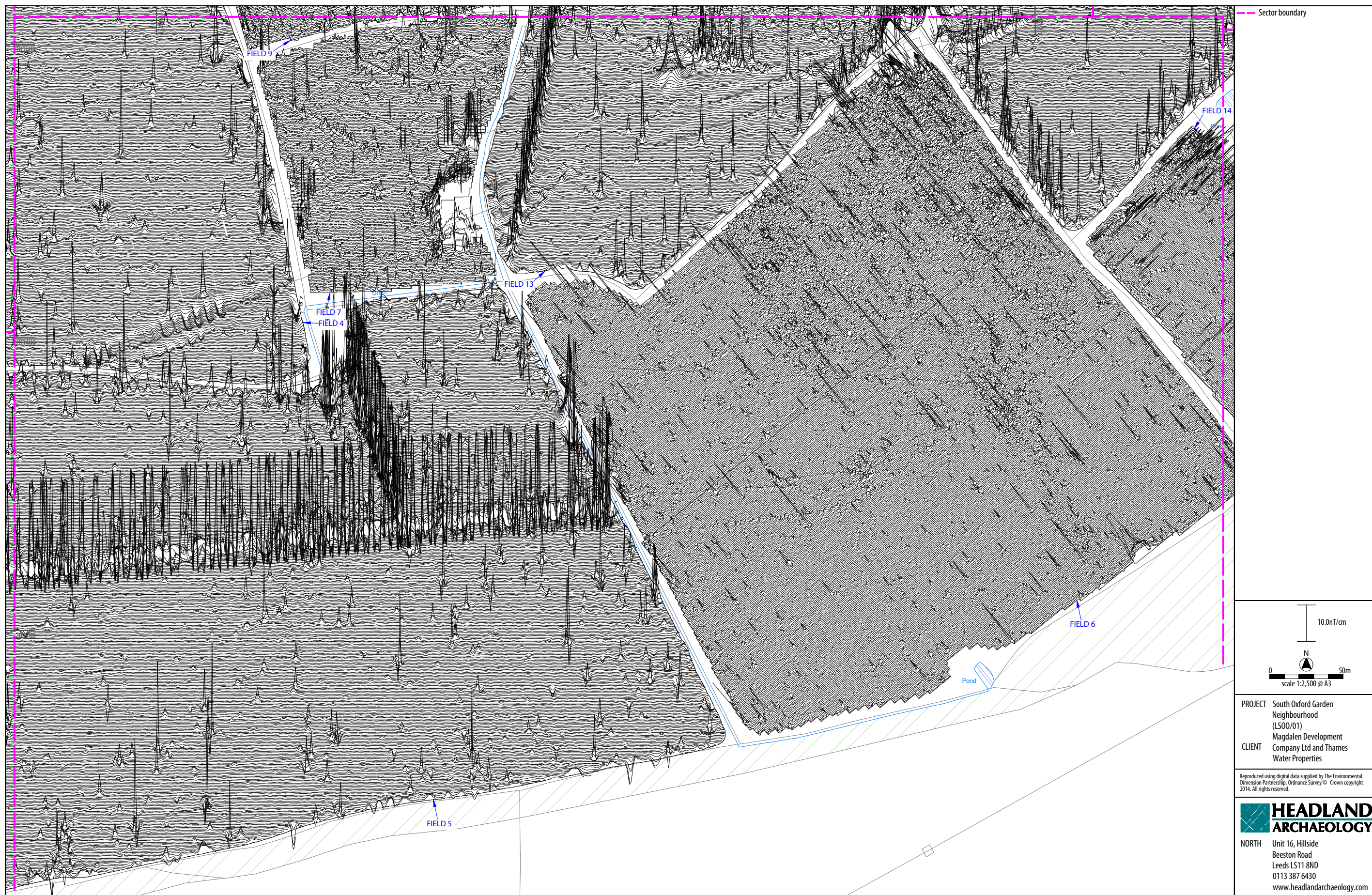
Illus 26
Processed greyscale magnetometer data; Sector 4

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Illus 27
XY trace plot of magnetometer data; Sector 4

Sector boundary

FIELD 9

FIELD 14

FIELD 13

FIELD 7

FIELD 4

FIELD 6

Pond

FIELD 5

10.0nT/cm

N

0 50m

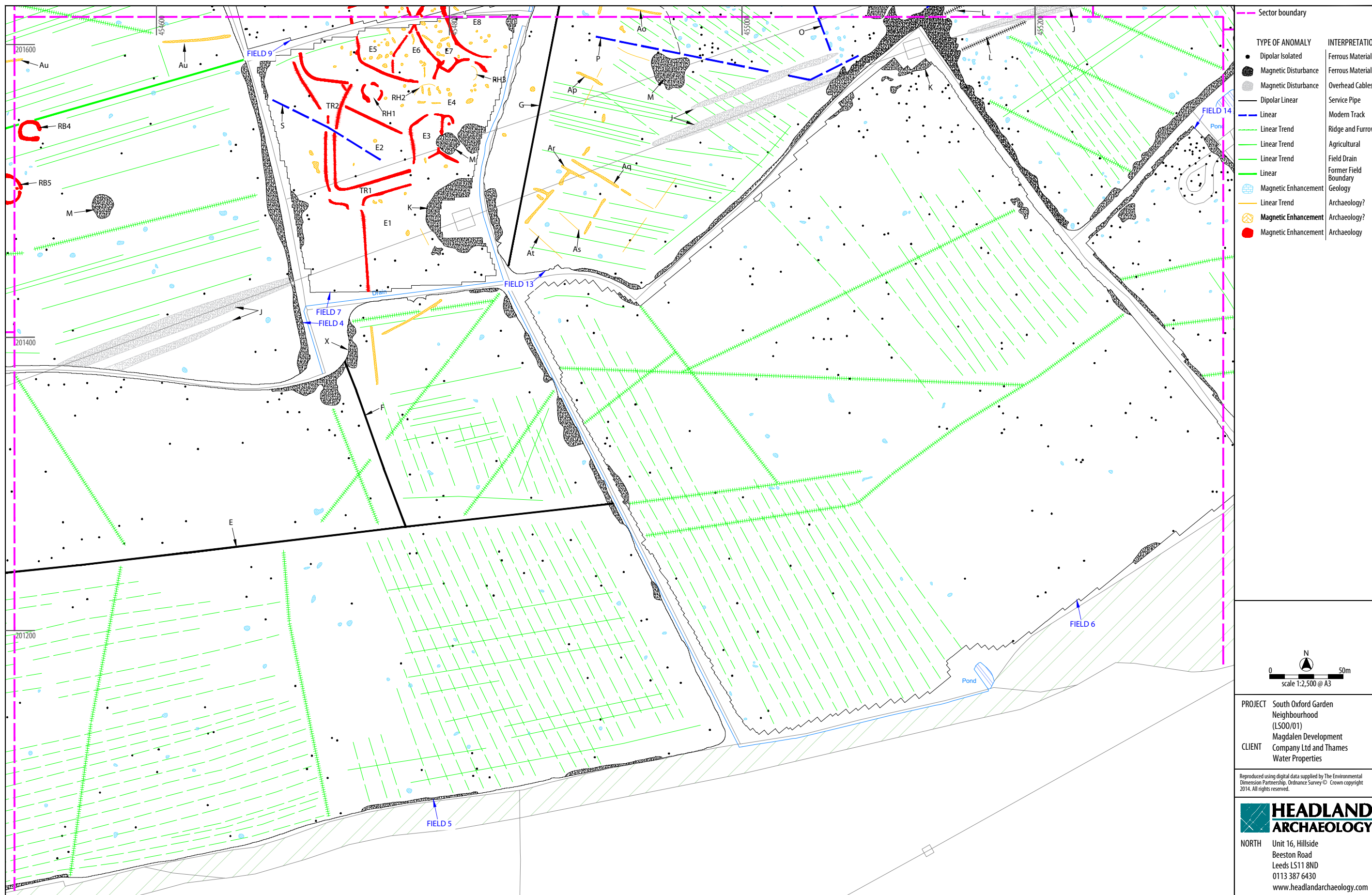
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Illus 28 Interpretation of magnetometer data; Sector 4



Illus 29
Processed greyscale magnetometer data; Sector 5

Sector boundary

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Path

Electricity Sub Station

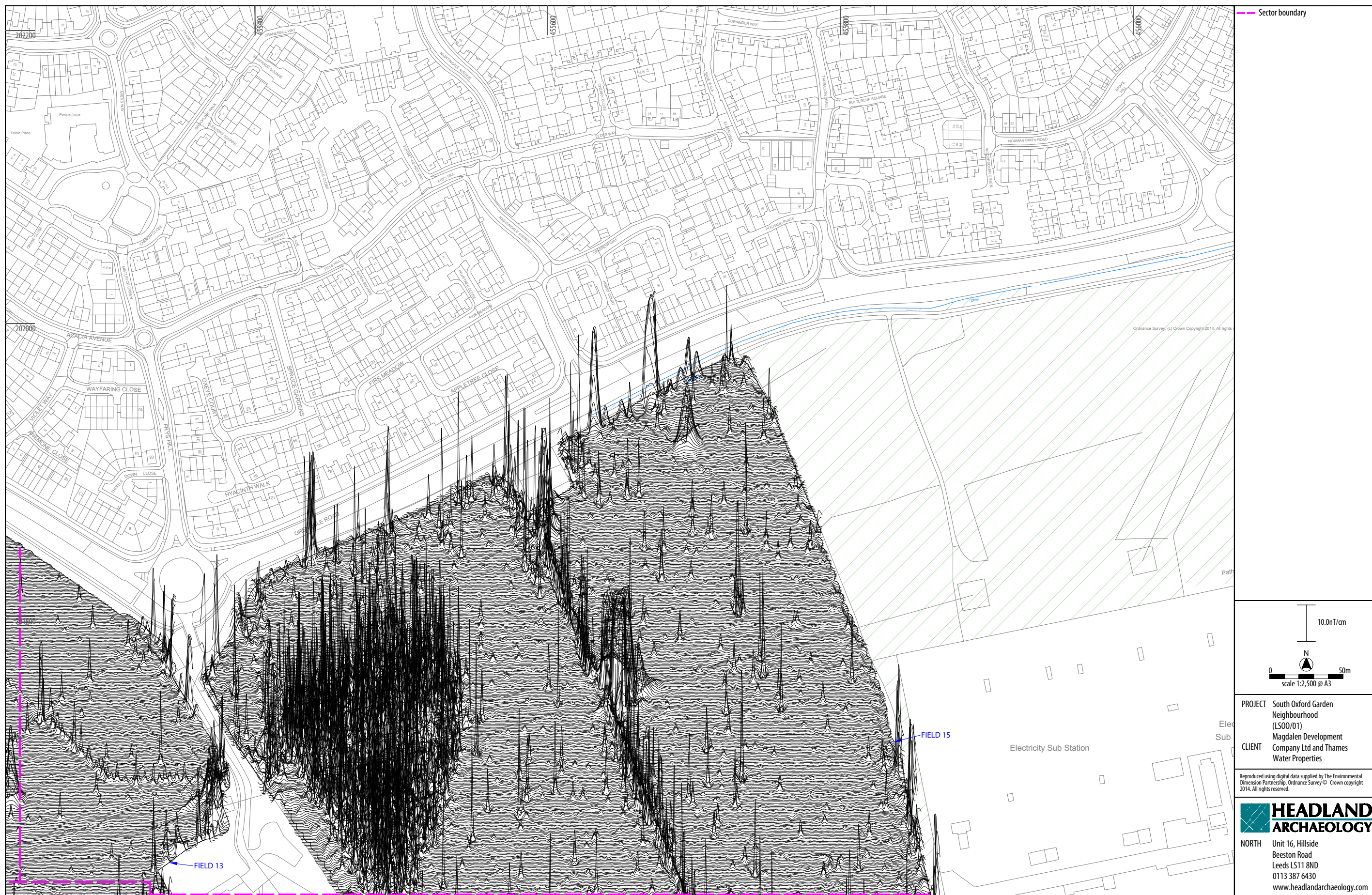
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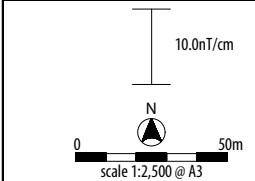
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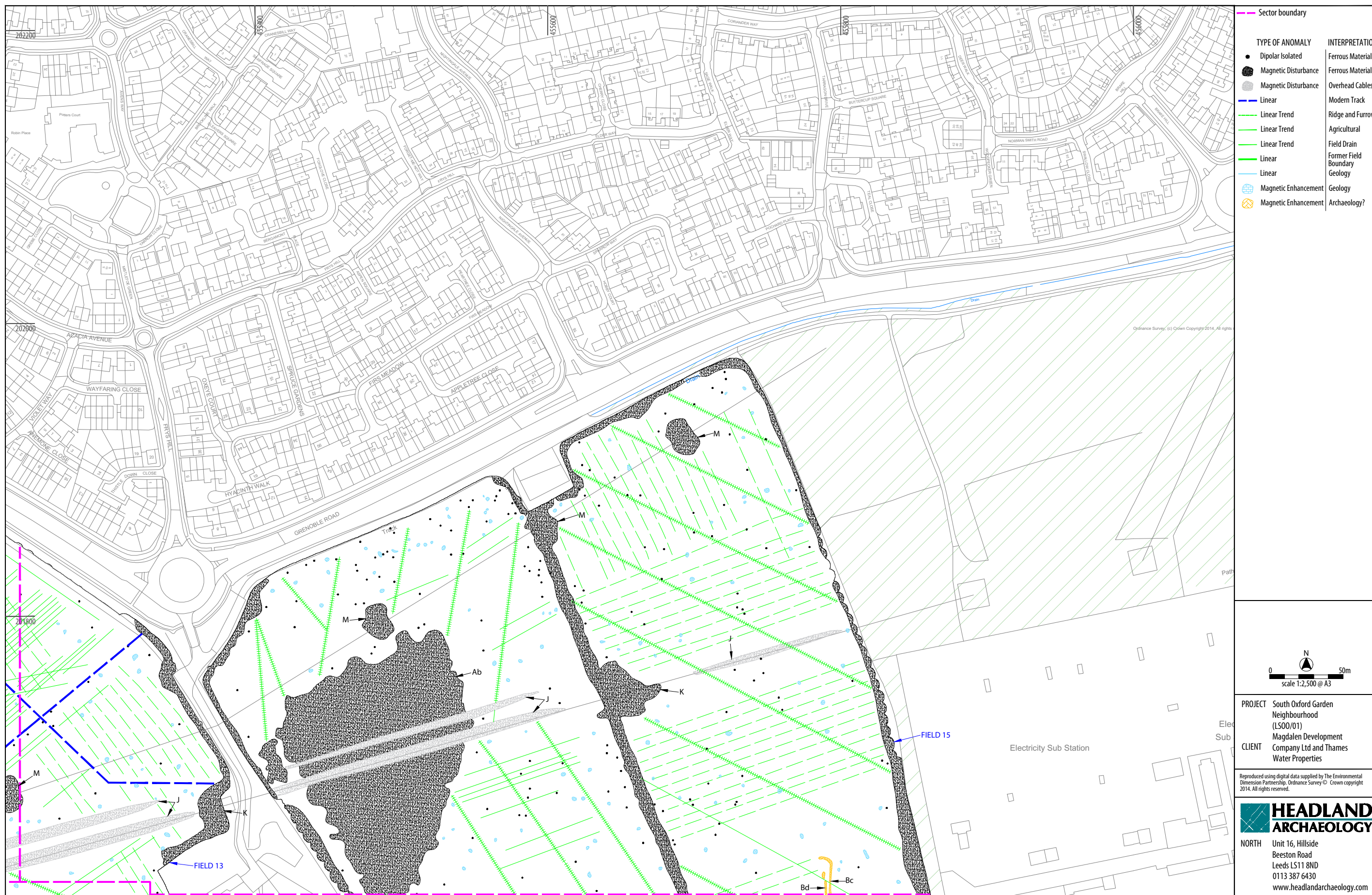
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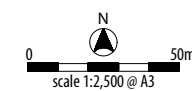
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Illus 30
XY trace plot of magnetometer data; Sector 5



TYPE OF ANOMALY		INTERPRETATION
●	Dipolar Isolated	Ferrous Material
■	Magnetic Disturbance	Ferrous Material
■	Magnetic Disturbance	Overhead Cables
—	Linear	Modern Track
—	Linear Trend	Ridge and Furrow
—	Linear Trend	Agricultural
—	Linear Trend	Field Drain
—	Linear	Former Field Boundary
—	Linear	Geology
⊕	Magnetic Enhancement	Geology
⊗	Magnetic Enhancement	Archaeology?



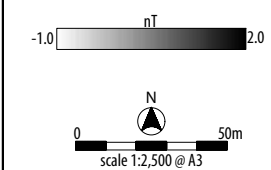
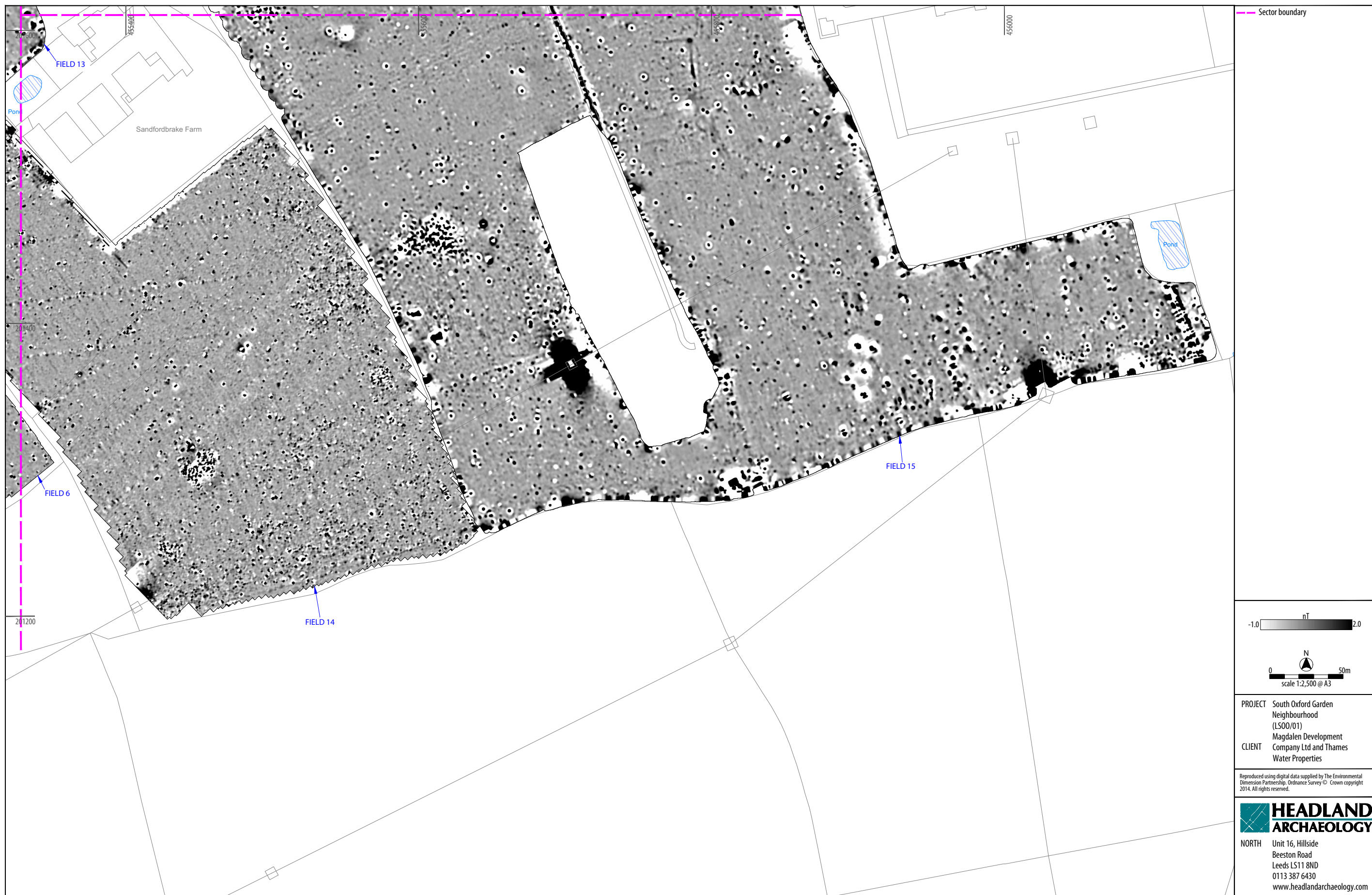
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Illus 31 Interpretation of magnetometer data; Sector 5



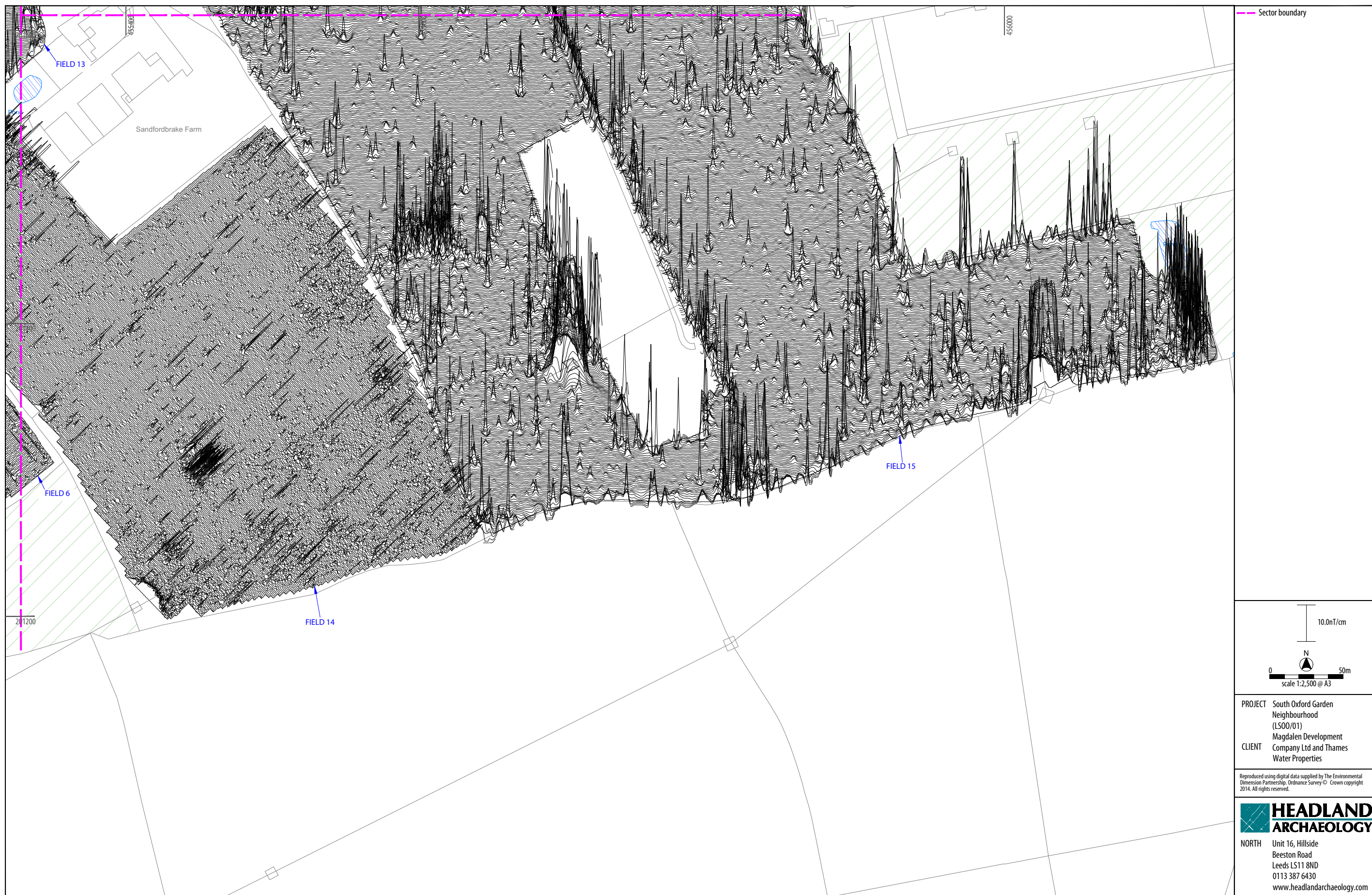
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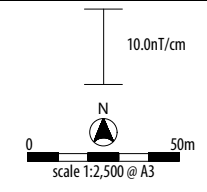
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Illus 32
Processed greyscale magnetometer data; Sector 6



— Sector boundary



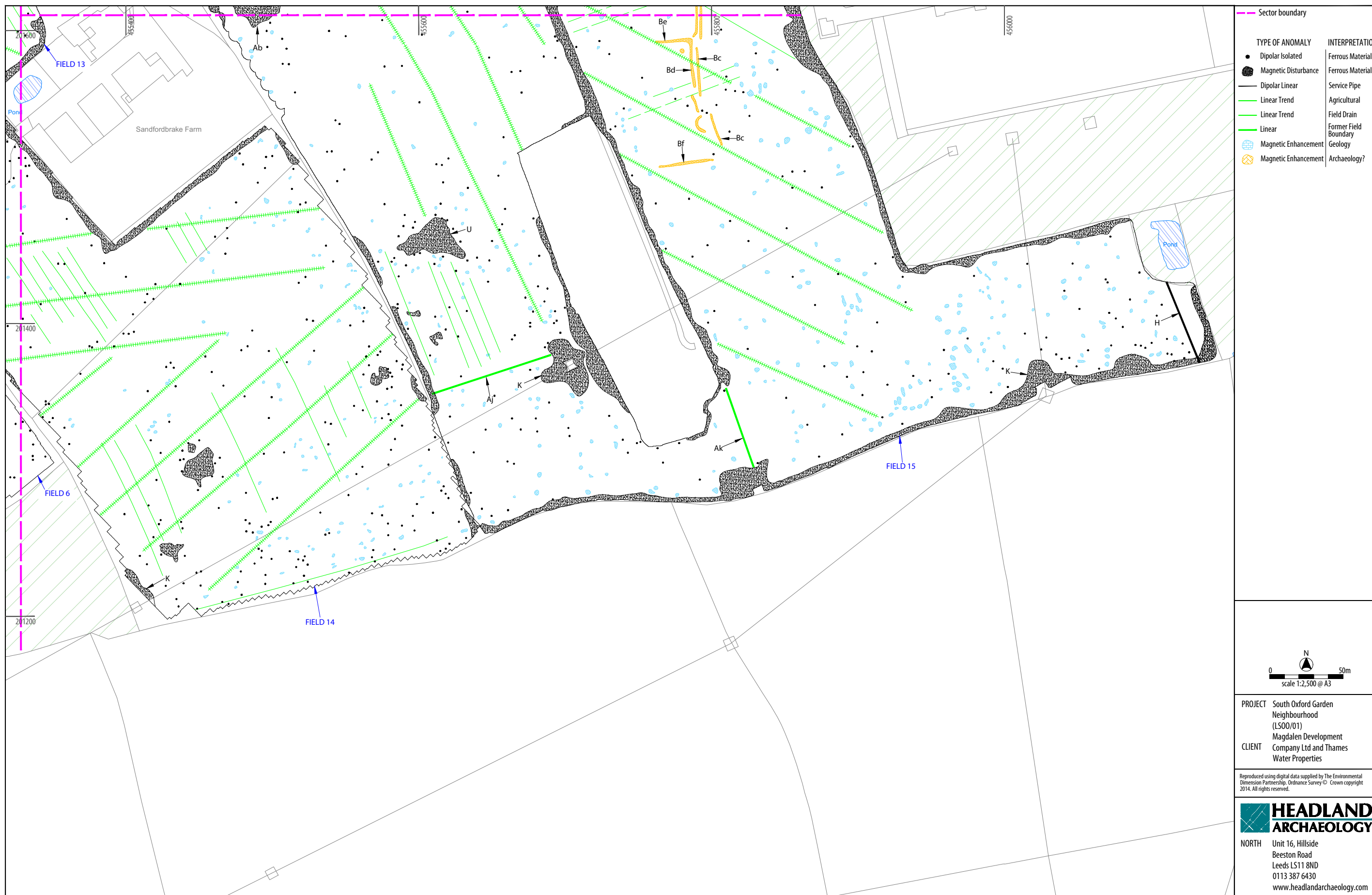
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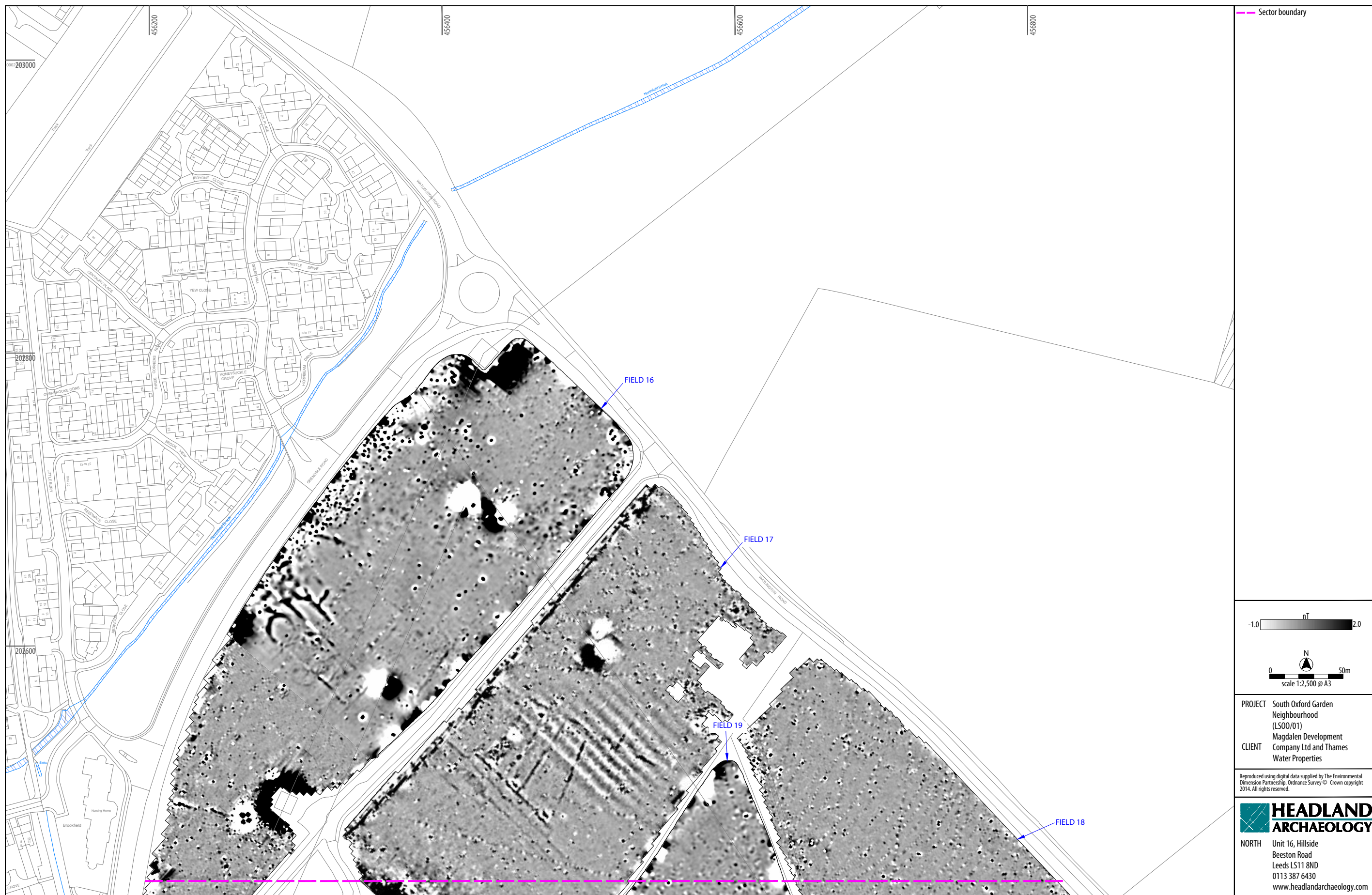
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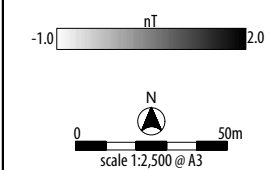
Illus 33
XY trace plot of magnetometer data; Sector 6



Illus 34 Interpretation of magnetometer data; Sector 6



— Sector boundary



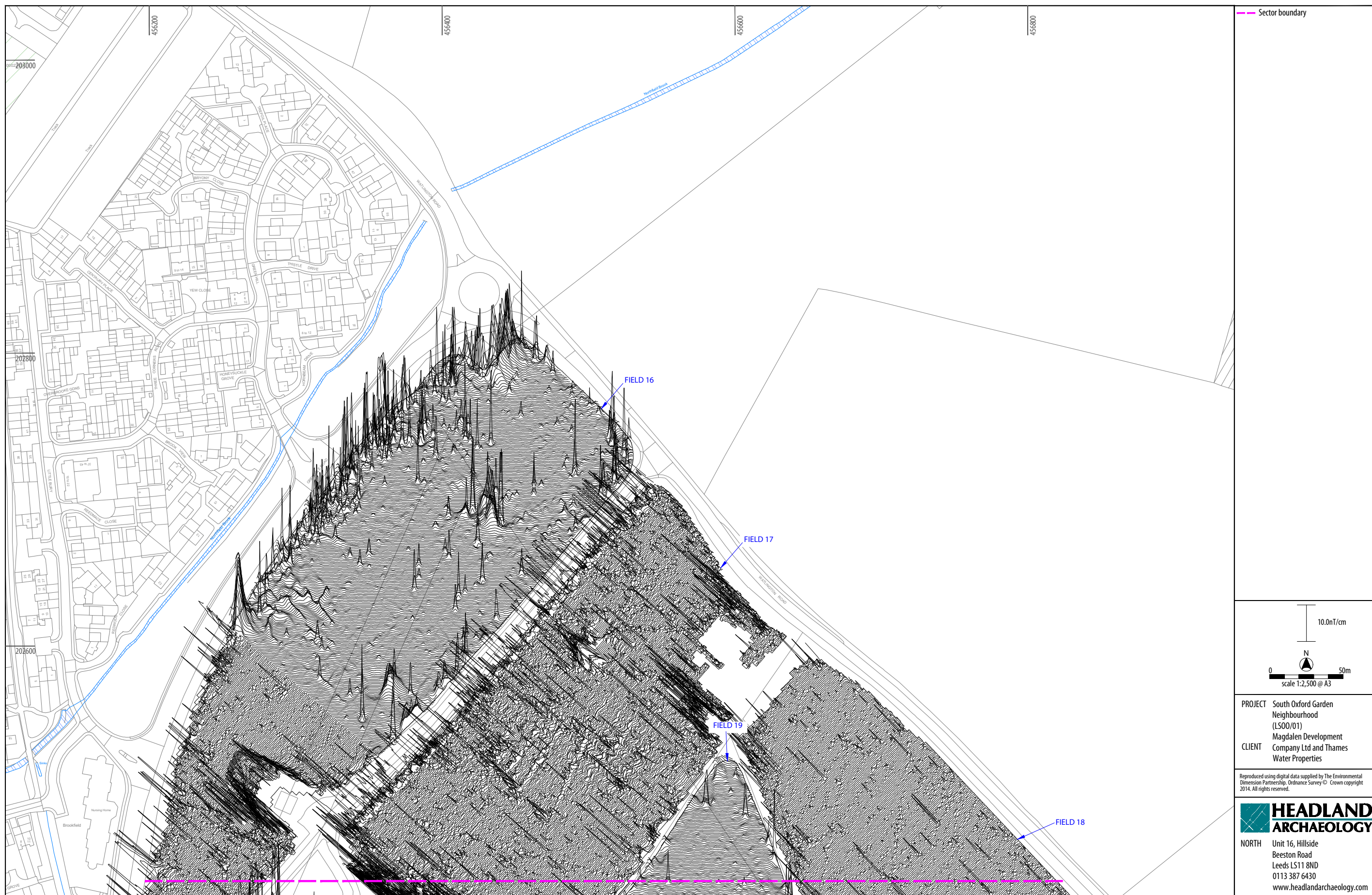
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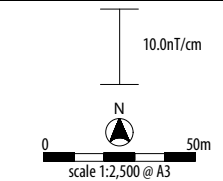
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Illus 35
Processed greyscale magnetometer data; Sector 7



— Sector boundary



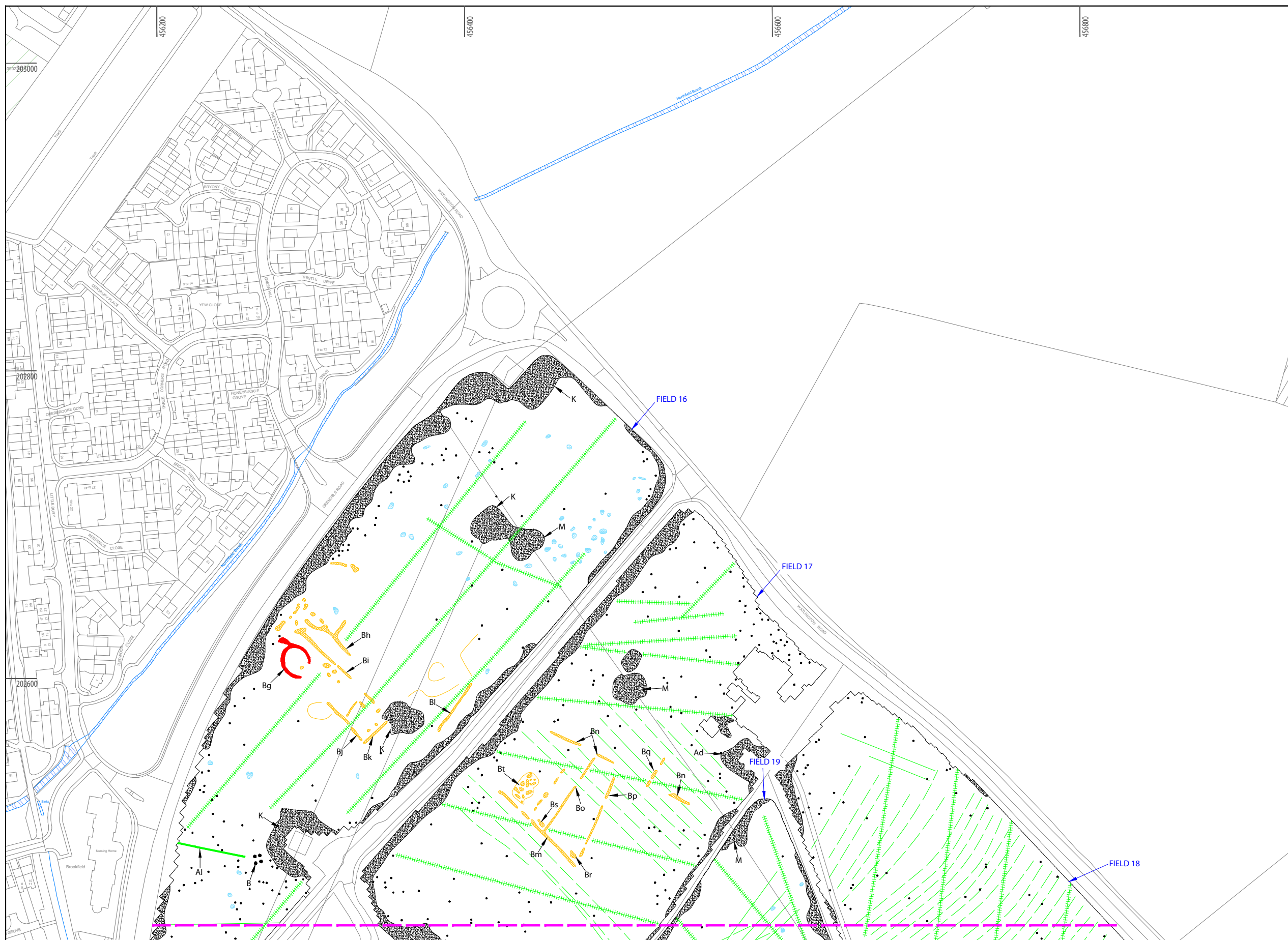
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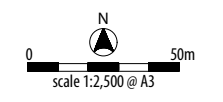
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Illus 36
XY trace plot of magnetometer data; Sector 7



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Magnetic Disturbance	Ferrous Material
— Linear Trend	Ridge and Furrow
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
● Magnetic Enhancement	Geology
— Linear Trend	Archaeology?
● Magnetic Enhancement	Archaeology?
● Magnetic Enhancement	Archaeology

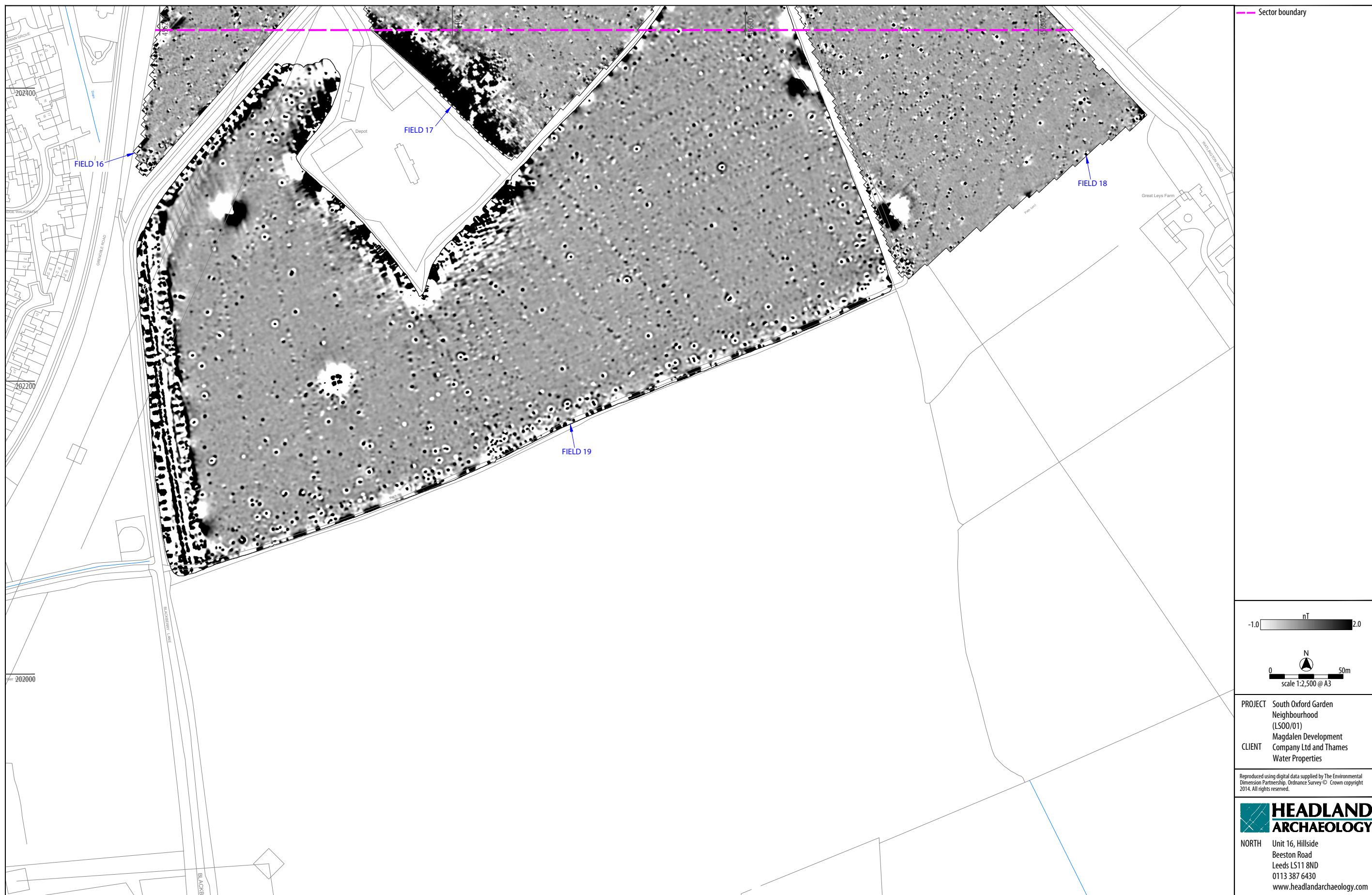


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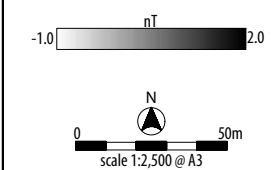
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Illus 37 Interpretation of magnetometer data; Sector 7



— Sector boundary



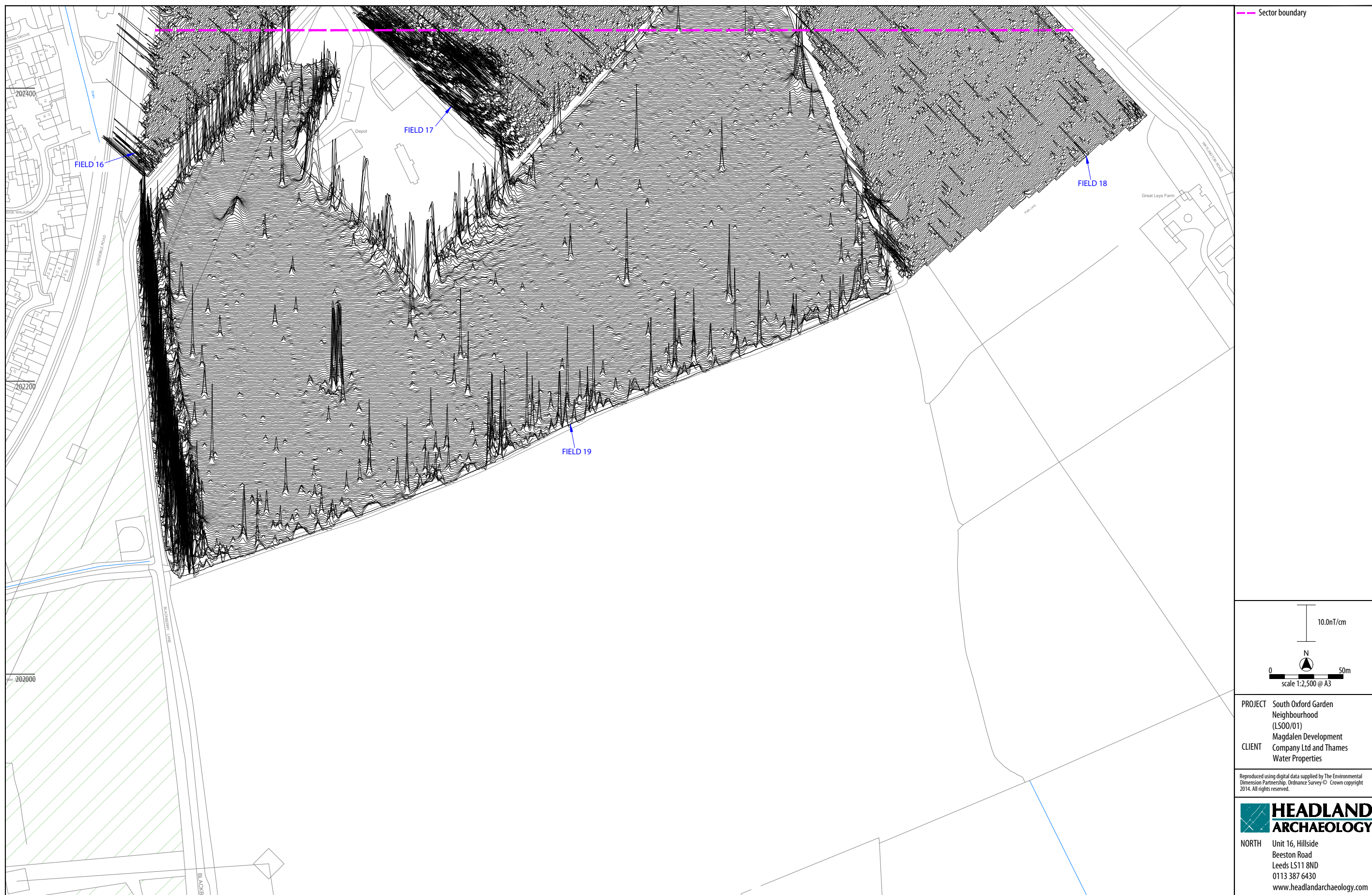
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Illus 38
Processed greyscale magnetometer data; Sector 8



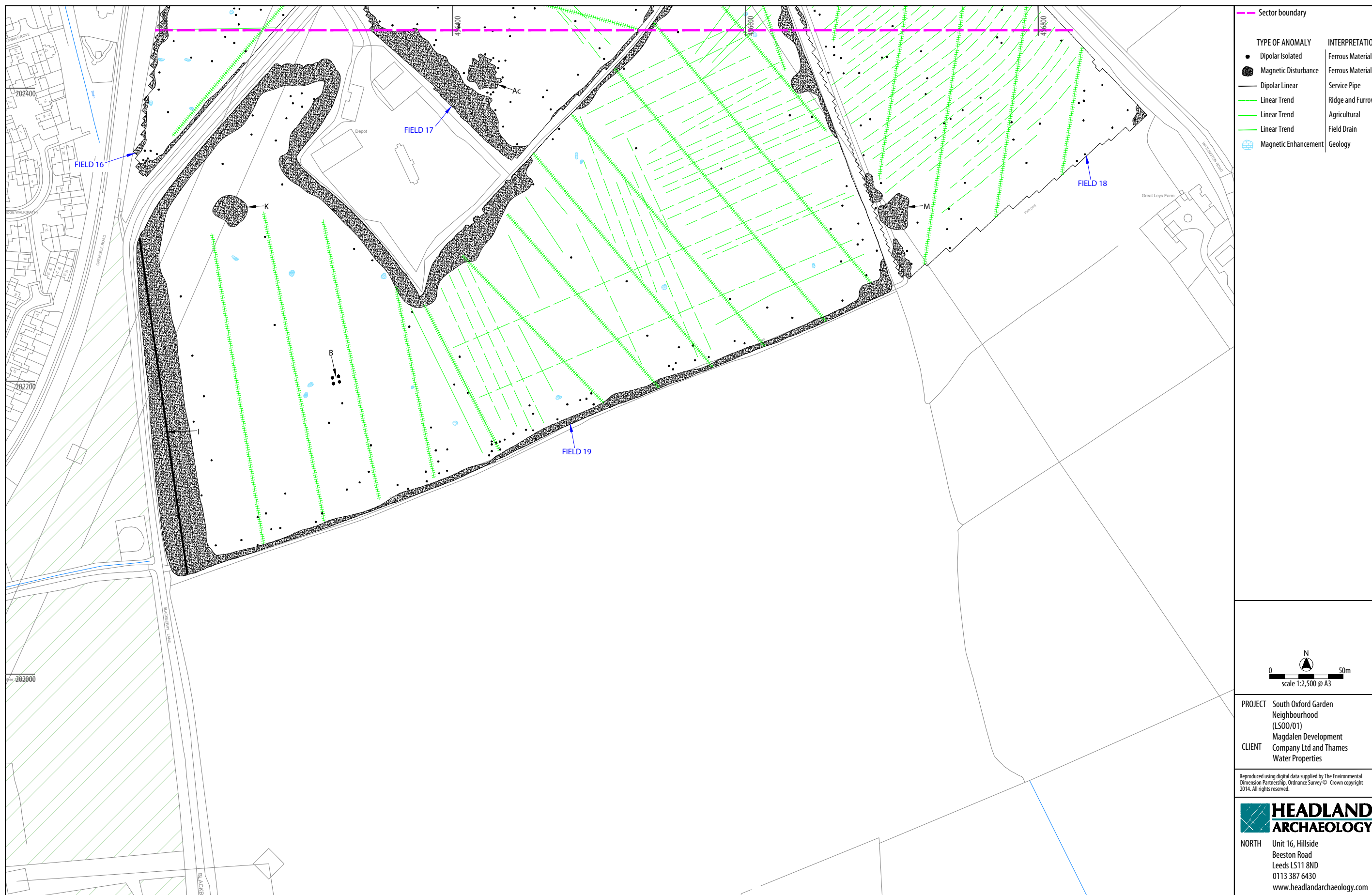
Illus 39
XY trace plot of magnetometer data; Sector 8

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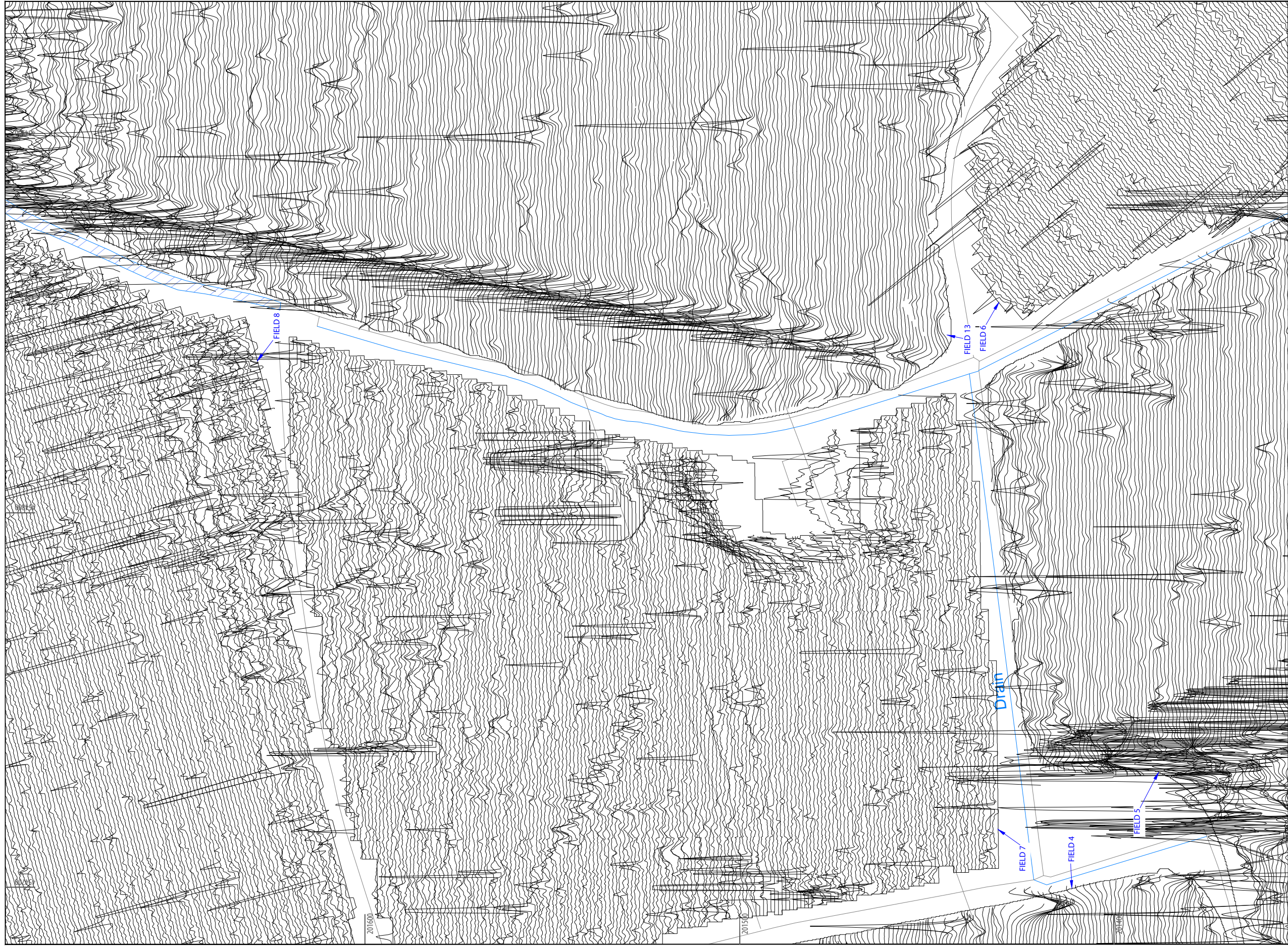



Illus 40
Interpretation of magnetometer data; Sector 8



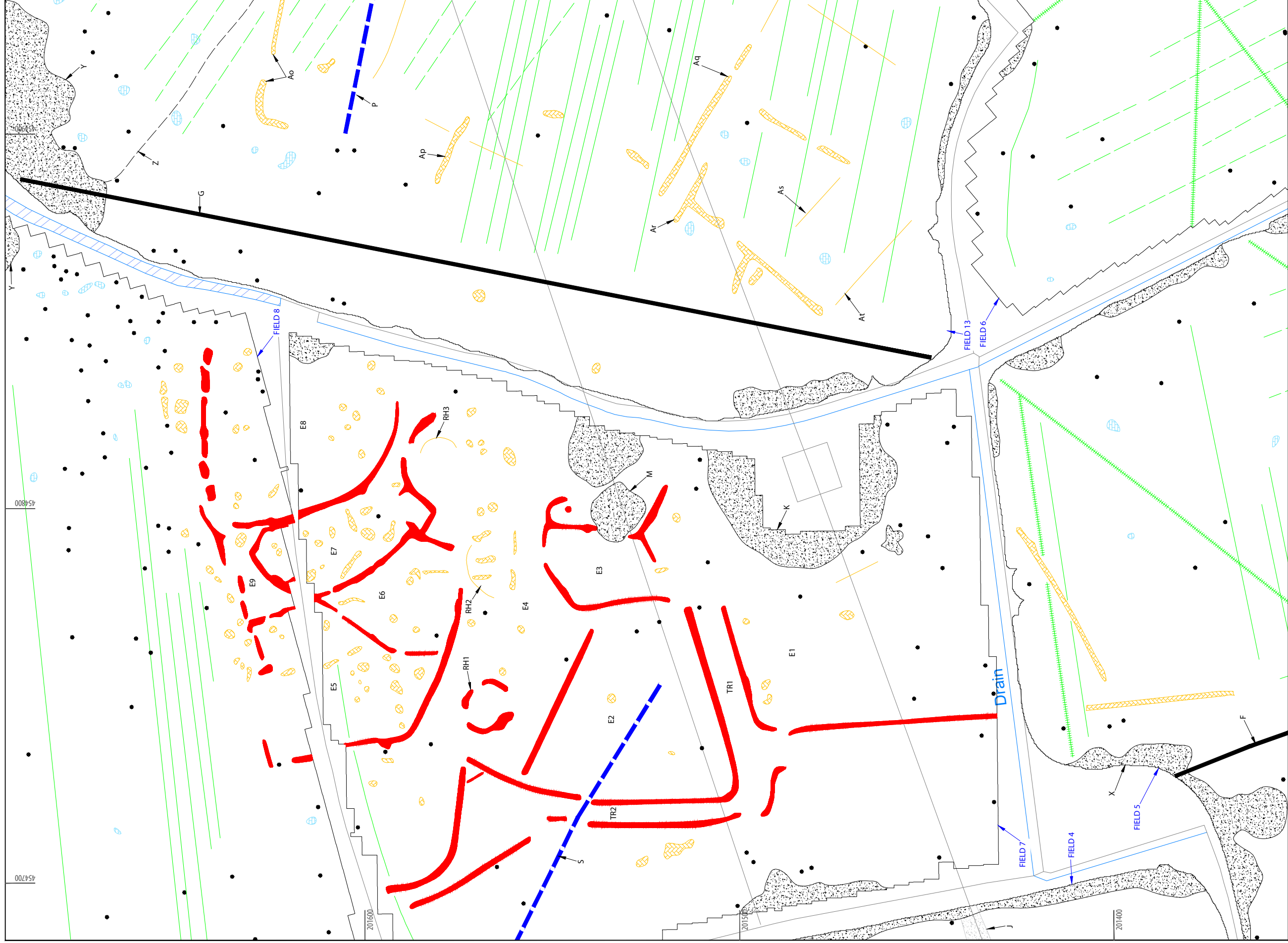
 <p>HEADLAND ARCHAEOLOGY NORTH Unit 16, Hillside Beeston Road Leeds LS11 8ND 0113 387 6430 www.headlandarchaeology.com</p>	<p>PROJECT South Oxford Garden Neighbourhood (LS00/01) Magdalen Development Company Ltd and Thames Water Properties</p> <p>CLIENT</p> <p><small>Reprocessed aerial data supplied by The Environmental Dimension Partnership, Ordnance Survey © Crown copyright 2014. All rights reserved.</small></p>	<p>NT</p> <p>0 2.0</p> <p>0 25m</p> <p>scale 1:1,000 @A3</p>
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Illus 41
Processed greyscale magnetometer data; AAP 1



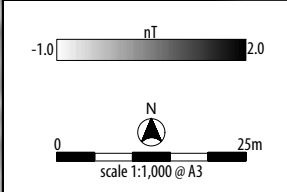
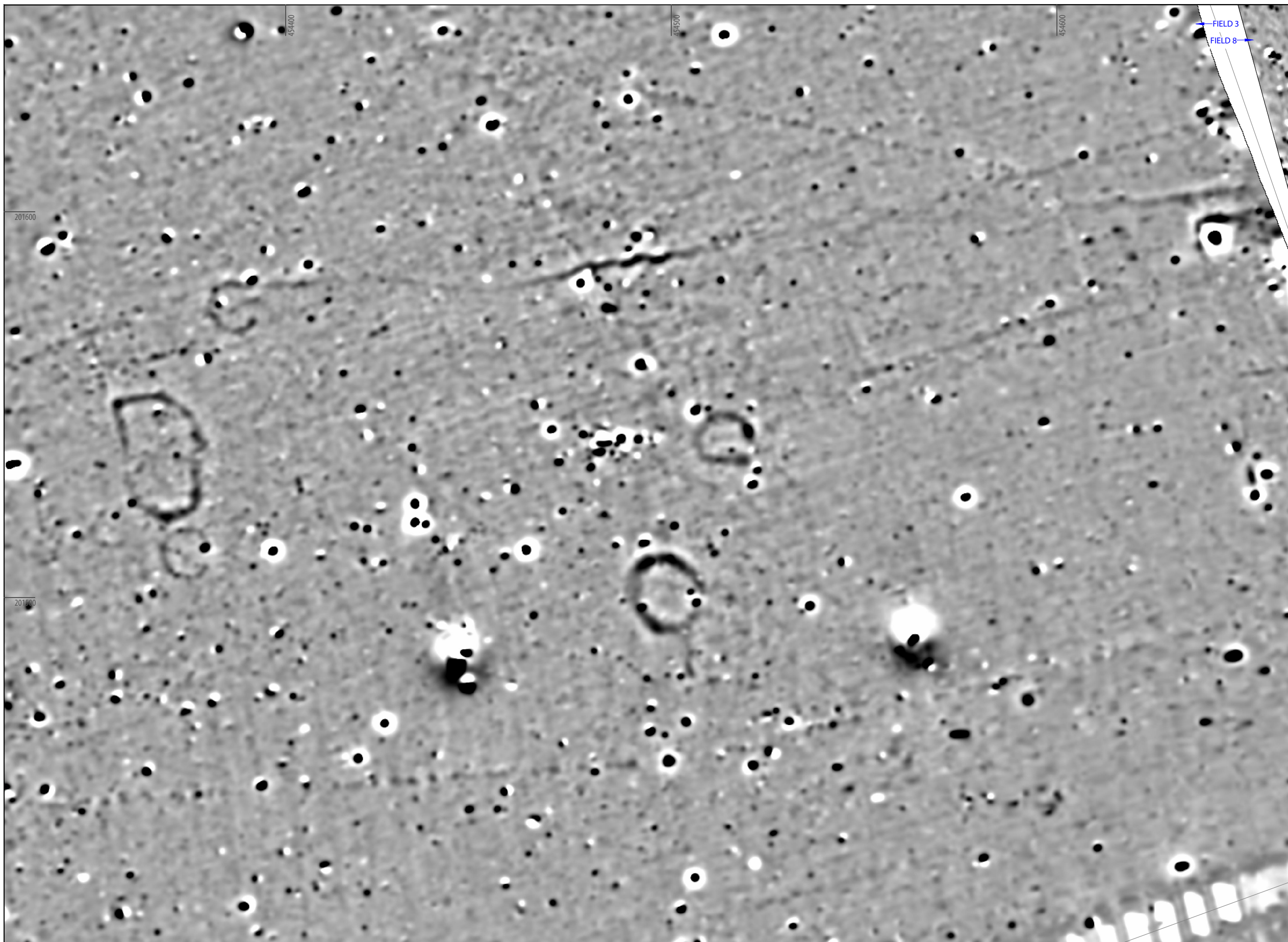
 <p>HEADLAND ARCHAEOLOGY</p> <p>NORTH Unit 16, Hillside Beeston Road Leeds, LS11 8ND 0113 387 6430 www.headlandarchaeology.com</p>	<p>PROJECT South Oxford Garden Neighbourhood (LS00/01)</p> <p>CLIENT Magdalen Development Company Ltd and Thames Water Properties</p> <p><small>Reproduced using data supplied by The Environmental Dimension Partnership, Ordnance Survey © Crown copyright 2014. All rights reserved.</small></p>	<p>10.0m/1cm</p> <p>N</p> <p>0 25m</p> <p>scale 1:1,000 @A3</p>
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illus 42
XY trace plot of magnetometer data; AAP 1



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<p>0 25m scale 1:1,000 @A3</p>		<p>TYPE OF ANOMALY INTERPRETATION TYPE OF ANOMALY INTERPRETATION</p>	
<ul style="list-style-type: none"> Dipolar Isolated Magnetic Disturbance Dipolar Linear Linear 	<ul style="list-style-type: none"> Ferrous Material Ferrous Material Overhead Cables Service Pipe Modern Track Ridge and Furrow 	<ul style="list-style-type: none"> Linear Trend Linear Trend Linear Magnetic Enhancement Linear Trend Magnetic Enhancement 	<ul style="list-style-type: none"> Agricultural Field Drain Former Field Boundary Geology Archaeology? Archaeology?
<p>TYPE OF ANOMALY INTERPRETATION TYPE OF ANOMALY INTERPRETATION</p> <ul style="list-style-type: none"> Magnetic Disturbance Magnetic Enhancement Archaeology 			

Illus 43
 Interpretation of magnetometer data; AAP 1



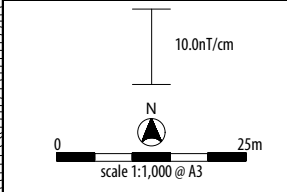
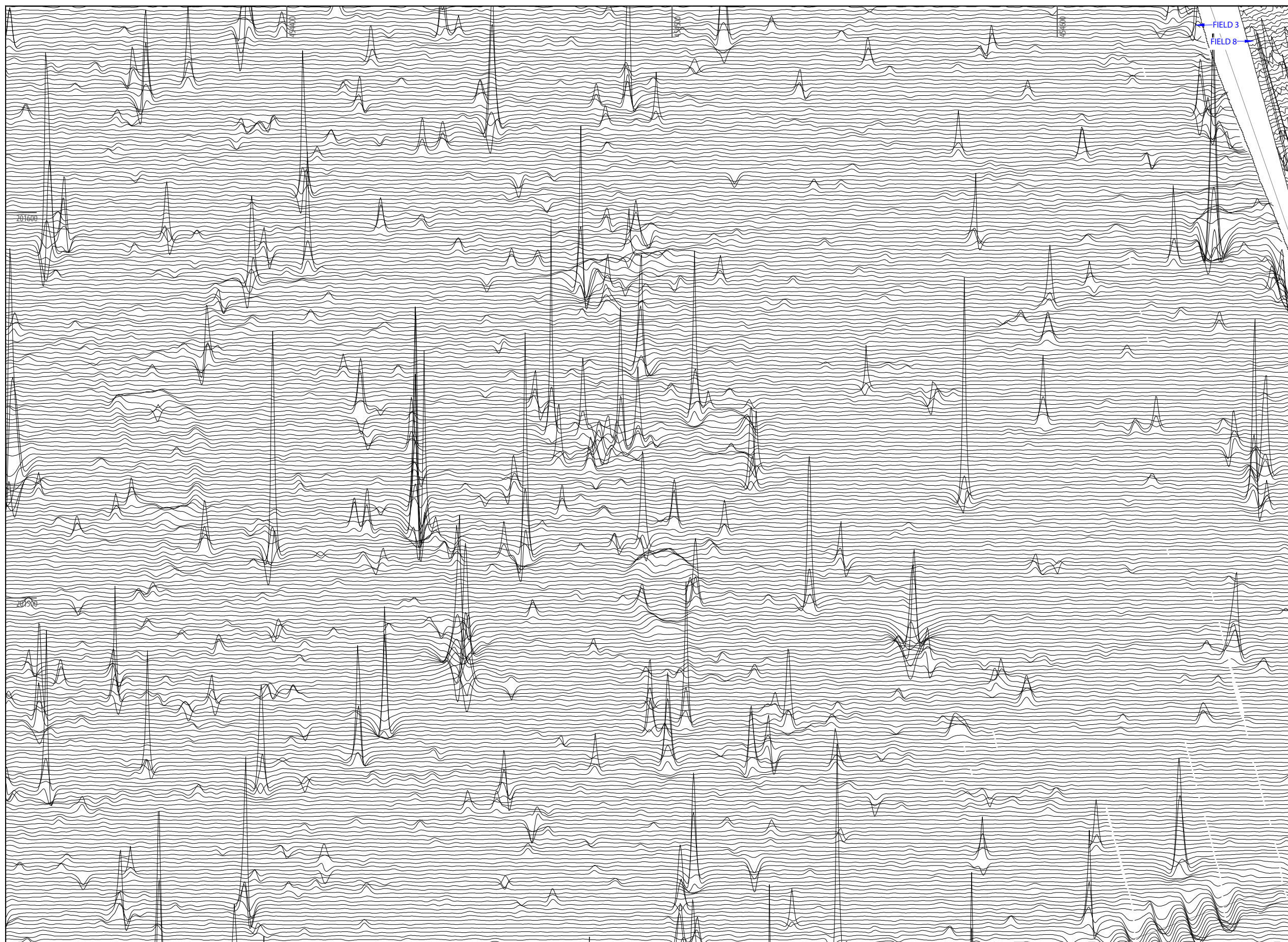
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Illus 44
Processed greyscale magnetometer data; AAP 2



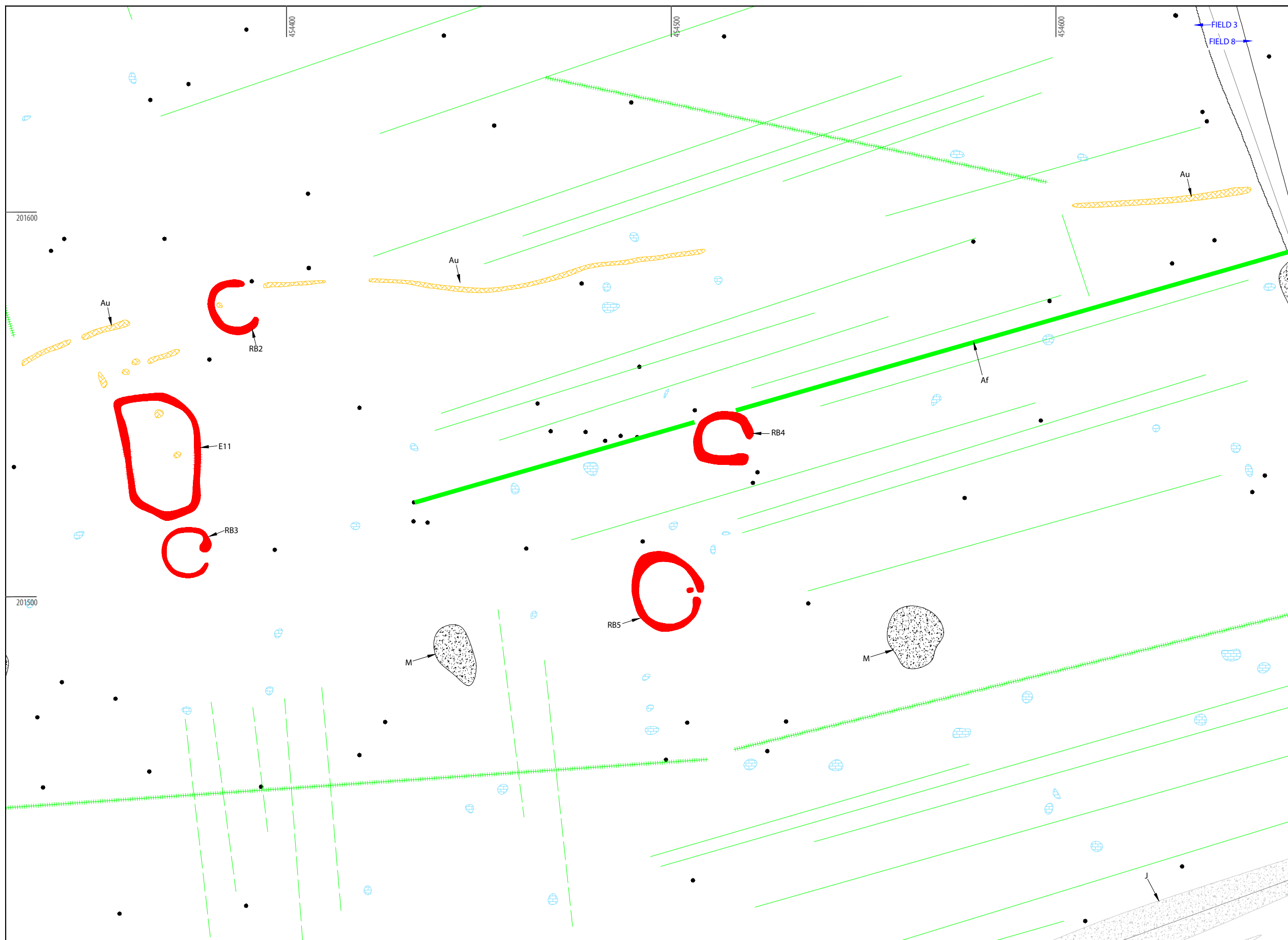
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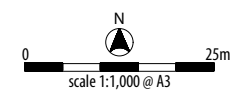
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Illus 45
XY trace plot of magnetometer data; AAP 2



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Magnetic Disturbance	Ferrous Material
● Magnetic Disturbance	Overhead Cables
— Linear Trend	Ridge and Furrow
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
● Magnetic Enhancement	Geology
● Magnetic Enhancement	Archaeology?
● Magnetic Enhancement	Archaeology



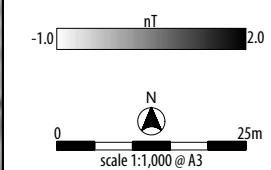
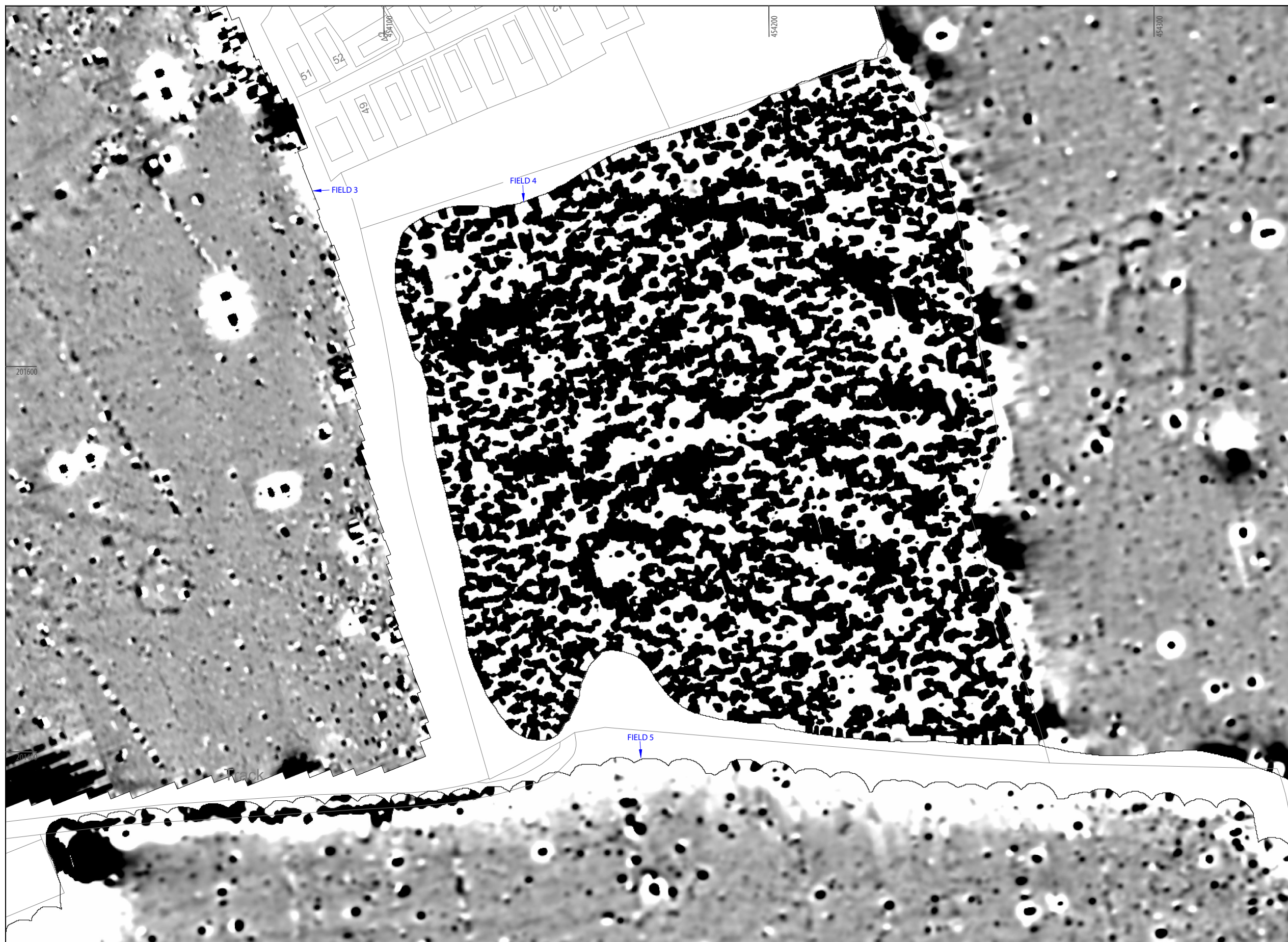
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Illus 46 Interpretation of magnetometer data; AAP 2



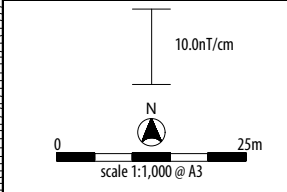
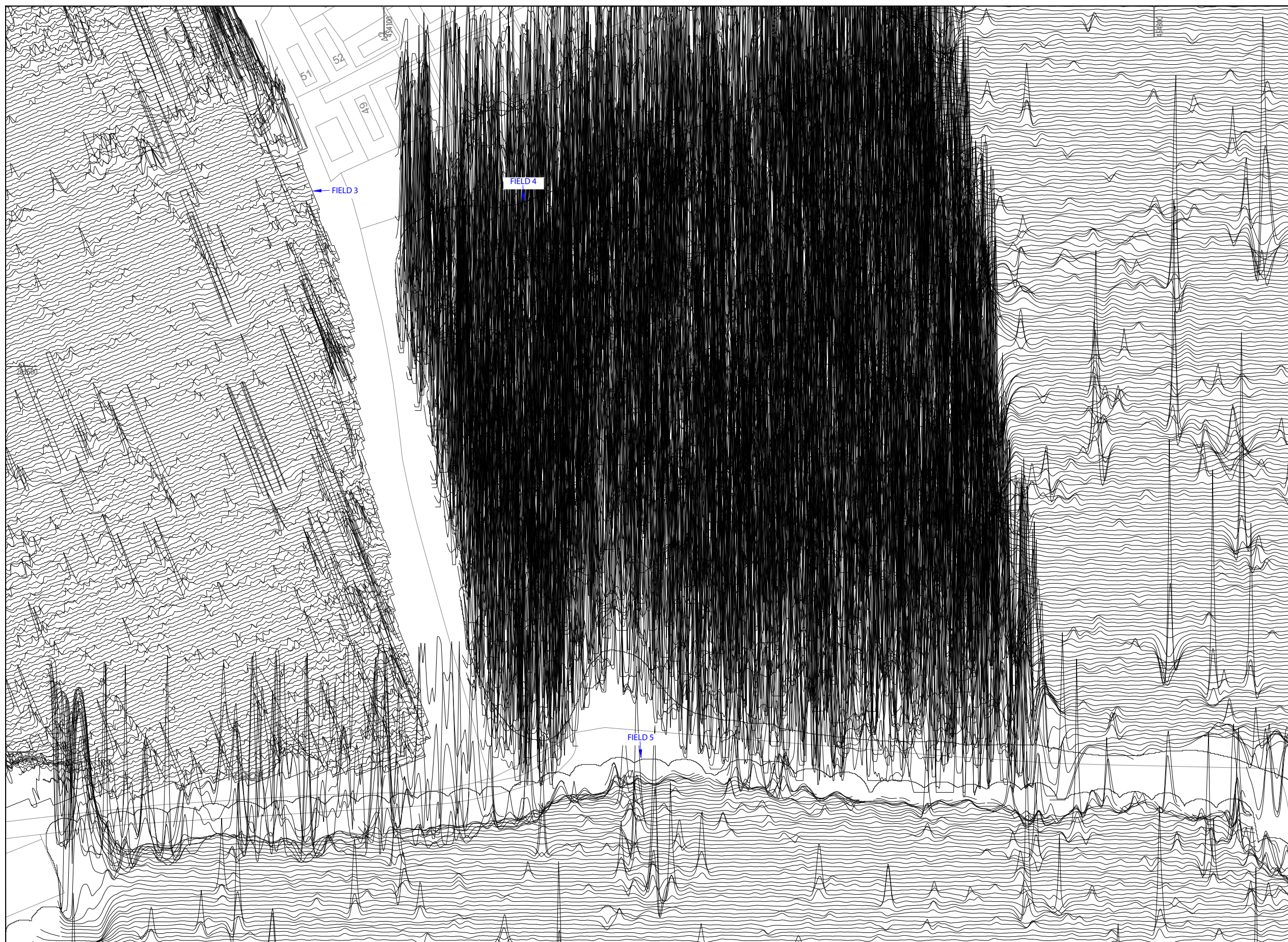
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Illus 47
Processed greyscale magnetometer data; AAP 3



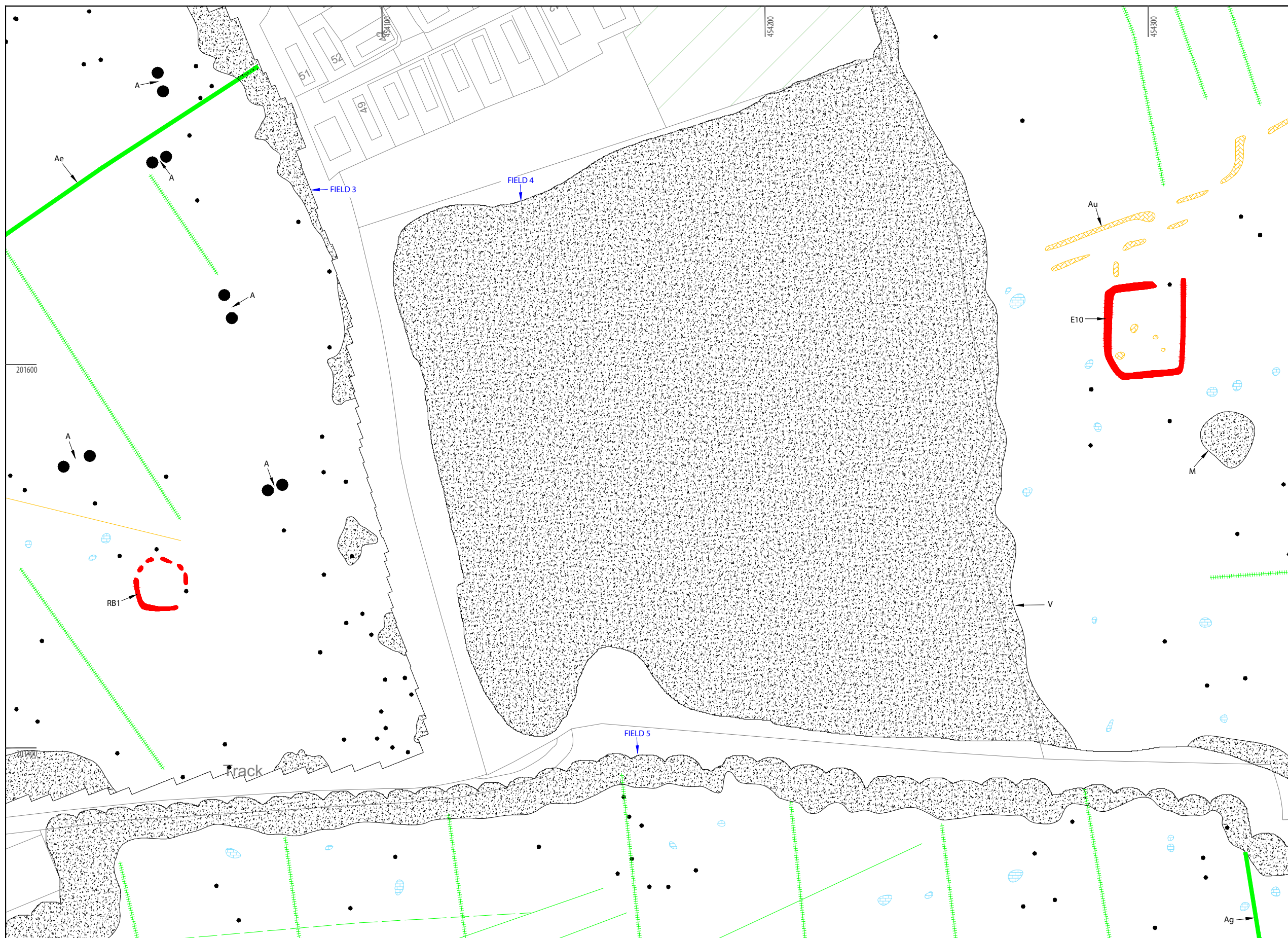
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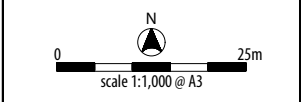
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Illus 48
XY trace plot of magnetometer data; AAP 3



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Dipolar Isolated	Goal Posts
● Magnetic Disturbance	Ferrous Material
— Linear Trend	Ridge and Furrow
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
⊕ Magnetic Enhancement	Geology
— Linear Trend	Archaeology?
⊗ Magnetic Enhancement	Archaeology?
● Magnetic Enhancement	Archaeology



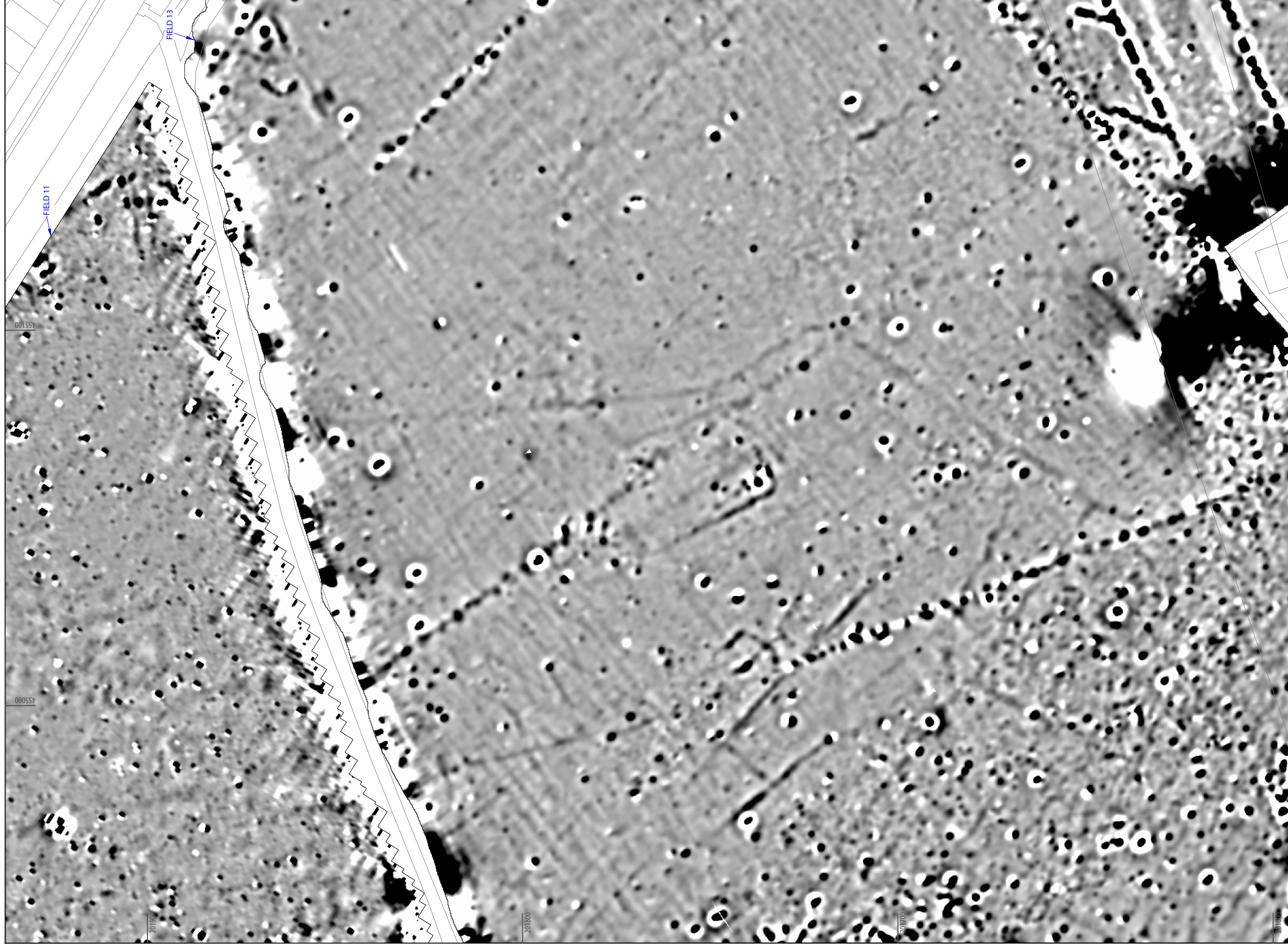
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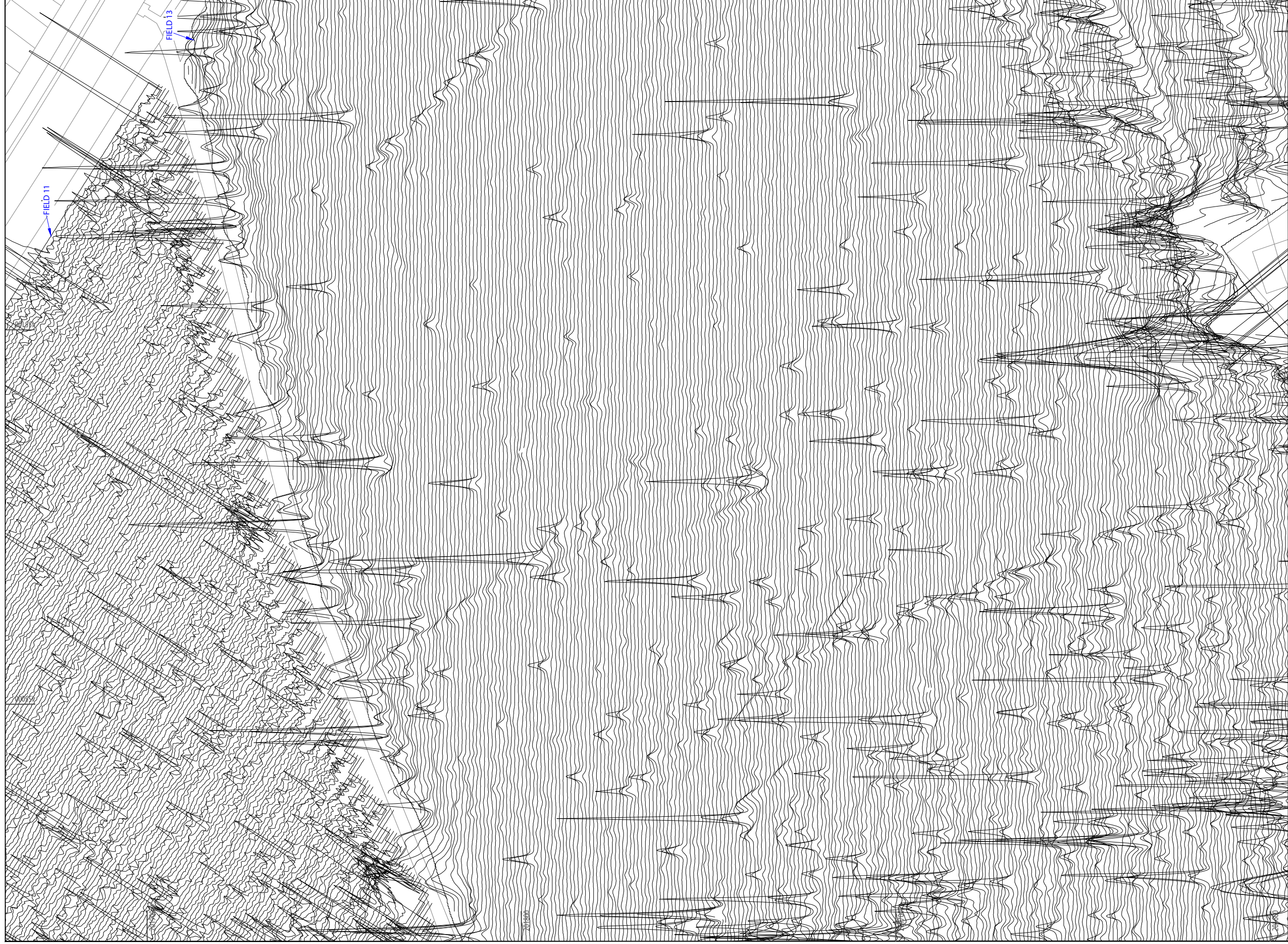
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Illus 49 Interpretation of magnetometer data; AAP 3

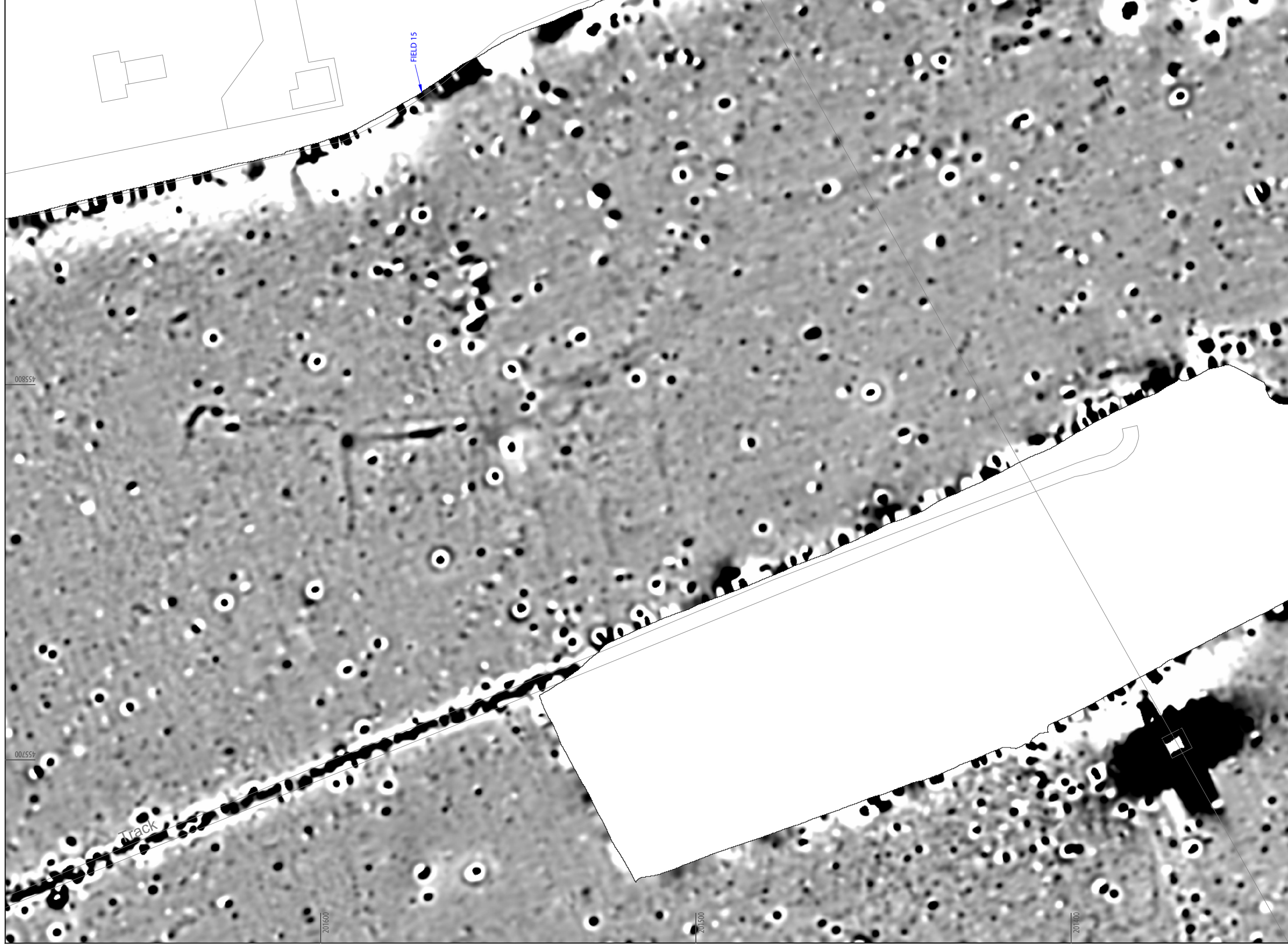


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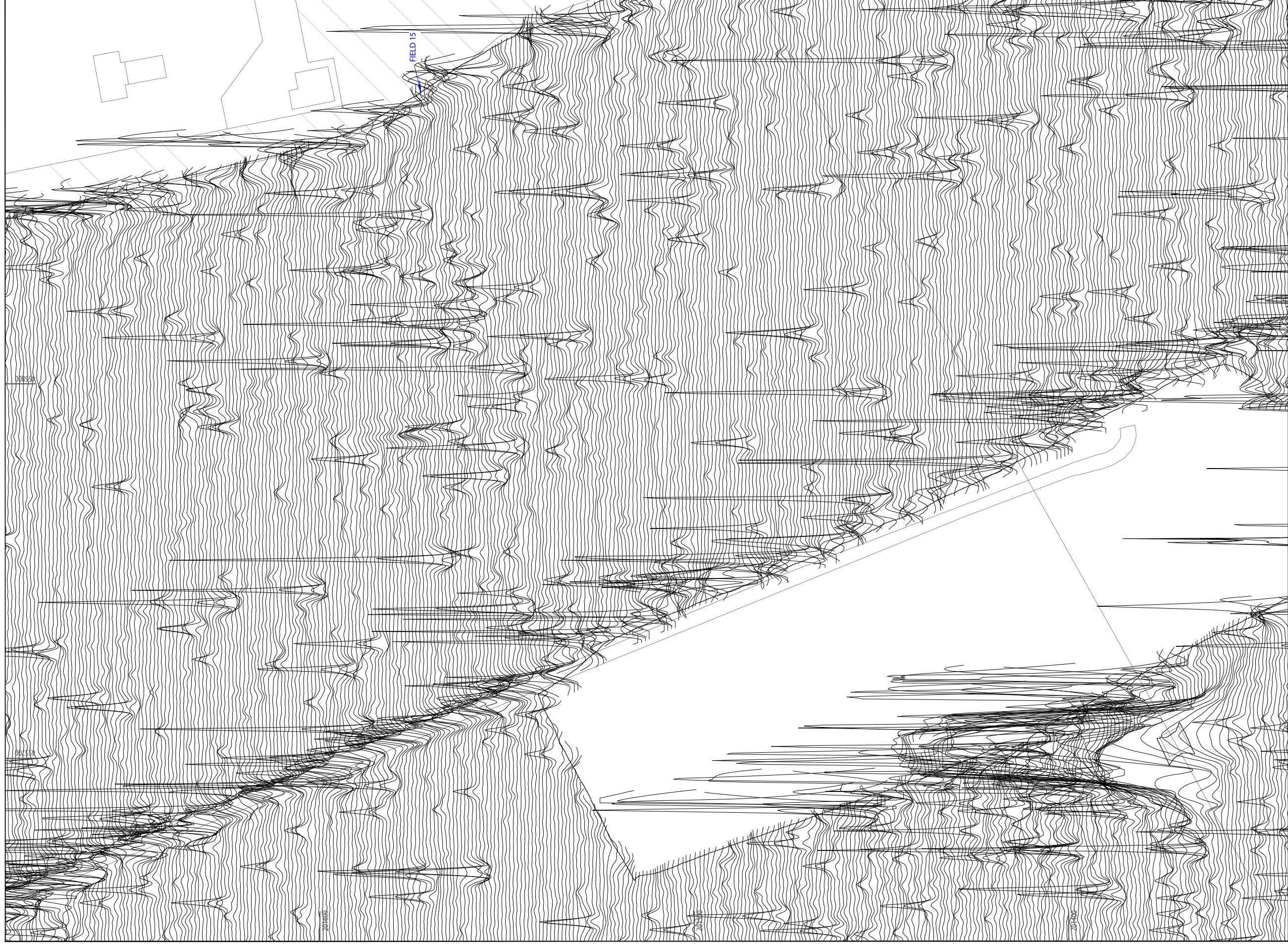
 <p>HEADLAND ARCHAEOLOGY</p> <p>NORTH Unit 16, Hillside Beeston Road Leeds LS11 8ND 0113 387 6430 www.headlandarchaeology.com</p>	<p>PROJECT South Oxford Garden Neighbourhood (LS00/01)</p>	<p>10.0m/cm</p> <p>0 25m</p> <p>scale 1:1,000 @A3</p>
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illus 51
XY trace plot of magnetometer data; AAP 4



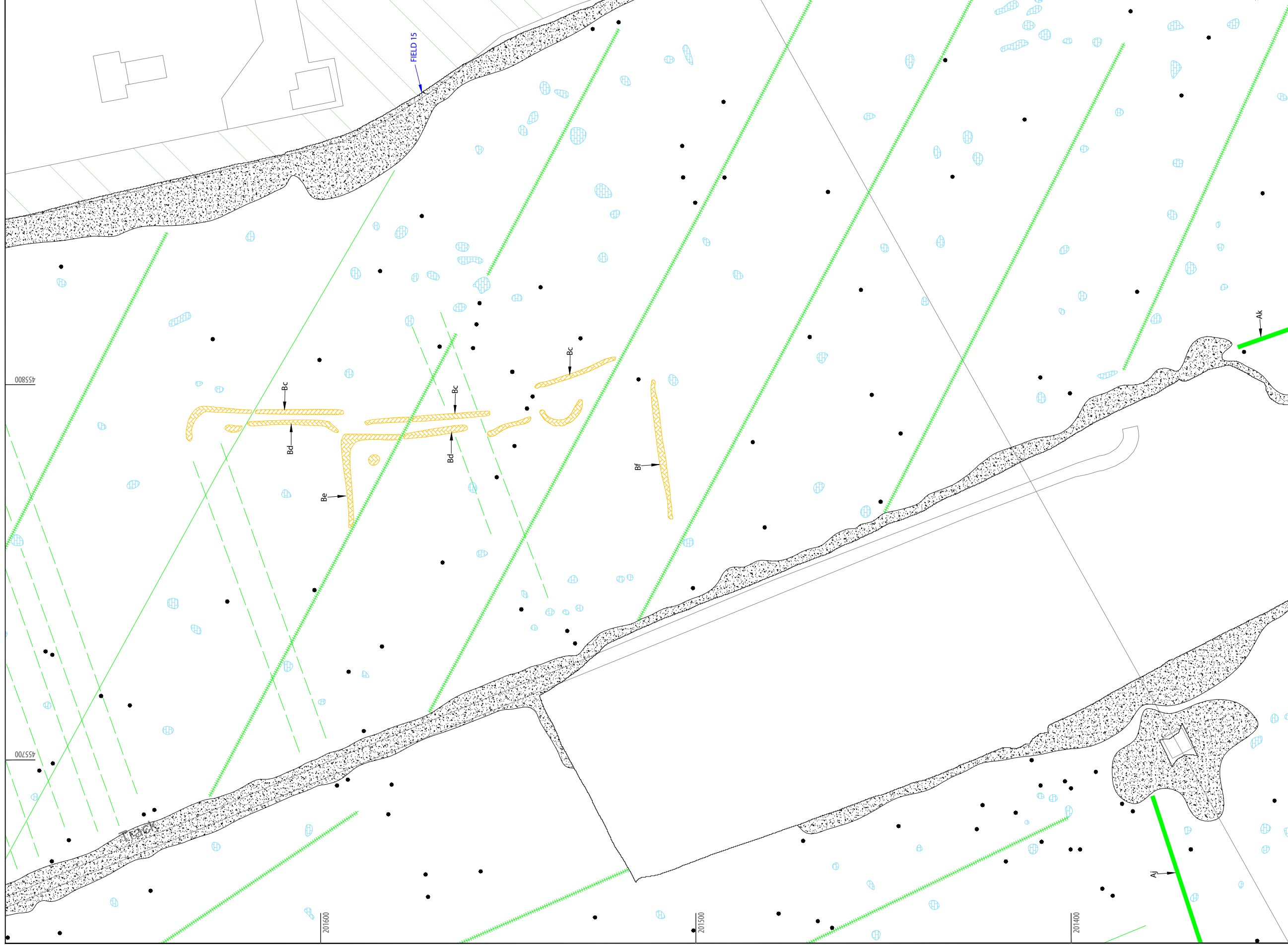
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<p>455800</p> <p>455700</p> <p>201600</p> <p>201500</p> <p>201400</p> <p>201300</p> <p>NT</p> <p>0 2.0</p> <p>0 25m</p> <p>scale 1:1,000 @A3</p>		

Illus 53
 Processed greyscale magnetometer data; AAP 5



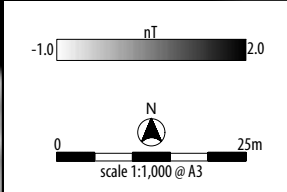
 <p>HEADLAND ARCHAEOLOGY</p> <p>NORTH Unit 16, Hillside Beeston Road Leeds, LS11 8ND 0113 387 6430 www.headlandarchaeology.com</p>	<p>PROJECT South Oxford Garden Neighbourhood (LS00/01)</p> <p>CLIENT Magdalen Development Company Ltd and Thames Water Properties</p> <p><small>Reproduced using data supplied by The Environmental Dimension Partnership, Ordnance Survey © Crown copyright 2014. All rights reserved.</small></p>	<p>10.0m/cm</p> <p>N</p> <p>0 25m</p> <p>scale 1:1,000 @A3</p>
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Illus 54
XY trace plot of magnetometer data; AAP 5



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0085800 455700		201600 201500 201400	
TYPE OF ANOMALY Dipolar Isolated Magnetic Disturbance Linear Trend Linear Trend Linear Trend Linear		INTERPRETATION Ferrous Material Ferrous Material Ridge and Furrow Agricultural Field Drain Former Field Boundary	
TYPE OF ANOMALY Magnetic Enhancement Magnetic Enhancement		INTERPRETATION Geology Archaeology?	
0 25m scale 1:1,000 @A3		N	

Illus 55
 Interpretation of magnetometer data; AAP 5



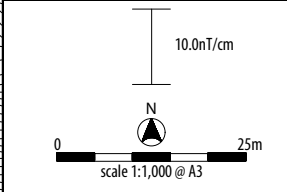
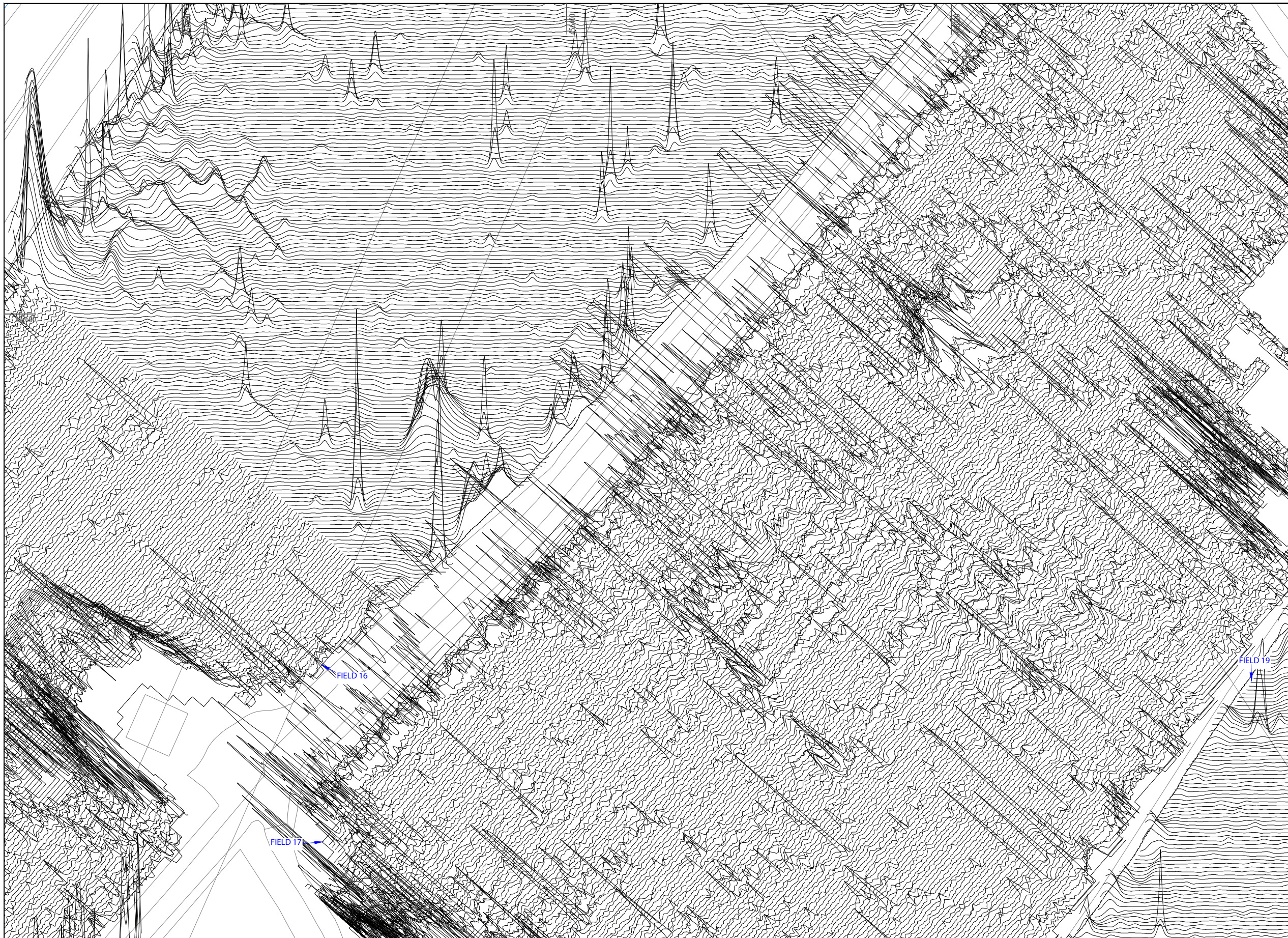
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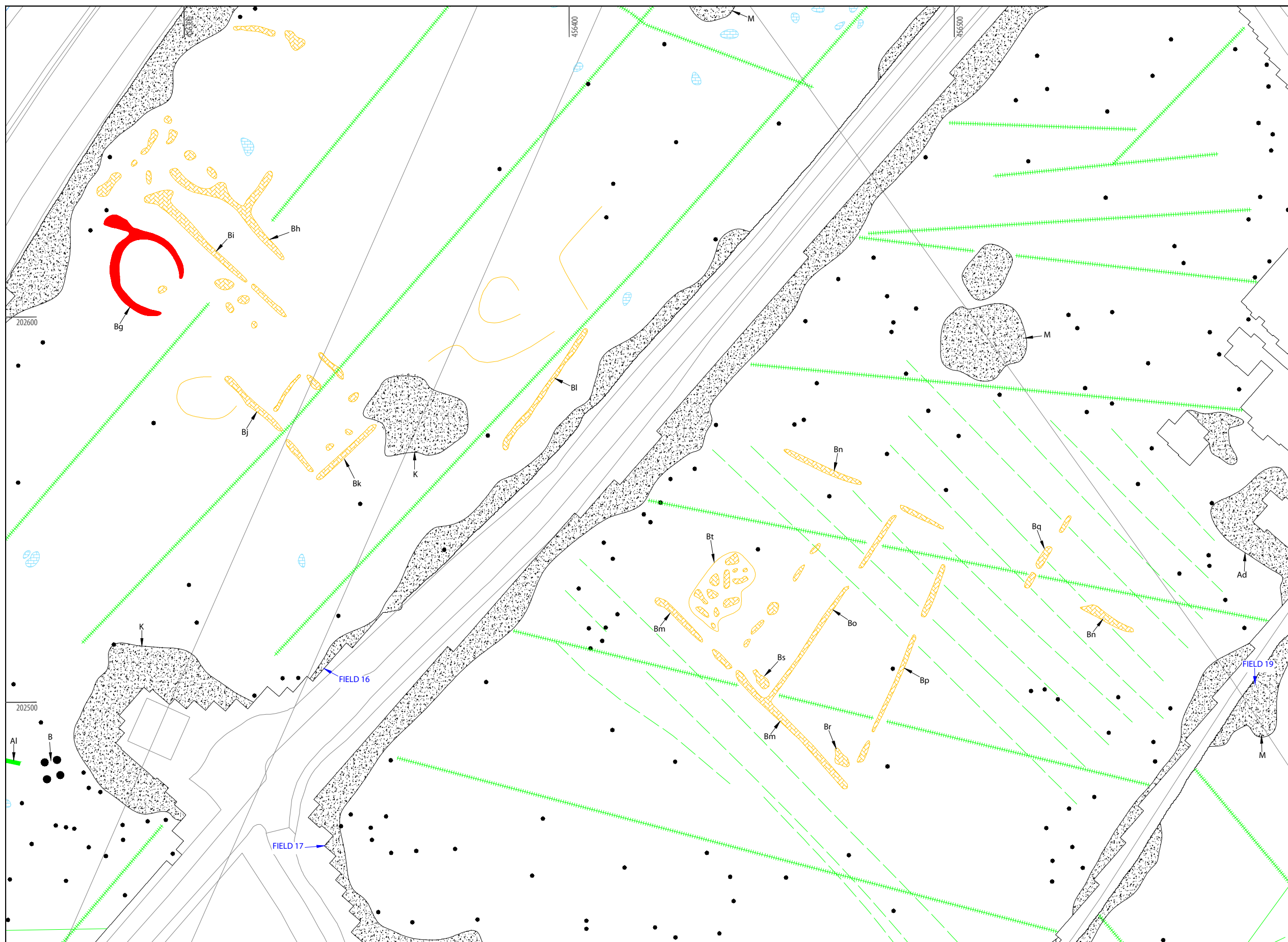
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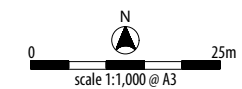
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Illus 57
XY trace plot of magnetometer data; AAP 6



TYPE OF ANOMALY	INTERPRETATION
● Dipolar Isolated	Ferrous Material
● Magnetic Disturbance	Ferrous Material
— Linear Trend	Ridge and Furrow
— Linear Trend	Agricultural
— Linear Trend	Field Drain
— Linear	Former Field Boundary
● Magnetic Enhancement	Geology
— Linear Trend	Archaeology?
■ Magnetic Enhancement	Archaeology?
● Magnetic Enhancement	Archaeology



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Illus 58
Interpretation of magnetometer data; AAP 6

7 APPENDICES

APPENDIX 1 MAGNETOMETER SURVEY

Magnetic susceptibility and soil magnetism

Iron makes up about 6% of the Earth's crust and is mostly present in soils and rocks as minerals such as maghaemite and haematite. These minerals have a weak, measurable magnetic property termed magnetic susceptibility. Human activities can redistribute these minerals and change (enhance) others into more magnetic forms so that by measuring the magnetic susceptibility of the topsoil, areas where human occupation or settlement has occurred can be identified by virtue of the attendant increase (enhancement) in magnetic susceptibility. If the enhanced material subsequently comes to fill features, such as ditches or pits, localised isolated and linear magnetic anomalies can result whose presence can be detected by a magnetometer (fluxgate gradiometer).

In general, it is the contrast between the magnetic susceptibility of deposits filling cut features, such as ditches or pits, and the magnetic susceptibility of topsoils, subsoils and rocks into which these features have been cut, which causes the most recognisable responses. This is primarily because there is a tendency for magnetic ferrous compounds to become concentrated in the topsoil, thereby making it more magnetic than the subsoil or the bedrock. Linear features cut into the subsoil or geology, such as ditches, that have been silted up or have been backfilled with topsoil will therefore usually produce a positive magnetic response relative to the background soil levels. Discrete feature, such as pits, can also be detected.

The magnetic susceptibility of a soil can also be enhanced by the application of heat. This effect can lead to the detection of features such as hearths, kilns or areas of burning.

Types of magnetic anomaly

In the majority of instances anomalies are termed 'positive'. This means that they have a positive magnetic value relative to the magnetic background on any given site. However some features can manifest themselves as 'negative' anomalies that, conversely, means that the response is negative relative to the mean magnetic background.

Where it is not possible to give a probable cause of an observed anomaly a '?' is appended.

It should be noted that anomalies interpreted as modern in origin might be caused by features that are present in the topsoil or upper layers of the subsoil. Removal of soil to an archaeological or natural layer can therefore remove the feature causing the anomaly.

The types of response mentioned above can be divided into five main categories that are used in the graphical interpretation of the magnetic data:

Isolated dipolar anomalies (iron spikes)

These responses are typically caused by ferrous material either on the surface or in the topsoil. They cause a rapid variation in the magnetic response giving a characteristic 'spiky' trace. Although ferrous archaeological artefacts could produce this type of response, unless there is supporting evidence for an archaeological interpretation, little emphasis is normally given to such anomalies, as modern ferrous objects are common on rural sites, often being present as a consequence of manuring.

Areas of magnetic disturbance

These responses can have several causes often being associated with burnt material, such as slag waste or brick rubble or other strongly magnetised/fired material. Ferrous structures such as pylons, mesh or barbed wire fencing and buried pipes can also cause the same disturbed response. A modern origin is usually assumed unless there is other supporting information.

Linear trend

This is usually a weak or broad linear anomaly of unknown cause or date. These anomalies are often caused by agricultural activity, either ploughing or land drains being a common cause.

Areas of magnetic enhancement/positive isolated anomalies

Areas of enhanced response are characterised by a general increase in the magnetic background over a localised area whilst discrete anomalies are manifest by an increased response (sometimes only visible on an XY trace plot) on two or three successive traverses. In neither instance is there the intense dipolar response characteristic exhibited by an area of magnetic disturbance or of an 'iron spike' anomaly (see above). These anomalies can be caused by infilled discrete archaeological features such as pits or post-holes or by kilns. They can also be caused by pedological variations or by natural infilled features on certain geologies. Ferrous material in the subsoil can also give a similar response. It can often therefore be very difficult to establish an anthropogenic origin without intrusive investigation or other supporting information.

Linear and curvilinear anomalies

Such anomalies have a variety of origins. They may be caused by agricultural practice (recent ploughing trends, earlier ridge and furrow regimes or land drains), natural geomorphological features such as palaeochannels or by infilled archaeological ditches.

APPENDIX 2 SURVEY LOCATION INFORMATION

An initial survey base station was established using a Trimble VRS differential Global Positioning System (dGPS). The magnetometer data was georeferenced using a Trimble RTK differential Global Positioning System (Trimble R8s model).

Temporary sight markers were laid out using a Trimble VRS differential Global Positioning System (Trimble R8s model) to guide the operator and ensure full coverage. The accuracy of this dGPS equipment is better than 0.01m.

The survey data were then super-imposed onto a base map provided by the client to produce the displayed block locations. However, it should be noted that Ordnance Survey positional accuracy for digital map data has an error of 0.5m for urban and floodplain areas, 1.0m for rural areas and 2.5m for mountain and moorland areas. This potential error must be considered if coordinates are measured off hard copies of the mapping rather than using the digital coordinates.

Headland Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party.

APPENDIX 3 GEOPHYSICAL SURVEY ARCHIVE

The geophysical archive comprises:

- › an archive disk containing the raw data in XYZ format, a raster image of each greyscale plot with associate world file, and a PDF of the report

The project will be archived in-house in accordance with recent good practice guidelines (http://guides.archaeologydataservice.ac.uk/g2gp/Geophysics_3). The data will be stored in an indexed archive and migrated to new formats when necessary.

APPENDIX 4 OASIS DATA COLLECTION FORM: ENGLAND

OASIS ID: headland5-269101

PROJECT DETAILS

PROJECT NAME	South Oxford Garden Neighbourhood
SHORT DESCRIPTION OF THE PROJECT	Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey, covering approximately 187 hectares on land south of Oxford, Oxfordshire, to provide baseline information on the archaeological potential of the site. The survey has identified six areas of archaeological potential (AAP), including a central complex of anomalies indicative of settlement, located in close proximity to a findspot of Iron Age pottery and coins (AAP1). Five circular anomalies, possible barrows, and two rectangular enclosures are clearly identified within an east/west 'corridor' to the west of the settlement complex (AAP2 and AAP3). The eastern extent of the complex is less well defined although a broad area of faint and fragmented linear and rectilinear anomalies (AAP4) is identified extending north-eastwards towards Grenoble Road and the known Iron Age and Roman sites beyond. Two areas of archaeological potential have been identified in the eastern half of the survey. A small cluster of linear anomalies aligned oblique to the current pattern of land division may locate the remnants of a possible field system between Sandfordbrake Farm and Sandfordbrake Electricity Sub-station (AAP5). A more extensive concentration of anomalies (AAP6), including a clear circular anomaly, in the north-eastern corner of the site adjacent to Grenoble Road, and in close proximity to Roman Way, is also considered to be of probable archaeological origin. Based solely on the results and interpretation of the data, the archaeological potential across the majority of the site is considered to be low to moderate, but moderate to high in the six identified areas of potential.
PROJECT DATES	Start: 09-03-2016 End: 09-05-2016
PREVIOUS/FUTURE WORK	Not known / Not known
ANY ASSOCIATED PROJECT REFERENCE CODES	LS0015-01 - Contracting Unit No.
ANY ASSOCIATED PROJECT REFERENCE CODES	LS0016-01 - Contracting Unit No.
TYPE OF PROJECT	Field evaluation
SITE STATUS	None
CURRENT LAND USE	Cultivated Land 4 - Character Undetermined
MONUMENT TYPE	N/A None
MONUMENT TYPE	N/A None
SIGNIFICANT FINDS	N/A None
SIGNIFICANT FINDS	N/A None
METHODS & TECHNIQUES	"Geophysical Survey"
DEVELOPMENT TYPE	Not recorded
PROMPT	National Planning Policy Framework - NPPF
POSITION IN THE PLANNING PROCESS	Pre-application
SOLID GEOLOGY	AMPTHILL AND KIMMERIDGE CLAY
SOLID GEOLOGY (OTHER)	LITTLEMORE MEMBER; BECKLEY SAND MEMBER
DRIFT GEOLOGY	ALLUVIUM
DRIFT GEOLOGY	COLLUVIUM
TECHNIQUES	Magnetometry

PROJECT LOCATION

COUNTRY	England
SITE LOCATION	OXFORDSHIRE SOUTH OXFORDSHIRE SANDFORD ON THAMES South Oxford Garden Neighbourhood
POSTCODE	OX4 7HA
STUDY AREA	187 Hectares
SITE COORDINATES	SP 5490 0150 51.709086599945 -1.205355587352 51 42 32 N 001 12 19 W Point

SITE COORDINATES SP 5650 0240 51.71701978579 -1.182053090964 51 43 01 N 001 10 55 W Point

PROJECT CREATORS

NAME OF ORGANISATION	Headland Archaeology
PROJECT BRIEF ORIGINATOR	The Environmental Dimension Partnership
PROJECT DESIGN ORIGINATOR	Headland Archaeology
PROJECT DIRECTOR/MANAGER	Harrison, S
PROJECT SUPERVISOR	Schmidt, A
TYPE OF SPONSOR/FUNDING BODY	Developer

PROJECT ARCHIVES

PHYSICAL ARCHIVE EXISTS?	No
DIGITAL ARCHIVE EXISTS?	No
DIGITAL MEDIA AVAILABLE	"Geophysics"
PAPER ARCHIVE EXISTS?	No
PAPER MEDIA AVAILABLE	"Report"

PROJECT BIBLIOGRAPHY 1

PUBLICATION TYPE	Grey literature (unpublished document/manuscript)
TITLE	South Oxford Garden Neighbourhood, Oxfordshire; Geophysical Survey
AUTHOR(S)/EDITOR(S)	Harrison, D.
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DESCRIPTION	A4 report
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ENTERED ON	17 November 2016



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