



Lime Down

Solar Park

Environmental Statement

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WYAS
**Archaeological
Services**

**Lime Down Solar Park
Wiltshire**

Geophysical Survey

Report no. 4313
June 2025

Client: Lime Down Solar Park



Lime Down Solar Park

Wiltshire

Geophysical Survey

Summary

A geophysical (gradiometer) survey was undertaken on approximately 832 hectares of land associated with the Lime Down Solar Park, Wiltshire. Archaeological and possible archaeological anomalies have been recorded comprising rectilinear enclosures, ring ditches, linear ditches and trends, pit responses and concentrations of increased magnetic response indicative of settlement activity. Agricultural anomalies have been recorded throughout including former field boundaries, medieval/post-medieval ridge and furrow cultivation, modern ploughing and land drains. Uncertain anomalies recorded within the data may also have an anthropogenic origin. Geological responses seen within the dataset reflect either the topography of the site, quarrying or discrete pockets and large areas of natural variations. Magnetic disturbance within the dataset can be attributed to adjacent tracks and metal fencing within field boundaries and also 'green manuring' in some of the fields. Former ponds and service pipes have also been recorded. Based on the geophysical survey, the archaeological potential of this Solar PV Sites is deemed to be high where there are areas of activity and low elsewhere.

Report Information

Client: Lime Down Solar Park
Report Type: Geophysical Survey
Location: Swindon
County: Wiltshire
Grid Reference: ST 88351 66824
Period(s) of activity: Prehistoric - post-medieval
Report Number: 4313
Project Number: XK62
Site Code: MKS23
OASIS ID: archaeol11-534257
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1 Introduction

Archaeological Services ASWYAS has been commissioned by Lanpro on behalf of Lime Down Solar Park to undertake a geophysical survey on land for the proposed Lime Down Sites A to E, which is located within the administrative boundary of Swindon, Wiltshire. This was undertaken in line with current best practice (CIfA 2020; Schmidt *et al.* 2015). The survey was carried out between September 2023 - October 2024 and January 2025 as and when the land became available.

Site location, topography and land-use

The survey area comprises approximately 832ha of arable land and pasture across five sites (A-E) centred at ST 88351 66824, which are detailed in turn below. During the survey, the Order Limits changed with the final area being 749ha.

Lime Down A comprises approximately 94ha of arable land across 12 fields (A1-A12). At the time of survey, the fields within the Solar PV Sites primarily consisted of young established crops, grassy pasture, and stubble from recently harvested crops (Plates 1-4). Lime Down A is centred at approximately ST 86281 84700 and lies between 105m aOD (above Ordnance Datum) at its lowest, and 125.9m aOD at its highest.

Lime Down B comprises approximately 70ha of arable land across 12 fields (B1-B12). At the time of survey, the fields within the Solar PV Sites primarily consisted of young established crops, stubble from recently harvested crops, and a field of grassy clover (Plates 5-7). Lime Down B is centred at approximately ST 88571 85010 and lies between 106.7m aOD (above Ordnance Datum) at its lowest, and 117m aOD at its highest.

Lime Down C comprises approximately 241ha of arable land across 36 fields (C1-C36). At the time of survey, the fields within the Solar PV Sites primarily consisted of recently drilled crop, some areas of young established crop, and grass pasture (Plates 8-14). Lime Down C is centred at approximately ST 86198 83092 and lies between 86m aOD (above Ordnance Datum) at its lowest, and 102m aOD at its highest.

Lime Down D comprises approximately 213ha of arable land across 24 fields (D1-D24). At the time of survey, the fields within the Solar PV Sites primarily consisted of recently drilled crop, some recently rolled areas, and grass pasture (Plates 15-19). Lime Down D is centred at approximately ST 89705 83780 and lies between 73m aOD (above Ordnance Datum) at its lowest, and 102m aOD at its highest.

Lime Down E comprises approximately 131ha of arable land across 34 fields (E1-E34), of which two fields (E10 and E16) were precluded from the survey as they contain young woodland. At the time of survey, ground use within the remaining fields primarily consisted of grass pasture, young established crop, and stubble from recently harvested crops (Plates 20-24).

Lime Down E is centred at approximately ST 89705 83780 and lies between 72.9m aOD (above Ordnance Datum) at its lowest, and 93.8m aOD at its highest.

Soils and geology

Bedrock geology varies across the Order Limits due to the large size of the survey area. The recorded bedrock across the west of Order Limits (Lime Down A-D) comprises Forest Marble Formation – mudstone, a sedimentary bedrock formed between 168.3 and 166.1 million years ago during the Jurassic Period. The eastern side of Order Limits has varying areas of bedrock geology with three main formations recorded: Cornbrash Formation – limestone, and Kellaways Clay Member – mudstone (Lime Down B, D, and E) and Kellaways Sand Member - Sandstone and siltstone, interbedded (Lime Down D and E). These are sedimentary bedrocks formed between 168.5 and 163.5 million years ago during the Jurassic period. Superficial deposits are not recorded across most of the Order Limits, with the exception of narrow bands of Alluvium (clay, silt, sand, gravel) recorded along areas around watercourses. These sedimentary superficial deposits were formed between 11.8 thousand years ago and the present during the Quaternary period. Within Lime Down B and C narrow bands of Head (clay, silt, sand, and gravel) are recorded and is a sedimentary superficial deposit that formed between 2.588 million years ago and the present during the Quaternary period (BGS 2024).

Multiple soils are recorded across the survey area. The centre of Order Limits is dominated by two soil types: Evesham 1 (411a) association, described as lime-rich loamy and clayey soils with impeded drainage, and Sherborne (343d) association, described as shallow lime-rich soils over chalk or limestone. To the east and west of sites there are areas of Wickham 3 (711g) and Denchworth (712b) association soils described as slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. Just west of Corston a small area of Fladbury 1 (813b) soil association is recorded. This soil is described as loamy and clayey floodplain soils with naturally high groundwater (SSEW 1983, CSAI 2024).

2 Archaeological Background

The below information is a summary of the archaeological background provided by Lanpro Services (2025) based on 1km search area.

Prehistoric period

Within the Solar PV Sites, the Wiltshire Historic Environment Record (HER) records one 'Upper Palaeolithic' (HER MWI64477) and two 'Mesolithic' findspots (HER ST88SE051; HER ST88SE051). It also records three 'Early Neolithic' ring ditches (HER MWI72518; HER MWI72519; HER MWI72520), one 'Early Bronze Age to Roman' cluster of barrows or a settlement (HER 1001406), and two ring ditches likely to be 'Bronze Age' barrows (HER ST88NE607; HER ST88NE618). In addition, the NRHE records an 'Early Bronze or Later Prehistoric' ring ditch (NRHE 1374563) a 'Prehistoric or Roman' ring ditch (NRHE 1001449)

and two ring ditches likely to be 'Bronze Age' barrows (NRHE 1475728; NRHE 1621061). There are also a further 12 records on the HER and one on the NRHE within the Solar PV Sites which include undated flint findspots, ring ditches, enclosures and other cropmark features which are potentially of prehistoric date.

The earliest evidence for human activity within the 1km search area is a findspot of Upper Palaeolithic flakes and cores found during fieldwalking south-west of Cleeve House, within Field E33 (HER MWI64477). A flint knife blade dated broadly from the Upper Palaeolithic to Late Mesolithic found through fieldwalking is recorded by the HER in woodland c.50 to the south-east of Field E2 in (HER MWI64480). It should be noted that the grid reference is only accurate to 100m and the exact location of the find spot is unknown.

Mesolithic flints have been recovered at two locations within the Solar PV Sites: Field C2 (HER ST88SE051 / MWI2476) and Field C12 at Cream Gorse (HER ST88SE052 / MWI2477). Undated flints are recorded as being found in Field C6 (HER ST88SW550).

Three findspots of a Neolithic date are recorded by the Portable Antiquities Scheme) PAS within Lime Down C. An incomplete polished greenstone axehead dating to the period c.4000-2500 BC was found in Field C2 (Ref. WILT-703FBC, a polished flint axehead dating to the period c.3500-2200 BC in Field C9 (Ref. WILT-ED4C81) and an incomplete flint axehead dating to the period c.3500-2200 BC was found in Field C3 (Ref. WILT-EE1C7E). A Neolithic flint was also recovered within Field C36 (ST88SE101) and noted on the HER.

Within the wider search area, a Neolithic axehead has been found near Drewes Pond at Alderton, c.50m to the west of Field C6 (HER ST88SW102), and Neolithic flint is recorded to the south of Cream Gorse, c.160m to the west of Field C12 (HER ST88SE101). Neolithic or Bronze Age rubbing stones were also found in the wider search area during fieldwalking near Cleeve House, c.150m to the north of Field E33.

Early Bronze Age activity is most often evident in the landscape by the presence of round barrows (although these can often be hard to distinguish from later prehistoric or Romano-British hut circles, and many may be of Neolithic date). To the west of Lime Down A, cropmarks of three ring ditches interpreted as possible barrows have been identified to the north of Norton Farm (HER MWI2518-20). The HER records another cluster of six possible barrows in Field B5 to the north of Norton Farm and the complex of settlement features was also picked up on the geophysical survey (ASWYAS), although the possibility that this relates to Iron Age or Romano-British settlement has also been mooted (HER ST88NE639). Further to the north in Field B6, a probable Bronze Age round barrow is visible as cropmarks on aerial photographs west of Baker's Gorse (HER ST88NE607) and corresponds to a ring ditch seen on the geophysical survey (ASWYAS: A13). Another possible round barrow has been identified to the east of Bakers Gorse, within Field B12 (HER ST88NE618).

Iron Age and Roman periods

Within the Solar PV Sites, the Wiltshire HER includes one record of 'Iron Age' date (HER ST88SE200), three of 'Early Iron Age to Roman' date (HER MWI44994; MWI72523; ST88NE637), one of 'Early Iron Age to Medieval' date (HER ST88NE636), and five of 'Roman' date (MWI64483; ST88SE301; ST88SE302; ST88SE304; ST88NE302). In addition, there are 10 findspots of Roman artefacts recorded by PAS within the Solar PV Sites

Settlements are often occupied across different periods, for example it is common for settlements to continue to be occupied during the Iron Age and Romano-British periods. There are several such settlement sites identified from cropmarks within the Solar PV Sites. While, it can be difficult to differentiate between Later Prehistoric and Romano-British settlement activity solely from non-intrusive evaluation techniques, findspots recorded by the HER and PAS in the vicinity of the cropmarks can provide evidence of likely dates of occupation.

An extensive area of Iron Age and/or Romano-British settlement activity has been identified from cropmarks east of Baker's Gorse in Field B12 (HER ST88NE637), where around 4 rectilinear enclosures, two curvilinear enclosures, a pair of trackways, at least ten probable rubbish or storage pits and three extractive pits have been recorded. Another rectilinear enclosure at the edge of Field B12 which straddles Honey Lane might also be of Iron Age and/or Romano-British date (HER MWI72523). In Field B6 and extending southwards into Field B5, a large undated rectilinear cropmark enclosure to the west of Baker's Gorse has been assigned a broad date range from the Early Iron Age to the Medieval period (HER ST88NE636).

Further undated field systems have been identified in Field D6 to east and south of Norton (HER ST88SE612) and in Fields D1 and D2 (HER ST88SE629). These are closely associated with a number of findspots including an Iron Age silver coin of the Durotriges tribe (HER ST88SE200), Romano-British pottery from Bradfield Farm (HER ST88SE302; HER ST88SE304), a complete copper alloy Roman brooch dating to AD 43- 255 (PAS Ref. WILT-EBF835) and a copper alloy Roman coin dating to AD 260-402 (PAS Ref. WILT-2BB344). Cropmarks that may be the continuation of the settlement at Bradfield have also been identified to the south of Fields D1 and D2 (HER MWI74497), and excavations here in 2013 ahead of the construction of the Hullavington Solar Park confirmed the likely prehistoric date for these remains.

At the cusp of the Iron Age/Romano-British transition, the search area is likely to have been located within territories occupied by the Dubonni tribe to the west and the Atrebatas to the east. Following the surrender of south-eastern tribes after the Roman invasion in 43 AD, the Fosse Way initially marked the western frontier of the extent of Roman rule, and eventually became the main military road linking Exeter (Isca Dumnorium) on the south-west coast with the major legionary fort at Lincoln (Lindum).

A field system has been identified from cropmarks further to the west in Lime Down C (HER ST88SE627), and a probable Roman date for these is indicated by the presence of numerous

Roman finds recorded in this vicinity. These include a Roman lead pot mend dating to c. AD 43-410 (PAS Ref. WILT-3F1639), two copper alloy brooches dating to c.AD80 – 200 (PAS Refs. WILT-8FF201 and WILT-395D58), a copper alloy brooch dating to c.AD 100-200 (PAS WILT-9011F6), and a copper alloy brooch dating to c.AD 50 - 100 (PAS Ref. WILT-710D23).

Further areas of potential Romano-British settlement within the Solar PV Sites include a 100m by 50m scatter of roof tiles and pottery, including Samian, indicating the location of a Roman building towards the northern edge of Field C20 (HER ST88SE301; ASWYAS). This is located within an area where cropmarks of part of a large rectilinear enclosure have been identified (NRHE 1621059). In Field E4, a scatter of Romano-British pottery east of Long Ground is recorded on the HER as being found in the plough soil (HER MWI64483), and further Romano-British finds including pottery and a spindle whorl are recorded as being found c.100m to the north-east of this within Long Ground (HER ST98SW302).

Medieval period

Within the Solar PV Sites, the Wiltshire HER includes one findspot of ‘medieval’ date (HER ST88SE458), three ‘monument’ records which have been assigned a broad ‘Early Neolithic to Saxon’ date (HER MWI72518-20), one record that has assigned an ‘Early Iron Age to medieval’ date (HER ST88NE636), one that has been assigned a ‘Saxon to late 19th century’ date (HER MWI64726). It also records four that have been assigned a ‘medieval to late 19th century’ date (HER MWI72515; HER MWI72517; HER MWI72524; HER MWI72569), and one that has been assigned a ‘medieval to post medieval’ date (HER MWI72522). The NRHE includes an additional two ‘monument’ records of ‘early medieval’ date (NRHE 208635; NRHE 212734), and the PAS records five medieval findspots within the Solar PV Sites (PAS Refs. NMGW-D809D1, WILT-3ED81B, WILT-DDA9E5, WILT-ED5724 and WILT-F35037).

There is a paucity of evidence for early medieval activity within the Solar PV Sites. Three ring ditches within Field B9 (HER MWI64495; ST88SE610; ST88SE611) have been assigned an Early Neolithic to Saxon date, though it appears most likely that these are prehistoric barrows or hut circles of Iron Age/Romano-British date rather than Saxon features. A cluster of pits north of Norton Farm in Fields B5 and B7 have been interpreted as possible medieval or later extractive pits or possible Saxon grubenhausen (‘sunken featured buildings’), though this interpretation remains tentative (HER MWI64726). An Early or Pre-Saxon burial ground at Rodbourne is mentioned in a charter of AD982 (NRHE 212734), and this is thought to be located somewhere between the hill upon which Bincombe Wood is located and a ‘withy bed’ at the Southern edge of the parish (Grundy 1920, 89). Fields E16-E26 are located within this area.

Several deserted or shrunken medieval settlements have also been identified within the 1km search area, for example at Surrendal (HER ST88SE450), c.500m to the south of Field C18, which had a church and possibly a manor and chapel, and where a Saxon sword pommel (HER ST88SE401) and 14th century spur (HER ST88SE454) have been found. There is also

‘pillow mound’ or rabbit warren to the west of the village which is designated as a Scheduled Monument (NHLE 1018610). The settlement known as Bremelham at Cowage Farm, c.975m to the east of Field B12 (HER ST98NW455) is thought to have Saxon origins and is also designated as a Scheduled Monument (NHLE 1018389). Bradfield Farm (HER ST88SE455), immediately to the south of Field D5 is thought to have medieval origins, and it has been suggested that this may have originated as a priory. Shrunken medieval settlement has been identified at Stanton St. Quinton c500m to the southwest of Lime Down E.

Other deserted medieval settlements (DMVs) have been identified southeast of Bottom Farm, c.650m to the east of Field E8 (HER ST98SW460), at Godwin’s Meadow c.350m to the south-east of Field E8 where burials, wall plaster and window glass have been found, suggesting there may have once been a church (HER MWI64475), and a west of Cleeve House, c.50m to the east of Field E33, where earthworks and medieval pottery have been found (HER ST98SW461). Grove Farm (HER ST98SW457), c.980m to the west of Parcel 20(SE) and Nabal’s Farm (HER ST98SW458), c.925m to the south of Field E33 are both thought to have medieval origins, and there are earthworks of a moated site to the west of Nabal’s Farm, c.835m to the south of Field E30 which is designated as a Scheduled Monument (NHLE 1013076).

Post-medieval and modern periods

There are six HER records of ‘19th century’ date within the Solar PV Sites; three within Lime Down A, two within Lime Down C and one within Lime Down E, all of the records are related to farm buildings. There are no Post-Medieval or Modern HER record entries within the Solar PV Sites.

Within the surrounding 1km search area, there are 142 HER records for the post-medieval and modern periods. These are largely characterised by heritage assets relating to buildings or monuments of a well-defined extent that do not contribute to the understanding of the study site’s archaeological potential. The understanding of settlement, land-use and the utilisation of the landscape is enhanced by cartographic and documentary sources which can give additional detail to data contained within the HER and, notably, to the Solar PV Sites

The early county map of Andrews’ and Drury’s 1773 Map of Wiltshire and Cary’s 1787 Map of Wiltshire are not largely detailed or geographically accurate but provide a snapshot of the Solar PV Sites and parishes in the post-medieval period. The maps show woodland and water courses that cross the Solar PV Sites, especially within Lime Down C which looks to be formed by woodland during this period, as well as the layout of the roads that still exist across the search area, including the Fosse Way Roman Road.

A major re-organisation of the landscape subsequently took place with the enclosure of the common fields. Parliamentary enclosure in the 18th and 19th centuries ended the traditional rights on common land, formerly held in the open field system, and restricted the use of the land to only the owner. It consolidated strips in the open fields into larger units, often delineated by hedgerows, and enclosed much of the remaining pasture commons (land

covered with grass and other low plants suitable for grazing animals, especially cattle or sheep).

3 Aims, Methodology and Presentation

The aims and objectives of the programme of geophysical survey were to gather sufficient information to establish the presence/absence, character and extent, of any archaeological remains within the specific area and to inform an assessment of the archaeological potential of the Solar PV Sites. To achieve this aim, a magnetometer survey covering all amenable parts of the Solar PV Sites was undertaken (see Fig. 2).

The general aims of the geophysical survey were:

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

Magnetometer survey

The cart-based survey was undertaken using an eight channel SenSYS MX V3 system containing eight FGM650 sensors. Readings are taken every 20MHz (between 0.05 and 0.1m). Data were recorded onto a device, using a Carlson GNSS Smart antenna, for centimetre accuracy. These readings were stored in the memory of the instrument and downloaded for processing and interpretation. DLMGPS and MAGNETO software, alongside bespoke in-house software was used to process and present the data. Further details are given in Appendix 1.

A handheld survey was undertaken in two areas (Fields B1 and C15) where the cart-based survey method was not suitable. The site grid was laid out using a Trimble VRS differential Global Positioning System (Trimble R6 model). The survey was undertaken using Bartington Grad601 magnetic gradiometers. These were employed taking readings at 0.25m intervals on zig-zag traverses 1.0m apart within 30m by 30m grids, so that 3600 readings were recorded in each grid. These readings were stored in the memory of the instrument and later downloaded to computer for processing and interpretation. Bespoke in-house software was used to process and present the data. Further details are given in Appendix 1.

Reporting

A general site location plan, incorporating the 1:50000 Ordnance Survey (OS) mapping, is shown in Figure 1. Figure 2 displays the survey areas at a scale of 1:12500. Figure 3 shows

an overview of the processed magnetometer data also at a scale of 1:12500, whilst Figure 4 shows an overview of the interpretation at the same scale. Processed and minimally processed data, together with interpretation of the survey results are presented in Figures 5 to 115 inclusive at a scale of 1:1500.

Technical information on the equipment used, data processing and survey methodologies are given in Appendix 1. Technical information on locating the survey area is provided in Appendix 2. Appendix 3 describes the composition and location of the archive. A copy of the completed OASIS form is included in Appendix 4.

The survey methodology, report and any recommendations comply with guidelines outlined by the European Archaeological Council (Schmidt *et al.* 2015) and by the Chartered Institute for Archaeologists (CIfA 2020). All figures reproduced from Ordnance Survey mapping are with the permission of the controller of His Majesty's Stationery Office (© Crown copyright).

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

4 Results and Discussion (see Figures 5 to 115)

Ferrous anomalies and magnetic disturbance

Ferrous anomalies, as individual 'spikes', or as large discrete areas 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 rural sites, often being present as a consequence of manuring or tipping/infilling. There is no obvious pattern or clustering to their distribution in this survey to suggest anything other than a random background scatter of ferrous debris in the plough-soil.

Linear dipolar trends have been recorded in Fields A2, A5 - A11; B1-B6; C7, C8, C21, C22, C24, C29 - C32, C33; D20-24 and E33 which relate to service pipes.

An area of magnetic disturbance (**F1**) detected in Field A3 corresponds with the location of an infilled pond shown on historic mapping dating from 1889 (NLS 2025). Other ponds can be seen in Field A6 (**F2**), Field A11 (**F3** and **F4**), Field C1 (**F6**), Field C2 (**F7**), Field C6 (**F8**), Field C7 (**F9**), Field C8 (**F10**), Field C18 (**F11**), Field C22 (**F12**) and Field D18 (**F14**).

Magnetic disturbance (**F5**) in Field B1 corresponds to a quarry shown on the 1844 historic mapping (NLS 2024).

Circular ferrous responses (**F13**) in Fields C3 and C31 correspond with the location of electricity pylons.

Large areas of magnetic disturbance have been recorded in Field E18 which is likely to be a result of 'green manuring'. The green waste is produced from organic and biodegradable household waste as a fertiliser and soil conditioner. Up to 0.25% of this material, however, can be from non-organic waste including metal fragments and batteries (Gerrard et al. 2015).

An area of magnetic disturbance (**F15**) detected in Field E12 corresponds with the HER as a post-medieval limestone quarry (MWI64485).

Ferrous response **F16** in Field F19 corresponds to a quarry or pit shown on the 1898 OS mapping (KYP 2025).

The majority of magnetic disturbance along the limits of the survey areas is due to interference from metal fencing and adjacent tracks.

Geological anomalies

The survey has detected anomalies throughout the Solar PV Sites that have been interpreted as geological in origin. It is thought that the responses have been detected because of the variation in the composition and depth of the deposits of superficial material in which they derive.

Within Lime Down A anomalies **G1-G4** in Fields A7 and A9 have been recorded. These are likely to be quarry pits due to similarities with known examples. Old quarries are highlighted on historic mapping surrounding these fields which adds weight to this interpretation. A similar response (**G5**) has been recorded in Field C13 which may also be associated with former quarrying.

A band of geology is recorded running through Fields C1 – C3 in which the outer limits have been marked on the interpretation diagrams. This roughly corresponds with a difference in the recorded soils (LandIS 2025).

Zones of geological responses can be seen in Field C13 which consist of anomalies of differing magnetic strengths. A band of responses (**G6**) which run through Fields C13 and C15 may be associated with a former water channel, although this is speculative as no corroborative evidence to support this.

Geological responses **G7** in Field C20 corresponds to some cropmarks seen on Google Imagery from 1944 (GE 2025).

A strong band of geological response have been recorded in Field C36 which appears to bound ridge and furrow cultivation.

Agricultural anomalies

Former field boundaries (**FB1 – FB17**) have been recorded throughout the survey areas including from Lime Down A within Fields A1-3 and A6-A9. All of these correspond to the 1840s Wiltshire Tithes (KYP 2025). By the 1898 Ordnance Survey (OS) map all boundaries remain apart from **FB10**, **FB11** and **FB15 – FB17** and are still visible on the mapping published 1955 (NLS 2025).

A section of a former field boundary **FB18** in Field B5 corresponds to the 1840s Wiltshire Tithes (KYP 2025). This may be part of a much older field system as archaeological responses **A11** to the immediate east also form the same boundary but are noted within the HER as part of field systems.

Former field boundaries (**FB19 - FB41** and **FB52**) are also visible throughout Lime Down C in which the majority correspond to the 1840s Wiltshire Tithes (KYP 2025). Boundaries **FB20** and **FB21** in Field C2 appear on the tithe map only and have been removed by the 1889 OS map (NLS 2025). Boundaries **FB26 - FB27** in Field C12 are not shown on any available mapping and are therefore likely to predate 1840. Magnetically strong boundary **FB35** in Field C16 is shown on the historic mapping as a drainage ditch.

Former field boundaries **FB42 – FB49** have been recorded in Lime Down D of which the majority correspond to the Wiltshire Tithes. Boundary **FB45** in Field D4 is shown as a footpath on the 1844 OS map whilst **FB46** in Field D5 is shown as a line of trees on the same map. Boundary **FB47** in Field D12 is on the tithe map only.

Former boundary **FB50** in Field E1 is shown on the tithe map as a full boundary and then as a handful of trees on the 1844 map (KYP 2025). Boundary **FB51** in Field 26 is shown on the tithe map only.

Medieval or post-medieval ridge and furrow cultivation has been recorded within a number of the areas on differing alignments and have been highlighted on the interpretation diagrams. Some of these responses are magnetically strong, such as those in Fields B6.

Field drains have been recorded in Fields B5, B6, C15, C17, C31, D6, D14, E5, E32 and E34. These have quite a low magnetic strength, and it is likely that their construction is of a non-fired clay construction.

Other parallel linear trends can be seen within most of the areas and are associated with modern ploughing. Only a selection of these have been highlighted on the interpretation diagrams to show the direction of the plough lines.

Uncertain anomalies

A handful of anomalies (**U1**) located in the north of Field A1 may be of some interest due to the adjacent archaeological anomalies. They are pit-like in form although a geological origin is also likely.

A curving ditch response (**U2**) in Field A2 may indicate part of a ring ditch, although this is speculative.

Ditch-like and pit-like anomalies (**U3**) in the south of Field A6 and to the southeast of Field A7 have proved difficult to ascertain a definite interpretation. Some of the linear responses have a strong magnetic response but it is unclear as to whether this is from modern or historical activity. The pits have been highlighted as *Uncertain* due to a slight increase in their response than the surrounding geological responses.

Linear trends (**U4**) in Field B2 may be of some interest and form former field systems, they are however, weak in magnetic strength and may be associated with agricultural regimes.

A zone of pit-like responses (**U5**) in the east of Field B2 have a similar magnetic strength to those mentioned above at **U3** and as such the same interpretation has been reached.

A number of pit-like anomalies have been recorded in Fields B6 and B7. Due to the surrounding archaeology an *Uncertain* interpretation has been reached but they are likely to be geological in origin.

Linear responses (**U6**) in Field B12 are likely to field drains or agriculture, however due to the archaeological responses in this field an archaeological origin cannot be ignored.

A group of pit-like responses and linear trends (**U7**) in Field C6 may be of some archaeological interest, although a geological origin is also possible.

Responses **U8** in Field C36 follow a band of geological responses, it is likely that these too are geological. However, the magnetic strength is much greater hence the *uncertain* interpretation.

Linear trends and pit-like responses have been recorded throughout Fields D1-D8 of varying magnetic strength. The HER records a number of cropmarks in this area in which some of these may be related. It is also likely that they are of an agricultural origin.

Two groups of responses (**U9** and **U10**) in Field D9 have been highlighted as they may be of some interest. Those at **U9** are close to a ring ditch (**A37**) and possible archaeological anomalies and may be associated whilst those at **U10** are within a rectilinear pattern. The latter is not that dissimilar to some quarrying responses seen elsewhere, it also lies near to a former footpath seen on mapping from 1844 (KYP 2025).

Possible and definite archaeological anomalies

Lime Down A

Circular response (**A1**) in the north of Field A1, measures approximately 19m in diameter and likely to represent a ring ditch. A handful of possible archaeological linear responses appear to truncate the ring ditch. Further to the south in the same field, double ring ditch **A2** has been recorded measuring approximately 13m along its outer ditch. A pit response is visible within the centre.

Part of a rectilinear enclosure (**A3**) can be seen along the west boundary of Field A1, which measures 50m along its north to south orientation. A ditch immediately south of **A3** is likely to be associated.

A group of anomalies (**P1**) in the northwest corner of Field A3 may be of some interest as correspond with Site of Outfarm, east-northeast of Widley's Farm (MWI65931). However, due to the geological responses along the western boundary of this field an archaeological origin must be viewed with care.

Linear anomalies (**P2**) in Field A7 correspond with a HER entry of 'various short linear features – undated cropmarks' MWI2510. These anomalies have been interpreted as possible archaeology as they are similar to some of the surrounding geological responses.

Ring ditch (**A4**) straddles the boundaries of Fields A6 and A7 and measures approximately 15m in diameter.

Features **A5** in Field A7 and **A6** in Field A9 consist of an enclosure and ditch lengths. This is recorded in the HER as an 'oval enclosure with many pits' MWI2519. The geophysical data suggests a rectilinear enclosure measuring approximately 45m by 45m with a clear entrance in the southern corner, a number of pits are visible. Unfortunately, the service pipe truncates the enclosure, with the halo masking some parts.

An isolated ring ditch (**A7**) has been recorded in Field A9 and measures approximately 9m in diameter.

Part of a large enclosure (**A8**) and linear trends are visible within Field A10. The enclosure measures approximately 90m along its north to south orientation. The magnetic strength of these responses is much weaker than the above features which may suggest a non-occupational function.

Lime Down B

A complex of settlement features (**A9**) can be clearly seen in the south of Field B5 and consist of at least six ring ditches surrounded by a rectilinear enclosure. Further pits and linear trends can be seen within this enclosure. The enclosure measures approximately 134m

by 105m with possible entrances along the eastern arm and also in the northwest. This settlement is recorded in the HER (MWI2435) and likely to be of an Iron Age date.

Two small ring ditches (**A10**) in Field B5 correspond to the HER as a possible Bronze Age round barrow or later hut circle (MWI72518). They both measure approximately 6m in diameter.

Anomalies **A11** in Field B5 and **A15** in Field B7 correspond to a HER entry as probable medieval or post-medieval extractive pits or Grubenhausen and associated boundary ditches (MWI64726). The possible archaeological response (**P3**) may also be part of these features.

Linear ditch (**A12**) in Field B5 corresponds to a field boundary in the Tithe map but has been interpreted as *Archaeology* as it is also mentioned in the HER as a field system (MWI2432). This field system continues to the east of Field B6 at features **A13**.

A magnetically weak circular response (**P4**) is visible above the background levels along the eastern boundary of Field B5. It measures approximately 8m in diameter and likely to be a ring ditch.

Ring ditch (**A14**) in Field B6 corresponds to cropmark data (MWI2405) and measures approximately 14m in diameter with a possible entrance in the north and a clear central pit response.

Within Field B9, a series of ditches (**A16**) correspond to cropmarks which are recorded in the HER as 'a group of probable Iron Age or Roman field boundaries and a possible rectilinear enclosure' (MWI44994). Further similar linear responses (**A17**) in this field are recorded as undated cropmarks (MWI2504).

Ring ditch **A18** is also recorded in the HER (MWI64495) and measures approximately 14m in diameter with a probable entrance to the south and possible internal features.

Zones of increased magnetic response has been recorded in the south of Field B9 and are possibly of some archaeological interest. The zones consist of numerous pit-like anomalies adjacent to the archaeological ditches. Whilst an archaeological origin is preferred another origin such as geological or natural responses may also be possible.

Ditch (**A19**) in Field B11 and the majority of the archaeological features within Field B12 are associated with an early Iron Age to Roman settlement recorded in the HER (MWI2433). The features recorded comprise of numerous enclosures with internal anomalies, field systems and pits. A clear ring ditch (**A20**) lies at the intersection of two ditches. It measures approximately 17m in diameter and also in the HER (MWI2415).

Anomalies (**A21**) in the southeast of Field B12 correspond with cropmarks which are thought to be medieval or post-medieval extraction pits (MWI72524).

Where anomalies not mentioned above have a weaker magnetic strength, incomplete patterning or have been disturbed by nearby ferrous responses they have been classified as possible archaeology. Where these anomalies are potentially associated with those considered likely to be of an archaeological origins, it is possible that they indicate the presence of shallow ephemeral features.

Lime Down C

An isolated ring ditch (**A22**) in Field C1 has been recorded within a band of geology and measures approximately 16m in diameter. The southern section has not been recorded within the magnetic data.

A complex of archaeological features have been recorded within Fields C2-C4, C30 and C31. The HER records a handful of cropmarks within this area (MWI2529), but the geophysical survey has added much greater detail. Linear ditches **A23** in Field C2 are likely to be part of a field system whereas the other features suggest settlement activity including a rectilinear area of activity (**A24**) that spans across Fields C2 and C4 comprising several enclosures and pits. Possible archaeological linear trends (**P5**) seen within Field C6 may also be associated with these responses. A large enclosure (**A25**) within Fields C3 and C4 measures approximately 85m by 70m. Internal structures can be seen within the enclosure, but it is uncertain if these are contemporary with **A25**. Further archaeological responses **A26** - **A28** have been recorded in Fields C30 and C31 and are likely to be of the same complex.

In the south of Field C2 a smaller enclosure (**A29**) has been recorded appearing to be separate from the main complex mentioned above.

Another area of archaeological activity (**A30**) has been recorded in Field C5 and the southeast of Field C6 and consists of enclosures, linear ditches and pits covering an area of approximately 130m by 85m. It is unfortunate that a service pipe truncates the activity in the south.

A rectilinear response (**P6**) in Field C6 measuring approximately 27m by 24m which could indicate an isolated enclosure. In the northeast of this field responses **P7** is also likely to indicate sections of a possible enclosure.

Archaeological responses have been recorded in Field C11 including a ring ditch (**A31**) which measures approximately 23m in diameter. This is located to the west of rectilinear enclosure **A32** which straddles Fosse Way continuing into Fields C13 and C14.

Linear responses **A33** also in Field C11 are likely to represent part of a field system. In the south of this field response **P8** again is likely to represent a field boundary of some sort. Although it is possible that it is also of a geological origin and hence the *possible archaeological* interpretation.

An isolated ring ditch (**A34**) in Field C14 can be seen straddling a former field boundary (**FB33**). The ring ditch measures approximately 16m in diameter.

Archaeological anomalies (**A35**) in the north of Field C20 consist of magnetically strong ditches surrounding an area of increased response. A number of uncertain anomalies surrounding these archaeological responses may also be associated.

In the north of Field C36 ditch responses (**A36**) are likely to be part of an enclosure extending into the woodland to the north. LiDAR data (NLS 2025) shows a feature in the woodland where the 'enclosure's extension would be, but this is speculative.

A small ring ditch (**A37**) has been recorded in the south of Field C36 measuring approximately 8m with a central pit anomaly.

Lime Down D

A complex of features (**A38**) can be seen within Field D24 covering an area of approximately 105m by 95m. A number of the ditches appear to intersect suggesting multiple phases of activity.

Linear ditches (**P9**) within Fields D21 and D23 may be of some interest and possibly associated with a field system. A small ring ditch (**A39**) in Field D21 measures approximately 5m in diameter and appears to have a central pit.

A group of three ring ditches have been recorded in the north of Field D20. **A40** measures approximately 10m in diameter with an internal pit response and a possible entrance to the south. Response **A41** measures approximately 15m in diameter whilst part ring ditch **A42** measures approximately 11m in diameter.

Responses (**A43**) correspond with undated cropmarks recorded in the HER (MWI2531) and consist of multiple ditches and incomplete enclosures within Fields D1 and D2. A number of possible archaeological and uncertain linear anomalies are recorded throughout Fields D1, D2, D4, D21 and D22 and may be connected to the above.

Short ditches (**P10**) in Field D3 are likely to be associated with the undated cropmarks mentioned above.

A ring ditch (**A44**) in the north of Field D3 has a very strong magnetic signature. It measures approximately 13m in diameter with a possible entrance in the east. Two pits can also be seen within the centre. A group of anomalies (**P11**) to the immediate south of **A44** may be of some archaeological interest. They appear to form a rectilinear feature with possible internal divisions. A number of strong pit-like anomalies (marked as *Uncertain*) have also been recorded within this area.

In the east of Field D4 a group of anomalies (**P12**) may be of some archaeological interest. They consist of linear ditches and pit but do not form any clear patterns hence the caution. It is possible they are connected to the archaeological responses in Field D6 to the immediate east.

A complex of anomalies (**A45**) in Field D6 consist of rectilinear enclosures, ditches, increased magnetic response and possible pits. Some of these correspond to the HER entry (MWI2514) described as 'various linear features, some interconnecting, visible all over this area'.

Straddling Fields D8 and D9 another ring ditch (**A46**) has been recorded. This measures approximately 20m in diameter. To the east of this a handful of possible archaeological anomalies may represent parts of smaller ring ditches.

Within Field D11 a number of linear responses (**P13**) of a possible archaeological origin have been recorded, similar to those found in the west of this Area, the ditch interpreted as definite archaeology (**A47**) has been due to the strong magnetic strength. A small rectilinear feature (**A48**) is visible within the large geological zone. It measures approximately 13m by 6m with a possible entrance in the west.

In the east of Field D19 of group of anomalies (**P14**) are similar to those recorded at **P12** in Field D4. Again, these are fragmented responses not forming any clear patterns. It is possible that these represent an area of quarrying.

Lime Down E

In the southwest of Field E1, two sides of a possible enclosure (**P15**) have been recorded. Negative rectilinear response (**P16**) can be seen within Fields E1 and E2 measuring at least 146m by 55m. The negative response could indicate that stone foundations remain *in situ* although this interpretation is speculative.

Possible archaeological anomalies in Field E5 may be associated with the Rodbourne Brick works which were located in the field immediately northwest.

Magnetically weak anomalies **P17** in Field E8 possibly form some small enclosures. A number of negative linear responses can be seen throughout this field and whilst an agricultural origin is likely an archaeological form cannot be ruled out entirely.

A handful of ring ditches have been recorded in Lime Down E. These include **A49** in Field E14 measuring approximately 12m in diameter. Two abutting ring ditches **A50** in Field E20, **A51** in Field E21 measuring approximately 17m in diameter and **A52** also in Field 42 measuring 10m in diameter.

5 Conclusions

The geophysical survey has detected archaeological and possible archaeological anomalies comprising rectilinear enclosures, ring ditches, linear ditches and trends, pit responses and concentrations of increased magnetic response indicative of settlement activity possibly indicative of prehistoric or Roman activity.

Agricultural anomalies have been recorded throughout including former field boundaries, medieval/post-medieval ridge and furrow cultivation, modern ploughing and land drains. Uncertain anomalies recorded within the data may also have an anthropogenic origin.

Magnetic disturbance within the dataset can be attributed to adjacent tracks and metal fencing within field boundaries and also 'green manuring' in some of the fields. Former ponds and service pipes have also been recorded.

Geological responses seen within the dataset reflect either the topography of the Solar PV Sites, quarrying or discrete pockets and large areas of natural variations.

Based on the geophysical survey, the archaeological potential of this Solar PV Sites is deemed to be high where there are areas of activity and low elsewhere.

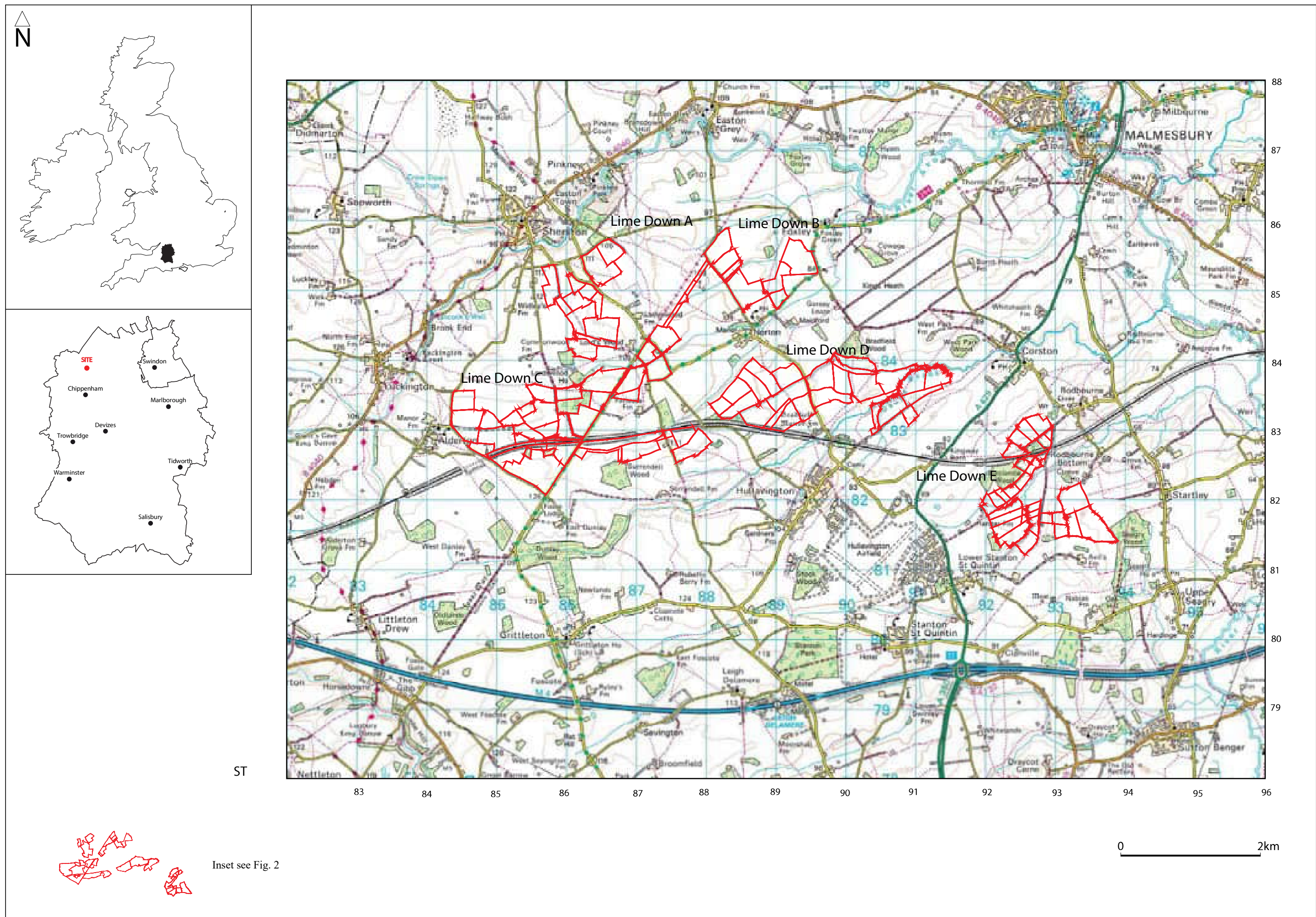
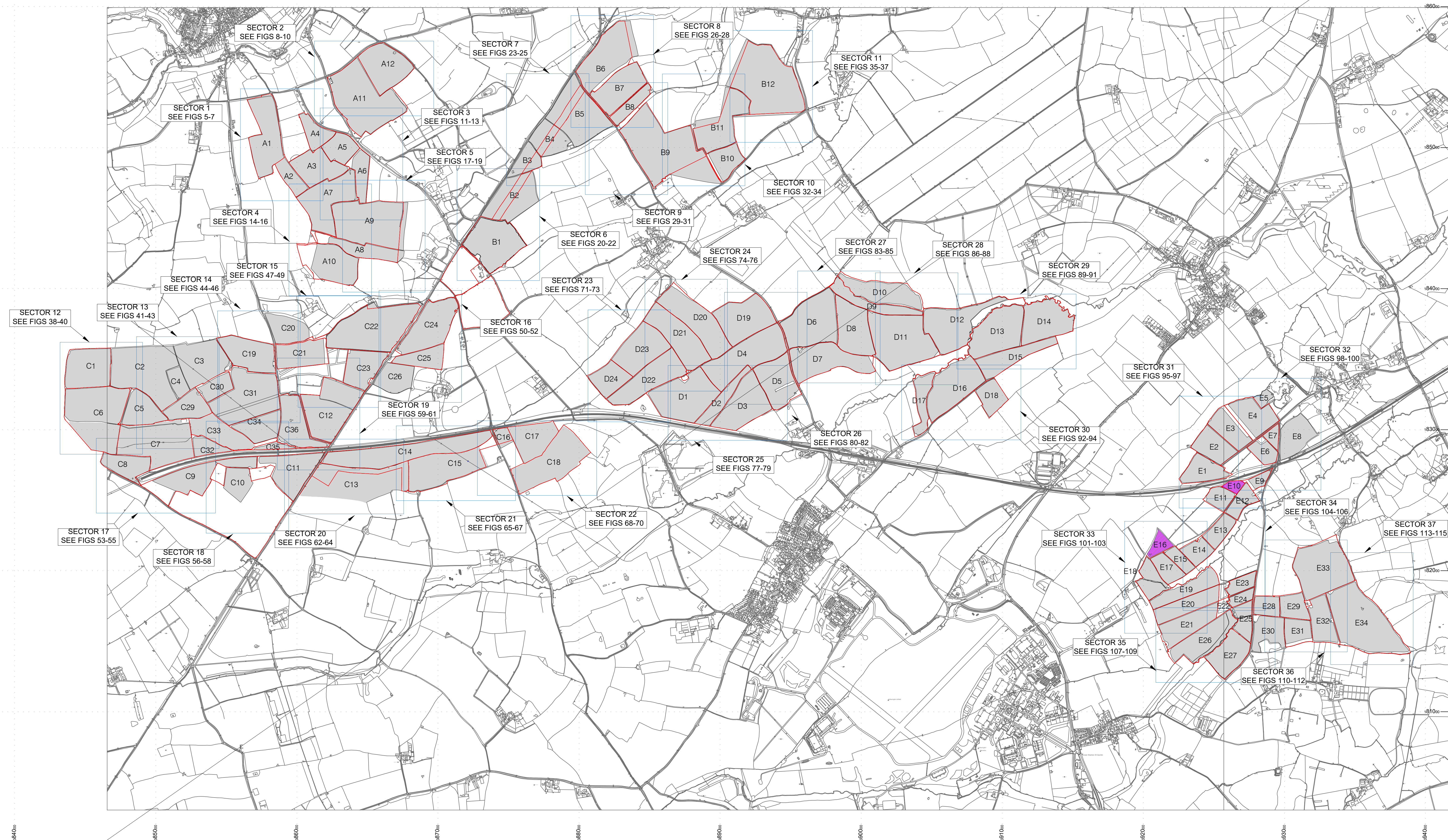
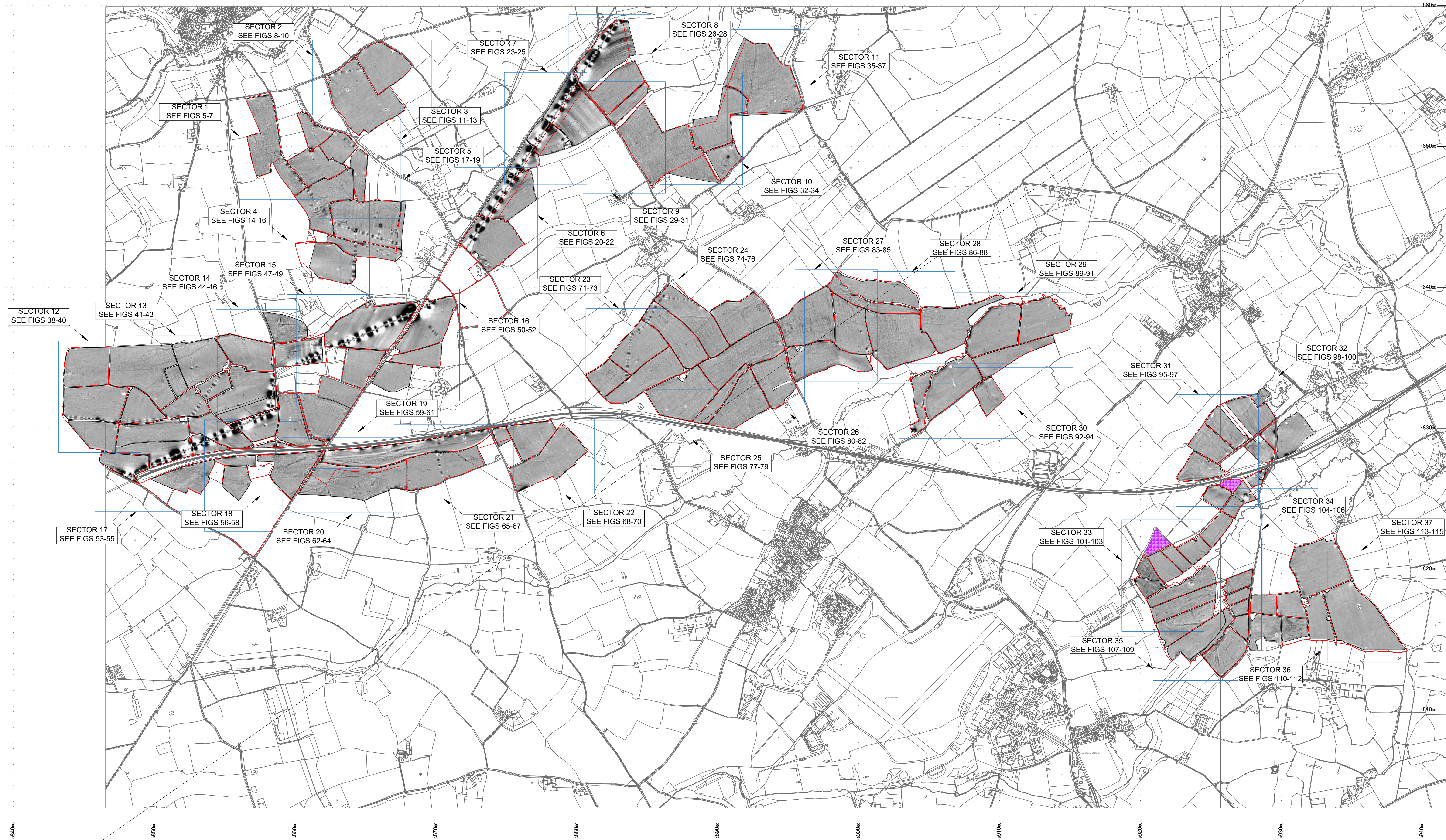
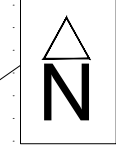
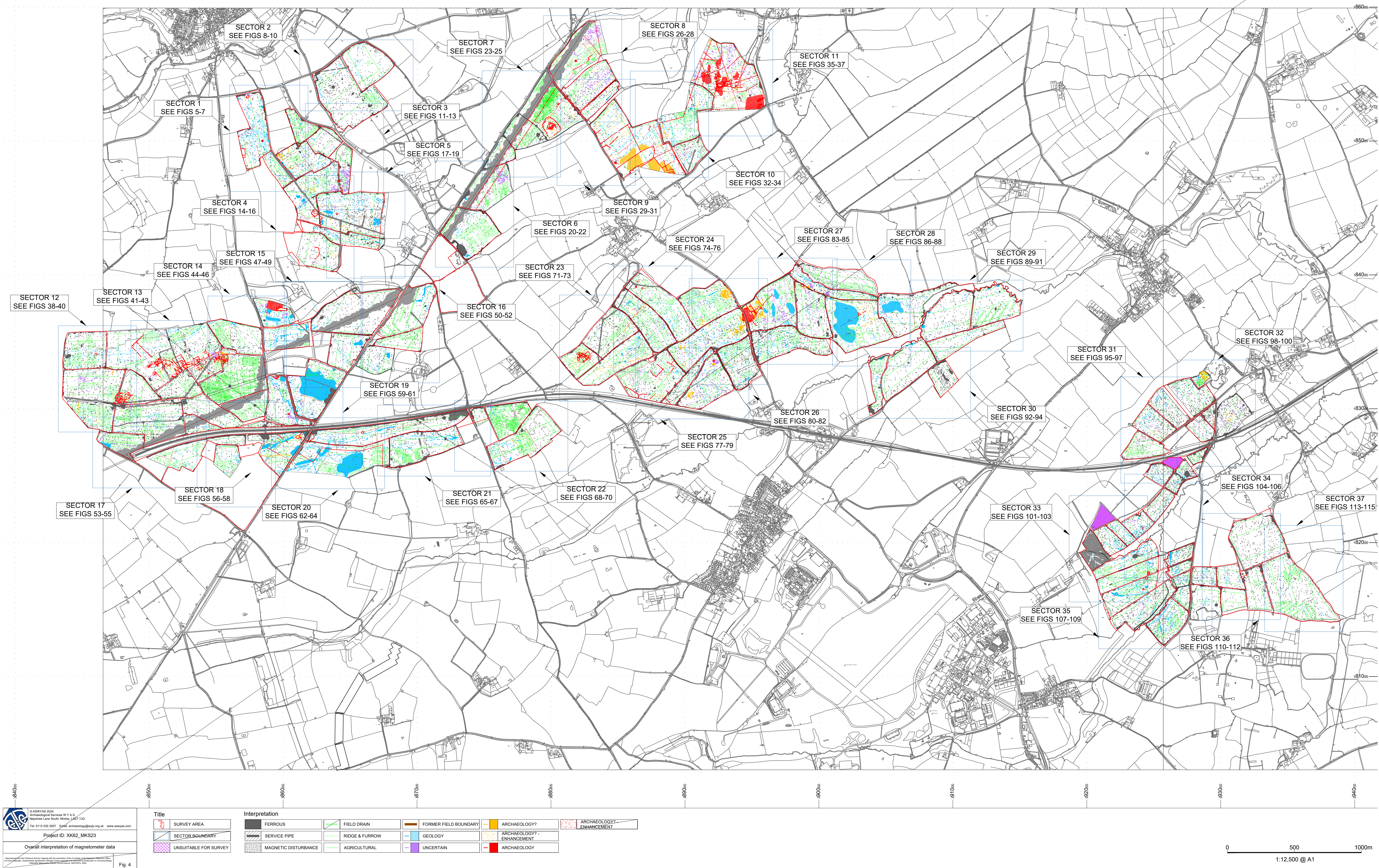
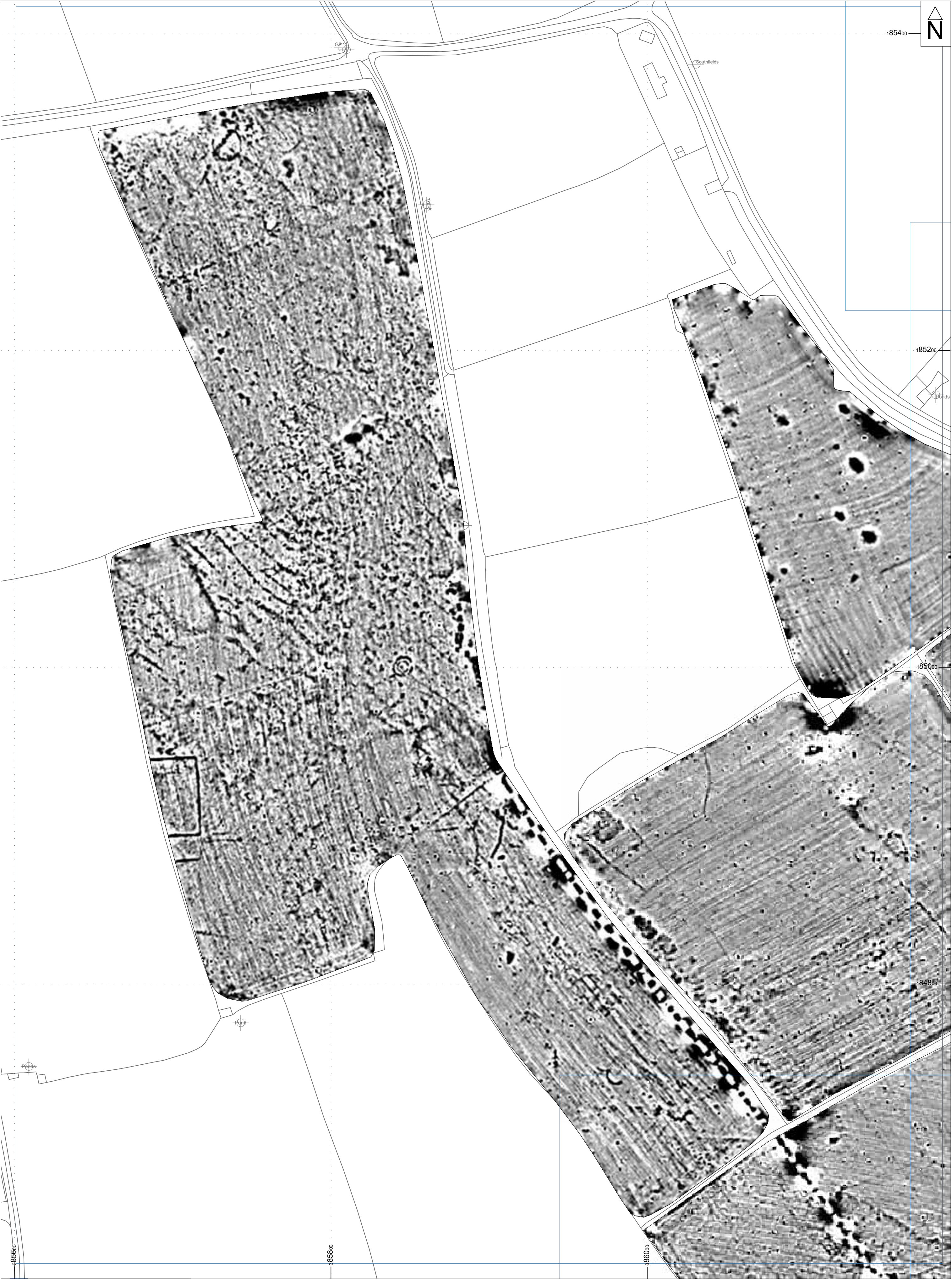


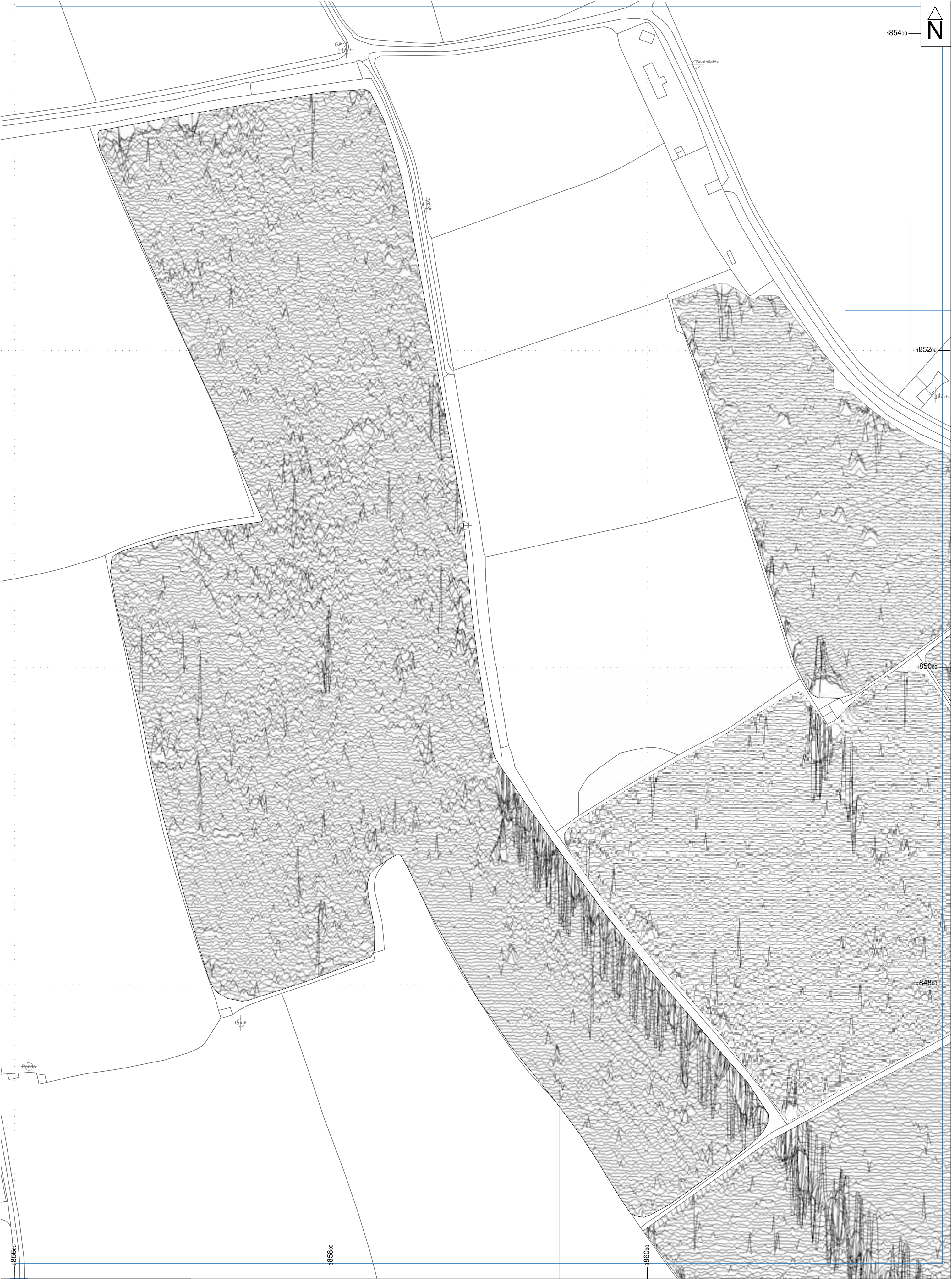
Fig. 1. Site location

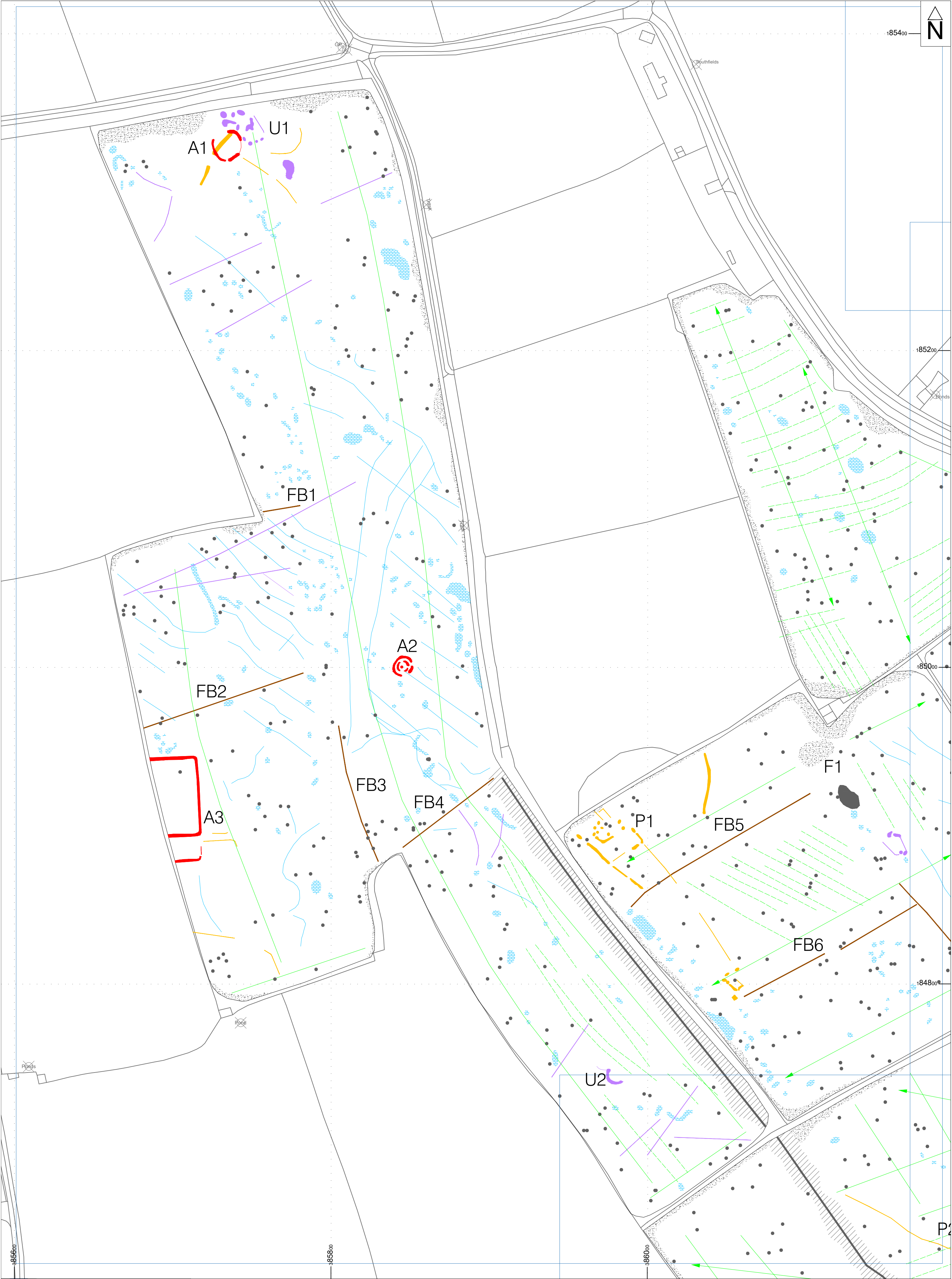















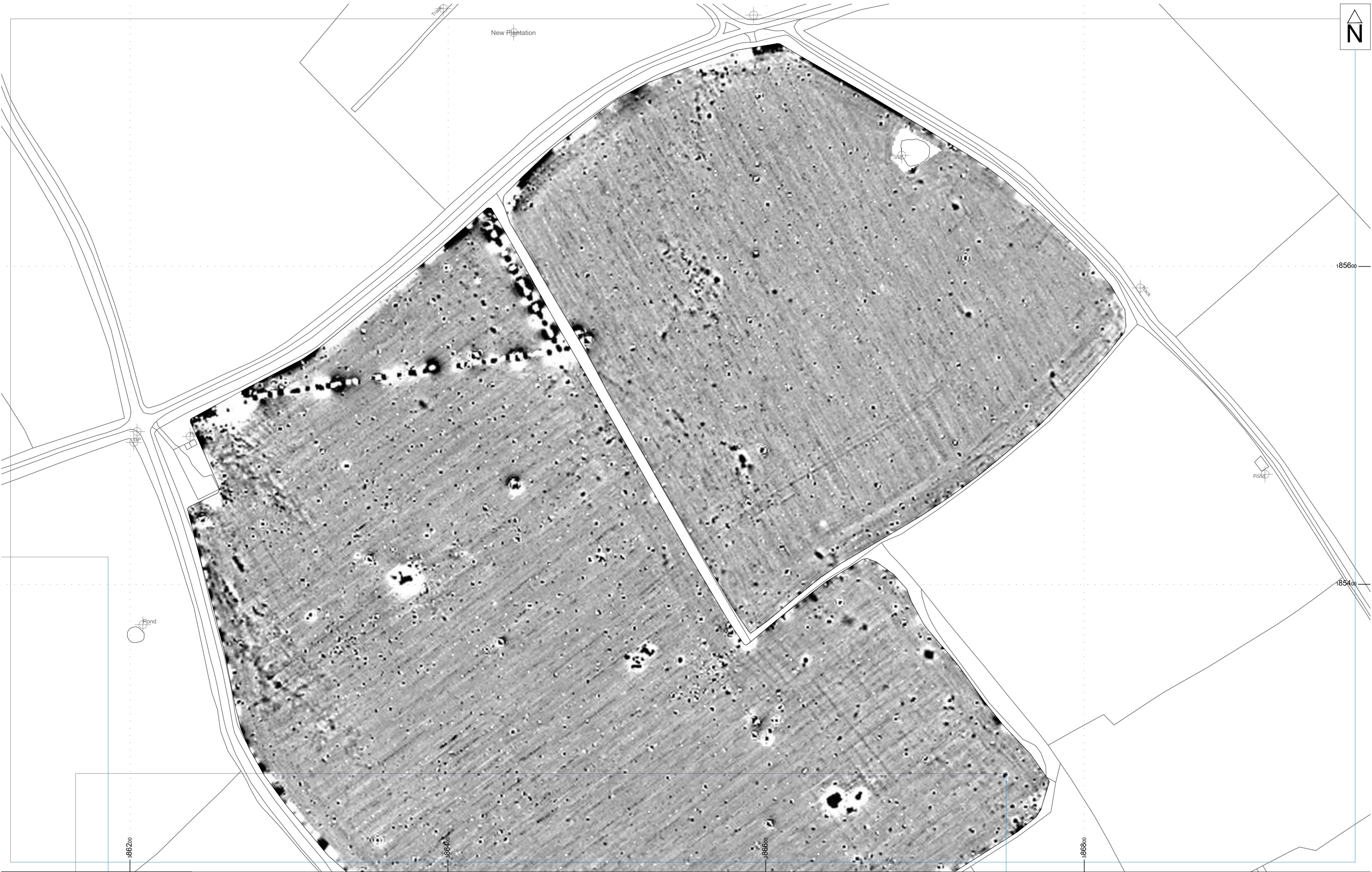


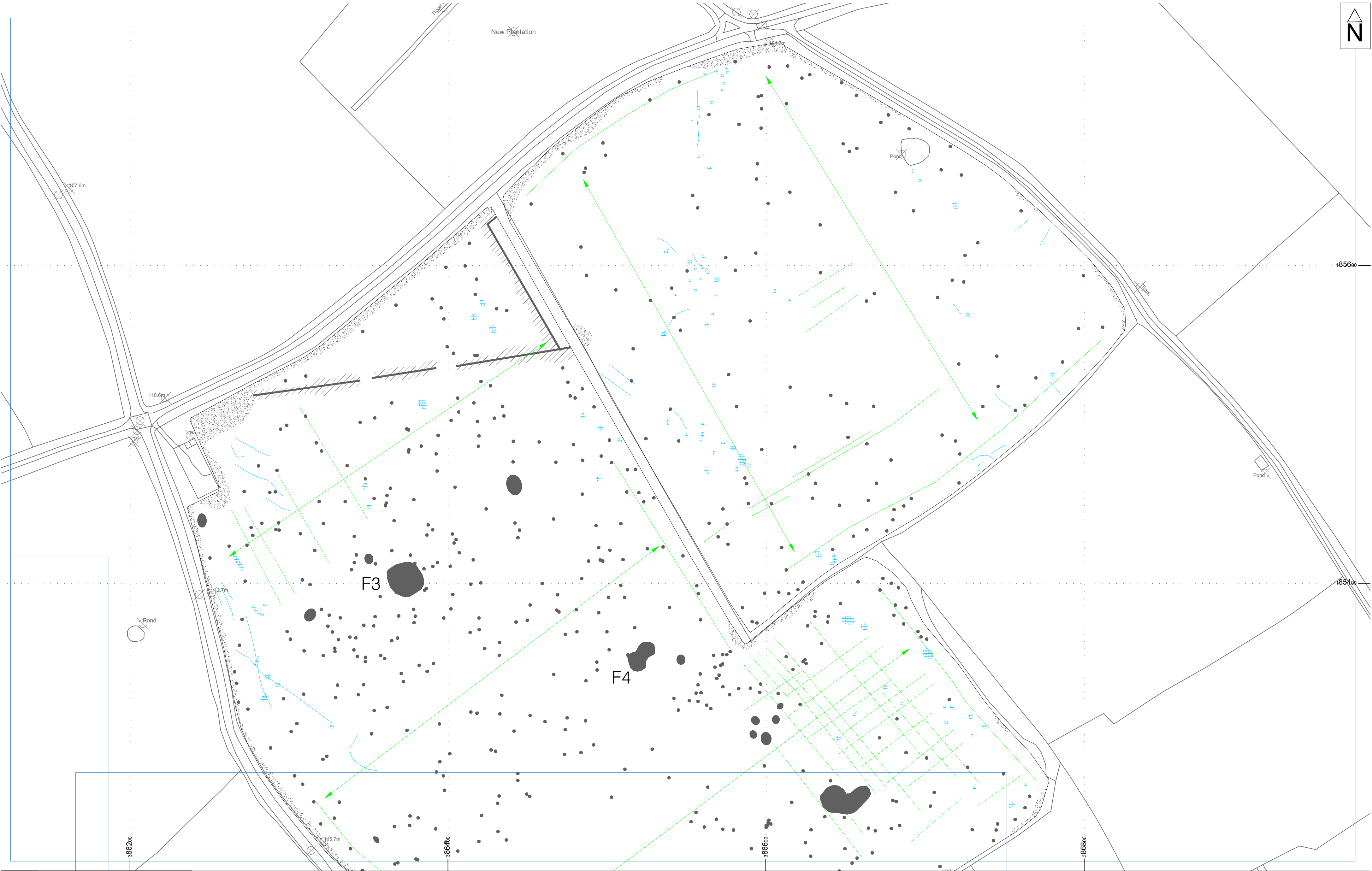






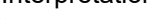


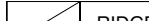




Title		Interpretation					
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	SERVICE PIPE		AGRICULTURAL		UNCERTAIN		ARCHAEOLOGY
	MAGNETIC DISTURBANCE		FORMER FIELD BOUNDARY		ARCHAEOLOGY?		



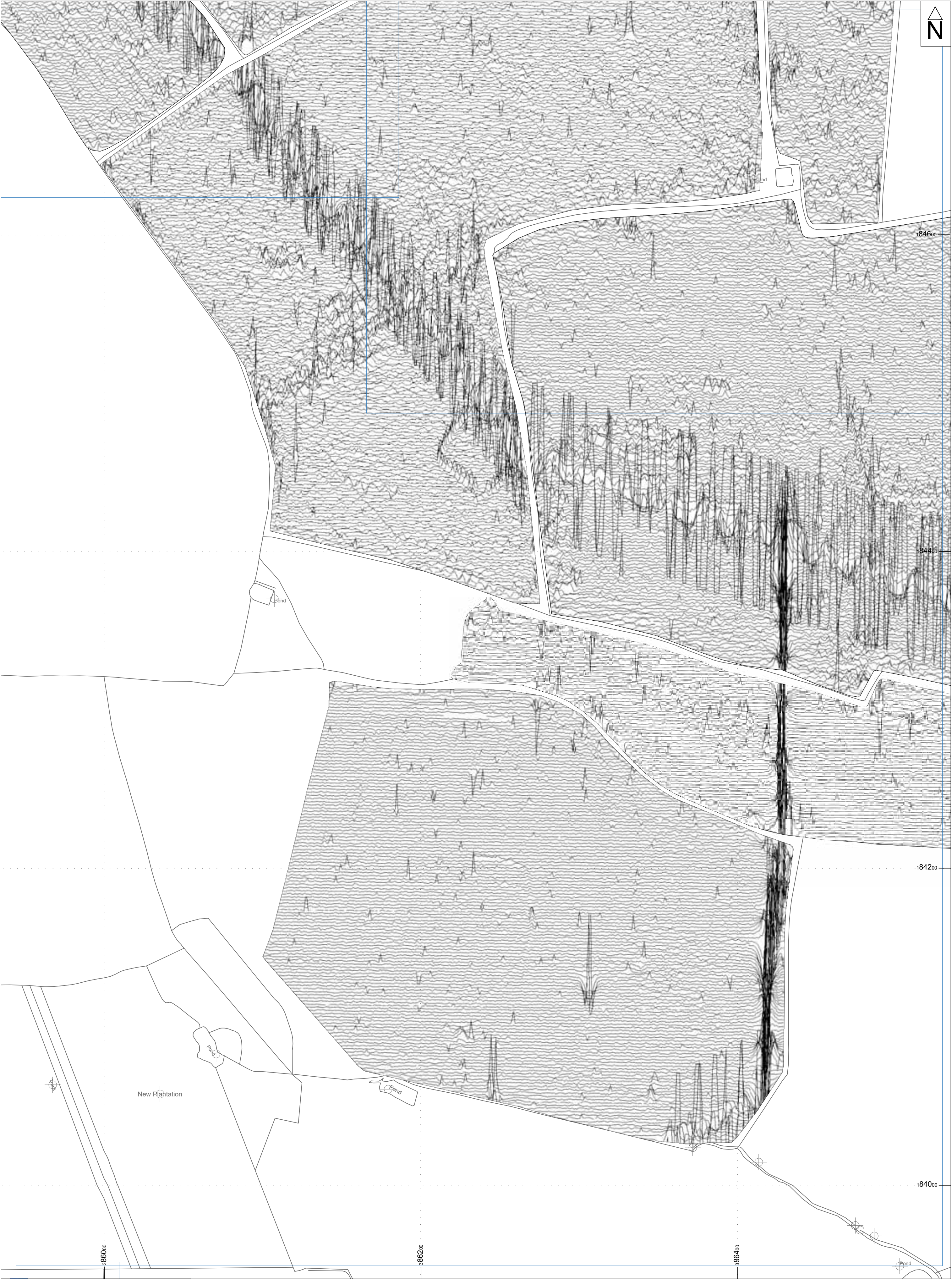


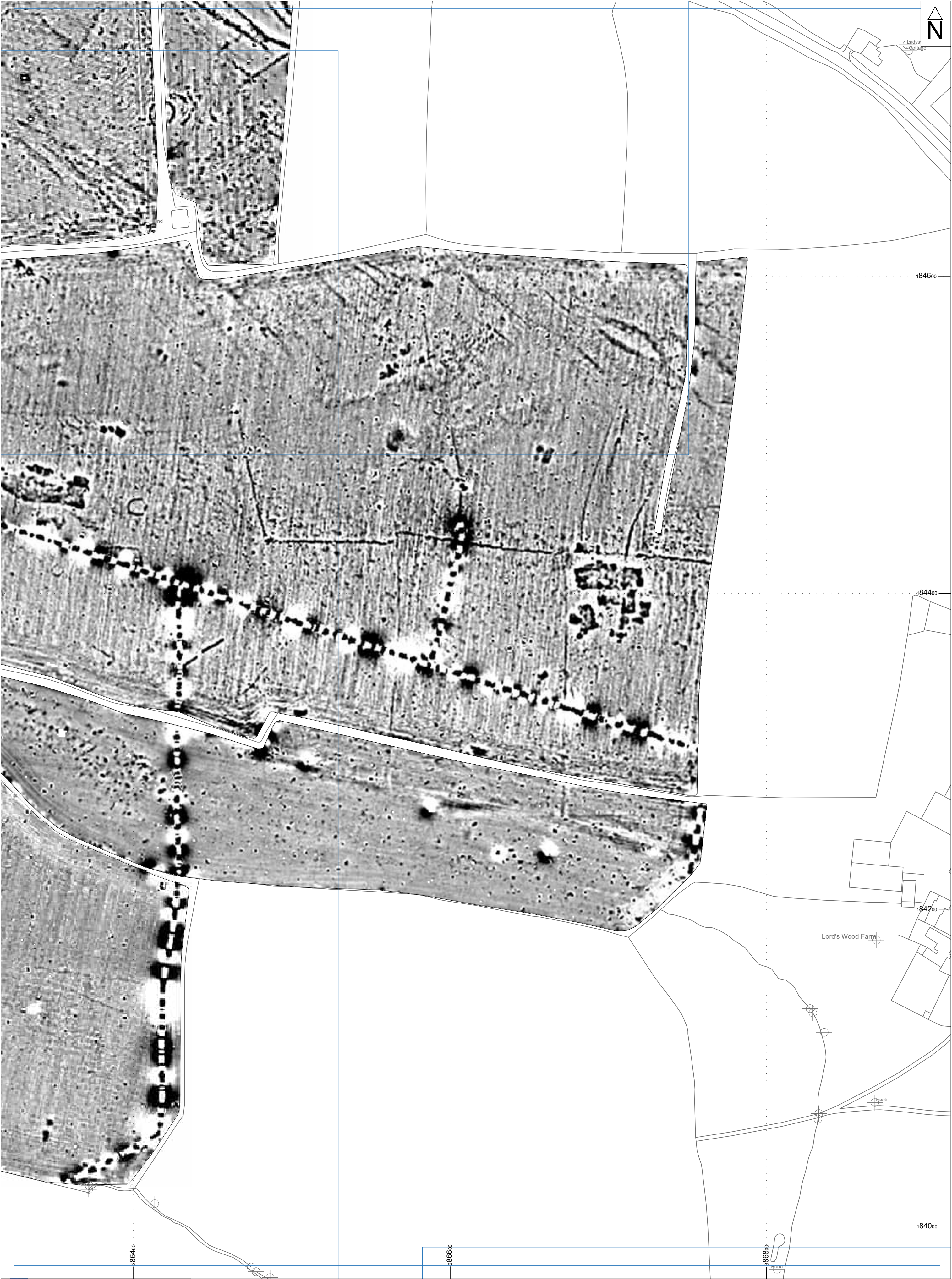
Title		Interpretation					
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			SERVICE PIPE		AGRICULTURAL		
			MAGNETIC DISTURBANCE		GEOLOGY		

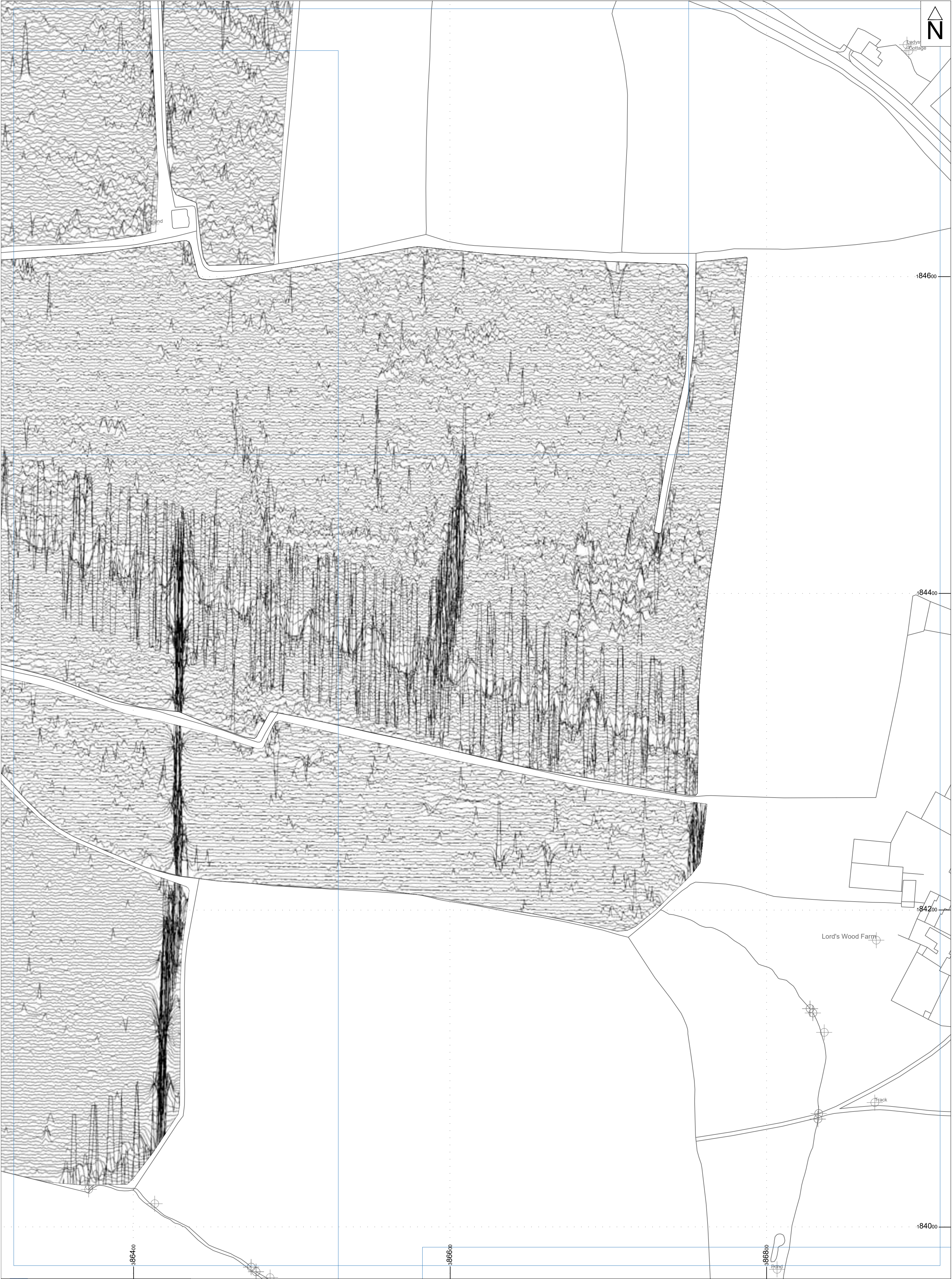


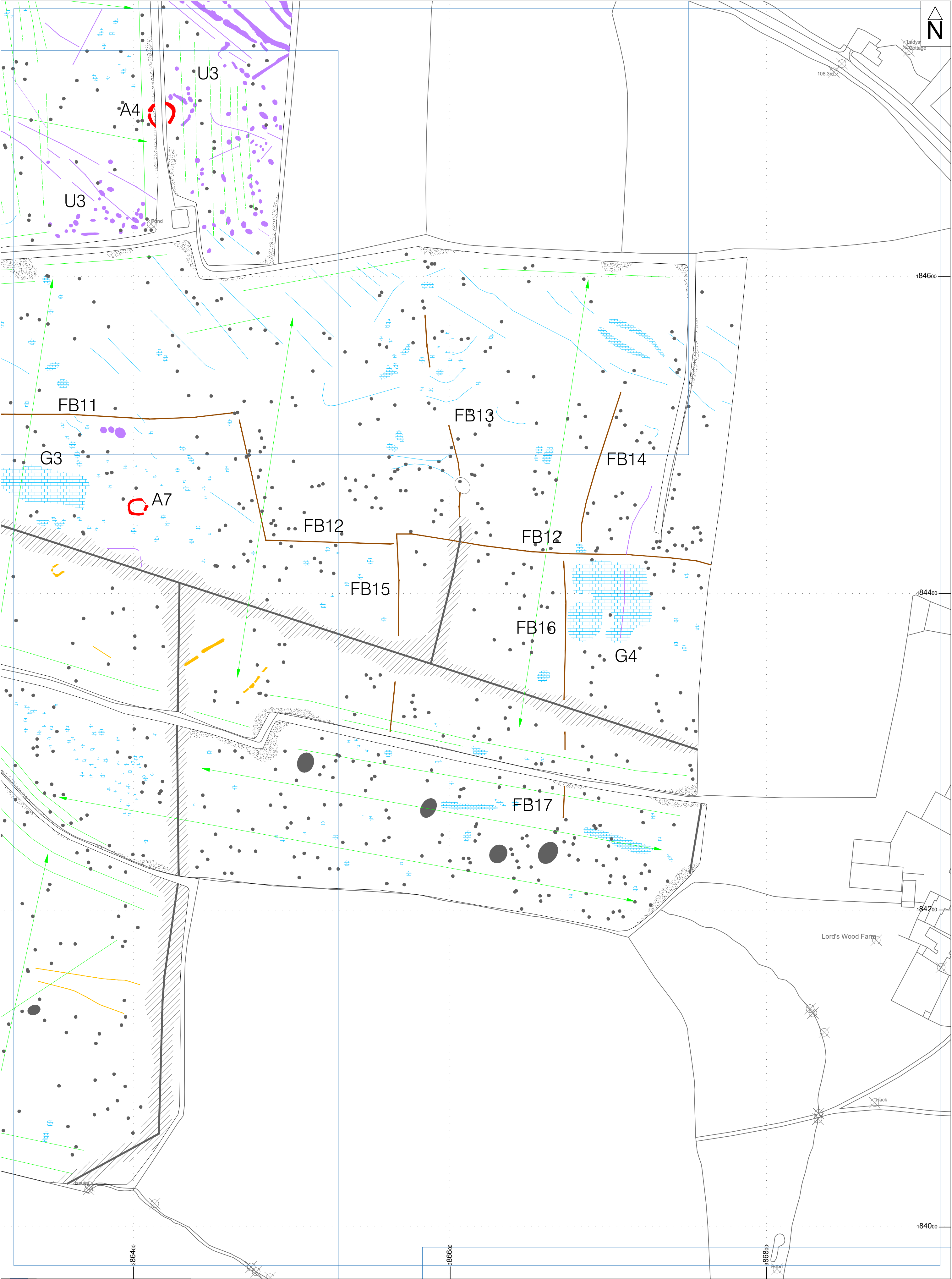


























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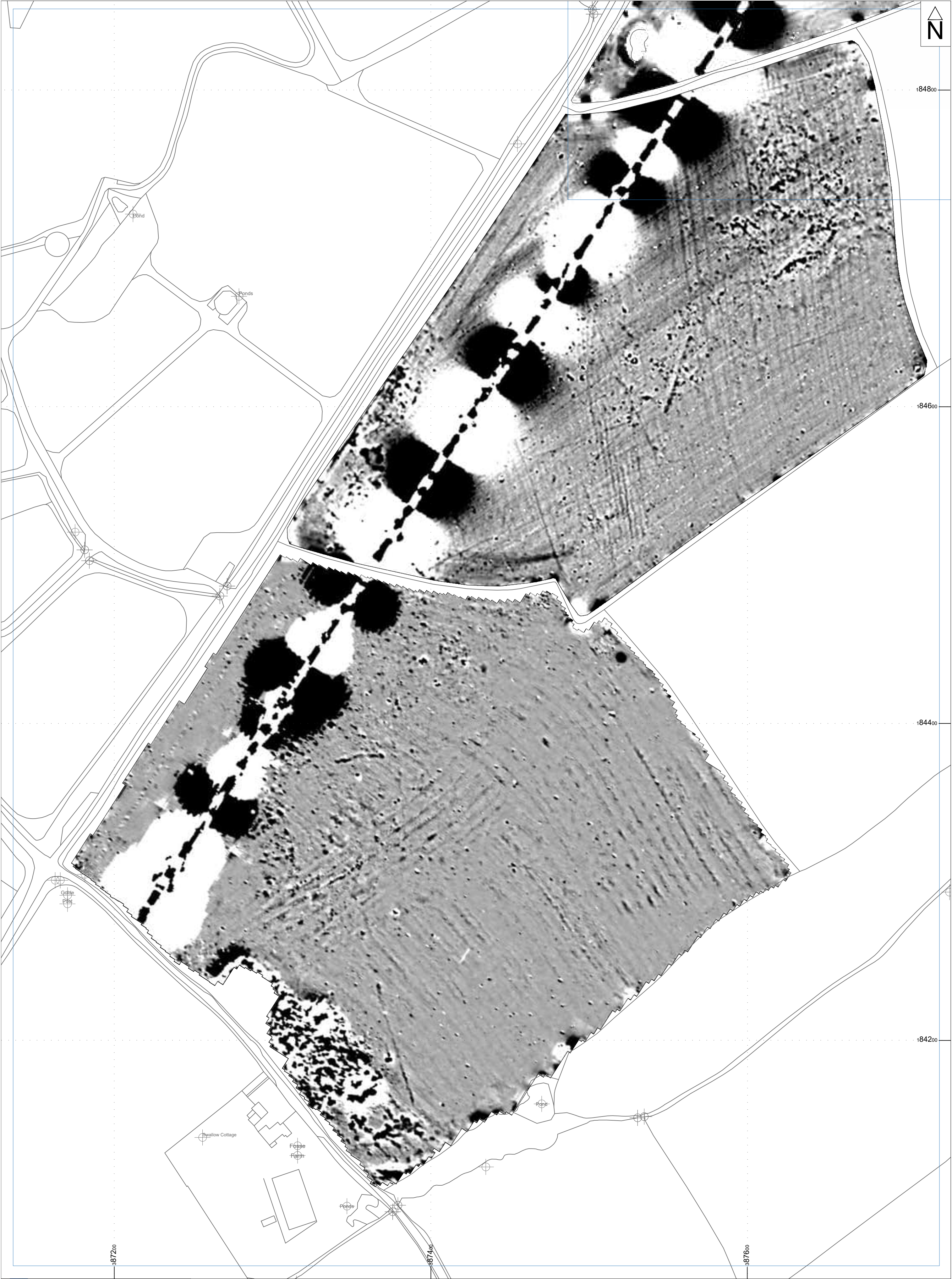
Interpretation of magnetometer data; Sector 5

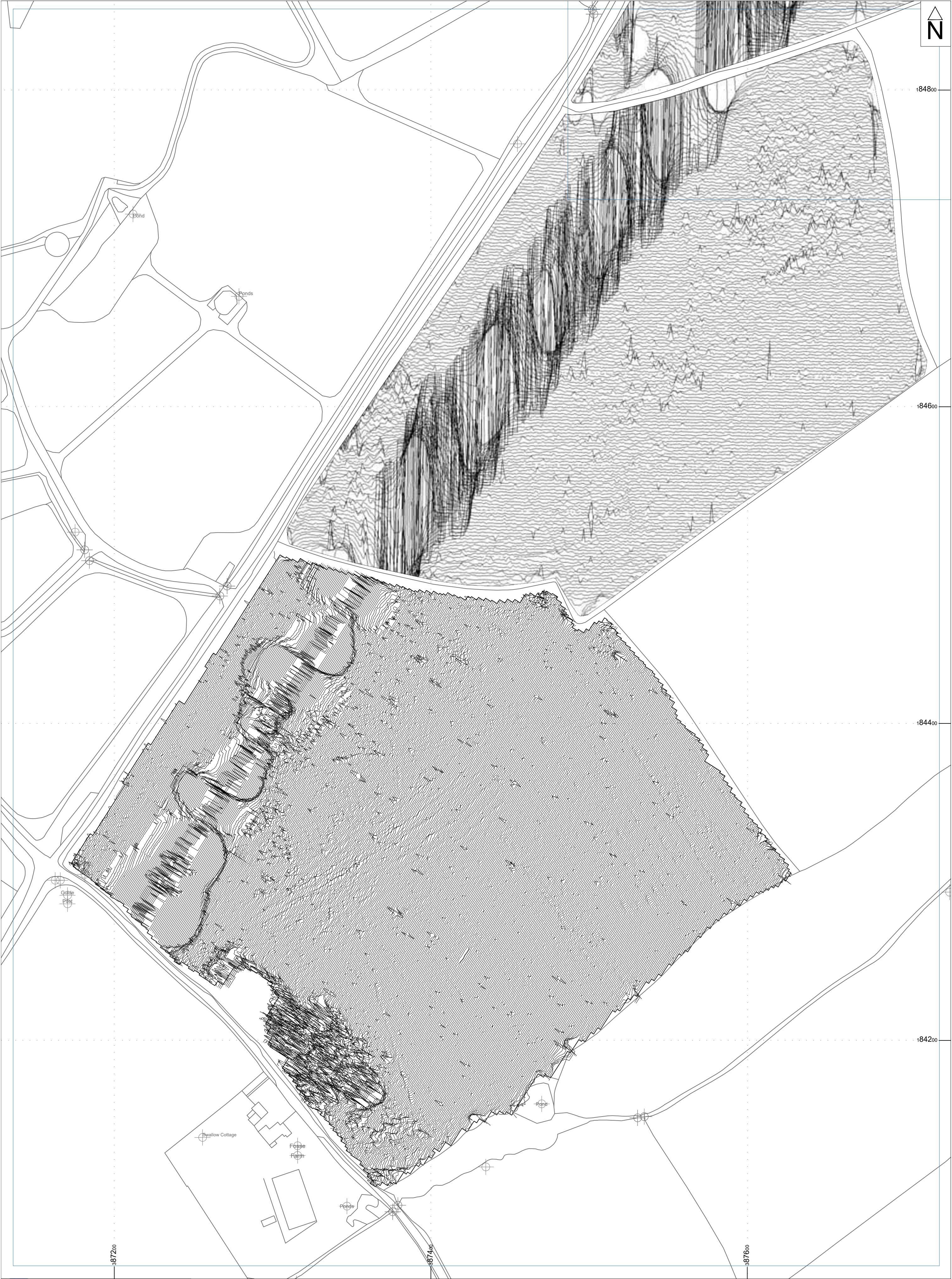
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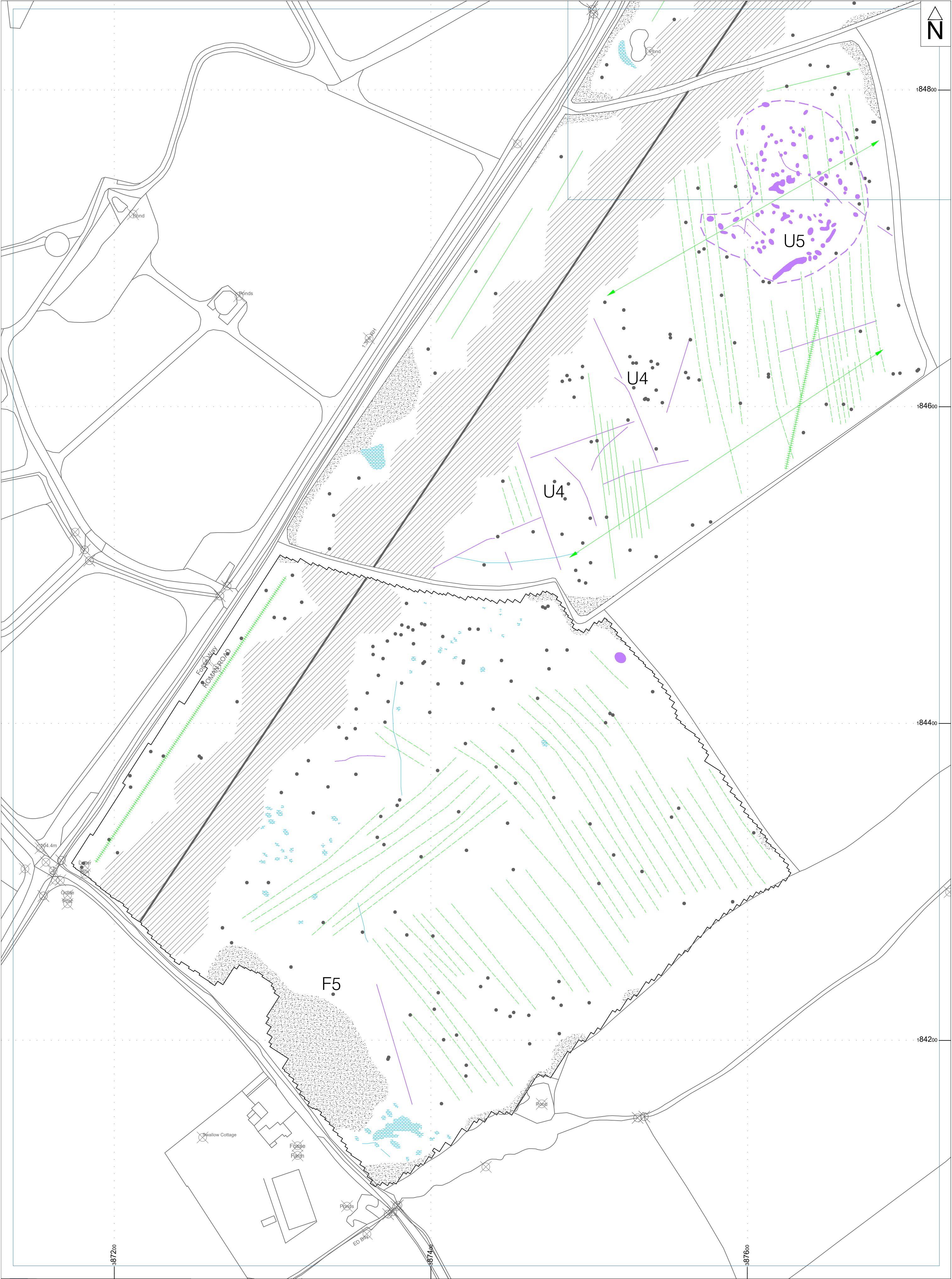
Fig. 19










Title		Interpretation					
	SECTOR BOUNDARY		FERROUS		RIDGE & FURROW		GEOLOGY
	SERVICE PIPE		AGRICULTURAL		UNCERTAIN		ARCHAEOLOGY
	MAGNETIC DISTURBANCE		FORMER FIELD BOUNDARY		ARCHAEOLOGY?		

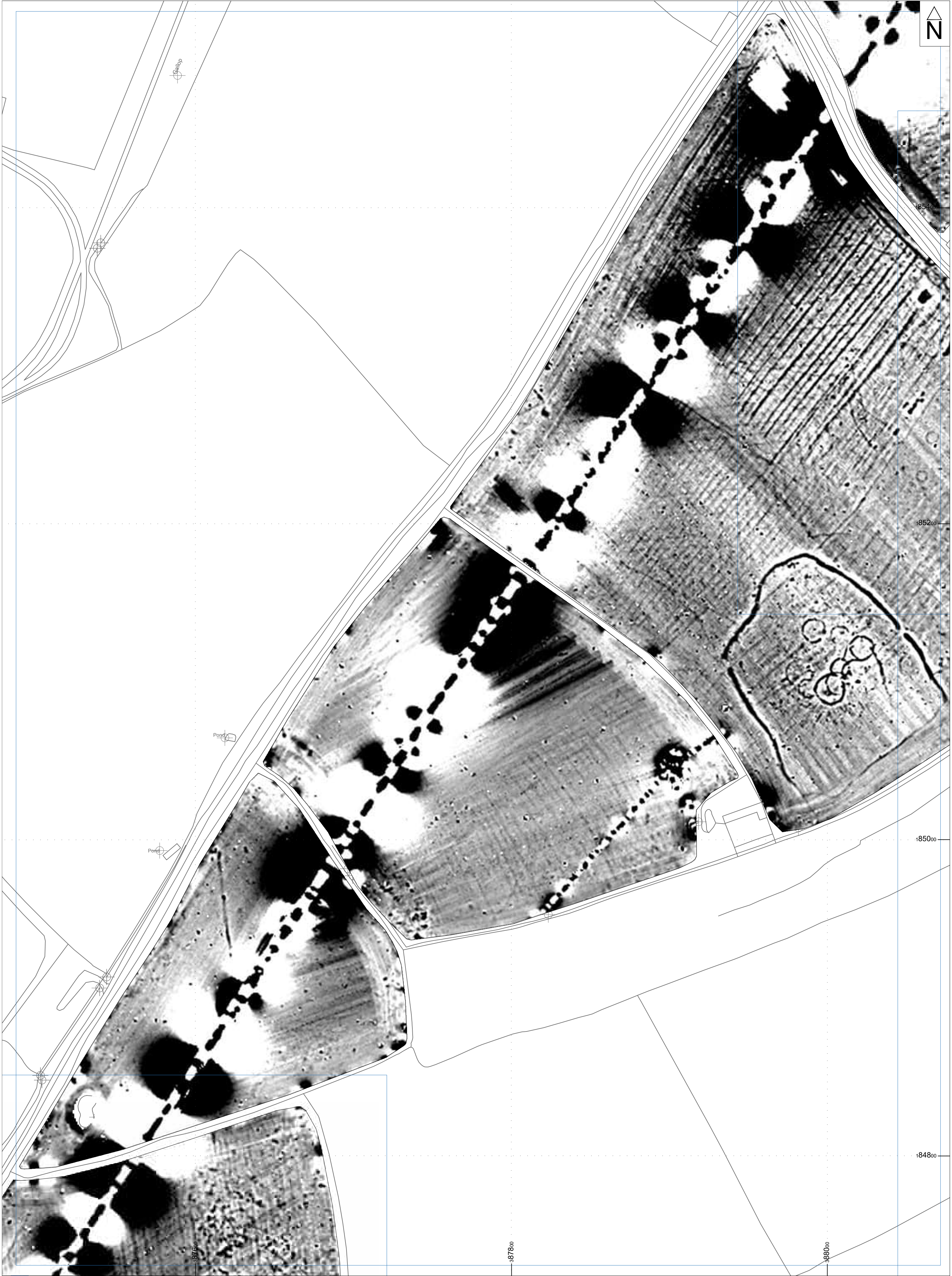
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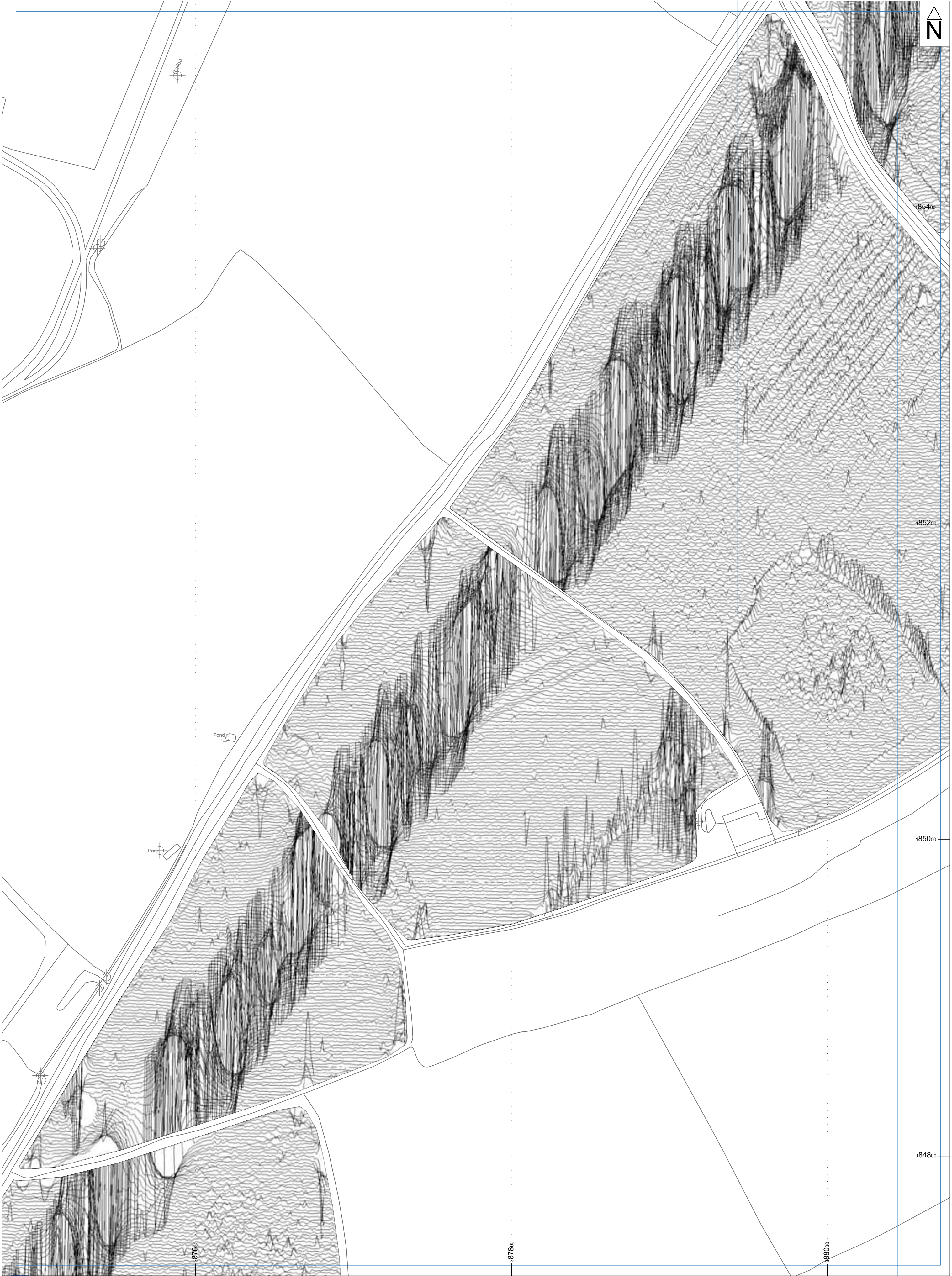


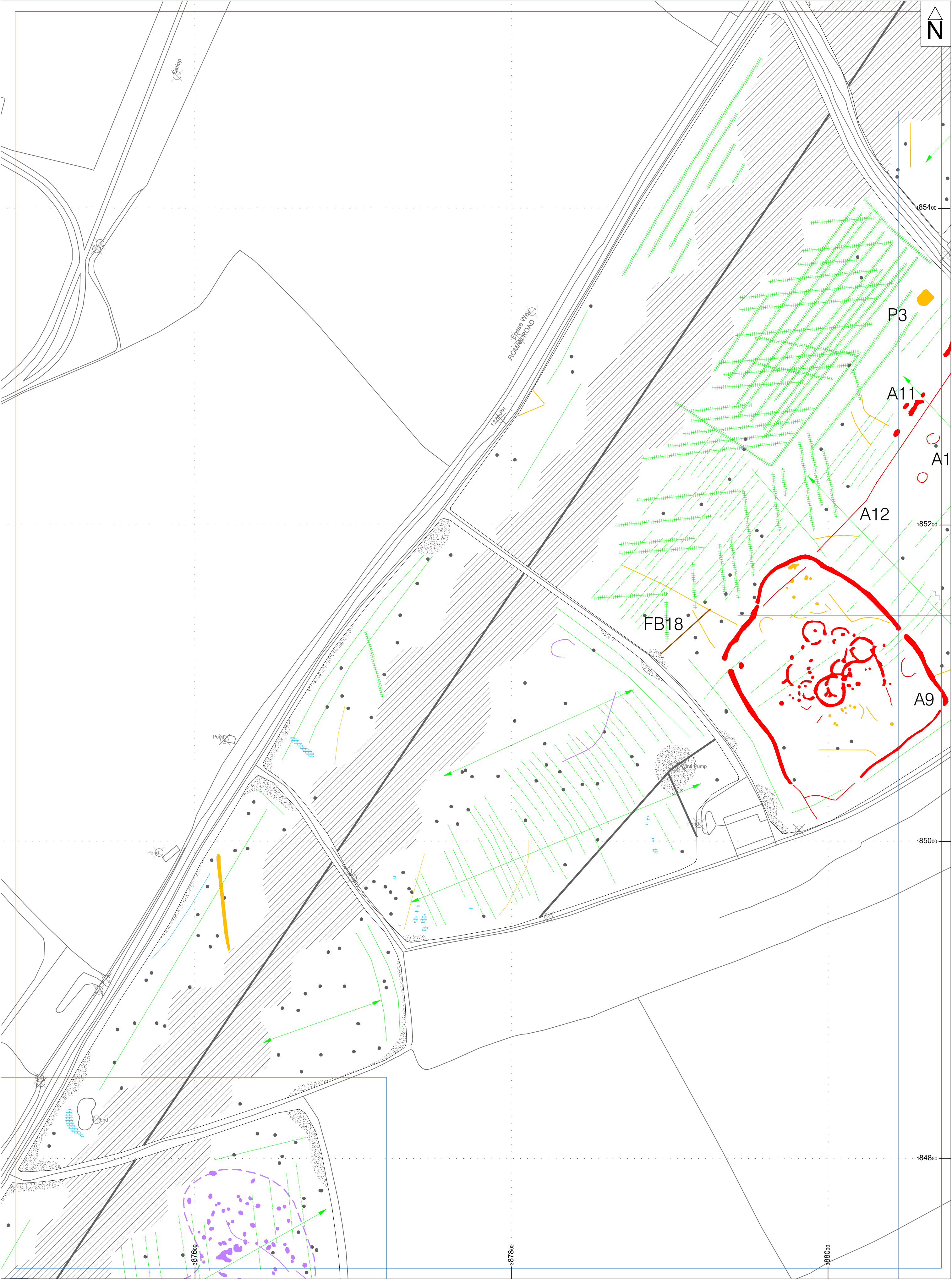





Title		Interpretation			
	SECTOR BOUNDARY		FERROUS		FIELD DRAIN
	SERVICE PIPE		RIDGE & FURROW		GEOLOGY
	MAGNETIC DISTURBANCE		AGRICULTURAL		UNCERTAIN





















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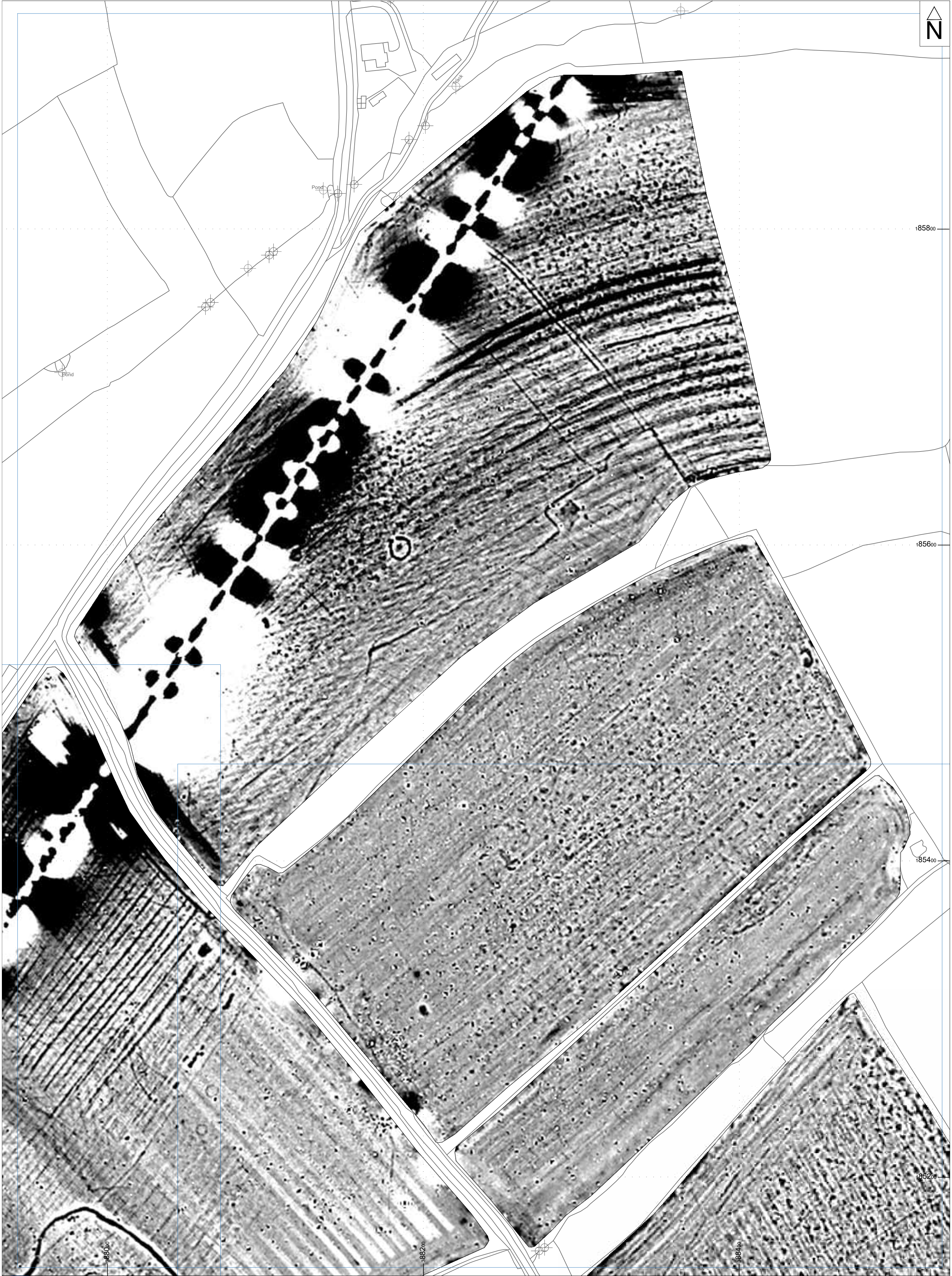
Interpretation of magnetometer data; Sector 7

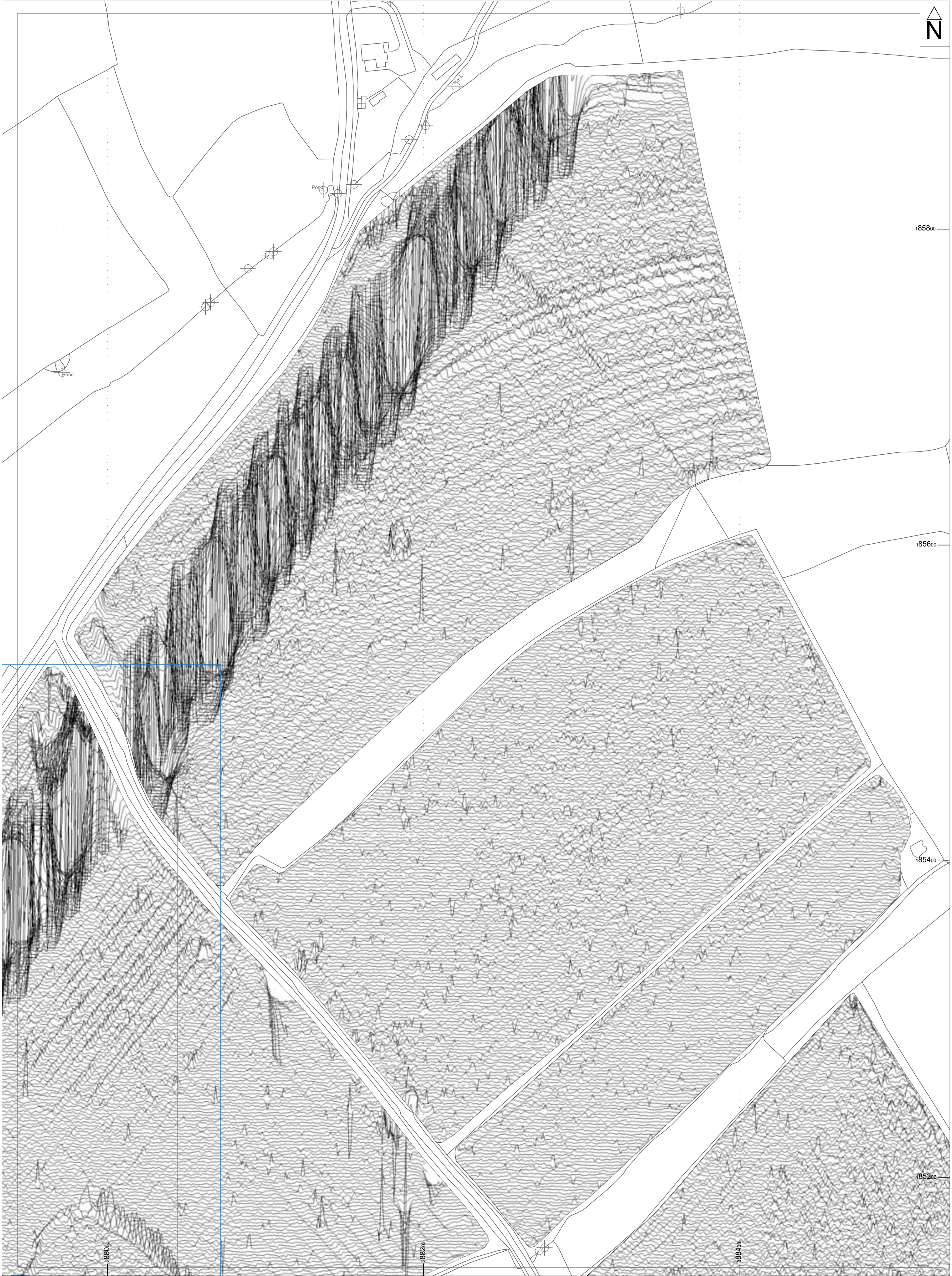
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Fig. 25

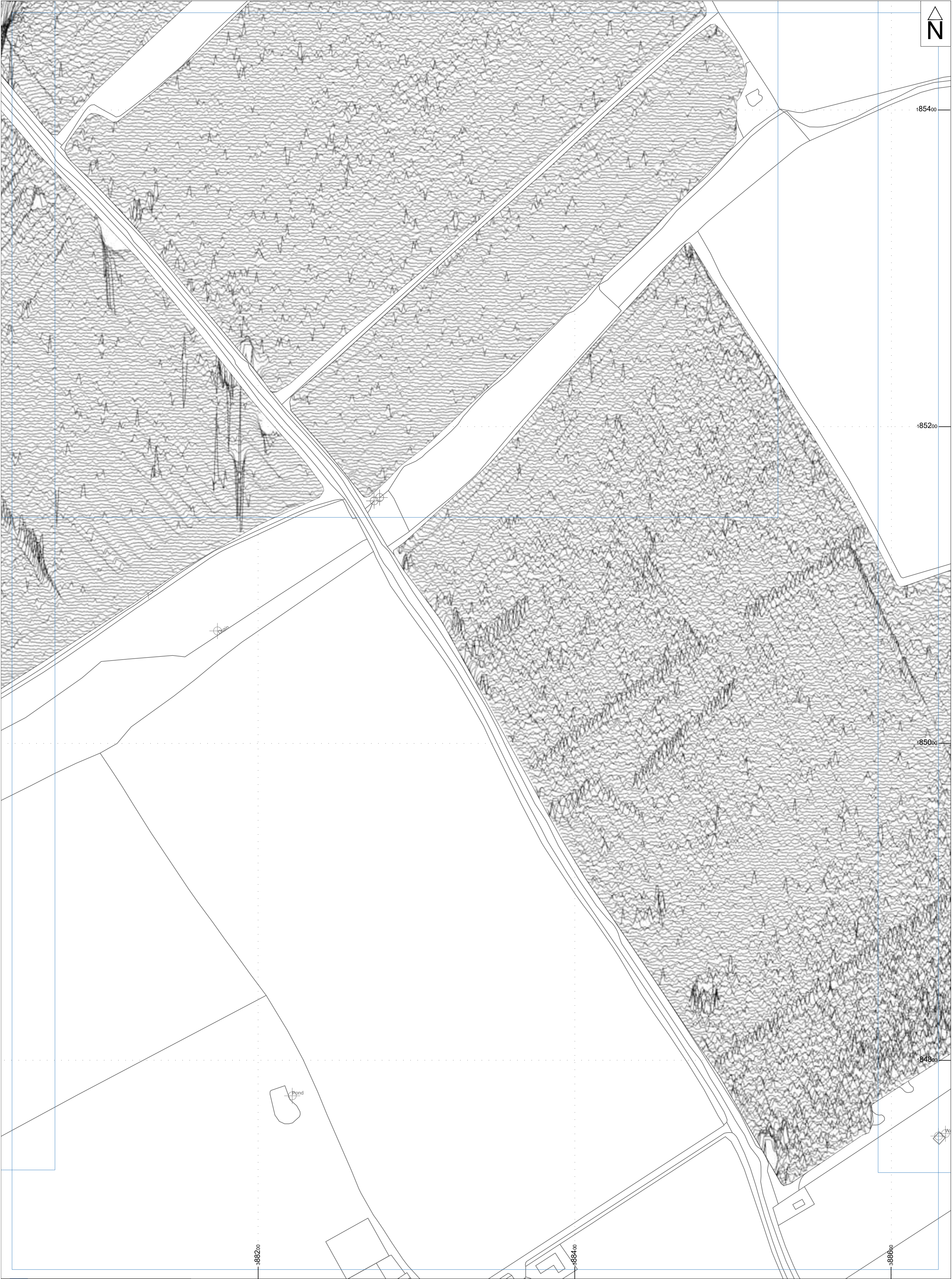
Title		Interpretation						
	SECTOR BOUNDARY	 FERROUS	 FIELD DRAIN	 FORMER FIELD BOUNDARY	 ARCHAEOLOGY?			
	SERVICE PIPE	 RIDGE & FURROW	 GEOLOGY	 ARCHAEOLOGY				
	MAGNETIC DISTURBANCE	 AGRICULTURAL	 UNCERTAIN					

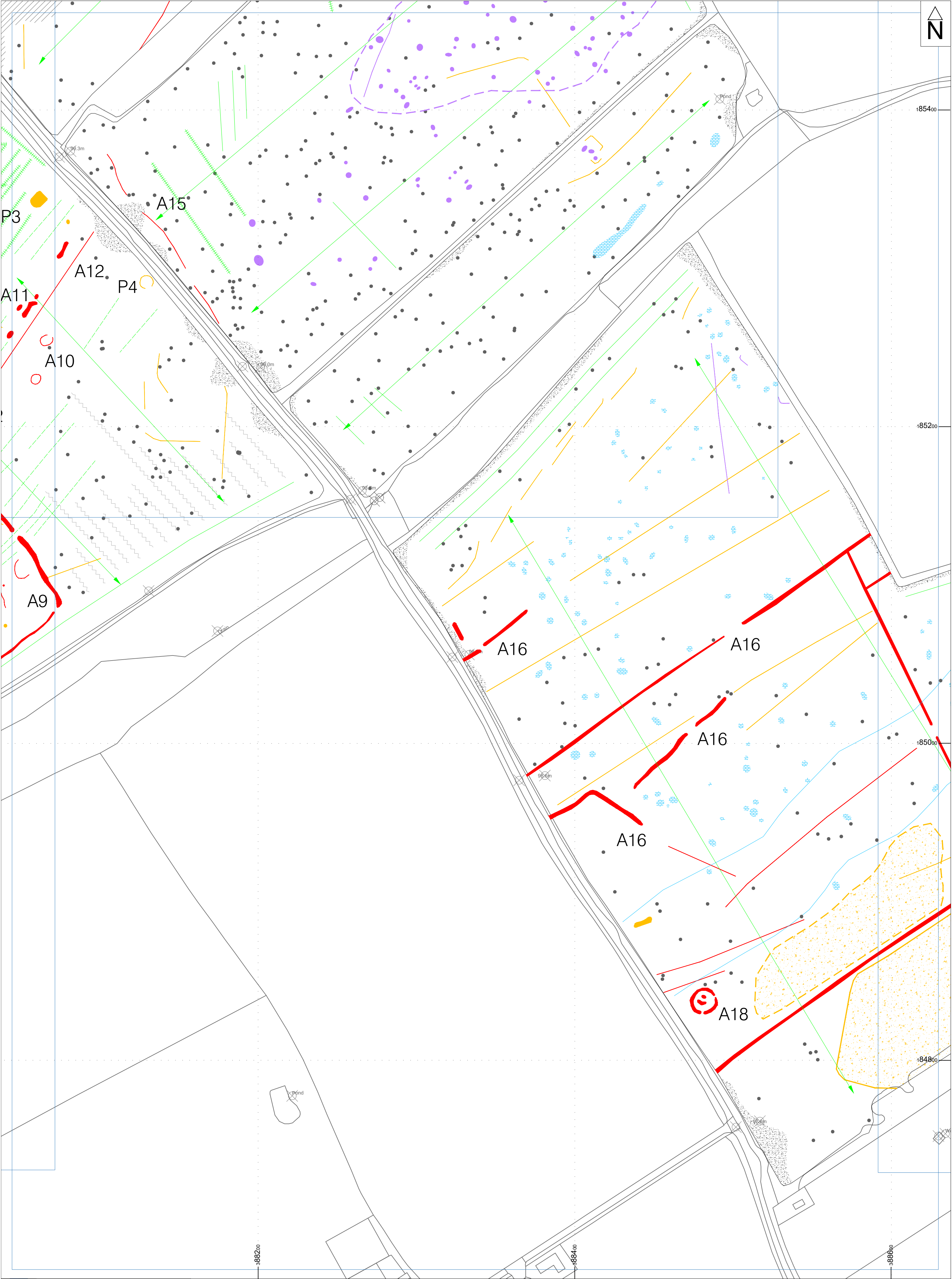
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
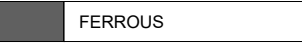

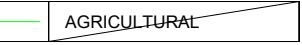
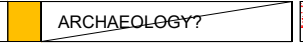
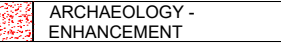


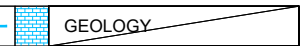

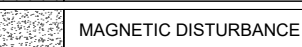
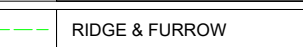

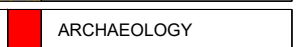






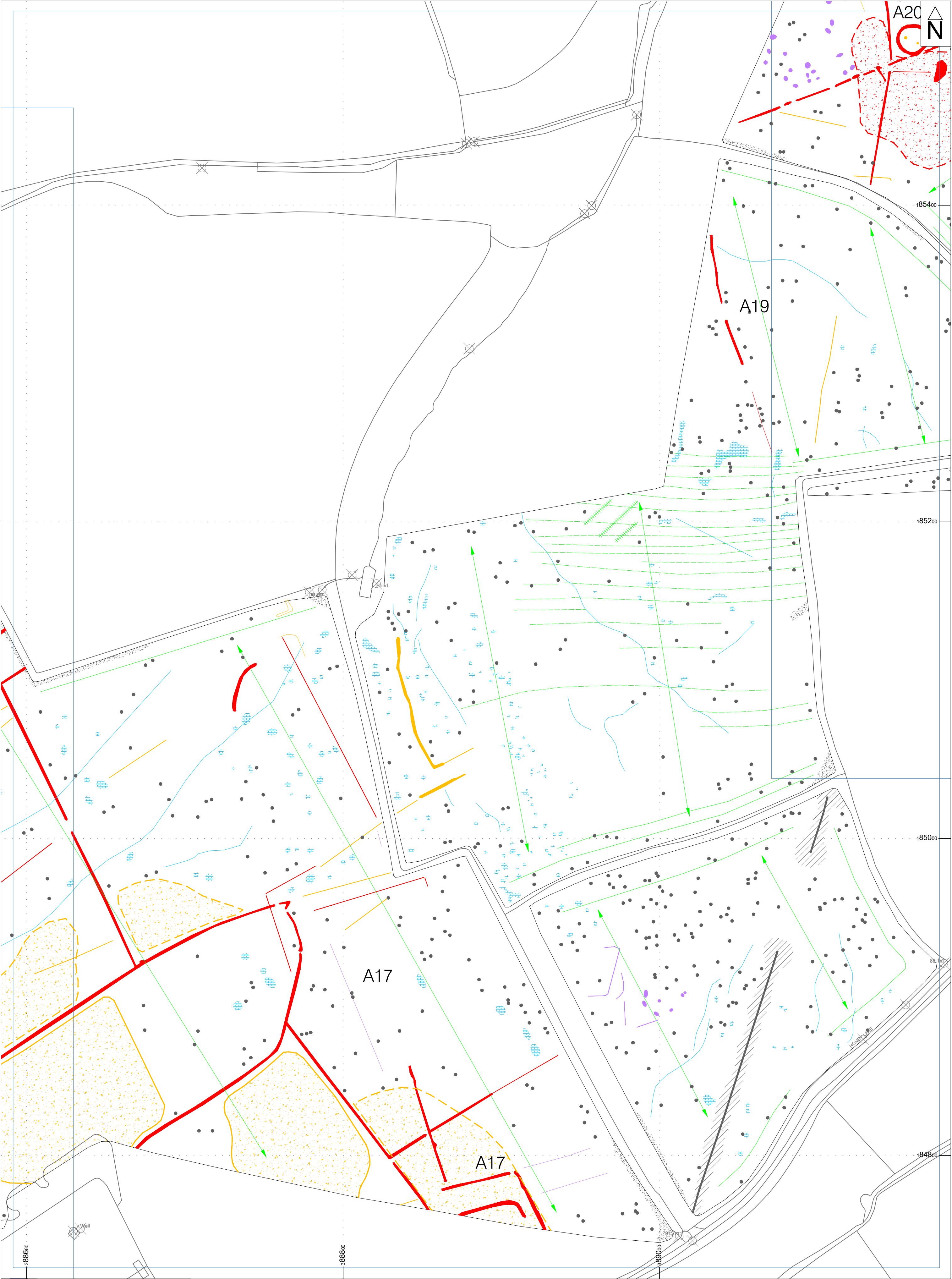





Title		Interpretation									
	SECTOR BOUNDARY		FERROUS		INTERFERENCE		AGRICULTURAL		ARCHAEOLOGY?		ARCHAEOLOGY - ENHANCEMENT
			SERVICE PIPE		FIELD DRAIN		GEOLOGY		ARCHAEOLOGY? - ENHANCEMENT		
			MAGNETIC DISTURBANCE		RIDGE & FURROW		UNCERTAIN		ARCHAEOLOGY		





















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Interpretation of magnetometer data; Sector 10

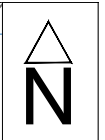
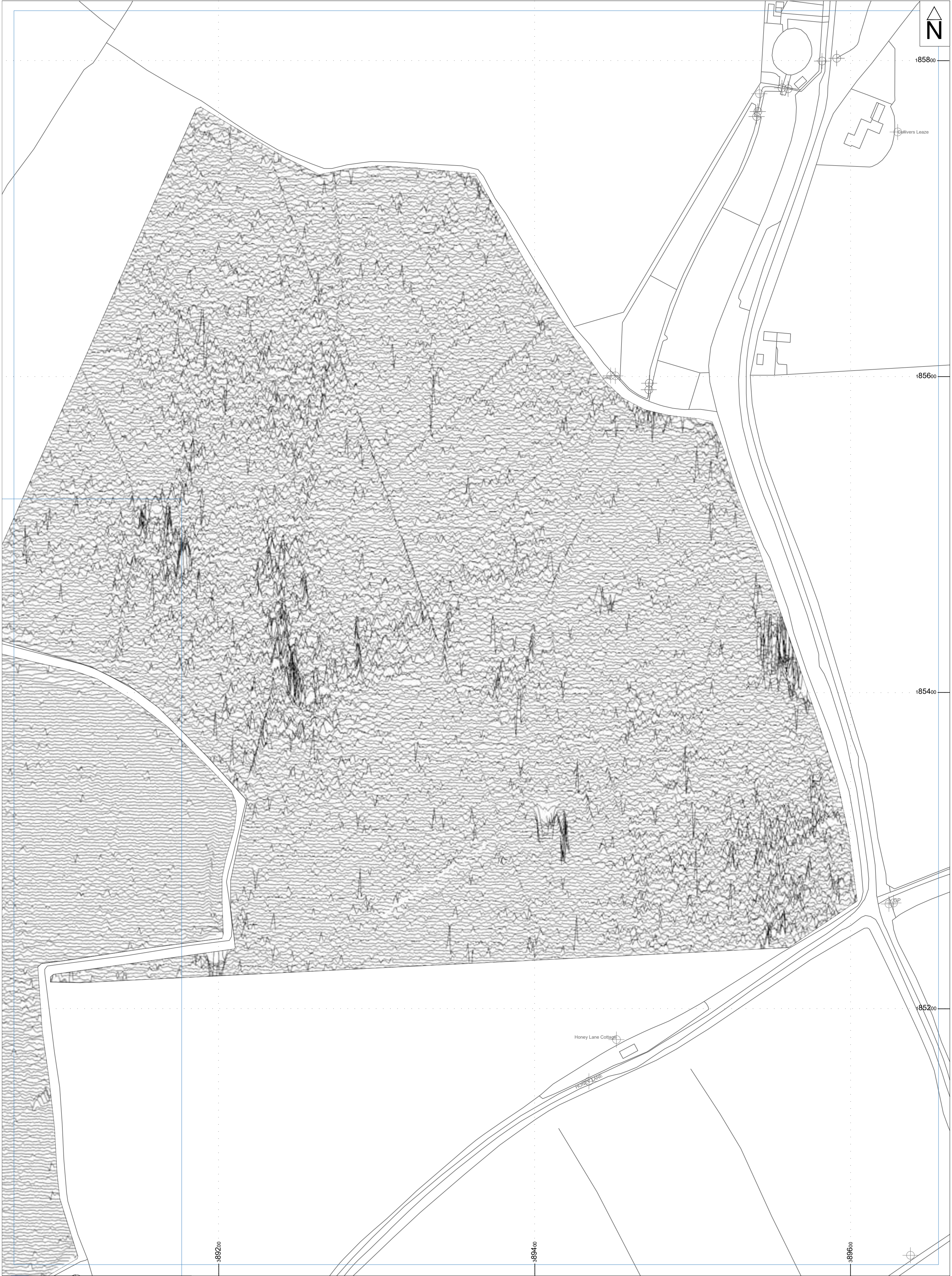
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Fig. 34

Title		Interpretation					
	SECTOR.BOUNDARY		FERROUS		RIDGE & FURROW		UNCERTAIN
							
							
							
							

0 50m
1:1500 @ A2







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
Project ID: XK77_MKS23

XY trace plot of minimally processed magnetometer data;
Sector 11

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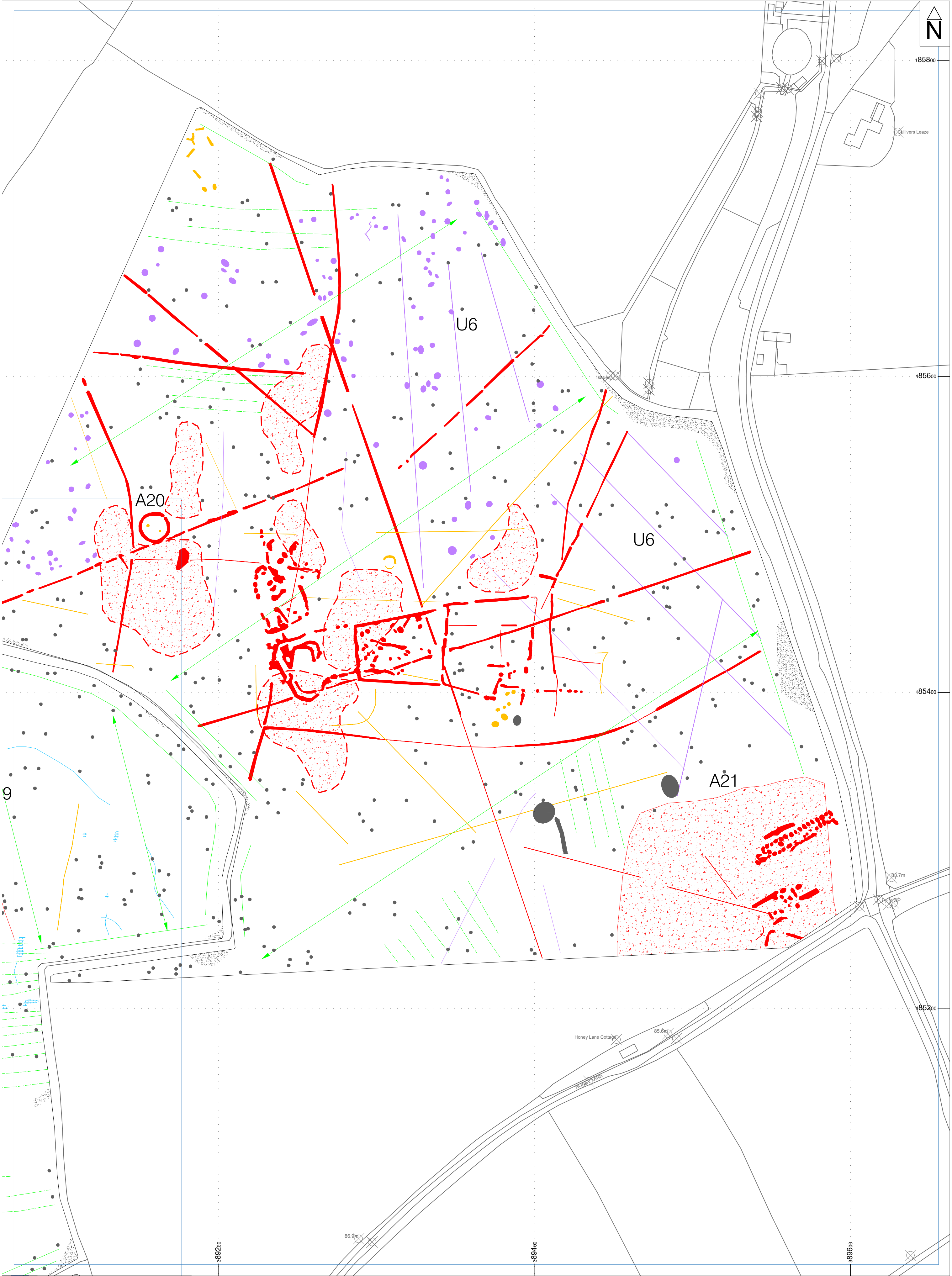
Fig. 36


Title

 SECTOR BOUNDARY

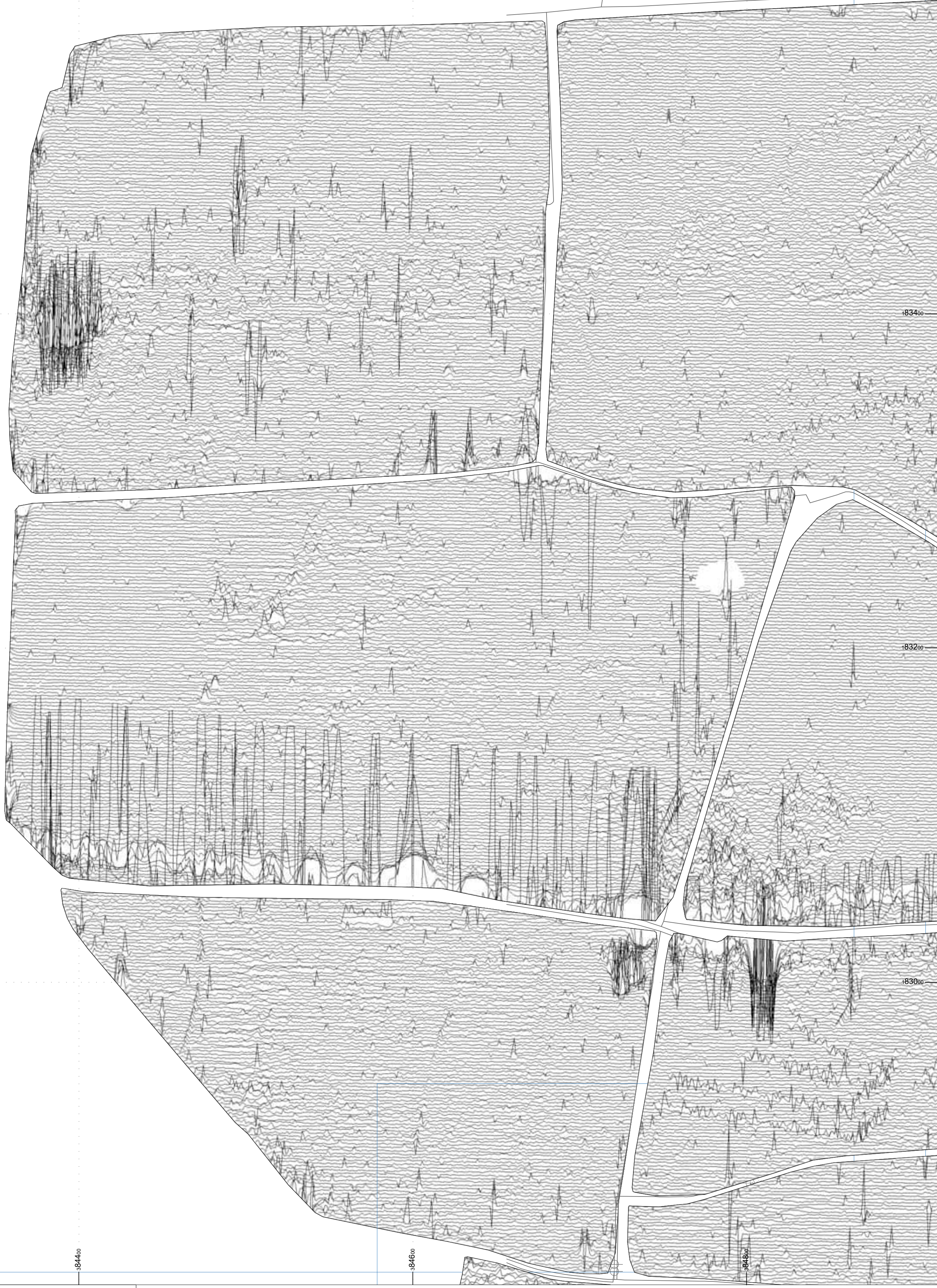
15.0 nT/cm

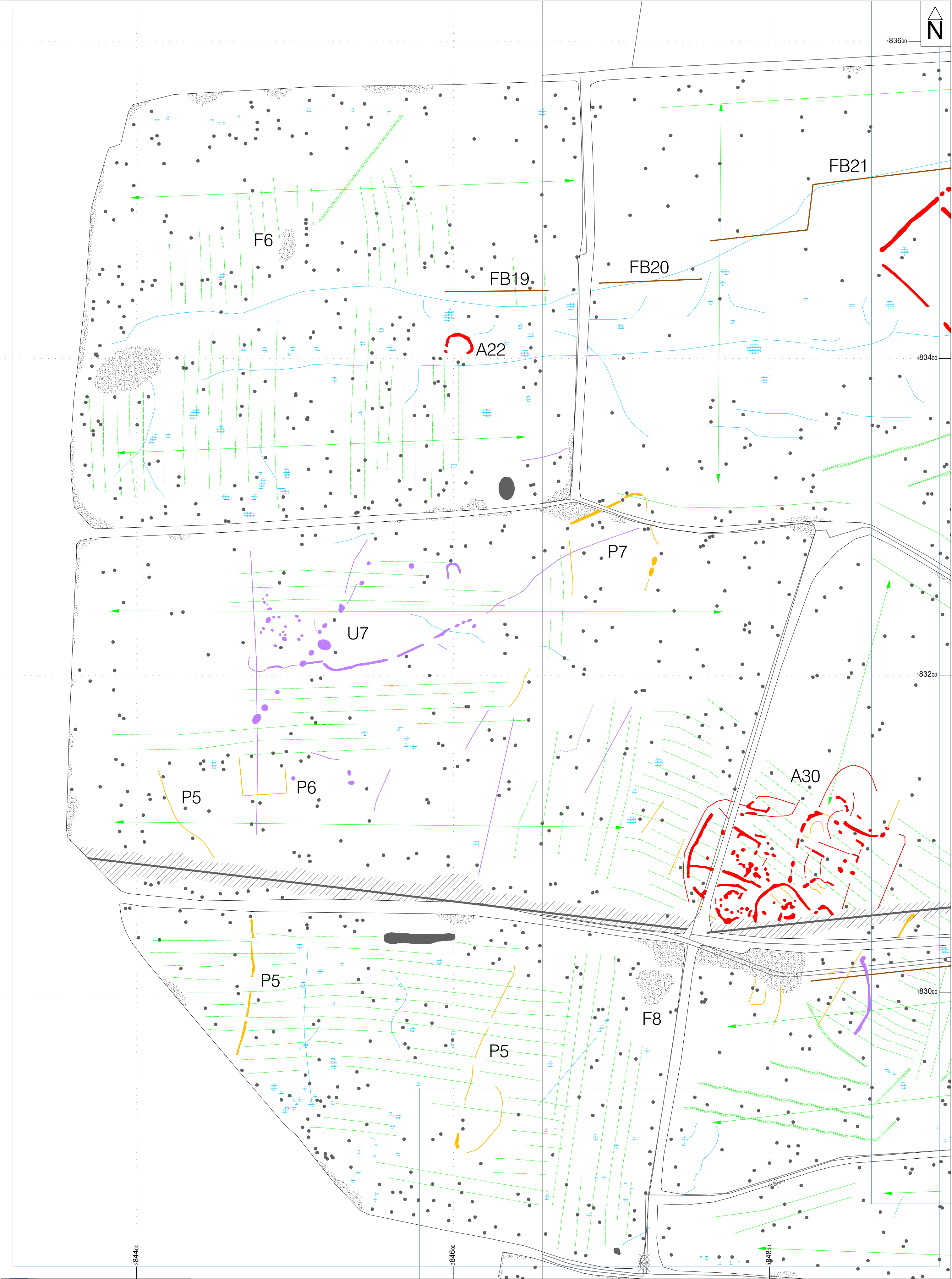
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













Title		Interpretation			
	SECTOR BOUNDARY		FERROUS		AGRICULTURAL
	MAGNETIC DISTURBANCE		GEOLOGY		ARCHAEOLOGY?
	RIDGE & FURROW		UNCERTAIN		ARCHAEOLOGY
			ARCHAEOLOGY ENHANCEMENT		



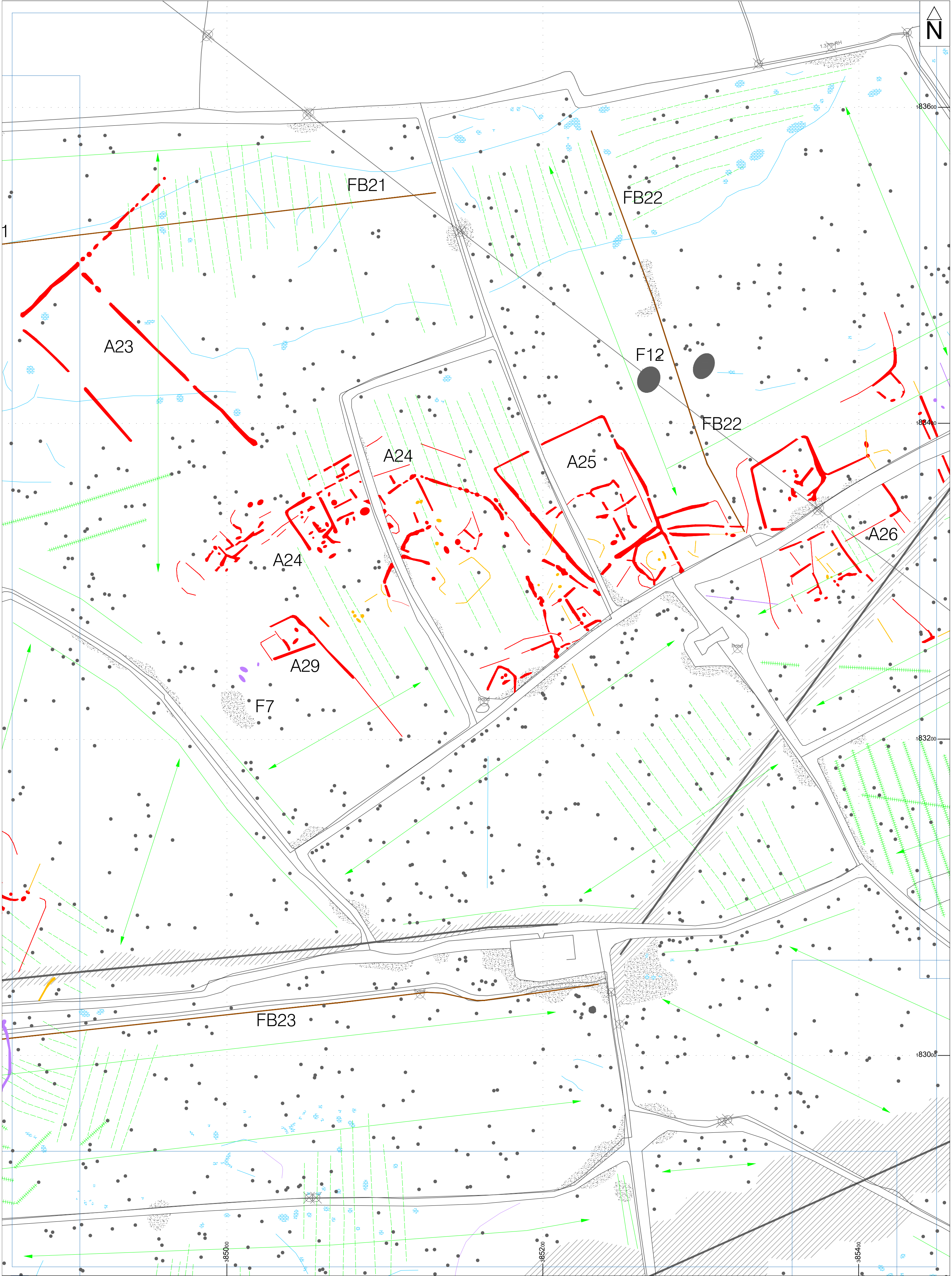





Title		Interpretation					
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							ARCHAEOLOGY










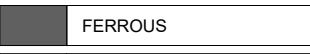

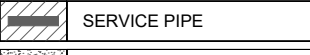

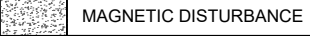
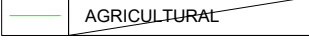

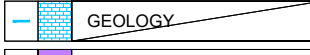

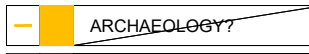
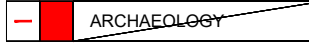
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Interpretation of magnetometer data; Sector 13

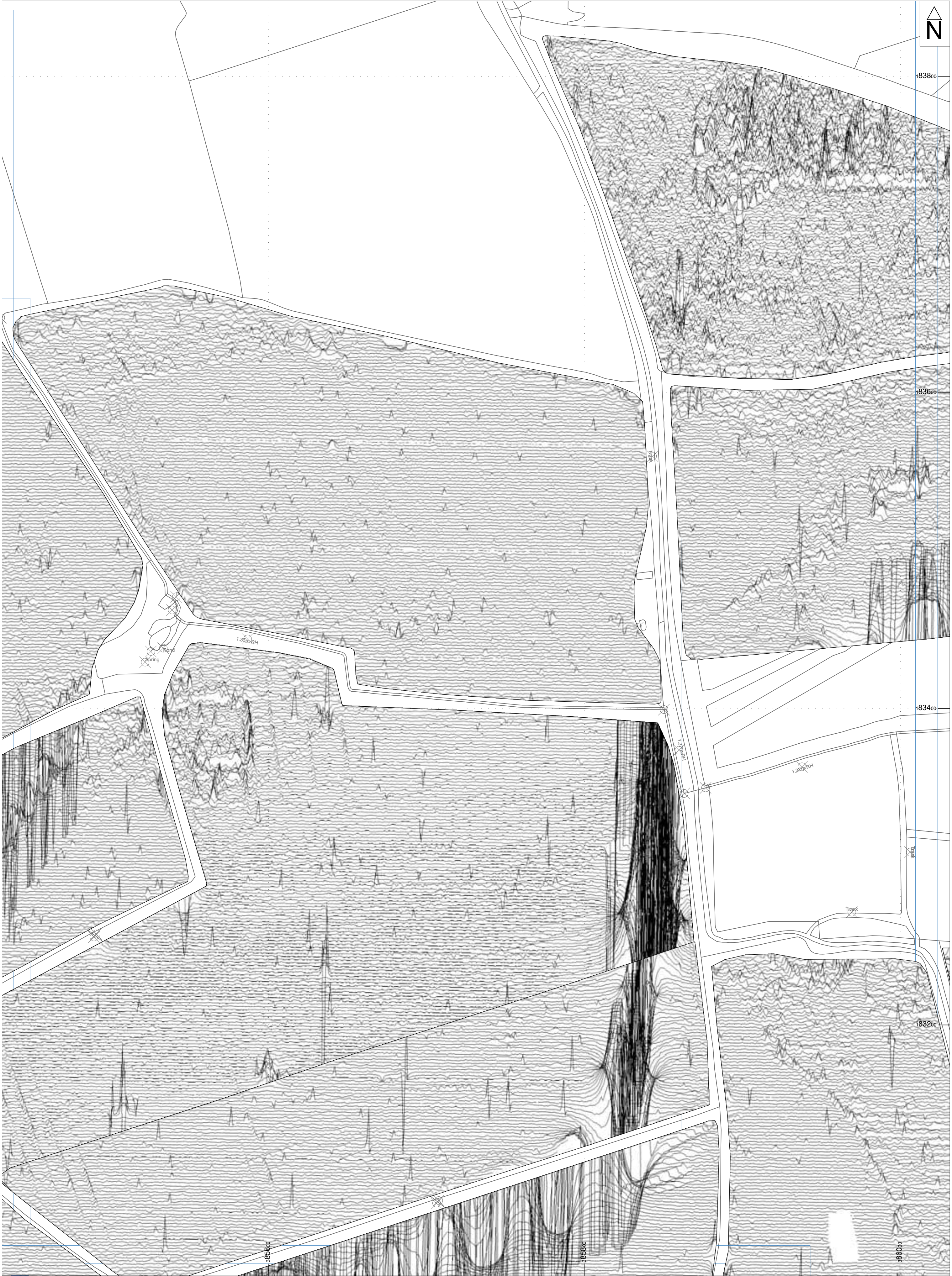
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Fig. 43

Title		Interpretation					
	SECTOR BOUNDARY		FERROUS			FIELD DRAIN	
			SERVICE PIPE			RIDGE & FURROW	
			MAGNETIC DISTURBANCE			AGRICULTURAL	
						FORMER FIELD BOUNDARY	
						GEOLOGY	
						UNCERTAIN	
						ARCHAEOLOGY?	
						ARCHAEOLOGY	

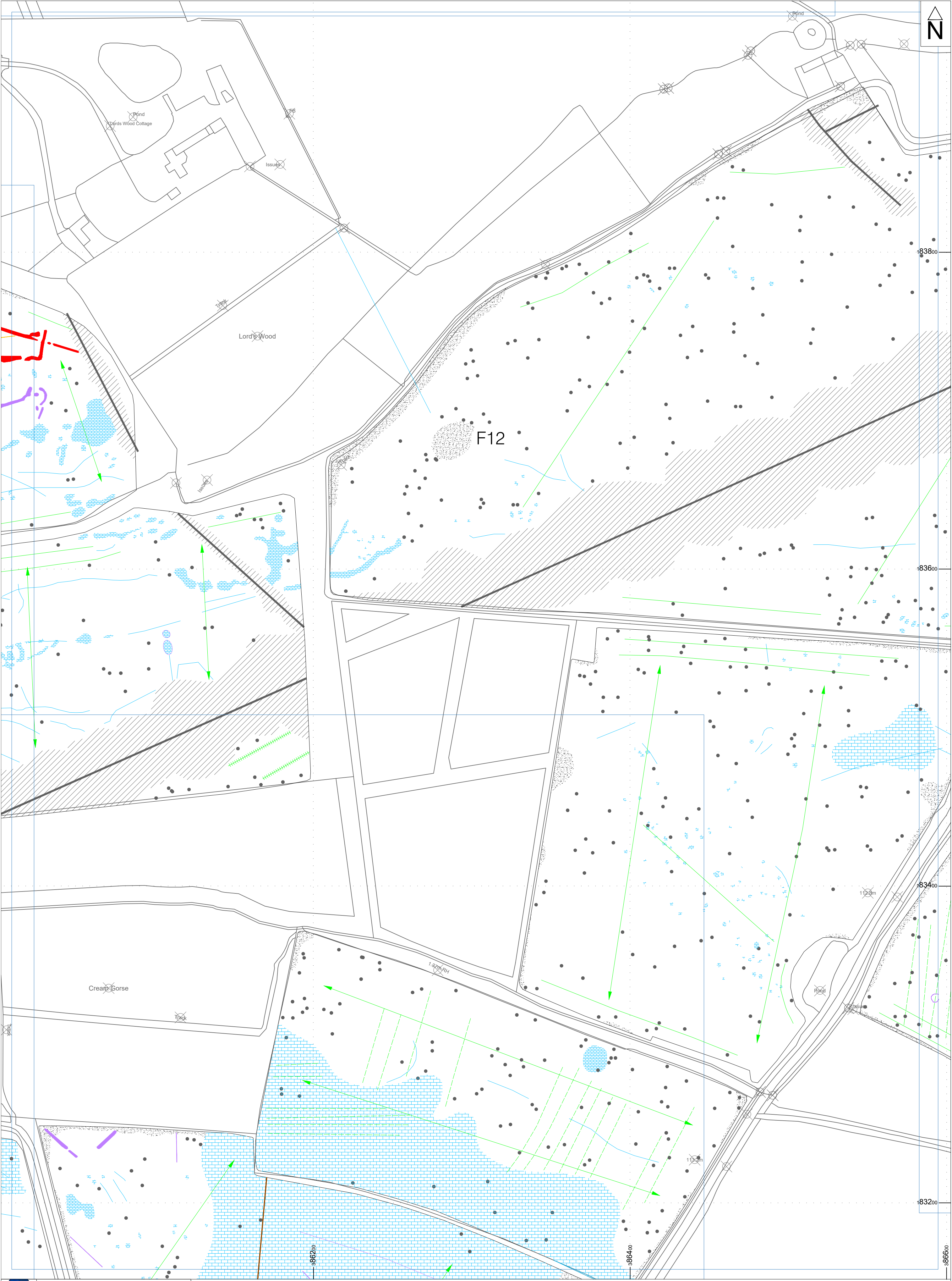
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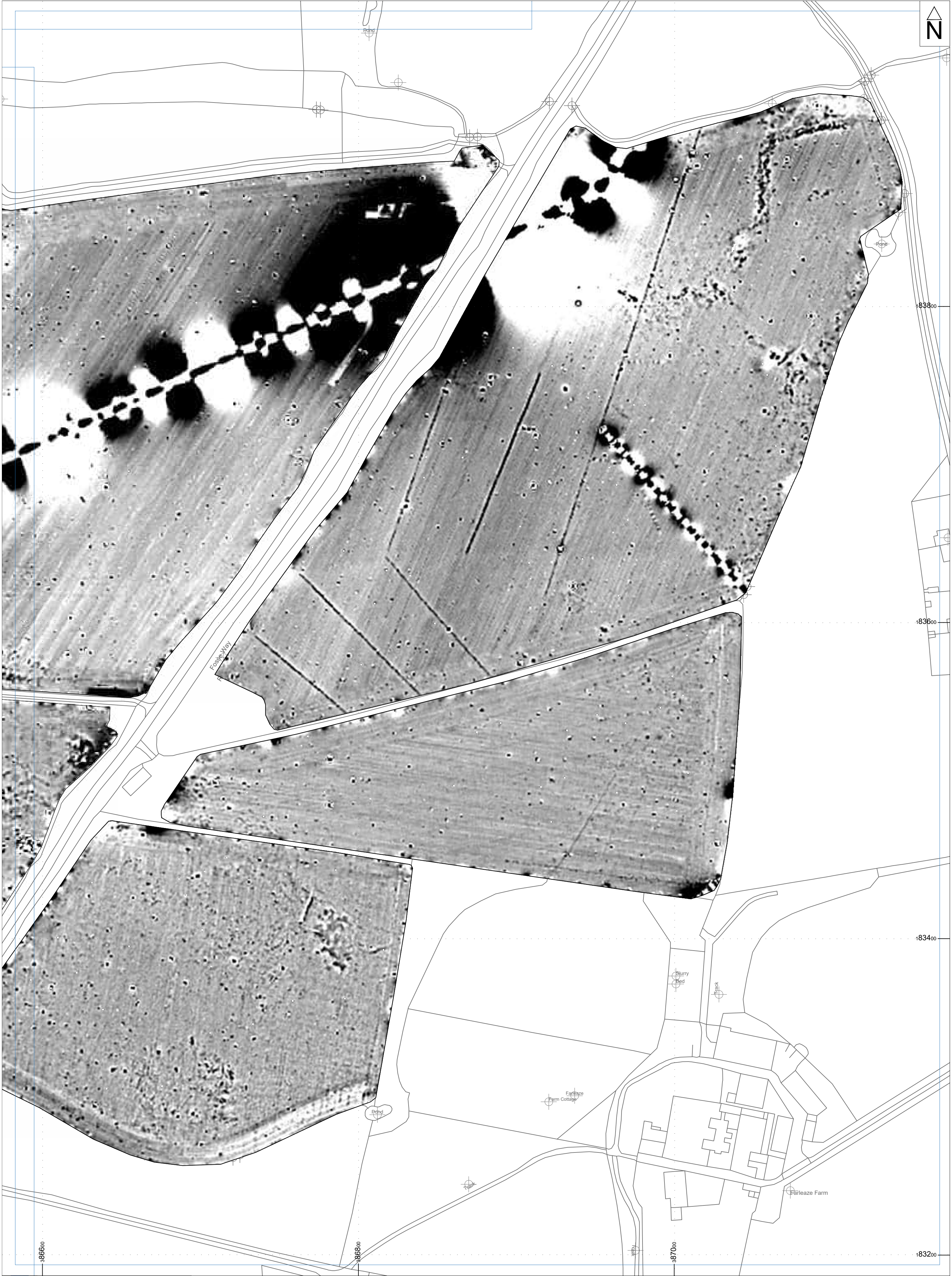


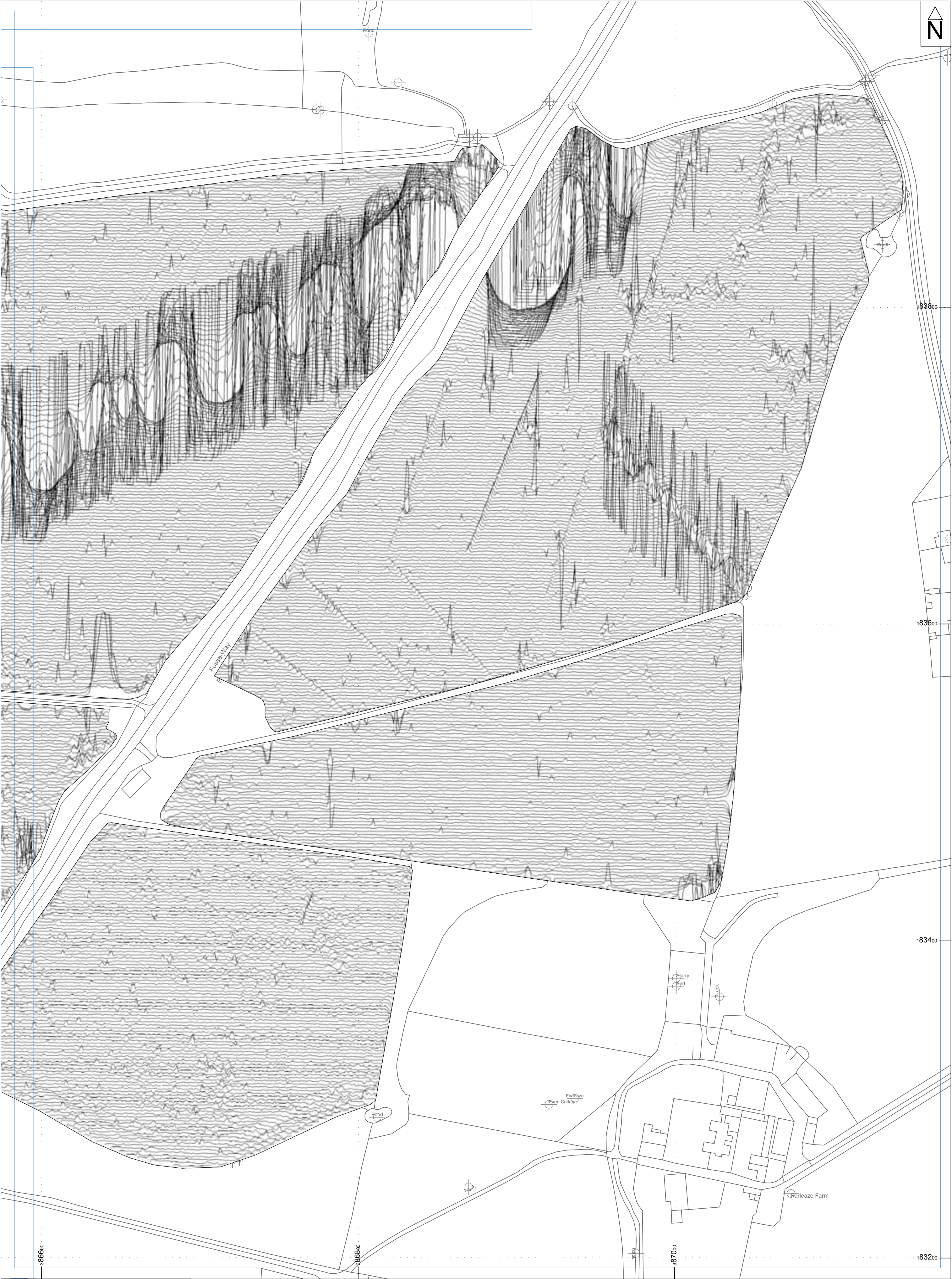




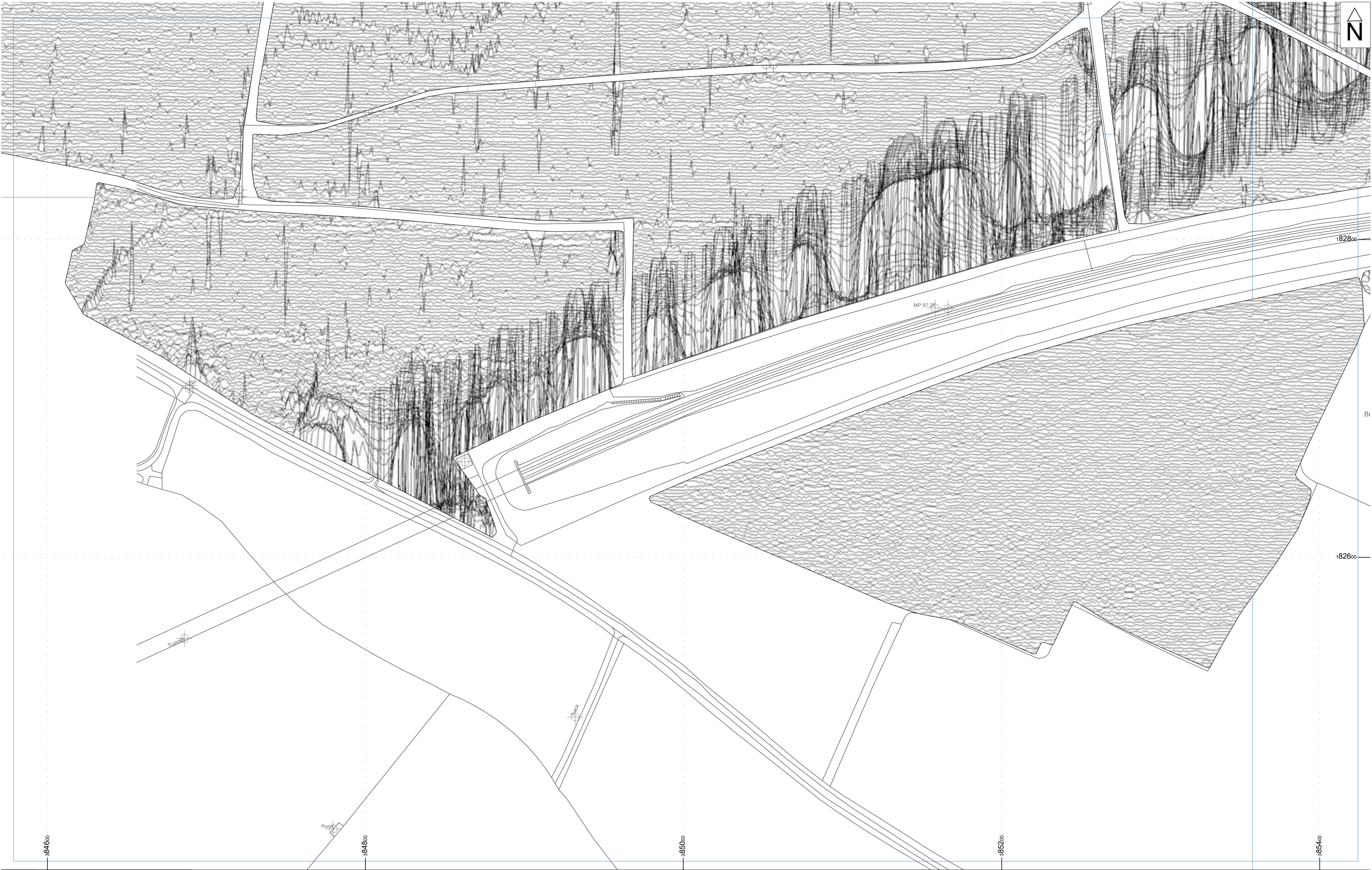


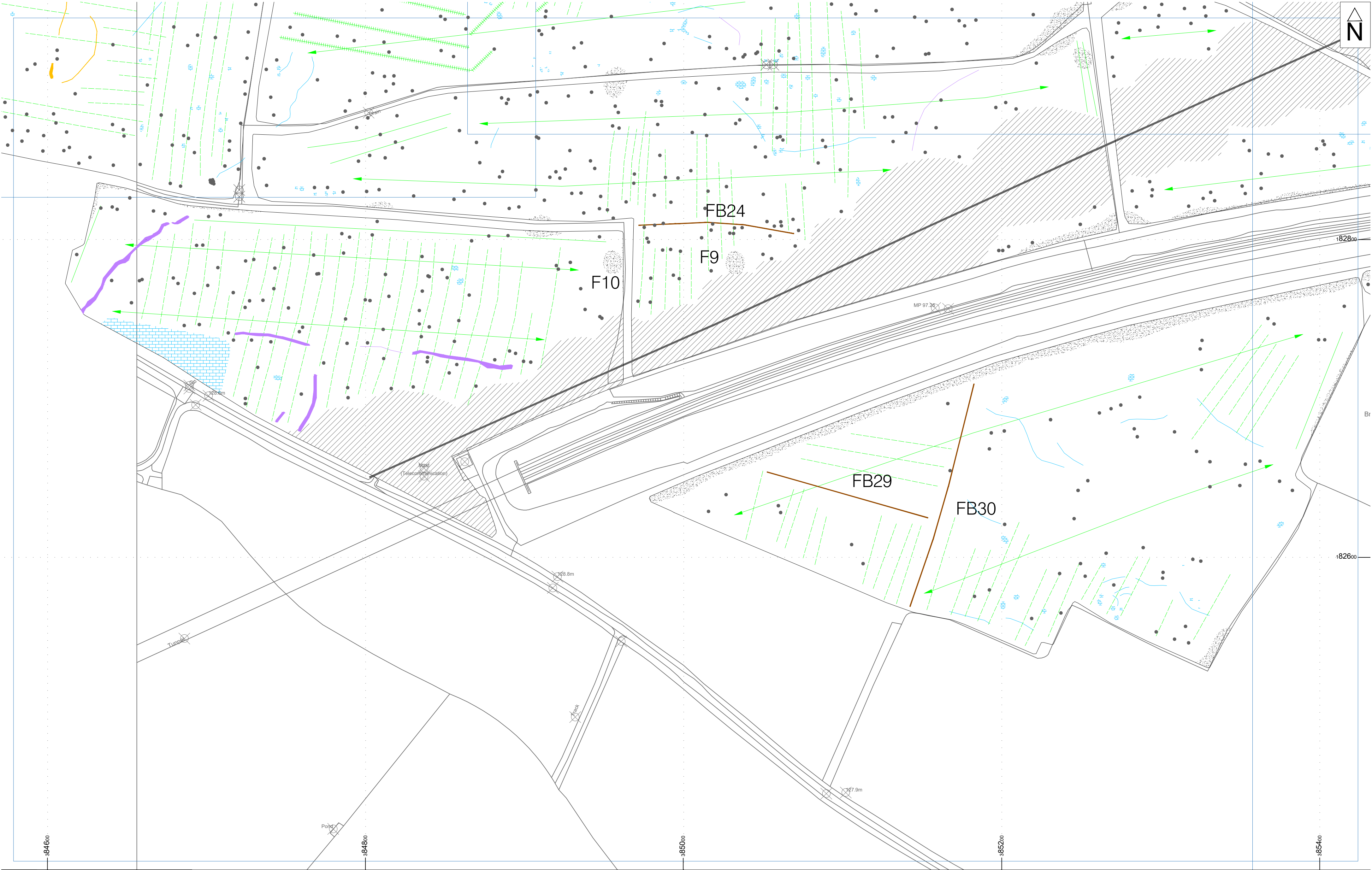
Title	Interpretation					
 SECTOR BOUNDARY	 FERROUS	 FIELD DRAIN	 FORMER FIELD BOUNDARY	 ARCHAEOLOGY?		
	 SERVICE PIPE	 RIDGE & FURROW	 GEOLOGY	 ARCHAEOLOGY		
	 MAGNETIC DISTURBANCE	 AGRICULTURAL	 UNCERTAIN			







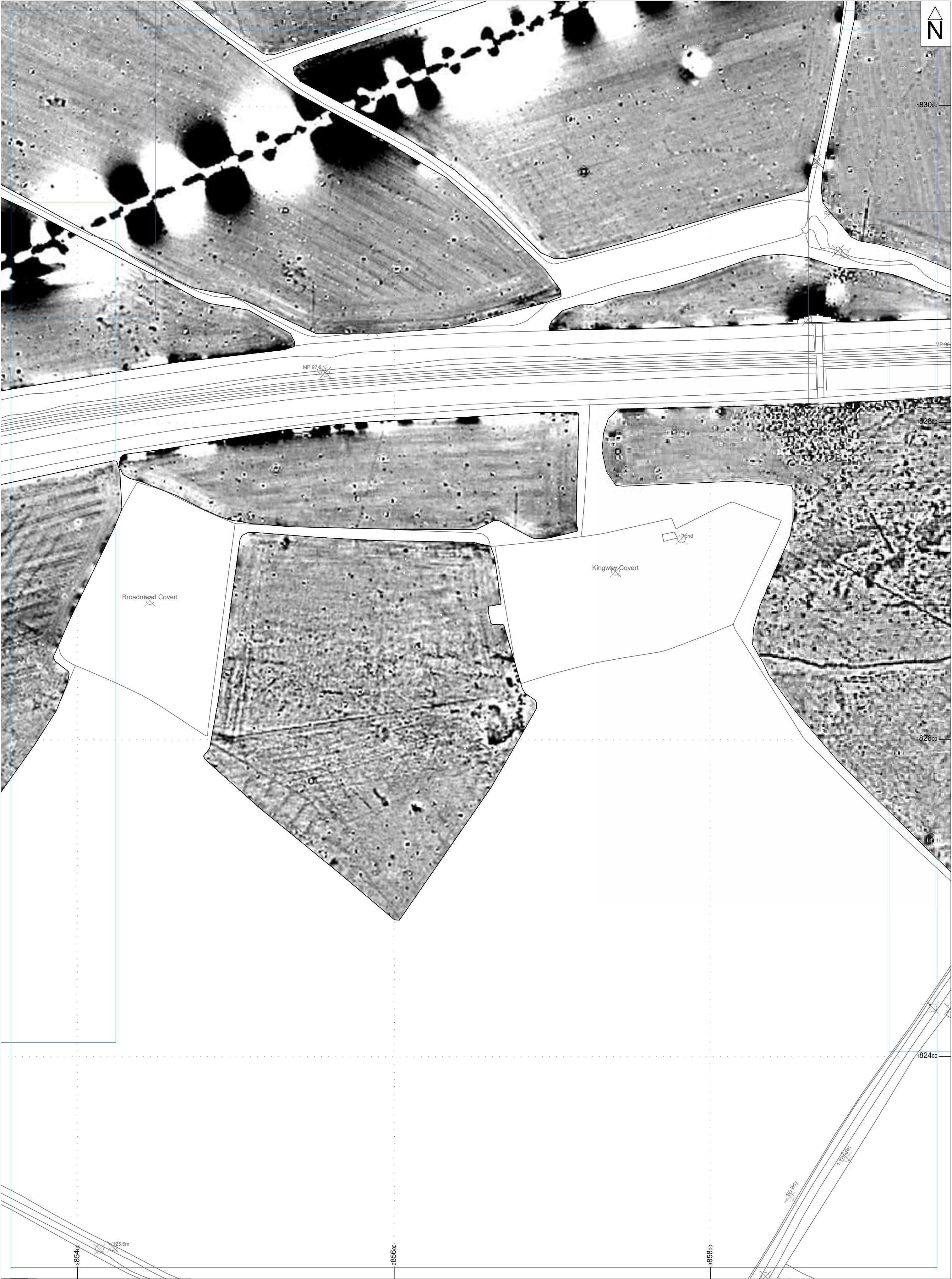


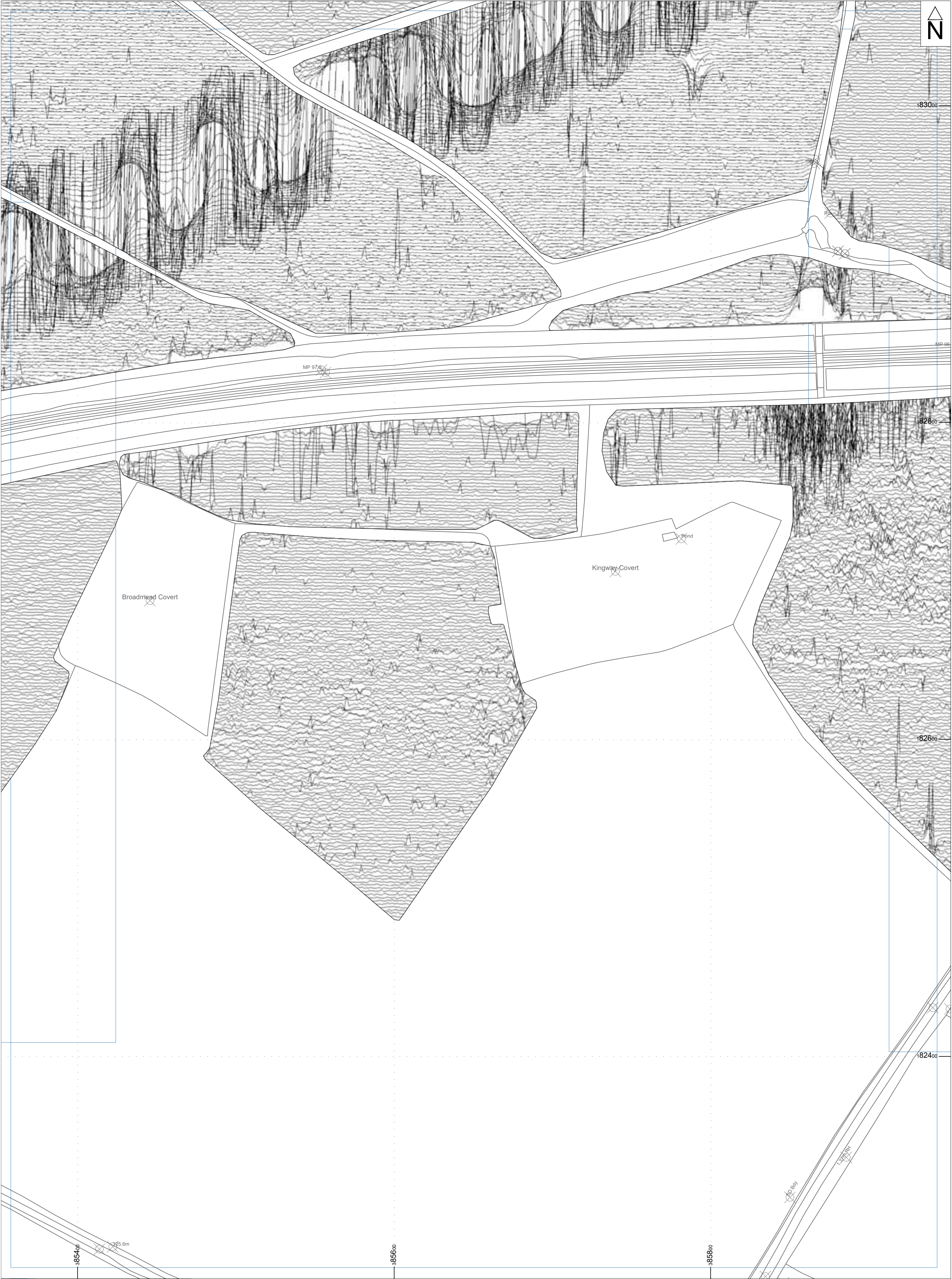


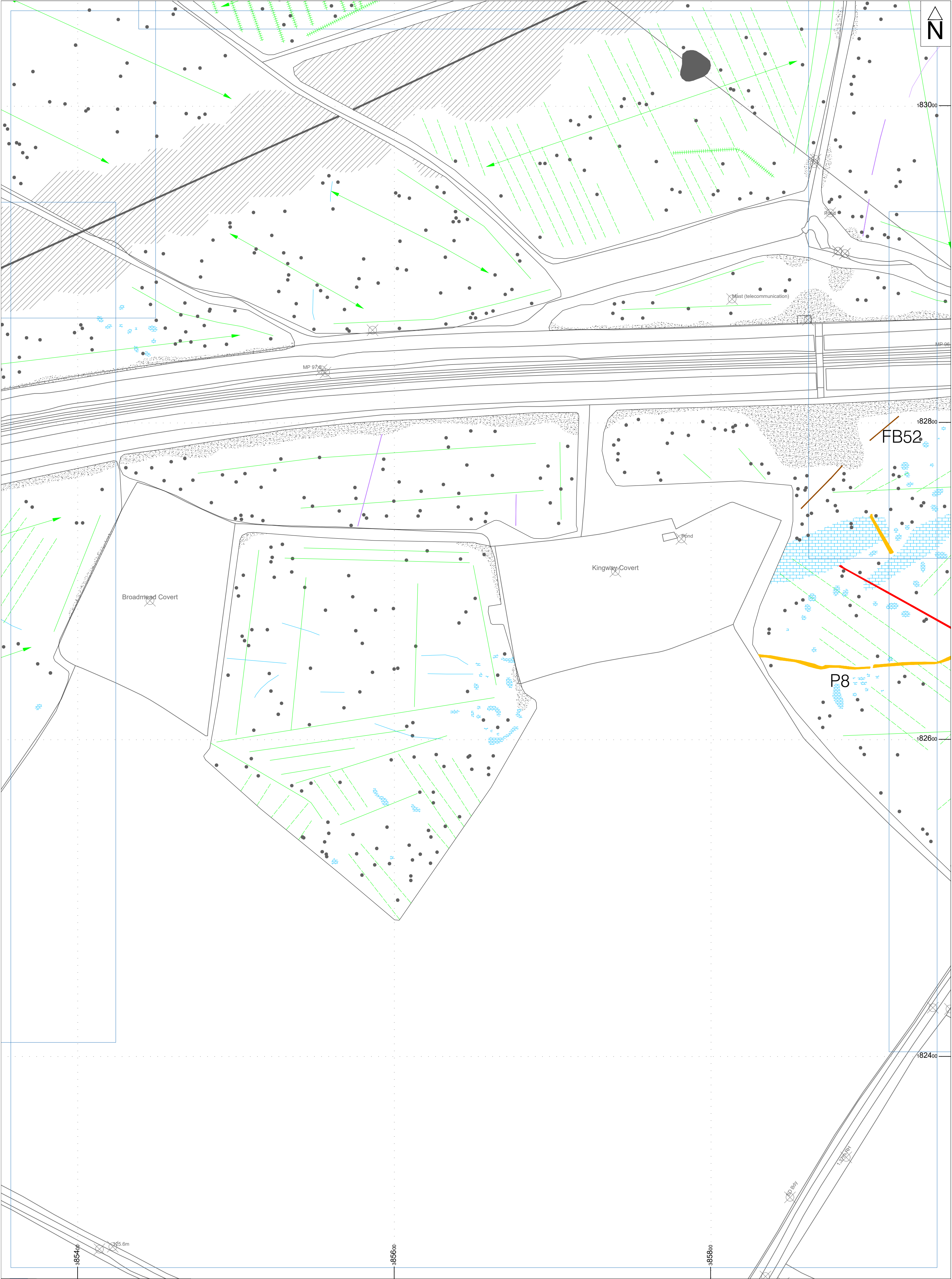
Title










SECTOR BOUNDARY

Interpretation			
	FERROUS		FIELD DRAIN
	SERVICE PIPE		RIDGE & FURROW
	MAGNETIC DISTURBANCE		AGRICULTURAL
	GEOLOGY		UNCERTAIN
	ARCHAEOLOGY?		

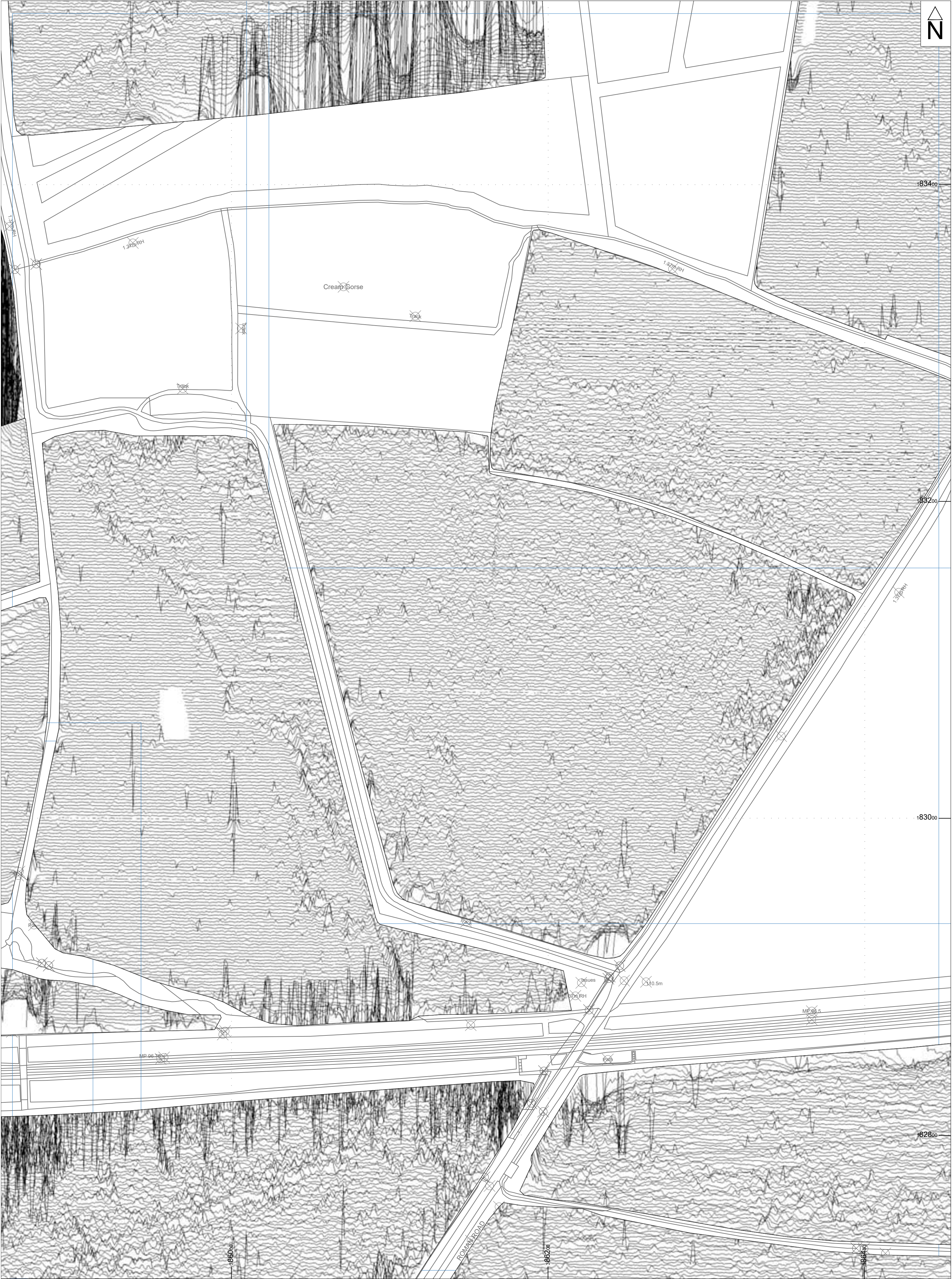


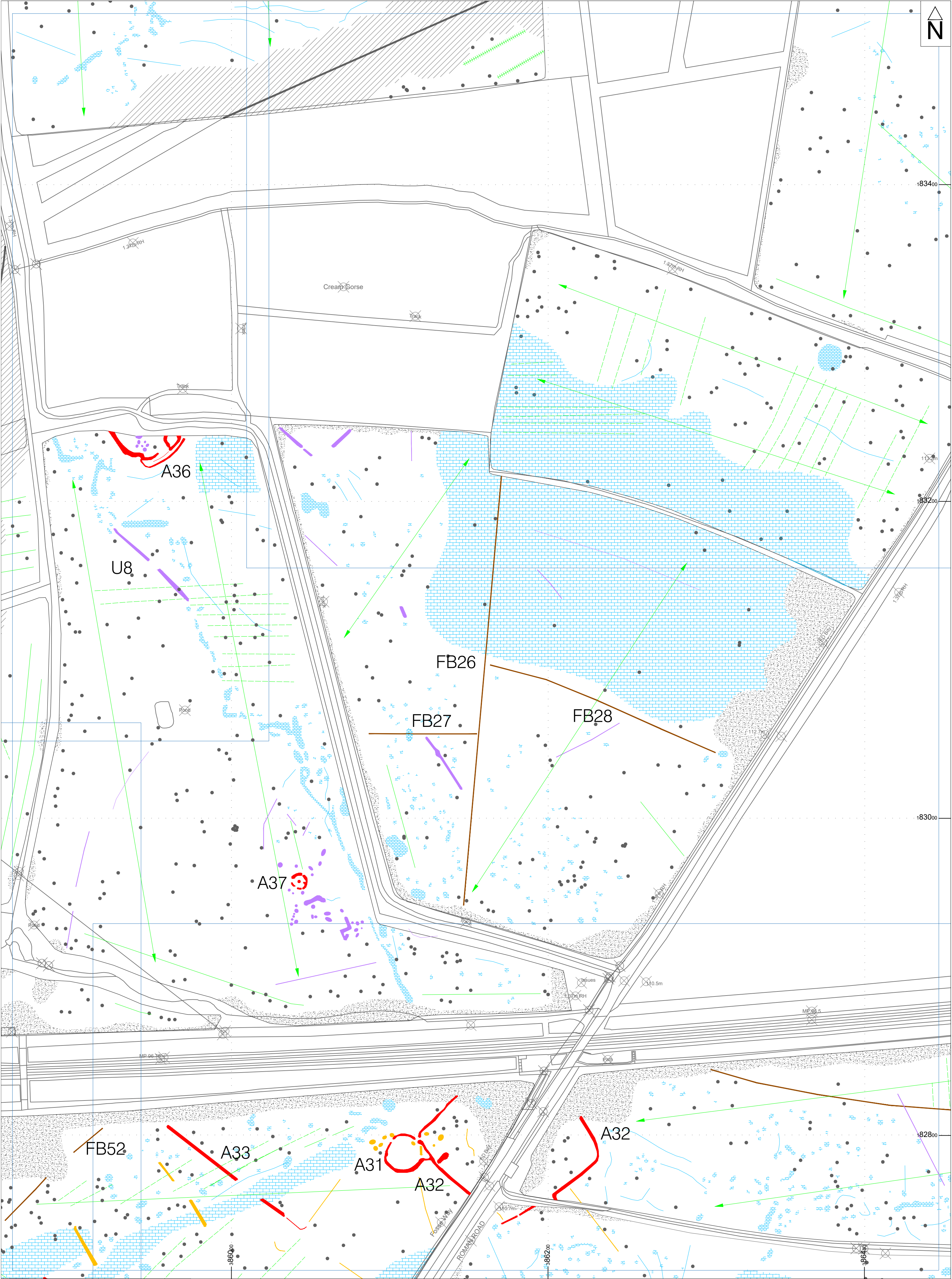
















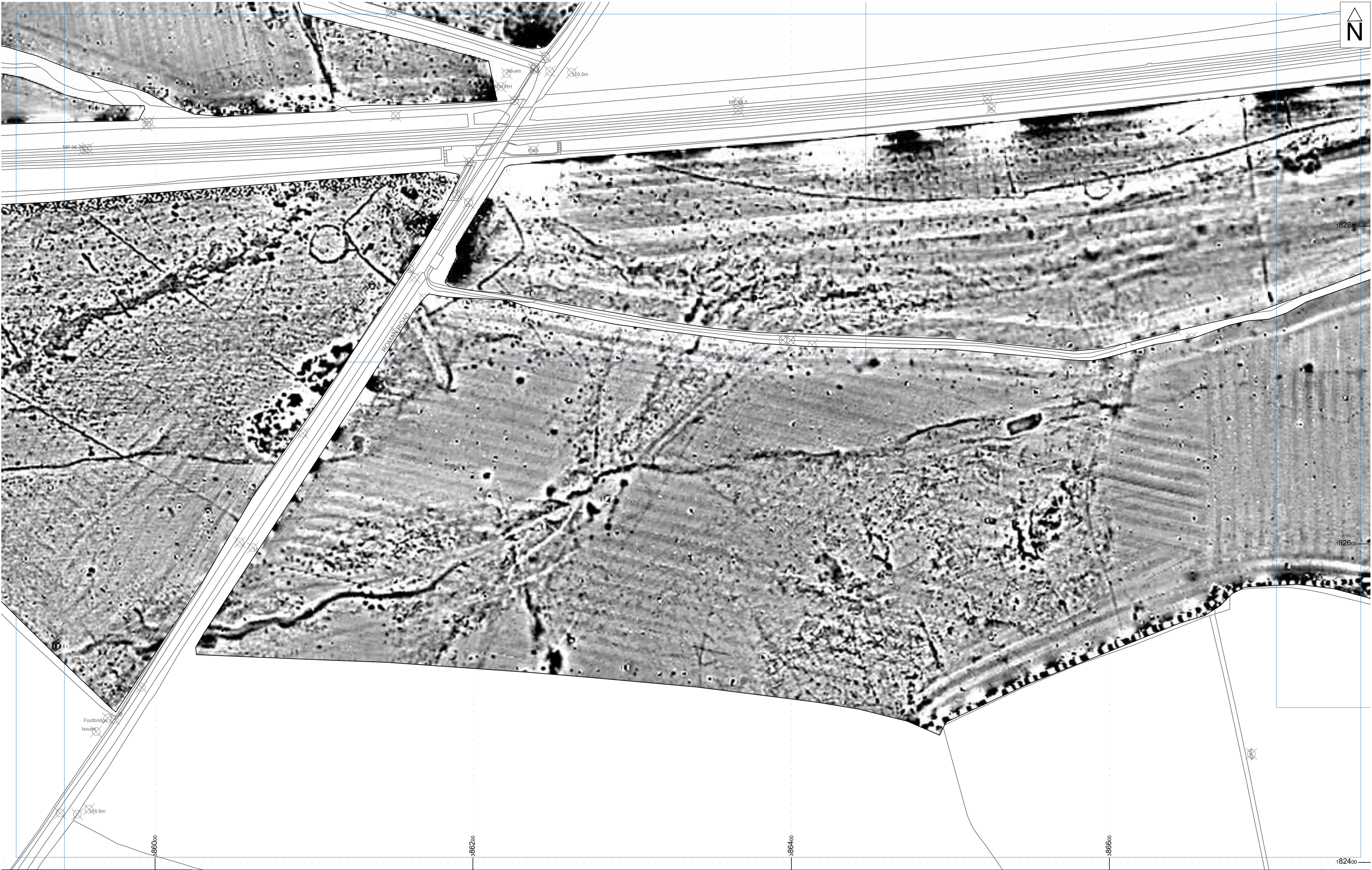
Title		Interpretation			
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	SERVICE PIPE		RIDGE & FURROW		GEOLOGY
	MAGNETIC DISTURBANCE		AGRICULTURAL		UNCERTAIN








Title		Interpretation							
	SECTOR BOUNDARY		FERROUS		FIELD DRAIN		FORMER FIELD BOUNDARY		ARCHAEOLOGY?
			SERVICE PIPE		RIDGE & FURROW		GEOLOGY		ARCHAEOLOGY
			MAGNETIC DISTURBANCE		AGRICULTURAL		UNCERTAIN		





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Project ID: XK77_MKS23

Processed greyscale magnetometer data; Sector 20

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Fig. 62

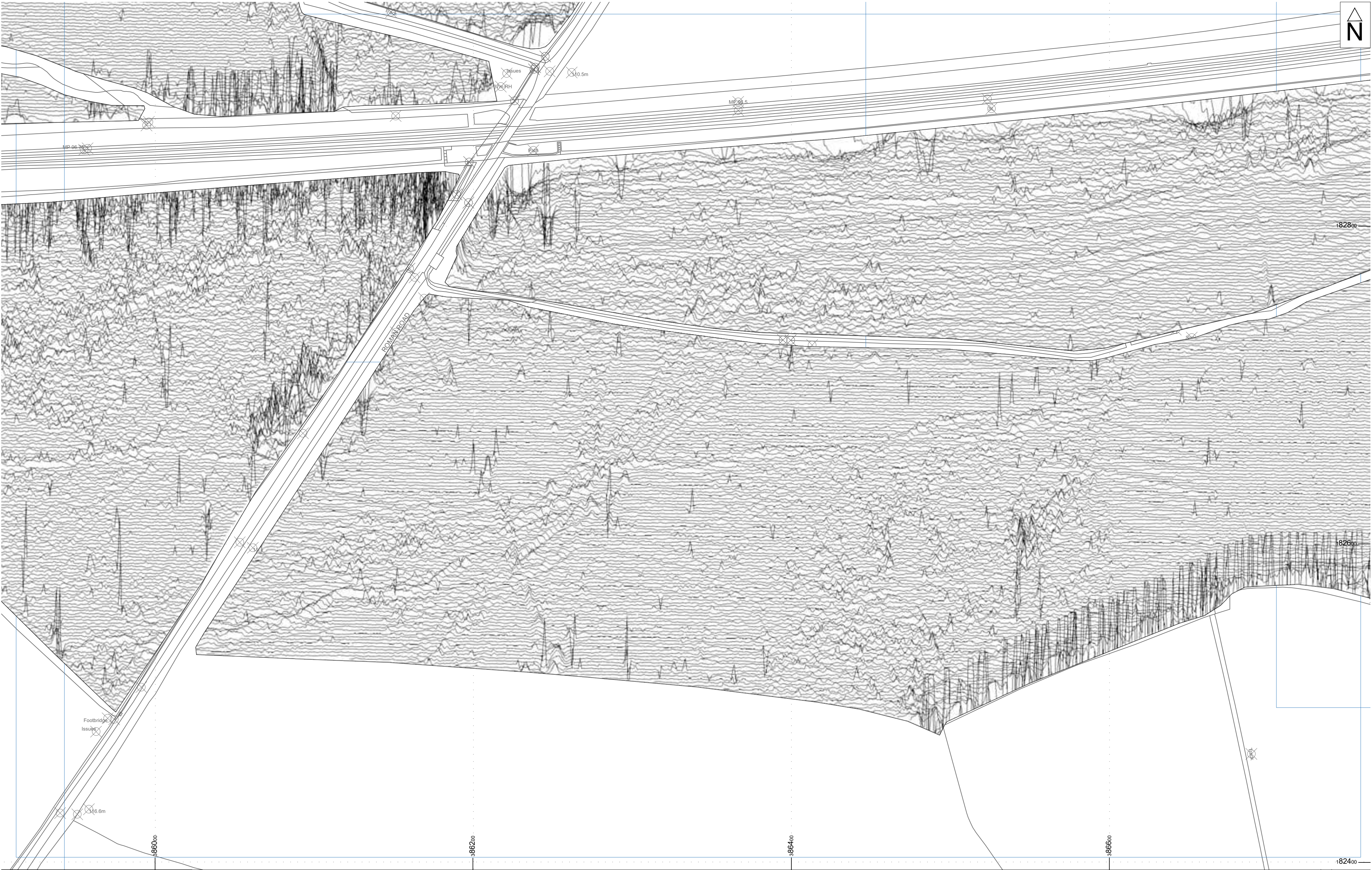
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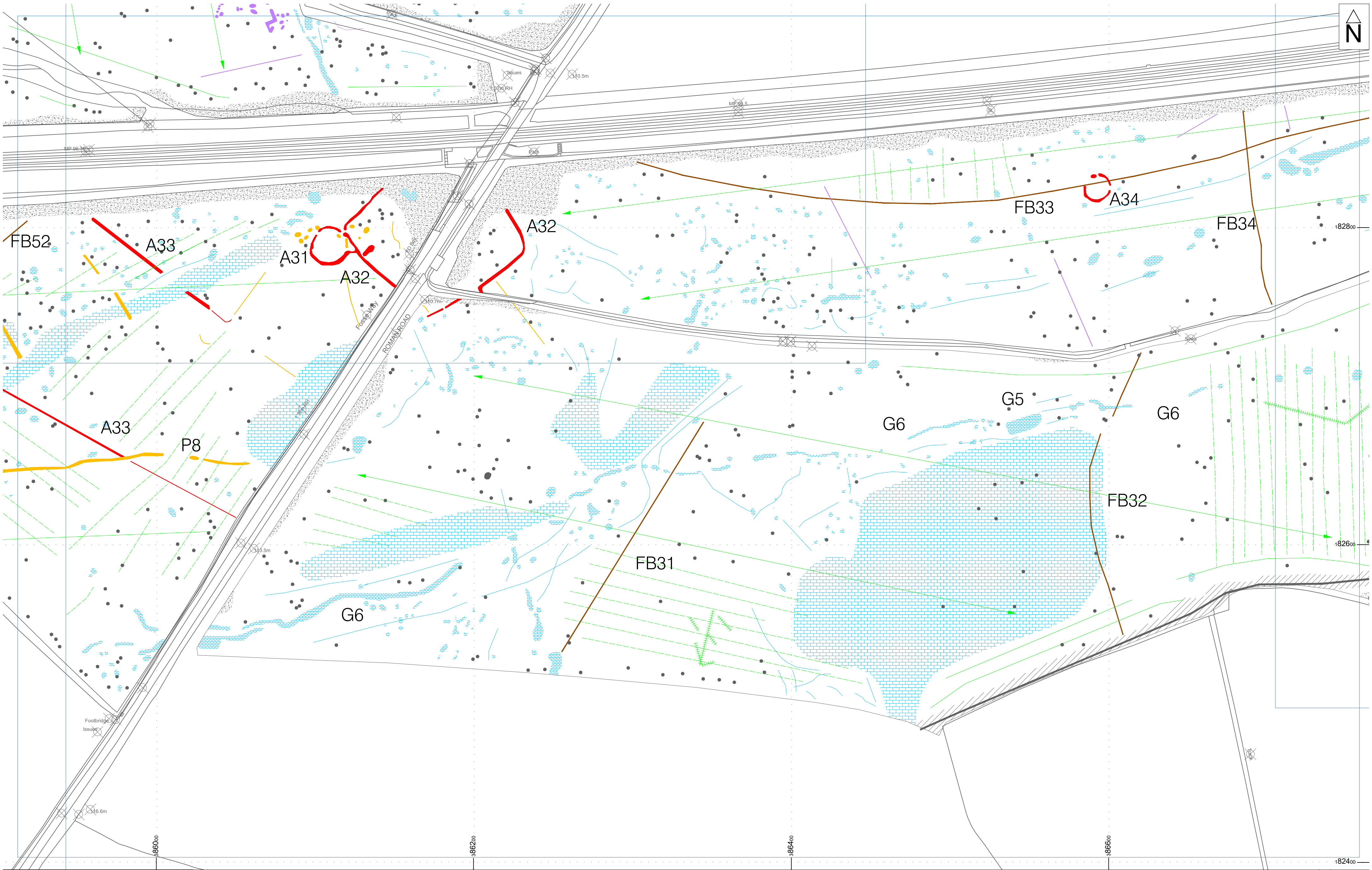
 SECTOR BOUNDARY



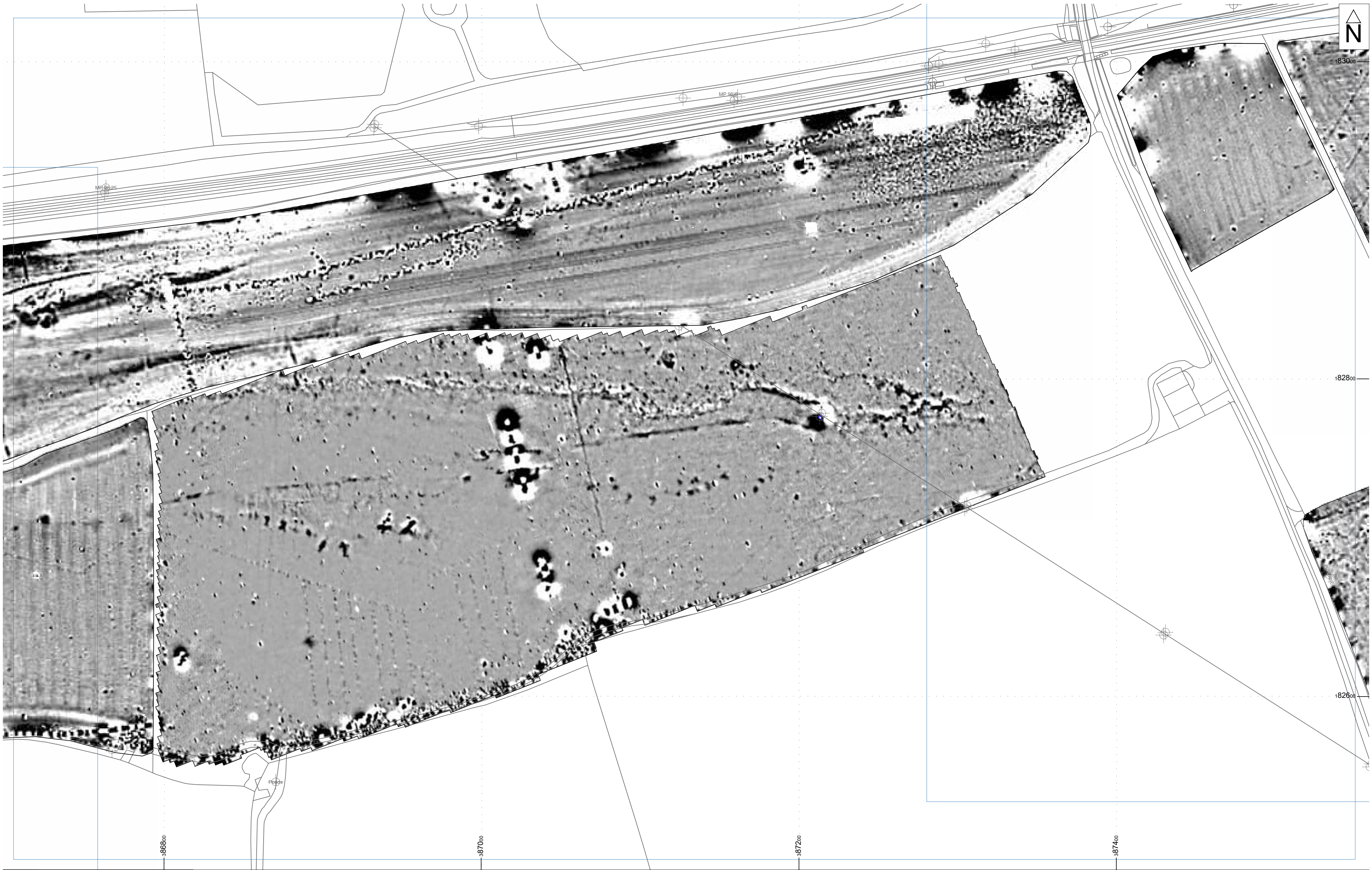
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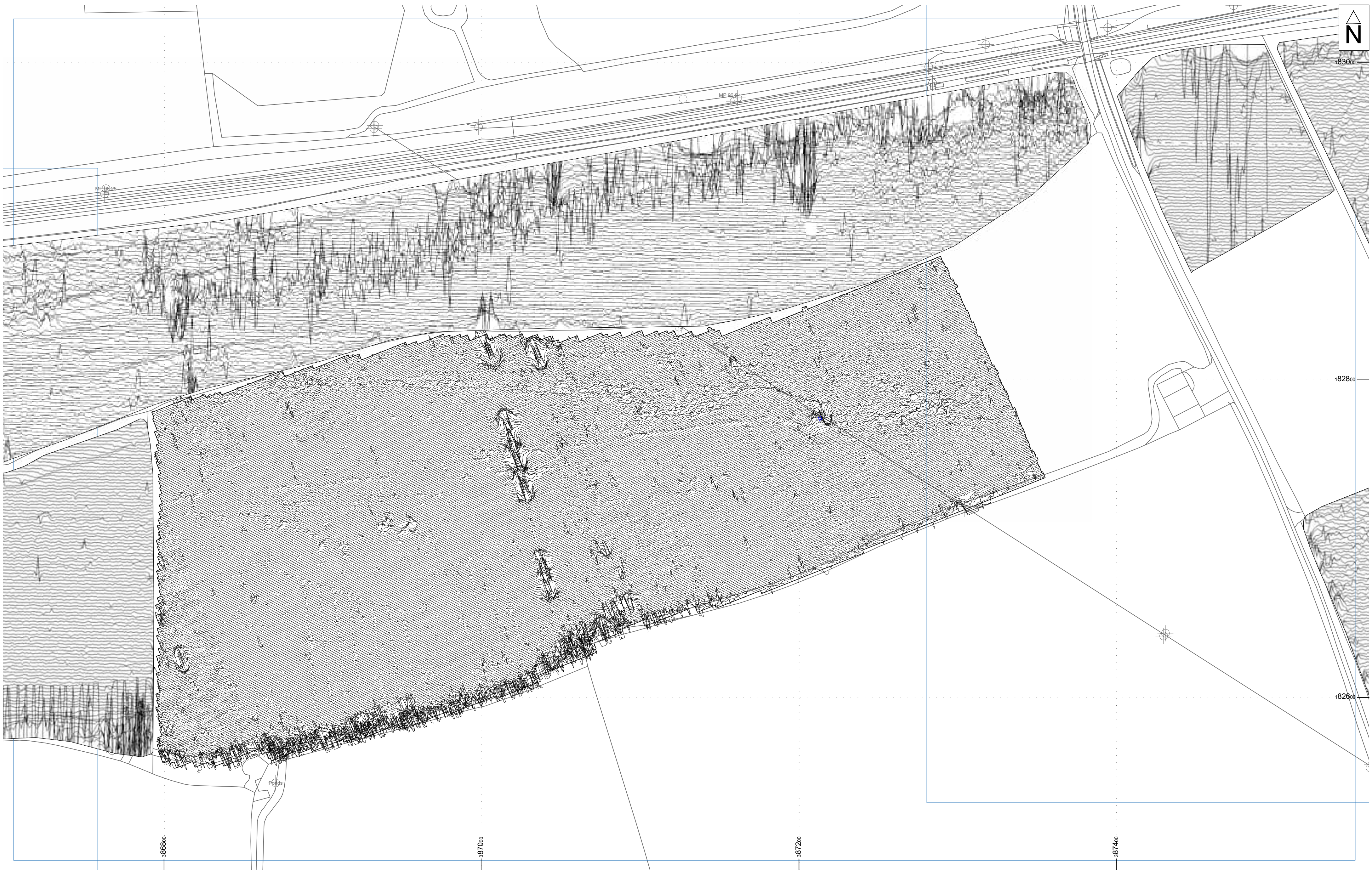
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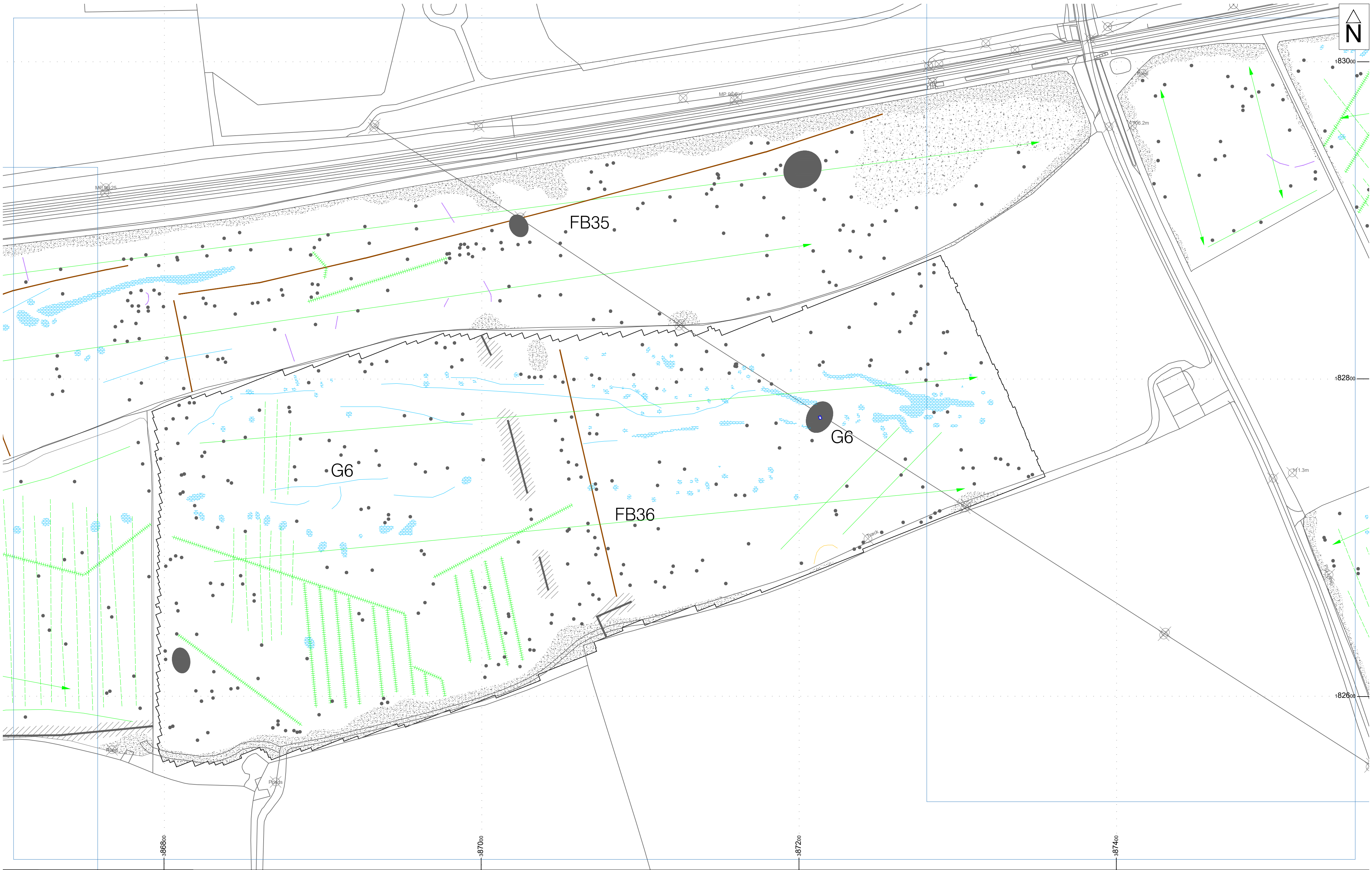


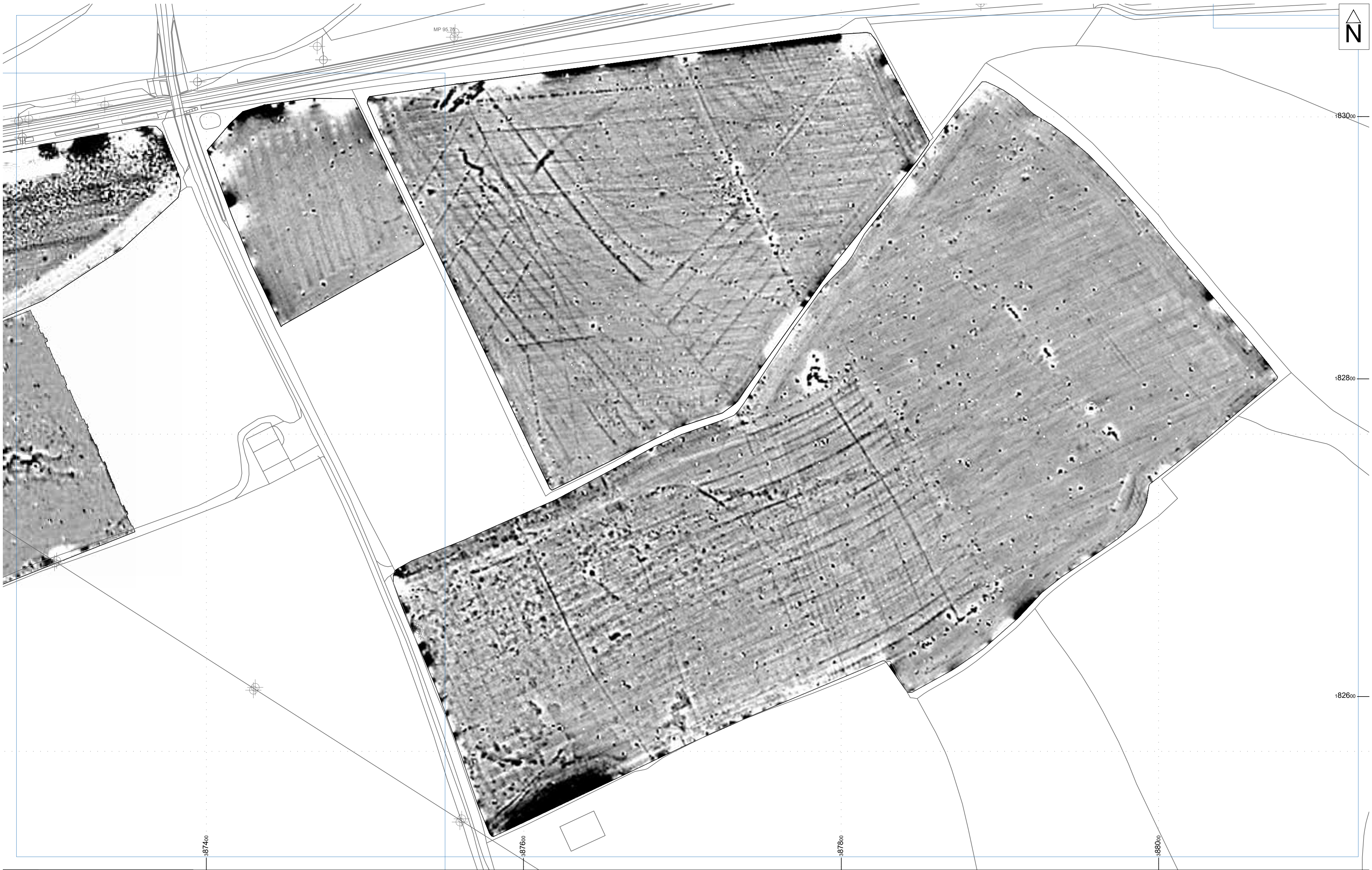


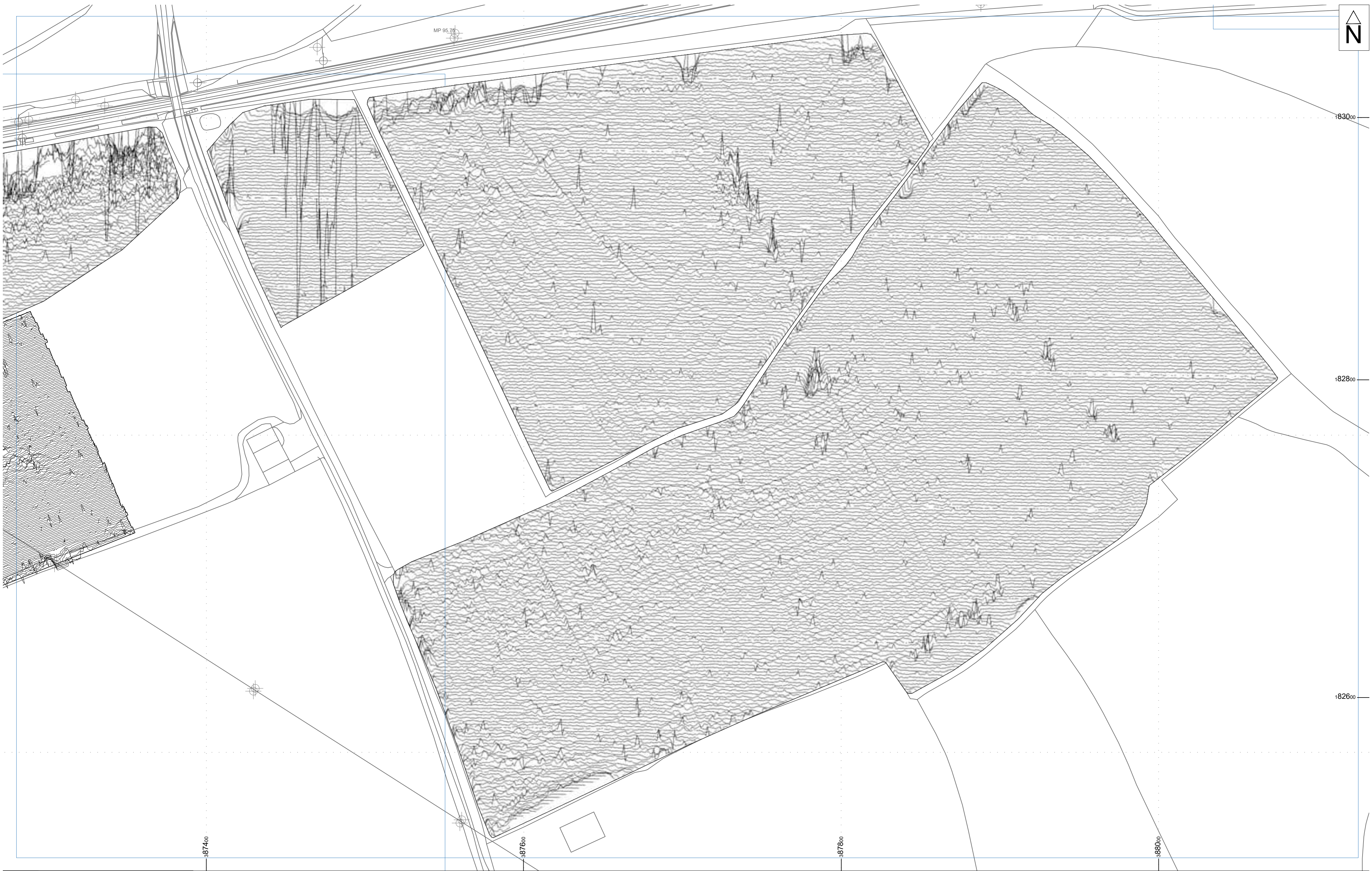
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SECTOR BOUNDARY		FERROUS	FIELD DRAIN	GEOLOGY	ARCHAEOLOGY
		SERVICE PIPE	RIDGE & FURROW	UNCERTAIN	
		MAGNETIC DISTURBANCE	AGRICULTURAL	ARCHAEOLOGY?	

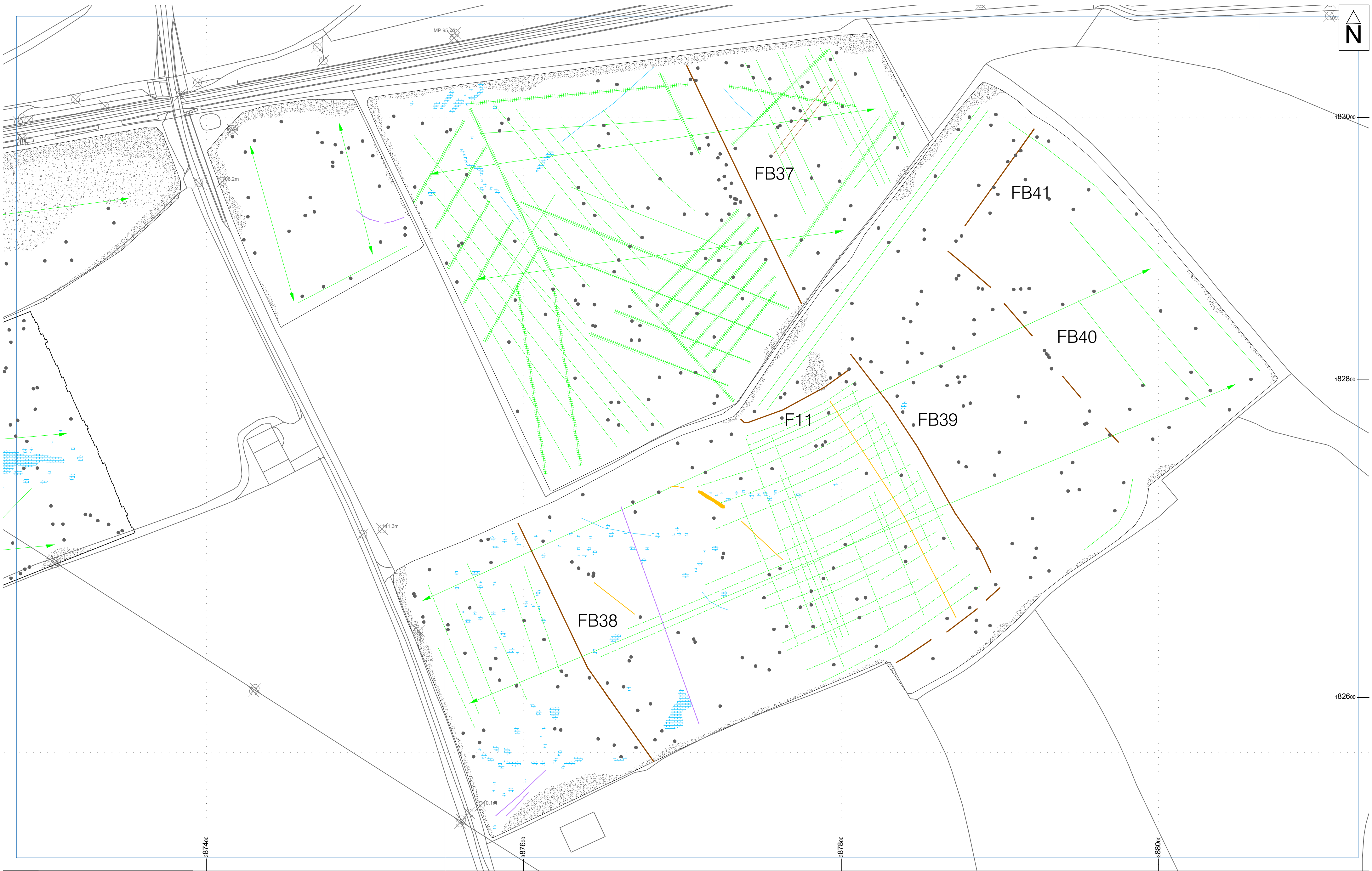












Title

SECTOR BOUNDARY

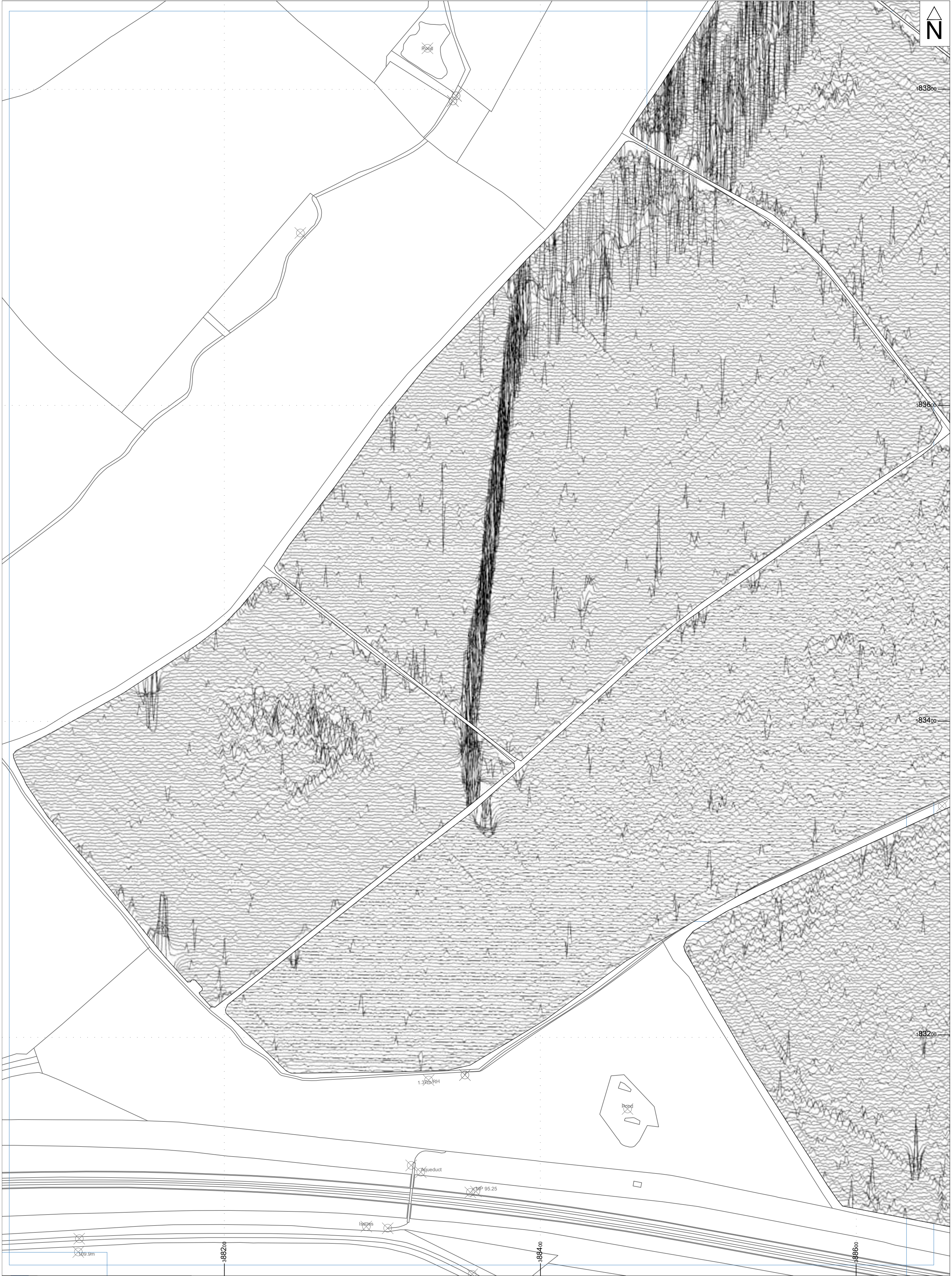
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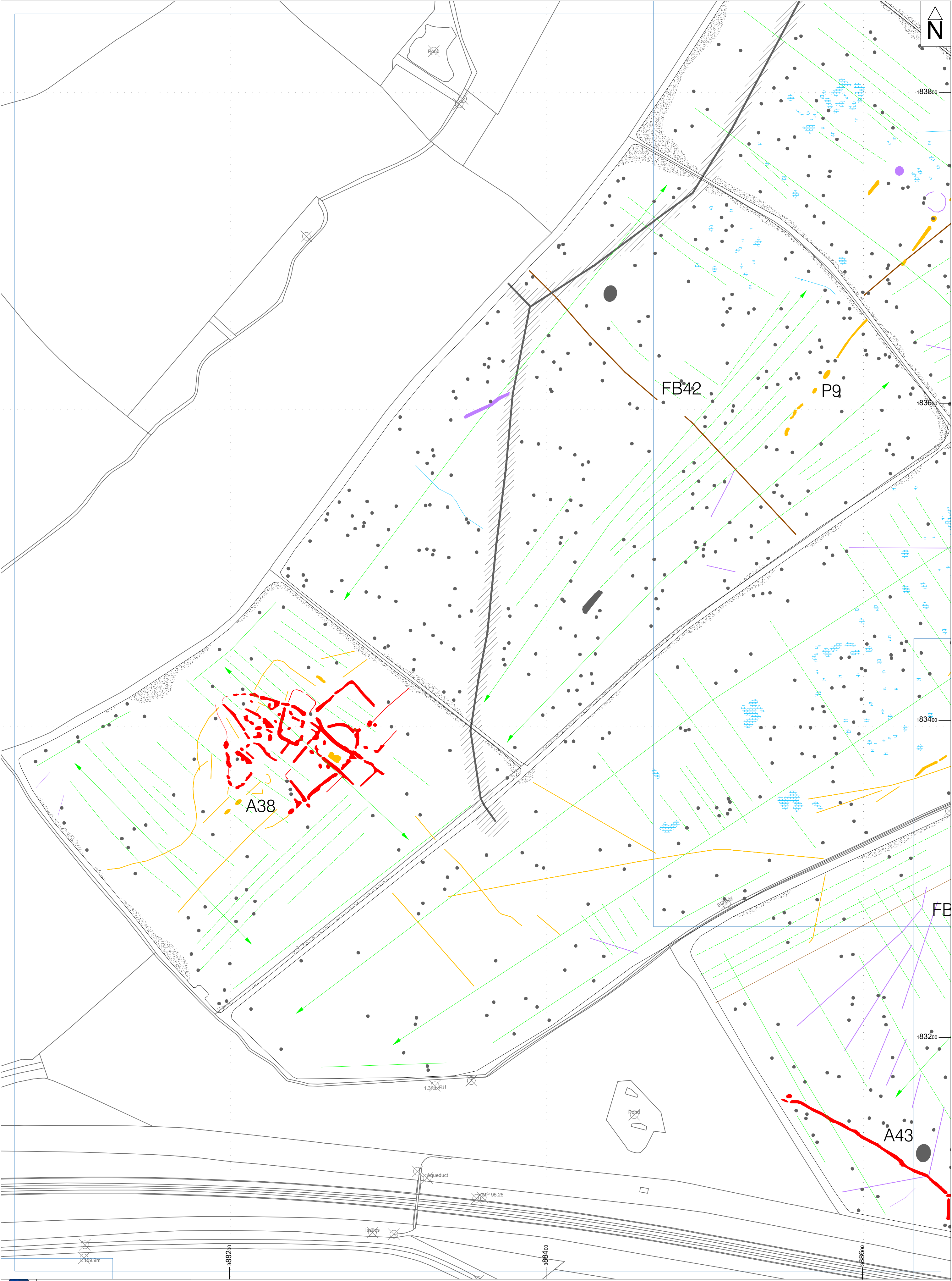
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	SERVICE PIPE		RIDGE & FURROW		UNCERTAIN
	MAGNETIC DISTURBANCE		AGRICULTURAL		ARCHAEOLOGY?











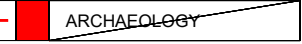
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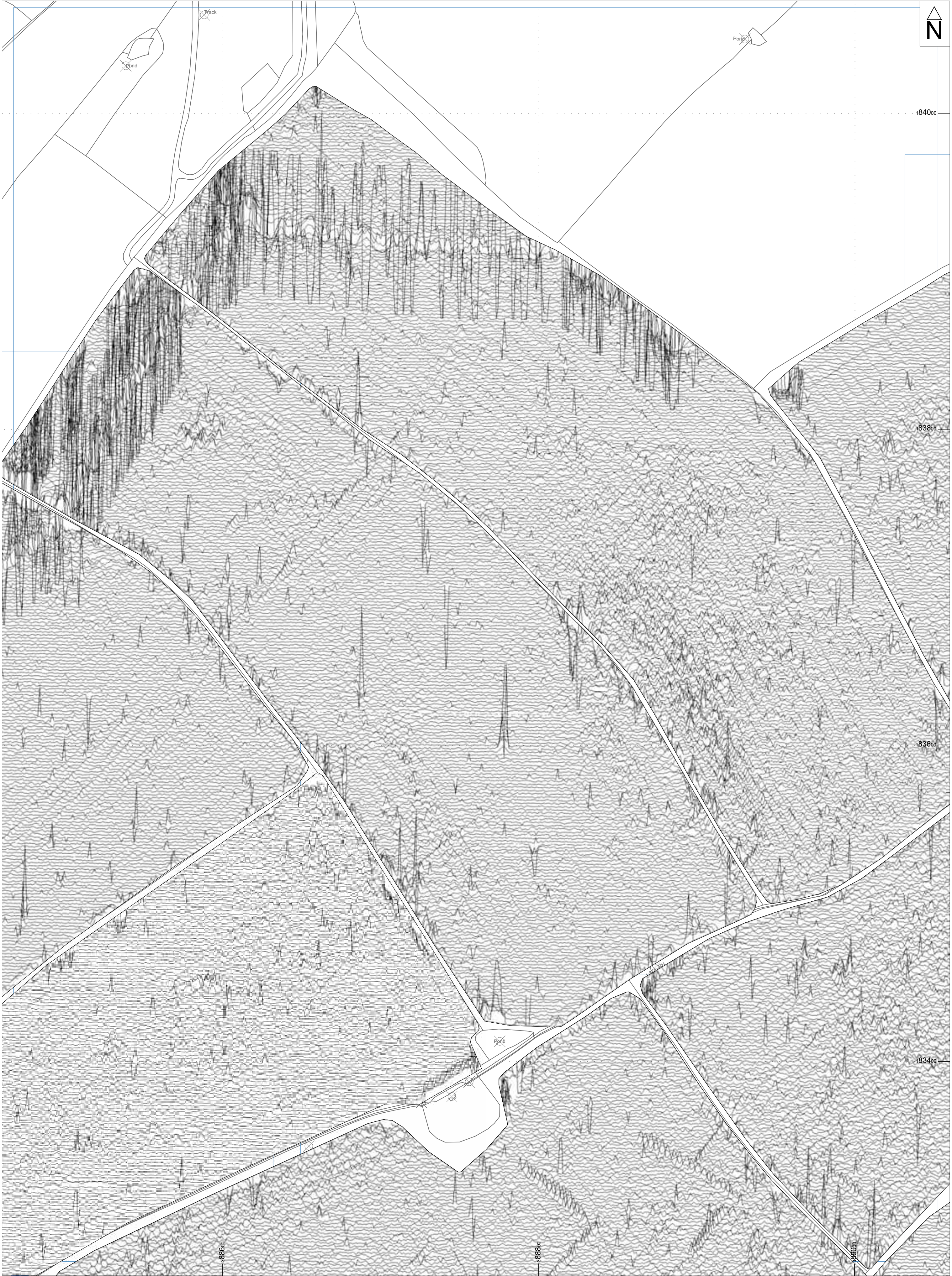







Title		Interpretation			
	SECTOR BOUNDARY		FERROUS		RIDGE & FURROW
	SERVICE PIPE		AGRICULTURAL		GEOLOGY
	MAGNETIC DISTURBANCE		FORMER FIELD BOUNDARY		UNCERTAIN
			ARCHAEOLOGY?		ARCHAEOLOGY







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
Project ID: XK77_MKS23

XY trace plot of minimally processed magnetometer data;
Sector 24

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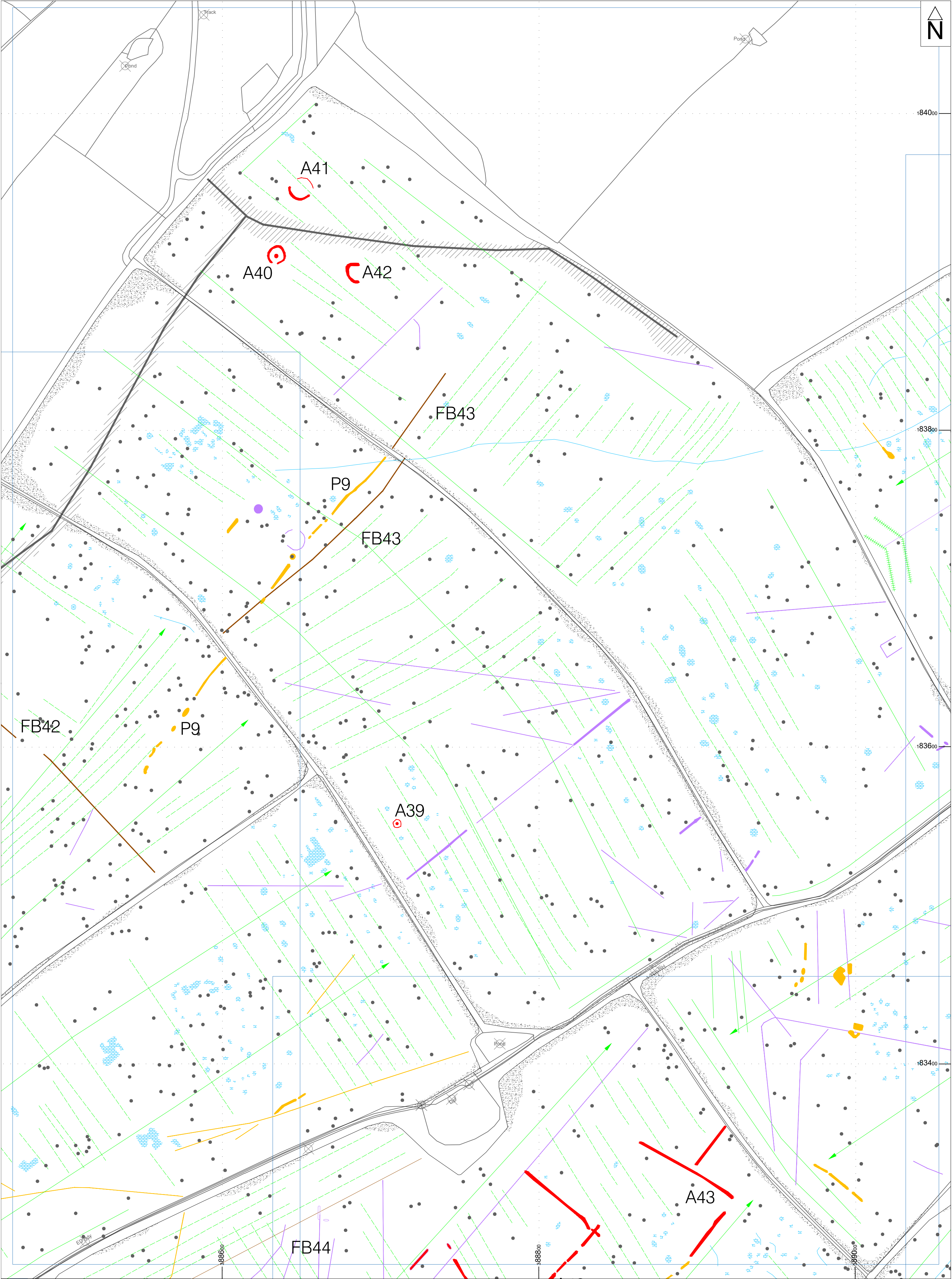
Fig. 75












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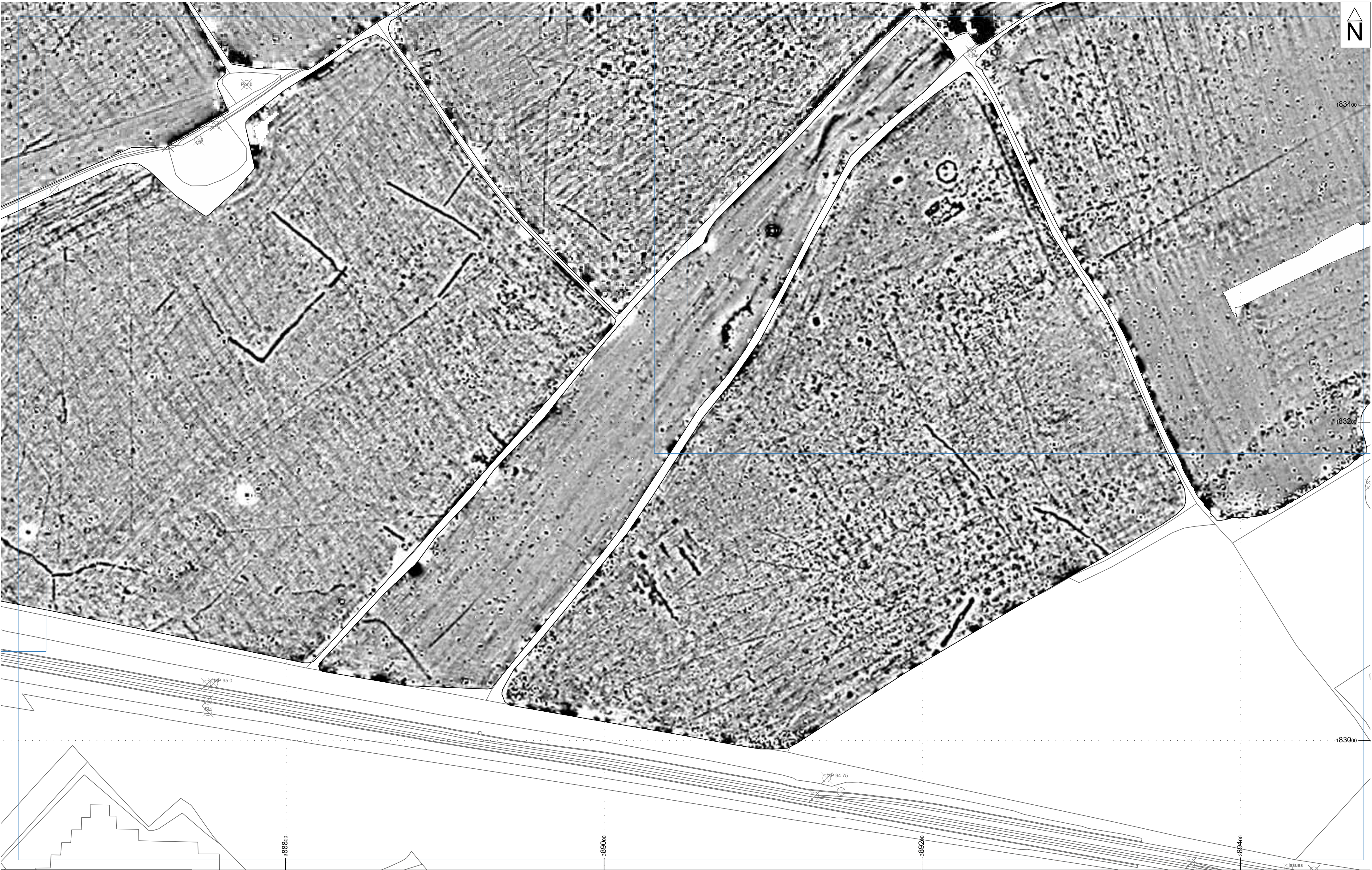
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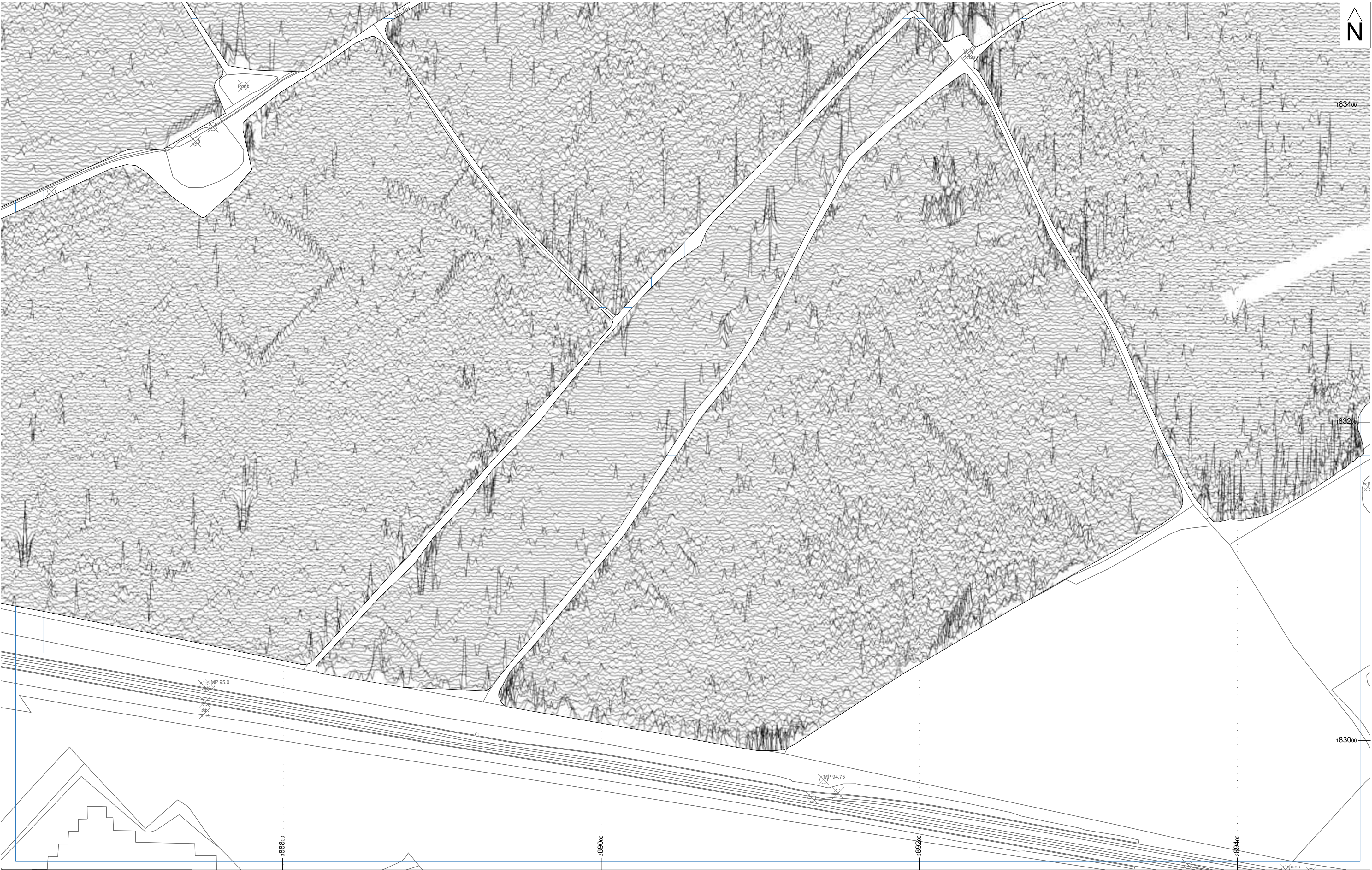
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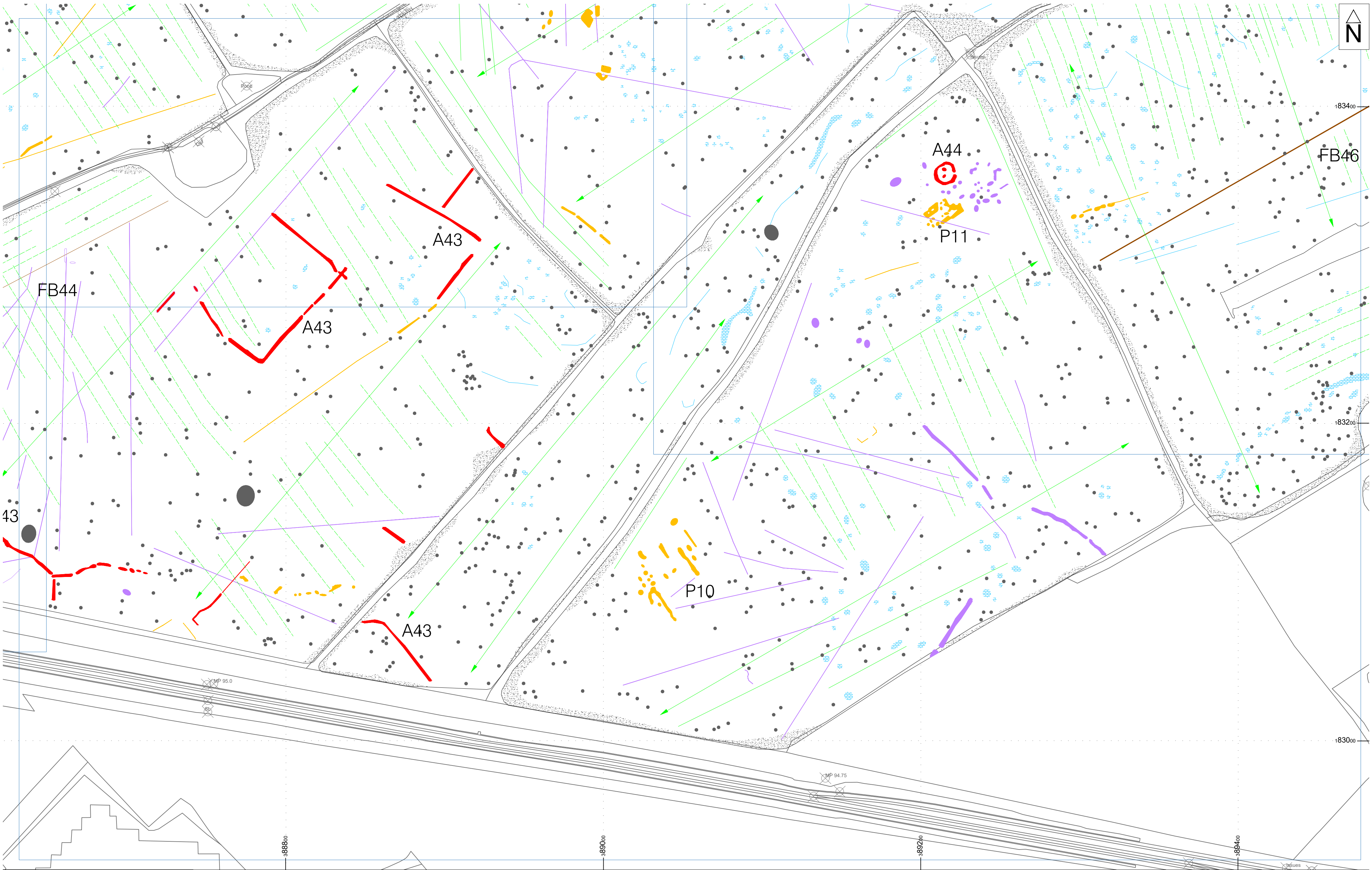
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Title		Interpretation			
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	SERVICE PIPE		AGRICULTURAL		GEOLOGY
	MAGNETIC DISTURBANCE		FORMER FIELD BOUNDARY		UNCERTAIN
			ARCHAEOLOGY?		ARCHAEOLOGY







Title

SECTOR BOUNDARY

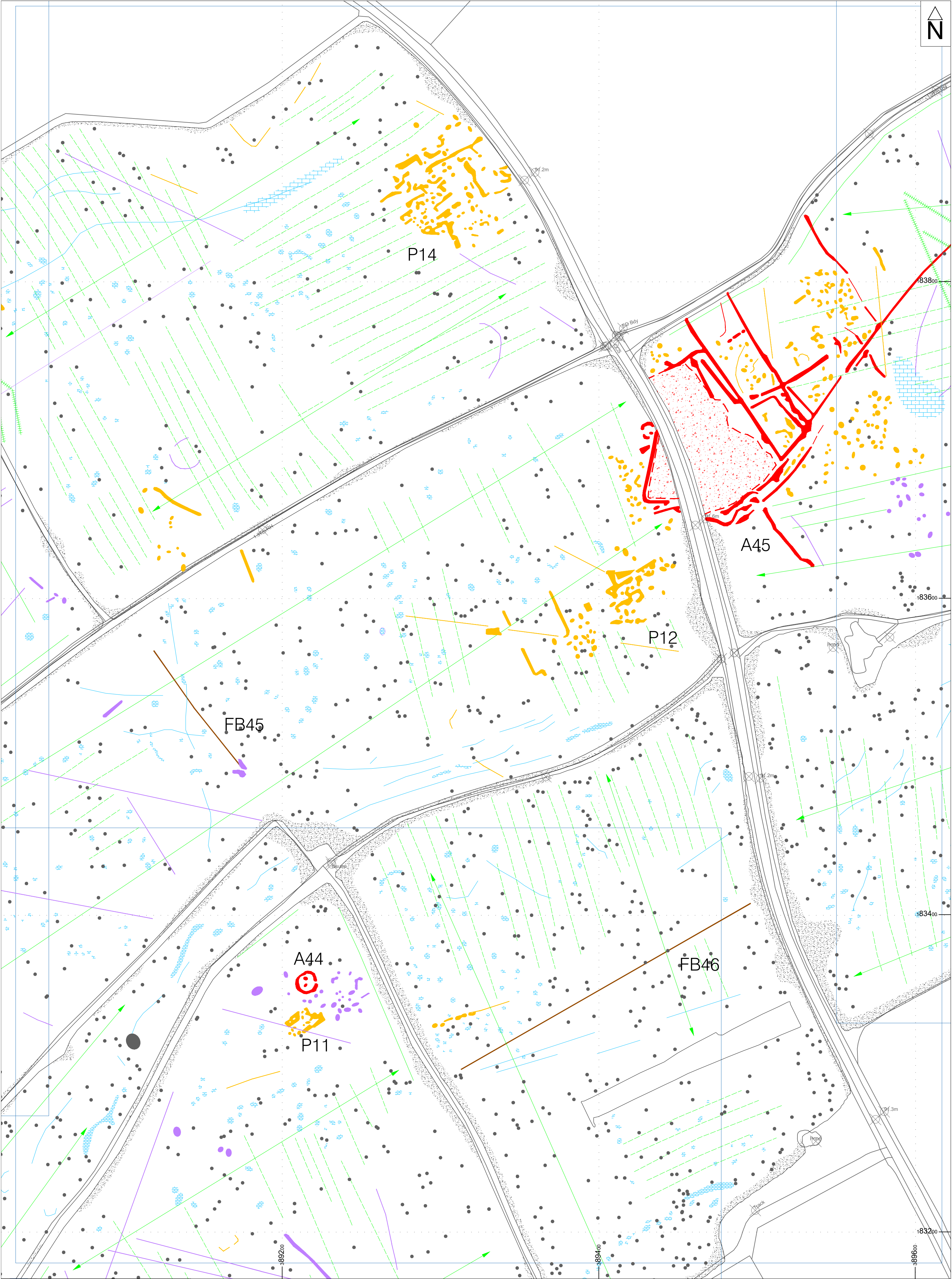
FERROUS	AGRICULTURAL	ARCHAEOLOGY?
MAGNETIC DISTURBANCE	GEOLOGY	ARCHAEOLOGY
RIDGE & FURROW	UNCERTAIN	












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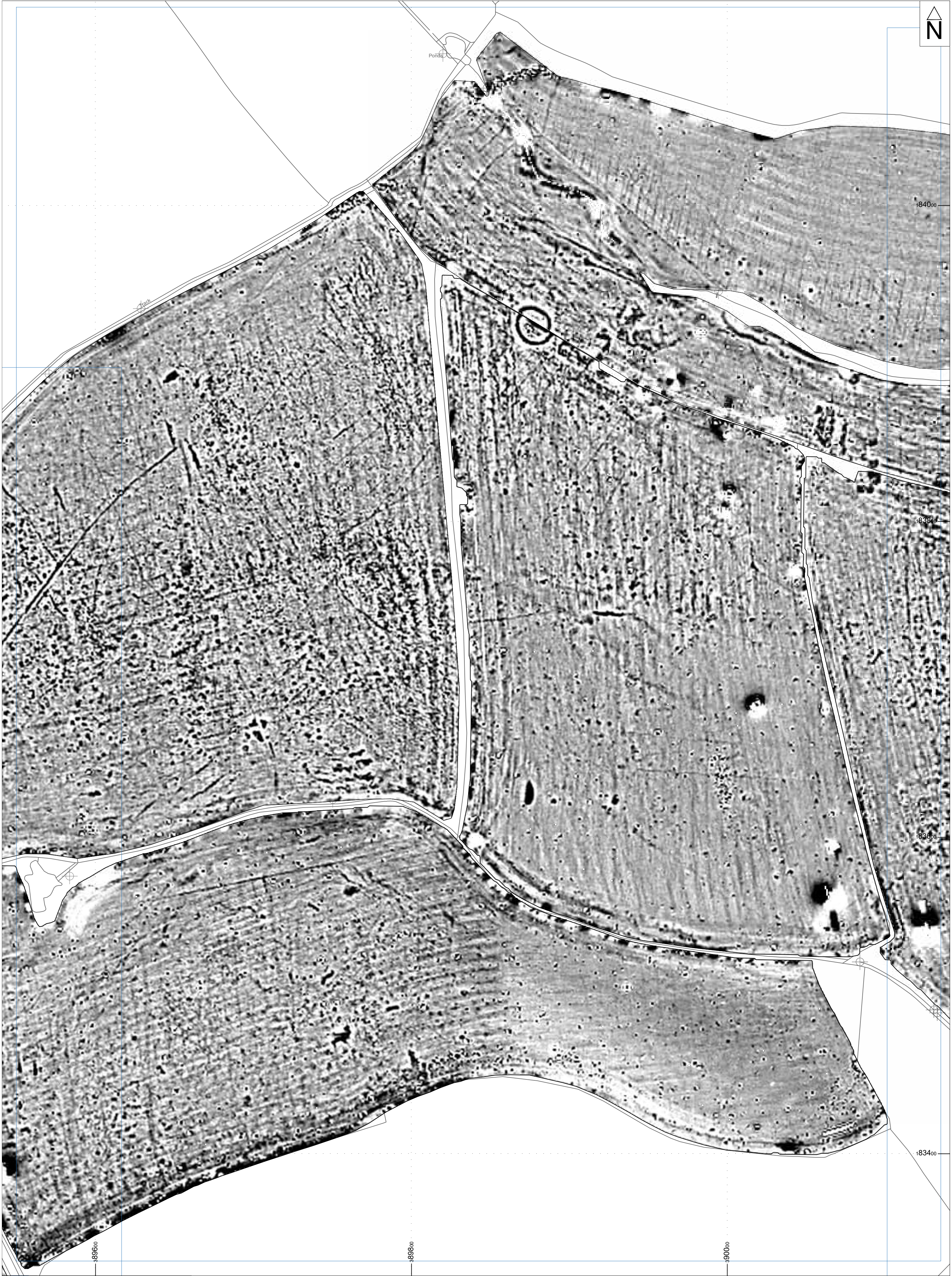
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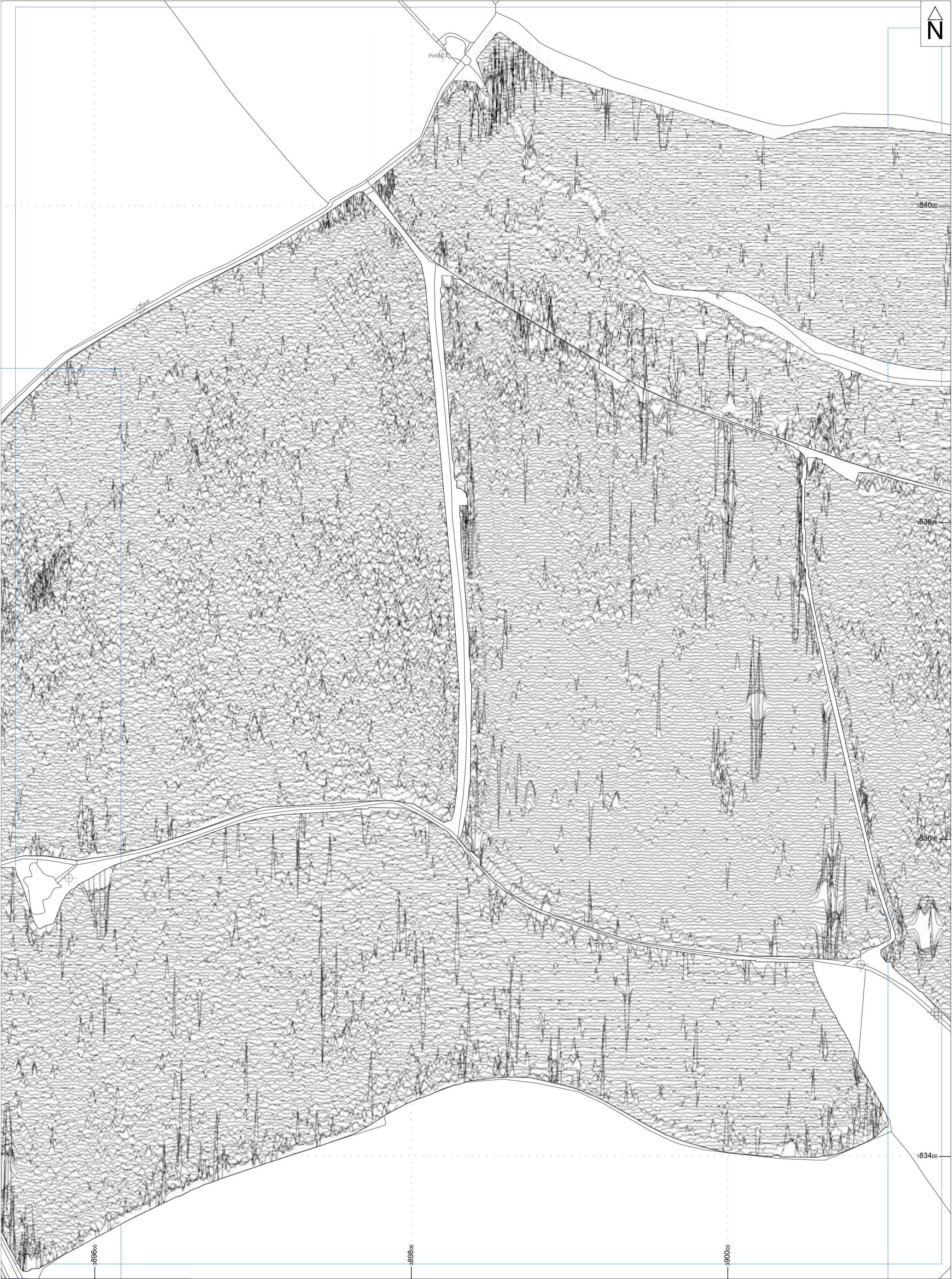


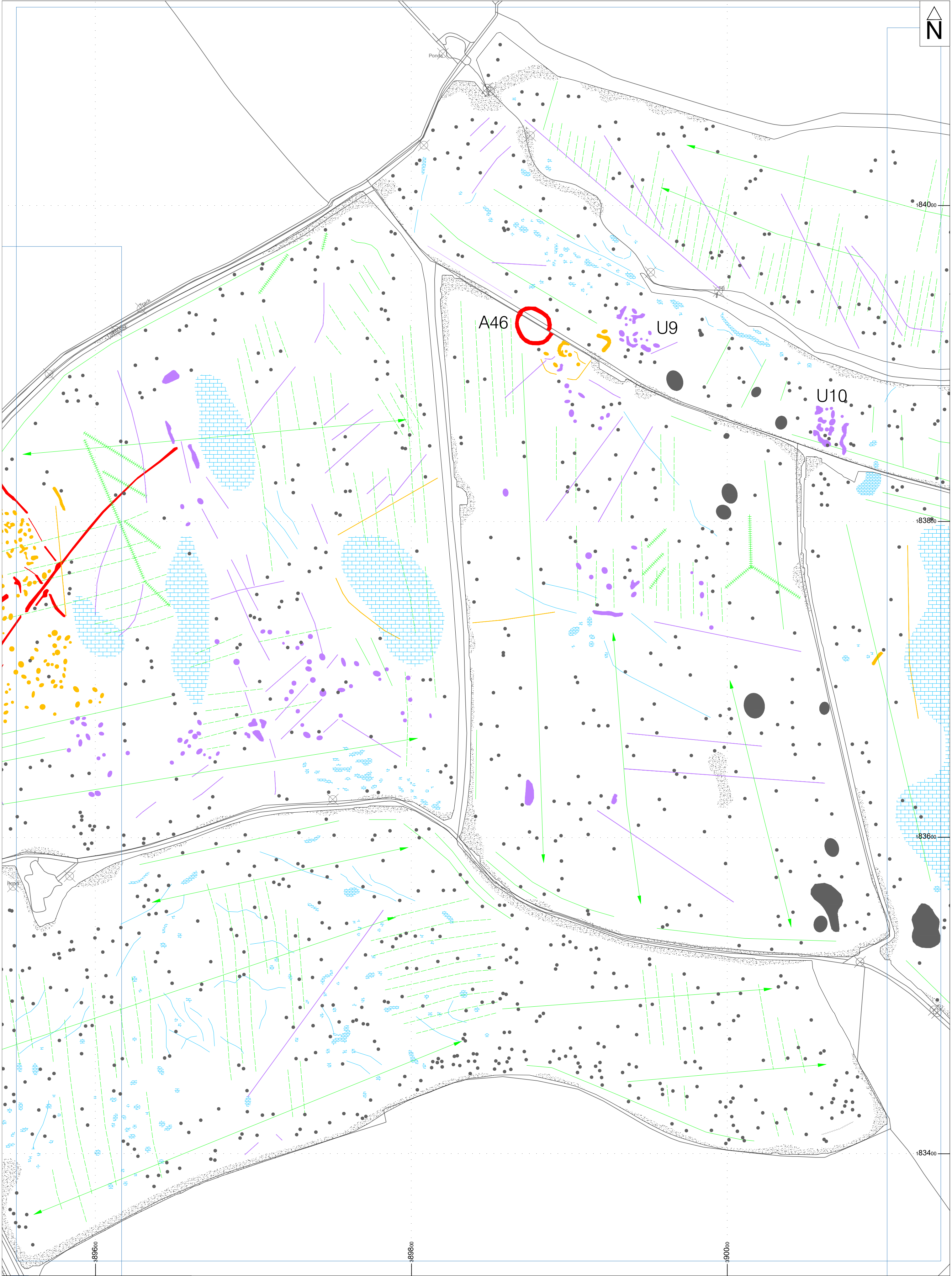














Title	Interpretation				
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	 MAGNETIC DISTURBANCE	 AGRICULTURAL	 UNCERTAIN		
	 FIELD DRAIN	 FORMER FIELD BOUNDARY	 ARCHAEOLOGY?		

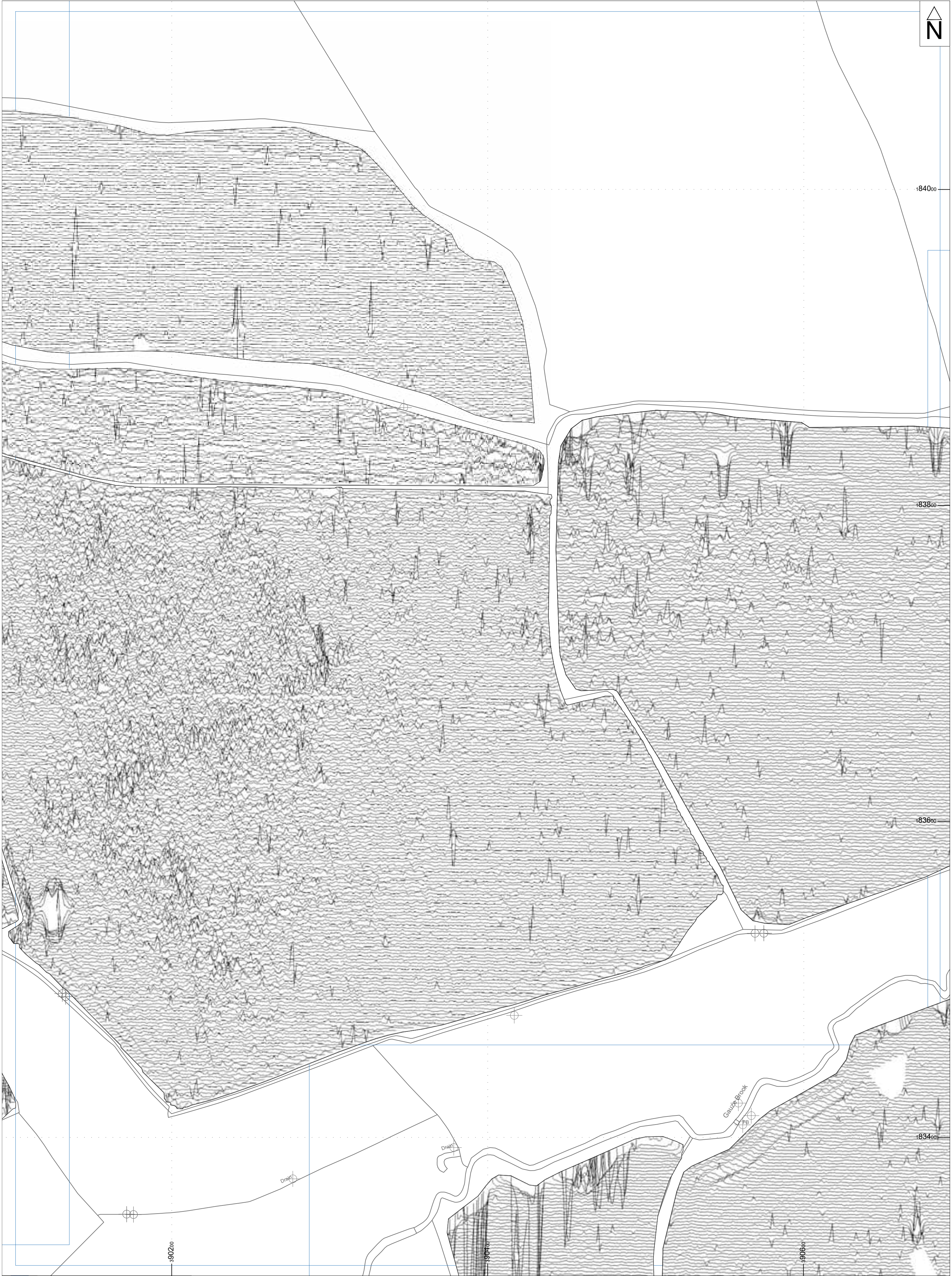


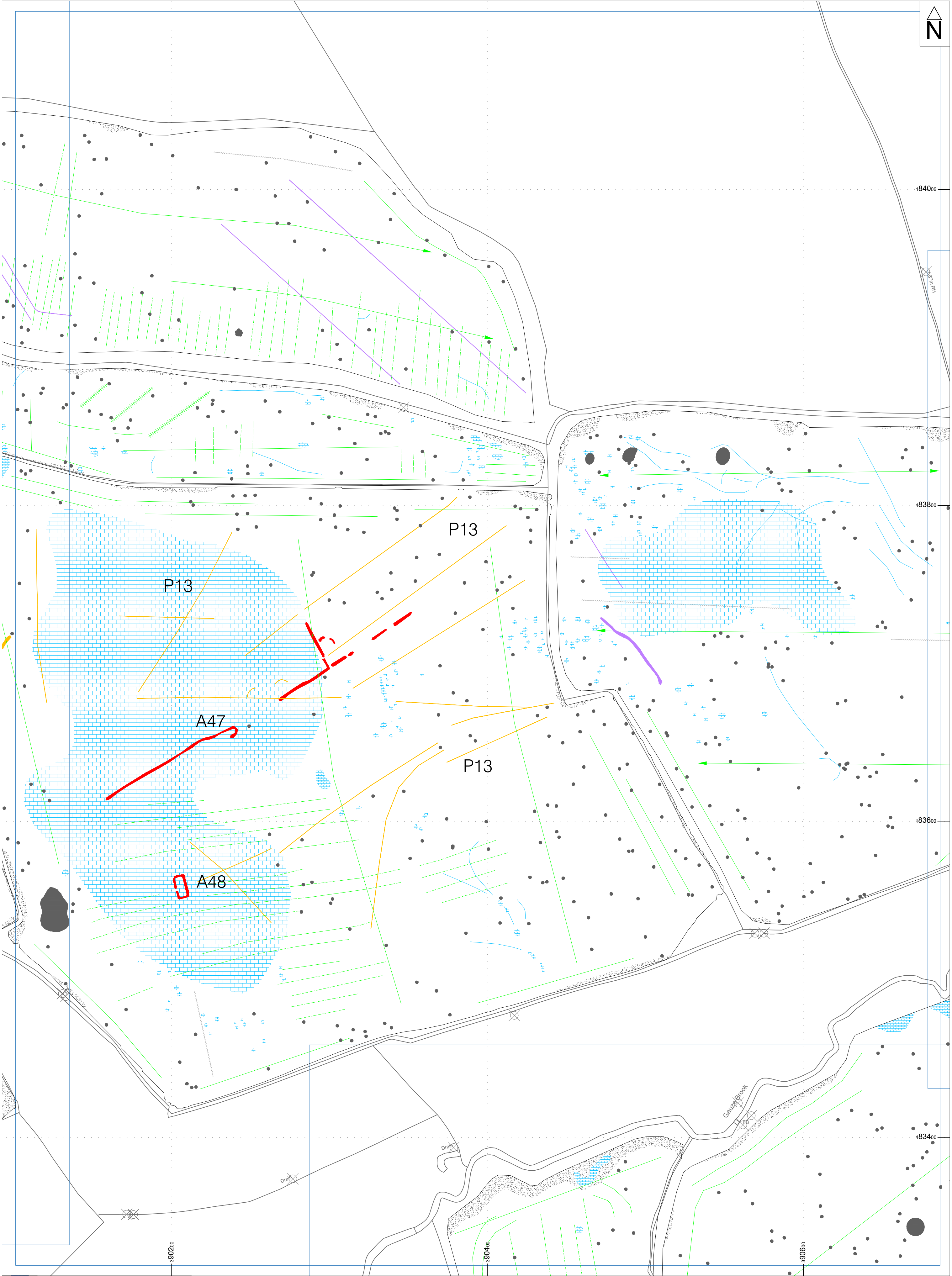














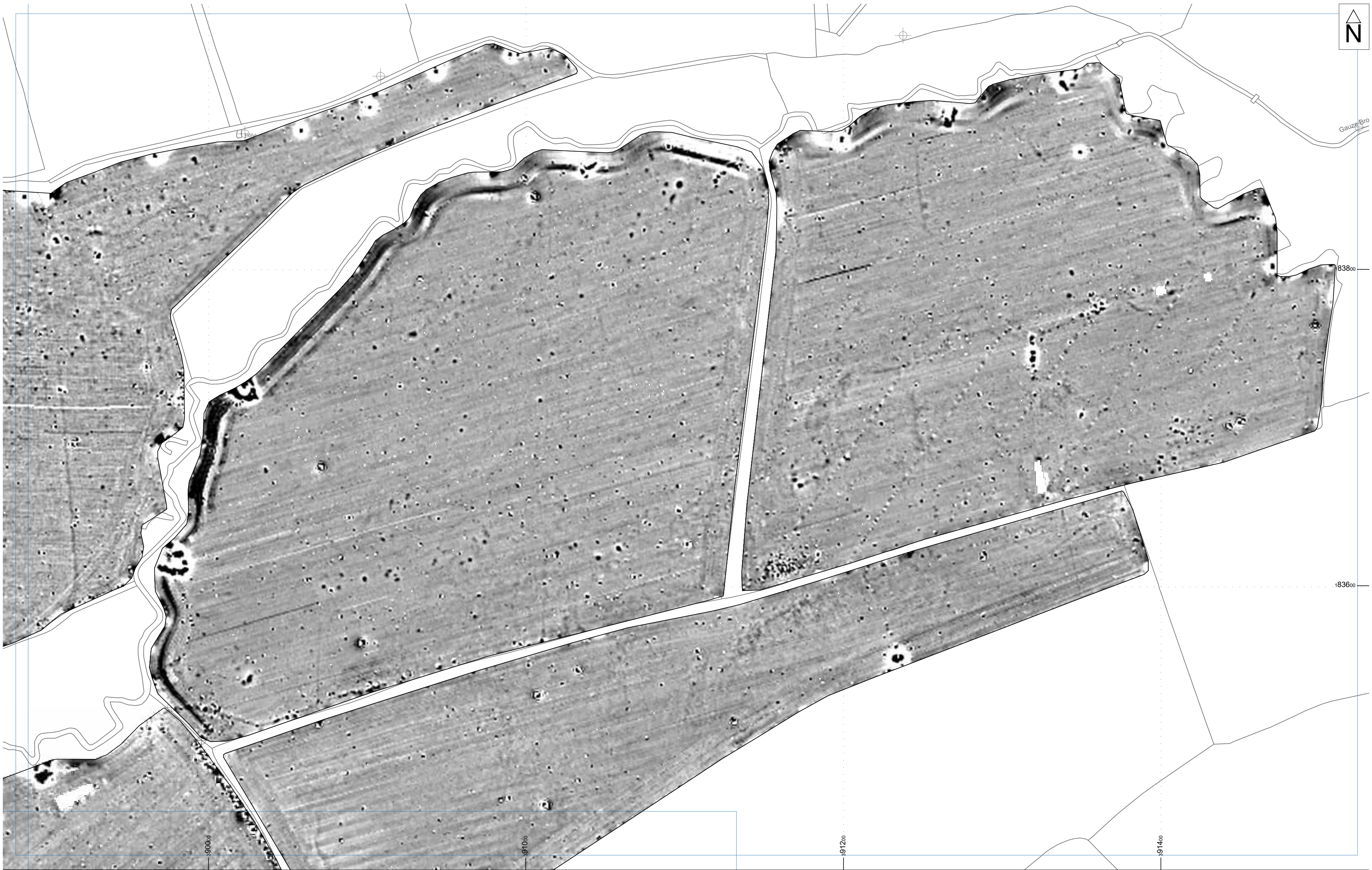
Title	Interpretation			
 SECTOR BOUNDARY	 FERROUS	 RIDGE & FURROW	 UNCERTAIN	
	 MAGNETIC DISTURBANCE	 AGRICULTURAL	 ARCHAEOLOGY?	
	 FIELD DRAIN	 GEOLOGY	 ARCHAEOLOGY	

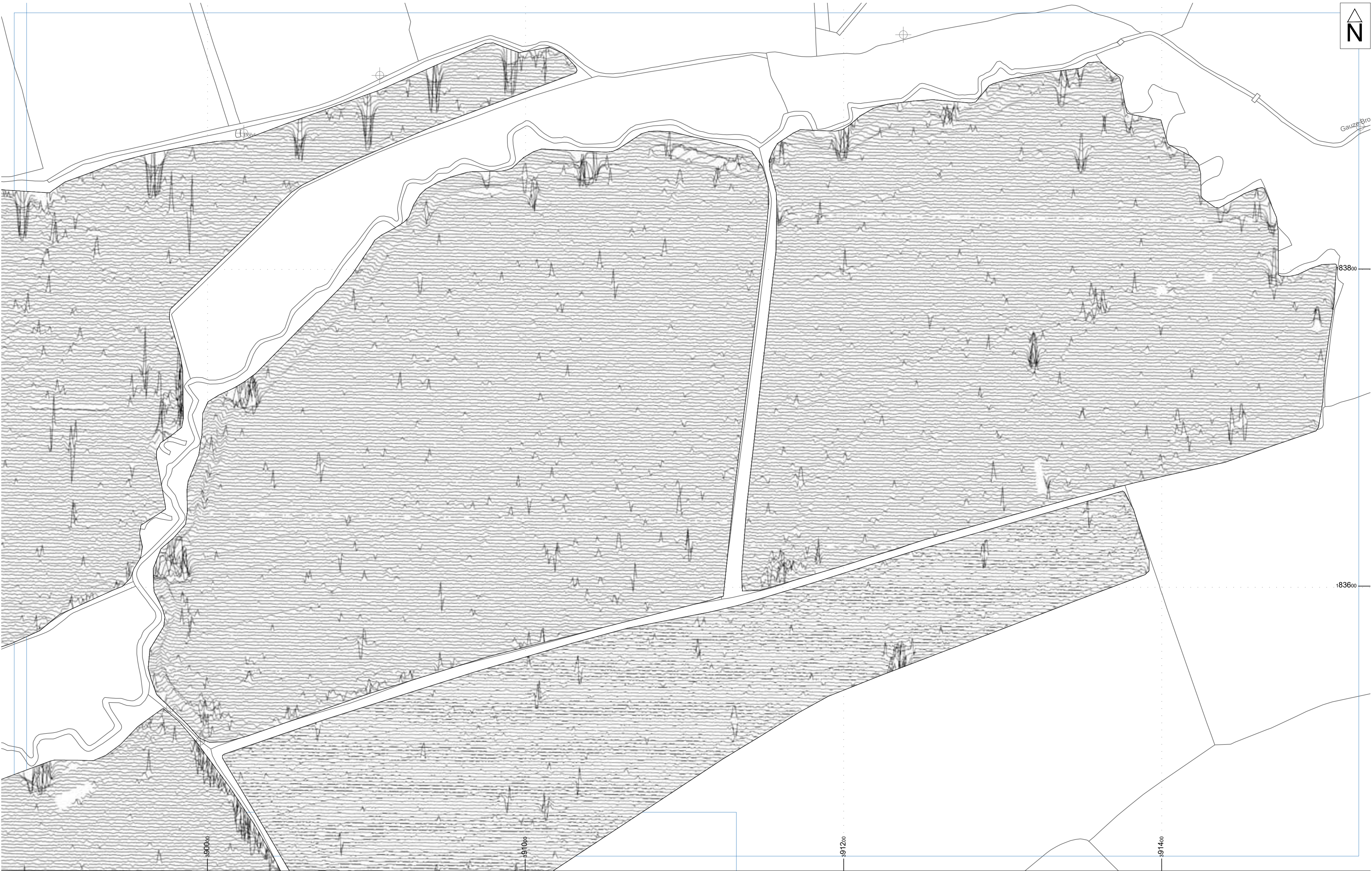


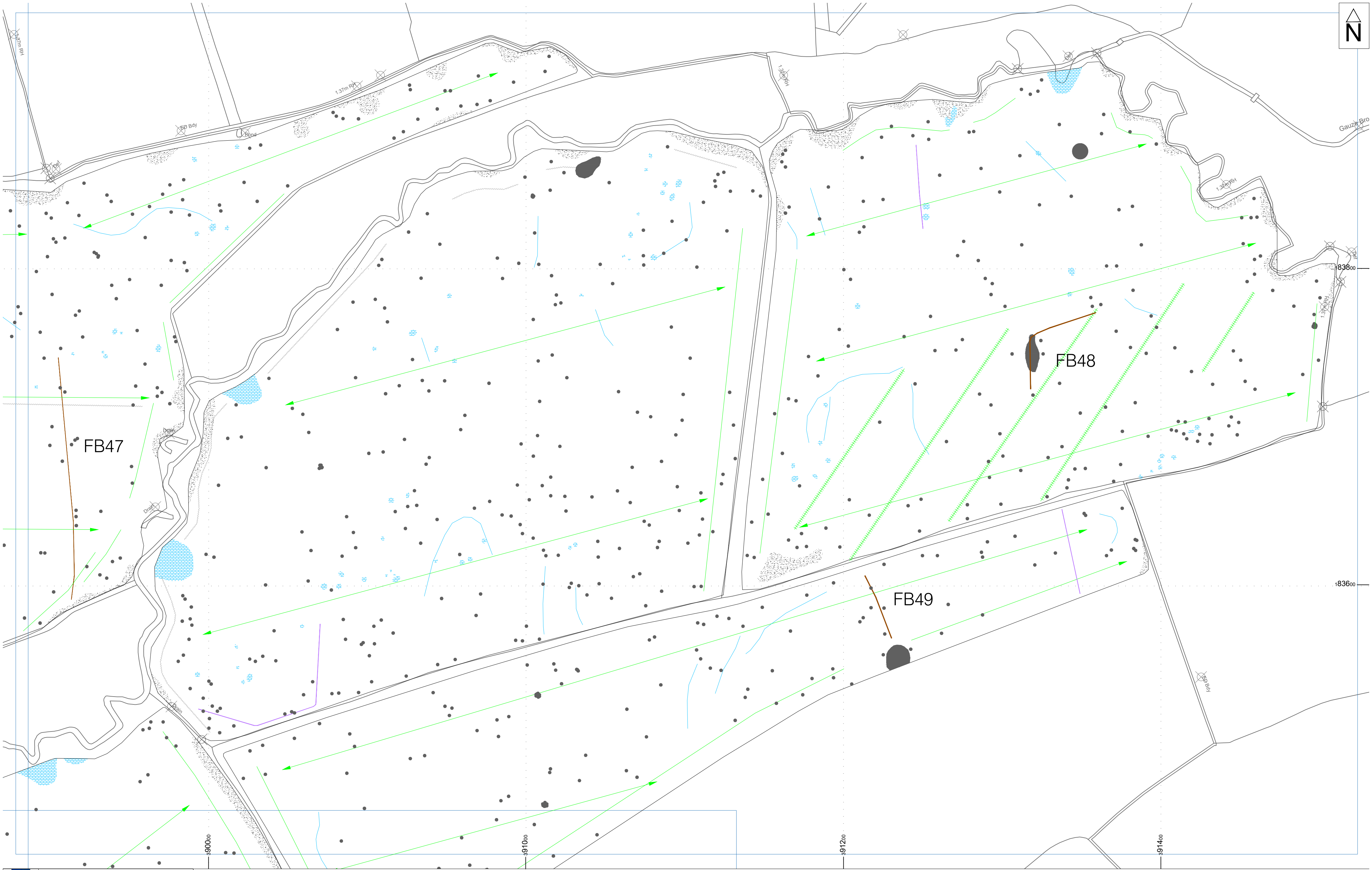


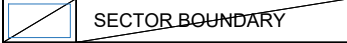
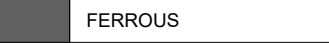
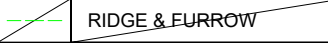


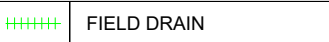





Title		Interpretation			
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	MAGNETIC DISTURBANCE		AGRICULTURAL		UNCERTAIN
	FIELD DRAIN		GEOLOGY		ARCHAEOLOGY?
			ARCHAEOLOGY		







Title		Interpretation			
	SECTOR BOUNDARY		FERROUS		RIDGE & FURROW
			MAGNETIC DISTURBANCE		AGRICULTURAL
			FIELD DRAIN		OLD FIELD BOUNDARY
			GEOLOGY		UNCERTAIN



Title

SECTOR.BOUNDARY



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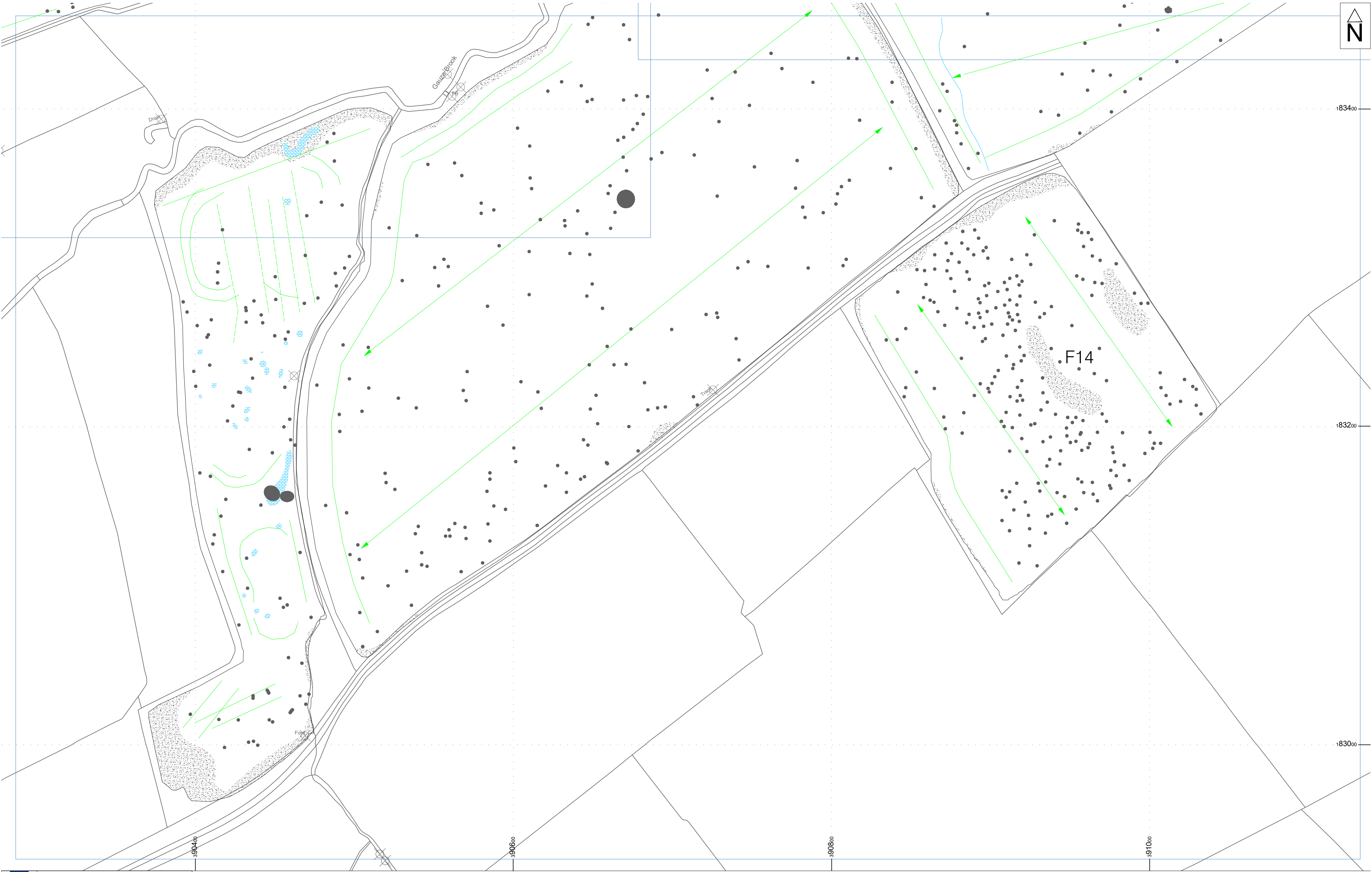
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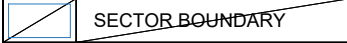
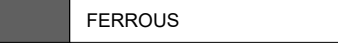
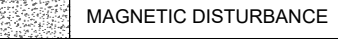

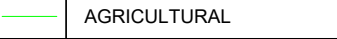



Title

SECTOR_BOUNDARY

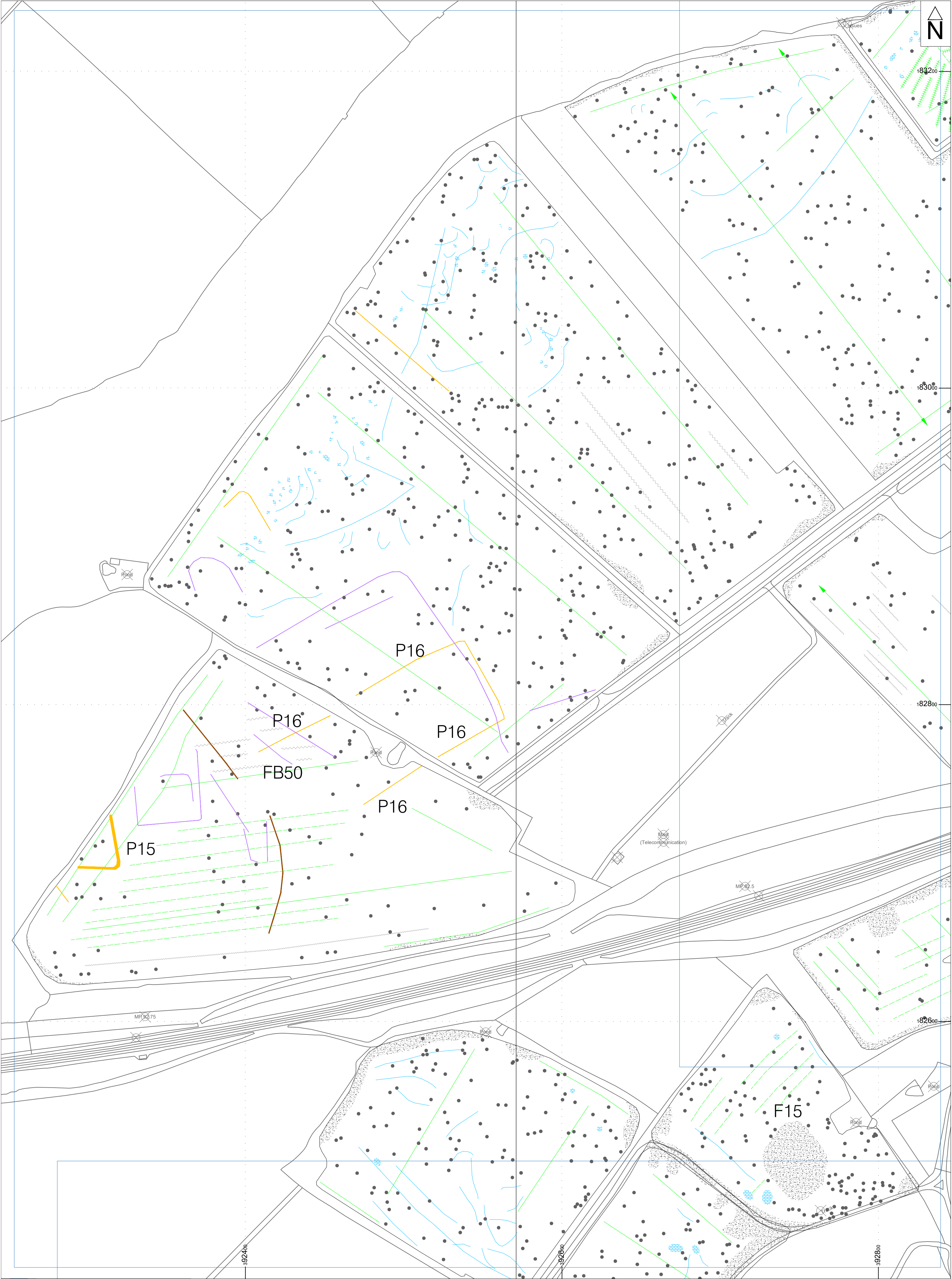
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Title		Interpretation	
	SECTOR BOUNDARY		FERROUS
	MAGNETIC DISTURBANCE		RIDGE & FURROW
	AGRICULTURAL		GEOLOGY








Title		Interpretation			
	SECTOR BOUNDARY		FERROUS		RIDGE & FURROW
	MAGNETIC DISTURBANCE		AGRICULTURAL		GEOLOGY
	INTERFERENCE		OLD FIELD BOUNDARY		UNCERTAIN
			ARCHAEOLOGY 7		







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
Project ID: XK77_MKS23

XY trace plot of minimally processed magnetometer data;
Sector 32

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Fig. 99

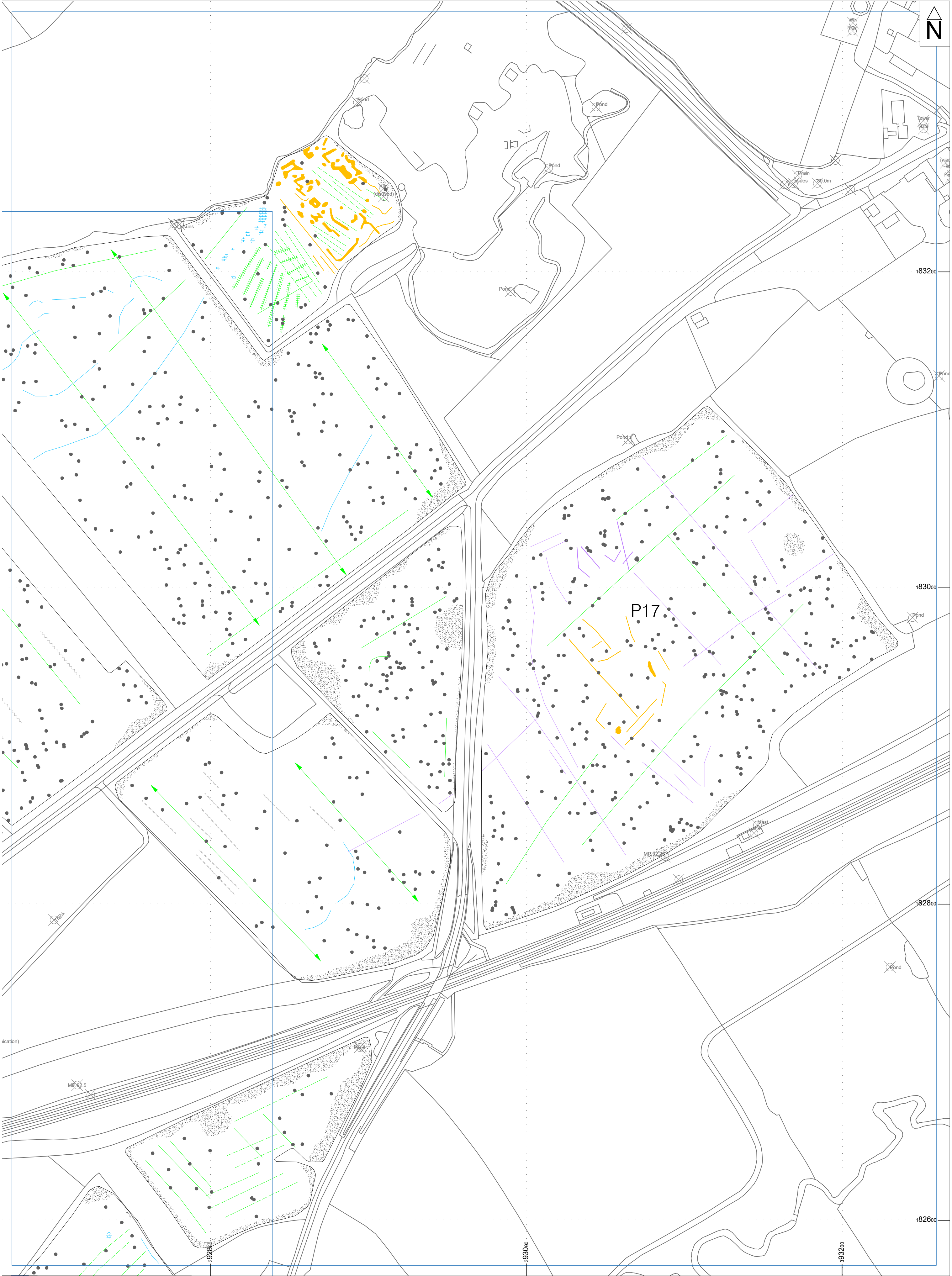
Title


 SECTOR BOUNDARY

15.0 nT/cm

0 50m

1:1500 @ A2











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Interpretation of magnetometer data; Sector 32

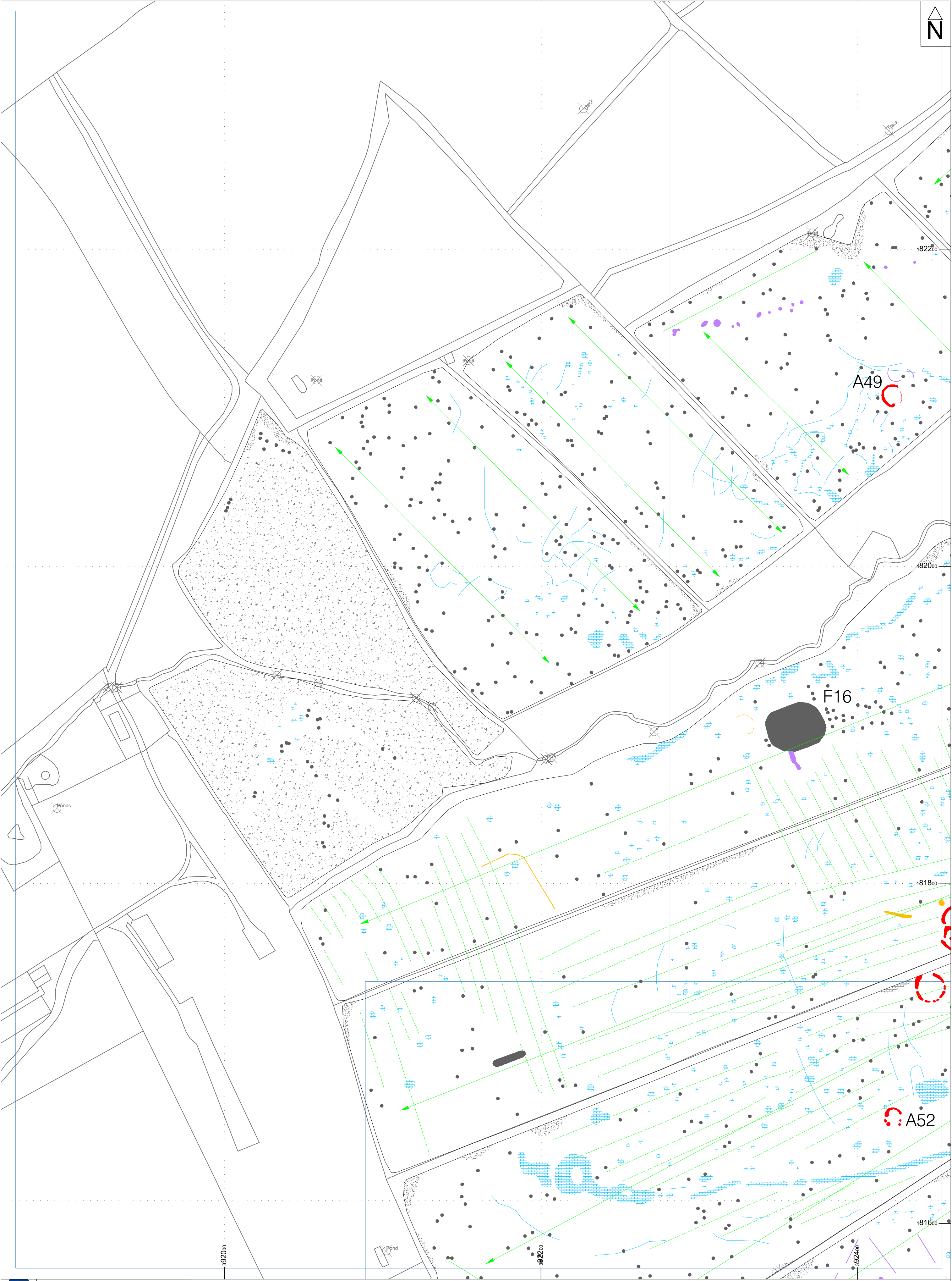
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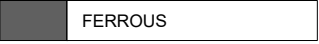
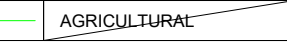


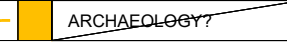
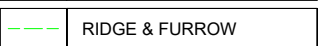


Fig. 100

Title		Interpretation			
	SECTOR BOUNDARY		FERROUS		RIDGE & FURROW
	MAGNETIC DISTURBANCE		AGRICULTURAL		UNCERTAIN
	INTERFERENCE		GEOLOGY		ARCHAEOLOGY?

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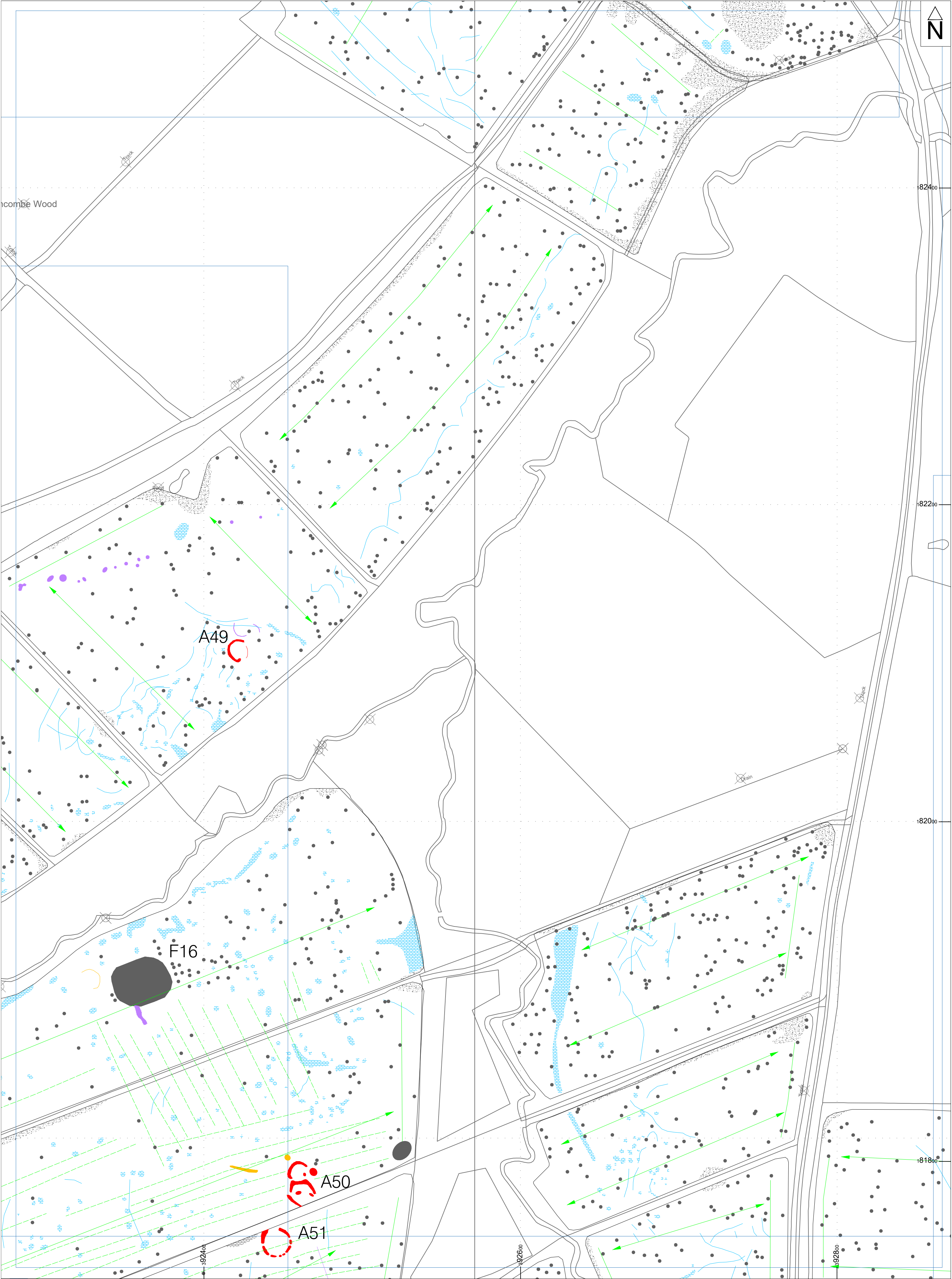



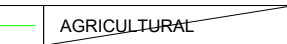
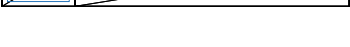
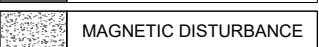

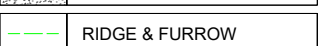
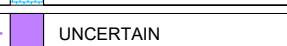


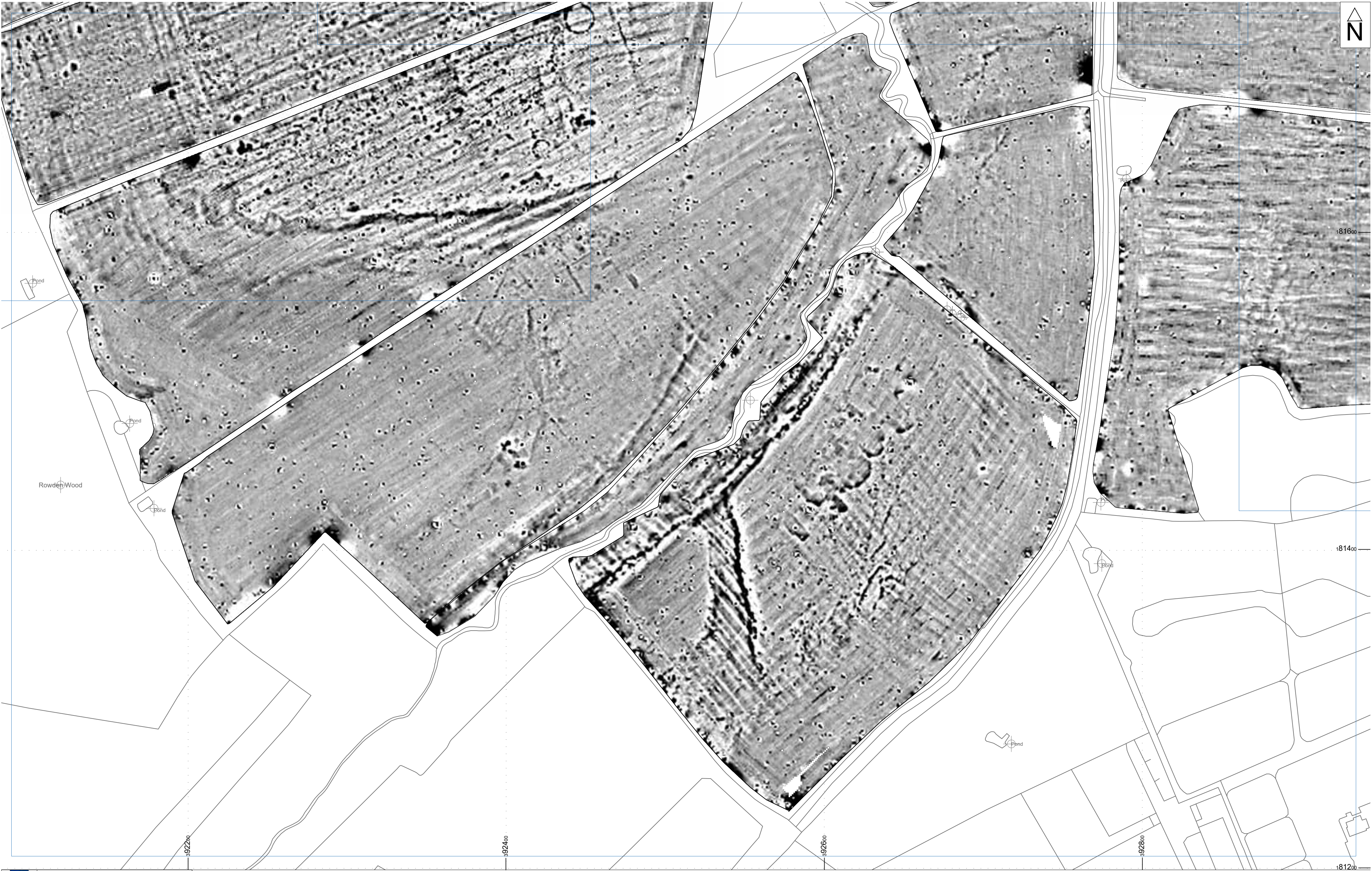
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	MAGNETIC.DISTURBANCE		GEOLOGY		ARCHAEOLOGY?
	RIDGE & FURROW		UNCERTAIN		ARCHAEOLOGY

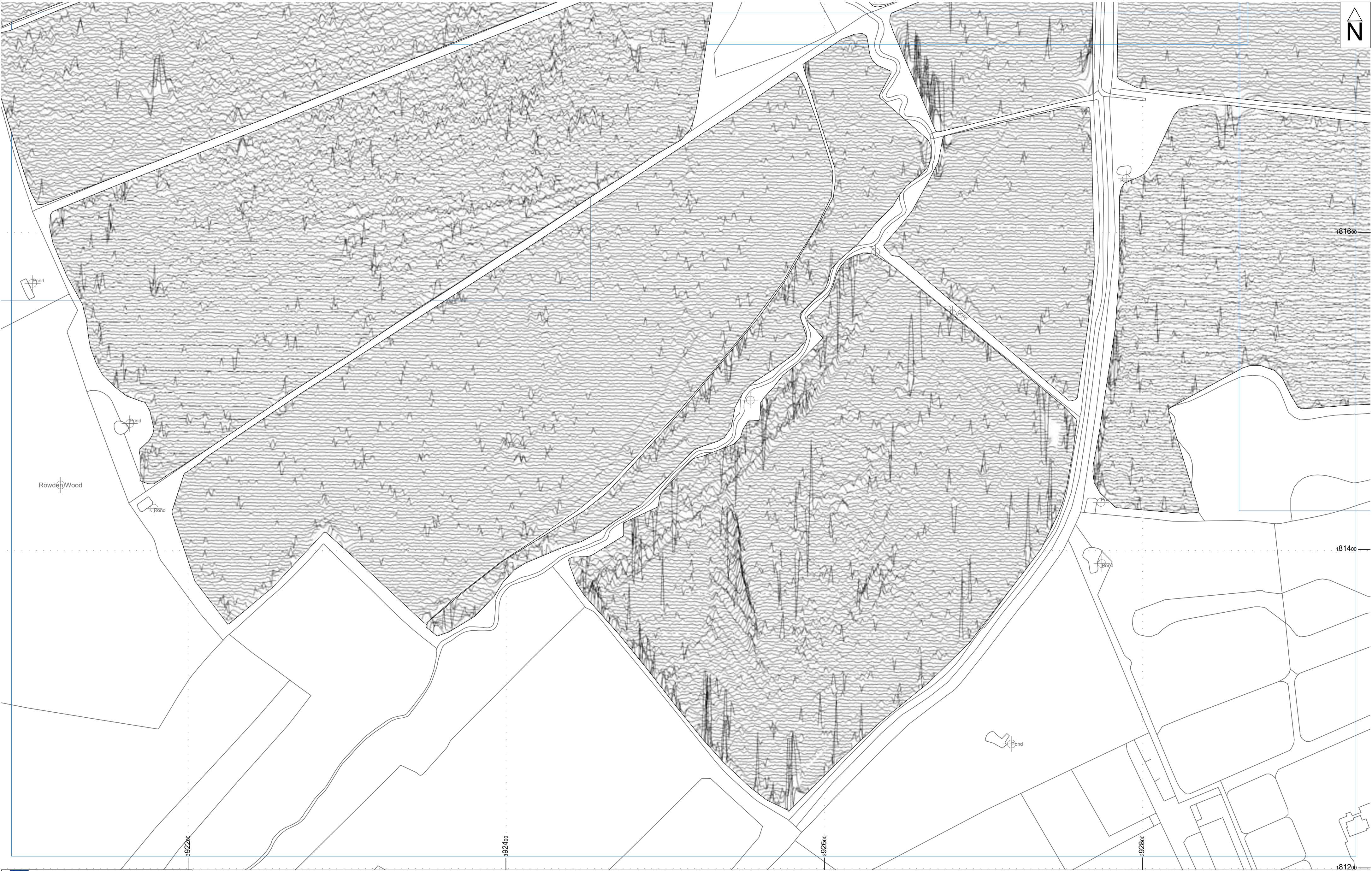


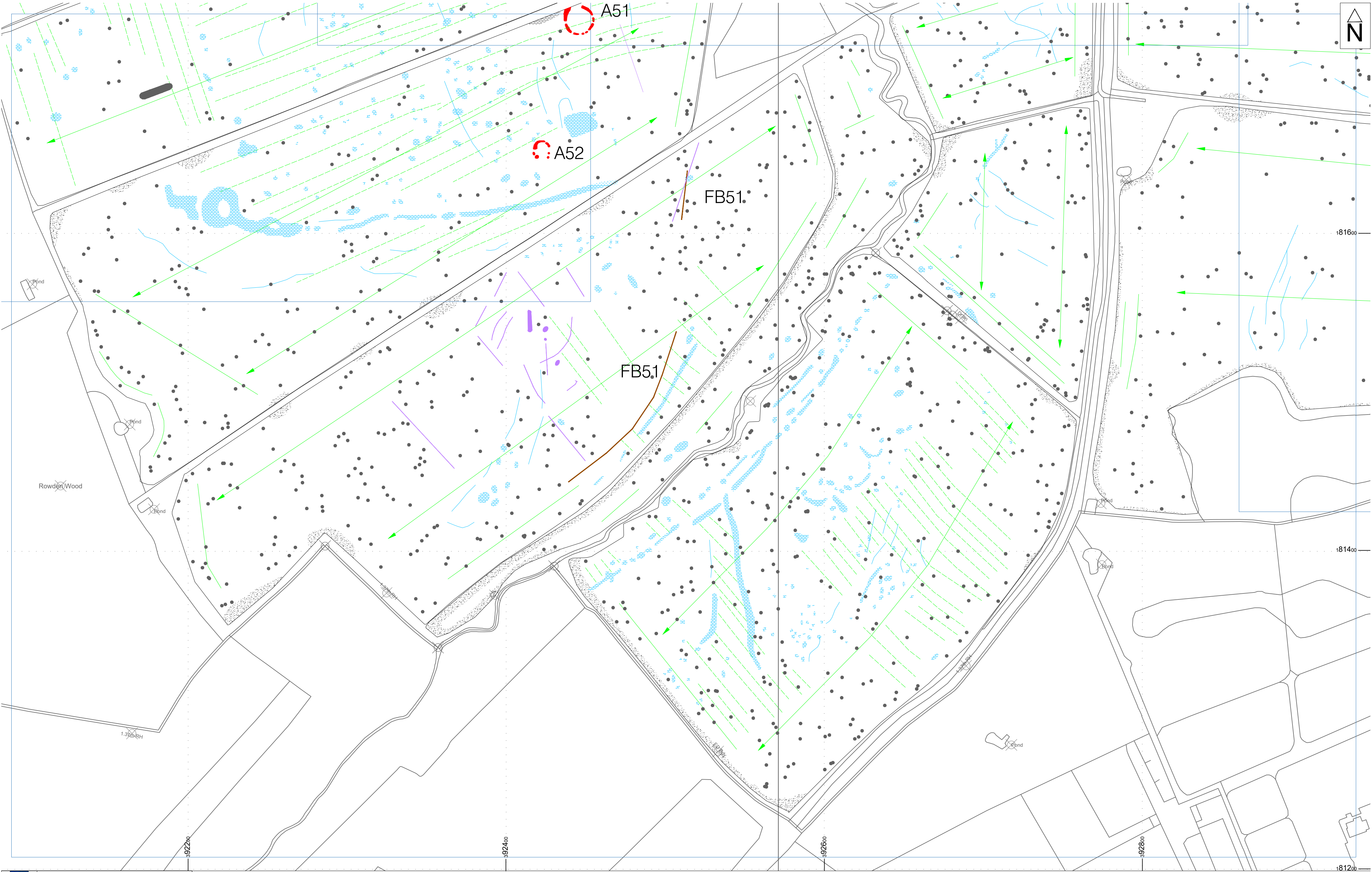




Title		Interpretation			
	SECTOR BOUNDARY		FERROUS		AGRICULTURAL
	MAGNETIC DISTURBANCE		GEOLOGY		ARCHAEOLOGY?
	RIDGE & FURROW		UNCERTAIN		ARCHAEOLOGY



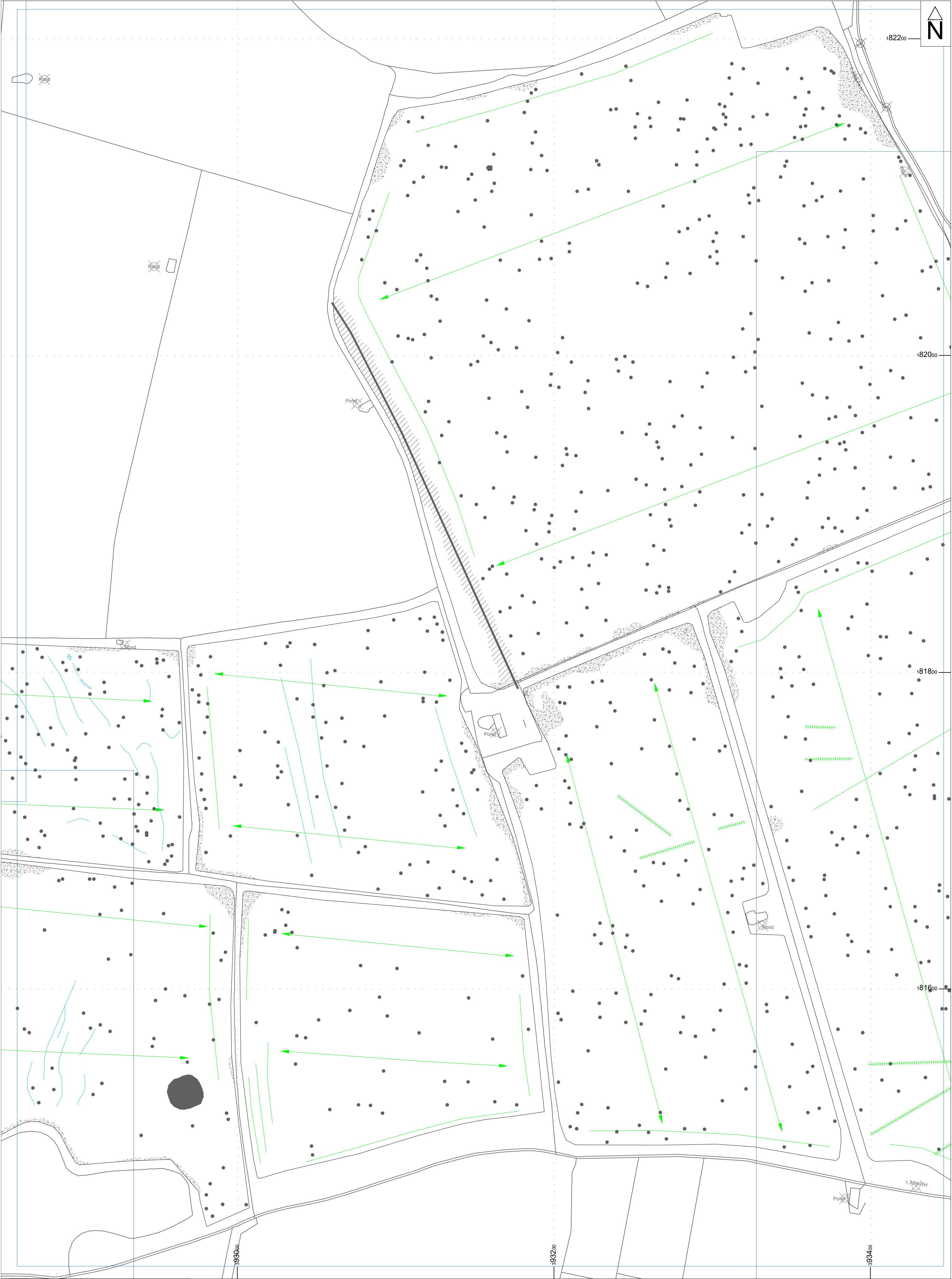










Title		Interpretation					
	SECTOR BOUNDARY		FERROUS		AGRICULTURAL		UNCERTAIN
			MAGNETIC DISTURBANCE		OLD FIELD BOUNDARY		ARCHAEOLOGY
			RIDGE & FURROW		GEOLOGY		







Title		Interpretation	
	SECTOR.BOUNDARY		FERROUS
			MAGNETIC DISTURBANCE
			FIELD DRAIN
			AGRICULTURAL
			GEOLOGY






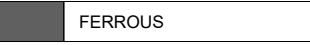

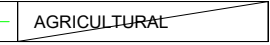


Title		Interpretation	
	SECTOR BOUNDARY		FERROUS
	MAGNETIC DISTURBANCE		AGRICULTURAL
	FIELD DRAIN		GEOLOGY



Plate 1. General view of Field A4, looking south



Plate 2. General view of Field A6, looking south



Plate 3. General view of Field A8, looking east



Plate 4. General view of Field A11, looking southwest



Plate 5. General view of Field B2, looking southwest



Plate 6. General view of Field B6, looking northeast



Plate 7. General view of Field B12, looking west



Plate 8. General view of Field C1, looking west



Plate 9. General view of Field C6, looking west



Plate 10. General view of Field C7, looking southeast



Plate 11. General view of Field C12, looking south



Plate 12. General view of Field C21, looking southeast



Plate 13. General view of Field C25, looking east



Plate 14. General view of Field C36, looking west



Plate 15. General view of Field D4, looking east



Plate 16. General view of Field D12, looking southwest



Plate 17. General view of Field D15, looking west



Plate 18. General view of Field D16, looking southwest



Plate 19. General view of Field D22, looking north



Plate 20. General view of Field E1, looking southwest



Plate 21. General view of Field E9, looking northwest



Plate 22. General view of Field E12, looking north



Plate 23. General view of Field E21, looking south



Plate 24. General view of Field E28, looking east

Appendix 1: Magnetic survey - technical information

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 haemetite. 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. Areas of human occupation or settlement can then be identified by measuring the magnetic susceptibility of the topsoil because 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 and the fermentation and bacterial effects associated with rubbish decomposition. The area of enhancement is usually quite large, mainly due to the tendency of discard areas to extend beyond the limit of the occupation site itself, and spreading by the plough.

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 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.

Methodology: Gradiometer Survey

The main method of using the fluxgate gradiometer for commercial evaluations is referred to as *detailed survey* and requires the surveyor to walk at an even pace carrying the instrument within a grid system. A sample trigger automatically takes readings at predetermined points, typically at 0.25m intervals, on traverses 1m apart. These readings are stored in the memory of the instrument and are later dumped to computer for processing and interpretation.

During this survey an eight channel Sensys MX V3 system containing eight FGM650 sensors was also used which was towed across the area using an ATV. Readings were taken every 20MHz (between 0.05 and 0.1m). Data was be recorded onto a device, using a Carlson GNSS Smart antenna, for centimetre accuracy. These readings were stored in the memory of the instrument and downloaded for processing and interpretation.

Where the Sensys MX V3 system could not be used, a Bartington Grad601 magnetic gradiometer was used taking readings on the 0.1nT range, at 0.25m intervals on zig-zag traverses 0.5m apart within 30m by 30m square grids. The instrument was checked for electronic and mechanical drift at a common point and calibrated as necessary. The drift from zero was not logged.

Appendix 2: Survey location information

Data was recorded onto a device, using a Carlson GNSS BRx7 Smart antenna, for centimetre accuracy. These readings were stored in the memory of the instrument and downloaded for processing and interpretation. The accuracy of the BRx7 is between 0.15cm – 0.8cm. The BRx7 has a built-in tilt sensor to correct collected point coordinates to within 2cm.

In the areas where handheld survey was undertaken, an initial survey station was established using a Trimble VRS differential Global Positioning System (Trimble R6 model). The data was geo-referenced using the geo-referenced survey station with a Trimble RTK differential Global Positioning System (Trimble R6 model). The accuracy of this equipment is better than 0.01m.

The survey data for both survey types were then super-imposed onto a base map provided by the client to produce the displayed 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 co-ordinates are measured off hard copies of the mapping rather than using the digital co-ordinates.

Archaeological Services WYAS cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party.

Appendix 3: Geophysical archive

The geophysical archive comprises:-

- an archive disk containing compressed (WinZip 8) files of the raw data, report text (Microsoft Word 2003), and graphics files (Adobe Illustrator CS6 and AutoCAD 2017) files; and
- a full copy of the report.

At present the archive is held by Archaeological Services WYAS although it is anticipated that it may eventually be lodged with the Archaeology Data Service (ADS). Brief details may also be forwarded for inclusion on the English Heritage Geophysical Survey Database after the contents of the report are deemed to be in the public domain (i.e. available for consultation in the Wiltshire Historic Environment Record).

Appendix 4: Oasis form

OASIS Summary for archaeol11-534257

OASIS ID (UID)	archaeol11-534257
Project Name	Geophysical Survey at Lime Down Solar Park
Sitename	Lime Down Solar Park
Sitecode	XK62
Project Identifier(s)	
Activity type	Geophysical Survey, MAGNETOMETRY SURVEY
Planning Id	
Reason For Investigation	Planning: Pre application
Organisation Responsible for work	Archaeological Services WYAS
Project Dates	04-Sep-2023 - 17-Jan-2025
Location	Lime Down Solar Park NGR : ST 88351 66824 LL : 51.40032552831874, -2.168840749031061 12 Fig : 388351,166824
Administrative Areas	Country : England County/Local Authority : Wiltshire Local Authority District : Wiltshire Parish : Melksham Without
Project Methodology	<p>The cart-based survey was undertaken using an eight channel SenSYS MX V3 system containing eight FGM650 sensors. Readings are taken every 20MHz (between 0.05 and 0.1m). Data were recorded onto a device, using a Carlson GNSS Smart antenna, for centimetre accuracy. These readings were stored in the memory of the instrument and downloaded for processing and interpretation. DLMGPS and MAGNETO software, alongside bespoke in-house software was used to process and present the data.</p> <p>A handheld survey was undertaken in two areas (Fields B1 and C15) where the cart-based survey method was not suitable. The site grid was laid out using a Trimble VRS differential Global Positioning System (Trimble R6 model). The survey was undertaken using Bartington Grad601 magnetic gradiometers. These were employed taking readings at 0.25m intervals on zig-zag traverses 1.0m apart within 30m by 30m grids, so that 3600 readings were recorded in each grid. These readings were stored in the memory of the instrument and later downloaded to computer for processing and interpretation. Bespoke in-house software was used to process and present the data.</p>

Project Results	A geophysical (gradiometer) survey was undertaken on approximately 827 hectares of land associated with the Lime Down Solar Park, Wiltshire. Archaeological and possible archaeological anomalies have been recorded comprising rectilinear enclosures, ring ditches, linear ditches and trends, pit responses and concentrations of increased magnetic response indicative of settlement activity. Agricultural anomalies have been recorded throughout including former field boundaries, medieval/post-medieval ridge and furrow cultivation, modern ploughing and land drains. Uncertain anomalies recorded within the data may also have an anthropogenic origin. Geological responses seen within the dataset reflect either the topography of the site, quarrying or discrete pockets and large areas of natural variations. Magnetic disturbance within the dataset can be attributed to adjacent tracks and metal fencing within field boundaries and also 'green manuring' in some of the fields. Former ponds and service pipes have also been recorded. Based on the geophysical survey, the archaeological potential of this Site is deemed to be high where there are areas of activity and low elsewhere.
Keywords	Ring Ditch - LATER PREHISTORIC - FISH Thesaurus of Monument Types Linear Settlement - UNCERTAIN - FISH Thesaurus of Monument Types
Funder	Private or public corporation Lime Down Solar Park
HER	Wiltshire and Swindon HER - unRev - STANDARD
Person Responsible for work	Emma Brunning
HER Identifiers	
Archives	

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