Grove Solar Farm
Leonard Stanley, Gloucestershire

Detailed Gradiometer Survey Report

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Summary

A detailed gradiometer survey was conducted over land at Grove Solar Farm, Leonard Stanley, Gloucestershire (centred on NGR 379500 203800). The project was commissioned by Lightrock Power Ltd with the aim of establishing the presence, or otherwise, and nature of detectable archaeological features in support of a planning application for the development of the site as a solar farm.

The site comprises nine arable fields located 1 km east of the village of Leonard Stanley and 15 km south of Gloucester, in the county of Gloucestershire, covering an area of 53 ha. The geophysical survey was undertaken between 3 and 18 April.

The survey has identified an extensive range of archaeological features that likely cover multiple periods of activity. This is predominantly associated with a palimpsest of conjoined or overlapping ditched enclosures and two ring ditches located in the centre of the site. The ring ditches are thought to relate to the Early to Mid-Bronze Age barrow cemetery. The easternmost enclosure is most likely attributable to the Iron Age settlement, while the enclosure to the west indicates a Romano-British phase of occupation. These enclosures are seemingly interconnected by a branching trackway or road system.

Both areas of settlement comprise enclosed areas with pit-like features. They also both contain areas that may relate to industrial activity and burning. It is possible that the Romano-British settlement contains structural remains.

Surrounding the settlement is a wider field system. It is likely that various phases of field systems are visible spanning the Iron Age – Romano-British through to the modern day.

Two large and several small areas indicate historical gravel extraction in the eastern part of the site. One has been noted on the first edition OS mapping for Gloucestershire.

The remaining identified anomalies relate to modern field boundaries, geological features, and modern services.

Acknowledgements

Wessex Archaeology would like to thank Lightrock Power Ltd for commissioning the geophysical survey. The assistance of Michelle Howson is gratefully acknowledged in this regard.

The fieldwork was undertaken by Callum Jervis, Andrew Marke, Amy Dunn and Manasi Patil. Rok Plesnicar processed and interpreted the geophysical data with contributions from Amy Dunn and Calum Jervis and Jack Trueman. Rok Plesnicar wrote the report and prepared the illustrations. The geophysical work was quality controlled by Brett Howard and the project was managed on behalf of Wessex Archaeology by Tom Richardson.

Grove Solar Farm
Leonard Stanley, Gloucestershire

Detailed Gradiometer Survey Report

1 INTRODUCTION

1.1 Project background

1.1.1 Wessex Archaeology was commissioned by Lightrock Power Ltd to carry out a geophysical survey at Grove Solar Farm, Leonard Stanley, Gloucestershire (centred on NGR 379500 203800) (**Figure 1**). The survey forms part of an ongoing programme of archaeological works being undertaken in support of a planning application for the development of the site as a solar farm.

1.2 Scope of document

1.2.1 This report presents a brief description of the methodology followed by the detailed survey results and the archaeological interpretation of the geophysical data.

1.3 The site

1.3.1 The site is located 1 km east of the village of Leonard Stanley and 15 km south of Gloucester, in the county of Gloucestershire.

1.3.2 The survey comprises 53 ha of agricultural land, currently utilised for pasture and arable purposes, situated across nine fields. The site is bounded by an unnamed road to the north and east, by Leonard Stanley Road to the south, and by field boundaries to the west.

1.3.3 The site is on a slight incline from 32 m above Ordnance Datum (aOD) at the north-western edge to 52 m aOD at the centre of the site. The slope declines north to 41 m aOD and to the east and south to 48 m aOD.

1.3.4 Three sets of overhead cables traverse the site on an east – west orientation.

1.3.5 The solid geology comprises Mudstone of the Blue Lias Formation and Charmouth Mudstone Formation, with overlying river terrace deposits of sand and gravel (BGS 2023).

1.3.6 The soils underlying the site are likely to consist of stagnogley soils of the 711d association (Martock) in the south, calcareous soils of the 411b association (Evesham 2) in the north, and argillic brown earths of the 572h association (Oxpasture) in the west of LP_9 (SSEW SE Sheet 5 1983). Soils derived from such geological parent material have been shown to produce magnetic contrasts acceptable for the detection of archaeological remains through magnetometer survey.

2 ARCHAEOLOGICAL BACKGROUND

2.1 Introduction

2.2 The following historical and archaeological background has been compiled using publicly available online resources, combined with the results of Wessex Archaeology's previous investigations in the area, and in-house resources.

2.3 Summary of the archaeological resource

2.3.1 The scheduled monument of Leonard Stanley Priory (NHLE 1018606) is located 400 m to the south-east of the site. It comprises the remains of a 10th – 11th century Grade II* listed Saxon chapel (NHLE 1171503), a 14th century Grade II listed tithe barn (NHLE 1090737), a pond, and the underground remains of the conventual buildings. At the northern side of Leonard Stanley Priory is the Grade I listed Church of St Swithin (NHLE 1171487) and the Grade II* listed Priory House (NHLE 1090735). The Grade II* listed Mercer house, the Weavers cottage, and Vine cottage are located in the village of Leonard Stanley.

2.3.2 A further 24 Grade II listed buildings lie within the search radius. They relate to a railway bridge and dwellings dating from the late 16th – 20th century.

2.3.3 In the north-eastern part of the site, a Mesolithic flint scatter was recorded during quarrying. Additionally, a Roman coin and pottery sherds were found.

2.3.4 An Iron Age Farmstead was recorded during the excavation in the village of Frocester, which predated a Roman villa, located 1.1 km to the south-west of the site.

2.3.5 A small excavation on the northern bank of the River Frome, in Stonehouse, revealed elements of a Romano-British settlement, located 1.5 km to the north-east of the site. Features comprised a small number of pits and an adjacent gully. One pit was found to contain more than 5 kgs of iron slag, while domestic occupation is indicated by other finds.

2.3.6 A Roman road is presumed to run north – south through the village of Frocester, 800 m to the west of the site.

2.3.7 The National Mapping Project (NMP) has identified a ring ditch of an uncertain date situated within site boundaries. Additionally, numerous medieval field boundaries were identified to the south of the site, as well as ridge and furrow field systems throughout the wider landscape.

2.3.8 Records of a 'Old Gravel Pits' are noted located within the north-eastern portion of the survey area, on the 25-Inch Ordnance Survey (OS) map for Gloucestershire from 1884, sheet XLIX.

3 METHODOLOGY

3.1 Introduction

3.1.1 The geophysical survey was undertaken by Wessex Archaeology's in-house geophysics team between 3 and 18 March 2023. Field conditions were appropriate for the geophysical technique throughout the period of survey. An overall coverage of 42.2 ha was achieved. LP_9 was under crop at the time of the survey and will be surveyed at a later date. An overgrown area in the south of LP_6 obstructed the survey.

3.1.2 The methods and standards employed throughout the geophysical survey conform to current best practice, and guidance outlined by the Chartered Institute for Archaeologists' (CIfA 2014) and European Archaeologiae Consilium (Schmidt *et al.* 2015).

3.2 Aims and objectives

3.2.1 The aims of the survey comprise the following:

- To determine, as far as is reasonably possible, the nature of the detectable archaeological resource within a specified area using appropriate methods and practices; and
- To inform either the scope and nature of any further archaeological work that may be required; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.

3.2.2 In order to achieve the above aims, the objectives of the geophysical survey are:

- To conduct a geophysical survey covering as much of the specified area as possible, allowing for on-site obstructions;
- To clarify the presence/absence of anomalies of archaeological potential; and
- Where possible, to determine the general nature of any anomalies of archaeological potential.

3.3 Fieldwork methodology

3.3.1 The cart-based gradiometer system used a Leica Captivate RTK GNSS instrument, which receives corrections from a network of reference stations operated by the Ordnance Survey (OS) and Leica Geosystems. Such instruments allow positions to be determined with a precision of 0.02 m in real-time and therefore exceeds European Archaeologiae Consilium recommendations (Schmidt *et al.* 2015).

3.3.2 The detailed gradiometer survey was undertaken using four SenSys FGM650/3 magnetic gradiometers spaced at 1 m intervals and mounted on a non-magnetic cart. Data were collected with an effective sensitivity of ±8 µT ±1000 nT at a rate of 100 Hz, producing intervals of 0.02 m along transects spaced 4 m apart.

3.4 Data processing

3.4.1 Data from the survey were subjected to minimal correction processes. These comprise a 'Destripe' function (±5 nT thresholds), applied to correct for any variation between the sensors, and an interpolation used to grid the data and discard overlaps where transects have been collected too close together.

3.4.2 Further details of the geophysical and survey equipment, methods and processing are described in **Appendix 1**.

4 GEOPHYSICAL SURVEY RESULTS AND INTERPRETATION

4.1 Introduction

4.1.1 Results are presented as a series of greyscale plots, and archaeological interpretations. The overview figures are presented at a scale of 1:5000 (**Fig. 2** and **3**); The detailed figures are presented at a scale of 1:2000 (**Fig. 4** – **11**). The data are displayed at -2 nT (white) to +3 nT (black) for the greyscale image.

4.1.2 The interpretation of the datasets highlights the presence of potential archaeological anomalies, ferrous responses, burnt or fired objects, and magnetic trends (**Fig. 5**, **7**, **9**, and **11**). Full definitions of the interpretation terms used in this report are provided in **Appendix 2**.

4.1.3 Numerous ferrous anomalies are visible throughout the dataset. These are presumed to be modern in provenance and are not referred to, unless considered relevant to the archaeological interpretation.

4.1.4 It should be noted that small, weakly magnetised features may produce responses that are below the detection threshold of magnetometers. It may therefore be the case that more archaeological features may be present than have been identified through geophysical survey.

4.1.5 Gradiometer survey may not detect all services present on site. This report and accompanying illustrations should not be used as the sole source for service locations and appropriate equipment (e.g., CAT and Genny) should be used to confirm the location of buried services before any trenches are opened on site.

4.2 Gradiometer survey results and interpretation

4.2.1 The geophysical survey has identified a number of areas that are associated with archaeological remains.

4.2.2 A positive penannular anomaly (**4000**) is located in the southern portion of LP_7 (**Figure 7**). It has a diameter of 37 m and is 2 m wide. This is indicative of ring ditch feature. The ditch is broken to the south-east with a 3 m wide opening. Four smaller positive discrete anomalies with diameters between 3 m and 5 m have been identified within the ring ditch. Three are located along the ditch at the eastern and southern side, and one in the centre. This likely represents the ring ditch of an Early – Mid Bronze Age round barrow with associated pit-like features that may relate to burials or later intrusions which was identified by the NMP.

4.2.3 A series of strong positive linear anomalies have been identified covering a large area in the centre of the site (**4001** – **4015**; **Figure 7**). These are indicative of a complex of ditch features with concentrations associated with settlement activity. At the north of this area are two parallel anomalies at **4001** and **4002**, which are orientated north – south. The eastern anomaly (**4001**) is 66 m long, with a 35 m long eastern spur at the south. The western anomaly (**4002**), separated from **4001** by 5 m, is 119 m long, continuing further south than the anomaly at **4001**, and 11 m wide at its greatest extent. These anomalies likely indicate the ditched edges of roads, or trackways, leading to, and around, wider enclosure systems to the south and east. An extension of the **4001** is apparent to the east at **4003**. This continues 87 m east – west and is 6 m wide.

4.2.4 It is likely that the trackway (**4001** – **4002**) opens out to agricultural land to the north. Two positive linear anomalies at **4004** and **4005** appear to form an extension of **4002**. The anomaly at **4004** is 73 m long east – west and 2 m wide, while the anomaly at **4005** is 164 m long north-east to south-west and 2 m wide. These indicate further enclosure ditches associated with agricultural activity outside the settlement areas.

4.2.5 At the end of the eastern spur of the track way is an area of rectilinear anomalies at **4006** (**Figure 7**). This comprises a linear system of anomalies on a broadly north-north-west to south-south-east orientation (**a** – **d**). Area **a**, located at the northern extent of the system covers an area of 36 m by 32 m containing at least four discrete, pit-like, anomalies. Increased activity has been identified at its western side and extends towards the south. Area **b** is situated in the middle of the system. It is 68 m long by 42 m wide, and contains numerous discrete, pit-like, anomalies, with two areas of increased activity located along the western side and north-eastern corner. An oval anomaly, at **c**, is located within **b** and is

23 m long by 17 m wide. It contains two discrete, pit-like, areas of positive anomalies which occupy an area 7 m by 5 m. Another enclosed space (**d**) located at the southern extent of the system, is 46 m long and up to 31 m wide. A circular dipolar anomaly is located in the southern part of **d**, which has a diameter of 4 m and likely indicates a spot of burning. This system of anomalies indicates archaeological settlement activity, formed of ditched enclosures containing pits and areas of burning. However, there is no clear evidence in the data for any dwellings. The character of the enclosures, and the position on a natural promontory within the landscape, suggests an Iron Age date, which has respected the Bronze Age barrow immediately to the south. Iron Age settlement activities were also identified 1 km to the south-east in the village of Frocester during the excavation of the Roman Villa.

4.2.6 Another collection of rectilinear and discrete anomalies has been identified 143 m west of **4006**, at **4007** – **4009** in LP_4 and LP_5 (**Figure 7**). It occupies an area of 185 m by 125 m on a north – south alignment. The linear anomaly at the southern extent of the system (**4007**) is 72 m long, has a 17 m return to the south, and is 2 m wide. The northern extent is defined at **4008**, and is 94 m long, joining to the trackway (**4002**) at its eastern end.

4.2.7 The area at **4009** has been interpreted as smaller separate areas, at **a** – **h**. Area **a** is 95 m long and 55 m wide, on an east – west orientation. Strong positive linear anomalies define the northern, eastern, and southern boundaries, with the western boundary comprising weaker magnetic values near the edge of the survey area. In the south-western corner is a rectangular area of strong positive and negative anomalies (**b**) which is 25 m long and 14 m wide on a north – south alignment. Area **c** is 88 m long north – south and 30 m wide. Strong dipolar rectangular anomalies are noted in the north and north-western portion (**d**) and in the centre, at **e**. The negative portion of the anomalies is suggestive of stone walls, with the interior areas likely representative of compact flooring, or industrial activity. The area at **f** is 94 m long north – south and 44 m wide. A range of strong dipolar anomalies is present in the centre of the area, at **g**. The anomalies at **g** present similar characteristics as **d** and **e**, suggestive of structural remains or industrial activity. An area at the north-east of the activity (**h**) 33 m wide east – west and 26 m long. This system of anomalies is indicative of settlement activity comprising a series of enclosures with internal divisions, pits, and possible stone structures or areas of industrial activity. The more rectangular form and possible presence of stone structures suggests a different phase of settlement to the area at **4006**, although they are linked by the northern trackway, so would have co-existed. It is likely this represents Romano-British settlement, due to its more regular rectilinear form.

4.2.8 Between the two areas of settlement (**4006** and **4007** – **4009**), an area of enhanced response has been identified at **4010**. The area covers 70 m by 70 m with no clearly defined anomalies within it. It is likely that this represents an area of activity associated with the settlements that has since been damaged the ridge and furrow ploughing evident in the vicinity. The preservation of the surrounding features suggests that these were more ephemeral features, possibly associated with agricultural activity rather than inhabitation or industry. There are some weakly positive linear anomalies in the area that appear to have similar alignments to the settlements and trackway (**4011** and **4012**), which support this interpretation.

4.2.9 To the south of the area of enhances response is a positive linear anomaly at **4013**. This forms a 'Y' shape 35 m long and may form a southern boundary to the activity to the north. This is supported by it appearing to respect the barrow, enclosing the area around it. Two other linear anomalies are evident in this area at **4014** and **4015**. The anomaly at **4014** extends north-west for 132 m and is 1.5 m wide. While this may be another boundary associated with the settlement activity, its straight and regular form is more suggestive of a modern feature, such as drainage or a water pipe. Extending south-east is a broad positive

and negative and linear anomaly at **4015**. It is 92 m long and up to 5 m wide. While this could be a boundary feature, its form is more indicative of natural variation.

4.2.10 The collection of features **4000** – **4015** indicate a landscape originally funerary in purpose, and later centred on agriculture, with progression from the Bronze Age through to at least the Romano-British period. The similar orientations, but differences in character between the features suggest a multi-phase occupation of the site, but further dating inferences cannot be made from the geophysical data.

4.2.11 Across the rest of the site are numerous weakly positive linear and curvilinear anomalies. A sub-circular positive anomaly has been identified in the south of LP_7 at **4016**. The anomaly is slightly flattened at the southern side and occupies an area of 30 m by 25 m. It relates to a ditch-like feature, such as a ring ditch. The ditch has two gaps in the northern and north-western sides, which are 4 m and 2 m wide, respectively. Three circular pit features have been identified within, with a diameter of 2 m. These are also very weak and could as well pertain to undulations in local geology. It is possible that this relates to the ring ditch of a barrow, similar to that at **4000** 100 m to the north-west. However, the weak nature of the anomalies makes confident interpretation difficult, and it could equally relate to natural variation.

4.2.12 In the south of the site is an area of weakly positive linear and curvilinear anomalies at **4017** – **4024** (**Figure 11**). The anomalies at **4017** form a rectangular enclosure with a triangular enclosure below it, covering an area of 36 m by 24 m. These ditch features are likely an extension of the settlement activity to the north, although there is no clear relationship between them in the geophysical data. The other anomalies in this area appear to form a north – south by east – west coaxial field system, with possibly smaller areas of enclosure at **4021** and **4023**. It is likely that this field system is associated with the Iron Age – Romano-British settlement, which is supported by the medieval – post-medieval ridge and furrow cultivation in the area being on a different orientation.

4.2.13 In the north-west of the site, two rectilinear positive anomalies have been identified at **4025** and **4026** (**Figure 5**). They are up to 2 m wide and a82 m and 105 m in length respectively. While these are indicative of ditched boundary features, similar to those in the south, they appear to share orientation with, and be respected by, the ridge and furrow in the area. This suggests a medieval – post-medieval date.

4.2.14 In the north-east of the site is an area of further weakly positive linear and rectilinear anomalies at **4027** – **4032** (**Figure 9**). These are seen on various orientations, suggesting several phases of activity. The anomaly at **4029** appears to respect the ridge and furrow, suggesting a medieval – post-medieval date. The other anomalies could relate to the Iron Age – Romano-British settlement activity but could equally relate to modern agricultural activity.

4.2.15 Weak positive parallel linear anomalies are evident across the site. These are indicative of medieval – post-medieval ridge and furrow, with many respecting current field boundaries suggestive of the post-medieval agricultural landscape.

4.2.16 Six positive linear anomalies have been identified across the site at **4033** – **4036**. These relate to historical field boundaries present on the First Edition OS mapping from 1884. However, the boundaries in the south-west of the site overlay the settlement boundary suggestive of a longer standing, or older field system. Additionally, three areas of increased magnetic response associated with historical material extraction have been identified at **4037** – **4039** (**Fig. 7** and **9**). They occupy areas of up to 120 m by 100 m. **4037** is present

on the 1884 First edition OS mapping. This suggests that **4038** and **4039** predate it as no historical evidence is available.

4.2.17 Numerous weakly positive discrete anomalies are likely associated with variations in the underlying superficial geology of the site. These are generally very weak and amorphous. Some of these may relate to archaeological pits but further investigation would be required to confirm this.

4.2.18 A broad positive sinuous anomaly has been identified in LP_7 and LP 8 at **4040** (**Fig. 5**, **7**, **9**, and **11**). It is up to 17 m wide, and 380 m long orientated from south-west to north-east. It has been interpreted as a paleochannel following the slope of the hill.

4.2.19 Strong dipolar linear anomalies have been identified traversing the site (**4041** – **4042**). They relate to modern services such as pipes and cables.

5 DISCUSSION

5.1.1 The gradiometer survey has identified an extensive range of archaeological features that likely cover multiple periods of activity. This is predominantly associated with a palimpsest of conjoined or overlapping ditched enclosures and two ring ditches located in the centre of the site.

5.1.2 The archaeological features are predominately located on the small hill which is raised above the flat land towards the west and north-west and just before the sharp elevation in the terrain towards the south. This would have provided a favourable location for settlement within the landscape.

5.1.3 The ring ditches are thought to relate to Early – Mid Bronze Age barrows. This represents the earliest activity evident in the dataset, with no further evidence for activity from this period.

5.1.4 Immediately north of the barrows is an area of multiphase settlement that is split across the eastern and western areas. The eastern area is most likely attributable to the Iron Age, while the western indicates a Romano-British phase of occupation. These enclosures are seemingly interconnected by a branching trackway or road system.

5.1.5 The Iron Age settlement comprises four parts where several pit features have been identified. Some of these are relatively small and are most likely associated with rubbish pits, post holes, or other settlement features. There is limited evidence for burning, suggesting hearths, ovens, or industrial activity. Iron Age settlement activities were also identified 1 km to the south-east in the village of Frocester during the excavation of the Roman Villa.

5.1.6 The settlement to the west has a primary activity area located at the western part of the enclosures, where several rectilinear areas suggest structural remains or industrial activities. Several pit features identified within are most likely associated with rubbish pits, post holes, or other settlement features. There is evidence for Roman settlement activity in the surrounding area, such as Frocester Court 1 km to the south-west, and settlements like Stonehouse that were used to support nearby cities at Colonia Glevum (Gloucester) to the north and Colonia Corinium Dobunnorum (Cirencester).

5.1.7 Surrounding the settlement is a wider field system. It is likely that various phases of field systems are visible spanning the Iron Age – Romano-British through to the modern day.

Medieval agricultural practices are recorded across the entire site in the form of ridge and furrow on various orientations. This shows that by the medieval period, the aforementioned settlements were abandoned and used as farmland.

5.1.8 Two large and several small areas indicate historical gravel extraction in the eastern part of the site. One has been noted on the first edition OS mapping for Gloucestershire.

5.1.9 The remaining identified anomalies relate to modern field boundaries, geological features, and modern services.

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APPENDICES

Appendix 1 Survey equipment and data processing

Survey methods and equipment

The magnetic data for this project were acquired using a non-magnetic cart fitted with four SenSys FGM650/3 magnetic gradiometers. The instrument has four sensor assemblies fixed horizontally 1 m apart allowing four traverses to be recorded simultaneously. Each sensor contains two fluxgate magnetometers arranged vertically with a 0.6 m separation and measures the difference between the vertical components of the total magnetic field within each sensor array. This arrangement of magnetometers suppresses any diurnal or low frequency effects.

The gradiometers have an effective resolution of ±8 µT over ±1000 nT range. All of the data are then relayed to a CS35 tablet, running the MONMX program, which is used to record the survey data from the array of FMG650/3 probes at a rate of 20 Hz. The program also receives measurements from a GPS system, which is fixed to the cart at a measured distance from the sensors, providing real time locational data for each data point.

The cart-based system relies upon accurate GPS location data which is collected using a Leica Captivate system with rover and base station. This receives corrections from a network of reference stations operated by the Ordnance Survey and Leica Geosystems, allowing positions to be determined with a precision of 0.02m in real-time and therefore exceed the level of accuracy recommended by European Archaeologiae Consilium recommendations (Schmidt *et al.* 2015) for geophysical surveys.

Data may be collected with a higher sample density where complex archaeological anomalies are encountered, to aid the detection and characterisation of small and ephemeral features. Data may be collected at up to 0.01 m intervals along traverses spaced up to 0.25m apart.

Post-processing

The magnetic data collected during the detailed survey is downloaded from Bartington and Sensys systems for processing and analysis using in-house software. This software allows for both the data and the images to be processed in order to enhance the results for analysis; however, it should be noted that minimal data processing is conducted so as not to distort the anomalies.

As the scanning data are not as closely distributed as with detailed survey, they are georeferenced using the GPS information and interpolated to highlight similar anomalies in adjacent transects. Directional trends may be removed before interpolation to produce more easily understood images.

Typical data and image processing steps may include:

- GPS DeStripe – Determines the median of each transect and then subtracts that value from each datapoint in the transect. May be used to remove the striping effect seen within a survey caused by directional effects, drift, etc.

- GPS Base Interpolation – Sets the X & Y interval of the interpolated data and the track radius (area around each datapoint that is included in the interpolated result).

- Discard Overlaps - Intended to eliminate a track(s) that have been collected too close to one another. Without this, the results of the interpolation process can be distorted as it tries to accommodate very close points with potentially differing values.

Typical displays of the data used during processing and analysis:

- Greyscale – Presents the data in plan view using a greyscale to indicate the relative strength of the signal at each measurement point. These plots can be produced in colour to highlight certain features but generally greyscale plots are used during analysis of the data.

- XY Plot – Presents the data as a trace or graph line for each traverse. Each traverse is displaced down the image to produce a stacked profile effect. This type of image is useful as it shows the full range of individual anomalies.

Appendix 2 Geophysical interpretation

The interpretation methodology used by Wessex Archaeology separates the anomalies into four main categories: archaeological, modern, agricultural, and uncertain origin/geological.

The archaeological category is used for features when the form, nature and pattern of the anomaly are indicative of archaeological material. Further sources of information such as aerial photographs may also have been incorporated in providing the final interpretation. This category is further sub-divided into three groups, implying a decreasing level of confidence:

- Archaeology – used when there is a clear geophysical response and anthropogenic pattern.
- Possible archaeology – used for features which give a response, but which form no discernible pattern or trend.

The modern category is used for anomalies that are presumed to be relatively modern in date:

- Ferrous – used for responses caused by ferrous material. These anomalies are likely to be of modern origin.
- Modern service – used for responses considered relating to cables and pipes; most are composed of ferrous/ceramic material although services made from non-magnetic material can sometimes be observed.

The agricultural category is used for the following:

- Former field boundaries – used for ditch sections that correspond to the position of boundaries marked on earlier mapping.
- Ridge and furrow – used for broad and diffuse linear anomalies that are considered to indicate areas of former ridge and furrow.
- Ploughing – used for well-defined narrow linear responses, usually aligned parallel to existing field boundaries.
- Drainage – used to define the course of ceramic field drains that are visible in the data as a series of repeating bipolar (black and white) responses.

The uncertain origin/geological category is used for features when the form, nature and pattern of the anomaly are not sufficient to warrant a classification as an archaeological feature. This category is further sub-divided into:

- Increased magnetic response – used for areas dominated by indistinct anomalies which may have some archaeological potential.
- Trend – used for low amplitude or indistinct linear anomalies.
- Superficial geology – used for diffuse edged spreads considered to relate to shallow geological deposits. They can be distinguished as areas of positive, negative, or broad bipolar (positive and negative) anomalies.

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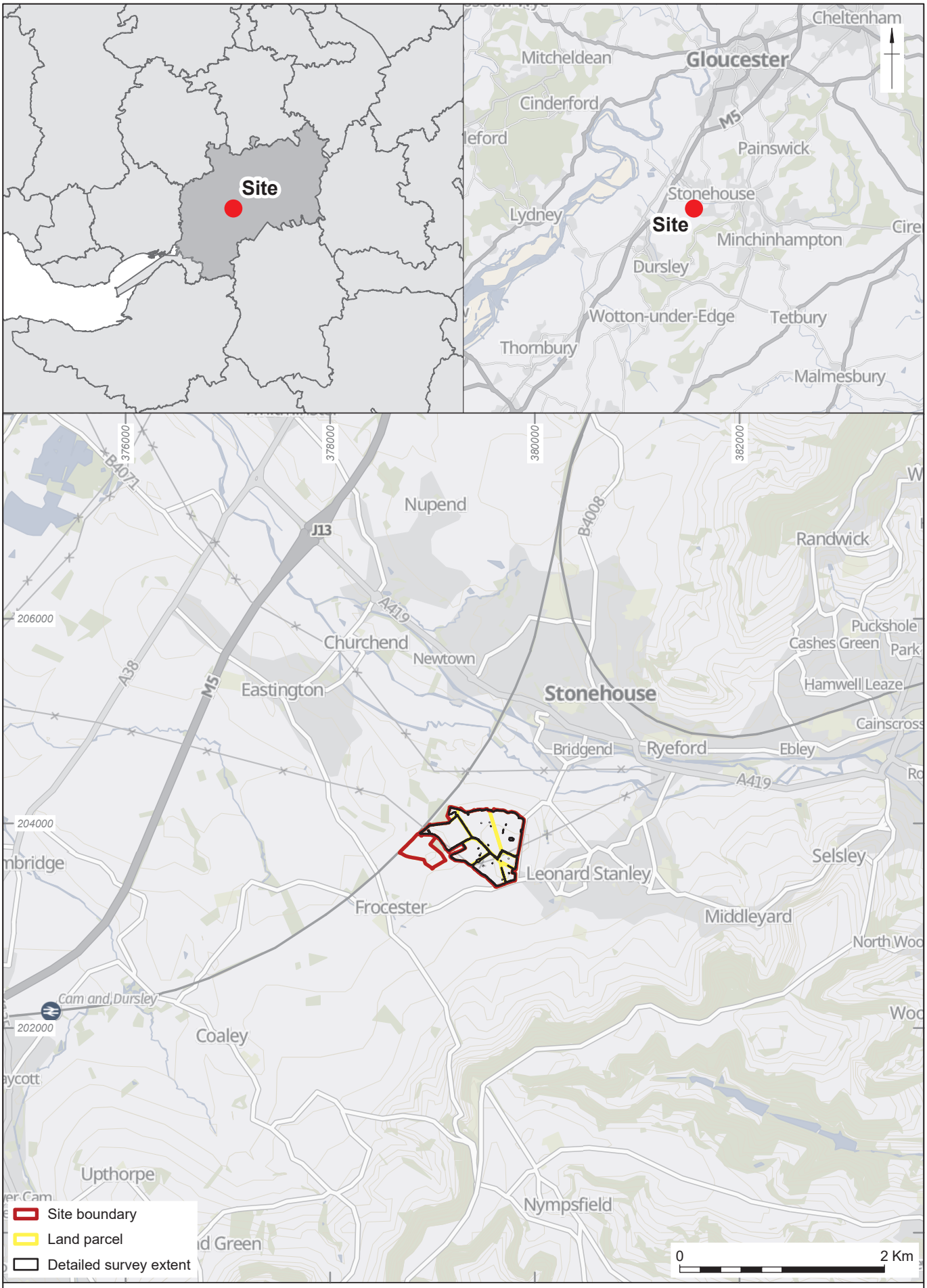
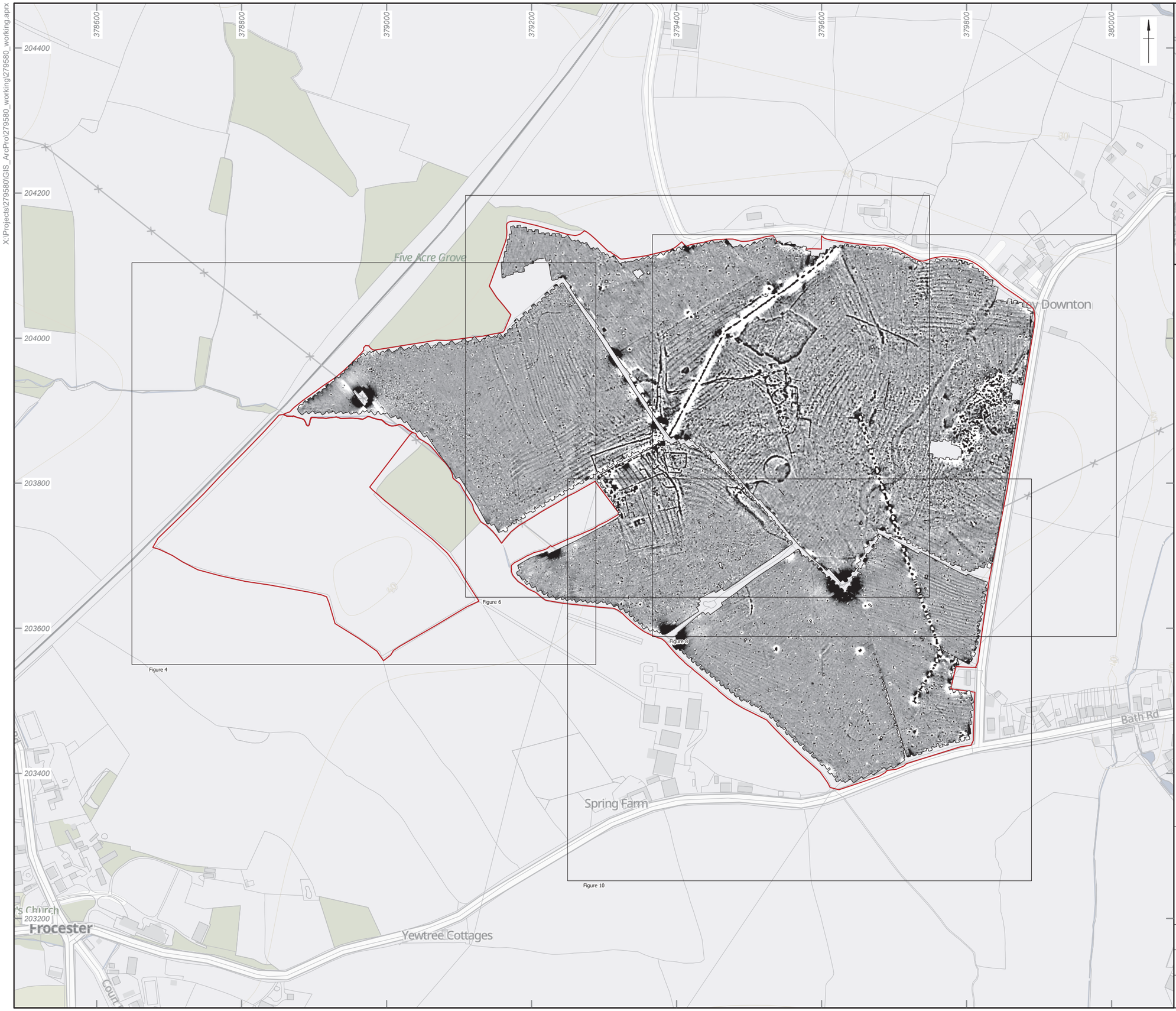
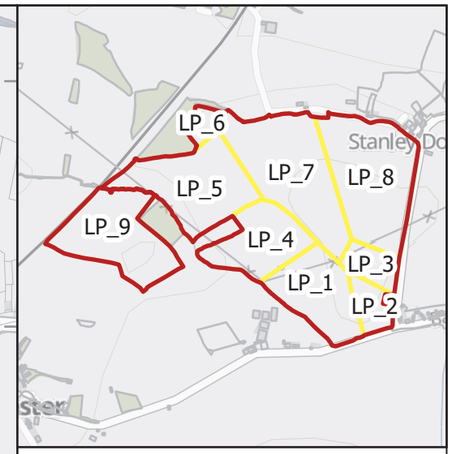


Date: 22/05/2023	Created by: RP	Revision: 0	Scale: 1:50,000 at A4

Figure 1: Site location and survey extent

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx





Site boundary

Detailed survey extent

-2 nT 3 nT

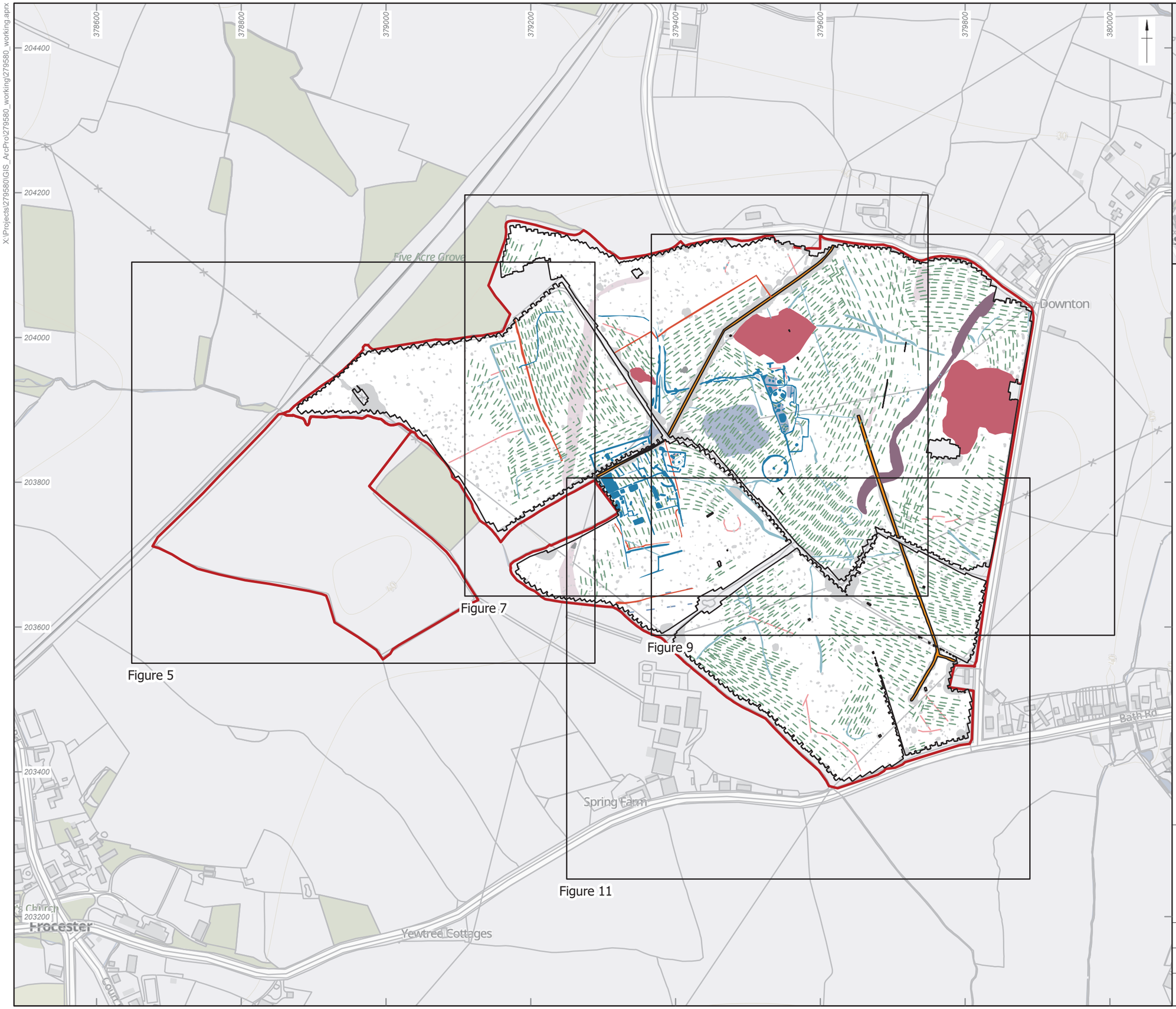
0 250 m

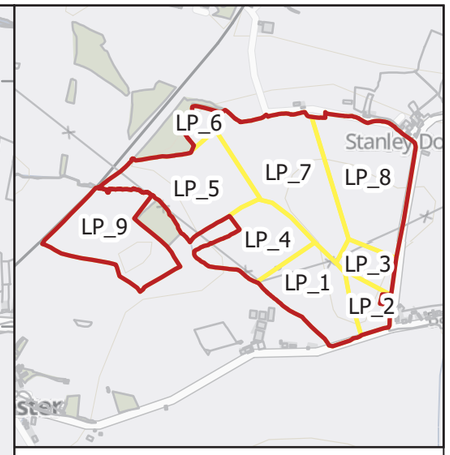
Coordinate system: OSGB 1936 British National Grid

Date: 26/05/2023	Created by: RP	
Scale: 1:5,000	Revision: 0	

Figure 2: Detailed gradiometer survey results: Overview greyscale plot

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx





- Site boundary
- Detailed survey extent
- Archaeology
- Possible archaeology
- Possible archaeology - Area
- Historic cultivation
- Former field boundary
- Historic landscape feature
- Increased response
- Trend
- Geomorphology
- Drain
- Geology
- Ferrous
- Modern service

0 250 m

Date: 26/05/2023	Created by: RP	
Scale: 1:5,000	Revision: 0	

Figure 3: Detailed gradiometer survey results: Overview interpretation

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Coordinate system: OSGB 1936 British National Grid

Date: 26/05/2023	Created by: BH
Scale: 1:2,000	Revision: 0

Figure 4: Detailed gradiometer survey results: greyscale plot (LP_4, LP_5, LP_6, LP_9)

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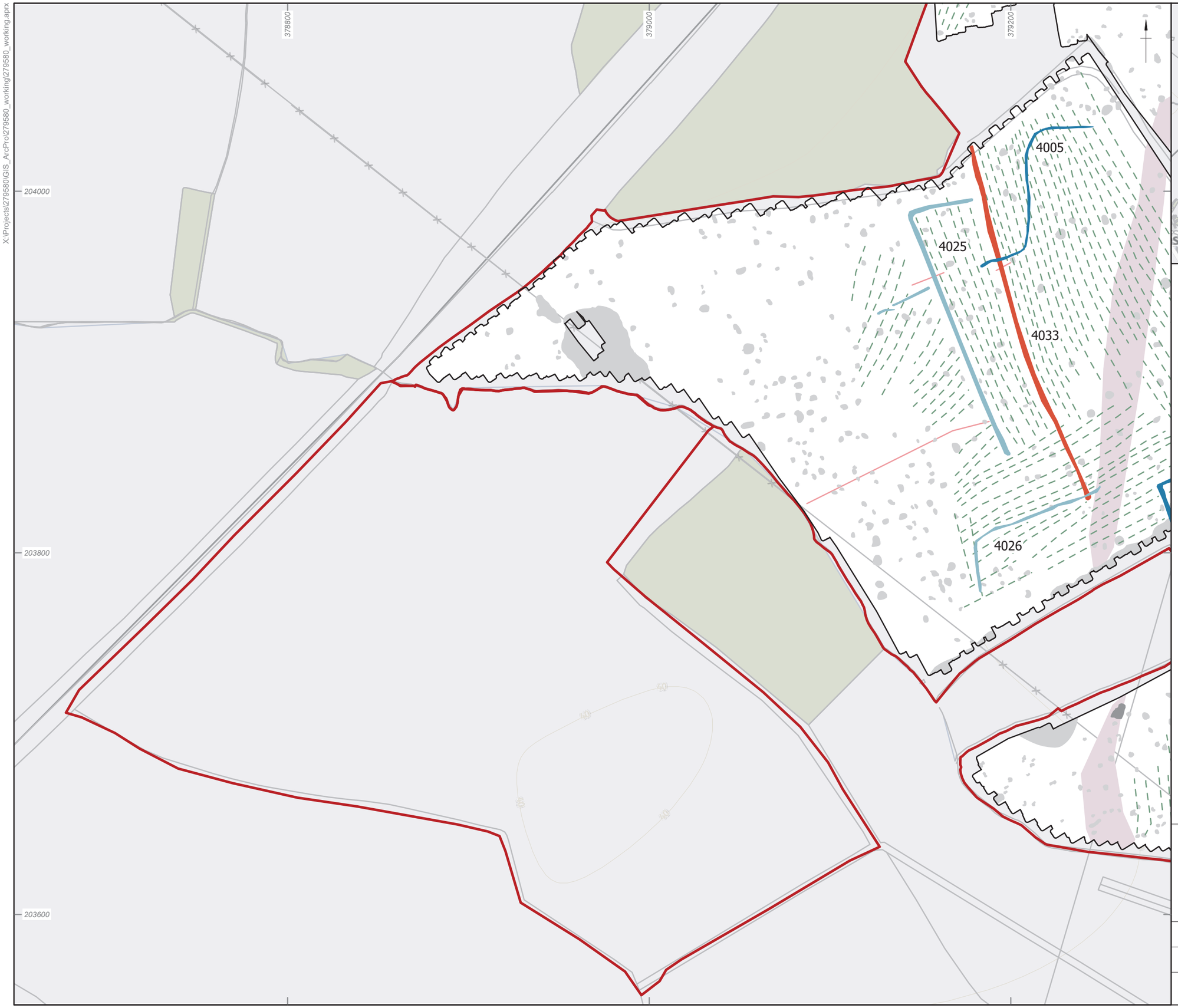
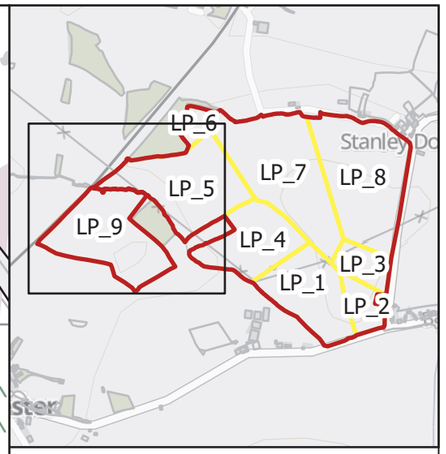




- Site boundary
- Detailed survey extent
- Archaeology
- Possible archaeology
- Historic cultivation
- Former field boundary
- Increased response
- Trend
- Geology
- Ferrous

0 100 m

Date: 26/05/2023 | Created by: BH

Scale: 1:2,000 | Revision: 0

Figure 5: Detailed gradiometer survey results: interpretation (LP_4, LP_5, LP_6, LP_9)

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx

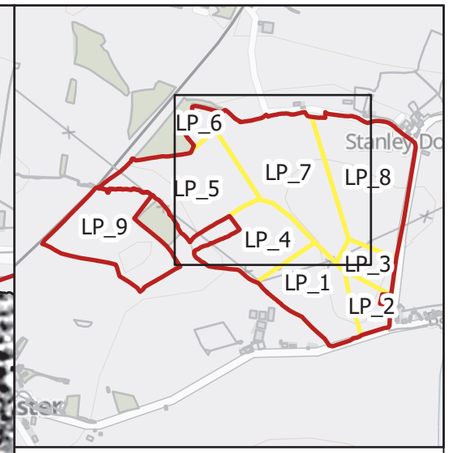
379200

379400

379600

204000

203800



Site boundary

Detailed survey extent

-2 nT

3 nT

0

100 m

Coordinate system: OSGB 1936 British National Grid

Date: 26/05/2023 | Created by: BH

Scale: 1:2,000 | Revision: 0

Figure 6: Detailed gradiometer survey results: greyscale plot (LP_1, LP_3, LP_4, LP_5, LP_6, LP_7, LP_8)

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx

379200
379400
379600
204000
203800

4041
4036
4029
4004
4005
4028
4027
4001
4002
4039
4025
4038
4030
4003
4033
4012
4011
4010
4008
4040
4006
4026
4014
4000
4013
4016
4015
4021
4009
4034
4007
4022
4035
4020

a
b
c
d
e
f
g
h

LP_6
LP_7
LP_8
LP_5
LP_9
LP_4
LP_3
LP_1
LP_2

Site boundary
Detailed survey extent
Archaeology
Possible archaeology
Historic cultivation
Former field boundary
Historic landscape feature
Increased response
Trend
Geomorphology
Drain
Geology
Ferrous
Modern service
Possible archaeology - Area

0
100 m

Coordinate system: OSGB 1936 British National Grid

Date: 26/05/2023 | Created by: BH
Scale: 1:2,000 | Revision: 0

Figure 7: Detailed gradiometer survey results: interpretation (LP_1, LP_3, LP_4, LP_5, LP_6, LP_7,

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx

379400

379600

379800

204000

203800

203600

Stanley Downton

LP_6
LP_7
LP_8
LP_5
LP_9
LP_4
LP_3
LP_1
LP_2

Site boundary

Detailed survey extent

-2 nT

3 nT

0

100 m

Date: 26/05/2023 | Created by: BH

Scale: 1:2,000 | Revision: 0

Figure 8: Detailed gradiometer survey results: greyscale plot (LP_1, LP_2, LP_3, LP_4, LP_7, LP_8)

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx

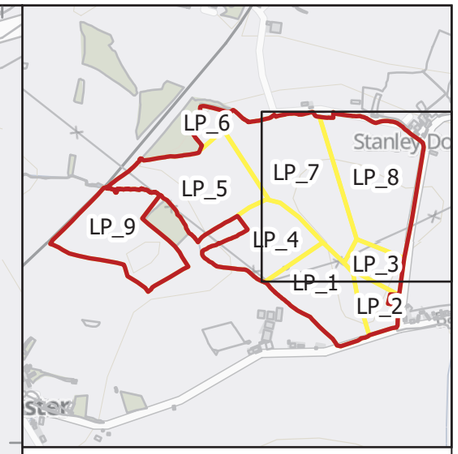
379400 379600 379800

204000 203800 203600

4041 4036 4029 4028 4027 4032 4031 4030 4038 4001 4003 4012 4011 4010 4040 4037 4006 4014 4013 4000 4016 4024 4021 4022 4009 4034 4015 4007 4035 4017 4020 4018

a b c d f g h

Stanley Downton



- Site boundary
- Detailed survey extent
- Archaeology
- Possible archaeology
- Historic cultivation
- Former field boundary
- Historic landscape feature
- Increased response
- Trend
- Geomorphology
- Drain
- Geology
- Ferrous
- Modern service
- Possible archaeology - Area

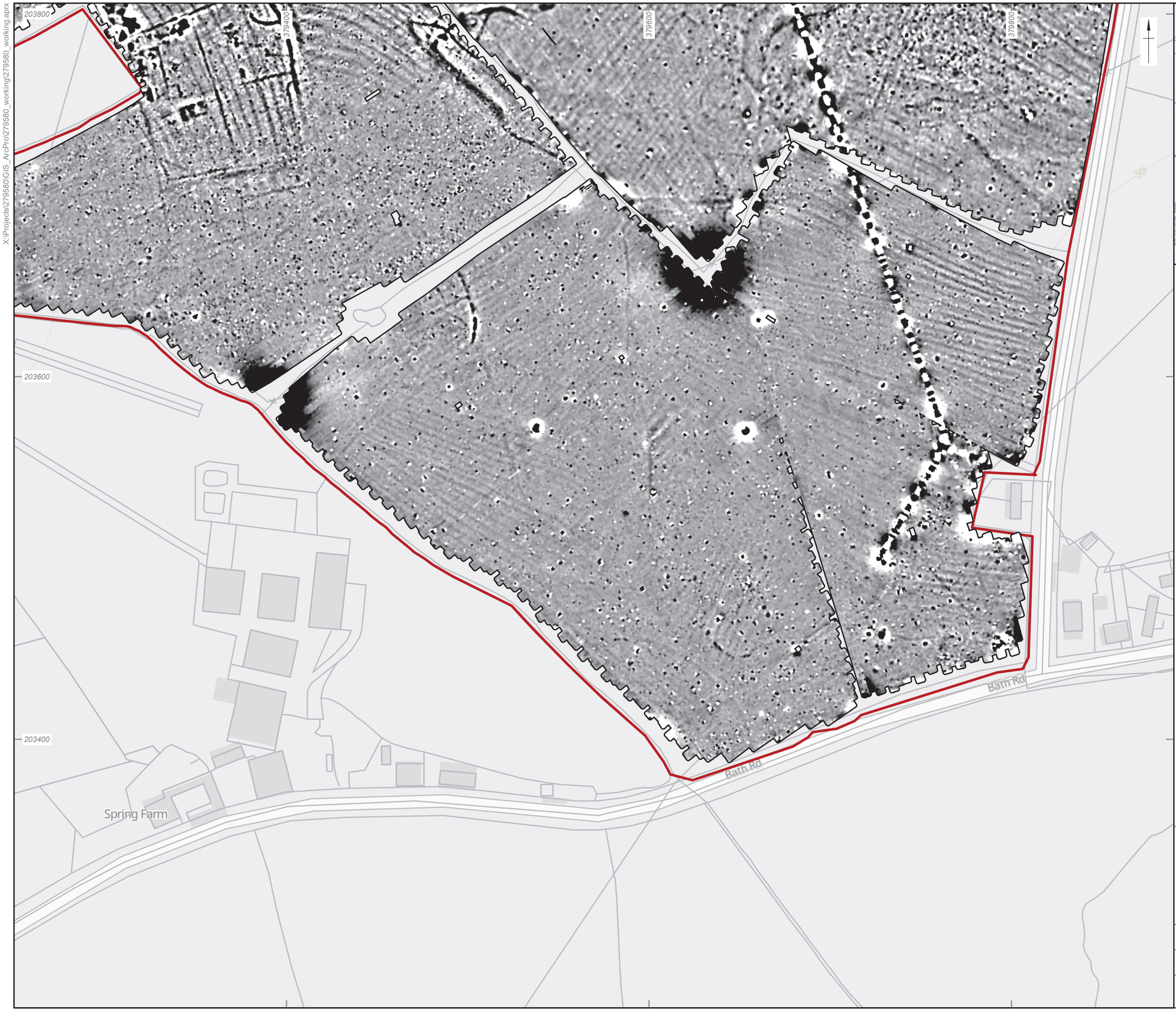
0 100 m

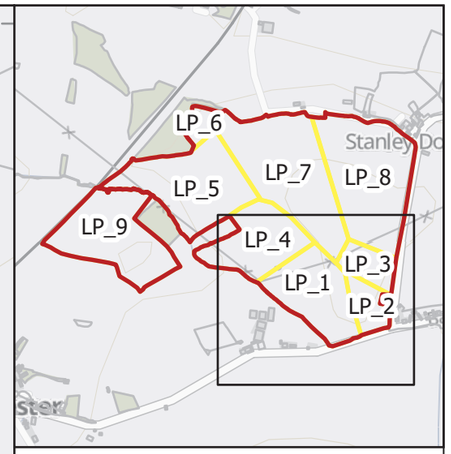
Coordinate system: OSGB 1936 British National Grid

Date: 26/05/2023	Created by: BH
Scale: 1:2,000	Revision: 0

Figure 9: Detailed gradiometer survey results: interpretation (LP_1, LP_2, LP_3, LP_4, LP_7, LP_8)

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx





Site boundary

Detailed survey extent

-2 nT 3 nT

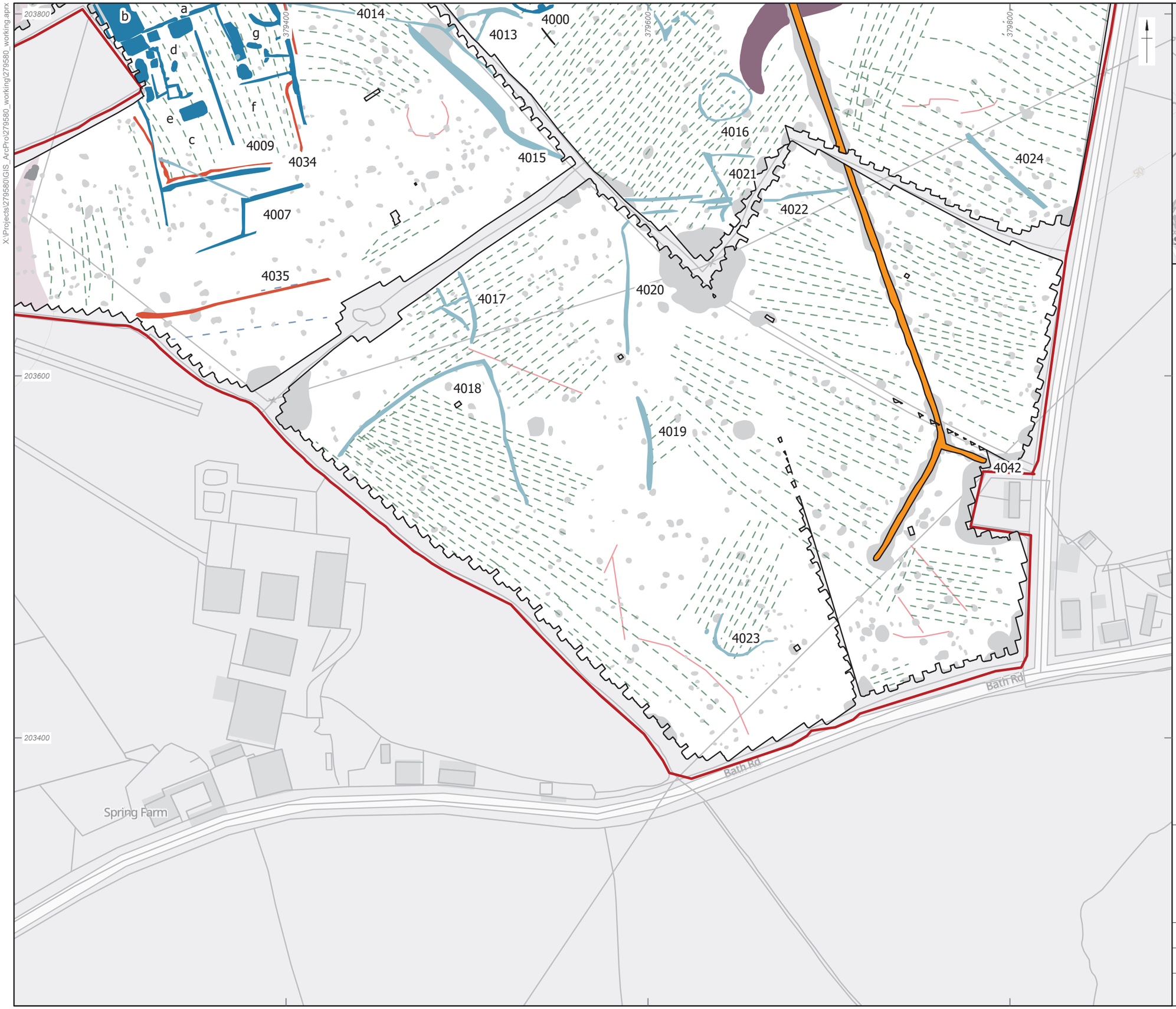
0 100 m

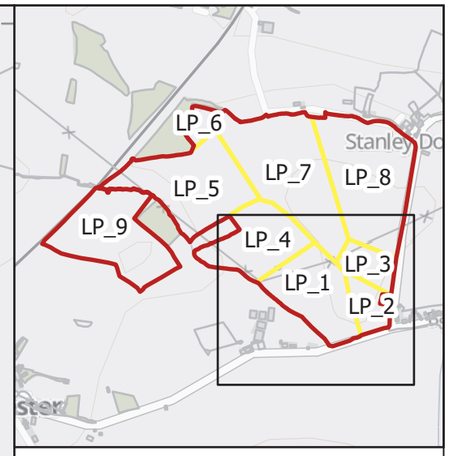
Coordinate system: OSGB 1936 British National Grid

Date: 26/05/2023	Created by: BH
Scale: 1:2,000	Revision: 0

Figure 10: Detailed gradiometer survey results: greyscale plot (LP_1, LP_2, LP_3, LP_4, LP_7, LP_8)

X:\Projects\279580\GIS_ArcPro\279580_working\279580_working.aprx





- Site boundary
- Detailed survey extent
- Archaeology
- Possible archaeology
- Historic cultivation
- Former field boundary
- Increased response
- Trend
- Geomorphology
- Drain
- Geology
- Ferrous
- Modern service

0 100 m

Date: 26/05/2023 | Created by: BH

Scale: 1:2,000 | Revision: 0

Figure 11: Detailed gradiometer survey results: interpretation (LP_1, LP_2, LP_3, LP_4, LP_7, LP_8)

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