LAND AT HOLLAMOOR FARM TAWSTOCK DEVON

Results of an Archaeological Gradiometer Survey

ARCHAEOLOGICAL SERVICES & HISTORIC BUILDING RECORDING
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Land at Hollamoor Farm, Tawstock, Devon

Results of an Archaeological Gradiometer Survey

For

Lucy Boulton

Of

Mosscliff Environmental

By

SWARCH project reference: THB15
OASIS Number: Southwes1_223352
National Grid Reference: SS 550301
Project Director: Dr. Bryn Morris
Fieldwork Managers: Dr Bryn Morris
Project Officer: Joe Bampton
Fieldwork: Peter Webb
Report: Joe Bampton
Report Editing: Dr. Bryn Morris
Graphics: Joe Bampton

September 2015

Summary

This report presents the results of a geophysical (gradiometer) survey carried out by South West Archaeology Ltd. (SWARCH) on land at Hollamoor Farm, Tawstock in Devon, in advance of a proposed solar farm development.

The geophysical survey would indicate that a small number of anomalies of archaeological origin are present, most of which are associated with field boundaries shown on historic maps. However, the survey shows one of these relict field boundaries as a very substantial boundary ditch or holloway, which defines part of an oval enclosure that can be associated with Hollamoor Farm. In addition, within this posited enclosure there is a large (c.23m) diameter but slight circular anomaly that may be a roundhouse.

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Acknowledgements

Thanks for assistance are due to:

Lucy Boulton of Mosscliff Environmental
Mr. and Mrs. Wrey, for access
Stephen Reed of the Devon County Historic Environment Team (DCHET)
The Staff of the Devon Record Office

1.0 Introduction

Location: Hollamoor Barton
Parish: Tawstock
County: Devon
NGR: Centred around SS550301
Type of survey: Gradiometer
Date of survey: 16-17.09.2015
Area surveyed: c.2ha

1.1 Project Background

This report presents the results of a geophysical survey carried out by South West Archaeology Ltd. (SWARCH) on land at Hollamoor Farm, Tawstock in Devon (Figure 1). The work was commissioned by Lucy Boulton of Mosscliff environmental (the Client) in order to identify any archaeological sites or features that might be affected by the installation of a solar PV array.

1.2 Topographical and Geological Background

The proposed PV site would be location in fields *c*.150m north-east of Hollamoor Farm (see Figure 1), on a north-facing slope within a shallow valley north-west of Tawstock village, at a height of approximately 30-45m AOD.

The soils of this area are the well-drained fine loamy soils of the Neath Association, bordering on the fine loamy or fine silty soils of the Manod Association to the north (SSEW 1983). These overlie the sandstones of the Crackington Formation (BGS 2014).

1.3 Historical Background

A full desk-based assessment has already been undertaken (SWARCH report 150910); a brief summary is provided here. Hollamoor Farm lies within the parish of Tawstock, which is located in the Hundred of Fremington and the Deanery of Barnstaple. Hollamoor Farm formed part of the lands of Tawstock Court, and is the last remaining part of the wider estate owned by the Wrey family. In 1840 the field in question belonged to the neighbouring Smallbrooke Farm, also held by the Wreys

The fields around Hollamoor Farm are classified as *modern enclosures adapting medieval fields* (Devon Historic Landscape Characterisation 2015).

The 1842 Tawstock Tithe map and accompanying apportionment list the fields as part of a tenement known as *Smallbrooke Farm* leased to George Sherwill. The field names are all fairly prosaic, with some exceptions. The element *Holland* may be an open-field term (from *headlands*) or possibly *land by a ridge* (Field 2013, 154-5); either is plausible.

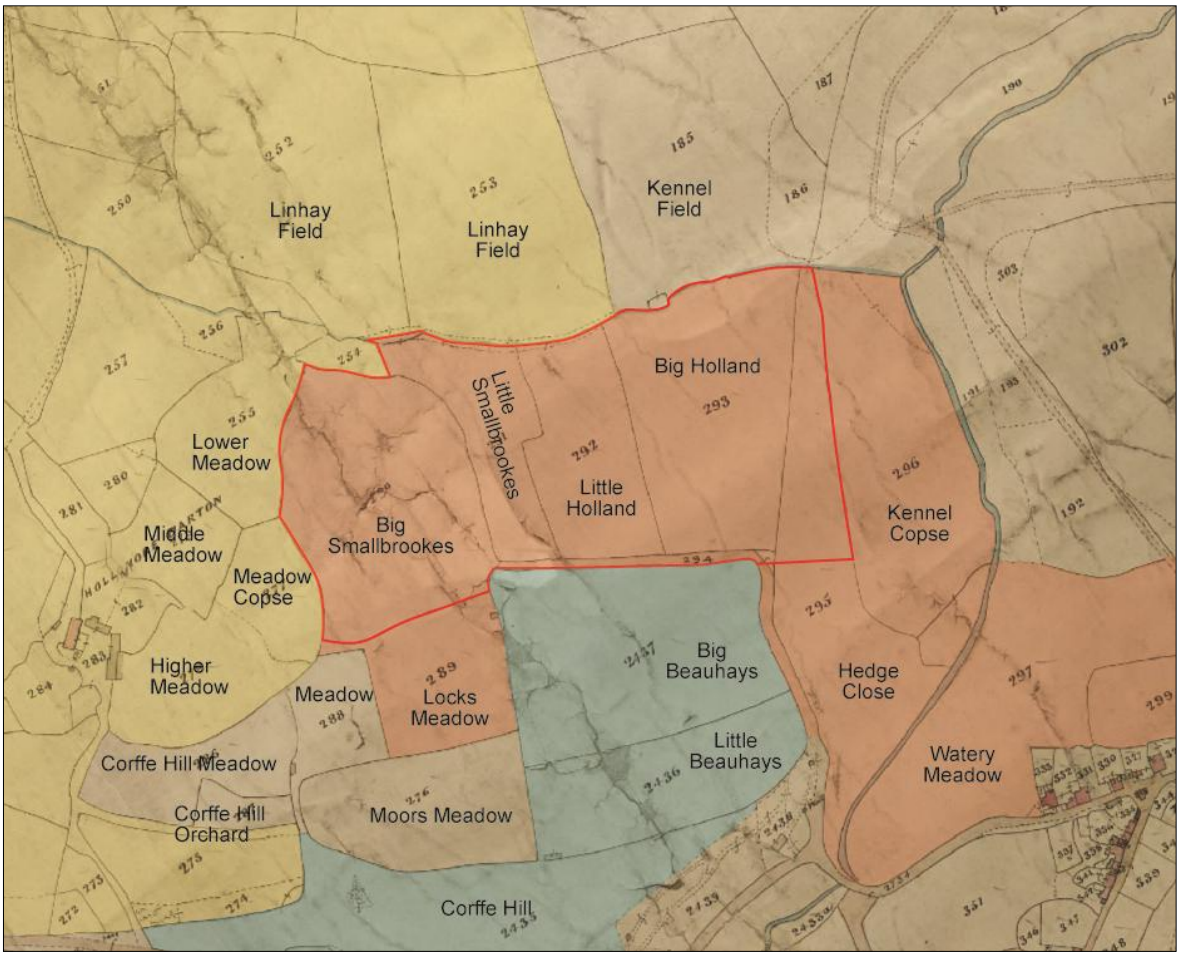

Figure 1: Extract from the 1842 Tawstock tithe map; the holdings of Hollamoor Farm (listed here Hollamore Barton) are shown outlined in yellow, the holdings of Smallbrookes Farm are shown in red, and the holdings of Hillside Farm in blue. The modern field containing the proposed development is outlined in red.

1.4 Archaeological Background

There have been few archaeological investigations within the immediate vicinity of the site, although field-walking, archaeological monitoring and evaluative works have been carried out during the construction of the North Devon Link Road and many of the industrial units and housing developments in the Roundswell area. These investigations have revealed a number of primarily medieval and post-medieval finds and a small number of undated post-holes. There are few identified Prehistoric features or finds in the area surrounding the proposal site. Further details can be found in SWARCH report 150910.

1.5 Methodology

The gradiometer survey follows the guidance outlined in *Geophysical Survey in Archaeological Field Evaluation* (English Heritage, 2008) and *Standard and Guidance for Archaeological Geophysical Survey* (IfA, 2011, updated 2013).

'Archaeological geophysical survey uses non-intrusive and non-destructive techniques to determine the presence or absence of anomalies likely to be caused by archaeological features, structures or deposits, as far as reasonably possible, within a specified area or site on land, in the inter-tidal zone or underwater. Geophysical survey determines the presence of anomalies of

archaeological potential through measurement of one or more physical properties of the subsurface' (Standard and Guidance for Archaeological Geophysical Survey 2011).

The results of the survey will, as far as possible, inform on the presence or absence, character, extent and, in some cases, apparent relative phasing of buried archaeology leading to the formulation of a strategy to mitigate a threat to the archaeological resource.

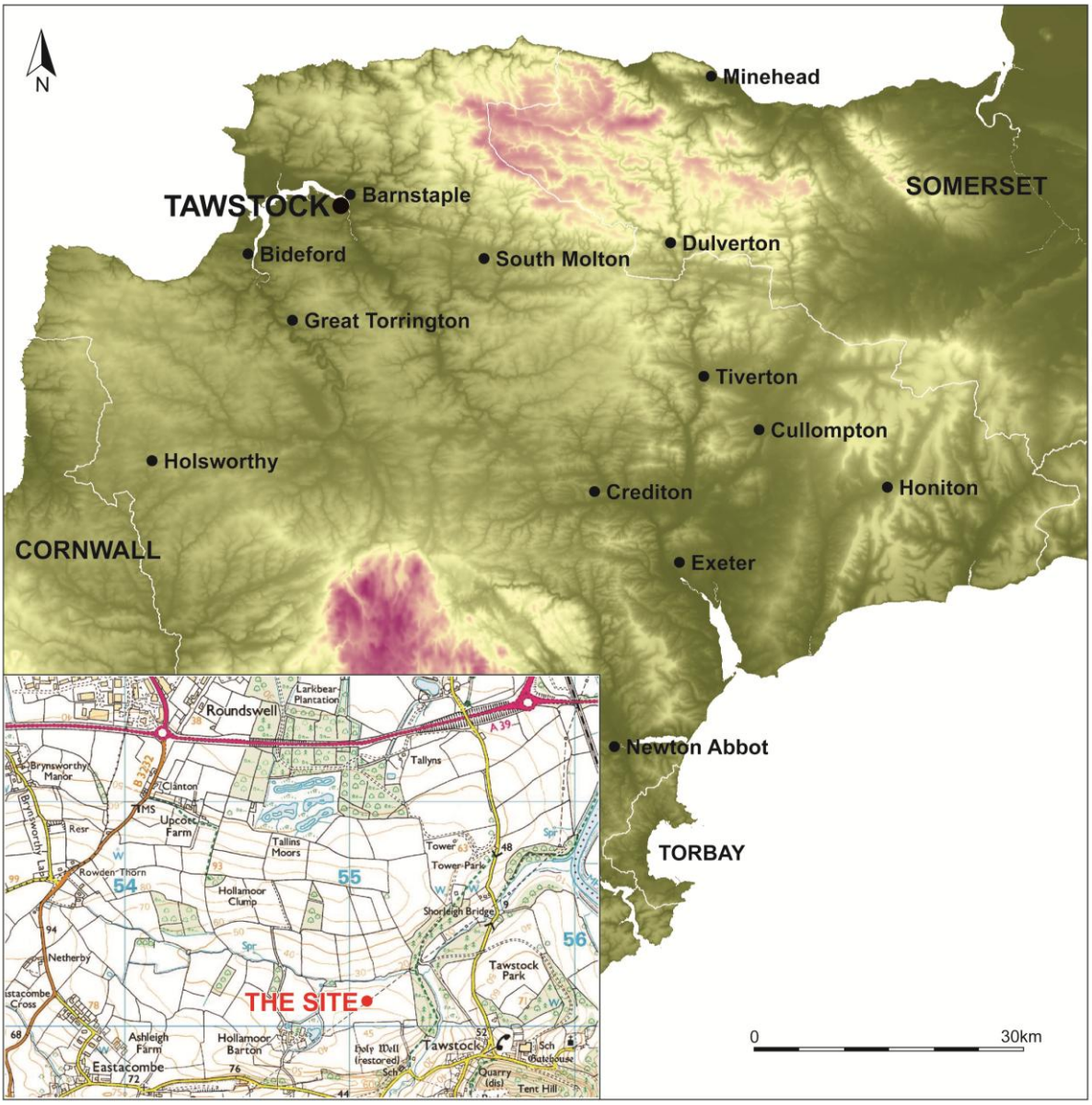

Figure 2: Site location (the locations of the proposed solar PV is indicated).

2.0 Gradiometer Survey

2.1 Introduction

The purpose of this survey was to identify and record magnetic anomalies. While the anomalies may relate to archaeological deposits and structures, the dimensions of recorded anomalies may not directly correspond with any associated archaeological features. The following discussion attempts to clarify and characterise the identified anomalies. The survey took place in September 2015 and was undertaken by P. Webb in overcast, occasionally-showery conditions. The ground was firm underfoot with some areas of standing water from recent rain. It contained a silage grass crop.

The survey identified seven groups of anomalies; Group 1 correspond to known historic field boundaries; Group 2 is of probable archaeological origin and is likely to be a removed field boundary contemporary with the Group 1 anomalies; Groups 3 and 4 are possible ditches or cut features associated with current farming practices defined by the existing field boundary and topographical conditions; Group 5 is indicative of a spread of material that may indicate truncated buried deposits or simply ground disturbance of the natural geology or material within the topsoil; Group 6 indicates a modern metallic service pipe; Group 7 belong to a possible large circular feature, perhaps a roundhouse. There are also various areas of magnetic debris and ferrous anomalies.

2.2 Methodology

The gradiometer survey follows the general guidance as outlined in: *Geophysical Survey in Archaeological Field Evaluation* (English Heritage, 2008) and *Standard and Guidance for Archaeological Geophysical Survey* (Institute for Archaeologists, 2011, updated 2013).

The survey was carried out using a twin-sensor fluxgate gradiometer (Bartington Grad601). These machines are sensitive to depths of up to 1.50m. The survey parameters were: sample intervals of 0.25m, traverse intervals of 1m, a zigzag traverse pattern, traverse orientation was circumstantial, grid squares of 30×30m. The gradiometer was adjusted ('zeroed') every 0.5-1ha. The survey grid was tied into the Ordnance Survey National Grid. The data was downloaded onto *Grad601 Version 3.16* and processed using *TerraSurveyor Version 3.0.25.0*. The primary data plots and analytical tools used in this analysis were *Shade* and *Metadata*. The details of the data processing are as follows:

Processes: Clip +/- 3SD; DeStripe all traverses, median; DeStagger, offset in- and outbound by 3 intervals; Interpolate X and Y, double resolution.

Details: 1.53ha surveyed; Max. 144.91nT, Min. -113.28nT; Standard Deviation 7.09nT, mean 0.28nT, median 0nT.

2.3 Results

Figure 3 with the accompanying Table 1 show the analyses and interpretation of the geophysical survey data. Additional graphic images of the survey data can be found in Appendix 2. Note that the four grids around the pylon in the middle of the field were *not* surveyed; this was because the magnetic mass of the pylon would have swamped any archaeological responses (Ross Dean, *pers. comm*.).

Anomaly group	Class and Certainty	Form	Archaeological characterisation	Comments
1	Moderate positive with weak negative flanks, probable	Linear	Field Boundary. Removed after 1842 or 1887	Field boundaries present on 1842 tithe map. The easternmost was removed prior to the OS 1st edition of 1887; the others have been removed since. The westernmost may represent a banked holloway or substantial ditch, given the width of the response and its negative flanking sides.
2	Moderate positive, probable	Linear	Medieval or post-medieval field boundary removed before 1842	Very similar in response to the two western examples in Anomaly Group 1. Its curving nature is indicative of the wider medieval field system, which can be seen to have been rectified in the area on the 1842 mapping.
3	Weak positive, possible	Linear	Possible drainage ditches or buried ruts/ploughing	This area of the site is particularly boggy and wheel ruts were noted in this corner. These may relate to drainage or wheel ruts.
4	Weak positive, possible	Linear	Ditch associated with extant boundary	May denote current ploughing activity or drainage at the edge of the current field.
5	Weak positive and mixed, possible	Amorphous	Natural variation or ploughed/ spread of archaeological deposits	These weak responses, generally of a positive nature, may reflect natural or man-made cut features or, when mixed, thermoremanent debris such as brick or ash. This may be from truncated buried features or have been spread across the topsoil. They are in areas of magnetic debris and may be part of the same non-archaeological spread of material within the topsoil or natural geology.
6	Strong dipolar, possible	Linear	Metallic modern service pipe	Strong dipolar responses indicative of metallic pipe
7	Weak positive and mixed, possible	Curving linear	Possible penannular gully	Slight and interrupted circular anomaly c.23m in diameter. Possible roundhouse, if so, very large diameter.

Table 1: Interpretation of gradiometer survey data.

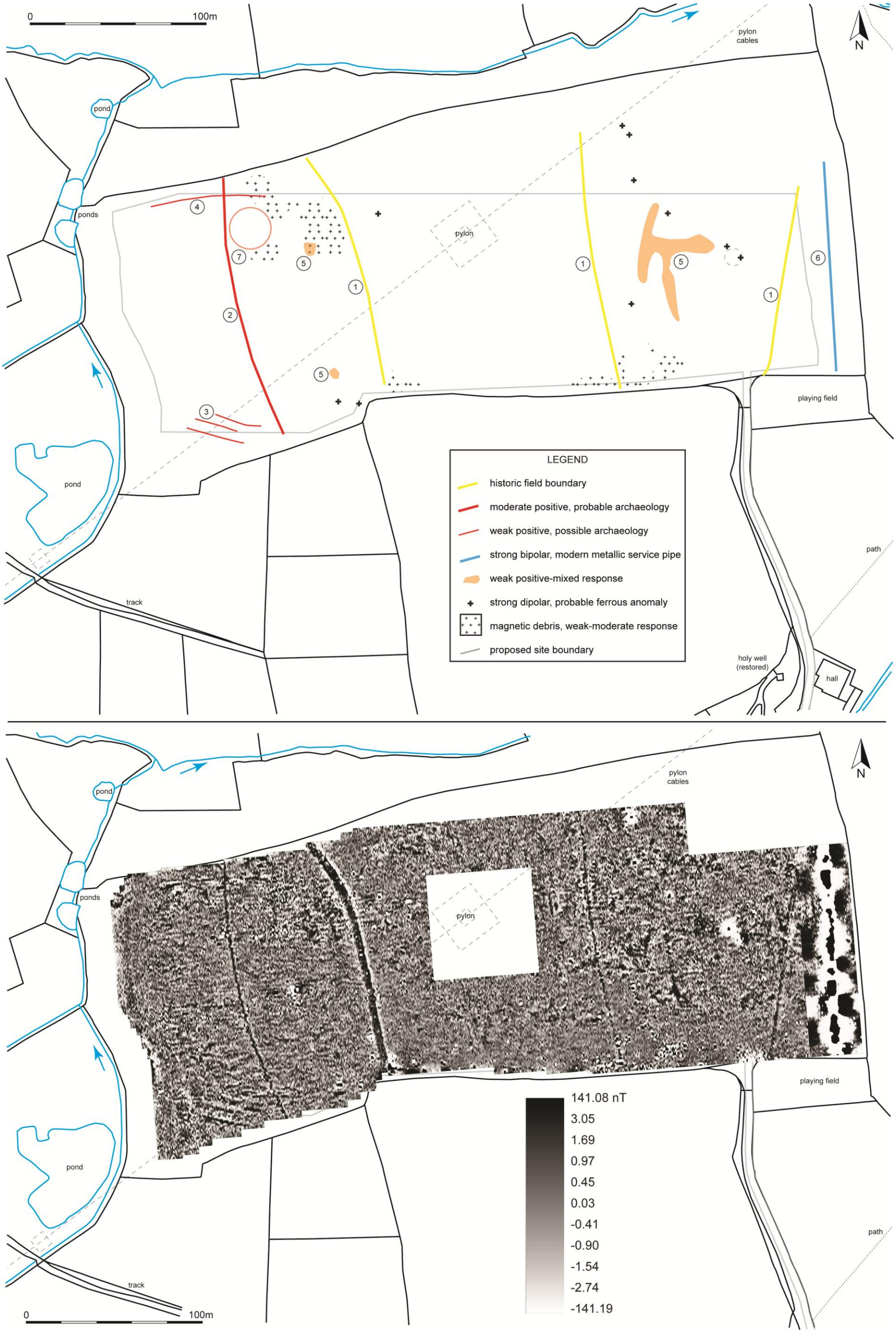

Figure 3: Interpretation of the gradiometer survey data (above) and greyscale shade plot (below).

3.0 Discussion and Conclusion

3.1 Discussion

The survey identified seven groups of anomalies: Group 1 corresponds to historic field boundaries; Group 2 is of probable archaeological origin and is likely to be associated with Group 1; Groups 3, 4 and 5 are of possible archaeological origin; Group 6 is indicative of a large modern metallic pipe; and Group 7 of a possible penannular gully.

Anomaly Group 1 contains three historic field boundaries that are shown on the 1842 tithe map. The westernmost of these three was removed prior to the 1887 OS 1st Edition map. The others were removed before 1956 (Morris *et al.* 2015). The westernmost of these linear anomalies is, compared to the other anomalies, very wide with weak-moderate negative responses along its flanks. This anomaly is an order of magnitude larger than the other field boundaries, and it may have been a holloway or substantial boundary ditch. This feature is visible as an indistinct pale soilmark on recent aerial photographs. The curving character of this anomaly, seen in relation to other curving boundaries associated with Hollamoor Farm, could indicate the presence of an early medieval enclosure. If so, the survey has revealed no clear evidence for any internal features.

Group 2 is a curving linear anomaly, similar to other examples in the area, both relict (i.e. the Group 1 anomalies) and extant. Its response is similar to the two eastern linear anomalies and was most likely a contemporary boundary removed prior to 1842.

Group 3 represents three narrow parallel curving ditches on the edge of a particularly boggy corner of the field. Wheel ruts were noted in this area and these anomalies probably represent deep wheel ruts or perhaps relate to drainage in this area.

Group 4 is a weak positive linear anomaly running close to and parallel with the northern field boundary. This may relate, like Groups 1 and 2, to former field boundaries, or else to wheel ruts like Group 3.

Group 5 is indicative of possible thermoremanent debris and/or cut features, but within and between areas of magnetic debris. Magnetic debris, which occurs across the site to a varying degree, is of a weak response and may in fact represent ground disturbance with no distinct cause. Group 5 is probably representative of a spread of material within disturbed deposits that only survive within the topsoil. However, these responses may indicate truncated buried deposits. It is most likely that these anomalies are not archaeological.

Group 6 is indicative of a very substantial metallic linear pipeline.

Group 7 comprises a single large near-circular weak and interrupted positive linear anomaly. This possible circular feature could represent the drip-gully or foundation trench of a very substantial roundhouse, of Prehistoric or early Roman date. It appears as a faint anomaly within the data, but is discrete and the magnetic debris in the area appears to respect the arc of the anomaly. If it was a roundhouse it would be very large (c.23m across), and its presence would lend credence to the 'holloway' being a Prehistoric enclosure boundary.

The amount of stone in the soil as observed during the survey would indicate a shallow topsoil subject to modern ploughing. This would suggest archaeological features in the upper part of the field will have been truncated or destroyed. This may account for the weak responses of many of the anomalies and the complete loss of the dog-leg field boundary shown on the tithe map.

Instances of ferrous anomalies, most likely parts of farm machinery, and magnetic debris indicative of ground disturbance, occurred across the site. Group 5 is likely to be associated with these responses.

3.2 Conclusion

The geophysical survey would indicate there are features of archaeological origin present within the area of the proposed development, most of which are associated with the mid 19th century and earlier field system.

One of these relict field boundaries appears to be a large boundary ditch or substantial holloway defining part of an oval enclosure. The morphology of the boundaries around Hollamoor Farm could suggest a settlement comprised of, or surrounded by, multiple lobate (infield?) enclosures. This is likely to be medieval in date, but it is not impossible that this is early medieval or even Prehistoric in origin. A weak positive circular anomaly may represent the drip gully/foundation trench of a very large Prehistoric or early Roman roundhouse; if so, it would imply the wide relict field boundary defines a large enclosure of similar date.

Later linear anomalies associated with modern agricultural activity are also present, as is a very substantial metallic pipe crossing the eastern end of the site. The ground is otherwise disturbed and includes ferrous debris. It is probable archaeological features or deposits in the upper (southern) part of the field will have been truncated.

4.0 Bibliography & References

Published Sources:

English Heritage 2008: *Geophysical Survey in Archaeological Field Evaluation.*

Field, J. 2013: *A History of English Field-Names*. Routledge.

Institute for Archaeologists 2011: (updated 2013) *Standard and Guidance for Archaeological Geophysical Survey*.

Schmidt, A. 2002: *Geophysical Data in Archaeology: A Guide to Good Practice.* ADS series of Guides to Good Practice. Oxbow Books, Oxford.

Soil Survey of England and Wales 1983: *Legend for the 1:250,000 Soil Map of England and Wales (a brief explanation of the constituent soil associations)*.

Websites:

British Geological Survey 2015: *Geology of Britain Viewer*. http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html [accessed 14.09.2015]

Devon Historic Landscape Characterisation 2015 http://www.devon.gov.uk/index/environment/historic_environment/landscapes/landscape-characterisation.htm

Unpublished Sources:

Morris, B., Walls, S., and Wapshott, E. 2015: *Land at Hollamoor Farm, Tawstock, Devon: Results of a Walkover Survey, & Historic Visual Impact Assessment*. South West Archaeology Ltd. Report Number 150910

Devon Record Office:

Tawstock Tithe Map 1842

Tawstock Tithe Apportionment 1842

Appendix 1
PROJECT DESIGN FOR GEOPHYSICAL SURVEY AT LAND AT HOLLAMOOR FARM, TAWSTOCK, DEVON.

Location: Land at Hollamoor Farm
Parish: Tawstock
County: Devon
NGR: SS 550301
Planning no: Pre-planning
Proposal: Installation of a PV array.
Date: 10th September 2015

1.0 INTRODUCTION

1.1 This document forms a Project design (PD) which has been produced by South West Archaeology (SWARCH) at the request of Lucy Boulton on behalf of Mosscliff Environmental. It sets out the methodology for a geophysical survey to be undertaken in advance of the application for planning for the above development and for related off site analysis and reporting.

2.0 ARCHAEOLOGICAL BACKGROUND

The site is located north-west of Tawstock village and north-east of Hollamoor Farm. It consists of a single large field, created through the progressive amalgamation of four mid-19th century fields; the HLC lists this as modern field adapting medieval enclosures. The former park associated with Tawstock House lies to the east, and Hollamoor Farmhouse is a Grade II Listed structure, but relatively little archaeological fieldwork has been undertaken in this area.

3.0 AIMS

3.1 The principal objectives of the work will be to:

3.1.1 To observe and identify archaeological features through geophysical survey.
3.1.2 To analyse and report on the results of the project as appropriate.

4.0 METHOD

4.1 Geophysical Survey:
The programme of work shall include a magnetometer survey of *c.*2 hectares, covering the field in which the proposed development would be located. The results of this survey will inform whether an archaeological evaluation or further archaeological recording of any potential buried remains or other mitigation is required.

4.2 The Client will provide SWARCH with details of the location of existing services and of proposed groundworks within the site area, and of the proposed construction programme.

4.3 Health and Safety requirements will be observed at all times by any archaeological staff working on site, particularly when working with machinery. As a minimum: high-visibility jackets, safety helmets and protective footwear will be worn.

4.4.1 Appropriate PPE will be employed at all times.
4.4.2 The site archaeologist will undertake any site safety induction course provided by the Client.

5.0 REPORTING

5.1 The type of report produced will be agreed with the HET in view of the results. If a full report is produced it will include the following elements:

5.1.1 A report number, date and the OASIS record number;
5.1.2 A copy of this WSI;
5.1.3 A summary of the project's background;
5.1.4 A description and illustration of the site location;
5.1.5 A methodology of the works undertaken, and an evaluation of that methodology;
5.1.6 Plans and reports of all documentary and other research undertaken;
5.1.7 A summary of the project's results;
5.1.8 An interpretation of the results in the appropriate context;
5.1.9 A summary of the contents of the project archive and its location (including summary catalogues of finds and samples);
5.1.10 A location plan and overall site plan including the location of areas subject to archaeological recording;
5.1.11 A description of any remains and deposits identified including an interpretation of their character and significance;
5.1.12 A consideration of the evidence within its wider context;
5.1.13 Specialist assessment or analysis reports where undertaken.

5.2 DCHET will receive the report within three months of completion of fieldwork.

5.7 A copy of the report detailing the results of these investigations will be submitted to the OASIS (*Online Access to the Index of Archaeological Investigations*) database under reference Southwes1-223352 within 3 months of completion of fieldwork.

7.0 ARCHIVE

7.1 On completion of the project an ordered and integrated site archive will be prepared in accordance with the Management of Research Projects in the Historic Environment (MoRPHE)(http://www.english-heritage.org.uk/publications/morphe-project-managers-guide/).
The digital element of the archive will be transferred to the Archaeology Data Service (ADS) for long-term curation. A reference number will be obtained from the Museum of Barnstaple and North Devon (MBND), with regard deposition of the material (finds) element of any archive created by these works.

7.2 The archive will consist of two elements, the digital archive and the material archive.

7.2.1 The digital archive, including digital copies of all relevant written and drawn records and photographs, will be deposited with the Archaeology Data Service (ADS) and in compliance with their standards and requirements.

7.2.2 The material archive, comprising the retained artefacts/samples and the hardcopy paper record (if requested) will be cleaned (or otherwise treated), ordered, recorded, packed and boxed in accordance with the deposition standards of the MBND, and in a timely fashion.

7.2.3 If the MBND wishes to retain the hardcopy paper archive, it will be deposited with the rest of the material archive under the same accession number. Should the MBND decline the hardcopy paper archive, that archive will be offered to other appropriate museum bodies or the HET. If a suitable third party cannot be found, the hardcopy paper archive will be retained by SWARCH for 3 years and then destroyed.

7.3 SWARCH will, on behalf of the MBND obtain a written agreement from the landowner to transfer title to all items in the material archive to the receiving museum.

7.4 If ownership of all or any of the finds is to remain with the landowner, provision and agreement must be made for the time-limited retention of the material and its full analysis and recording, by appropriate specialists.

7.5 SWARCH will notify the HET upon the completion of:
i) deposition of the digital archive with the ADS, and
ii) deposition of the material (finds) archive with the museum.

7.6 The condition placed upon this development will not be regarded as discharged until the report has been produced and submitted to the HET and the LPA, the site archive deposited and the OASIS form completed.

7.7 The archive will be completed within 3 months of the completion of the final report.

8.0 CONFLICT WITH OTHER CONDITIONS AND STATUTORY PROTECTED SPECIES

Even where groundworks are being undertaken under the direct control and supervision of SWARCH personnel, it remains the responsibility of the Client - in consultation with SWARCH, the applicant or agent - to ensure that the required archaeological works do not conflict with any other conditions that have been imposed upon the consent granted and should also consider any biodiversity issues as covered by the NERC Act 2006. In particular, such conflicts may arise where archaeological investigations/excavations have the potential to have an impact upon protected species and/or natural habitats e.g. SSSIs, National Nature Reserves, Special Protection Areas, Special Areas of Conservation, Ramsar sites, County Wildlife Sites etc.

9.0 PERSONNEL & MONITORING

9.1 The project will be managed by Dr. Brynmor Morris; the archaeological monitoring and building recording will be undertaken by SWARCH personnel with appropriate expertise and experience. Where necessary, appropriate specialist advice will be sought.

Bryn Morris, South West Archaeology
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Appendix 2
Additional Graphic Images of Gradiometer Survey Data

Figure 4: Gradiometer grids (above) and greyscale shade plot (minimal processing) (below).

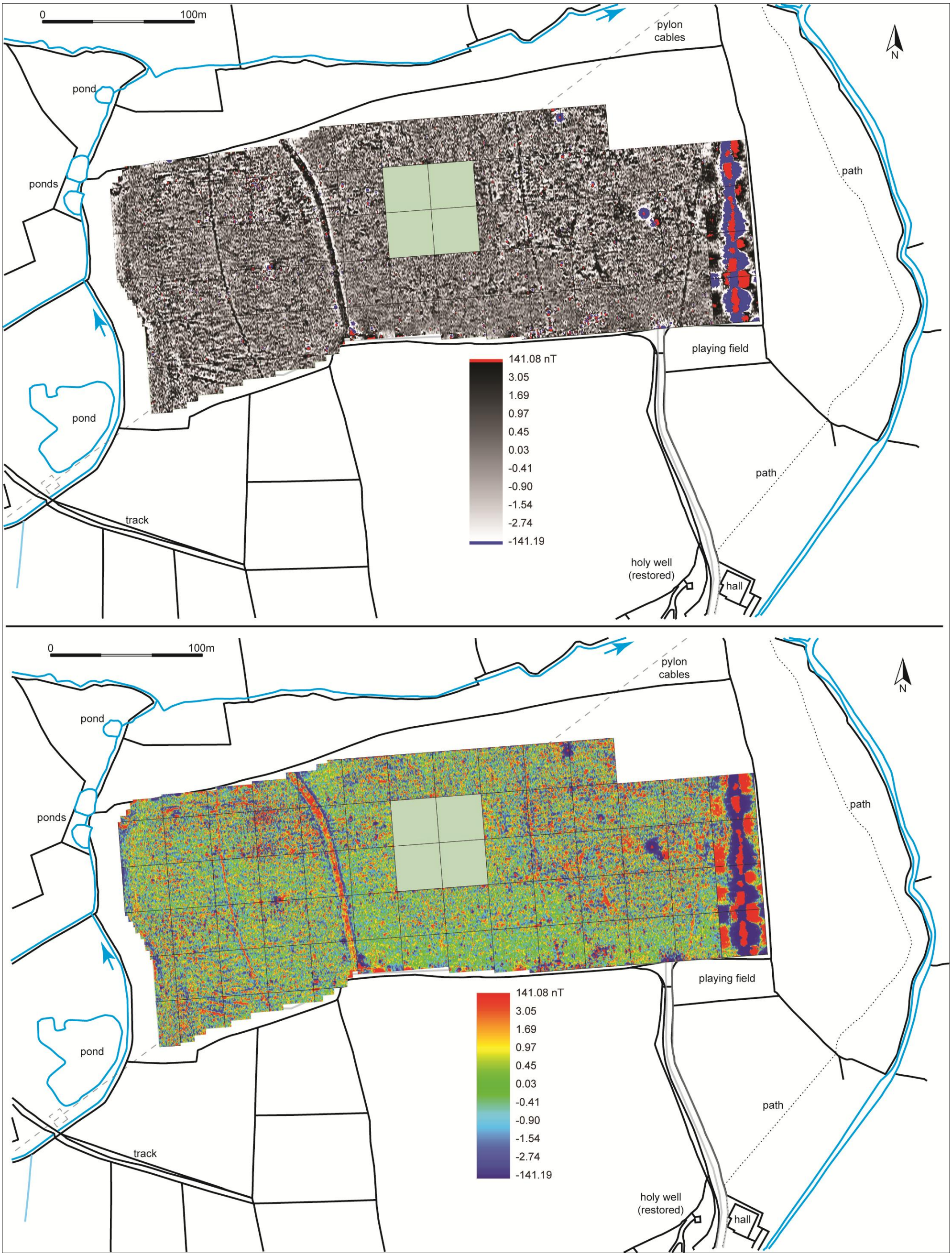

Figure 5: Red-greyscale-blue shade plot (above) and red-blue-green 2 shade plot (below).

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