

LAND AT THE TALLET BARN

HEATHFIELD

THORVERTON

DEVON

Results of a Geophysical Survey



South West Archaeology Ltd. report no. 201124



www.swarch.net

01769 573555
01872 223164

LAND AT THE TALLET BARN, HEATHFIELD, THORVERTON, DEVON RESULTS OF A GEOPHYSICAL SURVEY

By P. Webb
Report Version: Final
Draft issued: 25th November 2020
Finalised: 26th November 2020

Work undertaken by SWARCH for Fingle Farm Buildings
on behalf of a private client

SUMMARY

This report presents the results of a geophysical survey carried out by South West Archaeology Ltd. (SWARCH) on land at The Tallet Barn, Heathfield, Thorverton, Devon, as part of the planning submission for the erection of a barn and stables buildings. The site comprises a single field located to the north and east of The Tallet Barn, Heathfield; to the south-west of Thorverton, an area rich in prehistoric activity.

The survey identified 6 groups of anomalies. These were a mix of linear anomalies likely associated with phases of historic boundaries and agricultural activity, but including modern disturbance/services. The identified anomaly groups include: historic field boundaries; ditch features; agricultural activity; and modern services. Evidence of ploughing and metallic debris and ground disturbance was also identified.

The results of the geophysical survey would suggest that the archaeological potential of the site is low, the geophysical survey only identifying a small number of features associated with historic field boundaries and modern disturbance/services. Further archaeological mitigation is not thought to be particularly worthwhile in this instance given the limited extent of the development area within the site and the low potential of the geophysics results.



November 2020

South West Archaeology Ltd. shall retain the copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved, excepting that it hereby provides an exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project. The views and recommendations expressed in this report are those of South West Archaeology Ltd. and are presented in good faith on the basis of professional judgement and on information available at the time of production.

CONTENTS

<i>SUMMARY</i>	2
<i>CONTENTS</i>	3
<i>LIST OF FIGURES</i>	3
<i>LIST OF TABLES</i>	3
<i>LIST OF APPENDICES</i>	3
<i>ACKNOWLEDGEMENTS</i>	4
<i>PROJECT CREDITS</i>	4
1.0 INTRODUCTION	5
1.1 PROJECT BACKGROUND	5
1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND	5
1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND	5
1.4 METHODOLOGY	6
2.0 GEOPHYSICAL SURVEY	7
2.1 INTRODUCTION	7
2.2 SITE INSPECTION	7
2.3 METHODOLOGY	7
2.4 RESULTS	8
2.5 DISCUSSION	9
2.6 ARCHAEOLOGICAL POTENTIAL	10
3.0 CONCLUSION	13
4.0 BIBLIOGRAPHY & REFERENCES	14

LIST OF FIGURES

Cover plate: View across the proposal site; viewed from the south (no scale).

FIGURE 1: SITE LOCATION.	6
FIGURE 2: VIEW ALONG THE NORTHERN EARTHWORK FORMING A POSSIBLE HISTORIC BOUNDARY ACROSS THE MIDDLE OF THE SITE.	8
FIGURE 4: SHADE PLOT OF THE GRADIOMETER SURVEY DATA.	11
FIGURE 4: INTERPRETATION OF THE GRADIOMETER SURVEY DATA.	12

LIST OF TABLES

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.	8
---	---

LIST OF APPENDICES

APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY	15
APPENDIX 2: SUPPORTING PHOTOGRAPHS	19

ACKNOWLEDGEMENTS

FINLGE FARM BUILDINGS (THE AGENT)
THE CLIENT AND TENANTS FOR ACCESS

PROJECT CREDITS

DIRECTOR: DR. SAMUEL WALLS, MCIFA
FIELDWORK: PETER WEBB
REPORT: PETER WEBB
EDITING: DR. SAMUEL WALLS, MCIFA
GRAPHICS: PETER WEBB

1.0 INTRODUCTION

LOCATION:	THE TALLET BARN, HEATHFIELD
PARISH:	THORVERTON
DISTRICT:	CENTRAL DEVON
COUNTY:	DEVON
NGR:	SS 291495 100469
SWARCH REF.	THTB20

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Fingle Farm Buildings (the Agent) on behalf of a Private Client (the Client) to undertake a geophysical survey on land at The Tallet Barn, Heathfield, Thorverton, Devon, as part of a planning submission for the erection of a barn and stables buildings. This work was undertaken in accordance with best practice and ClfA guidance in order to assess the potential impact of the proposals on any buried archaeological remains.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The historic farmstead of Heathfield is located approximately 1.9km south-west of Thorverton, to the west of the Exe Valley. The site comprises a single field to the north of the historic farmstead, the proposed development area towards the north-west corner of the site, north of a converted barn. The site lies at a height of between c.40m and c.45m AOD. The soils of this area are the well-drained reddish coarse loamy soils over soft sandstone, associated with slowly permeable subsoils and slight seasonal weathering of the Bromsgrove Association (SSEW 1983). These overlie the breccia of the Crediton Breccia Formation where it borders sandstone of the Shute Sandstone Formation (BGS 2020).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

Heathfield is located at the southern edge of the parish of Thorverton. The parish lies within the deanery of *Cadbury* and Hundred of *Hayridge*. Most of Thorverton, including the village and church, were held by the Dean and Chapter of Exeter Cathedral. It was granted to the Convent of St. Martin in Tours by Henry II, but was purchased in 1276 by Sir John Widger and granted to St. Peters in Exeter for the maintenance of a chantry (Lysons 1822).

In 1841 the land at Heathfield is recorded in the Thorverton tithe apportionment as forming part of *Radcliffs* and *Snows*, both of which were owned by Richard Tippisley Hickfield and occupied by John R. Upcott; the fields being a mix of arable and pasture. The site at this time formed parts of three separate fields surrounding a modest single building farmstead. By 1888 the Ordnance Survey 1st edition map records the newly expanded farm as being called *Heathfield*, whilst the southern field has been sub-divided to include areas of orchard to the immediate south and east of the farm. This layout of both farm and fields had not altered by the early 20th century, later boundary alterations not occurring until later in the 20th and 21st centuries.

The site falls within land designated on the Historic Landscape Characterisation as Barton Fields: relatively large, regular enclosures likely to have been laid out between the 15th and 18th centuries with curving boundaries following earlier divisions in the pre-existing medieval fields; though the division of larger fields in this area is suggested as the sub-division of common land, particularly given the regular use of *heath* and *brake* field names.

The site lies in an area rich in prehistoric activity, with numerous barrow monuments (MDV1251, MDV1265, MDV1268, MDV1277, MDV1284); possible enclosure settlements (MDV12778, MDV39976, MDV54999, MDV55000, MDV64613, MDV111031); and findspots (MDV1270, MDV1586, MDV24449, MDV30167, MDV37281) with later medieval and post-medieval agricultural activity. Archaeological investigations in the area have been limited, largely identifying historic field boundaries (Morris & Bampton 2012), whilst repair work at Heathfields identified the farmhouse as formerly being a barn (MDV34531), probably that depicted on the tithe map. Recent excavations at Thorverton have identified a substantial area of prehistoric, including Neolithic, settlement and activity (Devon HER).

1.4 METHODOLOGY

This work was undertaken in accordance with current best practice, CIfA guidance. Any desk-based assessment aspect of this report follows the guidance as outlined in: *Standard and Guidance for Archaeological Desk-Based Assessment* (CIfA 2014a) and *Understanding Place: historic area assessments in a planning and development context* (English Heritage 2012). The geophysical (gradiometer) survey follows the general guidance as outlined in: *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider* (Europae Archaeologiae Consilium/European Archaeological Council 2016) and *Standard and Guidance for Archaeological Geophysical Survey* (CIfA 2014b).

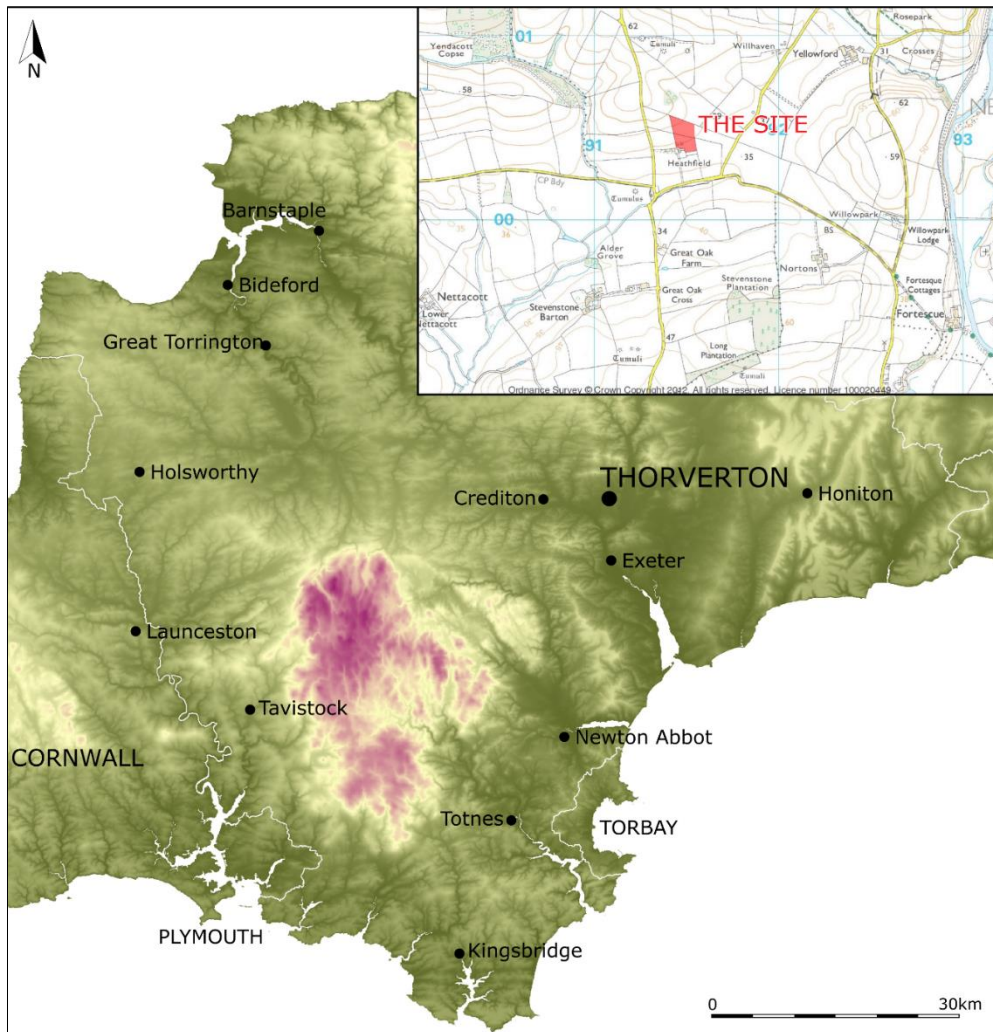


FIGURE 1: SITE LOCATION (THE SITE IS INDICATED).

2.0 GEOPHYSICAL SURVEY

2.1 INTRODUCTION

An area of c.1.5ha was the subject of a magnetometry (gradiometer) survey. The purpose of this survey was to identify and record magnetic anomalies within the proposed site. While identified anomalies may relate to archaeological deposits and structures the dimensions of recorded anomalies may not correspond directly with any associated features. The following discussion attempts to clarify and characterise the identified anomalies. The survey was undertaken on 20th November 2020 by P. Webb; the survey data was processed by P. Webb. Additional graphic images of the survey data and numbered grid locations can be found in Appendix 1; and supporting photographs for the site inspection can be seen in Appendix 2.

2.2 SITE INSPECTION

The site comprises a single field to the north and east of The Tallet Barn, Heathfield. It is trapezoidal in plan, the farmhouse and converted barns being situated at the south-west corner; and is orientated on an approximate north to south alignment. It is surrounded in all directions by agricultural land.

The field was under pasture at the time of survey with moderately short grass; and was surrounded on all sides by well kept low earth hedgebanks with shallow internal ditches and wooden post and wire fencing. In the south-west corner the field was bounded by wooden post and rail fencing. Across the middle of the field was an infilled shallow (up to c.0.10m deep) linear ditch orientated approximately north-west to south-east with rare oak trees along its northern edge, indicating the line of a historic boundary. To the south of this was a second slightly off-set linear ditch surviving to a greater depth (up to c.0.30m) which may also have formed part of a historic boundary, though may be associated with more modern service features. A series of metallic objects, including: a horse-box, shipping container, tractor, and metal panels and fencing were located along the southern side of this boundary. Septic/oil tanks and service features were also identified along the eastern boundary.

2.3 METHODOLOGY

The gradiometer survey follows the general guidance as outlined in: *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider* (Europae Archaeologiae Consilium/European Archaeological Council 2016) and *Standard and Guidance for Archaeological Geophysical Survey* (CIfA 2014b).

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- and set out using a Leica CS15 GNSS Rover GPS. The data was downloaded onto *Grad601 Version 3.16* and processed using *TerraSurveyor Version 3.0.36.0*. The primary data plots and analytical tools used in this analysis were *Shade* and *Metadata*. The details of the data processing are as follows:



FIGURE 2: VIEW ALONG THE NORTHERN EARTHWORK FORMING A POSSIBLE HISTORIC BOUNDARY ACROSS THE MIDDLE OF THE SITE; VIEWED FROM THE SOUTH-EAST (1M SCALE).

Processes:

Clip +/- 1SD; removes extreme data point values.

DeStripe all traverses, median; used to equalise underlying differences between grids (potentially caused by instrument drift or orientation, directional effects inherent in magnetic instrument, or differences in instrument set up during survey e.g. using two gradiometers).

Details:

1.4885ha surveyed

Stats unadjusted; Max. 98.45nT, Min. -100.00nT; Standard Deviation 21.80nT, mean -4.38nT, median -1.40nT.

Stats adjusted; Max. 140.18nT, Min. -181.30nT; Standard Deviation 20.83nT, mean -2.47nT, median -0.03nT.

2.4 RESULTS

Table 1 with the accompanying Figures 4 and 5 show the analyses and interpretation of the geophysical survey data.

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Weak positive with strong bipolar, probable	Linear	Historic boundary	Indicative of an in-filled cut feature such as a ditch. Bipolar responses suggest metallic infill. Aligned approximately north-west to south-east. Visible as an earthwork depression. Responses of between -99.27nT and +102.12nT. Boundary only removed in the later 20 th century.
2	Very strong dipolar, probable	Linear	Modern service	Indicative of a service pipe or drain. Orientated approximately north-west to south-east. Visible as an earthwork depression. Responses of between -105.04nT and +109.02nT.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
3	Weak positive, possible	Linear	Ditch	Indicative of a cut and in-filled feature such as a ditch. Aligned approximately north-north-east to south-south-west. Responses of between +1.18nT and +10.00nT.
4	Weak to moderate negative, possible	Linear	Modern service/drain	Indicative of a stone or ceramic feature such as a land drain. Orientated approximately north-west to south-east. Responses of between -17.95nT and -0.32nT.
5	Very strong mixed positive & negative, probable	Irregular	Disturbance associated with metallic objects	Indicative of disturbance caused by proximity to metallic objects (visible on the ground). Responses of between -105.64nT and +103.41nT.
6	Strong positive & negative, probable	Discrete rectangular	Bonfire	Indicative of heavily burnt material and/or disturbed ground. A bonfire was visible on the ground. Responses of between -87.66nT and +97.33nT.
	Weak positive & negative, possible	Linear	Agricultural activity	Linear striations covering the entire site with regularity. Weak mixed positive and negative responses suggest shallow ploughing. Aligned north-west to south-east. Responses of between -3.89nT and +7.31nT.
	Strong dipolar (mixed response)	Discrete	Ferrous anomaly	Indicative of metallic object. Responses of between c.+/-100nT.
	Strong bipolar (mixed response)	Irregular	Modern disturbance	Indicative of disturbed ground and disturbance caused by proximity to metallic fences and debris. Responses of between -181.30nT and +116.906nT.

2.5 DISCUSSION

The survey identified 6 groups of anomalies. These were a mix of linear anomalies likely associated with phases of historic boundaries and agricultural activity, but including modern disturbance/services. The identified anomaly groups include: historic field boundaries; ditch features; agricultural activity; and modern services. Evidence of ploughing and metallic debris and ground disturbance was also identified.

The weak responses of the anomalies which do not contain metallic debris indicates that these are only likely to survive to a shallow depth. The background geological variation across the site was between +/-3nT.

Anomaly Group 1 consists of a weak positive (+0.74nT to +7.39nT) linear response indicative of a cut and in-filled feature such as a ditch. At the eastern end, very strong bipolar responses (-99.27nT to -2.92nT and +2.32nT to +102.12nT) indicate the presence of metallic debris within the ditch. This feature was visible as a shallow earthwork ditch on the ground and was orientated north-west to south-east, along the lines of elements of the existing field-system and correspond to boundaries depicted on 19th century and later historic mapping, seemingly removed sometime between 1946 and 2000.

Anomaly Group 2 consists of a very strong dipolar (-105.04nT to -1.74nT and +4.51nT to +109.02nT) linear response indicative of a modern service feature. It was visible as an earthwork ditch on the ground and was orientated north-west to south-east, slightly offset to anomaly Group 1. It is possible that this feature formed part of a double-ditch boundary with anomaly Group 1, subsequently later re-used as a modern service trench.

Anomaly Group 3 consists of a weak positive (+1.18nT to +10.00nT) linear feature located in the north-west corner of the site indicative of an in-filled cut feature such as a ditch. It is orientated approximately north-north-east to south-south-west, corresponding with elements of the surrounding field boundaries, and is likely to represent an earlier phases of part of the same field system.

Anomaly Group 4 consists of a pair of weak to moderate negative (-17.95nT to -1.19nT) linear responses indicative of a stone or ceramic feature such as a land drain. Both are orientated

approximately north-west to south-east along the line of existing boundaries.

Anomaly Group 5 consists of an irregular area of very strong bipolar negative (-105.64nT to -7.66nT) and positive (+7.86nT to +103.41nT) discrete anomalies indicative of metallic objects and disturbed ground. A number of metallic objects, including: horse box, shipping container, trailer, tractor, metal sheeting and girders were identified on the ground in this area.

Anomaly Group 6 consists of a strong bipolar negative (-87.66nT to -2.85nT) and positive (+64.18nT to +116.90nT) discrete sub-rectangular anomaly indicative of a modern disturbance. A bonfire was identified on the ground at this location.

Linear striations of weak negative (-3.89nT to -0.30) and positive (+1.43nT to +7.31nT) responses orientated approximately north-north-west to south-south-east and west-north-west to east-south-east are present across the site, particularly in the northern half of the field, the regularity and weakness of the responses suggesting that they may represent shallow ploughing.

Modern disturbance, dipolar anomalies and magnetic disturbance are also located across the field, particularly around the site boundaries. This is likely due to the presence of ferrous objects and other metallic debris and the metallic components of fence lines and field boundaries.

2.6 ARCHAEOLOGICAL POTENTIAL

The results of the geophysical survey would suggest that the archaeological potential for the site is *low*. Some of the identified features relate to boundaries depicted on historic maps (anomaly Group 1); whilst the matching alignment of others with existing boundaries (Group 3) indicates that they likely reflect earlier phases of the same field-systems. Modern services/disturbance (Groups 2, 4, 5, and 6) were also identified across the site; whilst linear anomalies are likely to indicate episodes of agricultural activity.

Further archaeological mitigation does not appear to be necessary given the limited results obtained by the geophysical survey and the limited nature of the proposed development area within the site.



FIGURE 3: SHADE PLOT OF THE GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED.

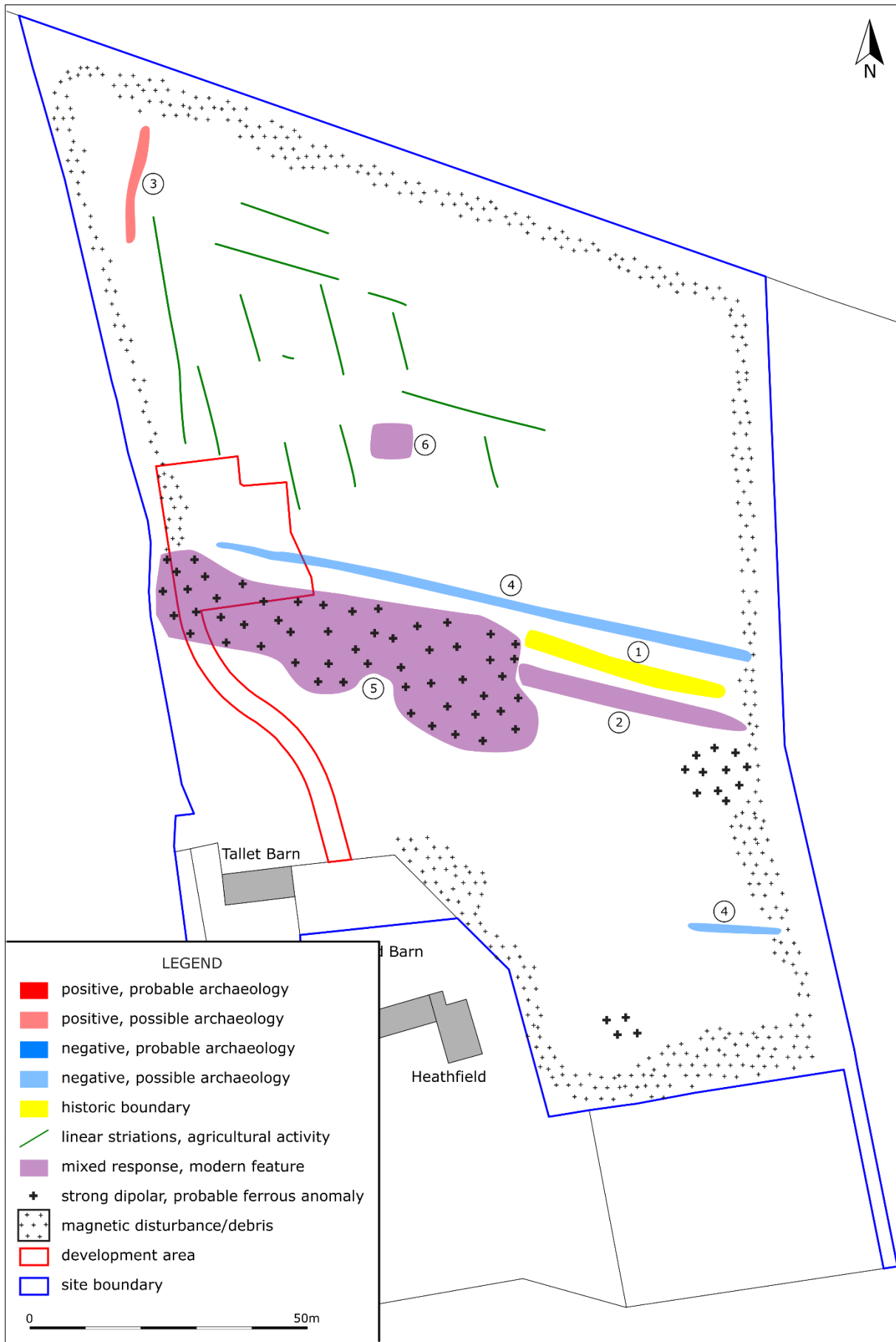


FIGURE 4: INTERPRETATION OF THE GRADIOMETER SURVEY DATA.

3.0 CONCLUSION

The site comprises a single field located to the north and east of The Tallet Barn, Heathfield; to the south-west of Thorverton, an area rich in prehistoric activity. Medieval use of the area was limited and largely agriculture based.

The survey identified 6 groups of anomalies. These were a mix of linear anomalies likely associated with phases of historic boundaries and agricultural activity, but including modern disturbance/services. The identified anomaly groups include: historic field boundaries; ditch features; agricultural activity; and modern services. Evidence of ploughing and metallic debris and ground disturbance was also identified.

The results of the geophysical survey would suggest that the archaeological potential of the site is *low*, the geophysical survey only identifying a small number of features associated with historic field boundaries and modern disturbance/services. Further archaeological mitigation is not thought to be worthwhile in this instance given the limited extent of the proposed development area and the low potential indicated on the geophysical survey.

4.0 BIBLIOGRAPHY & REFERENCES

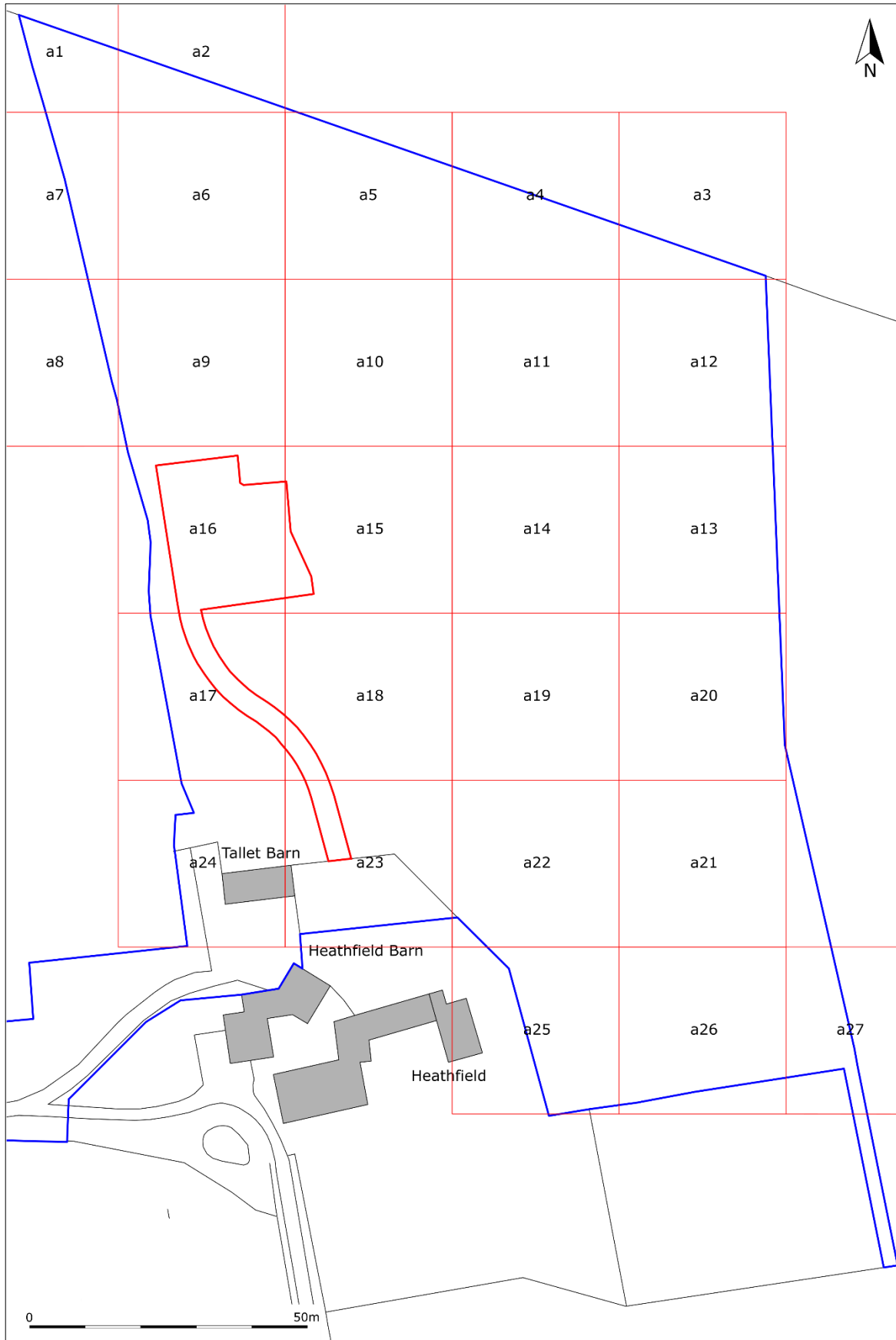
Published Sources:

- Chartered Institute of Field Archaeologists** 2014a (revised 2017): *Standard and Guidance for Historic Environment Desk-based Assessment*.
- Chartered Institute for Archaeologists** 2014b (revised 2017): *Standard and Guidance for Archaeological Geophysical Survey*.
- DW Consulting** 2016: *TerraSurveyor User Manual*.
- Europae Archaeologiae Consilium** 2016: *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider, EAC guidelines 2*.
- English Heritage** 2008: *Geophysical Survey in Archaeological Field Evaluation*.
- Lysons, D. & S.** 1822: *Magna Britannia: Volume 6, Devon*.
- 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)*.

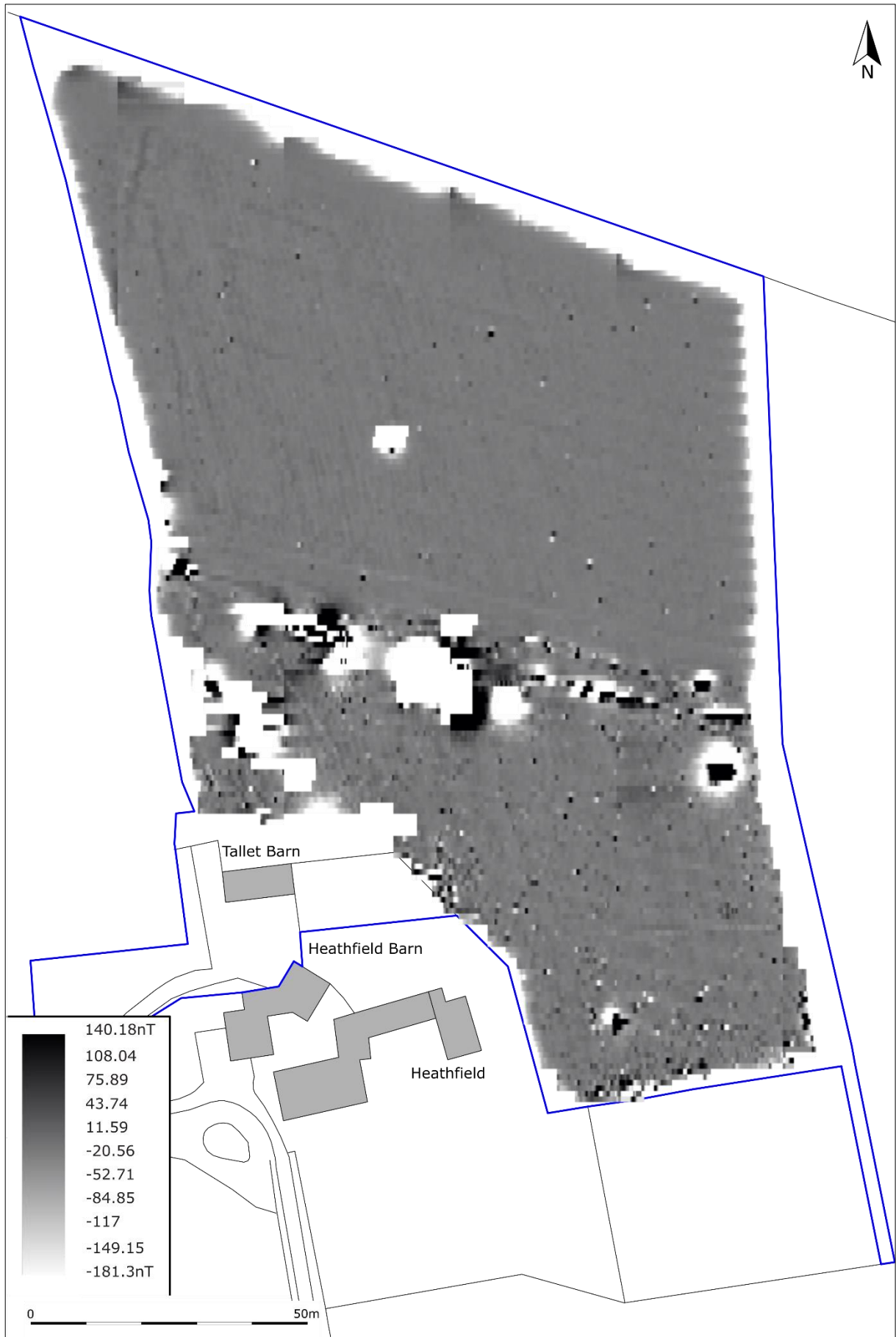
Websites:

- British Geological Survey** 2020: *Geology of Britain Viewer*. <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>
- Devon County Council Historic Environment** 2020
<https://www.devon.gov.uk/historicenvironment/latest-news/a-new-neolithic-henge-monument-for-devon/>

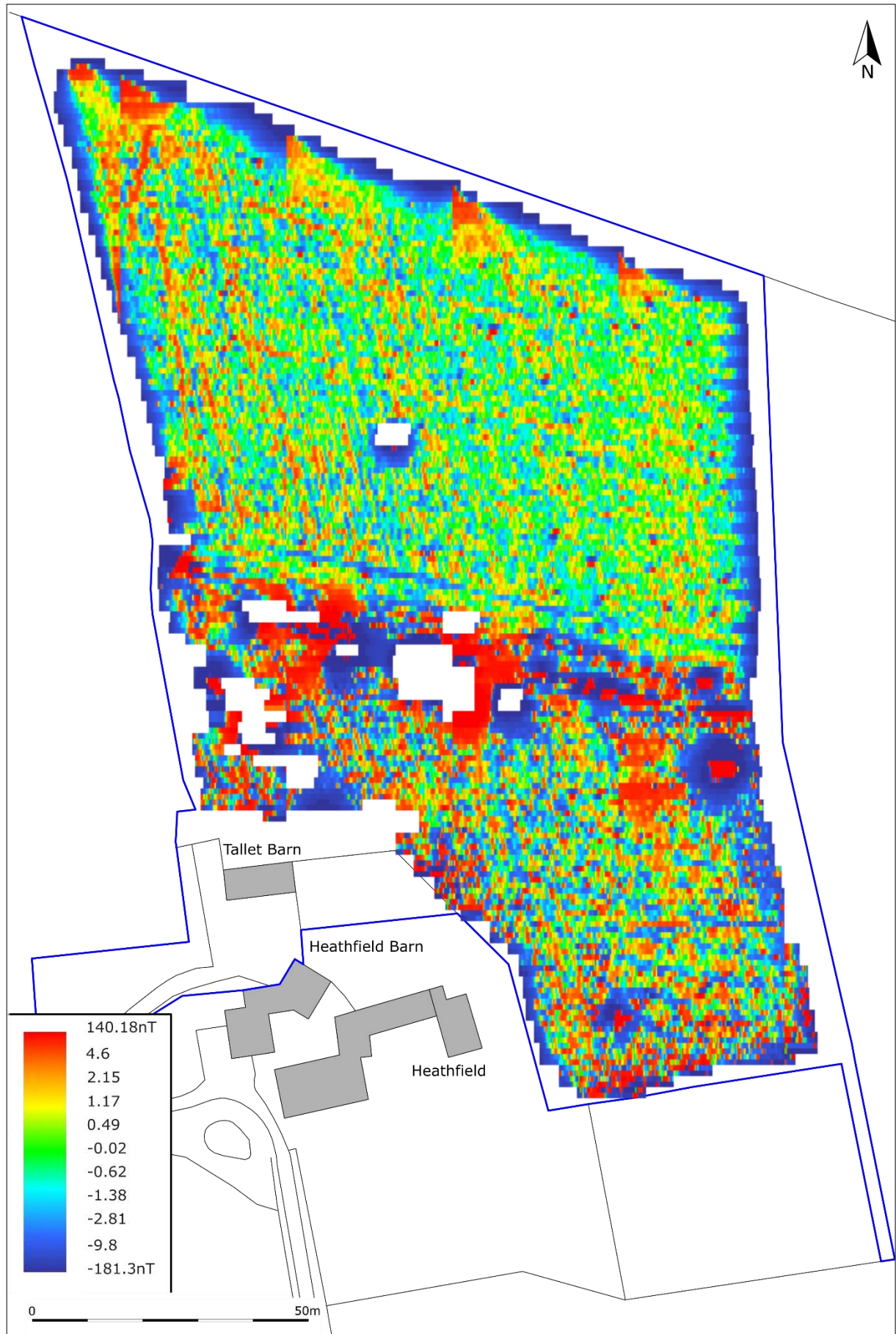
APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY



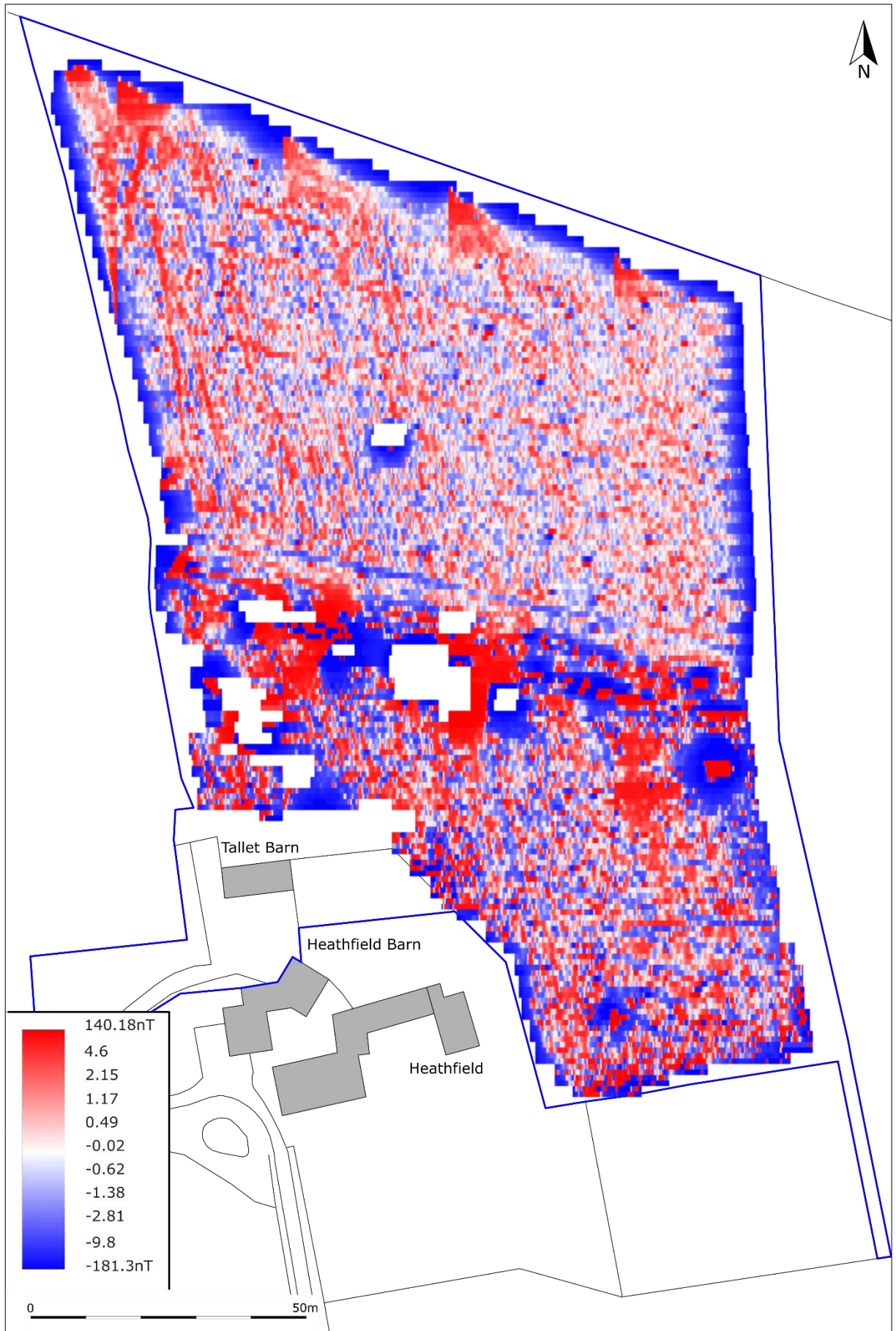
1. GEOPHYSICAL SURVEY GRID LOCATION AND NUMBERING.



1. GREYSCALE SHADE PLOT OF THE GRADIOMETER SURVEY DATA; MINIMAL PROCESSING.



2. RED-GREEN-BLUE2 SHADE PLOT OF THE GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED.



3. RED-WHITE-BLUE SHADE PLOT OF THE GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED.

APPENDIX 2: SUPPORTING PHOTOGRAPHS



1. VIEW ALONG WEST SITE BOUNDARY; VIEWED FROM THE SOUTH (NO SCALE).



2. VIEW ALONG SOUTHERN LINEAR DITCH; VIEWED FROM THE NORTH-WEST (1M SCALE).



3. VIEW ACROSS THE SITE FROM THE NORTH-WEST CORNER; VIEWED FROM THE WEST-NORTH-WEST (NO SCALE).



4. VIEW ACROSS THE SITE FROM THE NORTH-EAST CORNER; VIEWED FROM THE EAST-NORTH-EAST (NO SCALE).



5. VIEW ALONG THE NORTHERN LINEAR DITCH FEATURE; VIEWED FROM THE SOUTH-EAST (1M SCALE).



6. VIEW ALONG THE SOUTHERN LINEAR DITCH FEATURE; VIEWED FROM THE SOUTH-EAST (1M SCALE).



7. DETAIL OF THE HEDGEBANK AND DITCH EAST BOUNDARY; VIEWED FROM THE NORTH (1M SCALE).



8. VIEW ALONG THE LINE OF A POSSIBLE MODERN SERVICE IN THE SOUTHERN HALF OF THE SITE; VIEWED FROM THE SOUTH-EAST (1M SCALE).



9. VIEW ACROSS THE SITE FROM THE SOUTH-EAST CORNER; VIEWED FROM THE SOUTH-EAST (NO SCALE).



10. VIEW ALONG THE SOUTHERN BOUNDARY; VIEWED FROM THE EAST (NO SCALE).



11. VIEW ALONG THE LINE OF A POSSIBLE MODERN SERVICE IN THE SOUTHERN HALF OF THE SITE; VIEWED FROM THE NORTH-WEST (1M SCALE).



THE OLD DAIRY
HACCHE LANE BUSINESS PARK
PATHFIELDS BUSINESS PARK
SOUTH MOLTON
DEVON
EX36 3LH

01769 573555

01872 223164

MAIL@SWARCH.NET