

LAND SOUTH OF BOSWIDJACK FARM

CONSTANTINE

FALMOUTH

CORNWALL

RESULTS OF A GEOPHYSICAL SURVEY



SOUTH WEST ARCHAEOLOGY LTD. REPORT NO. 180604



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Land South of Boswidjack Farm, Constantine, Cornwall

Results of a Desk-Based Assessment & Geophysical Survey

By P. Bonvoisin
Report Version: **FINAL**
4th of June 2018

Work undertaken by SWARCH for Mr Bowden (the Client)

Summary

This report presents the results of a geophysical survey carried out by South West Archaeology Ltd. (SWARCH) on land south of Boswidjack Farm, Constantine, Cornwall. The site is located immediately south of the extended farm ranges and in the south-western corner of a gently sloped south facing field.

Historic mapping of the area suggests that the site appears to have been part of at least two fields during the 19th century, with the field division bisecting the survey area on a rough north-west to south-east axis. The geophysical survey identified seven groups of geophysical anomalies, five probably relating to archaeological activity. The majority of the archaeological features are of unknown origin or date, perhaps relating to a previous field system or enclosure. A relict historic field boundary is also indentified within the site.

Taking into consideration the results of the geophysical survey, as well as historic mapping of the area and nearby archaeological assets, the archaeological potential of the site is low to medium. Based on the results of the walkover and geophysical survey, further archaeological works on this site may be merited, most appropriately in the form of a watching brief.



June 2018

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ACKNOWLEDGEMENTS

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1.0 INTRODUCTION

LOCATION:	LAND SOUTH OF BOSWIDJACK FARM, CONSTANTINE
PARISH:	CONSTANTINE
POSTAL TOWN:	FALMOUTH
COUNTY:	CORNWALL
NGR:	SW 71516 28977
PLANNING NO.	PA18/01618
SWARCH REF.	CBJ18

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Edward Buckland Chartered Surveyors (the Agent) on behalf of Mr Bowden (the Client) to undertake a geophysical survey for Land South of Boswidjack Farm, Constantine, Cornwall, in advance of the development of a proposed earth banked slurry lagoon. This work was undertaken in accordance with best practice and ClfA guidelines.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

Boswidjack is a farm belonging to the parish of Constantine, and is located towards the western extent of the parish. The centre of the site is located c.220m south of the central farmyard at Boswidjack, and lies approximately 1.6km west of Constantine and 5.3km west-north-west of Helston. The site is on a gently sloping south facing field, ranging from c.109m Above Ordnance Datum (AOD) in the north of the site to c.105m AOD in the south.

The soils of this area are the well drained gritty loamy soils, with a humose surface horizon in places, with boulders and rocks of the Moretonhampstead soil group (SSEW 1983); these overlie the granite and other acid based igneous rocks of the Carnmenellis Intrusion which covers much of the site, immediately south of the site lies the Hornfelsed Slate and Siltstone an metamorphic bedrock of the Mylor Slate Formation (BGS 2018).

1.3 HISTORICAL & ARCHAEOLOGICAL BACKGROUND

Boswidjack is a farm that lies within the parish of Constantine, and the hundred and deanery of Kirrier (Lysons 1814). Boswidjack is not referenced in Domesday, and according to the Cornish Historic Environment Record (HER) was first recorded in 1590 as *Boswyssack* (Gover 1948). The initial element of the place name may refer to *bod*, Cornish for dwelling, implying that the settlement may be early medieval in origin (Padel 1988). The Cornish HER shows no listed buildings at Boswidjack farm, but notes the farm as an early medieval settlement (24633). A medieval field system and medieval strip fields are noted in the lower portion of, and below the site (51858). Medieval field boundaries are also located to the north-west of the site (51859). A post-medieval quarry (51864) is located c.100m north of the site with a possible round barrow (51865) visible c.200m south-east of the site, visible on aerial photography. The site lies within an area identified as medieval farmland within the Cornwall Historic Landscape Characterisation (HLC).

The site covers partials of tithe apportionments 1818 and 1819 on the 1841 Constantine tithe map and apportionment. The plot 1818 was to the north and was called *Cream Croft*, indicating

likely arable usage for dairy; plot 1819 was to the south and was called *Golhosking*, the Cornish element *gol* meaning 'feast' or being associated with fairs (Padel 1985; Watts 2004) and unknown element, the origin of this name is unclear as this land was previously medieval strip fields.

1.4 METHODOLOGY

This work was undertaken in accordance with best practice. The cartographic assessment 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 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* (CIfA 2014b).

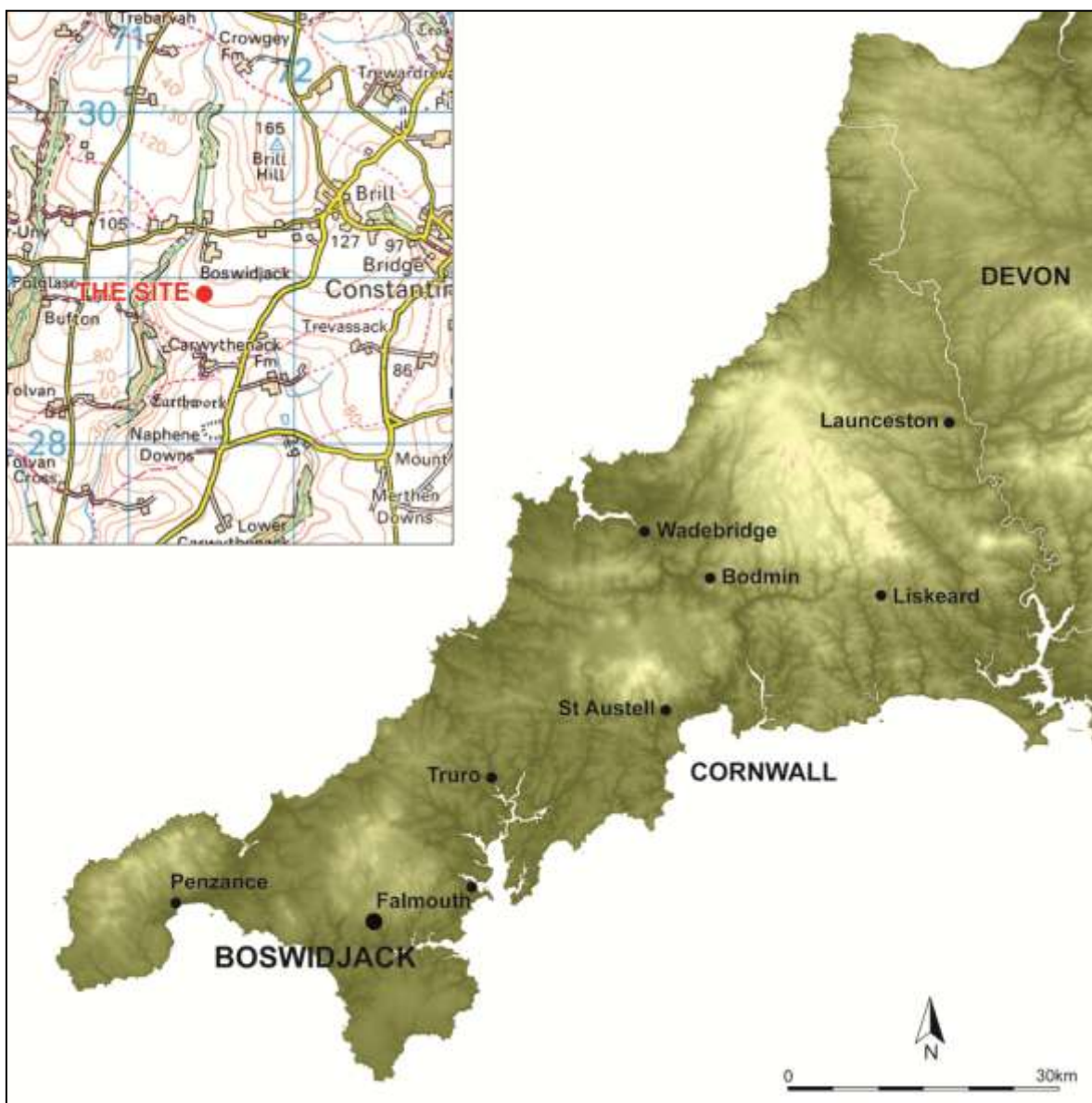


FIGURE 1: SITE LOCATION (THE SITE IS INDICATED).

2.0 GEOPHYSICAL SURVEY

2.1 INTRODUCTION

An area of c.0.7ha 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 the 23rd of May 2018 by P. Bonvoisin; the survey data was processed by P. Bonvoisin.

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* (ClfA 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 30x30m. 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 of particular grids.

Details: 0.71775ha surveyed; Max. 100.39nT, Min. -111.17nT; Standard Deviation 8.09nT, mean -0.25nT, median 0.00nT.

2.3 SITE INSPECTION

The site was comprised of the south-western section of a field (Figures 1-3), which was surveyed on 23rd May 2018. At the time of survey the site area was under pasture. The south and western edges of the site were bounded by a track running parallel to the field boundary; the northern edge of the site abutted a building site for a partially complete new barn associated with Boswidjack Farm; the eastern edge of the site was open to the rest of the field. The area underneath the new barn had been built up, and was elevated above the level of the site. A large pit had been dug midway along the northern edge of the survey area, this cut into the survey area and was fenced off at the time of survey.

No earthworks or archaeological features were observed across the site and no finds were recovered. A full complement of site photographs can be found in Appendix 3.



FIGURE 2: VIEW ACROSS SITE; VIEW FACING EAST.



FIGURE 3: VIEW ACROSS THE SITE; VIEW FACING WEST.

2.4 RESULTS

Table 1 with the accompanying Figures 4, 5 and 6 show the analyses and interpretation of the geophysical survey data. Additional graphic images of the survey data and numbered grid locations can be found in Appendix 1.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Moderate positive bordered by weak negative, probable	Fragmented flanked linear	Ditch or boundary from possible field system	Indicative of a ditch or cut feature with raised ground to either side. Likely represents the same feature as anomaly groups 2 and 3, and associated with group 4. Responses of c. +13.75nT to -5.54nT.
2	Weak positive with parallel weak negative, possible	Fragmented parallel curvilinears	Ditch or boundary from possible field system	Indicative of a ditch or cut feature with raised ground the side. Likely represents the same feature as anomaly groups 1 and 3, and associated with group 4. Responses of c. +7.01nT to -4.97nT.
3	Weak positive with parallel weak negative, possible	Fragmented parallel linears	Ditch or boundary from possible field system	Indicative of a ditch or cut feature with raised ground the side. Likely represents the same feature as anomaly groups 1 and 2, and associated with group 4. Responses of c. +8.84nT to -6.26nT.
4	Weak positive flanked by weak negative, possible	Flanked linear	Ditch or boundary from possible field system	Indicative of a ditch or cut feature with raised ground to either side; like associated with anomaly groups 1, 2 and 3. Responses of c. +7.26nT to -7.18nT.
5	Strong positive to moderate response, probable	Linear	Probable previous field boundary	Indicative of a previous field boundary, corresponds to a feature visible on historic mapping. Responses of c. +26.26nT to -14.93nT.
6	Alternate very strong positive and moderate negative, probable	Alternate linear	Modern feature, possible land drain	Strong response indicative of a modern feature, possible land drain or utility. Responses of c. +85.55nT to -19.26nT.
7	Strong mixed response, probable	Amorphous area	Geological response	Indicative of a background geological response, corresponds to underlying local granite. Responses in a range of c. +30nT to -30nT.

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.

2.5 DISCUSSION

The survey identified seven groups of anomalies, cartographic and visual sources supporting the discussion and comments can be seen Appendices 2 and 3.

Groups 1 (+13.75nT to -5.54nT), 2 (+7.01nT to -4.97nT), 3 (+8.84nT to -6.26nT) and 4 (+7.26nT to -7.18nT) are weak to moderate positive linears with associated negative linears; with group 1 displaying a stronger and clearer response. These groups all display a similar form; indicative of a boundary ditch with associated raised ground or possible banks. These features represent a possible previous field system or enclosure; the HLC of the site is *Anciently Enclosed Land*, meaning that these features could represent medieval strip fields or a similar landscape.

Group 5 is a strong to moderate (+26.26nT to -14.93nT) fractured positive and negative linear. Due to the fracture nature of the survey response the exact form of this feature is unclear, though it follows the line of field boundaries evident on this historic mapping and likely relates to a previous field boundary or Cornish Hedgebank removed after the early 20th century.

Group 6 is a strong mixed (+85.55nT to -19.26nT) linear, showing alternate positive and negative responses; indicative of a modern feature, such as a possible land drain.

Group 7 represents strong positive and negative responses displayed across the site, indicative of geological responses, this corresponds to the underlying igneous bedrock of the underlying Carnmenellis Intrusion. Spotty response likely due to lumps of granite floating within the layers above the bedrock, a sample of this can be seen in the large hole excavated prior to the survey, photograph in Appendix 3.

Di-Polar anomalies and magnetic disturbance are also located across the site. The Di-Polar anomalies appear concentrated in the central south segment of the site; however, some are likely obscured by the geological response. Concentrated Di-Polars may relate to the previous field system.

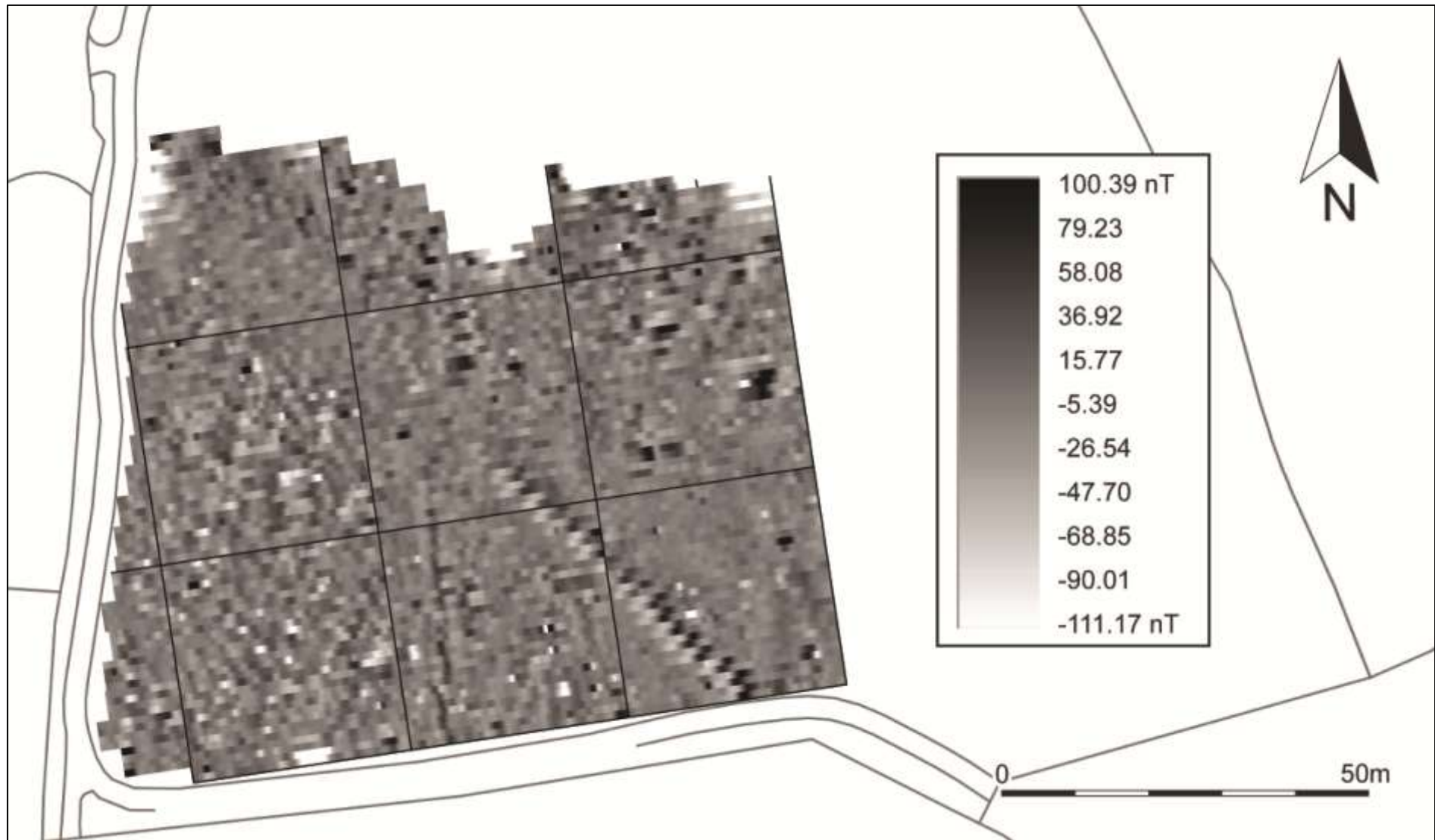


FIGURE 4: SHADE PLOT OF GRADIOMETER SURVEY DATA; MINIMAL PROCESSING.

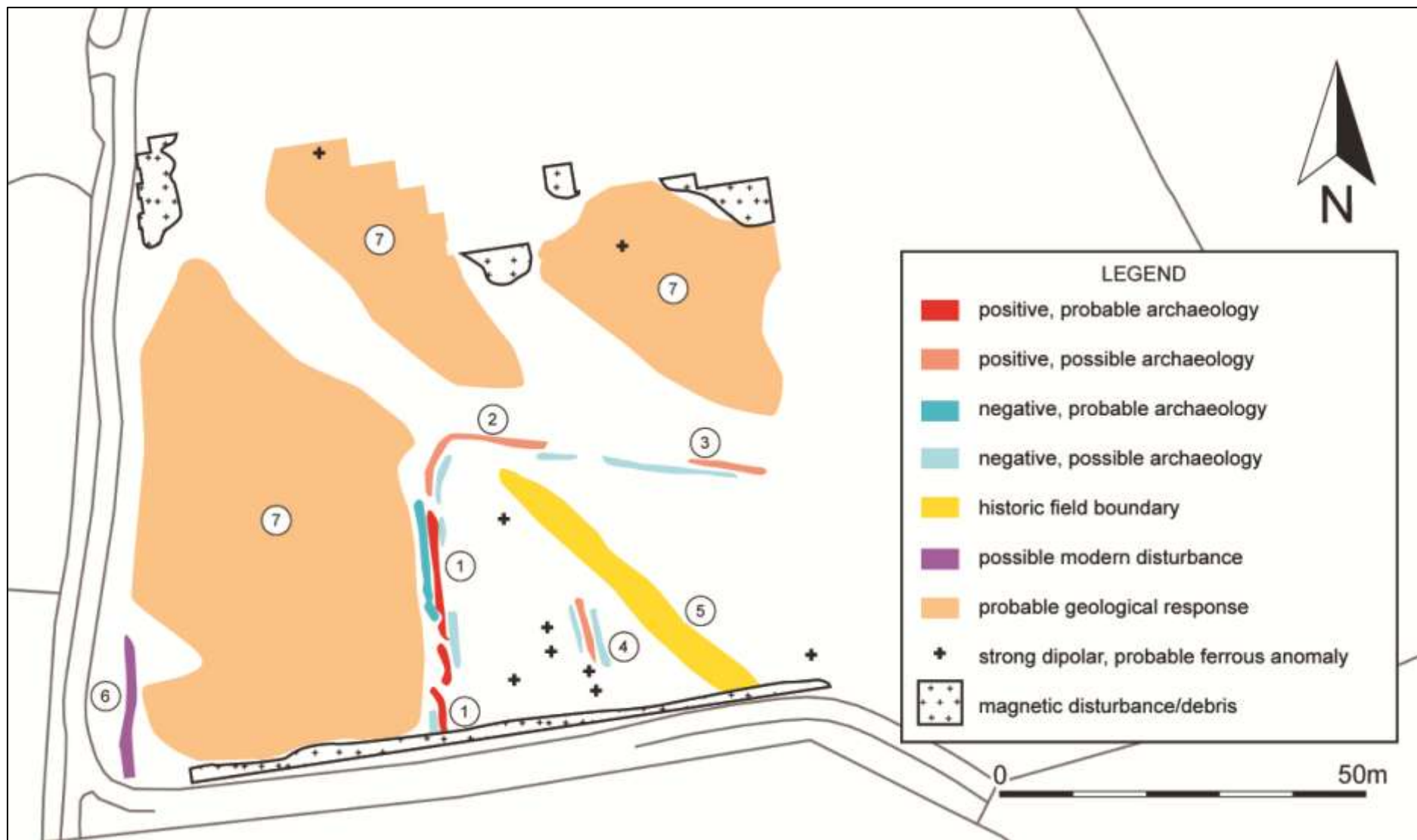


FIGURE 5: INTERPRETATION OF GRADIOMETER SURVEY DATA.

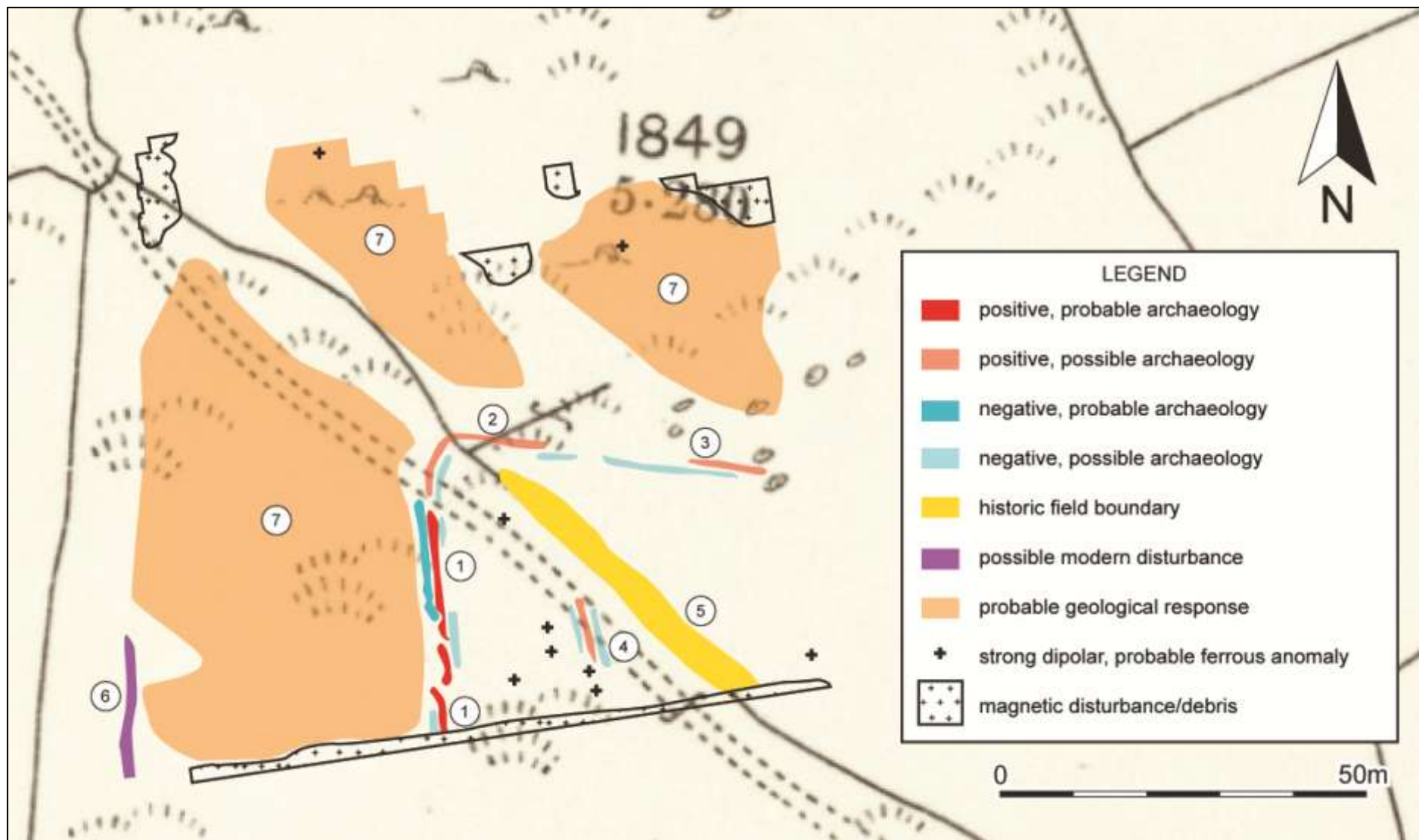


FIGURE 6: INTERPRETATION OF GRADIOMETER SURVEY DATA; OVERLYING ORDNANCE SURVEY 1ST DRAFT 25", 1879 (CRO).

3.0 CONCLUSION

It may be inferred from the location of the site within *Anciently Enclosed Land* would that there is potential archaeological remains with the site. Documentary evidence shows evidence of a farmstead of the name *Boswyssack* in the area in 1590; the site is c.200m south of Boswidjack Farm. The historic mapping of the area shows a field boundary bisecting the survey area but little else; the national mapping program shows medieval strip fields within the lower portion of the site and continuing to the south, with other field systems to the west.

The geophysical survey identified seven anomaly groups within the survey area; groups 1 to 5 may be archaeologically relevant. Anomaly groups 1 to 3 likely relate to the same feature; and with group 4 possibly relate to medieval strip fields. Anomaly group 5 likely represents a historic field boundary bisecting the site, visible on the 1907 25" Ordnance Survey and 1841 Tithe mapping of the area. The identification of these features would suggest that the overall archaeological potential of the site is ***low to medium***.

The impact of the development on any buried archaeological resource would be permanent and irreversible. Given the character and nature of the identified archaeological anomalies a program of archaeological works, most appropriately a watching brief may be required to validate the geophysical survey results and may clarify the form, extent, character, condition and date of any potential buried archaeological resource.

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Constantine tithe map and apportionment, 1841

Cornwall Record Office

- Ordnance Survey First Edition 25 Inch Map, 1879
Ordnance Survey Second Edition 25 Inch Map, 1907

APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY

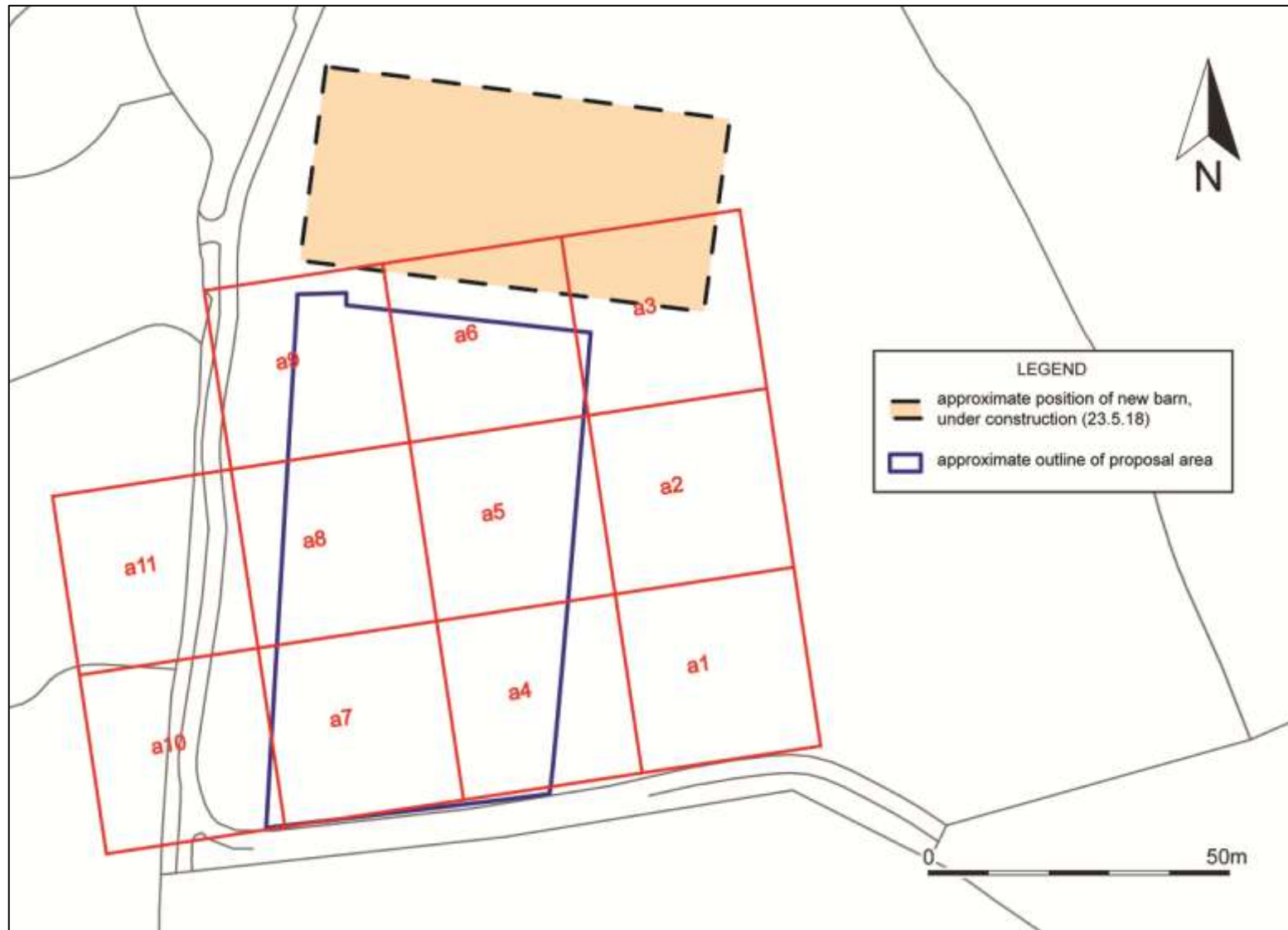


FIGURE 7: GEOPHYSICAL SURVEY GRID LOCATION AND NUMBERING.

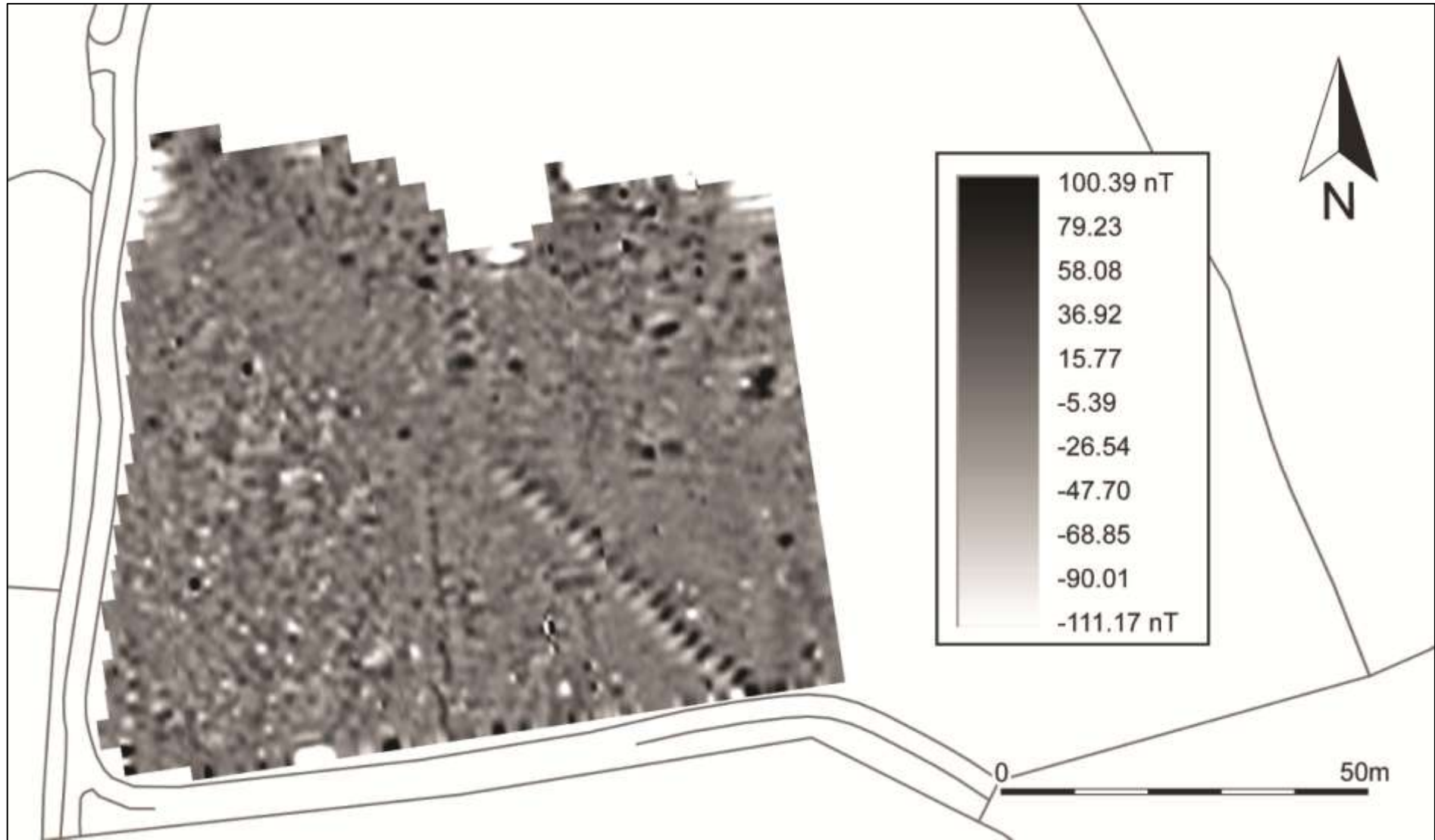


FIGURE 8: SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING.

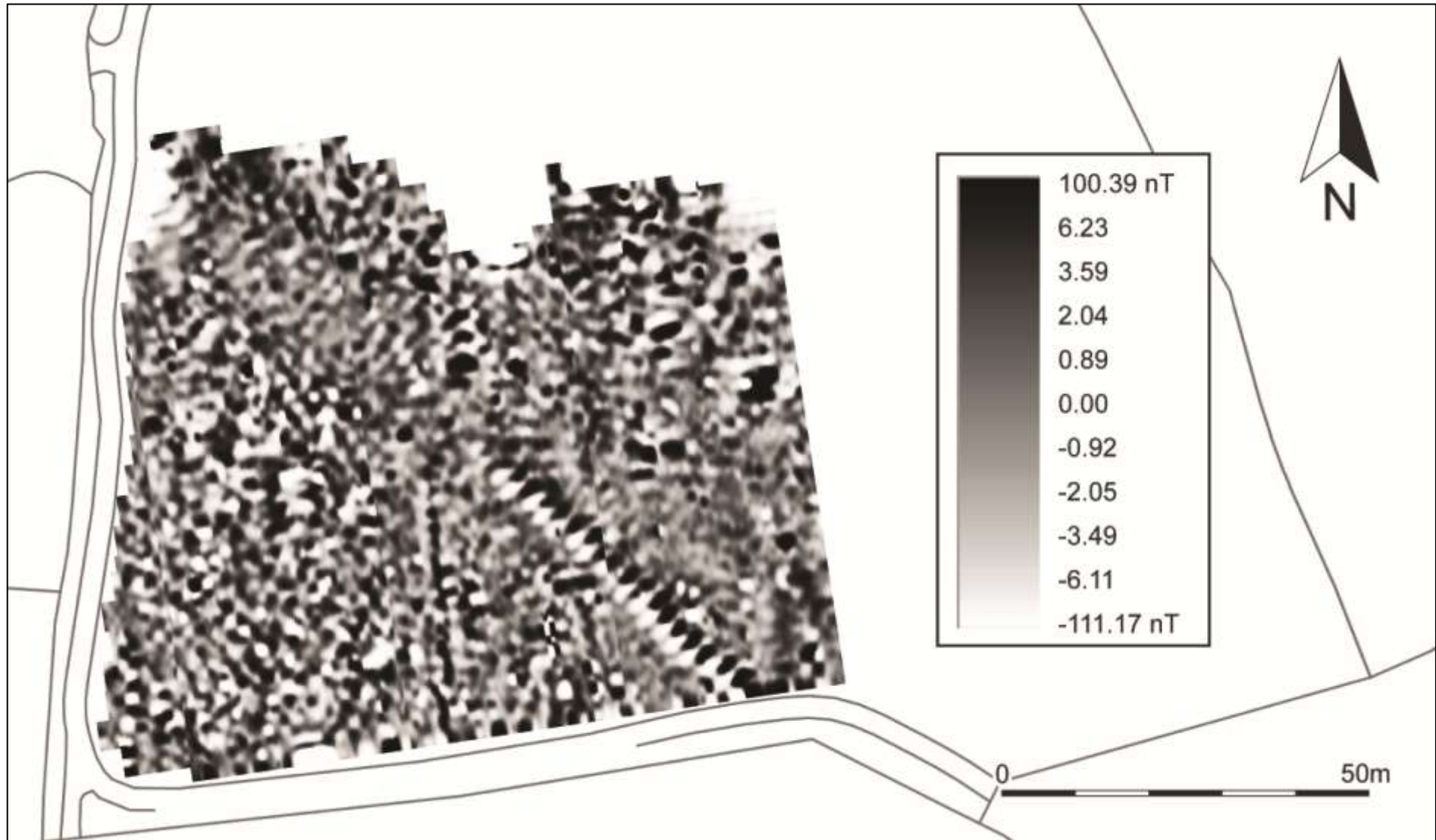


FIGURE 9: SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

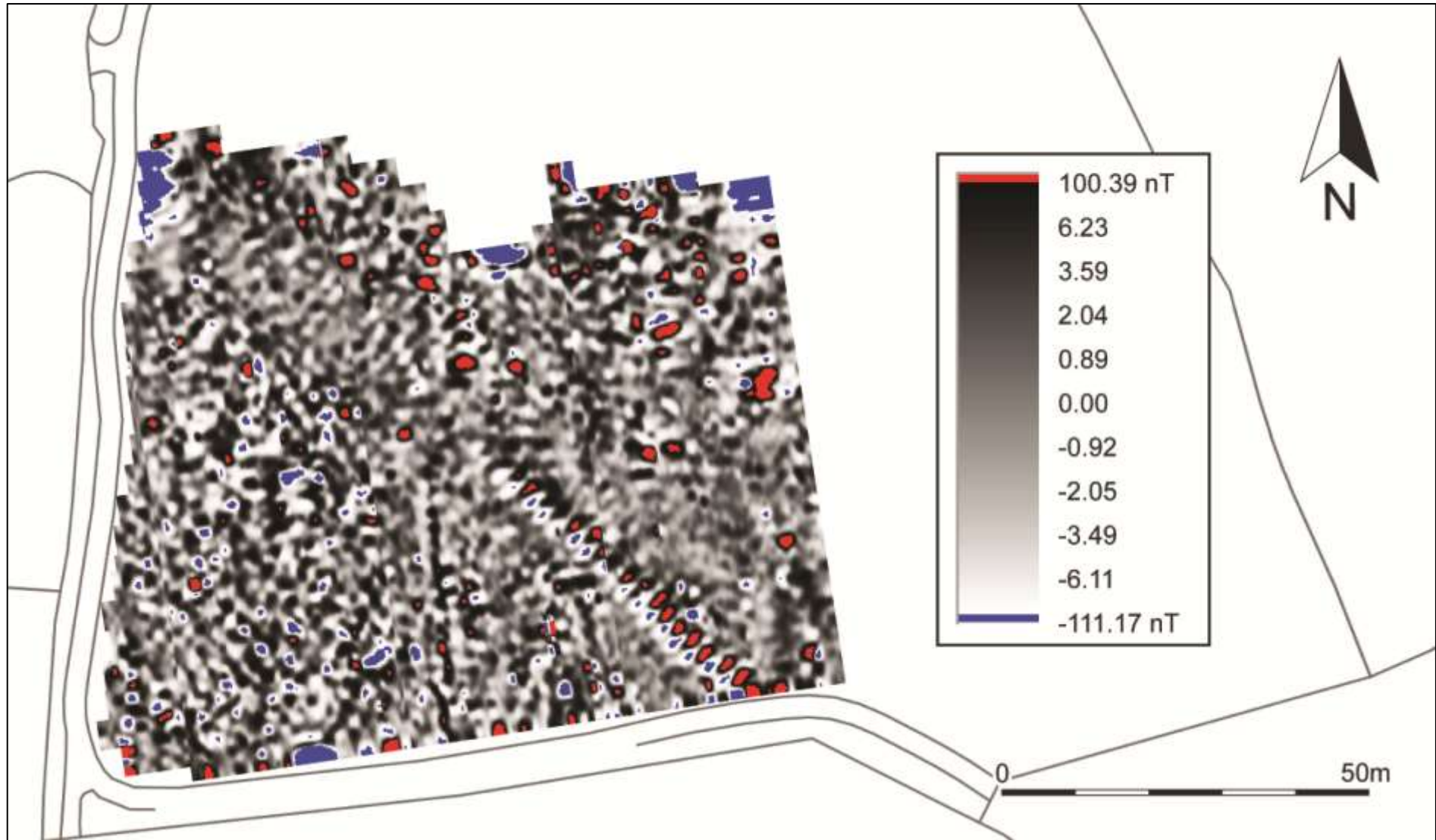


FIGURE 10: RED GREYSCALE BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING.

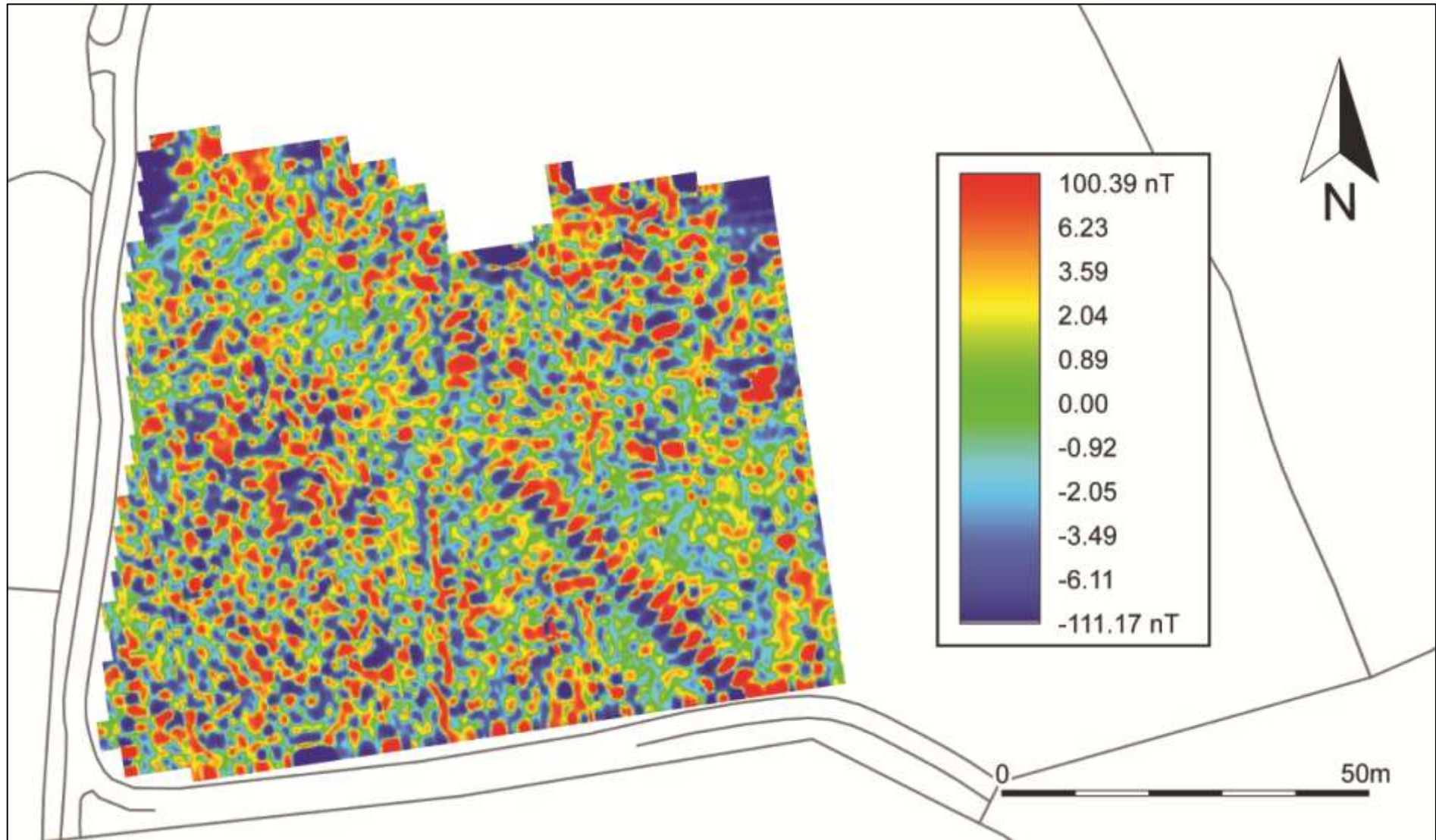


FIGURE 11: RED-BLUE-GREEN (2) SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

APPENDIX 2: SUPPORTING CARTOGRAPHIC EVIDENCE

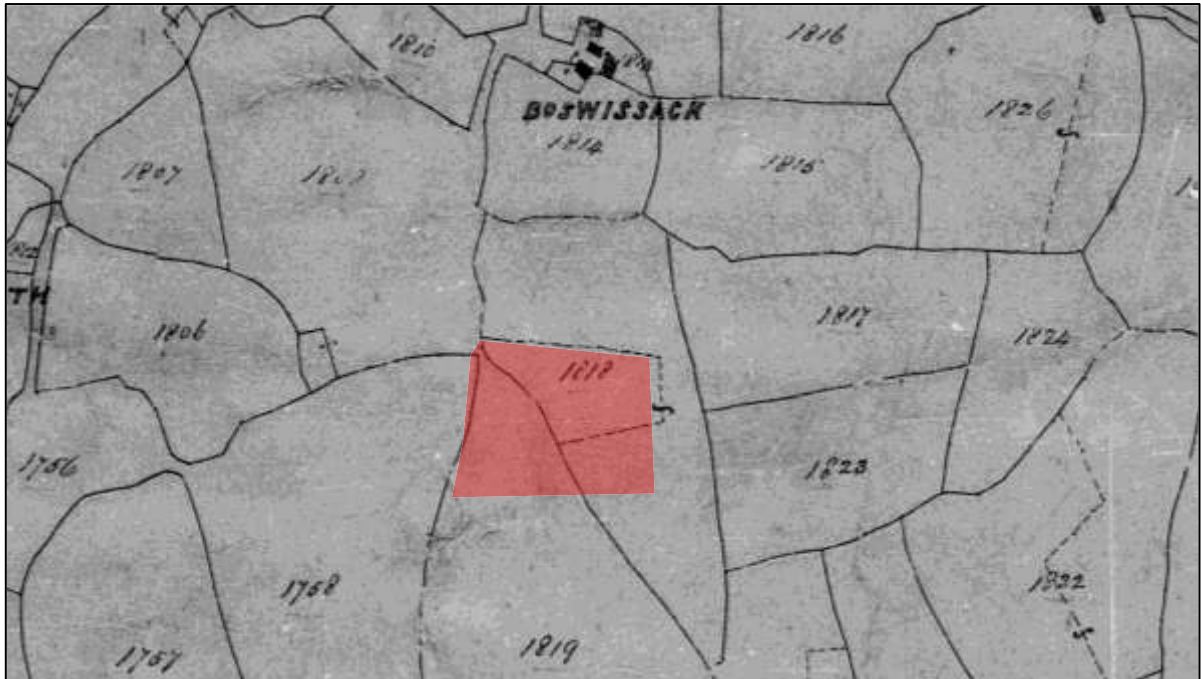


FIGURE 12: EXTRACT FROM CONSTANTINE 1841 TITHE MAP (GENEALOGIST), APPROXIMATE LOCATION OF THE SITE IS INDICATED.

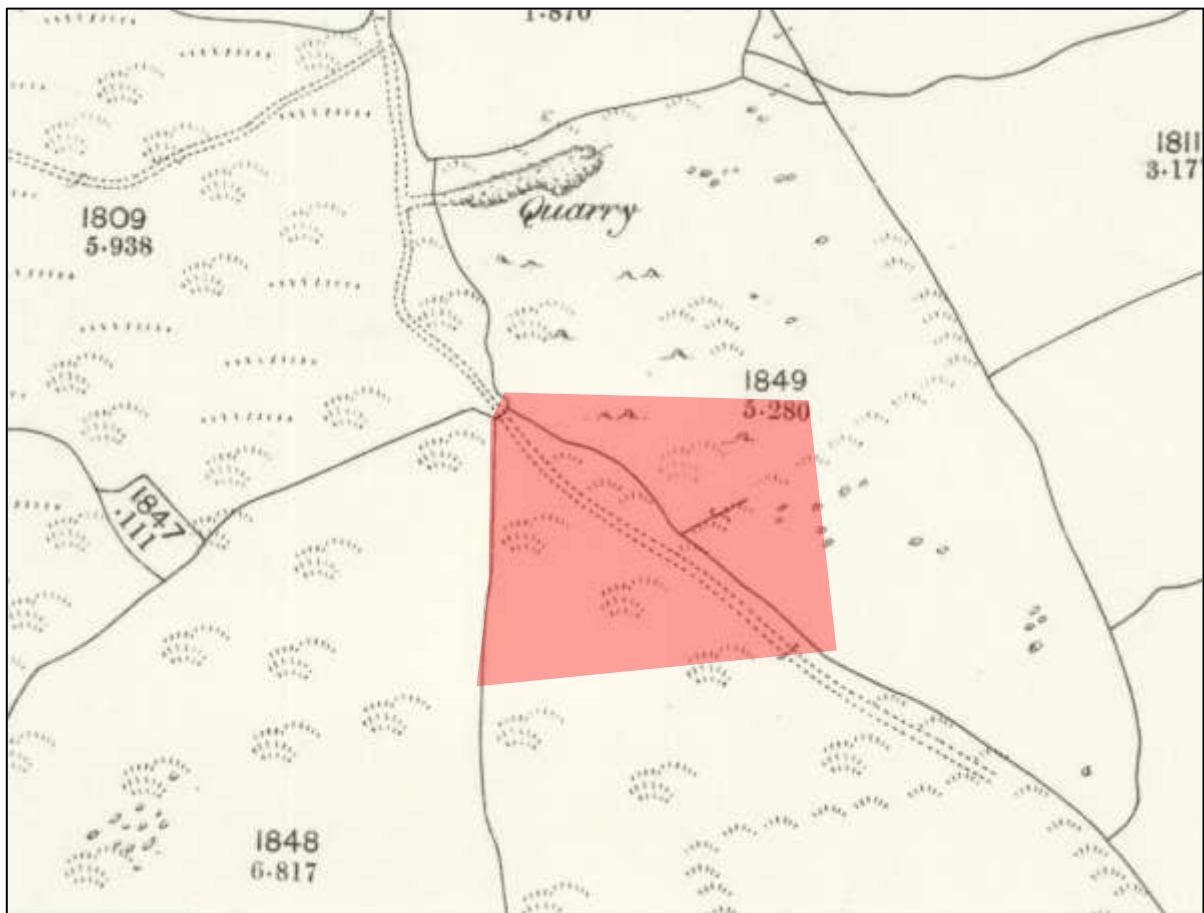


FIGURE 13: EXTRACT FROM THE ORDNANCE SURVEY 1ST REVISION 25" MAP OF 1879 (CRO), APPROXIMATE LOCATION OF THE SITE IS INDICATED.

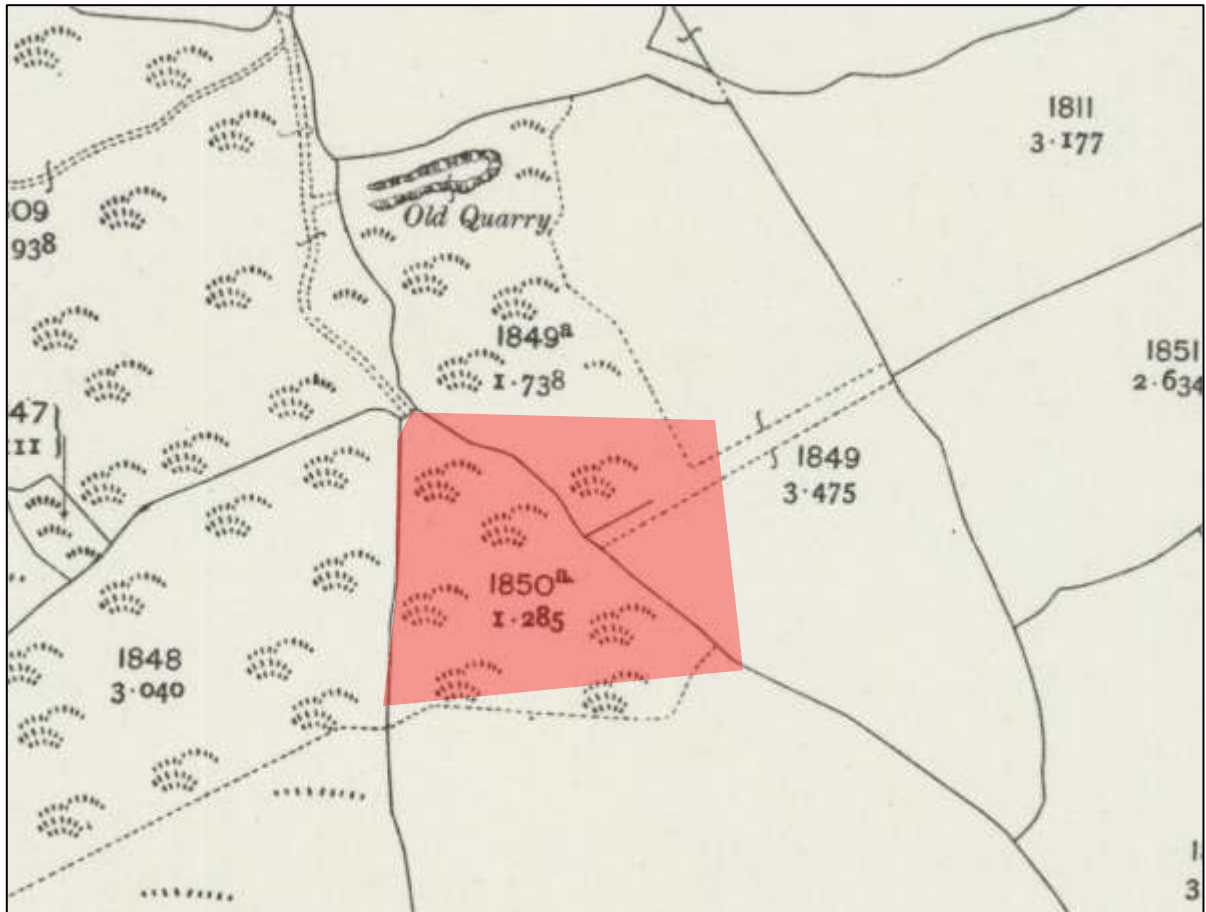


FIGURE 14: EXTRACT FROM THE ORDNANCE SURVEY 2ND REVISION 25" MAP OF 1907 (CRO), APPROXIMATE LOCATION OF THE SITE IS INDICATED.

APPENDIX 3: SUPPORTING PHOTOGRAPHS; SITE INSPECTION



FIGURE 15: VIEW OF THE NORTH-WESTERN CORNER OF THE SITE; VIEWED FROM THE NORTH-WEST (NO SCALE).



FIGURE 16: VIEW OF THE EXISTING PIT DUG APPROXIMATELY HALFWAY ALONG THE NORTHERN BORDER OF THE SITE; VIEWED FROM THE SOUTH-WEST (NO SCALE).



FIGURE 17: VIEW OF THE EXISTING PIT DUG APPROXIMATELY HALFWAY ALONG THE NORTHERN BORDER OF THE SITE; VIEWED FROM THE SOUTH (NO SCALE).



FIGURE 18: VIEW OF THE NORTHERN BOUNDARY OF THE SITE; VIEWED FROM THE SOUTH (NO SCALE).



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