

LAND EAST OF HOWELLS ROAD

STRATTON

BUDE

CORNWALL

Results of a Geophysical Survey



South West Archaeology Ltd. report no. 191213



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Land East of Howells Road, Stratton, Bude, Cornwall

Results of a Geophysical Survey

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Work undertaken by SWARCH for
A Private Client (the Client)

SUMMARY

This report presents the results of a geophysical survey carried out by South West Archaeology Ltd. (SWARCH) to accompany a planning application for the proposed residential development on land east of Howells Road, Stratton, Cornwall. The proposal site is located on the north-west-facing slope of a river valley overlooking Stratton. The site comprises portions of four agricultural fields, within an irregular block of land east of Howell's Road (the A3072) and south of a tributary of the River Strat at the south-eastern edge of the settlement of Stratton.

The geophysical survey identified a series of anomalies across the site including: linear bank and ditch features which, given their alignment can be seen to match various elements of the existing boundaries, and indicates that they likely reflect earlier phases of the same field-systems; which gently curve suggesting that they are base dupon medieval strip-fields. There were also a small number of anomalies indicative of shallow possible drainage/boundary features; and discrete pit features.

The results of the geophysical survey would suggest that the archaeological potential of the site is low; and that further archaeological mitigation would not be deemed necessary as it would add little to the existing record.



December 2019

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1.0 INTRODUCTION

LOCATION:	HOWELLS ROAD, STRATTON
PARISH:	BUDE-STRATTON
COUNTY:	CORNWALL
NGR:	SS 223239 106290
PLANNING NO.	PRE-PLANNING
SWARCH REF.	SHR19

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by a Private Client (the Client) to undertake a geophysical survey to accompany a pre-planning application for a proposed residential development on land east of Howells Road, Stratton, Cornwall to inform future development and/or further works. This work was undertaken in line with best practice and ClfA guidelines.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The proposal site is located on the north-west-facing slope of a river valley overlooking Stratton at a height of between approximately c.40-50m AOD. The site comprises portions of four agricultural fields, within an irregular block of land east of the A3072 Howell's Road and south of a tributary of the River Strat at the south-eastern edge of the settlement of Stratton, c.1.5km east of Bude. The soils of this area are the well-drained fine loamy soils of the Neath Association where they border the well-drained fine loamy or fine silty soils of the Manod Association (SSEW 1983); which overlie superficial deposits of alluvial clay, silt, sand, and gravel; and the sandstone of the Bude Formation (BGS 2019).

1.3 HISTORICAL & ARCHAEOLOGICAL BACKGROUND

Howells road, Stratton is situated within the parish of Stratton, in the Deanery of Trigg Major and the Hundred of Stratton. It is bounded on the north by Poughill, on the east by Launcells, on the south by Marhamchurch, and on the west by the sea (Lysons 1814). The parish name is said to have derived from the Cornish, meaning 'valley of the River Neet', however, a more plausible explanation, for the name is that it derived from the Roman road near to which it stands (Padel 1985). The parish was originally called Bude-Stratton, the two parishes of Bude Haven and Stratton were separated from each other in 1836, however they were joined again to form the civil parish of Bude-Stratton. The earliest mention of Stratton was in King Alfred's will of c.901 and the Domesday survey of 1086, before the conquest the manor had been held by Bishop Osbern and Alfred the Marshal (Thorn 1985).

The site is located on land characterised by the Cornwall and Scilly Historic Landscape Characterisation (HLC) as medieval farmland. Known heritage assets in the vicinity include one Scheduled round enclosure (DCO1715) approx. 1km north-west of the site; numerous listed buildings nearby including Grade I listed Church of St. Andrew (Listing 1279033) to the north and Grade II Listed 18th century Tudor Cottage on Howells Road (Listing 1229834). The Cornwall Historic Environment Record (HER) documents evidence for Iron Age settlement activity to the west of Stratton at the site of the A39, following a ridgeway.

1.4 METHODOLOGY

This work was undertaken in accordance with the CfA (2014) guidelines and best practice. 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* (CfA 2014).



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

2.0 GEOPHYSICAL SURVEY

2.1 INTRODUCTION

An area of c.1.2ha 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 11th of December 2019 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* (CIfA 2014).

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 of particular grids.

Details: 1.2075ha surveyed; Max. 99.47nT, Min. -100.20nT; Standard Deviation 5.04nT, mean - 0.02nT, median 0.00nT.

2.3 SITE INSPECTION

The site comprises three areas (Fields F1-F3) within four irregular fields currently all in use as agricultural land east of Howell's Road and south of a tributary of the River Strat on the south-eastern edge of the settlement of Stratton.

The majority of the fields contained moderately short pasture agricultural land; though the north-western field was in use as allotments and was therefore not suitable for surveying. The boundaries of the fields were all low earth and stone hedgebank with some additional wooden post and wire fences in front. The ground across the site varied from being largely moderately level to the north, to more steeply sloping down from the south and including areas of significant undulations. Reed growth along the flatter northern parts of the site indicate that these areas become seasonally waterlogged. A large sub-oval pit earthwork feature was identified towards the western edge of F3.



FIGURE 2: SITE PLAN SHOWING EXTENT OF PROPOSAL AREAS (OUTLINED IN BLUE) AND GEOPHYSICAL SURVEY AREAS (RED) WITH FIELD NUMBERING.

2.4 RESULTS

Table 1 with the accompanying Figures 3 and 4 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	Weak to moderate positive and negative, probable	Linear	Field boundaries	Indicative of bank material with flanking infilled cut features indicative of ditches to one side. Weak responses suggest only shallow survival or masking by local geology. Boundary does not appear on historic mapping but appears associated with older elements of the existing field-system. Responses of between -15.16nT and +7.87nT.
2	Weak mixed positive and negative, possible	Linear	Field boundary	Mixed bipolar response. May be indicative of more recent field drainage or services trenching, though shape of the anomaly may indicate a rectangular enclosure. Responses of between c.-11.51nT and +9.23nT.
3	Weak positive, probable	Ovoid	Pit	Indicative of a discrete infilled cut feature such as a pit. Visible on the ground as an earthwork and may be modern. Weak responses due to centre of pit not being surveyed on health & safety grounds. Responses of between +1.53nT and +8.05nT.
4	Weak positive and negative, possible	Linear	Geological variation	Mixed responses indicative of disturbed ground coinciding with break of slope from sloping to level ground. Likely to reflect geological variation. Responses of between -4.32nT and +6.28nT.
5	Strong positive, possible	Ovoid	Possible pits	Indicative of infilled cut features such as pits. Responses of between +8.49nT and +79.06nT.
	Strong bipolar (mixed response)	Discrete	Ferrous anomaly	Indicative of a metallic object. Responses of between -89.66nT and +94.98nT.
	Strong bipolar (mixed response)	Irregular	Modern disturbance	Indicative of disturbed ground and disturbance caused by proximity to metallic fences and debris. Responses of between -90.91nT and +96.67nT.

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.



FIGURE 3: SHADE PLOT OF GRADIOMETER SURVEY DATA; BANDWEIGHT EQUALISED, GRADIATED SHADING.

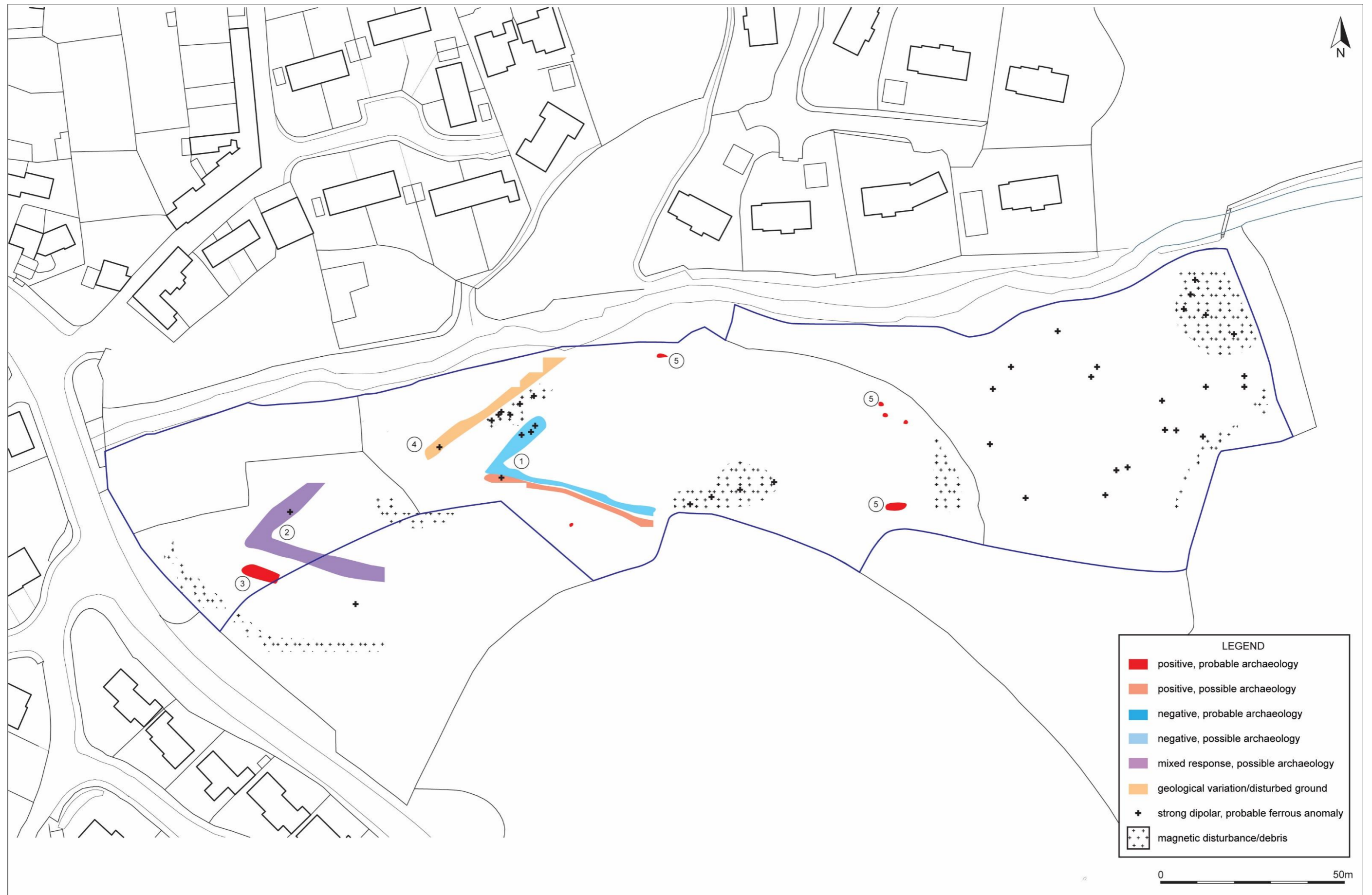


FIGURE 4: INTERPRETATION OF GRADIOMETER SURVEY DATA.

2.5 DISCUSSION

The survey identified 5 groups of anomalies comprised of 9 anomalies. Group 3 is of possible modern origin; Group 4 is likely of geological origin; and all other groups are of probable archaeological origin. Instances of magnetic debris and disturbance also occurred, whilst high levels of disturbance, particularly at the eastern edge of the site reflect the waterlogged nature of parts of the site. The identified features were a mix of linear anomalies associated with historic boundaries. The general geological variation across the site was between +/-2nT. Cartographic and visual sources supporting the discussion and comments can be seen in Appendices 2 and 3.

Anomaly Group 1 consists of a weak to moderate (-15.16nT to -1.60nT) negative linear response indicative of bank material flanked to the south by an associated weak (+0.79nT to +7.87nT) positive linear response indicative of an infilled cut ditch. The weak nature of the responses suggests that there is only shallow survival or local geological masking of the feature. Whilst this feature is not depicted on historic mapping, the position and approximate north-west to south-east alignment and slightly curving nature suggests that this boundary is associated with an earlier phase of the existing field-system.

Anomaly Group 2 consists of a weak (-11.51nT to -1.67nT) negative and (+0.94nT to +9.23nT) positive mixed bipolar responses and may be indicative of field drainage or service trenching; though the north-west to south-east turning from north-east to south-west corner alignment may suggest that the anomaly represents the corner of a rectangular enclosure. The orientation is identical to anomaly Group 1, and it most likely forms part of the same historic field-system.

Anomaly Group 3 consists of a weak (+1.53nT to +8.05nT) positive discrete ovoid response indicative of an infilled cut pit. The weak nature of the response is a result of the main bulk of the pit not being surveyed due to the depth and steep nature of the surviving earthwork pit identified in the site inspection.

Anomaly Group 4 consists of a weak (-4.32nT to -0.82nT) negative and (+1.90nT to 6.28nT) positive mixed linear response indicative of geological variation is associated with the break of slope at this point of the site.

Anomaly Group 5 consists of a series of strong (+8.49nT to +79.06nT) positive discrete ovoid responses indicative of infilled cut pits.

Modern disturbance, Di-Polar anomalies and magnetic disturbance are also located across the site, particularly around the site boundaries. This is likely due to modern or metallic debris and metallic components along the boundaries of the field; whilst the presence of a large number of metallic objects likely reflects the use of the site as a campsite.

3.0 CONCLUSION

The proposal site is located to the south-east of the settlement of Stratton on the north coast of Cornwall; and comprises three areas across four fields which form predominantly agricultural land.

The geophysical survey identified a series of anomalies across the site including: linear bank and ditch features which, given their alignment can be seen to match various elements of the existing boundaries, and indicates that they likely reflect earlier phases of the same field-systems; shallow possible drainage/boundary features; and discrete pit features.

Assessment of the available historic mapping and Cornwall Historic Environment Records indicates that the site has remained largely undeveloped since at least the mid-19th century, though Ordnance Survey mapping suggests that cottages existed in the area of allotments which has not survived, and that there is the potential for identification of lost cottages. The site sits within a landscape with prehistoric origins; but which is dominated by medieval and post-medieval field-systems and enclosure.

The results of the geophysical survey would suggest that the archaeological potential of the site is *low*; and that further archaeological mitigation would not be deemed necessary as it would add little to the existing record.

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http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html

APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY



FIGURE 5: GEOPHYSICAL SURVEY GRID LOCATION AND NUMBERING.



FIGURE 6: SHADE PLOT OF GRADIOMETER SURVEY DATA; MINIMAL PROCESSING.



FIGURE 7: RED GREYSCALE BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED, GRADIATED SHADING.

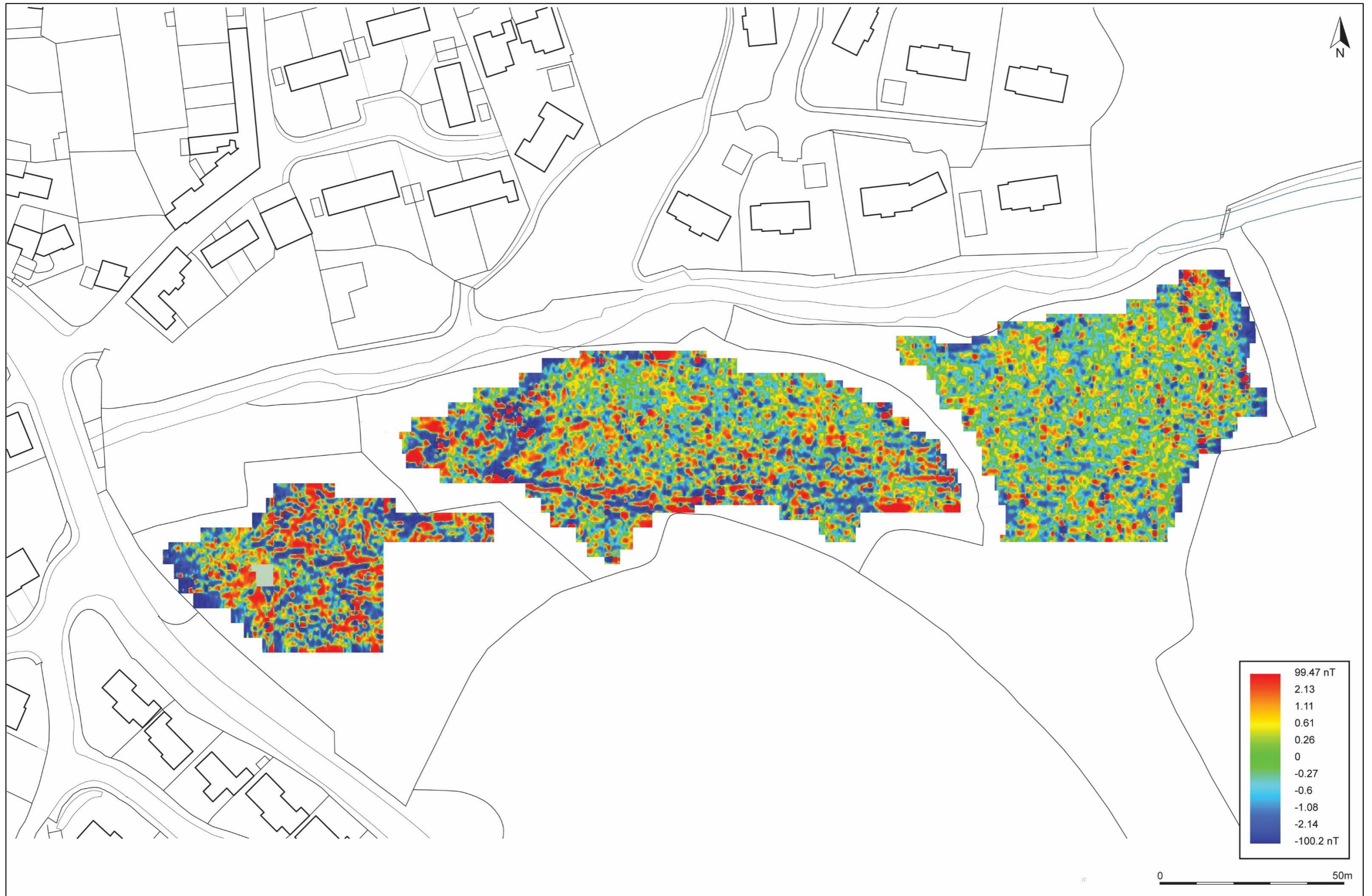


FIGURE 8: RED-BLUE-GREEN SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED, GRADIATED SHADING.

APPENDIX 2: SUPPORTING CARTOGRAPHIC EVIDENCE

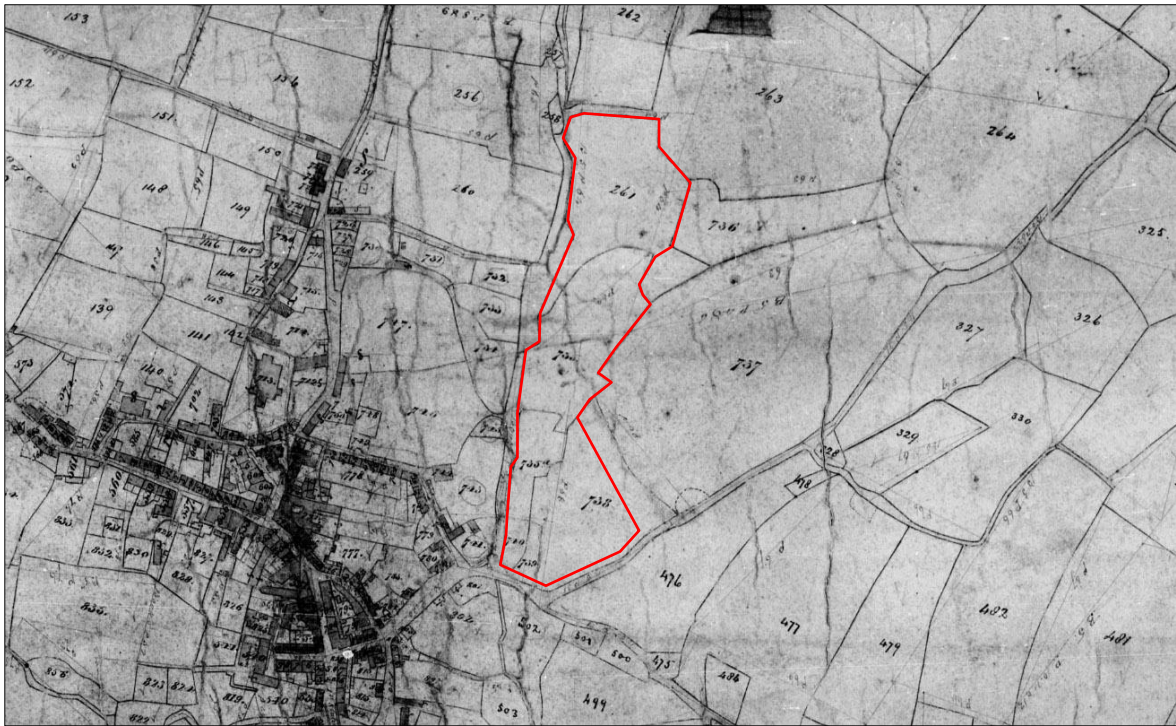


FIGURE 9: EXTRACT FROM THE 1840 BUDE-STRATTON TITHE MAP; THE APPROXIMATE OUTLINE OF THE SITE IS INDICATED.

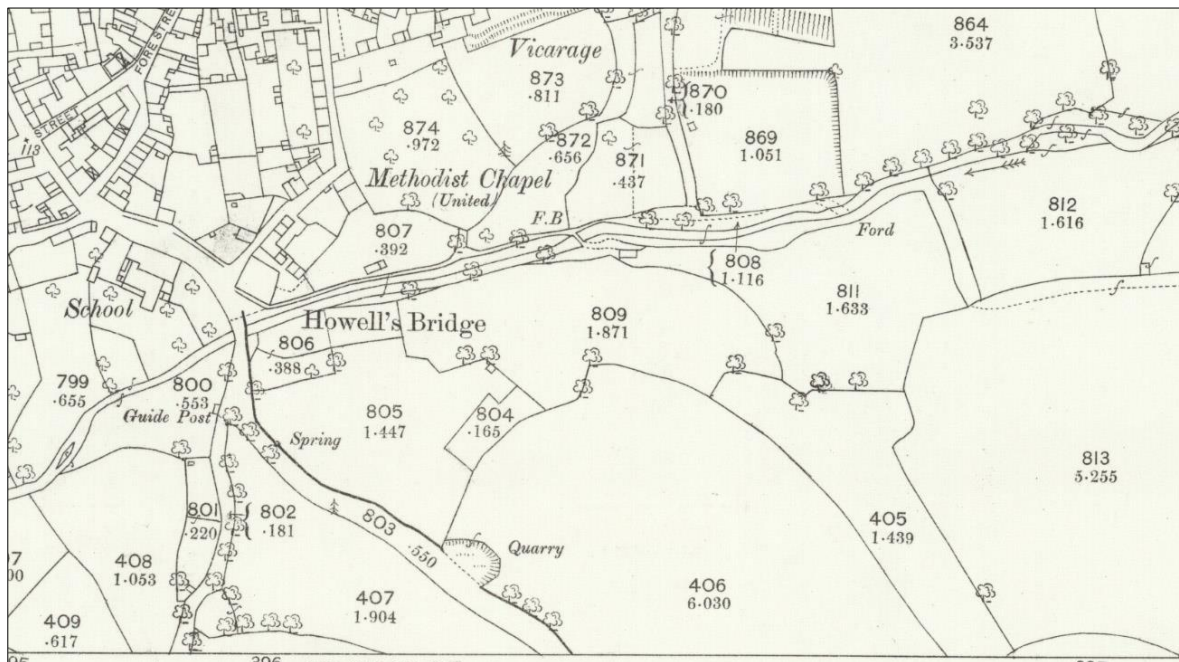


FIGURE 10: EXTRACT FROM THE 1885 ORDNANCE SURVEY 1ST EDITION MAP; THE APPROXIMATE OUTLINE OF THE SITE IS INDICATED.

APPENDIX 3: SUPPORTING PHOTOGRAPHIC EVIDENCE



1. VIEW OF SOUTH-WEST END OF F3; VIEWED FROM THE NORTH-WEST.



2. VIEW OF F3; VIEWED FROM THE WEST.



3. VIEW OF THE NORTH-EAST CORNER AND EAST PART OF F3; VIEWED FROM THE WEST.



4. VIEW OF THE OPENING BETWEEN F2 AND F3; VIEWED FROM THE SOUTH-WEST.



5. VIEW OF THE NORTH-WEST CORNER OF F2; VIEWED FROM THE SOUTH-EAST.



6. VIEW ACROSS F2; VIEWED FROM THE WEST.



7. VIEW ACROSS F2; VIEWED FROM THE EAST.



8. VIEW OF SOUTHERN FIELD BOUNDARY IN F2; VIEWED FROM THE WEST.



9. VIEW OF GATEWAY BETWEEN F2 AND F1; VIEWED FROM THE WEST.



10. VIEW ACROSS F1; VIEWED FROM THE SOUTH-WEST.



11. PARTIAL VIEW OF EASTERN CORNER OF F1; VIEWED FROM THE WEST.



12. VIEW OF ALLOTMENTS NORTH-WEST OF F3; VIEWED FROM THE WEST.



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