LAND at NEWTON HOUSE
BLISLAND
CORNWALL

Results of a Geophysical Survey

South West Archaeology Ltd. report no. 160224

South West Archaeology Ltd.

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Land at Newton House, Blisland, Cornwall
Results of a Geophysical Survey

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Work undertaken by SWARCH for Deborah McCann
on behalf of Jonathan Stirling

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Summary

South West Archaeology Ltd. was commissioned by Deborah McCann (the agent) on behalf of Jonathon Stirling (the client) to undertake a geophysical survey on land at Newton House, Blisland, Bodmin, Cornwall. The work was carried out as part of a submitted application for a residential housing development.

The site is located on gently sloping land in the centre of the village of Blisland, to the east of the 17th century manor house, and to the north-east of the Norman church. The survey area comprised a single roughly rectangular field sub-divided into three smaller paddocks, currently under pasture.

The geophysical survey identified six groups of anomalies, primarily linear features of probable archaeological origin and of a likely post-medieval date. All are likely to relate to former agricultural use of the land, including a number of field-drains, some of which may be stone-lined or ceramic. A possible former hedgebank was also identified, of possible earlier origin as it is not recorded on the historic mapping.

Any proposed development is likely to disturb buried archaeological deposits or remains, however, the probable features identified in this survey are of low significance and the site has a low potential for significant archaeological deposits or remains.

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ACKNOWLEDGEMENTS

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PROJECT CREDITS

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1.0 INTRODUCTION

Location: Land at Newton House
Parish: Blisland
County: Cornwall
NGR: SX 10212 73209

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Deborah McCann (the Agent) on behalf of Jonathan Stirling (the Client) to undertake a geophysical survey as part of a submitted application for a residential housing development.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

Blisland is situated approximately 7km north-east of Bodmin on the western edge of Bodmin Moor. The site is located in the centre of the village, on gently sloping land to the east of the Manor House, and north-east of the church. The survey area comprised a single roughly rectangular field, which is sub-divided into three smaller paddocks and currently under pasture (see Figure 1).

The soils in this area are the well drained loamy soils of the Denbigh 2 Formation (SSEW 1983), which overlie the slate and siltstone of the Trevose Slate Formation and Rosenum Formation (BGS 2016).

1.3 HISTORICAL BACKGROUND

The proposal site is located in the ecclesiastical parish of Blisland, in the hundred of Trigg and deanery of Trigg-Minor. Blisland is a former Domesday manor belonging to the king with four hides and land for 30 ploughs (Williams and Martin 2002). The church has Norman origins, with 15th to 18th century additions and 19th century restorations. The name Blisland, originally *Glustone* (possibly a variation of *Bluston*), incorporates an unidentified element and the Old English *tūn* (farm, village), later replaced with land (Watts 2010).

1.4 ARCHAEOLOGICAL BACKGROUND

The historic fieldscape of the area, including the proposed development site, is characterised by the Cornwall Council Historic Landscape Characterisation (HLC) as predominantly medieval farmland. The village of Blisland is recorded as 20th century settlement, though developed from a medieval settlement. Medieval farmland is described as Anciently Enclosed Land (AEL) and formed the agricultural heartland of Cornwall, with the settlements and field systems typically having clear medieval antecedents. AEL has also been demonstrated to indicate areas first settled, enclosed and farmed during late Prehistory i.e. the Middle Bronze Age (c. 1500-1000 BC) until the Roman period (AD 43-410) and continuing into the early medieval period (AD 410-1066). It is considered highly likely that buried archaeology dating to the Prehistoric and Romano-British periods generally survives within areas of AEL.

A number of heritage assets are recorded in close proximity to the proposed development site, including the site of a Neolithic or Bronze Age standing stone; and numerous medieval settlements, and crosses. Of the latter, the remains of one are recorded on Ordnance Survey mapping, though the Cornwall HER suggests that it may be a possible post-medieval rubbing stone. The majority of the assets, however, are post-medieval in date and relate to the development of Blisland, with the late 16th century Grade II listed Newton House and 17th century Manor House to the immediate west of the site. The wider area includes a significant prehistoric landscape which includes: Stipple Stones Henge, Trippet Stones, and a number of barrows, huts and further stone circles.

1.5 METHODOLOGY

This document follows a methodology of best practice in accordance with guidelines set out by the Chartered Institute for Archaeologists (CIfA).

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* (CIfA 2014b).

'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 2014).

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 the threat to the archaeological resource.

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

2.0 GRADIOMETER SURVEY

2.1 INTRODUCTION

The purpose of this gradiometer 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 identified anomalies. The survey was undertaken on the 19th February 2016 by P. Webb in dry and sunny conditions. The survey data was processed by P. Webb using *TerraSurveyor*. An area of approximately 1.03ha was surveyed.

The survey identified six groups of anomalies. The majority of these were linear features of probable archaeological origin and of a likely post-medieval date. Group 1 represents two modern drains with associated man-hole covers and a modern pipe or cable trench. Groups 2 and 3 signify a series of probable field drains of likely post-medieval origin. Group 4 represents a ploughed-out bank and possible shallow ditch of possible medieval date. Group 5 denotes a weaker curvilinear response, possibly a ploughed out mound of unknown date. Group 6 is a series of cut features, possibly pits of an unknown date. Anomalies indicative of modern ploughing activities, including wheel ruts and metallic debris are also present.

2.2 SITE INSPECTION

The site comprised a single field sub-divided into three by two wooden post and wire fences. At the time of survey it was under pasture, with areas of hardstanding in the north-east and north-west corners. The survey area was bounded to the north and south by roads lined by modern housing. To the west was the late 16th century Newton House, whilst to the east are further open agricultural fields. The site occupies a gently sloping hillside, the ground falling away to the south-east, and particularly more steeply in the south-west corner. The field is bounded by a series of Cornish hedgebanks with native deciduous trees and showing signs of collapse and repair in several areas. Whilst no earthworks were evident on the ground, three upright stone posts indicative of a former field boundary on a north to south alignment were present. These were abutted by the existing north to south wire fence suggesting that it represents a continuation of an earlier boundary. The possible medieval cross fragment or rubbing stone was also noted on the northern side of a tree in the centre of western site sub-division. A compliment of supporting photographs of the site can be seen in Appendix 1.

2.3 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 0.5ha. 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 outbound by +1 interval (all grids).

Details: 1.028ha surveyed; Max. 146.63nT, Min. -134.40nT; Standard Deviation 19.39nT, mean -3.48nT, median -0.05nT.

2.4 RESULTS

Figures 2 and 3 with the accompanying Table 1 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 2.

Anomaly group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Strong negative with associated positive, probable	Linear, sub-rectangular	Services	Modern services with strong negative responses associated with positive responses (c.-28nT to 11nT). Nodal points depicted by strong metallic responses (c.+/-100nT) indicating man-hole covers.
2	Weak mixed, possible	Linear	Drains	Weak mixed responses, predominantly c.+12nT may be associated with a series of field-drains.
3	Mixed, probable	Linear	Drains	Mixed responses, predominantly c.-20nT, may be indicative of stone-lined or ceramic field-drains.
4	Negative with associated positive, probable	Linear	Field Boundary	Possible relict Medieval or post-Medieval field boundary formed by possible bank material (-10nT) flanked to the west by a possible ditch (<+10nT) indicative of Cornish hedgebank.
5	Negative, possible	Sub-oval/curvi-linear	Mound or bank	Negative response formed by possible bank material (c.-20 to -1.5nT) perhaps indicative of a ploughed out mound or banked area.
6	Positive, possible	Sub-oval	Pits	Large positive points, although with weak relatively weak responses (c.+10-30nT) indicative of cut features such as pits.

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.

FIGURE 2: SHADE PLOT OF GRADIOMETER SURVEY DATA (MINIMAL PROCESSING).

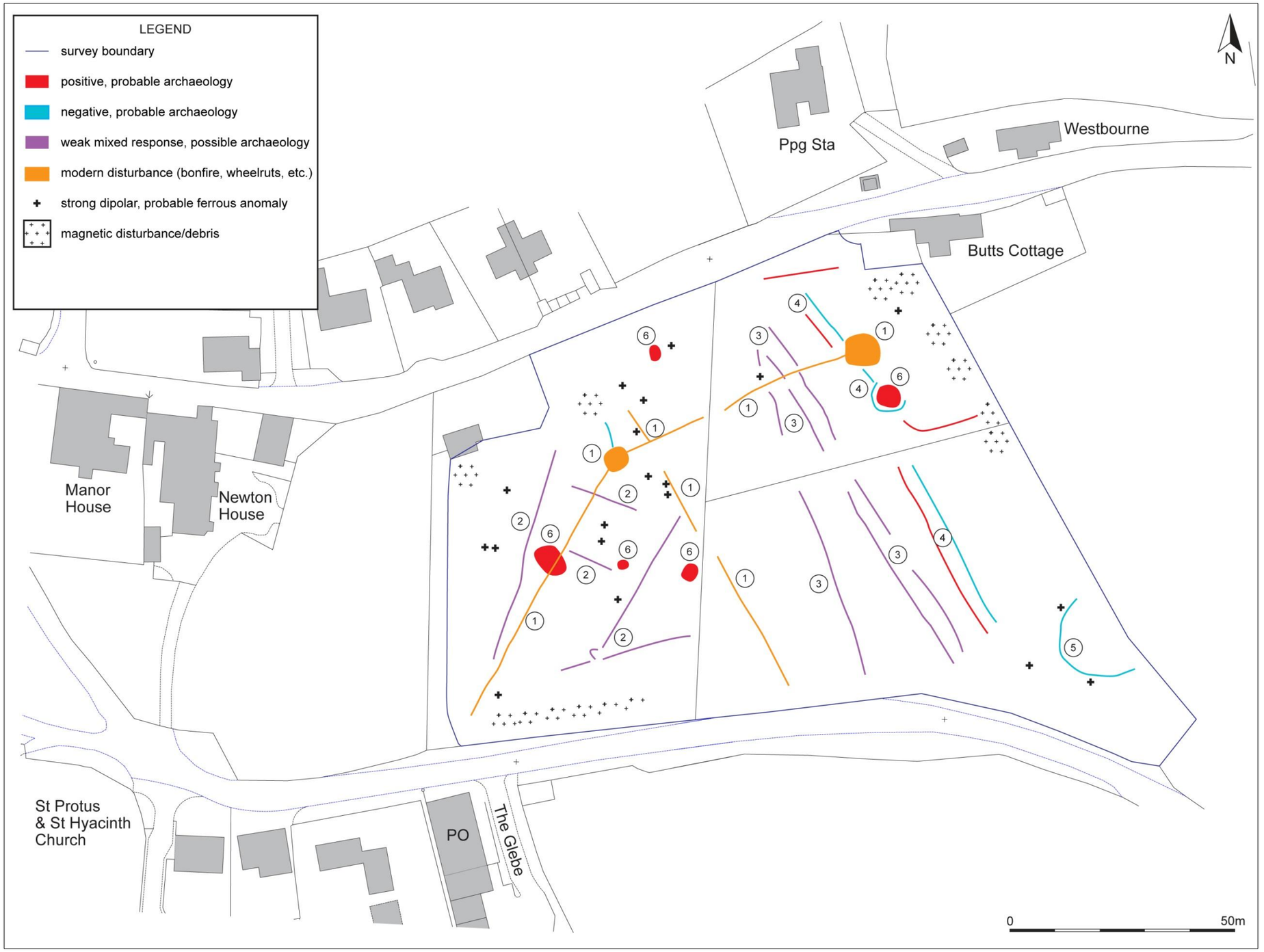

FIGURE 3: INTERPRETATION OF GRADIOMETER SURVEY DATA.

2.5 DISCUSSION

The survey identified six groups of anomalies. The majority of these were linear anomalies of probable archaeological origin and of a likely post-medieval date. Group 1 represents two modern drains with associated manhole covers and a modern pipe or cable trench. Groups 2 and 3 represent a series of probable field drains. Group 4 represents a ploughed out bank and possible shallow ditch of possible medieval date. Group 5 represents a weaker curvilinear response, possibly a ploughed out mound of unknown date. Group 6 are a series of cut features, possibly pits. Anomalies indicative of modern activities, including wheel ruts and metallic debris are also present.

Group 1 comprises three linear features with strong negative responses associated with positive readings, with nodal points indicated by very strong metallic responses. These equate to modern drainage and pipe or cable trenches relating to the modern settlement of Blisland.

Group 2 are five linear features with weak mixed, though predominantly positive, responses running in various directions across the site. They are indicative of shallow ditches or drains, though more likely to be the latter, forming elements of post-medieval drainage system for the fields.

Group 3 comprises a group of three linear features of mixed, though predominantly negative, responses running on approximate north to south or south-east alignments. The nature of the responses is indicative of them being either ceramic or stone-lined drains, and they are likely to form part of a similar drainage system to the features of Group 2.

Group 4 is a linear negative, with associated positive, anomaly indicative of being a linear Cornish hedgebank running north to south through the eastern half of the site, and on the same alignment as the existing eastern site boundary. That it runs parallel to this may suggest that it is an immediate predecessor, or formerly fitted within the same post-medieval field-system.

Group 5 comprises a curvilinear negative response indicative of bank material, perhaps suggesting the remains of a ploughed-out mound, of unknown origin or date. Given the topographical location and lack of a ditch it would appear unlikely that this feature represents the remains of a prehistoric barrow.

Group 6 are five sub-oval positive anomalies indicative of cut features, such as pits. They may indicate large tree-throws, geological anomalies, or pits.

A small amount of weak magnetic disturbance occurred around the boundary of the site and occasional instances of ferrous debris. The wheel ruts from recent agricultural and industrial machinery were visible in the eastern half of the site.

The disturbance caused by the modern fencing meant that the north to south field boundary identified on the historic maps in the same position (see Appendix 3) and so its earlier form remains unclear. However, the identification of three stone posts along the same alignment indicates that it may have been a fence or wall-line.

3.0 CONCLUSION

The geophysical survey identified six groups of anomalies, primarily linear features of probable archaeological origin and of likely post-medieval date. All are likely to relate to the former agricultural use of the land, including its drainage through a number of field-drains, some of which may be stone-lined or ceramic. A possible former Cornish hedgebank of potential post-medieval date was also identified along with a number of undated features and possible pits. Anomalies indicative of modern activities, including wheel ruts and metallic debris are also present.

Any proposed development is likely to disturb the surviving buried archaeological deposits or remains, however, the features identified in this survey are of low significance and the site has a low potential for significant archaeological deposits or remains.

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Cornwall Record Office:

Ordnance Survey 1st edition map of 1888

Ordnance Survey 2nd edition map of 1908

APPENDIX 1: SUPPORTING PHOTOGRAPHS

View of the eastern half of the site, from the entrance at the north-east corner; looking south (no scale).

View of the site, from the entrance at the north-east corner; looking south-west (no scale).

Detail of the eastern site boundary; looking south-east (no scale).

View of the northern half of the site, from mid-way along the eastern boundary; looking north-west (no scale).

View across the site from mid-way along the eastern boundary; looking west-south-west (no scale).

View of the southern half of the site; looking south-west (no scale).

Detail of the eastern site boundary; looking east (no scale).

View of the site from the south-east corner; looking north-west (no scale).

View of the eastern half of the site from mid-way along the southern boundary; looking north-east (no scale).

View of the western half of the site from mid-way along the southern boundary; looking north-west (no scale).

View along the north-south dividing fence-line; looking south-west (no scale).

View of the site from the north-west corner; looking south-east (no scale).

View along the southern boundary from the south-west corner; looking east (no scale).

Detail of the northern-most former gate-post in the north-eastern corner of the eastern half of the site; looking north-east (no scale).

Detail of the second former gate-post towards the north-east corner of the eastern western half of the site; looking south-east (no scale).

Detail of the third former gatepost towards the south-eastern corner of the western half of the site; looking east (no scale).

Detail of the possible remains of the medieval cross or post-medieval rubbing stone; looking south (no scale).

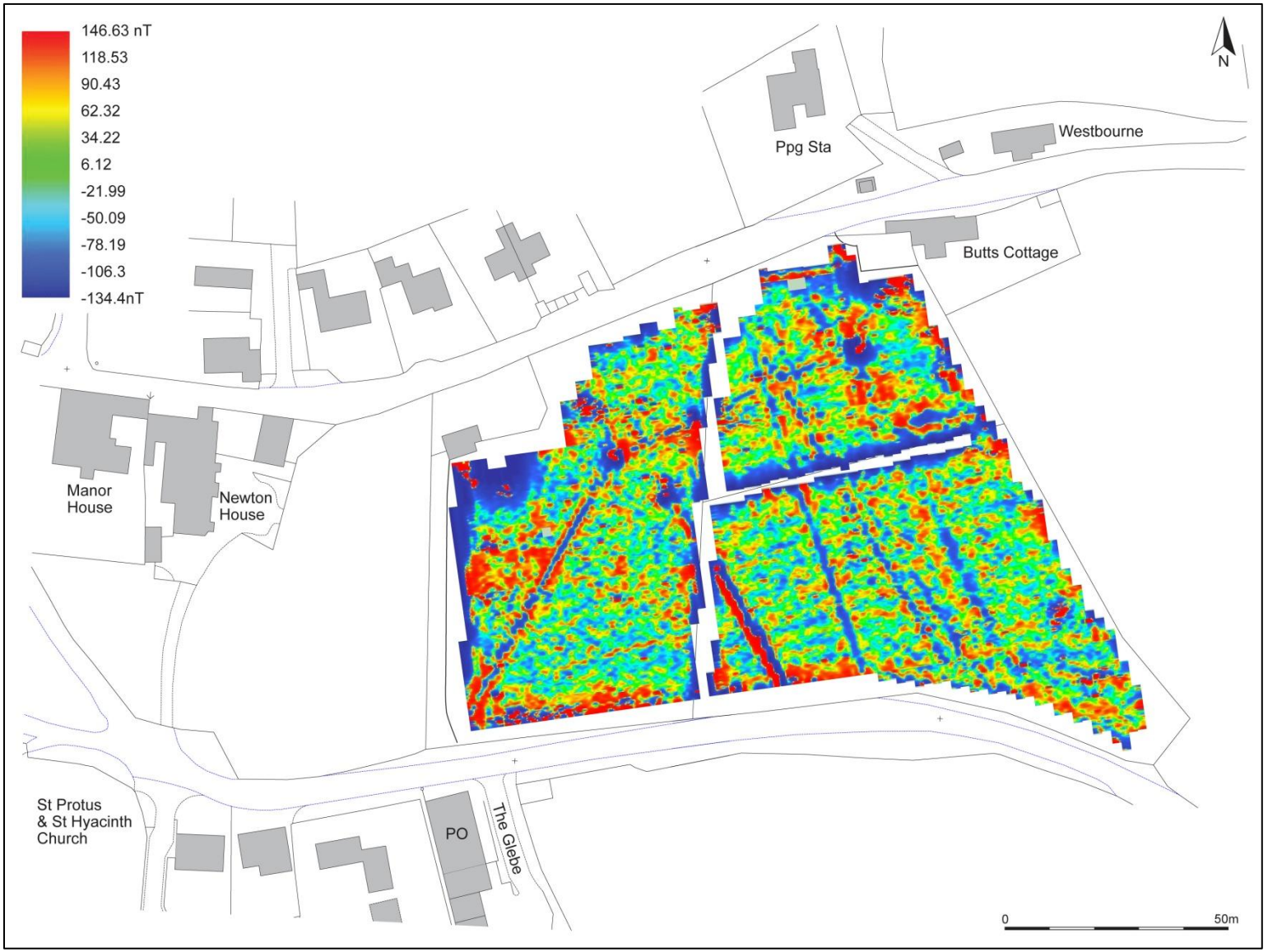
APPENDIX 2: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY

Geophysical survey grid location, layout and numbering.

Greyscale shade plot of gradiometer survey data; Gradiated Shading.

Greyscale shade plot of gradiometer survey data; Band Weight Equalised, Gradiated Shading.

Red-White-Blue shade plot of gradiometer survey data; Gradiated Shading.



Red-Green-Blue shade plot of gradiometer survey data; Band Weight Equalised, Gradiated Shading.

APPENDIX 3: SUPPORTING MAPS

Extract from the 1888 Ordnance Survey 1st Edition map of Cornwall (sheet XXVI).

Extract from the 1907 Ordnance Survey 2nd Edition map of Cornwall (sheet XXVI).

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