

**LAND ADJACENT TO MANATON DRIVE
DUNHEVED ROAD
LAUNCESTON
CORNWALL**

Results of a Geophysical Survey



South West Archaeology Ltd. report no. 190920



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Land adjacent to Manaton Drive, Dunheved Road, Launceston, Cornwall

Results of a Geophysical Survey

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Report Version FINAL
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Work undertaken by SWARCH for Cornwall Archaeological Unit (the Client)

SUMMARY

South West Archaeology Ltd. (SWARCH) was commissioned by Cornwall Archaeological Unit to undertake a geophysical survey for land adjacent to Manaton Drive, as part of the pre-development works required for the proposed development.

The proposed site is located towards the northern extent of the 20th century and later development of Launceston and south of the historic settlement. There is notable activity from multiple historic periods within the surrounding landscape, with areas of medieval farming surrounding the layout of the medieval setting of Launceston.

The geophysical survey identified multiple features, including the boundary visible on the tithe mapping. Linears running parallel to this boundary may indicate the presence of agricultural activity such as plough scars. A possible ditch or cut feature also runs along the eastern boundary and may be indicative of a previous field system. A modern utility was also present within the site; some of the survey area was under tree cover and could not be surveyed.



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ACKNOWLEDGEMENTS

CORNWALL ARCHAEOLOGICAL UNIT (THE CLIENTS)
 THE GENEALOGIST (GEN)
 NATIONAL LIBRARY OF SCOTLAND (NLS)

PROJECT CREDITS

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1.0 INTRODUCTION

LOCATION:	LAND ADJACENT TO MANATON DRIVE
PARISH:	LAUNCESTON
COUNTY:	CORNWALL
NGR:	SX 33061 84196
SWARCH REF.	MDL19

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Cornwall Archaeological Unit (the Client) to undertake a geophysical survey for land adjacent to Manaton Drive Club prior to the proposed housing development. This work was undertaken in accordance with best practice and ClfA guidelines.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The centre of the site is located c.454m to the south of Launceston castle, and c.700m north-east of Launceston junction off the A30. The site consists of a single small field surrounded by residential areas, with recent development present immediately to the west. Allotments are present to the south-east of the site. The only open views from the site are towards the west, visibility to the north and south are obscured by trees with the view to the east partially cut off by trees with only residential buildings remaining visible. The site was grassed at the time of the survey, with numerous trees and shrubs present within the site boundary, the site ranges from 154m Above Ordinance Datum (AOD) at the west extent to 159m AOD along the eastern boundary of the site.

The soils of this area are the well drained fine loamy soils of the Denbigh 2 Association (SSEW 1983), which overlie the sedimentary mudstone and sandstone of the Crackington Formation, with the slate and limestone of the Stourscombe formation immediately to the east of the site (BGS 2019).

1.3 HISTORICAL BACKGROUND

The site is located in the parish of Launceston, and is present within the 20th century expansion of the historic settlement. Launceston lies in the north-division of the hundred of East, and deanery of Trigg-Major. It is an ancient market and borough town, located on the mail-coach road from London to the Land's-end (now the A30). The manor of Launceston was owned by the Earls of Cornwall, and following its seizure by William the Conqueror, was given to his half-brother Robert, Earl of Morteyne. The 13th century castle was an important post during the civil war, being occupied at various points by both the Royalists and Parliamentarians. The town was made a free borough during the 13th century, and was incorporated in 1555.

Manaton house was built in the latter half of the 19th century, with no indication of the property on the tithe mapping, but prior to the 1st edition Ordnance Survey mapping. The site appears to be under agricultural use and becomes associated with Manaton at a later date.

1.4 METHODOLOGY

This work was undertaken in accordance with 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* (ClfA 2014b).



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

2.0 CARTOGRAPHIC DEVELOPMENT

The earliest cartographic source looked at for this study is the 1839 tithe mapping of St Mary Magdalene. The approximate location of the site is highlighted, and appears to be meadow and pasture, with the surrounding fields also being pasture. The field names and form suggest long term arable/pastoral usage, with *Pottery Field* indicating other usage. The boundary between plots 245 and 246 runs roughly east-west across the site. A table with the listings for the tithe apportionments is also listed below.

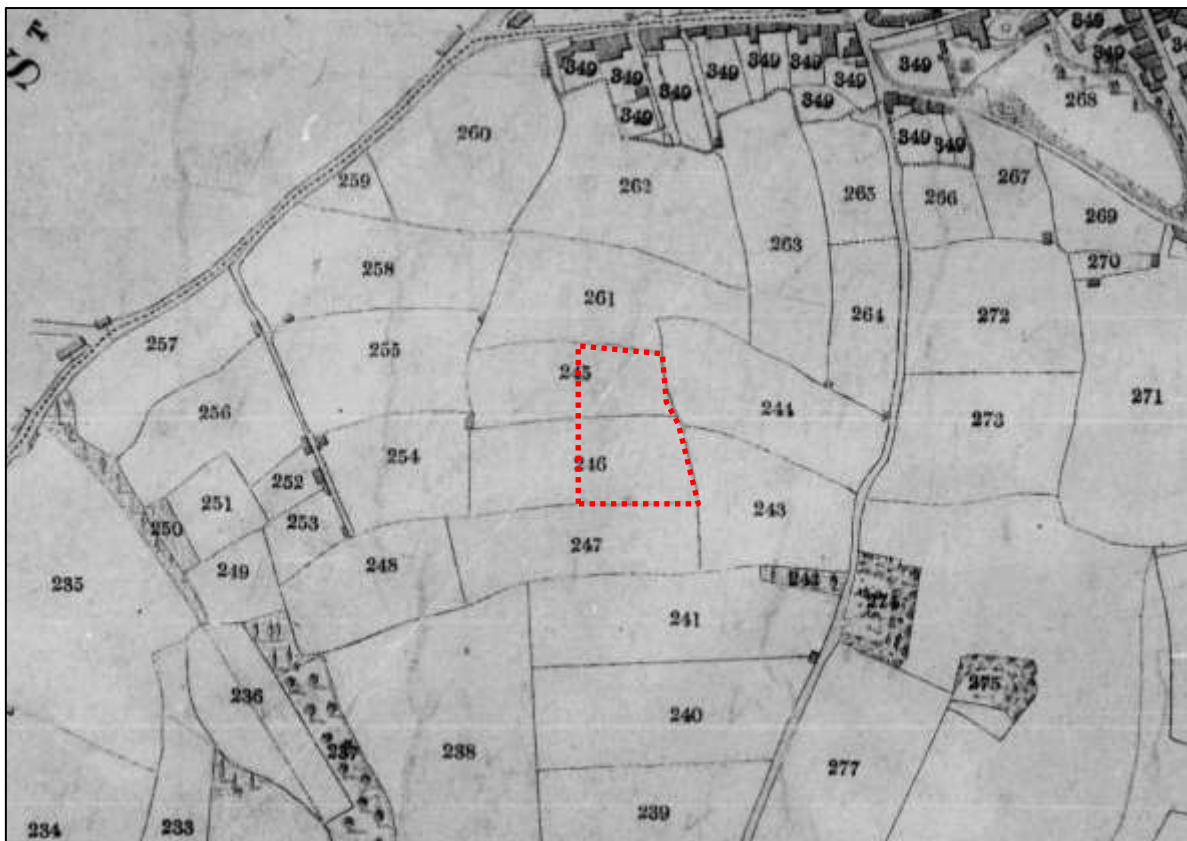


FIGURE 2: EXTRACT FROM THE 1839 ST MARY MAGDALENE TITHE MAP, THE APPROXIMATE SITE LOCATION IS INDICATED (GEN).

TABLE 1: EXTRACT FROM THE TITHE APPORTIONMENT OF 1841. THE SITE OCCUPIES THE PLOTS HIGHLIGHTED.

Landowner	Occupier	Farm name	Plot number	Plot name	Usage
Duke of Northumberland	James Deacon	Part Newton	243	Little Meadow	Meadow
James Westlake	George Pridham	Part Druckham	244	Westlakes Field	Meadow
John Ching		Hendra Lane	245	Post Meadow	Meadow
			246	Upper Meadow	Meadow & Pasture
Roberts	Henry Blake	Hay Common	247	Higher Meadow	Meadow
			248	Lower Meadow	
John Ching		Hendra Lane	254	Home Meadow	
			255	Pipe Meadow	
Thomas Pearse Esquire	Richard Wise	Great Pennygillam	261	Pottery Field	Meadow Garden

The Ordnance Survey (OS) 1st and 2nd edition maps (Figures 4 and 5, respectively) show the boundary between tithe plots 245 and 246 having been removed, meaning that it was likely removed in the second half of the 19th century, of comparable timing with the construction of Manaton House, which now occupies much of the western portion of tithe plots 245 and 246. Some expansion to Launceston seems to have taken place since the tithe mapping; with later

significant changes to the site through the 20th century include the residential areas surrounding the proposed development area.

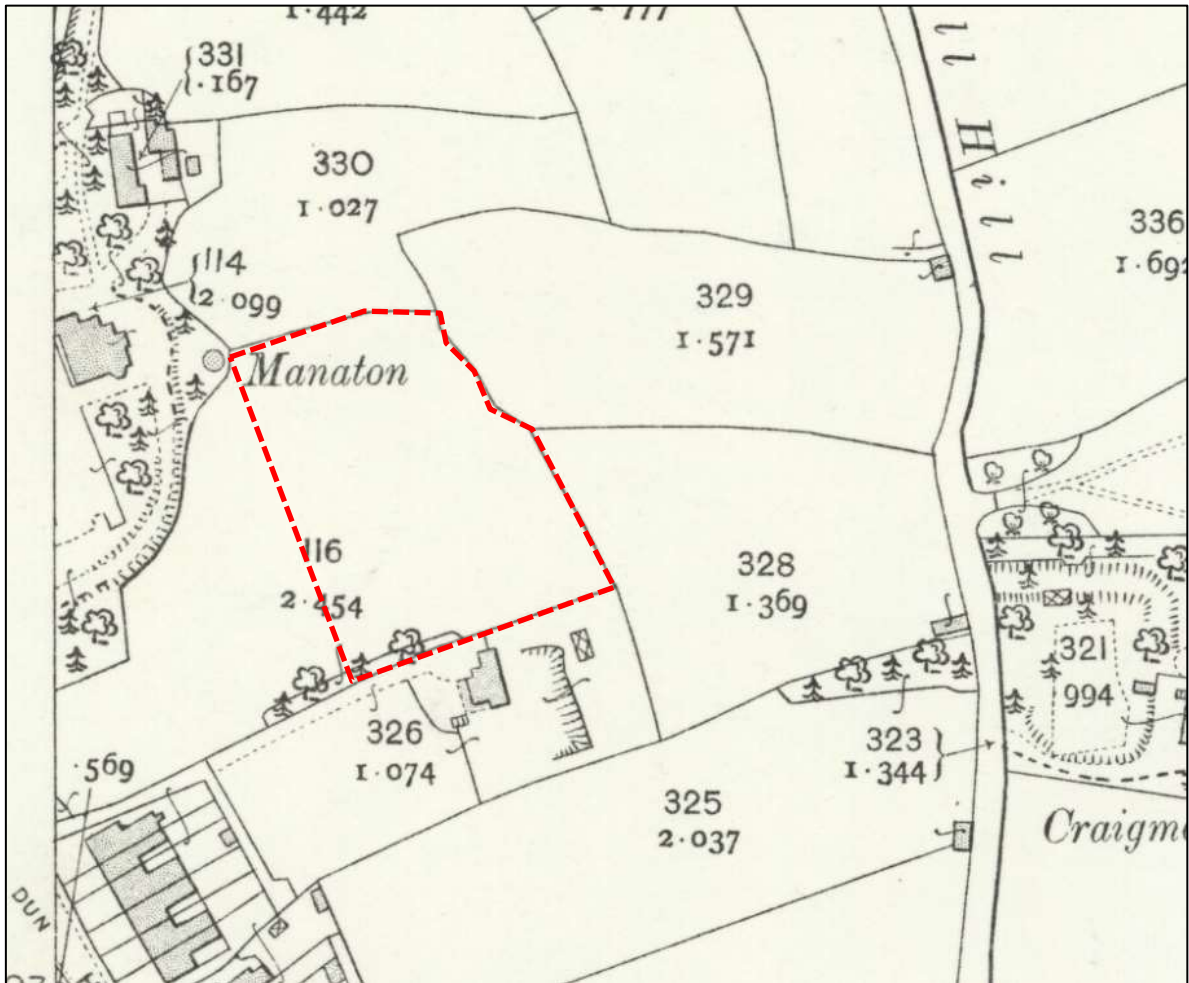


FIGURE 3: EXTRACT FROM THE OS 25 INCH MAP, PUBLISHED 1906. THE LOCATION OF THE SITE IS INDICATED (NLS).

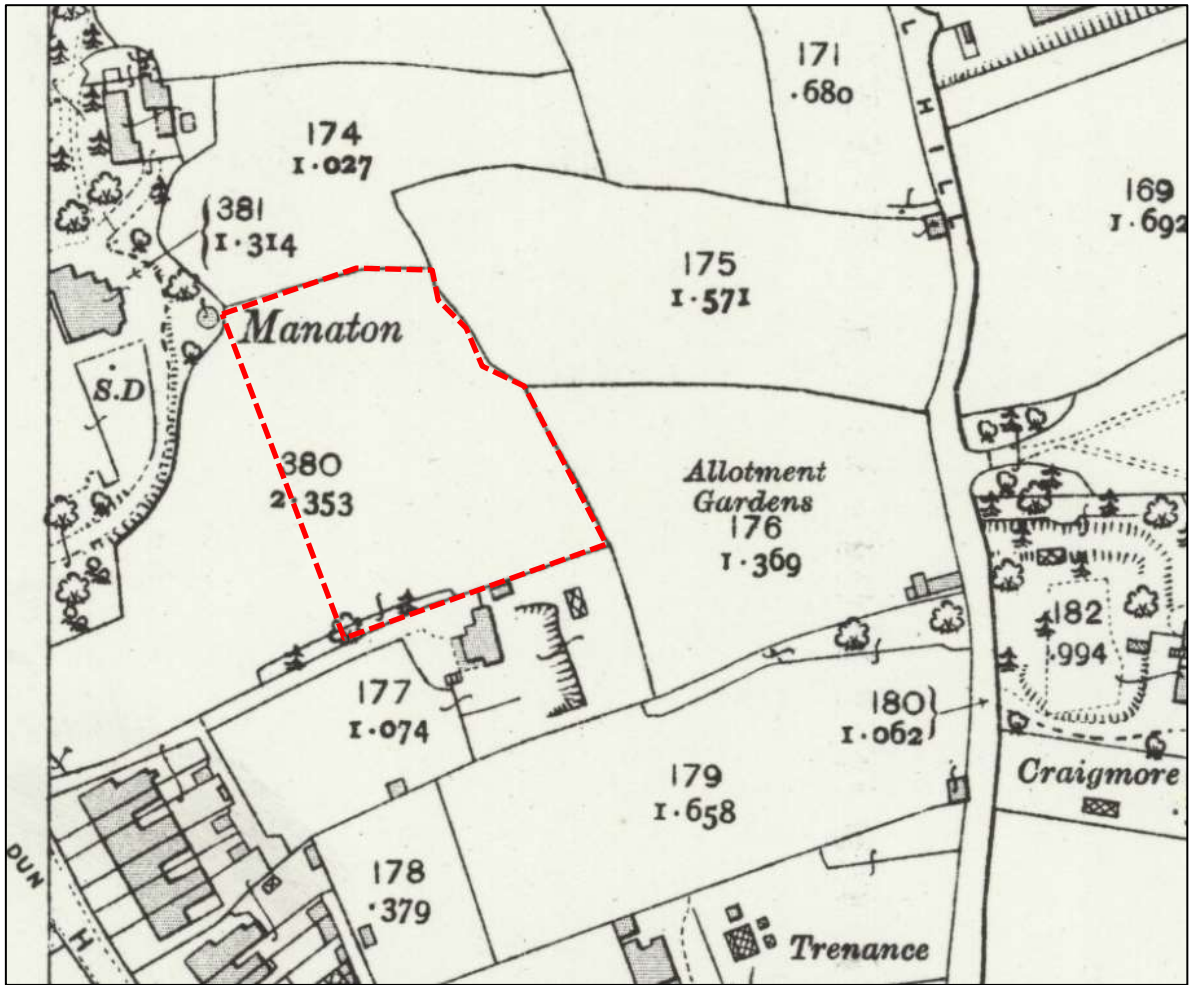


FIGURE 4: EXTRACT FROM THE OS 25 INCH MAP, PUBLISHED 1934. THE LOCATION OF THE SITE IS INDICATED (NLS).

3.0 GEOPHYSICAL SURVEY

3.1 INTRODUCTION

An area of c.0.3ha 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 18th of September 2019 by P. Bonvoisin; the survey data was processed by P. Bonvoisin.

3.2 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 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.

Area Details: 0.3018ha surveyed; Max. 116.59nT, Min. -110.49nT; Standard Deviation 14.10, mean -1.04nT, median 0.00nT.

3.3 SITE INSPECTION

The proposed development site and survey area covers a single field; the site lies immediately to the south-east of Manaton House and immediately east of Manaton Drive. Access to the site was via an unnamed residential lane off of Windmill Hill road. The historic centre of Launceston lies to the north of the site. The western boundary of the site comprises modern residential plank fencing, with the north and eastern boundaries of the site as neat stone lined hedgebanks, the southern boundary of the site comprised of an overgrown hedgebank and old metallic park fencing. The south-western corner of the site contained a gate with access to Manaton Drive. Two pedestrian gates were present in the north-eastern corner of the site and on the northern boundary. A manhole cover was present along the western boundary.

The south-eastern corner of the site and much of the southern boundary was unsurveyable due to mature trees, with further trees present towards the northern boundary, with this arrangement being more ornamental and curated. Some young birch and cherry trees are present in the north-western portion of the site but did not obstruct the survey. Wooden pegs were present across the site demarking the development plots, but these also did not obstruct the survey. A full complement of site photographs can be found in Appendix 2.



FIGURE 5: VIEW OF THE SOUTH-WESTERN CORNER OF THE SITE; VIEWED FROM THE NORTH-EAST (NO SCALE).



FIGURE 6: VIEW TOWARDS THE NORTHERN BOUNDARY OF THE SITE; VIEWED FROM THE SOUTH-EAST (NO SCALE).

3.4 RESULTS

Table 2 with the accompanying Figures 7 and 8, show the analysis and interpretation of the geophysical survey data. Additional graphic images of the survey data can be found in Appendix 1.

TABLE 2: INTERPRETATION OF GRADIOMETER SURVEY DATA.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Moderate positive, probable	Linear	Historic field boundary	Indicative of a ditch or similar boundary. Matches up with a field boundary shown on the tithe mapping. Responses of c.+18.47nT to c.+4.50nT.
2	Moderate positive, probable	Linear	Cut feature/agricultural linear	Indicative of a cut feature, such as a ditch. Runs parallel to anomaly group 5, likely related and a stronger response from agricultural linear. Responses of c.+9.81nT to c.+2.87nT.
3	Moderate positive, possible	Curvi-linear	Ditch or cut feature	Indicative of a discrete cut feature such as a ditch. Fragmentary survey response is not accurately representative of actual form. Responses of c.+12nT to c.+4nT.
4	Weak positive, possible	Curvi-linear	Ditch or cut feature	Indicative of a discrete cut feature such as a ditch. Fragmentary survey response is not accurately representative of actual form. Responses of c.+5nT.
5	Weak positive, probable	Parallel linears	Agricultural linears	Indicative of a cut features, likely associated with the previous field structure represented by anomaly group 1. Responses of c.+5-2nT.

3.5 DISCUSSION

The survey identified 5 groups of anomalies showing features of viable interest within the survey area. The survey and cartographic resources indicate a historic field boundary bisects the proposed development site on a rough east-west axis. The other anomaly groups visible within the survey results may correspond to agricultural markings, previous boundaries or field divisions.

Group 1 (+18.5nT to +4.5nT), is a moderate positive linear, and likely represents a boundary visible on the St Mary Magdalene tithe mapping.

Groups 2 (+9.8nT to +2.9nT) and 5 (+5nT to +2nT) are moderate to weak positive linears that follow the same alignment as anomaly group 1, and likely represent agricultural linears such as plough marks associated with the same field system.

Group 3 (+12nT to +4nT) is a gently curving linear running along the eastern boundary of the site and likely corresponds to an earlier field system; possibly being associated with anomaly group 1, though the relationship is unclear.

Group 4 (c.+5nT) is a bent positive linear, possibly representative of a ditch or similar cut feature. May relate to a previous field system.

Di-Polar anomalies and magnetic disturbance are present across the site. Magnetic disturbance across the site is mostly associated with metallic debris and the current field boundaries. A modern utility can also be seen running across the site, running north-east from the manhole cover on the western boundary.

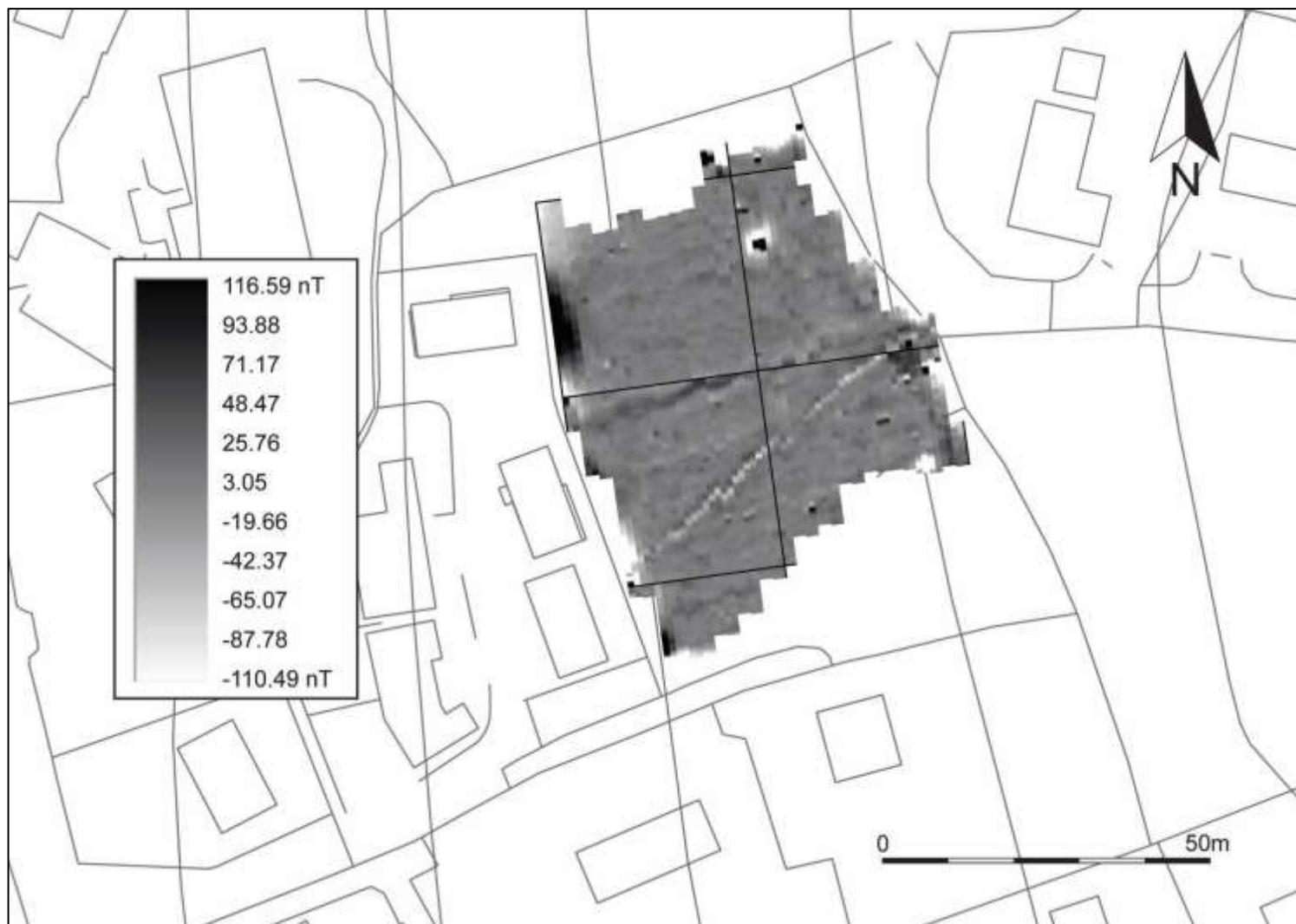


FIGURE 7: SHADE PLOT OF GRADIOMETER SURVEY DATA; GREYSCALE.

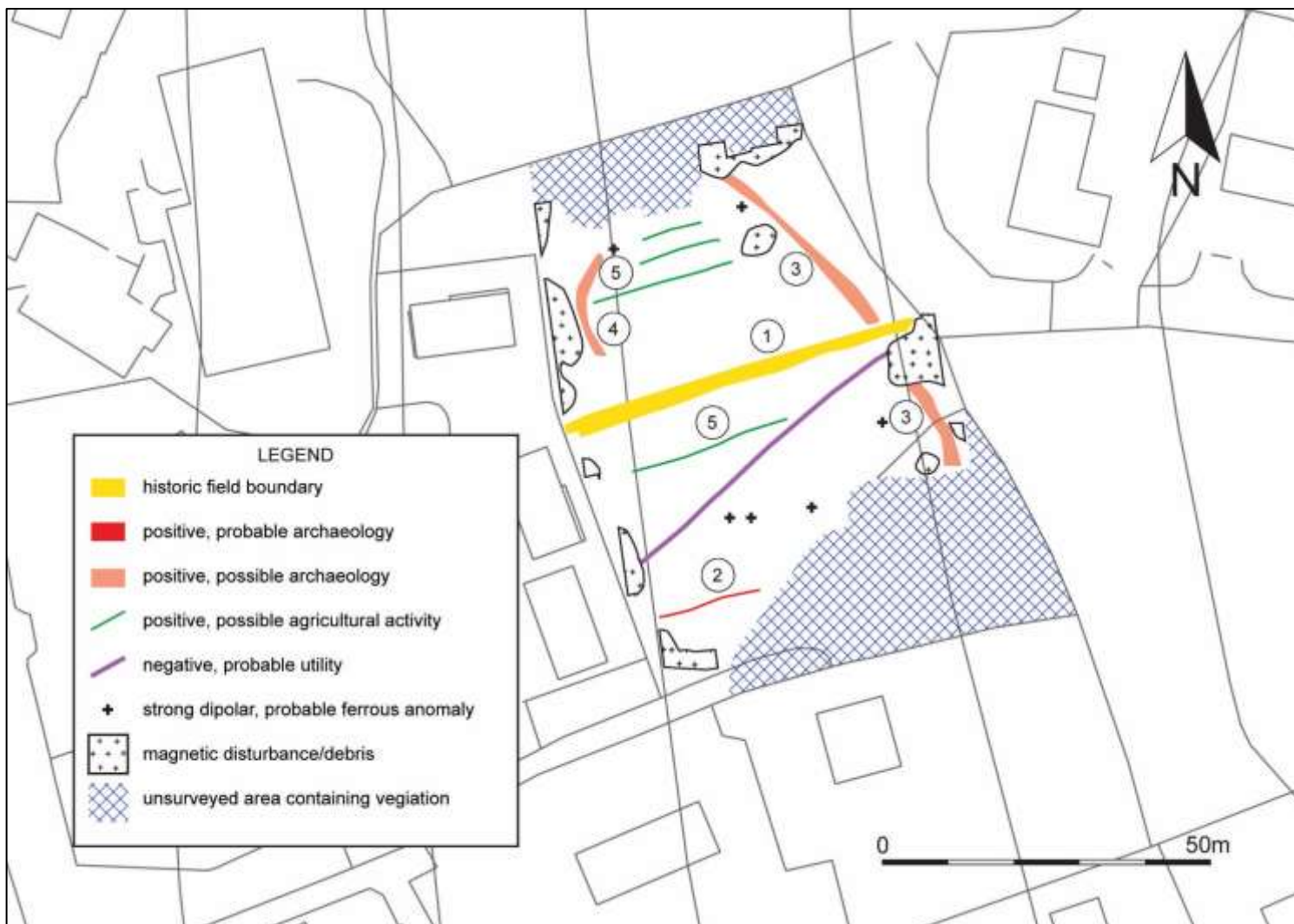


FIGURE 8: INTERPRETATION OF GRADIOMETER SURVEY DATA.

5.0 CONCLUSION

The proposed site is located towards the northern extent of the 20th century and later development of Launceston and south of the historic settlement. There is notable activity from multiple historic periods within the surrounding landscape, with areas of medieval farming surrounding the layout of the medieval setting of Launceston.

The geophysical survey identified multiple features, including the boundary visible on the tithe mapping. Linears running parallel to this boundary may indicate the presence of agricultural activity such as plough scars. A possible ditch or cut feature also runs along the eastern boundary and may be indicative of a previous field system. A modern utility was also present within the site; some of the survey area was under tree cover and could not be surveyed.

6.0 BIBLIOGRAPHY & REFERENCES

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National Library of Scotland (NLS)

1906 OS 25" map (revised 1905), Cornwall sheet XVII.5

1934 OS 25" map (revised 1932), Cornwall sheet XVII.5

The Genealogist (GEN)

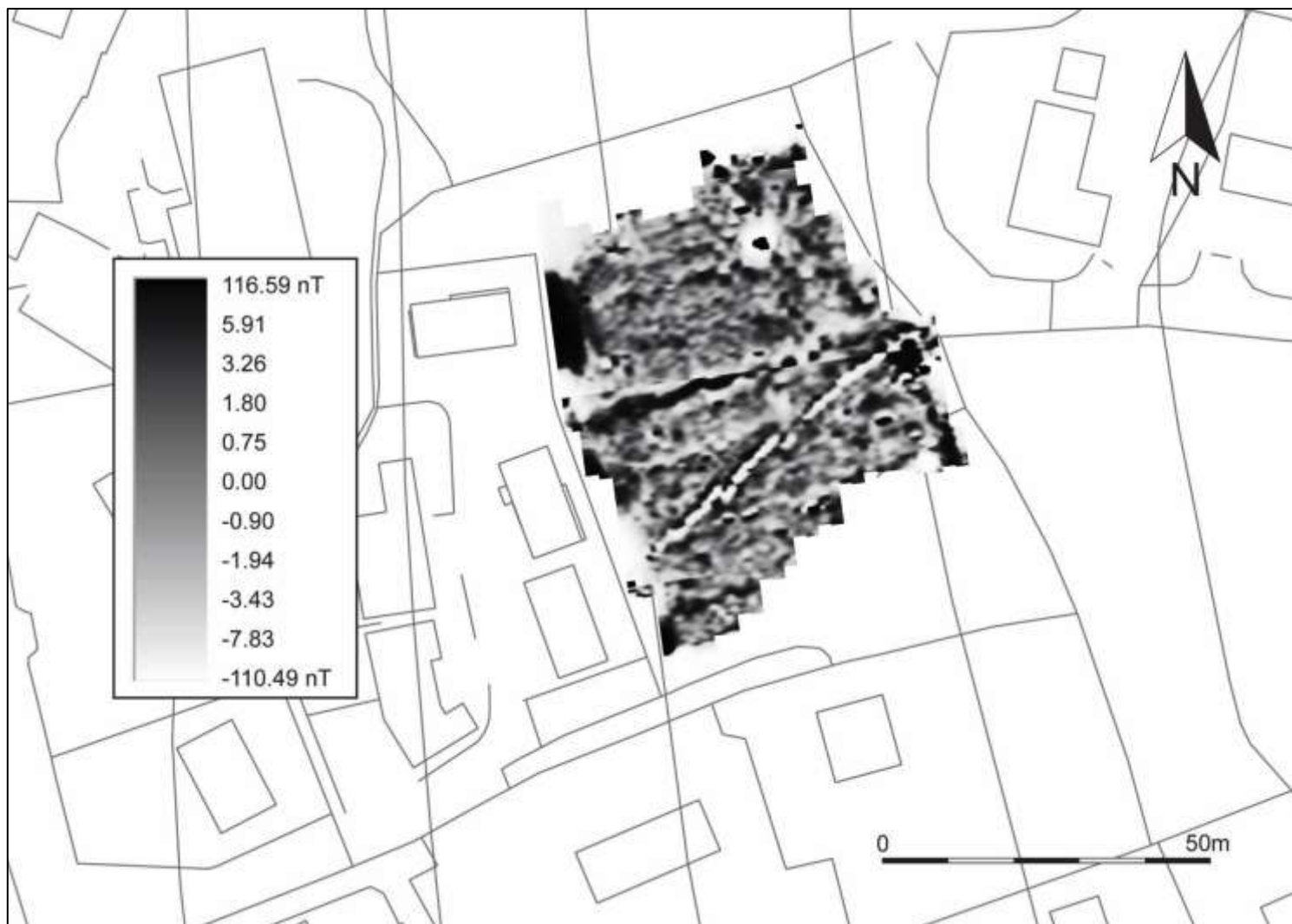
The 1839 St Mary Magdalene tithe map

The 1842 St Mary Magdalene tithe apportionment

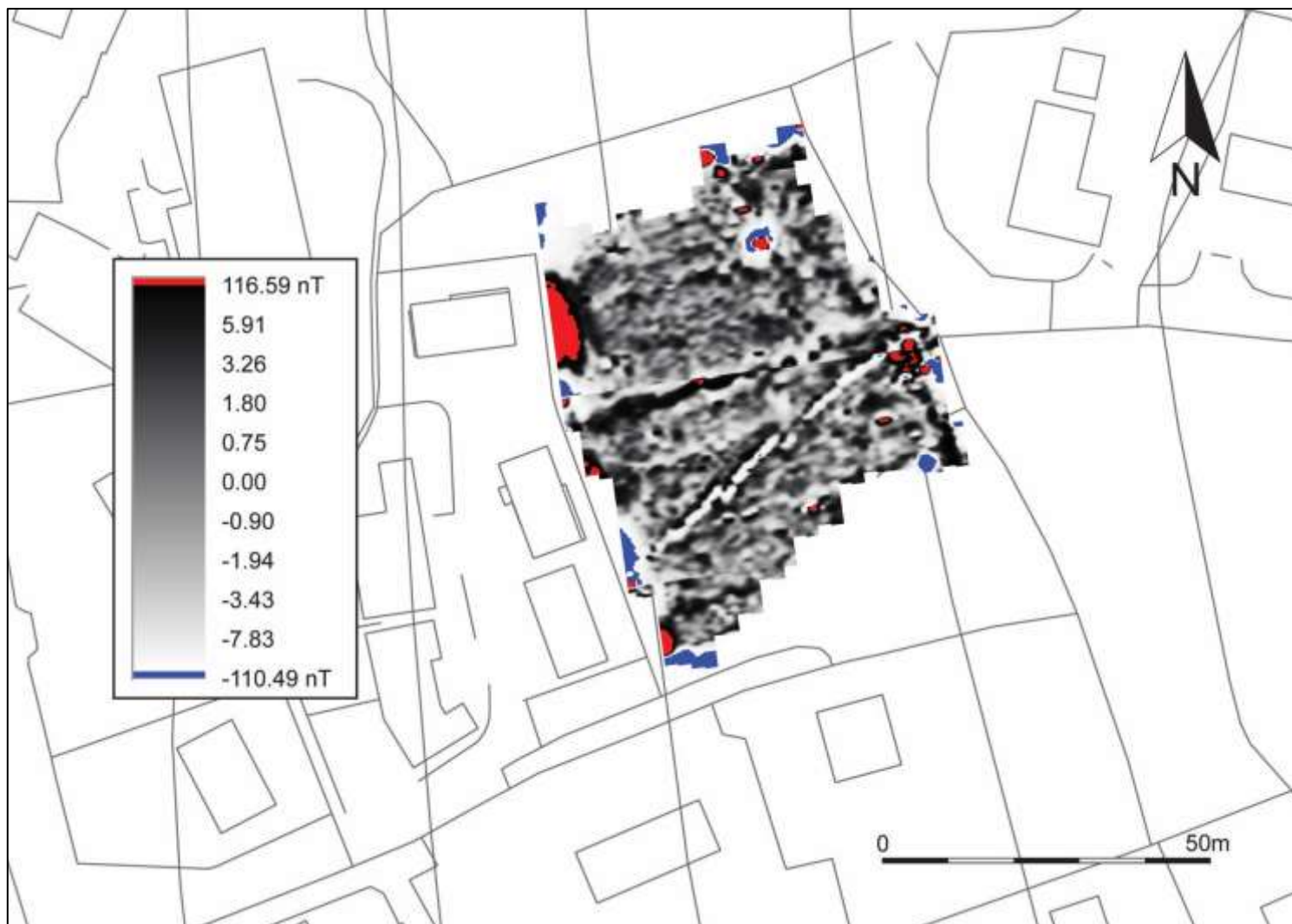
APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY



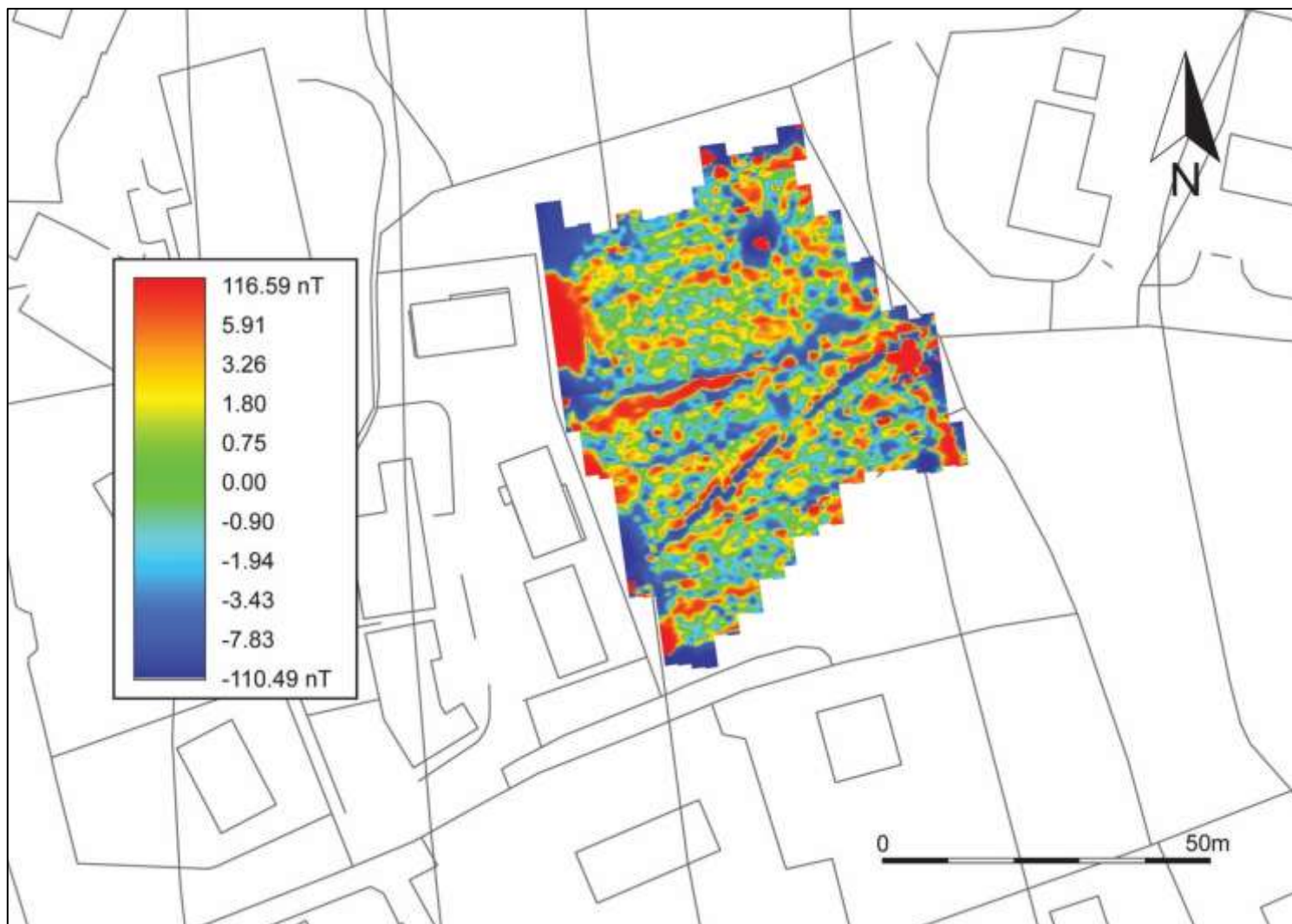
LOCATION AND NUMBERS OF THE SURVEY GRIDS.



GREYSCALE SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.



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



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

APPENDIX 2: SUPPORTING PHOTOGRAPHS: SITE INSPECTION



1. THE NORTHERN BOUNDARY OF THE SITE; VIEWED FROM THE SOUTH (NO SCALE).



2. THE SOUTHERN BOUNDARY OF THE SITE; VIEWED FROM THE NORTH (NO SCALE).



3. THE WESTERN BOUNDARY OF THE SITE, SHOWING THE MANHOLE COVER; VIEWED FROM THE NORTH (NO SCALE).



4. THE EASTERN BOUNDARY OF THE SITE; VIEWED FROM THE WEST (NO SCALE).



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