

# LAND AT NORTHWICK ROAD

## MARK SOMERSET

Results of a Geophysical Survey



South West Archaeology Ltd. report no. 160907



[www.swarch.net](http://www.swarch.net) Tel. 01769 573555

## Land at Northwick Road, Mark, Somerset Results of a Geophysical Survey

---

By J. Bampton  
Report Version: FINAL  
07<sup>th</sup> September 2016

Work undertaken by SWARCH for Simon Emary, Chair of the Mark Community Land Trust (the Client)

### SUMMARY

---

*South West Archaeology Ltd. (SWARCH) was commissioned to undertake a geophysical survey and for related off site analysis and reporting on land at Northwick Road, Mark, Somerset, in advance of the application for the potential development of the site.*

*The site is located in a field on the west side of Mark, on the south side of Northwick Road. The site is within 500m of the 13<sup>th</sup> century village church, near to which has been found medieval and Romano-British finds. The site itself is on recently enclosed farmland, although some possible earlier enclosed land and ridge and furrow can be identified in the wider landscape. In general it is likely the land has been worked at least on a seasonal basis from at least the 11<sup>th</sup> century origins of the village, being located off an ancient causeway across the Somerset Levels.*

*The geophysical survey identified a single anomaly group comprised of two undated parallel linear anomalies possibly indicative of ditches defining a boundary or track. Other geophysical responses are related to geological variation and modern activity including drainage. Given the nature of the surrounding landscape drainage is vital to the use of the land.*

*Given the results of this assessment, any development of the site will be unlikely to disturb any significant archaeological deposits, and it is recommended that no further archaeological works will be necessary on the site.*



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 as described in the Project Design.

## CONTENTS

---

<i>SUMMARY</i>	2
<i>CONTENTS</i>	3
<i>LIST OF FIGURES</i>	4
<i>LIST OF TABLES</i>	4
<i>LIST OF APPENDICES</i>	4
<i>ACKNOWLEDGEMENTS</i>	4
<i>PROJECT CREDITS</i>	4
<b>1.0 INTRODUCTION</b>	<b>5</b>
1.1 PROJECT BACKGROUND	5
1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND	5
1.3 HISTORICAL BACKGROUND	5
1.4 ARCHAEOLOGICAL BACKGROUND	6
1.5 METHODOLOGY	6
<b>2.0 GRADIOMETER SURVEY</b>	<b>8</b>
2.1 INTRODUCTION	8
2.2 SITE INSPECTION	8
2.3 METHODOLOGY	8
2.4 RESULTS	9
2.5 DISCUSSION	9
<b>3.0 CONCLUSION</b>	<b>12</b>
<b>4.0 BIBLIOGRAPHY</b>	<b>13</b>

## LIST OF FIGURES

---

*COVER PLATE: THE FIELD FROM THE SOUTH-WEST CORNER; LOOKING NORTH-EAST.*

FIGURE 1: SITE LOCATION (THE SITE IS INDICATED).	7
FIGURE 2: SHADE PLOT OF GRADIOMETER SURVEY DATA; MINIMAL PROCESSING.	10
FIGURE 3: INTERPRETATION OF GRADIOMETER SURVEY DATA.	11
FIGURE 4: EXTRACT FROM THE ORDNANCE SURVEY 1ST EDITION, SURVEYED 1884, PUBLISHED 1885 (SALSS); THE	14
FIGURE 5: DETAILED TOPOGRAPHICAL IMAGE BASED ON LIDAR DATA.	14
FIGURE 6: VIEW ALONG THE WESTERN BOUNDARY FROM THE SOUTH-WEST CORNER OF THE SITE; LOOKING NORTH.	15
FIGURE 7: VIEW ALONG THE SOUTHERN BOUNDARY FROM THE SOUTH-WEST CORNER OF THE SITE; LOOKING WEST.	15
FIGURE 8: VIEW ALONG A BROAD RIDGE ALONG THE WESTERN SIDE OF THE SITE; LOOKING NORTH.	16
FIGURE 9: VIEW OF ONE OF THE GULLIES PERPENDICULAR TO THE LONG RIDGES AND GULLIES ACROSS THE SITE.	16
FIGURE 10: VIEW ALONG THE APPROXIMATELY CENTRAL AND SUBSTANTIAL CURVING DITCH/GULLY ACROSS THE SITE; LOOKING NORTH.	17
FIGURE 11: GEOPHYSICAL SURVEY GRID LOCATION, LAYOUT AND NUMBERING.	18
FIGURE 12: RED-GREY-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA: GRADIATED SHADING; BAND WEIGHT EQUALISED.	19
FIGURE 13: RED-BLUE-GREY (2) SHADE PLOT OF GRADIOMETER SURVEY DATA: GRADIATED SHADING; BAND WEIGHT EQUALISED.	20
FIGURE 14: TERRAIN COLOURS SHADE PLOT OF GRADIOMETER SURVEY DATA: BLOCK PALETTE.	21

## LIST OF TABLES

---

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.	9
---	---

## LIST OF APPENDICES

---

APPENDIX 1: SUPPORTING CARTOGRAPHIC SOURCES AND LIDAR IMAGERY	14
APPENDIX 2: SUPPORTING PHOTOGRAPHS: SITE INSPECTION	15
APPENDIX 3: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY	18

## ACKNOWLEDGEMENTS

---

THE STAFF AT THE SOMERSET ARCHIVES AND LOCAL STUDIES SERVICE (SALSS)  
SIMON EMARY, CHAIR OF THE MARK COMMUNITY LAND TRUST

## PROJECT CREDITS

---

PROJECT DIRECTOR: DR. SAMUEL WALLS  
PROJECT OFFICER: JOE BAMPTON  
FIELDWORK: JOE BAMPTON  
RESEARCH: PETER WEBB  
REPORT: JOE BAMPTON  
EDITING: DR. SAMUEL WALLS  
GRAPHICS: JOE BAMPTON

## 1.0 INTRODUCTION

---

**Location:** Land at Northwick Road  
**Parish:** Mark  
**County:** Somerset  
**NGR:** Centred on ST 37521 47908  
**SWARCH ref:** MNR16

### 1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Simon Emary, Chair of the Mark Community Land Trust (the Client) to undertake a geophysical survey on land at Northwick Road, Mark, Somerset, in advance of an application for planning to redevelop the site and for related off site analysis and reporting. This work was carried out in accordance with best practice and ClfA guidelines.

### 1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

Mark is a village in the Somerset Levels, c.12.5km north-east of Bridgewater, c.14km north-west of Glastonbury and c.4km east of the M5, on the B3139. The field-scape is defined by a large number of drains and post-medieval enclosed land, although some boundaries may respect earlier curving boundaries and strip-fields fields. The drains feed various rhynes, rivers and canals that in turn feed into the Bristol Channel to the west. The site is located on the west side of the village, between Northwick Road along its north boundary and the B3139 to its south and east, to the west of the White Horse Inn. It is located on flat, well drained fenland, at an altitude of c.5-10m AOD.

The soils of this area are the deep stoneless mainly calcareous clayey soils of the Newchurch 2 Association (SSEW 1983). These overlie the mudstone of the Charmouth Mudstone Formation, with tidal flat deposits of clay, silt and sand (BGS 2016).

### 1.3 HISTORICAL BACKGROUND

The site is located within *Recently Enclosed Land 17<sup>th</sup>-18<sup>th</sup> century* bordered by *Recently Enclosed Land 18<sup>th</sup>-21<sup>st</sup> century* to the north; *Settlement post Tithes Map 1840* to the east; and *Anciently Enclosed Land* to the south-east (Somerset HLC). The village of Mark is close to the centre of the parish of the same name, and developed along the edge of a causeway through the Somerset Levels, said to have timber foundations. The site is situated c.0.5km west-north-west of the parish church. A settlement at Mark (from the Old English *mearc* and *ærn* meaning boundary house) is first recorded in the 11<sup>th</sup> century, and the estate had been given to the Bishop of Wells by 1157, and remained church land until 1547 (Bush 1994). The core of the settlement developed around the church; much of the settlement to the west only expanding from the mid-19<sup>th</sup> century. The site is just outside the western edge of the historic core, c.0.5km west-north-west of the 13<sup>th</sup> century parish church. The modern B3139 follows the line of the 18<sup>th</sup> century Turnpike road and earlier causeway, an important source of Mark's income with trade of wool merchants on their way to the ports of Highbridge and the Bristol Channel.

The Somerset Historic Environment Record (HER) lists a number of standing structures that indicate the historic origins of the village of Mark. Its early history reflected in the 13<sup>th</sup> century church (HER13321) standing within a settlement along an important trading canal (HER28600). This location

alongside a trade route led to increased prosperity, and the granting of a market, shown by the 15<sup>th</sup> century market cross (HER13322). By the Post-Medieval period road transport had overtaken canals and waterways in their importance for the transport of goods, and toll roads such as the turnpike road running through Mark (HER26232), led to further expansion and growth of such settlements, and can be seen through the construction of new properties such as The Elms (HER13316; 13317), Duffield Cottage (HER13332) and the Pack Horse Inn (HER13319). By the 19<sup>th</sup> and 20<sup>th</sup> centuries there was further expansion, Portland House (HER13310) and Old Auster (HER 13304), emphasising that the growth was from this period focused along the turnpike road rather than remaining centred on the church.

#### 1.4 ARCHAEOLOGICAL BACKGROUND

No archaeological investigations have been carried out on the proposed development site, though limited small scale works have been carried out in the village. These include monitoring of the footprint of a building to the rear of Oak House (Corcos 2009), which whilst not identifying any features, recovered a large amount of Post-Medieval and Modern pottery indicating historical occupation. Archaeological monitoring has also recovered Romano-British, Medieval and Post-Medieval pottery from the churchyard. Other large-scale works have been carried out in the wider landscape, including the monitoring of a pipeline between Highbridge and Mark Causeway (Ritchie and Wells 1996) identifying Medieval remains; monitoring of a sewage pipeline monitored in 2001 (Hollinrake and Hollinrake 2001) which recovered Romano-British pottery. Further geophysical and earthwork surveys have also been carried out in the wider landscape. LiDAR survey of the wider landscape also suggests the presence of numerous relict river channels, partially identified by aerial photographs; including the drained area between Brent Knoll and the Polden ridge which may represent a salt marsh channel of late Roman to early medieval date when a 7<sup>th</sup> century charter refers to the River Siger (Brunning and Farr-Cox 2005).

#### 1.5 METHODOLOGY

The background research and desk-based assessment aspect of this report follows the guidance as outlined in: *Standard and Guidance for Archaeological Desk-Based Assessment* (ClfA 2014a), *Understanding Place: historic area assessments in a planning and development context* (English Heritage 2012), and *The Setting of Heritage Assets, GPA3* (Historic England 2015).

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* (ClfA 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 a threat to the archaeological resource.

Land at Northwick Road, Mark, Somerset



Figure 1: Site location (the site is indicated).

## 2.0 GRADIOMETER SURVEY

---

### 2.1 INTRODUCTION

The purpose of this survey was to identify and record magnetic anomalies within the proposed site. 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 2<sup>nd</sup> September 2016 by J. Bampton in sunny and showery conditions. The survey data was processed by J. Bampton. An area of approximately 1.12ha was surveyed.

The survey identified a single anomaly group indicative of a possible double ditched enclosure, route-way or drainage. Instances of probable ferrous objects or ferrous fragments across the site and areas of modern disturbance; including extant drains and drainage channels and a bonfire with ferrous debris were also identified. Some of the probable single ferrous anomaly readings loosely define some of the extant drains that are visible on the site and in aerial photography.

### 2.2 SITE INSPECTION

The site was comprised of a single field under pasture with relatively short (recently grazed) grass. The field was bounded by deep and wide drains along its north-east and western boundary and a hedge and fence line with a possible drain beyond it along its southern boundary. The eastern boundary had a tree line while the west and north boundaries were overgrown with shrubs and brambles. Immediately south of the site was a c.1800 farm building, the White Horse Inn was located to its east and a modern housing development was located to its north with enclosed fields to its west. The field contained a series of wide (c.3-5m) ridges and gullies associated with drainage and possible ridge-and furrow ploughing aligned parallel to the east and west boundaries and perpendicular gullies feeding the main drains in each quarter of the field. A bonfire and recently cut gully and two dip wells were located in the north half of the site. A compliment of supporting photographs of the site can be seen in Appendix 2.

### 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 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, offset in- and outbound by -2 intervals (all grids).

Details: 1.1189ha surveyed; Max. 102.06nT, Min. -98.85nT; Standard Deviation 4.45nT, mean 0.00nT, median 0.00nT.



## 2.4 RESULTS

Table 1 with the accompanying Figures 2 and 3 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 3.

Anomaly group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Weak positive with, possible	Linear	Ditch	Possible double ditched feature associated with drainage for a boundary or route-way on a different alignment to existing boundaries and drains. Potentially aligns with the road running south-west from a small junction to the north-east of the site. The weak responses may be indicative of a natural/geological origin for the anomaly. Responses of c.+2.5nT.

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.

## 2.5 DISCUSSION

The survey identified a single anomaly group composed of two, parallel, linear anomalies of possible archaeological origin.

Group 1 were two weak linear positive responses (c.+2.5nT) aligned north-east by south-west. These possibly represent drainage ditches that define a boundary of route-way; they possibly align with the part of Northwick Road which adjoins Vole Road to the north-east of the site. If this anomaly is an archaeological feature it is on a different, probably earlier alignment than the existing field system. The response of the anomaly is very weak and it could easily represent a natural/geological feature or variation in the natural geology.

Other anomalies include gullies that are visible on the ground today and that are associated with visible drains and a bonfire. Many of the single dipolar responses across the site that probably represent ferrous objects or debris help to define other extant gullies on the site. They indicate small ferrous fragments/objects that have rolled or been washed into the gullies the occasional linear distribution patterns.

The geophysics survey did not clearly represent the gullies and ridges extant across the site, aligned parallel to the boundaries (approximately north-west by south-east). This is partly because of their broad and shallow nature and the nature of the natural, which appears to be indicative of the ancient tidal deposits associated with the Charmouth Mudstone Formation and the probable imposition of intermittent and ancient flooding across this part of the Somerset Levels. Although many of these features, visible on aerial photography and satellite imagery including LiDAR, are indicative of the drains common across the area, they also appeared to represent wide ridge and furrow ploughing practices. The fields along Northwick Road may include elements of medieval strip fields and the ridge and furrow may be part of this phase of activity.

The LiDAR imagery also identifies a complex array of drainage across the site. Supporting cartographic and LiDAR images can be seen in Appendix 1.

Land at Northwick Road, Mark, Somerset

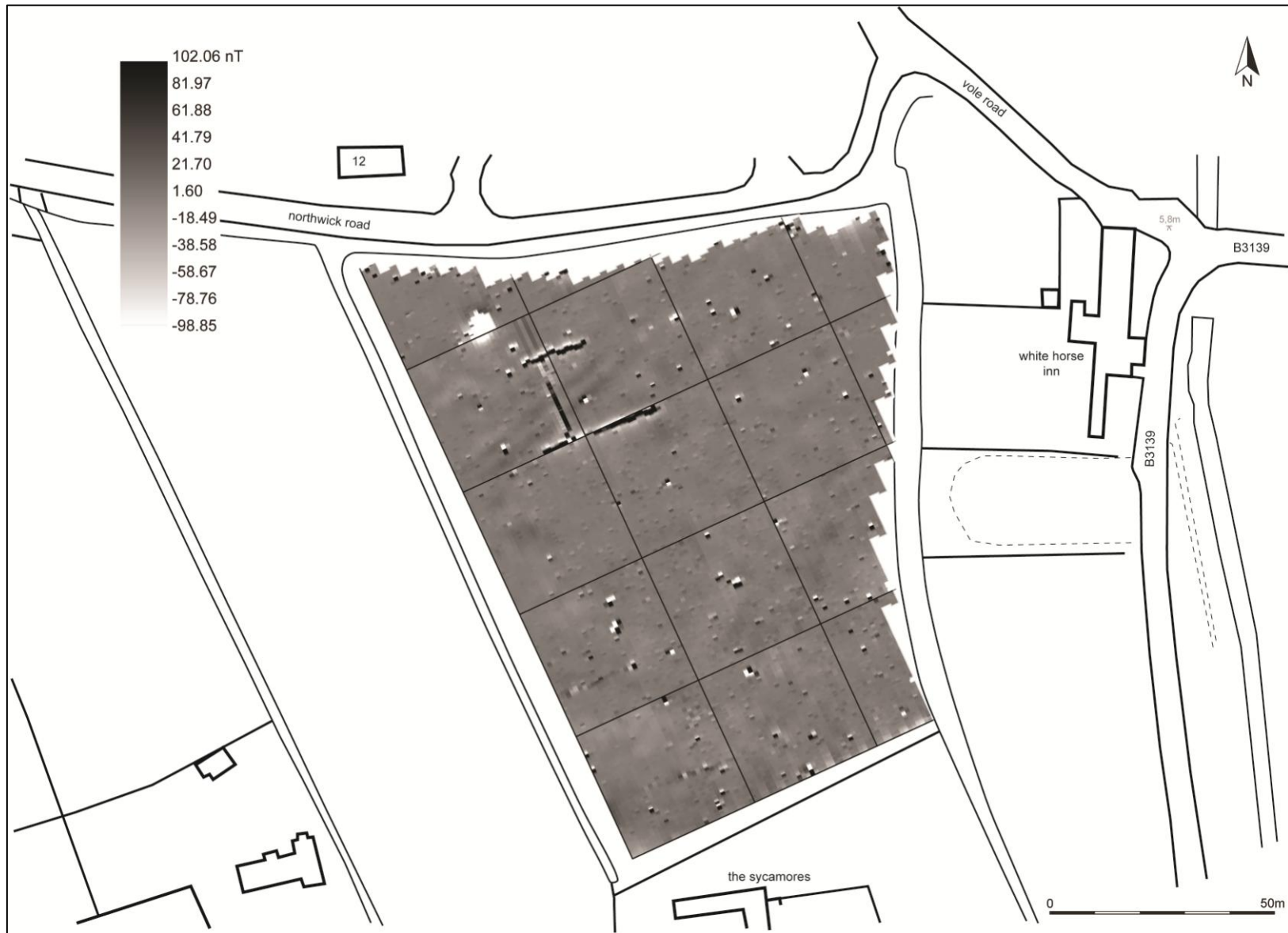


FIGURE 2: SHADE PLOT OF GRADIOMETER SURVEY DATA; MINIMAL PROCESSING.

Land at Northwick Road, Mark, Somerset

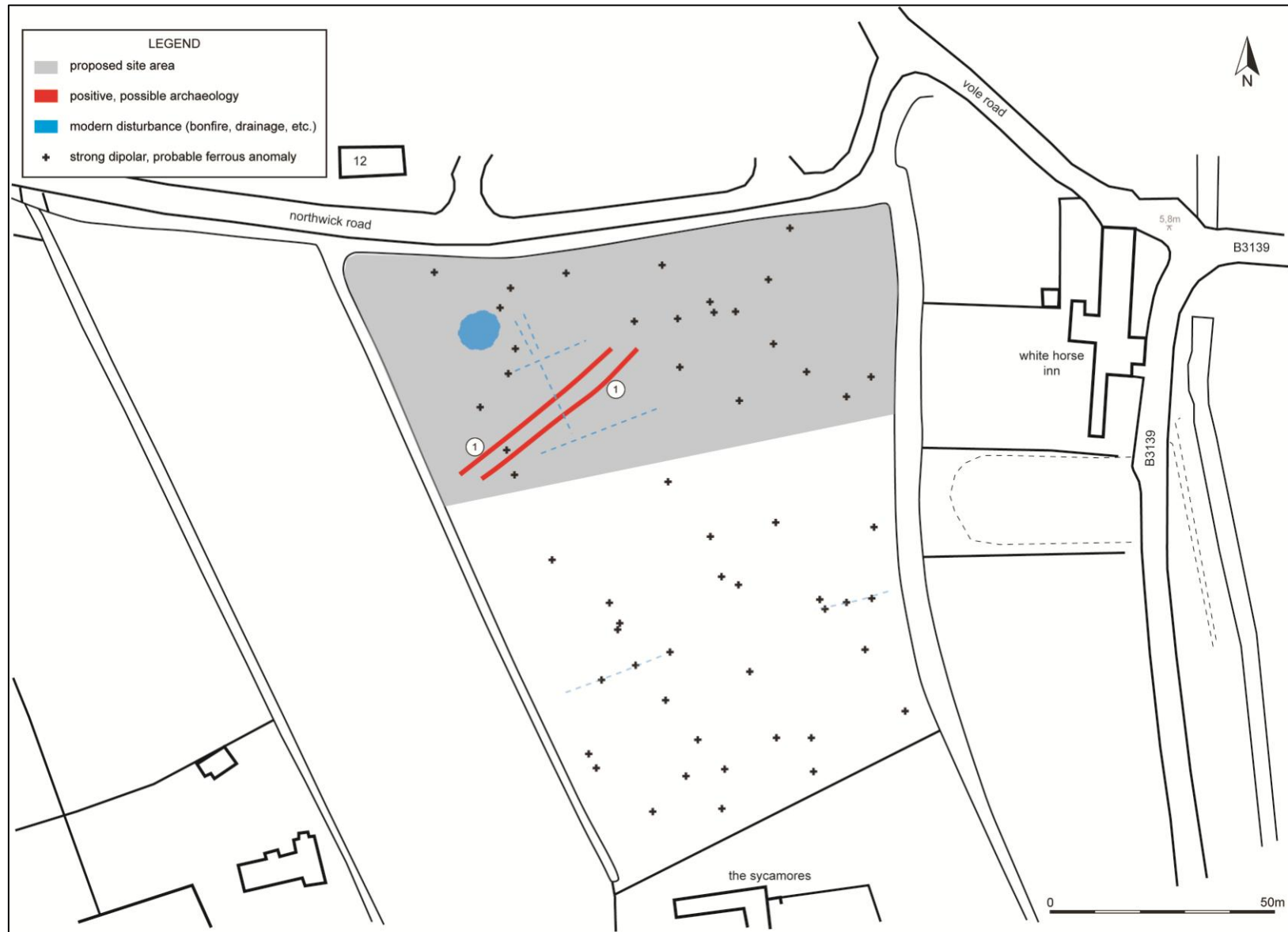


FIGURE 3: INTERPRETATION OF GRADIOMETER SURVEY DATA.

### 3.0 CONCLUSION

---

The results of the geophysical survey would suggest that there is possibly a single possible archaeological feature; two ditches lining a track or removed boundary that predates, or is at least differently aligned to the existing field-system. The majority of the field containing the site is devoid of any archaeological features.

The results of the geophysical survey suggest that any development of the site will not disturb any significant archaeological deposits, and it is recommended that no further archaeological work is likely to be required as part of the planning submission.

## 4.0 BIBLIOGRAPHY

---

### *Published Sources:*

- Brunning, R. Farr-Cox, F.** 2005: *The River Siger Rediscovered: LiDAR Survey and Relict Landscapes on the Somerset Levels*. In *Archaeology in the Severn Estuary*, 16.
- Bush, R.** 1994: *Somerset: The Complete Guide*. Wimborne, The Dovecote Press.
- Chartered Institute of Field Archaeologists** 2014a: *Standard and Guidance for Historic Environment Desk-based Assessment*.
- Chartered Institute for Archaeologists** 2014b: *Standard and Guidance for Archaeological Geophysical Survey*.
- English Heritage** 2008: *Geophysical Survey in Archaeological Field Evaluation*.
- Historic England** 2015: *The Setting of Heritage Assets: historic environment good practice guide in planning 3*.
- 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** 2016: *Geology of Britain Viewer*.  
[http://maps.bgs.ac.uk/geologyviewer\\_google/googleviewer.html](http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html) [accessed 26.08.2016]
- Environment Agency** 2015: *LiDAR, Digital Surface Model*  
<http://environment.data.gov.uk/ds/survey#> [accessed 26.08.2016]

### *Unpublished Sources:*

- Corcos, N.** 2009: *An Archaeological Watching Brief on Land at Oak House, Mark*. Unpublished C. and N. Hollinrake report no 432.
- Hollinrake, C. Hollinrake, N.** 2001: *An Archaeological Watching Brief on the Blackford to Mark Wessex Water Pipeline*. Unpublished C. and N. Hollinrake report no 259.
- Wells, R. Wells, K.** 1996: *Highbridge – Mark Causeway Sewerage Scheme, Somerset*. Unpublished Wessex Archaeology Report no 41441.1.

Somerset Archives and Local Studies Service (SALSS):  
Ordnance Survey (OS) 1<sup>st</sup> edition, published 1885



APPENDIX 1: SUPPORTING CARTOGRAPHIC SOURCES AND LIDAR IMAGERY



Figure 4: Extract from the Ordnance Survey 1st edition, Surveyed 1884, Published 1885 (SALSS); the approximate location of the site is highlighted in red.



Figure 5: Detailed topographical image based on LiDAR data. This is a QGIS-generated image (terrain analysis>slope) of TELLUS LiDAR survey data [contains freely available LIDAR data supplied by Natural Environment Research Council (Centre for Ecology & Hydrology; British Antarctic Survey; British Geological Survey); ©NERC (Centre for Ecology & Hydrology; British Antarctic Survey; British Geological Survey)]; the site is outlined in red.



APPENDIX 2: SUPPORTING PHOTOGRAPHS: SITE INSPECTION



FIGURE 6: VIEW ALONG THE WESTERN BOUNDARY FROM THE SOUTH-WEST CORNER OF THE SITE; LOOKING NORTH.



FIGURE 7: VIEW ALONG THE SOUTHERN BOUNDARY FROM THE SOUTH-WEST CORNER OF THE SITE; LOOKING WEST.





FIGURE 8: VIEW ALONG A BROAD RIDGE ALONG THE WESTERN SIDE OF THE SITE; LOOKING NORTH.



FIGURE 9: VIEW OF ONE OF THE GULLIES PERPENDICULAR TO THE LONG RIDGES AND GULLIES ACROSS THE SITE IN THE SOUTH-WEST QUARTER OF THE SITE; LOOKING NORTH-EAST.





FIGURE 10: VIEW ALONG THE APPROXIMATELY CENTRAL AND SUBSTANTIAL CURVING DITCH/GULLY ACROSS THE SITE; LOOKING NORTH.

APPENDIX 3: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY



FIGURE 11: GEOPHYSICAL SURVEY GRID LOCATION, LAYOUT AND NUMBERING.



FIGURE 12: RED-GREY-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA: GRADIATED SHADING; BAND WEIGHT EQUALISED.



Land at Northwick Road, Mark, Somerset

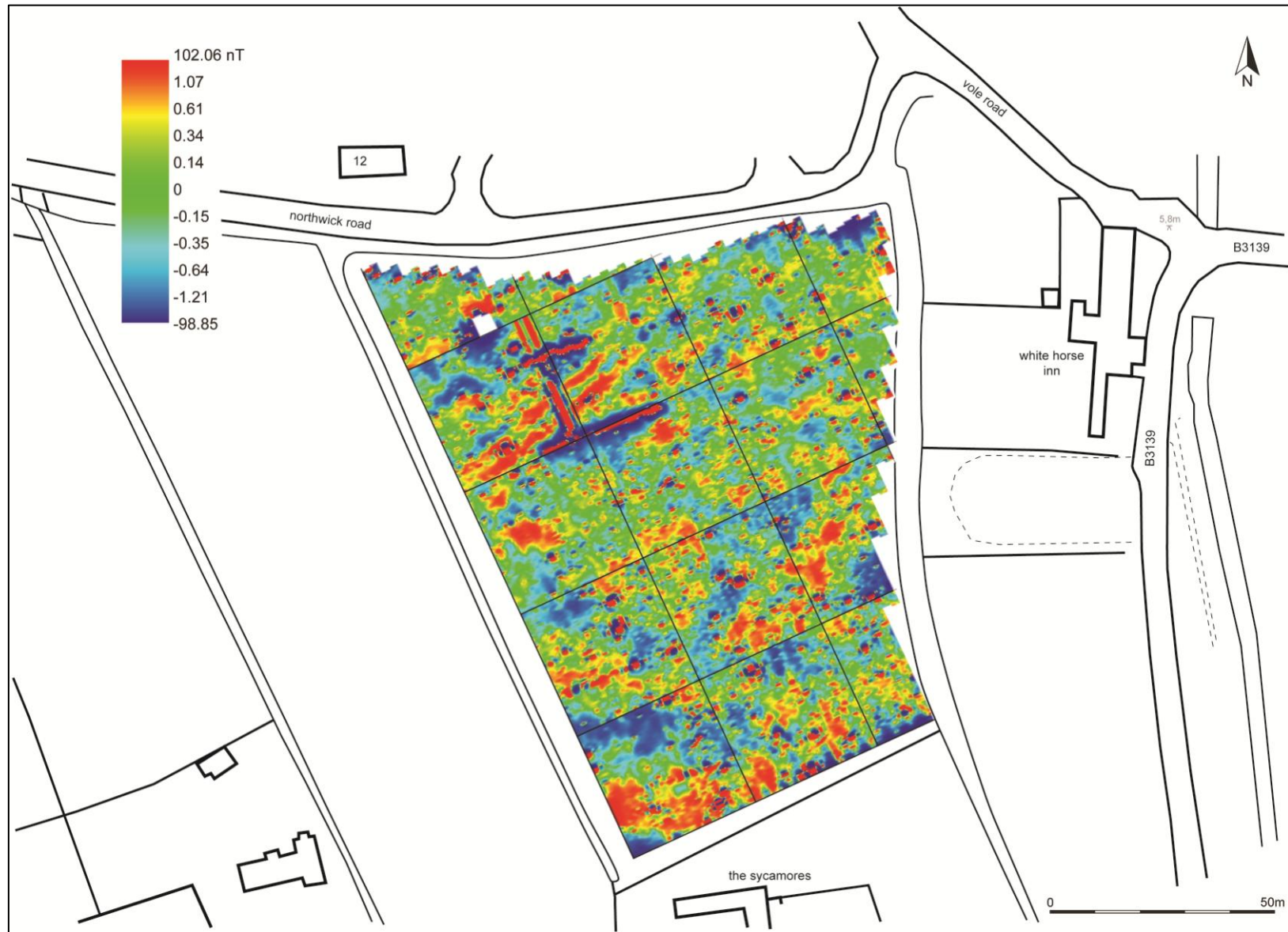


FIGURE 13: RED-BLUE-GREY (2) SHADE PLOT OF GRADIOMETER SURVEY DATA: GRADIATED SHADING; BAND WEIGHT EQUALISED.

Land at Northwick Road, Mark, Somerset



FIGURE 14: TERRAIN COLOURS SHADE PLOT OF GRADIOMETER SURVEY DATA: BLOCK PALETTE.

Land at Northwick Road, Mark, Somerset



The Old Dairy  
Hacche Lane Business Park  
Pathfields Business Park  
South Molton  
Devon  
EX36 3LH

Tel: 01769 573555  
Email: [mail@swarch.net](mailto:mail@swarch.net)