



**Archaeological geophysical survey of land
south of Bridge Lane, Wimblington
Cambridgeshire
May 2022**

Report No: 22/048

Author: Adam Meadows

Illustrator: John Walford



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Project Manager: John Walford
Event No.: ECB 6912
NGR: TL 41350 93000

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OASIS REPORT FORM

Bridge Lane, Wimblington		OASIS No: molanort1- 506997	
ACTIVITY TYPE			
Project/Activity type	Geophysical survey		
Reason for investigation	Planning: Post-application / Residential		
Planning reference ID	F/YR20/1235/O		
PROJECT LOCATION			
National grid ref	541350 293000		
Site name	Land south of Bridge Lane, Wimblington		
REVIEWERS/ ADMIN			
HER for project	Cambridgeshire Historic Environment Record		
National organisation	Historic England		
WORK UNDERTAKEN			
Methodological summary	Magnetometer survey with a cart-mounted array of Bartington Grad601 fluxgate gradiometers.		
Previous work?	No	Future works?	Yes
Dates - Start date:	6th May 2022	End date:	6th May 2022
GEOPHYSICS			
Geology	Amphill Clay Formation mudstones overlain by March Gravels Member sand and gravels		
Land use	Arable		
Survey type	Magnetometer survey		
Size of survey area	3.5ha		
Instrumentation	Bartington Grad-01-1000L		
Configuration	Multiple		
Spatial resolution	Traverse spacing	0.8m	Sample interval
Resolution (data values)	0.1nT		
BIBLIOGRAPHY			
Title	Archaeological geophysical survey of land south of Bridge Lane, Wimblington, Cambridgeshire, May 2022		
Author(s)	Meadows, A.		
Publisher, place and date	MOLA Northampton / Northampton / 2022		
Report number	22/048		
Report release delay?	6 months		
PEOPLE			
Organisation	MOLA Northampton		
Project manager	John Walford		
Project supervisors	Adam Meadows		
Funding body	Bellway Homes		
KEYWORDS			
Monuments found/ date	Trackway – Iron Age or Roman Ditch – Iron Age or Roman Ridge and furrow - Medieval		
RESULTS			
Description of outcomes	The survey detected the route of a potential track way aligned parallel to March Road, with a small number of apparently associated pits and ditches. These features are thought to be Iron Age to Roman in date. Ridge and furrow cultivation of probable medieval date was also detected.		
ARCHIVES			
Accession ID	ECB 6912		
Paper Archive repository	None		
Digital Archive repository	Archaeology Data Service		
<i>No finds made during survey - no finds archive to be deposited</i>			

Contents

1	INTRODUCTION	1
2	BACKGROUND	1
2.1	Location and land use.....	1
2.2	Geology and topography	2
2.3	Historical and archaeological background	2
3	METHODOLOGY	4
3.1	Fieldwork.....	4
3.2	Data processing and presentation.....	4
4	SURVEY RESULTS	5
5	CONCLUSION.....	6
6	BIBLIOGRAPHY	6

Figures

Front cover: Survey in progress, view facing south-west

Fig 1: Site location	1:2000
Fig 2: Magnetometer survey results	1:2000
Fig 3: Magnetometer survey interpretation	1:2000
Fig 4: Unprocessed magnetometer data	1:2000

Archaeological geophysical survey of land south of Bridge Lane Wimblington, Cambridgeshire May 2022

ABSTRACT

MOLA (Museum of London Archaeology) was commissioned by Bellway Homes to conduct a geophysical survey on land south of Bridge Lane, Wimblington, Cambridgeshire. The survey detected the route of a potential track way aligned parallel to March Road, with a small number of apparently associated pits and ditches. These features are thought to be Iron Age to Roman in date. Ridge and furrow cultivation of probable medieval date was also detected.

1 INTRODUCTION

MOLA (Museum of London Archaeology) was commissioned by Bellway Homes to conduct a magnetometer survey on c3.5ha of land south of Bridge Lane, Wimblington, Cambridgeshire (NGR 541350 293000 (Fig 1). The survey was intended to identify areas of potential archaeological interest that could be disturbed by an upcoming housing development.

The Cambridgeshire Historic Environment Team (CHET) issued a brief for archaeological evaluation, stipulating a requirement for geophysical survey followed by trial trench excavation (Thomas 2022). They also recorded the work on the Cambridgeshire Historic Environment Record (HER), allocating it Event Number ECB 6912.

The survey took place on the 6th May 2022. It was conducted according to the methodology set out in the Written Scheme of Investigation for the project (Markus and Walford2022), as approved by Andy Thomas of CHET. The details of the methodology were informed by the Chartered Institute for Archaeologists and European Archaeological Council guidelines (ClfA 2020 and Schmidt *et al* 2015).

2 BACKGROUND

2.1 Location and land use

The survey area is located just north of the core of Wimblington village. It comprises one arable field bounded by Bridge Lane to the north and March Road to the west, with residential properties found to the south and further agricultural land to the east (NGR 541350 293000, Fig 1).

At time of survey the ground was under a knee high, maturing barley crop with overgrown grassland present along the southern and western borders. Shallow ditches were being dug on behalf of the developers along the eastern and northern borders to restrict access from the public road.

2.2 Geology and topography

Wimblington is located on a low gravel island within the Fens. The survey area is essentially flat, and stands at around 5m above Ordnance Datum.

The solid geology of the survey area is Amptihill Clay Formation mudstone, laid down during the Jurassic period. This is entirely overlain entirely by a superficial deposit of March Gravels Member sands and gravels, dating from the Quaternary Period (BGS 2022).

2.3 Historical and archaeological background

The Cambridgeshire HER lists a number of entries located within close proximity to the survey area, and one (ECB 2090) located within its bounds.

A trial trench evaluation was conducted within the survey area in preparation for the laying of a water pipeline between Chatteris and March in 2005-2006. This work uncovered a shallow ditch, aligned broadly north to south, which contained a solitary sherd of Romano-British pottery (MCB17553, Jones 2006).

An archaeological evaluation including a geophysical survey was conducted c100m south of the survey area, adjacent to 38 March Road, Wimblington in 2014 (ECB1497). Here the survey detected a sub-square shaped enclosure located on the high ground of the site. The following excavation works uncovered several pits and ditches with datable artefacts originating from the Iron Age to Roman periods. The anomaly detected in the geophysical survey here proved to be Roman in origin with a deep well located 90m east of it (MCB20356).

Works conducted c50m north-west of the survey area, on land south of 24 March Road, Wimblington in 2013 uncovered a ditch containing a single sherd of Roman pottery alongside numerous undated quarry pits that are presumed to be of similar age (MCB20018).

A number of trenches were excavated c600m east of the survey area in 1993-94, ahead of building works for stores, parking and a sewage works. Two prehistoric lithic implements were recovered from the plough soil, though the record does not define the exact nature of the artefacts (CHER 11416A).

An evaluation conducted c900m south-east of the survey area uncovered four pits, all of similar size, with dark fills containing charred organic materials and burnt flints. They were recorded as possibly prehistoric in origin as, although they contained no securely datable artefacts, Iron Age pottery was recovered from the natural-subsoil interface nearby (MCB17557).

Archaeological works adjacent to 3 Norfolk Street, c800m south of the current survey area uncovered a ditch terminus, pits, dyke and drainage ditches. While the latter were 16th to 17th century features, pollen samples from the ditch terminus revealed a high level of alder which was taken as evidence of a possible Mesolithic date (MCB16492).

Works in 1993, located c600m east of the survey area uncovered a single ditch that contained animal bones and heavily abraded Iron Age pottery sherds. The latter included fragments of a horizontally-grooved Belgic type vessel, and reportedly, a "black burnished ware vessel" (*sic*) (CHER 11416).

A 27cm long Bronze Age rapier was discovered in or around Wimblington prior to 1962 and is now in Wisbech Museum (CHER 05912). It is also recorded that an Iron Age coin hoard, comprising 300 to 350 silver Icenian coins, was found at Wimblington, though the HER suggests this information may be conflated with information about an earlier, pre 1890, find at Stonea (CHER 16064) (Stonea Camp, which lies c3.5km to the east of the survey area, is a notable Iron Age fort (Scheduled Monument 33272)).

During the Fenland Survey which occurred between 1976 and 1989 a site was identified through aerial photography and walkover surveys located c900m north-east of the survey area. Double-ditched linear features were interpreted as roads or tracks running east to west with other boundaries spurring off. Scatters of Iron Age and Roman pottery have been recovered on the surface of this area with a slightly raised gravelly bank found, theorised to represent a metalled road (CHER 08984).

A Roman boundary ditch, medieval ditches and a posthole were uncovered c500m south-east of the survey area during an evaluation on land near 3 Eastwood End, Wimblington in 2009. The posthole contained three sherds of Stamford and Thetford wares originating from the early medieval period (MCB18530).

Sites c500m east of the survey area have evidence of surviving medieval ridge and furrow cultivation though visible earthworks (MCB27948) or were explored through archaeological excavations (MCB20073). During this time it is likely that the area around Wimblington, including that of the current survey area was utilised as agricultural ground on what would have been a high point in the Fens.

3 METHODOLOGY

3.1 Fieldwork

The magnetometer survey was undertaken with a Bartington magnetometer cart. This is a two-wheeled, lightweight sensor platform operated by hand. The cart incorporates a bank of six vertically-mounted Bartington Grad-01-1000L magnetic sensor tubes, spaced at 0.8m intervals along a bar aligned crossways to the direction of travel. It also incorporates a Leica Geosystems Viva GNSS antenna, mounted on the central axis.

The magnetic sensors were calibrated ('zeroed') at the start of each day's work to minimise any heading errors or offsets between the zero points of each individual sensor.

The cart was propelled along straight and parallel traverses across the survey area, with data logging being manually toggled on and off at the start and end of each traverse to avoid the collection of spurious data whilst turning. Traverse ends were marked with ranging poles to aid even coverage, and the evenness of coverage was further checked by monitoring the positional trace plotted in real time by the MultiGrad601 logging software.

The magnetic sensors were set to output data at a rate of eight readings per second. The GNSS antenna was set to output NMEA format data (GGA messages) at a rate of one position per second. These data streams were compiled into a single raw data file by MultiGrad601 logging software.

The typical speeds of coverage was c1.7m/s. The combination of sensor spacing, survey speeds and data output rates ensured that the spatial resolution of all the data sets would be better than 0.25m x 0.50m.

3.2 Data processing and presentation

The raw survey data was initially processed with MLGrad601 software, which calculated a UTM co-ordinate for each data point by interpolating the GPS readings and applying offset corrections based on the array geometry and calculated heading direction. This produced an output file in XYZ format which could be imported into TerraSurveyor software for data visualisation and further processing.

The raw XYZ data exhibited striping caused by slight mis-matches in the calibration of the individual magnetic sensors. This was removed in TerraSurveyor by applying the median de-stripe function to runs of data from each sensor.

The processed survey data is presented in this report as greyscale raster images which have been rotated and scaled to fit against Ordnance Survey base-mapping. The processed results are presented at a scale of $\pm 4\text{nT}$ and the raw data at $\pm 10\text{nT}$.

The interpretation of the data has been undertaken in a qualitative manner, based on the recognition of distinctive anomaly types and patterns. The interpretation figures show the main anomalies identified but, for clarity's sake, omit some minor anomalies including magnetic halos and the majority of small ferrous dipoles.

4 SURVEY RESULTS

The survey has detected a series of parallel linear anomalies aligned broadly north to south through the western part of the survey area (Figs 2-3). These are likely to represent ditches. In the south-western corner a shorter third linear anomaly is present, aligned east-north-east by west-south-west; it probably represents another ditch. There are also some irregularly-shaped, magnetically positive 'blobs' in this area, and these would be consistent with pits.

Short lengths of weakly positive linear anomalies appear predominantly in the western half of the data. These may represent further ditches; possibly fragments of poorly resolved enclosures or field boundaries. Two possible large pits are also present in the south-west of the area.

In the south-western quadrant of the survey area there are multiple parallel, positively magnetic linear anomalies, all evenly spaced and aligned north to south. This type of response is typical of ridge and furrow cultivation, probably medieval in age. The furrow anomalies are rather weak and fragmentary, which is an indication that the soils on the site are only moderately favourable for magnetic survey.

The survey data exhibits a broad swathe of diffuse, irregular positive anomalies with narrow, weakly negative halos around them. The form of the individual anomalies is suggestive of geological variations, and their distribution suggests that they are most likely to relate to pockets of sediment within a palaeochannel or similar feature buried within the river terrace gravels. A broad negative linear anomaly towards the northern end of this geological response is of uncertain significance but may also prove to have a geological origin.

A weakly negative linear anomaly is aligned north-west to south-east through the northern half of the survey data. This corresponds to the line of a known water pipe, and is the typical magnetic response for a backfill utility trench. A second buried utility, probably a metal pipe, is represented by an intense linear anomaly of alternating magnetic polarity which closely follows the northern and north-eastern edge of the survey area.

The data exhibits a random scatter of small, strongly positive magnetic anomalies, typically associated with a small negative halo. These all relate to ferrous debris of probably modern origin found on and within the ploughsoil. Concentrations of these anomalies are present in the south of the survey area, probably reflecting an accumulation of rubbish at the edge of the field.

5 CONCLUSION

The survey has successfully detected a set of ditches located in the western portion of the survey area. These probably functioned as boundaries and drainage for a set of fields or enclosures, between which a track way may also have existed. The short length of ditch located in the south-western corner of the site may also represent part of this historic field network.

When projected, the line of the putative trackway would broadly link the sites of previously excavated Roman and Iron Age remains to the north and south of the survey area (MCB20018 and MCB20356). This suggests the detected remains may have a Roman, or possibly Iron Age, date. Moreover, it is likely that one of the detected ditches is the one that was partially excavated, and dated as Roman, in 2006 (Jones 2006).

Traces of medieval ridge and furrow are present within the survey data. Although they share a similar alignment to the trackway they do not fully respect it, which is further evidence suggesting the trackway pre-dates the medieval period.

It is presumed that the survey area continued in agricultural use through the post-medieval period to the present day. The survey has detected no evidence of other post-medieval activity and the only notable modern feature to have been detected is a pipeline

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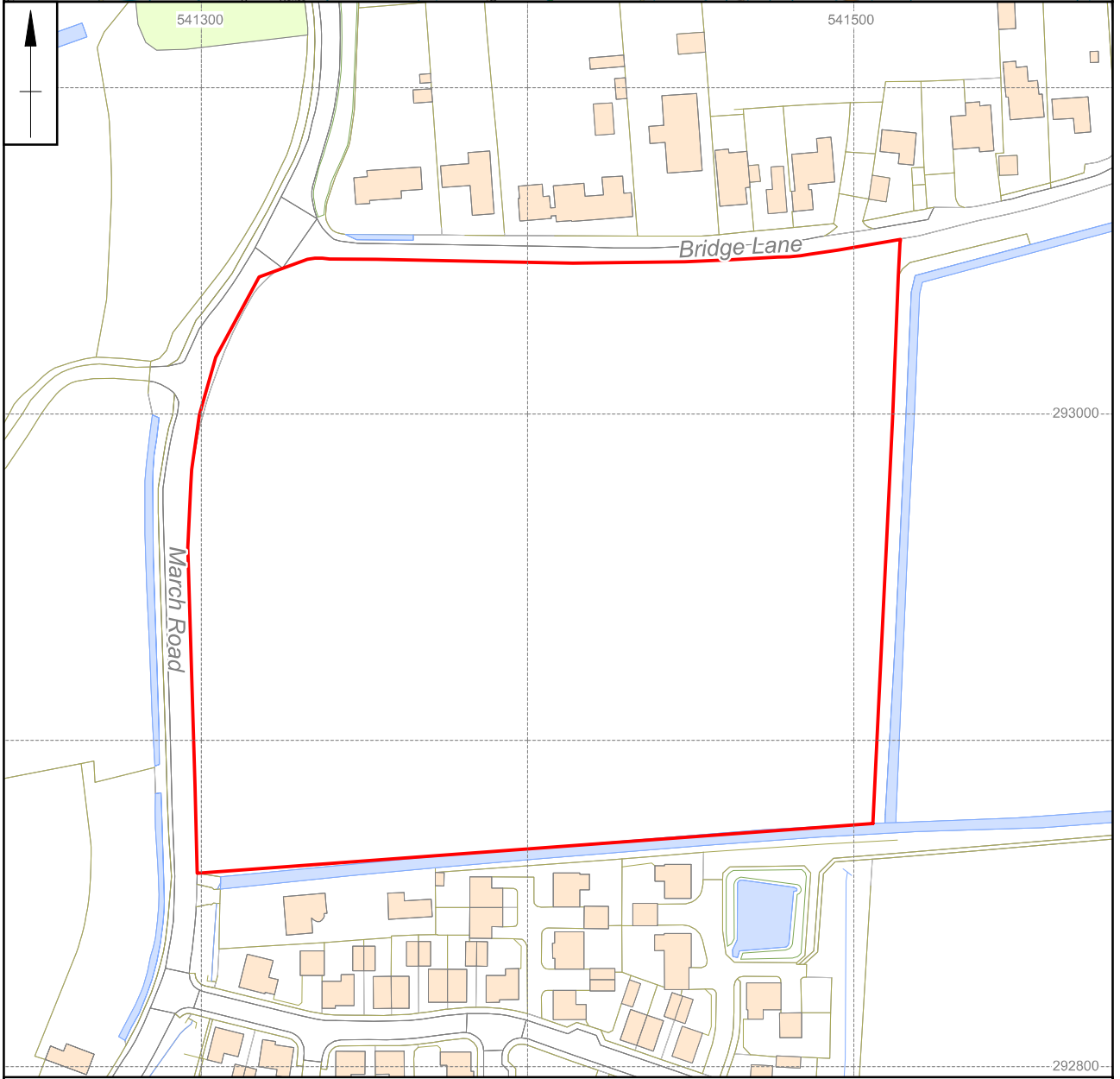
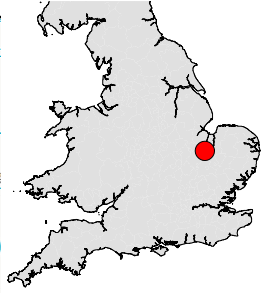
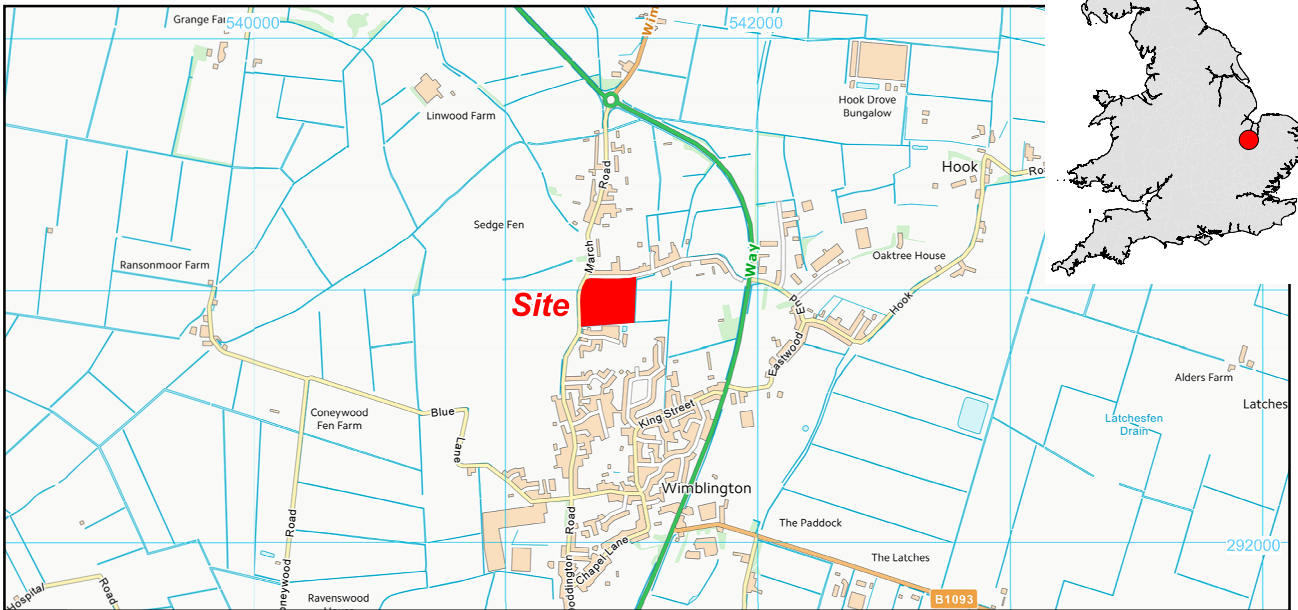
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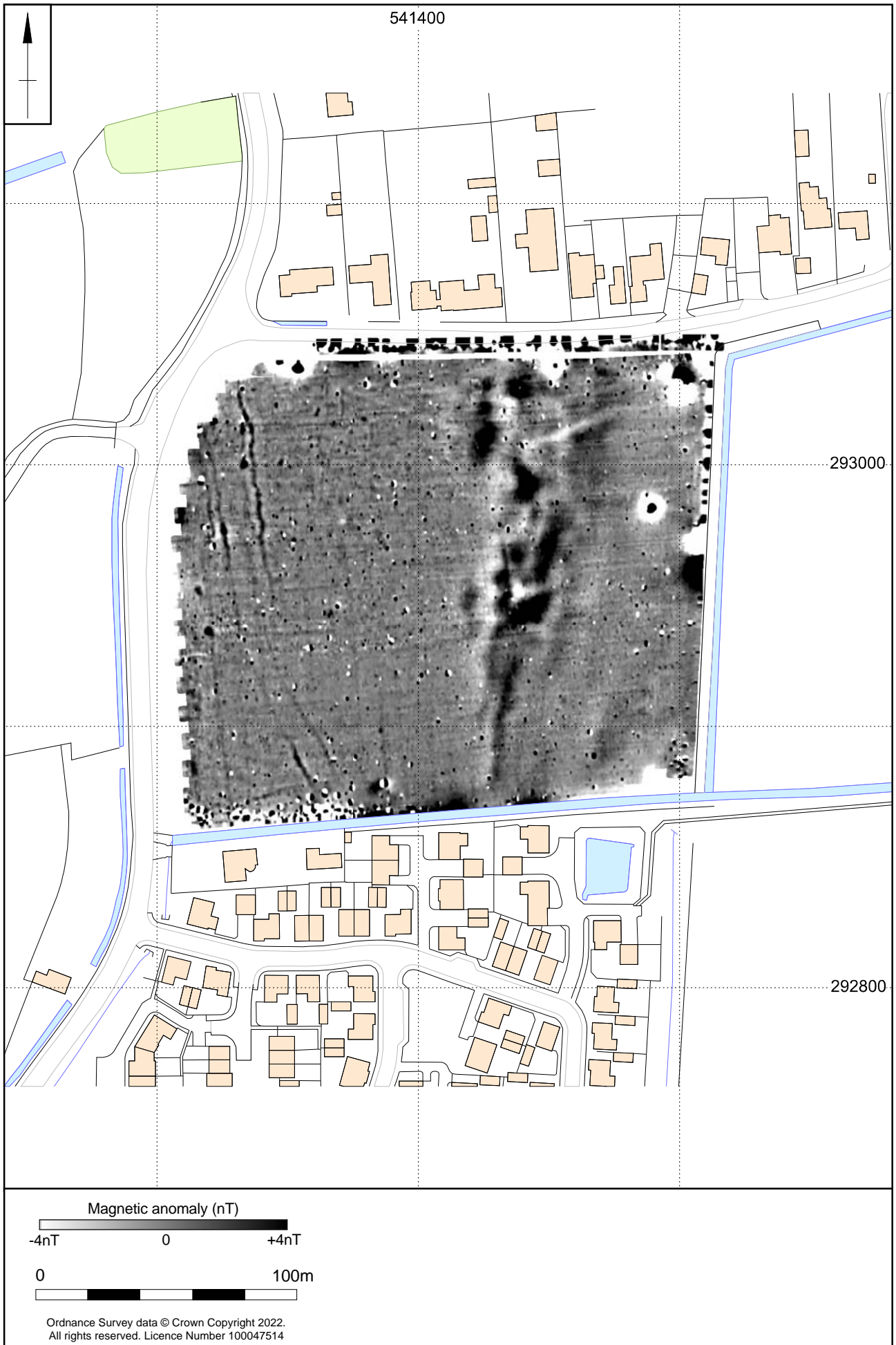
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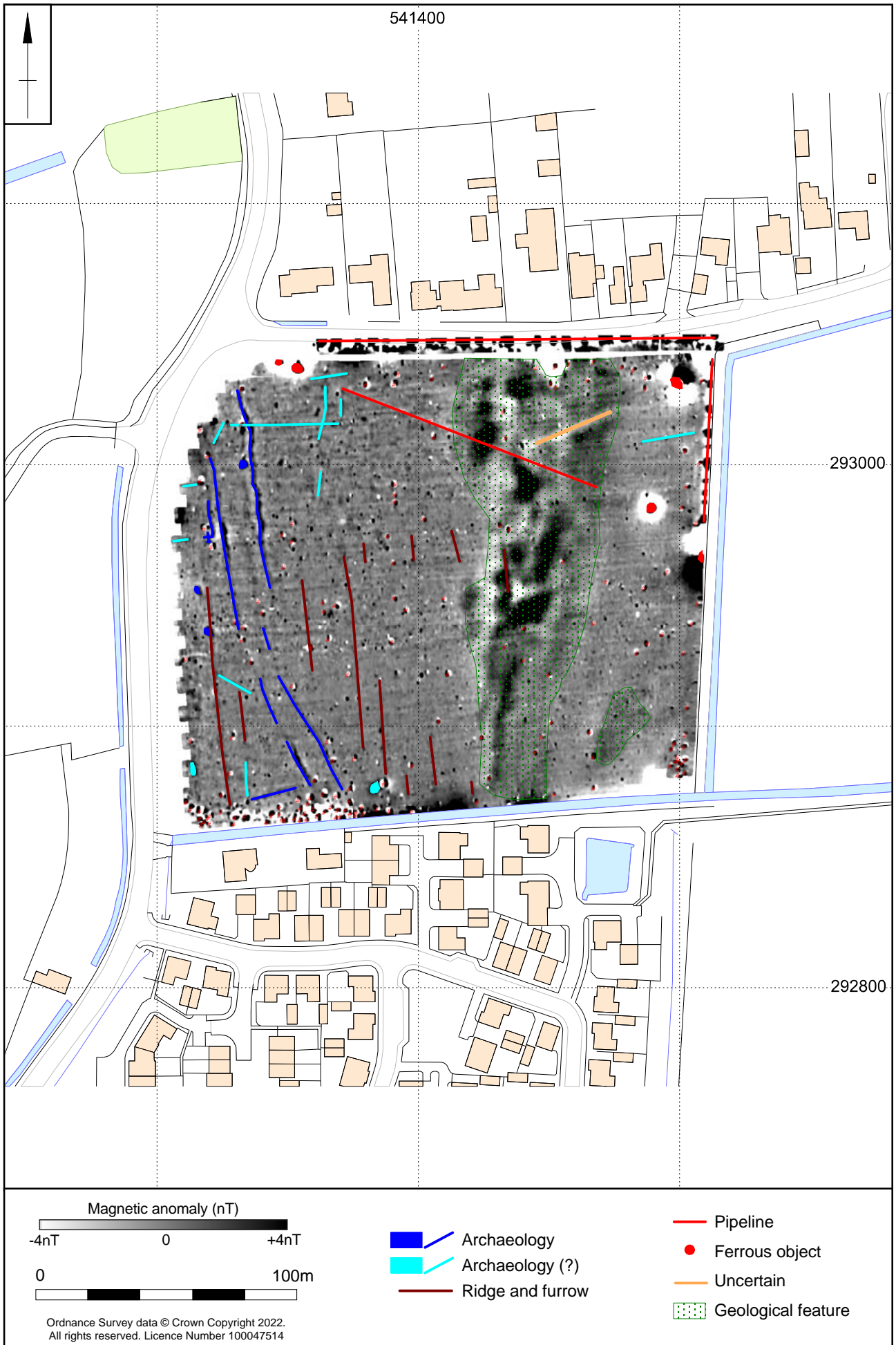
July 2022



Scale 1:2000

Site location Fig 1





Scale 1:2000

Magnetometer survey interpretation Fig 3





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