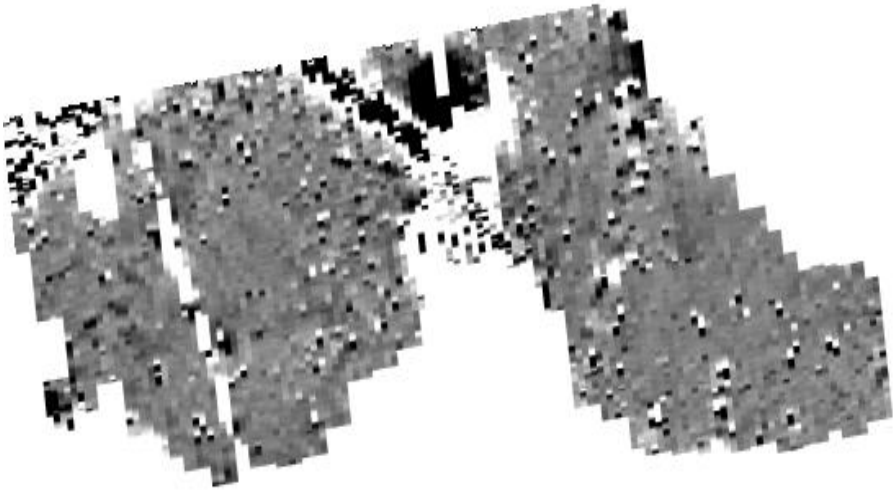
Northamptonshire Archaeology

# Archaeological geophysical survey at Chapel End, Sawtry, Cambridgeshire April 2013



**Northamptonshire Archaeology**
2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
t. 01604 700493 f. 01604 702822
e. sparry@northamptonshire.gov.uk
w. www.northantsarchaeology.co.uk

Northamptonshire County Council

John Walford

Report 13/67

ECB 3953

April 2013

## STAFF

| | |
|---|---|
| Project Manager: | Mark Holmes BA MA MIfA |
| Fieldwork: | Ian Fisher BSc |
| | Gemma Hewitt BA |
| | John Kemp BSc |
| Text and Illustrations: | John Walford BSc MSc |

## QUALITY CONTROL

| | Print name | Signed | Date |
|---|---|---|---|
| Checked by | Charlotte Walker | *CW* | 16/04/2013 |
| Verified by | Mark Holmes | *MH* | 16/04/2013 |
| Approved by | Pat Chapman | *PC* | 19/04/2013 |

## *OASIS* REPORT FORM

| PROJECT DETAILS | **OASIS No: 148578** | |
|---|---|---|
| Project name | Archaeological geophysical survey at Chapel End, Sawtry, Cambridgeshire | |
| Short description | Northamptonshire Archaeology was commissioned to carry out a detailed magnetometer survey on a proposed development site at Chapel End, Sawtry, Cambridgeshire. Two circular earthworks were present on the site but proved to be magnetically invisible. Other features, which were detected magnetically, included a trackway, traces of ridge and furrow field cultivation, and some linear features of uncertain significance. | |
| Project type | Geophysical survey | |
| Site status | None | |
| Previous work | None known | |
| Current Land use | Paddocks | |
| Future work | Unknown | |
| Monument type/ period | Undated circular earthworks, medieval to post-medieval ridge and furrow and trackway | |
| Significant finds | | |
| PROJECT LOCATION | | |
| County | Cambridgeshire | |
| Site address | Chapel End, Sawtry | |
| Study area | *c* 2.2ha | |
| OS grid reference | TL 1727 8373 | |
| Height OD | *c* 10m aOD | |
| PROJECT CREATORS | | |
| Organisation | Northamptonshire Archaeology (NA) | |
| Project brief originator | CgMs Consulting | |
| Project Design originator | NA | |
| Director/Supervisor | Ian Fisher | |
| Project Manager | Mark Holmes | |
| Sponsor or funding body | CgMs Consulting | |
| PROJECT DATE | | |
| Start date | 10 April 2013 | |
| End date | 19 April 2013 | |
| ARCHIVES | Location | Content |
| Physical | | |
| Paper | ECB 3953 | Site survey records |
| Digital | | Geophysical survey & GIS data |
| BIBLIOGRAPHY | Journal/monograph, published or forthcoming, or unpublished client report | |
| Title | Archaeological geophysical survey at Chapel End, Sawtry, Cambridgeshire, April 2013 | |
| Serial title & volume | Northamptonshire Archaeology Reports 13/67 | |
| Author(s) | John Walford | |
| Page numbers | 6 | |
| Date | 19 April 2013 | |

# Contents



## Figures

# ARCHAEOLOGICAL GEOPHYSICAL SURVEY AT CHAPEL END, SAWTRY, CAMBRIDGESHIRE APRIL 2013


## ABSTRACT

*Northamptonshire Archaeology was commissioned to carry out a detailed magnetometer survey on a proposed development site at Chapel End, Sawtry, Cambridgeshire. Two circular earthworks were present on the site but proved to be magnetically invisible. Other features, which were detected magnetically, included a trackway, traces of ridge and furrow field cultivation, and some linear features of uncertain significance.*


## 1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting, to conduct a magnetometer survey on a proposed development site at Chapel End, Sawtry, Cambridgeshire (NGR TL 1727 8373; Fig 1). The aim of the survey was to investigate whether the proposed development would damage or destroy any significant archaeological remains. The fieldwork (event number ECB 3953) was conducted on 10 April 2013 and comprised the detailed magnetometer survey of *c* 2.2ha of land.

## 2 TOPOGRAPHY AND GEOLOGY

The proposed development area comprises an elongated parcel of land lying on the eastern side of Sawtry, between the village and the A1(M) (NGR TL 1727 8373; Fig 1). It is located to the north of Fen Lane, and is accessed via Chapel End. At present, it is divided up into seven small paddocks.

The elevation of the proposed development area is *c* 10m aOD, To its east, the ground drops away gradually into Sawtry Fen. The geology of the area has been mapped as Oxford Clay, with no overlying drift (BGS 2013).

## 3 ARCHAEOLOGICAL BACKGROUND

The proposed development area lies just to the east of the A1(M), which follows the approximate line of the Roman 'Ermine Street'. Iron Age and Roman settlement remains have been excavated at several nearby locations, including Tort Hill, approximately 350m to the north of the survey area (CHER 01567), and Black Horse Farm, approximately 500m to the south-east (CHER MCB18242).

To the north of the proposed development area stands All Saints' church, which is a Victorian building but occupies an earlier, medieval site (Page *et al* 1936, 203-212). Around the church there are various medieval and post-medieval earthworks, including a moated platform, and these are collectively designated as a scheduled monument (Cambridgeshire SM No. 172).

Within the northern part of the proposed development area there are two circular earthworks, each consisting of a shallow ring ditch about 13m in diameter. They are clearly apparent on aerial photographs (Google Earth imagery dated February 2003 and October 2008) and were observed and mapped during the present survey (Plates 1-2, Fig 2 inset).

Whilst there is no unambiguous mention of the circular earthworks on the Cambridgeshire HER, one of them may be alluded to by record CHER 01018. This record concerns an earthwork 'island' located to the west of the survey area, at TL 170 838, but describes it in two contradictory ways. The second description (an "*island*" "*only some 2m in diameter and its surrounding ditch c 15m*") does not fit with the feature to which the record ostensibly relates and sounds more like a description of one of the earthworks in the proposed development area.

Circular earthwork 1, viewed from the north Plate 1

Circular earthwork 2, viewed from the north Plate 2

## 4 METHODOLOGY

The survey was conducted with Bartington Grad 601-2, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT).

An independent system of 30m grid squares was established across each of the fields to be surveyed. The grids were established with a tape measure and optical square and were tied in to the Ordnance Survey National Grid by means of a Leica Systems 1200 dGPS. The gradiometers were carried at a brisk but steady pace through each grid square, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per square.

The earthworks in the northern part of the proposed development area were mapped by GPS survey. Points were recorded along the breaks of slope, to provide locational information and rough outlines of all the main features (Fig 2 inset).

All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 2011), and with the written scheme of investigation for the project (NA 2013).

The magnetometer survey data were processed using Geoplot 3.00v software. Striping, caused by slight mismatches in sensor balance, was removed using the 'Zero Mean Traverse' function and destaggering of the data was performed as necessary.

The processed data is presented in this report in the form of greyscale plots, at a scale of +/- 4nT black/white. These have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretive overlay has also been produced, and is presented in Figure 3.

## 5 SURVEY RESULTS

Although the circular earthworks (see above) are fairly conspicuous surface features, they proved to have no discernable magnetic signature. This suggests that there is a poor magnetic contrast between the features themselves and the underlying substrate. Such a situation could occur if the feature consisted largely of re-deposited natural sediments, or if the local soils had a naturally low iron content which precluded the development of enhanced magnetic susceptibility.

To the north-east of the circular earthworks, a broad linear magnetic anomaly has been detected. It coincides with the line of a former trackway, shown on the first edition of the 6 inch Ordnance Survey map (1889), and has a typical intensity of *c* 10nT, which would be consistant with a metalled surface composed of brick rubble, slag, or other weakly magnetic hardcore material.

In the fields to the south-east of Chapel End, there are a series of parallel linear anomalies which represent remnant furrows of medieval or post-medieval field cultivation. In the same general area are some ‘scrappy’ linear anomalies, on various alignments, which are of unknown significance. It is possible that they represent ditches, but they are too ephemeral and ill-defined for this interpretation to be made with any confidence.

The data contains a few large, very intense, dipolar anomalies which are of obvious ferrous origin. There are also areas where the survey data is dominated by dense clusters of small dipolar anomalies, indicating spreads of brick rubble, ferrous scrap and other magnetic debris. Such material is most commonly associated with former hardstandings, demolished buildings, made ground, and other relatively modern forms of disturbance.

## 6 CONCLUSION

The fieldwork has identified two circular earthworks, each measuring *c* 13m in diameter. Although these are fairly conspicuous surface features, they proved to be magnetically undetectable. Their date and function is unknown.

The survey has identified only a few features of minor archaeological significance. There is some ridge and furrow, a metalled trackway and several vague linear features of unknown origin. Some areas of modern disturbance have also been detected.

## BIBLIOGRAPHY

Bartington, G, and Chapman, C, 2003 A high-stability fluxgate magnetic gradiometer for shallow geophysical survey applications, *Archaeological Prospection*, **11**, 19-34

BGS 2013 *GeoIndex*, http://mapapps2.bgs.ac.uk/geoindex/home.html, consulted 8/04/2013

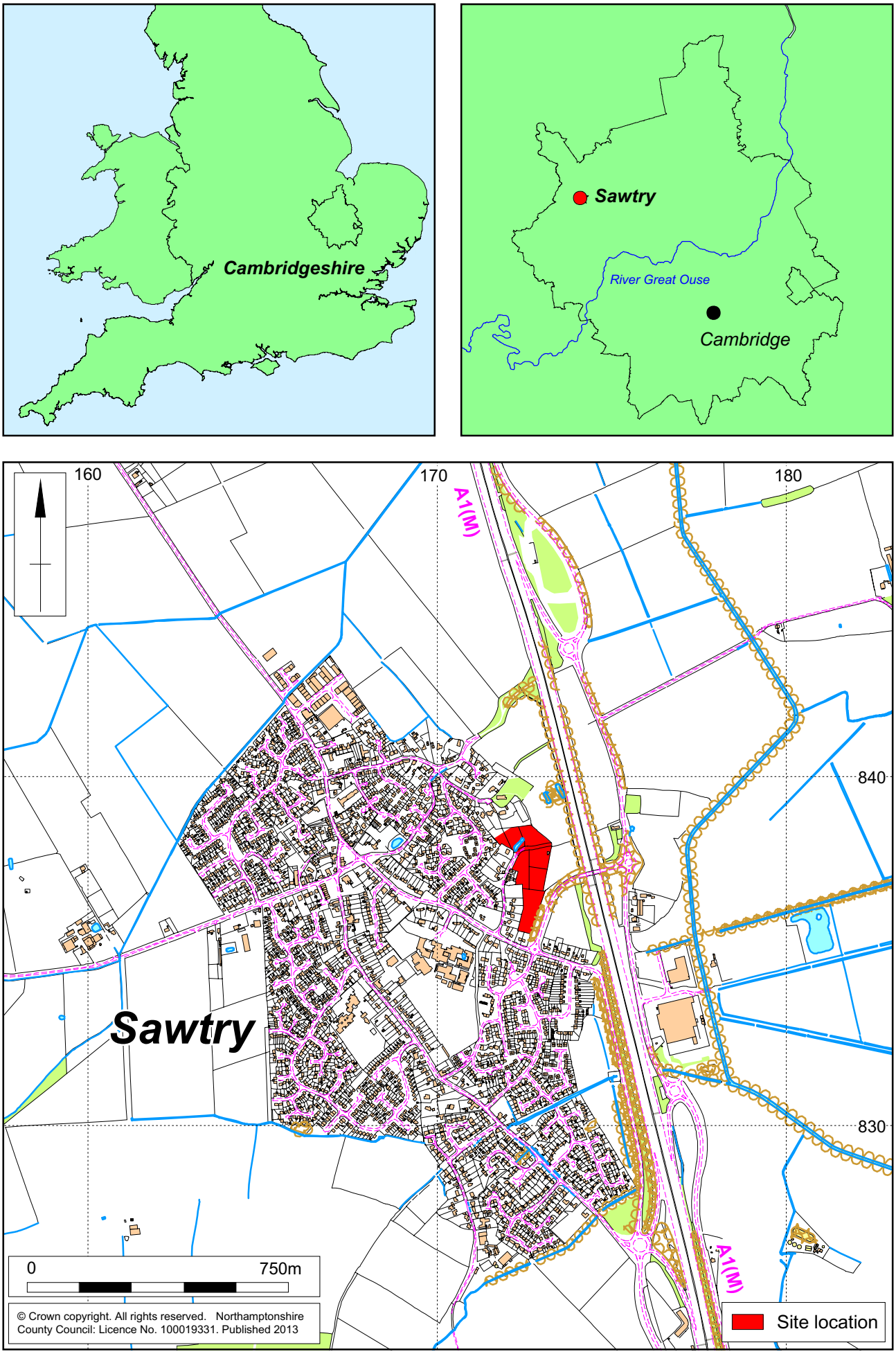
EH 2008 *Geophysical Survey in Archaeological Field Evaluation*, English Heritage

IfA 2011 *Standard and Guidance for Archaeological Geophysical Survey*, Institute for Archaeologists

NA 2013 *Land at Chapel End, Sawtry, Cambridgeshire: Method statement for geophysical survey*, Northamptonshire Archaeology

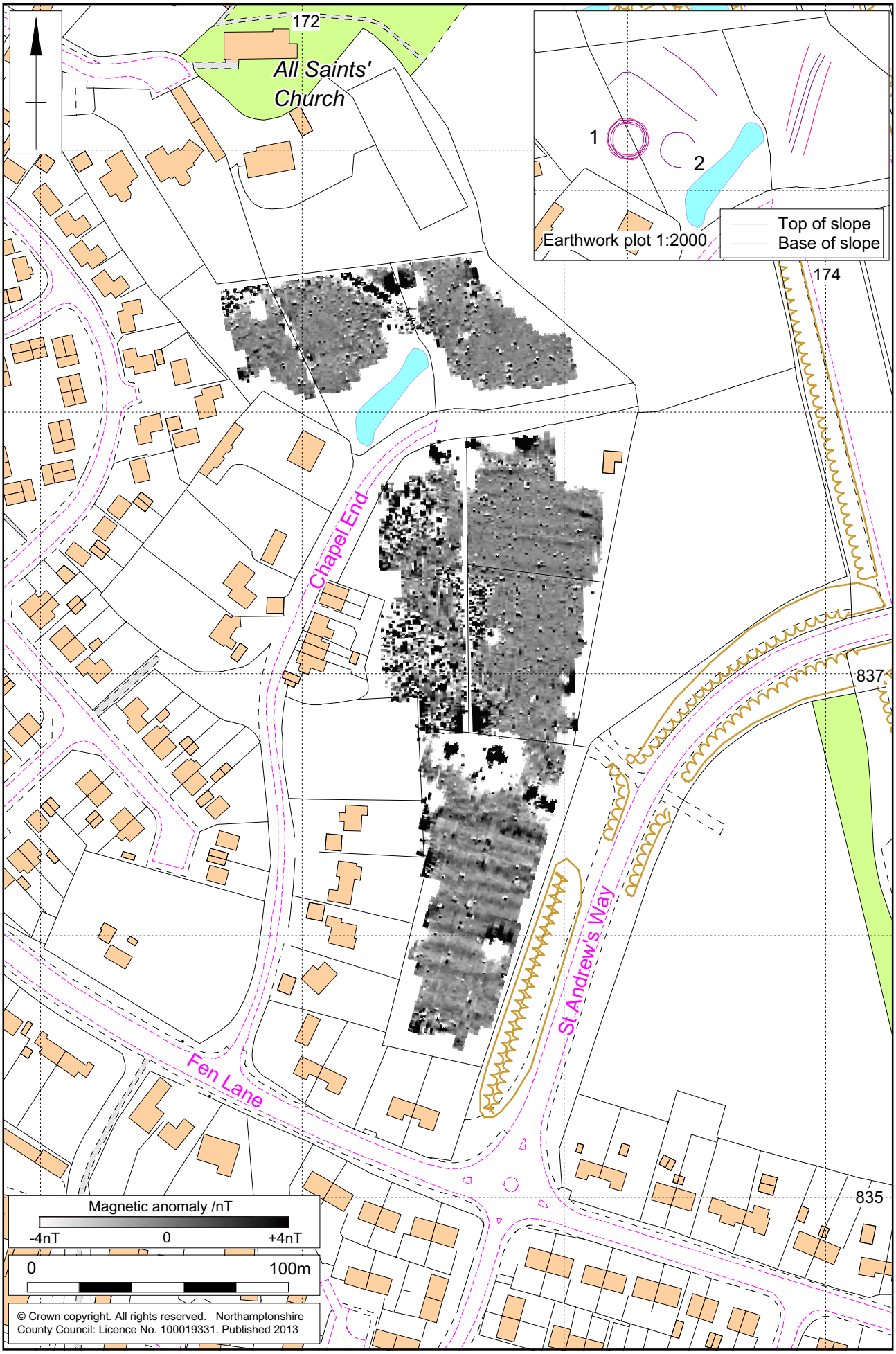
Page, W, Proby, G, and Inskip-Ladds, S, 1936 *Victoria County History: A History of the County of Huntingdon,* vol, **3**

Northamptonshire Archaeology
a service of Northamptonshire County Council 19 April 2013



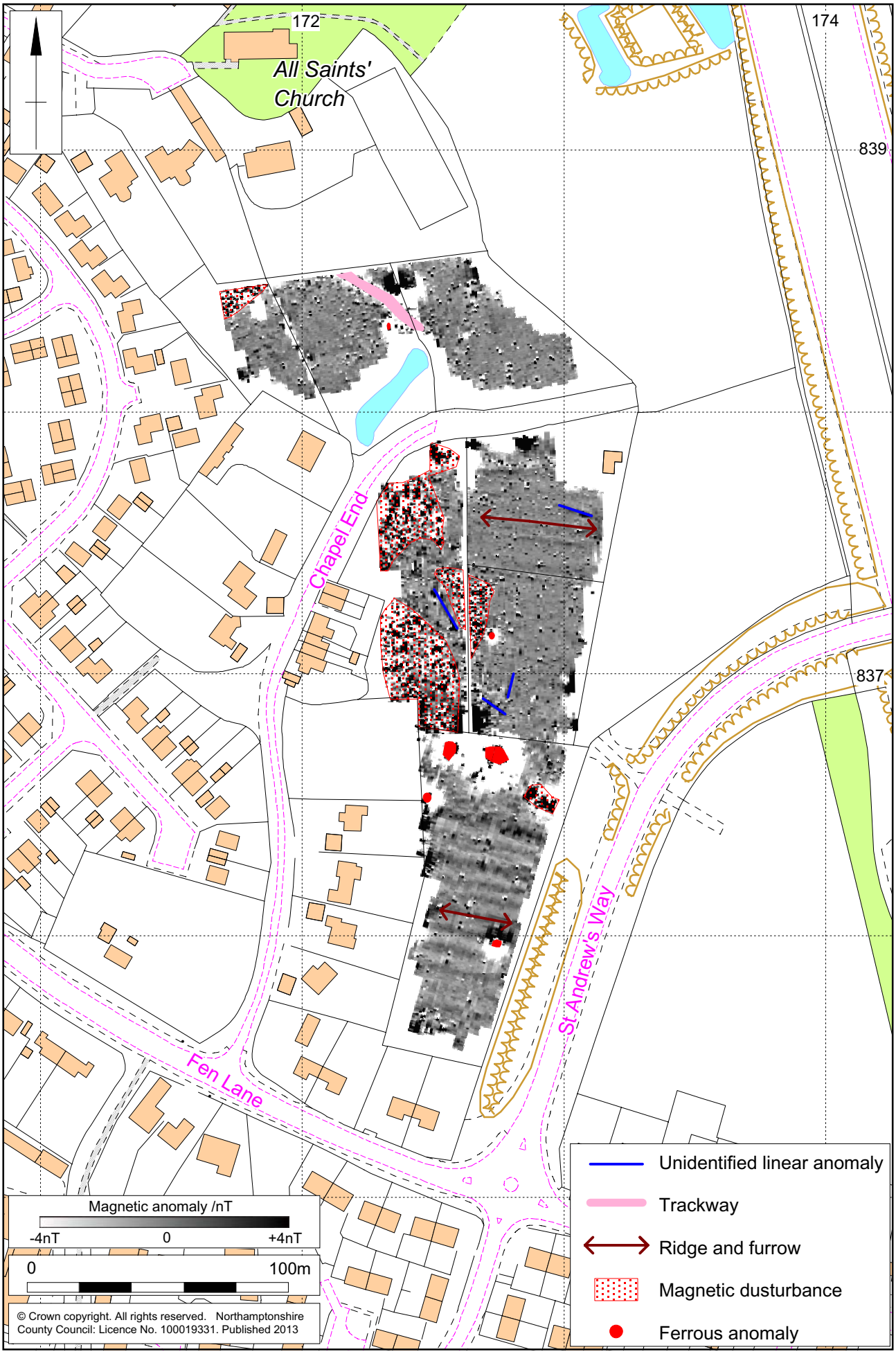

Scale 1:15,000

Site location Fig 1




1:2000

Magnetometer survey results Fig 2




1:2000

Magnetometer survey interpretation Fig 3

Northamptonshire County Council

# Northamptonshire Archaeology

**Northamptonshire Archaeology**
2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
t. 01604 700493 f. 01604 702822
e. sparry@northamptonshire.gov.uk
w. www.northantsarchaeology.co.uk

Accredited Contractor

Registered Organisation

Northamptonshire County Council