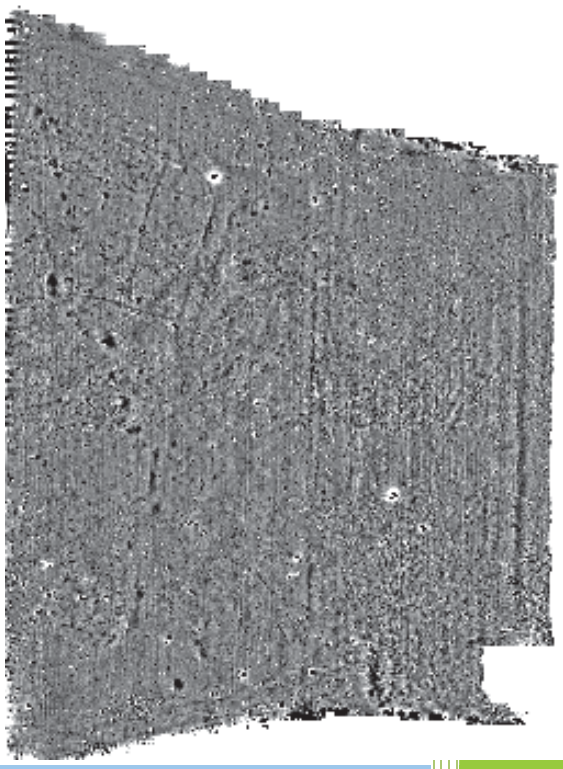
Northamptonshire Archaeology

Archaeological Geophysical Survey of Land at Nightingale Lane, Downham Market Norfolk



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Report 11/122
June 2011

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OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey of Land at Nightingale Lane, Downham Market, Norfolk	
Short description	Northamptonshire Archaeology was commissioned by CgMs Consulting Ltd to carry out a magnetometer survey in advance of a proposed development scheme at Downham Market, Norfolk. Four fields, with a combined area of 23ha, were surveyed. This work identified a ditched enclosure of possible prehistoric or Romano-British date, a curving ditch which may represent part of a second enclosure, several possible pit clusters and a possible (but doubtful) stone building. Some relatively recent structures of unknown function were also encountered.	
Project type	Geophysical survey	
Site status	None	
Previous work	None known	
Current Land use	Arable	
Future work	Not known	
Monument type/ period	Undated enclosures, undated pits, possible building, recent structures.	
Significant finds	None	
PROJECT LOCATION		
County	Norfolk	
Site address	Nightingale Lane, Downham Market	
Study area	23ha	
OS Easting & Northing	TF 618 024	
Height OD	*c* 30m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	CgMs Consulting	
Project Design originator	NA	
Director/Supervisor	Ian Fisher	
Project Manager	Adrian Butler	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	26 May 2011	
End date	2 June 2011	
ARCHIVES	Location	Content
Physical	N/A	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological Geophysical Survey of Land at Nightingale Lane, Downham Market, Norfolk	
Serial title & volume	Northamptonshire Archaeology Reports 11/122	
Author(s)	John Walford and Ian Fisher	
Page numbers	6	
Date	02/06/10	

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ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF LAND AT NIGHTINGALE LANE, DOWNHAM MARKET, NORFOLK

MAY 2011

ABSTRACT

Northamptonshire Archaeology was commissioned by CgMs Consulting Ltd to carry out a magnetometer survey in advance of a proposed development scheme at Downham Market, Norfolk. Four fields, with a combined area of 23ha, were surveyed. This work identified a ditched enclosure of possible prehistoric or Romano-British date, a curving ditch which may represent part of a second enclosure, several possible pit clusters and a possible (but doubtful) stone building. Some relatively recent structures of unknown function were also encountered.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting Ltd to carry out an archaeological geophysical survey in advance of a proposed development scheme at Downham Market, Norfolk (NGR TF 618 024; Fig 1). The fieldwork was undertaken from 23 to 26 May 2011, during which time four fields, with a total area of 23ha, were subject to detailed magnetic gradiometer survey.

2 TOPOGRAPHY AND GEOLOGY

The proposed development area comprises an irregularly-shaped area of arable land lying immediately south-west of Downham Market in Norfolk. It stands at an elevation of *c* 30m AOD and undulates gently, with an overall slope down towards the east. It is underlain by a sandy, silty clay till (Brown and Dobson 2010, 3), supporting very light sandy soils with abundant flints (pers obs).

The proposed development area is bounded to the south by the A1122, and extends as far as Rouse's Lane in the north. A footpath, Nightingale Lane, passes through the area on a north-south alignment, linking Downham Market with the village of Denver.

At the time of the survey, most of the proposed development area was covered by a young crop of sugar beet. However the easternmost field, Field 2, contained a more advanced cereal crop and was judged to be in an unsurveyable condition. Some small areas of overgrown land were also unfit for survey.

3 ARCHAEOLOGICAL BACKGROUND

A recent desk-based assessment of the proposed development area (Brown and Dobson 2010) identified little evidence for archaeological remains within the area itself, but suggested that this was more likely to reflect a lack of previous investigation than a genuine absence of archaeology. Indeed, the assessment highlighted a number of discoveries (summarised below) which show that the immediately surrounding landscape has seen repeated episodes of human activity from the Mesolithic period onwards.

Several flint scatters of Mesolithic and Neolithic date have been found in and around Downham Market, but the earliest physical remains yet found comprise a pit and scattered pot sherds of late Neolithic or early Bronze Age date which were discovered immediately adjacent to the proposed development area during the construction of the A1122 bypass. Other early Bronze Age activity in the area is suggested by two ring ditches, one indicated by a cropmark 250m east of the proposed development area and the other found in excavations near to Crow Hall, a similar distance to the west.

As well as the probable Bronze Age ring ditch, the Crow Hall excavations also revealed a late Iron Age settlement, which appeared to continue in use for some years after the Roman Conquest. This site was overlain by a much later set of ditches, dating from the middle Saxon period. Although no other substantial sites of Iron Age, Roman or Saxon date have been discovered in the vicinity, there have been a number of stray finds, and it is suspected that a Roman road, the Fen Causeway, passed very close to the south-eastern corner of the proposed development area.

During the medieval to post-medieval periods, the proposed development area appears to have been open ground in between the main settlements, and is presumed to have been predominantly in agricultural use. However a part of the area was incorporated for a while in the 18th to 19th century grounds of Crow Hall Park and may contain landscape features of this date.

At the easternmost tip of the proposed development area there is a large, derelict circular brick structure of relatively recent date. The same structure appears on a 1946 aerial photograph (NCC 2011), surrounded by a number of other structures which no longer survive. A quantity of slag occurs on the field surface in the same location and is probably part of an associated deposit of hardcore (pers obs).

4 METHODOLOGY

The magnetometer 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).

Each field within the survey area was sub-divided into a system of 30m grid squares, which were established by means of a tape measure and optical square. The grids were tied into the national grid by means of a Leica 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 grid. In accordance with the written scheme of investigation (NA 2011), one grid was surveyed twice each day to demonstrate the repeatability of the results (Fig 6).

All fieldwork methods complied with the written scheme of investigation and with guidelines issued by English Heritage and by the Institute for Archaeologists (NA 2011; EH 2008; Gaffney, Gater and Ovendon 2002).

The survey data was processed using Geoplot 3.00u 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 (+/- 4nT black/white) which have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Figs 2 and 4). Interpretative overlays have been produced and are shown in Figures 3 and 5. The repeated survey grids are shown as greyscale plots in Figure 6.

5 SURVEY RESULTS

Field 1 (Figs 2-3)

The data from this field contains an abundance of positive linear anomalies, but relatively few of these are thought to be of archaeological interest. One pair follows a sinuous course across the western half of the field, and perhaps indicates the side ditches of a trackway of unknown date. A few other anomalies may also indicate lengths of infilled ditch, but are too scattered and fragmentary to interpret any further.

Many of the remaining linear anomalies in the data follow parallel, slightly curving, east-west aligned courses. These represent a block of medieval or later ridge and furrow cultivation extending across the central and eastern parts off the modern field. Further to the west there is a 'Christmas tree' arrangement of anomalies which represent a fairly recent system of field drains. Two other linear anomalies lie parallel with modern field boundaries. Their exact cause is uncertain but they are presumed to be of recent agricultural origin.

A few other linear anomalies can be correlated with 19th century field boundaries recorded on various historic maps (see Brown and Dobson 2010, fig 9). The most conspicuous of these passes from east to west through the centre of the field and represents the former northern boundary of Crow Hall Park.

At the far western edge of the field, butting against Nightingale Lane, there is a weak, L-shaped negative anomaly which perhaps represents the buried footings of a stone building. This interpretation is, however, a very tentative one and it is also possible that the anomaly represents no more than random noise in the data.

At the eastern edge of the field, and close to the circular brick structure noted in Section 3 (above), there are several very large dipolar anomalies. These probably represent recent structure features, such as brick or reinforced concrete footings, or else dense concentrations of slag (a scatter of which is apparent on the field surface). A positive linear magnetic anomaly heads south-westwards away from this area, perhaps indicating the remnants of a former access track.

A number of small discrete dipolar anomalies occur across the field. Most of these probably indicate insignificant pieces of iron debris in the plough-soil, but there are two which relate to modern manhole covers and one, in the northern limb of the field, which has an unusually low and broad peak (*c* 45nT). The latter could represent a ferrous object but would also be consistent with an area of burnt soil, such as a hearth.

Field 2 (Fig 2)

This field was not surveyed. The western part was obstructed by dense vegetation, and the eastern part contained a well developed cereal crop which could not be surveyed without causing undue damage.

Field 3 (Figs 2-3)

Several anomalies of archaeological interest occur in the northern half of this field. In particular, there is a group of weakly positive linear anomalies located towards the north-eastern corner which appear to represent part of a square or rectangular ditched enclosure, perhaps with a trackway along its southern edge. The form of this enclosure is not particularly diagnostic, but it is most probably of later prehistoric or Romano-British date.

To the north and west of the enclosure is a linear spread of discrete positive anomalies. These may represent infilled pits, natural hollows or concentrations of magnetic minerals within the underlying geology. In the same area is a very weakly positive linear anomaly which probably indicates a section of infilled ditch.

A discontinuous positive linear anomaly bisects the field from east to west. This coincides with the line of a 19th century boundary marking the former southern extent of Crow Hall Park (*cf* Brown and Dobson 2010, fig 9). Much weaker linear anomalies on the same alignment indicate the modern direction of ploughing. The broad linear anomaly along the southern field edge is probably also of modern agricultural origin, although its precise cause is unknown.

There is a narrow band of irregular magnetic anomalies at the south-eastern edge of the field, and a line of more regular ones at the western edge, against Nightingale Lane. None of these anomalies are particularly strong (typical peak heights are 5-20nT), so they are unlikely to be of ferrous origin. More probably they represent concentrations of ceramic debris (brick, tile, etc) or else areas of burnt soil.

Field 4 (Figs 2-3)

The data from this field contains a positive curvilinear anomaly which extends southwards beyond the limits of the survey area. To the east it weakens abruptly and appears to stop short of the field boundary. It is likely that this anomaly represents part of an enclosure ditch, perhaps associated with the late Neolithic or early Bronze Age pit and pottery found immediately to the south, on the line of the A1122 (see Section 3 above).

To the north and east of the probable enclosure there are some very weak and irregular linear anomalies. It is possible that these represent ditches, but a geological origin is thought to be more likely.

In the same area are two dipolar anomalies with fairly broad central peaks and somewhat subdued peak heights. The southern attains a maximum intensity of c 60nT, and the northern a maximum of *c* 90nT. Such anomalies could relate either to buried iron objects or to concentrations of burnt sediment such as may be associated with hearths or kilns.

Field 5 (Figs 4-5)

The data from this field contains a number of discrete positive anomalies which most probably indicate infilled pits. A cluster of these occurs in the eastern half of the field and there are others further to the north-east. In the western half of the field is a group of anomalies which are of similar magnetic intensity but much more elongated in form.

These features, which are all aligned from north to south, presumably represent infilled trenches or short sections of ditch.

Five equally spaced parallel linear anomalies extend from east to west across the eastern half of this field. Although they might represent traces of ridge and furrow, they do not have the typical S-curve of plough ridges and are though more likely to indicate relatively modern field drains.

A thin and discontinuous linear anomaly, incorporating a number of small magnetic dipoles, bisects the field from north to south and marks the line of a 19th century field boundary (*cf* Brown and Dobson 2010, fig 9). A strongly dipolar magnetic anomaly which follows a parallel course along the western edge of the field indicates the presence of a small pipeline. Other linear anomalies around the field edge are thought to be of recent agricultural origin.

6 CONCLUSION

This survey has identified a ditched enclosure in Field 3 which, although not closely datable, is most probably of later prehistoric or Roman origin. Part of another enclosure has been identified in Field 4, and this may be associated with a late Neolithic or early Bronze Age pit discovered immediately to the south during the construction of the A1122.

Further archaeological remains, including pits and areas of ridge and furrow cultivation have been identified across the survey area. The data also suggests that the footings of a small building may exist in Field 1, adjacent to Nightingale Lane, although the evidence for this is not conclusive.

Finally, the survey has drawn attention to the presence of some relatively recent structural remains at the eastern edge of Field 1. The origin and function of these is at present uncertain, but they may perhaps be of slight historic interest.

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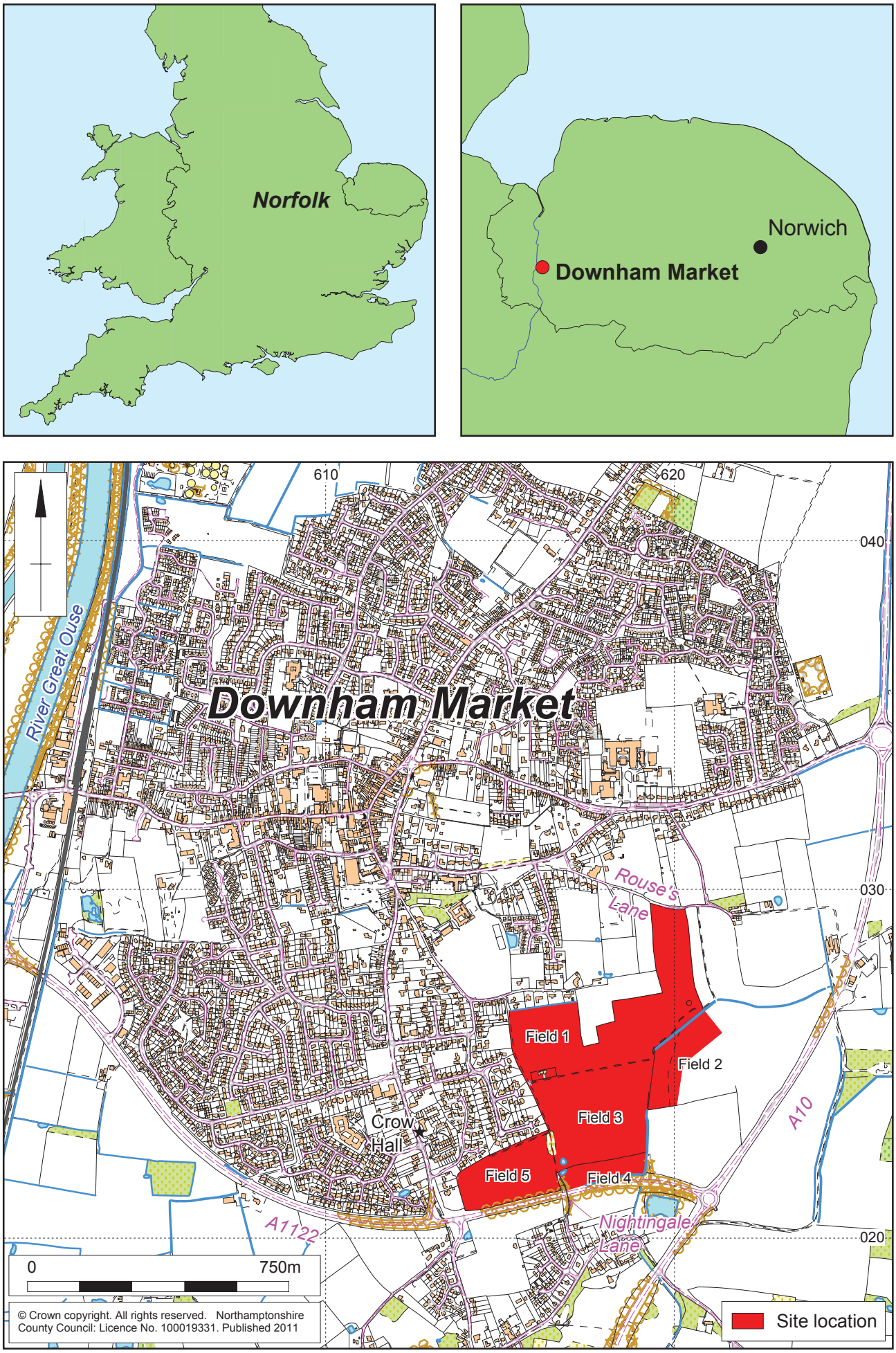
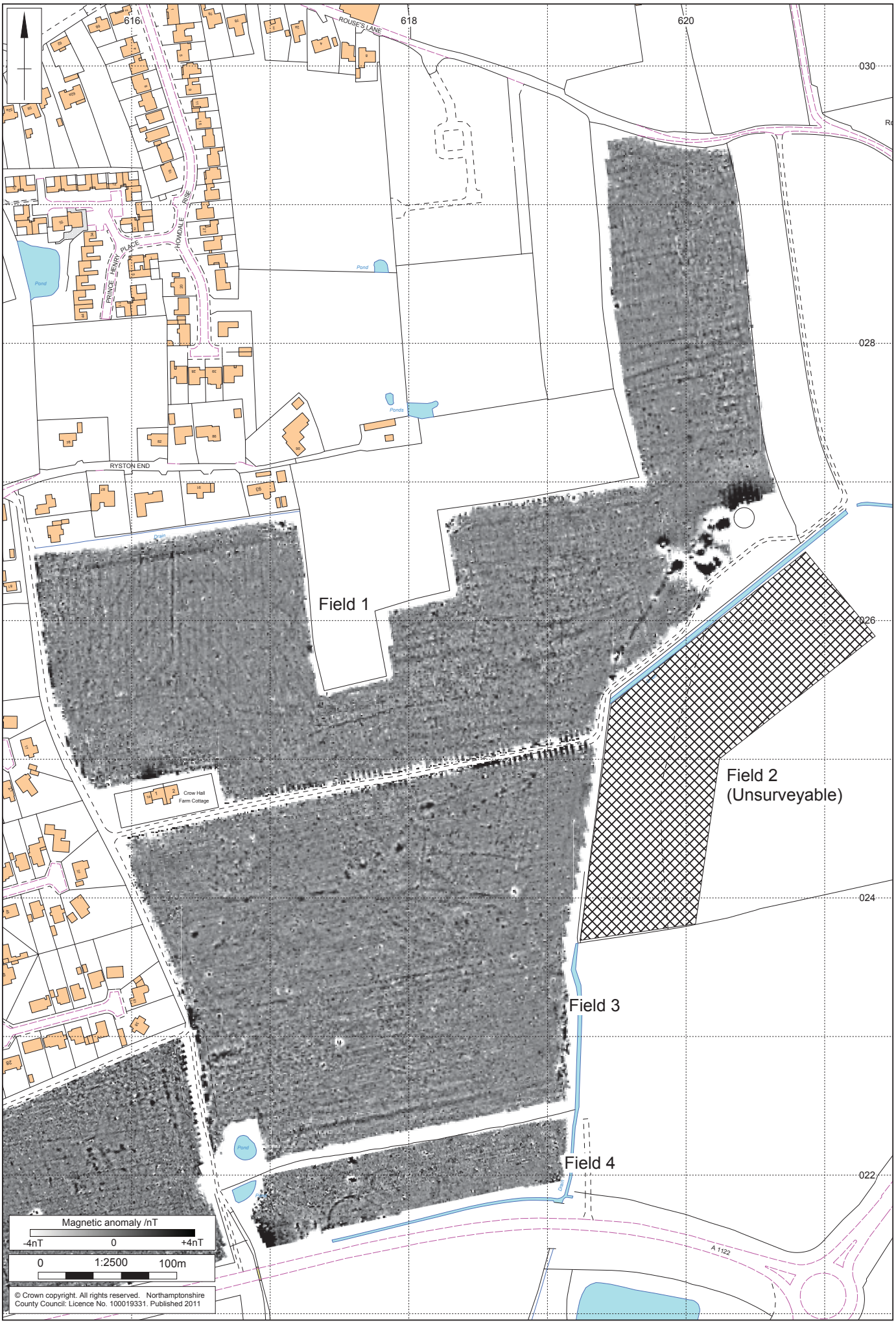
A Service of Northamptonshire County Council 2 June 2011



Scale 1:15,000

Site location Fig 1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618
620
030
028
026
024
022
ROUSE'S LANE
HOWDALE RISE
PRINCE HENRY PLACE
RYSTON END
Pond
Ponds
Drain
Crow Hall Farm Cottage
Field 1
Field 2
(Unsurveyable)
Field 3
Field 4
A 1122
Magnetic anomaly /nT
-4nT
0
+4nT
0
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100m
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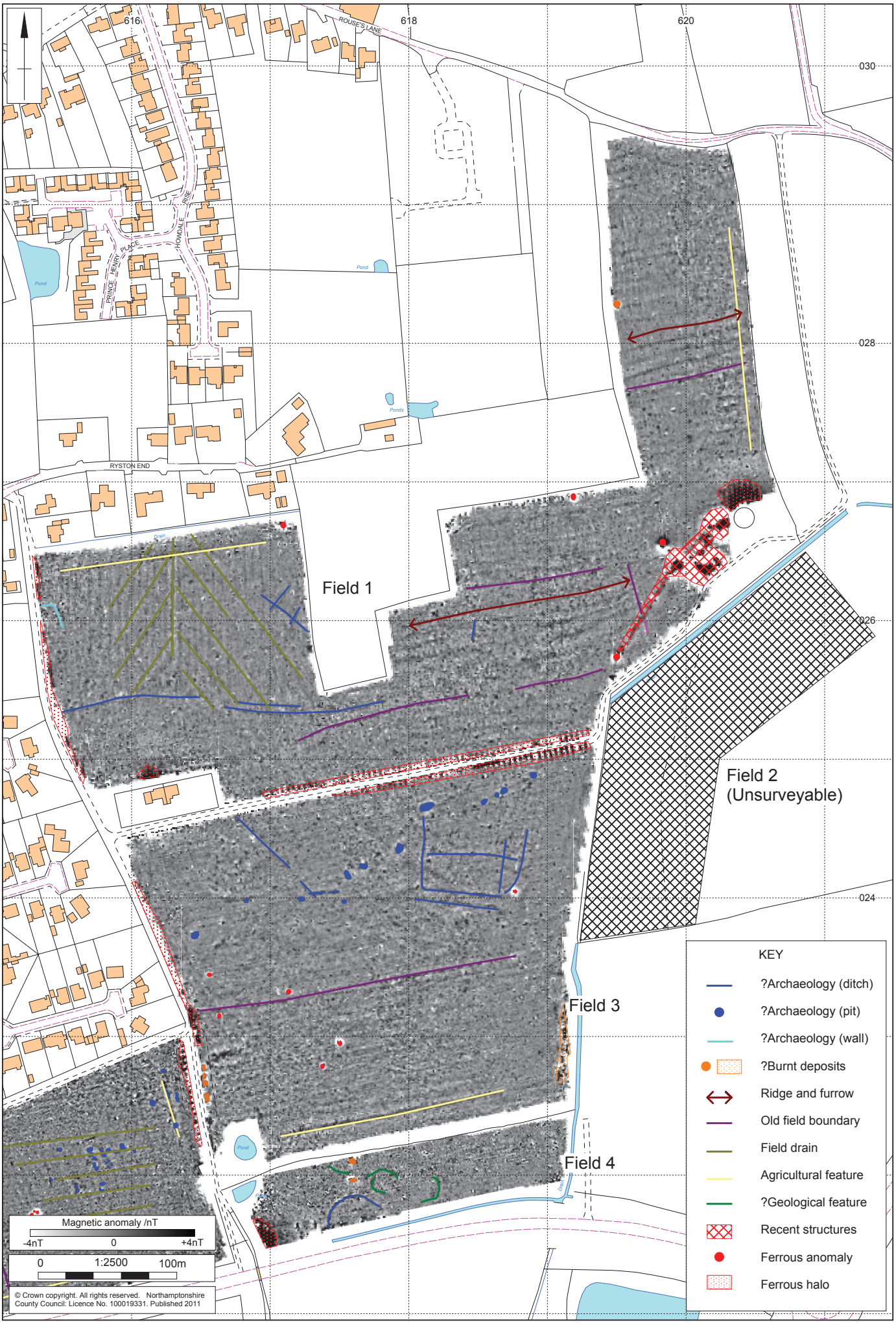
Magnetometer survey results Fields 1-4
Fig 2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030
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024
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HOWDALE RISE
PRINCE HENRY PLACE
RYSTON END
Pond
Ponds
Drain
Field 1
Field 2
(Unsurveyable)
Field 3
Field 4
KEY
?Archaeology (ditch)
?Archaeology (pit)
?Archaeology (wall)
?Burnt deposits
Ridge and furrow
Old field boundary
Field drain
Agricultural feature
?Geological feature
Recent structures
Ferrous anomaly
Ferrous halo
Magnetic anomaly /nT
-4nT
0
+4nT
0
1:2500
100m
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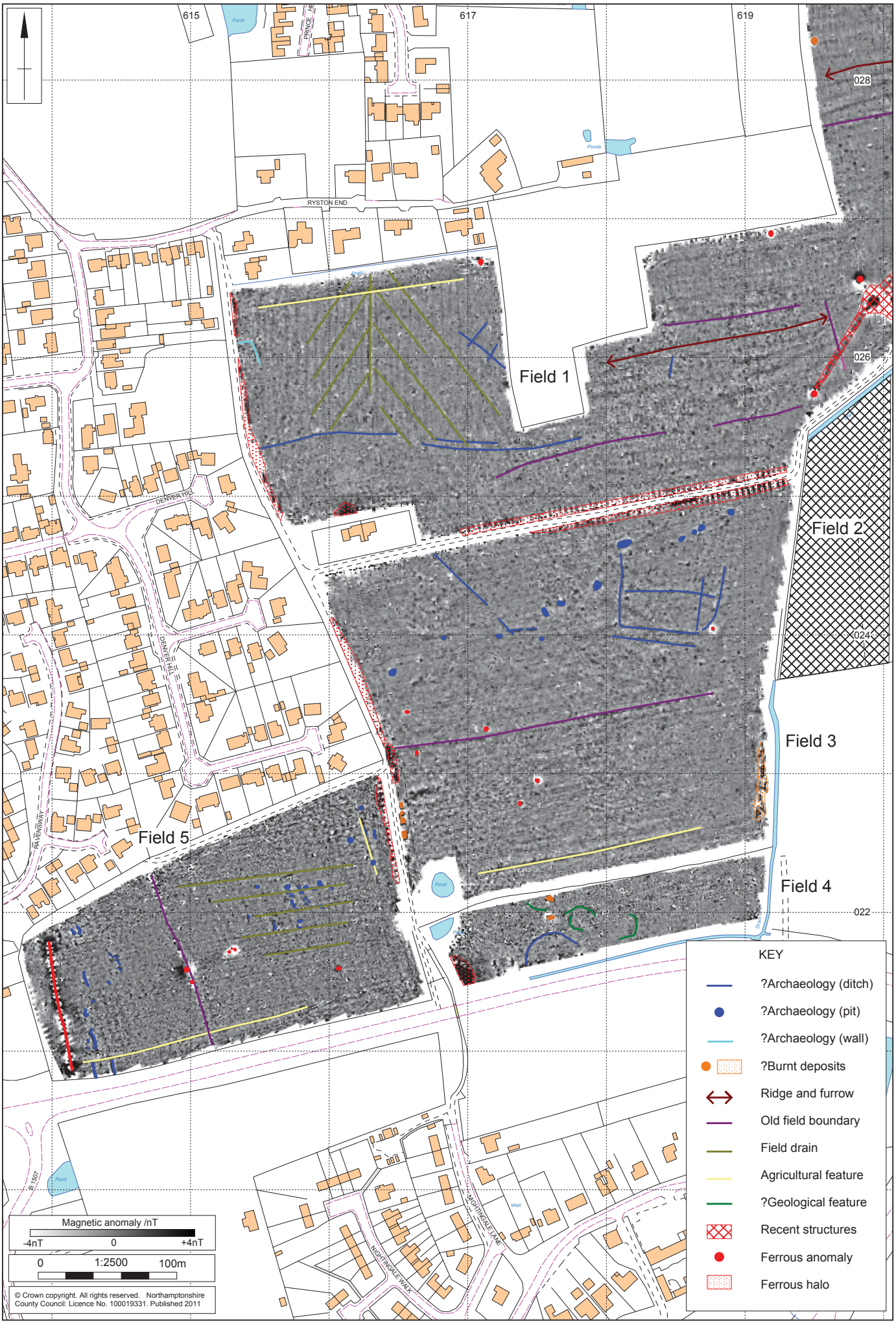
Magnetometer survey interpretation, Fields 1 - 4
Fig 3

Scale 1:2500 @ A3

Magnetometer survey results, Fields 3-5 Fig 4

Scale 1:2500 @ A3



Magnetometer survey interpretation, Fields 3-5

Fig 5

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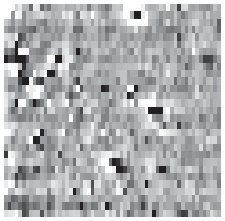

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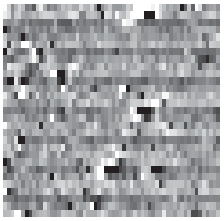

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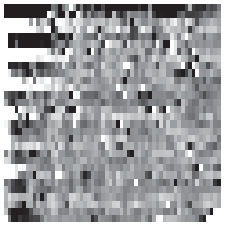

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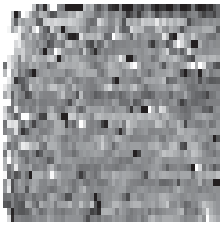

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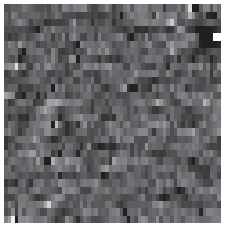

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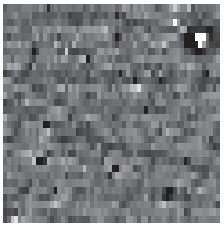

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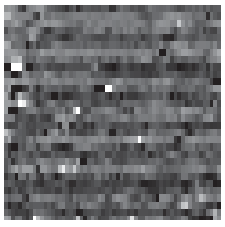

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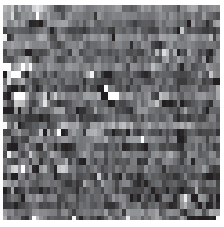

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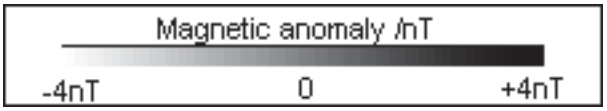

Repeated magnetometer survey grids Fig 6

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