Northamptonshire County Council

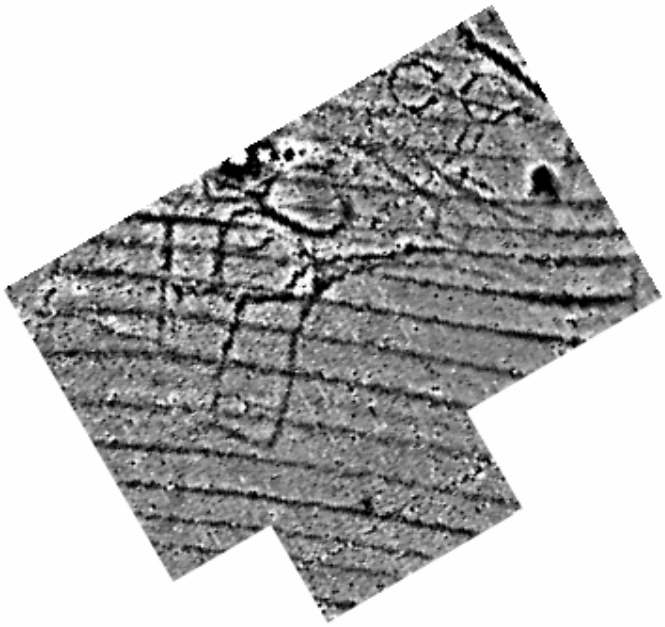
Northamptonshire Archaeology

Archaeological Geophysical Survey on Land

East of Lancasterway Business Park,

Ely, Cambridgeshire

February 2008



Ian Fisher

March 2008

Report 08/48

CHER Event Refs: ECB2861

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REGISTERED IFA ORGANISATION

NORTHAMPTONSHIRE COUNTY COUNCIL

NORTHAMPTONSHIRE ARCHAEOLOGY

MARCH 2008

ARCHAEOLOGICAL GEOPHYSICAL SURVEY ON LAND EAST OF LANCASTERWAY BUSINESS PARK, ELY, CAMBRIDGESHIRE

FEBRUARY 2008

CHER Event Refs: ECB2861

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QUALITY CONTROL

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Checked by	Pat Chapman	*PC*	07/03/08
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***OASIS* REPORT FORM**

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey on Land East of Lancasterway Business Park, Ely, Cambridgeshire	
Short description (250 words maximum)	Northamptonshire Archaeology was commissioned by CgMs Consulting on behalf of their clients Grovemere Property Ltd to undertake a gradiometer survey across a proposed development area to the east of Lancasterway Business Park, Ely, Cambridgeshire. The survey area is triangular in shape defined by the remains of former runways of a Second World War airfield. The survey identified a complex enclosure system with roundhouses and possible industrial activity. It also mapped medieval ridge and furrow cultivation, field boundaries and land drains.	
Project type	Geophysical Survey	
Site status (none, NT, SAM etc)	Arable land	
Previous work (SMR numbers etc)	DBA (CgMs 2008), Evaluation (Hancock 2006), Fieldwalking (Morris forthcoming)	
Current Land use	Arable farmland	
Future work	Yes, fieldwalking and trial trenching	
Monument type/ period	Unknown	
Significant finds (artefact type and period)	Settlement remains, probably Iron Age / Roman	
PROJECT LOCATION		
County	Cambridgeshire	
Site address (including postcode)	Lancaster Way Business Park, Ely	
Study area (sq.m or ha)	Approx 35.5ha	
OS Easting & Northing	TL519,782	
Height OD	15m OD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	CgMs Consulting (Flitcroft 2008)	
Project Design originator	CgMs Consulting (2008)	
Director/Supervisor	Ian Fisher	
Project Manager	Myk Flitcroft (CgMs) Adam Yates (NA)	
Sponsor or funding body	Grovemere Property Ltd	
PROJECT DATE		
Start date	February 2008	
End date	March 2008	
ARCHIVES	**Location (Accession no.) ECB2861**	**Content (eg pottery, animal bone etc)**
Physical		
Paper	Northamptonshire Archaeology	Survey notes
Digital	Northamptonshire Archaeology	Geophysical data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	Archaeological Geophysical Survey on Land East of Lancasterway Business Park, Ely, Cambridgeshire	
Serial title & volume	NA reports 08/48	
Author(s)	Ian Fisher	
Page numbers	6	
Date	07/03/08	

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ARCHAEOLOGICAL GEOPHYSICAL SURVEY

ON LAND EAST OF LANCASTERWAY BUSINESS PARK,

ELY, CAMBRIDGESHIRE

FEBRUARY 2008

Event Number ECB2861

ABSTRACT

Northamptonshire Archaeology was commissioned by CgMs Consulting on behalf of their clients Grovemere Property Ltd to undertake a gradiometer survey across a proposed development area to the east of Lancasterway Business Park, Ely, Cambridgeshire. The survey area is triangular in shape, defined by the remains of former runways of a Second World War airfield. The survey identified a complex enclosure system with roundhouses and possible industrial activity. It also mapped medieval ridge and furrow cultivation, field boundaries and land drains.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by CgMs, on behalf of Grovemere Property Ltd, to undertake an archaeological geophysical survey of an area of land east of Lancasterway Business Park, Ely, Cambridgeshire (NGR TL519,782, Fig 1). The survey was required to inform a planning proposal for the extension of the business park. Works were undertaken according to a specification prepared by CgMs (2008a).

The objectives of the geophysical survey were to identify the presence or absence of buried archaeological remains within the proposed development area. The magnetometer survey of the 36.5ha area of land was undertaken in February 2008.

2 TOPOGRAPHY AND GEOLOGY

Lancasterway Business Park is situated on the site of the former Second World War airfield of RAF Witchford, on the west side of the village of Witchford, 2km south-west of Ely, Cambridgeshire. The survey area was ploughed arable land, defined by the courses of the former runways on three sides.

The proposed development area is mapped as Kimmeridge Clay, capped by glacial till and Boulder Clay deposits (www.bgs.ac.uk/geoindex/index.htm accessed 28/02/08). The site lies between 20m OD, to the north and west, and 10m OD in the east (CgMs 2008b).

At the time of survey the field had been ploughed except for a 160m wide strip of low crop which covered the north-east side of the field.

3 ARCHAEOLOGICAL BACKGROUND

The archaeological background of the site is described in full in the Desk-Based Assessment (CgMs 2008b). It is probable that Iron Age and Roman sites extend into the western part of the current development site. During the development of the existing Business Park, to the west, Roman rural remains were recorded. Additional Iron Age settlement remains were identified in advance of recent pipeline works along the western edge of the current site (CgMs 2008b, 10-12).

The 'lost' Saxon village of *'Cratendune'*, traditionally a predecessor to Ely, and the site of a 6th - 7th-century church are possibly located south of the development site (CgMs 2008b, 12). In 1947, an Anglo-Saxon cemetery was discovered south of the development area. Additional evidence for Saxon burials include finds of metal artefacts from the vicinity of the airfield. Early field boundaries may extend into the site as it is located within the medieval open strip fields of Ely and Witchford parishes.

Early Ordnance Survey maps show areas of pre-parliamentary enclosure, whilst the late 19th-century parliamentary enclosure landscape is visible on early maps that also include tracks or roads and a now demolished farmstead – Emery Barn Farm - within the development site.

In 1942, construction began of RAF Witchford, a bomber airfield that was operational between 1943 and 1945, during which period the existing field boundaries were removed. The lines of the three concrete runways are preserved in the current site boundaries (CgMs 2008b).

4 METHODOLOGY

Geophysical survey was carried out in accordance with English Heritage and the Institute of Field Archaeologists Guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

The fieldwork was divided into two phases, an initial reconnaissance survey by gradiometer scanning to be followed by up to 30% targeted detailed gradiometer survey.

Reconnaissance Survey

The reconnaissance survey was carried out using Geoscan FM-series fluxgate gradiometers. The development area was surveyed east to west in parallel transects at 20m intervals. The gradiometers

were then carried along the transects and monitored for fluctuations in the local magnetic field (scanning). Where an anomaly exceeding 3.0nT (nanoTesla) was encountered it was examined for magnetic characteristics, likely surface ferrous or ceramic anomalies discounted, and flagged for possible further investigation. Such anomalies were then plotted on scale maps (Fig 2).

Detailed Magnetometer Survey

Four areas were then targeted for examination by more detailed survey.

All detailed magnetometer survey was undertaken using Bartington Grad601-2 fluxgate gradiometers. The Grad601-2 is constructed as a dual-sensor instrument with two vertical gradiometers separated on a yoke to enable two lines of survey to be recorded in tandem.

The areas were sub-divided into 30m x 30m grid-squares. These were laid out manually, using tapes and an optical square. The survey consisted of 101 whole and partial 30m x 30m grid-squares. Each grid square was traversed at rapid walking pace in zigzag traverses spaced at 1m intervals and data recorded every 0.25m along these. However, in Area 1, the survey block nearest to the Saxon cemetery, the possibility of inhumations existed and so data was recorded at a 0.125m interval along traverses to allow for the finer detail required for detection of such features. All fieldwork was carried out in accordance with the aforementioned guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

The data was analysed using Geoplot 3.00u software. Low (negative) magnetism is shown as white and high (positive) magnetism as black in the resultant greyscale plots. To avoid the introduction processing of errors, minimal manipulation was carried out on the data. The 'Zero Mean Traverse' function was applied in order to bring the average level of each data line into a balanced zero.

The processed data is presented here in the form of a greyscale georectified to the Ordnance Survey base (-3nT / +3nT scale; Fig 3). An interpretative plot has been generated from the results (Fig 4), both figures are referred to directly in the following section.

5 SURVEY RESULTS

Reconnaissance Survey (Fig 2)

Four anomalies were detected towards the southern part of the field, no other anomalies were detected. The anomalies were then investigated by detailed magnetometer survey along with three other areas.

Detailed Survey (Figs 3 & 4)

Area 1

A 3.1ha block located in the south-east corner of the site was targeted to examine the area of possible cropmark features in this part of the site (Air Photo Services 2007, 5) and establish whether the Saxon burial ground extended north into the site. However, no such evidence was identified from the detailed gradiometer survey.

The survey did detect medieval ridge and furrow cultivation orientated north to south and a former field boundary (Ordnance Survey 'County Series' 1887 1st edition 6" map). The survey also mapped the extent of the former southern runway. Interestingly the ridge and furrow and former field boundary survives beneath the easement of the former runway. The runways, constructed from concrete on a layer of brick rubble at least eight inches thick, and measured 150 feet wide (Chorlton 2001).

Area 2

An area of 0.7ha was surveyed in the south-west corner of the field. Other than land drains nothing significant was detected.

Area 3

A 3.8ha survey block was located in the middle of the site to target the four reconnaissance anomalies. The survey did identify three possible archaeological features. The first, a weak positive curvilinear anomaly possibly representing part of a ditch. The second is a square feature that maybe an enclosure measuring 20m x 20m. However, it is on the same alignment as the ridge and furrow and land drains so it may just be magnetically enhanced sections of these. The third possible feature is a weak positive linear feature extending north-west for 30m from the square feature. Medieval ridge and furrow cultivation, orientated north to south was identified along with a former field boundary (Ordnance Survey 'County Series' 1887 1st edition 6" map). Land drains were also detected orientated east to west. The four anomalies recorded from the reconnaissance survey proved to be medieval ridge and furrow.

Area 4

A 1.5ha block located in the north of the site revealed six enclosures, two roundhouses, several lengths of ditches and possible industrial activity.

Three adjacent enclosures were detected aligned north to south. Enclosure A is a rectilinear enclosure measuring 40m x 20m, its long axis orientated north to south. In the south-west corner of

the enclosure there is a small curvilinear feature measuring 7m in diameter. Immediately north, Enclosure B measures 24m x 25m, sub-circular in shape. Four curvilinear ditches and a linear ditch can be seen north of Enclosure A extending into Enclosure B. It is unclear if these are associated with the enclosures or are earlier or later features. Immediately north is Enclosure C, an oval enclosure measuring 23m x 18m, orientated east to west on its long axis.

To the west is Enclosure D, a rectilinear enclosure extending north out of the survey area. It measures 29m in wide. To the north-east two right-angled ditches are visible, these may be part of other enclosures.

To the north-east, three smaller rectilinear enclosures have been detected. Enclosure E measures 18m x 9m, its long axis orientated north-east to south-west. Adjacent to this is enclosure F, measuring 12m x 7m, also orientated north-east to south-west. These two enclosures have been dissected by two linear ditches orientated north-west to south-east. Enclosure G, also orientated north-east to south-west, measures 8m x 4m.

Two roundhouses (R) were detected in the north of the survey area, the entrance to each is clearly visible on the east side. Each roundhouse measures 12.5m in diameter. The two roundhouses are bisected by a length of ditch, orientated north-west to south-east, extending out of the survey area. North of the roundhouses, a north-west to south-east ditch was detected extending out of the survey area.

To the north-east and north-west of the survey block are two possible areas of industrial activity, defined by highly magnetised anomalies that may stem from episodes of burning.

The archaeology, of probable Iron Age in date, is overlain by medieval ridge and furrow cultivation orientated east to west.

6 CONCLUSIONS

The detailed gradiometer survey identified a complex enclosure system and roundhouses of probable Iron Age or Roman date, with associated industrial activity. It also revealed medieval ridge and furrow cultivation and former field boundaries.

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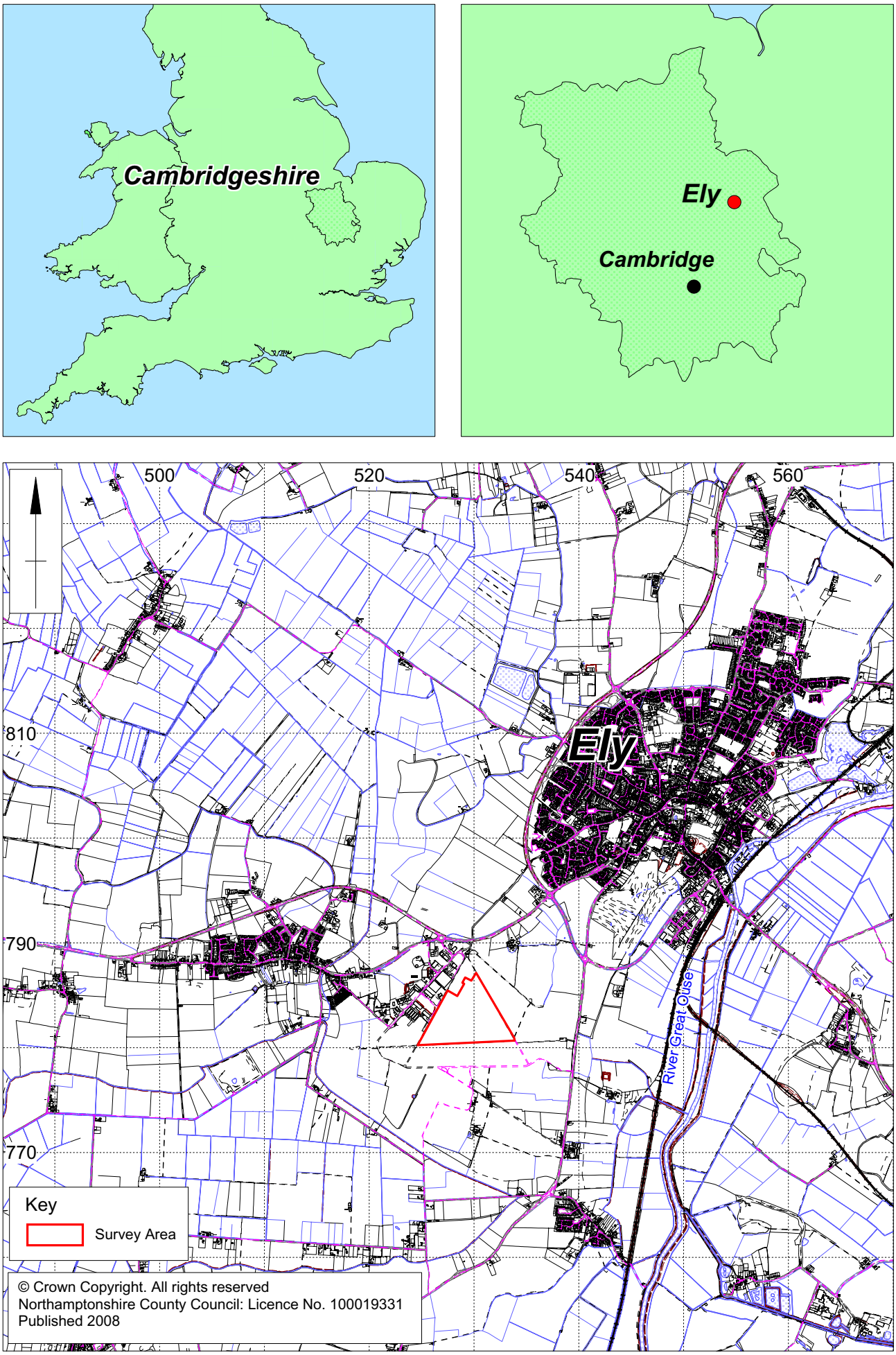
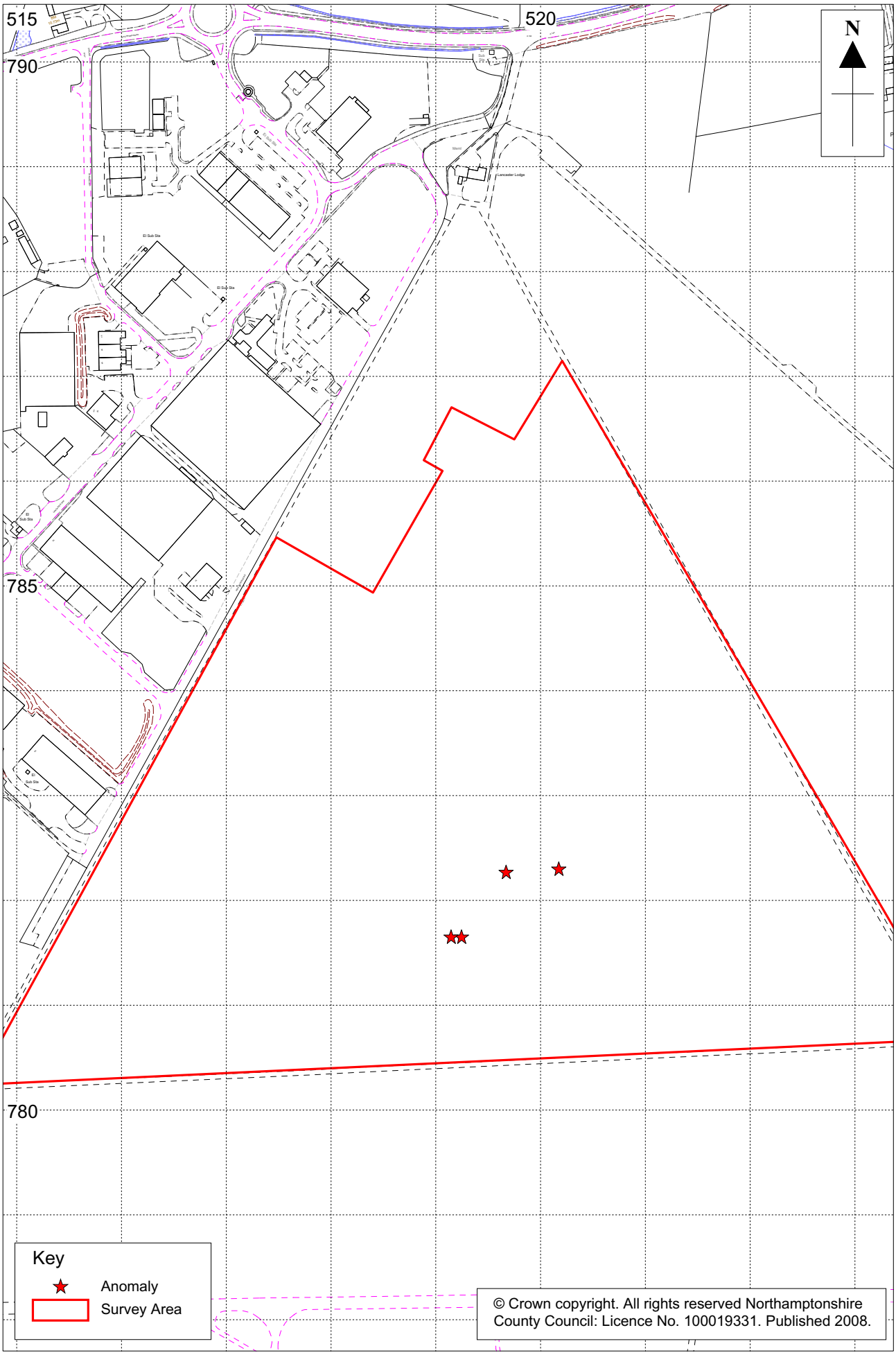


Scale 1: 50,000

Site location Fig 1



Scale 1:5000 @ A4

Reconnaisance Survey Results Fig 2

715
717
719
721
723
785
783
781
LANCASTER WAY
WELLINGTON ROAD
El Sub Sta
El Sub Sta
Area 4
Area 3
Area 2
Area 1
N
Anomalies / nT
-3.0
+3.0

Scale 1:2500 at A3

Detailed Gradiometer Survey Results Fig 3

715
717
719
721
723
785
783
781
N
LANCASTER WAY
WELLINGTON ROAD
El Sub Sta
El Sub Sta
Area 4
R
R
G
F
E
C
B
D
A
Area 3
Area 2
Area 1
Key
Former Runway
Land Drain
Ridge & Furrow
Former Field Boundary
Continuation of Field Boundary
Archaeological Feature
Archaeological Feature
Reconnaisance Survey Anomaly
Anomalies / nT
-3.0
+3.0

Scale 1:2500 at A3

Detailed Gradiometer Survey Interpretation Fig 4