

ARCHAEOLOGICAL
SERVICES
DURHAM UNIVERSITY

on behalf of
URS/Scott Wilson

Land at Moss Road
Askern
Doncaster

geophysical survey

report 2723
September 2011

Contents

1.	Summary	1
2.	Project background	2
3.	Historical and archaeological background	2
4.	Landuse, topography and geology	4
5.	Geophysical survey	4
6.	Conclusions	7
7.	Sources	7
Appendix: Project specification		8

Figures

Figure 1:	Site location
Figure 2:	Geophysical survey
Figure 3:	Geophysical interpretation
Figure 4:	Archaeological interpretation
Figure 5:	Trace plots of geomagnetic data

1. Summary

The project

- 1.1 This report presents the results of a geophysical survey conducted in advance of proposed development of land at Moss Road, Askern, Doncaster. The works comprised 7.2ha of geomagnetic survey in two areas.
- 1.2 The works were commissioned by URS/Scott Wilson and conducted by Archaeological Services Durham University.

Results

- 1.3 Probable soil-filled features, possibly relating to an enclosure system identified by cropmark evidence to the north, have been detected.
- 1.4 Features likely to be related to former field boundaries and tracks, as shown on historical maps, have been identified.
- 1.5 Modern features, including possible services, a possible structure and a modern ploughing regime, have also been detected.
- 1.6 No features related to an area marked as 'Detached Campsall' have been identified.

2. Project background

Location (Figure 1)

- 2.1 The survey areas were located on land at Moss Road, Askern, Doncaster (NGR centre: SE 5704 1392). Two surveys totalling 7.2ha were conducted in two land parcels. To the north was open farmland and Askern water treatment works; to the east was Askern Grange Lane; to the south was Moss Road and housing; to the west was housing on Sunnymede Terrace and allotment gardens.

Development proposal

- 2.2 Taylor Wimpey Ltd proposes to develop the site.

Objective

- 2.3 The objectives of the survey were: to establish if any archaeological features survived in the areas labelled on historic maps as 'Detached Campsall'; to determine if cropmarks recorded immediately to the north of the site extend to the south; to establish the presence or absence of any archaeological anomalies within the area of proposed development; to define the extent of any such anomalies; to characterise, if possible, any features or anomalies recorded; and to inform the requirement for further archaeological works (if required).

Methods statement

- 2.4 The surveys have been undertaken in accordance with a specification provided by the client and approved by Andrew Lines (Archaeologist, South Yorkshire Archaeology Service) (Appendix).

Dates

- 2.5 Fieldwork was undertaken on 30th and 31st August 2011. This report was prepared for 14th September 2011.

Personnel

- 2.6 Fieldwork was conducted by Natalie Swann and Richie Villis. The geophysical data were processed by Richie Villis. This report was prepared by Richie Villis, with illustrations by David Graham, and edited by Duncan Hale, the Project Manager.

Archive/OASIS

- 2.7 The site code is **DAM11**, for **Doncaster, Askern, Moss Road 2011**. The survey archive will be supplied on CD to the client for deposition with the project archive in due course. Archaeological Services Durham University is registered with the **Online AccesS to the Index of archaeological investigationS project (OASIS)**. The OASIS ID number for this project is **archaeol3-108978**.

3. Historical and archaeological background

- 3.1 A Cultural Heritage Assessment is being prepared by URS/Scott Wilson which will include a detailed summary of the historical and archaeological background of the site and its surrounding area. The following text is taken from the specification provided by the client (Appendix).
- 3.2 With the exception of the allotment gardens, the site has remained undeveloped since its depiction on the 1818 Plan of the Township of Askern. It has been subject to

extensive ploughing and is currently under crop. This could have resulted in the disturbance of the potential archaeological resource.

- 3.3 The main aspects that need to be considered are the origin of the sub-circular parcel of land that is marked on the 1818 Plan and again on the 1st edition Ordnance Survey map as '*Campsall Detached*', and the cropmarks immediately to the north of the site boundary that have been plotted as part of the National Mapping Programme. Despite the parcel of land originally being defined by a ditch it is not presently visible at ground level as a cropmark. Nor is it possible to see any evidence of the cropmarks immediately to the north extending into the site.
- 3.4 The evidence from the excavation of the Iron Age 'Marsh Fort' at Sutton Common, former archaeological investigations within the area, local place names and accounts from 19th century texts all suggest that the site and its surrounding area was previously a large marsh that has been drained to allow it to be occupied and cultivated. Given the evidence for Iron Age and Bronze Age activity within the area it could be representative of a lowland enclosure or a ring fort such as those seen in Yorkshire and the Cambridgeshire fenland, Dartmoor and Wessex.
- 3.5 Extra-parochial enclosures sometimes began in the medieval period, as early medieval monastic or church sites, or were the sites of private chapels. These chantry chapels, often funded by lords and merchants to offer prayers for their souls, were sometimes built on private land, or formed part of manorial complexes or larger churches. They experienced a boom period in the 12th and 13th centuries, and were abolished at the Reformation, in 1545- 1547. Historical records note that there was a chantry or service of the Blessed Virgin in Askern during the reign of Henry VIII (1509-1547), but it is not clear whether this was a late foundation dating to the 16th century, or whether it was an older establishment that was recorded at the time of its dissolution in 1545-7. There is no evidence as to where this chantry was located.
- 3.6 It is also possible that the sub-circular enclosure may have been the detached holding of a medieval manor (acquired by sale or purchase, marriage, division of estates among inheritors, usurpation of proprietary rights etc.). This is a possibility as the area is characterised by large parishes with dispersed townships, and the division of the landscape appears to have developed quite late and rather erratically. The late development coupled with a population boom, the growth of a cash economy and the rise of renting land may have resulted in this land being bought or inherited and attached to the principal manor of Campsall. It may also have been a sub-manor that was used to pass military service obligations on to tenants or to delegate estate management duties. Sometimes such 'parcels' appeared when manors were split between co-heiresses if there were no male heirs.
- 3.7 The land parcel may have been the result of medieval land annexation, acquisition, purchase, inheritance, usurpation, subinfeudation, or surrender. However, no documentary records have been identified that clearly refer to this piece of land, or to any associated land transfer. Another possibility is that a run of poor harvests resulted in free peasants having to surrender control of their land to the lord of the manor in exchange for food.
- 3.8 It is equally feasible that the land was set aside to graze animals on lush spring and summer grass in a low lying area or that it was kept as an area of woodland and used

for summer wood pasture to avoid cattle trampling the crops. In some cases, pasture rights were assured/upheld by the king as cattle had to be driven over other lords' land to get there, resulting in the area being 'fixed' at Domesday and beyond. If the parish belonged to the king and was then granted to Pontefract Abbey, this might make some sense. The Domesday Book notes that Campsall had woodland pasture 1 league long and half broad but it is not possible to identify where this was located.

4. Landuse, topography and geology

- 4.1 At the time of survey the proposed development area comprised two fields of arable land separated by a hedged track aligned north/south leading to Askern water treatment works. Several telegraph lines crossed the survey area.
- 4.2 The area was predominantly level with a mean elevation of approximately 5.5m OD.
- 4.3 The underlying solid geology of the area comprises Permian and Triassic strata of the Sherwood Sandstone Group, which are overlain by Devensian glaciolacustrine deposits.

5. Geophysical survey

Standards

- 5.1 The surveys and reporting were conducted in accordance with English Heritage guidelines, *Geophysical survey in archaeological field evaluation* (David, Linford & Linford 2008); the Institute for Archaeologists (IfA) *Draft Standard and Guidance for archaeological geophysical survey* (2010); the IfA Technical Paper No.6, *The use of geophysical techniques in archaeological evaluations* (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service *Guide to Good Practice: Geophysical Data in Archaeology* (draft 2nd edition, Schmidt & Ernenwein 2011).

Technique selection

- 5.2 Geophysical survey enables the relatively rapid and non-invasive identification of sub-surface features of potential archaeological significance and can involve a suite of complementary techniques such as magnetometry, earth electrical resistance, ground-penetrating radar, electromagnetic survey and topsoil magnetic susceptibility survey. Some techniques are more suitable than others in particular situations, depending on site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift.
- 5.3 In this instance, based on desktop and cropmark evidence, it was considered likely that cut features such as ditches and pits might be present on the site, and that other types of feature such as trackways, wall foundations and fired structures (for example kilns and hearths) might also be present.
- 5.4 Given the anticipated shallowness of targets and the non-igneous geological environment of the study area a geomagnetic technique, fluxgate gradiometry, was considered appropriate for detecting the types of feature mentioned above. This technique involves the use of hand-held magnetometers to detect and record anomalies in the vertical component of the Earth's magnetic field caused by

variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

Field methods

- 5.5 A 30m grid was established across each survey area and tied-in to known, mapped Ordnance Survey points using a Leica GS15 global navigation satellite system (GNSS) with real-time kinematic (RTK) corrections.
- 5.6 Measurements of vertical geomagnetic field gradient were determined using Bartington Grad601-2 dual fluxgate gradiometers. A zig-zag traverse scheme was employed and data were logged in 30m grid units. The instrument sensitivity was nominally 0.03nT, the sample interval was 0.25m and the traverse interval was 1m, thus providing 3,600 sample measurements per 30m grid unit.
- 5.7 Data were downloaded on site into a laptop computer for initial processing and storage and subsequently transferred to a desktop computer for processing, interpretation and archiving.

Data processing

- 5.8 Geoplot v.3 software was used to process the geophysical data and to produce both continuous tone greyscale image and trace plots of the raw (minimally processed) data. The greyscale images and interpretations are presented in Figures 2-4; the trace plots are provided in Figure 5. In the greyscale images, positive magnetic anomalies are displayed as dark grey and negative magnetic anomalies as light grey. A palette bar relates the greyscale intensities to anomaly values in nanoTesla.
- 5.9 The following basic processing functions have been applied to each dataset:

<i>clip</i>	clips data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic
<i>zero mean traverse</i>	sets the background mean of each traverse within a grid to zero; for removing striping effects in the traverse direction and removing grid edge discontinuities
<i>destagger</i>	corrects for displacement of geomagnetic anomalies caused by alternate zig-zag traverses
<i>interpolate</i>	increases the number of data points in a survey to match sample and traverse intervals; in this instance the data have been interpolated to 0.25m x 0.25m intervals

Interpretation: anomaly types

- 5.10 A colour-coded geophysical interpretation plan is provided. Three types of geomagnetic anomaly have been distinguished in the data:

<i>positive magnetic</i>	regions of anomalously high or positive magnetic field gradient, which may be associated with high magnetic susceptibility soil-filled structures such as pits and ditches
--------------------------	--

negative magnetic regions of anomalously low or negative magnetic field gradient, which may correspond to features of low magnetic susceptibility such as wall footings and other concentrations of sedimentary rock or voids

dipolar magnetic paired positive-negative magnetic anomalies, which typically reflect ferrous or fired materials (including fences and service pipes) and/or fired structures such as kilns or hearths

Interpretation: features

General comments

- 5.11 A colour-coded archaeological interpretation plan is provided.
- 5.12 Except where stated otherwise in the text below, positive magnetic anomalies are taken to reflect relatively high magnetic susceptibility materials, typically sediments in cut archaeological features (such as ditches or pits) whose magnetic susceptibility has been enhanced by decomposed organic matter or by burning.
- 5.13 Small, discrete dipolar magnetic anomalies have been detected in both of the survey areas. These almost certainly reflect items of near-surface ferrous and/or fired debris, such as horseshoes and brick fragments, and in most cases have little or no archaeological significance. A sample of these is shown on the geophysical interpretation plan; however, they have been omitted from the archaeological interpretation plan and the following discussion.

Area 1

- 5.14 Historic maps show several former field boundaries and tracks crossing this area. A number of these former features have been detected as linear positive magnetic anomalies and chains of dipolar magnetic anomalies.
- 5.15 Several additional linear positive magnetic anomalies have been detected which do not correspond to known former field boundaries; these are likely to reflect the presence of soil-filled ditch features and may be associated with the cropmarked features recorded to the north of this area.
- 5.16 The north/south aligned strong dipolar anomaly detected in the west of the area is likely to reflect the location of a service, possibly a brick-lined drainage channel, and appears to follow the line of a former field boundary.
- 5.17 The very large and strong dipolar magnetic anomaly detected in the south of the survey area may reflect the location of a former agricultural building/shed, as was indicated to have stood in this vicinity by the farmer.
- 5.18 Three of the larger discrete dipolar magnetic anomalies detected in the south of the area reflect existing telegraph poles.
- 5.19 None of the geomagnetic anomalies correspond to the area marked as 'Detached Campsall' on the 1st edition Ordnance Survey map. The feature is recorded on that map as 'not defined', however, it was shown as a ditch on an 1818 plan. It seems the feature may have been shallow and subsequently ploughed-out.

Area 2

- 5.20 A broadly north-west/south-east aligned positive magnetic anomaly has been detected in the east of the area; this almost certainly reflects a soil-filled ditch feature.
- 5.21 A number of smaller positive magnetic anomalies have also been detected in the east of the area. These may reflect the remains of plough-damaged soil-filled features.
- 5.22 The broad chain of dipolar magnetic anomalies aligned north/south in the west of the survey area reflects the location of a former field boundary and track shown on historic maps.
- 5.23 Closely-spaced negative magnetic lineations crossing the area almost certainly reflect the modern ploughing regime.

6. Conclusions

- 6.1 7.2ha of geomagnetic survey were undertaken on land at Moss Road, Askern, Doncaster, prior to development.
- 6.2 Probable soil-filled features, possibly relating to an enclosure system identified by cropmark evidence to the north, have been detected.
- 6.3 Features likely to be related to former field boundaries and tracks, as shown on historical maps, have been identified.
- 6.4 Modern features, including possible services, a possible structure and a modern ploughing regime, have also been detected.
- 6.5 No features related to an area marked as 'Detached Campsall' have been identified.

7. Sources

- David, A, Linford, N, & Linford, P, 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage
- Gaffney, C, Gater, J, & Ovenden, S, 2002 *The use of geophysical techniques in archaeological evaluations*. Technical Paper 6, Institute of Field Archaeologists
- IfA 2010 *Draft Standard and Guidance for archaeological geophysical survey*. Institute for Archaeologists
- Schmidt, A, & Ernenwein, E, 2011 (draft) *Guide to Good Practice: Geophysical Data in Archaeology*. Archaeology Data Service

Appendix: Project specification



Moss Road, Askern, Doncaster

Geophysical Survey Specification

July 2011

Prepared for
Taylor Wimpey Ltd

Taylor Wimpey Ltd
Moss Road, Askern

Revision Schedule

Geophysical Survey Specification July 2011

Rev	Date	Details	Prepared by	Reviewed by	Approved by
01	July 2011	Draft	Jim MacQueen Principal Consultant - Heritage	Neil MacNab Principal Archaeologist	Annette Roe Technical Director
02	July 2011	Draft 2	Jim MacQueen Principal Consultant - Heritage	Neil MacNab Principal Archaeologist	Annette Roe Technical Director

URS Scott Wilson Ltd ("URS Scott Wilson") has prepared this Report for the sole use of Taylor Wimpey Ltd ("Client") in accordance with the Agreement under which our services were performed (agreement received on 20th May 2011). No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by URS Scott Wilson. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of URS Scott Wilson.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by URS Scott Wilson has not been independently verified by URS Scott Wilson, unless otherwise stated in the Report. The methodology adopted and the sources of information used by URS Scott Wilson in providing its services are outlined in this Report. The work described in this Report was undertaken between March and April 2011 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances. Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available. URS Scott Wilson disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to URS Scott Wilson's attention after the date of the Report. Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. URS Scott Wilson specifically does not guarantee or warrant any estimate or projections contained in this Report. Unless otherwise stated in this Report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant changes. Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

Copyright

© This Report is the copyright of URS Scott Wilson Ltd. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

URS Scott Wilson
WestOne
Wellington Street
Leeds
LS1 1BA

Tel 0113 204 5000
Fax 0113 204 5001

www.scottwilson.com

Taylor Wimpey Ltd
Moss Road, Askern

Table of Contents

1	Introduction.....	1
2	Archaeological/ Historical Background	1
3	Project Objectives	2
4	Scope of Works	3
5	Works Specification	3
6	Reporting	4
7	Archive Preparation and Deposition	5
8	Publication	5
9	Confidentiality and Publicity.....	6
10	Copyright	6
11	Resources and Timetable	6
12	Access Arrangements and Site Information.....	7
13	Insurances and Health and Safety.....	7
14	General Provisions	7
15	References	8

Appendices

Appendix 1	Figures
Appendix 2	Relevant Standards and Guidelines

Taylor Wimpey Ltd
Moss Road, Askern

1 Introduction

Project background

- 1.1 This specification has been prepared by URS Scott Wilson Ltd in consultation with Andrew Lines (Archaeologist, South Yorkshire Archaeology Service) and it describes the requirements for a geophysical survey. The survey will form part of the Cultural Heritage Assessment which is being prepared for Taylor Wimpey Ltd to inform development options.
- 1.2 The specification and accompanying drawings (refer to Appendix 1) detail the requirements for geophysical survey to inform the requirement for further work, if necessary.
- 1.3 The proposed works include 7.2ha. of detailed magnetometry which is to be carried out at locations shown on the Figure 2 (see Appendix 1).
- 1.4 The archaeological fieldwork, post-survey assessment, archiving, analysis and preparation of the fieldwork report text will be undertaken by the 'Contractor', unless specified otherwise in this specification.

Site location and Geology

- 1.5 The proposed development is situated on the northern periphery of Askern (NGR 457043, 413920), (Figure 1). The site measures 12.1ha and is bound by residential properties and Moss Road to the south, residential properties to the west, open fields to the north and Askern Grange Lane to the east. The site is divided into two parts by a hedge-lined track running north-south from Moss Road to a pumping station and caravan site located to the north of the site.
- 1.6 The superficial geology of the area comprises clay and silt glaciolacustrine deposits from the Devensian overlying sandstone deposits from the Sherwood sandstone group.

2 Archaeological/ Historical Background

- 2.1 With the exception of the allotment gardens, the site has remained undeveloped since its depiction on the 1818 *Plan of the Township of Askern*. It has been subject to extensive ploughing and is currently under crop. This could have resulted in the disturbance of the potential archaeological resource.
- 2.2 The main aspects that need to be considered are the origin of the sub-circular parcel of land that is marked on the 1818 Plan and again on the 1st edition Ordnance Survey map as '*Campsall Detached*', and the cropmarks immediately to the north of the site boundary that have been plotted as part of the National Mapping Programme. Despite the parcel of land originally being defined by a ditch it is not presently visible at ground level as a cropmark. Nor is it possible to see any evidence of the cropmarks immediately to the north extending into the site.
- 2.3 The evidence from the excavation of the Iron Age 'Marsh Fort' at Sutton Common, former archaeological investigations within the area, local place names and accounts from 19th century texts all suggest that the site and its surrounding area was previously a large marsh that has

Taylor Wimpey Ltd
Moss Road, Askern

been drained to allow it to be occupied and cultivated. Given the evidence for Iron Age and Bronze Age activity within the area it could be representative of a lowland enclosure or a ring fort such as those seen in and Yorkshire, the Cambridgeshire fenland, Dartmoor and Wessex.

- 2.4 Extra-parochial enclosures sometimes began in the medieval period, as early medieval monastic or church sites, or were the sites of private chapels. These chantry chapels, often funded by lords and merchants to offer prayers for their souls, were sometimes built on private land, or formed part of manorial complexes or larger churches. They experienced a boom period in the 12th and 13th centuries, and were abolished at the Reformation, in 1545- 1547. Historical records note that there was a chantry or service of the Blessed Virgin in Askern during the reign of Henry VIII (1509-1547), but it is not clear whether this was a late foundation dating to the 16th century, or whether it was an older establishment that was recorded at the time of its dissolution in 1545-7. There is no evidence as to where this chantry was located.
- 2.5 .It is also possible that the sub-circular enclosure may have been the detached holding of a medieval manor (acquired by sale or purchase, marriage, division of estates among inheritors, usurpation of proprietary rights etc.). This is a possibility as the area is characterised by large parishes with dispersed townships, and the division of the landscape appears to have developed quite late and rather erratically. The late development coupled, with a population boom, the growth of a cash economy and the rise of renting land may have resulted in this land being bought or inherited and attached to the principal manor of Campsall. It may also have been a sub-manor that was used to pass military service obligations on to tenants or to delegate estate management duties. Sometimes such 'parcels' appeared when manors were split between co-heiresses if there were no male heirs.
- 2.6 The land parcel may have been the result of medieval land annexation, acquisition, purchase, inheritance, usurpation, subinfeudation, or surrender. However, no documentary records have been identified that clearly refer to this piece of land, or to any associated land transfer. Another possibility is that a run of poor harvests resulted in free peasants having to surrender control of their land to the lord of the manor in exchange for food.
- 2.7 It is equally feasible that the land was set aside to graze animals on lush spring and summer grass in a low lying area or that it was kept as an area of woodland and used for summer wood pasture to avoid cattle trampling the crops. In some cases, pasture rights were assured/upheld by the king as cattle had to be driven over other lords' land to get there, resulting in the area being 'fixed' at Domesday and beyond. If the parish belonged to the king and was then granted to Pontefract Abbey, this might make some sense. The Domesday Book notes that Campsall had woodland pasture 1 league long and half broad but it is not possible to identify where this was located.

3 Project Objectives

- 3.1 The specific objectives of the detailed magnetometer survey are:
- to establish if there are any archaeological features within the areas labelled on historic maps as *'Detached Campsall'*; and
 - to determine if the cropmarks recorded immediately to the north of the site extend to the south.
- 3.2 The general objectives of the survey are:

Taylor Wimpey Ltd
Moss Road, Askern

- to establish the presence or absence of any archaeological anomalies within the area of proposed development;
- to define the extent of any such anomalies;
- to characterise, if possible, any features or anomalies recorded; and
- to inform the requirement for further archaeological works (if required).

4 Scope of Works

- 4.1 The detailed magnetometer survey will cover the areas defined in Figure 2. The total area to be surveyed measures 7.2ha and has been divided into two areas as detailed in Table 1. Each area is composed of a number of 30m x 30m grid squares.

Table 1 Geophysical Survey Areas

Item	Survey Area	Area (HA)
1	Area 1	5.94
2	Area 2	1.26
Total Area		7.2ha

- 4.2 If there are any areas that cannot be surveyed, the Contractor will inform URS Scott Wilson immediately and details of these will be provided in the interim report.

5 Works Specification

General Works

- 5.1 All archaeological works will be carried out in accordance with this Specification (and any further instructions from the Consultant). This design takes account of assessment guidance in Standard and Guidance for archaeological field evaluation prepared by the Institute for Archaeologists (IfA, 2008), the IfA Code of Conduct (IfA, 2010), English Heritage guidelines (English Heritage, 2008) and other current and relevant best practice and standards and guidance (refer to Appendix 2).
- 5.2 The survey will be undertaken by an experienced operator to provide consistent results with regard to pattern recognition and to provide initial screening of noise resulting from recent ferrous disturbance and local magnetic pollution.
- 5.3 During the survey a record should be made of surface conditions and sources of modern geophysical interference that might have a bearing on subsequent interpretation of field data.
- 5.4 The survey grid/ transects must be established by electronic means (using a survey-grade GPS (English Heritage, 2003) or equivalent metric survey device) and accurately tied to the Ordnance Survey National Grid. This should be internally accurate to 100 mm, and the grid locatable on the Ordnance Survey 1:2500 map.

Taylor Wimpey Ltd
Moss Road, Askern

Specific Works

Detailed Magnetometer Survey

- 5.5 A detailed magnetometer survey will be carried out over the designated survey area using either a Geoscan FM 36 Fluxgate Gradiometer or a Bartington GRAD 601 Fluxgate Gradiometer (or similar electronic instrument). Readings should be taken at 4 readings per metre at 1m traverses within a 1m grid system.
- 5.6 The data should be downloaded at regular intervals on-site into a laptop computer for initial processing and storage. This will ultimately be transferred to a desktop computer for further processing, interpretation and archiving. *Geoplot v.3 software (or comparable) will be used to interpolate the data to form an array of regularly spaced values at 0.25m x 0.25m intervals. Continuous tone greyscale images of raw data and an x/y trace plot will also be produced. Palette bars relating the greyscale intensities to anomaly values in ohms will be included with the images.*
- 5.7 The raw and processed data should be presented in the report. The processed drawings should be accurately located and presented in relation to the Ordnance Survey base plan for the route and the survey markers should be accurately plotted to aid in the laying out of subsequent evaluation or excavation areas. Interpretation plots shall be included in the report.

6 Reporting

- 6.1 An Interim Statement of the results of the fieldwork will be prepared and submitted within 1 week of the completion of the works.
- 6.2 A fieldwork report will be submitted in draft within 2 weeks of the completion of fieldwork. The preparation of the survey archive and fieldwork report will be undertaken in accordance with this Archaeological Design and relevant archaeological standards and national guidelines (refer to Appendix 2). The report will include the following
- a non technical summary;
 - site location;
 - archaeological and historical background;
 - full detailed methodology;
 - aims and objectives;
 - results (to include full description, assessment of condition, quality and significance of the results);
 - general and detailed plans showing the location of the results accurately positioned on an OS base map (to a known scale commensurate with the objectives of the survey);
 - colour/grey scale plots to aid interpretation. The plots will be contoured (if appropriate) to allow trends to be shown superimposed over data without obscuring it;
 - an interpretative plot(s);

Taylor Wimpey Ltd
Moss Road, Askern

- an assessment of potential with recommendations for further survey;
 - publication proposals if warranted; and
 - a cross-referenced index of the project archive.
- 6.3 An electronic pdf copy (complete with illustrations) of the completed report will be submitted to URS Scott Wilson as a draft for comment.
- 6.4 Three bound copies, one unbound master-copy and a digital version of the final report will be submitted within one week of the receipt of comments on the draft report.
- 6.5 A project CD shall be submitted containing image files in JPEG or TIFF format, digital text files shall be submitted in MS Word format, illustrations in AutoCAD format or ArcView shapefile format. A fully collated version of the report shall be included in PDF format.
- 6.6 A copy of the survey database with national grid co-ordinates shall be provided in Excel, MS Access or in ArcView shapefile format.

7 Archive Preparation and Deposition

- 7.1 The archive of records generated during the fieldwork will be kept secure at all stages of the project. All records will be quantified, ordered, indexed and will be internally consistent. The digital archive will be produced to the national standards (ADS, Geophysical Data in Archaeology: A Guide to Good Practice, 2002 and IfA, Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation, 2007).
- 7.2 If appropriate the 'Contractor' will, prior to the start of fieldwork, liaise with an appropriate recipient museum to obtain agreement in principle to accept the documentary, digital and photographic archive for long-term storage. The 'Contractor' will be responsible for identifying any specific requirements or policies of the museum in respect of the archive, and for adhering to those requirements.
- 7.3 The 'Contractor' will store the archive in a suitable secure location until it is deposited in the agreed museum.
- 7.4 The deposition of the archive forms the final stage of this project. The 'Contractor' shall provide URS Scott Wilson with copies of communication with the recipient museum and written confirmation of the deposition of the archive. URS Scott Wilson will deal with the transfer of ownership and copyright issues.
- 7.5 Within 3 months of the completion of the report the 'Contractor' will also prepare and submit the online OASIS form (<http://ads.ahds.ac.uk/project/oasis>). When completing the form the 'Contractor' must make reference to the Regional Research Framework.

8 Publication

- 8.1 If significant results are obtained and it is likely that further stages of archaeological work will be required, publication shall be deferred until such time as the project works are substantially complete.

Taylor Wimpey Ltd
Moss Road, Askern

- 8.2 The format of any publication shall be commensurate with the importance of the results and be agreed in advance with URS Scott Wilson.

9 Confidentiality and Publicity

- 9.1 Detailed information regarding the proposed development is not yet in the public domain and the archaeological works may attract interest.
- 9.2 All communication regarding this project is to be directed through URS Scott Wilson. The 'Contractor' will refer all inquiries to URS Scott Wilson without making any unauthorised statements or comments.
- 9.3 The 'Contractor' will not disseminate information or images associated with the project for publicity or information purposes without the prior written consent of URS Scott Wilson.

10 Copyright

- 10.1 The 'Contractor' shall assign copyright in all reports and documentation/ images produced as part of this project to URS Scott Wilson. *The 'Contractor' shall retain the right to be identified as the author/ originator of the material.* This applies to all aspects of the project. It is the responsibility of the 'Contractor' to obtain such rights from sub-contracted specialists.
- 10.2 The 'Contractor' may apply in writing to use/disseminate any of the project archive or documentation (including images). Such permission will not be unreasonably withheld.
- 10.3 The results of the archaeological works shall be submitted to the client, the Local Authority Archaeologist (or their equivalent) and if appropriate to English Heritage by URS Scott Wilson and will ultimately be made available for public access.

11 Resources and Timetable

- 11.1 All archaeological personnel involved in the project should be suitably qualified and experienced professionals. The 'Contractor' shall provide URS Scott Wilson with staff CVs of the Project Manager, Site Supervisor and any proposed specialists. Site assistants' CVs will not be required, but all site assistants should have an appropriate understanding of geophysical survey procedures.
- 11.2 All staff will be fully briefed and aware of the work required under this specification and will understand the objectives of the investigation and methodologies to be employed.
- 11.3 The fieldwork is programmed to be implemented at the earliest available opportunity (subject to land access agreements). The survey will be completed within one week.
- 11.4 The timetable for completion of the reporting is 2 weeks after completion of fieldwork. The Interim plot of the results of the fieldwork will be provided within 48 hours of the completion of the work.
- 11.5 The 'Contractor' shall give immediate warning to URS Scott Wilson should any agreed programme date not be achievable.

Taylor Wimpey Ltd
Moss Road, Askern

12 Access Arrangements and Site Information

- 12.1 Access to the land for fieldwork will be arranged /organised by URS Scott Wilson.
- 12.2 The survey schedule will be agreed in advance. There will be no separate negotiation concerning the availability of land for survey with landowners, their agents or representatives without the prior agreement of URS Scott Wilson.
- 12.3 Should the 'Contractor' require an adjustment to the location of the survey areas due to unforeseen local conditions, these shall be agreed with URS Scott Wilson prior to implementation.
- 12.4 The 'Contractor' will notify URS Scott Wilson immediately of any areas that cannot be surveyed and will provide a clear explanation for the situation.

13 Insurances and Health and Safety

- 13.1 The 'Contractor' will provide URS Scott Wilson with details of their public and professional indemnity insurance cover.
- 13.2 The 'Contractor' will have their own Health and Safety policies compiled using national guidelines, which conform to all relevant Health and Safety legislation. A copy of the 'Contractors' Health and Safety policy will be submitted to URS Scott Wilson with their proposal.
- 13.3 The 'Contractor' shall prepare a Risk Assessments and submit these to URS Scott Wilson for approval prior to the commencement of the survey. If amendments are required to the Risk Assessment during the works URS Scott Wilson and any other interested party must be provided with the revised document at the earliest opportunity.
- 13.4 All site personnel will familiarise themselves with the following:
- site emergency and evacuation procedures;
 - the first aider; and
 - the location of the nearest hospital and doctors surgery.

14 General Provisions

- 14.1 The 'Contractor' will undertake the works according to this specification and any subsequent written variations. No variation from or changes to the specification will occur except by prior agreement with URS Scott Wilson.
- 14.2 All communications on archaeological matters will be directed through URS Scott Wilson.
- 14.3 The archive of data and records generated during the fieldwork will be kept secure in appropriate conditions using suitable materials at all stages of the project. The archive will be removed from site each evening and will be kept in secure premises by the 'Contractor'.

Taylor Wimpey Ltd
Moss Road, Askern

- 14.4 Processing of datasets will be concurrent with the fieldwork and immediately after completion of fieldwork the processing of the remaining data will be completed.
- 14.5 The 'Contractor' shall leave the survey area(s) in a tidy and workmanlike condition and remove all materials used during the fieldwork.
- 14.6 The 'Contractor' shall make the minimum of disturbance during the survey and will avoid any unnecessary damage.
- 14.7 The 'Contractor' will immediately notify URS Scott Wilson of any evidence of or damage to the integrity of the survey caused by any third party including the activities of unauthorised metal-detectorists.

15 References

English Heritage, 2003, Where on Earth Are We? The Global Positioning System (GPS) in archaeological field survey. English Heritage (London)

English Heritage, 2008, Geophysical Survey in Field Evaluation

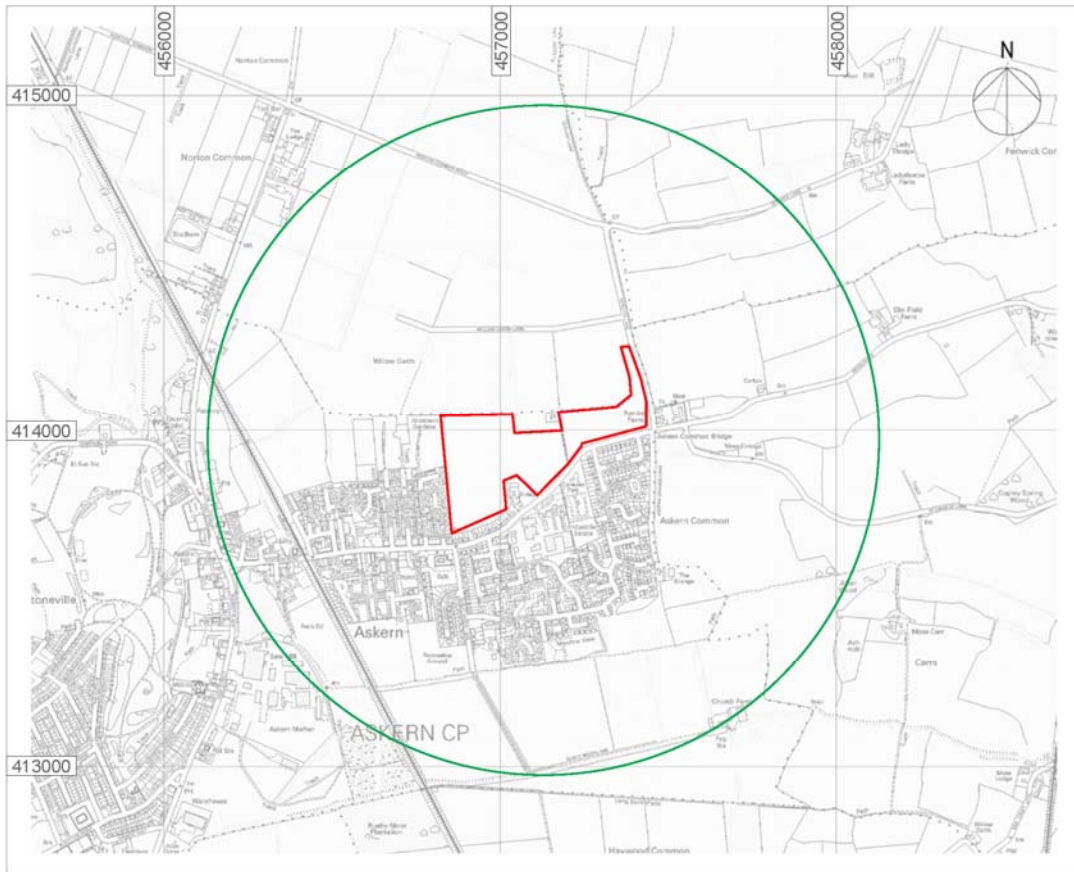
IfA, 2008, Standard and Guidance for Archaeological Field Evaluation. Institute for Archaeologists (Reading)

IfA, 2010, Code of Conduct. Institute for Archaeologists (Reading)

URS Scott Wilson Ltd
Moss Road, Askern

Appendix 1

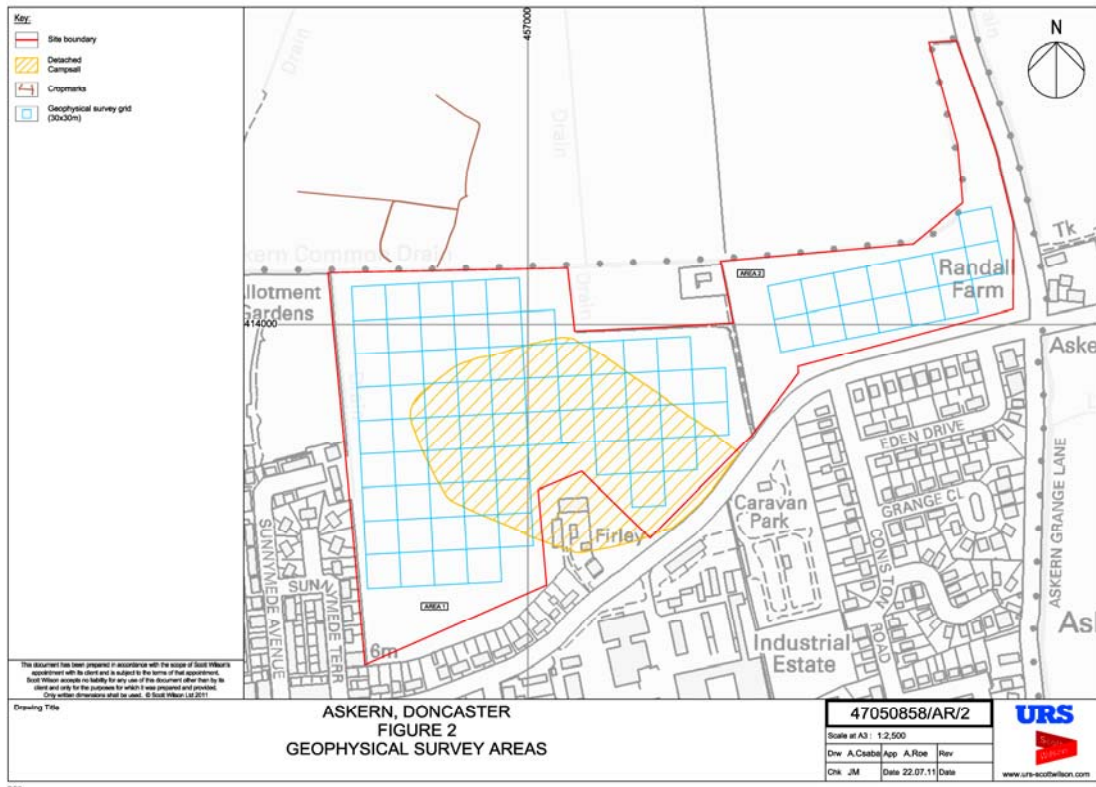
Figures



This document has been prepared in accordance with the scope of Scott Wilson's appointment with its client and is subject to the terms of that appointment. Scott Wilson accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided. Only written dimensions shall be used. © Scott Wilson Ltd (2011)

Job Title ASKERN, DONCASTER	Dwg Ref Number 47050858/AR/1	URS Scott Wilson Ltd WESTONE Leeds LS1 1BA Telephone:(0113) 204 5000 Fax:(0113) 204 5001
Drawing Title SITE LOCATION PLAN	Scale(s) @ A4 NOT TO SCALE	
Drn A.Csaba	Chk LR	Date 22/07/11
	AR App	Figure Number FIGURE 1

Reproduced from Ordnance Survey digital map data (c) Crown copyright 2011. All rights reserved. Licence number 0100031673



URS Scott Wilson Ltd
Moss Road, Askern

Appendix 2

Relevant Archaeological Standards & Guidelines

URS Scott Wilson Ltd
Moss Road, Askern

Relevant Archaeological Standards and Guidelines

AAF, 2007, Archaeological Archives. A guide to best practice in creation, compilation, transfer and curation. Archaeological Archives Forum

Bewely, R., Donoghue, D., Gaffney, V., Van Leusen, M., Wise, M., 1998, Archiving Aerial Photography and Remote Sensing Data: A guide to good practice. Archaeology Data Service

Brown, A. and Perrin, K., 2000, A Model for the Description of Archaeological Archives. English Heritage Centre for Archaeology/ Institute of Field Archaeologists (Reading)

Brown, D.H. 2007, Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation. IFA Archaeological Archives Forum (Reading)

Darvill, T. and Atkins, M., 1991, Regulating Archaeological Works by Contract. IFA Technical Paper No 8, Institute of Field Archaeologists (Reading)

Eiteljorg, H., Fernie, K., Huggett, J. and Robinson, D., 2002, CAD: A guide to good practice. Archaeology Data Service (York)

EA, 2005, Guidance on Assessing the Risk Posed by Land Contamination and its Remediation on Archaeological Resource Management. English Heritage/ Environment Agency Science Report P5-077/SR (Bristol)

EH, 1991, The Management of Archaeological Projects. Second Edition (MAP2) English Heritage (London)

EH, 2000, Managing Lithic Scatters. Archaeological guidance for planning authorities and developers. English Heritage (London)

EH, 2003a, Where on Earth Are We? The Global Positioning System (GPS) in archaeological field survey. English Heritage (London)

EH, 2003c, (revised 2008), Metric Survey Specifications for English Heritage. English Heritage (Swindon)

EH, 2008b, Geophysical Survey in Archaeological Field Evaluation. English Heritage Research and Professional Services Guidelines No 1 (second edition). English Heritage (Swindon)

Gaffney, C. and Gater, J., with Ovenden, S., 2002, The Use of Geophysical Techniques in Archaeological Evaluations. IFA Technical Paper 9, Institute of Field Archaeologists (Reading)

Gurney, D.A., 1985, Phosphate Analysis of Soils: A Guide for the Field Archaeologist. IFA Technical Paper 3, Institute of Field Archaeologists (Reading)

IfA, 2008, Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology. Institute for Archaeologists (Reading)

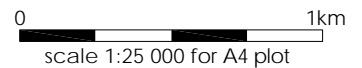
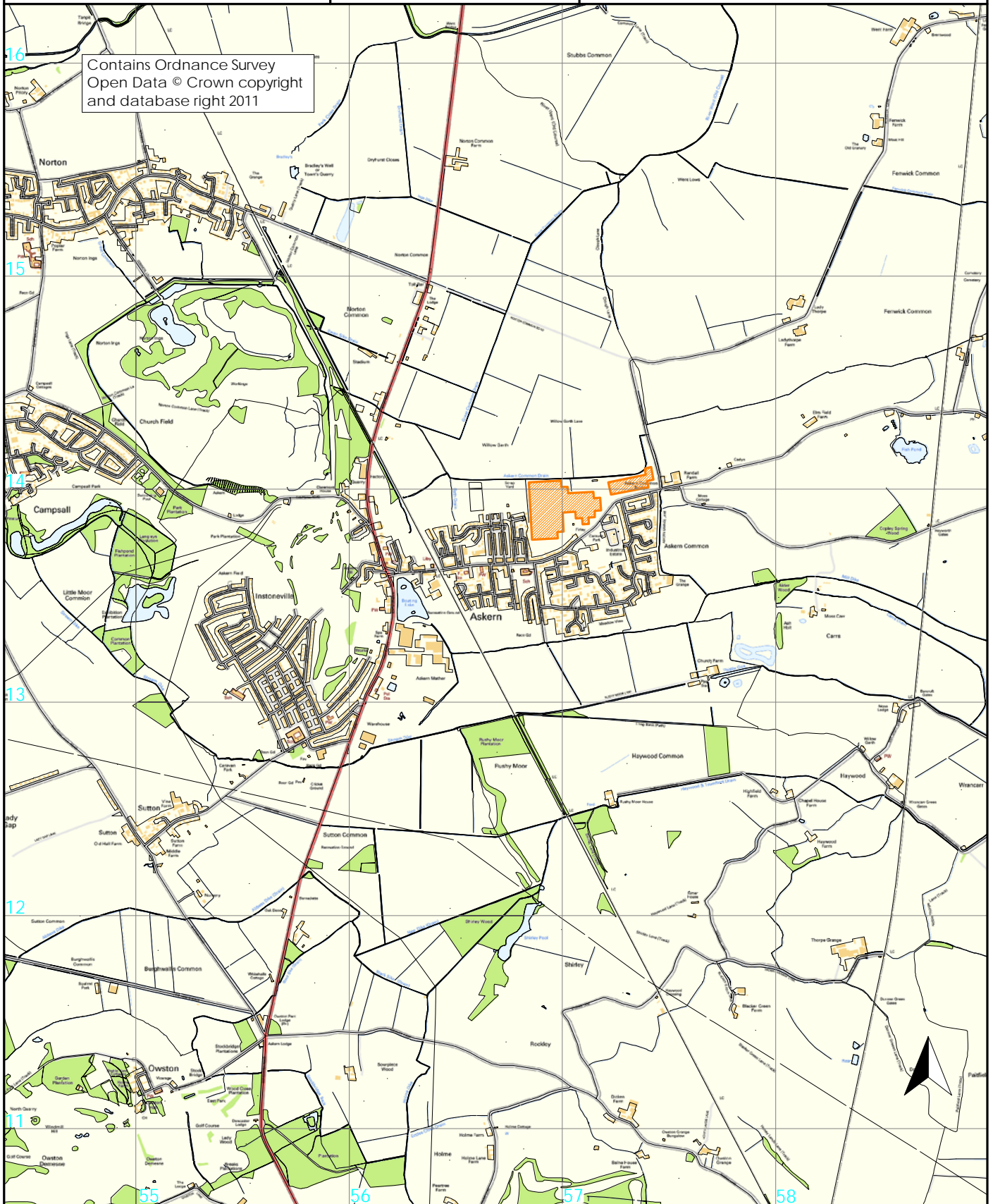
IfA, 2010, Code of Conduct. Institute for Archaeologists (Reading)

IfA, 2008, Standard and Guidance for Archaeological Field Evaluation. Institute for Archaeologists (Reading)

IfA, 2008, Standard and Guidance for Archaeological Excavation. Institute for Archaeologists (Reading)

URS Scott Wilson Ltd
Moss Road, Askern

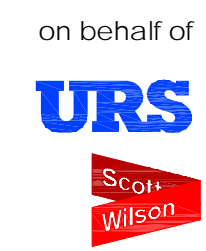
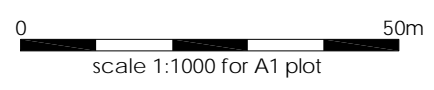
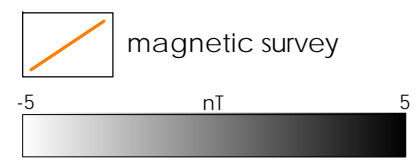
Schmidt, A., 2001, Geophysical Data in Archaeology: A guide to good practice. Archaeology Data Service





AREA 1

AREA 2

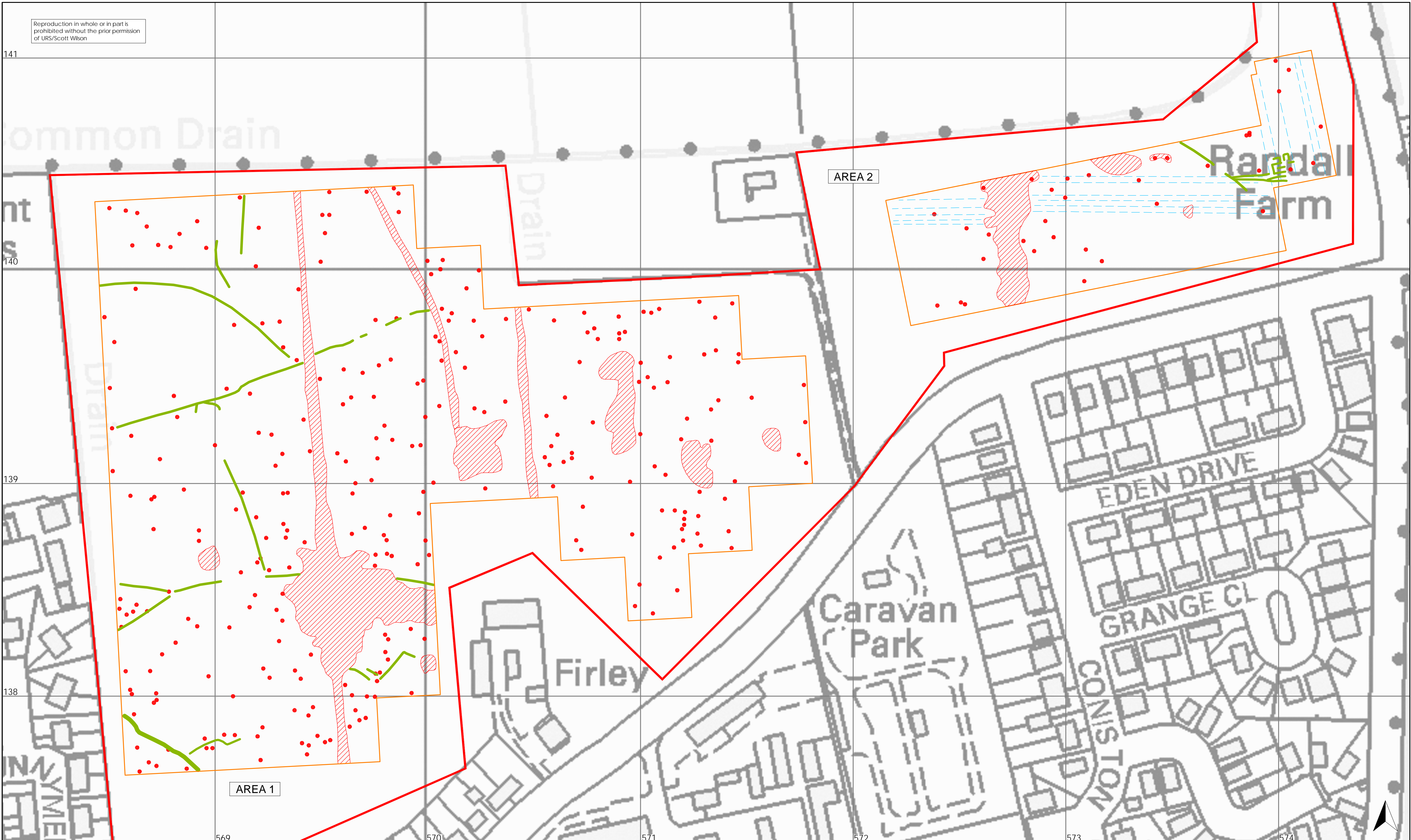


ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

Land at Moss Road
Askern
Doncaster





geophysical survey
report 2723

Figure 2: Geophysical survey



AREA 1

AREA 2

-  magnetic survey
-  dipolar magnetic anomaly
-  positive magnetic anomaly
-  negative magnetic anomaly

0 50m
scale 1:1000 for A1 plot

on behalf of
URS
Scott
Wilson

ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

Land at Moss Road
Askern
Doncaster

geophysical survey
report 2723

Figure 3: Geophysical interpretation

Reproduction in whole or in part is prohibited without the prior permission of URS/Scott Wilson

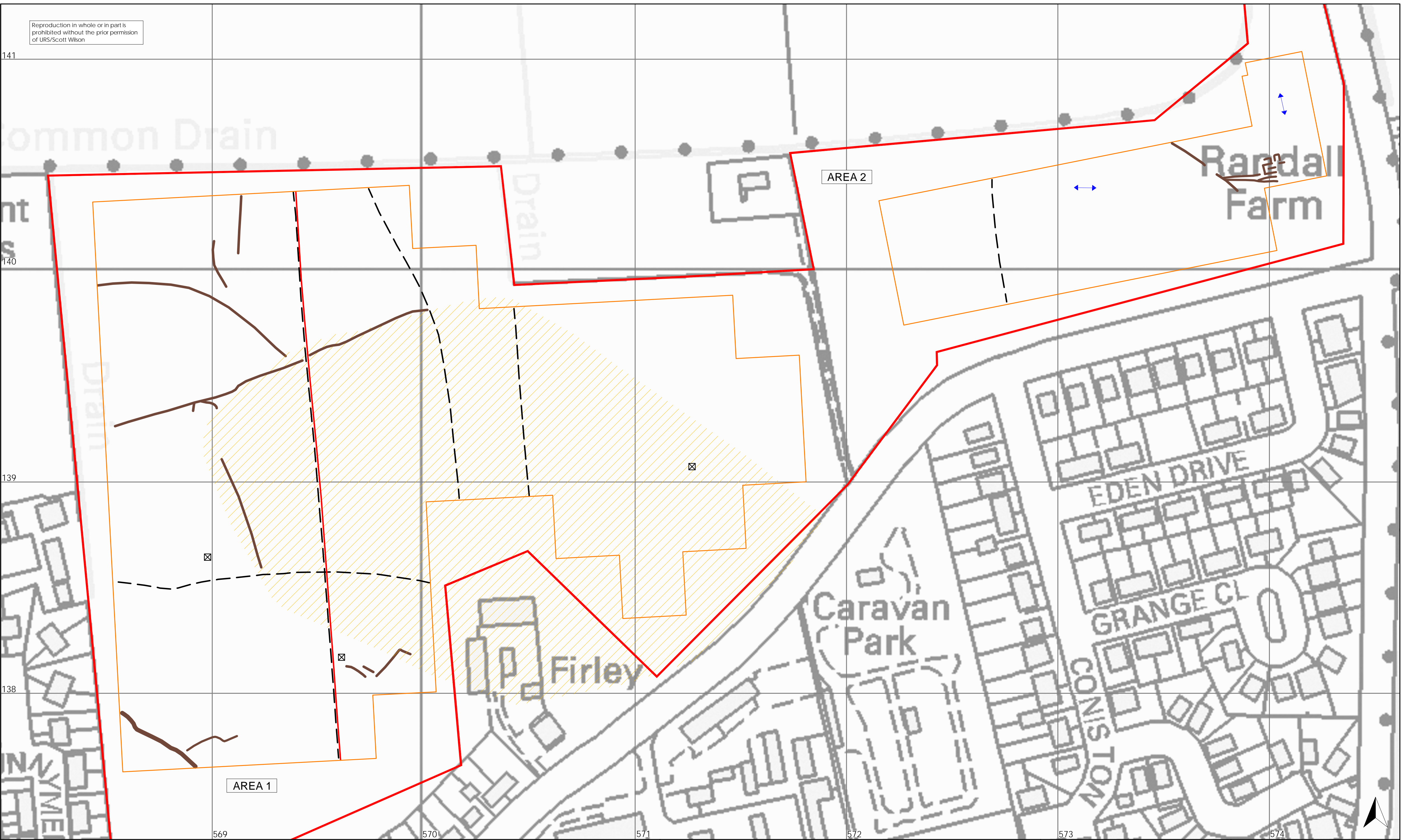
141




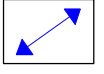



140

139

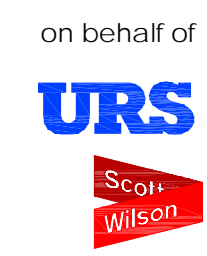
138

569 570 571 572 573 574



- | | | | |
|---|-----------------------|---|----------------------|
|  | magnetic survey |  | telegraph pole |
|  | soil-filled feature |  | former plough regime |
|  | former field boundary |  | "Detached Campsall" |
|  | service pipe | | |

0 50m
scale 1:1000 for A1 plot



on behalf of
ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

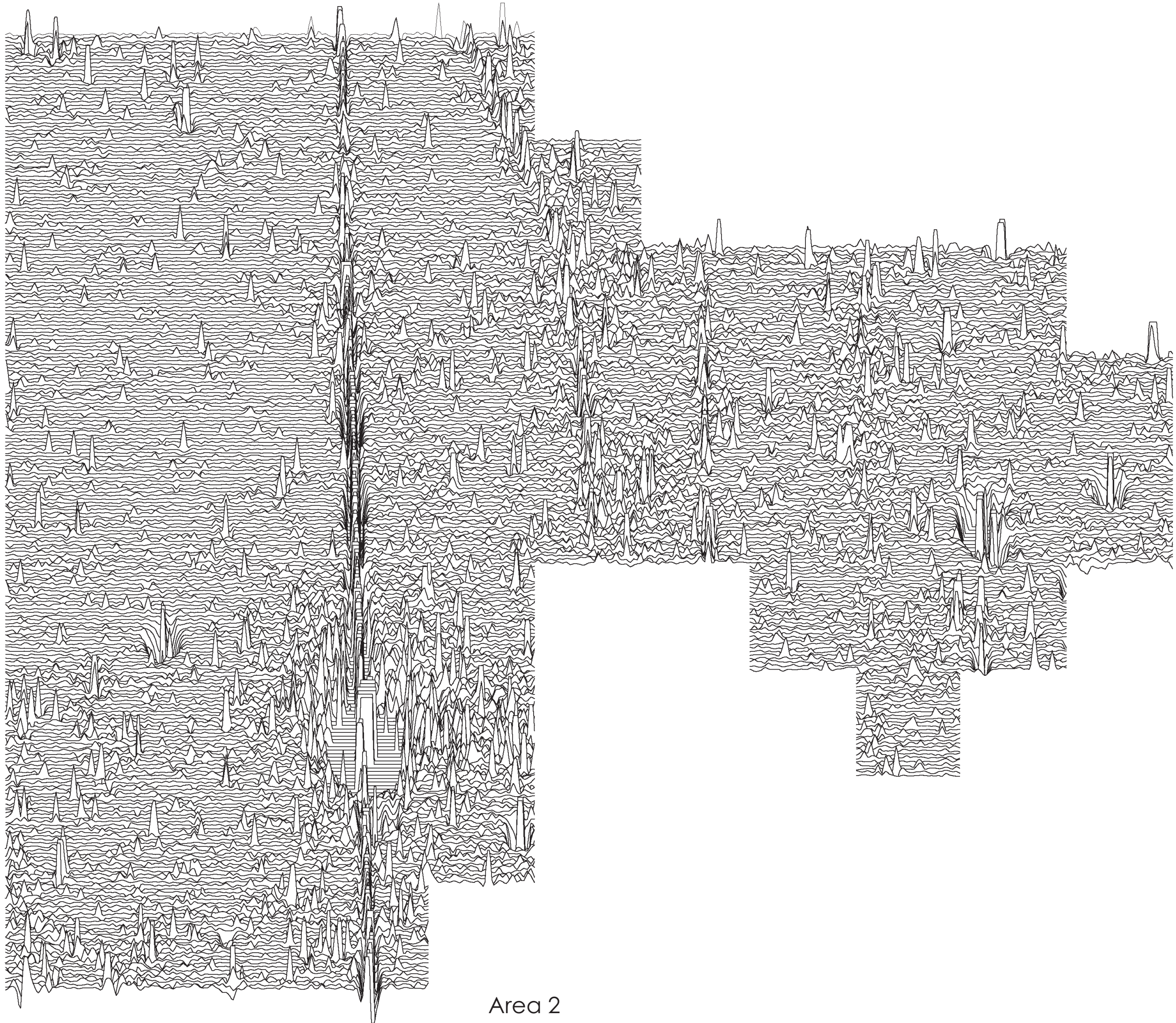
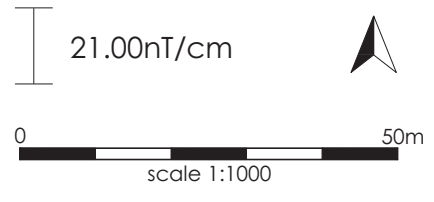
Land at Moss Road
Askern
Doncaster
geophysical survey
report 2723
Figure 4: Archaeological
interpretation

Land at Moss Road
Askern
Doncaster

geophysical survey
report 2723

Figure 5:
Trace plots of geomagnetic data

Area 1



Area 2

