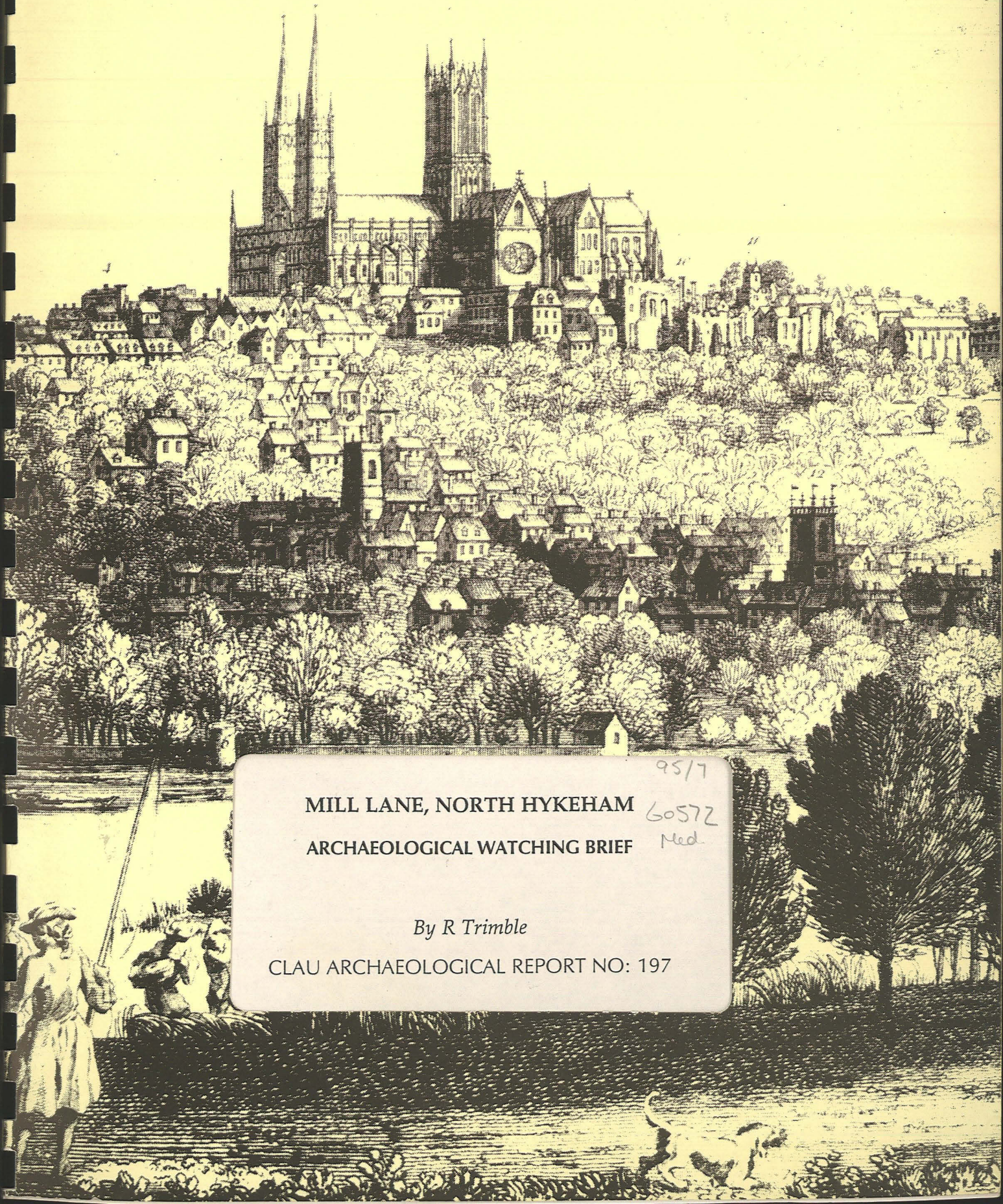
CITY OF
LINCOLN ARCHAEOLOGY
UNIT



MILL LANE, NORTH HYKEHAM

ARCHAEOLOGICAL WATCHING BRIEF

By R Trimble

CLAU ARCHAEOLOGICAL REPORT NO: 197

EVENT L1404 L11066 SOURCES L11659 L1697 L1698 L13489

PRN 60572 Medieval

A

Report to

Lindum Homes Ltd

June 1995

Prepared by

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95/7

MILL LANE, NORTH HYKEHAM

60572 Med.

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ARCHAEOLOGICAL WATCHING BRIEF

1.0 Introduction

1.1 Background

In response to an archaeological condition of planning consent set by North Kesteven District Council, CLAU was commissioned by Lindum Homes Ltd, to undertake an archaeological watching brief during groundworks associated with a residential development at Mill Lane, North Hykeham (SK 9415 6545). The site lies approximately 7km to the south west of the centre of Lincoln (Fig.1).

The development consisted of 25 separate house plots together with access roads and drainage and was confined to a single 3.25 hectare field last planted with sugar beet. At the request of Lindum Homes Ltd and the Community Archaeologist for North Kesteven District Council, monitoring was extended to cover topsoil removal over a 130 x 35m area within a separate field to the east which was not included in the current planning application. It is anticipated that a report on the results of this work will accompany any subsequent planning application to North Kesteven District Council.

The watching brief was maintained throughout the period 24/04/95 to 07/06/95.

The information in this document is presented with the proviso that further data may yet emerge. The Unit, its members and employees cannot, therefore, be held responsible for any loss, delay or damage, material or otherwise, arising out of this report. The document has been prepared in accordance with the terms of the Unit's Articles of Association, the Code of Conduct of the Institute of Field Archaeologists, and The Management of Archaeological Projects 2 (English Heritage, 1991).

1.2 Topography and Geology

The area is low lying and predominately flat. Its height relative to Ordnance Datum rises imperceptibly from 11.9m at Mill Lane to around 12.3m at the eastern periphery of the development. A slight fall in ground level is evident towards the east of the extended watching brief area.

The British Geological Survey's 1:50 000 geological map for the North Hykeham and surrounding area indicates the site to be situated on Quaternary Older River sand and gravel deposits which overlie Jurassic Lias Clay.

1.3 Archaeological Background

Recent work in the area includes a series of watching briefs by CLAU at North Kesteven (GM) School (SK 4939 3663). The results of this work were largely negative, although a possible pit or ditch terminal was recorded (CLAU Report no. 170, 1995).

The Lincolnshire Sites and Monuments Record contains details of an extensive 3rd-4th century Roman pottery scatter located at SK 945 656, approximately 400m E/NE of the site. Kiln furniture in association with Romano-British pottery is noted at 250m E/NE of the site (SK 9443 6557). To the west of Mill Lane at SK 938 656 aerial photographs show circular and other crop marks. A polished stone axe was found at SK 947 659 and a find of medieval pot sherds is recorded at SK 9475 6575.

Pre-development evaluation of the watching brief area consisted of a geophysical survey by Landscape Research Centre Ltd (see Appendix). The survey area was confined to the narrow approach to the field and to the north western part of the main field giving a total survey area of 0.75m. The survey produced no evidence of anamolies which could be attributed to an archaeological origin.

2.0 Aims and Methods

The principal aims of the watching brief were to ensure that any archaeological features exposed during the groundworks were recorded and interpreted to a standard accepted by the Community Archaeologist for North Kesteven, and to ensure that any significant discoveries of artefactual evidence were recorded and analysed to a standard accepted by the Community archaeologist for North Kesteven.

In order to satisfy these requirements, the site was monitored on an intermittent basis by representatives of CLAU, with visits timed to coincide with periods of major groundworks. A record consisting of trenchside notes and colour slide transparencies was compiled.

3.0 Results

The original watching brief area is referred to as Area 1 in the following discussion, with Area 2 denoting the extended watching brief area. (see Fig.1)

3.1 Area 1

Inspections were carried out following topsoil stripping for the access roads and for the block of housing to the north west of the development (see Fig.2). Monitoring continued during the excavation of the main service trenches which were routed along the lines of the access roads.

Terrace sands and gravels were present throughout the development area. Remnants of "ridge and furrow" overlay the sands in places with noticeable thickening towards the eastern field boundary. Comparatively modern land drains were in evidence.

Despite fairly intensive inspection of all surfaces following topsoil removal no archaeologically significant artefacts or features were found.

3.2 Area 2

The remains of "ridge and furrow" were revealed at the level of the stripped surface, with at least three distinct furrows. In contrast to the north-west to south-east orientation of the existing field boundaries, the furrows displayed a north-to-south orientation. A hand-excavated section across the most clearly defined furrow indicated a 1.35m width and 0.10m maximum depth. The centre to centre distance between furrows was 6.25m.

There was no evidence of archaeological features cutting into the natural sands exposed on the islands between furrows, and intensive inspection of the trench failed to produce any evidence of displaced artefacts.

3.3 Evaluation of the Effectiveness of the Watching Brief

Following ground reduction along the roads and on the inspected house plots in Area 1, residual traces of topsoil and/or ridge and furrow continued to obscure underlying deposits in many places. However, the absence of features from the areas which were visible, the sparsity of artefactual material, and the negative results of observation along the lines of the main drains would tend to suggest that more archaeologically visible remains such as Romano-British settlement sites or pottery production centres are not present in the immediate vicinity. Less obvious prehistoric features may, on the other hand, have remained undetected.

In Area 2 conditions for the identification of archaeological features were good. The furrows were fairly well defined against the natural sands but there was no evidence of any other cut features.

4.0 Conclusions

The watching brief did not produce any evidence of significant archaeological deposits. However, an enhancement of archaeological knowledge of the area has been achieved. This information will be of value in future decision making with regard to the management of the archaeological resource.

5.0 Acknowledgements

Thanks are due to Norman French of Lindum Homes plc for his excellent cooperation during site visits, and to Claire Smith for the production of all illustrations for this report.

6.0 References

Trimble, R, 1995, New Technology and Maths blocks, North Kesteven (GM) School, Archaeological Watching Brief, CLAU. Archaeological Report 170

7.0 Archive Deposition

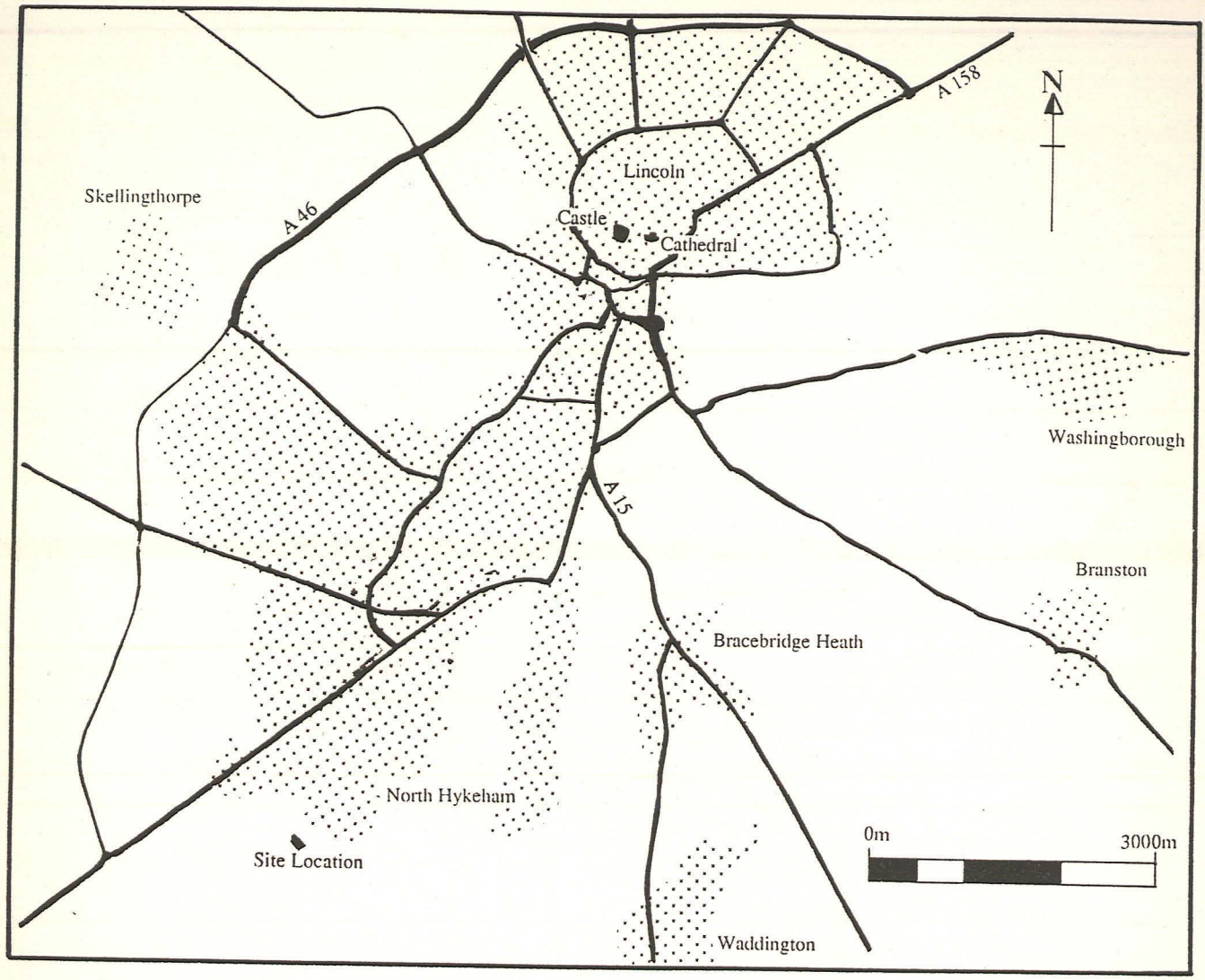
The archive consists of:

No.	Description
1	Site diary
1	Report
1 set	Photographic records - Colour slides

The primary archive material, as detailed above, is currently held by :

The City of Lincoln Archaeology Unit,
Charlotte House,
The Lawn,
Union Road,
Lincoln,
Lincolnshire,
LN1 3BL.

It is intended that transfer to the City and County Museum, Friars Lane, Lincoln, in accordance with current published requirements, under Museum Accession Number 54.95, will be undertaken within approximately six months of completion of this project.


A 158
N
Lincoln
Skellingthorpe
A 46
Castle
Cathedral
Washingborough
A 15
Branston
Bracebridge Heath
North Hykeham
Site Location
0m
3000m
Waddington

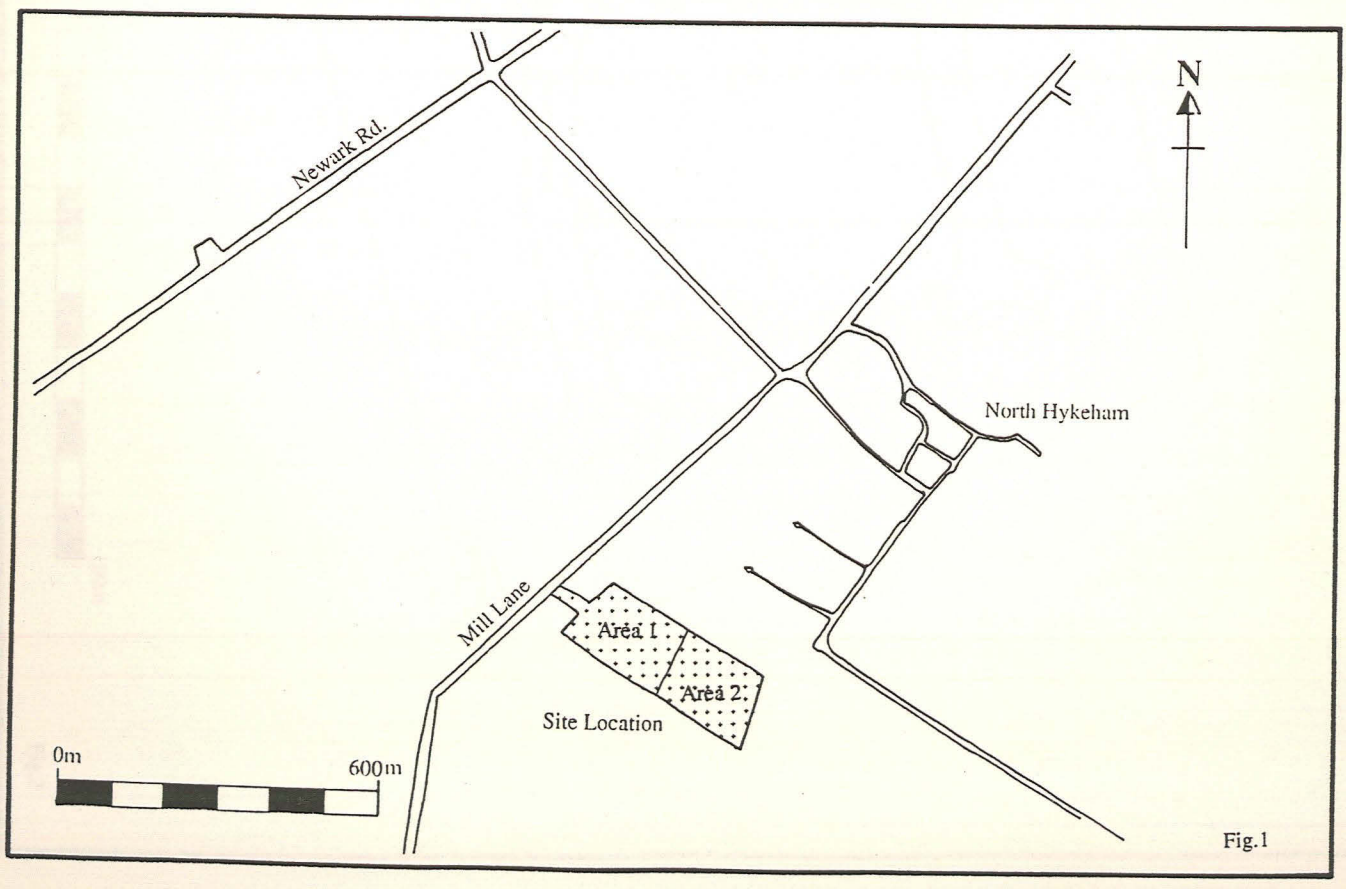

N
Newark Rd.
North Hykeham
Mill Lane
Area 1
Area 2
Site Location
0m
600m

Fig.1

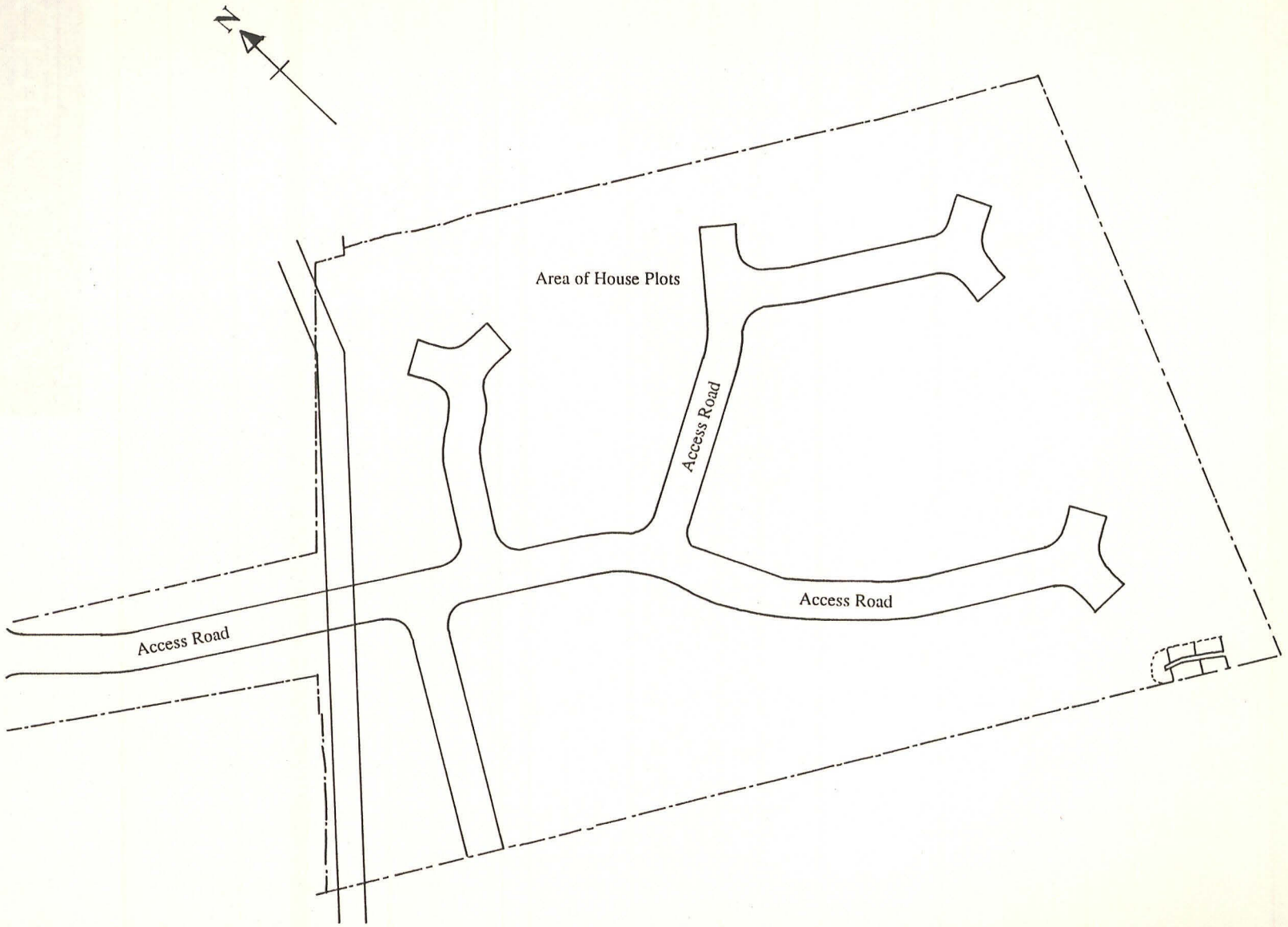

N
Area of House Plots
Access Road
Access Road
Access Road
0m
100m

Fig.2

APPENDIX

Fluxgate Gradiometer Survey

for the

City of Lincoln Archaeology Unit

at

Mill Lane, North Hykeham, Lincolnshire

Survey by the

Landscape Research Centre Ltd
The Old Abbey
Yedingham
North Yorkshire
YO17 8SW

carried out on the

13th March, 1995

Phone & Fax 0723 859759

CONTENTS

Summary

A fluxgate gradiometer survey was carried out by the Landscape Research Centre Ltd. on behalf of the City of Lincoln Archaeology Unit, as part of an archaeological assessment of a proposed development at Mill Lane, North Hykeham, Lincolnshire. The proposed development area was of a low magnetic response to this form of survey, with no obvious anomalies being found.

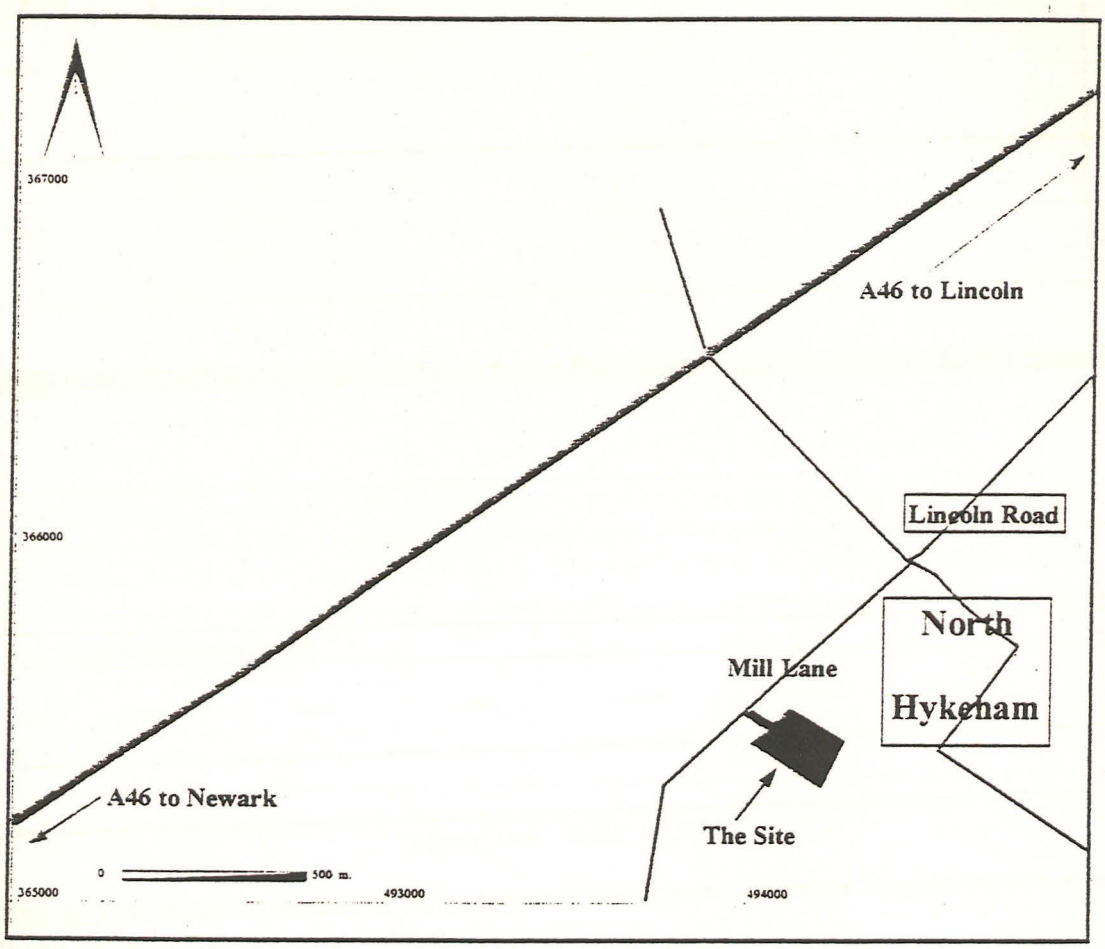


Figure One Scale 1:20800

This diagram shows the position of the site in relation to the A46 and North Hykeham. The grid is at 1 kilometre intervals.

Introduction

The subject of this report is the discussion of the results of a fluxgate gradiometer survey carried out on behalf of the City of Lincoln Archaeology Unit. The site in question is a proposed development at Mill Lane, North Hykeham, Lincolnshire. The fluxgate gradiometer survey was conducted using a *Geoscan Research* fluxgate gradiometer (model FM36), hereafter referred to as a magnetometer. The zigzag traverse method of survey was used. The survey was conducted by taking readings every 25cm along the north/south axis and every metre along the east/west axis (thus 3600 readings for every 30m grid and 400 readings for each 20m grid). The data has been processed and presented using the programs GeoImage (a program dealing with the processing of geophysical data) and GSys (a program which can display, process and present digitised plans and images).

The survey was carried out on the 13th March, 1995. The personnel involved were James Lyall and Heather Clemence. The proposed site was 0.966 hectares in area and consisted of one field, bounded on the west by Mill Lane, and by hedges and walls on the northern and western boundaries. The eastern and southern boundaries of the survey area were in the open field. The field had been planted with sugar beet, and the remnants of the crop remained sporadically to about 10cm in height. The field had a number of recent ploughmarks. The underlying geology was a sand and gravel, with the gravel fading out at below 1.5 metres in depth. The topsoil was a brown sndy loam. A total area of 0.75 hectares was surveyed. The weather conditions on the 13th of March were a warm spring sun, with no wind.

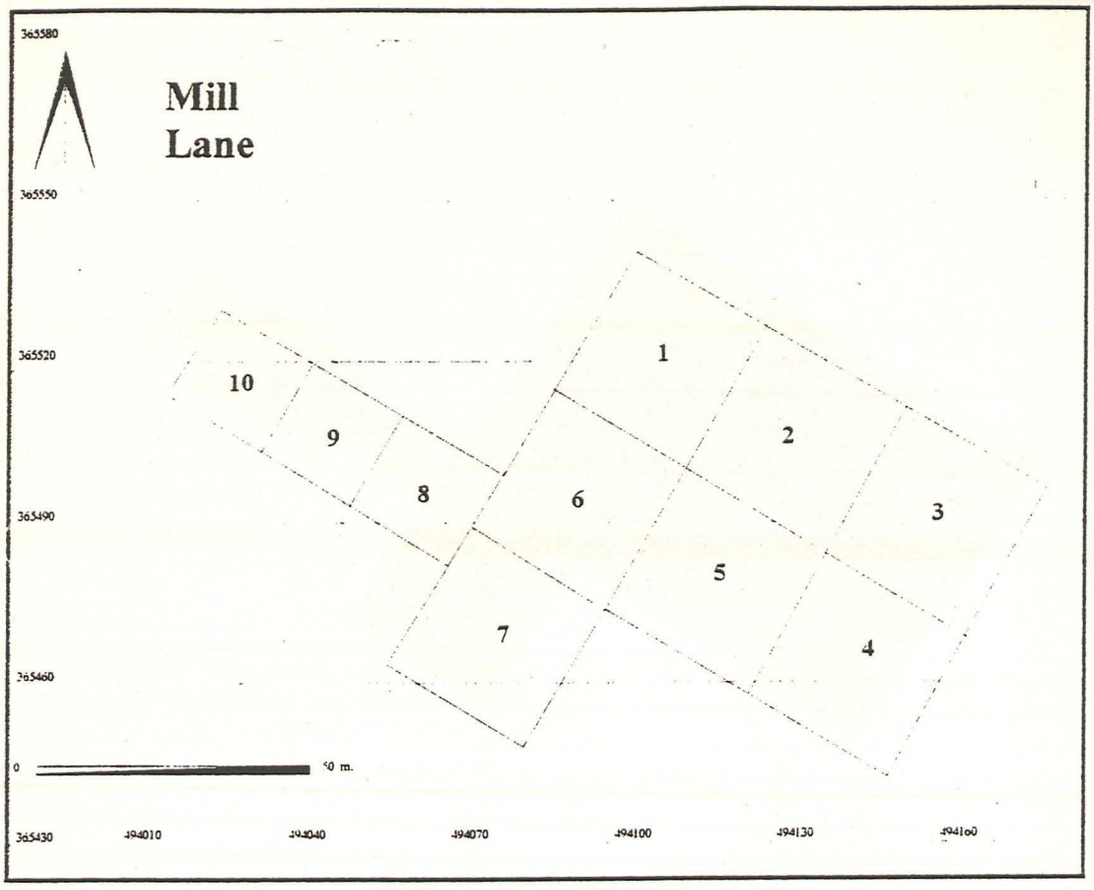


Figure Two Scale 1:1360

This diagram shows the numbers of the grids used in the main text. There are 10 grids, the first seven being 30m square and grids 8 to 10 being 20m square.

The magnetometer data

The magnetometer data is displayed as two images (**Figures Three and Four**, below). **Figures Three and Four** are presented as greyscale images, with **Figure Four** being a contrast enhanced image. This enhancement was carried out to check if any weak underlying anomalies could be extracted from the data. The results remained negative. The images show areas of lighter and darker grey, which indicate areas of higher and lower magnetic response. The results from the survey are discussed in detail below. The data is predominantly "flat", indicating a uniform magnetic response, with a scattering of "high spots". These high spots are caused by metal in the soil, and are of a probable recent origin. The area of high magnetic fluctuation in the south of grid 10 is caused by the presence of a drain. The areas of high magnetic fluctuation in the north and south of grid 8 are of probable recent origin. There are a number of high spots visible in grids 4, 5 and 6, although no obvious pattern is discernible. The contrast enhanced image (**Figure Four**), does give indications of very weak east/west oriented anomalies, particularly in grids 1,2 and 3. These are almost certainly caused by the presence of the modern ploughmarks.

There are no obvious anomalies that could be attributed to an archaeological origin. Absence of anomalies does not automatically preclude the presence of archaeological activity, due to the nature of magnetic surveying, but the survey picked up no anomalies that could not be attributed with a recent origin.

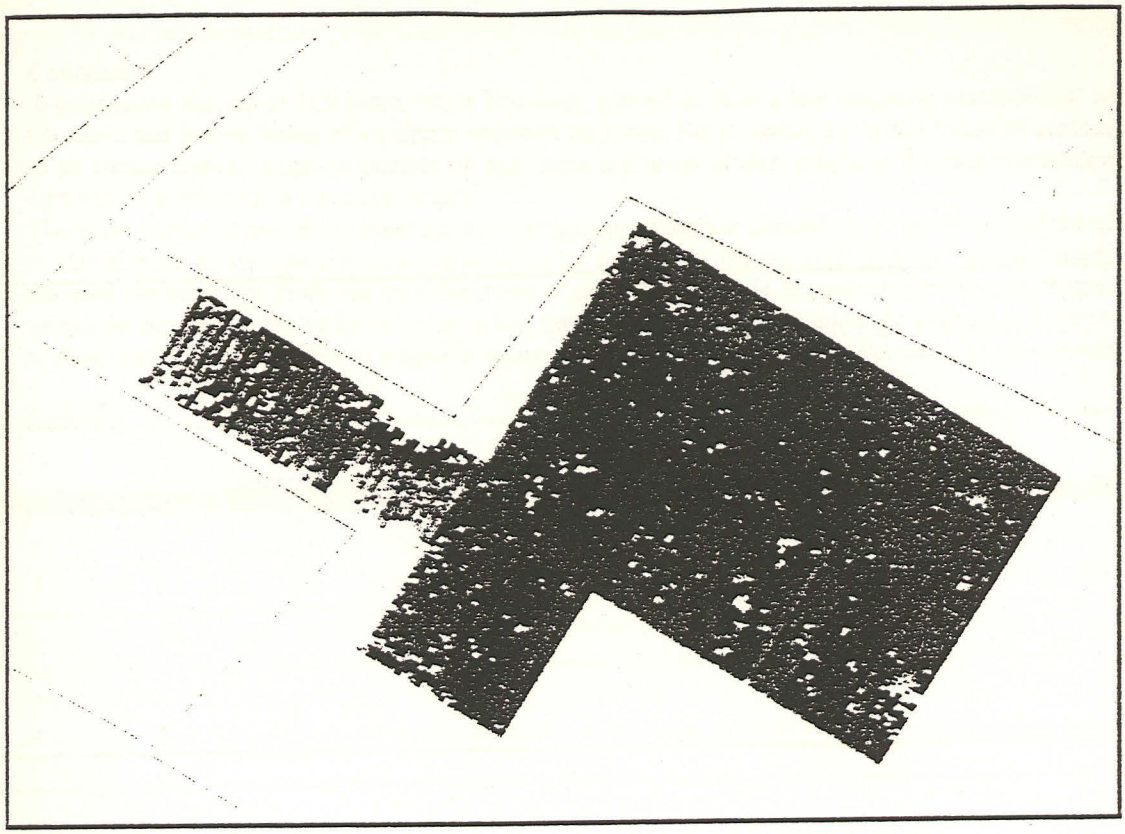


Figure Three Scale 1:1330

This diagram shows the results of the fluxgate gradiometer survey displayed as a greyscale image.

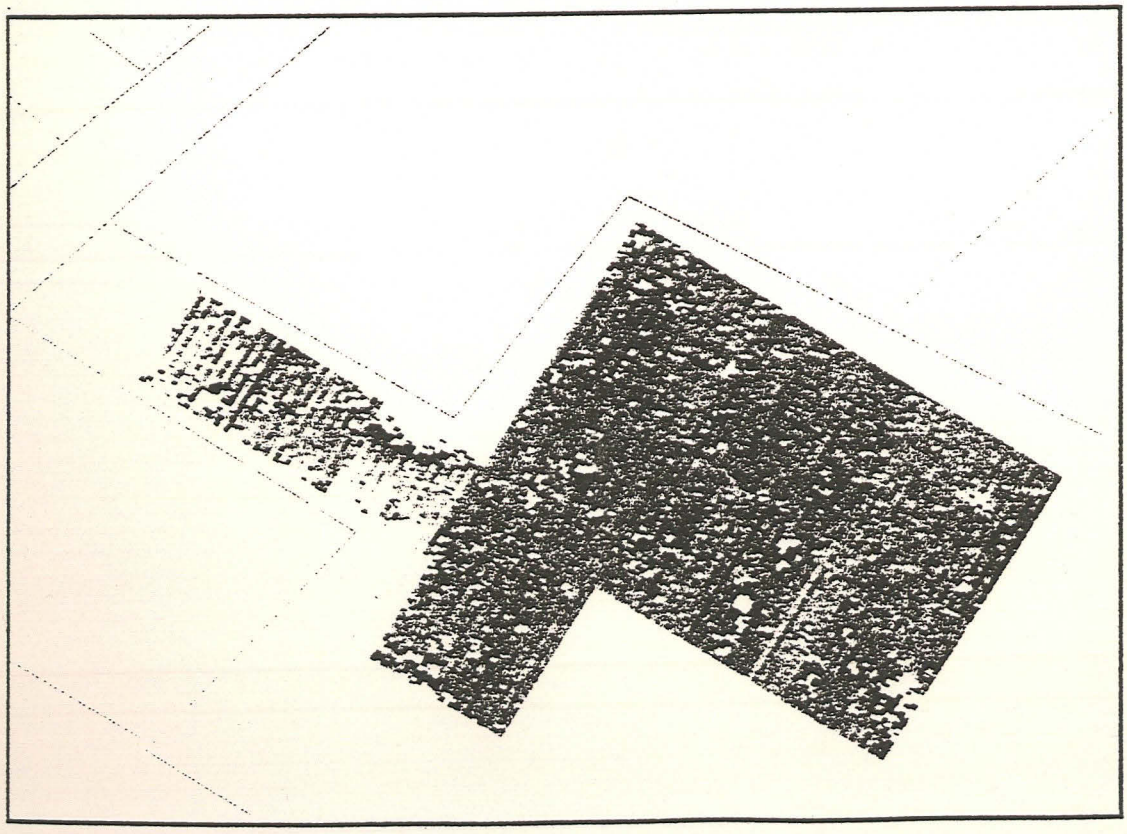


Figure Four Scale 1:1330

This diagram shows the results of the survey displayed as a contrast enhanced greyscale image.

Conclusion

In conclusion, the site at Mill Road, North Hykeham, proved to be of a low magnetic susceptibility, with the sands and gravels being of a uniform magnetic response. No magnetic anomalies could be atrributed to an archaeological origin. A number of high spots and areas of high magnetic fluctuation can almost certainly be atrributed to a modern origin.

The plans should allow any archaeological investigation (if such is deemed to be necessary) of the area to concentrate in the specific areas believed to be significant. Please note that the United Kingdom latitudes are such that there can be a distortion of up to half a metre in position between the magnetic anomalies shown and the position of the actual features themselves. The anomaly strength is a function of depth beneath the surface and magnetic response, and not the actual size of the cause of the anomaly.

Report by James Lyall

Landscape Research Centre Ltd.

APPENDIX ONE

GRID NO	MINIMUM	MAXIMUM	RANGE	AVERAGE	STD. DEVIATION
1	-100	79	179	3	5
2	-22	93	115	4	3
3	-42	167	209	5	4
4	-345	236	581	3	15
5	-174	330	504	1	11
6	-146	162	308	2	7
7	-54	337	391	2	10
8	-326	353	679	-2	148
9	-119	296	415	0	117
10	-211	243	454	-2	224

TABLE ONE

The table gives the raw data and statistics in NanoTesla for each of the 10 grids. Values shown are the minimum value, maximum value, range, average value and the standard deviation for each grid.

Note that these are not absolute magnetic values in NanoTesla. A true magnetometer measures absolute values. A fluxgate gradiometer measures relative differences in magnetic values, based on a zero reference point established by the surveyors at the time of the survey. Although the range of the values is high, the average values are close to zero, thus indicating a flat magnetic response, interspesed with high spots.