



LINDSEY ARCHAEOLOGICAL SERVICES

**Gainsborough Road, Market Rasen, Lincs.  
Archaeological Desk Top Assessment and  
Geophysical Survey**

NGR: TF ~~1080 8880~~ TF1034 8906

Planning Application: M00/P/0238

Site code: MRGR00

LCNCC Accn No.: 2000.301

**Report for  
Market Rasen Developments Ltd**

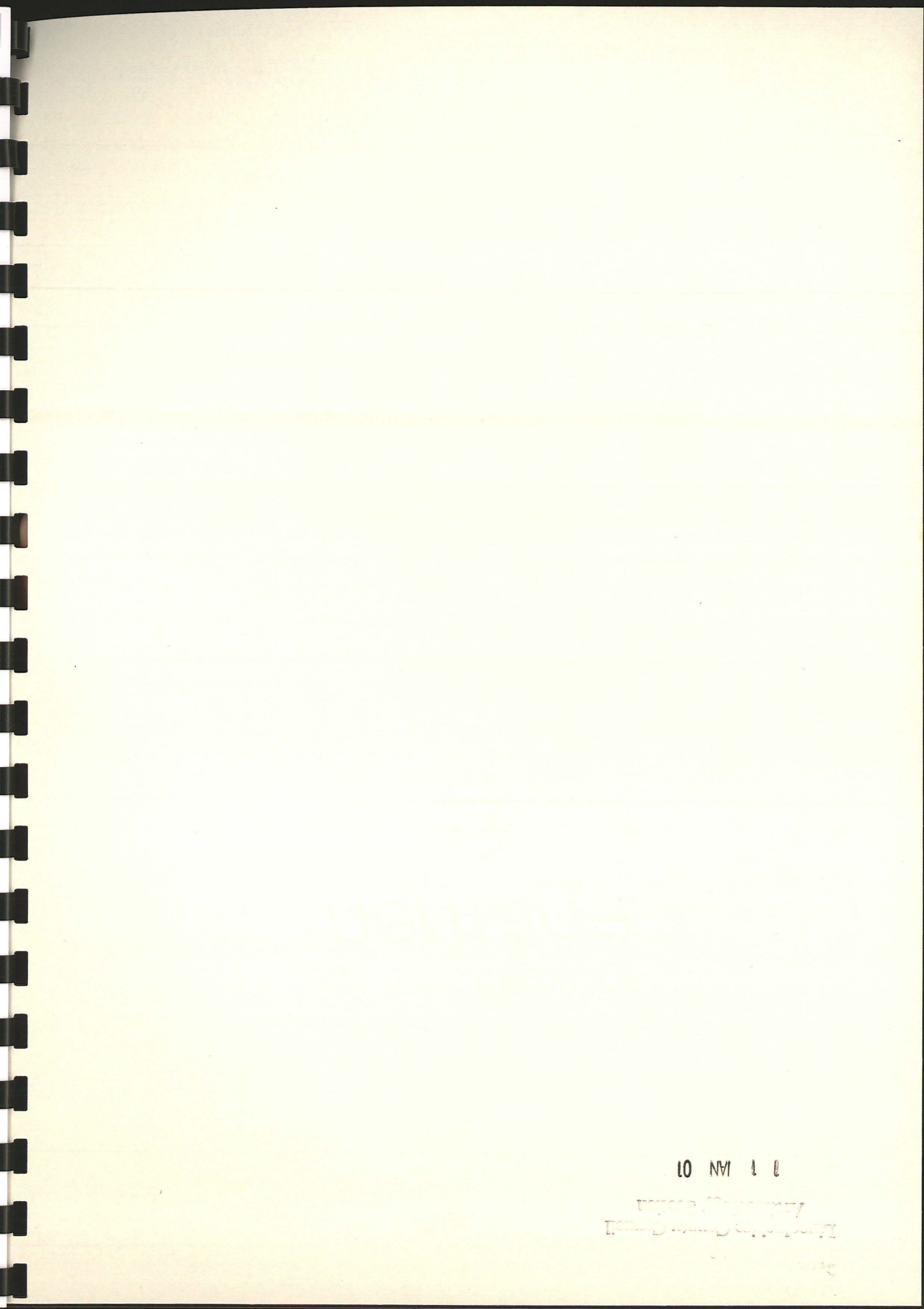
**by  
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**LAS Report No. 486**

**January 2001**

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Lithography Company

EVENT L11506  
SOURCES L16291/6292

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**Gainsborough Road, Market Rasen, Lincs.  
Archaeological Desk Top Assessment and Geophysical Survey**

NGR: TF 1030 8900 TF1034 8906

Planning Application: M00/P/0238

Site code: MRGR00

LCNCC Accn No.: 2000.301

**Summary**

*A proposed foodstore development south of Gainsborough Road at Market Rasen will be situated on ground which has been altered by the levelling when school playing fields were created. This may have affected any surviving archaeology that might be present. The access road to the north crosses an area of ploughed out ridge and furrow. Apart from the ridge and furrow there are no known archaeological remains of any date within the study area. Geophysical survey over the southern half of the site recorded a number of magnetic variations in the soil, the stronger of which coincided with the presence of modern features. Some weaker anomalies may reflect the presence of archaeological remains but their interpretation is difficult due to the masking effects of the strong signals produced by modern activity.*

**Introduction**

Lindsey Archaeological Services (LAS) was commissioned by Market Rasen Developments Ltd in November 2000 to prepare an archaeological desk-based assessment and undertake a geophysical survey of land south of Gainsborough Rd in Market Rasen, Lincs. (Figs. 1 and 2).

**Site Location**

Market Rasen is situated 22km NE of Lincoln and 24km west of Louth, in the West Lindsey District of Lincolnshire.

The proposed application site is located west of the town centre, on the south side of Gainsborough Rd the main east-west route through the town (A631). The site is bounded to the west by the Limes and extends south across part of the Market Rasen Primary School playing fields (Fig. 2). It lies just east of the parish boundary with Middle Rasen.

**Planning Background**

An outline planning application has been made for the construction of a foodstore with associated parking and landscaping (Fig. 3). A request for further archaeological information prior to determination of the application has been made.

## **Sources**

The following sources were consulted:

- Lincolnshire County Council County Archaeology Office (Sites and Monuments Record) including air photographic data from the National Mapping Project (RCHME)
- Lincolnshire Archives Office (Enclosure map, Ordnance Survey maps, manuscript maps and other documentary and published sources)

## **Topography and Geology**

Market Rasen is situated at the western edge of the Lincolnshire Wolds on the southern side of the River Rase, a small tributary of the River Ancholme. The western side of the parish lies on boulder-clay/till, with wind-blown cover-sands masking it to the east. The development site lies at a height between 24.4-25m OD.

## **Archaeological and Historical Background**

The numbers used in this report in bold refer to primary record numbers (PRNs) assigned by the Lincolnshire Sites and Monuments Record; those within the study area are shown on Fig. 2 and listed in Appendix 1.

### ***Prehistoric***

No prehistoric finds are known from the vicinity of the application site.

### ***Roman***

The significance of this district in the Roman period derives from pottery production sites to the SE of the modern town and in the adjoining parish of Linwood. Evidence for pottery production was found on the Gordon Fields Estate c. 0.5km south east of the study area. Further kilns have recently been found east of the railway station, on Linwood Road. The production centre is one of several concentrations NE of Lincoln, together with known sites at Claxby and Walesby. The associated Roman settlement, which is presumed to have existed, has not yet been located.

### ***Saxon and Medieval***

Two mid-seventh century Anglo-Saxon hanging-bowl mounts were recorded from the parish in 1957, apparently from a roadside trench although their actual provenance has not been established. Metal detecting finds of three sleeve clasps and part of a cruciform brooch suggest that an inhumation cemetery is present in the area (Leahy 1993, 41). A coin found near Market Rasen in the 1980s possibly dates to 720-740 AD (Blackburn 1993, 88).

The configuration of the parish boundaries suggests that Market Rasen was carved out of Middle Rasen parish, and was formerly referred to as East Rasen (Everson et al.1991,

RCHME archive, PRN 52752). (Parishes and their boundaries are thought to have been created at some point during the 10-11<sup>th</sup> centuries). There is no recorded archaeological evidence for an associated Saxon settlement although the mention of East Rasen in the Domesday Survey of 1086 confirms its Anglo-Saxon origins. A market was granted in 1218-19, with a fair shortly after. Fourteenth-century records hint at either an unsuccessful market status or decline perhaps associated with the mid-fourteenth century Black Death.

Evaluation in 1998 in the grounds of the Vicarage close to the Market Place on King Street revealed a series of levelling deposits which produced a single piece of Roman Samian pottery and 20 sherds of medieval pottery of 13<sup>th</sup>-15<sup>th</sup> century date (JSAC 1998) (PRN 54294-7).

### **Post-medieval Remains**

Open fields in Market Rasen were formally enclosed in 1780 (Figs. 4 and 5). A two-field system was in operation at Market Rasen, and before Parliamentary Enclosure the study area lay in the West Field. The north end of the site, which still retains evidence for medieval ridge and furrow, was privately enclosed at an unknown date prior to the parliamentary enclosure of 1780. The site has been ploughed up in the last five years but beforehand the ridge and furrow was clearly visible suggesting that it had not previously been ploughed in recent times (PRN 52044). The southern half of the site, in the area of the playing fields and tennis courts became two fields at the time of enclosure.

The earliest large-scale OS map for the town is the 1:10,560 survey of 1885 (published 1892) shows that this part of Market Rasen remained outside the built-up area of the town (Fig. 6). The long, narrow plots of land at the north end of the town and to the west reflect the ridge and furrow cultivation that probably extended across the whole of the study area at one time. East of The Limes was another, unnamed, building whose site lies under the present playing field and was located by the geophysical survey (see below). This building and an associated well are recorded on subsequent OS maps. It was demolished before 1956.

### **Scheduled Ancient Monuments**

There are no Scheduled Ancient Monuments within the study area or its close vicinity.

### **Listed Buildings** (DoE 1972)

There are no buildings on the proposed development site. The Limes, which is currently a hotel is situated immediately west of the site and is a Grade II Listed Building. The setting of a Listed Building is a material consideration in any planning decision.



### **Geophysical Survey**

A fluxgate gradiometer survey was undertaken over the southern part of the plot where the proposed supermarket will be located. Part of the site was unsuitable for survey because it was too overgrown with thistles. The north-west part of the area surveyed contained former tennis court whose outline was picked up by the survey. One of the field boundaries shown on the 1892 OS map (Fig. 6) was also identified (Appendix 1, Fig. 6.11). A number of diffuse weak linear and curvilinear anomalies were also detected, mainly in the south-east corner of the area surveyed, which may represent archaeological features of unknown function or date (Appendix 1, Fig. 6.13-16). The full results of the geophysical survey are provided in Appendix 1.

### **Archaeological Potential of the Study Area**

This site lies close to the parish boundary with Middle Rasen. It is clear from early OS maps that the focus of the medieval and modern settlement lay east of the site. The survival until recently of medieval ridge and furrow over the northern half of the site confirms the cartographic evidence that the area was part of the medieval open field system until enclosure in 1780. This part of the site will only have an access road constructed along its western boundary.

There is no known record of Roman or prehistoric occupation in this part of the town. While the presence of archaeological remains cannot be discounted the likelihood is considered to be low. In addition, there has been some ground disturbance associated with the construction of a building at some point prior to 1886 and its subsequent demolition before 1956. The landscaping associated with construction of the playing fields may also have disturbed any below ground remains. This further reduces the archaeological potential of the site.

### **Potential Archaeological Impact of the Proposed Development**

Medieval or later ridge and furrow cultivation earthworks covered the north end of the site and these may be masking earlier features. Geophysical survey has identified a few weak anomalies in the south-east corner of the site which may be archaeological in origin but are of indeterminate form. The results of the geophysical survey seem to support the conclusion of the desk top study that the potential for archaeological remains, and the consequent impact of development on any remains, based on currently available information is considered to be low. The potential impact of development must therefore also be low.

Naomi Field  
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January 5<sup>th</sup> 2001

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Swan, V.G. 1984 *The Pottery Kilns of Roman Britain* RCHM Supplementary Series 5. London.

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## APPENDIX 1

### Summary List of Archaeological Sites and Artefacts in the Vicinity of Gainsborough road, Market Rasen (Source: Lincolnshire Sites and Monuments Record)

#### Abbreviations

PRN: Primary Record Number in the Lincs. County Sites and Monuments Record

NGR: National Grid Reference

PRN	NGR	Description
52044	TF 1015 8930	Medieval cultivation remains on air photos (ridge and furrow). Film and neg. no. 2975/6 (National Air Photo Library)
52738	TF 1064 8921	Iron key (15 <sup>th</sup> century) found in 1906 near south door of parish church
52744	TF 1060 8930	Artefacts found during deepening of Mill Dam in 1848 include iron javelin, 2 single edged daggers, medieval jetons, Elizabeth I shilling, Charles II farthing, hundreds of brass pins
52746	TF 1064 8921	Parish church of St Thomas
52752	TF 107 892	Medieval settlement of East (Market) Rasen
54294-7	TF 1062 8919	Medieval pottery (13-15 <sup>th</sup> century) found in Vicarage grounds 1998. 1 sherd of Roman Samian ware

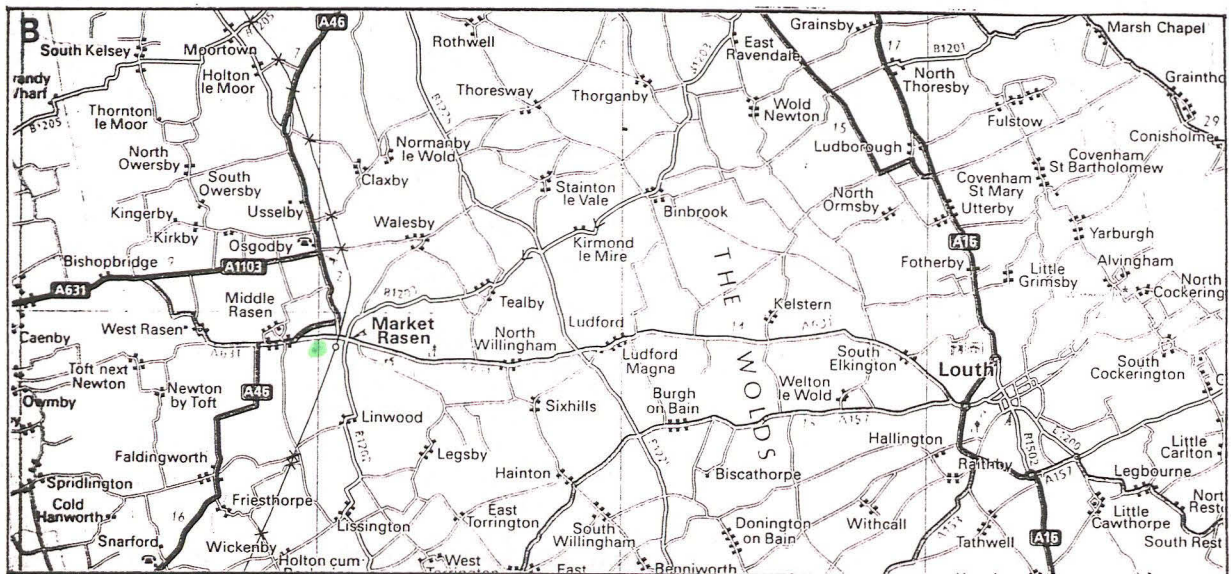


Fig. 1 Location of Market Rasen (based on the 1956 Ordnance Survey 1:10,560 map sheet TF 18NW. © Crown Copyright, reproduced with the permission of the Controller of HMSO. LAS Licence No. AL 50424A).

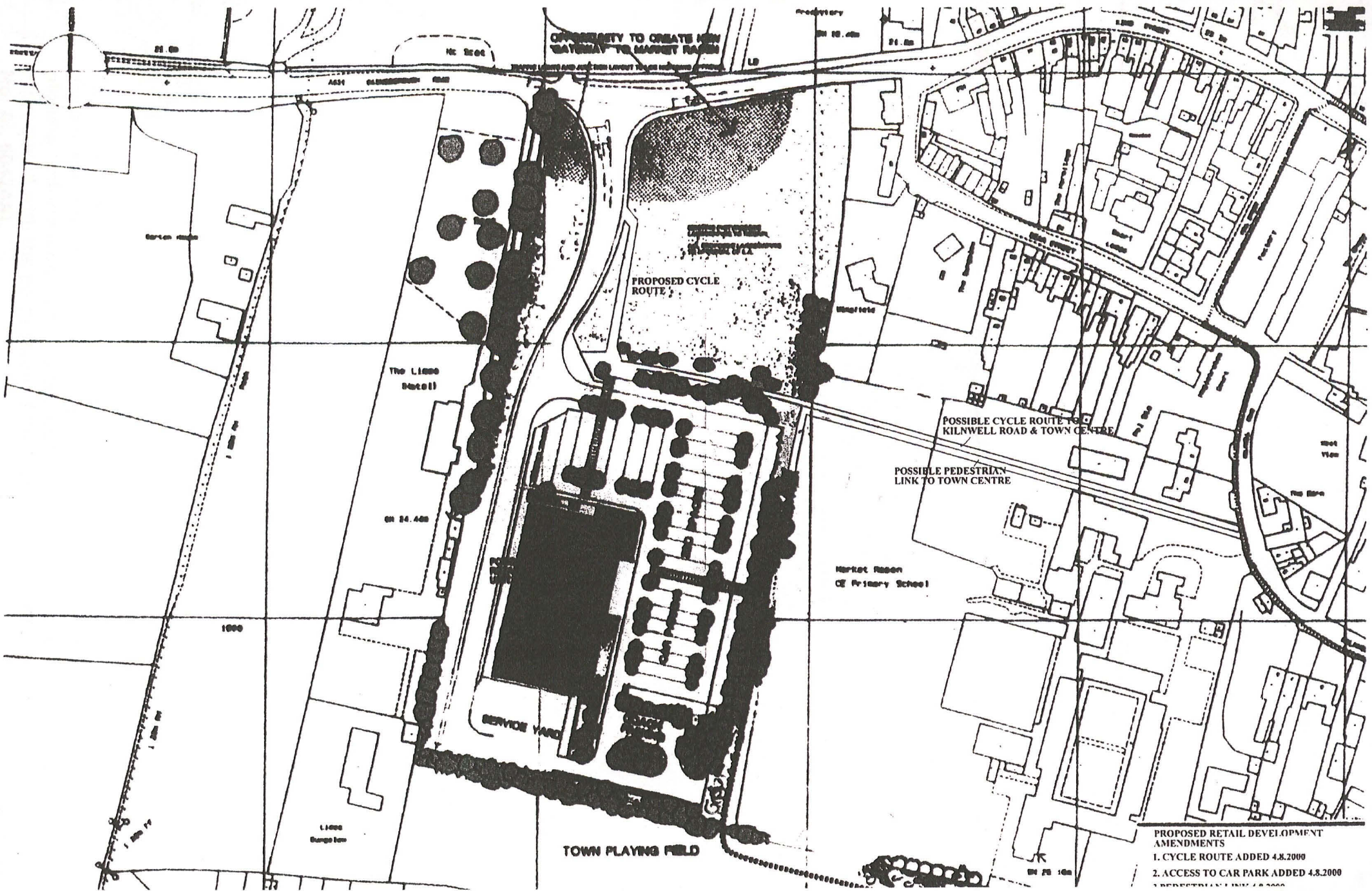


Fig. 3 The proposed development, plan supplied by Mr A. Jones (Based on the 1972 Ordnance Survey 1:2,500 map © Crown copyright, reproduced with the permission of the Controller of HMSO. LAS Licence No. AL 50424A).



# MARKET RASEN - THE OPEN FIELD SYSTEM - 1779

RECONSTRUCTION FROM THE ENCLOSURE AWARD & THE SURVEYOR'S MAP

BY REX C. RUSSELL.

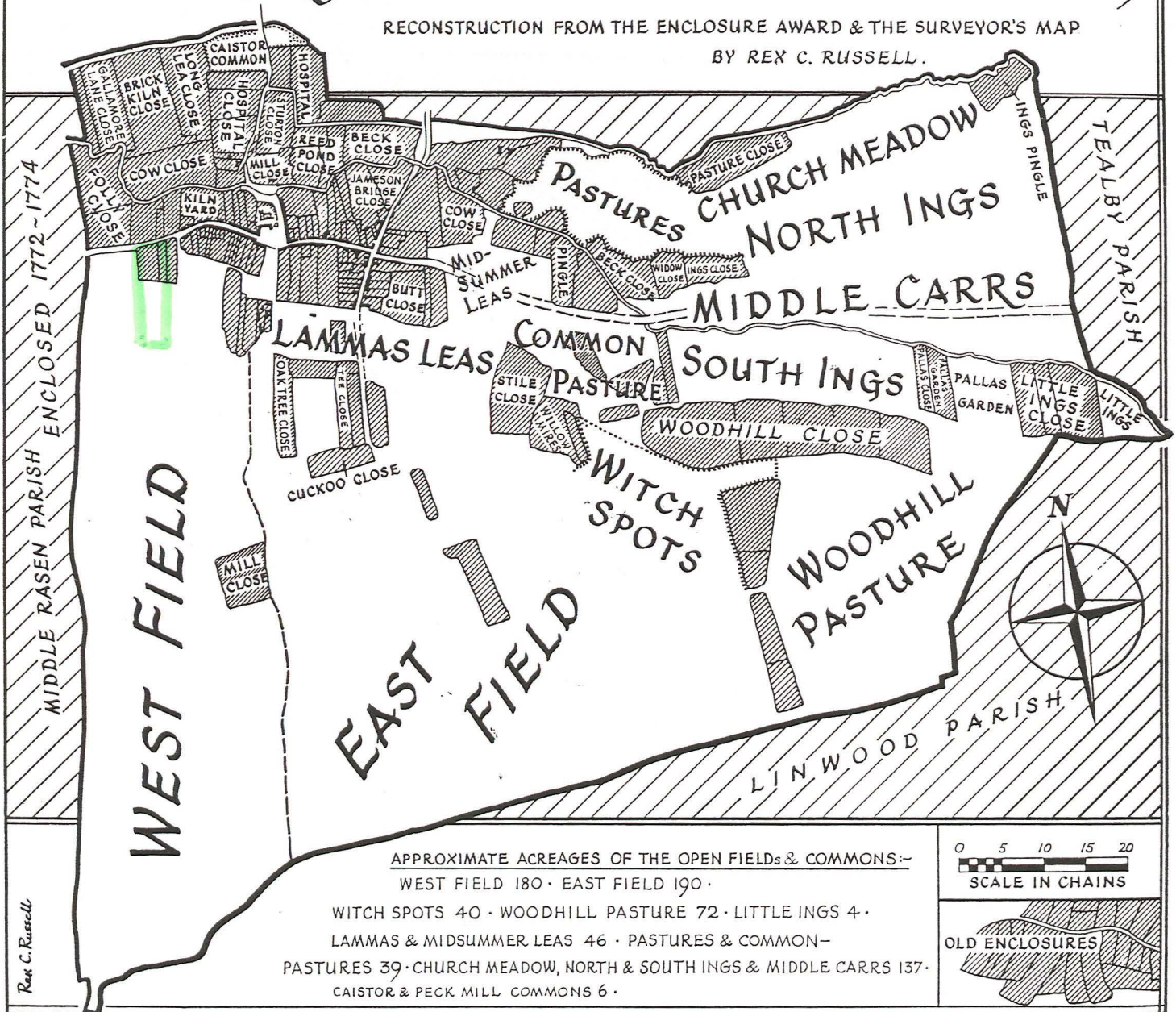


Fig. 4 Market Rasen, the open field system prior to 1780, reconstructed from the Enclosure Award and the surveyor's map by Rex Russell, showing the study area.



# MARKET RASEN AFTER ENCLOSURE IN 1780.

FROM THE AWARD MAP BY JOHN HUDSON OF LOUTH

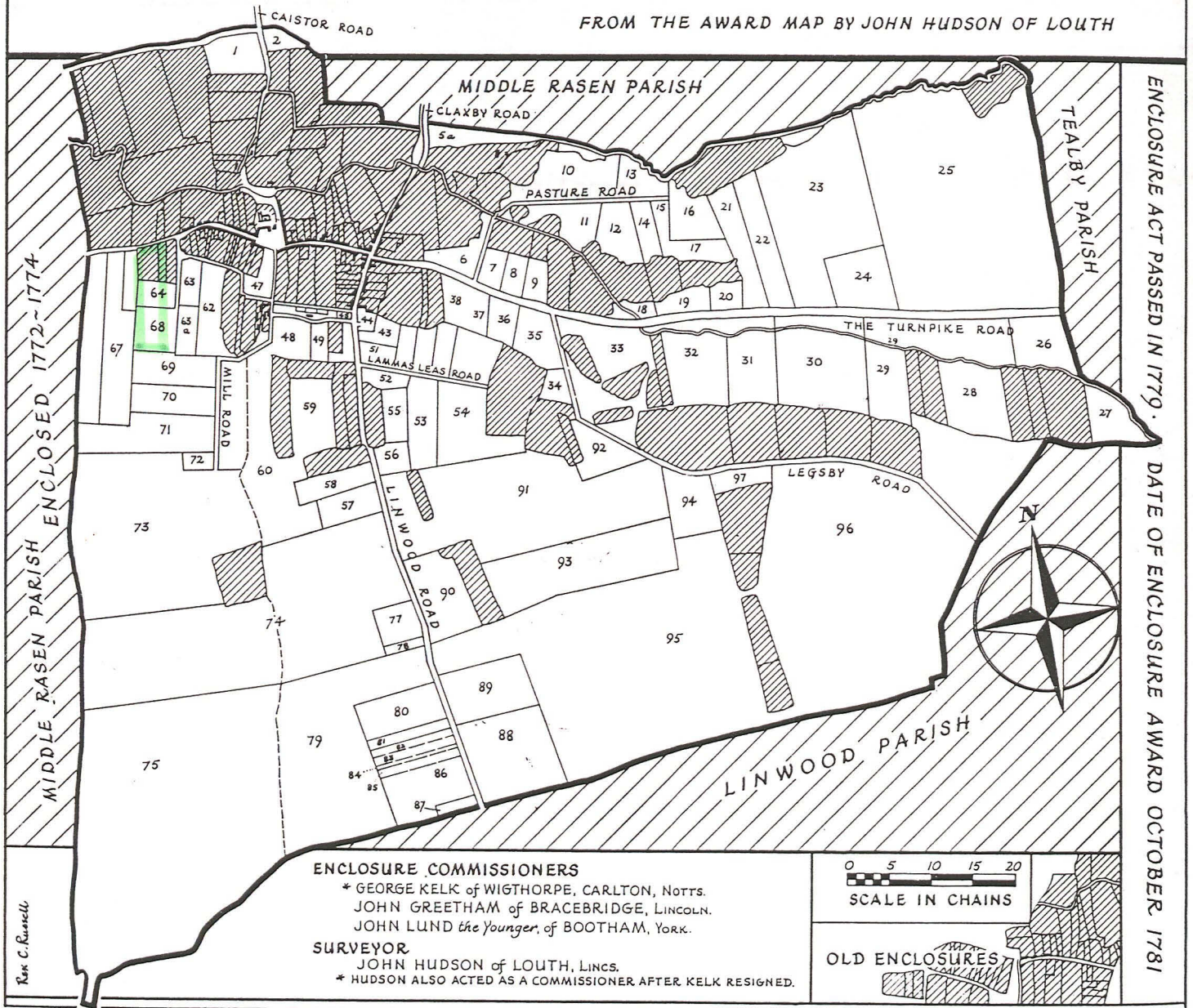


Fig. 5 Market Rasen, after Enclosure, reconstructed from the Enclosure Award and the surveyor's map by Rex Russell, showing the study area.

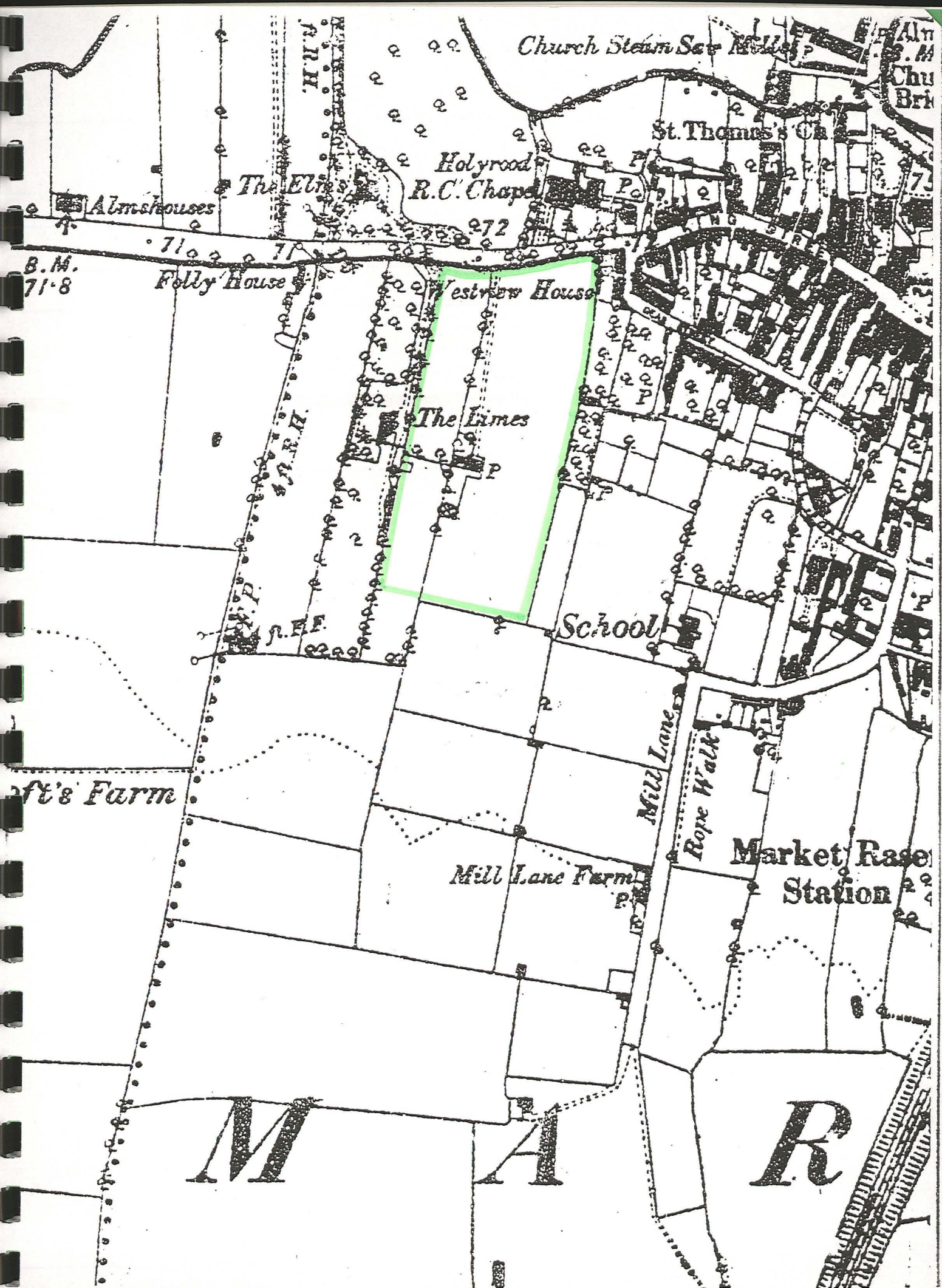


Fig. 6 Extract from the 1892 OS 1: 10560 map Sheet Lincs. 45SE (surveyed 1885, reprinted 1903). Enlarged scale.

**APPENDIX 2**

**Fluxgate Gradiometer Survey**

by  
**Jim Rylatt and David Bunn**

**Pre-Construct Geophysics**

**FLUXGATE GRADIOMETER SURVEY:  
LAND OFF GAINSBOROUGH ROAD,  
MARKET RASEN,  
LINCOLNSHIRE**

NGR                    TF 10808800  
SITE CODE        MRGR00

1034 8906

Report prepared for Lindsey Archaeological Services  
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November 2000

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**Fig.2** Location of survey grids. Scale 1:2000.

**Fig.3** Greyscale image of raw data (probable modern anomalies). Scale 1:1000.

**Fig.4** Trace plot of raw data. Scale 1:1000.

**Fig.5** Clipped greyscale image. Scale 1:1000.

**Fig.6** . Interpretive plan Scale 1:1000.

**Table 1** Summary of survey parameters.

## Summary

- A fluxgate gradiometer survey was undertaken on 1.0 hectare of land to the south of Gainsborough Road, Market Rasen, Lincolnshire. The survey identified significant magnetic variation across the site, and this variability can be resolved into a series of magnetic anomalies
- Most of these anomalies have been interpreted as representing features of modern origin, as they have a close spatial correlation with areas of disturbance, standing structures or those depicted on recent maps, or fences containing ferrous metals
- A small number of anomalies possibly reflect the presence of sub-surface archaeological features, though these have proved difficult to resolve due to the masking effects of the strong signals produced by modern activity

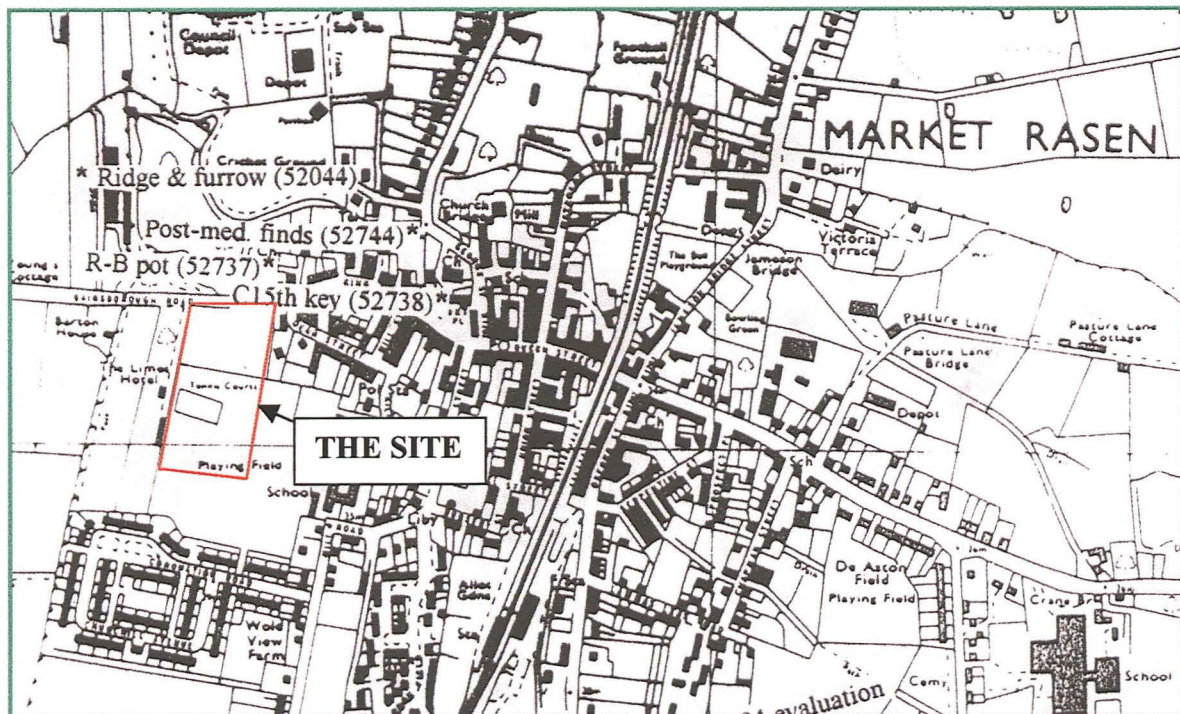


Fig.1: Location of site (County Sites and Monuments Record) 1:10000



Fig.2: Location of survey grids showing greyscale of raw data. 1:2000

## 1.0 Introduction

Lindsey Archaeological Services commissioned Pre-Construct Geophysics to undertake a gradiometer survey on land to the south of Gainsborough Road, Market Rasen, Lincolnshire. The survey forms part of an archaeological assessment of the site in advance of a planning application for retail development.

The survey methodology was based upon guidelines set out in the English Heritage document '*Geophysical Survey in Archaeological Field Evaluation*' (David, 1995).

## 2.0 Location and description

The site is located to the west of the town centre, on land to the south of Gainsborough Road. It comprises a sub-rectangular unit extending to c. 3.0ha and currently supports rough pasture, which is interspersed with localised beds of thistles. The survey examined 1.09ha of the southern part of the site, the area in which the proposed development would potentially have the greatest impact.

Hedges, fences and buildings bound the survey area along the western edge, with timber fencing separating the site from playing fields to the east and south. A barbed wire fence divides the northern and southern parts of the site. The ground surface undulates gently and dips toward the eastern part of the site. However, it appears to have been artificially raised and levelled in the north-west part of the survey area, in order to construct a tennis court, that has subsequently been demolished (see Fig.1).. A mature tree is located at the junction of grids 1, 2 and 9. A spoil heap, over-grown with weeds, lies to the north-east of the survey area.

The drift geology is comprised of blown sands, beneath which lie solid deposits of the Upper Jurassic period; the uppermost of these are the beds of the Kimmeridge Clay Formation, which consist of grey mudstones interbedded with oil shales (B.G.S. 1999).

Central National Grid Reference TF 1080 8800.

## 3.0 Archaeological and historical background

The sand and clay soils found in and around Market Rasen are well suited to the production of pottery. Evidence for the foundation of this local industry dates from the Romano-British period, with potters probably being reliant on a road, which is thought to be located to the south of the town (Whitwell, 1992). A number of Roman kilns have been discovered to the south and south-east of the site, particularly in the area to the east of Linwood Road, where evidence of extensive pottery production has been uncovered (N. Field, *pers comm.*). Although comparable evidence has yet to be discovered within the immediate vicinity of the site, further Romano-British pottery has been unearthed to the north-west of the town centre, c. 150m to the north of the survey area (SMR No. 52737).



## 4.0 Methodology

Detailed area survey using a fluxgate gradiometer is a non-intrusive means of evaluating the archaeological potential of a site. The fluxgate gradiometer detects magnetic anomalies created by areas of high or low magnetic susceptibility. These areas are caused by changes in the composition of the subsoil or the underlying geology. Archaeological features result from man-made changes to the soil and the introduction of intrusive materials such as brick and stone. These features can create detectable magnetic anomalies. In addition, activities that involve heating and burning will create magnetic anomalies, as will the presence of ferrous metal objects.

The anomalies detected by a fluxgate gradiometer survey can often be resolved into entities sharing morphological characteristics with features of known archaeological provenance. This enables the formulation of an informed, but subjective interpretation.

Magnetic variation between archaeological or naturally produced features and the natural background level can result from:

- different depth or density of fill, with respect to the depth or density of surrounding soils magnetically similar to the fill
- the magnetic properties of materials introduced as a result of human activity (e.g. rubble, stone, brick/tile, ferrous metal etc.) in contrast to those within surrounding natural deposits
- the magnetic susceptibility of areas of burning, as opposed to unburnt areas
- the magnetic properties of localised, naturally deposited minerals, such as occur in the fill of palaeo-channels, in contrast to those of the surrounding soils.

The area survey was conducted using a *Geoscan Research* fluxgate gradiometer (model FM36) with an electronic sample trigger set to take four readings per metre (a sample interval of 0.25m). The zigzag traverse method of survey was used, with 1m wide traverses across 30m x 30m grids. The sensitivity of the machine was set to detect magnetic variation in the order of 0.1 nanoTesla. The base line was established along the western edge of the survey area (Fig.2).

The data from the survey was processed using *Geoplot* (v. 3.0). It was desloped (a means of compensating for sensor drift during the survey) and clipped to reduce the distorting effect of extremely high or low readings caused by discrete pieces of ferrous metal. The results are plotted as greyscale and trace images.

The survey was carried out by David Bunn on the 17<sup>th</sup> of November 2000.

Instrument	Geoscan Research fluxgate gradiometer FM36 Sample trigger ST1
Grid size	30m x 30m
Sample interval	0.25m
Traverse interval	1.0m
Traverse method	Zigzag
Sensitivity	0.1nT
Processing software	Geoplot (v. 3.0)
Weather conditions	Fine, cool, occasional sunny periods
Area surveyed	1.09ha

**Table 1: Summary of survey parameters**

## 5.0 Results

The survey detected a number of areas of strong magnetic variability. *Figure 3* represents the raw data, with the strongest anomalies highlighted in colour.

The largest and most intense area of magnetic disturbance occurs in the northern part of the site, (1). This corresponds to the known location and orientation of redundant tennis courts (depicted in Fig.1). The magnetic variation, which clearly defines the perimeter and extent of the latter, is strongest toward the east, and possibly represents the remains of retaining walls (2), and rubble infill (3), that were used to level the playing surface. This interpretation is supported by an examination of the micro-topography; the area occupied by this anomaly is slightly terraced, while the ground to the east is lower and at the time of survey was waterlogged. Linear anomaly (4), which runs eastwards from (3) to the edge of the survey area, probably represents a sub-surface drain running toward the nearest mains sewer, or surface water drain, located in the immediate vicinity of The Limes Hotel. The manhole cover situated at the south-east corner of (1) suggests that further drains are located along the perimeter of this structure. The strength of the signal generated by (1) raises the possibility that weaker magnetic anomalies are being masked and consequently remain undetected.

The survey also detected a number of more localised areas of strong magnetic disturbance. Anomalies (5), (6), (7), (8) and (9) have characteristics which suggest that they identify either pits filled with rubble and ferrous materials, or areas of *in-situ* burning. Anomaly (5) possibly indicates the location of another component of the tennis courts, (1), given that they lie in close proximity to each other, and that any direct relationship would be situated to the immediate west of the survey area.

Anomaly (10), which is situated at the south-west corner of the survey area, corresponds to the position of a tension cable for an electricity pole.

The survey also detected a number of diffuse anomalies (Figs.5 and 6).

A discontinuous linear anomaly, (11), extends from north to south across the survey area. The punctuated nature of this feature indicates that it is not a pipeline. However, the presence of a number of small, magnetically strong signals arranged in a linear

sequence, suggests that this anomaly represents an accumulation of ceramic and ferrous debris, deposited in a hedge bottom during the course of cultivation. An examination of Ordnance Survey maps, (e.g. Fig.1), indicates that there are a number of narrow, elongated fields both to the west of the site and to the north-west, beyond Gainsborough Road; the latter are noted to contain areas of ridge and furrow (SMR No. 52044). The perimeters of units of land with these relative proportions usually represent the fossilisation of medieval furlong boundaries at the time of Enclosure. The Limes Hotel, immediately to the west of the site, is situated in one such plot of land; if the width of this unit is projected onto the site from its western boundary, there is a close correspondence with the location of anomaly (11). A mature tree situated at the point that (11) exits the northern edge of the tennis courts, provides further corroboration for the proposal that this represents a furlong boundary. Trees are often the only surviving elements of such a boundary when the hedge is grubbed-out.

A diffuse negative linear anomaly (12), situated c. 20m to the west of, and roughly parallel to (11), may result from the compaction of the topsoil, and could indicate the location of a disused pathway.

One curvilinear, (13), and three linear anomalies, (14)/(15)/(16), were detected in the eastern third of the survey area. These may represent boundary features, but this interpretation remains tentative, because of the limited magnetic variation that they all exhibit. The spatial relationship of anomalies (14) and (16) suggests that they may be constituents of a single feature sharing a similar alignment with (11). Although the latter may be coincidental, this association could indicate that (14) and (16) represent further medieval or post-medieval activity.

Anomaly (17) represents an area of weak, positive magnetic enhancement. Similar areas occur elsewhere on the site (Fig.6: shown in red), and possibly mark the location of pits or areas enhanced by burning. Anomalies (18) and (19) may result from ground disturbance over larger areas, a theory receiving circumstantial support from the proximity of the strong anomalies (1)/(7) and (8)/(9) respectively.

The random distribution of small discrete anomalies, (20) (Fig.6: shown in orange), across the site probably results from the presence of the detritus of agricultural activity (e.g. ploughshares, thrown horseshoes, ferrous and ceramic debris contained in midden material), or the proximity of the site to residential areas (e.g. ferrous litter, building debris).

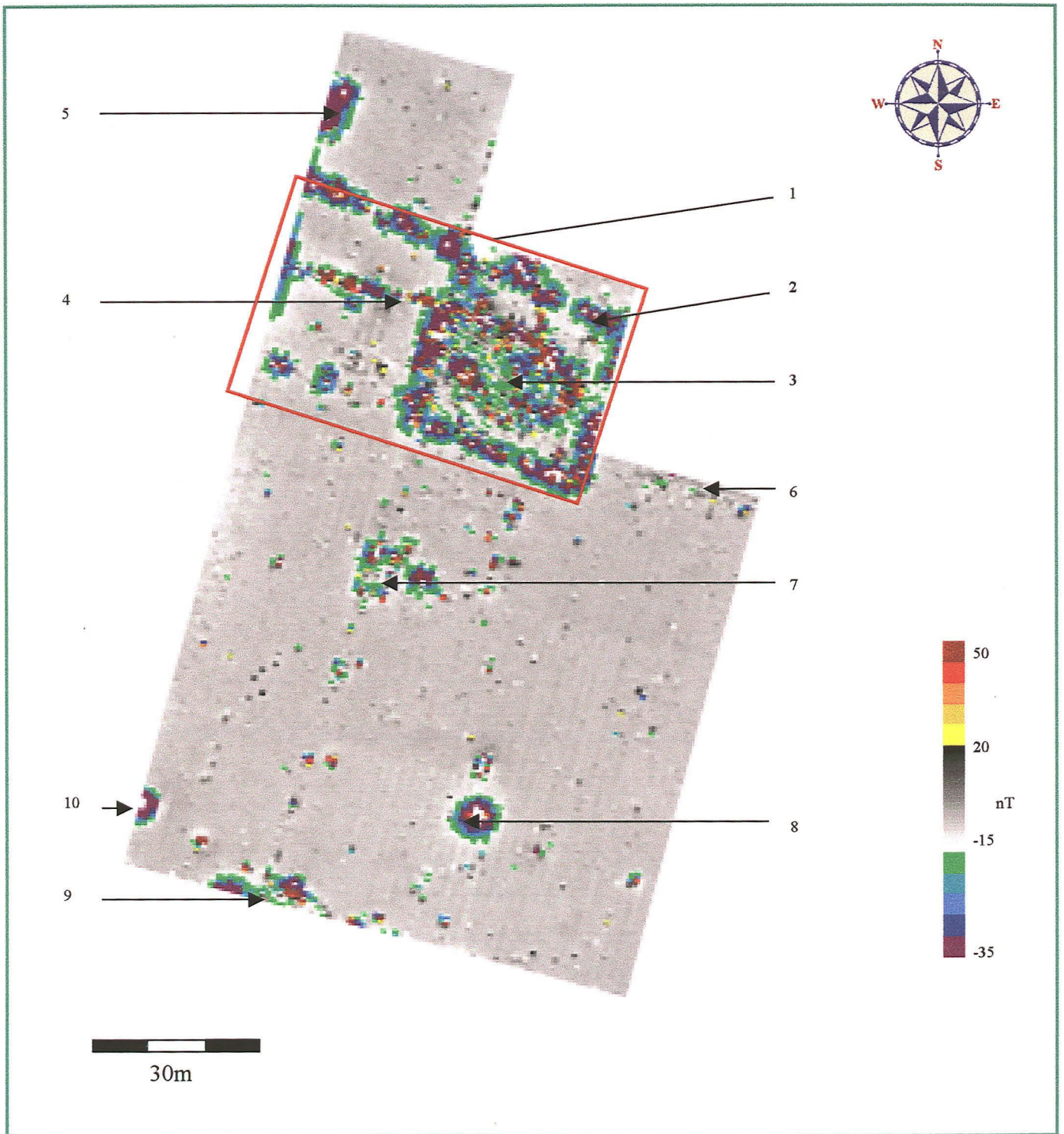
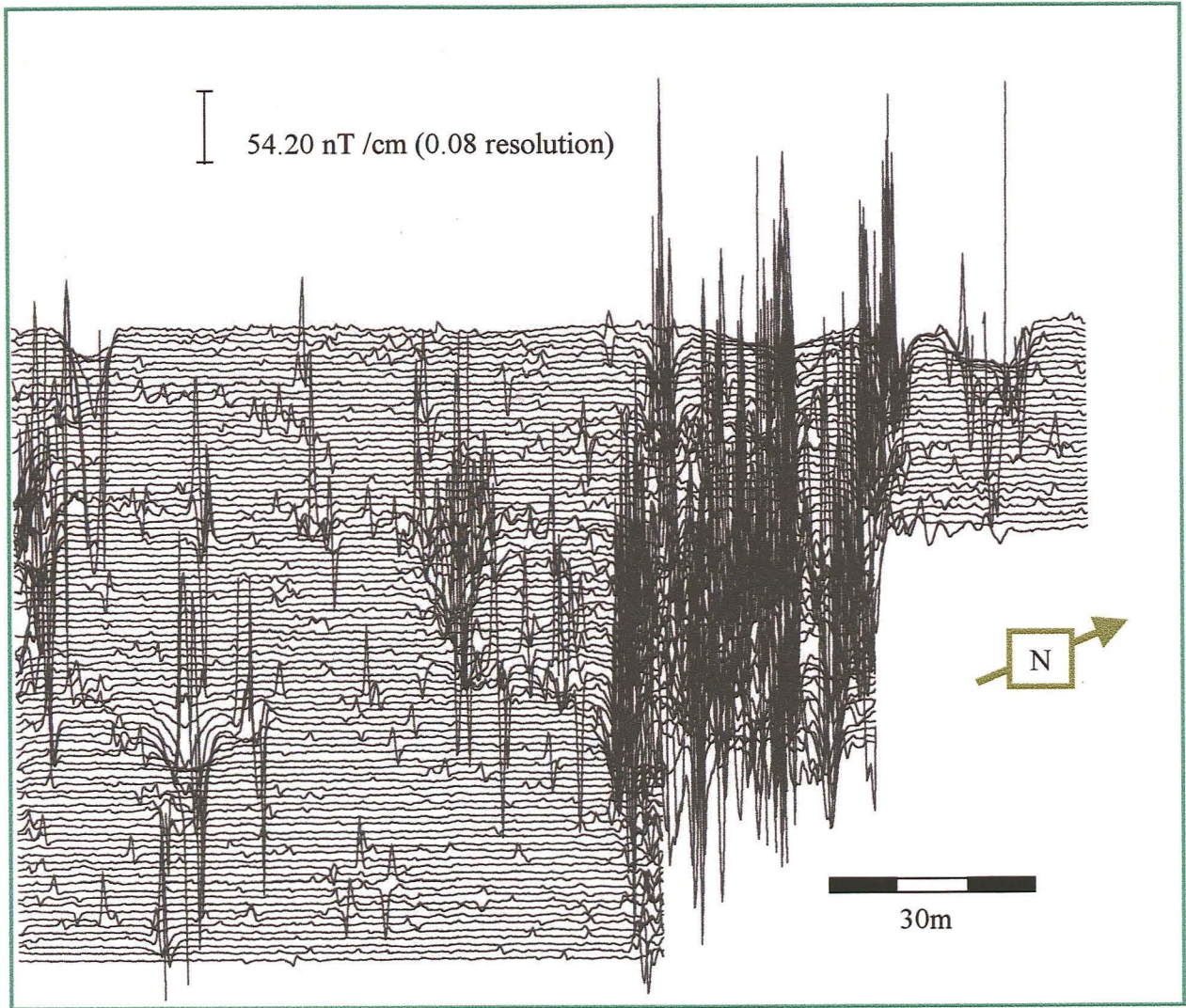


Fig. 3: Greyscale image of raw data showing anomalies of definite and probable modern origin Scale 1:1000.



**Fig.4: Trace plot of raw data. Scale 1:1000**

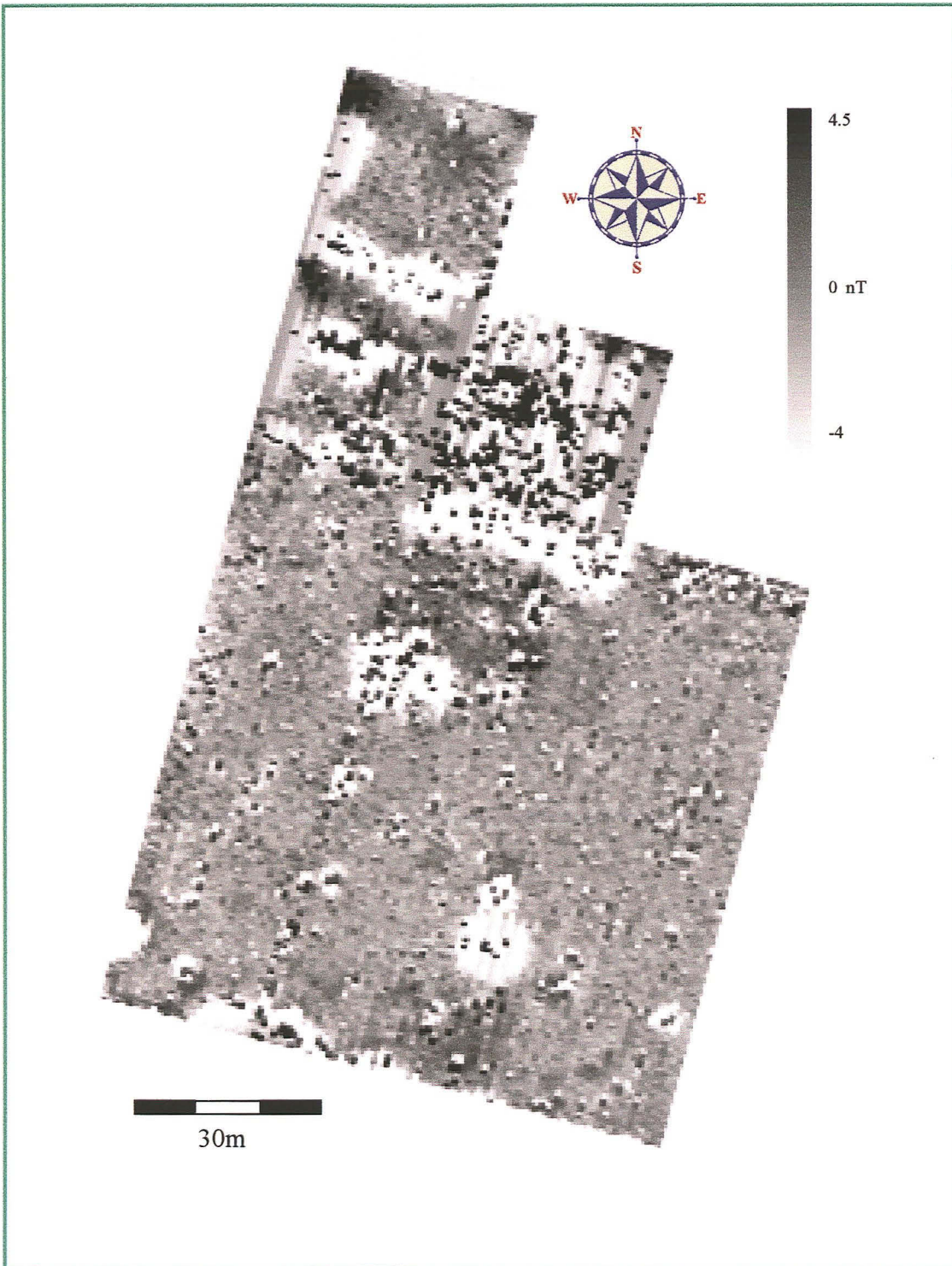


Fig.5: Greyscale image of clipped data. Scale 1:1000

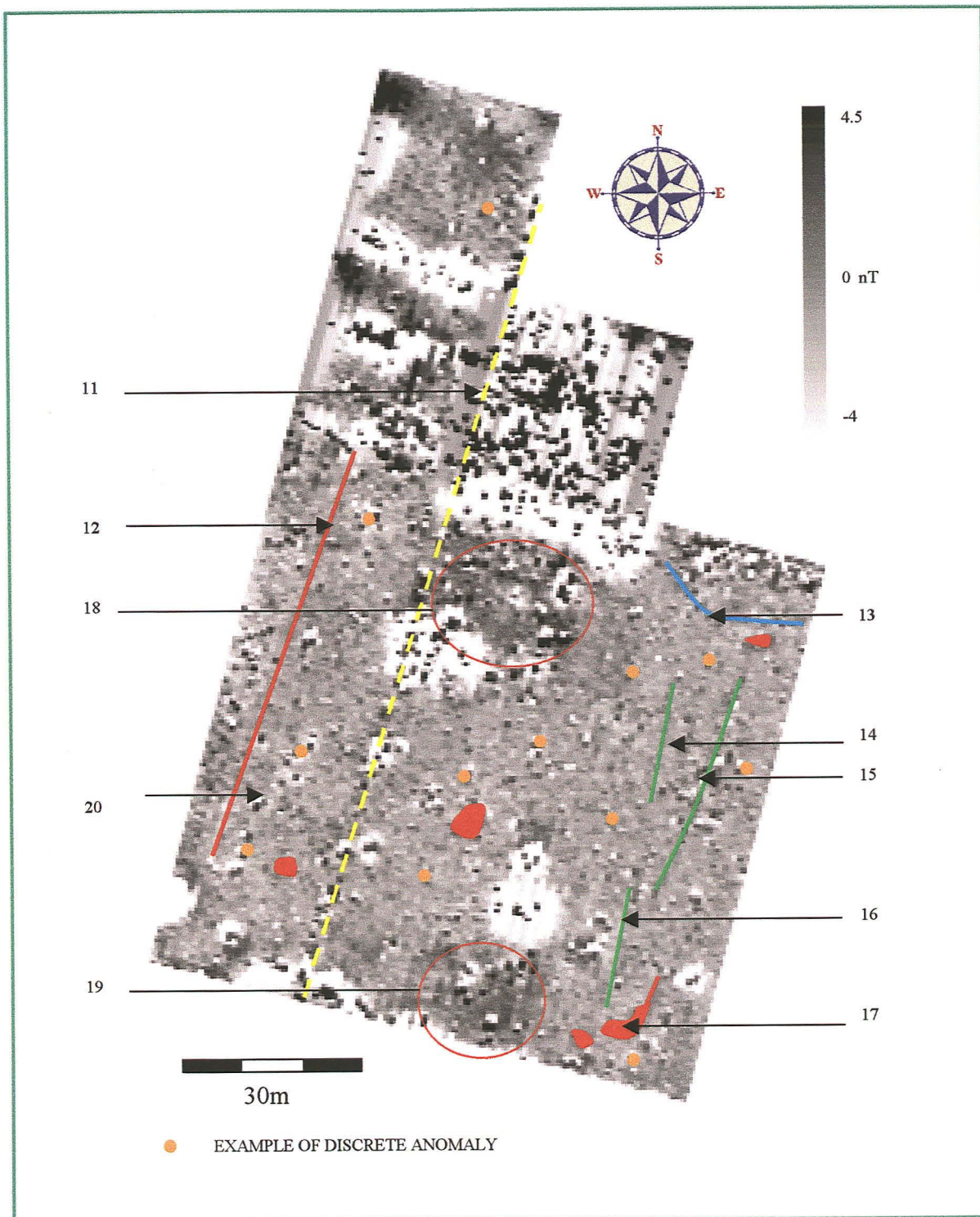


Fig.6: Interpretive image. Scale 1:1000

## 6.0 Conclusions

It is probable that the majority of the magnetic variation detected results from recent activity, principally, from the construction and partial demolition of the redundant tennis courts. Areas of strong magnetic disturbance also occur in other parts of the survey area, probably representing the location of spreads of rubble, pits or burnt materials.

A number of magnetically weak anomalies seem to indicate that the remains <sup>of</sup> earlier land divisions may exist within the survey area. Anomaly (11) appears to indicate the position of an earlier boundary. The relationship of this feature to adjacent fields suggests that it was probably first established in the medieval period, and that the site was under cultivation at this time.

A number of diffuse, linear and curvilinear, anomalies were detected by the survey. They may have archaeological significance, given that, spatially, they do not appear to reflect the recent or present utilisation of the site. Other areas of localised weak magnetic variation may result from ground disturbance and/or burning.

## 7.0 Acknowledgements

Pre-Construct Geophysics would like to thank Lindsey Archaeological Services for this commission.

## 8.0 References

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