

ARCHAEOLOGICAL DESK TOP STUDY
AND FLUXGATE GRADIOMETER
SURVEY REPORT

LAND OFF CAISTOR ROAD, SOUTH
KELSEY, LINCOLNSHIRE

NGR: TF 04209820

00/28



Lincolnshire County Council
Planning and Development

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Report prepared for Andrew Hancock,
Planning and Development Consultancy
by A.M. Hardwick
April 2000

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Summary

- An archaeological desk top assessment and fluxgate gradiometer survey was undertaken on approximately 1 hectare of land at South Kelsey, Lincolnshire during March/April 2000.
- The site was assessed for its archaeological potential in advance of a possible residential development: involving desk-based and non-intrusive field research.
- It is a conclusion of this report that development of the site may disturb remains of potential archaeological significance. Such deposits could date from any time from the prehistoric period onwards, although it is considered most likely that they will fall between the late Saxon and post-medieval periods.

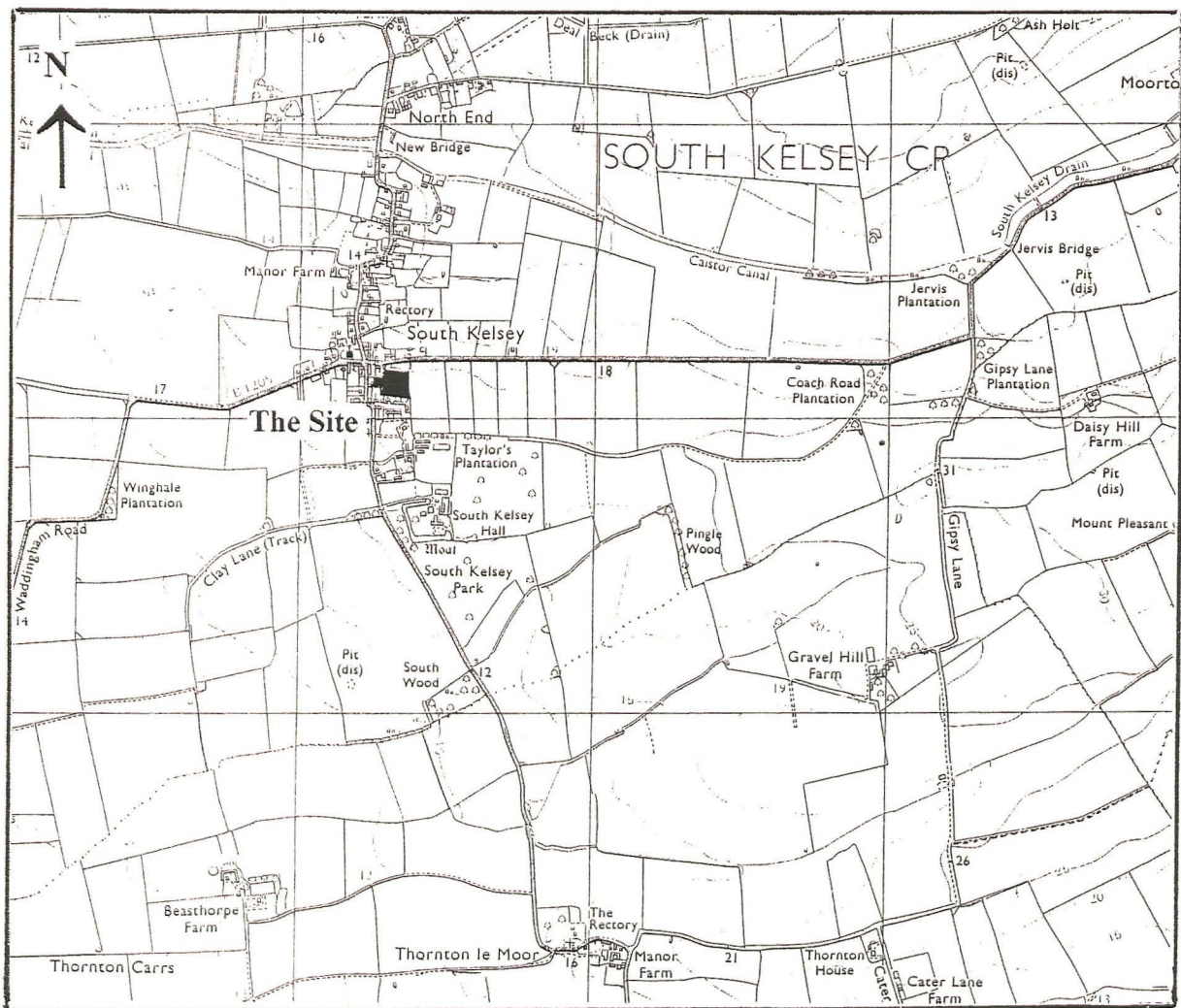


Fig. 1 Site location, scale 1: 25 000
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1.0 Introduction

1.1 This report has been prepared for Andrew Hancock, Planning and Development Consultancy, on behalf of his client. It comprises both desk-based research and the results of a detailed geophysical (gradiometer) survey of approximately 1.0 hectare of land at South Kelsey, north Lincolnshire.

1.2 This assessment has been prepared to meet the requirements of both the client, and the Built Environment Section at Lincolnshire County Council. It is structured according to the guidelines set out in the LCC Archaeology Section document '*Lincolnshire Archaeological Handbook: A Manual of Archaeological Practice*' (LCC, 1998), and may be used to support of an application for residential development. The *Standard and Guidance for Archaeological Desk-Based Assessments*, produced by the Institute of Field Archaeologists (1999), was also consulted.

The archive for this report will be held at the Lincoln City and County Museum.

2.0 Site description and planning background

2.1 South Kelsey lies within the administrative district of West Lindsey, Lincolnshire, approximately 26km north-east of Lincoln and 35km south-west of Grimsby (Central NGR TF 0420 9820).

2.2 The development area represents a sub-division of a larger open field in the southern part of the village, lying approximately 100m to the south-east of St Marys' Church. It is situated immediately to the south of the B1205 Caistor Road and east of Thornton Road (Fig. 1).

2.3 The western part of the site, a strip approximately 50m wide east to west, contains derelict farm buildings of 19th and 20th century date. The majority of the site is an open field bounded by modern residential dwellings to the north, south and west, with further open agricultural land to the east.

2.4 The clients are currently considering whether to submit a planning application for residential development. This report forms part of a pre-application inquiry and its conclusions will help to determine whether the application will be presented to the District Council.

3.0 Methodology

3.1 *Desk-top assessment*

An archaeological desk-based assessment is a collation of the accessible sources of information relating to a proposed development area. Its purpose is to assess known and potential archaeological resources, assembling both written and graphic information with a view to presenting conclusions relating to the archaeological

potential of a site. Consideration is given to the importance of any such deposits in a landscape context.

3.1.1 The desk-based element of this report was undertaken by Mr A. Hardwick over a period of six working days during March/April 2000. The following sources were consulted:

Lincolnshire County Council Sites and Monuments Record:

- the South Kelsey Parish file
- the relevant 1:10 000 scale RCHME overlay map sections (produced as a component of the National Mapping Programme)
- computerised SMR records
- aerial photographs
- historical maps of Lincolnshire 1576 – 1900

Lincolnshire Archives Office:

- documents for South Kelsey listed in the card reference files (details in bibliography) ? no!
- first and second edition 6" series Ordnance Survey maps on microfiche
- lay subsidy returns for Lindsey
- other publications listed in the bibliography

Lincolnshire Local Studies Library:

- all documentary information relating to South Kelsey referenced in the Subject Index files > refs.
- the parish file (newspaper clippings/pamphlets) for North and South Kelsey
- the Map Index for relevant historical information

Enquiries were made at both the SMR and Local Studies Library for relevant modern maps detailing the solid and drift geology, but neither location has complete county coverage. Consequently, the 19th century edition held at the Local Studies Library was consulted.

No tithe map relating to the study area was available.

3.1.2 A rapid walkover survey was undertaken as part of the research. This recorded the basic topography, vegetation cover, site boundaries and adjacent buildings.

3.2 Fluxgate Gradiometer Survey

Mr D. Bunn and Mr A Hardwick of Pre-Construct Geophysics conducted a fluxgate gradiometer survey on 29 March 2000. A separate report has been compiled (see Appendix II) and the major points have been integrated into this study.

4.0 Geology and topography

4.1 South Kelsey is one of several villages, including North Kelsey and Owersby, which are situated on a low, north-south orientated ridge, at approximately 15m OD. This slight rise is formed by the intersection of boulder clay or glacial till deposits to the west, and cover sands to the east; these deposits overlie Upper Jurassic clays (Everson, *et al*, 1991).

4.2 The site occupies relatively high ground, which slopes downwards towards the north and west. Low grass covers the majority of the site, but there are occasional isolated areas of modern garden and construction waste dumped toward the northern edge. There are areas of dense nettle growth toward the edges of the field; this can be indicative of a high phosphate or nitrogen content, and can also result from the disturbance of the topsoil through digging or burning.

4.3 The ground surface undulates significantly across the site, with variations in height of up to c. 0.5m, over relatively short distances. However, none of these undulations could be resolved into morphologically distinct earthworks. Near the eastern end of the site, a shallow north-south orientated furrow runs between two short sections of dike; the latter are situated at the northern and southern extremities of the field. This suggests that a continuous dike originally crossed the field and has since been partially backfilled. If so, it would appear to have bounded a trackway, shown on the 1902 Ordnance Survey map, that ran south-eastward into Taylor's Plantation (Appendix I).

??
variant sp.

5.0 Archaeological and historical background

5.1 Evidence of prehistoric activity has been recovered from the surrounding landscape. To the east, blown sand deposits have yielded significant remains, including later Mesolithic flint microliths, and a large number of Neolithic and Bronze Age flint and pottery scatters. The majority of these finds were recovered from an area approximately 3-4 km north-east of the site, which suggests that these early social groups were selecting certain soil types for settlement related activity (see Appendix III for SMR references).

5.2 A polished green stone axe of Neolithic date was found c. 700m north of the site (SMR Ref. 53499).

5.3 Small-scale gravel extraction near the location of Winghale Priory, c. 1.7km south-west of the site, has produced evidence of occupation in both the Iron Age and Romano-British period. Additionally, a possible Roman horseshoe was found in the gardens of the Rectory, c. 150m north of the site.

5.4 The site of the former priory has yielded large quantities of Middle Saxon pottery, animal bone and slag; earth-cut features of this date include three ditches.

5.5 The modern place name could derive from either Old English or Old Scandinavian. If Anglo-Saxon, it is likely to incorporate the OE personal name *Cēl* and a suffix denoting 'dry or higher ground in the marsh' (Cameron, 1992). If

however, the first component is Old Scandinavian, then it is a modification of *kæl* meaning wedge-shaped piece of land (Mills, 1993).

5.6 The Domesday Book of 1086 records the lands of the settlement of *Chelsei* (or *Colesi*) as being in dual ownership. Three carucates of land belonged to the King and three carucates were the property of Roger of Poitou (Morgan & Thorn, 1986).

5.7 South Kelsey appears to have been a very large settlement in the medieval period; originally it was divided into two separate secular administrative units (as detailed in 5.6), but later this also became established as an ecclesiastical division centred around the churches of St Nicholas, to the north, and St Mary, to the south (Everson, *et al*, 1991). These twin foci are evident in the modern street arrangement; the area of proposed development lies close to St Mary's Church (Fig. 2). In addition to the known manor site (see 5.13), Everson (*ibid.*) suggests that another manor may have been associated with St Nicholas' Church, possibly to the east or north-east of that structure.

5.8 The earliest documentary evidence of the simultaneous existence of both churches dates to 1254; there are further references from 1291, 1341 and 1428. By 1795, St Nicholas' Church had apparently been in ruins for some time and elements of its fabric was used in the renovation of St Marys' Church, carried out that year. However, the graveyard of St Nicholas' was still being utilised in 1882. A modern mortuary chapel now occupies the site and incorporates the ironstone tower of the original church.

5.9 Between the 12th and 14th centuries, much of the village's land appears to have been in the ownership of Winghale Priory, situated in the south-west corner of the modern parish. It is believed that the priory was established by endowment shortly after the Norman Conquest; this possibly occurred c. 1080. It is mentioned indirectly in the *Domesday Book*, with reference to land in Owersby belonging to Roger of Poitou, which was held by the '*ecclesia* of Wingeham'. Records indicate that William, Count of Mortain, formally granted his manor of Winghale to the abbey of St. Martin of Marmoutier, Tours, in 1103-4, on the condition that a community of twelve monks was established there.

5.10 By the 13th century Winghale Priory was a cell of the abbey of St Martin at Sees in Normandy and during the 14th century Henry V suppressed it, along with other alien priories. Henry VI granted its lands to Kings College, Cambridge in 1441; two years later these passed to Trinity College by exchange. The property eventually came into the possession of the Hansard family, resident in the Parish since at least the 13th century, subsequently passing to the Ayscoughs following a marriage in 1521.

-ie
Dissolution.

5.11 Rex Russell's map reconstructing the open field system of South Kelsey prior to enclosure in the 18th century shows a lengthy east-west area of enclosed fields along the southern boundary of the parish (Appendix I). These fields are believed to have belonged to Winghale Priory. The proposed development site lies some 200m north of these lands.

5.12 A chapel, which was initially licensed by Bishop Grosseteste of Lincoln, in 1236, was located on the Hansard family lands (SMR Ref. 53507). Its location is

unknown, but the documented Hansard association with St Mary's Church raises the possibility that it may have been situated relatively close to the current area of investigation.

? see
.5-13.

5.13 South Kelsey Hall is situated approximately 300m south of the study area, at the southern edge of the village and near the northern limit of the former Priory lands. It is surrounded by a substantial moat, which is known to have enclosed a large Tudor house and courtyard (Pevsner & Harris, 1990). The Ayscough's constructed the hall and gardens after they acquired the estate in 1521. The construction of defensive moats is relatively unusual at this time, due to the widespread use of gunpowder-based armaments. Consequently, it is probable that the Tudor structure occupied the site of the medieval manor belonging to the Hansard family.

PRNS3507
50309
- pre-exist'g
moat!
X yes!
+ probable site
of chapel.

5.14 The Ayscough family possessed the property until the end of the 17th century, when it passed by marriage to the Thornhagh family, who owned it until c. 1790. Around 1810, the hall was demolished and replaced by the present farmhouse, which retains some structural elements, including one of the octagonal corner towers. This 19th century dwelling also retains the moat around its north, south and west sides; the eastern side has been drained and backfilled. The landscaped gardens of the hall covered a broad area just to the south of the study area. The trackway noted on the edge of the site extends across these lands (Appendix I).

5.15 Most of the fields in South Kelsey were enclosed between 1794 and 1797. Prior to this, 3281 acres of open field were recorded, with a further 900 acres having already been enclosed. Two large blocks of pre-1794 enclosures are evident on Russell's reconstructed map (Appendix I), both of which seem to be associated with medieval land use. The block of enclosures along the southern parish boundary have been previously mentioned (see 5.11) and the second block runs north-south through the centre of South Kelsey up to North Kelsey. The current area of study lies within this block.

5.16 The principal landowner in South Kelsey at the time of enclosure was one Francis Ferrand Foljambe. Additionally, it is recorded that the Skipworth family owned the manor for most of the first half of the 19th century. It was not possible to establish whether either party owned the area of the proposed development.

5.17 Enclosure also resulted in the construction of new roads, including the Waddingham/Caistor Road that runs east-west, immediately to the north of the site.

? - it may
have been
- no roads to W
but gaps for them
insette.

5.18 The structure of the field system in the study area following enclosure appears to have been subsequently simplified. 19th and 20th century Ordnance Survey maps (Appendix I) indicate that the current field consists of a number of smaller units that were created in the 18th and early 19th centuries. Comparison with the current Ordnance Survey map (Fig.2) indicates that the site contains at least one former field boundary orientated east-west near its south-eastern edge, and another boundary and trackway orientated north-south, at the eastern perimeter.

- no bands
shown RR
match APS.

5.19 In recent years, the site seems to have been utilised as common land, and there is no evidence of cultivation. Occasional brick fragments were noted during the

walkover survey, raising the possibility that material had been dumped, either to make-up the ground surface or during manuring activities.

5.20 A small building appears to have occupied the south-western corner of the larger, eastern block of land forming the site; maps suggest that this existed until at least the early 20th century (Appendix I).

5.21 The RCHME aerial photography overlay map of the area indicates that there are a substantial number of cropmarks running north-south along the line of the settlement. These extend approximately 1.5km to the north, and approximately 0.5km to either side, of the proposed development site. Additionally, a series of connected, angular cropmarks are recorded on the present site (see Fig. 2). These features appear to correlate with some of the geophysical anomalies that are described in detail in Appendix II.

ref to RCHME notes

→ also correlate field bounds

5.22 Extant medieval ridge and furrow is noted along the southern parish boundary (SMR Ref. 53506), and aerial photography indicates that it is relatively extensive in the vicinity of the development area.

5.23 There are no records of any intrusive archaeological investigations undertaken in South Kelsey.

6.0 The archaeological potential

6.0.1 The wider landscape noted has produced significant quantities of artefactual remains dating from the later Mesolithic period onwards. Many of these finds, particularly those relating to the Roman and Anglo-Saxon periods, have been recovered at some distance from the study area, with the majority coming from isolated finds spots, which provide little information relating to their original contexts.

6.0.2 Despite these discoveries, the nature and spatial form of past activity in the parish is poorly resolved. It is possible that there are similar remains closer to, or within, the study area.

6.0.3 While the site occupies relatively high ground, large areas of its environs may have been slightly marshy. The suggested etymology of the place name implies that this was noted at least as far back as the Anglo-Saxon period.

? yts + likely OE/AS sett orig

6.1 Prehistoric

6.1.1 Significant quantities of Neolithic and Bronze Age artefacts have been recovered in the parish. The parish file in the Lincolnshire County Council SMR notes several prehistoric finds spots in the centre and to the west of the parish. There is no further information as to their exact location.

6.1.2 Iron Age material has been recovered from the site of Winghale Priory, located to the south-east of the site. The development area occupies a potentially

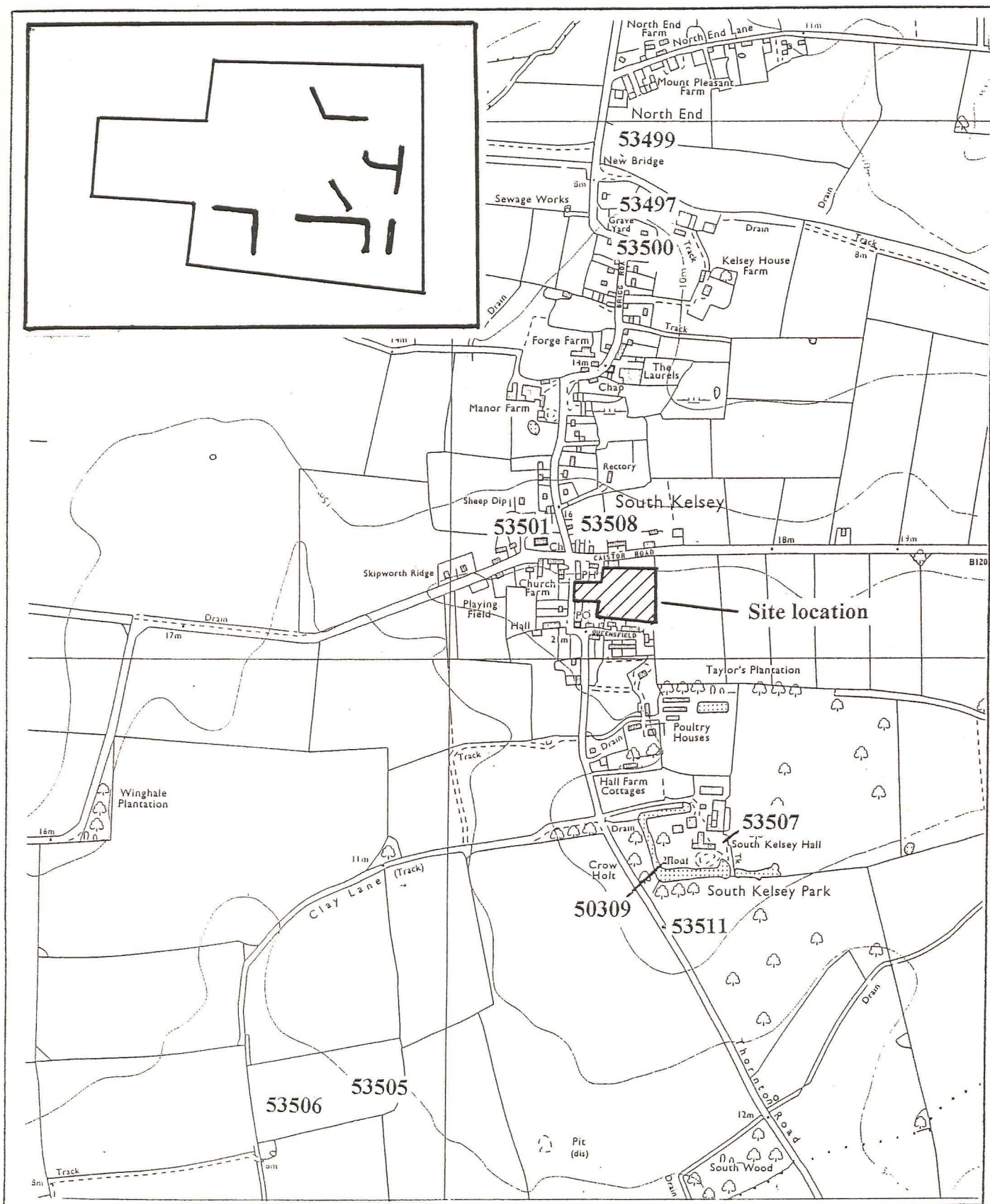


Fig. 2: Extract from the 1:10,000 Ordnance Survey map showing the location of sites with records in the Lincolnshire County Council SMR.

Inset shows the site at 1:2,500, indicating the position and form of cropmarks identified by aerial reconnaissance.

attractive position within the wider landscape, raising the possibility that in-situ prehistoric remains could be present.

6.2 Romano-British

6.2.1 South Kelsey lies approximately 7km east of Ermine Street, a significant north-south communication route during the Roman conquest and occupation of lowland Britain. The parish lies a similar distance to the west of the Roman small town at Caistor. The available cartographic evidence indicates that the current east-west road linking these locations, and passing through South Kelsey, was constructed in the 18th century during enclosure (Russell and Russell, 1987). The precursor to this road seems to have provided access only to the open fields to the east and west (Appendix I).

6.2.2 Roman remains have been identified at Winghale Priory, 1.5km to the south-west of the site, and a possible Roman horseshoe has been recovered from the Rectory gardens just north. The extent and nature of Romano-British activity in the locality is unresolved.

6.3 Anglo-Saxon

6.3.1 The village name is possibly of Anglo-Saxon origin. Quantities of Middle Saxon pottery have been recovered during small-scale quarrying on the site of Winghale Priory.

6.3.2 Remains associated with Anglo-Saxon activity could be present within the boundaries of the site; this is an extrapolation, which considers the spatial relationship of the development area to the core of the medieval village. Such residues could include evidence of domestic occupation or alternately could relate to contemporary agricultural practices.

6.4 Medieval

6.4.1 The site lies within the centre of the southern nucleus of medieval settlement, close to St. Mary's Church; the oldest visible components of the latter date from the late 13th century. Cartographic evidence indicates that the study area falls within a strip of land that may have been enclosed in the medieval period, whereas the majority of its environs were enclosed much later. Consequently, this indicates that there is some potential for the development to disturb remains relating to the development of the village during the Middle Ages.

6.4.2 Records suggest that the medieval chapel belonging to the Hansards, and licensed by Bishop Grosseteste, lies in the locality. However, considering the presence of two churches within the village, it is unlikely that the general population would have used this chapel. It is more likely to have been a private establishment associated with the Hansard family home. It is noted (5.10/5.13, above) that the Ayscough family built South Kelsey Hall after inheriting the Hansard estate. It is

therefore suggested that the most likely location for this chapel is within the moated enclosure at the southern end of the village.

6.5 Post-medieval

6.5.1 The area lies close to two major east-west routes of communication, which developed in the 18th century, i.e. the Caistor Canal and Caistor Road. However, the available cartographic evidence suggests that the current site has been used primarily for agricultural purposes for much of its later history.

6.5.2 Both the first and second edition Ordnance Survey maps indicate the presence of a structure at the south-west corner of the site, which no longer exists.

6.6 Consideration of the results of the gradiometer survey (see Appendix II)

6.6.1 The gradiometer survey identified a complex of magnetic anomalies that appear to be distributed across much of the study area; these are most coherent in the eastern and south-eastern areas of the site, away from the masking effects of modern detritus, most of which appears to be modern, and a product of the farmyard to the west and the houses to the north.

6.6.2 Several linear anomalies, orientated approximately north-south and east-west, are apparent; it is probable that many relate to sub-surface, archaeological features, which appear to be the product of more than one phase of activity.

6.6.3 The anomalies identified by this survey are more clearly understood through reference to the relevant RCHME overlay map, available at the county Sites and Monuments Record, which plots features identified by aerial photography. A number of cropmarks have been recorded within the confines of the site, and some of these appear to form components of rectilinear enclosures or landscape divisions.

7.0 The archaeo-environmental potential

7.1 A number of mollusc shells were noted during the walkover survey, which suggests that soil conditions are favourable to the preservation of molluscan and faunal remains. The former can provide information relating to past microclimates, both at a landscape level and directly appertaining to individual archaeological features such as pits and ditches, depending on the sampling strategy employed. Animal bones can provide data on animal husbandry, diet, butchery, social status and local land use.

7.2 A site located close to the village core offers the potential of directly investigating domestic activity through environmental remains recovered from contexts such as refuse pits. Organic remains, such as bone, and charred wood, seeds and cereal grains, are frequently recovered from such deposits, providing data relating to diet, climate, technology and social conditions.

8.0 Impacts upon the archaeological resource – past and present

8.1 The west side of the site is currently occupied by a number of derelict farm buildings. Foundation trenches for some of these may have impacted on buried archaeological deposits. The extent of such impacts cannot be quantified on the basis of current information. Large parts of the western area are covered with concrete floor surfaces and demolition material, which potentially seals earlier deposits.

8.2 A structure in the south-west corner of the site is noted on early Ordnance Survey maps. The foundations of this building may have impacted on older archaeological deposits.

8.3 Site surveys, both walkover and gradiometer, indicate that there may be a significant amount of modern debris along the northern and western sides of the study area. These materials could be masking earlier activity.

9.0 Conclusions

9.1 The combined results of the desk-based assessment and fluxgate gradiometer survey strongly suggest that archaeological remains are present within the study area. The information available is unable to resolve the nature and extent of these remains, but geophysical and cropmark data seems to indicate that they are present across much of the site.

9.2 Many of the features that were identified by aerial and gradiometer survey appear to relate to former drainage ditches and property boundaries. However, some features may relate more directly to domestic occupation of the area. This deficiency in our understanding of the nature of these remains cannot be rectified through reference to existing sources of information.

10.0 Recommendations

10.1 This report (supported by information contained in Appendix II) has been able to establish that there are probably archaeological features within the area of the proposed development. Given that there is evidence of activity in the parish from prehistory until the present, further investigation would establish the nature, density, extent, date and significance of these remains.

10.2 Non-intrusive investigation is unable to satisfactorily resolve many of these questions, and it is probable that there are some features present which are not susceptible to detection by remote sensing, such as postholes or beam slots. Areas of modern refuse may be masking subtle anomalies from detection by geophysical survey.

10.3 A programme of selective trial trenching would identify the nature, density and extent of the anomalies detected by geophysics.

10.4 Development is likely to result in the levelling of the micro-topography; therefore an earthwork survey may be deemed appropriate.

11.0 Acknowledgements

Pre-Construct Archaeology (Lincoln) would like to thank Mr Andrew Hancock for this commission. Thanks are also extended to Mark Bennett and Sarah Grundy of Lincolnshire County Sites and Monuments Record, and the staff of Lincolnshire Archives office.

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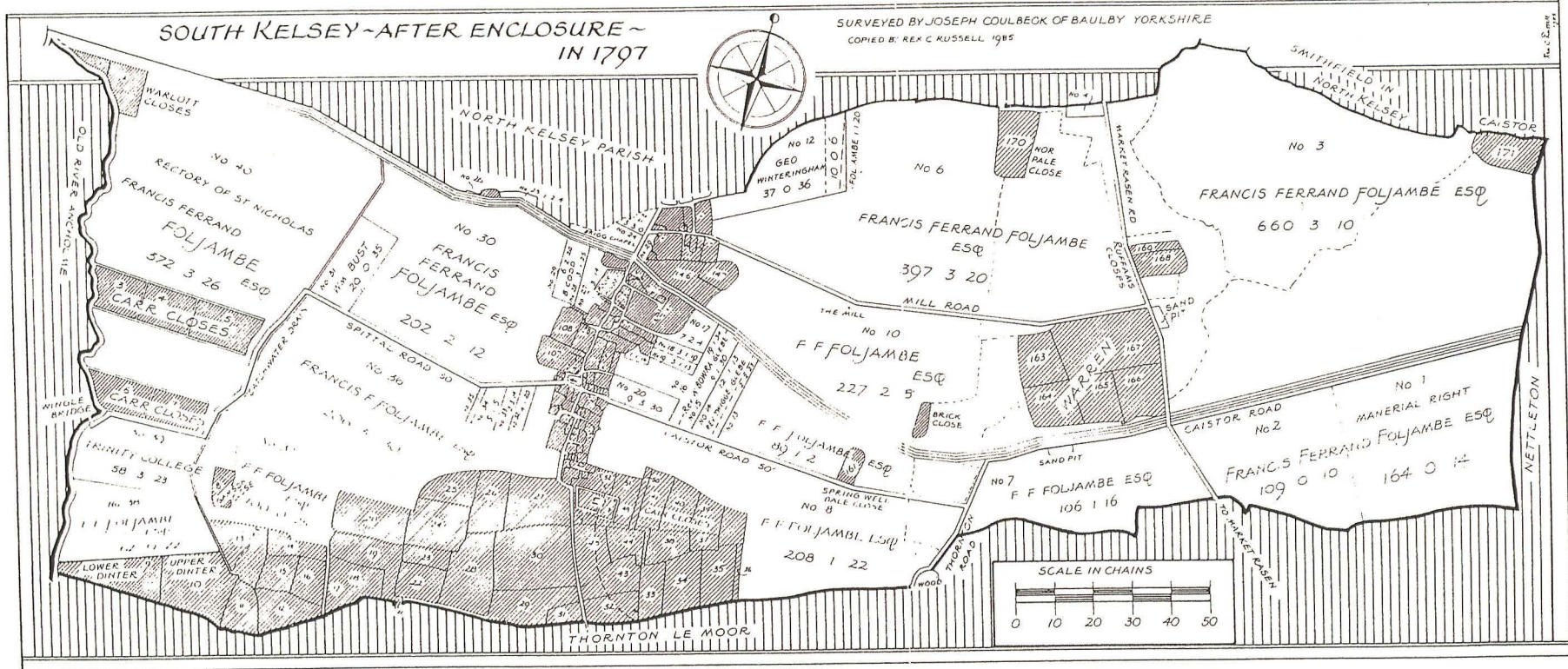
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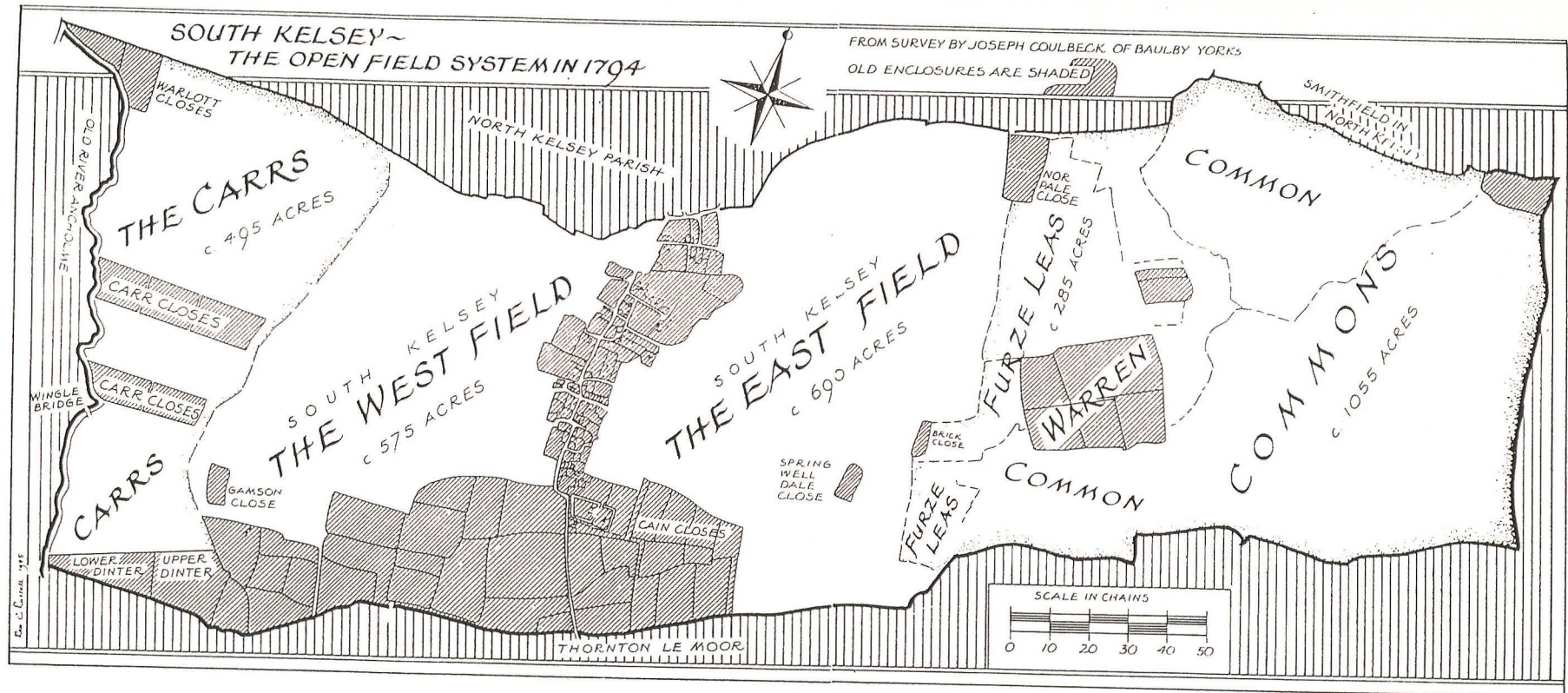
White, W. 1842 *'Lincolnshire County Directory'*

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Cameron 1992 ?

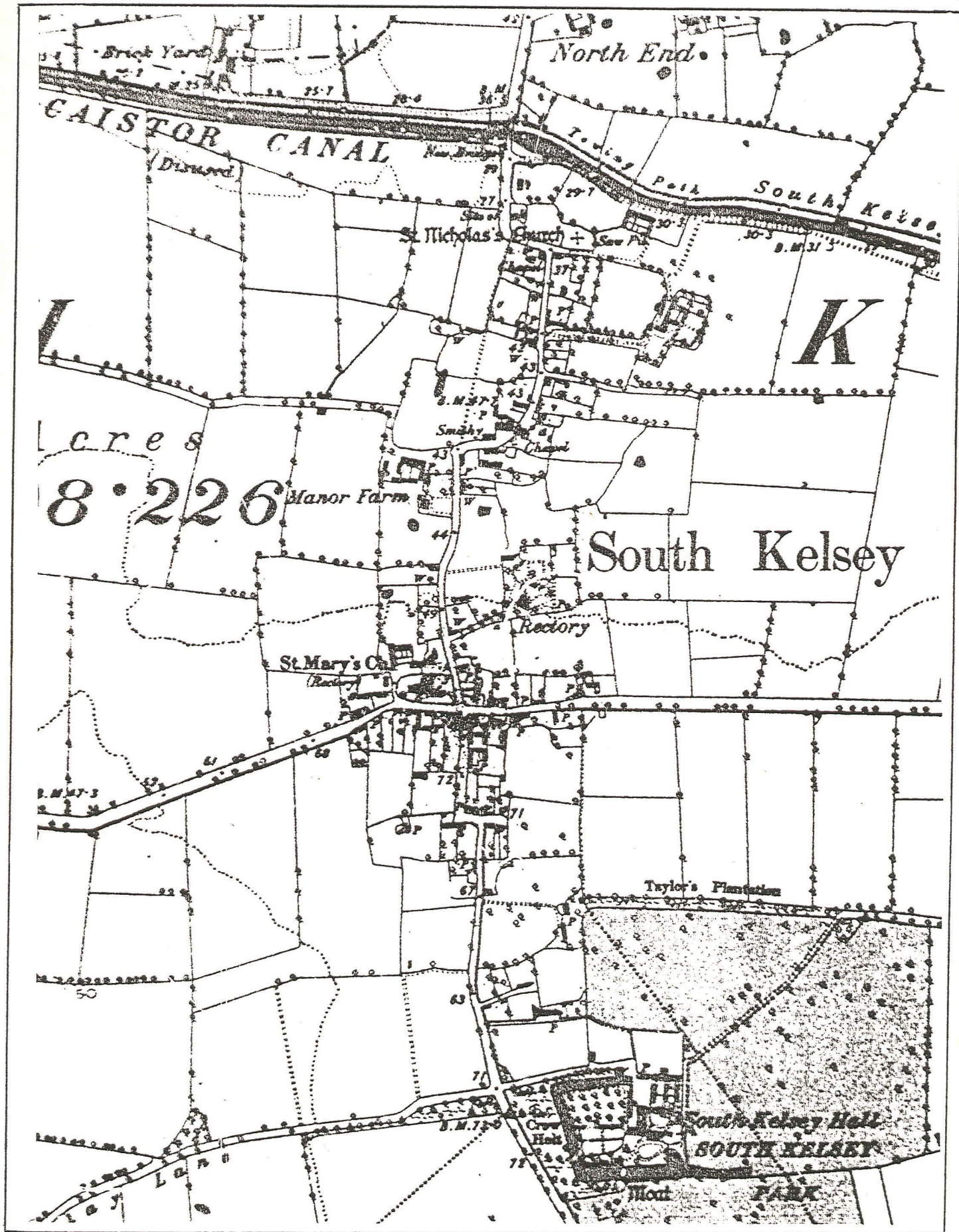
APPENDIX I
HISTORICAL MAPS



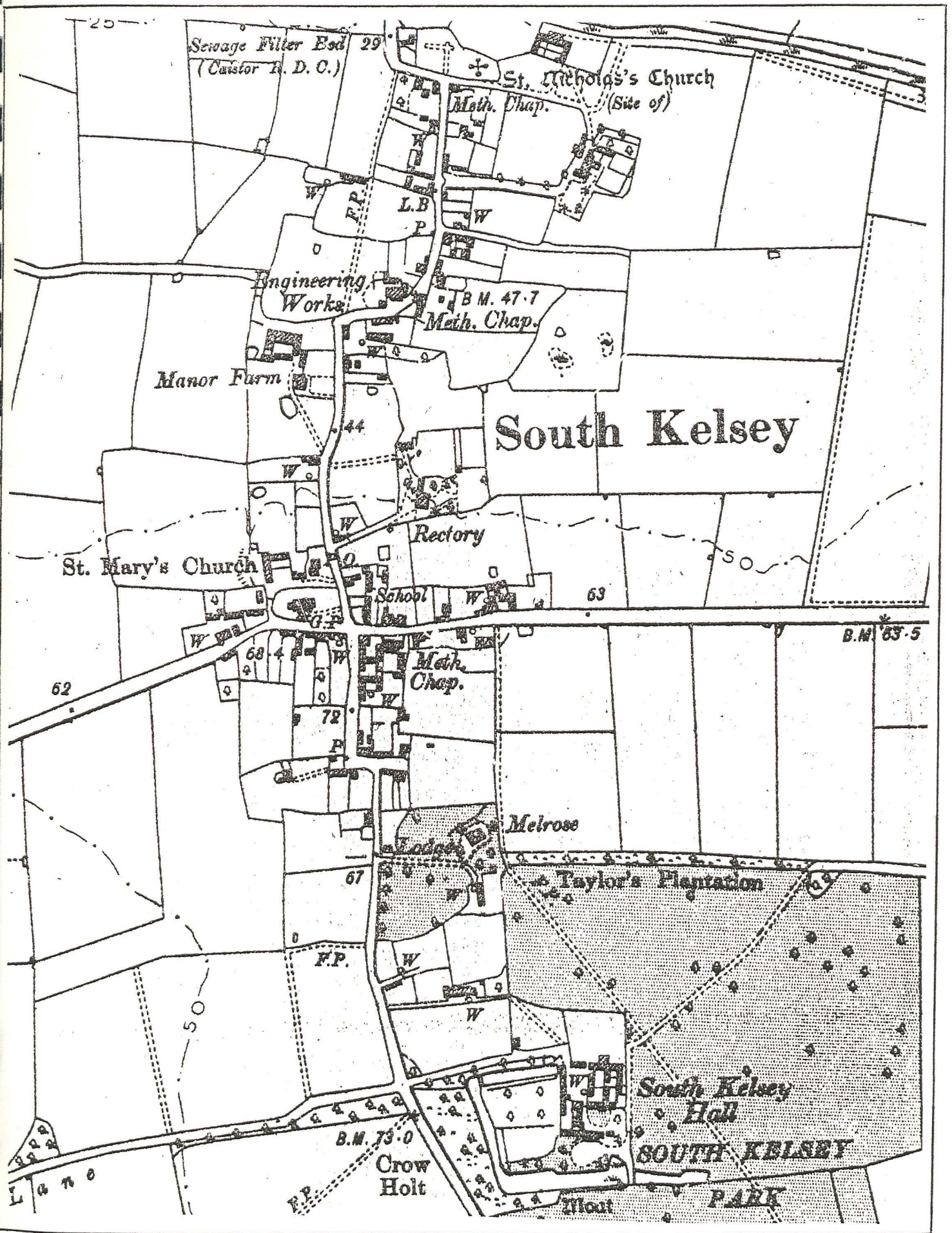
From Russell, R.C. and Russell, E. 'Parliamentary enclosure and new Lincolnshire landscapes' (1987)



From *Russell, R.C. and Russell, E. 'Parliamentary enclosure and new Lincolnshire landscapes' (1987)*



Extract from 1st edition Ordnance Survey map, 1824. No scale.



Extract from 2nd edition Ordnance Survey map, 1902. No scale.

APPENDIX II

**FLUXGATE GRADIOMETER SURVEY
LAND AT SOUTH KELSEY
LINCOLNSHIRE**

Report prepared for Andrew Hancock (Planning Consultant)
by David Bunn BSc and Andrew Hardwick BSc
April 2000

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	6.2 Summary of survey parameters	
	6.3 Trace plot of raw data	

Illustrations

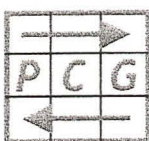
Fig.1 Location of survey grids. Scale 1:2000.

Fig.1a Location of survey (greyscale image). Scale 1:2000.

Fig.2 Clipped greyscale image. Scale 1:1000.

Fig.3 Interpretive image (possible modern anomalies). Scale 1:1000.

Fig.4 Interpretive image (probable archaeologically significant anomalies). 1:1000.



Summary

- *As part of an integrated desk top assessment, a fluxgate gradiometer survey was undertaken on approximately 1.0 hectare of land at South Kelsey in north Lincolnshire*
- *This survey identified significant magnetic variation over much of the site, and this variability is expressed/presented as a series of magnetic anomalies that are thought to indicate archaeological activity*
- *Whilst some of the anomalies are directly associated with modern activities (strong anomalies, particularly common to the site boundaries), others appear to reflect the presence of buried archaeological features such as extensive ditches and localised features*
- *Many of the potentially significant anomalies appear to represent previous land divisions (field/property boundaries); possibly indicating a succession of agricultural/pastoral regimes. However, the possibility that some anomalies reflect direct domestic occupation should not be ignored*

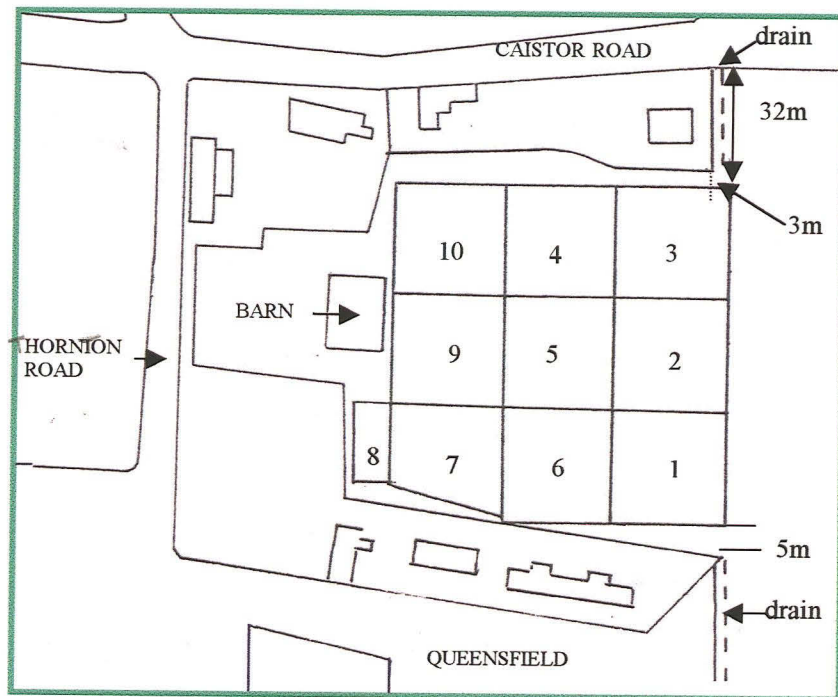


Fig.1: Location of survey grids 1:2000

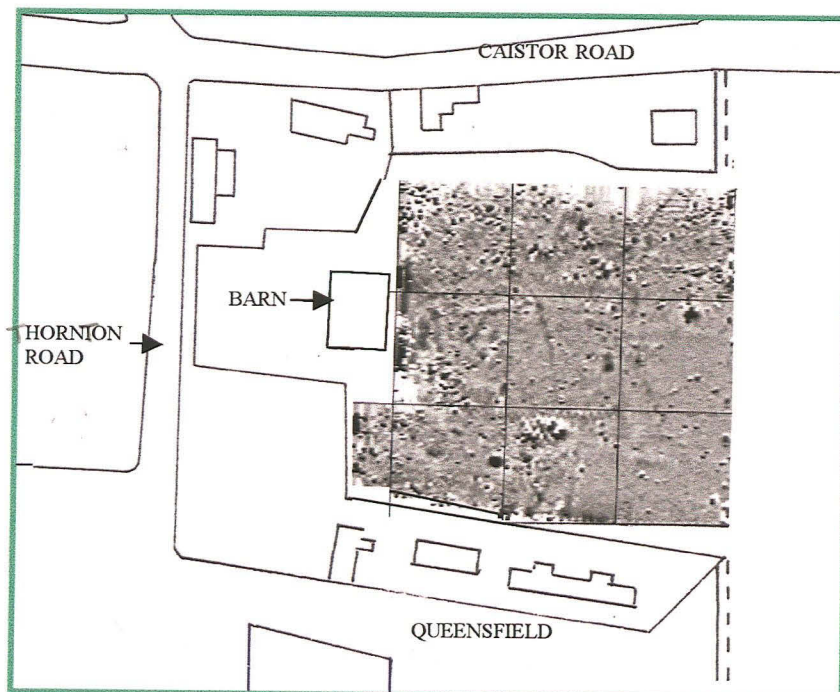


Fig.1a: Location of survey (greyscale image) 1:2000

1.0 Introduction

A Fluxgate Gradiometer survey was commissioned by Andrew Hancock (Planning Consultant), on behalf of his client, as part of an archaeological assessment/evaluation of a proposed development site at South Kelsey, north Lincolnshire. The survey was carried out to fulfil a requirement issued by West Lindsey District Council and a specification prepared by Pre-Construct Archaeology. This work, which is documented below, has broadly followed the guidelines set out in the English Heritage document 'Geophysical Survey in Archaeological Field Evaluation', 1995.

2.0 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 caused 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 are the result of man-made changes to the composition of the soil and the introduction of intrusive materials such as brick and stone. These features create detectable magnetic anomalies. In addition, activities which involve heating and burning will create magnetic anomalies, as will the presence of ferrous metal objects. By examining the anomalies detected by a fluxgate gradiometer survey, geophysicists can often translate the data into archaeological interpretation.

The area survey was conducted using a *Geoscan Research* fluxgate gradiometer (model FM36) with an electronic sample trigger set to take 4 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 base line was established along the east edge of the survey (see Fig. 1), parallel to and 1m from the centre of the drain. Pegs were placed along the base lines and at grid corners elsewhere. The sensitivity of the machine was set to detect magnetic variation in the order of 0.1 nanoTesla.

The data from the survey was processed using *Geoplot* version 3.0. It was desloped (a means of compensating for sensor drift during the survey by subjecting the data to a mathematical bias sloping in the opposite direction of the bias created by sensor drift), and clipped to reduce the distorting effect of extremely high or low readings caused by ferrous metals on the site. The results are plotted as greyscale images.

The survey was carried out by David Bunn and Andrew Hardwick on 29th March 2000. The weather was overcast.

3.0 Results

The site displayed a wide range of magnetic variability, reflecting features of both modern and archaeological origin (Figs. 2,3 & 4).

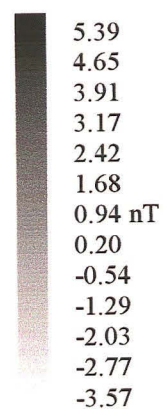
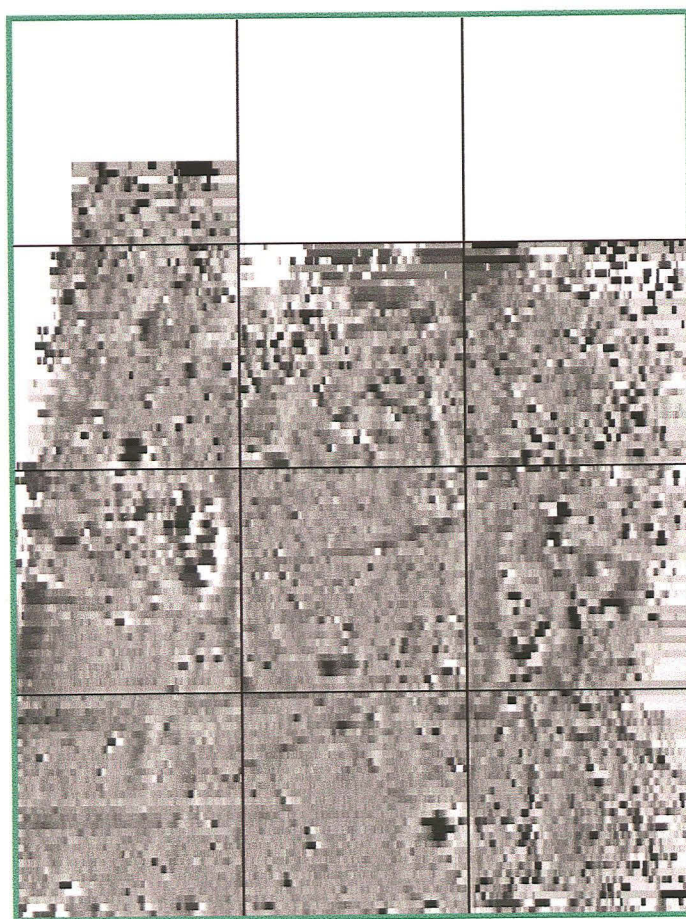


Fig.2 Clipped greyscale image Scale 1:1000

The interpretive images represent anomalies of:
 (a) probable modern origin (Fig.3)
 (b) possible archaeological potential (Fig.4).

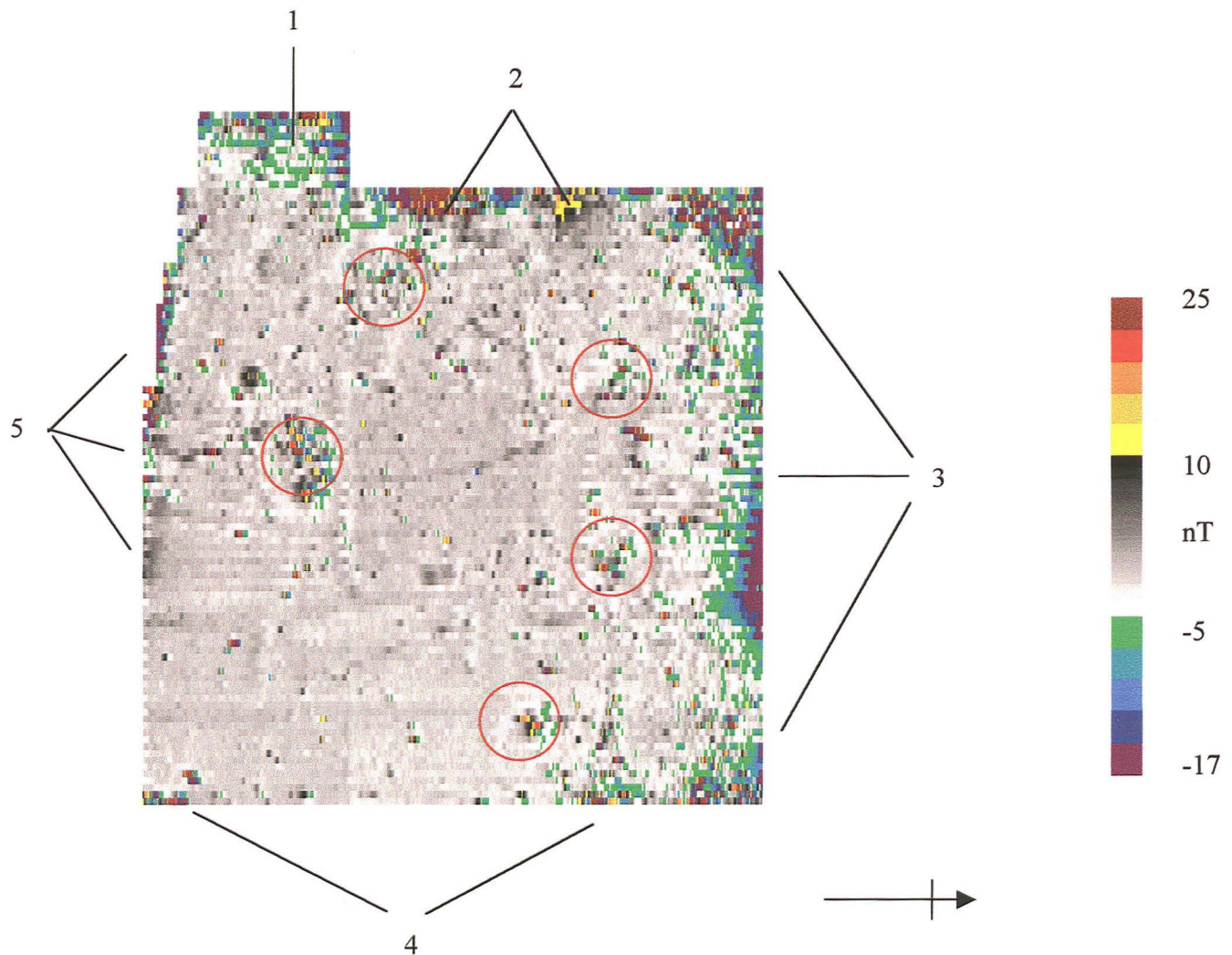


Fig.3: Interpretive image (possible modern anomalies) Scale 1:1000

Significant magnetic disturbance characterised the north, west and southwest areas of the site: probably the result of recent activity.

Fig.3: Anomaly

- 1 Area to the south-west, close to gardens and barn: probably miscellaneous brick/tile/ferrous debris. Also the site of an earlier building (see desk top assessment).
- 2 Close to the barn (galvanised metal stanchions).

- 3 Wide area of disturbance to the north, adjoining houses (with access to the site): probably modern debris that may be masking weaker features.
- 4 Possible backfilled drain.
- 5 Close to the southern site boundary comprising a hedge incorporating wire fence remains.

A number of magnetically strong anomalies were detected away from the survey boundaries (Fig.3: Circled red). These are similar in character to anomalies 1-5 and are possibly also of modern origin (brick/tile/ferrous debris). The proximity to the farmyard/houses and lack of recent cultivation suggests that dumping and burning may have taken place, possibly accounting for many of the anomalies discussed above. However, given that the site contains features of potential archaeological significance (Fig.4), these 'modern' anomalies (especially those away from the site boundary) may warrant further investigation.

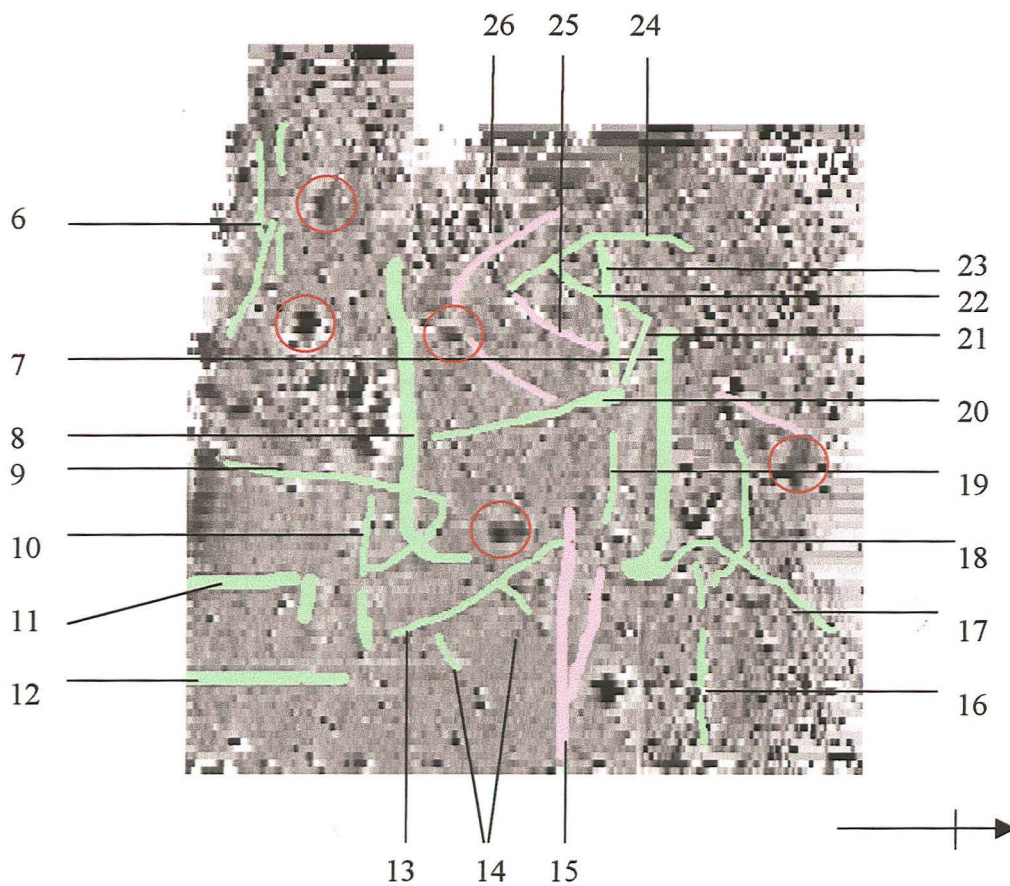


Fig.4: Interpretive image (probable archaeologically significant anomalies)
Scale 1:1000

A complex arrangement of linear, curvilinear and discrete anomalies were detected (Fig.2), some of which seem to correspond to cropmarks that are described in the desk top assessment above.

The linear anomalies seem to reflect several phases of activity, although the stronger magnetic signals (1-5) may be masking and/or confusing the true morphology of some of the features.

Fig.4: Anomaly

- 6 Two or more broken, diffuse parallel linear anomalies close to the south-west edge of the survey; of potential archaeological significance, but partially masked by modern activity.
- 7 A broad east/west orientated linear, turning southwards and converging with other linear features at its eastern extent. Possibly associated with linear anomaly 8 to represent a rectangular enclosure (tentative interpretation).
- 8 Similar, parallel and possibly associated with anomaly 7.
- 9 A diffuse linear extending roughly north from the southern boundary, bisecting linear 8 and possibly curving back towards anomaly 11.
- 10 A narrow, diffuse and segmented linear, possibly related to anomalies 11 and 12.
- 11 A broad anomaly, parallel to and possibly part of the same rectangular enclosure feature as linear 12. However, given that part of anomaly 11 and all of anomaly 12 extend exactly parallel to the survey traverse direction, data collection error should not be discounted.
- 12 See anomaly 11.
- 13 Diffuse linear, orientated northwest/southeast, possibly abutting two short, indistinct linears (anomaly 14), although this interpretation is tenuous, given lack of definition. These anomalies may reflect earlier boundaries or possible land drain remnants.
- 14 See anomaly 13.
- 15 Very diffuse (coloured pink, Fig.4) and possibly branching towards anomaly 19. Lack of definition makes interpretation difficult.
- 16 Well defined linear, parallel to 15, converging with, though possibly unrelated to, anomalies 17 and 18. May be remains of an earlier field boundary (see desk top assessment: 1st and 2nd edition O S maps).
- 17 This anomaly appears to turn and converge with anomaly 7 at its southern extent.
- 18 Curvilinear anomaly partially masked by strong magnetic disturbance
- 19 Diffuse linear extending west towards anomaly 21; possibly associated with 23.
- 20 Well defined linear orientated north-south between anomalies 7 and 8 and converging with anomaly 23.
- 21 Abutting, and possibly related to, anomaly 22.
- 22 Extending north-east from anomaly 24, bisecting anomaly 23, to meet anomaly 21.
- 23 Distinct linear possibly related to part of anomaly 19.
- 24 Curvilinear, less distinct to the north, abutting anomalies 22 and 23, and possibly respecting alignment of anomaly 26.
- 25 Tenuously flagged as a slightly negative linear anomaly that possibly extends from anomaly 24 north-east towards, and to the north of,

- anomaly 23. Magnetically negative anomalies often represent stone features, for example walls, or stone-filled land drains.
- 26 Magnetically similar (slightly negative) curvilinear, possibly respecting or respected by anomaly 25, although more diffuse to the north.

A number of magnetically weaker (compared to Figure 3), discrete anomalies were detected (Fig 4: circled red) which may have archaeological potential (pits, areas of burning).

4.0 Conclusions

It is variously concluded that the site contains anomalies of potential archaeological significance. Most of these appear to reflect the presence of buried ditches and/or gullies, the majority of which are aligned east-west or north-south (some of the linears do not conform to this pattern). There are localised anomalies also that may indicate discrete features such as buried pits or possible areas of burning.

Excluding modern activity, it is suggested that the anomalies/features referred to above reflect several phases of activity on the site (at least two, possibly more). Much of this activity may have been associated with changing agricultural regimes (e.g. the change from open to enclosed fields – see desk top assessment report above). However, this is almost certainly an over-simplification, and it is possible that some of the anomalies may have a more direct association with human (i.e. domestic) settlement in the medieval or earlier periods. These are issues that cannot be resolved by gradiometry alone.

5.0 Acknowledgements

Pre-Construct Geophysics would like to thank Andrew Hancock for this commission.

6.0 Appendices

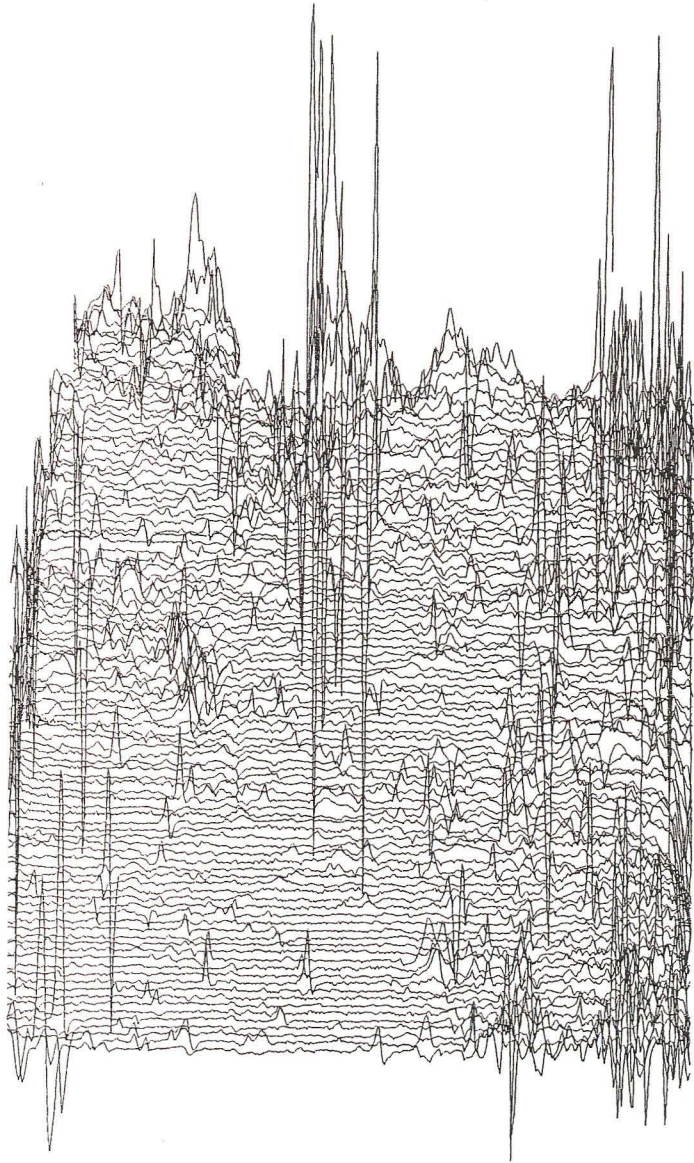
6.1 References

- | | | |
|-----------------------------------|------|--|
| Clark, A J | 1990 | <i>'Seeing beneath the soil.'</i> |
| David, A | 1995 | Research & Professional Services Guidelines No 1; 'Geophysical Survey in Archaeological Field Evaluation.' |
| Gaffney, C, Gater, J & Ovenden, S | 1991 | <i>IFA Technical Paper No 9; 'The use of Geophysical techniques in archaeological evaluations.'</i> |

6.2 Summary of survey parameters

Instrument:	Geoscan Research Fluxgate Gradiometer FM 36 with Sample Trigger ST1.		
Resolution:	0.1 nT	Grid size:	30m x 30m
Sample interval:	0.25m	Traverse interval:	1m
Traverse method:	Zigzag		

6.3 Trace plot of raw data Scale 1:1000



33.82nT/cm

Appendix III – List of sites and artefacts recorded in the Sites
and Monuments Record

See Map 2

SMR No.	Description	NGR
50309	South Kelsey Hall	TF04439766
53497	Post-medieval jetton with illegible biblical quotation	TF04309887
53499	Neolithic polished stone axe	TF04259893
53500	St. Nicholas's Church	TF04349879
53501	St. Mary's Church	TF04169822
53505	Medieval earthwork enclosures	TF03829722
53506	Ridge and furrow	TF03699719
53507	Medieval moated manor	TF04439766
53508	Medieval settlement	TF04209820
53511	Civil war gun placement	TF04419754

- 3 Wide area of disturbance to the north, adjoining houses (with access to the site): probably modern debris that may be masking weaker features.
- 4 Possible backfilled drain.
- 5 Close to the southern site boundary comprising a hedge incorporating wire fence remains.

A number of magnetically strong anomalies were detected away from the survey boundaries (Fig.3: Circled red). These are similar in character to anomalies 1-5 and are possibly also of modern origin (brick/tile/ferrous debris). The proximity to the farmyard/houses and lack of recent cultivation suggests that dumping and burning may have taken place, possibly accounting for many of the anomalies discussed above. However, given that the site contains features of potential archaeological significance (Fig.4), these 'modern' anomalies (especially those away from the site boundary) may warrant further investigation.

4 trenches
15 x 1 bucket

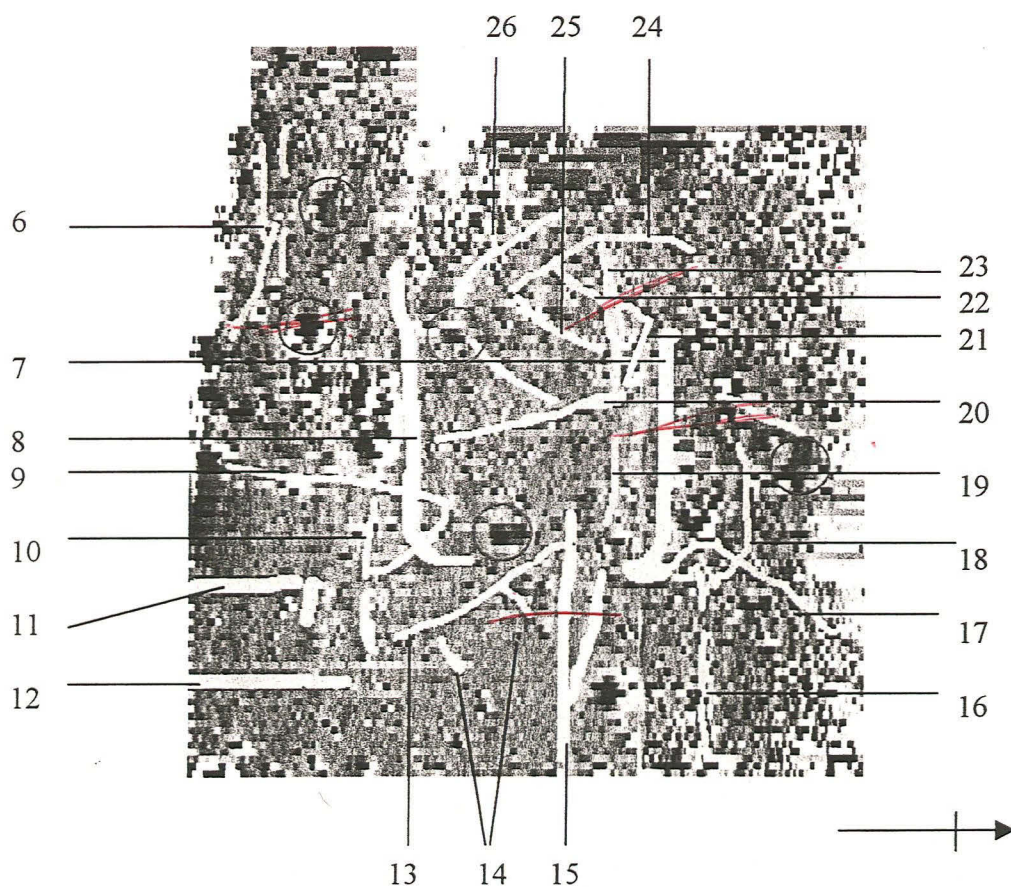


Fig.4: Interpretive image (probable archaeologically significant anomalies)
Scale 1:1000