97/19

IN GREATFORD PARISH

LAND AT KING STREET, THE DEEPINGS, LINCOLNSHIRE

ARCHAEOLOGICAL FIELD SURVEY

Produced by

OXFORD ARCHAEOTECHNICS
(Survey Ref: 1260997/KIL/ENN)

under the direction of

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and

LINDSEY ARCHAEOLOGICAL SERVICES
(Report No: 267)

under the direction of

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COMMISSIONED BY SECOR LIMITED on behalf of ENNEMIX CONSTRUCTION MATERIALS LIMITED

NOVEMBER 1997

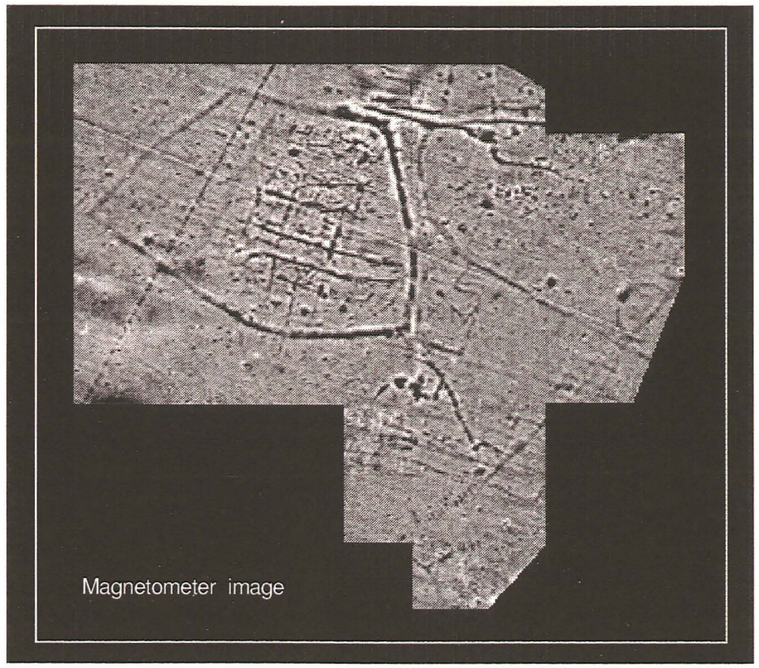
LINDSEY ARCHAEOLOGICAL SERVICES

OXFORD ARCHAEOTECHNICS

GEMT 413623 Topsoil mag sus
413627 Magnetometry scanning
413628 Detailed magnetometry
413629 Topographic survey
413630 Selective hand augering
413631 Single test pit
413633 Fieldwalking

SOURCES 418338 418339

35779	4183459	Prch
35780	4183466	Prch
35781	4183464	Prch
35782	4183465	Undated
33418		Roman
35795	4183487	Medieval to modern.


Magnetometer image

SPECIALIST ARCHAEOLOGICAL FIELD EVALUATION

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The field evaluation was carried out jointly by Oxford Archaeotechnics (OA) (geophysical survey) and Lindsey Archaeological Services (LAS) (fieldwalking). The fieldwalking finds were surveyed and fieldwalking plans prepared by Midland Surveying and Engineering (MSE), who also undertook topographic survey of residual earthworks in collaboration with Oxford Archaeotechnics.

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Geophysical fieldwork and data processing by Oxford Archaeotechnics Limited was directed by Tony Johnson, assisted by Jason Porter and Dan Chambers.

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The Midland Surveying and Engineering surveying team was Mike Winterbottom, Nick Thompson and Ellie Peters.

The project was co-ordinated by Anne Johnson of Oxford Archaeotechnics.

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(in wallet)

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SUMMARY

Archaeological survey, comprising geophysical survey (10 m topsoil magnetic susceptibility mapping, magnetometer scanning and selective detailed magnetometer survey), topographic survey and sketch plotting of residual earthworks, hand augering (combined with hand cleaning of modern ditch sides where applicable), and fieldwalking (on 20 m transects) was carried out on a c.41 ha area of farmland in two large fields situated immediately west of King Street centred on NGR 510100 312250 (TF 101122), approximately 1 km northeast of the village of Greatford and 4 km northwest of Market Deeping, Lincolnshire, in advance of proposed sand and gravel extraction.

The evaluation was designed to determine the extent and geometry of underlying archaeological features, several of which had already been plotted as cropmarks from the air, and to assess their continuity with elements of ancient landscape remains previously mapped as cropmarks upon adjoining land.

Topsoil magnetic susceptibility mapping and fieldwalking identified a strong focus of activity associated with a previously recorded cropmark enclosure within the northeast quadrant of the west field. Gradiometer survey confirmed the precise location of the polygonal (irregular pentagon) ditched enclosure and identified within it, situated upon a slight topographic rise, the probable robbing trenches of a rectilinear building or complex of buildings. Fieldwalking recovered quantities of Romano - British pottery of predominantly mid 3rd - 4th century date from the area of the enclosure, together with tile fragments (both roofing tile and box flue tile suggestive of a hypocausted structure), limestone fragments, mortar, concrete flooring, a fragment of painted wall plaster and a number of limestone tesserae (mosaic flooring).

Hand augering into the enclosure ditch demonstrated waterlogging, with organic remains present at a depth of 1.2 m beneath the present ground surface.

Numerous extra mural features were also recorded including trackways and further small rectilinear and curvilinear ditched enclosures (some of which may contain structures); pits and burnt features (possibly industrial) were generally present. The locations of two ring ditches (probably ploughed down Bronze Age burial mounds) previously recorded from air photographs were also confirmed. A small number of prehistoric worked flints was also found.

The majority of the magnetic anomalies, surface artefacts and dispersal of magnetically enhanced topsoils were confined between a pair of low residual banks. The function and relationship of these and two similar banks within the east field, all of which were recorded by topographic survey, remain uncertain.

Both magnetic survey and fieldwalking indicate that the focus of archaeological activity lies within the northeast quadrant of the west field, with little evidence extending into the east field, where the only two concentrations of magnetically enhanced topsoils appear to result from the formation of iron pan in topographically low areas, although some anthropogenic input cannot be entirely discounted. Elements of earlier landscape organisation, possibly of Romano-British date, which were indicated by aerial photographs within this field were also suggested on the topsoil magnetic susceptibility map.

1. INTRODUCTION

Site Location

1.1 Non-intrusive archaeological survey was commissioned by Secor Limited on behalf of Ennemix Construction Materials Limited within an area of farmland situated immediately west of King Street centred on NGR 510100 312250 (TF 101122), approximately 1 km northeast of the village of Greatford and 4 km northwest of Market Deeping, Lincolnshire. The survey area is the subject of a current planning application for sand and gravel extraction.

1.2 The application area covers an area of some 45 ha, of which c.41 ha was available for survey, comprising two large arable fields (OS Field 0036, part of 'Middle Field', and OS Field 4500, part of 'Red Inn Field', referred to below as the 'west' and 'east' fields respectively for convenience); two narrow strips alongside the modern roads forming the western and eastern boundaries of the application site, together with a small triangular plot within the extreme southeast angle were under plantation and excluded from the survey, as was an area of some 0.2 ha occupied by an agricultural barn and yard. The location is shown on Fig.1.

Evaluation Techniques

1.3 In view of the known archaeological material both within the survey area and in close proximity (see 1.10 below), a series of non-intrusive prospecting and evaluatory techniques was specified for the fieldwork by Oxford Archaeological Associates Limited (OAA 1997a), including: geophysical survey (global 10 m topsoil magnetic susceptibility mapping, magnetometer scanning and selective detailed magnetometer survey), topographic survey and sketch plotting of residual earthworks, hand augering (combined with hand cleaning of modern ditch sides where applicable), and fieldwalking (on 20 m transects). An explanation of the geophysical techniques used, and the rationale behind their selection, is included in Appendix 1. The evaluation was designed to assess the extent and geometry of underlying archaeological features, and their continuity with elements of ancient landscape remains previously mapped upon adjoining land.

1.4 The geophysical survey was conducted by Oxford Archaeotechnics, with fieldwalking by Lindsey Archaeological Services, who were also responsible for limited hand cleaning of modern ditch sides; topographic survey of residual earthworks was undertaken by Oxford Archaeotechnics and Midland Surveying and Engineering. The survey work was carried out in September 1997.

1.5 The project design complies with the *Standards and Guidance for Archaeological Field Evaluation* (1993, revised 1994) of the Institute of Field Archaeologists, *Management of Archaeological Projects* (English Heritage 1991) and the draft Guidelines for archaeological work in Lincolnshire issued by Lincolnshire County Council Archaeology Section, and follows the standards for the conduct and reporting of geophysical survey in field evaluations set out by English Heritage Ancient Monuments Laboratory (David, A. 1995. *Geophysical survey in archaeological field evaluation*, Research and Professional Services Guideline No. 1, English Heritage, 1995), hereafter referred to as AML 1995.

Physical Setting

1.6 Geology is reported as Pleistocene fluvial gravels over a basement of (Upper Jurassic) Oxford Clays; the soils (topsoils generally 0.3 m in depth) are fine loamy soils of the Badsey 2 Association overlying calcareous gravels. The land slopes from 11.25 m

AOD on the westernmost edge of the survey area to 8.75 m AOD on the eastern boundary, adjacent to King Street, and there is, in addition, a gentle slope eastnortheastwards (the topography is shown on Fig. 14). Groundwater levels in August/September 1997 were recorded at a depth of c.1.00 - 1.25m below the surface within the northern part of the west field (OAA 1997b).

1.7 At the commencement of the fieldwork (i.e. during the topsoil magnetic susceptibility mapping and fieldwalking phases) the whole of the east field and majority of the west field had been ploughed, with the exception of a c.90 m wide x 400 m long strip (3.6 ha) alongside the northern boundary which was still under a maturing onion crop. Both fields were harrowed and the onion crop harvested prior to the gradiometer stage of the survey work. Soil conditions were dry.

Known Archaeology

1.8 The Lower Welland Valley is an area known to contain a rich variety of archaeological remains, many of which were first recorded as cropmarks from the air by the Royal Commission on the Historic Monuments of England (RCHME 1960). Excavations at several locations in proximity to the survey area have demonstrated a range of Neolithic, Bronze Age, Iron Age and Romano-British material; chance pottery finds (400 m east of the survey area) and the discovery of a cemetery close to King Street at the nearby village of Baston, indicate some potential for Anglo-Saxon remains (Herbert 1996). Recent large-scale geophysical survey (Johnson 1994) and excavation carried out at Rectory Farm, West Deeping, just south of the Greatford Cut in advance of gravel extraction, have identified landscape elements of all periods from the earlier prehistoric (Neolithic) onwards, demonstrating intensive continued human exploitation of this area of the fen gravels.

1.9 The modern road which forms the eastern boundary of the survey area follows the course of a major Roman road, known as King Street. The line of the Roman road in the vicinity of the survey area is well preserved: "[north of] West Deeping the road becomes an obvious causeway again, and after 1 mile its form is very striking, a large *agger* [embankment] 40 feet wide and 6 feet high with a wide and deep fosse [ditch] along its western side, continuing thus for 3 miles to the river crossing at Kate's Bridge, north of Baston" (Margary 1973:233). King Street was one of two major Roman roads which linked the early Roman forts at Water Newton (later the flourishing Roman town of *Durobrivae*) and Longthorpe on the River Nene (nr. Peterborough) with the legionary fortress at Lincoln. The principal road, Ermine Street, took the higher ground, passing through Stamford, whilst King Street skirted the Fen edge, running almost due north through West Deeping and Bourne before turning northwestwards to rejoin Ermine Street at Ancaster (Margary 1973).

1.10 Numerous cropmarks of archaeological significance have been recorded from aerial photographs both within and in proximity to the survey area, which from their morphology can be identified with some confidence as the remains of ploughed down prehistoric burial mounds (ring ditches) interspersed with prehistoric and Romano-British settlement enclosures and their associated trackways, field systems and land boundaries. To the east of Greatford village (centred at TF 098119) lies a complex of cropmarks, believed to represent a rather straggling agricultural settlement with associated trackways and fields, probably of prehistoric and Roman date (RCHME 1960: fig. 10). Three areas within this complex have been scheduled as ancient monuments (County SAMS 160, 294 & 327), the most northerly of which, comprising a number of ring ditches, enclosures and possible trackways, extends as far as the southern boundary of the survey area (County SAM 327) (Fig. 2).

1.11 A recent assessment of the aerial photographic data, combining computer-rectified sketch plots provided by the Royal Commission on the Historic Monuments of England (RCHME) with re-examination (by OAA) of photographs held by the RCHME in Swindon has shown aerial photographic coverage of the survey area to be patchy, the land giving a variable, occasionally poor, response to cropmark formation and often making it difficult to distinguish between archaeological and geological features. Nevertheless, a number of features of potential archaeological significance have been plotted (OAA 1997: fig. OAA3) (Fig. 2):

- two rectilinear enclosures associated with trackways and a number of apparent large pit forms within the northern half of the west field (field reconnaissance in September 1996 (Herbert 1996) recorded 'significant quantities' of Roman pottery, limestone debris, fragments of roof tile, animal bone and oyster shells on the field surface within the larger of the enclosures, suggesting the presence of a Roman building);

- further linears, together with one complete and two further partial rings or small angular enclosures situated close to the eastern boundary of the west field;

- a pattern of parallel and orthogonal linear cropmarks upon a markedly different alignment to the modern field layout, possibly representing a former field system, visible within the southeast angle of the west field and across much of the east field;

- topographic features identified from aerial photographs and confirmed by a previous (Ennemix/Secor) topographic survey, including four broad sinuous banks running on a SSW-NNE trend (a fifth plotted adjacent to King Street probably represents the *agger* of the Roman road), together with a roughly circular rise within the centre of the larger cropmark enclosure.

2. MAGNETIC SURVEY (A.E. Johnson)

SURVEY DESIGN

2.1 Survey control was established to the National Grid by EDM Total Station. Following the AML 1995 guidelines, the 10 m geophysical grid is internally accurate to ± 10 cm, and the grid locatable on the OS 1:2500 map to the nearest metre (AML 1995:Part I, 3.2).

2.2 The equipment used for the direct topsoil magnetic susceptibility survey was a Bartington Instruments MS2 meter with an 18.5 cm loop.

2.3 *In situ* magnetic susceptibility readings were taken on a 10 metre grid, an interval proven to give a high probability of intersection with the magnetic signal from a wide range of archaeological sites, particularly occupation and industrial sites of the later prehistoric, Roman or Medieval periods. Under favourable conditions the survey technique is equally capable of locating earlier prehistoric features. The 10 m grid configuration also favours the detection of ploughed-out earthworks, which can occasionally be located as areas of more weakly magnetic soils.

2.4 A 10 m resolution, although perfectly satisfactory for defining general areas of activity, will inevitably intersect with soils showing locally strong magnetic contrasts. It is more important to pay attention to the general trend/pattern than to concentrate upon specific magnetically enhanced 'hotspots', even though many of the latter may eventually prove to relate to the positions of underlying archaeological features.

2.5 Routine scanning (the observation, by a skilled operator, of magnetic field fluctuations, without gridded logging) by gradiometer was carried out on 20 m traverse

intervals across the site, providing both an initial appreciation of anomalies and a rapid check on apparently 'blank' areas.

2.6 Following the first stage of fieldwork, areas judged to require more precise characterisation (specific cropmark features, areas showing significant topsoil susceptibility enhancement, magnetic anomalies identified by magnetometer scanning, some low residual earthwork features, and surface concentrations of pottery and/or building debris identified by fieldwalking) were investigated by detailed magnetometry using a Geoscan Research FM 36 Fluxgate Gradiometer (sampling 4 readings per metre at 1 metre traverse intervals in the 0.1 nT range). The nanotesla (nT) is the standard unit of magnetic flux (expressed as the current density), here used to indicate positive and negative deviations from the Earth's normal magnetic field.

2.7 Field data were stored to 3.5-inch disks, and processed using Geoscan Research Geoplot and Oxford Archaeotechnics software.

2.8 The topsoil magnetic susceptibility plots show contours at 10 SI intervals (Figs. 4, 12 & 13). Magnetometer data have been presented as grey scale and stacked trace plots (Figs. 5, 6, 8 & 9), interpretation of the results included on Figs. 7 & 10, and a summary provided on Fig. 11.

RESULTS

TOPSOIL MAGNETIC SUSCEPTIBILITY MAPPING (Fig. 4)

2.9 4061 *in situ* topsoil magnetic susceptibility readings were recorded. Susceptibility is reported in SI: volume susceptibility units (x 10^{-5}), a dimensionless measure of the relative ease with which a sample can be magnetized in a given magnetic field.

2.10 *In situ* topsoil magnetic susceptibility measurements showed a dynamic range, with readings between 17 and 167 (x 10^{-5}) SI units; the mean for the survey was 35.3 SI units and the standard deviation calculated against the mean was 9.2 SI units. The pale brown shade on Fig. 4 approximates to one standard deviation above the mean.

2.11 There is a marked contrast in general topsoil magnetic susceptibility levels between the two fields, with more strongly magnetic topsoils generally present within the west field. In addition, there are two principal foci of magnetic enhancement: one extending along the extreme eastern boundary of the east field, and the second within the northeastern quadrant of the west field.

2.12 A band of magnetically enhanced topsoils (locally reaching over 100 SI), almost 80 m wide, lies adjacent to the eastern boundary of the survey area. Subsequent gradiometer survey (Area 3, see 2.51 below) located patterns of strong magnetic anomalies displaying a 'mottled' appearance which are provisionally interpreted as the result of concentrations of iron-rich deposits associated with the particularly strong local iron pan (noted by OAA 1997b), although whether these deposits remain undisturbed or have been subject to some anthropogenic input (possibly exploitation of the iron-rich material) remains uncertain. A smaller focus of enhanced soils close to the southeastern angle of this field covering approximately 0.3 ha.(centred on NGR 510350 311980) lies within an area in which cropmarks of possible geological origin have been recorded (Fig. 2, OAA 1997b). Subsequent gradiometer survey at this location (Area 2, see 2.47 below) also detected patterns of 'mottling' not dissimilar to those found close to the eastern boundary, which are also of probable natural origin, although the possibly of underlying 'cut' features cannot be entirely discounted.

2.13 The second principal focus of magnetic enhancement is visible within the west field, where the topsoil magnetic susceptibility map shows well defined patterns of enhanced

topsoils covering an area of almost one hectare (within NGR grid square 509900 312400) centred upon a large rectilinear enclosure known from cropmarks, and extending both northeast and southeast from the enclosure over much of the northeast quadrant of the field, the patterning being for the most part contained by a low bank (Bank 1) to the west, the present drainage ditch to the east, and extending as far as the field boundary to the north. Subsequent gradiometer survey within the enclosure itself revealed the presence of a substantial structure which is attributable from both its morphology and the evidence of surface finds to the Romano-British period, whilst a complex of underlying 'cut' features was recorded in areas of enhanced topsoils extending beyond the enclosure (Area 1, see 2.24 below).

2.14 In contrast, a block of weaker topsoils (pale blue shade on Fig. 4), measuring some 50 m square, lies immediately east of the enclosure. Less magnetic zones in areas of generally enhanced topsoils indicative of otherwise intensive archaeological activity frequently represent differential agricultural practice, and as subsequent gradiometer survey confirmed this 'weak' zone to be relatively quiet with few substantial underlying features, it is possible that it may represent the location of an ancient agricultural enclosure associated with the adjacent occupation site.

2.15 Topsoils over the location of a smaller rectilinear cropmark enclosure within the extreme northwestern angle of the west field (Fig. 2) are magnetically weak, with few underlying magnetic anomalies detected by gradiometer scanning.

2.16 Apart from the two principal foci of magnetic enhancement, the topsoil magnetic susceptibility map for the most part shows a series of subtle magnetic patterns whose alignments are generally orthogonal both with the field boundaries of the present and former (mapped) agricultural landscape and with a series of low broad banks spaced c.200 m apart, which cross the survey area on a northeast - southwest trend, roughly parallel with the short axis of the survey area (Figs. 2 & 14; see 5.1 below). The bank which defines blocks of magnetic susceptibility patterning in the west field has been mentioned in 2.13 above. The east field is similarly bounded (on the west) and crossed by two further low banks, each block of soils between the banks displaying its own distinct magnetic identity: interfaces between contrasting magnetically enhanced soils within these blocks probably signify subdivisions of former small cultivation plots.

2.17 In addition to those associated with former occupation and industral sites, topsoil magnetic susceptibility patterns can also be formed by various agencies, including ploughing over infilled former agricultural ditches, headlands and earthworks, together with differential landuse and drainage. Topsoil magnetic susceptibility patterning representing successive phases of organisation can often be detected within agricultural landscapes; at nearby Rectory Farm, West Deeping for example, patterns of early prehistoric subdivision of the landscape appear to have been reflected in an extensive topsoil susceptibility map covering over a square kilometre (112 ha) (Johnson 1994). Such patterns often represent elements of 'lost' landscape, not surprisingly appearing disjointed by the superimposition of subsequent agricultural regimes, leaving only fleeting spreads of magnetically contrasting soils displaying alignments which can sometimes be confirmed by aerial photographic or cartographic evidence. A series of cropmarks has been identified from aerial photographs running at approximately 45 degrees to the modern landscape (purple linears on Fig. 2), possibly belonging to a pattern of enclosures and rectilinear field systems associated with the Romano-British (or earlier) occupation phase (OAA 1997b). Some elements in the topsoil magnetic patterning in the east field, notably within the hectare block contained within NGR grid square 510400E 312200N display what may be similar residual magnetic susceptibility contrasts associated with some of the more assertive of these cropmark linears (the aerial photographs show a strong angular component at

this location). The magnetic pattern shows a 20 m wide band of raised soil susceptibility (40 - 50 SI; brown shade on Fig. 4) continuing for a distance of some 100 m, reaching 10 - 20 SI higher than the surrounding soils. As this band follows the alignment and general location of one of these cropmarks, it may be suggested that some of the patterns perceived along the northern edge of the east field are survivals of an earlier field layout and, although insubstantial, the corresponding alignments shown on aerial photographs should be noted.

2.18 A similar band of enhanced soils can be seen in the west field, visible for a distance of over 200 m, following the boundary of a recently removed lateral subdivision (cf. Figs 2 & 4).

2.19 In addition to the agricultural patterning described above, a relationship is also recognisable between the topography of the lower-lying east field and more subtle patterns of topsoil magnetic susceptibility, with the 9.85 m AOD contour approximating to a 10 SI shift in soil susceptibility (Fig. 14); the more magnetic soils tend to lie below this level, seemingly representing a naturally magnetic 'boundary' which may perhaps be due to deposition or water table fluctuation. Spreads of strongly magnetic soils have already been identified below the 9.0 m AOD contour overlying substantial areas of iron pan (see 2.48 & 2.52 below), and it is conceivable that some of this material may have been incorporated into the topsoils and distributed by former flooding episodes. Equally the patterns between 9.0 m and 9.85 m AOD may have resulted from a similar but weaker formation process responsible for the stronger iron-rich soils below 9 m AOD. The presence of Banks 3 & 4 (Figs. 2 & 14) add further complications to this pattern. Both influence the topsoil susceptibility map (Fig. 4) and show anthropogenically induced patterning running southwest-northeast away from the lower lying ground to the north. This suggests that agriculture has further modified and dispersed the magnetically stronger soils within these boundaries and perhaps also within former agricultural blocks which are no longer apparent.

MAGNETOMETER (GRADIOMETER) SURVEY

2.20 A total area of 5 ha was investigated by detailed gradiometer grids, their location is shown on Fig. 3, and a summary of results is shown on Fig. 11. The siting of the gradiometer survey grids was determined by the topsoil magnetic susceptibility patterning, cropmark information, density of artefacts recorded by fieldwalking, and from gradiometer scanning; the relationship between the topsoil magnetic susceptibility map (grey scale) and the distribution of Roman tile fragments, Roman pottery sherds and prehistoric flintwork recorded from fieldwalking, together with their relationship to the large cropmark enclosure are shown on Figs. 12 & 13. Neither gradiometer scanning nor fieldwalking (on 20 m traverses across the whole of the survey area), provided further substantial magnetic 'targets' beyond those indicated by the topsoil magnetic susceptibility map.

2.21 A high voltage power line, running from northwest to southeast, crosses the centre of the west field and southwestern angle of the east field. Although proximity to the power lines themselves caused no problems to magnetometer survey, detailed work could not be undertaken within a 20 m radius of the single pylon present within the centre of the west field.

2.22 The majority of anomalies were recorded in the range -1 to +3 nT. Few negative magnetic anomalies (indicative of material with relatively lower magnetic susceptibility) were recorded. The range of the recorded magnetic anomalies is shown on Fig. 15.

2.23 Selective hand augering was carried out to test the nature and depth of underlying deposits revealed by gradiometer survey; a single test pit was also dug to determine the cause of an obstruction to the auger at the base of the plough soil (see 2.27 below).

AREA 1 (Figs. 5 - 7)

2.24 Both topsoil magnetic susceptibility mapping and gradiometer scanning confirmed that the area of the cropmark polygonal enclosure within the northeast quadrant of the west field contained numerous anomalies mostly representing underlying 'cut' features, which corresponded to areas where concentrations of artefacts (both pottery, roof tile and building debris) of Romano-British date had been recorded from fieldwalking (Figs. 12 - 13 & 18, and see 3.12 below).

2.25 Detailed gradiometry was targeted initially to locate precisely the polygonal enclosure and to examine its interior. Gradiometer survey was subsequently extended (total area of 4.5 ha) to encompass a further area of magnetically enhanced topsoils to the east and southeast, together with the locations of two ring forms also observed as cropmarks from the air.

2.26 The enclosure (an irregular pentagon in shape) measures a maximum of 150 m (from east to west) x 110 m (north to south), covering an area of approximately 1.5 ha. The enclosure ditch, which appears to be c.2 m wide, is represented by a relatively strong magnetic anomaly on the east side of the enclosure; the magnetic image fades considerably towards the west (see 2.32 & 2.33 below). At least one, possibly two, entrances are suggested on the eastern side of the enclosure. The larger, more northerly, is some 6 - 8 m in width and corresponds with a gap visible on the aerial photographs; a second apparent break, 2 m wide, is visible on the gradiometer plot a further 15 m to the south. The general lack of 'cut' features within a zone some 4 - 5 m wide immediately behind the ditch suggests the location of a former bank.

2.27 Hand augering into the ditchfill on the east side, close to the northeast angle (NGR 509978 312405) revealed waterlogged deposits, with organic remains present, at a depth of 1.2 m below the present surface. At a second location nearby the hand auger was obstructed at the base of the ploughsoil; a small test pit (centred on NGR 509977 312407) (0.5 x 0.5 x 0.4 m deep) dug to investigate this obstruction revealed that the top of the ditch infill contained large pieces of stone, tile and other building debris.

2.28 Within the eastern half of the enclosure a series of anomalies indicate a substantial rectilinear building measuring some 30 x 25 m, at the core of which lies an inner element which appears to define a courtyard c.14 m square. The northern edge of the 'courtyard' appears to be curved, mirroring a curved or broad apsidal projection in the northern wing of the building. The majority of the elements are displayed as positive anomalies, although the form and the surface debris indicate a substantial limestone building, suggesting that the majority of the structural elements identified by the gradiometer survive as robbing trenches infilled with material with relatively high magnetic susceptibility. This does not, however, preclude the possibility of the survival of stonework or footings at the base of the robbing trenches. A number of parallel regular anomalies are ranged between the inner and outer walls. Some of them, particularly on the eastern side and again to the north, show strong linear magnetic identities perhaps representing the flues of a hypocaust (underfloor heating) system.

2.29 A pattern of rectilinear features defining a square some 15 m wide is appended to and extends westwards from this concentric square or courtyard arrangement, apparently sharing the same frontage, although there is a slight suggestion from the gradiometer

plot that this western component may project a 5 m further south. The width of the main structure together with this western extension totals almost 40 m. The same building line or frontage may be seen to continue on the east side of the principal complex for a further 30 m towards the easternmost enclosure ditch, although this eastern extension does not appear to have any associated substantial orthogonal structural elements.

2.30 A second linear runs parallel and c.10 m south of this building frontage, defining what may be a thoroughfare; both have a similar magnetic identity and width (c.1 m), showing as positive (intrusive) features, which probably represent robbing trenches. Appended to the southern linear are at least three perpendicular lineations with a possible lateral subdivision, suggesting that at least two cell-like elements measuring some 10 x - 8 m lie facing the main structure. The southern part of the enclosure also contains a number of substantial pit forms up to 3 - 4 m in diameter (although it is thought that some if not all of these pits form part of a more extensive group or alignment which extends east of the enclosure, see 2.42 below).

2.31 Considerable further activity is indicated to both the north and northwest of the principal structure by a series of substantial pit-like anomalies, some of which have a diameter of up to 5 m; further fleeting linears, weak curvilinear anomalies and more disjointed lineations may be elements of less substantial structures.

2.32 The western part of the enclosure (slightly less than half), approximately 60 m wide, is relatively 'quiet' magnetically, displaying a subdued magnetic signal. The reduced strength of the anomalies is most marked in the vicinity of the westernmost broad bank (unknown date) (Bank 1, Figs. 2 & 14). Hand augering at several locations on this side of the enclosure proved inconclusive, producing only clean subsoil-like deposits to a depth of 1.2 m below the present surface, and so the relationship between the bank and the enclosure ditch remains unknown. The reduction in the magnetic signal in this area corresponds broadly with the 10.5 m AOD contour (Fig. 14); anomalies above this contour are significantly weaker. As the difference in height between the present field surface to the east and west of the principal enclosure is approximately 0.5 m (with the westernmost angle higher than the east side of the enclosure), some agricultural truncation might be anticipated over the marginally higher ground, resulting in the loss of the uppermost part of the enclosure ditch.

2.33 In contrast, the eastern side of the enclosure ditch shows as a relatively strong local anomaly, increasing in strength towards the northeast angle. Many of the dispersed cut features visible on the gradiometer plot at this location also show as strong anomalies, with a similar pattern evident in the extreme southeast angle and some 20 - 30 m further south. These stronger anomalies are probably due to the local incorporation of burnt material (with higher magnetic susceptibility) both from sources within the enclosure (proximal to the main building) and from probable burnt features or horizons lying outside the enclosure to the east and south. It is suggested therefore that the stronger magnetic appearance of the enclosure ditch on the east side is due to the incorporation of higher proportions of material with raised magnetic susceptibility, whilst to the west the more diffuse plot reflects the presence of silted fills of relatively low susceptibility, to which may be added the effects of agricultural truncation and the potential for 'masking' by the ploughing down of bank material over the western part of the enclosure.

2.34 No obvious structural elements were recorded within the western half of the enclosure, although several large pits, generally ranging between 1 and 4 m in diameter, can be seen. Insubstantial structural features would be less visible within this weaker magnetic zone, and timber-built structures are unlikely to show at all.

2.35 A regular linear approximately 1 m in width, probably an agricultural drain of relatively recent origin, cuts across the enclosure and through the zone of reduced magnetic activity along the east side of the bank.

2.36 An extremely weak broad (c.3 m wide) linear, probably representing a ditch or linear intrusive feature silted or filled with material of low magnetic susceptibility, is apparent some 15 m west of the main complex associated with the Romano-British building. It appears to be too magnetically weak to have been open and providing a catchment for material associated with occupation activity during the Romano-British phase, although the possibility that it represents an early subdivision of the enclosure or a deliberately infilled ditch cannot be discounted. There is a suggestion that this feature continues northwards beyond the enclosure ditch, where a slightly narrow but similar linear continues for a further 20 m to the edge of the survey area; it cannot be traced south of the enclosure. An equally weak but narrower parallel linear is visible some 50 m west of the enclosure, continuing beyond the survey area to both the southwest and northeast. It is possible that the westernmost (and conceivably also the eastern) linear, may be related to the bank (Bank 1), as they run parallel and on either side.

2.37 A number of angular features are suggested by magnetic anomalies of varying strengths visible immediately beyond the southeastern angle of the enclosure. One pattern indicates a roughly 30 m square enclosure which may have been appended to the east side of the enclosure, perhaps sharing the main enclosure ditch. A further rectilinear element (possibly structural) on a northeast-southwest alignment measuring approximately 12 x 10 m is centred almost 20 m southsoutheast of the southeastern corner of the main enclosure, and is associated with the presence of material having a relatively strong magnetic identity, indicative of burnt deposits. A slightly curving linear extends from this rectilinear feature roughly southeastwards for a distance of at least 35 m. Several substantial pit forms are visible, the largest of which, some 4 - 5 m in diameter, lie immediately adjacent to the west. Locally, further pits and more tenuous lineations are represented by a series of weaker magnetic anomalies.

2.38 The area immediately west and south of the enclosure is relatively 'quiet' magnetically, with the exception of a few pits.

2.39 The location of a 25 m diameter ring form (probably representing a ploughed-down Bronze Age burial mound), first observed as a cropmark from the air, was confirmed lying 100 m east of the southeastern angle of the main enclosure (centred on NGR 510080 312390). The ring is crossed by two linears (former ditches) which intersect just within the ring, to the southwest. A second ring, similar in diameter, which was also visible as a cropmark (Fig. 2) lies approximately 130 m to the southwest (centred on NGR 510005 312272); this ring shows as a much weaker magnetic anomaly.

2.40 A pair of parallel linear anomalies extending eastwards immediately beyond the northeastern angle of the enclosure represent the flanking ditches of a trackway which is also known from aerial photographs (Fig. 2). The ditches (each c.1.5 m wide) are represented locally by relatively strong anomalies spaced 5 - 6 m apart. Although these ditches are known from aerial photographs to continue westwards, no such westerly extension is visible on the gradiometer plot. This effect is probably the result of the incorporation of higher susceptibility material from burnt archaeological deposits in the vicinity of the eastern side of the enclosure whilst no comparable magnetic enhancement has occurred on the west side (see 2.32 above).

2.41 A continuous curvilinear ditch extends southwards from a point 20 m east of the northeast angle of the enclosure, apparently branching from, or perhaps a modification to the southernmost trackway ditch. This feature continues southwards for a distance

of some 50 m before turning southeast at a position approximately opposite the main enclosure entrance, and continuing for a further 100 m, leaving the eastern edge of the survey area at the margin of the modern drain cut. Lying within this broad curve, and some 50 m east of the main enclosure, is a series of grouped anomalies, probably pits or burnt structural elements, on an east-west axis, occupying a rectilinear area measuring some 20 x 10 m. Examination of the stacked trace plot (Fig. 6) shows that some of them display 'double-peaked' anomalies, characteristic of *in situ* burning (perhaps localised industrial activity). Similar possible burnt features are also suggested to the north, between this location and the ditched trackway.

2.42 A number of magnetic anomalies within in this area represent large round pits 3 - 4 m in diameter; these include three or four whose alignment may be continued by a line of similar large pits identified within the southern part of the enclosure (see 2.30 above). A number of further linear and curvilinear features have also been identified, generally to the east and southeast of the enclosure. These appear to be, for the most part, weaker former agricultural ditches. Whilst some may be of recent date, the alignment of the majority argues for an earlier origin.

2.43 The gradiometer plot is crossed by numerous parallel agricultural striations. The precise negative anomaly visible as a sharp linear running from northwest to southeast across the centre of the plot is a magnetic signal generated by a furrow marking the northerly extent of fresh ploughing up to the location of an onion crop which had been present immediately prior to the survey (the precise crop boundary is shown on Fig. 18).

2.44 There is a light litter of ferrous material generally present over the majority of the survey area.

2.45 Two broad diffuse anomalies are shown on the gradiometer plot: the first (up to 25 m wide) extends some 50 m into the survey area immediately south of the southwest angle of the enclosure, whilst the second (30 x 10 m) extends northeast from the northeastern angle of the enclosure; such anomalies commonly represent naturally silted hollows.

2.46 The broad positive anomaly intruding into the extreme southern edge of the survey area close to the southwestern corner is the result of magnetic effects from the electricity pylon standing some 20 m to the south.

AREA 2 (Figs. 8, 9 & 10)

2.47 This gradiometer survey area, measuring 60 x 30 m (0.18 ha), was sited to investigate the pattern of enhanced topsoils close to the southern edge of the east field.

2.48 A number of magnetic anomalies were recorded which on first impression appear to be caused by the presence of pit-like features, although examination of the stacked trace plot (Fig. 9) tends to suggest that these anomalies may be due to pockets of iron-rich material, probably of natural origin.

2.49 Hand augering proved inconclusive at this location, as the auger was generally obstructed by hard gravel deposits with iron concretions just beneath the base of the ploughsoil. No evidence for charcoal, or any other material of clearly archaeological origin was recovered.

2.50 A semi-circular feature represented by a curving anomaly of 1 - 2 m width may be a 'cut' feature.

AREA 3 (Figs. 8, 9 & 10)

2.51 Two gradiometer survey areas, one measuring 90 x 30 m and the other an outlying 30 m square (totalling 0.36 ha) were sited over an extremely strong pattern of magnetically enhanced topsoils and gradiometer scanning anomalies alongside the extreme eastern boundary of the east field.

2.52 The strength and pattern of magnetic anomalies revealed by the grey shade plot (Fig. 8) gives the impression of a number of pits or burnt features. As in Area 2, hand augering at a number of locations failed to confirm the presence of any anthropogenic material (charcoal was noticeably absent), and again the auger was generally obstructed at a depth of 40 - 50 cm by extremely hard and compacted gravels with iron pan; lumps of iron-concreted gravel were visible on the surface.

2.53 Some subtle lineations were recorded, some of which may represent former field boundaries.

3. FIELDWALKING (R. J. Armour-Chelu)

METHOD

3.1 A geodimeter 640 total station 1' machine was used to establish a baseline tied into the National Grid and related to the road nails used during the original survey of the site prepared for Ennemix Construction Materials Ltd. This was used as the base for all aspects of the project.

FIELDWALKING SURVEY

3.2 Fieldwalking is normally carried out on land which has been recently ploughed or sown, to retrieve artefacts such as worked flint or pottery whose spatial distribution can indicate zones of former occupation.

3.3 The two fields were walked in transects 20m apart (giving a 5% coverage of the land) and finds individually recorded using a geodimeter 640 total station 1' machine and geodimeter super prisms, providing a two-dimensional co-ordinate for each find.

3.4 Contact between the fieldwalkers (referred to as Officers 1 to 4) and the surveyors was maintained using two-way radios. Each fieldwalker carried their own prism and reported directly to the surveyor when recording of a find was required. Pre-numbered bags were used to ensure that there was no duplication in the field. A total of 1040 items was recorded.

3.5 As stated in OAA 1997a (Section 3.8) post-medieval material was noted but not intentionally picked up. In addition, animal bones were not retrieved because bone found on the ground surface cannot be assigned to a specific archaeological period.

Concentrations of roof tile and other building materials were recorded using the geodimeter 1' total station and plotted together with the finds.

3.6 Draft printouts of finds distribution were made available each morning to allow consideration of the data together with the results of the magnetic susceptibility and scanning surveys, in readiness for selective magnetometer (gradiometer) survey.

3.7 Conditions for finds retrieval were not ideal as much of the walked area had yet to be harrowed and one area in the north of the west field was still under crop (Figs. 17 & 18). Visibility can be affected by bright sunshine although the amounts of artefacts recovered suggest this not to have been the case (Table 1). Easily identifiable post-medieval ceramics, animal bone and the remains of modern land drains were noted but not picked up in accordance with OAA 1997a (Section 3.8). However, due to the abraded nature of much of the pottery and tile a small quantity of this material was collected.

RESULTS

3.8 A total of 1040 finds was recovered, 11 of which were discarded. The majority of the artefacts were tile totalling 710 pieces, 401 of which were of Roman date (Appendix 3). The majority of the remainder (295 pieces) were too small or too abraded to date. 5 pieces were of the medieval period with a further 9 of post-medieval and modern date.

3.9 In addition, 267 sherds of pottery were collected. Of these, 135 pieces were of Roman date, the majority of which dated to the mid 3rd to 4th centuries (Appendix 3). A further 72 sherds were of medieval or late medieval date with 35 pieces dated to the 17-20th centuries. 27 sherds proved to be too small or too abraded to date accurately. 11 fragments of brick were collected, all of which were of post-Roman date. A small quantity of other materials including glass, burnt stone, metal, plaster and mortar was also recovered. Although Officer 3 collected a significantly greater amount of finds, this reflected the density of material within the transects and does not suggest that recovery rates were affected by any differences in identification ability between Officers.

Officer	Artefacts
1	249
2	201
3	341
4	250
Total	1041

Table 1 : Artefact Retrieval

3.10 Only the fired clay finds were weighed and recorded, producing a total weight of 32.025kg (Table 2). 43% of the finds weighed 10g or less. Three fragments of mortar (85g) and one of plaster (5g) were also of probable Roman date.

3.11 The ploughsoil in the east field consisted of an orange-brown sandy silt loam containing frequent flint gravels often concentrated in strips relating to recent ploughing. Relatively few finds were recovered from this field, the majority being small pieces of abraded tile and occasional burnt stone. No concentrations of materials were noted and no significant spatial patterning was evident from the artefacts collected (Fig. 17).

Type	Finds	Weight/g	g/find
Roman pottery	135	1817	13.459
Post-Roman pottery	105	1102	10.495
Undated pottery	27	66	2.444
Total pottery	**267**	**2985**	
Roman tile	401	23943	59.708
Post-Roman brick/tile	25	2006	80.24
Undated tile	295	3091	10.478
Total brick/tile	**721**	**29040**	
Flint	19		
metal	12		
mortar/plaster	4		
slag	1		
glass	6		
misc	10		
Total	**52**		

Table 2 : Fieldwalking Finds

3.12 The ploughsoil in the west field had a similar nature to that described above (Fig. 16 b) with a significant darkening evident to the east of centre, spreading southeast and associated with major concentrations of both tile and limestone rubble. The incidence of domestic pottery also increased in this general area, particularly evident in the area yet to be ploughed at the north end of the field. Although this area was still under its crop of onions at the time of the survey, the ground surface had been subject to several months of weathering increasing visibility between the rows (Fig. 16 a).

3.13 Spreads of limestone rubble were noted on the surface of the west field, particularly densely concentrated in the area within and around the enclosure suggested by cropmark evidence and subsequent geophysical survey. As limestone is not a naturally occurring rock locally, it was thought that this material may relate to former buildings in the vicinity. The major concentrations of this material were recorded on two dimensional plots, noted as primary or secondary spreads dependent upon their density. Associated with the limestone were smaller spreads of mortar, the most substantial of which was also plotted. These plots appear in Fig. 18. A small percentage of the mortar was collected during fieldwalking (see above), with a further sample gathered and returned to LAS by members of the geophysical survey team.

3.14 Subsequent to the completion of the fieldwalking survey, the crop of onions was lifted to enable magnetometer survey to be undertaken. Quantities of limestone *tesserae* (at least 50) and fragments of mortar were noted by the geophysical survey team within the former onion plot, dispersed generally within the eastern side of the mortar spread defined by fieldwalking (centred on NGR 509945 312440) (Fig. 18). Three examples were returned to LAS for processing. All three had dimensions within a 3 x 3 x 3cm range and exhibited one obviously worn surface with traces of mortar adhering to the sides.

DISCUSSION

3.15 The greatest density of Roman finds was recorded in the northeast quadrant of the west field, mostly from the area around, and within, the large enclosure (Figs. 12, 13, 17 & 18).

3.16 Concentrations of roof tile, combed flue tile (indicative of hypocaust heating systems), limestone and mortar, combined with an increase in the incidence of domestic pottery, suggests the presence in this vicinity of a building or buildings of potentially high status, datable to the mid-3rd to 4th centuries. One find of painted wall plaster and the subsequent noting and collection of limestone *tesserae* and mortar would appear to confirm this interpretation.

3.17 The main concentrations of Roman pottery finds and spreads of building materials were also contained within the area defined by two of the north-south aligned banks, remnants of which were visible in the west field.

3.18 Post-Roman pottery and tile collected during the survey exhibited no significant spatial patterning (Fig. 17). No material of Anglo-Saxon date was recovered, the earliest post-Roman pottery being 4 sherds of Stamford ware dating to the late 11th - 12th century. The majority of medieval material in the assemblage was of 13th to 15th century date with very little 16th - 17th century material. The low number of sherds dating to the 17 - 20th century is not a true reflection of the actual proportion of late material on the site since obviously modern material was not picked up. The presence of all this material is most likely the result of manuring of the fields, rather than an indication of habitation, especially given the position of the survey area on the periphery of the parish. The apparent break in date for the pottery finds may reflect a change in land use from the 15th to 17th centuries with the area perhaps being turned over to pasture or left uncultivated.

3.19 Only a tiny amount of lithic material was collected during the survey (Appendix 2), the majority of which was burnt and hence undiagnostic, despite the presence of potentially prehistoric features in the survey area, most notably two probable Bronze Age ring ditches on the eastern perimeter of the west field. It should be noted, however, that pottery of this period is generally fragile and poorly preserved, making its survival on the surface for any significant period of time unlikely.

4. CLEANING OF MODERN DITCH SIDES (R.J. Armour-Chelu)

4.1 At several points over the surveyed area, archaeological features identified as cropmarks on aerial photographs were cut through by ditches acting as field boundaries to the north of, and between the two fields surveyed. The ditch edges were cleaned at these points in order to ascertain the depth and nature of these features.

RESULTS

4.2 Investigation of the three northeast - southwest aligned banks in the east field (Fig. 14) proved impossible as the northern field boundary east of the centre of the field had no ditch running along it. In the west field, the point of intersection of the central bank and the east-west field ditch was overgrown with brambles and a blackthorn hedge making hand-cleaning of the ditch edge unfeasible.

4.3 At three points in the east field, the northern field boundary intersected linear cropmarks which appear to represent elements of a former field system. At all three of these points of intersection, the boundary was marked by a hawthorn hedge, the lack of a ditch making further non-intrusive investigation impossible.

4.4 The intersection of the bank running between the two fields and the northern field boundary was again inaccessible to the north although it is likely that a remnant of it is reflected in the depths of topsoil and subsoil recorded during investigation of ditch **1103**, cut by the existing N-S field boundary and discussed further below.

4.5 In the northwest corner of the west field a series of parallel 'S'-form cropmarks, probably the remains of ploughed-out medieval ridge and furrow agriculture were cut by the northern field ditch. This end of the modern ditch was inundated with

brambles, occasional hawthorn and sapling elder and further investigation had, therefore, to be abandoned.

4.6 A double linear cropmark running north-east from the large enclosure in the west field and cut by the modern field ditch was located and found also to be too overgrown with blackthorn and brambles to allow any further investigation (Fig. 16 c).

4.7 A probable Bronze Age ring ditch identified as a cropmark c.87 m south of the northeast corner of the west field was originally thought to be cut by the modern north - south ditch. Before the ditch sides around the suggested interface between ring ditch and modern feature were cleaned, localised magnetometer survey of the area was carried out. The results of this survey indicated the ring ditch to be intact, lying c.2m west of the field boundary. In the light of this evidence, no further investigation was carried out at this stage.

4.8 One east - west aligned linear cropmark, **1103**, bisected by the modern north - south ditch separating the two fields was located by geophysical survey and investigated. The west side of the modern field boundary was cleared of foliage and topsoil revealing the cross section of a shallow ditch. It was 0.95 m wide and 0.45 m deep with a broadly 'u'-shaped profile (Figs. 16 d & e). The primary fill of this feature, **1106**, was a 0.16 m deep layer of redeposited natural sand and gravel overlying which was a fine yellowish grey silt, c.0.11 m deep (**1105**). The upper fill of this ditch, **1104**, was a yellowish grey sandy silt containing occasional natural flint gravels. No finds were recovered from any of the fills of this ditch which was sealed under 0.42 m of topsoil (**1100**) and 0.28 m of subsoil (**1101**) (Appendix 4). The unusually deep nature of the topsoil at this point is likely to be a remnant of the northeast - southwest aligned bank, one of four visible within the survey area.

5. TOPOGRAPHIC SURVEY OF RESIDUAL EARTHWORKS (A.E. Johnson)

5.1 Several residual earthworks have been noted within the survey area (Herbert 1996, OAA 1997b) comprising four low banks running roughly parallel and almost equidistant on a generally northeast-southwest alignment, together with a marked rise within the northeastern quadrant of the west field in the vicinity of the cropmark enclosure; a fifth bank adjacent to the modern King Street and possibly representing part of the *agger* (embankment) of the Roman road (Bank 5 on Fig. 2) lies within the plantation outside the survey area.

5.2 Using topographic survey data supplied by Ennemix/Secor (28-01-97) as a base, additional data points across the residual earthworks were recorded by Oxford Archaeotechnics in conjunction with MSE, using a geodimeter 640 total station 1' machine. The resultant data set has been processed by Oxford Archaeotechnics to provide a more detailed contour map of the earthworks; this information has been superimposed upon the topsoil magnetic susceptibility map (Fig. 14), displaying soil magnetic values at 10 SI intervals and topographic heights at 5 cm intervals (the relationship between these data sets is discussed in 2.17 above).

5.3 The profile (a - b, Fig. 14) shows the survey area divided into five broad (c.200 m wide) strips by the four low banks, each strip lying successively c.0.25 - 0.5 m higher than its neighbour to the east:

- Bank 1 c.30 m wide, runs almost centrally across the west field. The crest lies at 10.75 m AOD, and there is a drop of some 0.25 m on the east side.
- Bank 2 incorporates the present (water-filled ditch) boundary between the west and east fields. The crest lies at 10.65 m AOD. The profile of the bank is relatively steep on the east side, with a drop of 0.5 m; the maximum width (spread across existing boundary) is c.50 m;

- Bank 3 curves north and northeastwards approximately one third of the way (east) across the east field. The crest of the bank, which is slighter than its western neighbour (only averaging 0.2 m in height), approaches 10.25 m AOD at the extreme southern end, the width varies between 20 and 25 m;
- Bank 4 lies approximately two thirds of the way across the east field. The bank is similar both in width (c.20 m) and height (0.2 - 0.25 cm) to its neighbour. The crest (south side) lies at 9.75 m AOD.

5.4 A roughly circular topographic rise measuring almost 70 m in diameter lies within the area of the cropmark enclosure containing Romano-British building material in the northeast quadrant of the west field. The ground at this point rises 0.5 m from 10.5 m AOD on the edge of the enclosure to just over 11.25 m at its highest point in the centre.

5.5 No further residual earthworks were recorded within the survey area.

6. CONCLUSIONS

6.1 Topsoil magnetic susceptibility mapping and fieldwalking have identified a strong focus of activity associated with a previously recorded cropmark enclosure within the northeast quadrant of the west field. Gradiometer survey confirmed the precise location of the polygonal (irregular pentagon) ditched enclosure and identified within it, situated upon a slight topographic rise, the probable robbing trenches of a substantial rectilinear building or complex of buildings containing at least one large courtyard structure which, on the basis of evidence of artefacts recovered from fieldwalking, is attributed to the later Romano-British period (mid 3rd - 4th centuries AD). The surface finds indicate that the principal building was of stone (or part-stone) construction under a tiled roof with wall plaster, concrete floors, at least some of which were tessellated (with limestone mosaic cubes), and heated by means of an underfloor hypocaust system. The enclosure may be contemporary with the internal building(s), but could represent a modification of an earlier ditch system.

6.2 As the hand auger was consistently obstructed by compacted material at the base of the ploughsoil, it is suggested that the raised ground surface within the enclosure is the result of a build-up of buried material and underlying structural remains; the presence of a mass of building debris in the upper fill of the eastern enclosure ditch was confirmed by a single test pit. Hand augering into the ditchfill itself has demonstrated waterlogged deposits with organic material surviving at a depth of 1.2 m beneath the present ground surface.

6.3 A considerable amount of further activity associated with the building has been identified within the eastern half of the enclosure, including numerous pits of various

sizes, further structural elements, and a possible road or thoroughfare; by contrast, the western half of the enclosure is relatively 'quiet magnetically.

6.4 Extra mural features include a ditched trackway, enclosures, pits, possible structures, and what may be burnt features, some perhaps indicative of industrial activity.

6.5 The majority of the magnetic anomalies, surface artefacts and dispersal of magnetically enhanced topsoils were confined between a pair of low banks (the more easterly of which carries the modern field boundary); most of the cropmarks relating to the scheduled ancient monument situated immediately south of the survey area are also 'contained' within these two banks. The function and relationship of these and two similar banks within the east field, which were recorded by topographic survey, remain uncertain, as there was no opportunity to investigate them in cross-section at their intersection with the modern farm ditches, the latter being too overgrown.

6.6 Gradiometer survey also confirmed the position of a probable prehistoric ring ditch (25 m diameter) already known from air photographs, and has suggested the location of a second (also visible as a cropmark); both lie close to the eastern boundary of the west field. A row of large pits visible within the southern part of the enclosure and extending eastwards beyond it may also represent a different phase of activity on the site, as it bears no obvious relationship to the main enclosure.

6.7 The surface artefacts comprised predominantly Roman pottery, tile and building debris, with only a small amount (6 pieces) of prehistoric work flint, including a late Neolithic arrowhead; no prehistoric pottery sherds were recognised, although prehistoric fabrics tend to be too friable to survive as surface finds.

6.8 The majority of archaeological activity appears to be confined within the northeast quadrant of the west field, with little evidence extending into the east field. No concentrations of artefacts were recovered from fieldwalking here, and gradiometer survey over two areas of enhanced topsoils, one extending in a band alongside the eastern boundary of the survey area and the other comprising a small focus on the southeastern boundary appear to be the result of concentrations of iron-rich deposits associated with the particularly strong local iron pan (OAA 1997b), although the possibility of some further activity at these locations cannot be entirely discounted.

6.9 There is a slight suggestion of a correspondence between a series of extensive rectilinear cropmarks and what may be a residual patterning of topsoil magnetic susceptibility reflecting earlier landscape organisation visible within the east field.

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APPENDIX 1 MAGNETIC TECHNIQUES: GENERAL PRINCIPLES

A1.1 It is possible to define areas of human activity (particularly soils spread from occupation sites and the fills of cut features such as pits or ditches) by means of *magnetic survey* (Clark 1990; Scollar et al. 1990). The results will vary, according to the local geology and soils (Thompson & Oldfield 1986; Gale & Hoare 1991), as modified by past and present agricultural practices. Under favourable conditions, areas of suspected archaeological activity can be accurately located and targeted for further investigative work (if required) without the necessity for extensive random exploratory trenching. Magnetic survey has the added advantages of enabling large areas to be assessed relatively quickly, and is non-destructive.

A1.2 Topsoil is normally more magnetic than the subsoil or bedrock from which it is derived. Human activity further locally enhances the magnetic properties of soils, and amplifies the contrast with the geological background. The main enhancement effect is the increase of *magnetic susceptibility*, by fire and, to a lesser extent, by the bacterial activity associated with rubbish decomposition; the introduction of materials such as fired clay and ceramics - and, of course, iron and many industrial residues - may also be important in some cases. Other agencies include the addition and redistribution of naturally magnetic rock such as basalt or ironstone, either locally derived or imported.

A1.3 The tendency of most human activity is to increase soil magnetic susceptibility locally. In some cases, however, features such as traces of former mounds or banks, or imported soil/subsoil or non-magnetic bedrock (such as most limestones), will show as zones of lower susceptibility in comparison with the surrounding topsoil.

A1.4 Archaeologically magnetically enhanced soils are therefore a response of the parent geological material to a series of events which make up the total domestic, agricultural

and industrial history of a site, usually over a prolonged period. Climatic factors may subsequently further modify the susceptibility of soils but, in the absence of strong chemical alteration (e.g. during the process of podzolisation or extreme reduction), magnetic characteristics may persist over millions of years.

A1.5 Both the magnetic contrast between archaeological features and the subsoil into which they are dug, and the magnetic susceptibility of topsoil spreads associated with occupation horizons, can be measured in the field.

A1.6 There are several highly sensitive instruments available which can be used to measure these magnetic variations. Some are capable, under favourable conditions, of producing extraordinarily detailed plots of subsurface features. The detection of these features is usually by means of a *magnetometer* (normally a fluxgate gradiometer). These are defined as passive instruments which respond to the magnetic anomalies produced by buried features in the presence of the Earth's magnetic field. The gradiometer uses two sensors mounted vertically, often 50 cm apart. The bottom sensor is carried some 30 cm above the ground, and registers local magnetic anomalies with respect to the top sensor. As both sensors are affected equally by gross magnetic effects these are cancelled out. In order to produce good results, the magnetic susceptibility contrast between features and their surroundings must be reasonably high, thereby creating good local anomalies; a generally raised background, even if due to human occupation within a settlement context, will sometimes preclude meaningful magnetometer results. The sensitive nature of magnetometers makes them suitable for detailed work, logging measurements at a closely spaced (less than 1 metre) sample interval, particularly in areas where an archaeological site is already suspected. Magnetometers may also be used for rapid 'prospecting' ('scanning') of larger areas (where the operator directly monitors the changing magnetic field and pinpoints specific anomalies).

A1.7 *Magnetic susceptibility measuring systems*, whilst responding to basically the same magnetic component in the soil, are 'active' instruments which subject the sample area being measured (according to the size of the sensor used) to a low intensity alternating magnetic field. Magnetically susceptible material within the influence of this field can be measured by means of changes which are induced in oscillator frequency. For general work, measuring topsoil susceptibility *in situ*, a sensor loop of around 20 cm diameter is convenient, and responds to the concentration of magnetic (especially ferrimagnetic) minerals mostly in the top 10 cm of the soil. Magnetically enhanced horizons which have been reached by the plough, and even those from which material has been transported by soil biological activity, can thus be recognised.

A1.8 Whilst only rarely encountering anomalies as graphically defined as those detected by magnetometers, magnetic susceptibility systems are ideal for detecting magnetic spreads and thin archaeological horizons not seen by magnetometers. Using a 10 m interval grid, large areas of landscape can be covered relatively quickly. The resulting plot can frequently determine the general pattern of activity and define the nuclei of any occupation or industrial areas. As the intervals between susceptibility readings generally exceed the parameters of most individual archaeological features (but not of the general spread of enhancement around features), the resulting plots should be used as a guide to areas of archaeological potential and to suggest the general form of major activity areas; further refinement is possible using a finer mesh grid or, more usually, by detailing underlying features using a gradiometer.

A1.9 Magnetic survey is not successful on all geological and pedological substrates. As a rule of thumb, in the lowland zone of Britain, the more sandy/stony a deposit, the less magnetic material is likely to be present, so that a greater magnetic contrast in soil materials will be needed to locate archaeological features; in practice, this means that only stronger magnetic anomalies (e.g. larger accumulations of burnt material) will be

visible, with weaker signals (e.g. from the fillings of simple agricultural ditches) disappearing into the background. Similar problems can arise when the natural background itself is very high or very variable (e.g. in the presence of sediments partially derived from magnetic volcanic rocks).

A1.10 The precise physical and chemical processes of changing soil magnetism are extremely complex and subject to innumerable variations. In general terms, however, there is no doubt that magnetic enhancement of soils by human activity provides valuable archaeological information.

A1.11 As well as locating specific sites, topsoil magnetic susceptibility survey frequently provides information relating to former landuse. Variations in the soils and subsoils, both natural and those enhanced by anthropogenic agencies, when modified by agriculture, give rise to distinctive patterns of topsoil susceptibility. The containment of these spreads by either natural or man-made features (streams, hedgerows, etc.) gives rise to a characteristic chequerboard or strip pattern of varying enhancement, often showing the location of former field systems, which persist even after the physical barriers have been removed. These patterns are often further amplified in fields containing underlying archaeological features within reach of the plough. More subtle landuse boundaries and indications of former cultivation regimes are often suggested by topsoil magnetic susceptibility plots.

A1.12 Where a general spread of magnetically enhanced soils contained within a long-established boundary becomes admixed over a long period by constant ploughing, it can be diffused to such a point that the original source is masked altogether. Magnetically enhanced material may also be moved or masked by natural agencies such as colluviation or alluviation. Generally, it appears that the longer a parcel of land has been under arable cultivation, the greater is the tendency for topsoil susceptibility to increase; at the same time there is increasing homogeneity of the magnetic signal within the soils owing to continuous agricultural mixing of the material. Some patterns of soil enhancement derived from underlying archaeological features are, however, apparently capable of resisting agricultural dispersal for thousands of years (Clark 1990).

APPENDIX 2 LITHIC MATERIAL ASSESSMENT by Robert Middleton

A2.1 This report concerns a brief assessment of 19 flints (237.0g) recovered during fieldwalking.

Typology

A2.2 The typology of the assemblage was as follows:

Type	No
Unretouched flake	3
Preparation flake	1
End scraper	1
?Transverse arrowhead	1
Burnt Natural	13

Description

A2.3 A large proportion of the assemblage comprised burnt pebbles and chips of flint. The degree of burning on these pieces was variable, although all exhibited some degree of surface alteration. All of these were unworked and will not be considered further in this report.

A2.4 All of the worked material (a total of 6 pieces) had variable degrees of edge abrasion and damage, particularly on thin and fragile margins. Despite these slight variations, the condition of the assemblage as a whole was consistent with a ploughsoil origin for the finds. The absence of fresh artefacts suggests that the sub-soil features are not actively being disturbed from primary contexts.

A2.5 Most of the assemblage had no patina, although two pieces had a small amount of light grey surface fogging.

A2.6 Most of the artefacts were made from pebble flint which was predominantly black in colour with small numbers of dark grey pieces. The flint was of good quality and was fine-grained. On some pieces a light brown abraded cortex remained which may suggest a river gravels origin for the raw material. There is little to suggest that this came from anything other than a local source. The variation in flint quality came within the natural range for such a source.

A2.7 The assemblage was too small for a detailed examination of the lithic technology employed. However, most of the pieces suggest that they were worked using a relatively crude technology, most flakes having been detached with hard hammers exhibiting hertzian cones of percussion. Little care was shown in the detachment of flakes by the preparation of either flake beds or striking platforms.

A2.8 The typology of such a small assemblage is relatively meaningless. There is little, however, to suggest that the material is not all contemporary with the single dateable piece, the late Neolithic transverse arrowhead.

APPENDIX 3 ROMAN POTTERY AND TILE REPORT by Margaret J. Darling, M.Phil., F.S.A., M.I.F.A.

Quantity

A3.1 Find numbers totalled 1040. Only the clay fired finds were weighed and recorded, producing a total weight of 32.025kg. 43% of the finds weighed 10g or less.

POTTERY

Fabrics

Fabric	Code	No.	grams	% no.	% wt.
Colour-coat	CC	1	3	0.74	0.16
Cream	CR	1	2	0.74	0.11
Grey fine	GFIN	1	2	0.74	0.11
Grey	GREY	27	263	20	14.47
Mortaria Nene Valley	MONV	1	21	0.74	1.16
Nene Valley Colour-coat	NVCC	28	463	20.74	25.48
Nene Valley Grey ware	NVGW	14	157	10.37	8.64
Oxidised	OX	10	128	7.41	7.04
Samian Central Gaul	SAMCG	1	18	0.74	0.99
Shell-gritted	SHEL	51	760	37.78	41.84
Total		**135**	**1817**	**100**	**100**

Table 1 : Roman pottery, fabrics

A3.2 The percentage of colour-coated sherds is relatively high, but is not directly comparable to finds from an excavation since the sherds, more visible during fieldwalking, are likely to be over-represented. Most of the post-Roman sherds were in oxidised fabrics, and it is possible that some abraded sherds have been mis-identified as Roman; once the glaze has been lost, the remaining fabrics are indistinguishable macroscopically. Sherds from a Roman oxidised lid and possibly a beaker occurred, the rest being bodysherds of indeterminate form, mostly from closed vessel forms.

A3.3 In view of the location, it is not surprising that much of the pottery derived from kilns in the Nene Valley, specifically NVCC, NVGW, MONV and probably some of the shell-gritted finds. One colour-coated fragment could not be positively identified for source, and the single cream sherd is probably from the Nene Valley. The only sherd positively from outside the area is the single sherd of samian, a footring from a decorated Central Gaulish bowl of Dr37 type; this cannot be more closely dated than as mid to late 2nd century.

Vessel types

A3.4 There was hardly any evidence for form in the GREY sherds, probably jars or bowls. The NVCC included late open forms, bead-and-flange bowls and plain-rimmed dishes, alongside copies of samian bowls or dishes, as Dr36 and possible Dr38. the beakers included a cornice rim type, a funnel-necked type with a beaded rim, and a fragment from a later type. Other sherds were likely to have come from jars or bowls. Few of the NVGW could be identified for form, although a grooved-rim dish and a jug occurred. Most were from closed forms, many probably the typical wide-mouthed jar. The SHEL, shell-gritted, sherds were all from jars where form could be identified, with the occasional sherd from a rilled shoulder, typical of production in the area. One rim was from a large storage jar. There were no open forms or positive identifications of South Midlands shell-gritted vessels.

Dating

A3.5 The earliest date for the activity producing these finds would probably be mid 2nd century. The samian Dr37 footring belongs to the mainstream Lezoux production. The colour-coated vessels appear to have a relatively restricted chronological range, and could all fit within the mid 3rd to 4th century, and a similar date would apply to the

NVGW jug. The shell-gritted sherds change little over a long period, and none of the finds refine the broad dating. The absence of any definite south Midlands jars may indicate a cessation before the later part of the 4th century. This is, however, tenuous evidence since the absence of usable data from the area (as from major sites like West Deeping) makes it impossible to assess the interaction between the long-lived local shell-gritted production and the expanding South Midlands kilns (mostly in Bedfordshire, at Harold and probably other sites).

A3.6 In summary, the outside limits for activity appear to be mid 2nd to 4th century; the emphasis of the pottery finds is mid 3rd to perhaps mid 4th century.

TILE

A3.7 The paucity of definite post-Roman tile and the nature of most of the fragments unidentified for type suggest that almost all the tile was of Roman date, most of the fragments probably being from *tegulae* roofing tiles. The tile divided on the basis of the manufacture between normal quartz clay tiles and those gritted with shell, the shell accounting for 10.7% on fragment count, and 17% on weight.

A3.8 The normal tile fragments included *tegulae* (195, 14948g), *imbrices* (95, 4787g), miscellaneous roof fragments (41, 1612g), flue tiles (3, 458g), and two fragments from bonding and/or *pila* tiles. Given that most of the undated fragments are probably from *tegulae*, the ratio of *tegula* to *imbrex* is probably about right, although there is little recorded data to substantiate this. It should be noted that *tegulae* are frequently used, particularly in the later Roman period, as substitutes for bonding tiles, so the ratio of roofing tiles is important. There were a number of fragments, seemingly all from *tegulae*, with particles of chalk imbedded on the surface, this would be consistent with local manufacture.

A3.9 Of the identifiable shell-gritted fragments, nearly all were from combed flue tiles, associated with hypocaust heating systems, although there were two which appeared to be from *tegulae* roof tiles. Since not all faces of the flue tiles were combed, most of the fragments unidentified for type (295, 3091g) are likely to be from flue rather than roof tiles.

A3.10 The bulk of finds therefore derive from roofs, but the presence of flue tiles in both fabrics, accounting for over 7% of the finds (on weight), indicate a building/s with provision for heating, whether as normal domestic heating or for a bath-suite.

A3.11 The presence of shell-gritted tiles may provide additional evidence for dating. These are likely to have been brought to site, perhaps from Harrold, Bedfordshire, where manufacture of shell-gritted tiles starts in the 2nd century. Roller-stamped flue tiles are known from there of late 2nd century date (Betts *et al.*, 1997, 22). As with the rilled jars made at the same kiln field, large-scale distribution of tiles beyond the immediate area is likely to be later, and probably more late 3rd century than earlier. Shell-gritted tiles from Lincoln have only been found in late Roman deposits, and the evidence from the large West Deeping site, if available, could have a major bearing on this site. The site evidence for the roller-stamped tiles from Harrold is sparse and inconclusive, but suggests a late 3rd to 4th century date (Betts *et al.*, 1997, dies 64 and 123, 149). This fieldwalked site would probably fit with the same distribution phases finds from Northamptonshire sites. The villa site at Piddington, currently being excavated, has quantities of both roof and flue tiles, which appear to arrive there in the mid, or more probably the late 3rd century, continuing into the 4th (pers. comm. R. Friendship-Taylor). Such dating for the tiles would be consistent with the evidence from the pottery, discussed above.

APPENDIX 4 CONTEXT SUMMARY by R.J. Armour-Chelu

Context	Type	Part of	Form	Description
1100	L		Layer	Topsoil
1101	L		Layer	Subsoil
1102	L		Layer	Natural Sand and Gravel
1103	C	1103	Ditch	Ditch, Contains 1104, 1105, 1106
1104	F	1103	Ditch	Silty Upper Fill
1105	F	1103	Ditch	Below 1104, Above 1106
1106	F	1103	Ditch	Primary Fill, below 1105

FIGURE CAPTIONS

Figure 1. Location maps. Scale 1:50,000 and 1:10,000. Based upon OS 1:50,000 Map 130, and OS 1:10,000 Sheets TF 01 SE & TF 11 SW.

Figure 2. Sketch plot showing the aerial photographic and map evidence (after OAA 1997 b). Based upon OS Superplan data, 1997. Scale 1:5000.

Figure 3. Location of gradiometer survey grids. Based upon OS Superplan data, 1997. Scale 1:5000.

Figure 4. Topsoil magnetic susceptibility survey: colour contour plot. Scale 1:5000.

Figure 5. Magnetometer (gradiometer) survey. Area 1: grey shade plot (Geoscan Research Geoplot Licence No. GPB 885-6). Scale 1:1000.

Figure 6. Magnetometer (gradiometer) survey. Area 1: stacked trace plot (raw data) (Geoscan Research Geoplot Licence No. GPB 885-6). Scale 1:1000.

Figure 7. Magnetometer (gradiometer) survey. Area 1: interpretation (Geoscan Research Geoplot Licence No. GPB 885-6). Scale 1:2000.

Figure 8. Magnetometer (gradiometer) survey. Areas 2 & 3: grey shade plots (Geoscan Research Geoplot Licence No. GPB 885-6). Scale 1:1000.

Figure 9. Magnetometer (gradiometer) survey. Areas 2 & 3: stacked trace plots (raw data) (Geoscan Research Geoplot Licence No. GPB 885-6). Scale 1:1000.

Figure 10. Magnetometer (gradiometer) survey. Areas 2 & 3: interpretation (Geoscan Research Geoplot Licence No. GPB 885-6). Scale 1:1000.

Figure 11. Magnetometer (gradiometer) survey: overview. Based upon OS Superplan data, 1997. Scale 1:5000.

Figure 12. Relationship between topsoil magnetic susceptibility and the distribution of surface finds: Roman tile. Scale 1:5000

Figure 13. Relationship between topsoil magnetic susceptibility and the distribution of surface finds: Roman pottery. Scale 1:5000

Figure 14. Topographic survey of residual earthworks. Scale 1:5000.

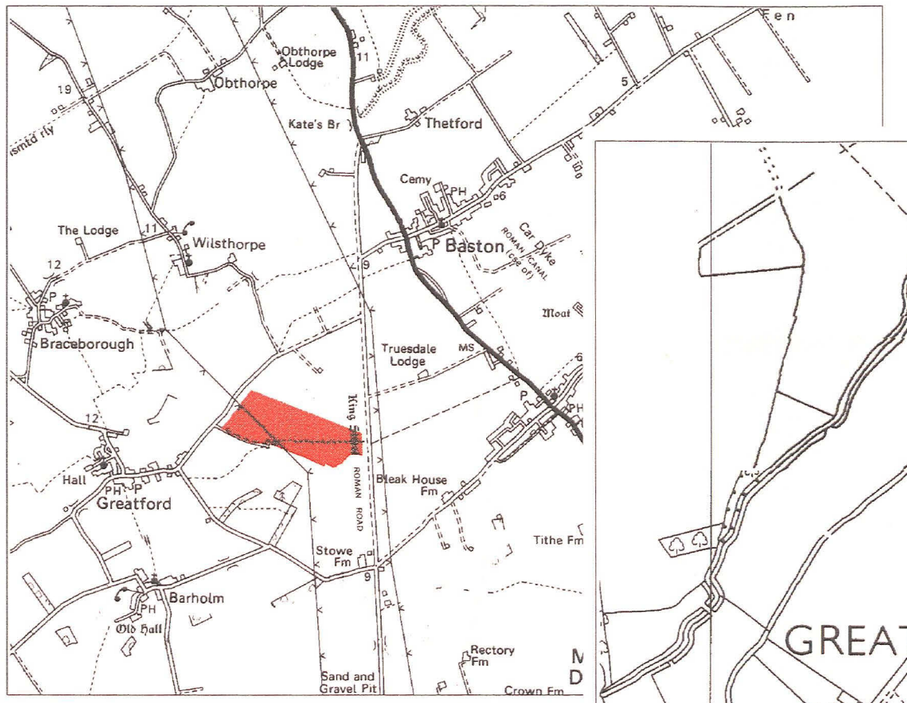
Figure 15. Magnetometer (gradiometer) survey. Area 1: black and white plots (Geoscan Research Geoplot Licence No. GPB 885-6). Scale 1:2500.

Figure 16 (a) North end of west field still under crop. Ditch overgrown with hawthorn visible in background, looking north.
(b) View across west field of survey area, looking north-west.
(c) Northern boundary ditch of west field, overgrown with hawthorn, looking south-west.
(d) Section through ditch 1103, looking west. Scale 0.5m.
(e) Section of Ditch 1103, drawn by R. Armour-Chelu.

(in wallet)

Figure 17. Plot of artefact distribution from fieldwalking. Scale 1:2500

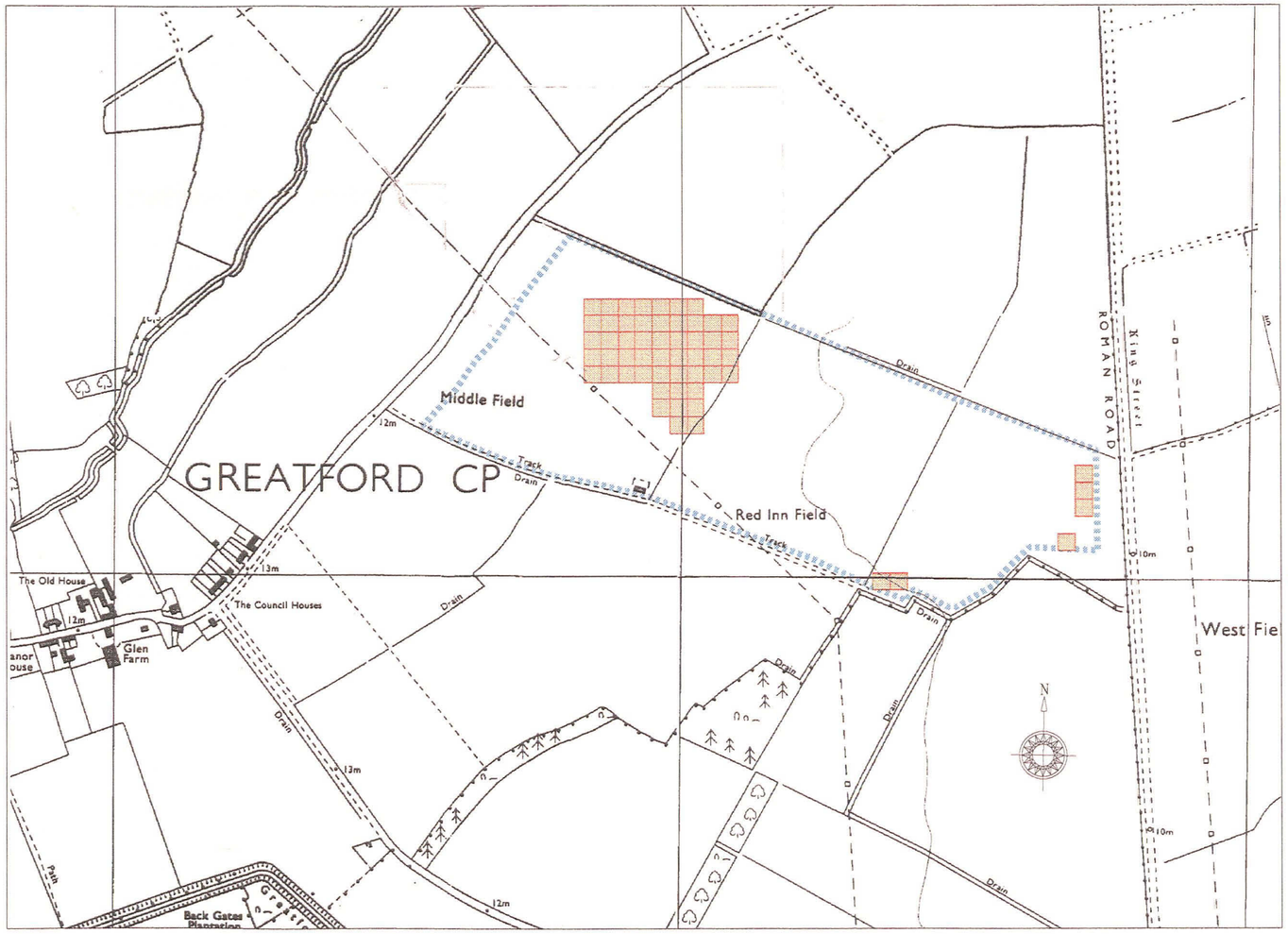
Figure 18. Plot of artefact distribution from fieldwalking: west field. Scale 1:1250.



1:50,000

Location

1:10,000

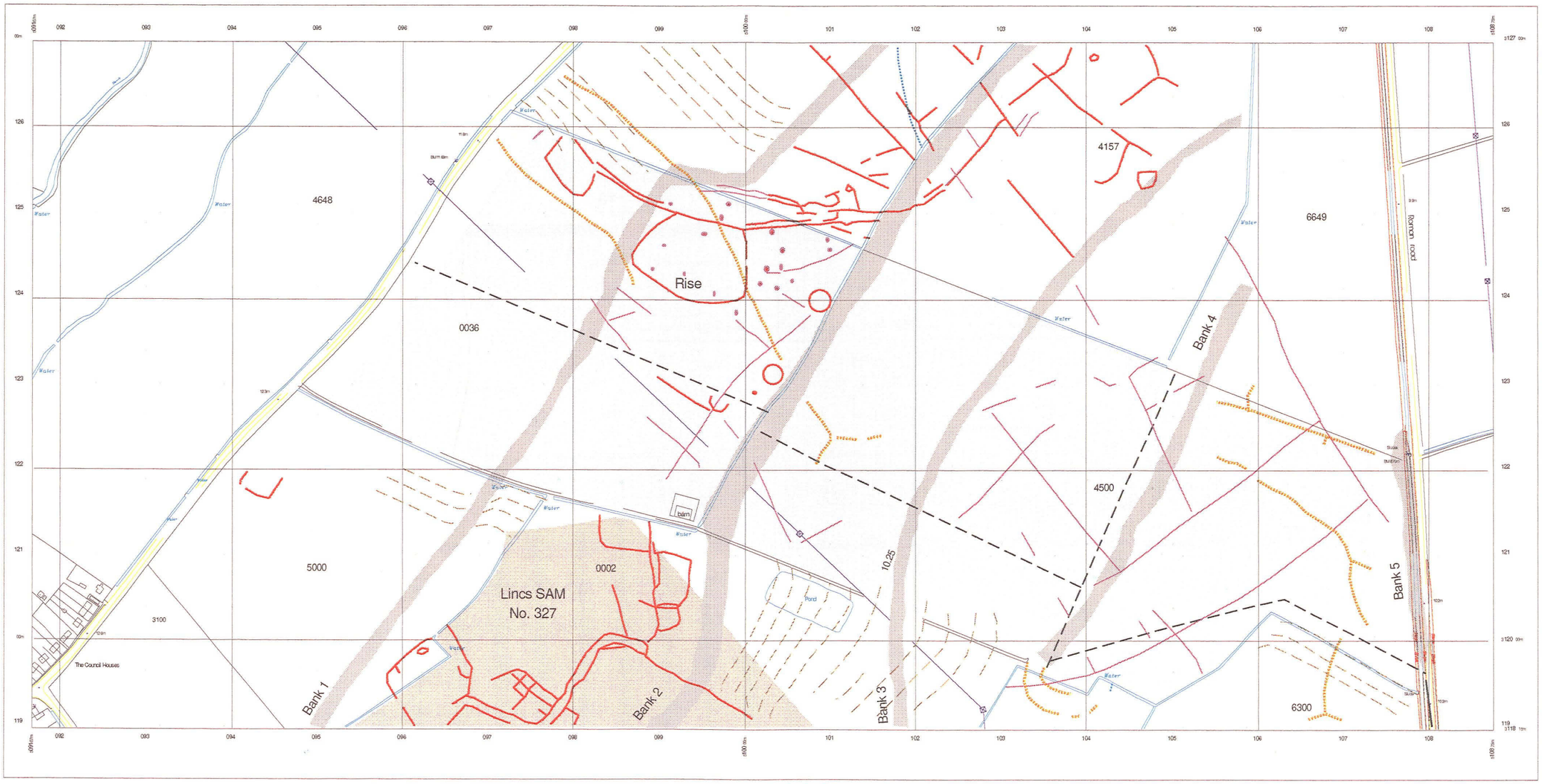


Gradiometer survey, see fig.3 for detailed location

Topsoil magnetic susceptibility survey - extent of

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Sketch plot showing the aerial photographic and map evidence (after OAA 1997b)



1:5000

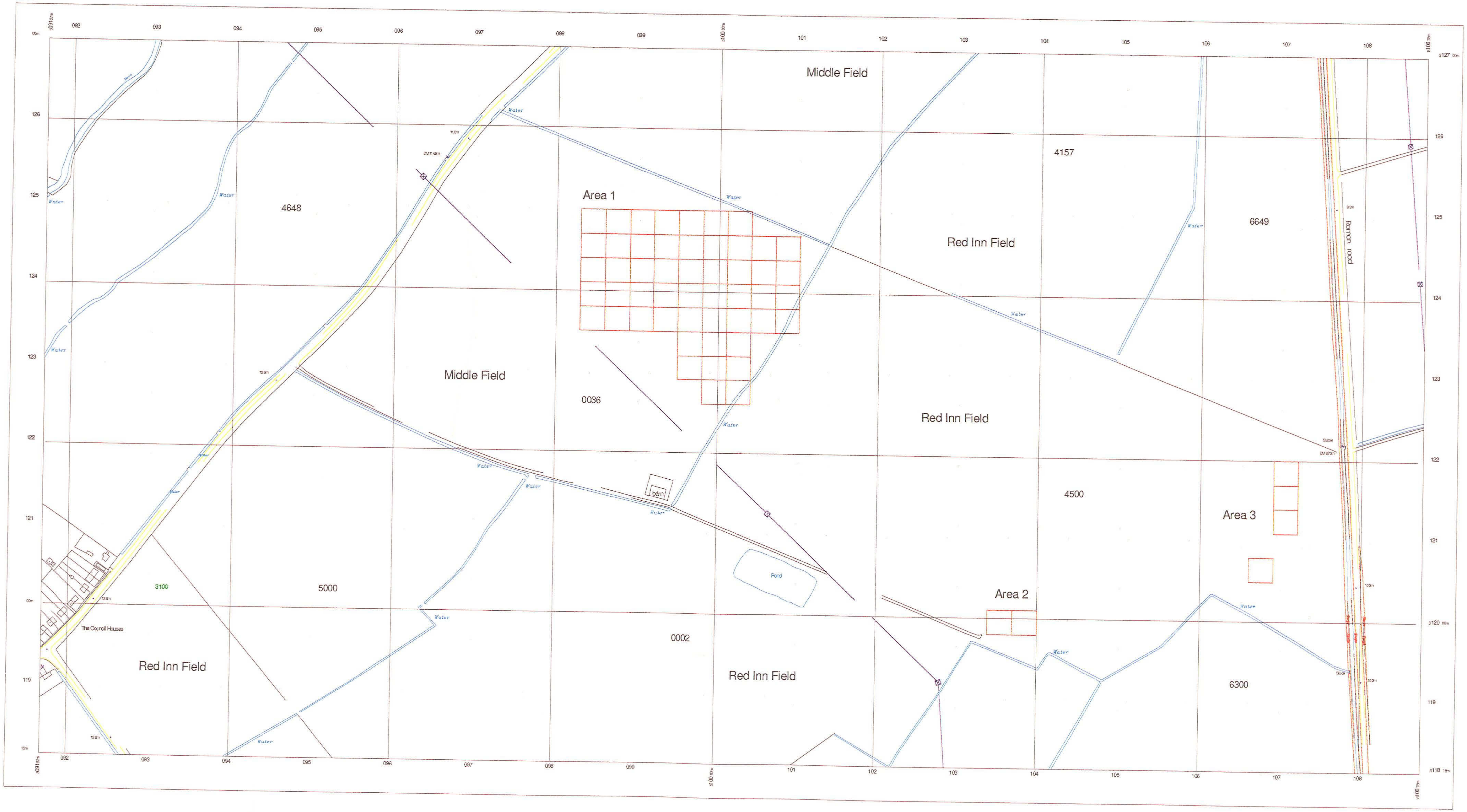
KEY

- Survey area
- Known former field boundaries & tracks (map evidence)
- Probable archaeological cropmarks (RCHME plot)
- Probable archaeological cropmarks added by OAA
- Probable geological features
- Ridge and furrow
- Area of SAM
- Banks plotted by OAA & RCHME

OXFORD ARCHAEOTECHNICS Fig. 2

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey: location



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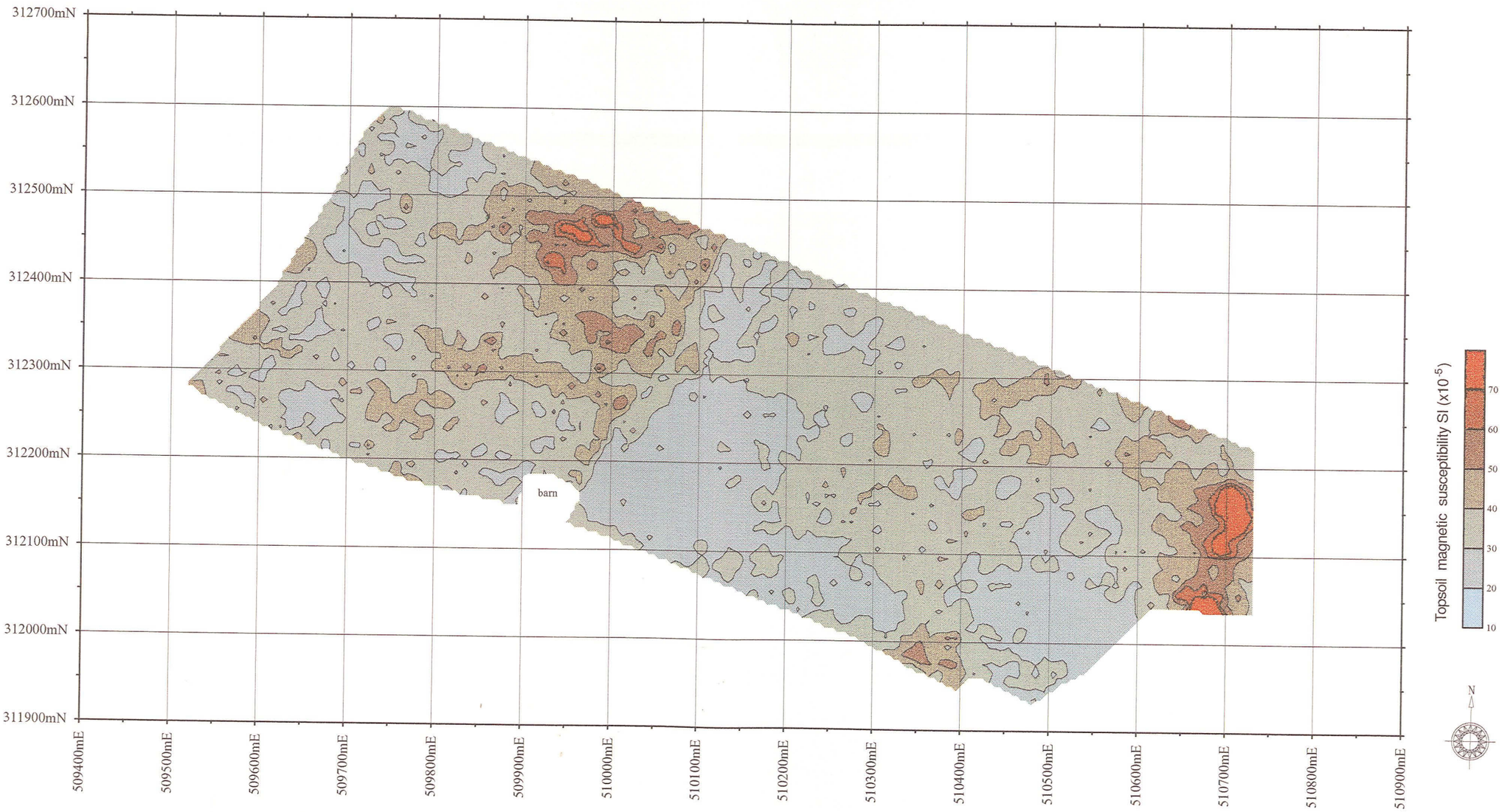
OXFORD ARCHAEOTECHNICS Fig. 3

Land at King Street, The Deepings , Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Topsoil Magnetic Susceptibility Contour Plot



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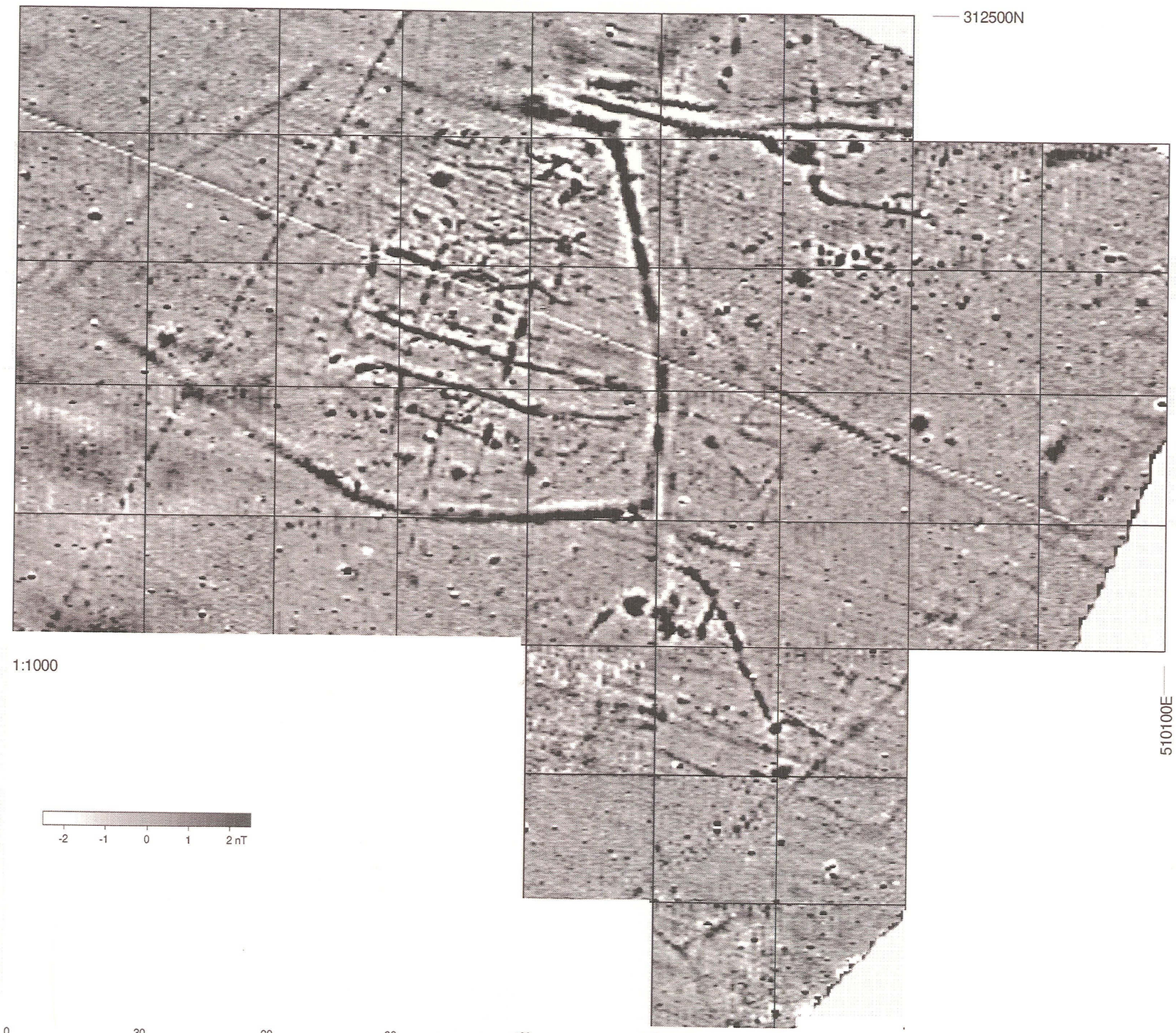
OXFORD ARCHAEOTECHNICS

Fig. 4

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey. Area 1: grey shade plot



OXFORD ARCHAEOTECHNICS

Fig. 5

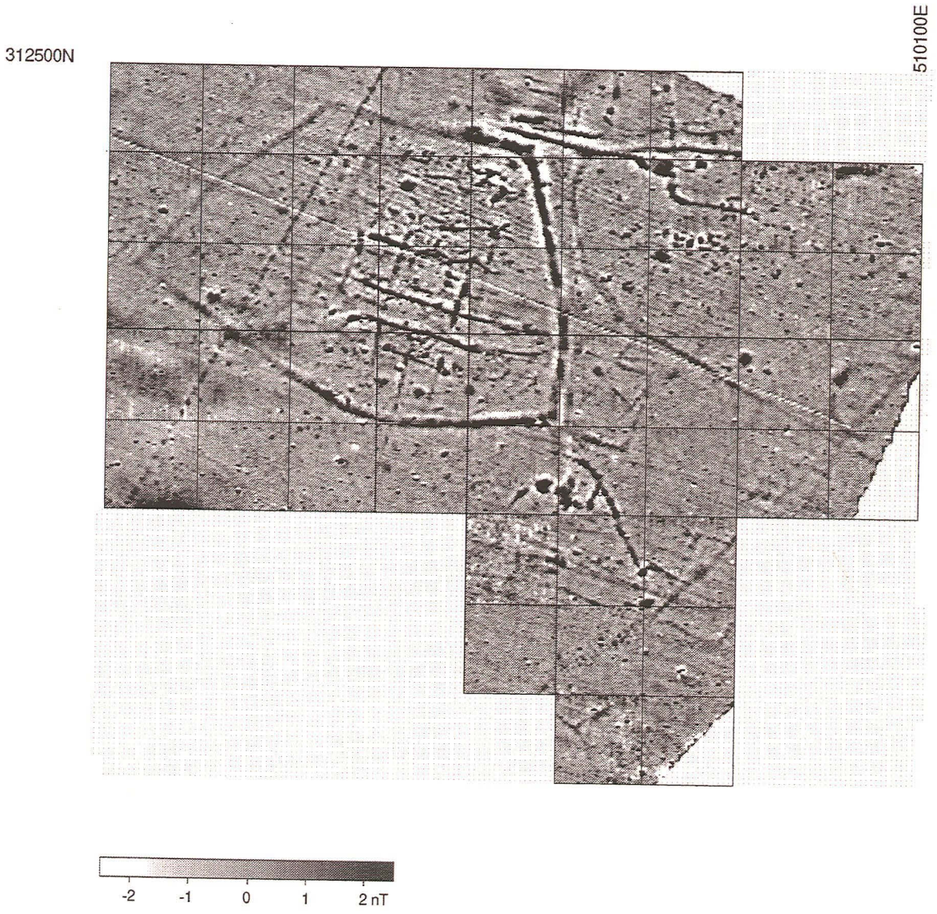
Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey, Area 1: stacked trace plot (raw data)

1:1000

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey. Area 1: interpretation



Interpretation

Linear and curvilinear features

Weak linear and curvilinear features, including agricultural striations

Pits

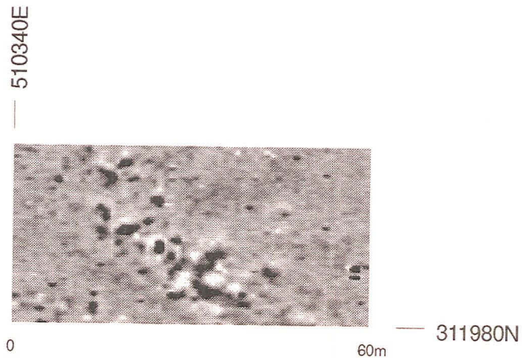
Ferrous material (main concentrations)

Areas containg concentrations of probable burnt material

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey. Areas 2 and 3: grey shade plots

Area 2



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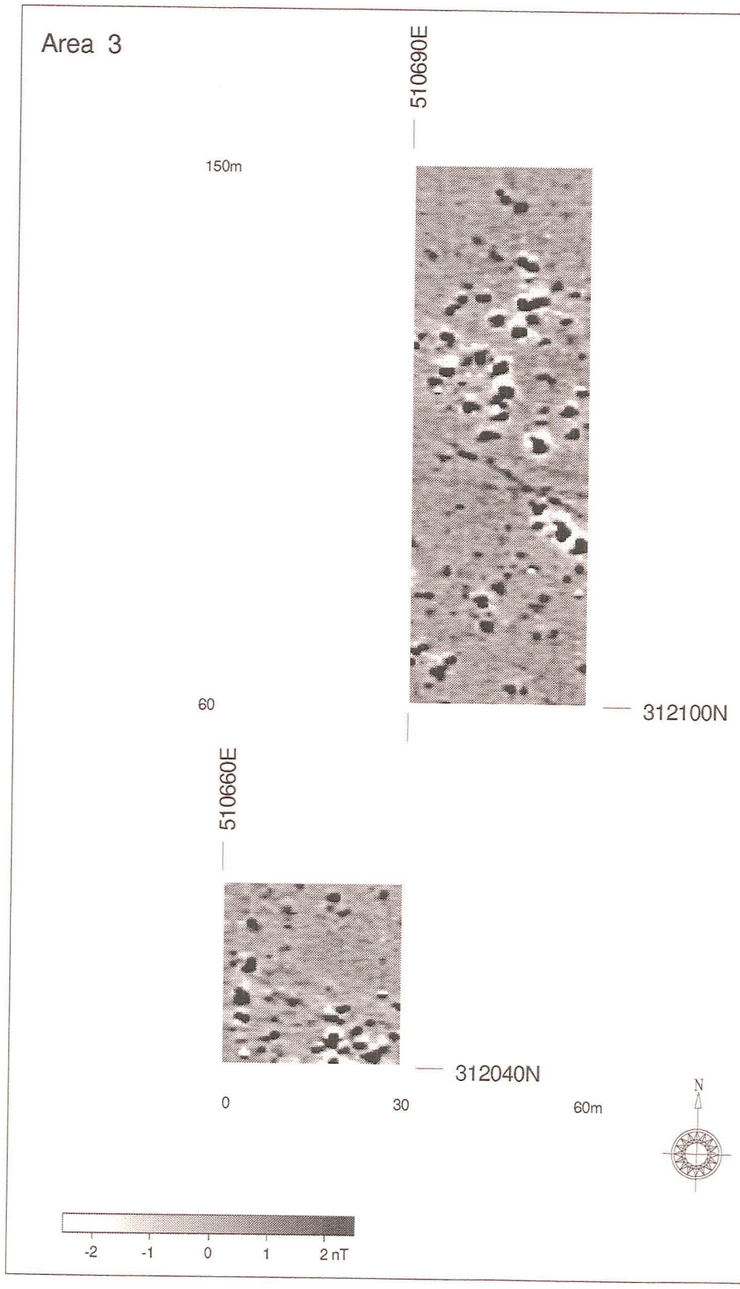
Area 3



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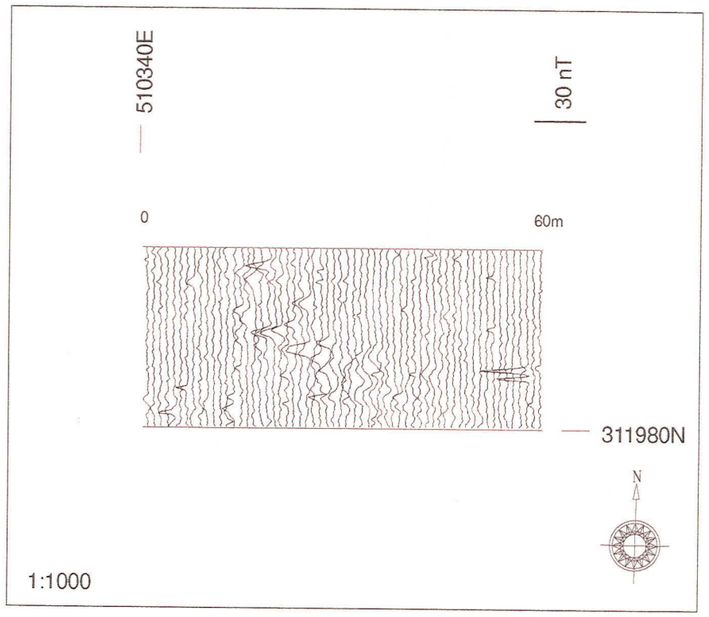
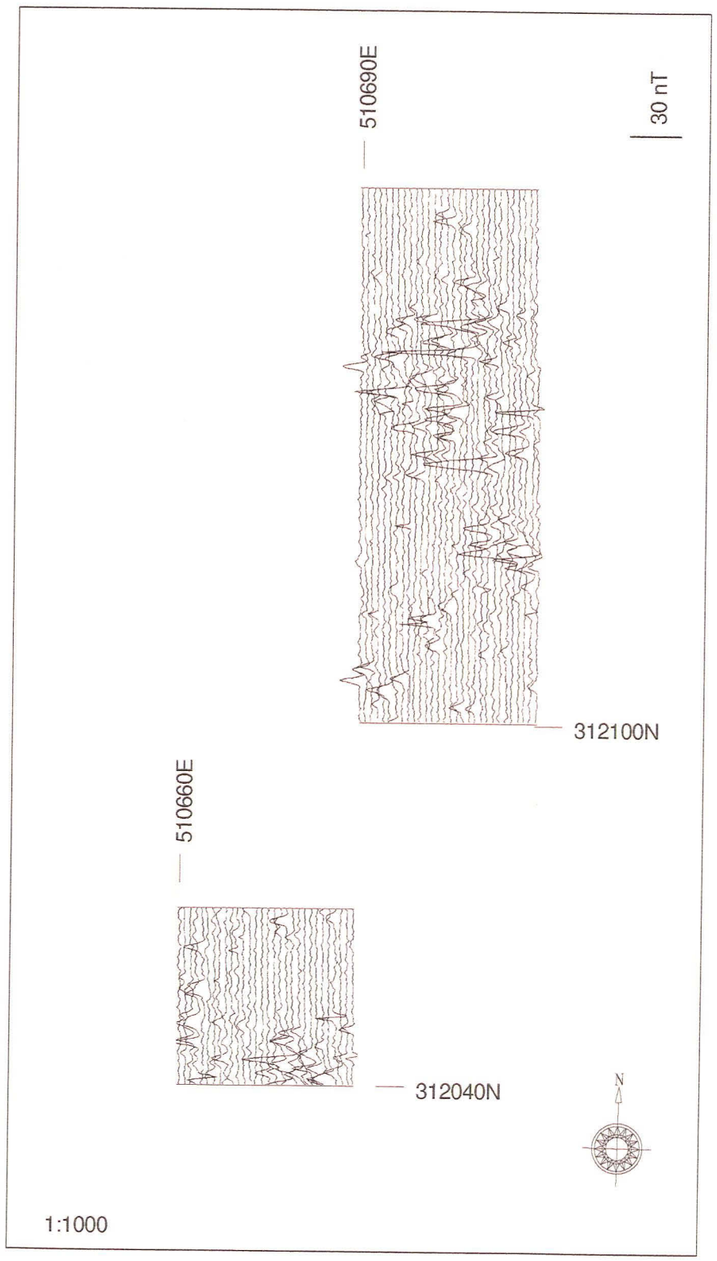
Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey. Areas 2 & 3: stacked trace plots (raw data)

Area 2



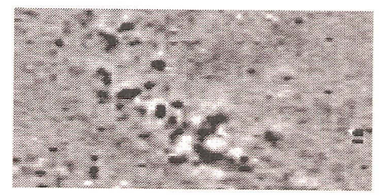
Area 3



Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey. Areas 2 & 3: interpretation

Area 2



510340E

311980N

0 60m

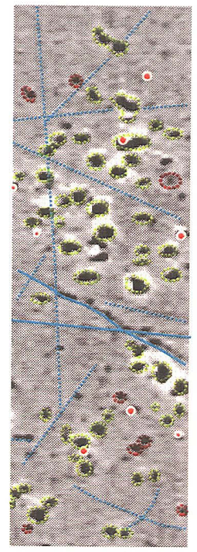
-2 -1 0 1 2 nT

1:1000

Area 3

510690E

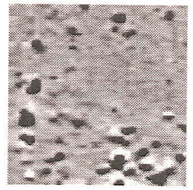
150m

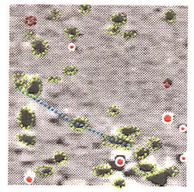


312100N

60

510660E





312040N

0 30 60m

-2 -1 0 1 2 nT

1:1000

Interpretation

Linear and curvilinear features

Weak linear and curvilinear features, including agricultural striations

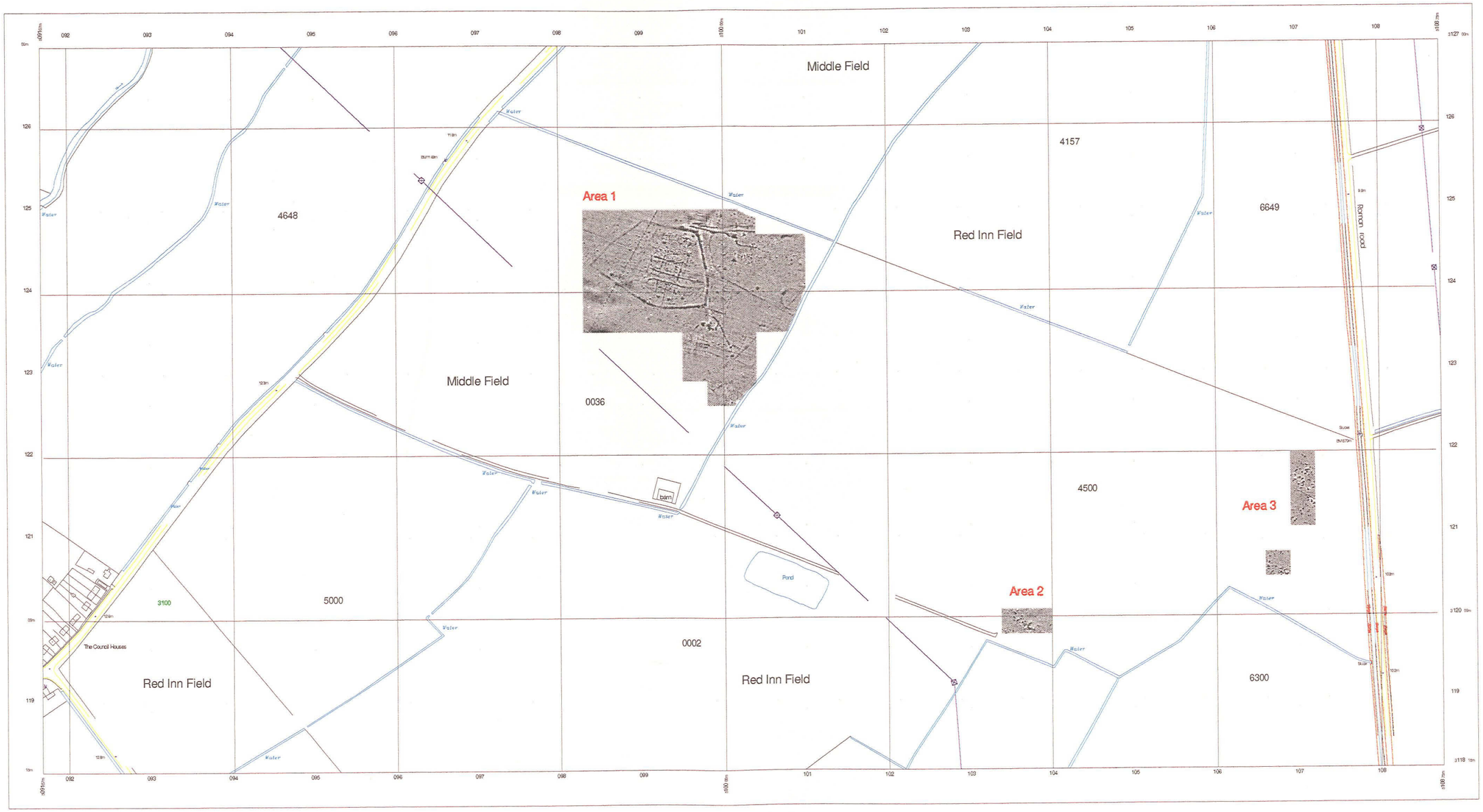
Possible pits

Ferrous material (main concentrations)

Undefined magnetic anomalies (probably mostly iron-rich natural deposits, although burnt material may also be present)

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Gradiometer survey overview

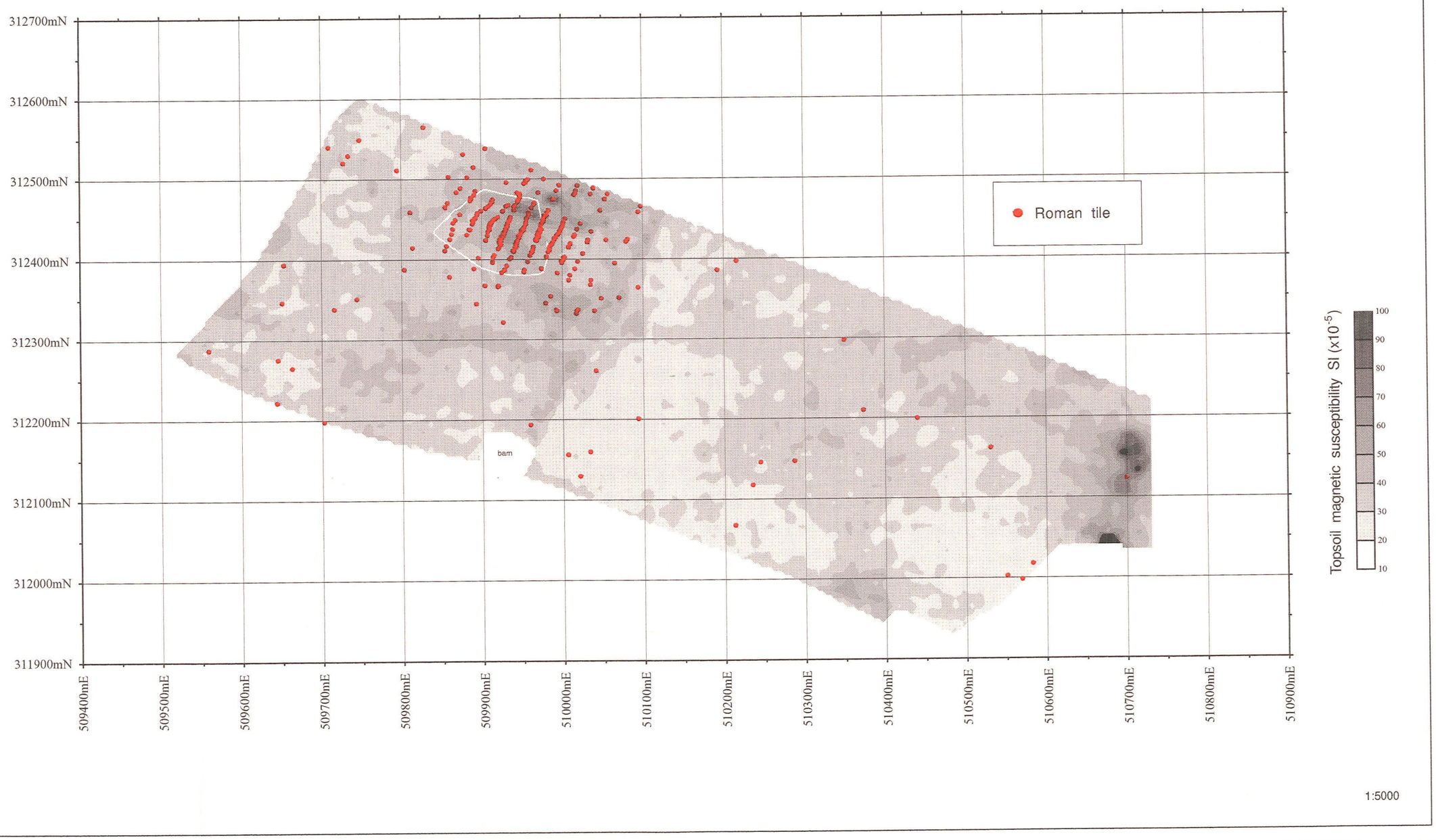


OXFORD ARCHAEOTECHNICS

Fig. 11

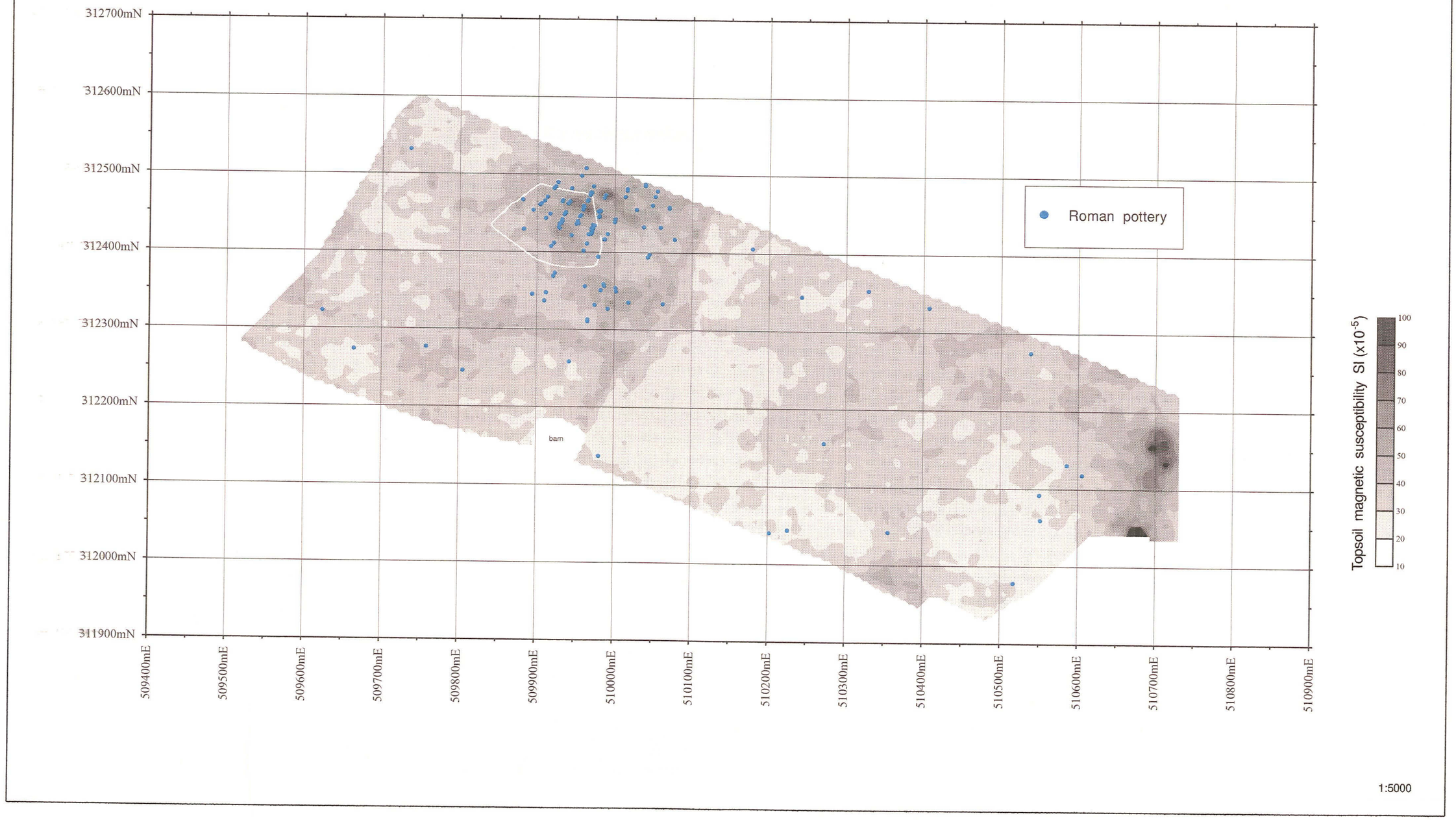
Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Relationship between topsoil magnetic susceptibility and the distribution of surface finds: Roman tile



Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

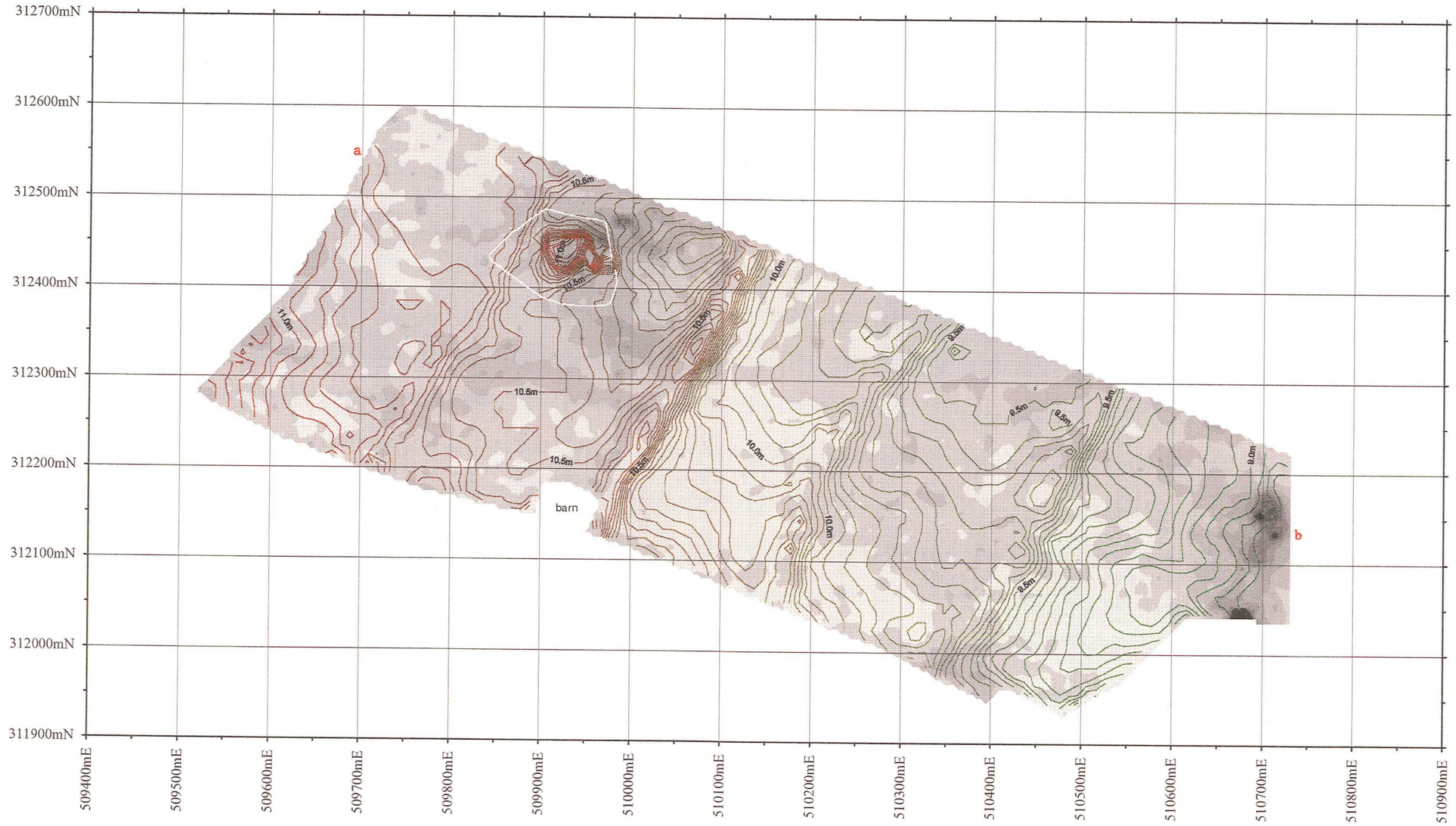
Relationship between topsoil magnetic susceptibility and the distribution of surface finds: prehistoric flint & Roman pottery

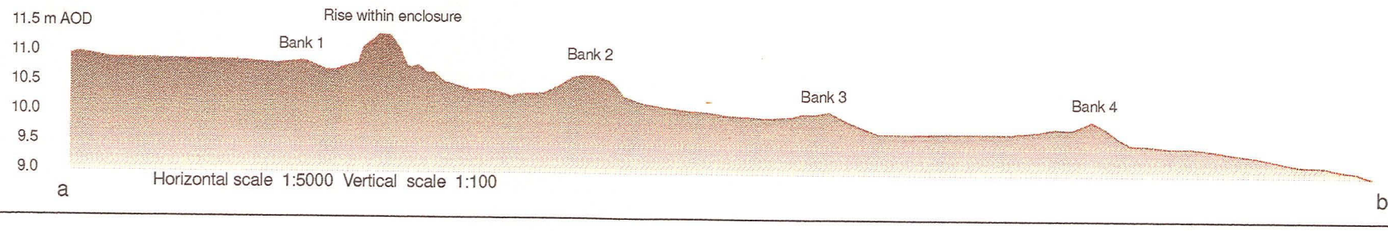


OXFORD ARCHAEOTECHNICS Fig. 13

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey

Topographic survey of residual earthworks

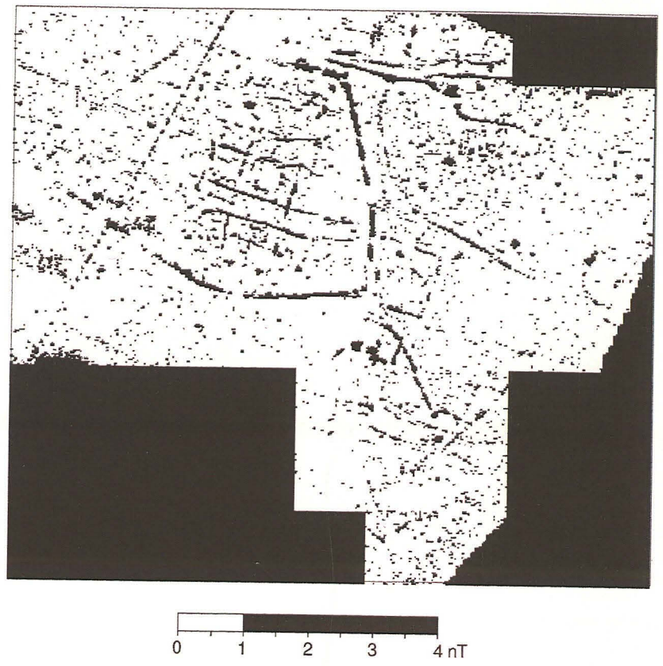


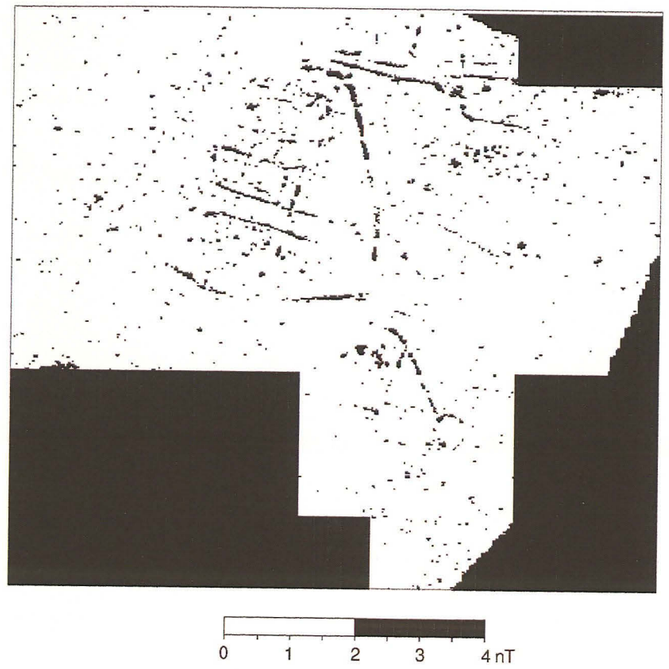


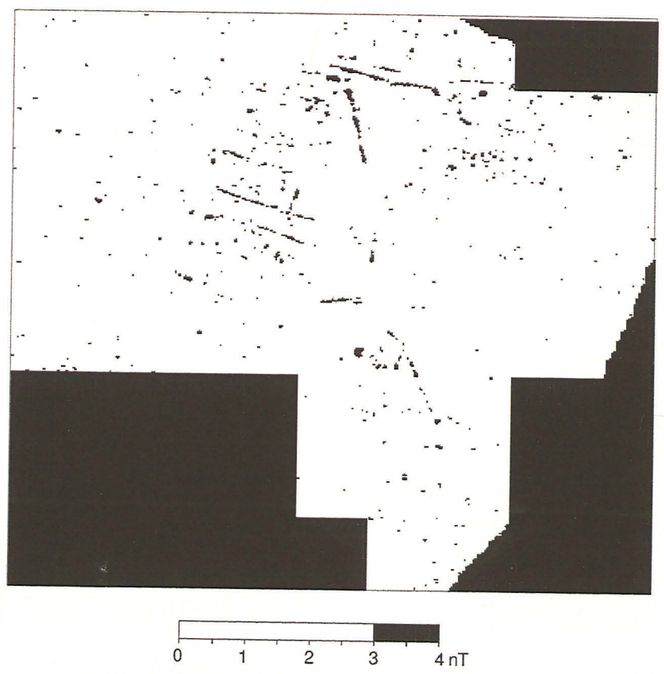
1:5000

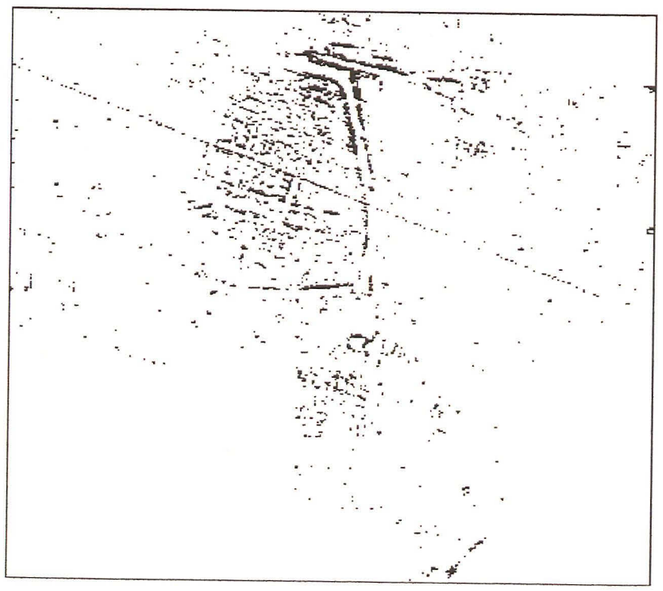
OXFORD ARCHAEOTECHNICS Fig. 14

Land at King Street, The Deepings, Lincolnshire. Topsoil Magnetic Susceptibility and Magnetometer (Gradiometer) Survey









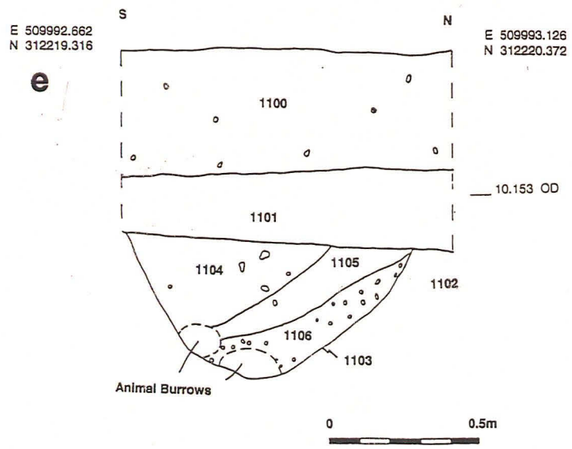
1:2500

Gradiometer survey: black and white plots

Land at King Street, The Deepings, Lincolnshire

a. North end of west field still under crop. Ditch overgrown with hawthorn visible in background, looking north.

b. View across west field of survey area, looking north-west.



c. Northern boundary ditch of west field, overgrown with hawthorn, looking south-west.

d. Section through ditch 1103, looking west. Scale 0.5m.

e. Section of ditch 1103, drawn by R. Armour-Chelu.

Fig. 16

OXFORD ARCHAEOTECHNICS

Specialist Archaeological Field Evaluation

INTERNAL QUALITY CHECK

Survey Reference	1260997/KIL/ENN
Primary Author	Date
Checked By APJ	Date 27-11-97
Checked By	Date
Further Corrections	Date

OXFORD ARCHAEOTECHNICS

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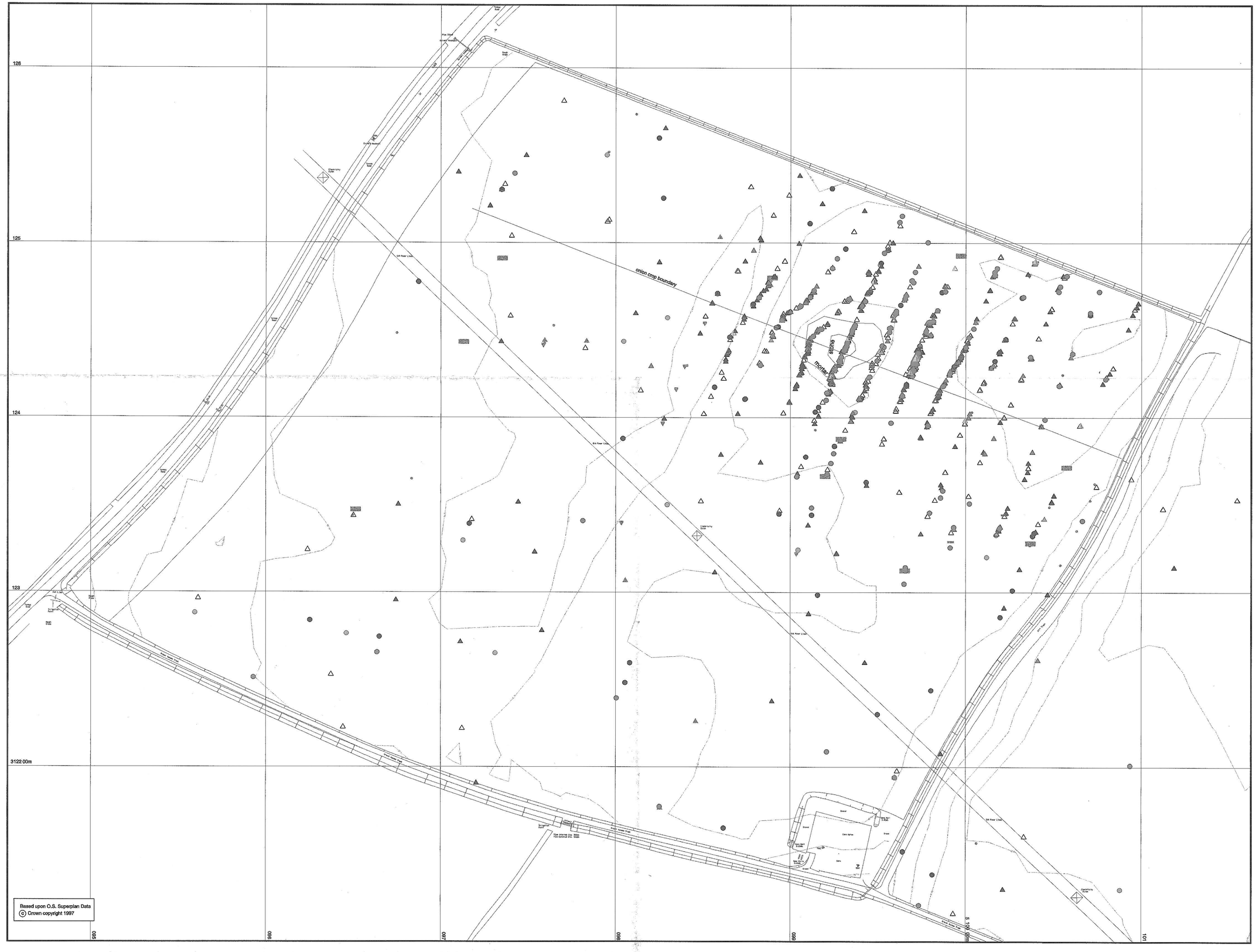
Jan. 1997



Notes

- Roman Pot
- Medieval Pot
- Post Medieval Pot
- Modern Pot
- Undated Pot
- Roman Flue Tile
- Roman Roof Tile
- Roman Tile Unclassified
- Medieval Tile
- Post Medieval Tile
- Modern Tile
- Tile Unclassified
- Modern Brick
- Mortar
- Flint

Plan is based upon surveyed data, O.S. Superplan data and third party survey data

Site

King Street
The Deepings

Plan

Fig 18
Artefact Distribution from Field Walking (West Field)

Scale : 1/1250 Date : 19/03/98

Plan Ref : LA/MSE/952-2

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Notes

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Plan is based upon surveyed data, O.S. Superplan data and third party survey data

Site

King Street
The Deepings

Plan

Fig 17
Artefact Distribution from Field Walking

Scale : 1/2500 Date : 19/03/98

Plan Ref : LA/MSE/952-1

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