
**ASSESSMENT OF THE FIELDWALKING AND
GEOPHYSICAL SURVEY UNDERTAKEN AT
SEMPRINGHAM PRIORY AND VILLAGE,
POINTON AND SEMPRINGHAM,
LINCOLNSHIRE
(SEMP 03)**

Work Undertaken For



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**ARCHAEOLOGICAL
PROJECT
SERVICES**



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SUMMARY

Following concerns about damage to the archaeological resource, a programme of fieldwalking was undertaken on the site of Sempringham Priory and village, Pointon and Sempringham, Lincolnshire. The project was carried out to recover information to assist in reconstructing the layout and development of the whole site. The reasons for this are to characterise the site accurately; to locate areas of building and areas of open land; to use geophysics to locate accurately both known and unrecognised areas of building; to identify changes in the use of different parts of the site through time; to provide information that will dictate future research strategy and to provide base information for the development of a future management strategy.

The site, which is being demonstrably eroded through intensive agriculture, was previously subject to aerial photographic interpretation. This enabled further understanding of the layout of the village and priory buildings, though few remains of the post-suppression mansion were located.

Previous fieldwalking at the site, albeit non-intensive, had also identified Middle Saxon pottery on the site of the priory, suggesting that there may have been an earlier monastic foundation at the site.

Geophysical survey was undertaken in three stages. Initial magnetic scanning defined broad and discrete anomalies. Five areas were then subjected to detailed gradiometer survey which showed marked concentrations of activity to the south of St Andrew's church, with significant activity to the north and northeast of the church. South of the Marse Dyke, the structure of the priory complex and post-suppression house was defined. Following this, four areas were subjected to resistivity survey which helped to elucidate the plan of the priory church, though was less successful

in defining buildings recognised through fieldwalking.

Fieldwalking of the site retrieved several thousand items from the survey area, each assigned to a particular five metre square. In addition, densities of stone, brick and tile were recorded as were notes on particular features.

Pottery was the largest category of the artefacts collected and are of types that can be assigned to the prehistoric, Romano-British, Saxon, medieval, post-medieval and modern periods. Initial results indicate a continuity of settlement since the Romano-British period centred on St Andrew's church with an expansion of cultural material to the south following the founding of the priory in the 12th century. Further work on the pottery may help to elucidate the development and use of particular buildings within the village and priory.

Other categories of finds include worked flints, brick, tile, clay pipe, window glass, metalwork and worked stone, both tools and architectural fragments. Slag was also retrieved and hints at an industrial area within the monastic precinct, though no work was undertaken to differentiate between smithing and blooming slag. Animal bone, glass vessels, mortar and coal was collected but has not been examined.

It is the considered opinion that the site is still being actively eroded by modern agriculture and that any surviving deposits are under threat.

This document represents a formal assessment of the results.

1. INTRODUCTION

1.1 Project Background

Heritage Trust of Lincolnshire (though Archaeological Project Services) undertook fieldwalking and oversaw geophysical survey at Sempringham Priory and village, Pointon and Sempringham, Lincolnshire, following concerns about the effect of the current agricultural regime on surviving archaeological deposits. The work was undertaken in order to reconstruct the layout and development of the site. An assessment of plough damage to the site was also considered and the data will be used to inform the appropriate level of any future archaeological management or intervention.

The work comprised intensive fieldwalking carried out from the 6th January to 10th February 2005. The work was undertaken in accordance with a Project Design prepared by Archaeological Project Services and English Heritage (East Midlands) (Coppack and Lane 2002) and approved by English Heritage.

1.2 Location, Topography and Geology

Sempringham is located 16km southeast of Sleaford and 15km northwest of Spalding in the civil parish of Pointon and Sempringham, South Kesteven District, Lincolnshire (Fig. 1).

The site encompasses, and extends south and west of, the church of St. Andrew and is centred on National Grid Reference TF 1065 5255 (Fig. 2). The site is some 42 hectares in size and bounded by Primrose Lane, a medieval mill pond, various field boundaries and the current track to the church.

Sempringham Priory lies in the shallow east-west valley of the Marse Dyke on the eastern dip-slope of the Jurassic ridge. The valley floor lies at heights of between 13m

and 16m OD. To the south is a uniform rise in height to the southern field boundary which lies at a height of *c.* 25m OD. There is also an upwards slope to the north to a slight ridge, *c.* 26m OD. North of the church land slopes down to the northeast.

Local soils are mapped as the Denchworth Series, a heavy wet clayey (pelo-stagnogley) soil (Hodge *et al.* 1984, 155). These soils have not been mapped at any greater scale and the underlying geology and surface observations would suggest that more soil types are present. Alluvium is the youngest drift geology present and is restricted to the course of the Marse Dyke, particularly on the eastern boundary of the site and over the mill pond to the west (Fig. 3). Glacial till is also apparent immediately outside the survey area, particularly along the southern field boundary. Solid geological deposits comprise mainly Jurassic Oxford Clay, Kellaways Sands and Clays with Cornbrash outcropping in the valley floor (GSGB 1972).

1.3 Archaeological and Historical Setting

The survey area lies in an area of known archaeological activity dating from the Neolithic to the present day. Both the medieval priory and village site have attracted attention from fieldworkers in the past.

Prehistoric activity is limited in the vicinity of the survey area with a Neolithic stone axe recorded to the west of Primrose Lane (Hayes and Lane 1992, 43).

Roman pottery has previously been retrieved from the area surrounding the church and a possible settlement may exist east of Primrose Lane (Hayes and Lane 1992, Fig. 25).

Early Saxon finds including pottery and beads have been collected from fields overlying the priory and the village (*ibid.* Fig 26).

Sempringham is first mentioned in a charter dating to AD 852. Referred to as *Sempingaham* the name is derived from the Old English and means the ‘farmstead, estate (*hām*) of the *Sempinga*’, a group name (Cameron 1998, 109). The charter details the leasing of the Abbot of Peterborough’s estate, which included Sleaford (Hart 1966, 100).

Late Saxon finds are known from the village site and the church contains part of a mid 10th – early 11th century grave cover (Everson and Stocker 1999, 245).

The Domesday Survey of c. 1086 indicates that Sempringham was held by Robert de Toden, Gilbert de Gand and Alfred of Lincoln and contained no more than 45 acres of meadow, 53 acres of woodland and a church (Foster and Longley 1976, 18/23; 24/97; 27/57). The largest portion was held by Alfred and controlled by a tenant named Gocelin.

Gilbert, the son of Gocelin, was the rector of Sempringham and had been experimenting with monasticism since 1131. He set up a ‘cloister’ on the north side of the church for seven local women with the help of Bishop Alexander and later, following guidance from Bernard of Clairvaux and William of Rievaulx, established a new priory in the valley of the Marse Dyke after receiving three caracuates of land from Gilbert II de Gand

It has been claimed that with the founding of Sempringham Priory ‘*the whole village entered the monastery, men and women, and the village disappeared*’ (Beresford 1998, 154). This may be an over simplification and there is evidence of settlement, albeit dependant on the Priory, continuing throughout the medieval period (Platts 1985). However, given the number of religious and the number of lay brothers and sisters, the founding of the priory would surely have depleted the population of the village.

Prior John de Hamilton began to rebuild the church in 1301, although it was still not completed in 1342 (Graham 1901, 184). Papal indulgence was also granted to repair the church in 1400. No other periods of rebuilding are known.

The priory was eventually surrendered in September 1538 to John Freeman, receiver of the county, and four months later the site was granted to Edward Fiennes, Lord Clinton and Saye.

Clinton, who became earl of Lincoln in 1572, built a substantial mansion over the monastic church and re-used some of the north claustral buildings. The date of construction is unknown but must be before 1552 when he was certainly resident. This was a great Renaissance building and perhaps only surpassed by Grimsthorpe Castle in the county. The house was described by William Camden in 1600 as ‘passing fair’ and comparable to Wolsey’s and Henry VIII’s Hampton Court Palace.

It has been suggested that the post-suppression house was never occupied (Platts 1985, 56, after Braun 1938). However, the will of Clinton of 1585 mentions his ‘*goods at my house in Sempringham*’ (LAO Heathcote 1/3) and the second earl, Henry Clinton, died at Sempringham in 1616. Furthermore, the widow and three sons of the third earl were residing at Sempringham in 1620 (Iredale 1992, 32). The mansion house was pulled down in the early 17th century (Platts 1985, 56). The house was recorded as being ruinous, though still containing fine plasterwork, when the site was visited by Daniel Defoe in 1726 (Iredale 1992, 34). The front of the gateway to the house was illustrated in 1791 (LAO Cragg 14/2a/48), though there is a suggestion this gatehouse may have belonged to the medieval priory (LAO Cragg 14/2a/49).

Previous archaeological investigations at Sempringham

A series of excavations on the site were undertaken between 1938 and 1939 by Hugh Braun and are fully summarised in Appendix 1. These revealed the layout of the monastic church and part of the conventual range to the north of this. Traces of the post-suppression houses were also revealed (Braun, 1938, 1939; Graham and Braun 1940).

Aerial photograph plotting was undertaken by Glyn Coppack following the cultivation of the area between the earthwork of the post-suppression house and the Marse Dyke. These revealed the north claustral range, to the north and west of the church, and elements of the church, including a chapel or sacristy that had been misinterpreted by Hugh Braun as a deep buttress.

A watching brief was undertaken in 1978, by the South Lincolnshire Archaeology Unit, when a ditch was cut across the west end of the pond complex. Recording appears to have taken the form of a photographic record with no other notes made (*pers. comm.* Peter Chowne). Stone walls were recorded along with evidence for industrial activities, notably significant quantities of slag, and the cobbled lining of the fishpond. Finds included a brass letter, possibly from a tomb, as well as floor tiles and window lead (Lincs HER). A subsequent watching brief was planned for field drainage works, though the agents for the crown omitted to inform the local archaeology unit at the time.

Prior to this current work, aerial photographs of the survey area were again plotted (Palmer 2003). Importantly, the village was included as well as the wider precinct of the priory. A number of routes around the complex were also plotted.

Table 1: Summary of Main Events

Date	Event
852 AD	Sempringham first mentioned
c. 1083	Birth of Gilbert at Sempringham
c. 1086	Domesday Survey
c. 1100	Church rebuilt
1129	Gilbert instituted at Sempringham and West Torrington
1131	First community established under Gilbert at Sempringham
1139	Land granted by Gilbert de Gant to Gilbert, priory begun in the same year
1147	Gilbert attends the general chapter of the Cistercians and meets Bernard of Clairvaux
1148	The Order of Sempringham established
1189	Gilbert dies
1202	Gilbert canonised
1290	Priory church reported to 'threaten ruin'
1301	Building of a new church started
1349	Priory flooded
1538	Priory surrendered
1539	Priory granted to Edward, Lord Clinton
1572	Clinton was created Earl of Lincoln
1616	The second Earl of Lincoln dies at Sempringham
1724-6	The post-suppression house described as 'decayed magnificence'
1855	The site of the priory sold to the Crown
1938-9	Excavations undertaken at the priory site
before 1948	Part of the site of the priory was ploughed for the first time
1970	Area between the earthwork and the Marse Dyke ploughed for the first time
1987	Evaluation excavation of the priory site

1.4 Structure of the Assessment Report

Report structure is based on that recommended in Management of Archaeological Projects II (MAP 2) (English Heritage 1991). Within this overall Assessment Report, the full texts submitted by specialists are incorporated into the report and the accompanying tables catalogues are presented as

Appendices at the rear of the report. This report represents a formal assessment of the results of the archaeological investigations with some quantification of the structural and artefactual data in relation to the potential of the site.

2. AIMS AND OBJECTIVES

The Primary aims of the project are:-

- a) To recover information to reconstruct the layout, development and function of the whole site
- b) To characterise the site accurately
- c) To locate areas of buildings and areas of open land within a precinct that is currently undefined
- d) To use geophysics to locate accurately both known and unrecognised areas of buildings (AP cover is not perfect due to cropping and soil patterns)
- e) To identify changes of use of different parts of the site through time
- f) To provide baseline information for the development of a future research and management strategy in partnership with the Crown Estate Commissioners *and* the tenant
- g) To enhance the known record of the site in advance of possible revision of the extent of the Scheduled area
- h) To determine the extent of the underlying Middle Saxon settlement. Current research would suggest that Sempringham Priory was intentionally placed on the site of a Middle Saxon monastery
- i) To identify the location of cemeteries
- j) To determine whether the northern cloister is the nun's cloister, as the layout at Watton and Nunormsby would suggest, or the canon's cloister as claimed in 1938-39
- k) To determine whether 'empty' areas are pasture, as they would be in a Cistercian precinct, or are voids caused by lack of cropmark definition
- l) To identify the extent of the 16th century house and its gardens
- m) To determine whether the 'village' is a village or part of the outer court

3. METHODOLOGY

Prior to fieldwork, the landowner's and tenant's permission were granted.

Geophysical Survey

The geophysical survey comprised three elements. The first entailed use of a fluxgate gradiometer to allow for rapid assessment of the area. The entire area of the site was scanned by an experienced operator to identify areas of enhanced magnetic activity. Scanning took place along transects 5m apart. Anomalies $\pm 2nT$ from the background was sketch plotted on maps at a scale of 1:2500 or greater.

On the basis of the results of the scanning selected areas were subject to detailed magnetometry. The detailed survey took place in 20m squares. Readings were taken at 0.5m intervals along transects 1m apart. The grid was walked in a zig-zag pattern. The detailed magnetometry covered up to 20% of the scanned area, covering not only areas with distinct anomalies but also some apparently blank areas.

Finally, some resistivity survey was conducted where there is clear evidence for building rubble on the field surface and in other apparently blank test areas.

Fieldwalking

The entire area was sub-divided into 20m square areas with a cane at each corner based on the National Grid. Surveying was carried out by Souterrain Archaeological Services Ltd using Global Positioning by Satellite equipment. For all but the southwestern field the 20m grids were further sub-divided into 5m grids which were the collection units employed. In the southwestern field, which probably lies beyond all associated buildings but which may lie within the precinct, the collection unit was to be 10m squares. However, crop growth was already advanced in this field and fieldwalking could not be undertaken. A specially made rope with 20m long sides and internal divisions marking 5m squares was placed over each 20m square. A second rope grid and team was added partway through the survey.

An APS fieldwalking sheet was produced specifically for this project with each sheet representing a 20m square. On the standard sheet was recorded date, topography, soil weathering, weather conditions, cropping, names of staff walking and all other relevant factors. The purpose of the sheets is to be able to consider the density and types of finds in each square in relation to the factors recorded. Moreover, the data from the sheets was used to produce a plan of surface soil types.

Fieldwalking covered 100% of the ground surface in each square. All pre-modern finds were bagged with the exception of tile. In the case of tile 'Featured pieces' (i.e. that were decorated, complete, any with nibs and nail holes) only were retained. For the remainder of the tile a 'Sparse', 'Medium' or 'Heavy' designation was made by the supervisor and noted on fieldwalking sheets for that particular square. As most of the monastic buildings and the 16th century house had tiled roofs the spreads of tile were significant.

The collection methodology employed at Sempringham is consistent with that used

on other monastic sites in Lincolnshire (e.g. Catley Priory) and is an established method for work on such sites and recommended by the County Archaeologist. The use of a rope grid was devised by F Macavoy of English Heritage for use at Owmbly.

Building materials, pottery, fired clay, metalwork, glass, shell and animal bone was collected. No human bone was to be retrieved knowingly. Where identified in the field, human bone was noted on fieldwalking sheets and discarded. Likewise, the presence of worked or dressed stone was noted but the material not collected. Individual decorated/carved pieces of stonework were collected at the discretion of the leader of the fieldwalking team.

Photographs were taken of the work in progress in order to provide a separate record of the conditions. The site was photographed in colour from various angles in order to create a record of the site topography.

Post-Fieldwork assessment

Following completion of the fieldwalking all records were checked and recorded observations computerised. Finds were cleaned and re-bagged where necessary and sent for conservation, if applicable, or directly to finds specialists. Period dates were assigned and the data fed into a database for use with a compatible GIS programme.

4. FACTUAL DATA

4.1 Geophysical Survey

General

The geophysical report appears in its entirety as Appendix 2.

4.2 Fieldwalking

Fieldwalking retrieved over 45,000 finds

with fieldwalking sheets numbering 839. The finds are discussed below.

The fieldwalking sheets note relative densities of stone (including locations of ashlar and other carved stone), ceramic building material, gravel and soil colour. Although generally good records were maintained, difficulties were encountered particularly in low sunlight and inclement weather conditions. However, density plots of stone (Fig. 4) and ceramic building material (Fig. 5) were produced.

4.3 The Artefacts

Table 2: Chronology

Period	Date Range
Mesolithic	10,000-4000 BC
Neolithic	4000-2250 BC
Bronze Age	2250-800 BC
Iron Age	800 BC-AD 43
Romano-British	AD 43-410
Early Saxon	AD 410-650
Middle Saxon	AD 650-850
Late Saxon	AD 850-1066
Saxo-Norman	AD 1000-1150
Medieval	AD 1066-1540
Post-Medieval	AD 1540-1900

Flints

By Tom Lane

Quantity of material

A total of 131 pieces of worked or struck flint was collected during fieldwalking.

Provenance

All the material was collected during fieldwalking. Figure 7 indicates no real concentrations of material within the overall distribution. However, there was an absence of material in the central section for reasons described elsewhere. Neither were there concentrations of lithics by period, although a slight cluster of Neolithic flints appears in the southeast corner.

Range and variety

The majority of the collection represents debitage, the waste flakes and cores from working flints ranging in date from Mesolithic to Bronze Age. Aside from the waste material there was a limited number of tools, including seven scrapers, a fabricator and a leaf-shaped arrowhead, possibly unfinished. Raw materials were generally pebbles making a black flint and were probably sourced locally from the boulder clay outcrops at the north and south ends of the site. Many of the flakes had some cortication remaining, as did the projectile point. This piece is of a brown translucent flint which may be imported. Heavily worked on its dorsal surface it retains a striking platform and bulb of percussion and may be unfinished.

Condition

Unsurprisingly, as a fieldwalking collection many of the pieces were moderately to severely abraded. However, some were reasonably sharp and may have been introduced into the ploughsoil relatively recently. None of the pieces require any special treatment or long-term conservation.

Prehistoric, Roman, Medieval and Post-medieval Pottery

By Glyn Coppack

1. Collection

The site was divided into 20m squares based on the national grid, and each 20m square was subdivided into 5m square collecting units. The area covered is shown in figure 2. The field to the south of the mill pond, in a separate tenancy, was not walked because of advanced crop growth. Neither was the field to the northeast of the parish church. This field was included within the Fenland Survey of 1981-88 and produced Early and Middle-Saxon (ESAX, EMSAX) pottery (Hall and Coles 1994, 128). The field to the south of the mill pond, though within the scheduled area,

appears from the survey to lie outside the precinct of Sempringham Priory on the basis of pottery distribution.

Fieldwalking took place in January and February 2005, and the site was photographed in detail from the air by Simon Erskine Crum for Glyn Coppack (who personally commissioned the work) on 19 February 2005. This photography recorded the extremely clear soil marks revealed by ploughing. The clear soil marks and the high incidence of unabraded pottery and tile (some with fresh breaks) in the plough soil, coupled with observation on site, indicated that ploughing had been deeper than normal, even within the scheduled area where Class I Consent permits only habitual cultivation.

Small quantities of roof tile and ridge tile were recovered with the pottery. A substantial scatter of mosaic tile wasters in Bourne D fabric (BOU) was recorded to the north of the Marse Dyke and south of the parish church cemetery extension which indicates a kiln in that area. Only a small quantity of this floor tile was actually collected and the spread is still observable on the surface of the field. This kiln probably dates to the second period of mosaic tile production in the early fourteenth century and its products are directly comparable with excavated floors in the Cistercian church of Warden in Bedfordshire (Evelyn Baker *pers comm*).

Pottery collection provided the most common artefactual evidence, with 27,279 sherds of all periods and 413 pieces of ceramic building material recovered from 6119 squares, an average of 4.5 sherds per square (CD-Rom). Quantities ranges from a single sherd to in excess of 40 sherds for a single 5m square, and condition ranged from heavily abraded (and thus in the plough soil for a considerable period) to sharp, unweathered, and with fitting sherds (implying the recent disturbance of stratified archaeological deposits). The

general distribution and quantification of the pottery is shown in Figure 8.

Pottery was identified against the author's own type series, the Lincoln medieval pottery type series, and the draft Nottingham medieval pottery type series.

2. *The pottery*

(a) *Quantity of pottery sherds recovered by period*

PREH	5
ROMAN	356
ESAX-MSAX	357
MSAX	40
LSAX	581
LSAX-EMED	1348
LSAX-LMED	2
SN	4
SN-EMED	260
SN-MED	1
EMED	947
EMED-MED	260
MED	10138
MED-PMED	12060
LMED	2
LMED-PMED	478
PMED	375
PMED-EMOD	2
EMOD	1
MOD	93
UNIDENT	208
CBM	413

(b) *Pre-medieval pottery*

Five sherds of Iron Age pottery and a scatter of 356 second to third century Roman sherds with a high percentage of Nene valley colour coated vessels provided unexceptional evidence for the early settlement of the site. The location of this material coincided with the concentration of Middle Saxon ceramics in the northeast quadrant of the site (Fig. 9).

(c) *Early to Middle Saxon pottery*

Sempringham, as its name suggests, should be an early Saxon settlement, and there was good ceramic evidence for this.

There was a concentration of Early Saxon (ESAX) and Middle-Saxon (EMSAX) pottery (including northern Maxey (MAX) and Ipswich type wares (IPST)) in the area around the parish church, substantially to the west and southwest but also on the north side, starting perhaps in the sixth century and extending into the ninth century (Fig. 10). A thinner spread of both Early and Middle-Saxon pottery was recorded to the south of the cemetery extension, indicating that a considerable area of early settlement has been lost below the modern cemetery. There was a consistent undercurrent of second to third century pottery in all the areas producing Early and Middle-Saxon pottery, suggesting the reuse of an earlier site.

A thinner spread of early and middle-Saxon pottery was recorded in the field to the south of the Marse Dyke, particularly in the area of the southern cloister of the medieval double monastery. It is unclear whether this indicates another area of settlement, manuring, or the transfer of archaeological deposits elsewhere on site to level up the area of twelfth century and later construction. A single sherd of Ipswich type ware was recovered by the writer in 1976 to the southwest of the standing earthwork that marks the outer court of the post-suppression house.

If the generic ESAX and EMSAX are filtered out of the distribution and only the recognisable Middle-Saxon fabrics known to date to the late seventh, eighth and early ninth century fabrics (MAX and IPST) are plotted, these sherds all come from a ditched enclosure centred on the existing parish church (Fig. 11). The generic fabrics have a wider distribution, though the majority of them were also found within the area of the ditched enclosure.

There appears to have been no break in settlement in the late ninth century. This is interesting because the Peterborough manuscript of the Anglo-Saxon Chronicle includes a charter in 852 of Abbot Coelred

of Peterborough leasing *the land at Sempringham* to Wulfred for his life in exchange for land in Sleaford which was to transfer to Peterborough (Swanton 1997, 65). The Peterborough manuscript of the Anglo-Saxon Chronicle was re-compiled after the loss of the original manuscript in a fire in 1116 with the insertion of a series of probably spurious charters which had some basis in truth. This suggests that Sempringham was somehow attached to Peterborough by the mid ninth century, and that it was subsequently lost to the abbey. Peterborough made similar claims about a number of other places in Mercia including Louth, Swineshead, and Bardney which were the sites of monasteries in the late seventh, eighth, and ninth centuries though they were almost certainly independent and not Peterborough dependencies (Swanton 1997, 37). There remains the possibility that the early settlement at Sempringham was monastic before its apparent alienation in 852. Thus, it is possibly of greater significance locally and nationally than just the presence of Early to Middle-Saxon settlement would suggest. The quantities of pottery involved are not high, usually one or at the most two sherds in a 5m square, but none of this material is abraded suggesting it has not been in the plough soil for long.

(d) Late Saxon and Saxo-Norman pottery

To the north of the Marse Dyke, shelly wares, early Stamford wares (EST), South Lincolnshire Saxo-Norman oolitic ware (SNSLOL), Thetford-type ware (THETT) and a single sherd of Torksey ware (TORK) indicate continuing and expanding settlement through the tenth and eleventh centuries (Fig. 12). There was a surprisingly high quantity of Lincoln shelly ware (LSH and LKT) and the Lincoln-area local Late-Saxon fabrics (LSLOC), but only small quantities of Lincolnshire early-medieval shelly wares (LEMS). The extent of settlement at the close of the eleventh century, that is close

to Domesday, is clearly demonstrated by the distribution of these fabrics. It is remarkably similar in extent to the spread of Early and Middle-Saxon pottery, but the quantities were larger, with up to five or six sherds from many 5m squares. Outlying sherds, as in the earlier periods, are likely to be the result of manuring.

(e) Medieval pottery

A significant change in pottery distribution results from the building of Sempringham Priory on what was clearly a green-field site in the second quarter of the twelfth century.

The removal of Sempringham Priory to the valley bottom from 1139 is marked by a change in pottery sources which probably began in the early 1100s. Previously the pottery has a northern, even Lincoln, character; from the early twelfth century the sources are southern (Bourne and Stamford), and western (Nottingham). The Nottingham sandy fabrics (NSP, NOTGE, NOTGI, NOTGL and NOTGR) substantially outnumber the Lincoln sandy fabrics (LSWA, LSW2, LSW3, LSW4 and LLSW) though from the early fourteenth century Nottingham ceases to dominate the glazed wares and Lincoln (predominantly LSW2-4 and LLSW), Bourne (BOUA) and Lyveden / Stanion (STANLY) make up the shortfall. Figure 13 indicates that the distribution of the Lincoln and Nottingham glazed wares is more or less identical. It is the date that varies, with the Nottingham fabrics representing perhaps 70% of the twelfth and early thirteenth century pottery, and Lincoln being relatively uncommon until the second half of the thirteenth century. More than 60% of the medieval pottery recovered was from jugs, a fairly standard occurrence on monastic sites.

Reference to Figure 8, the general distribution and quantification, indicates, as would normally be expected, that the central buildings of the priory, which

occupy the land to the south of the Marse Dyke, produced considerably less pottery than the area of the Saxon and later village site. Cloister ranges typically produce little in the way of occupation, and most of the pottery from this area of the site is liable to have been derived from robbing and the disturbance of late medieval construction deposits. The model for Thornholme Priory, even in the inner and outer courts, was that 65% of the twelfth and thirteenth century pottery was recovered from late medieval construction deposits and robbing (Coppack and Hayfield forthcoming). The area to the south of the Marse Dyke was marked by an average of 2.5 sherds per 5m square including post-suppression material associated with Sempringham Hall. This is an indication that the area was kept clean with rubbish disposal either elsewhere *or* deeply buried in construction or levelling layers that are not currently affected by ploughing. One area does stand out to the southwest and west of the standing earthwork of the Tudor house where medieval buildings are visible in the ploughsoil marking the southern and west boundaries of the precinct. Here, the density rises as high as 10 to 15 sherds in some 5m squares. The buildings can be identified from aerial photography as a pair of barns ranged along the south precinct wall, and what is almost certainly a mill against the west side where a massive mill pond and dam survives.

There is good reason to believe that the village ceased to exist as such in the first half of the twelfth century when most of its residents took orders. There is no clear marker to distinguish the site of the central priory buildings from the contemporary occupation of what had been a domestic village until most of its residents had entered religion – the same pottery sources were used by both areas. Within the northern area, the site of the twelfth century and earlier village of Sempringham, there was no break in occupation. There were areas that

produced substantial scatters of medieval pottery, marked particularly by the Nottingham and Lincoln glazed wares that indicated contemporaneity with the identified cloister ranges, particularly to the west and south of the surviving church. The very low concentrations in the western part of the field to the north of the Marse Dyke indicate that this was an area of manured and cultivated arable land. Aerial photography records ridge and furrow in the north-west quarter of the field.

(f) Late-medieval and early post-medieval pottery

The last fifty or so years of the priory's life (AD 1475-1540) was marked by the introduction of Bourne D ware (BOU) in early post-medieval vessel forms, small quantities of Toynton / Bolingbroke wares (TB), Cistercian wares (CIST) and Raeren (RAER), Seigberg (SIEG) and Langerwehe (LANG) stonewares. There were also small quantities of early Midlands Purple (MP), Tudor Green (TUDGR), South Netherlands Tin Glazed wares (SNTG) and other Late Medieval Finewares (LMF). Bourne D and Toynton / Bolingbroke occur in both pre- and post-suppression contexts but the other fabrics are reliable indicators of a pre-1540 date. Though the proportion of jugs remained high, the late medieval and early post-medieval pottery was marked by the appearance of a large quantity of drinking vessels and pancheons. The distribution of late medieval and early post-medieval pottery (Fig. 14) mirrors the distribution of the medieval fabric discussed above, but the quantities need to be seen in the context of Figure 8. The bulk of this pottery, which is predominantly Bourne D ware, was concentrated in the field to the north of the Marse Dyke and related to a series of buildings that were clearly visible as soil marks (Plate 6). The likelihood is that the greater part of the Bourne D ware is actually pre-1538 and its consistent intensity marks the extent of the medieval monastic precinct. The western part of the

field to the north of the Marse Dyke, where the squares with late medieval and post medieval pottery are considerably less frequent and where the quantity is in only one case higher than 5m sherds, was identified as manured arable land in the twelfth to fifteenth centuries, with ridge and furrow surviving in its northern half until the late 1950s. All of the sherds from this area were small, and many were eroded.

(g) Sixteenth and seventeenth century pottery associated with Sempringham Hall

The Frechen (FREC) and Cologne (KOLN) stone wares occur principally in eastern England after 1540 and are reliable markers of post-suppression occupation. Additionally, approximately 50% of the Cistercian wares occur in later forms, moving towards Black Wares of mid-sixteenth-century date, and they were associated with developed Midlands Purple (MP) and Midlands Yellow (MY). Post-medieval red-bodied earthenwares (including some from the Babylon kiln at Ely) completed the suite of fabrics associated with the post suppression use of the site (Fig. 15).

The east range of the Tudor house and an aisled medieval building to the east which appears to have been used as its kitchen were clearly marked, though the remainder of the house produced very little pottery at all. Surprisingly, the two barns on the southern precinct wall appear to have survived the suppression and produced the full range of post-suppression fabrics. While quantities were small, Bourne D ware is excluded from the distribution in Figure 15, and at least some of that pottery must date to the later sixteenth century.

The Marse Dyke was diverted to run to the north of the new Tudor house. There are two areas of the northern field which produced substantial quantities of later sixteenth and seventeenth century pottery.

The first, covering a 100m square to the northeast of the Tudor house, is potentially the home farm serving Sempringham Hall. The second, at the northwest corner of the churchyard is almost certainly a new post-suppression rectory, a part of which (the 'tithing barn') survives within the churchyard itself.

(h) Floor tiles

A discrete area of waster floor tiles was recorded in an area on the north of the Marse Dyke and centred on 510745/332700, spreading some 30m north and south of this point and 40m to east and west (Fig. 16). The tiles were all in the Bourne D fabric (BOU) and were distinguished by being rare cut mosaic tiles, some with and some without a white slip below a clear lead glaze. Although most of the floor tile was not collected because of the quantities on the surface of the field, 21 pieces were recovered with the pottery. None retained mortar, the glaze was not worn, and the majority of pieces recorded had glaze run into breaks, suggesting that this was kiln waste. These wasters appear to be tiles of the second Cistercian mosaic series, usually dated to the early fourteenth century, the period when Sempringham Priory was rebuilding its church

Three other areas produced floor tile that appeared not to be wasted: one to the west of the earthwork of the Tudor house outer court, one to the immediate west of the church of St Andrew, and one to the southwest of the extension to the churchyard. All these appear to be associated with buildings.

(i) Ceramic water pipe

A single fragment of ceramic water pipe was found at 510590/332730 on the western fringe of the settlement area in the field to the north of the Marse Dyke. The fabric was Bourne A ware (BOUA), and its date probably late twelfth century, or

early thirteenth century. Similar pipes have recently been excavated at the Gilbertine St Katherine's Priory, Lincoln, in a variant of the LSW3 fabric.

The Brick and Tile

Spreads of brick and tile were recorded on the fieldwalking sheets with only diagnostic fragments retained for the archive. This excludes the stone tile which is reported separately below.

Summary of the Ceramic Building Material

By Anne Boyle

A small sample of the ceramic building material was viewed to produce this summary. Therefore, the comments below may not be representative of the entire assemblage recovered from the site. None of the material has been quantified by weight or fragment count.

Drainage

Modern field drain, all of which is suitable for discard, accounts for a small proportion of the ceramic building material.

Floor Tile

At least three types of floor tile are present and span the medieval and post-medieval periods. Green glazed medieval floor tiles may be the earliest type in the assemblage. These are highly fragmented, making measurements difficult to obtain. However, they are c. 20 mm thick in a quartz tempered fabric that appears similar to some of the roofing tile (fabric 1). None appears to be inlaid although such tiles might be expected at a monastic site such as Sempringham. These fragments are difficult to date, but their manufacture suggests they belong to the 14th or 15th century.

Several spalled floor tiles in a smooth fabric and a yellow glaze were encountered during recording of the pottery assemblage. These appear to be scored and are probably mosaic tiles (Glyn

Coppack *pers. comm.*). Spalling may have occurred during firing (making them production waste) or because of plough damage whilst *in-situ*. Mosaic tiles were manufactured from the 13th through to the 15th century.

Later floor tile typical of the 15th and 16th centuries may be associated with the post-medieval manor house. These Flemish style tiles may be imports although they were also manufactured domestically. Examples with dark brown/black, green and yellow glaze have been identified in a coarse, often near vitrified, fabric.

Roofing Tile

Flat roofing tile was present in a range of fabrics; most commonly a medium quartz tempered fabric with varying amounts of calcareous matter and a medium to coarse quartz fabric containing carbonised vegetable matter. The latter appears similar to medieval pottery fabrics from Bourne and tile production is known at the town, making this a potential source. However, tiles in a fabric very similar to Bourne 'D' ware may have been manufactured on the site (see above) specifically for use at the Priory. This is also suggested by a number of vitrified and misfired fragments that may represent manufacturing waste. Fabrics with varying amounts of shale are also present; these appear similar to Lincoln-types although it is unlikely they are from the City itself. A number of sites in the south of the county receive Lincoln-variant pottery in the 13th, 14th and 15th centuries and although the source(s) for these vessels are not yet known, it is possible this tile comes from a similar area.

Both nibbed and peg tiles occur in the assemblage, with the emphasis on the former. However, as no complete tile widths were encountered it is not known if these are double or single nib or peg tiles, or perhaps a hybrid with a peg-hole and nib on a single tile. Peg holes vary in diameter and positioning although a few

appear to have been made using a large nail, resulting in a square hole on one face with a circular aperture on the opposing side. The peg tiles are largely un-dateable and can only be given a general span date of the 13th to 15th century. Nibs ostensibly appear in two styles; applied large rectangular and moulded and folded rectangular. For the most part these are neatly formed and show signs of trimming and wiping. Both these types are typical of the early 14th to 15th century.

Several fragments of crested ridge tile are present, appearing in the Lincoln-variant and Bourne 'D' fabrics. The glaze on these is pocked suggesting a late 12th to mid 13th century date for their manufacture. One example appears to be over-fired and has burnt glaze.

Brick

Very little brick appears to be present in the assemblage; a single fragment is 50mm thick and has been moulded using sand and organic material.

Stove Tile

A single fragment of stove tile came from TF 10600 32625 (Glyn Coppack *pers. comm.*) and this may be associated with the later manor house, although imported stove tiles are found in late 15th and early/mid 16th century monastic contexts.

Miscellaneous

A possible roofing tile or fragment of roof furniture with an incised design came from TF 10380 32510. The pattern is not clear but tiles with free-hand designs are not currently known from elsewhere in the county making this fragment very unusual.

The Clay Pipe

By Gary Taylor

Methodology

Analysis of the clay pipes followed the guidance published by Davey (1981). Bore dating methods (Walker 1967, 96-7) were used to provide an indication of date for

the stems, whose bores were measured using imperial drill bits. Pipe bowl forms were dated with reference to published local Lincolnshire and national typologies (Mann 1977; Oswald 1975).

Condition

All the clay pipe is in good condition and presents no problems for long-term storage. Virtually all the pieces are fairly small, not more than *c.* 5cm maximum length, and some of them are abraded.

Provenance

All the later pipes of late 17th century and subsequent date are likely to be local south Lincolnshire products. There are, however, a significant number of early 17th century bowl forms, and stems with very wide bores that are probably of the same period. These early pipes will have been imported, probably from London or Holland. In England, London had a virtual monopoly in pipe production until 1640 (Jackson and Price 1974, 10), and this group of early bowl forms are earlier than this, dating from about 1580-1640 (Oswald 1975, 37-41).

There is a pronounced concentration of clay pipe, much of it comprising material of 17th century date, to the north of the earthwork. A few pieces of 17th century date were also recovered south of the earthwork. North of the Marse Dike is a thin scatter of mainly 18th century pieces. West of the earthwork, mostly beyond the field track, is another thin scatter, with 18th century material to the north and 17th century items in the south.

Metal Objects

By Gary Taylor

Methodology

All the metal items were examined and, where necessary, were identified and dated from published material.

Condition

All of the metal items are in good condition, though ferrous items are oxidized and some are flaking. A few of the items are fragile.

Provenance

South of the Marse Dike, and surrounding the earthwork, is a prominent concentration of lead window came, sheet, and melt. This concentration describes an approximately oval ring, with a zone on the east side of the earthwork lacking such items. Moreover, there is a bias in the distribution of the window came and sheet, with most of the window lead found on the west and north sides of the earthwork, while the sheet concentrated to the south and east of the earthwork. This collection of lead objects almost certainly signifies the former presence of buildings with glazed windows and leaded roofs; the melt may relate to repair or re-use of the lead items.

Personal items include buckles and mounts from belts, other types of mounts, pins, thimbles and lace tags, all in copper alloy and mostly of post-medieval date. Twice as many of these personal items were found north of the Marse Dike compared to the south. This indicates general domestic activity concentrated in the area north of the dike in the post-medieval period. A Middle Saxon pin was also found near the church within the area from which Middle Saxon pottery was retrieved.

Items associated with industry and craft occurred in limited numbers. Several weights, a cloth seal, some thimbles, and isolated pieces of slag and casting mould were found, but thinly distributed across the area. The casting mould could have been used for the production of bells or more domestic items, such as cauldrons and ewers. Both medieval and post-medieval items were represented.

Objects potentially associated with cooking and food serving were also

recovered, almost all of them south of the Marse Dike. These included vessel spouts, skimmers, cauldron fragments and a lid to a chalice carrying case. Some of these items, most of which are copper alloy, could actually be scrap for re-casting and, as noted above, a fragment of casting mould was recovered. Also, the chalice case lid could be an item derived from the grave of a higher-ranking ecclesiastic, who were frequently buried with chalices. A gilt tap also has spiritual significance and was found in the vicinity of the *lavatorium* of the southern cloister.

Horseshoes are not particularly numerous but show some distributional bias. The largest concentration, and that mostly of medieval forms (cf Clark 2004), occurs north of the Marse Dike. South of this dike there are far fewer horseshoes, and they were found mostly around the peripheries of the field and are absent from a large area around the earthwork. As other artefacts occurred close to the earthwork the dearth of horseshoes implies that horses were kept out of this area. Some of the horseshoes, of both medieval and post-medieval date, were recovered close to present-day trackways. This suggests the routes were extant in these earlier periods.

Iron nails occurred moderately frequently, and displayed clustering. South of the Marse Dike the nails are distributed in a loose halo around the earthwork, but mostly avoid the immediate proximity of that feature. West of the trackway there is some moderate concentrations, with one prominent cluster that may relate to metal working activity. North of the Marse Dike the nail distribution describes a north-south band through the centre of the field, with a focus near the centre of this band. These nail concentrations perhaps reflect a zone of buildings. If so, the structures are likely to be higher status and post-medieval, as wooden pegs would predominate in earlier and lower status buildings, although nails may have been used for the roof tiles.

Metalworking debris

By Paul Cope-Faulkner

A total of 237 five metre squares produced slag which weighed in total 13,157 grams. The slag has not been identified to differentiate between smithing and blooming slag or to ascertain a date range.

The slag is largely absent from the southern part of the surveyed area and from the western part of the northern field (Fig. 19). There is a moderate background noise from around the village site, particularly south of St Andrew's church. A possible concentration is also apparent in this locality.

The principal concentration of slag lies to the immediate east of the medieval pond and a slight area north of the earthwork. This area adjacent to the pond lies astride a ferromagnetic anomaly recorded on the geophysical survey which lies south of the response marking the medieval course of the Marse Dyke.

The concentration north of the earthwork also accords well with a discrete ferromagnetic anomaly identified in the geophysical survey.

Stone Objects

By Paul Cope-Faulkner

A number of stone artefacts were collected and principally consist of whetstones and querns. These derive from the area between the Marse Dyke and south of the church. Apart from a single whetstone and a single quern, none of this material was found overlying the priory site.

Architectural Fragments

By Paul Cope-Faulkner

Twenty four fragments of architectural origin were retrieved from the fieldwalking. These constitute the

moveable items as larger pieces were left in the field, which were mostly ashlar with a single moulding. Most of the architectural fragments derived from the area north and east of the earthwork with scattered items found principally south of the Marse Dyke.

In addition to the architectural fragments were a number of stone tiles made from shelly and fissile limestones, similar to Collyweston Slate. These have a more widespread distribution across the site and may have been used from the early medieval period onwards. Welsh slate was also recorded and is likely to represent a later period (post 18th century) of roof covering.

Glass

By Paul Cope-Faulkner

The window glass was examined and a period date assigned where possible. The results were entered into an Excel spreadsheet for use in MapInfo and the results plotted as a series of date and presence diagrams.

Vessel Glass

None of the vessel glass has been examined at this stage.

Medieval Window Glass

Thirty seven squares contained medieval window glass. The window glass was generally derived from an area north and northeast of the earthwork which would relate to the conventual buildings on the north side of the priory church.

A few fragments of glass were collected north of the Marse Dyke. Two fragments northwest of the church may relate to re-glazing of the church.

Post-medieval Window Glass

Fifty five metre squares contained post-medieval window glass. These are clustered north of the earthwork and relate

to the post-suppression house. A few other fragments perhaps indicate manuring scatters.

Animal Bone

No formal identification or quantification of the animal bone has been undertaken.

Categories of Other Finds

Mortar

Several squares produced mortar, though not in the quantities expected. There is no perceived focus of the material.

Shell

Significant quantities of shell were retrieved from the fieldwalking. Most comprised edible marine molluscs (oyster, mussel etc) and are likely to represent food waste.

5. STATEMENT OF POTENTIAL

5.1 Geophysical Survey

The results of the geophysical survey show, in places, in exceptional quality the presence and extent of archaeological remains across the site. In particular, elements of the priory buildings, the layout of the village and post-suppression house are clearly discernable.

Elements of the priory were clearly identified using resistivity survey. Additional resistivity survey, particularly to the north and south of the earthwork may help to elucidate further the groundplan of the priory.

The true potential of the geophysical surveys lies in associating the results with aerial photographic and surface observation data to enable a clearer picture of the development of the survey area to be reached.

5.2 Fieldwalking Survey

Plotting of the stone density enabled the lines of several walls to be made out. Most of these walls, particularly around the earthwork, would appear to relate to the Tudor mansion. These include walls of the house as well as walls defining garden courtyards.

East of the earthwork are high stone densities relating to the eventual demolition of the priory and post-suppression house.

To the west, stone spreads and further walls indicate buildings set within the outer monastic court.

Stone density in the northern field is less well marked. However, several small foci are visible, many of which relate to the buildings of the medieval village or outer court structures.

That walls and stone spreads are clearly visible indicate that the walls lie within the plough horizon and are, therefore, being actively eroded.

Tile and brick densities concentrate on areas to the north and east of the earthwork and to the southwest and indicate spreads of demolition material. Smaller foci north of the Marse Dyke may also be associated with buildings within the village or outer court structures.

In addition to the above densities, more discrete features were identified. These included an area of fire reddened silt with a spread of light grey vesicular mould fragments, representing a possible bell casting pit (TF 10575 32370), and a second area of fire reddened silt, crushed tile and charcoal (Plate 4), perhaps a tile kiln (TF 10500 32745). An additional tile kiln is suggested by wasters in the vicinity of TF 10750 32740 (see tile report above). A more recent building was also identified at TF 10640 32320 from a spread of brick,

tile and stone (Plate 3).

5.3 The Artefacts

The artefacts were all generally retrieved in a good to fair condition.

Flints

By Tom Lane

Potential

While a good representative sample of the background lithic density and make-up of the area, the collection has little potential for advancing either lithic studies or period studies.

Discussion

Little can be said about the prehistoric archaeology of the site from the lithics collection. They span the Mesolithic to Bronze Age but are fairly evenly spread over most of the area in a typical background scatter. The area of this survey was not covered as part of the Fenland Project when a similar fairly sparse lithic background was recorded in the immediate environs. This included the discovery of a Neolithic axe in the field immediately to the west. None of the pieces found were particularly rare or unusual and there was no clustering.

Pottery

By Glyn Coppack

The potential of the pottery collection from field-walking

A collection of 27,279 sherds collected in small squares is capable of providing exceptional detail about the site. To date, all that has been done with the collection is to identify the number of sherds against pottery type series, to demonstrate period of occupation of individual elements of the site, and to distinguish areas of occupation from likely areas of cultivation. This has been done with great effect, and has

permitted the definition of the precinct of Sempringham Priory and the Anglo-Saxon to medieval village that preceded it and the Tudor great house and its gardens that followed it.

Further work could be done on vessel-form analysis, against areas of known building and probable function. However, the collection is unstratified and it was considered unnecessary to record vessel form when the pottery was analysed. The collection has not raised new research questions. In my opinion, there is no need for any further work on the collection at present with one exception:

The stamped Anglo-Saxon – Middle-Saxon sherds have been removed from their original bags, and should be examined by a specialist to determine date and likely source. This might be extended to the generic early to middle-Saxon material which remains in its original bags.

The study of a large collection of both Nottingham and Lincoln medieval pottery which was identified against the existing type series and the published Corpus of Anglo-Saxon and Medieval Pottery from Lincoln (Young and Vince 2005) has identified potential difficulties in identification. Too great a reliance has been placed on tempering agents (ie sand sources), and in the case of Nottingham, presence or absence of glaze has been used to separate closely comparable fabrics. In the former case it has extended date ranges for specific fabrics, in the latter case it separates splashed-ware jugs which are glazed from other vessels which were not, even though the two are found together in the same kiln groups. Geological advice is that two buckets of sand from the same pit are likely to be different mineralogically, the result of distant erosion and long-distance water deposition. In both cases, this could lead to stratified material being either misidentified or misdated. It is less significant in the study of unstratified material.

Brick and Tile

Examination of this material should accompany the density plot for the brick and tile produced in the field.

Recommendations

By Anne Boyle

The ceramic building material should be quantified by count and weight; much of the material is either in poor condition or non-diagnostic making it suitable for discard once an adequate archive record has been made (retaining at least 10% in line with museum deposition policy). A fabric and form type series should be established for the tile and a range of peg and nib types should be illustrated, along with any rare or unusual fragments. ICPS analysis could be carried out to compare the Sempringham fabrics with those from Lincoln and Bourne. The fragment of stove tile and inscribed tile warrant a note in the appropriate journal(s).

The Clay Pipe

By Gary Taylor

Potential

The greatest potential of the clay pipe assemblage is presented by the marked concentration of predominantly 17th century material found north of the earthwork. This cluster includes types of possible late 16th century date, which occur very rarely in Lincolnshire. Habitation of late 16th -17th century date or, perhaps more correctly, refuse discard from such occupation, is strongly implied by the concentration of clay pipes at this location. The significance of the clay pipe concentration may be enhanced through its associations with other artefacts and archaeological evidence from the same area.

The thin scatters of clay pipe, north of the Marse Dike and west of the field track are likely to be due to manuring scatter.

Recommendations for further work

Due to their rarity in Lincolnshire, the early bowl forms merit illustration and more detailed re-examination. It is perhaps worthwhile, for the purposes of completeness and comparison, to illustrate the other bowls also. Otherwise, no further work is required on the clay pipe assemblage.

Metal Objects

By Gary Taylor

Potential

Differing types and dates of metal items have varying potential and significance. The halo of lead structural items around the earthwork are of potential in defining the location of, and something of the nature of, buildings in that area. Other functionally-specific and domestic items display zonation in their distribution and this has potential for defining activity areas across the site. The significance of any particular artefact type may be enhanced through its associations with other artefacts and archaeological evidence from the same area.

Recommendations for further work

More thorough comparison with published data should be carried out with some of the more unusual artefacts (eg, spouts, chalice case lid, purse bar, Saxon pin, *etc.*), and these should be illustrated. The more amorphous ferrous objects should be X rayed and then re-examined. Beyond this, no further work is required on the metalwork collection.

Metalworking debris

By Paul Cope-Faulkner

Further analysis of this work has the potential to determine if smithing or actual production of metalwork is occurring at the site.

Excavation would determine if the

apparent concentrations reflect industrial zones within the precinct. Furthermore, excavation of the concentration of slag at the east end of the fishpond, would determine if this was an industrial mill pond, such as the one found at Bordesley Abbey (Astill 1993). Further enhancement will be achieved by comparing this slag concentration with the results of a watching brief carried out on an adjacent ditch in 1978, the photographic records of which have only recently come to light.

Comparing the sites suggested for metalworking with the distribution of coal may elucidate fuel used in the metalworking processes.

Stone Objects

By Paul Cope-Faulkner

Most of the stone objects (querns and whetstones) were found across the village site, particularly south of the church. As such, they form an expected component of the Saxon and early medieval village.

Architectural Fragments

By Paul Cope-Faulkner

The architectural fragments all derive from the vicinity of the priory. None are known from the area surrounding St Andrew's church which has a known history of rebuilding and restoration. As yet the items are undated but some are characteristic of the later medieval period and further work may elucidate periods of rebuilding. However, it may be difficult to associate the items with particular buildings as the medieval material may have been incorporated into the post-suppression house.

The stone roof tile has been plotted and indicates that many of the buildings of the priory area used this material in addition to ceramic roofing material. No attempt to distinguish dates has been made, though

the limestone slate may have arrived at the site from the 13th century onwards.

When the survey area first came under cultivation during the Second World War, surface stone was removed from the site and some of it used to resurface Primrose Lane, located west of the church (*pers comm.* Glyn Coppack). More recently, stone brought to the surface by ploughing has been dumped within the earthwork area. This transportation of stone will have an effect on the potential of the assemblage to be associated with particular structures.

Glass

By Paul Cope-Faulkner

Vessel Glass

This material is mainly of post-medieval date and requires examination.

Window Glass

This has been plotted and shows discrete concentrations in the area occupied by the northern conventual range and post-suppression house. There is a paucity of medieval material from the southern conventual range (south of the earthwork) and the main body of the priory church, which invites comparison to other monastic sites.

Medieval window glass from previous excavations at Sempringham has been noted upon previously in a wider report on the window glass of the Gilbertine Order (Graves 2001). None of the material retrieved from fieldwalking will contribute to this corpus, though any future work at the site may produce window glass of significance for incorporation.

Post-medieval window glass is largely concentrated north of the earthwork. Further examination of this material may determine phases of construction of the post-suppression house.

Post-medieval window glass was also retrieved from an area of buildings identified on the western side of the southern field. This may indicate continued use of buildings within the precinct following the dissolution.

Animal Bone

Analysis of the animal bone may indicate discrete areas of dumping of kitchen waste or general zones of disposal. However, the animal bone assemblage may also relate to livestock disposal occurring since the abandonment of the post-suppression house. Therefore, no work has been undertaken on this category of material.

Categories of Other Finds

Mortar

As few fragments of mortar were collected, there is little potential in further examination of this category of find.

Shell

The plotting of this material will generally indicate nothing more than manuring scatters, though any focus of material may suggest the presence of a discrete midden, perhaps associated with kitchen or refectory waste.

6. STORAGE AND CURATION

6.1 Receiving Body

All primary records and finds are currently kept at:

Archaeological Project Services
The Old School
Cameron Street
Heckington
Sleaford
Lincolnshire
NG34 9RW

The ultimate destination of the project archive is:

The Collection
Art and Archaeology in Lincolnshire
Danes Terrace
Lincoln
LN2 1LP

The archive will be deposited in accordance with the document titled *Conditions for the Acceptance of Project Archives*, produced by the Lincolnshire City and County Museum. The accession number for the material and paper archive is LCNCC: 2004.5.

6.2 Conservation

None of the metalwork and window glass has yet been stabilised to museum standards. None of the other material finds are expected to require 'special' storage or conservation.

6.3 Discard policy

Most of the material retrieved during this investigation is expected to be retained, although the natural and burnt stone is recommended to be discarded. Brick and tile could be quantified by count and weight before discarding all but 10% of the assemblage. The remaining material will form a significant resource for future research into the origins of Sempringham.

7. SITE OVERVIEW

Summary

The geophysical and fieldwalking surveys achieved all of the original aims of the project. In particular, the work has established a firm base for future research, interpretation and management.

These investigations have produced data regarding prehistoric landscape use, Romano-British settlement, Saxon

habitation, medieval monastic activity and the establishment of a major post-medieval house, which is further enhanced by photographic and geophysical data.

Aerial photography and geophysical survey suggest that archaeological remains survive but the future stability is under threat, principally from the agricultural regime undertaken at Sempringham.

Results of all aspects of work undertaken at Sempringham will make a substantial contribution to the understanding of the development of the area from the prehistoric to post-medieval periods.

The fieldwalking results suggest that the site of Sempringham village has been a focus for settlement since the Romano-British to the early post-medieval periods. Settlement was attracted here due in part to a spring and generally good drainage and its south facing gentle slope.

Furthermore, overlaying the plots of particular categories of finds on to the aerial photographic interpretation (e.g. Figures 20 and 21) have the ability to demonstrate the development of Sempringham village and priory.

Key Points

- The superimposition of Prehistoric, Romano-British, Saxon, medieval and later activity at the site shows continuity of settlement and land-use.
- Sempringham priory is of international significance and bears comparison with Cîteaux, Savigny, Prémontré and the Grande Chartreuse.
- As the mother house of the only English order, it is of significant national and international importance.

- There is a wealth of documentary and previous archaeological evidence for Sempringham Priory which will enhance overall site interpretation.
- Previous archaeological work, particularly the results of the Fenland Survey, in Sempringham and the surrounding fen-edge has provided a well understood 'setting' in which the site can be placed.
- The site is undergoing continued attrition from cultivation and is under significant future threat.
- The current bounds of the Scheduled Area exclude the site of the village, the priory church, the north cloister and the post-suppression house (Fig. 24). It does, however, encompass areas outside the priory precinct in which little archaeological material was identified during the fieldwalking survey.

Assessment of Impact

The current levels of impact are largely restricted to damage by ploughing. This has in many cases lifted large blocks of masonry to the surface of the field where they are at further risk from erosion and damage by machinery. There are earthworks, albeit slight, evident around the priory site which are gradually being eroded through ploughing.

Soil marks and field observations also accentuate the damage being done by the plough, with visible wall lines apparent across the survey area.

It is considered that future threats to the site will be dictated by its ploughing regime. However, maintenance of the

Marse Dyke by the local drainage authority may also be a threat. This is evidenced by high densities of stone, ceramic building materials and other cultural material adjacent to the watercourse, particularly on the southern side of the southeast return of the Marse Dyke.

The extent of the damage being done by cultivation at the priory site has not been assessed by evaluation excavation since 1987 when English Heritage concluded that the site was stable. No similar exercise was undertaken on the site of the village.

The site is also under threat from illicit metal-detecting, although most of the priory lies outside the scheduled area. The tenant farmer reported of several instances where discarded headphones have been found at the site.

Future Work

No future work is currently envisaged for Sempringham. Despite this, '*research into the origins of the Gilbertine order, the development of the Gilbertine plan and economy makes the study of Sempringham Priory a high priority in national terms*' (Lewis 2006, 213).

This work has indicated a number of issues which should be addressed in any future work on the Gilbertine priory and order in general. The following provides a brief summary of possible future directions.

- In the short term, the effects of cultivation should be immediately re-assessed by evaluation excavation. Opening the trenches excavated by English Heritage in 1987 will quickly establish whether ploughing is having an adverse effect on the monument.
- This assessment of plough damage, when coupled with the results of this survey which has gone some way in defining the layout and extent of the

priory and village, can enable informed decisions regarding any changes to the extent of the Scheduled Area.

- Some categories of finds require further attention, most notably the ceramic building material. This material should be quantified by count and weight and any new information added to the county type series before the majority could be discarded. None of the other material (mortar, vessel glass etc) has yet been quantified which is a requirement before deposition in the museum.
- The clay pipe is also of some interest and the bowls should be illustrated and published as they are of types rare in Lincolnshire.
- Some of the metalwork requires further comparanda and amorphous ferrous material may require X-rays. All the metalwork would require stabilisation or conservation to accepted museum standards.
- A short synthesis of the work undertaken should be published in a suitable journal and the Society for Medieval Archaeology has expressed an interest in doing so. This should include results of the geophysical survey as well as some of the preliminary results presented here. Short interim articles of the work have already been published (Coppack 2006; Coppack and Cope-Faulkner 2007). In the longer term, the overall results and interpretation should be substantially published at a local level.
- Although analysis of the material will best be undertaken within a structured research design for which this document could form the base, the following areas of work may be beneficial for the future.
- There are two areas of distinct earthworks which are under threat from the current agricultural regime. The first area includes the upstanding earthwork within the southern field and areas to the west, north and east of this. To the south lies the side of the valley where some terracing is visible.
- The second area for possible earthwork survey is the site of the village where hollow-ways and house platforms are evident, though faint. These could be compared to early Ordnance Survey maps which show hollow-ways in the vicinity.
- If earthwork survey was undertaken, this could include the mill pond to the west of the site and the field to the south of this. In so doing, the wider setting of the priory and village site would be recorded.
- The need for an earthwork survey may be negated by using LIDAR data to create a topographic model. The LIDAR data is available for this area and held by the Environment Agency.
- Previous observations have suggested that a gatehouse survives where Primrose Lane meets the site (approximately TF 103 325). This lay outside of the survey area, though indicates that the monastic precinct is larger than that fieldwalked. Limited further work may accurately define the true limits of the outer precinct along the western edge of the site.
- Shortly after the fieldwork was completed at Sempringham, Mr Simon Erskine Crum was able to take a series of photographs from the air. This work was commissioned privately by Glyn Coppack. Conditions were conducive to soil-mark formation and the clarity of the photographs has enabled new features to be identified. Plotting of these new photographs would enhance the previous aerial photographic plots and the overall interpretation of the

site.

- A range of stamped Anglo-Saxon pottery was retrieved from the fieldwalking exercise. This material requires further examination and comparanda and added to a corpus of such material retrieved from the county.
- The results obtained from this survey can and should enhance the interpretation of Catley priory, of which part of the outer precinct was fieldwalked in a similar manner in 2002. Catley priory has also been subjected to an earthwork survey by English Heritage (Hunt and Brown 2005).
- The results are also beneficial to the understanding of partly excavated Gilbertine double-houses such as Bullington, Haverholme and Nuns Ormsby. These sites still require post-excavation analysis, particularly as the work was undertaken in the 1950s and 1960s.

Conclusions

Combined geophysical survey and fieldwalking undertaken at Sempringham has provided a wealth of data that will allow the development of the site to be fully understood.

Distributions of finds demonstrate that they are closely associated with the medieval village and priory or the post-suppression house. Furthermore, artefacts also demonstrate a Saxon pre-cursor to the village, possibly monastic in nature, and the existence of a Romano-British settlement.

However, the survival of these artefacts shows that primary archaeological contexts are being severely eroded and that the site is under considerable threat from its current agricultural regime.

8. ACKNOWLEDGEMENTS

Archaeological Project Services wishes to acknowledge the assistance of English Heritage who commissioned the fieldwalking, geophysical survey and the production of the assessment report. In particular, thanks must go to Kath Buxton, Glyn Coppack, Tim Cromack, Chris Scull and Gareth Watkin. Permission to undertake the work was granted by Crown Estates Commission and access to the field was kindly provided by the tenant, Mr J. Richardson. Simon Erskine Crum kindly allowed use of aerial photographs, commissioned by Glyn Coppack, taken after the survey was completed. The work was coordinated by Tom Lane who edited this report along with Gary Taylor. Glyn Coppack also commented on a draft of this report.

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10. ABBREVIATIONS

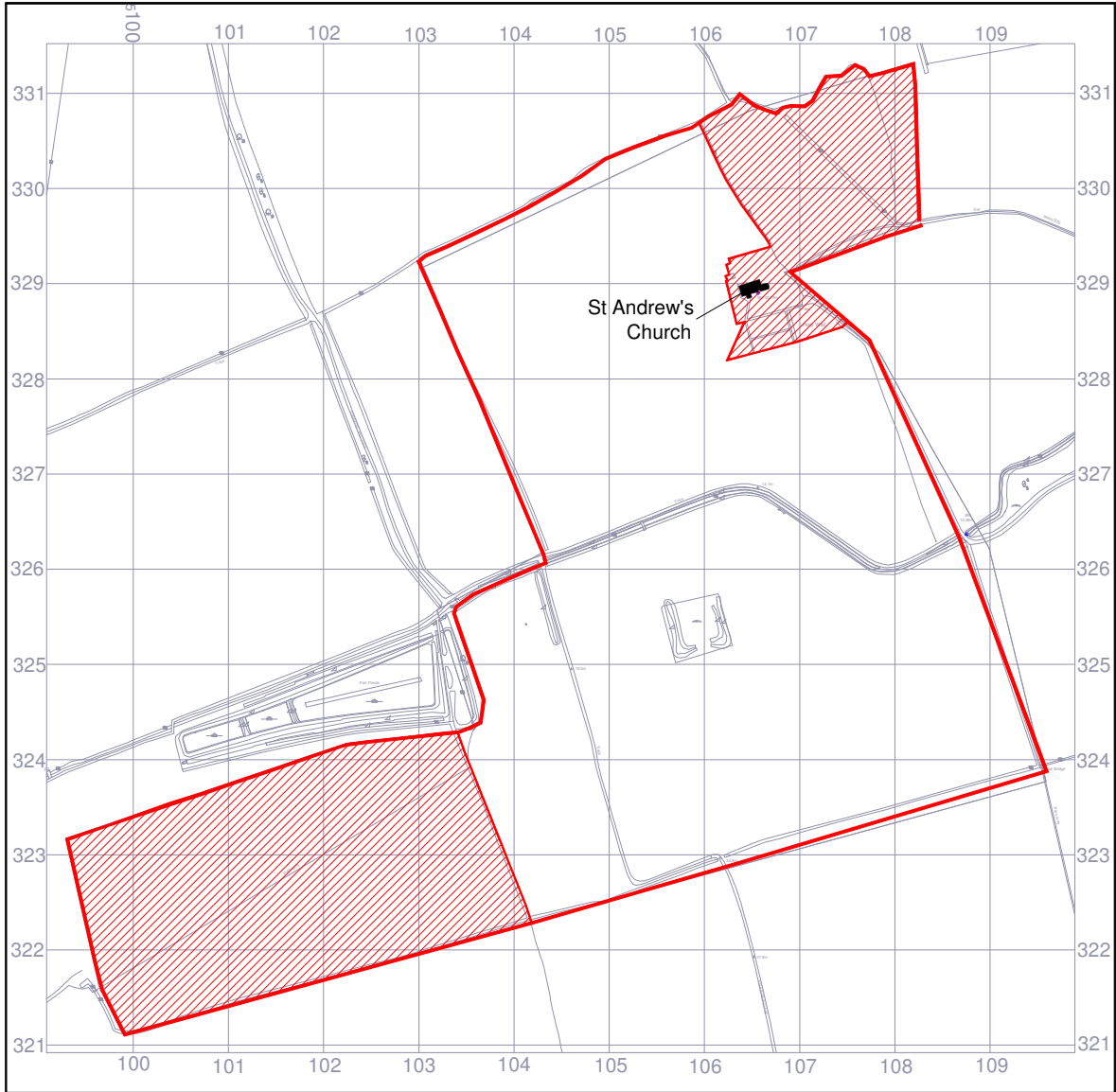
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

GSGB Geological Survey of Great Britain

LAO Lincolnshire Archive Office



Figure 1 - General location plan



-  Original survey area
-  Areas not surveyed



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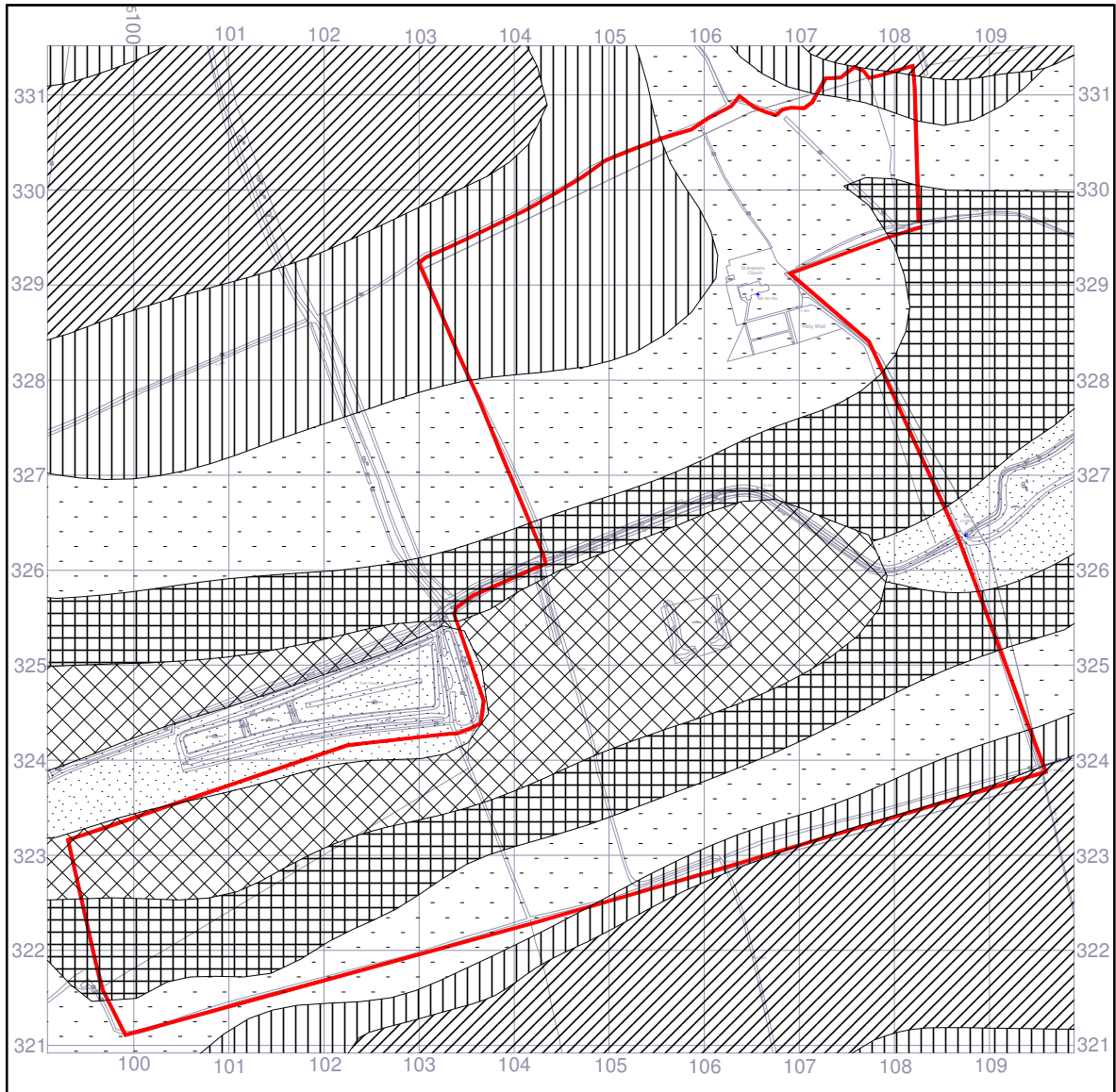

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Project Name: Sempringham Priory Survey		
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Figure 2 - Extent of the survey



Drift geology

 Alluvium


 Glacial Till

Solid geology

 Oxford Clay

 Kellaways Sands

 Kellaways Clay

 Cornbrash

Source: GSGB 1972



Survey area

0  500m

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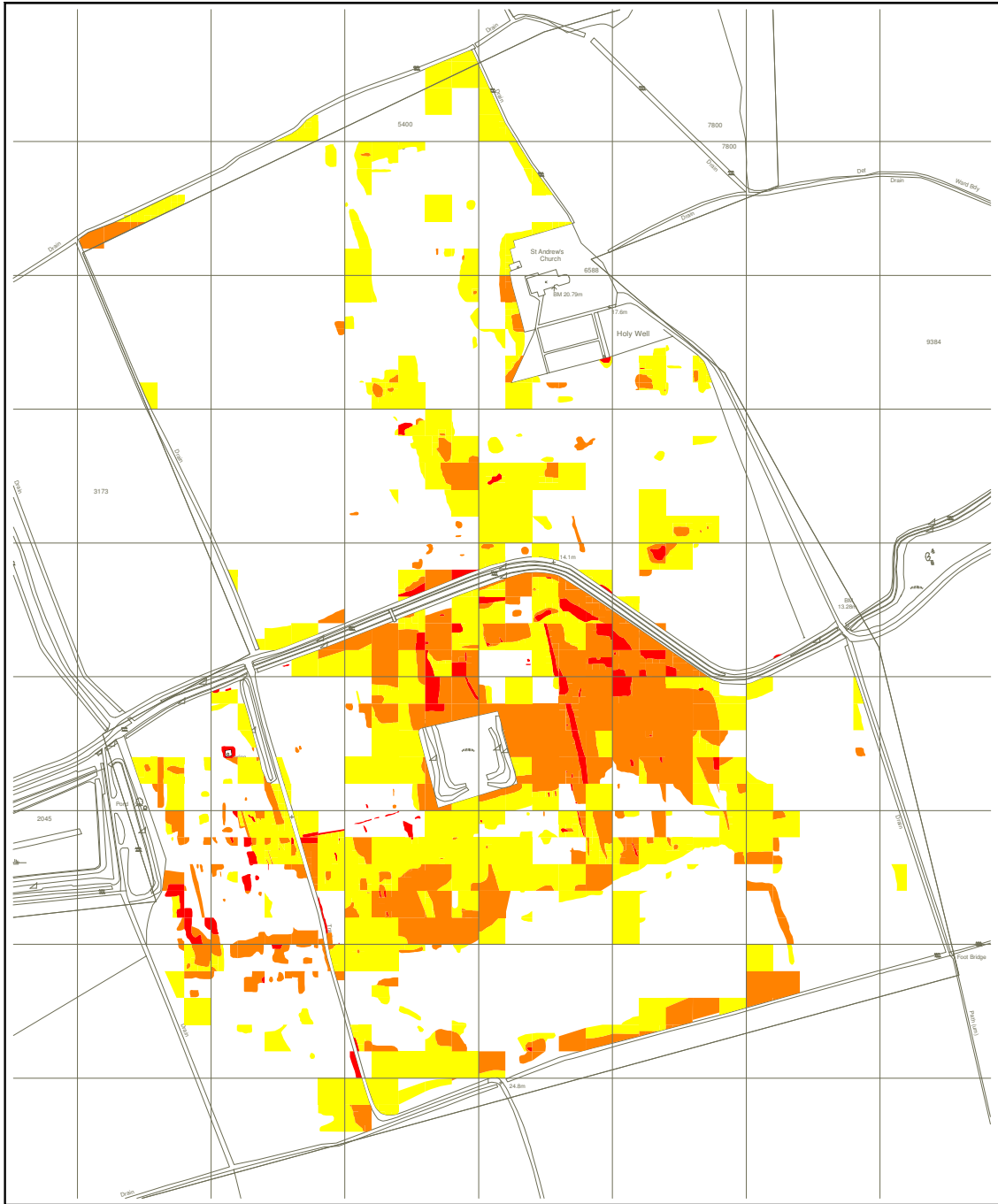
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Report No: 113/08

Figure 3 - Geology of the Survey Area



-  Dense
-  Moderate
-  Occasional
-  Sparse to none

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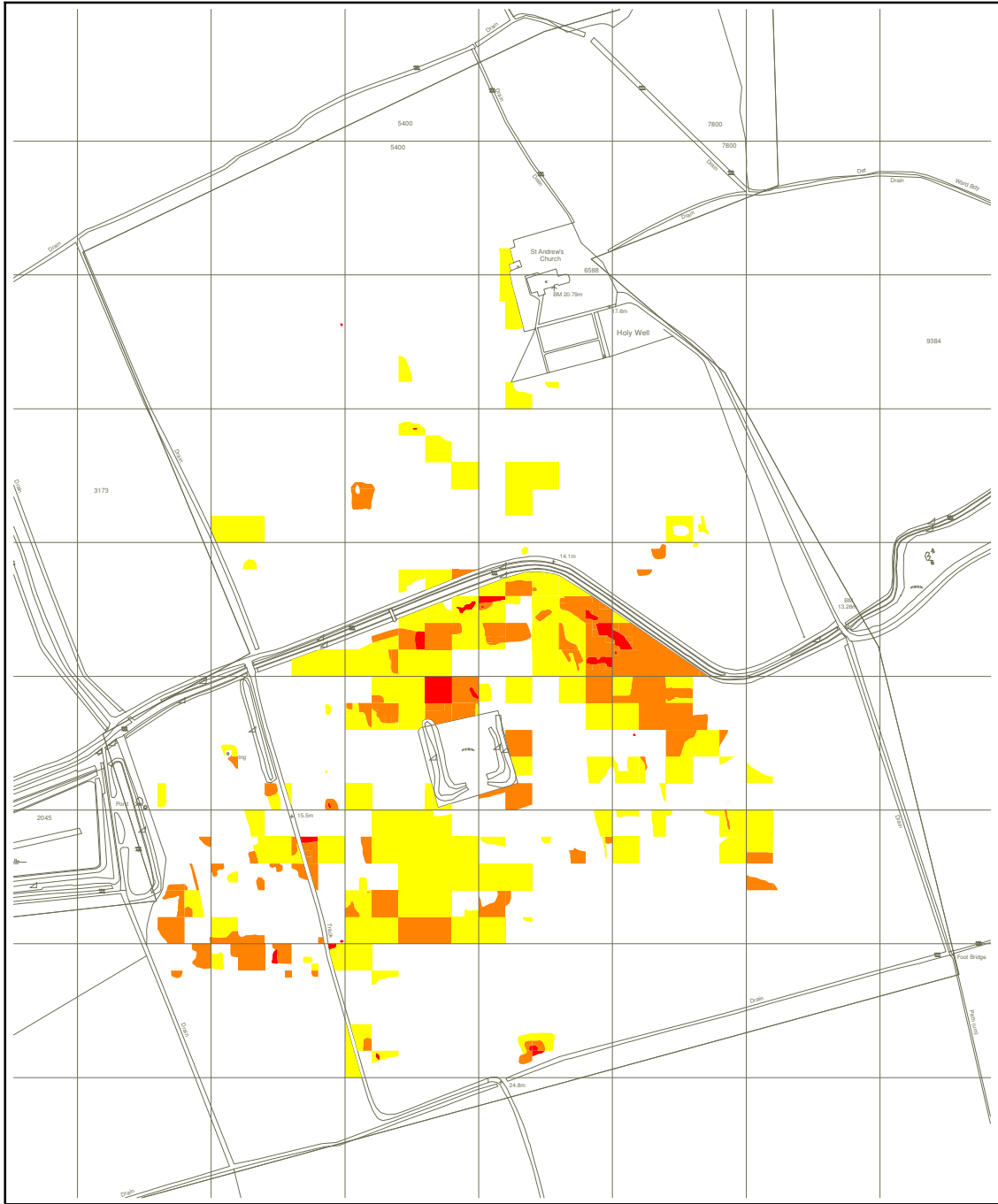




 Archaeological Project Services		
Project Name: Sempringham Priory Survey		
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Figure 4 - Stone density



-  Dense
-  Moderate
-  Occasional
-  Sparse to none

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Figure 5 - Tile and brick density

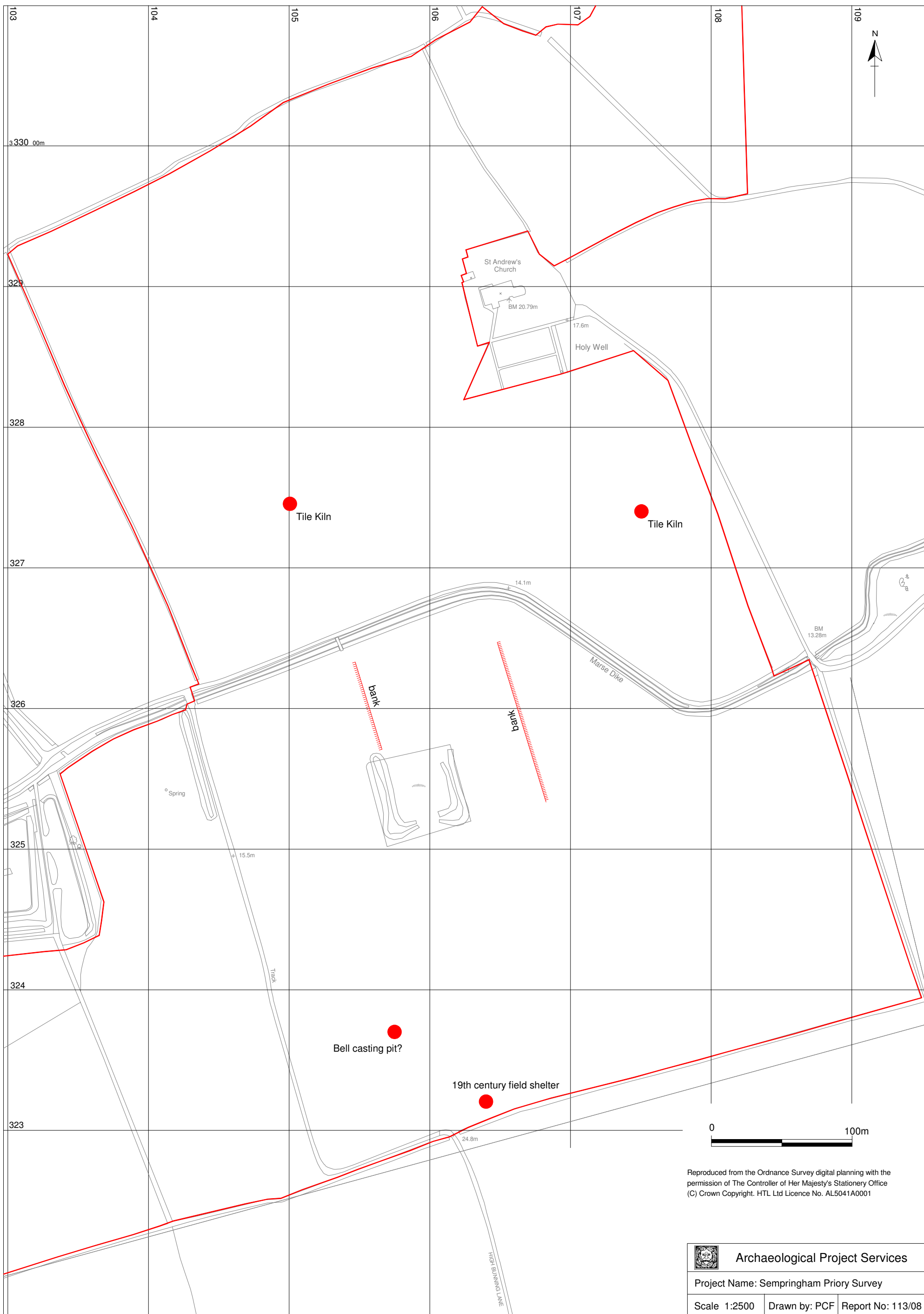


Figure 6 - Features recorded from the fieldwalking

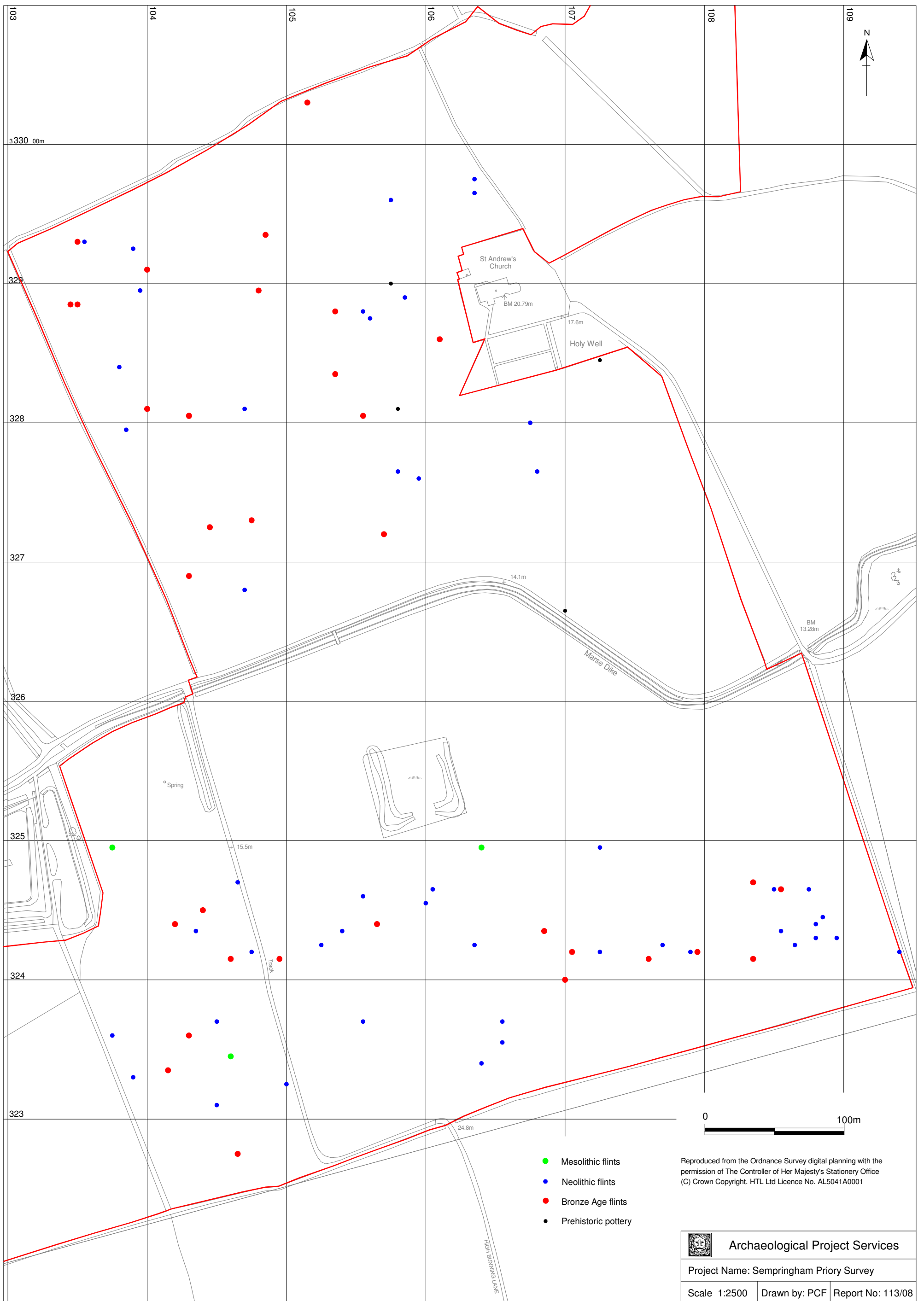


Figure 7 - Distribution of Prehistoric artefacts

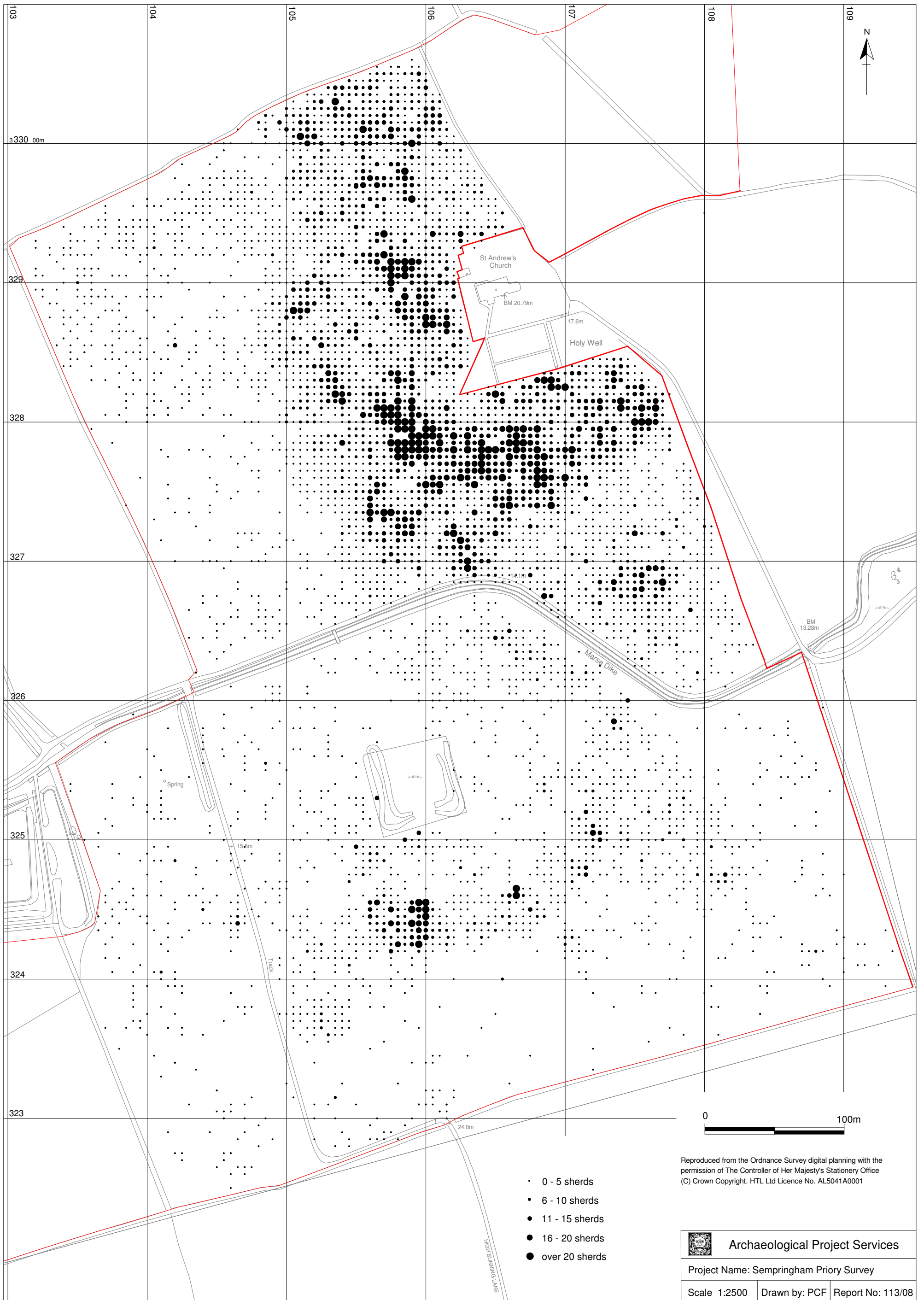


Figure 8 - The distribution and quantities of pottery of all periods recovered by fieldwalking

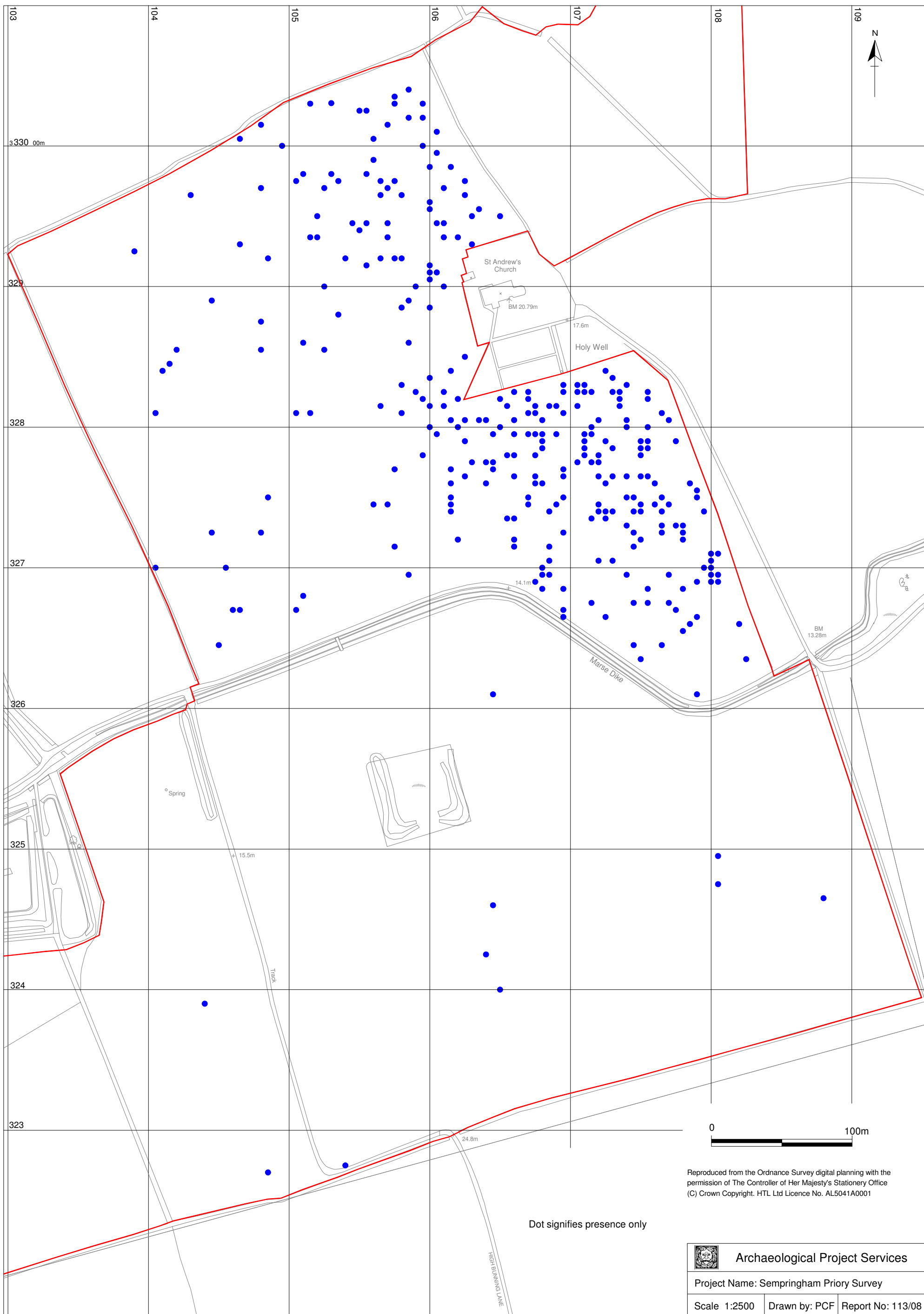


Figure 9 - Distribution of Romano-British pottery

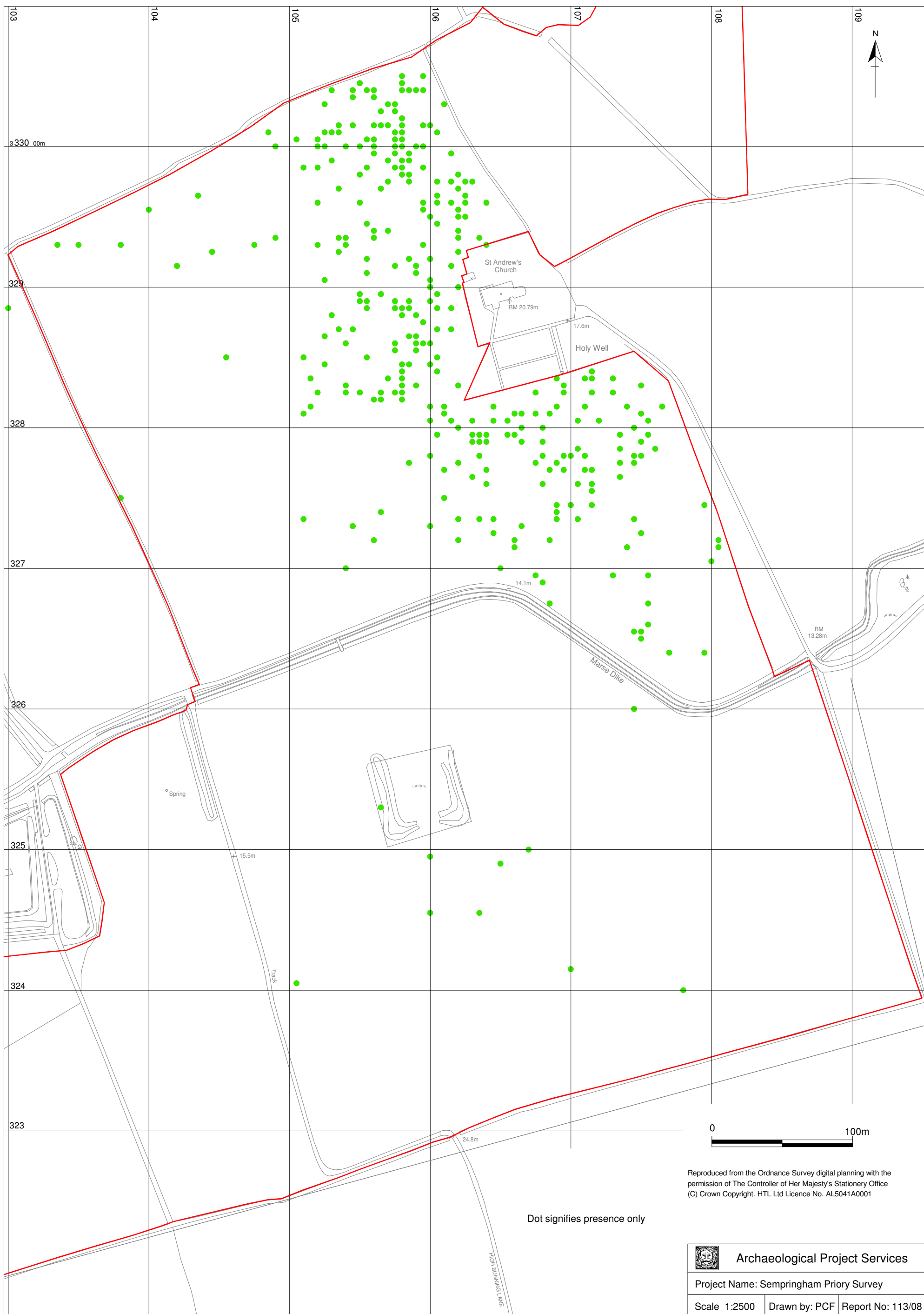


Figure 10 - Distribution of Early to Middle Saxon pottery

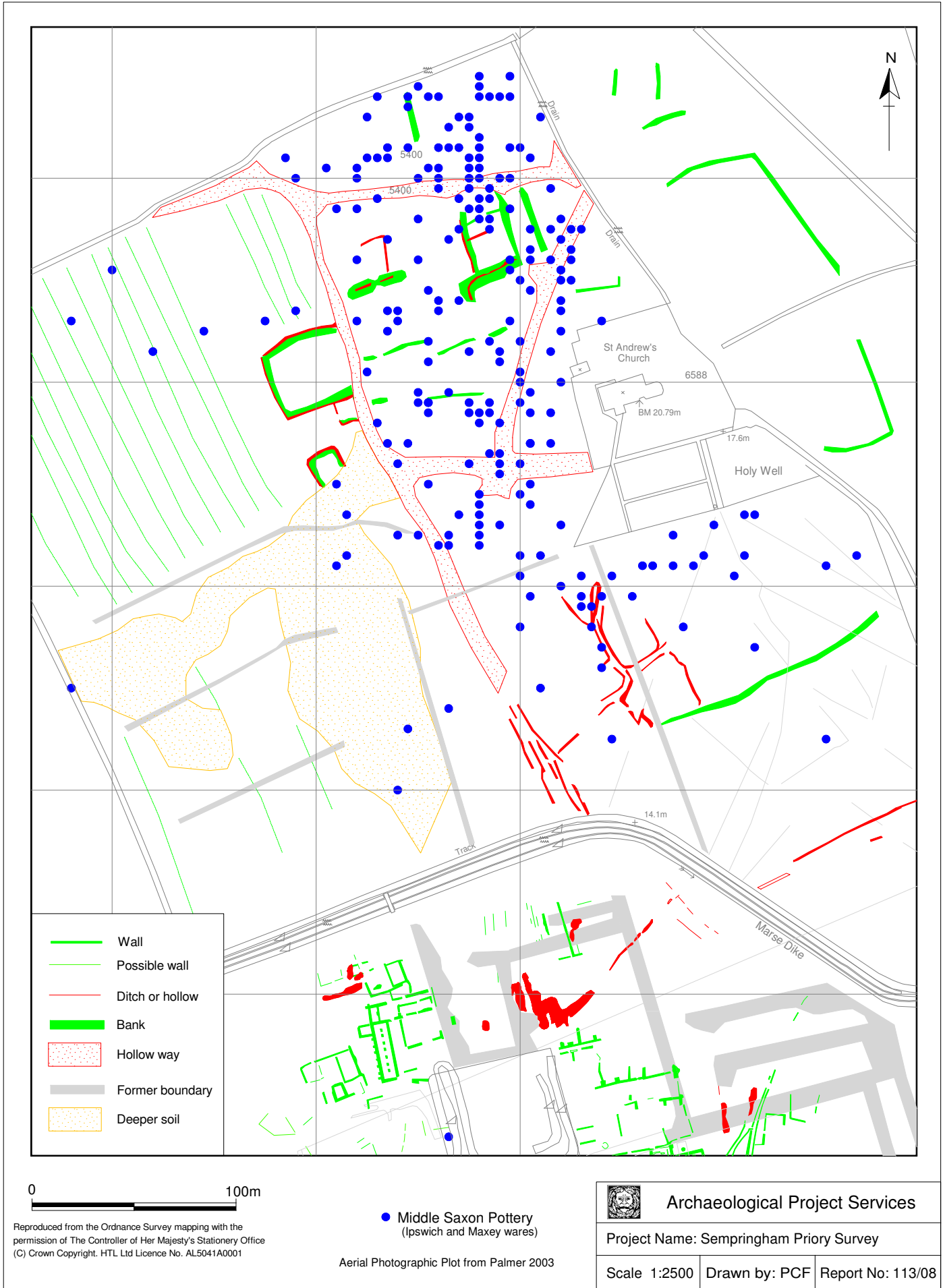


Figure 11 - Middle Saxon pottery distribution on a plot of the site's aerial photography showing the area of the ditched enclosure

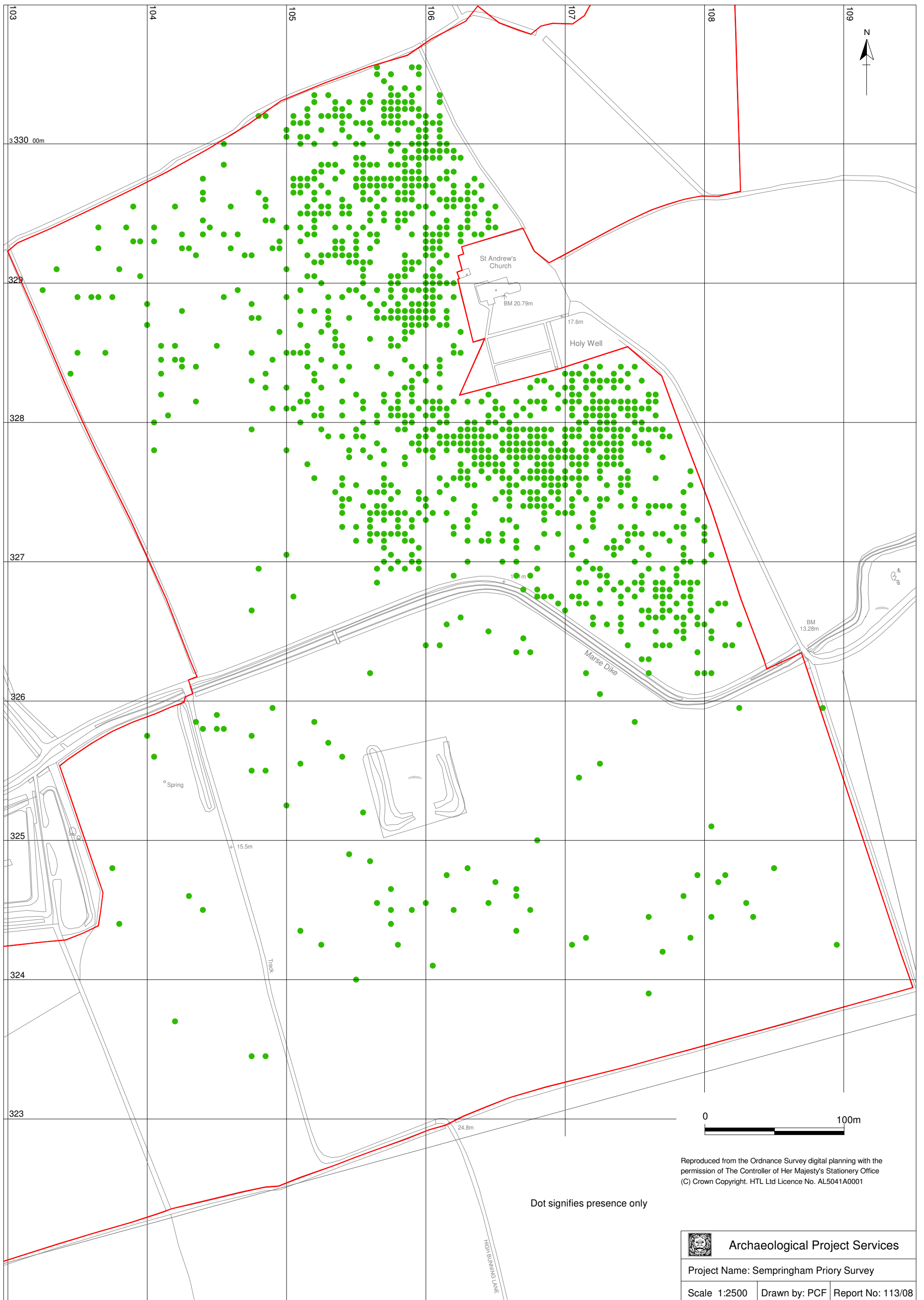


Figure 12 - Distribution of Late Saxon and Saxo-Norman pottery

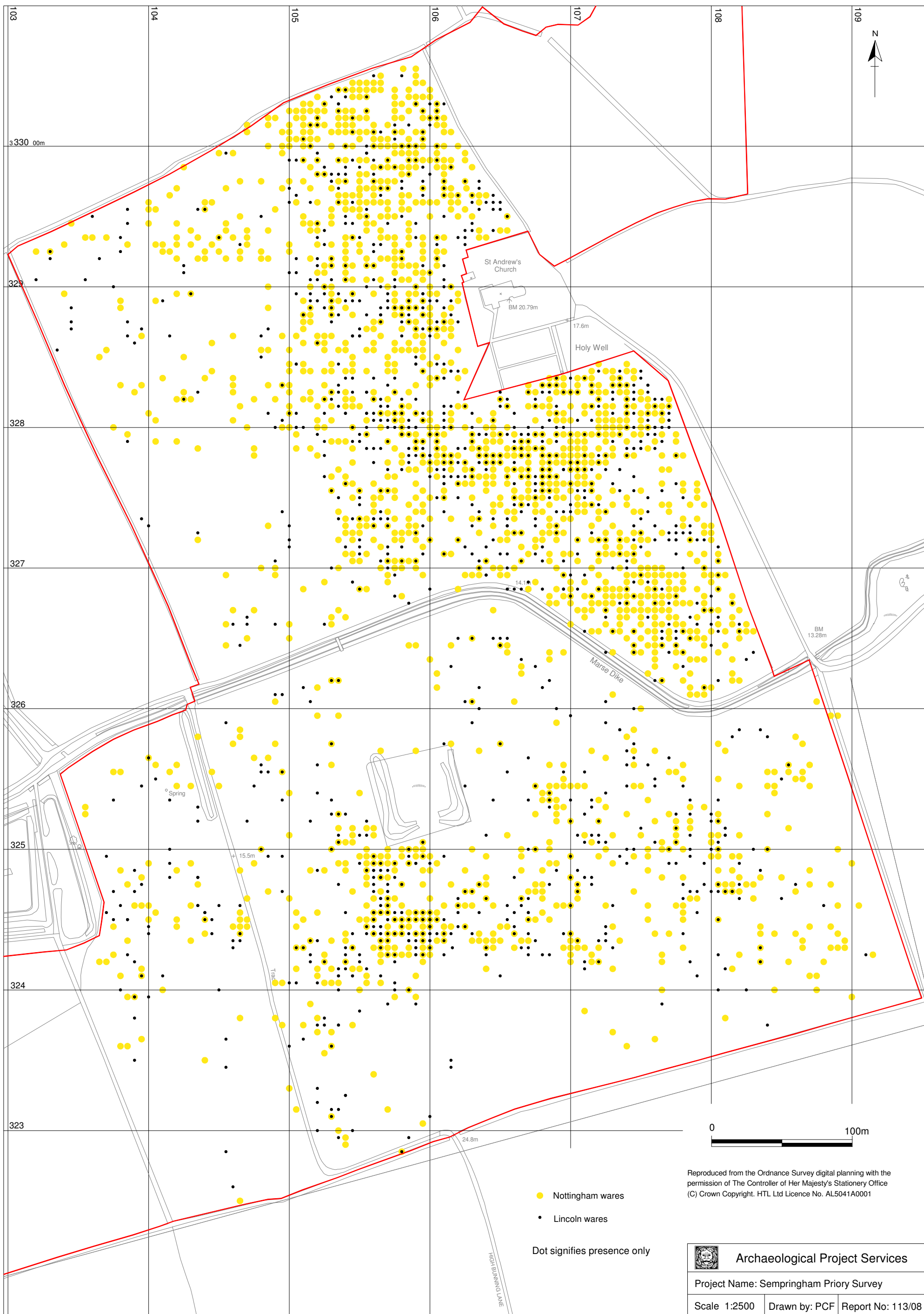


Figure 13 - Distribution of Nottingham and Lincoln wares

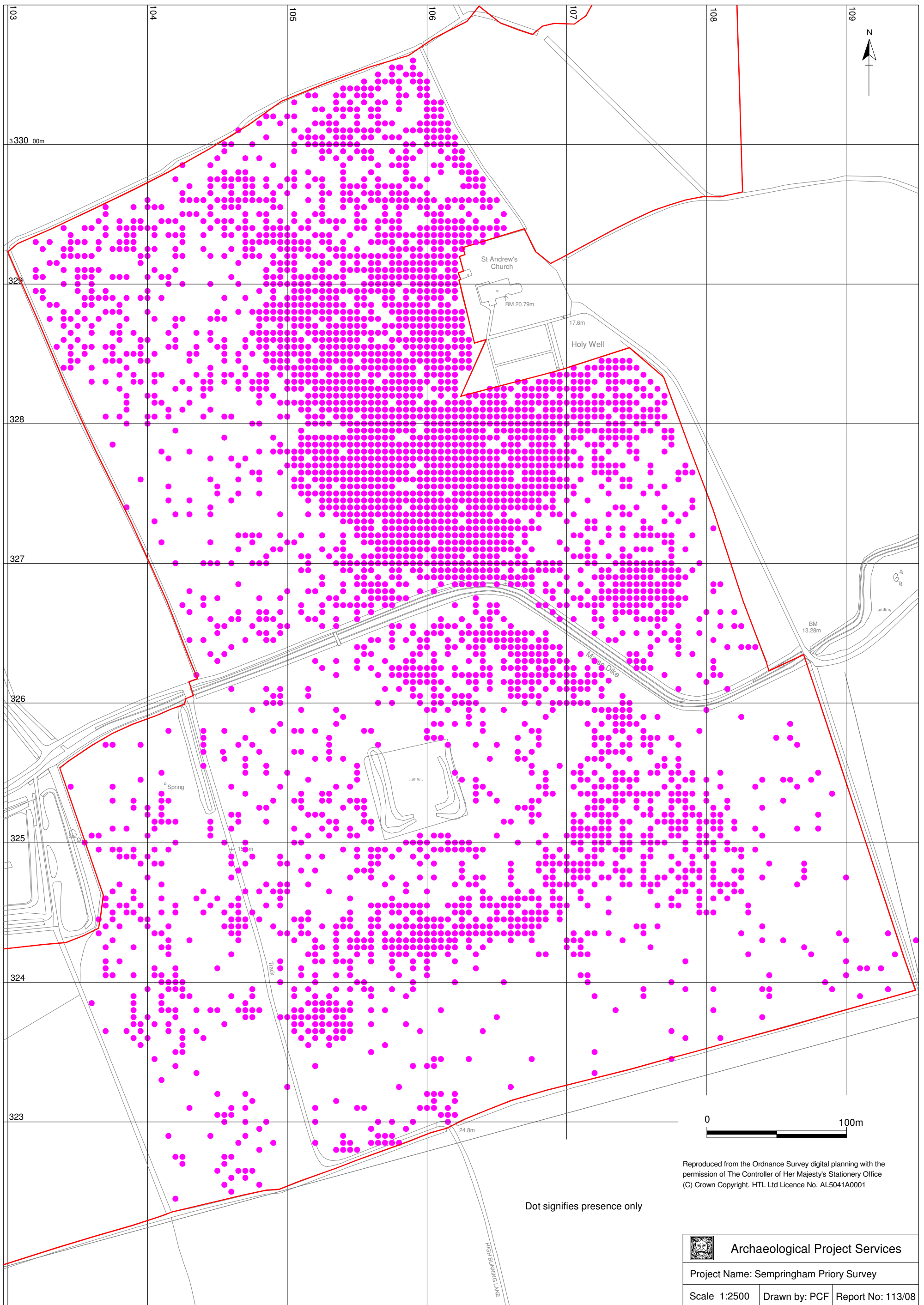


Figure 14 - Distribution of late medieval and post-medieval pottery

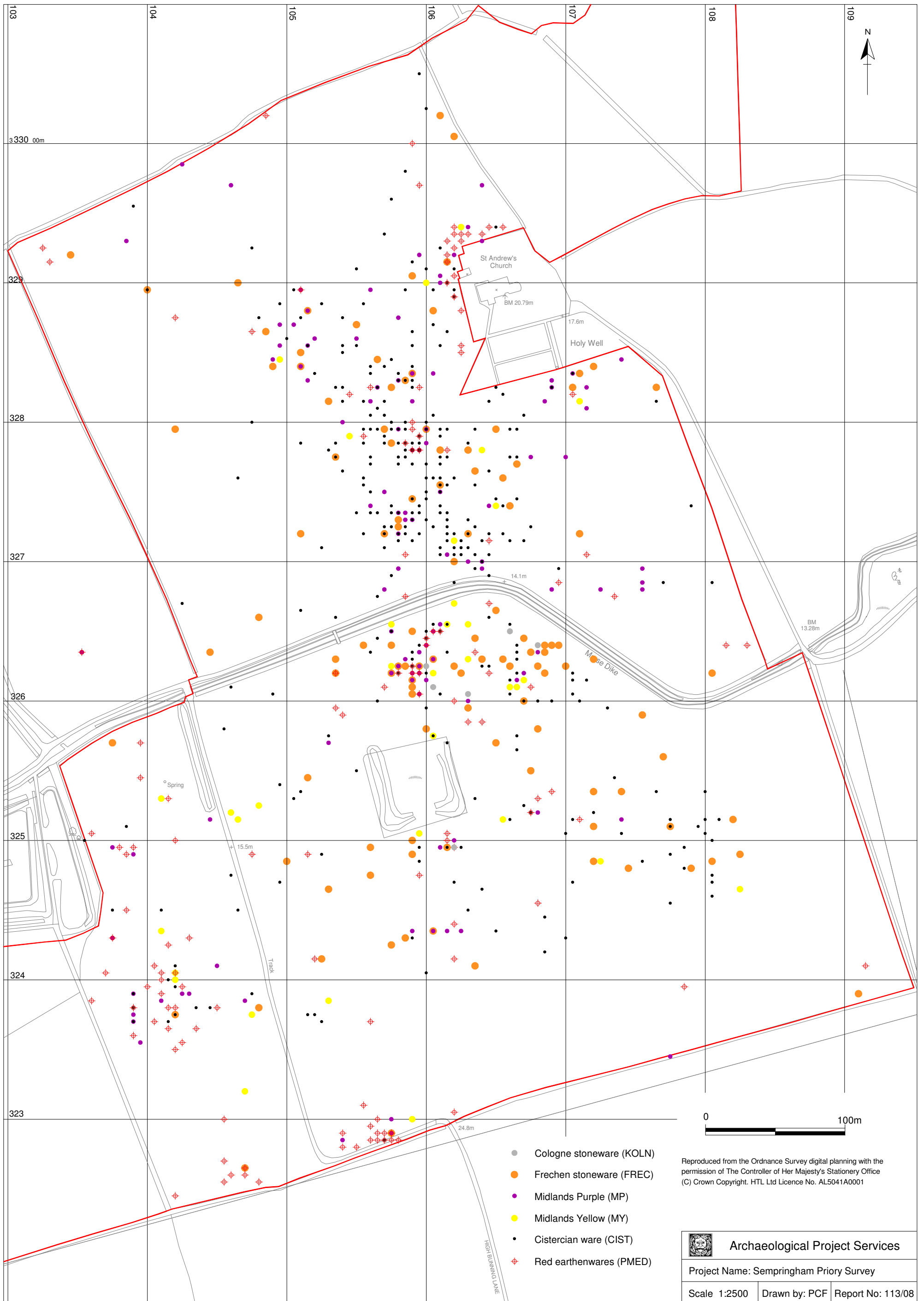


Figure 15 - Distribution of sixteenth and seventeenth century pottery

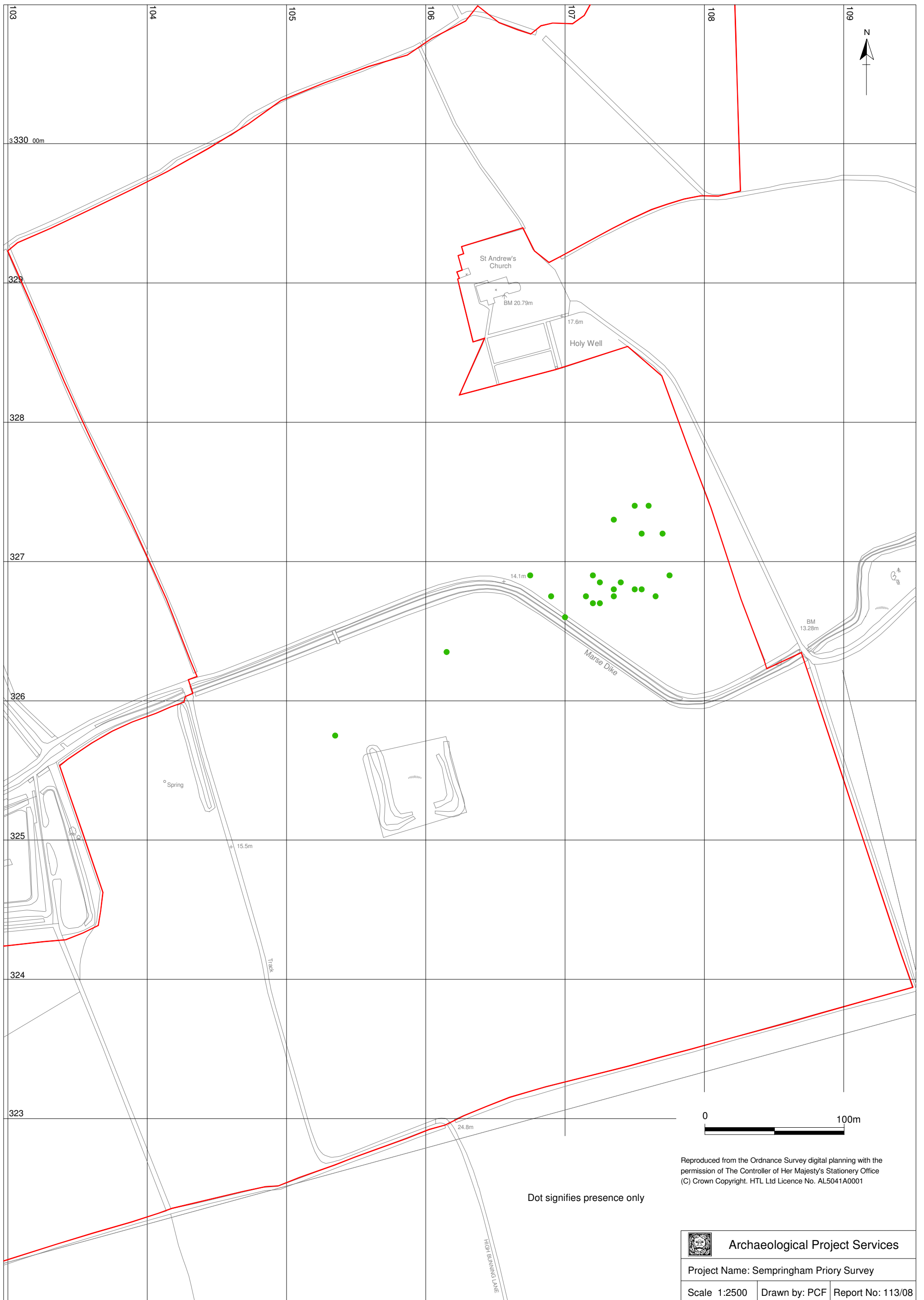


Figure 16 - Distribution of mosaic floor tiles

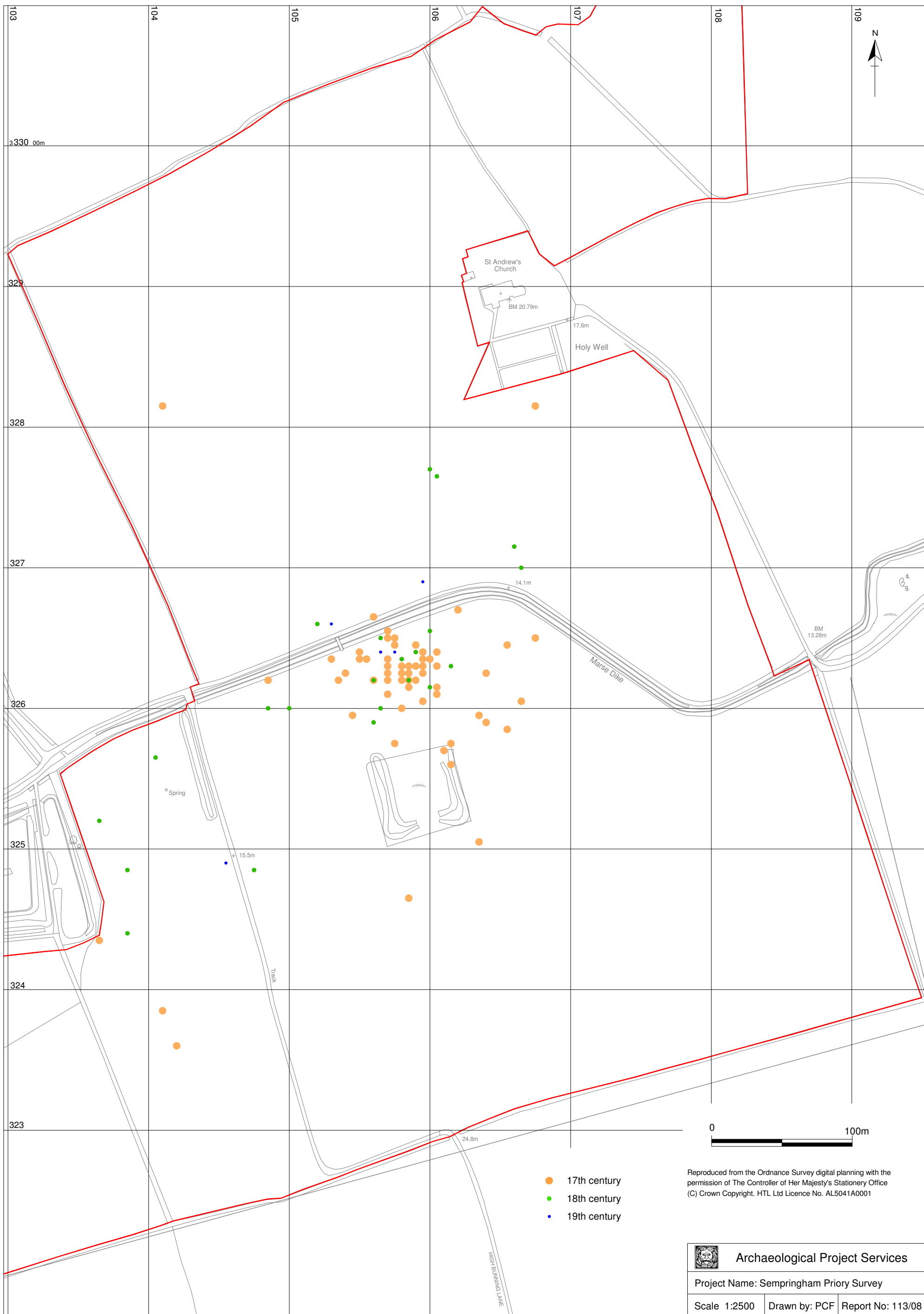



Figure 17 - Distribution of clay pipe

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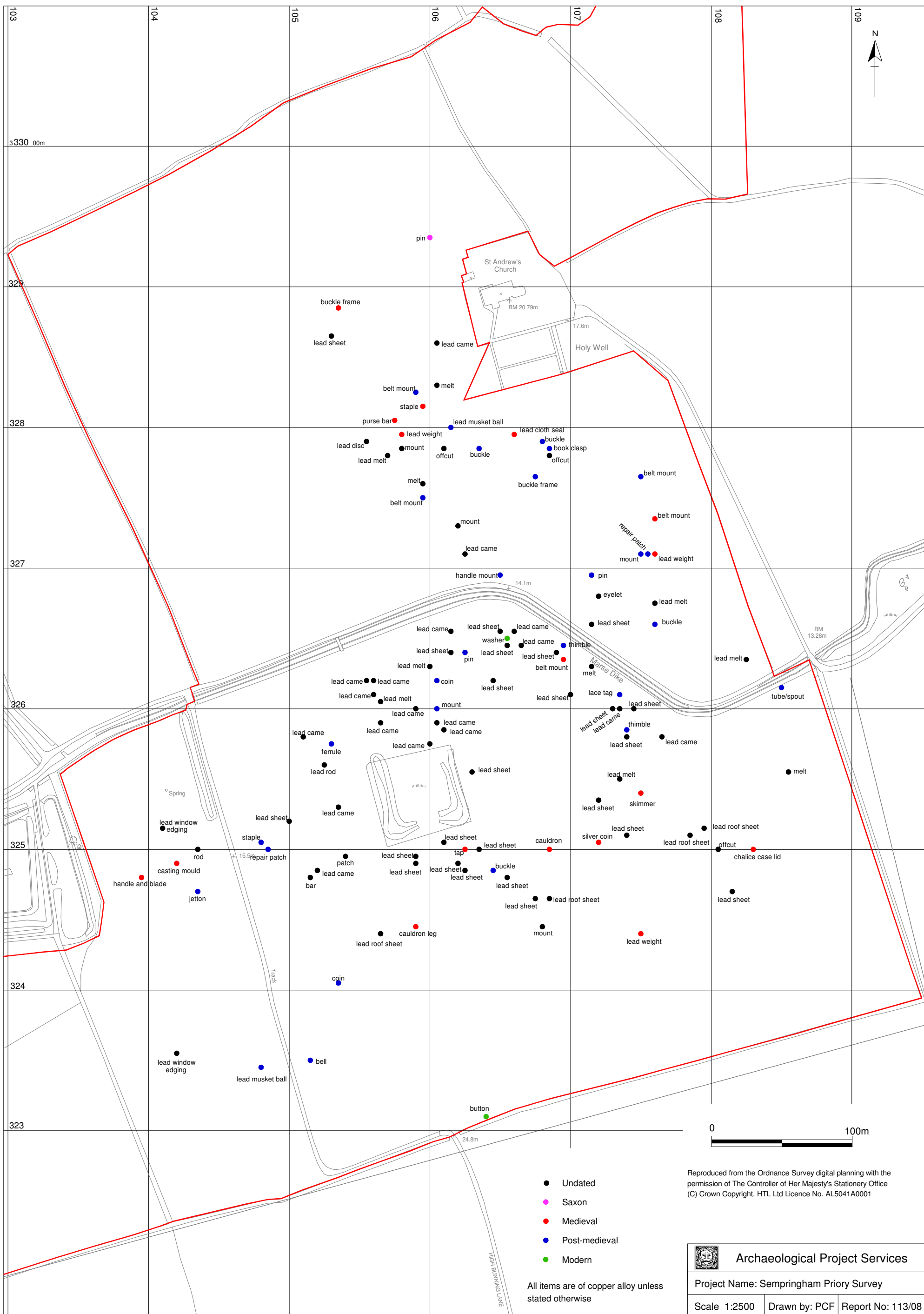


Figure 18 - Distribution of silver, copper alloy and lead items

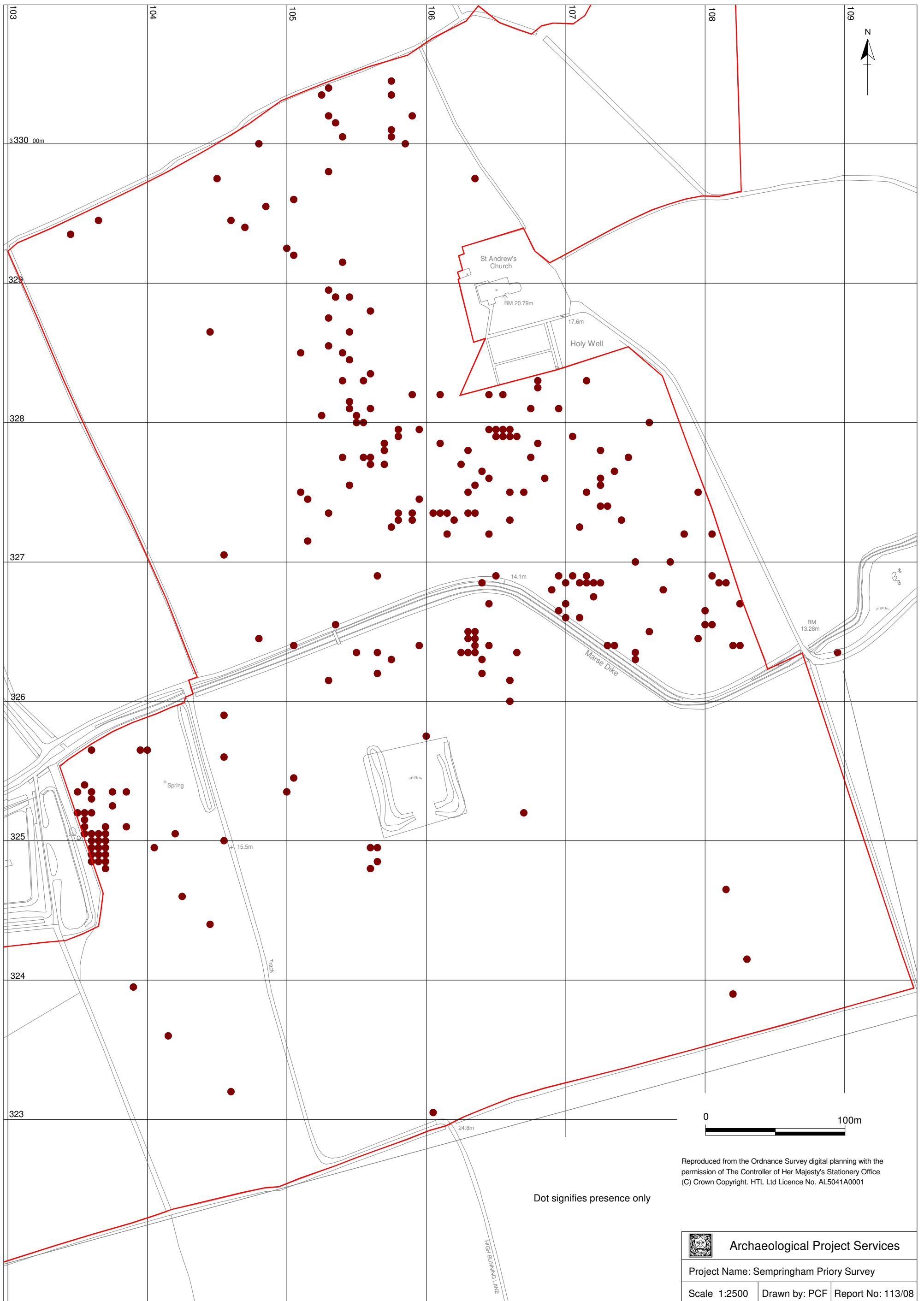


Figure 19 - Distribution of slag

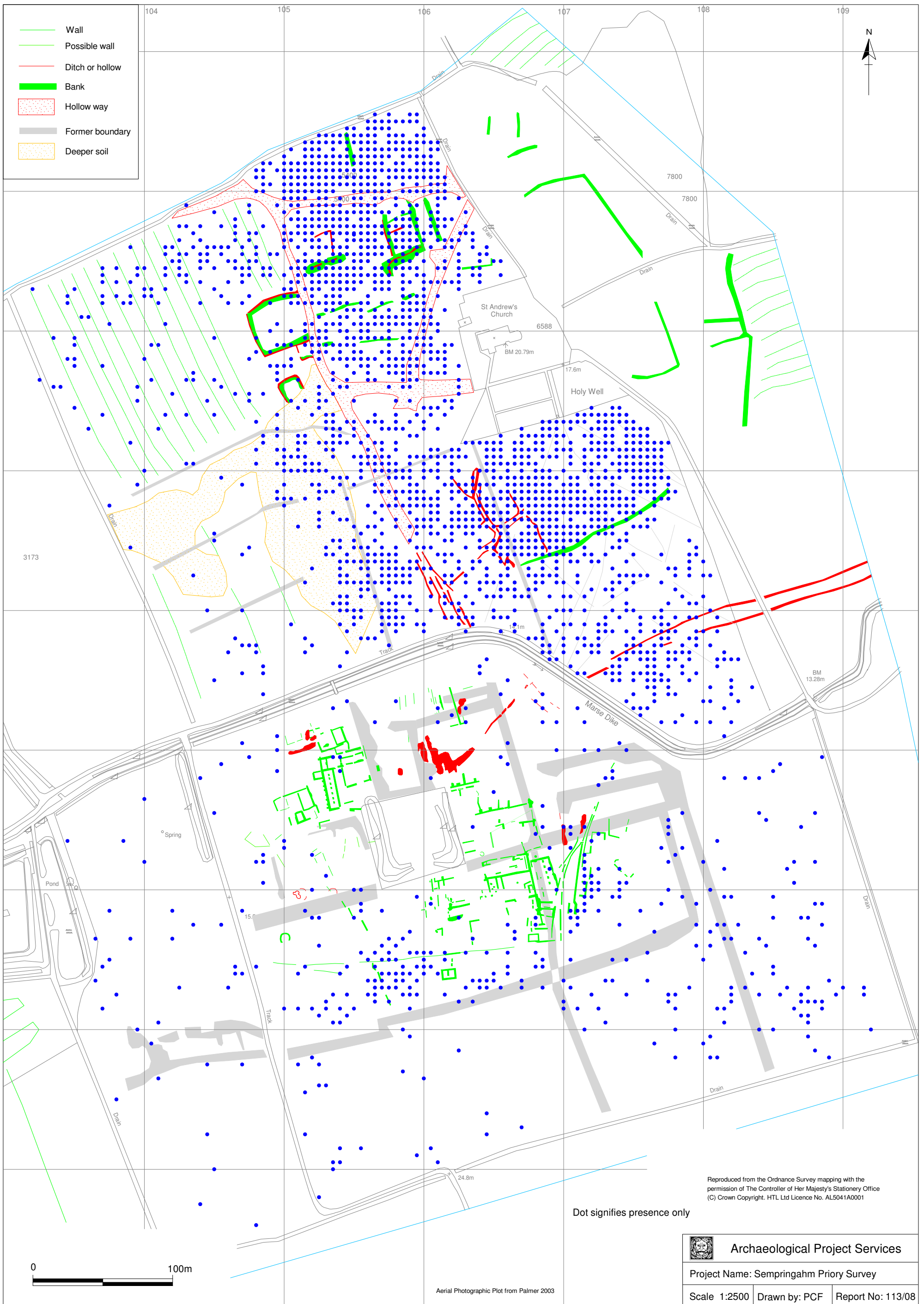


Figure 20 - Distribution of Bourne A Ware superimposed over the aerial photographic data

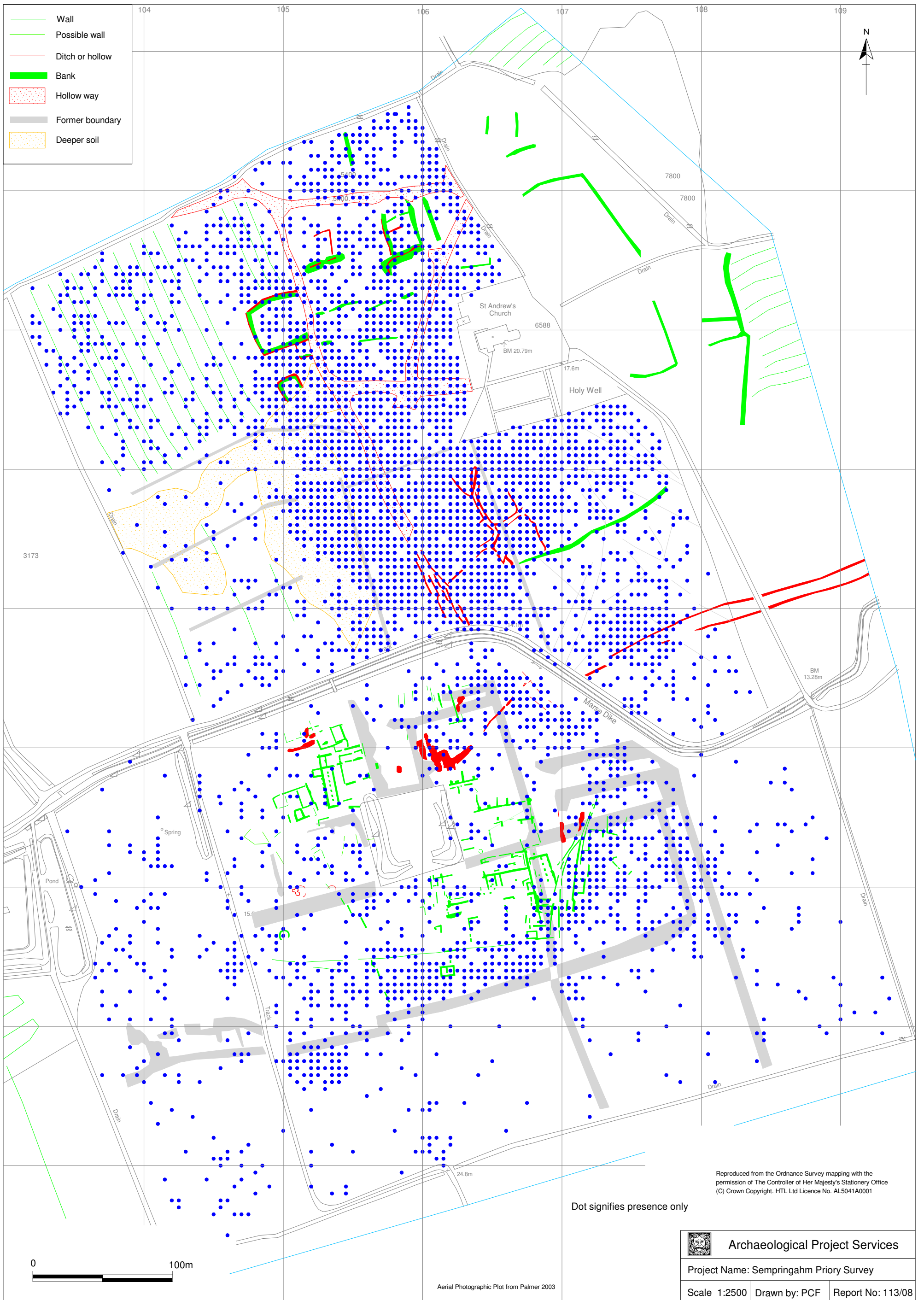
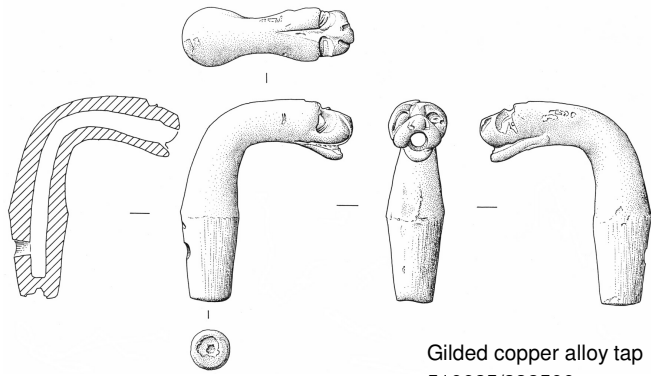
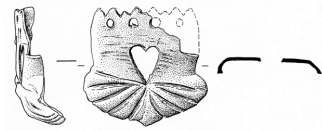


Figure 21 - Distribution of Bourne D Ware superimposed over the aerial photographic data



Gilded copper alloy tap
510625/332500



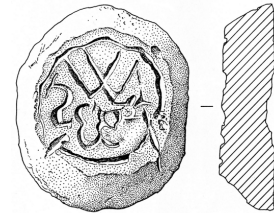
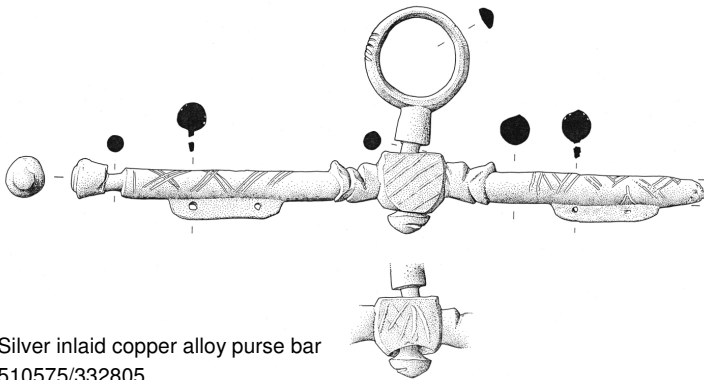
Copper alloy mount/lock panel
510590/332825



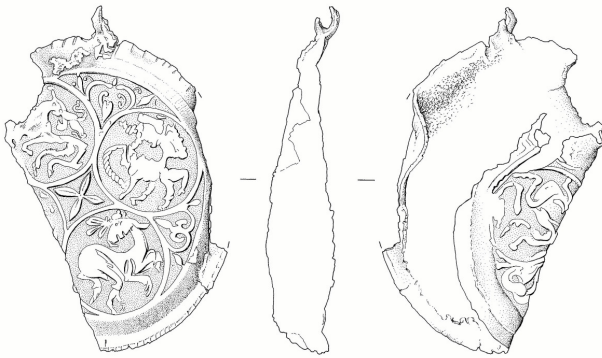
Silver inlaid copper alloy purse bar
510575/332805



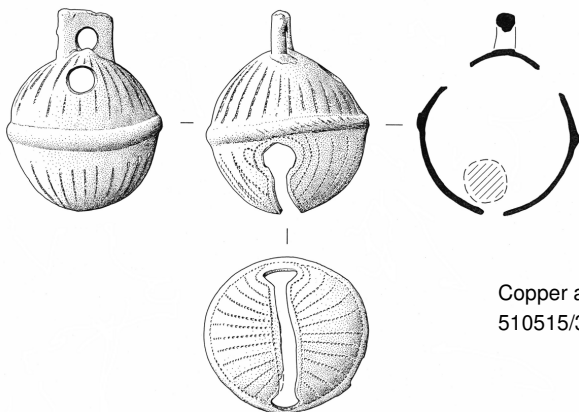
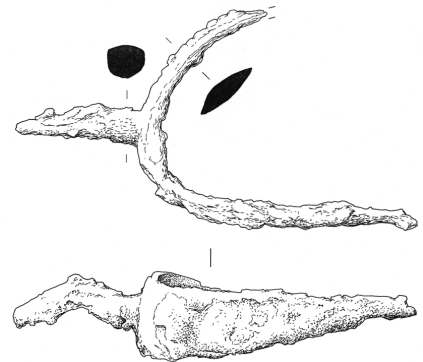
Gilded copper alloy mount
510685/332785



Lead weight
510760/332719



Copper alloy chalice case cover
510830/332500



Copper alloy bell
510515/332350



Archaeological Project Services

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Scale 1:2

Drawn by: DWH

Report No: 113/08

Figure 22 - Selection of the metalwork retrieved from the fieldwalking

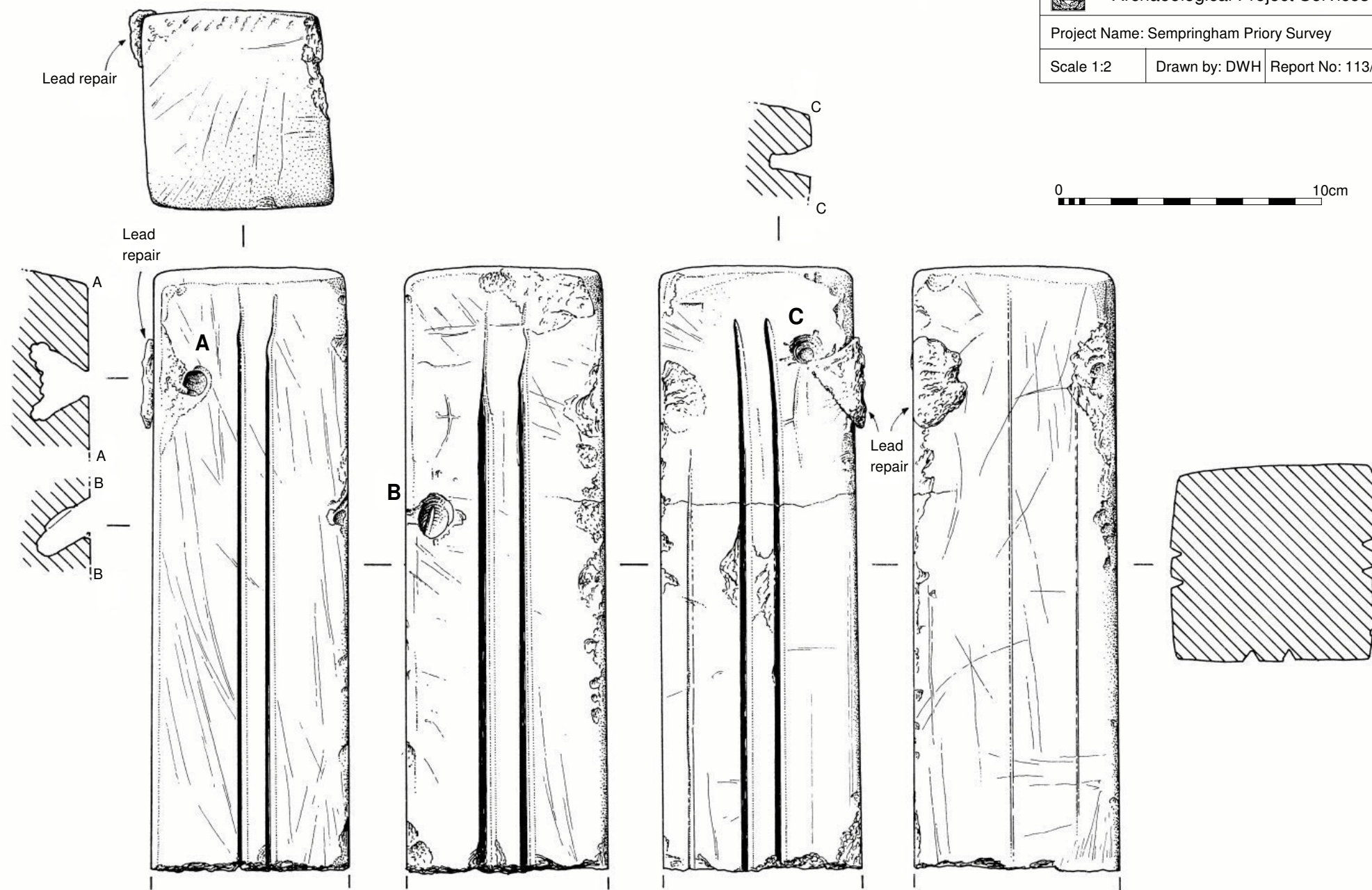
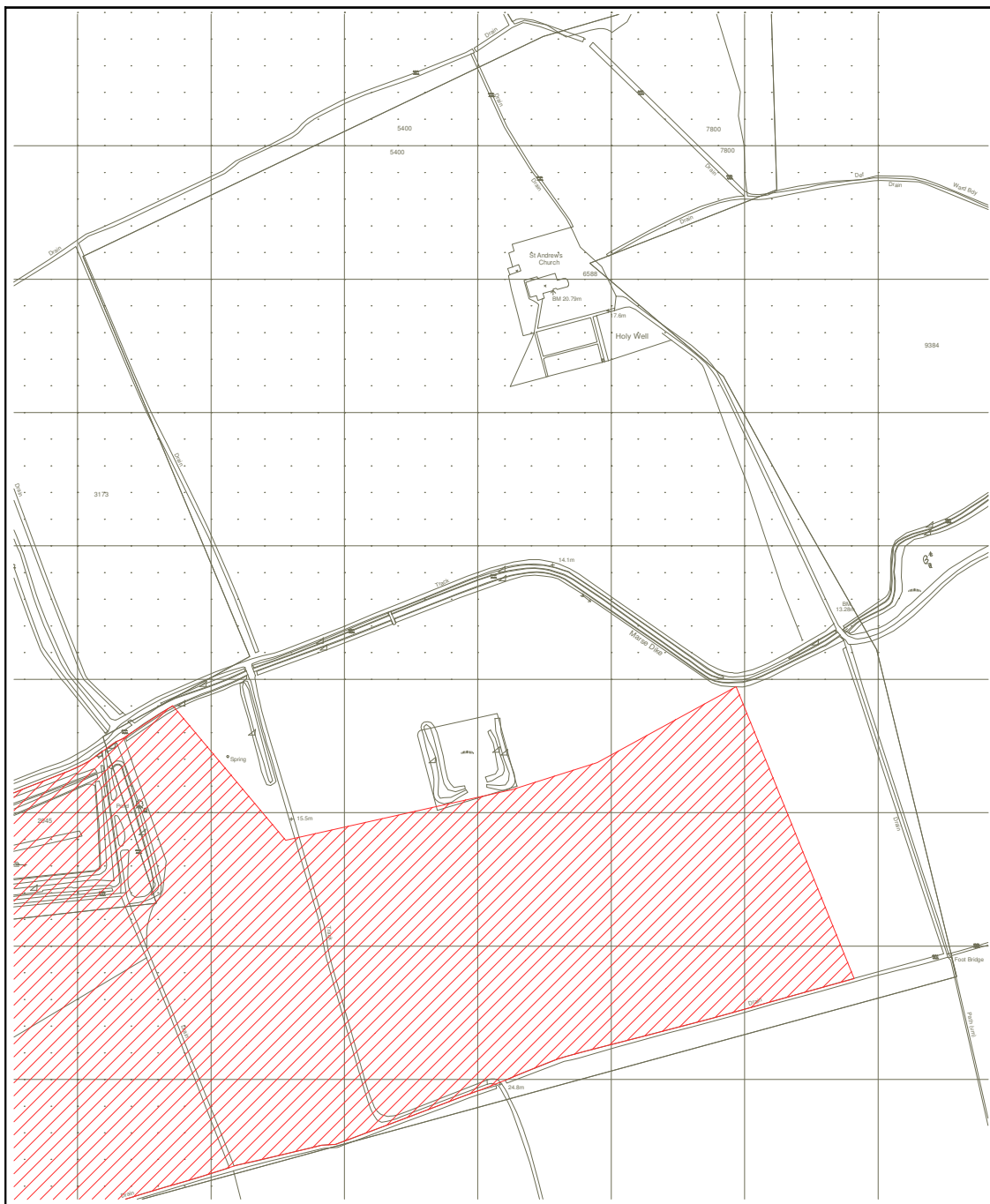


Figure 23 - Possible decorated stone hone



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Figure 24 - Extent of the Scheduled area

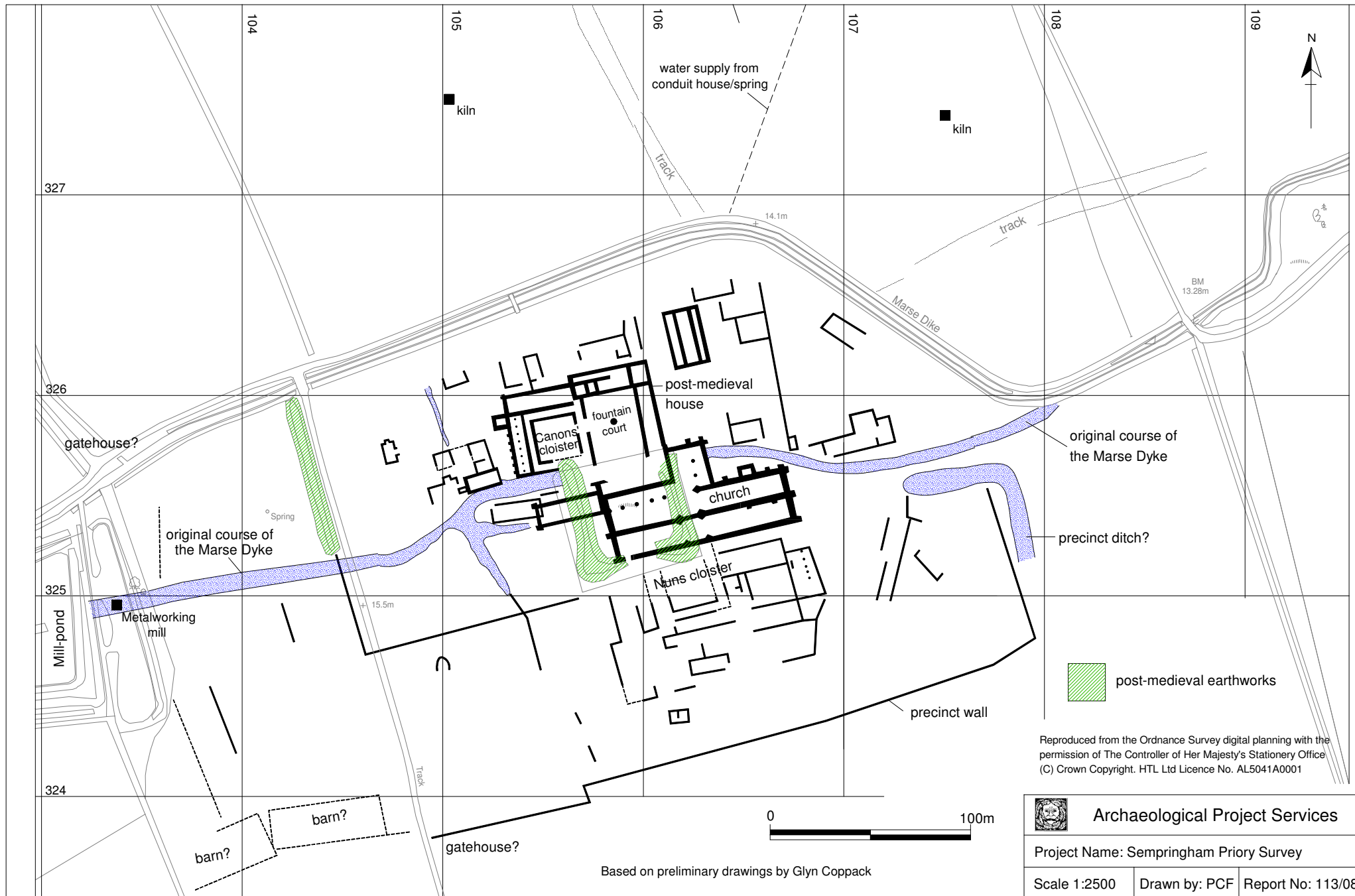


Figure 25 - Plan showing a suggested interpretation of the priory area



Plate 1 – View looking across the survey area with St Andrew’s church in the background, looking north



Plate 2 – Fieldwalking in progress



Plate 3 – The ploughed out remains of a post-medieval building along the southern edge of the survey area, looking east



Plate 4 – The red soil-mark of a possible tile kiln, looking southwest



Plate 5 – Aerial view of the survey area showing the soil-marks, looking north (*Photo: S Erskine Crum*)



Plate 6 – Aerial view of the village showing soil-marks, looking southeast (*Photo: S Erskine Crum*)



Plate 7 – Aerial view of the western part of the monastic precinct with soil-marks of a building range in the foreground, Looking north (*Photo: S Erskine Crum*)



Plate 8 – Aerial view showing the earthwork and soil-marks of the post-suppression house and its outer court, looking north (*Photo: S Erskine Crum*)

Appendix 1

SUMMARY AND COMMENTARY ON PREVIOUS WORK UNDERTAKEN AT SEMPRINGHAM PRIORY

By Glyn Coppack

Excavations by Hugh Braun in 1938 and 1939

The 1938 season:

The Lincolnshire Architectural and Archaeological Society invited Hugh Braun FSA to undertake excavations at Sempringham in 1938, and two seasons of work were completed before the onset of World War II (Braun 1938; Braun 1939; Graham and Braun 1940). At the time, the whole of the vill of Sempringham was under pasture, and there were two areas of earthworks: the site of the village surrounding the surviving parish church, and the site of Sempringham Hall to the south of the Marse Dyke. Although it was supposed that the monastery was attached to the parish church, Braun suggested that he should examine the area of Sempringham Hall, marked by a substantial U-shaped earthwork which he interpreted as the site of the cloister of the monastery converted to a post-suppression garden feature. In this he was supported by AW Clapham FSA who cited the parallel of Mottisfont Abbey in Hampshire. A series of earthworks to the north of this feature were interpreted as the site of post-suppression buildings.

Excavation was carried out by a team of three (or four) men trained for the purpose by Braun who were set to work on 12th July 1938 on the most obvious building at points A and B (Fig. 1). This revealed the walls of a building containing re-used monastic material and at point B a junction with a north-south wall on a slightly different axis to that of the apparent post-suppression structure that contained no reused material and which was interpreted as monastic. Braun considered that the post-suppression house was a conversion of the prior's lodging. Mouldings including fourteenth century window tracery recovered from this area are now in the south porch of the parish church. Rather than follow this area up, his attention turned to a prominent mound at C close to the Marse Dyke.

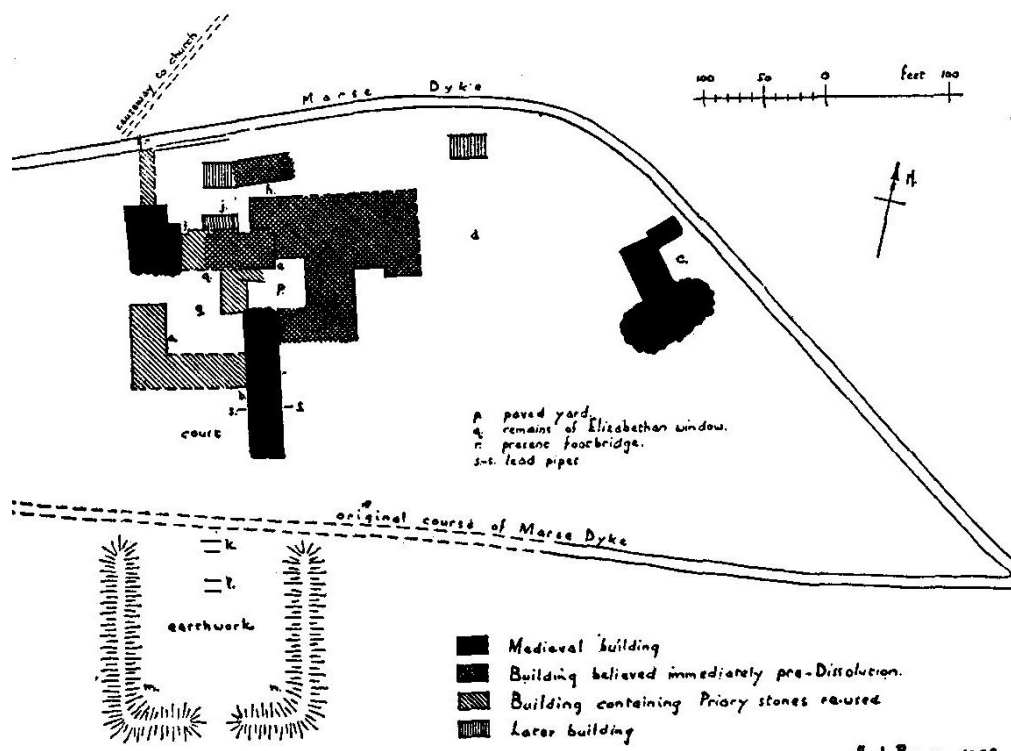


Figure 1 - Buildings recorded by Hugh Braun in 1938

Following walls, a substantial medieval building aligned north-west to south-east was identified, with another structure at its south end. This area was heavily robbed and was 'abandoned as fruitless'. Trenches were dug in all directions from this site 'for some distance, all proving disappointing'. At

point D an *ex situ* stone coffin (now in the parish church) was recorded. According to Miss FE Mann 'thin walls' were discovered between points C and D (letter of 21/7/39 in the Pointon and Sempringham Parish File, Lincs SMR)

Attention returned to the area of the post-suppression house where at point E the walls of a well-preserved small house, with a hall and parlour to the east, were recorded. Its alignment was that of the post-suppression house but Braun considered it to be a pre-suppression building. Its rubble walls contained no reused medieval masonry. This building had been extended westwards to provide a kitchen, using scrap medieval material, to join a north-south building on the alignment of the building first discovered at point B at point F. (From Glyn Coppack's plotting of aerial photographs in 1976-7 the building at point B can be identified as the east range of a northern cloister and that at point F a building attached to the north range. Both are medieval). Additions of a porch and stair wing (J) were also recorded. Further ranges of buildings were identified to the east of this house, probably contemporary with its earliest phase as they contained no reused monastic stonework. Interpreted as 'farm buildings', Braun paid them little attention.

The extended house, and an enclosed courtyard to the south, as interpreted as the post-suppression house built by Edward, Lord Clinton, after he was granted the site in 1538. Excavation to the north recovered a further building at H, buried to a depth of 6 to 8 feet and heavily robbed, and a second building to the east. These were not followed up.

Because Braun could not identify the monastic layout in the area of the post-suppression house, this area was abandoned at the close of the 1938 season. While backfilling was taking place, two trenches were dug within the earthwork to the south which identified thick walls crossing the enclosure from west to east of apparent medieval date. This convinced Braun that the cloister lay below the earthwork which itself had only been examined cursorily.

The 1939 season

The record of the 1939 season is not as comprehensive as that of the previous season and occurs in two forms, an interim report by Braun (1939) and a more extensive description compiled from Braun's interim and excavation notes by Dr Rose Graham FSA (Graham and Braun 1940). Braun was on active service from shortly after the completion of fieldwork, and the existence of any form of published record is testimony to his professionalism. He was able to produce a plan of the monastic church which conforms with more recent aerial photographic evidence.

The 1939 season began on 26th June, with 'three of the four men trained last year' and began with an examination of the U-shaped earthwork looking for the elusive cloister ranges. It was discovered that 'the banks were bounded by the walls of a large mansion built around three sides of a courtyard, and having projecting towers at the four outer angles. The architectural detail of this building showed it to have been constructed about the year 1625'. Photographic evidence (LAO Sempringham Parish File, 10-28) indicates that the building was in fact 16th century in date, and the date was probably suggested to Braun by the closure date of 1626 in Sempringham building accounts (note by Andrew White FSA on a copy of Braun's 1939 report, Lincs. SMR Pointon and Sempringham Parish File). Built of newly quarried stone, it was partly footed on re-used monastic masonry. The footings of the northeast tower comprised elements of a major medieval window. Braun considered that the house was probably never completed but that it was reduced to its plinths and buried below an earthen bank on the surface of which was a neat brick path to form a garden feature for the existing house, whose axis it shared. No evidence was produced to demonstrate this, and evidence of field walking would suggest that it had been completed and fitted out.

Excavation along the northern part of the east wall of the mansion showed that it stood on medieval footings, with the projecting base of a 14th century respond (actually the base of the northwest crossing pier). Trenching to the east of the west range of the mansion revealed the complete 13th century pier of a 'crypt which had apparently been filled in at some time during the mediaeval period, doubtless because its floor was beneath the level of the valley's water-table'. A trench was then dug eastwards from the 14th century respond, and 'the excavators soon found themselves working eastwards along the face of a formidable wall, having on its southern side large projections, clearly the foundations of vaulting-shafts of considerable scale'. This was subsequently identified as the north wall of the presbytery of the church. One vaulting-shaft sub-base survived. A second trench was dug east of the vaulting-shaft base located north of the northwest crossing pier which uncovered a complete pier base in what was to be identified as the eastern arcade of the north transept. On the sub-base, the tracing lines of a base with circular shafts 1 foot in diameter to the cardinal points with pairs of subordinate shafts between them. Work then concentrated on following the walls of the presbytery and the east and

north walls of the transept. At some point it became clear that this was a rebuilding of the early 14th century, identified by Dr Graham as work begun by Prior John de Hamilton in 1301. The nuns' church to the south was only partly explored: it was more heavily robbed and the premature closing of the work prevented only a cursory examination. The presbytery had been extended by two bays to the east to match the length of the canons' church, but otherwise the south wall had been retained from an earlier church and vaulting-shafts had been added to the older work. The wall that divided the two churches was examined from the crossing to the east wall and was found to be a part of the fourteenth century rebuilding apart from a section in the second bay east of the crossing. This had subsequently been widened in good ashlar to form the base of St. Gilbert's shrine. There is no indication that the interior of either church was otherwise examined to the east of the mansion, though burials were disturbed by trenching and an undisturbed stone coffin was found in the third bay of the canons' presbytery.

Investigation of the courtyard of the mansion initially appears to have been carried out by digging trenches along the west face of the east wing, the east face of the west wing, and north face of the south wing, and by following up wall L found in 1938. This was the north wall of an aisle on the north side of the canons' nave. The easternmost pier of its arcade was located just to the west of the east wing of the mansion on the line of the north wall of the presbytery. Although Braun did not describe the north aisle wall, he did record narrowings in the second and fifth bays from the west which almost certainly indicate doors. He did think the aisle was an addition to an earlier building but gave no reason for this. The trench along the west wall of the east wing also picked up the dividing wall between the two churches, and the trench along the south range of the house revealed the south wall of the nuns' church with a door at its west end and the return of the west wall of the church. Part of the superstructure survived towards the north and Braun concluded that it was of 12th century date from the tooling of the stone. He also recorded '*Norman walls below the west and north walls of the canons' church. Wall chasing picked up the western bay of the dividing wall and evidence that both the nuns' and canons' naves were vaulted in the 14th century*'.

The nave was only five bays long, constrained at its west end by a sizeable 12th century building 105ft long and 30ft wide. It is uncertain how much of it Braun actually excavated, though his plan suggests that its walls were traced from the west range of the mansion to the west front of the church. Its west wall, with a central and two clasping buttresses also appears to have been at least partly traced. Braun's 13th century 'crypt' lies on its north side, and on its south side is an aisle which was vaulted, two of the vault-shaft bases surviving *in situ*.

It is apparent from Braun's plan that the northern cloister was free-standing of the nave. The south wall of the church retained a respond opposite the south-eastern crossing pier, but the south wall continued westward beyond it indicating that there was no south transept. The relationship with the southern cloister was not resolved.

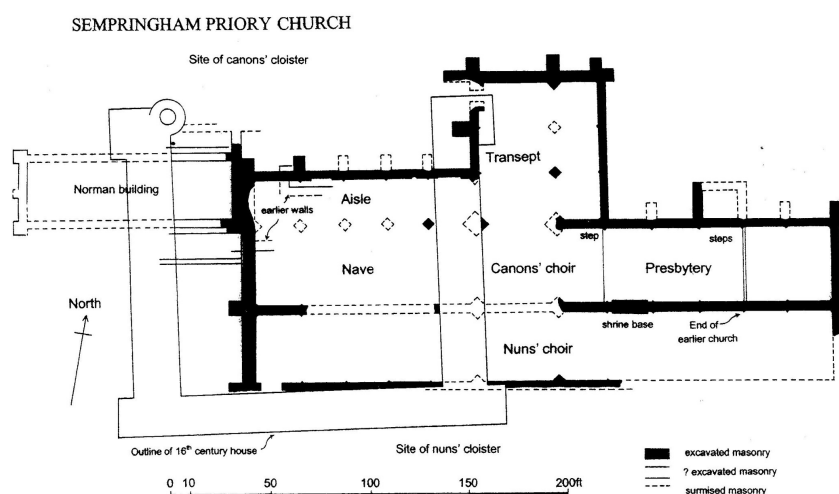


Figure 2 – Plan of the church recovered by Braun in 1939

Some indication of the post-medieval garden was recorded: a boundary wall that ran over the east wall of the church, post-medieval drains; and boundary and drainage ditches. None of these were planned.

Commentary on Braun's discoveries by Glyn Coppack

By the standards of the late 1930s, Hugh Braun's work at Sempringham was brutal but not particularly destructive, based as it was on the methods used by Sir William St John Hope from the 1880s into the early 20th century. By his own admission, the technique was to dig a trench to find masonry and then to follow it. Contemporary photographs indicate that trench edges were reasonably straight and vertical, and masonry was scrupulously cleaned. They also indicate that the trenches were narrow, probably no more than three feet wide. Consequently, the degree of damage to buried deposits is likely to be limited.

A number of problems were not resolved in either season. Taking the 1938 season first:

- ❑ The buildings of Sempringham Hall were located and to a certain extent phased, but were only planned schematically. There is not a plan of 'unsuccessful' trenches
- ❑ Two known medieval buildings were identified but not recognised, and appear to have been reused within the post suppression house
- ❑ The earliest elements of the house were thought to pre-date the suppression simply on the evidence that they did not contain reused medieval material without recourse to archaeological dating
- ❑ Buildings along the Marse Dyke of various dates were only briefly examined before being abandoned
- ❑ Medieval ranges visible on aerial photographs were not located though they lie in the area examined
- ❑ The interface between monastic and post-suppression structures was not examined at all

In the 1939 season, the problems relate as much to the brevity of the record as to interpretation:

- ❑ While it is possible to reconstruct a trench plan from Braun's published plan and from his descriptions and site photographs, it is in no way complete
- ❑ The published plan is unphased, though two or three phases are described in the interim reports. In particular, there is evidence for a 14th century rebuilding and extension of the church but no indication of the earlier layout (apart from the approximate indication of the location of an earlier east wall)
- ❑ No floor areas appear to have been examined to identify ritual areas such as the choir stalls, screens, and altars. There are, however, indications of numerous burials in the church. The late Ethel Rudkin (*pers comm.*) who assisted in the excavation mentioned a high incidence of child burials in the nuns' church
- ❑ Wall K in the courtyard of the mansion was not followed up, but this appears to be the south wall of the north cloister that should align with the north wall of the 'crypt'
- ❑ Garden features were not planned or located, yet there is a period of 80 years between the demolition of the church and the supposed construction of the 'unfinished' mansion, and a further two centuries of occupation after the building of the earthwork that buried the remains of the mansion.
- ❑ The relationship of the building revealed within the earthwork to the buildings excavated in 1938 was never resolved

In both years of excavation, the research aim was to locate and examine the monastic buildings, and the post-suppression history of the site was of minimal interest apart from providing clues as to where the monastic buildings might be. Where buildings were thought to be medieval, they were not planned in 1938, and the plan produced in 1939 was a strange amalgam of walls that were located, walls that were assumed or could not be traced because of robbing, and a reconstruction of the assumed vaulting plan. No doubt Braun had intended to do further work on the church, but although he survived the war he did not return to Sempringham

Plotting of aerial photography by Glyn Coppack in 1976-77

The late Professor JK St Joseph recorded crop and soil-marks at Sempringham Priory in 1976 (Cambridge Committee for Aerial Photography A2 76-80; BT 66-67; E9 7-19; and FN 76-77) which he drew to Glyn Coppack's attention because of their exceptional clarity. These were plotted in 1977-78 on the 25inch Ordnance Survey map in an attempt to resolve the interpretation of Braun's work in 1938. Because of cropping patterns, definition was poor south of the earthwork remains of the house that was the only part of the site to remain outside cultivation. The area between the earthwork and the Marse Dyke was first cultivated in 1970 (it was not cultivated in 1969 according to the SAM record

form). The area to the north of the earthwork had unaccountably been excluded from the scheduled area and one purpose of the plotting was to provide evidence to rectify this deficiency.

The aerial photographs located the presbytery and north transept of the canons' church and eastern part of the nuns' church very much as Braun had planned them but with a chapel or sacristy on the north side of the canons' presbytery in the third bay from the east. Braun had recovered its west wall and mistaken it for a deep buttress. The buttresses were in fact only about half the depth shown by Braun. The clearest indication to the north of the church was of a northern cloister, slightly over 30m square, with a west range some 15m wide and of eight double bays and a narrower north range some 5m wide. The north, west, and south cloister alleys were all visible, and this might suggest that the upper floor of the north range actually overshoot the cloister alley. The indication is that the canon's cloister lies well to the north and west of the church and not adjacent to the nave and north transept as might be expected. In the area of the east range, it appears to be the post-suppression buildings that are visible on the aerial photographs. They show up clearly as rubble in the plough soil when the field is cultivated.

Evaluation excavation by Fachtna McAvoy in 1987

The Central Excavation Unit of English Heritage was asked to evaluate plough damage in 1987. A total of 6 trenches was cut by machine: Trench 1 to the north-west of the earthwork across the west range of the northern cloister; Trench 2 from west to east across the raised area to the north of the earthwork; Trench 3 in the area of Braun's Building C; Trench 4 to its south east; Trench 5 to the south-east of the earthwork across buildings visible on aerial photographs; and Trench 6 to the south-west of the earthwork.

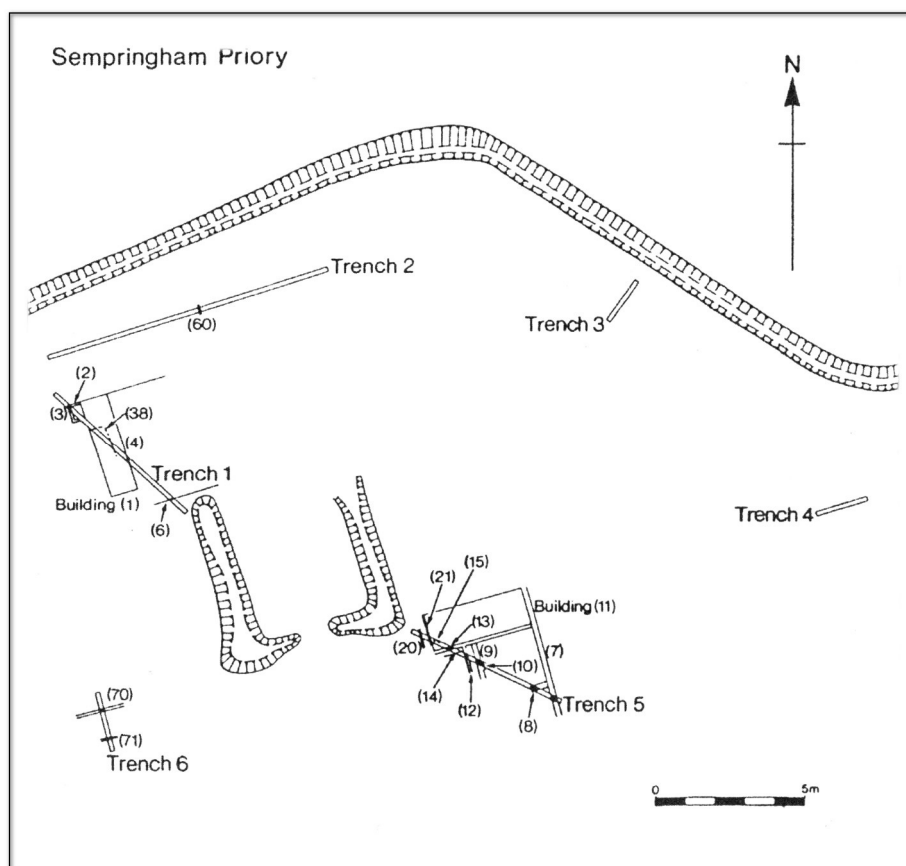


Figure 3 – Location of 1987 evaluation trenches

Results of the 1987 evaluation

Trench 2 indicated that the area examined by Braun to the north of the earthwork in 1938 had been raised in level by a dump of sand up to 0.50m thick. One wall, built with re-used medieval material was cut into this dump, and McAvoy concluded that the post-suppression buildings were constructed after the site had been levelled up. Medieval buildings were recorded below the dump of sand but not examined. Trench 1, however did not have the dump of sand, and the top of medieval walls was approximately 280mm below the surface of plough soil. There is no spread of demolition rubble

sealing the walls, though the interior of the west range contained 100mm of rubble above its mortar sub floor, and a thin deposit, only half that depth sealing the west cloister alley floor. The trench confirmed Coppack's AP plotting of 1977-8. Trench 5 recorded ploughsoil only 220-300mm deep, below which the east range of the southern cloister was recorded with no intervening demolition rubble. Walls were examined to a depth of 300mm without floors or sub floors being encountered, and the water-table was reached at this depth.

Trench 3 recorded topsoil to a depth of between 210 and 330mm above a spread of demolition material, presumably associated with Building C. Trench 4 recorded slightly less ploughsoil above a layer containing limestone rubble. No buildings were encountered by either trench.

Trench 6, which lies to the south-west of the church, recorded a substantial wall running east-west and containing re-used medieval material. It was sealed by a layer of demolition rubble, and was taken to be a garden wall (probably the wall plotted by Coppack further west and also recorded by Braun). Excavation also recorded a robber trench and a series of mortar floors, which were probably medieval. The ploughsoil in this area was 250-300mm deep and ploughing was not disturbing archaeological features.

McAvoy concluded that the active ploughsoil was only 150mm deep, and that cultivation at that level would not be damaging to the site's buried deposits. However, since then the fields have been let on a short term lease arrangement with a heavy reliance on root crops.

Commentary on McAvoy's evaluation by Glyn Coppack

The 1989 evaluation was carried out to establish whether or not the site of Sempringham Priory was at risk from cultivation, and was one of a series of similar exercises carried out in the late 1980s. It was focused primarily on monastic buildings visible on aerial photographs, and expressly did not examine the area of the church recorded by Braun because of its likely complexity. Nor did it attempt to locate other buildings excavated in 1938-39. It did establish that the area to the north of the earthwork had been raised in the post-suppression period, and that at least one wall that contained re-used medieval elements was constructed from this raised terrace. It also indicated that there are medieval structures sealed by the terrace.

Because no attempt was made to locate accurately Braun's church, the two ranges of medieval buildings are left 'floating' in any plan. Transcription of aerial photographs cannot give the precision required to fix these two areas against either the sixteenth century mansion or the fourteenth century and earlier church.

Braun, H, 1938 *Sempringham Priory Excavations: Interim Report* (Sempringham Priory Exc. Cttee.)

Braun, H, 1939 *Sempringham Priory: Report on Excavations 1939* (Sempringham Priory Exc. Cttee.)

Graham, R, and Braun, H, 1940 'Excavations on the site of Sempringham Priory', *J British Archaeol Assoc* Third Series **5**, 73-101

Appendix 2

SEMPRINGHAM PRIORY GEOPHYSICAL SURVEY - FEBRUARY 2005/04

*Surveyed by I.P. Brooks and K. Laws
Engineering Archaeological Services Ltd.*

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Figures highlighted in red have been omitted from this report

NGR

Centred on:

Area 1 TF 10573 32945

Area 2 TF 10689 33000

Area 3 TF 10680 32784

Area 4 TF 10635 32569

Area 5 TF 10393 32506

Area 6 TF 10400 32400

Area 7 TF 10650 32500

Area 8 TF 10593 32543

Area 9 TF 10770 32700

Location and Topography (Figure 1)

The site of the medieval priory at Sempringham lies approximately 1 km to the west of the B 1177 and is approximately 1km NW from the village of Pointon. It lies in a shallow valley through which runs the Marse Dike. The only standing buildings are St Andrew Church and its associated “barn” on the northern slopes of the valley, approximately 350 m to the north of the site of the priory.

The site of the priory contains an upstanding earthwork, forming three sides of a square enclosure approximately 60 x 65m in size with the banks standing to approximately 2m. Outside of the survey area, to the west, the remains of the fish-ponds associated with the priory still survive.

The Fluxgate Gradiometer survey and magnetic scanning took place between 20/9/04 and 1/10/04. At that time the fields surrounding the church and to the south of the Marse Dike were under stubble. The Resistivity Survey took place between 7/2/05 and 10/2/05, after the majority of the fieldwalking had been completed. At this time the fields had been ploughed, but not harrowed. The only exception was within the earthwork which was under rank vegetation.

Archaeological Background

The priory of Sempringham was built from AD 1132 by St Gilbert as a ‘double’ order with both Canons and Nuns. Prior to this there had been a medieval village, which is assumed to concentrate around the present site of St Andrews Church. The priory was demolished after AD 1534 by the Earl of Lincoln to be replaced by a post suppression house which probably incorporated elements of the monastic buildings. Limited “excavation” took place immediately before the Second World War, consisting of a series of narrow trenches following the line of any walls located in an attempt to define the extent and form of the monastic buildings. This work was interrupted by the declaration of war and was never resumed.

Further limited work was also carried out more recently for English Heritage to assess the level of damage to the buried remains by modern agriculture.

Aims of Survey

To gather sufficient information to establish the location and extent of any archaeological features within the study area and, if possible, to characterise the archaeology located.

SUMMARY OF RESULTS

Magnetic scanning defined a series of large magnetically disturbed areas together with a number of discrete anomalies and a major linear anomaly.

From this it was possible to define five areas for detailed Fluxgate Gradiometer survey. Three of these areas were to the north of the Marse Dike, centring on St Andrews Church. These showed a marked concentration of activity to the south of the church, although there was significant archaeological activity to the north and north east of the church. Amongst the anomalies is the possibility of prehistoric activity with a possible ring ditch being defined.

South of the Marse Dike, much of the structure of the priory complex was defined, together with that of the post-suppression house. The possible original course of the Marse Dike was also defined together with a number of other large anomalies which may be post-suppression garden features or possible prehistoric features.

A limited programme of Resistivity survey was also undertaken. Two areas were defined as a result of the detailed fieldwalking by Archaeological Project Services and a further two areas were designed to sample the plan of the priory buildings, particularly in the areas where the Fluxgate Gradiometer survey proved to be less successful, probably because of the presence of stone buildings.

The plan of the assumed priory church, together with a range of buildings to the south of the probable church have been defined. The two areas defined from fieldwalking tended to reflect the pattern derived from the fieldwalking with no further definition of buildings or structures defined.

Methods

The magnetic scanning took place along transects, five metres apart laid out as in Figure 2. Magnetic anomalies which varied from the general background readings by ± 2 nT were sketch plotted on 1:2500 plans of the area. The survey was carried out using Geoscan FM 36 Fluxgate Gradiometers.

The Fluxgate Gradiometer survey was undertaken using parts of 261 20 x 20m grid squares laid out as in Figure 3. Readings were taken at 0.5m intervals along transects 1 m apart. These transects were walked in a zigzag pattern.

The survey was carried out using Geoscan FM 36 Fluxgate Gradiometers with ST 1 sample triggers. Greyscale plots were produced using Geoscan Research "Geoplot" v. 3.00e and X - Y plots using Golden Software "Surfer" v. 5.01.

The Resistivity survey also used 20 x 20m grid squares as its base. Parts of 51 squares were surveyed in four areas laid out as in Figure 4.

The survey was carried out using a Geoscan RM4/DL10 resistivity survey and a twin parallel probe setting. The separation between each of the probe sets was 0.5m. Greyscale plots were produced using Geoscan Research "Geoplot" v. 3.00e and X - Y plots using Golden Software "Surfer" v. 5.01.

Survey Results:

Area

The proposed study area for the project is approximately 42 Ha, however at the time of the survey one of the fields was not available and thus approximately 35 Ha was subjected to magnetic scanning. This magnetic scanning survey led to the selection of five areas for more detailed survey.

The total area of detailed Fluxgate Gradiometer survey was 10.27 Ha. This consisted of five areas (Figure 3). Area 1 Andrews Church and consisted of 1.86 Ha, Area 2 was 1.06 Ha to the north east of St Andrews Church, Area 3 was to the south of St Andrews Church and consisted of 1.60 Ha, Area 4 was the largest area, south of Marse Dyke it consisted of 4.95 Ha around the upstanding earthworks and Area 5 was 0.8 Ha to the east of the Fish Ponds. The total area of the Resistivity Survey was 2 Ha. This comprised four areas (Figure 4). Area 6 was on the western edge of the survey area, to the south of the fish ponds, and was 0.48 Ha in size. Area 7 was to the south and east of the earthwork and was 1.24 Ha in size. Area 8 was 0.06 Ha within the earthwork and Area 9 was to the south of St Andrews Church and consisted of 0.24 Ha

Display

The results are displayed as Grey Scale Image and as X-Y Trace Plots. Figures 6 to 16 show the results from the Fluxgate Gradiometer survey and are also summarised on Figure 17. Figures 25 to 32 show the results from the Resistivity survey and are summarised on Figure 33

Scanning Results

The magnetic scanning defined a number of discrete magnetic anomalies together with broad zones of magnetic disturbance, within which it was generally not possible to define specific anomalies. In general the background magnetic field was reasonably quiet allowing anomalies with a magnitude of ± 2 nT to be plotted.

Two broad areas were defined (Anomalies A and B, Figure 5) of variable magnetic responses. Within each of these it was then possible to define areas of distinct variability suggestive of specific anomalies. This was particularly marked in A where a circular anomaly up to 10m in diameter was defined with readings in excess of 2047 nT above the background. This was also surrounded by a marked negative zone to the north suggesting that this was a high temperature anomaly such as a hearth, furnace or kiln. The areas within B, however, only reached values of ± 50 nT from the background, which may suggest that although they may have been heated the heating may not have been as intense or as regular as that seen from Anomaly Area A.

Anomaly C (Figure 5), was another extensive spread of variable responses, running parallel with the field boundary running NNW from St. Andrews Church. Whilst this may be the result of modern disturbance, it was up to 25m wide which would suggest some other factor, such as a track or occupation in this area.

Anomaly D (Figure 5) was a group of anomalies to the north of St Andrews Church, forming a rough "L" shape with each leg being at least 5m wide, this would appear to represent some sort of boundary or track way. These anomalies varied from the background by between ± 5 nT and ± 10 nT from the background.

Anomaly E (Figure 5) was isolated on the slope of the valley to the north east of St Andrews Church. The anomaly was approximately 5m in diameter with values varying between -30 and +600 nT from the background. Values of this magnitude would suggest either a high temperature feature such as a furnace or kiln or a large fragment of ferrous metal. If it is a metal object, however it would appear to be quite considerable in size.

Anomalies F and G (Figure 5) are small groups of magnetic anomalies in the field to the west of St Andrews Church. Each consists of a limited number of relatively small (up to 5 m diameter) anomalies. Those within Anomaly F varied from the background by up to ± 40 nT, whilst those in Anomaly G were only ± 7 nT.

Anomaly H (Figure 5) can be seen as an extension of Anomaly Area B within the area of the priory buildings. This anomaly varied between ± 4 nT from the background suggesting an area of archaeological activity.

Anomaly I, (Figure 5) ran close to the eastern end of the fishponds. A broad area of disturbance ranging between ± 10 nT from the background suggesting a level of archaeological activity in this area.

Anomaly J (Figure 5) was a band of slight, almost intermittent magnetic variability running ENE-WSW south of the priory site. Rarely more than 2m wide, this anomaly could be traced for approximately 500m across the field. Its position and character would suggest that it was a major boundary, possibly the southern boundary of the priory complex.

Anomaly K (Figure 5) was near to the track entering the study area from the south. It was associated with a spread of building debris, particularly tile fragments suggesting the presence of a building in this vicinity.

Surrounding the upstanding earthworks on three sides Anomaly L (Figure 5) had readings in excess of 2047 nT above the background. It would seem likely that the earthwork was fenced off at some time, probably in the recent past and fragments of the fence probably survives in the undergrowth or topsoil.

There were also a few other isolated and small group of magnetic anomalies none of which could be resolved into a coherent pattern. The majority were less than 2m in diameter and varied from the background by ± 5 nT. Whilst these may be the result of archaeological activity it is also possible that they are the result of modern disturbance or geological variability in the subsoil.

A marked area of magnetic disturbance was also recorded around the spring to the east of the fishponds. This was the result of the quantity of modern metal objects in this area of the field including fragments of wire fencing.

Detailed Fluxgate Gradiometer Survey Results:

Area 1

Area 1 was to the north west of St Andrews Church and thus on part of the assumed site of the village of Sempringham. A number of magnetic anomalies were defined together with five large areas of magnetic disturbance.

Whilst it is assumed that the majority of the anomalies located are associated with the medieval activity on the site, one anomaly (Anomaly 1, Figure 18) would appear to represent a ring ditch and therefore is possibly Bronze Age in date.

A major anomaly consisting of two sub-parallel linear anomalies (Anomaly 2, Figure 18) crossed the northern end of the survey area. Approximately 9 m apart these anomalies probably represent either the edges of a track way or a major land boundary, possibly the northern edge of the possible village.

South of Anomaly 2, there are a series of linear and discrete anomalies suggesting significant archaeological activity. The discrete anomalies (Anomalies 3 and 4, Figure 18) are areas of high magnetic disturbance, between 5 and 7m in diameter, possibly associated with high temperature activities such as hearths, kilns or furnaces. It is also possible that these anomalies may be the result of ferrous metal objects in the ploughsoil.

The pattern of linear anomalies (Anomalies 5 - 15, Figure 18) form no obvious coherent pattern and probably represent anomalies from several phases of activity within the area. Anomalies 5, 7, 9, 10, 11 and 15 (Figure 18) appear to represent fragments of enclosures, although no complete enclosure can be determined. It would seem unlikely that Anomalies 9, 10 and 11 are contemporary and may represent the expansion or contraction of an enclosure over time.

Four large areas of magnetic disturbance were also located (Anomalies 17 - 21, Figure 18). These tend to concentrate in the southern half of the survey area and presumably reflect increased archaeological activity in these areas. Indeed whilst doing the survey a few fragment of iron slag were noted towards the south east corner of the survey. Anomaly 17 (Figure 18) is unusual, in that it is north of Anomaly 2 which may suggest that archaeological activity continues to the north of the

survey area.

Area 2

Area 2 was to the north east of St Andrews Church in an area where Middle Saxon pottery had been recovered during the fieldwalking associated with the Lincolnshire Fenland Project. Apart from a large area of magnetic disturbance, the greyscale plot of Area 2 is dominated by a series of parallel, or near parallel, linear anomalies. Of these, Anomalies 22, 23 and 24 (Figure 19) appear to be more magnetically active and presumably represent major land divisions. Between these, a series of faint linear anomalies (Anomalies 27, Figure 19) appear to subdivide the area into roughly equal strips each being approximately 11m wide. It is possible that these faint anomalies may be the result of modern drainage, although they follow the axis of Anomalies 22, 23 and 24 and would appear to be related to them.

A few other linear anomalies were also located. Anomaly 25 (Figure 19) appear to comprise two elements. One a linear anomaly running approximately north-south and the other an "L" shaped linear running adjacent. One leg of the "L" shape anomaly would appear to take up the alignment of the linear anomalies 22, 23 and 24.

The western side of the survey is dominated by a large area of magnetic disturbance which extends the area of magnetic disturbance seen in Area 1 (Anomaly 28, Figure 19). This presumably reflects the level of activity in this area in the past. The width of this disturbance would suggest that it is not wholly related to disturbance from the modern field boundary.

Two other areas of magnetic disturbance were also located (Anomalies 29 and 30, Figure 19) of unknown origins, together with a single area of ferromagnetic response (Anomaly 31, Figure 19). This is assumed to be the result of modern disturbance.

Area 3

Area 3 lies immediately to the south of St Andrews Church. The greyscale plot contains a very high density of magnetic anomalies making it difficult to define all of the potential archaeological activity within this area. In general the plots give the impression of significant domestic and industrial activity taking place and it is possible that this area was the focus for the Medieval village of Sempringham.

Two, sub-parallel linear anomalies run approximately east-west along the southern side of the survey area (Anomaly 32, Figure 20). Within the limits of the area surveyed they appear to define the southern limits of clearly definable anomalies. They appear to lead to a large circular anomaly with an apparent cross shaped anomaly at its centre (Anomaly 33, Figure 20). This anomaly is approximately 25m in diameter with the cross having legs approximately 6m in length. The function of this anomaly is unknown, initial thoughts of a possible windmill would seem unlikely because of the size of the circular anomaly and its position in the bottom of the valley. At 25m diameter this anomaly would also seem too big for a prehistoric ring ditch and it does seem to be related to Anomaly 32 which is assumed to relate to the medieval activity on the site.

To the north of Anomaly 33 is an enclosure which appears to be attached to the western side of a linear feature (Anomaly 34, Figure 20). This also has an area of magnetic disturbance within the apparent enclosure suggesting a level of potentially industrial activity was taking place.

Three areas of fine anomalies can be determined (Anomalies 35, 36 and 38) These appear to have a series of linear anomalies with a remarkably rectilinear plan. It is assumed that they are the result of buildings and streets of the village. However, the rectilinear appearance would suggest a level of planning and control not usual for medieval settlement and it is possible that either part of the priory complex extended into this area or that there is the potential for Roman activity on the site.

The other linear anomalies within the greyscale plot (Anomalies 37, 39 - 46, Figure 20) presumably reflect various divisions and boundaries within the area. Anomaly 44, however, leads directly towards the "Holy Well" on the south side of the cemetery associated with St Andrews Church and presumably is a leat leading from this "Well".

Three large areas of magnetic disturbance have been defined (Anomalies 47, 48, 49, Figure 20). These presumably reflect areas of intense activity, possibly with an industrial component. Anomaly 49, in particular would appear to be defined partly by Anomaly 32 which forms its northern boundary, at least in part. Four smaller areas of magnetic disturbance have also been defined (Anomalies 50, 51, 52 and 53). Each of which presumably reflecting increase activity in that area. Anomaly 53, in particular is worthy of note. It continues an area of ferromagnetic disturbance (Anomaly 54, Figure 20) to which it is probably related. Anomaly 54 is a large circular area, approximately 12m in diameter in which reading in excess of 2047 nT above the background were recorded. Anomalies of this type are typical of high temperature features such as kilns, bloomeries, furnaces etc. suggesting that there is similar industrial activity in this area.

There are also two other smaller areas of ferromagnetic response (Anomalies 55 and 56, Figure 20) which may also be related to industrial activity, although it is equally possible that these may relate to ferrous metal objects in the plough soil.

Area 4

Area 4 was by far the largest survey, covering the area of the Priory and post-suppression house. It is possible to define much of the Priory and post-suppression house from the greyscale plot (Figure 12) although the buildings tend to be clearer when the grey scale is reversed (Figure 13). A range of other anomalies were also recorded, including the possible original course of the Marse Dike.

On the eastern side of the survey area two “L” shaped anomalies form near mirror images of each other (Anomalies 57 and 58, Figure 21). The function of these features is uncertain, although it has been suggested that they may be garden features associated with the post-suppression house (Coppack pers. comm.). They would appear to align themselves on the original course of the Marse Dike with one leg pointing, at right angles up the slope of the valley. Information from the farmer, suggest that there is an occasional spring up slope from this point (Richardson pers. comm.) and it is possible that these features relate to water management from this spring.

The previous line of the Marse Dike is probably shown by Anomalies 59 and 61 (Figure 21). There is also the possibility that other earlier courses of the Marse Dike are also shown by Anomalies 60, 62 and 63, suggesting that there may have been more than one episode of modification to the dike.

A curious anomaly in the northwest corner of the survey area (Anomaly 63, Figure 21) is a clearly defined area with straight sides and two circular anomalies along its edge. These may suggest some sort of structure or support to this edge of the feature. Leading from Anomaly 63 are two linear anomalies joining this anomaly to the presumed original course of the Marse Dike. It is possible that Anomalies 63, 64 and 65 represent some sort of garden feature with associated drainage features, possible associated with the post-suppression house.

A large looping linear anomaly extends beyond the area of the survey (Anomaly 67, Figure 21). This appears to be part of a possible circular enclosure approximately 68 m in diameter. This feature does not obviously follow the pattern of other priory features seen in the plots and its position would cross the assumed position of the priory church. It is therefore possible that this feature is not associated with the priory. It is tempting to suggest that this feature may be prehistoric, although this is purely speculative.

A faint area of magnetic disturbance (Anomaly 68, Figure 21) appears to have a series of circular anomalies along its northern edge. Each of these circular anomalies is approximately 5m in diameter and they are set approximately 8m apart. This area is within the assumed site of the Priory church to which they may be related.

Several possible buildings have been defined by the survey presumably relating to both the priory and post-priory phases of the site. Anomaly 69 (Figure 21) appears to be a building approximately 32m long and 14m wide with an offshoot 12 x 8m on its northern side. It sits within an area of ferromagnetic disturbance which has a marked high intensity anomaly at its eastern end. This would suggest that some sort of industrial activity may have taken place associated with this building, or possibly that this building had been damaged by fire.

Anomaly 70 (Figure 21) is a faint rectilinear anomaly, approximately 30 x 23m in size with two ferromagnetic anomalies within its enclosure. It would appear to be aligned with its long axis at right angles to the assumed old course of the Marse Dike and presumably represents a building containing two hearths or other high temperature features.

It is assumed that Anomaly 71 (Figure 21) forms part of the post-suppression house. 33 x 14m in size with some internal divisions, this feature would appear to be on a similar alignment to the other anomalies in the immediate area. Anomalies 72 and 73 (Figure 21) would appear to be cloisters with presumably open courtyards surrounded by building ranges. It is possible that the post-suppression house incorporated part of the cloisters from the priory into its structure. A circular anomaly in the centre of Anomaly 72 may be a fountain or statue base in the centre of this courtyard. A further fragmentary range of buildings to the north of Anomaly 71, are suggested by Anomalies 76 and 77 (Figure 21).

Anomaly 74 (Figure 21) would appear to be an aisled building 18 x 32m in size containing an ferromagnetic anomaly, possibly a hearth or industrial activity. It sits within a large rectangular enclosure (Anomaly 75, Figure 21) with fragments of other potential buildings. The enclosure would appear to be at least 90 x 68m in size and possibly have a building attached to its south east corner.

A range of rectangular and sub-rectangular anomalies (Anomalies 78 - 85, Figure 21) may represent other buildings or enclosures within the priory complex, some of which appear to be isolated buildings and others (particularly Anomaly 78) small ranges of buildings.

The magnetic signature of most of the possible buildings may suggest the inclusion of magnetically active materials, such as brick, in the structures, although it is also possible that the magnetic signature of the cut footing trenches are being recorded.

Two areas of parallel linear anomalies have been recorded (Anomalies 86 and 87, Figure 21). These are on different alignments both to each other and to the assumed buildings on the site. The function of these anomalies is unknown.

Area 5

Area 5 is east of the fishponds in an area which the magnetic scanning suggested there were magnetic anomalies. It is around a capped spring in the field. Whilst not containing the same density of anomalies as Area 4, this survey suggest that activity continued between the Priory buildings and their fishponds.

The assumed course of the Marse Dike before it was diverted can be seen to continue through this survey area as Anomaly 89 (Figure 22). South of this anomaly there are a series of rectilinear anomalies (Anomalies 90 - 93) which may suggest that some buildings continued into this area. They range in size between 10 x 10m (Anomaly 91) to 15 x 17m (Anomaly 90). There is also an area of magnetic disturbance between Anomalies 90 and 91 and Anomaly 92 which may be the result of industrial activity (Anomaly 95, Figure 22).

North of the assumed line of the original Marse Dike, the character of the anomalies is different. Only two parallel, linear anomalies were recorded (Anomaly 94, Figure 22) together with a series of areas of magnetic disturbance. The majority of these probably reflect levels of archaeological activity, however Anomalies 97 and 100 (Figure 22) are at least partly because of modern disturbance around the spring.

A large area of ferromagnetic disturbance on the western side of the survey area (Anomaly 101, Figure 22) is suggestive of industrial activity and it should be noted that a few fragments of iron slag were noted from this area of the field.

Magnetic Susceptibility

It was possible to take soil samples in order to assess the magnetic susceptibility of the soils. It was not possible, however to obtain a subsoil sample for comparison.

Sample	Volume susceptibility χ_v	Mass susceptibility χ_m
Area 1		
Grid 2	36	37.9
Grid 4	65	61.9
Grid 6	81	72.3
Grid 8	39	39.0
Grid 8	52	46.4
Grid 10	64	60.4
Grid 12	47	48.0
Grid 14	67	63.8
Grid 16	85	73.9
Grid 18	62	57.4
Grid 19	61	58.7
Grid 21	89	84.8
Grid 23	81	77.9
Grid 25	65	53.7
Grid 28	62	58.5
Grid 30	72	75.8
Grid 32	80	72.7
Grid 34	47	44.3
Grid 35	65	59.1
Grid 37	63	68.5
Grid 39	62	63.9
Grid 44	57	54.8
Grid 45	100	91.7
Grid 46	49	48.0
Area 2		
Grid 49	65	66.3
Grid 51	53	55.8
Grid 53	41	39.4
Grid 54	26	24.1
Grid 56	56	54.9
Grid 58	48	44.4
Grid 61	18	15.9
Grid 63	29	27.4
Grid 65	49	50.0
Grid 66	13	12.3
Grid 68	25	24.0
Grid 70	32	33.0
Grid 72	47	42.3
Grid 74	29	27.9
Area 3		
Grid 76	63	62.4
Grid 78	68	79.1
Grid 80	58	58.6
Grid 82	78	78.0
Grid 84	97	101.0
Grid 86	95	94.1
Grid 88	109	119.8
Grid 90	91	91.9
Grid 92	104	109.5
Grid 94	79	79.0
Grid 96	79	84.9
Grid 98	108	121.3
Grid 100	71	71.0
Grid 102	67	68.4
Grid 104	50	53.8
Grid 106	62	62.0
Grid 108	80	89.9
Grid 110	61	61.0

Sample	Volume susceptibility χ_v	Mass susceptibility χ_m
Grid 112	97	100.0
Grid 114	52	53.6
Area 4		
Grid 116	37	37.4
Grid 118	31	34.1
Grid 120	33	30.8
Grid 122	19	19.2
Grid 123	43	39.4
Grid 125	62	63.3
Grid 127	39	39.0
Grid 129	43	45.3
Grid 132	53	57.6
Grid 134	48	49.5
Grid 136	41	41.8
Grid 138	26	25.5
Grid 139	35	36.5
Grid 141	47	48.0
Grid 143	34	30.9
Grid 145	27	25.2
Grid 148	44	44.9
Grid 150	41	39.0
Grid 152	40	37.7
Grid 154	17	17.7
Grid 155	30	33.3
Grid 157	35	39.3
Grid 159	26	26.0
Grid 162	26	27.1
Grid 164	32	32.7
Grid 166	19	19.4
Grid 168	93	101.1
Grid 170	37	35.2
Grid 172	30	28.8
Grid 174	15	13.2
Grid 175	67	73.6
Grid 177	52	55.9
Grid 179	44	49.4
Grid 181	45	47.4
Grid 183	23	24.7
Grid 188	52	55.9
Grid 190	48	51.6
Grid 192	23	25.6
Grid 194	13	12.6
Grid 195	64	72.7
Grid 196	139	152.7
Grid 197	59	62.8
Grid 199	41	38.3
Grid 201	38	45.2
Grid 203	21	20.4
Grid 205	54	56.3
Grid 207	47	56.6
Grid 209	50	62.5
Grid 211	30	28.3
Grid 213	21	21.4
Grid 214	43	44.3
Grid 216	59	64.1
Grid 218	38	40.9
Grid 220	23	24.2
Grid 222	59	66.3
Grid 224	45	45.9

Sample	Volume susceptibility χ_v	Mass susceptibility χ_m
Grid 226	26	24.1
Grid 228	52	53.6
Grid 230	36	38.7
Grid 232	24	24.0
Grid 234	35	35.0
Grid 236	22	22.4
Grid 238	22	21.4
Grid 240	16	16.3
Area 5		
Grid 242	128	129.3
Grid 244	72	74.2
Grid 246	38	35.8
Grid 248	25	24.8
Grid 250	56	60.9
Grid 252	49	47.6
Grid 254	21	24.7
Grid 256	36	38.7
Grid 258	29	33.3
Grid 260	23	21.9

The magnetic susceptibilities, as measured, are of moderate values suggesting that the area was suitable for magnetic survey. The large number of samples taken (131) also allow for some investigation of the distribution of higher magnetic susceptibility readings across the site.

The average magnetic susceptibility value was 51.3, thus values in excess of 50 have been plotted on Figure 24. Given that magnetic susceptibility is often a proxy for the level of archaeological activity, it can be seen that there is a concentration of high values in Area 3 suggesting that this was the focus for occupation and industrial activity.

Areas 1 and 2 also contained areas of enhanced magnetic susceptibility suggesting a continuation of activity into these areas. There is also a concentration of enhanced values in the north east corner of Area 4. It is possible that this may suggest that this area of the priory complex was devoted to more domestic or industrial activities than that over the ecclesiastical buildings.

It is also noticeable that the area of the post-suppression house does not have enhanced magnetic susceptibility readings and it is possible that the level of domestic, and particularly industrial, activity was not as great associated with this house.

Resistivity Survey Results

Area 6

Area 6 was on the western edge of the survey area, approximately 75m south of the fishponds. It was designed to sample an area of masonry located in the fieldwalking. The plots (Figures 25 and 26) show a broad band of higher resistance crossing the plots together with three zones of higher resistance leading off the main anomaly.

Anomaly 102 (Figure 34) was a broad area of higher resistance running approximately east-west. It was generally 10m wide, although at the western end it becomes at least 15m wide. This may be the result of the junction with anomaly 103, which runs approximately NNW-SSE and was similarly approximately 10m wide. No structure could be determined within these anomalies. This may be a result of a spread of building materials, however, it may also be the result of banks running along the line of the anomalies. The line of this anomaly would appear to correspond with Anomaly J (Figure 5) recorded in the magnetic scanning. It would, therefore, seem likely that this anomaly may mark the boundary of the priory complex.

Anomaly 104 (Figure 34) runs north-south from Anomaly 102. Its relatively thin width (approximately 3m) would suggest a wall or drain.

Anomaly 105, was on the southern side of Anomaly 102. It was roughly "L" shaped, 25m long and 12m wide. As an area of high resistance it is possible that this anomaly marks the position of a building, however no details could be determined within the general area of higher resistance.

Area 7

Area 7 was located to the east and south of the earthworks and was designed to define the remains of the priory church and associated buildings in an area where the Fluxgate Gradiometer survey did not define any possible buildings.

The probable position of the priory church is shown as Anomaly 106 (Figure 35). Two possible aisles have been defined each 12.5m wide, presumably reflecting the separation of the nuns and monks within the church. It is a little surprising that the central dividing wall shows as such a dominant feature and this wall appears to have possible buttresses protruding to the south. It is possible that this wall was load bearing and thus it needed to be of solid construction.

There would appear to also be buttresses on the external face of the eastern end of the northern aisle. This is particularly shown on the north east corner of Anomaly 106 where possible rectangular buttresses can be seen.

The position of a possible porch, or attached building can also be defined on the northern side of Anomaly 106. This was approximately 8 x 5m in size.

Anomaly 106 would appear to sit within a general area of higher resistance (Anomaly 108, Figure 35). This presumably reflects the spread of building debris from the destruction of the priory church and associated buildings.

A series of less well defined linear anomalies can be defined to the south and south west of Anomaly 106 (Anomaly 107, Figure 35). This probably reflects the less substantial nature of the building in this area. It is assumed that this area contained the nun's chapter house, cloister and associated buildings.

The extent of the possible buildings appears to be confined by a broad "L" shaped anomaly (Anomaly 109, Figure 35). This anomaly varies between 14 and 5m wide, with the widest section to the south of the possible buildings. Less well de-

finer than the possible wall lines, it is possible that this anomaly marks the position of a bank, although it is also possible that geological variation may give rise to a similar response. This comment is also true of Anomaly 110 (Figure 35) which runs for approximately 32m in the south eastern corner of the survey area.

A zone of lower resistance was also defined as Anomaly 111 (Figure 35). This runs approximately north-south from the centre of the southern edge of the survey area. This anomaly would appear to extend the line of Anomaly 67 (Figure 21) located in the Fluxgate Gradiometer survey and therefore it is likely that this is a cut feature.

Area 8

Area 8 was a small area within the earthworks which was designed to try and define the western end of the priory church. This area had been used as a dumping ground for excess stone and therefore the plots were not as clear as Area 7.

Anomaly 112 (Figure 36) ran along the northern edge of the survey area before turning south. This probably marks the northern and western walls of the priory church.

The other anomalies (Anomalies 113 and 114, Figure 36) are less consistent and therefore probably reflect the position of dumped building debris within the earthwork.

Area 9

Area 9 was in the field to the south of St Andrew's Church and was positioned to sample an area of possible building debris, assumed to be the priory gatehouse, defined in the fieldwalking. Conditions were markedly more difficult in this area, the slightly more clayey soils meant that the ploughing had left deep ruts and voids within the soil.

Two broad areas of slightly higher resistance (Anomalies 115 and 116, Figure 37) can be defined which reflect areas of clay seen in the field. No details of any building could be defined.

Conclusions

It is a fundamental axiom of archaeological geophysics that the absence of features in the survey data does not mean that there is no archaeology present in the survey area only that the techniques used have not detected it.

There is a good correlation between the three survey types undertaken with the magnetic scanning locating the major areas of activity and then both the detailed survey and magnetic susceptibility samples reflecting the same pattern of land use.

The main focus for domestic and industrial activity would appear to be around St Andrews Church, particularly to the south of the church, between the church and the Marse Dike. Area 3 is particularly dense with magnetic anomalies of both possible domestic and industrial character. The layout of the fine linear anomalies (particularly Anomalies 35, 36 and 38, Figure 20) are remarkably rectilinear possibly suggesting a degree of planning for part of the site which is unusual for Medieval domestic sites. It is possible that either this area formed part of the extended Priory complex, or that there are elements of a possible Roman site being represented. The industrial activity in this Area is particularly marked by Anomalies 54 and 53 (Figure 20). It appears to be a high temperature anomaly, (similar responses have been gained from bloomery sites for instance), suggesting significant industrial activity.

Areas 1 and 2, in general, have a more organic layout which is more typical of Medieval settlement. There is obviously more than one phase of activity with anomalies crossing each other so that no full consistent pattern can be determined. It is assumed that the majority of the anomalies recorded over the whole survey are the result of Medieval or later activity. There are some hints, however, that there may be a prehistoric phase of activity on the site. Anomaly 1 (Figure 18) is typical of that from a ring ditch and is possibly Bronze Age in date. Area 4 defines much of the Priory and post-suppression house layout. It is noticeable, however, that whilst the cloister and ancillary buildings can be defined in the Fluxgate Gradiometer data, there is little evidence for the Priory church which, conversely shows much better in the Resistivity survey (Area 7). This may be a reflection of differing building techniques between the main church buildings and the ancillary building, possibly with more magnetic materials, such as brick being used in the ancillary buildings. It is also possible that the ancillary buildings were incorporated into, and modified for the post-suppression occupation of the site, possibly including the increased use of magnetically active materials. It should also be noted that the activities being carried out in the Priory Church were less likely to generate the types of magnetically active materials which could be detected.

It is possible that some of the anomalies detected are the result of major garden features associated with the post-suppression house. Possible contenders are Anomalies 58 and 63 (Figure 21) both of which do not appear to be of a similar character to the rest of the anomalies in this area. Anomaly 63, in particular would appear to have very sharp edges with the possibility of further structures along the southern edge, possibly suggesting some sort of sunken feature. At least some activity continued into Area 5. It is assumed that the anomalies detected here may be related to the management of the adjacent fishponds together with some industrial activities.

The resistivity survey of the areas defined by the fieldwalking (Areas 6 and 9) reflected the pattern recovered from the fieldwalking, although it added little in the way of extra detail. In Area 9, in particular, this was partly because of the conditions within the field.

Areas 7 and 8, were more successful. The size and most of the plan of the priory church have been defined. It would appear to be approximately 25m wide and 85.4m long, now partly below the upstanding earthworks. It would also appear to have been divided along its length, presumably to separate the nuns and monks from each other. There is some correspondence between the Fluxgate Gradiometer survey and the Resistivity Survey, particularly in the area of the probable Priory Church. A series of discrete, circular anomalies noted within Anomaly 85 (Figure 21) appear to lie directly below the probable central dividing wall of the priory church (Anomaly 106, Figure 35). It is possible that the magnetic anomalies represent reinforcing within the wall, possibly the position of columns or other features incorporated into the wall.

There is also a good correspondence between Anomaly 67 (Figure 21) in the Fluxgate Gradiometer survey and Anomaly 111 (Figure 35) in the Resistivity survey. This would suggest that these anomalies represent a possible cut feature containing at least some magnetically active materials. The line of this feature does not appear to conform with the layout of the priory and it is therefore probable that it may predate the construction of the priory buildings.

Techniques of Geophysical Survey:

Magnetometry:

This relies on variations in soil magnetic susceptibility and magnetic remanence which often result from past human activities. Using a Fluxgate Gradiometer these variations can be mapped, or a rapid evaluation of archaeological potential can be made by scanning.

Resistivity:

This relies on variations in the electrical conductivity of the soil and subsoil which in general is related to soil moisture levels. As such, results can be seasonally dependant. Slower than Magnetometry this technique is best suited to locating positive features such as buried walls that give rise to high resistance anomalies.

Resistance Tomography

Builds up a vertical profile or pseudosection through deposits by taking resistivity readings along a transect using a range of different probe spacings

Magnetic Susceptibility:

Variations in soil magnetic susceptibility occur naturally but can be greatly enhanced by human activity. Information on the enhancement of magnetic susceptibility can be used to ascertain the suitability of a site for magnetic survey and for targeting areas of potential archaeological activity when extensive sites need to be investigated. Very large areas can be rapidly evaluated and specific areas identified for detailed survey by gradiometer.

Instrumentation:

- 1. Fluxgate Gradiometer - Geoscan FM36**
- 2. Resistance Meter - Geoscan RM4/DL10**
- 3. Magnetic Susceptibility Meter - Bartington MS2**
- 4. Geopulse Imager 25 - Campus**

Methodology:

For Gradiometer and Resistivity Survey 20m x 20m or 30m x 30m grids are laid out over the survey area. Gradiometer readings are logged at either 0.5m or 1m intervals along traverses 1m apart. Resistance meter readings are logged at 1m intervals. Data is down-loaded to a laptop computer in the field for initial configuration and analysis. Final analysis is carried out back at base.

For scanning transects are laid out at 10m intervals. Any anomalies noticed are where possible traced and recorded on the location plan.

For Magnetic Susceptibility survey a large grid is laid out and readings logged at 20m intervals along traverses 20m apart, data is again configured and analysed on a laptop computer.

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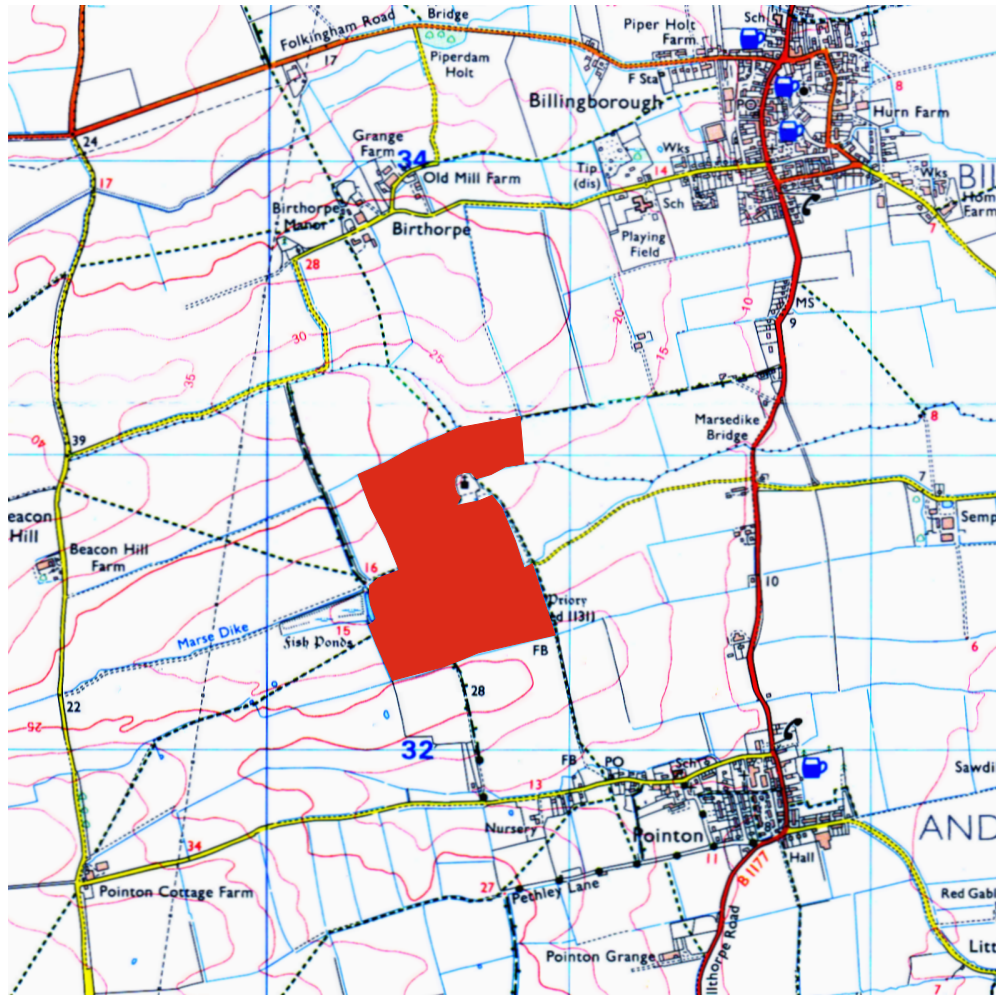


Figure 1: Sempringham Priory
Location
Scale 1:25,000

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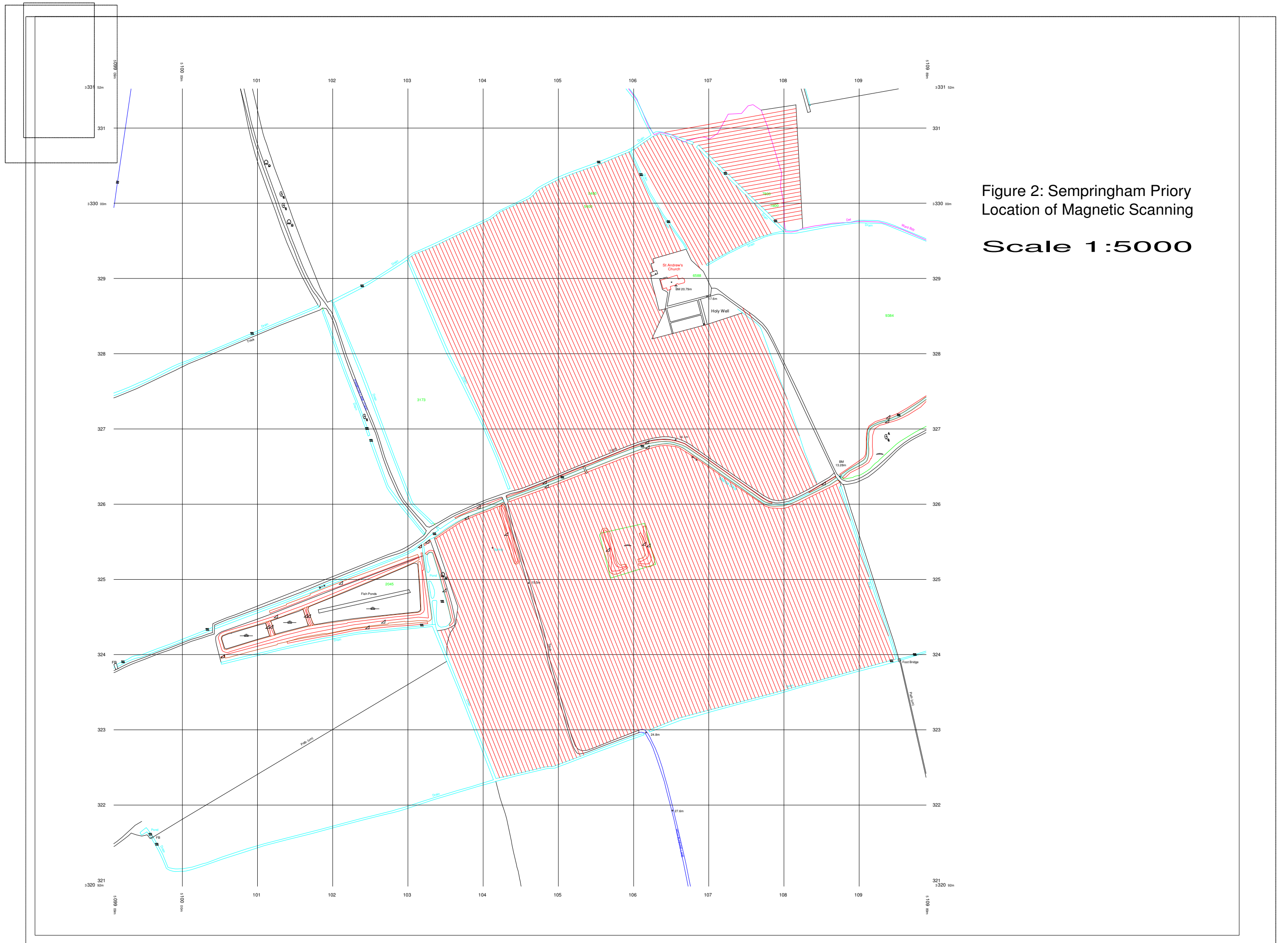


Figure 2: Sempringham Priory
Location of Magnetic Scanning

Scale 1:5000

Figure 3: Sempringham Priory
Location of Fluxgate Gradiometer Survey

Scale 1:2500

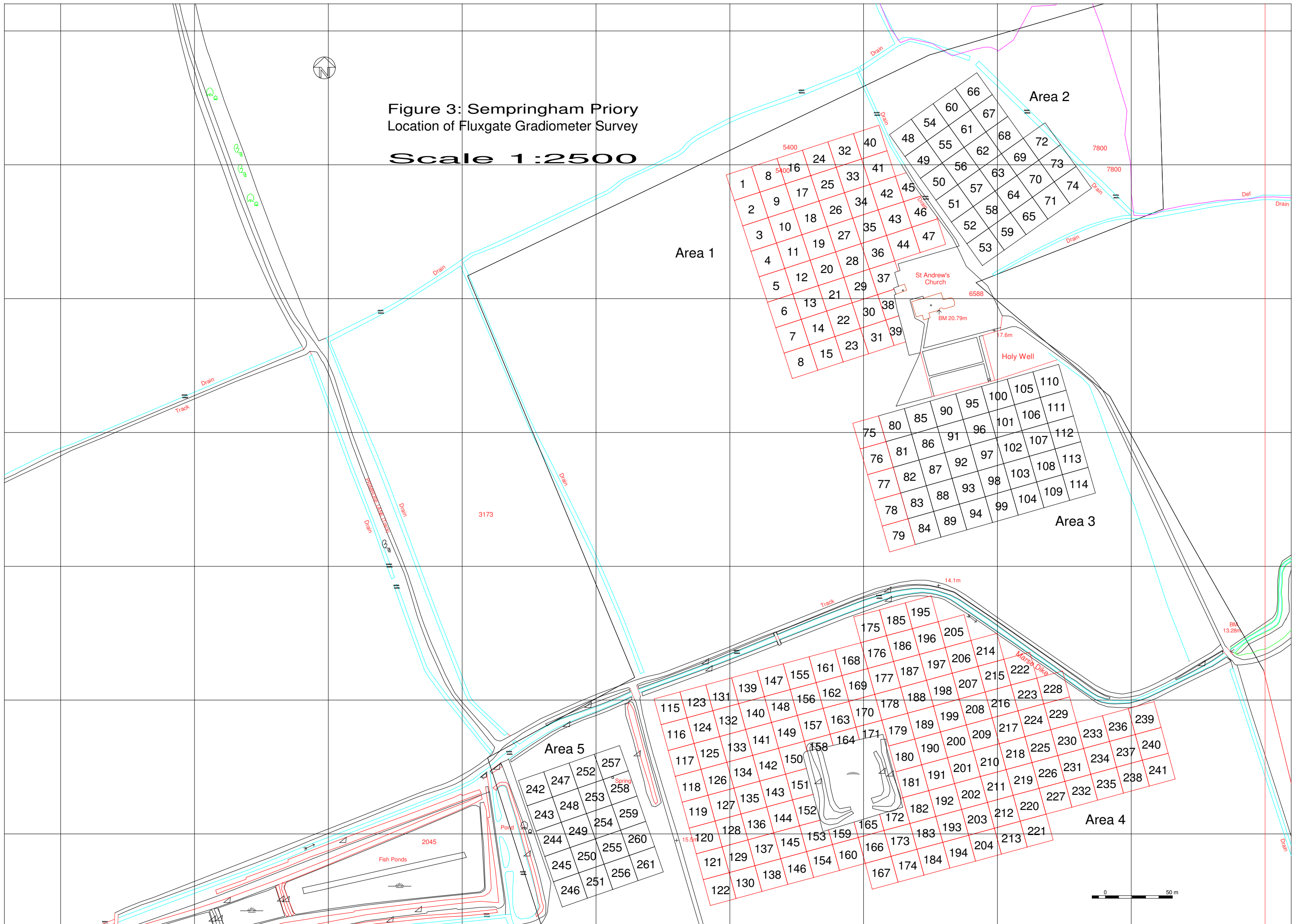
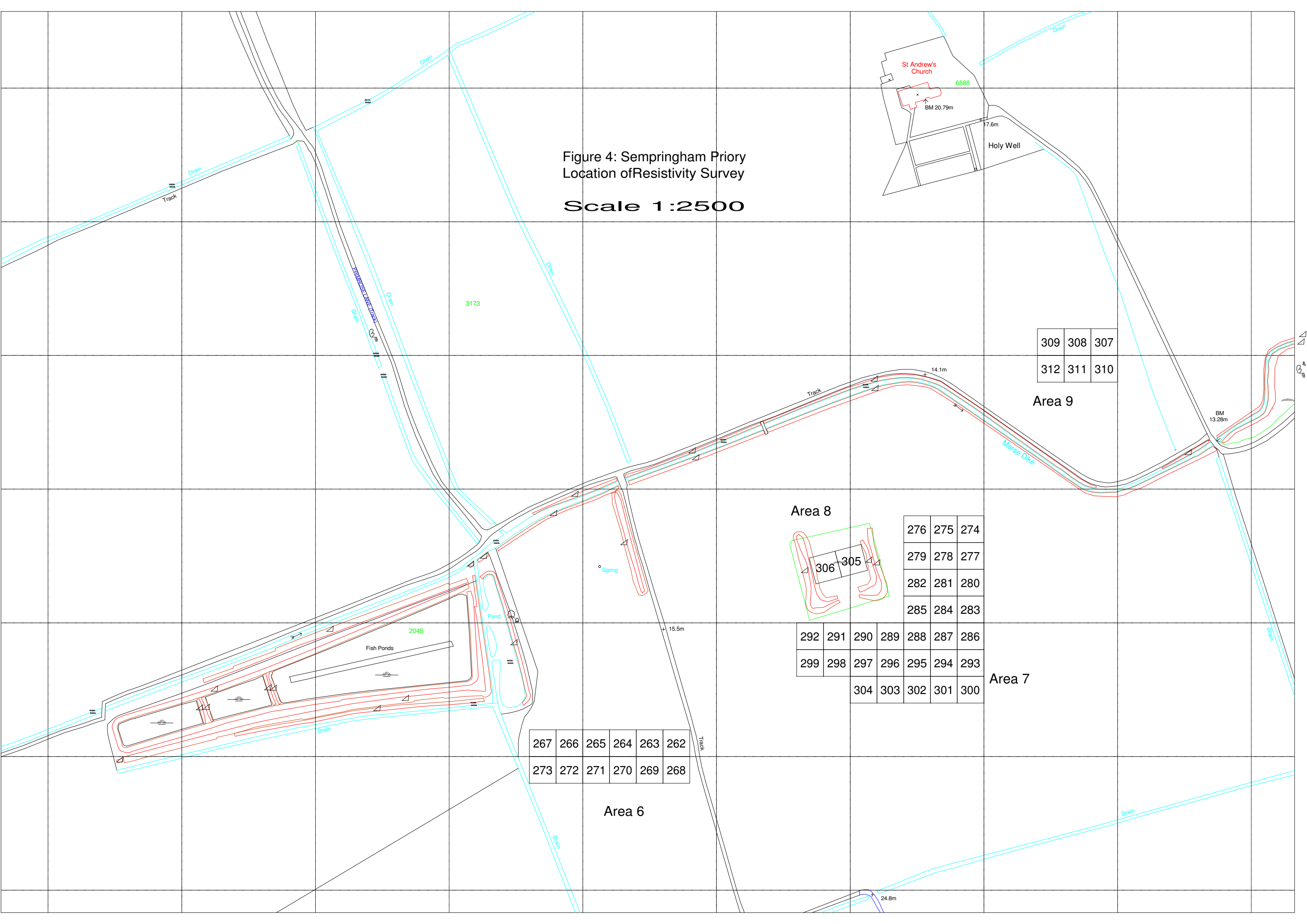
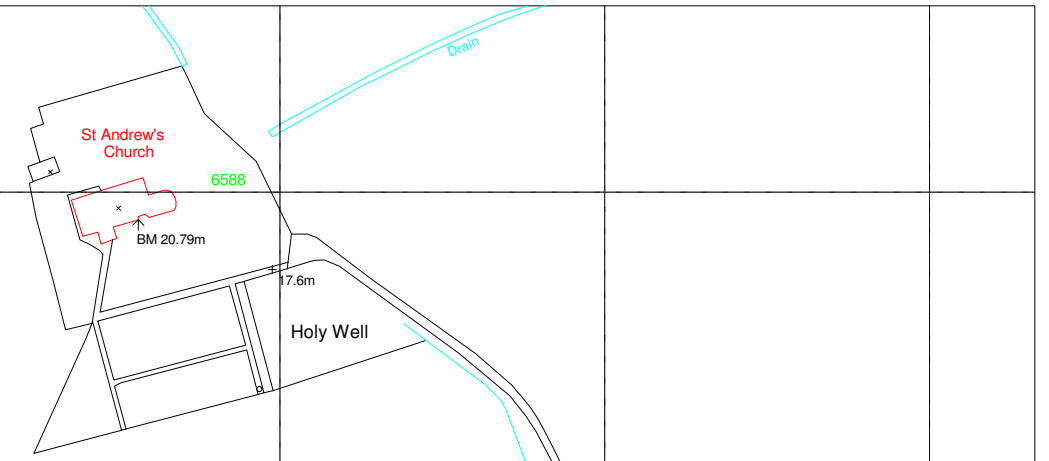
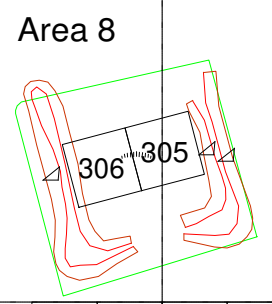


Figure 4: Sempringham Prioory
 Location of Resistivity Survey
 Scale 1:2500



309	308	307
312	311	310

Area 9



276	275	274
279	278	277
282	281	280
285	284	283

292	291	290	289	288	287	286
299	298	297	296	295	294	293
304	303	302	301	300		

Area 7

267	266	265	264	263	262
273	272	271	270	269	268

Area 6

3173

2045

BM 13.28m

15.5m

14.1m

24.8m

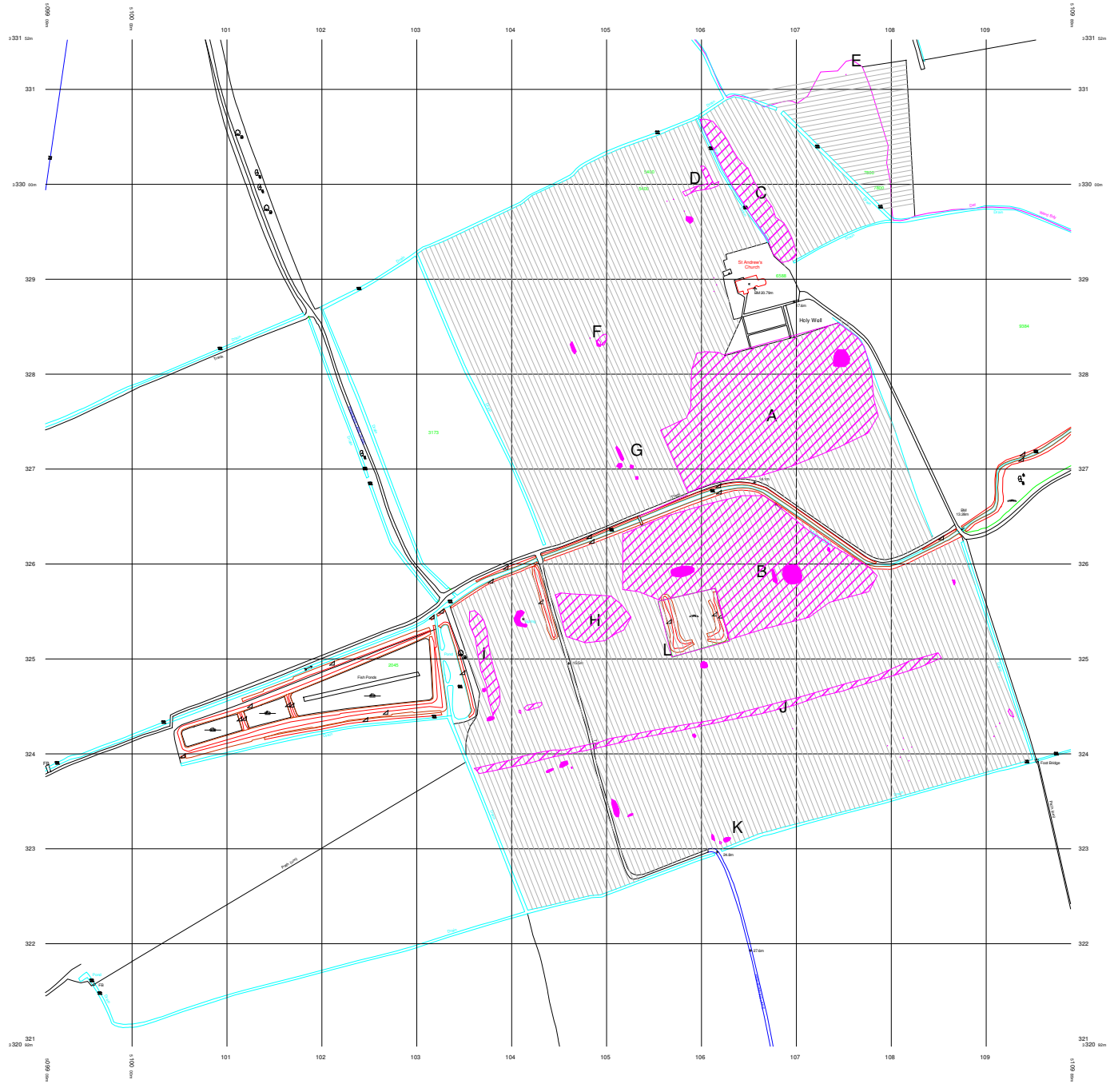


Figure 5: Sempringham Priory
Magnetic Scanning Results

Scale 1:5000

- Discrete magnetic anomalies
- Areas of magnetic disturbance

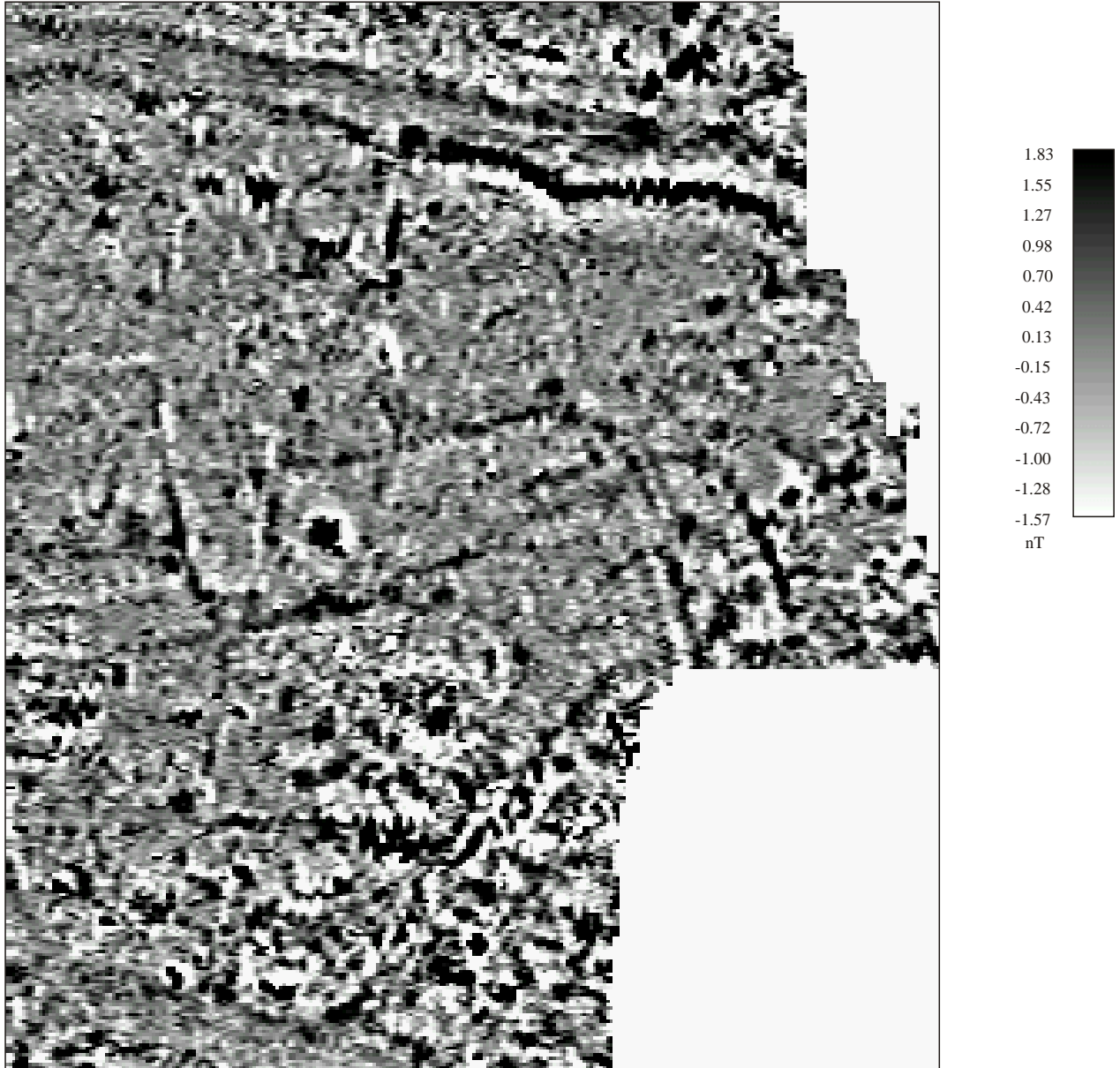


Figure 6: Sempringham Priory
Area 1, Grey Scale Plot
Scale 1:1000

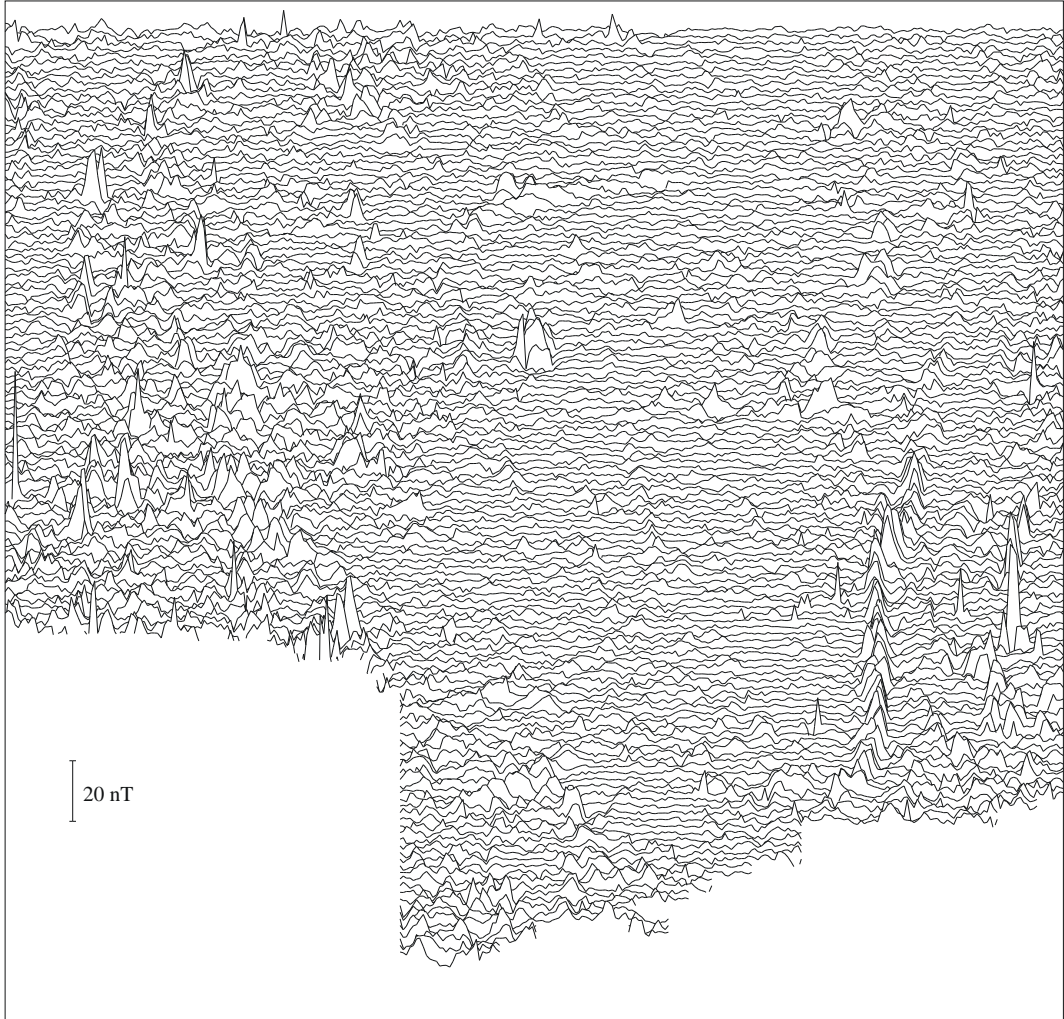


Figure 7: Sempringham Priory
Area 1, X- Y Plot
Scale 1:1000

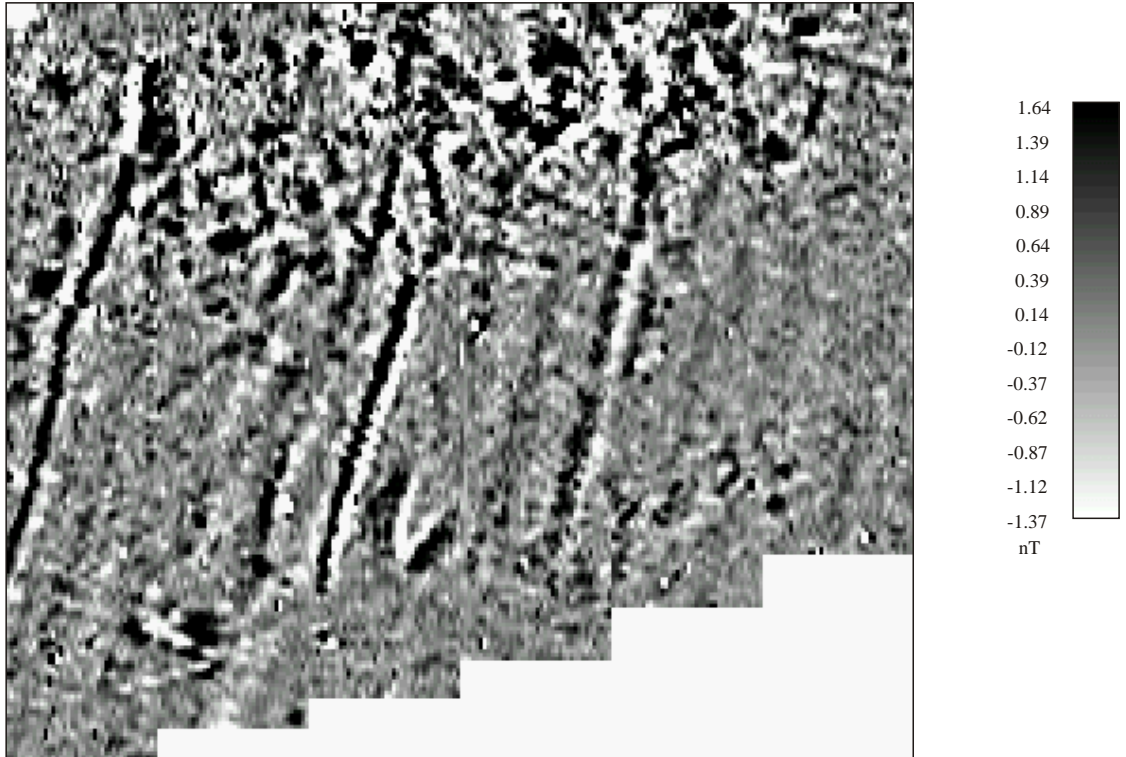


Figure 8: Sempringham Priory
Area 2, Grey Scale Plot
Scale 1:1000

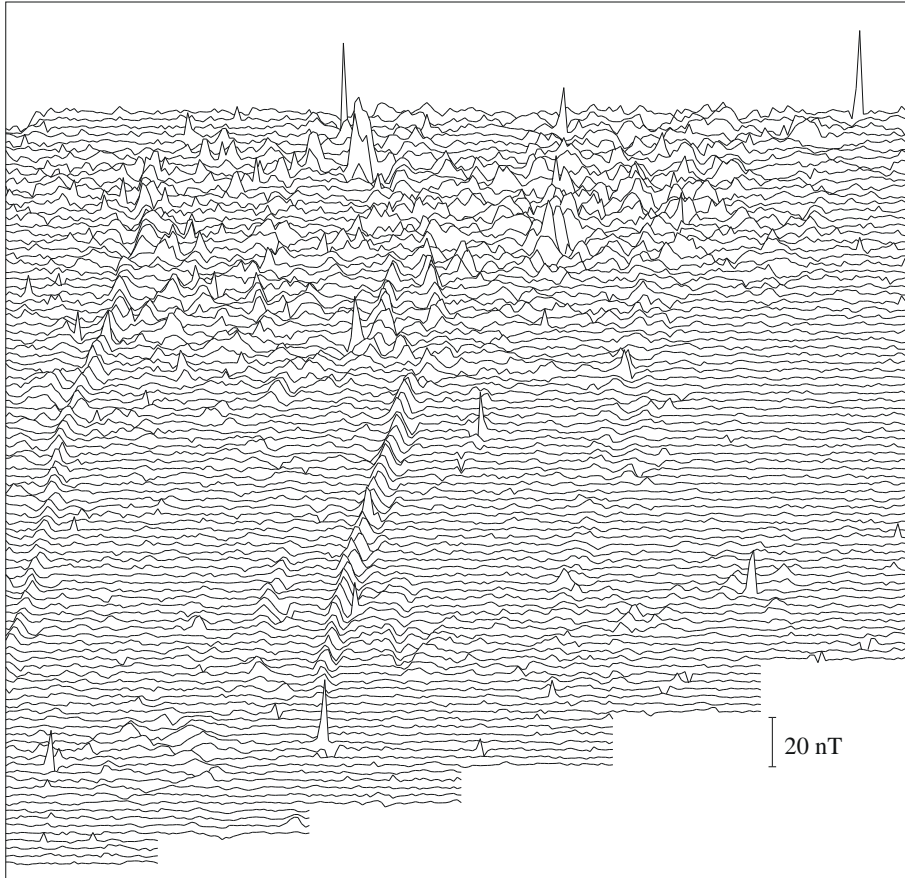


Figure 9: Sempringham Priory
Area 2, X - Y Plot
Scale 1:1000

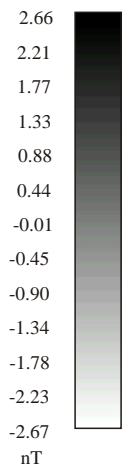


Figure 10: Semprinham Priory
Area 3, Grey Scale Plot
Scale 1:1000

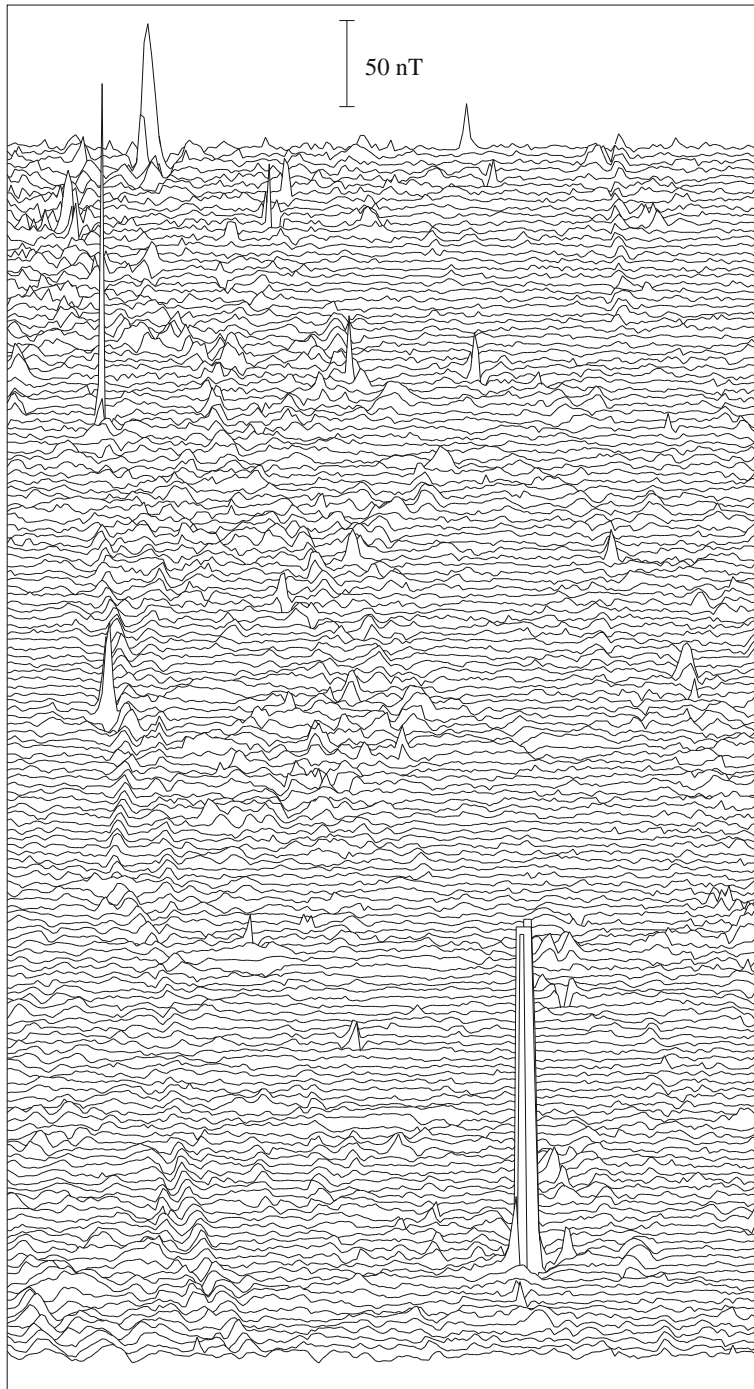
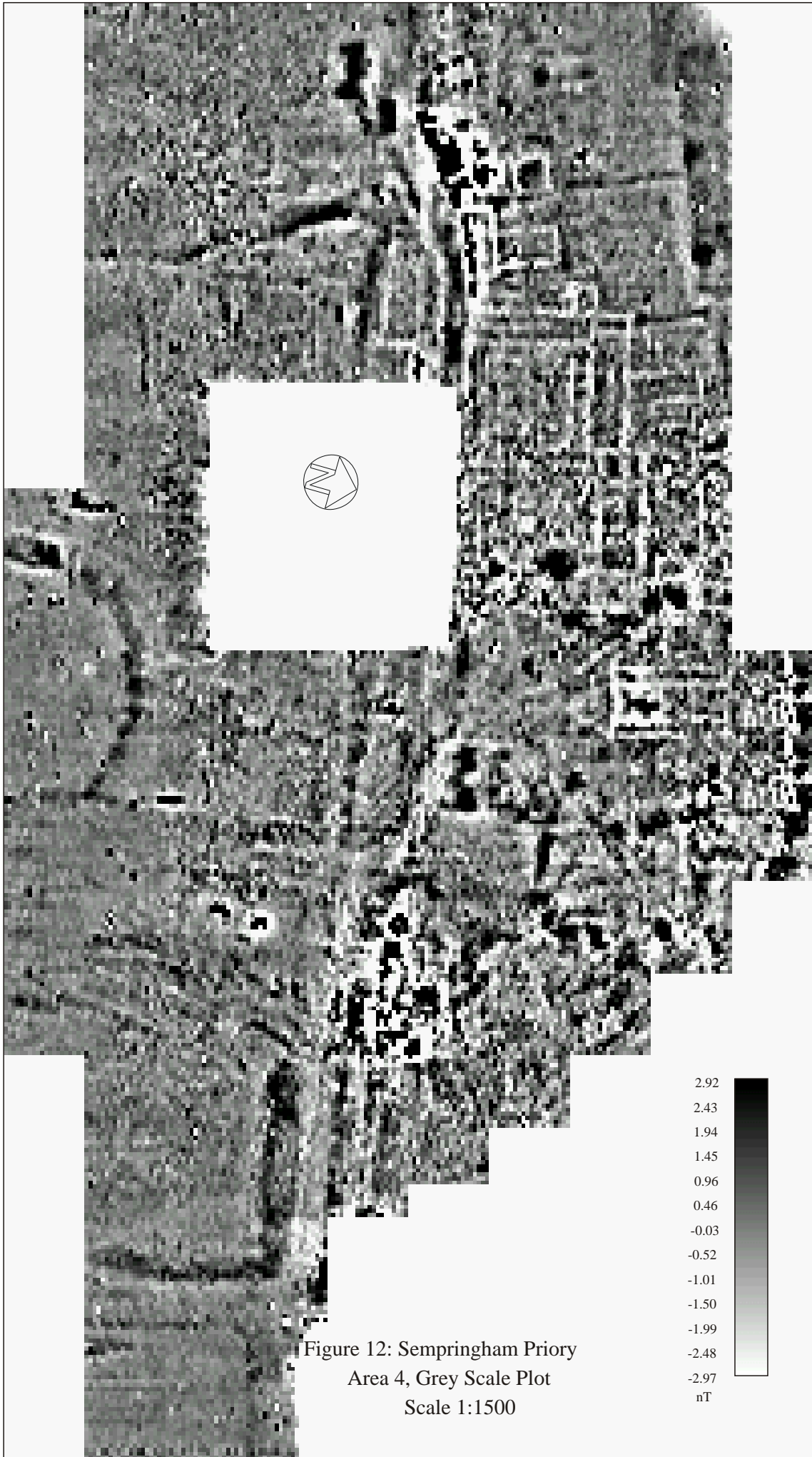
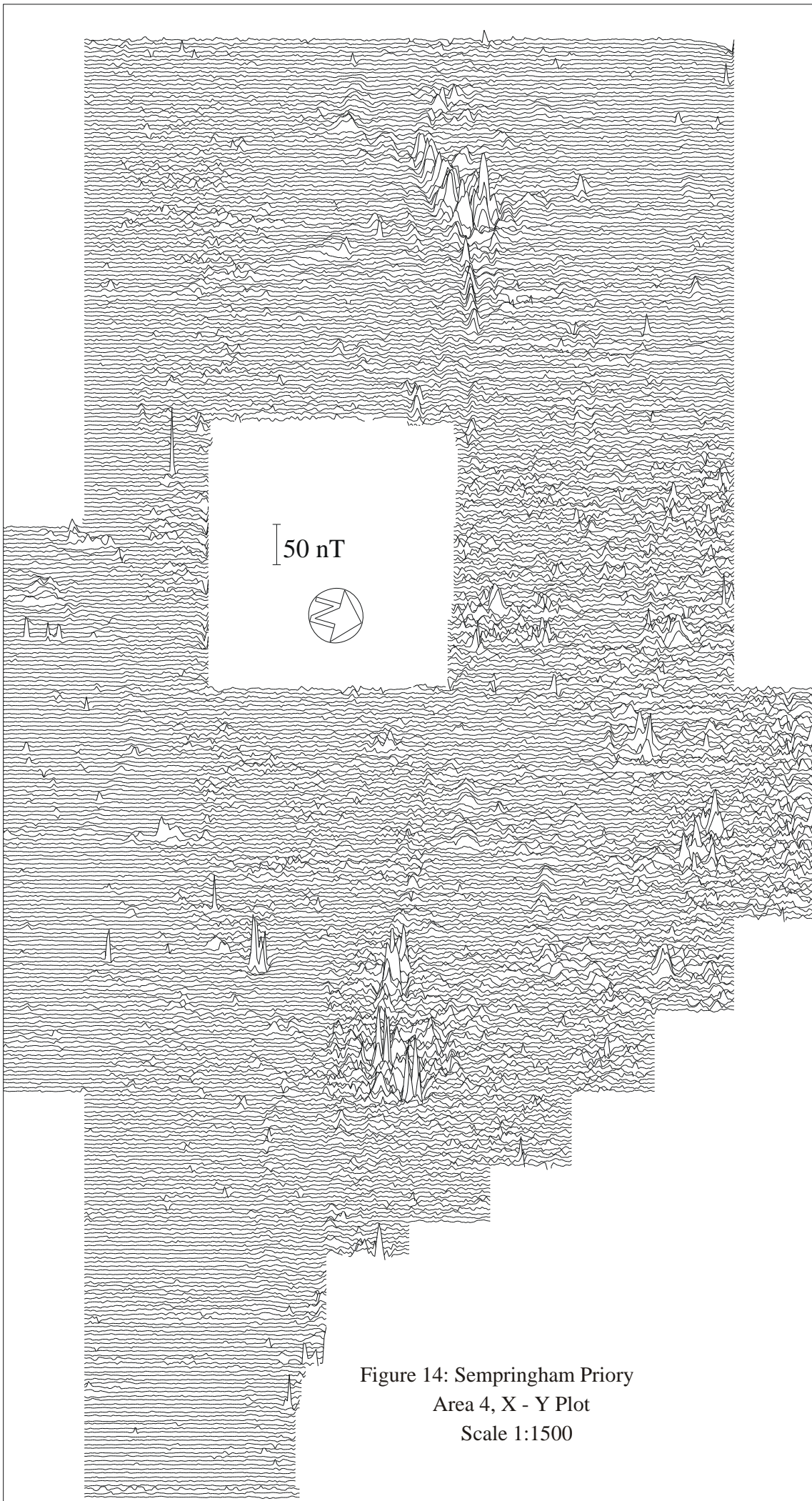


Figure 11: Sempringham Priory
Area 3, X - Y Plot
Scale 1:1000







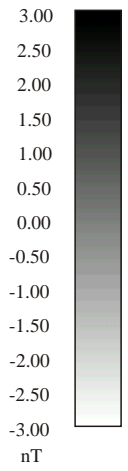
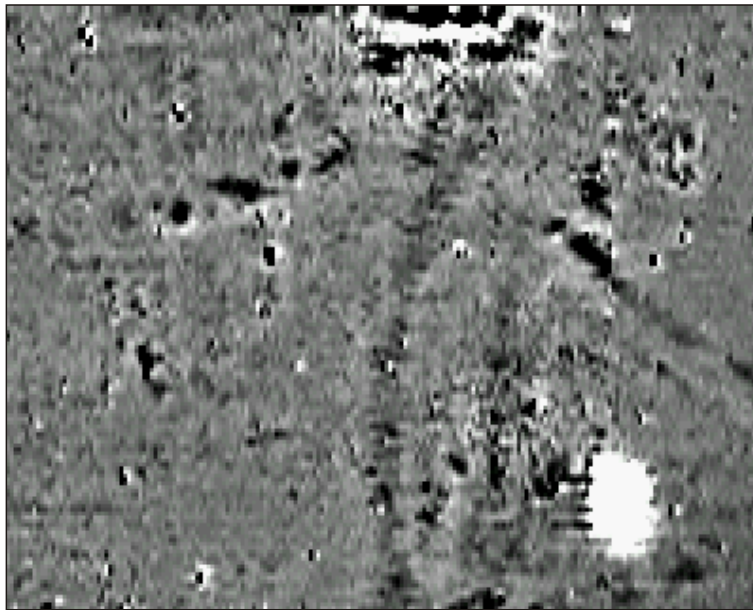


Figure 15: Sempringham Priory
Area 5, Grey Scale Plot
Scale 1:1000

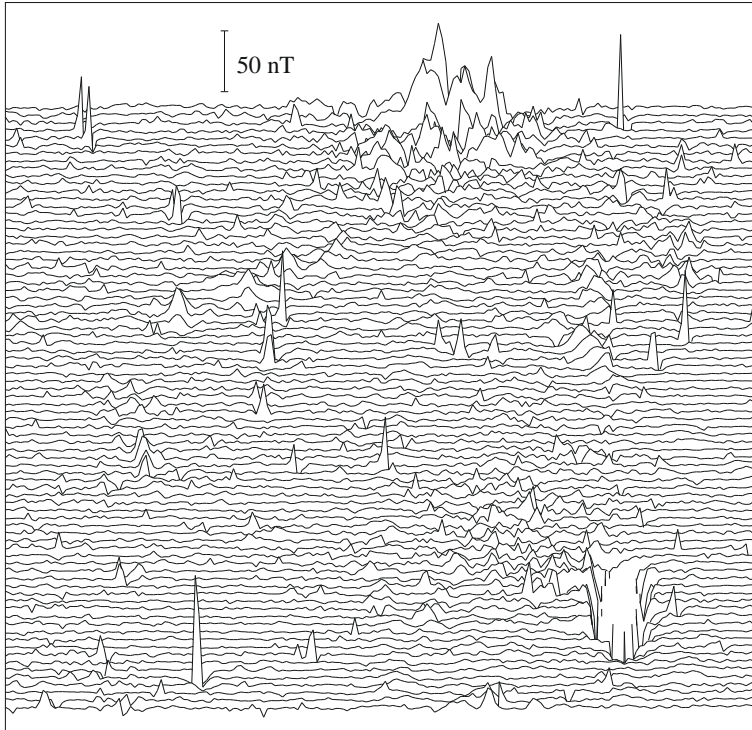


Figure 16: Sempringham Priory
Area 5, X - Y Plot
Scale 1:1000

Figure 17: Sempringham Priory
Summary of Grey Scale Plots
Scale 1:2500



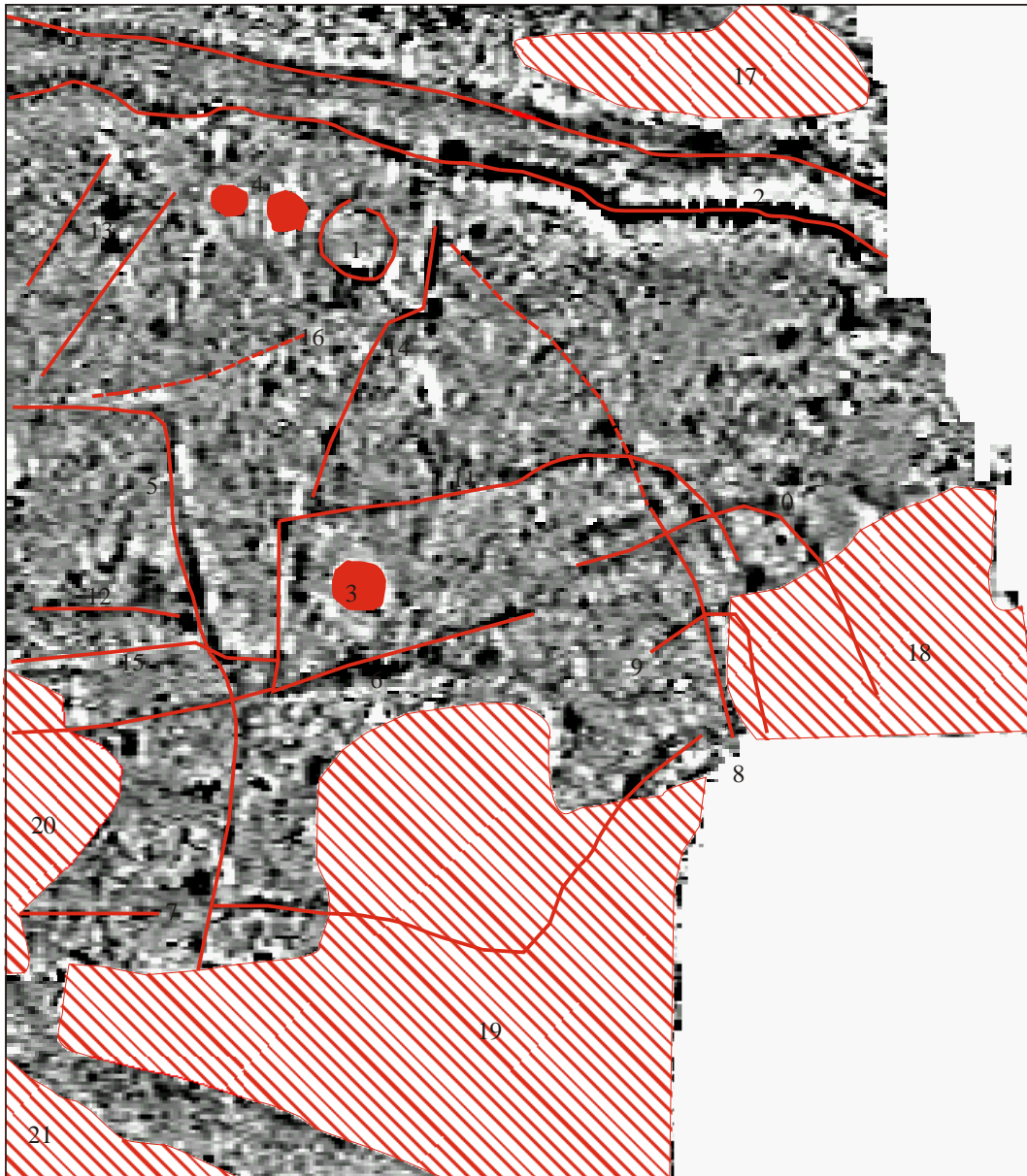


Figure 18: Sempringham Priory
Area 1, Interpretation
Scale 1:1000

Figure 23: Sempringham Priory
Summary of Fluxgate Gradiometer Survey
Scale 1:2500

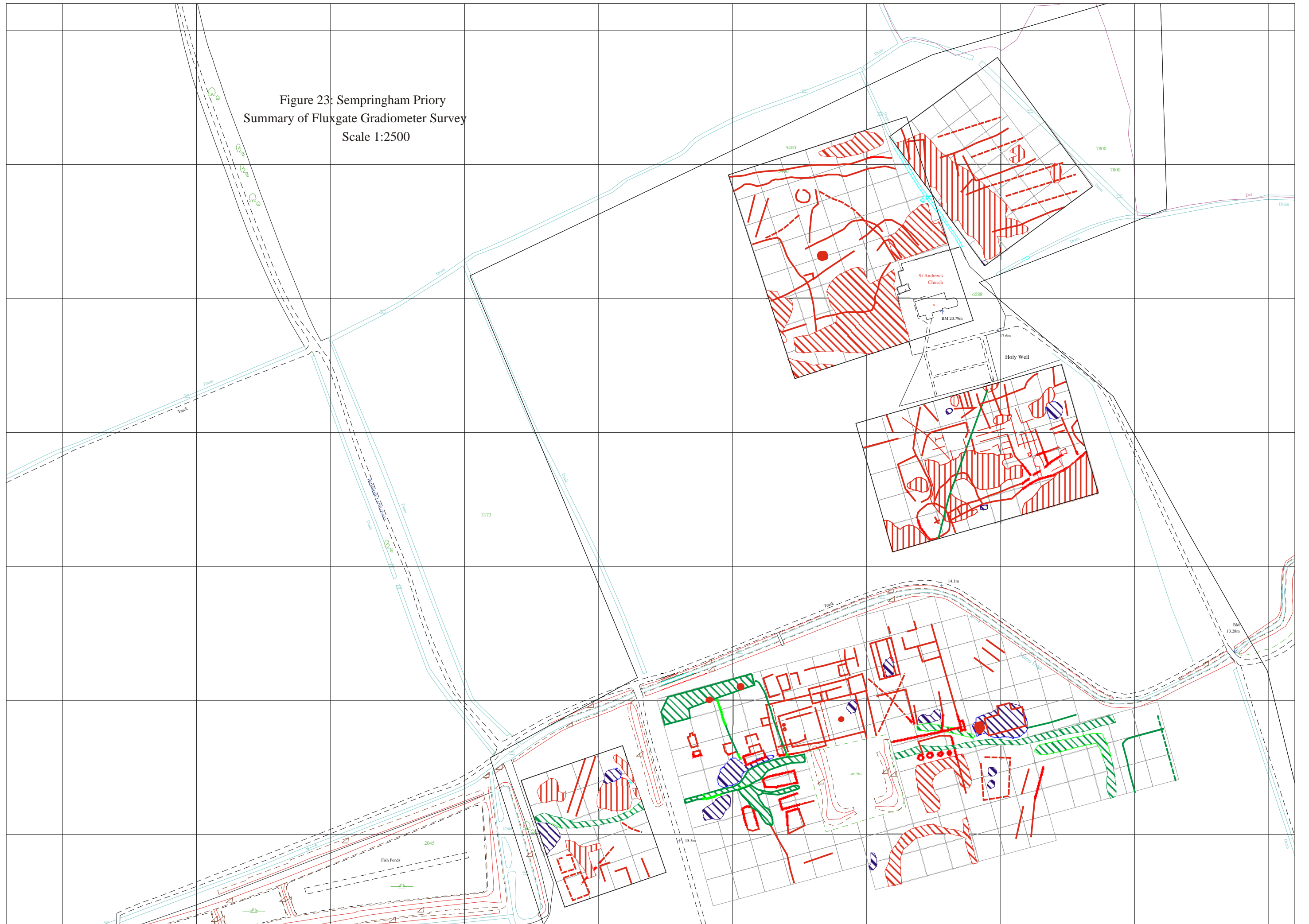
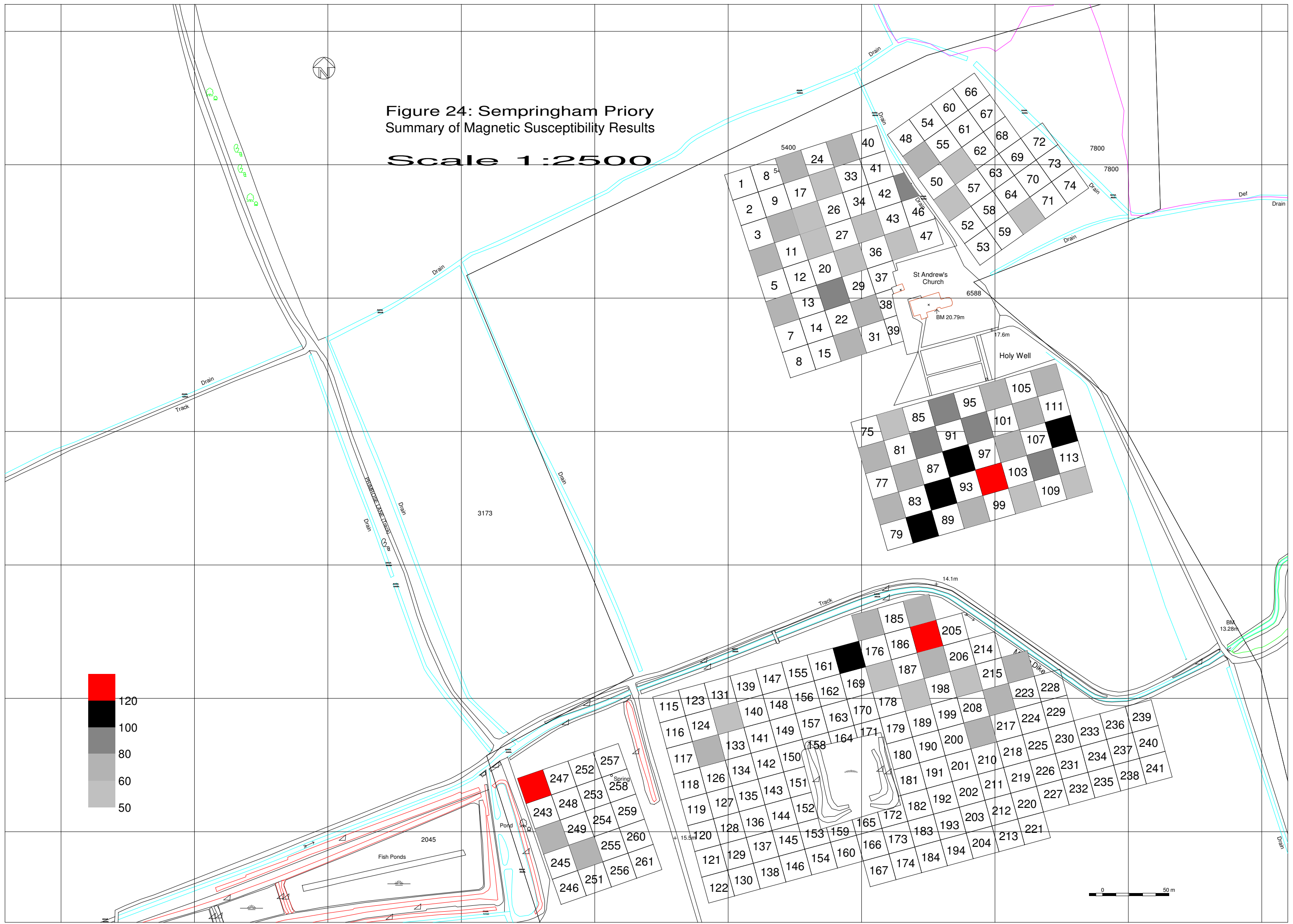
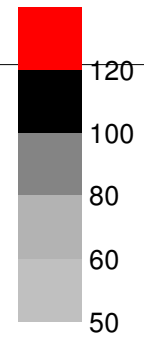


Figure 24: Sempringham Priory
Summary of Magnetic Susceptibility Results

Scale 1:2500



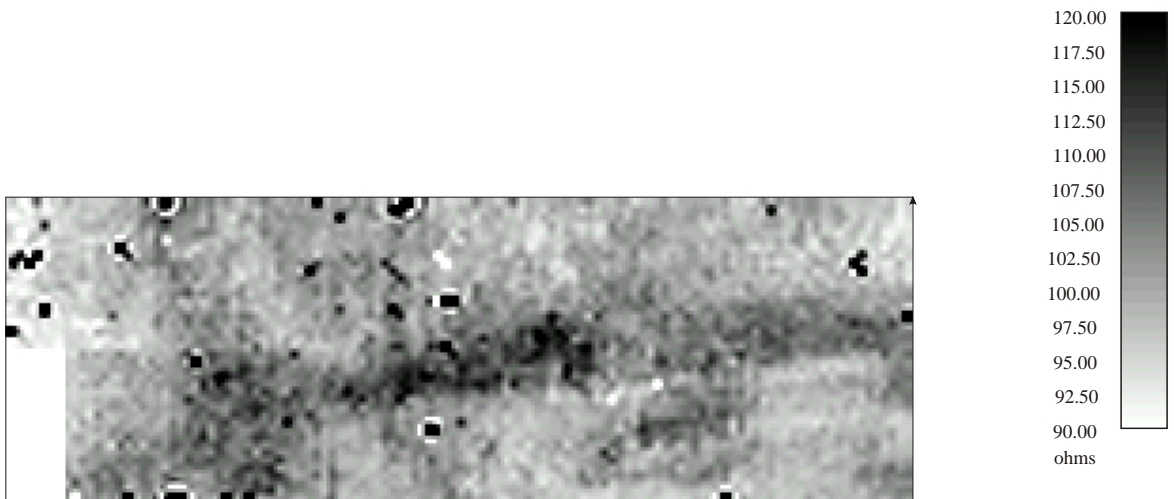


Figure 25: Sempringham Priory
Area 6, Grey Scale Plot
Scale 1:1000

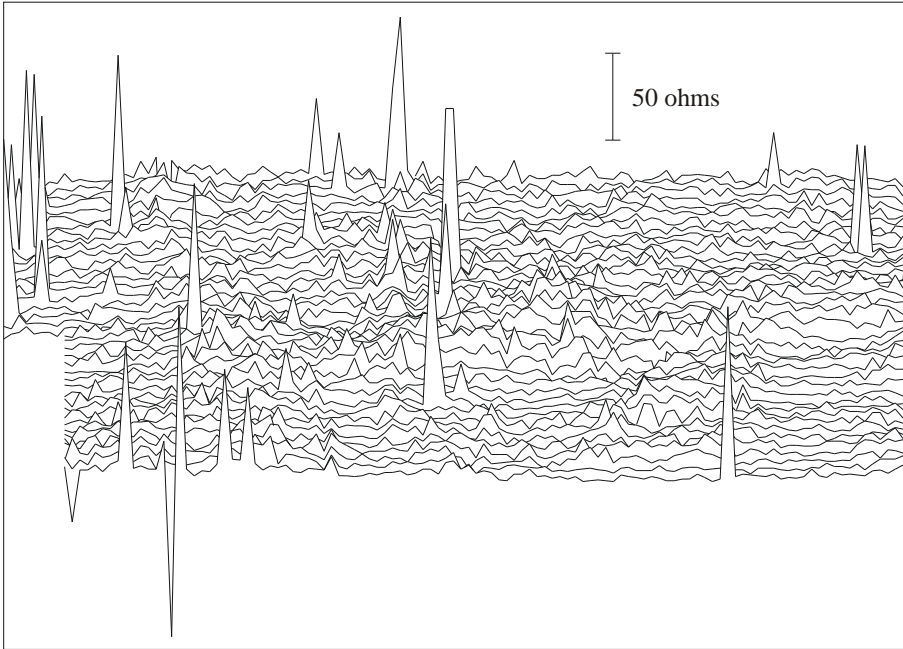


Figure 26: Sempringham Priory
Area 6, X - Y Plot
Scale 1:1000

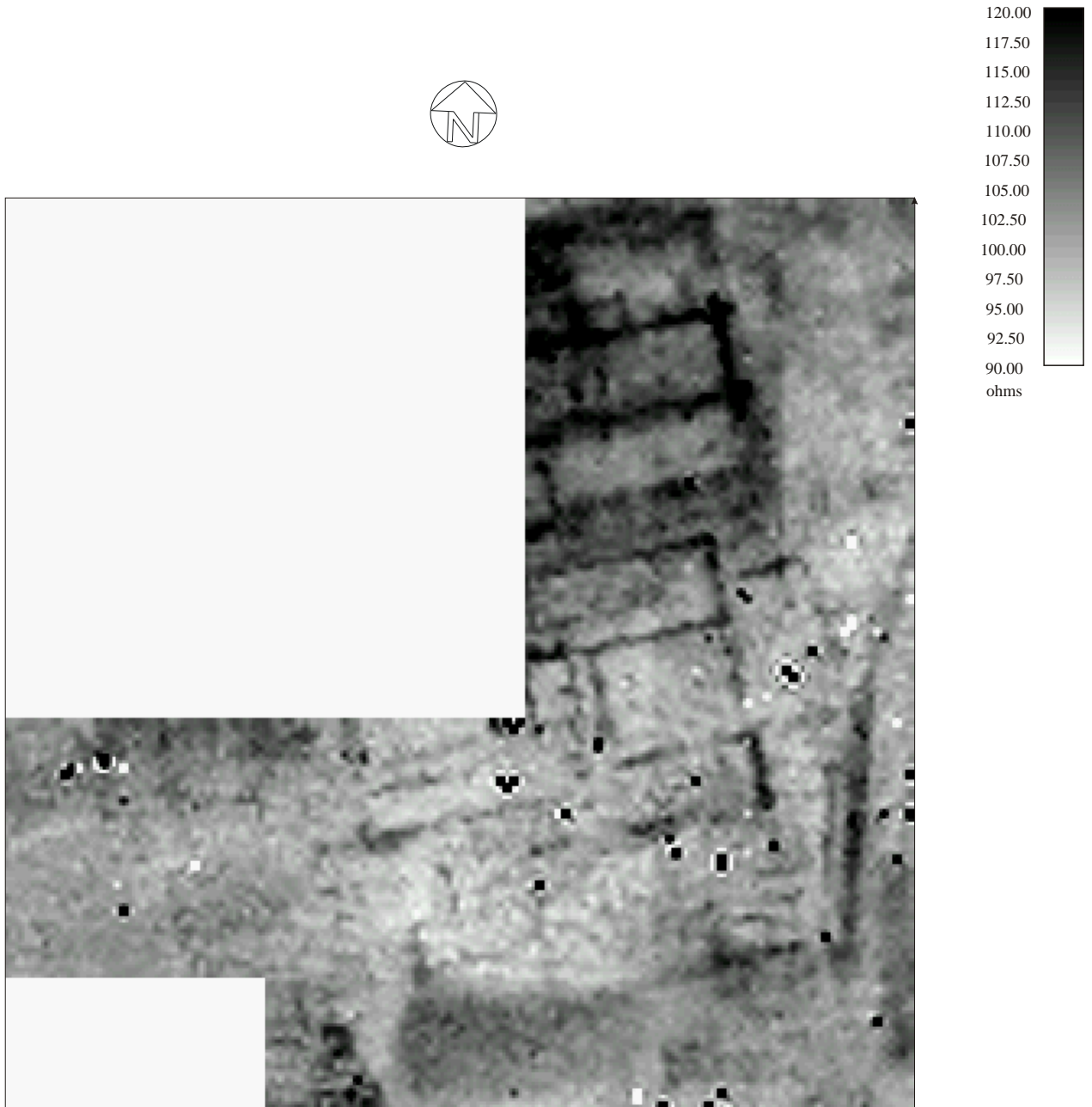


Figure 27: Sempringham Priory
Area 7, Grey Scale Plot
Scale 1:1000

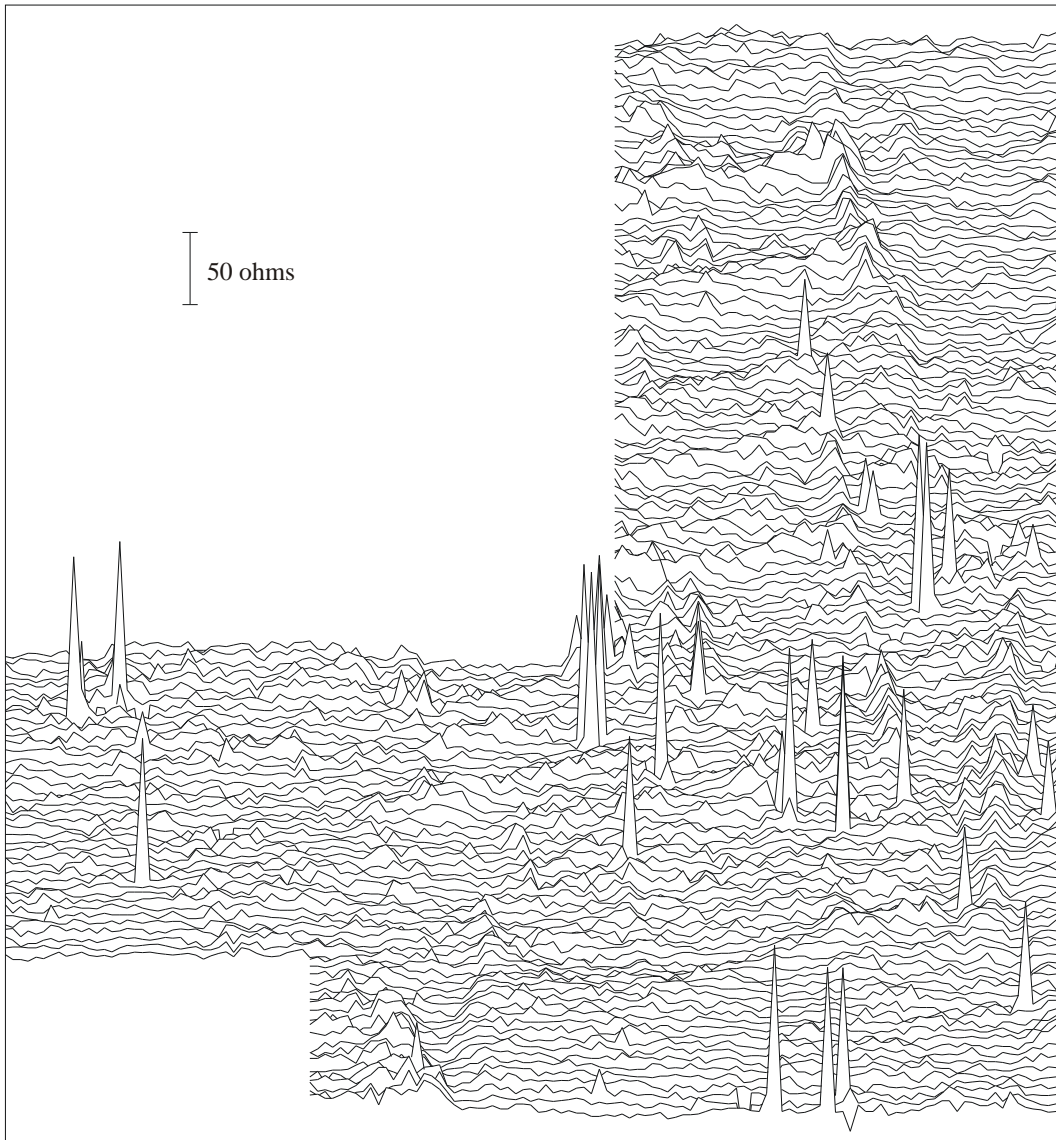


Figure 28: Sempringham Priory
Area 7, X - Y Plot
Scale 1:1000

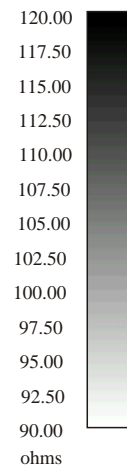
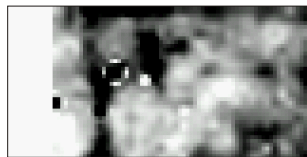


Figure 29: Sempringham Priory
Area 8, Grey Scale Plot
Scale 1:1000

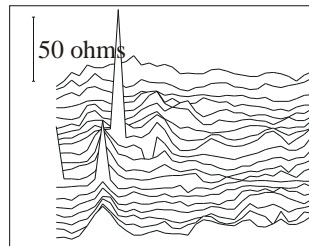


Figure 30: Sempringham Priory
Area 8, X - Y Plot
Scale 1:1000

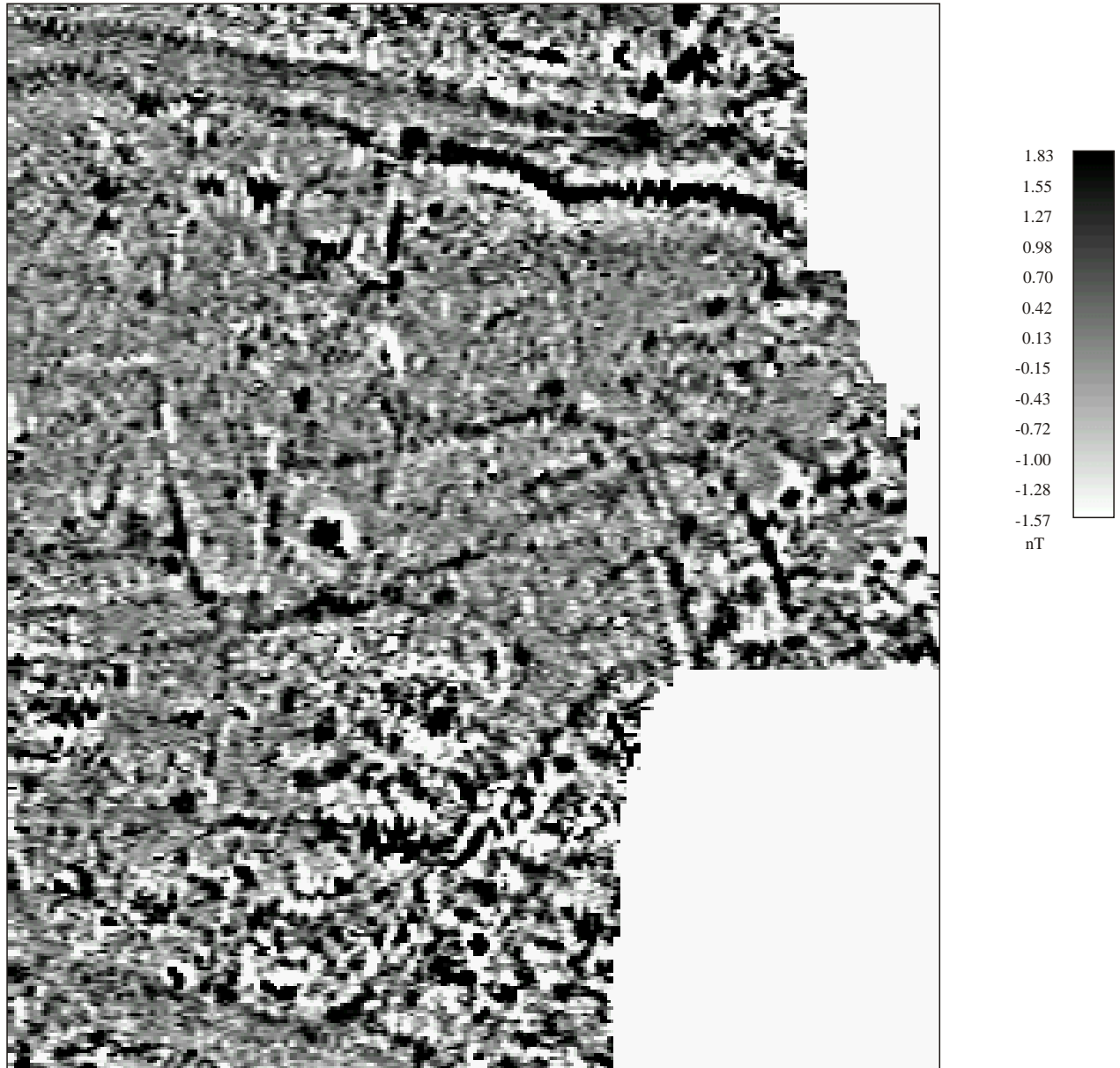


Figure 6: Sempringham Priory
Area 1, Grey Scale Plot
Scale 1:1000

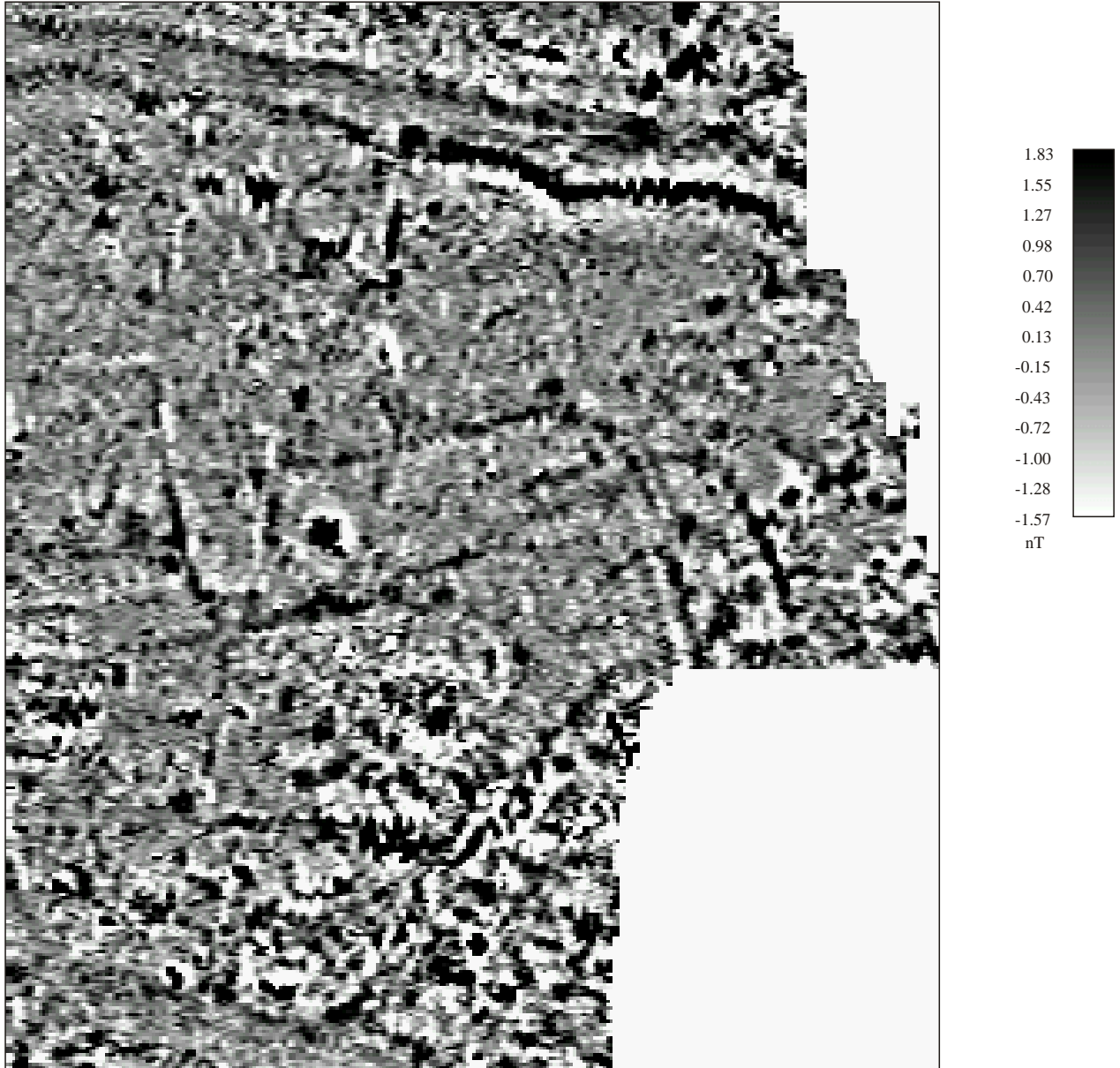


Figure 6: Sempringham Priory
Area 1, Grey Scale Plot
Scale 1:1000

Figure 33: Sempringham Priory
Summary of Resistivity Grey Scale Plots
Scale 1:2500



Figure 38: Sempringham Priory
Summary of Resistivity Surveys
Scale 1:2500



Figure 39: Sempringham Priory
Summary
Scale 1:3000



Appendix 3

CATALOGUE OF THE FLINT

Prepared by Tom Lane

Easting	Northing	Date	flake	core	scraper	burnt/ crazed	other
510345	332885	prob BA	flake				
510350	332930	prob BA	flake				
510350	332885	prob BA	flake				
510355	332930	NEO					broken fabricator
510370	332395	undated	flake				
510375	332495	MESO/NEO?		core frag			
510375	332360	NEO	blade flake				
510380	332895	undated	flake				
510380	332840	prob NEO		blade core frag			
510385	332795	NEO	flake				
510385	332795	undated		core frag			
510390	332925	NEO	flake				
510390	332330	NEO	flake				
510395	332400	undated				1	
510395	332895	NEO		broken core			
510400	332810	late NEO/EBA			end scraper		
510400	332910	prob BA	flake				
510400	332315	undated	flake				
510410	332850	undated	flake				
510410	332960	undated	flake				
510410	332440	undated	core rej flake				
510410	332855	undated	flake				
510415	332335	prob BA		broken core			
510420	332405	undated	flake				
510420	332260	undated		core frag			
510420	332560	undated	flake				
510420	332440	prob BA	flake				
510430	332360	BA	flake				
510430	332690	BA		core frag			
510430	332805	BA		core frag			
510430	332805	BA	flake				
510435	332435	NEO	flake				
510440	332450	prob BA	flake				
510440	332405	undated	flake				
510445	332725	BA					chopping tool
510445	332340	undated	flake				
510450	332310	prob NEO		blade core frag			
510450	332370	NEO					unfinished leaf- shaped a/head
510460	332415	prob BA	flake				
510460	332885	undated	flake				
510460	332345	MESO/NEO?	flake				
510465	332470	NEO	flake				
510465	332275	BA	flake				
510465	332960	undated	flake				
510470	332765	undated	flake				

Eastings	Northing	Date	flake	core	scraper	burnt/ crazed	other
510470	332810	prob NEO		core frag			
510470	332680	NEO	flake				
510475	332730	BA			end scraper		
510475	332420	NEO		core frag			
510480	332895	BA			Broken scraper		
510485	332260	undated	flake				
510485	332935	prob BA		core frag			
510495	332325	undated	flake				
510495	332430	undated				1	
510495	332415	ba			broken End Scraper		
510500	332325	NEO		core			
510515	333030	BA?	utilized flake				
510525	332340	undated		core frag			
510525	332425	NEO	blade flake				
510525	332805	undated					hammerstone frag
510525	332960	undated	flake				
510535	332835	prob BA		core frag			
510535	332880	BA	utilized flake				
510535	332305	undated					broken/unfinished tool
510540	332435	NEO	flake				
510540	332930	undated	flake				
510555	332370	NEO	flake				
510555	332805	BA					large chopping tool
510555	332880	NEO	flake				
510555	332560	undated			Unfinished scraper		
510555	332460	prob NEO	flake				
510560	332875	NEO	utilized flake				
510565	332440	BA	utilized flake				
510565	333030	undated	flake				
510565	332965	undated	flake				
510570	332720	prob BA	flake				
510575	332960	prob NEO	flake				
510580	332675	undated	flake				
510580	332435	undated	flake				
510580	332765	prob NEO		broken core			
510585	332890	NEO		core frag			
510595	332760	prob NEO		core			
510600	332455	undated	utilized flake				
510600	332455	NEO		blade core frag			
510605	332465	prob Late NEO					unfinished tool
510605	332480	undated	utilized flake				
510610	332860	Late NEO/EBA		core frag			
510615	332965	undated	1				
510635	332965	NEO	flake				
510635	332975	NEO	blade flake				
510635	332425	NEO	flake				

Easting	Northing	Date	flake	core	scraper	burnt/ crazed	other
510640	332340	NEO		core			
510640	332495	MESO			side and end scraper		
510645	332410	undated	utilized flake				
510645	332475	undated	flake				
510655	332355	prob NEO		core frag			
510655	332370	NEO	flake				
510675	332800	prob NEO		core frag			
510680	332610	undated	flake				
510680	332765	NEO	flake				
510685	332435	BA		broken core			
510700	332400	BA	flake				
510705	332420	prob BA	utilized flake				
510725	332420	NEO		core frag			
510725	332495	early NEO	blade flake				
510730	332350	undated	core rej flake				
510760	332415	BA	flake				
510760	332415	undated	flake				
510770	332425	NEO	flake				
510790	332420	NEO	flake				
510795	332420	prob BA	large flake				
510795	332655	undated				1	
510805	332380	undated	flake				
510835	332415	BA		core			
510835	332470	Late NEO/EBA	utilized flake				
510835	332595	undated	flake				
510845	332580	undated	flake				
510850	332465	NEO	flake				
510855	332435	NEO	flake				
510855	332465	BA	flake				
510865	332495	undated	flake				
510865	332425	prob NEO		core			
510870	332520	undated		core frag			
510875	332465	NEO		core frag			
510875	332465	undated	flake				
510875	332515	undated	flake				
510880	332430	NEO	blade flake				
510880	332440	NEO	blade flake				
510885	332445	NEO			end scraper		
510895	332430	NEO	core rej flake				
510940	332420	NEO	blade flake				

Appendix 4

CATALOGUE OF THE CLAY PIPE

Prepared by Gary Taylor

Eastings	Northing	17 th century	18 th century	19 th century
510605	332615	Y		
510595	332635	Y		
510545	332595	Y		
510635	332595	Y		
510570	332610	Y		
510570	332625	Y		
510580	332625	Y		
510570	332655	Y		
510410	332385	Y		
510540	332625	Y		
510520	332660		Y	
510535	332620	Y		
510610	332570	Y		
510575	332575	Y		
510665	332605	Y		
510575	332640			Y
510600	332770		Y	
510605	332610	Y		
510635	332505	Y		
510530	332635	Y		
510590	332620	Y		
510455	332490			Y
510595	332690			Y
510385	332440		Y	
510405	332565		Y	
510640	332590	Y		
510580	332630	Y		
510365	332520		Y	
510585	332630	Y		
510550	332640	Y		
510600	332635	Y		
510570	332620	Y		
510570	332650	Y		
510595	332605	Y		
510600	332615		Y	
510585	332465	Y		
510410	332815	Y		
510560	332590		Y	
510555	332635	Y		
510675	332650	Y		
510585	332625	Y		
510605	332630	Y		
510660	332715		Y	

Eastings	Northing	17 th century	18 th century	19 th century
510605	332640	Y		
510655	332585	Y		
510365	332435	Y		
510575	332645	Y		
510485	332620	Y		
510590	332645	Y		
510615	332560	Y		
510665	332700		Y	
510500	332600		Y	
510615	332575	Y		
510420	332360	Y		
510620	332670	Y		
510385	332485		Y	
510530	332660			Y
510560	332665	Y		
510580	332635		Y	
510580	332600	Y		
510590	332630	Y		
510640	332625	Y		
510550	332635	Y		
510590	332640		Y	
510485	332600		Y	
510655	332645	Y		
510570	332635	Y		
510575	332650	Y		
510675	332815	Y		
510475	332485		Y	
510595	332625	Y		
510595	332630	Y		
510570	332630	Y		
510615	332630		Y	
510580	332620	Y		
510585	332620	Y	Y	
510595	332640	Y		
510600	332655		Y	
510585	332615	Y		
510605	332765		Y	
510565	332640			Y
510565	332650		Y	
510565	332600		Y	
510560	332620	Y	Y	

Appendix 5

CATALOGUE OF THE METALWORK

Prepared by Gary Taylor

Catalogue of copper Alloy and silver objects

METAL	EASTINGS	NORTHINGS	OBJECT	No	DATE	CENTURY
Silver	510720	332505	Coin, Penny	1	Medieval	14-15
Cu Alloy	510715	332695	Pin	1	Post-Medieval	
Cu Alloy	510575	332805	Purse Bar	1	Medieval	15-16
Cu Alloy	510625	332500	Tap/Spout	1	Medieval	13-14
Cu Alloy	510750	332540	Skimmer	1	Medieval	14
Cu Alloy	510830	332500	Chalice Lid	1	Medieval	
Cu Alloy	510685	332500	Cauldron	1	Medieval	
Cu Alloy	510855	332555	Melt	1		
Cu Alloy	510740	332585	Thimble	1	Post-Medieval	
Cu Alloy	510760	332735	Belt Mount	1	Medieval	15-16
Cu Alloy	510420	332490	Casting Mould	1	Medieval	
Cu Alloy	510715	332630	Melt	1		
Cu Alloy	510515	332350	Bell	1	Post-Medieval	16-17
Cu Alloy	510605	332620	Coin, William III Halfpenny	1	Post-Medieval	1695-1701
Cu Alloy	510435	332470	Jetton, German	1	Post-Medieval	16-17
Cu Alloy	510535	332405	Coin, Charles I Irish Rose Farthing	1	Post-Medieval	1625-49
Cu Alloy	510640	332310	Button, Military	1	Early Modern	Early 20
Cu Alloy	510605	332830	Slag/Melt	1		
Cu Alloy	510595	332760	Melt	1		
Cu Alloy	510695	332645	Thimble	1	Post-Medieval	
Cu Alloy	510685	332785	Book Clasp	1	Post-Medieval	16-17
Cu Alloy	510595	332750	Belt Mount	1	Post-Medieval	15-16
Cu Alloy	510695	332635	Belt Mount	1	Post-Medieval	15-17
Cu Alloy	510750	332765	Belt Mount	1	Post-Medieval	15-17
Cu Alloy	510675	332765	Buckle Frame & Plate	1	Post-Medieval	15-16
Cu Alloy	510535	332885	Buckle Frame & Plate	1	Medieval	14-15
Cu Alloy	510850	332615	Crimped Tube, Spout	1	Post-Medieval	
Cu Alloy	510480	332505	Repair Staple	1	Post-Medieval	
Cu Alloy	510645	332485	Buckle	1	Post-Medieval	17-18
Cu Alloy	510635	332785	Buckle	1	Post-Medieval	16-17
Cu Alloy	510680	332790	Buckle	1	Post-Medieval	16-17
Cu Alloy	510655	332650	?Washer	1	Early Modern	20
Cu Alloy	510625	332640	Pin	1	Post-Medieval	18-19
Lead	510610	332585	Window Came	1		
Cu Alloy	510590	332825	Furniture/Belt Mount	1	Post-Medieval	17-18
Cu Alloy	510755	332710	Repair Patch	1	Post-Medieval	
Cu Alloy	510485	332500	Repair Patch	1	Post-Medieval	
Cu Alloy	510760	332660	Buckle Plate	1	Post-Medieval	
Cu Alloy	510650	332695	Handle Mount, Gilded	1	Post-Medieval	15-16
Cu Alloy	510735	332610	Lace Tag	1	Post-Medieval	15-16
Cu Alloy	510435	332500	Rod	1		
Cu Alloy	510530	332575	Ferrule, Half	1	Post-Medieval	19

METAL	EASTINGS	NORTHINGS	OBJECT	No	DATE	CENTURY
Cu Alloy	510595	332815	Staple?	1	Medieval	12TH-14TH
Cu Alloy	510685	332780	Offcut	1		
Cu Alloy	510610	332785	Offcut	1		
Cu Alloy	510805	332500	Offcut	1		
Cu Alloy	510605	332600	Mount	1	Post-Medieval	
Cu Alloy	510750	332710	Mount	1	Post-Medieval	
Cu Alloy	510580	332785	Mount	1		
Cu Alloy	510620	332730	Mount	1		
Cu Alloy	510680	332445	Mount	1		
Cu Alloy	510720	332680	Eyelet Ring	1		
Cu Alloy	510515	332480	Bar, Folded	1		
Cu Alloy	510395	332480	Unidentified - Handle & Blade	1	?Medieval	
Cu Alloy	510600	332935	Pin, Flat Head With Ring & Dot	1	Saxon	08-Sep
Lead	510510	332580	Window Came	1		
Lead	510605	332590	Window Came	3		
Lead	510560	332620	Window Came	4		
Lead	510590	332600	Window Came	1		
Lead	510625	332710	Window Came	1		
Lead	510615	332800	Musket Ball	1		
Lead	510480	332345	Musket Ball	1		
Lead	510685	332465	Roof Patching Sheet	1		
Lead	510565	332440	Roof Patching Sheet	1		
Lead	510600	332630	Melt	1		
Lead	510730	332600	Sheet Offcut	1		
Lead	510720	332535	Sheet Offcut	1		
Lead	510665	332645	Window Came	1		
Lead	510735	332600	Window Came	1		
Lead	510610	332505	Roof Patching Sheet	1		
Lead	510615	332655	Window Came	1		
Lead	510590	332495	Roof Patching Sheet	1		
Lead	510760	332675	Melt	1		
Lead	510785	332510	Roof Patching Sheet	1		
Lead	510555	332620	Window Came	1		
Lead	510600	332575	Window Came	1		
Lead	510745	332600	Roof Patching Sheet	1		
Lead	510715	332660	Sheet Offcut	1		
Lead	510660	332655	Window Came	1		
Lead	510825	332635	Melt	1		
Lead	510570	332780	Melt	1		
Lead	510530	332865	Sheet Offcut	1		
Lead	510655	332480	Sheet Offcut	1		
Lead	510605	332860	Window Came	1		
Lead	510535	332530	Window Came	1		
Lead	510740	332510	Folded Sheet	1		
Lead	510635	332500	Folded Sheet	1		
Lead	510630	332555	Folded Sheet	1		
Lead	510615	332640	Sheet Offcut	1		
Lead	510740	332580	Sheet Offcut	1		
Lead	510655	332645	Sheet Offcut	1		
Lead	510500	332520	Sheet Offcut	1		
Lead	510735	332550	Melt	1		

METAL	EASTINGS	NORTHINGS	OBJECT	No	DATE	CENTURY
Lead	510625	332485	Sheet Offcut	1		
Lead	510645	332620	Sheet Offcut	1		
Lead	510795	332515	Roof Patching Sheet	1		
Lead	510815	332470	Folded Sheet	1		
Lead	510620	332490	Folded Sheet	1		
Lead	510690	332640	Sheet Offcut	1		
Lead	510590	332490	Folded Sheet	1		
Lead	510675	332465	Sheet Offcut	1		
Lead	510555	332790	Disc	1		
Lead	510760	332710	Weight, Inscribed	1	?Medieval	
Lead	510565	332605	?Melt	1		
Lead	510660	332795	Cloth Seal	1	?Medieval	
Lead	510580	332795	Weight, Inscribed	1	?Medieval	
Lead	510410	332515	Unidentified - Window Edging?	1		
Lead	510420	332355	Unidentified - Window Edging?	1		
Lead	510650	332655	Sheet Offcut	1		
Lead	510525	332560	Rod - Slate Pencil?	1		
Lead	510765	332580	Window Came	1		
Lead	510560	332610	Window Came	1		
Lead	510565	332590	Window Came	1		
Lead	510520	332485	Window Came	1		
Lead	510750	332440	Weight, Spindle Whorl?	1	Medieval	
Cu Alloy	510590	332445	Cauldron Leg	1	Medieval	
Cu Alloy	510700	332610	Sheet, Casting Debris	1		
Cu Alloy	510540	332495	Repair Patch	1		

Catalogue of iron objects

EASTINGS	NORTHINGS	ITEM	No.	DATE	CENTURY
510565	332750	Nail	1		
510665	332355	Nail	1		
510410	332525	Nail	5		
510415	332970	Nail	1		
510400	332535	Nail	2		
510490	332870	Nail	1		
510580	332785	Nail	2		
510400	332520	Nail	5		
510710	332835	Nail	1		
510590	332810	Nail	1		
510585	332915	Nail	1		
510530	332815	Handle-Furniture?	1		
510785	332675	Nail	1		
510555	332725	Nail	1		
510525	332900	Nail	1		
510575	332780	Nail	1		
510540	333030	Nail	1		
510730	332335	Stud	1		
510605	332845	Nail	1		
510680	332775	Nail	1		
510615	332735	Nail	1		
510430	332515	Nail	1		

EASTINGS	NORTHINGS	ITEM	No.	DATE	CENTURY
510575	332675	Nail	3		
510405	332520	Nail	7		
510440	332620	Nail	1		
510530	332665	Horseshoe	1	Medieval	14-15
510570	332900	Nail	2		
510590	332630	Nail	1		
510540	332660	Barbed Wire	2	Recent	19-20
510590	332800	Nail	1		
510610	332950	Horseshoe	1	Medieval	14-15
510670	332755	Horseshoe	1	Medieval	14-15
510580	332880	Nail	1		
510820	332530	Nail	1		
510620	332830	Nail	1		
510590	332785	Nail	1		
510605	332940	Nail	1		
510585	332675	Nail	1		
510660	332775	Nail	1		
510510	333005	Nail	1		
510605	332930	Nail	1		
510580	332830	Nail	2		
510530	332860	Stud	1		
510605	332795	Nail	1		
510730	332685	Nail	1		
510820	332570	Horseshoe	1	Post-Medieval	18-19
510605	332920	Nail	2		
510405	332520	Nail	1		
510540	332850	Nail	1		
510610	332790	Nail	3		
510500	332905	Horseshoe	1	Medieval	14-15
510540	332815	Nail	1		
510580	332720	Horseshoe	1	Medieval	13-14
510605	332860	Nail	1		
510605	332830	Nail	1		
510570	332830	Nail	1		
510660	332615	Stud	1		
510650	332690	Nail	1		
510650	332690	Wire	1		
510590	332835	Nail	1		
510465	332930	Nail	1		
510400	332375	Nail	1		
510675	332685	Nail	1		
510570	332920	Nail	1		
510580	332930	Nail	2		
510590	332795	Nail	1		
510570	332735	Ring-Machinery Part	1	Recent	19-20
510600	332820	Nail	1		
510560	332620	Nail	1		
510735	332720	Spike	1		
510590	332860	Spoon Bit-Carpentry Tool	1	Post-Medieval	16-17
510410	332520	Nail	2		
510410	332520	Buckle	1	Post-Medieval	16-17

EASTINGS	NORTHINGS	ITEM	No.	DATE	CENTURY
510410	332520	Blade	2	Medieval	14-15
510410	332520	Key?	1	Post-Medieval	
510415	332480	Spike	1		
510750	332740	Nail	1		
510600	332875	Hook	1	Post-Medieval	
510600	332875	Horseshoe	1	Medieval	14-15
510525	332665	Spike	1		
510615	332915	Spike	1		
510525	332720	Spike	1		
510805	332655	Harrow Tine	1	Post-Medieval	
510580	332735	Staple	1	Medieval	
510580	332720	Hook	1	Post-Medieval	
510475	332460	Alloy	1		
510710	332685	Wall Hook	1	Medieval	
510625	332990	Binding-Machinery Part	1	Post-Medieval	
510430	332405	Machinery Part	1	Post-Medieval	
510745	332685	Machinery Part	1	Post-Medieval	
510715	332795	Trowel	1	Post-Medieval	
510540	332045	Nail	1		
510435	332955	Machinery Part	1	Post-Medieval	
510570	332625	Strap Hinge	1	Post-Medieval	
510540	332620	Bar	1		
510525	332935	Machinery Part	1	Post-Medieval	
510630	332780	Nail	1		
510630	332780	Binding	1		
510630	332780	Unidentified	1		
510625	332860	Staple	1	Post-Medieval	
510400	332440	Nail	1		
510570	332740	Nail	1		
510560	332425	Nail	1		
510575	332845	Nail	1		
510515	332855	Nail	1		
510450	332630	Nail	1		
510555	332775	Nail	1		
510590	332720	Nail	1		
510580	332850	Nail	1		
510355	332540	Nail	1		
510580	332635	Nail	1		
510590	332495	Nail	1		
510570	332925	Nail	1		
510515	332890	Nail	1		
510600	332785	Nail	1		
510395	332485	Nail	1		
510730	332585	Nail	1		
510665	332780	Nail	1		
510600	332045	Nail	1		
510595	332755	Nail	1		
510795	332515	Nail	1		
510415	332520	Nail	1		
510400	332530	Nail	1		
510670	332680	Nail	1		

EASTINGS	NORTHINGS	ITEM	No.	DATE	CENTURY
510420	332420	Nail	1		
510590	332760	Nail	1		
510370	332500	Nail	2		
510580	332705	Nail	1		
510610	332715	Nail	1		
510440	332840	Nail	1		
510560	332820	Nail	2		
510575	332925	Nail	1		
510605	332750	Nail	3		
510740	332475	Nail	1		
510580	332810	Nail	4		
510560	332725	Nail	1		
510660	332750	Nail	1		
510710	332615	Nail	1		
510580	332790	Nail	3		
510595	332735	Nail	1		
510510	332485	Nail	1		
510515	332885	Nail	1		
510635	332695	Nail	1		
510710	332620	Nail	1		
510545	332865	Nail	1		
510750	332690	Nail	1		
510615	332650	Nail	1		
510580	332775	Nail	1		
510605	332780	Nail	1		
510715	332620	Nail	1		
510360	332940	Nail	2		
510600	333040	Nail	1		
510630	332760	Nail	1		
510550	332815	Nail	1		
510600	332795	Nail	1		
510610	332795	Nail	1		
510610	332795	Knife	1	Medieval	14
510670	332690	Nail	1		
510590	332915	Nail	1		
510420	332400	Nail	1		
510545	332875	Nail	1		
510570	332675	Nail	1		
510750	332515	Nail	1		
510695	332825	Horseshoe	1	Medieval	14-15
510610	332825	Horseshoe	1	Medieval	14-15
510475	332510	Horseshoe	1	Medieval	14-15
510600	332790	Nail	1		
510405	332525	Nail	1		
510515	332475	Nail	2		
510555	332785	Nail	1		
510560	332905	Nail	1		
510590	332830	Nail	1		
510585	332730	Nail	1		
510515	332850	Nail	1		
510765	332700	Nail	1		

EASTINGS	NORTHINGS	ITEM	No.	DATE	CENTURY
510700	332410	Horseshoe	1	Medieval	14-15
510465	332485	Horseshoe	1	Medieval	14-15
510505	332690	Horseshoe	1	Medieval	14-15
510365	332380	Horseshoe	1	Post-Medieval	18-19
510580	332315	Sheet - Machinery Part	1	Post-Medieval	19-20
510720	332695	Hinge Pivot	1	Medieval	15
510415	332845	Horseshoe	1	Medieval	14
510780	332495	Fire Grill	1	Post-Medieval	
510720	332740	Horseshoe	1	Post-Medieval	18
510600	332360	Horseshoe	1	Post-Medieval	18
510580	332770	Horseshoe	1	Post-Medieval	18
510775	332800	Horseshoe	1	Post-Medieval	19
510705	332610	Nail	1		
510665	332635	Nail	3		
510670	332450	Machinery Part	1	Post-Medieval	
510660	332475	Stud	1	Post-Medieval	16
510660	332475	Nail	1		
510570	332765	Stud	1		
510620	332630	Stud	1		
510620	332815	Spike	1		
510425	332430	Spike	1		
510555	332735	Spike	1		
510560	332630	Spike	1		
510610	332780	Spike	1		
510610	332780	Nail	1		
510530	332430	Wire	1	Post-Medieval	
510455	332385	Trowel	1	Post-Medieval	16-17
510455	332385	Shears	1	Medieval	14-15
510830	332580	Spike	1		
510595	332795	Nail	3		
510570	332850	Nail	1		
510405	332495	Nail	1		
510565	332740	Spike	1		
510565	332740	Bar	1		
510710	332345	Stud	1	Post-Medieval	
510695	332610	Nail	1		
510605	332880	Nail	1		
510740	332350	Nail	1		
510405	332350	Horseshoe	1	Medieval	
510715	332755	Horseshoe	1		
510525	332915	Spike	1		
510605	332800	Nail	2		
510570	332780	Nail	1		
510540	332955	Spike	1		
510745	332500	Nail	1		
510415	332795	Bar	1		
510600	332620	Nail	1		
510360	332495	Nail	1		
510590	332855	Nail	1		
510530	332910	Spike	1		
510565	332845	Spike	1		

EASTINGS	NORTHINGS	ITEM	No.	DATE	CENTURY
510670	332780	Nail	2		
510560	332975	Nail	1		
510565	332780	Bar	1		
510585	332965	Bar	1		
510565	332855	Spike	1		
510515	332470	Nail	2		
510490	332920	Nail	1		
510575	332725	Nail	1		
510535	332670	Nail	1		
510535	332670	Bar	1		
510600	332780	Nail	1		
510740	332505	Nail	1		
510405	332520	Shears	1	Medieval	14-15
510465	332675	?Nail	1		
510525	332830	?Nail	1		
510720	332695	Smithing Slag	1		
510555	333010	Unidentified	1		
510365	332490	?Spike	1		
510615	332690	Nail	1		
510380	332920	?Blade	1		
510620	332795	?Nail	1		
510615	332885	Bar	1		
510465	332440	Blade	1		
510465	332440	Unidentified	1		
510520	332955	?Nail	1		
510765	332815	?Nail	1		
510385	332895	Unidentified	1		
510510	332025	?Nail	1		
510590	332995	Unidentified	1		
510700	332785	Unidentified	1		
510365	332495	Nail	1		
510365	332495	Bar	1		
510635	332510	Bar	1		
510500	332840	Spike	1		
510630	332840	Rod	1		
510785	332550	Unidentified	1		
510810	332645	Blade	1		
510525	332820	Unidentified	1		
510435	332675	Unidentified	1		
510700	332835	Unidentified	1		
510510	332840	Knife	1		
510575	332040	Bar	1		
510580	332840	Nail	1		
510595	332780	Rod	1		
510570	332810	Nail	3		
510465	332535	Nail	1		
510320	332880	Unidentified	1		
510540	332520	Vegetable Chopper	1	Post-Medieval	
510320	332650	Unidentified	1		
510580	332730	Nail	1		
510580	332730	Unidentified	1		

EASTINGS	NORTHINGS	ITEM	No.	DATE	CENTURY
510830	332470	Machinery Part	1	Post-Medieval	
510745	332810	Stud	1		
510725	332680	Machinery Part	1	Post-Medieval	
510515	332825	L-Shaped Rod	1		
510330	332920	Spring	1	Post-Medieval	19-20
510330	332920	Rod	1		
510450	332480	Staple	1	Post-Medieval	
510605	332810	Harness Loop	1	Post-Medieval	
510665	332775	Unidentified	2		
510625	332810	Ring-Harness Loop?	1	Post-Medieval	
510565	332530	Staple	1	Post-Medieval	16-17
510605	332785	Staple	1	Post-Medieval	16
510530	332785	Suspension Loop	1	Post-Medieval	
510590	332755	Suspension Loop	1	Medieval	15
510590	332790	Nail	1		
510590	332790	Blade	1		
510590	332790	Prick Spur	1	Medieval	11-12
510730	332680	Handle	1	Post-Medieval	
510715	332565	Unidentified	1	Post-Medieval	
510710	332790	Y-Shaped Arrowhead	1	Medieval	14

Appendix 6

CATALOGUE OF THE SLAG *Prepared by Paul Cope-Faulkner*

Easting	Northing	Weight (g)
510345	332935	30
510350	332520	28
510350	332535	12
510355	332505	890
510355	332510	576
510355	332515	13
510355	332520	6
510355	332540	11
510360	332485	130
510360	332490	158
510360	332495	648
510360	332500	444
510360	332505	326
510360	332520	9
510360	332530	15
510360	332535	9
510360	332565	5
510365	332485	495
510365	332490	666
510365	332495	1665
510365	332500	60
510365	332505	43
510365	332945	2
510370	332480	107
510370	332485	686
510370	332490	1729
510370	332495	110
510370	332500	530
510370	332505	82
510370	332510	62
510375	332525	82
510375	332535	6
510385	332510	12
510385	332535	10
510390	332395	3
510395	332565	90
510400	332565	6
510405	332495	32
510415	332360	1
510420	332505	16
510425	332460	20
510445	332440	80
510445	332865	2
510450	332975	10
510455	332500	14

Easting	Northing	Weight (g)
510455	332560	99
510455	332590	2
510455	332705	6
510460	332320	7
510460	332945	73
510470	332940	54
510480	332645	14
510480	333000	1
510485	332955	38
510500	332535	55
510500	332925	5
510505	332545	260
510505	332640	32
510505	332920	38
510505	332960	14
510510	332750	5
510510	332850	1
510515	332715	93
510515	332745	10
510525	332805	2
510525	333035	13
510530	332615	142
510530	332735	53
510530	332855	3
510530	332875	33
510530	332895	29
510530	332980	19
510530	333020	32
510530	333040	28
510535	332655	7
510535	332890	5
510535	333015	25
510540	332775	8
510540	332830	30
510540	332850	6
510540	332915	10
510540	333005	97
510545	332755	9
510545	332810	110
510545	332815	2
510545	332845	264
510545	332865	24
510545	332890	1
510550	332635	2
510550	332800	362

Easting	Northing	Weight (g)
510550	332805	8
510550	333080	14
510555	332775	128
510555	332800	5
510555	332830	12
510560	332480	67
510560	332495	34
510560	332770	105
510560	332775	302
510560	332810	2
510560	332835	68
510560	332880	1
510565	332485	348
510565	332495	5
510565	332620	4
510565	332635	4
510565	332690	71
510570	332770	10
510570	332780	23
510570	332785	58
510575	332630	1
510575	332725	18
510575	333005	25
510575	333010	7
510575	333035	28
510575	333045	10
510580	332730	4
510580	332735	404
510580	332790	6
510580	332795	19
510585	333000	5
510590	332730	17
510590	332735	24
510590	332820	21
510590	333020	48
510595	332640	3
510595	332745	102
510595	332795	146
510600	332575	3
510605	332305	2
510605	332735	16
510610	332735	57
510610	332785	3
510610	332820	72
510615	332720	32

Easting	Northing	Weight (g)
510615	332735	83
510620	332730	41
510625	332635	34
510625	332770	47
510630	332635	16
510630	332645	309
510630	332650	32
510630	332735	700
510630	332750	6
510630	332780	46
510635	332635	22
510635	332640	20
510635	332645	50
510635	332650	14
510635	332735	98
510635	332755	10
510635	332975	8
510640	332620	1
510640	332630	14
510640	332685	4
510640	332765	160
510645	332640	19
510645	332670	14
510645	332720	10
510645	332760	178
510645	332795	4
510645	332820	34
510650	332690	214
510650	332790	4
510650	332795	12
510655	332790	4
510655	332795	20
510655	332820	4
510660	332600	4
510660	332615	1
510660	332730	41
510660	332750	146
510660	332790	2
510660	332795	1
510665	332635	2
510665	332790	10
510670	332520	32
510670	332750	180
510675	332775	70
510675	332810	44
510680	332785	6
510680	332825	894
510680	332830	140
510685	332760	46
510690	332680	110
510695	332665	17
510695	332690	20

Easting	Northing	Weight (g)
510695	332810	60
510700	332660	36
510700	332670	45
510700	332685	1
510705	332690	47
510705	332790	63
510710	332660	145
510710	332685	36
510710	332725	3
510715	332685	13
510715	332690	3
510715	332750	214
510715	332830	32
510720	332675	29
510720	332685	100
510725	332685	3
510725	332740	137
510725	332755	16
510725	332760	22
510725	332780	57
510730	332640	32
510730	332740	80
510735	332640	1
510735	332765	70
510740	332730	33
510745	332775	53
510750	332630	2
510750	332635	10
510750	332700	35
510760	332650	26
510760	332800	2
510770	332680	18
510775	332700	54
510785	332720	20
510795	332645	6
510795	332750	26
510800	332655	34
510800	332665	440
510805	332655	88
510805	332690	27
510805	332720	7
510810	332685	5
510815	332465	1
510815	332685	35
510820	332390	14
510820	332640	22
510825	332640	12
510825	332670	56
510830	332415	4
510895	332635	196
total		13157

Appendix 7

CATALOGUE OF THE STONE ITEMS

Prepared by Paul Cope-Faulkner

Eastings	Northings	Category	Description
510370	332435	Worked stone	Tile
510375	332415	Worked stone	Tile
510380	332420	Worked stone	Tile
510395	332385	Worked stone	Tile
510400	332305	Worked stone	Tile
510405	332435	Worked stone	Tile
510410	332435	Worked stone	Tile
510415	332475	Worked stone	-
510420	332515	Worked stone	Tile
510425	332385	Worked stone	Tile
510430	332370	Worked stone	Tile
510440	332605	Architectural fragment	Moulding
510440	332600	Architectural fragment	Moulding
510455	332390	Worked stone	Tile
510455	332380	Worked stone	Tile
510460	332400	Worked stone	Tile
510464	332440	Worked stone	Tile
510465	332520	Worked stone	Tile
510465	332700	Worked stone	Tile
510470	332400	Worked stone	Tile
510470	332490	Worked stone	Tile
510470	332385	Worked stone	Tile
510475	332385	Architectural fragment	Moulding
510475	332395	Architectural fragment	Moulding
510475	332595	Worked stone	Tile
510475	332580	Worked stone	Tile
510480	332655	Worked stone	Tile
510490	332560	Worked stone	Tile
510500	332890	Worked stone	Whetstone
510500	332580	Worked stone	Tile
510500	332840	Worked stone	Tile
510505	332815	Worked stone	Lava quern
510505	332555	Worked stone	Tile
510505	332375	Worked stone	Tile
510505	332365	Worked stone	Tile
510505	332370	Worked stone	Tile
510505	332850	Worked stone	Tile
510515	332580	Worked stone	Tile
510520	332360	Worked stone	Tile
510520	332375	Worked stone	Tile
510520	332795	Worked stone	Tile
510525	332390	Worked stone	Tile
510525	332600	Worked stone	Tile
510525	332365	Worked stone	Tile
510530	332540	Architectural fragment	Moulding
510530	332595	Worked stone	Tile

Eastings	Northings	Category	Description
510540	332935	Worked stone	Polishing
510540	332750	Worked stone	Tile
510545	332350	Worked stone	Tile
510545	332630	Worked stone	Tile
510545	332620	Worked stone	Tile
510550	332595	Architectural fragment	Moulding
510550	332695	Architectural fragment	Moulding
510550	332570	Architectural fragment	Moulding
510550	332750	Worked stone	Tile
510555	332810	Worked stone	Lava quern
510555	332615	Architectural fragment	Moulding
510555	332425	Worked stone	Tile
510555	332530	Worked stone	Tile
510560	332595	Architectural fragment	Two mouldings
510560	332375	Worked stone	Tile
510560	332880	Worked stone	Tile
510560	332620	Worked stone	Tile
510560	332440	Worked stone	Tile
510565	332490	Worked stone	Tile
510570	332735	Worked stone	Whetstone
510575	332620	Worked stone	Tile
510580	332780	Worked stone	Whetstone
510580	332565	Architectural fragment	Moulding
510580	332620	Worked stone	Tile
510580	332830	Worked stone	Tile
510585	332575	Worked stone	Tile
510590	332785	Worked stone	Whetstone
510590	332735	Worked stone	Quern, Roman?
510595	332445	Architectural fragment	Door jamb
510595	332580	Worked stone	Tile
510595	332590	Worked stone	Tile
510600	333025	Worked stone	Whetstone
510600	332640	Stone	Fissile limestone
510605	332745	Worked stone	Whetstone
510605	332775	Worked stone	Whetstone
510605	332735	Stone	Burnt, oolitic limestone
510610	332730	Architectural fragment	Moulding
510610	332610	Worked stone	Tile
510620	332575	Architectural fragment	Moulding
510620	33280	Worked stone	Tile
510620	332785	Worked stone	Tile
510625	332520	Architectural fragment	Moulding
510630	332660	Architectural fragment	Moulding
510630	332635	Worked stone	Tile
510630	332750	Worked stone	Tile
510635	332775	Worked stone	Whetstone
510640	332635	Worked stone	Quern
510640	332600	Worked stone	Tile
510640	332975	Worked stone	Tile
510640	332950	Worked stone	Tile
510645	332645	Worked stone	Tile

Eastings	Northings	Category	Description
510645	332945	Worked stone	Tile
510645	332615	Worked stone	Tile
510645	332520	Worked stone	Tile
510650	332555	Architectural fragment	Ashlar
510650	332515	Architectural fragment	Two keel shafts
510650	332790	Worked stone	Tile
510660	332630	Worked stone	Tile
510670	332555	Worked stone	Whetstone
510670	332460	Worked stone	Tile
510675	332560	Architectural fragment	Moulding
510675	332540	Architectural fragment	Moulding
510680	332620	Worked stone	Tile
510680	332635	Worked stone	Tile
510680	332830	Worked stone	Tile
510685	332770	Worked stone	Whetstone
510685	332600	Worked stone	Tile
510690	332635	Worked stone	Tile
510690	332690	Worked stone	Tile
510690	332620	Worked stone	Tile
510700	332620	Worked stone	Tile
510705	332480	Worked stone	Tile
510705	332615	Worked stone	Tile
510710	332675	Worked stone	Whetstone
510710	332610	Worked stone	Tile
510715	332470	Worked stone	Tile
510715	332460	Worked stone	Tile
510720	332775	Worked stone	Quern
510720	332805	Worked stone	Whetstone
510720	332485	Worked stone	Tile
510725	332550	Worked stone	Tile
510725	332605	Worked stone	Tile
510725	332615	Worked stone	Tile
510730	332825	Worked stone	Whetstone
510730	332825	Worked stone	Whetstone
510730	332795	Worked stone	Quern
510730	332590	Architectural fragment	Door jamb
510730	332590	Worked stone	Tile
510740	332710	Worked stone	Lava quern
510740	332595	Worked stone	Tile
510745	332590	Architectural fragment	Door jamb
510750	332585	Worked stone	Tile
510755	332685	Worked stone	Tile
510755	332560	Worked stone	Tile
510760	332760	Worked stone	Whetstone
510765	332495	Worked stone	Tile
510770	332495	Worked stone	Tile
510790	332480	Worked stone	Tile
510810	332450	Worked stone	Tile
510815	332505	Worked stone	Tile