

LAND AT EAST OF TUNBRIDGE
COURT, TUNBRIDGE LANE,
BOTTISHAM,
CAMBRIDGESHIRE, CB25 9TU:

AN ARCHAEOLOGICAL
EVALUATION

SEPTEMBER 2016



PRE-CONSTRUCT ARCHAEOLOGY
R 12635


LAND EAST OF TUNBRIDGE COURT, TUNBRIDGE
LANE, BOTTISHAM, CAMBRIDGESHIRE, CB25 9TU

AN ARCHAEOLOGICAL EVALUATION

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Land at East of Tunbridge Court, Tunbridge Lane, Bottisham, Cambridgeshire, CB25 9TU: An Archaeological Trial Trench Evaluation

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ABSTRACT

This report describes the results of an archaeological trial trench evaluation carried out by Pre-Construct Archaeology on land East of Tunbridge Court, Tunbridge Lane, Bottisham, Cambridgeshire (NGR TL 5471 6100) between the 22nd and the 24th August 2016. The archaeological work was commissioned by ARM on behalf of Greensons Land and Cattle Co. in response to an archaeological brief composed by Kasia Gdaniec of the Cambridgeshire County Council Historic Environment Team (CCC HET). The aim of the work was to characterise the archaeological potential of the proposed development area.

The principal result of the evaluation was the discovery of a cobbled trackway, flanked by two ditches, in Trench 1. Associated with the trackway were a series of agricultural field boundaries and enclosures, as well as a possible robbed-out wall and accompanying demolition spread (Trench 2). The pottery assemblages, although only consisting of a few sherds in key features are sufficient to date the majority of the activity on the site to between 1100AD- 1450AD in the medieval period. The combination of boundary ditches, a trackway and a possible outbuilding indicate that the site lies on the edge of settlement in the medieval period, likely to that north-west (Medieval; HER 01124). It is also worthy of note that, with the exception of a single small sherd of Samian ware no other finds and no features dateable to the Roman period were identified despite the presence of a known and extensive villa site to the south.

The findings are in keeping with the results of previous excavations in this part of Bottisham, which have investigated the peripheral areas and infield enclosures of a Roman farmstead (ECB 1234) as well as the possible villa site (MCB20322) as well as known historic remains such as the Deserted Medieval Village at Bottisham Park (HER 01124).

1 INTRODUCTION

- 1.1 An archaeological trial trench evaluation was undertaken by Pre-Construct Archaeology Ltd (PCA) on land East of Tunbridge Court, Tunbridge Lane, Bottisham, Cambridgeshire, CB25 9TU (centred on Ordnance Survey National Grid Reference (NGR) TL 5741 6100) from the 22nd to the 24th August 2016 (Figure 1).
- 1.2 The archaeological work was commissioned by ARM on behalf of Greensons Land and Cattle Co. in response to archaeological pre-application advice prior to development. The proposed development is for an extension to a small business park (Planning Reference: Pre-application).
- 1.3 A magnetometry survey of the site was undertaken prior to design of the trench layout (Magnitude Surveys 2016). This was followed by trial trenching in the northern half of the potential development area.
- 1.4 The geophysical results show many ferrous responses that reflect modern activity (e.g. fences around the perimeter and trees within the survey area were surrounded by a metre square fence that contained metal). One very strong, substantial anomaly in the centre of the survey area, which has been marked as Undetermined, displays a classic geophysical response in the XY traces and is indicative of burning. It is unclear from the results of the magnetometer results whether this response is related to modern or historic burning. Trenching did not extend into this part of the field to test this result. The only other anomalies of note are the weak linear anomalies at the northern end that correspond with former field boundaries on the historic mapping.
- 1.5 The evaluation was carried out in accordance with a Written Scheme of Investigation (WSI) prepared by Mary-Anne Slater of PCA (Slater 2016) in response to a Brief for archaeological evaluation issued by Kasia Gdaniec (Gdaniec 2016) of Cambridgeshire County Council Historic Environment Team (CCC HET).
- 1.6 The aim of the evaluation was to determine the location, date, extent,

character, condition and quality of any archaeological remains on the site, to assess the significance of any such remains in a local, regional, or national context, as appropriate, and to assess the potential impact of the development proposals on the site's archaeology.

- 1.7 A total of four 20m and one additional 8m trial trenches were excavated and recorded.
- 1.8 This report describes the results of the evaluation and aims to inform the design of an appropriate archaeological mitigation strategy. The site archive will be deposited at Cambridgeshire County Council Archaeology Store.

2 GEOLOGY AND TOPOGRAPHY

2.1 Geology

2.1.1 The underlying geology of the site is Chalk of the West Melbury Marly Chalk Formation, a chalk subgroup bedrock formed approximately 94 to 100 million years ago in the Cretaceous Period when the local environment was dominated by warm chalk seas (British Geological Survey; Website 1). The overlying soils in Bottisham are sandy loams belonging to the Soham association (Hodge and Seale 1966).

2.2 Topography

2.2.1 The site comprises an area of approximately 0.4ha. It is located in the north-eastern part of the village of Bottisham, 6km east of Cambridge and just north of the A14. The site lies at approximately 12m above Ordnance Datum (AOD) (above Ordnance Datum). The surrounding area is generally flat, with a slight fall in the ground to the north and west of the site towards the Fenland and a rise in elevation to the east towards Newmarket. The River Cam is located 5km north-west of the site, the site falling on the eastern side of the wider river valley.

3 ARCHAEOLOGICAL BACKGROUND

3.1 General

3.1.1 The site lies in an area of known archaeological significance, as recorded in the Cambridgeshire Historic Environment Record (HER). Several phases of evaluation and excavation have been conducted within the immediate vicinity of Tunbridge Lane, including the adjacent sites at the doctor's surgery, Ancient Meadows and at Crystal Park, immediately to the south. This archaeological and historical background has been drawn from the archaeological design brief (Gdaniec 2016) and the available 'grey literature' reports documenting the adjacent archaeological investigations.

3.2 Mesolithic

3.2.1 Mesolithic material was recovered from two sites, c.600m south west of the site (CHER 06595 & MCB 19774). These consisted of a number of blades, flakes and 2 tranchet axe heads (CHER 06595) and a number of Late Mesolithic flint tools (MCB 19774).

3.3 Neolithic and Bronze Age

3.3.1 Two parallel ditches east of Hall Farm (to the north of the site) are thought to represent a possible cursus monument (HER 06605), while numerous cropmark ring-ditches of Late Neolithic and Bronze Age barrows can be seen along the chalk ridge to the east of Bottisham. An Early Neolithic causewayed enclosure is known 3km to the south at Great Wilbraham.

3.3.2 Several isolated finds of Neolithic date have been recovered from across Bottisham, including greenstone and flint axes (HER 06556), as well as seven poorly-provenanced Tuff axes (HER 06580), a polished axe (HER 09208) and a hammerstone of presumed prehistoric date (HER 06585). A pit cluster of Late Neolithic/ Early Bronze Age date was recorded during archaeological investigations at Bendyshe Farm (HER MCB 19774) and a flint assemblage comprising contemporary material has been found to the south-west of the current site (HER 06626). Two barbed and tanged arrowheads have also been found in the general area (HER 06591; 06598) and flint flakes (HER MCB 20080) and a large assemblage of fire-cracked

flint (HER 19433) have been found in the vicinity.

3.3.3 Prehistoric activity was identified at Crystal Park, Bottisham (MCB 20322) in the form of a possible Neolithic buried soil and a Bronze Age pit.

3.3.4 A find of undated flint debitage is recorded at Grid Reference TL 5487 6042 (HER Ref: MCB 19429).

3.4 Iron Age and Roman

3.4.1 Several sherds of Iron Age pottery were recovered from archaeological investigations at Bendyshe Farm, Bottisham (MCB 19774).

3.4.2 Part of a Roman farmstead of the 2nd to 4th centuries AD was recorded during archaeological excavations immediately north of the site. Three probable buildings were identified, together with a metalled yard and associated features (CB 14806).

3.4.3 A potentially high-status Roman settlement has been identified immediately north-east of the study site at Tunbridge Hall Farm. The remains dating to c. AD 200-400 include buildings with stone footings and finds of painted wall plaster (CB 15605). During the 3rd century AD, a driveway was created together with a curvilinear enclosure with a system of associated ditches. A cobbled surface and two ovens were also in use. In the late 3rd and early 4th century, a large rectangular field or paddock was created surrounding a timber building. Large quarry pits were also dug in the north of the site. An undated burial and a cobbled surface were also identified (MCB 20080).

3.4.4 Other Roman finds from close to the site include Roman pottery from TL 5440 6101, off Tunbridge Lane (HER MCB 19433), a Roman jug recorded from TL 54 60 (HER 06581); supposedly 'Roman' shackles are also recorded from the same arbitrary grid location (HER Ref: 06582). Roman pottery is also recorded from TL 543 609 (HER 06586), with another assemblage from TL 545 611 (HER 04133).

3.4.5 Overall, in view of the immediate proximity of Roman settlement remains to the south and south-west of the site, it is highly likely that further remains will

be present within the proposed development area.

3.4.6 Archaeological work conducted in advance of the redevelopment of the former doctor's surgery (E/02/00141/FUL) at 29-33 Tunbridge Lane, at the new surgery site (E/99/0824), at Ancient Meadows (south of Tunbridge Hall, E/00370/04) and at Crystal Park (14/00359/FUM), along with the numerous Roman finds listed in the Cambridgeshire Historic Environment Record, combine to demonstrate the presence of a Roman rural settlement of moderate to high status, possibly a 'villa' estate in this part of Bottisham. The main buildings associated with this complex have not yet been found, though one might be expected to lie within the Crystal Park site as large clunch-built foundations surrounding a deep cavity were excavated at the very limit of excavation at the southern boundary of the Ancient Meadows site (e.g. HER ECB2915 and MCB 20080). The previous excavations in the immediate vicinity of this site revealed a series of buildings and barns, yards and industrial areas contained in ditched enclosures, likely to represent the farmyards and agricultural infield attached to the villa. One tonne of ceramic building materials, along with a wide variety of other finds and environmental evidence, was recovered from the Ancient Meadows site. Box flue tile indicates the presence of a hypocaust heating system in one or more buildings somewhere in the area, possibly including a bathhouse).

3.5 Anglo-Saxon

3.5.1 Saxon-Norman features were identified at Beachwood Avenue (CB 15746) while an Anglo-Saxon Disc Brooch was also found nearby (CHER 06599).

3.5.2 Saxon and medieval remains were found in the excavations at Ancient Meadows, to the north.

3.6 Medieval

3.6.1 The medieval settlement of Bottisham is characterised as a 'street' village. However it may represent the eventual nucleation of a more dispersed pattern of hamlets found within the parish (Taylor 1973). The medieval village may, in part have its origins in the Roman period, for example at Crystal Park there is evidence for the medieval street frontage present within

a predominantly Roman settlement. The area to the north of Tunbridge Lane has been subject to extensive metal detecting, which has revealed a large number of medieval coins. Additional find-spots include medieval metal finds (CHER 03410), pottery sherds (CHERs 04133A & 06592), a mile stone at Stow cum Quy (CHER 06550) and ridge and furrow earthworks (CHERs 06697 & 06706).

- 3.6.2 Early Medieval features were identified during an archaeological investigation at Bendyshe Farm (MCB 19801).
- 3.6.3 A Deserted Medieval Village (DCB 371) and five moated sites (DCB 270) are present at Bottisham Park, c.300m-600m north of this site. These indicate the presence of a former settlement between the Bottisham and Swaffham Bulbeck. The moated sites are surrounded by ditches 25-30ft wide, 4ft deep forming rectangular enclosures within which low platforms indicate the sites of former buildings.
- 3.6.4 To the north west of this site, c.600m, there is evidence of an extensive system of Medieval ridge and furrow covering approximately 600m² (HER 06705-06708), some of which was used for grazing animals.

3.7 Post-Medieval

- 3.7.1 During the late medieval period, the site may have lain in an area of vineyards, as this was the place name recorded for the area of the site in the early 19th century. The vineyard may have been held by the Priory of Tunbridge, hence 'Tunbridge Lane'.
- 3.7.2 The Ordnance Survey map of 1808 and the Bottisham Enclosure map of 1808 record the site as agricultural land. In the latter it is described as held by John Hobbs and comprising a 'parcel of land or ground'.
- 3.7.3 Tunbridge Hall, to the south-west of the study site, was built in c. 1830 (HER 06604), and White Cottages were built in the early 19th century (HER 06588). Neither is listed as being of special architectural or historical importance.

3.7.4 The 1886 Ordnance Survey map shows the site as being located in an orchard or plantation. This was also the case in 1902 and 1925.

3.7.5 A number of Second World War features, located in the vicinity, relate to RAF Bottisham training airfield (CB15127). At Tunbridge Lane four buildings and two air raid shelters formed the barracks and were associated with offices, gun placements, and pillboxes.

3.7.6 Two air raid shelters were identified at Crystal Park to the south of the current site (ECB 4297).

3.8 Geophysical Survey

3.8.1 A geophysical survey (Appendix 3) was undertaken for the development area which identified a number of features of which most appeared to relate to agricultural activity, likely to be former field boundaries. A number of discrete pit-like anomalies were identified; these anomalies were described as being likely natural or modern in origin. One anomaly could have related to historic burning.

3.8.2 A large proportion of the survey area is dominated by ferrous response, which is due to modern activity around the site. These overwhelming ferrous responses may mask any weaker archaeological signals, should they be present.

3.8.3 A number of anomalies of undetermined origin have been detected that likely reflect natural, agricultural and modern processes, but an archaeological origin cannot be entirely ruled out. The presence of overwhelming ferrous responses makes determining a specific origin for many of these anomalies difficult.

4 METHODOLOGY

4.1 Excavation and Sampling

- 4.1.1 The Written Scheme of Investigation for the evaluation proposed the excavation of four trial trenches, distributed across the site (Figure 2). An extra trench (Trench 5) was added to investigate the alignment and extent of a possible robbed out wall (47). Some trenches were targeted in order to investigate geophysical anomalies, with the others being positioned in order to obtain a representative sample of the 'blank' spaces on the site.
- 4.1.2 Ground reduction was carried out under archaeological supervision using an 8-ton mechanical excavator fitted with a 1.8m-wide toothless ditching bucket. Topsoil and subsoil deposits were removed in spits down to the level of the undisturbed natural geological deposits where potential archaeological features could be observed and recorded. Exposed surfaces were cleaned by trowel and hoe as appropriate and all further excavation was undertaken manually using hand tools. Overburden deposits were set aside beside each trench and examined visually and with a metal-detector for finds retrieval.
- 4.1.3 Metal-detecting was carried out during the topsoil and subsoil stripping and throughout the excavation process. Archaeological features and spoilheaps were scanned by metal-detector as they were encountered/ created.
- 4.1.4 Field excavation techniques and recording methods are detailed in the PCA Fieldwork Induction Manual (Operations Manual I) by Joanna Taylor and Gary Brown (2009).
- 4.1.5 All features were investigated and recorded in order to properly understand the date and nature of the archaeological remains on the site and to recover sufficient finds assemblages to assess the chronological development and socio-economic character of the site over time.
- 4.1.6 Discrete features such as pits and postholes were at least 50% excavated and, where considered appropriate, 100% excavated.

4.2 Recording Methodology

- 4.2.1 The limits of excavations, heights above Ordnance Datum (m OD) and the locations of archaeological features and interventions were recorded using a Leica 1200 GPS rover unit with RTK differential correction, giving three-dimensional accuracy of 20mm or better.
- 4.2.2 Manual plans and section drawings of archaeological features and deposits were drawn at an appropriate scale (1:10, 1:20).
- 4.2.3 Deposits or the removal of deposits judged by the excavating archaeologist to constitute individual events were each assigned a unique record number (often referred to within British archaeology as 'context numbers') and recorded on individual pre-printed forms (Taylor and Brown 2009). Archaeological processes recognised by the deposition of material are signified in this report by round brackets (thus), while events constituting the removal of deposits are referred to here as 'cuts' and signified by square brackets [thus]. The record numbers assigned to cuts and deposits are entirely arbitrary and in no way reflect the chronological order in which events took place. All features and deposits recorded during the evaluation are listed in Appendix 2. Artefacts recovered during excavation were assigned to the record number of the deposit from which they were retrieved.
- 4.2.4 High-resolution digital photographs were taken at all stages of the evaluation process. Digital Photographs were taken of all archaeological features and deposits and black and white film photographs were taken when considered appropriate by the excavator and supervisor.
- 4.2.5 Artefacts and ecofacts were collected by hand and assigned to the record number of the deposit from which they were retrieved, receiving appropriate care prior to removal from the site (ClfA 2001; Walker 1990; Watkinson 1981).

5 ARCHAEOLOGICAL SEQUENCE

5.1 Introduction

5.1.1 The trenches are described below in numerical order, with technical data tabulated. Features are described from north to south or west to east dependent on the alignment of the trench. The evaluation identified a cobbled trackway, flanked by two ditches associated with a system of field boundaries and enclosures.

5.2 Trench 1

5.2.1 This trench was located to investigate two anomalies identified in the geophysical survey (Figure 2). These were identified as former field boundaries, and upon excavation of the trench one of the anomalies correlated with Trackway [50].

5.2.2 Trench 1 contained a cobbled trackway aligned east to west, and flanked by two ditches on the same alignment. Three further ditches were present in the trench, two aligned east to west and one aligned north-west to south-east. A pit was also present mid-way along the trench.

5.2.3 Ditch [5] (Figure 4; Plate 2; Section 26) was located at the north-eastern end of the trench extending beyond both limits of excavation. It was linear in plan, aligned east to west, measuring 0.67m wide and 0.4m deep with moderate to steep sides and a concave base. It contained a single fill (4) of mid grey-brown silty sand. No finds were recovered from this feature.

5.2.4 Trackway [50] (Figure 4, Section 26) was located just to the south of [5]. It was located at the north-east end of the trench extending beyond both limits of excavation. It was linear in plan, aligned east to west, measuring 2.98m wide and 0.36m deep with moderately sloping sides and a concave base. It contained two fills: a basal deposit (9) of rounded and sub-angular flints in a pale grey-brown silty sand matrix, and an upper deposit (49) of mid grey silty sand. No finds were recovered from this feature.

5.2.5 Ditch [27] (Figure 4; Section 26) was located just to the south of Trackway [50]. It was located at the north-east end of the trench extending beyond

both limits of excavation. It was linear in plan, aligned east to west, measuring 2.2m wide and 0.54m deep with moderate to steep sides and a concave base. It contained a single fill (26) of mid grey-brown silty clay. No finds were recovered from this feature.

5.2.6 Ditch Terminus [29] (Figure 4) was located midway along the trench extending beyond the eastern limit of excavation. It was a linear terminus in plan, aligned north-east to south-west, measuring 0.67m wide and 0.13m deep with gently sloping sides and a concave base. It contained a single fill (28) of mid grey-brown silty clay, which contained four sherds (47g) of Medieval pottery (AD1050-1400).

5.2.7 Pit [7] (Figure 4) was present midway along the trench, measuring 0.7m wide and 0.23m deep with gently sloping sides and a narrow, concave base. It contained a single fill (6) of mid orange-brown silty sand. No finds were recovered from this feature.

5.2.8 Ditch [40] (Figure 4; Plate 3; Section 22) was located at the south-west end of the trench, just to the north of Ditch [37], extending beyond both limits of excavation. It was linear in plan, aligned east to west, measuring 1.51m wide and 0.38m deep with moderate to steep sides and a concave base. It contained a single fill (39) of mid grey-brown silty clay. No finds were recovered from this feature.

5.2.9 Ditch [37] (Figure 4) was located at the south-west end of the trench, just to the south of Ditch [40], extending beyond both limits of excavation. It was linear in plan, aligned east to west, measuring 2.4m wide and 0.2m deep with moderate to gently sloping sides and a concave base. It contained two fills: a basal fill (38) of rounded and sub-angular flints set in a mid grey-brown silty clay matrix, overlain by (36) a mid to pale grey-brown silty clay. No finds were recovered from this feature. This ditch may be a former, heavily truncated track similar to Trackway [50] present to the north.

5.2.10 The ditches identified in this trench are likely to be agricultural field boundaries, associated with the trackway present at the northern end of the

trench (Figure 8). The ditches did not contain much in terms of dateable finds, which indicates they are on the peripheries of any settlement activity.

TRENCH 1	Figures 2-4	Plate 1	
Trench Alignment: NE-SW	Length: 20m	Max Machine Depth (m OD): 9.93m Level of Natural (m OD): 9.78m	
Deposit	Context No.	Average Depth (m)	
		NE End	SW End
Topsoil	(1)	0.28m	0.15m
Subsoil	(2)	0.17m	0.17m
Natural (max machined depth)	(3)	0.48m+	0.35m+
Summary			
<p>Trench 1 was located close to the north-western boundary of the site.</p> <p>The trench contained a cobbled trackway aligned east to west, and flanked by two ditches on the same alignment. Three further ditches were present in the trench, two aligned east to west and one aligned north-west to south-east. A pit was also present mid-way along the trench.</p>			

5.3 Trench 2

5.3.1 This trench was located to investigate an anomaly identified in the geophysical survey (Figure 2). This anomaly was not identified within the trench, and likely related to an ephemeral modern field boundary.

5.3.2 The trench contained four ditches, three aligned east to west and one aligned north-west to south-east, and two pits. A possible robbed-out wall foundation was also present at the northern end of the trench.

5.3.3 Robbed-out wall (47) (Figure 5; Plate 5) was located at the north-western end of the trench extending beyond both limits of excavation. It was linear in plan, aligned north-east to south-west, measuring 0.7m wide and 0.06m deep. It consisted of a deposit of angular and sub-angular stones and mortar which formed an irregular linear in plan. This likely represents a robbed-out wall line, with the unwanted materials redeposited. A modern waterpipe hindered access to where this wall line may have returned with a possible return postulated c. 3m to the south (Figure 5).

- 5.3.4 Demolition spread (48) (Figure 5; Plate 5) was located at the north-western end of the trench, just to the east of (47), extending beyond the eastern limit of excavation. The spread measured c. 3.0m long 2.4m wide and 0.08m deep. It consisted of a thin deposit of mortar, tile, and CBM mixed with pale grey brown silty clay.
- 5.3.5 Ditch [41] (Figure 5) was located midway along the trench extending beyond both limits of excavation. It was linear in plan, aligned north-west to south-east, measuring 0.58m wide and 0.26m deep with moderate to steep sides and a concave base. It contained a single fill (42) of mid grey-brown silty sand which contained 1 sherd (15g) of Medieval pottery (AD1150-1450) and 16 fragments of struck flint. Ditch [41] was truncated by Ditch [43].
- 5.3.6 Ditch [43] (Figure 5) was located midway along the trench extending beyond both limits of excavation. It was linear in plan, aligned north-east to south-west, measuring 0.44m wide and 0.18m deep with moderate to steep sides and a flat base. It contained a single fill (44) of mid to dark grey-brown silty sand from which no finds were recovered. Ditch [43] truncated Ditch [41].
- 5.3.7 Ditch [30] (Figure 5) was located midway along the trench extending beyond both limits of excavation. It was linear in plan, aligned east to west, measuring 1.6m wide and 0.32m deep with moderate to steep sides and a concave base. It contained a single fill (31) of mid grey-brown silty sand which contained 3 sherds (19g) of Medieval pottery (AD1200-1400) and one fragment of struck flint.
- 5.3.8 Ditch [45] (Figure 5) was located at the south-eastern end of the trench extending beyond both limits of excavation. It was linear in plan, aligned east to west, measuring 0.92m wide and 0.18m deep with moderately sloping sides and a concave base. It contained a single fill (46) of mid to dark grey-brown silty sand which contained 1 sherd (4g) of Medieval pottery (AD1150-1350).
- 5.3.9 The robbed-out wall foundation likely relates to a building which was on the edge of Trackway [50] and associated with the field boundaries and

enclosures identified throughout the site (Figure 8). It is heavily truncated remaining as a deposit of unwanted material from the wall. A demolition deposit was also associated with the wall foundation.

5.3.10 The ditches identified in this trench are likely to be agricultural field systems and enclosures on the peripheries of settlement activity (Figure 8). The robbed out wall could relate to small scale temporary occupation, perhaps as overnight accommodation whilst herding livestock.

TRENCH 2	Figures 2 & 5	Plate 4	
Trench Alignment: NW-SE	Length: 20m	Max Machine Depth (m OD): 9.701m Level of Natural (m OD): 9.71m	
Deposit	Context No.	Average Depth (m)	
		NW End	SE End
Topsoil	(1)	0.15m	0.15m
Subsoil	(2)	0.35m	0.4m
Natural (max machined depth)	(3)	0.53m+	0.58m+
Summary			
Trench 2 was located in the north-east of the site.			
The trench contained four ditches, three aligned east to west and one aligned north-west to south-east, and two pits. A possible robbed-out wall foundation was also present at the northern end of the trench.			

5.4 Trench 3

5.4.1 This trench was located to investigate two anomalies identified in the geophysical survey (Figure 2). These were of undetermined origin identified as being either natural, modern or agricultural features. Upon excavation of the trench these appear to relate to natural deposits.

5.4.2 The trench contained three ditches aligned north-west to south-east as well as three pits/post-holes.

5.4.3 Pit [34] (Figure 6) was present at the western end of the trench, measuring 0.57m wide and 0.41m deep with steeply sloping sides and a narrow, concave base. It contained a single fill (35) of mid grey-brown silty sand,

which contained one sherd (1g) of Roman Samian pottery, likely to be a residual find. Pit [34] truncated Ditch [20].

- 5.4.4 Pit [32] (Figure 6) was present at the western end of the trench, measuring 0.43m wide and 0.14m deep with moderate to steeply sloping sides and a concave base. It contained a single fill (33) of mid grey-brown silty sand. No finds were recovered from this feature. Pit [32] truncated Ditch [20].
- 5.4.5 Ditch [20] (Figure 6) was located at the western end of the trench extending beyond both limits of excavation. It was linear in plan, aligned north-west to south-east, measuring 1.8m wide and 0.25m deep with moderately sloping sides and a concave base. It contained a single fill (21) of mid grey-brown silty sand, which contained one sherd (7g) of Medieval pottery (AD1150-1350). Ditch [20] was truncated by Pit [34] and Pit [32].
- 5.4.6 Ditch [18] (Figure 6) was located at the western end of the trench extending beyond both limits of excavation. It was linear in plan, aligned north-west to south-east, measuring 1.6m wide and 0.22m deep with moderately sloping sides and a concave base. It contained a single fill (19) of mid grey-brown silty sand. No finds were recovered from this feature.
- 5.4.7 Ditch [14] (Figure 6) was located midway along the trench extending beyond both limits of excavation. It was linear in plan, aligned north-west to south-east, measuring 1.25m wide and 0.35m deep with moderate to steeply sloping sides and a concave base. It contained a single fill (15) of mid grey-brown silty sand. No finds were recovered from this feature.
- 5.4.8 Pit [16] (Figure 6) was present midway along the trench, measuring 0.46m wide and 0.24m deep with steep sloping sides and a concave base. It contained a single fill (17) of dark grey-brown silty sand which contained four sherds (38g) of Medieval pottery (AD1000-1350). Pit [16] truncated Ditch [14].
- 5.4.9 Ditch [22] (Figure 6; Plate 7) was located at the eastern end of the trench extending beyond both limits of excavation. It was linear in plan, aligned north-west to south-east, measuring 1.4m wide and 0.22m deep with

moderately sloping sides and a concave base. It contained a single fill (23) of mid grey-brown silty sand which contained one fragment of iron slag.

5.4.10 The ditches present in this trench form agricultural field boundaries on the periphery of settlement activity (Figure 8). The presence of the pits/post-holes may be indicative of occupation activity in the near vicinity, and are potentially associated with the robbed-out wall (47) identified in Trench 2.

5.4.11 This trench contained a deeper sequence of subsoil. This may be due to colluvial action, but is more likely to represent the ploughed out and mixed upper deposits of the tightly packed ditches present throughout this trench.

TRENCH 3	Figures 2 & 6		Plate 6	
Trench Alignment: NE-SW	Length: 20m	Max Machine Depth (m OD): 9.38m Level of Natural (m OD): 9.45m		
Deposit	Context No.	Average Depth (m)		
		SW End	NE End	
Topsoil	(1)	0.2m	0.18m	
Subsoil	(2)	0.28m	0.31m	
Subsoil	(8)	0.21m	0.27m	
Natural (max machined depth)	(3)	0.71m+	0.75m+	
Summary				
Trench 3 was located towards the eastern edge of the site.				
The trench contained trench contained three ditches aligned north-west to south-east as well as three pits/ post-holes.				

5.5 Trench 4

5.5.1 This trench was located to investigate a number of anomalies identified in the geophysical survey (Figure 2). These related to undetermined responses identified as being either natural, modern or agricultural features. Upon excavation of the trench two of these responses related to field boundaries with the final anomaly picking up a modern water pipe.

5.5.2 The trench contained three ditches, one aligned east to west, one north-east to south-west and the final one north to south. A modern live water pipe was

also identified in the south-eastern end of the trench.

5.5.3 Ditch [11] (Figure 7; Plate 9) was located at the north-western end of the trench extending beyond both limits of excavation. It was linear in plan, aligned east to west, measuring 1.1m wide and 0.22m deep with moderately sloping sides and a concave base. It contained a single fill (10) of mid grey-brown silty sand. No finds were recovered from this feature. Ditch [11] was truncated by Ditch [24].

5.5.4 Ditch [24] (Figure 7) was located at the north-western end of the trench extending beyond both limits of excavation. It was linear in plan, aligned north-east to south-west, measuring 0.4m wide and 0.14m deep with moderate to steeply sloping sides and a concave base. It contained a single fill (25) of mid grey-brown silty sand. No finds were recovered from this feature. Ditch [24] truncated Ditch [11].

5.5.5 Ditch [12] (Figure 7) was located at the south-eastern end of the trench extending beyond both limits of excavation. It was linear in plan, aligned north to south, measuring 1.08m wide and 0.32m deep with moderate to steeply sloping sides and a concave base. It contained a single fill (13) of mid grey-brown silty sand. No finds were recovered from this feature.

5.5.6 Ditches [11] and [12] may form part of a larger rectilinear enclosure with the corner located to the north-east of the trench (Figure 8). This suggests it is an enclosure within the wider agricultural landscape, used for the temporary corralling of livestock. This is especially likely when viewed alongside the presence of Trackway [50] with this enclosure potentially being used for pasture of livestock whilst being herded.

TRENCH 4	Figures 2 & 7		Plate 8	
Trench Alignment: NW-SE	Length: 20m	Max Machine Depth (m OD): 9.85m Level of Natural (m OD): 9.83m		
Deposit	Context No.	Average Depth (m)		
		NW End	SE End	
Topsoil	(1)	0.1m	0.1m	
Subsoil	(2)	0.26m	0.28m	

Natural (max machined depth)	(3)	0.31m+	0.32m+
Summary			
Trench 4 was located in the western part of the site.			
The trench contained three ditches, one aligned east to west, one north-east to south-west and the final one north to south. A modern live water pipe was also identified in the south-eastern end of the trench.			

5.6 Trench 5

5.6.1 Trench 5 was added to investigate the extents of the robbed-out wall (47). The wall did not continue into this trench, with only one ditch, already excavated in Trench 2, identified. A modern live water pipe was present in the centre of the trench (Figure 2).

TRENCH 5	Figure 2	Plate 10	
Trench Alignment: NW-SE	Length: 8m	Max Machine Depth (m OD): 9.72m Level of Natural (m OD): 9.67m	
Deposit	Context No.	Average Depth (m)	
		NW End	SE End
Topsoil	(1)	0.1m	0.1m
Subsoil	(2)	0.38m	0.4m
Natural (max machined depth)	(3)	0.5m+	0.53m+
Summary			
Trench 5 was located in the centre of the site.			
The trench contained one ditch, aligned east to west and a modern live water pipe.			

6 THE FINDS AND ENVIRONMENTAL EVIDENCE

6.1 Flint

By Barry Bishop

Introduction

6.1.1 The archaeological investigations at the above site resulted in the recovery of eighteen pieces of struck flint. This report describes the assemblage and assesses its archaeological significance. Sixteen of the pieces came from ditch [41] and one from ditch [30], both in Trench 2, with the remainder recovered from the sub-soil in Trench 4. This text should be read in conjunction with the catalogue which provides further details of each piece (Table 1). All metrical descriptions follow the methodology established by Saville (1980).

Context	Feature	Trench	Decortication flake	Chip <15mm	Flake	Flake fragments	Retouched implements	Comments
2	Subsoil	4					1	Side scraper 62x44x14mm
31	D30	2			1			Small, partially cortical
42	D41	2	2	7	1	6		Mostly small, good condition, probably recent damage

Table 1: Quantification of flint

Description

6.1.2 All of the struck pieces were made from a translucent dark brown flint of reasonable knapping quality and with a weathered but thick cortex and thermal scars that suggest the raw materials were gathered from remnants of glacial till or colluvial deposits that are present in the vicinity.

6.1.3 The assemblage from fill (42) of Ditch [41], Trench 2, produced the largest collection which comprises two decortication flakes, a flake and thirteen pieces of micro-debitage (flakes and fragments measuring less than 10mm in maximum dimension). All of these pieces show conchoidal fracture scars and it is possible they represent attempts at deliberate flintworking. However, their sharp conditions, the random nature of their fracturing and the high

levels of crushing and abrasion suggest they were perhaps more likely formed from unintentional mechanical damage.

- 6.1.4 The two other pieces from the site are convincingly deliberate struck flints. The sub-soil in Trench 4 produced a rather minimally but finely worked side scraper, made on a wide partially cortical thick flake. This has fine steep scalar retouch forming convex edges around both lateral margins and along a small stretch of its distal end. Scrapers are not easy to date but this is perhaps most reminiscent of Later Neolithic or Early Bronze Age examples. Ditch [30], also in Trench 2, produced a small undiagnostic flake.

Significance

- 6.1.5 The struck flint assemblage is small and much of may be attributable to recent activity. However, the presence of at least two deliberately worked pieces demonstrates that the site was visited during the prehistoric period. Its dating is not certain but the scraper from Trench 4 suggests this occurred during the Later Neolithic or Early Bronze Age. This would accord with the larger quantities of flintwork that have been found recently in the vicinity (e.g. Bishop 2014; Newton forthcoming). Unfortunately, the small size of this assemblage means little can be said concerning the precise chronology or nature of the occupation here.

Recommendations

- 6.1.6 The assemblage's main significance is that it demonstrates prehistoric activity at the site which further fieldwork site could potentially elucidate. It is also recommended that a short description of the flintwork, which can be based on this report, be included in any published accounts of the fieldwork.

6.2 Pottery

By Berni Sudds

Introduction

- 6.2.1 The small assemblage of post-Roman pottery recovered from the evaluation amounts to 26 sherds, representing 18 vessels, weighing 496g. The majority dates to the Early and High medieval period, although a single fragment of

Samian was recovered, dating to the early Roman period. The fabrics were examined under x20 magnification and recorded using a system of mnemonic codes based on common name. As far as possible these comply with those laid out in the recently published type series for Cambridgeshire (Spoerry 2016), although identifications remain provisional at this stage. A full catalogue of the assemblage is held with the archive.

Assemblage Composition

6.2.2 With the exception of the small assemblage from the subsoil (2), the pottery is fragmentary and abraded with just one or two sherds per context. The dominance of micaceous coarsewares from Essex, including examples from Hedingham, is perhaps not surprising given the location of the village in the south-east of the county, relatively close to the border with Essex. South-east Fenland Medieval Calcareous Buff ware also appears to form part of assemblages in this part of Cambridgeshire (Spoerry 2016, 196). The surviving bowl and jar rims are fairly developed, implying a 13th or even early 14th century deposition date for much of the pottery, although the presence of EMW and DNEOT, even if re-deposited, indicate earlier and thus more long-lived activity in the vicinity. No glazed wares were recovered, but as such a small assemblage, this is not necessarily significant. The residues and sooting on a number of vessels is consistent with domestic cooking activities.

Context	Trench	Fabric code	Common name	Date range	Form	SC	ENV	Wg	Spot date
2	1	EMW	Early medieval ware	1000/50 – 1200		1	1	54	1200 - 1350
		HEDIC	Hedingham coarseware	1150 – 1350	Jar, everted, flat-topped rim	1	1	30	
		MEMS	Medieval Essex-type Grey Sandy wares (Essex Fabric 20)	1200 - 1400		1	1	5	
		MEMS	Medieval Essex-type Grey Sandy wares (Essex Fabric 20)	1200 - 1400		1	1	5	
		SEFEN	South-east Fenland Medieval Calcareous Buff ware	1150 – 1450		1	1	5	

		SEFEN	South-east Fenland Medieval Calcareous Buff ware	1150 – 1450	Shallow flared bowl, folded thickened rim	6	1	26 6	
17	3	HEDIC	Hedingham coarseware	1150 – 1350		1	1	22	1200 - 1350
		EMW	Early medieval ware	1000/50 – 1200		1	1	1	
		HEDIC	Hedingham coarseware	1150 – 1350	Jar, everted, flat-topped rim	2	1	15	
21	3	HEDIC	Hedingham coarseware	1150 – 1350		1	1	7	1150 - 1350
28	1	DNEOT	Developed St Neots-type ware	1050 - 1250		1	1	4	1200 - 1250+
		MEMS	Medieval Essex-type Grey Sandy wares (Essex Fabric 20)	1200 - 1400		3	1	43	
31	2	MEMS	Medieval Essex-type Grey Sandy wares (Essex Fabric 20)	1200 - 1400		1	1	17	1200 - 1400
		MISC	Miscellaneous	1200 – 1400		1	1	1	
		MISC	Miscellaneous	1200 – 1400		1	1	1	
35	2	SAM	Samian			1	1	1	1st - 3rd century
42	2	SEFEN	South-east Fenland Medieval Calcareous Buff ware	1150 – 1450		1	1	15	1150 - 1400
46	2	HEDIC	Hedingham coarseware	1150 – 1350		1	1	4	1150 - 1350

Table 2: Pottery by context

ENV= Estimated number of vessels; SC= Sherd count; Wg= Weight in grams

6.3 Faunal Remains By Kevin Rielly

Introduction

6.3.1 The site is situated in the central-eastern part of the village of Bottisham, adjacent and on the eastern side of Tunbridge Hall, in turn located c. 6km east of Cambridge, just north of the A14. The excavation consisted of 5 trial trenches, these provided evidence for an agricultural field system comprising a series of ditches flanking a ditched cobbled pathway.

6.3.2 This small part of Bottisham has been the subject of fairly intensive archaeological investigation, this evaluation lying immediately to the north-east of another three archaeological sites. Going from north to south these include a large area alongside Tunbridge Lane excavated by HAT/ES

(Newton 2014), this just south of Tunbridge Hall and then another PCA evaluation at Crystal park, Tunbridge Lane (CCPB14), this comprising 13 trial trenches (House 2014); and finally alongside and just west of the last site on the other side of the road, there is 31 Tunbridge Lane, an evaluation excavated by the Archaeological Field Unit for Cambridge County Council (Kenney 2002). The HAT/ES site comprised a large concentration of linear enclosure ditches as well as two corn drying ovens accompanied by finds evidence suggestive of a potentially high status Roman settlement dating to the 3rd/4th centuries AD. The sites to the south and west provided further evidence for agricultural features confirming a general Late Roman date, although the PCA evaluation also suggested an earlier phase of occupation dating to the Late Neolithic/Early Bronze age.

- 6.3.3 This evaluation provided a minor collection of bones, the majority taken from the bulk samples.

Methodology

- 6.3.4 The bone was recorded to species/taxonomic category where possible and to size class in the case of unidentifiable bones such as ribs, fragments of longbone shaft and the majority of vertebra fragments. Recording follows the established techniques whereby details of the element, species, bone portion, state of fusion, wear of the dentition, anatomical measurements and taphonomic including natural and anthropogenic modifications to the bone were registered. A concerted effort was undertaken to refit as many bones as possible, noting the actual number of fragments prior to refitting. The sample collections were washed through a modified Siraf tank using a 1mm mesh and the subsequent residues were air dried and sorted.

Description of the Faunal Assemblage

- 6.3.5 The bones recovered from this site are summarised in Table 1. All were taken from ditch fills with the hand collected bones amounting to a single bone and the sieved collection to 21 fragments.

Fill	Cut	Trench	H/S	Species	Bone	N
17	16	3	S	Cattle-size	limb bone	1

17	16	3	S	Sheep-size	limb bone	4
17	16	3	S	Sheep-size	indet	3
21	20	3	H	Cattle	humerus	1
26	27	1	S	Cattle-size	rib	1
26	27	1	S	Uniden bird	limb bone	5
31	30	2	S	Uniden	indet	7

Table 3: Quantification of the faunal assemblage

6.3.6 There was only one identifiable fragment, a cattle humerus, from a notably small individual, perhaps reminiscent of the typically small Iron Age stock i.e without any sign of the size increase shown at various other Roman sites (see for example Johnstone and Albarella 2002, 25 and Ingrem 2012, 207).

6.3.7 None of the other bones could be identified beyond cattle-size, sheep-size or possible bird. The cattle humerus fragment was about 75% complete, just missing the articular ends, while the unidentifiables were composed of rather small fragments. These have clearly undergone a high level of fragmentation, this contrasting with a generally good level of preservation i.e. little to no damage to the surface of these bones.

Conclusion and Recommendations for Further Work

6.3.8 The present evaluation was concentrated in the northern part of the development area and thus, if possible, considering the wealth of faunal data from the adjacent sites, it is recommended that should further excavation proceed this should include a sampling strategy aiming to maximize recovery. This strategy will undoubtedly be enhanced with hand recovery augmented by sieving.

6.4 Environmental Results

By Kate Turner

Introduction and Method Statement

6.4.1 This report summarises the findings of the rapid assessment of 4 bulk samples taken during excavations on land at Tunbridge Court, Bottisham. These samples were taken from the fills of four ditches, two of which are

thought to be the ditches of an enclosure, the context information for which is given in Table 3.

6.4.2 The aim of this assessment is to:

- 1) Give an overview of the contents of the assessed samples;
- 2) Determine the environmental potential of these samples;
- 3) Establish whether any further analysis is necessary.

Methodology

6.4.3 Four bulk samples were processed using the flotation method; material was collected using a 300µm mesh for the light fraction and a 1mm mesh for the heavy residue. The heavy residue was then dried, sieved at 1, 2 and 4mm and sorted to extract artefacts and ecofacts. The abundance of each category of material was recorded using a non-linear scale where '1' indicates occasional occurrence (1-10 items), '2' indicates occurrence is fairly frequent (11-30 items), '3' indicates presence is frequent (31-100 items) and '4' indicates an abundance of material (>100 items). The results for this stage of the assessment are presented in Table 3.

Sample number	Context number	Cut	Feature Type	Number of buckets	Residue			
					Charcoal	Seeds/grain	Mollusca	Other
1	17	16	Ditch	3			4	
2	31	30	Ditch	3	2		4	
3	42	41	Ditch	2	3		4	
4	26	27	Ditch	2			4	

Table 4: Assessment of environmental residues

6.4.4 The light residue (>300 µm), once dried, was scanned under a low-power binocular microscope in order to quantify the level of environmental material,

such as seeds, chaff, charred grains, molluscs and charcoal. Abundance was recorded as above. A note was also made of any other significant inclusions, for example roots and modern plant material. The results of this assessment are shown in Table 4.

Sample number	Context	Vol (ml)	Flot						
			Charcoal >1mm	Charcoal <1mm	Seeds	Seeds (charred)	Grains	Mollusca	Other
1	17	250	2*	3			3	4	Roots (4) Insect remains (1)
2	31	400	3*	3	1		2	4	Roots (4) Insect remains (1)
3	42	300	3	4	1		1	4	Roots (4) Insect remains (1) Insect eggs (1) Snail eggs (3)
4	26	95	1					4	Roots (3) Insect remains (2) Insect eggs (2) Snail eggs (2)

Table 5: Assessment of flots

Results

6.4.5 The heavy residues were relatively poor in terms of archaeobotanical material; no seeds or plant material were identified, and only a small amount of wood charcoal found in samples <2> and <3>, none of which was of a suitable size for species identification. All four samples did however contain an abundance of land and freshwater molluscs; land snails were generally predominant in all residues, though samples <1> and <4> also featured a high concentration of Planorbis spp. (rams horn snails), a freshwater species. A small amount of Cerastoderma edule (common cockle) fragments were also identified in sample <1>, along with several shells of Helix spp. in samples <1> to <4>, both of which may be evidence of molluscs as a dietary component. <4> contained the greatest taxonomic diversity, with specimens from 14 genera being identified; including Oxychilus spp., Vitrea spp. and Succinea spp. (amber snails). Additionally a large amount of juvenile shells were identified in sample <2>, and in sample <3> several operculum (shell lid).

6.4.6 All of the processed samples produced flots, ranging in volume from 95ml to

400ml. Wood charcoal was present throughout the assemblage; samples <2> and <3> produced the highest concentration of material, and fragments of a viable size for species identification were found in samples <1> and <2>. Due to the small amount of suitable material it is not, however, recommended that any further assessment be carried out at this stage.

6.4.7 Low concentrations of un-charred seed were identified in samples <2> and <3>; all of which belonged to the species *Chenopodium album* (fat-hen) and *Sambucus nigra* (black elder). Charred grain was also found in samples <1>, <2> and <3>, the majority of which was too burnt and fragmented for species to be discernible, though small amounts of *Triticum* spp. (indeterminate wheat) and *Avena sativa* (oat) could be recognised in samples <1> and <2>. The level of damage evident suggests that grains have been subjected to prolonged, high-temperature burning, which has caused the degradation of surface features that could be used in identification. Taking this into account, coupled with the fact that the concentration of grain is generally low, no additional work is recommended on this material. It is worth noting is that glume and base were not found in any of the assessed samples, suggesting that whilst cereals may have been consumed at the site, they were being processed elsewhere.

6.4.8 As with the heavy residues, the flots were rich in mollusc remains, both complete shells and fragments. All of the samples assessed contained over 100 individuals, both land and freshwater, as well as an abundance of juvenile specimens. Sample <4>, as expected, contained the greatest species diversity, the predominant taxa identified being *Carychium* spp., *Vallonia* spp. and *Planorbis* spp., a freshwater type. *Cecilioides acicula*, a modern burrowing species, was also identified in significant amounts throughout the sample set; this species, when found in archaeological deposits, is often interpreted as a modern intrusion, and could be an indication of bioturbation. Despite this, and due to the proliferation of land and freshwater genera represented, as well as a small amount of marine shells (for example *Palundinella littorina*) it is recommended that further assessment be carried out on an intact stratigraphic sequence or column

sample through the relevant deposits, as this material could prove useful in creating an environmental reconstruction for the site.

- 6.4.9 As well as the potentially modern mollusc remains, other signs of post-depositional mixing, in the form of roots and modern insect remains and eggs were discovered in all of the samples, root material being especially abundant in samples <1>, <2> and <3>, a fact which should be taken into consideration when interpreting the environmental assemblage.

Conclusions and Recommendations

- 6.4.10 This assessment has confirmed that the environmental potential of the assemblage is mixed; whilst both wood charcoal and seeds/grain were present throughout the sample set, the preservation was often poor, and the concentration of viable material low. Mollusc remains were however both abundant and taxonomically diverse, and therefore by sampling from a complete stratigraphic sequence it may be possible to develop a high-resolution reconstruction of both the environment and land use changes in the locality of the site.

7 DISCUSSION & CONCLUSIONS

- 7.1.1 The principal result of the evaluation was the discovery of a cobbled trackway with associated field boundaries and enclosures. The limited finds assemblages indicate that the current site is not located close to settlement, lying well away from the focus of settlement activity.
- 7.1.2 The ceramic evidence suggests that the activity is of predominantly Medieval (AD1150-1350) date; however, this dating may only show the site at its peak, with 'quieter' phases of activity not represented within the relatively small sample provided by the trial trenching.
- 7.1.3 The presence of a number of deliberately worked flints, in particular the side scraper from Trench 4, suggests there was the potential for small scale activity on the site in the prehistoric period. This ties into what has been identified in the vicinity, such as at Crystal Park to the south, with prehistoric activity uncovered on a predominantly Roman site.
- 7.1.4 The densest concentration of features appears to be in the northern and eastern parts of the site. These features were not associated with large finds assemblages, again indicating they are located away from the focus of settlement.
- 7.1.5 The features identified on site are agricultural field boundaries, with associated enclosures or paddocks. With the presence of Trackway [50] it is likely the enclosures identified on the site were used for the temporary corralling of animals.
- 7.1.6 A possible robbed out wall was located in Trench 2 which suggests that limited small scale Medieval occupation may be present on the site, in the form of temporary shepherd huts for use whilst herding/droving livestock. Given the limited coverage provided by the trenching, evidence for this small scale occupation and related activity may extend across the site. Some of the pottery contained residues and sooting consistent with domestic cooking (see Sudds, Section 6.2) which provides further evidence for small scale/temporary occupation on the site.

7.1.7 The robbed out wall (47) likely relates to an agricultural building associated with Trackway [50], and is not associated with the villa range located further to the south of the site (Figure 3).

7.1.8 The results of the evaluation provide a new aspect to the known archaeology of Bottisham. The evaluation identified a new focus for Medieval activity in an area previously thought to relate to the Roman villa complex.

7.2 Conclusions

7.2.1 The trial trench evaluation has identified features reflecting two periods of activity on the site: one prehistoric and one Medieval (predominantly AD1150-1350). The prehistoric evidence is from residual finds, but suggests a background of prehistoric activity in the area.

7.2.2 The archaeological features and deposits from the Medieval period are relatively well-preserved, but they are not associated with large or varied finds assemblages. This suggests that the site is well away from the focus of both the Roman settlement (further to the south; ECB 1234, MCB20322) and Medieval settlement (further to the north/north-west; HER 01124).

7.2.3 The features identified on the site relate to Medieval field boundaries and associated enclosures and paddocks (Figure 8). These features are likely related more to the settlement located at Bottisham Park (HER 01124) forming the settlements agricultural out-field systems away from the main focus of activity.

7.2.4 All the trenches revealed Medieval remains with the likelihood that further archaeological remains are present in the area. The presence of a possible robbed out wall suggests truncated structural remains may also be present in the area, associated with Trackway [50].

7.2.5 The character of the Medieval features and the associated finds is in keeping with an agricultural rural site on the edge of settlement, away from the focus of activity. This is not unexpected given the results of previous archaeological work in this part of Bottisham.

7.2.6 No evidence of outlying Roman activity, associated with the known villa estate at Crystal Park, was present on the site (Figure 3). This is of interest as the current site was thought to be situated in a prime location for further Roman activity, near the stream on the outskirts of the village. This indicates that the focus of earlier Roman activity is further to the south and west of the current site, near Crystal Park (MCB20322).

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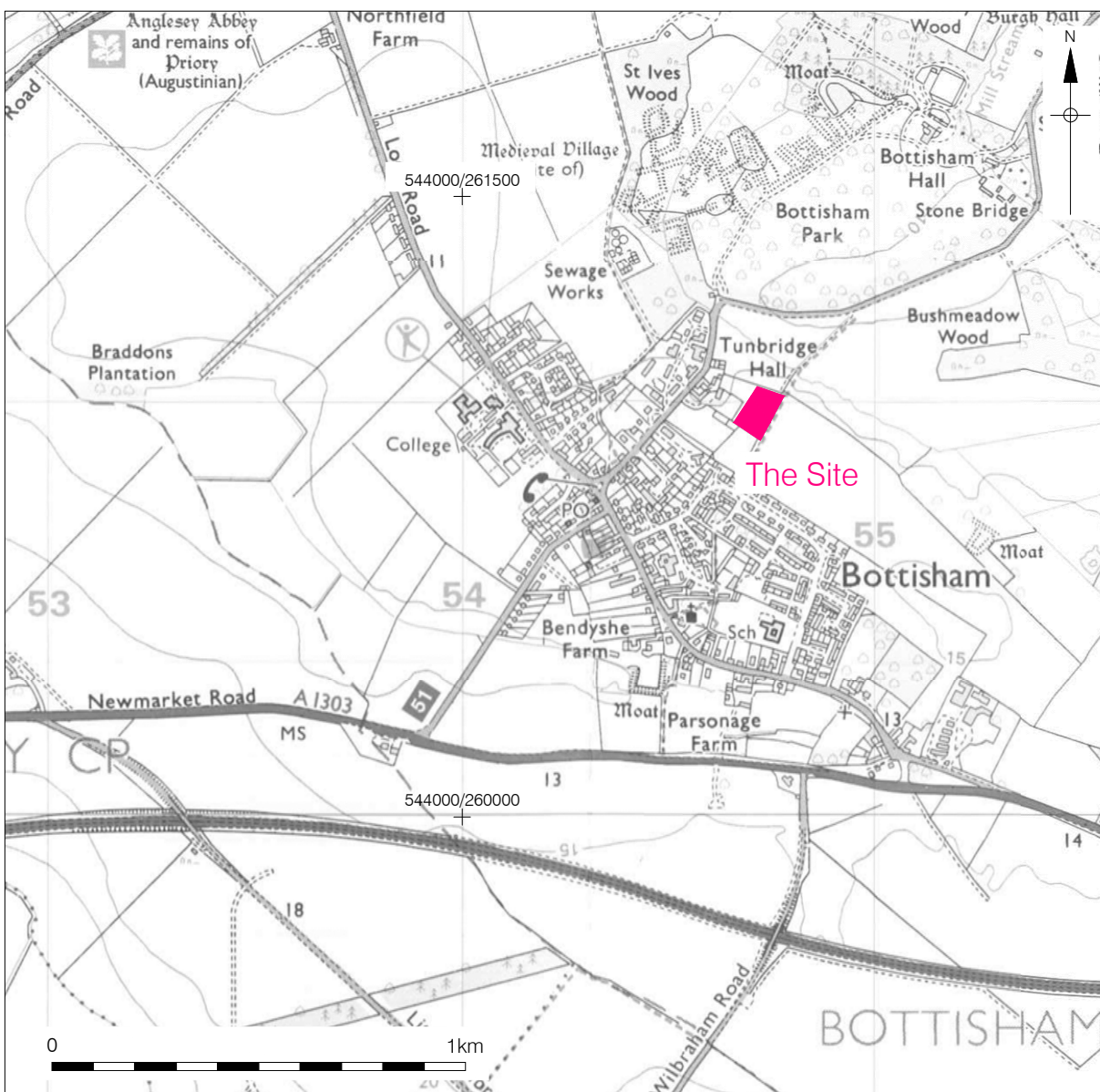
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Figure 1
Site Location
1:2,000,000 & 1:25,000 at A4



	FERROUS DIPOLAR		AGRICULTURAL WEAK
	UNDETERMINED (STRONG)		MODERN FEATURE WITHIN TRENCH
	FERROUS (SPIKE)		ARCHAEOLOGICAL FEATURE WITHIN TRENCH
	UNDETERMINED (WEAK)		WALL WITHIN TRENCH
	FERROUS (SPREAD)		EXTENT OF GEOPHYSICAL SURVEY

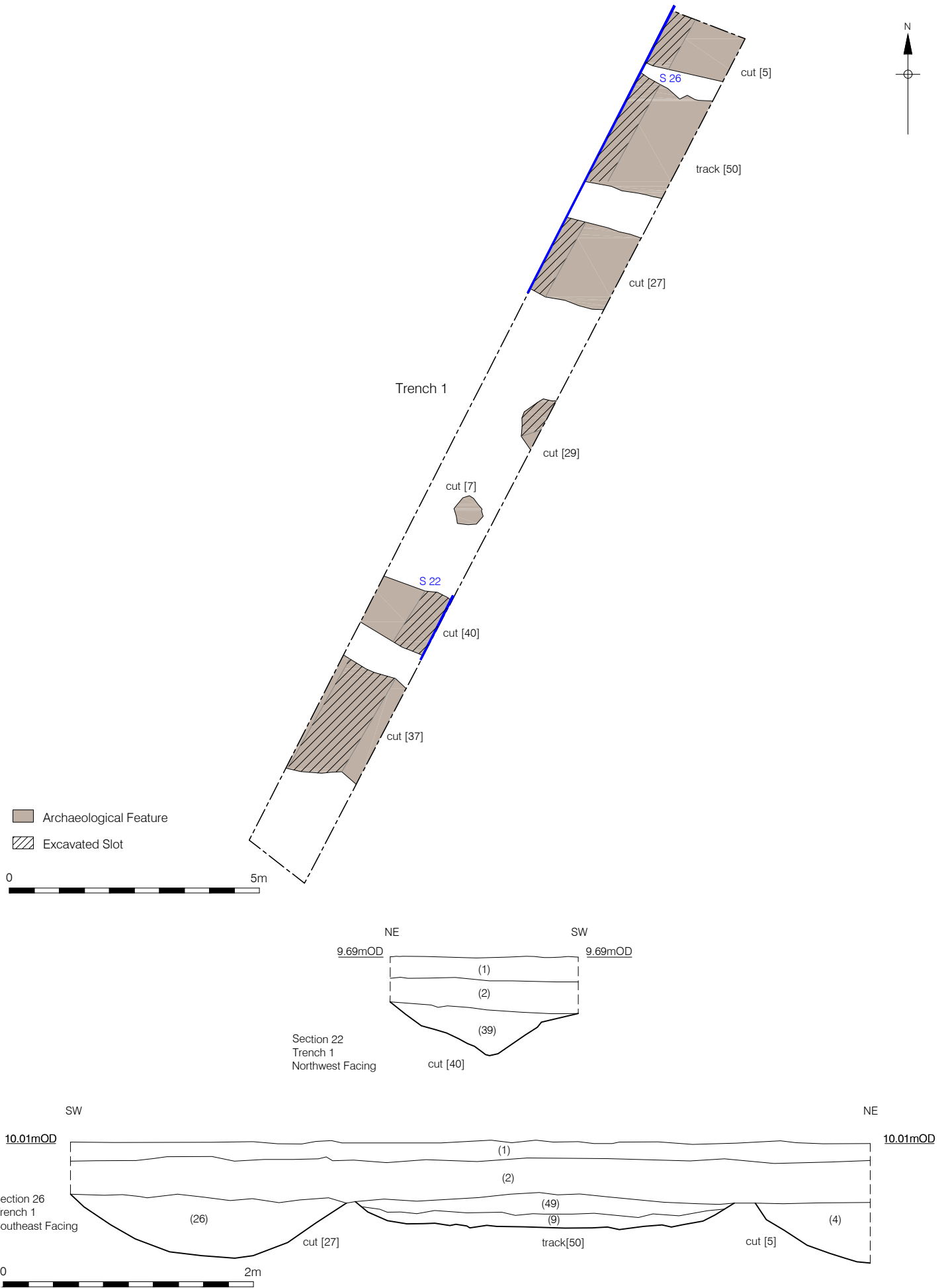
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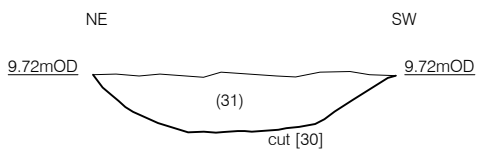
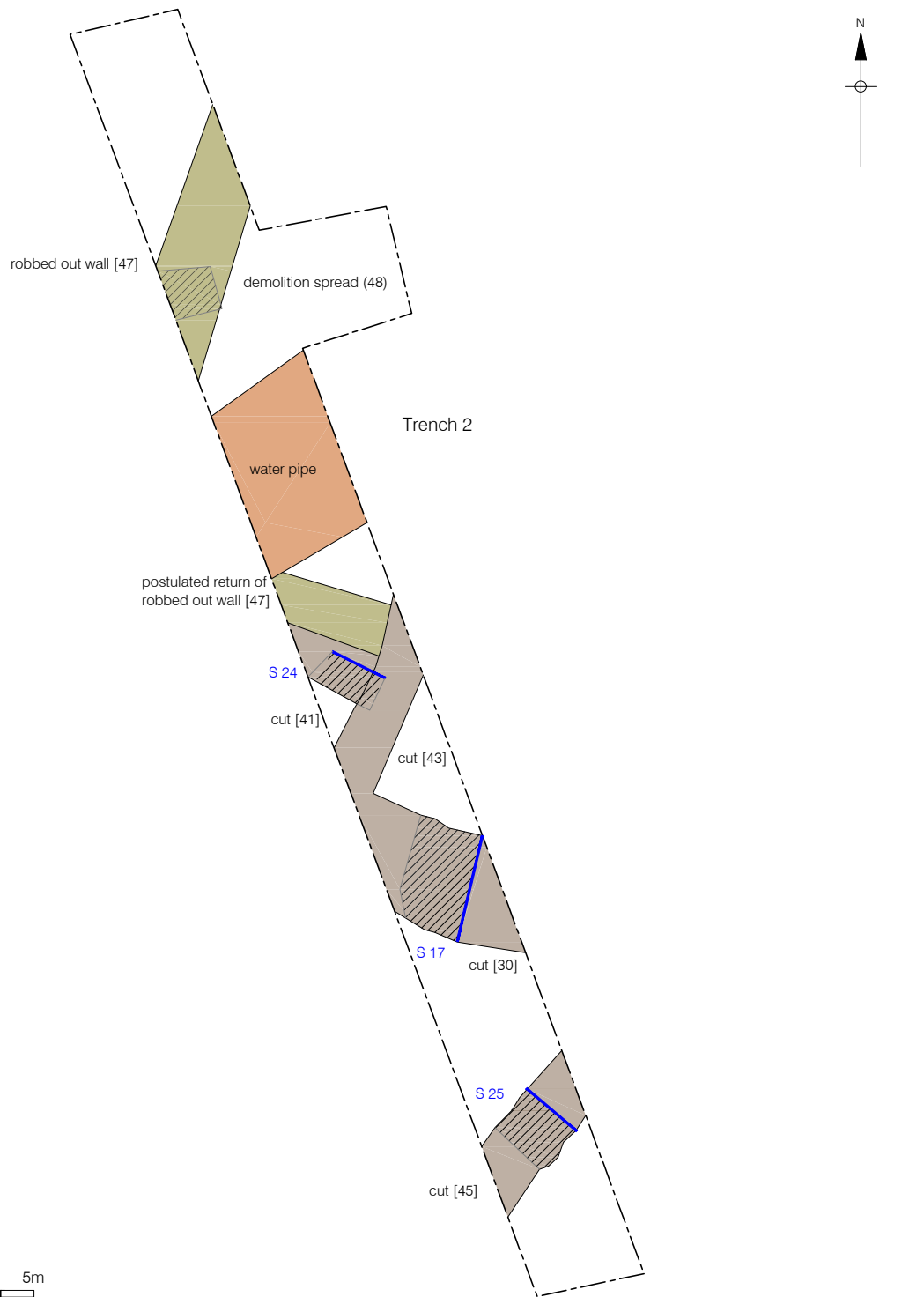
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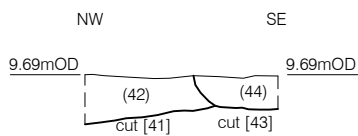
Figure 2
Trench Location Plan Overlain on Geophysical Survey Results
1:800 at A4



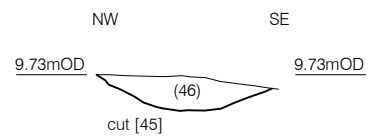




Section 17
Trench 2
Northwest Facing



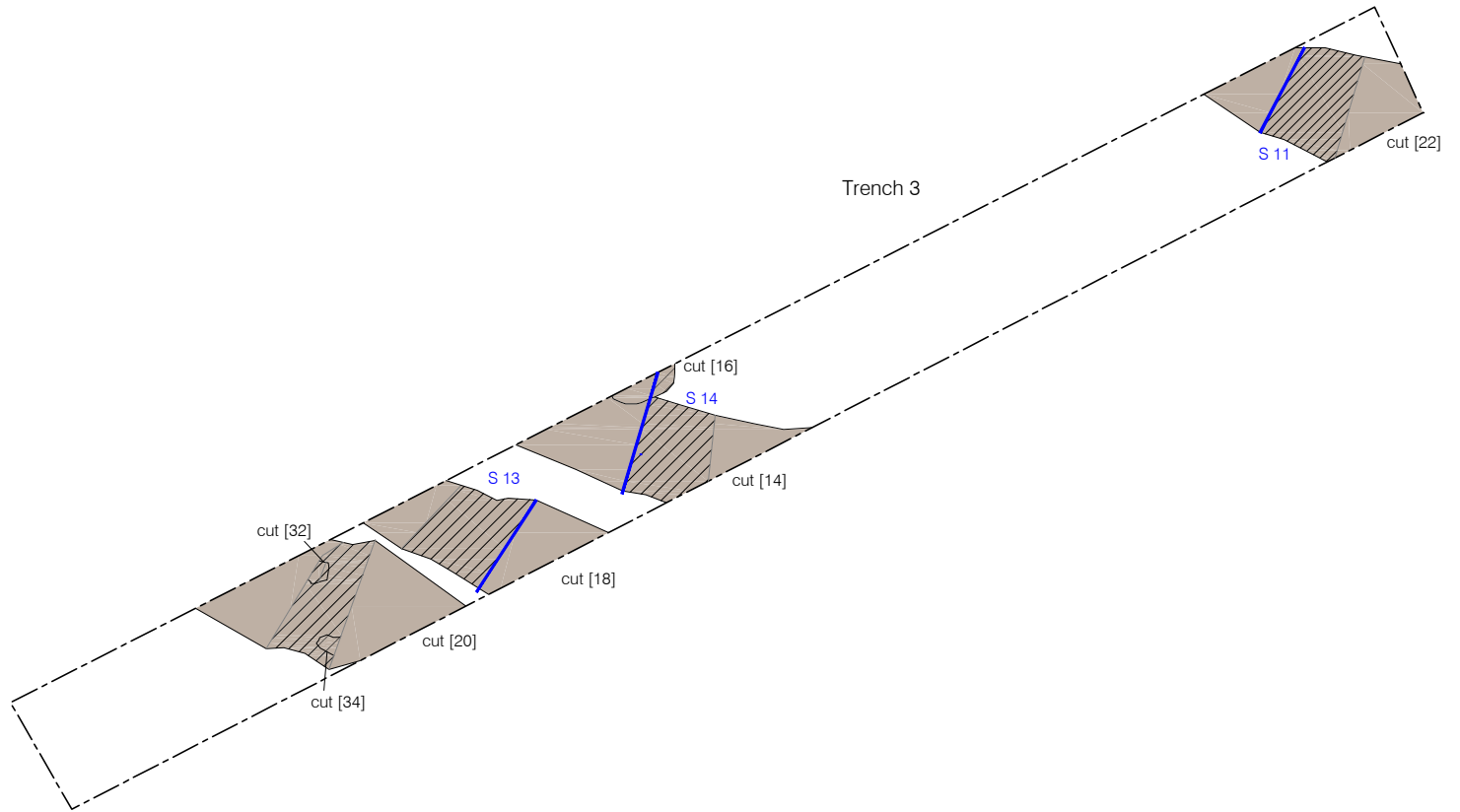
Section 24
Trench 2
Southeast Facing



Section 25
Trench 2
Southwest Facing



Figure 5
Plan and Sections of Trench 2
Plan 1:100 and Sections 1:40 at A4



Archaeological Feature

Excavated Slot

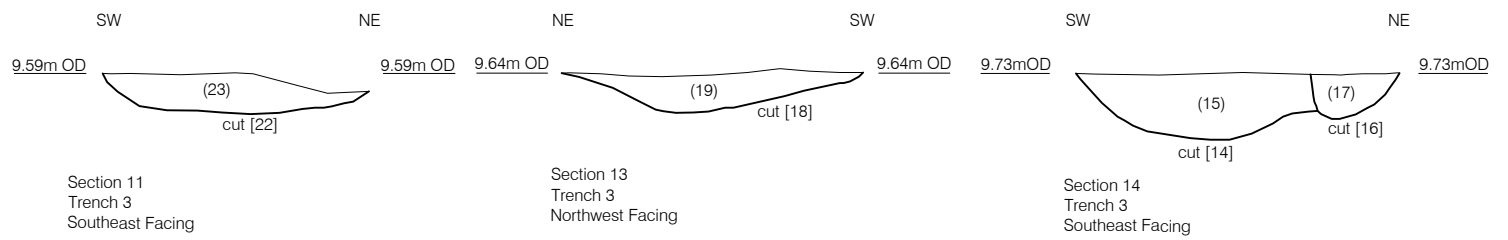
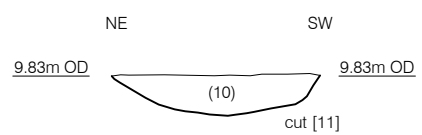
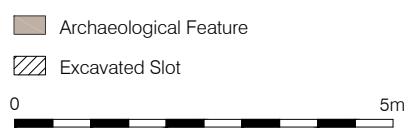
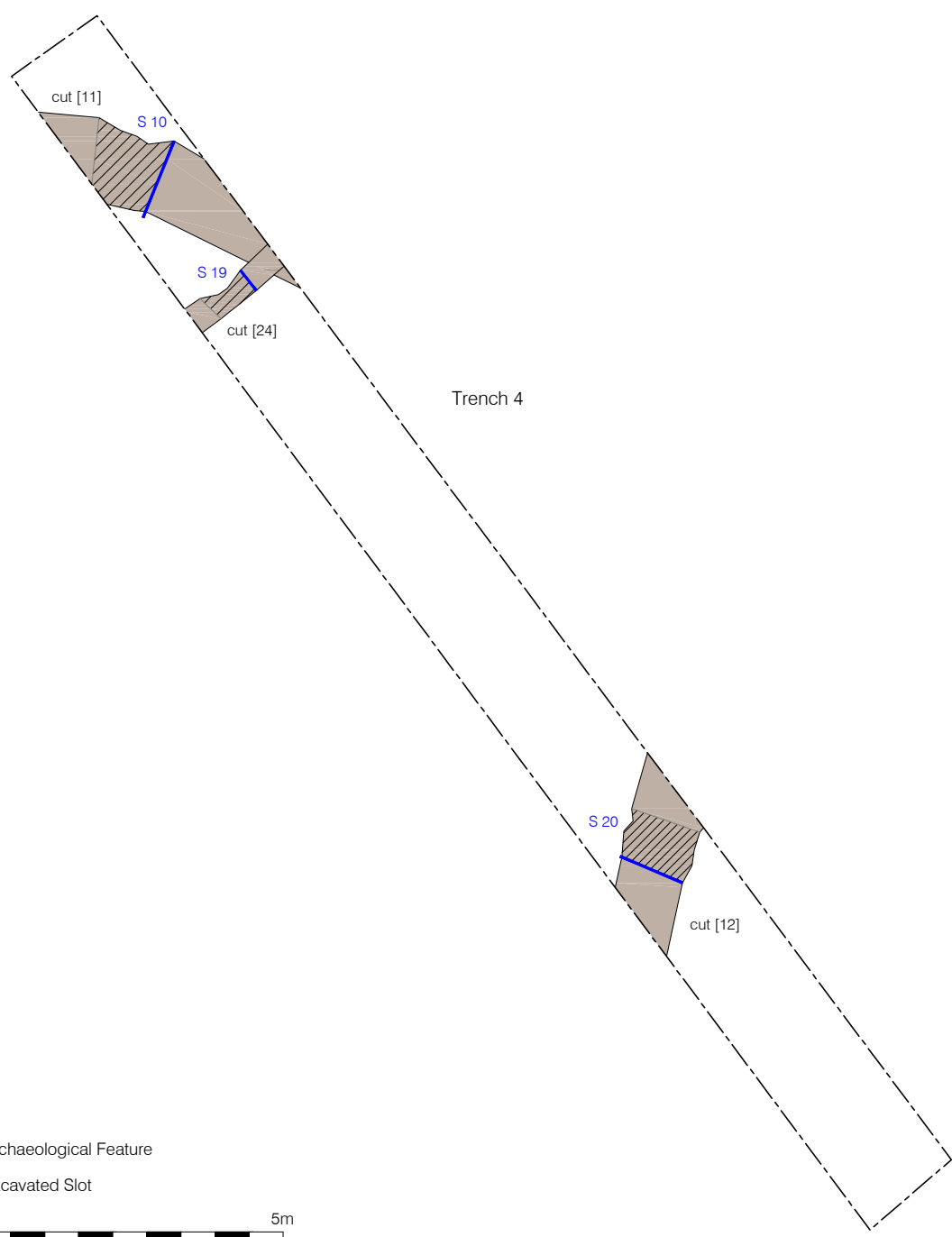
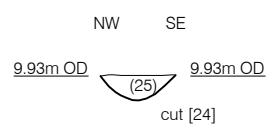


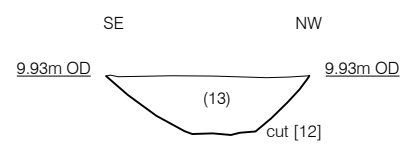
Figure 6
Plan and Sections of Trench 3
Plan 1:100 and Sections 1:40 at A4



Section 10
Trench 4
Northwest Facing



Section 19
Trench 4
Southwest Facing



Section 20
Trench 4
Northeast Facing



Figure 7
Plan and Sections of Trench 4
Plan 1:100 and Sections 1:40 at A4



GEOPHYSICS			
	FERROUS DIPOLAR		AGRICULTURAL WEAK
	UNDETERMINED (STRONG)		MODERN FEATURE WITHIN TRENCH
	FERROUS (SPIKE)		ARCHAEOLOGICAL FEATURE WITHIN TRENCH
	UNDETERMINED (WEAK)		WALL WITHIN TRENCH
	FERROUS (SPREAD)		EXTENT OF GEOPHYSICAL SURVEY

INTERPRETATION OF ARCHAEOLOGICALLY RECORDED MEDIEVAL FEATURES	
	PROJECTED FIELD BOUNDARY
	TRACKWAY
	POSTULATED LOCATION OF POSSIBLE BUILDING
	ENCLOSURE

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Figure 8
Plan of Interpreted Medieval Features Overlain on Geophysical Survey Results
1:800 at A4

10 APPENDIX 1: PLATES



Plate 1: Trench 1, view south



Plate 2: Trench 1, view north showing Trackway [50] mid-excitation



Plate 3: Trench 1, view north-west showing Ditch [40]



Plate 4: Trench 2, view north-west



Plate 5: Trench 2, view north-west showing Robbed-out wall (47)



Plate 6: Trench 3, view north-east



Plate 7: Trench 3, view north-west showing Ditch [22]



Plate 8: Trench 4, view south-east



Plate 9: Trench 4, view north-west showing Ditch [11]



Plate 10: Trench 5, view south-east

11 APPENDIX 2: CONTEXT INDEX

Context	Cut	Trench	Type	Category	Other Comments
1	0	0	Layer	Topsoil	
2	0	0	Layer	Subsoil	
3	0	0	Layer	Natural	
4	5	1	Fill	Ditch	Trackway Ditch
5	5	1	Cut	Ditch	Trackway Ditch
6	7	1	Fill	Pit	
7	7	1	Cut	Pit	
8	0	3	Layer	Subsoil	
9	50	1	Layer	Track	Cobbled Trackway
10	11	4	Fill	Ditch	
11	11	4	Cut	Ditch	
12	12	4	Cut	Ditch	
13	12	4	Fill	Ditch	
14	14	3	Cut	Ditch	
15	14	3	Fill	Ditch	
16	16	3	Cut	Pit	
17	16	3	Fill	Pit	
18	18	3	Cut	Ditch	
19	18	3	Fill	Ditch	
20	20	3	Cut	Ditch	
21	20	3	Fill	Ditch	
22	22	3	Cut	Ditch	
23	22	3	Fill	Ditch	
24	24	4	Cut	Ditch	
25	24	4	Fill	Ditch	
26	27	1	Fill	Ditch	Trackway Ditch
27	27	1	Cut	Ditch	Trackway Ditch
28	29	1	Fill	Ditch	
29	29	1	Cut	Ditch	
30	30	2	Cut	Ditch	
31	30	2	Fill	Ditch	
32	32	2	Cut	Pit	
33	32	2	Fill	Pit	
34	34	2	Cut	Pit	
35	34	2	Fill	Pit	
36	37	1	Fill	Ditch	
37	37	1	Cut	Ditch	
38	0	1	Layer	Track	Possible former Track
39	40	1	Fill	Ditch	
40	40	1	Cut	Ditch	
41	41	2	Cut	Ditch	

42	41	2	Fill	Ditch	
43	43	2	Cut	Ditch	
44	43	2	Fill	Ditch	
45	45	2	Cut	Ditch	
46	45	2	Fill	Ditch	
47	0	2	Layer	Rubble	Robbed wall
48	0	2	Layer	Rubble	Demolition rubble
49	50	1	Fill	Track	Cobbled Trackway
50	50	1	Cut	Track	Cobbled Trackway

13 APPENDIX 4: OASIS FORM

OASIS ID: preconst1-262707	
Project details	
Project name	Land at East of Tunbridge Court, Tunbridge Lane, Bottisham, Cambridgeshire, CB25 9TU: An Archaeological Trial Trench Eva
Short description of the project	This report describes the results of an archaeological trial trench evaluation carried out by Pre-Construct Archaeology on land East of Tunbridge Court, Tunbridge Lane, Bottisham, Cambridgeshire (NGR TL 5471 6100) between the 22nd and the 24th August 2016. The archaeological work was commissioned by Greensons Land and Cattle Co. in response to an archaeological brief composed by Kasia Gdaniec of the Cambridgeshire County Council Historic Environment Team (CCC HET). The aim of the work was to characterise the archaeological potential of the proposed development area. The principal result of the evaluation was the discovery of a cobbled trackway, flanked by two ditches, in Trench 1. Associated with the trackway were a series of agricultural field boundaries and enclosures, as well as a possible robbed-out wall and accompanying demolition spread (Trench 2). The features did not yield large finds assemblages which suggests the site lies on the peripheries of settlement, identified to the south (Roman) and north-west (Medieval; HER 01124) of the site. The findings are in keeping with the results of previous excavations in this part of Bottisham, which have investigated the peripheral areas and infield enclosures of a Roman farmstead (ECB 1234) as well as the possible villa site (MCB20322) as well as known historic remains such as the Deserted Medieval Village at Bottisham Park (HER 01124).
Project dates	Start: 22-08-2016 End: 24-08-2016
Previous/future work	Yes / Not known
Any associated project reference codes	ECB4768 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 1 - Minimal cultivation
Monument type	DITCH Medieval
Monument type	PIT Medieval
Monument type	TRACK Medieval
Significant Finds	POTTERY Medieval
Significant Finds	FLINT Late Prehistoric
Significant Finds	BONE Uncertain
Significant Finds	SLAG Uncertain
Methods & techniques	"Sample Trenches", "Targeted Trenches"
Development type	Rural commercial
Prompt	Pre-application advice

Position in the planning process	Pre-application
Project location	
Country	England
Site location	CAMBRIDGESHIRE EAST CAMBRIDGESHIRE BOTTISHAM Land at East of Tunbridge Court, Tunbridge Lane, Bottisham, Cambridgeshire, CB25 9TU
Postcode	CB25 9TU
Study area	0.4 Hectares
Site coordinates	TL 5741 6100 52.224244204766 0.304828329567 52 13 27 N 000 18 17 E Point
Height OD / Depth	Min: 9.38m Max: 9.93m
Project creators	
Name of Organisation	Pre-Construct Archaeology Ltd
Project originator brief	Cambridge HET
Project originator design	Mark Hinman
Project director/manager	Mark Hinman
Project supervisor	Matthew Jones
Type of sponsor/funding body	Private Client
Name of sponsor/funding body	Greensons Land and Cattle Co
Project archives	
Physical Archive recipient	Cambridgeshire County Council Archaeological Archive Facility
Physical Archive ID	ECB4768
Physical Contents	"Animal Bones","Ceramics","Environmental","Worked stone/lithics"
Digital Archive recipient	Cambridgeshire County Council Archaeological Archive Facility
Digital Archive ID	ECB4768
Digital Contents	"none"
Digital Media available	"Database","Images raster / digital photography","Spreadsheets","Survey","Text"
Paper Archive recipient	Cambridgeshire County Council Archaeological Archive Facility

Paper Archive ID	ECB4768
Paper Contents	"none"
Paper Media available	"Context sheet","Diary","Drawing","Notebook - Excavation',' Research',' General Notes","Photograph","Plan","Report","Section","Survey","Unpublished Text"
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	Land at East of Tunbridge Court, Tunbridge Lane, Bottisham, Cambridgeshire: An Archaeological Evaluation
Author(s)/Editor(s)	Jones, M.
Date	2016
Issuer or publisher	Pre-Construct Archaeology Ltd.
Place of issue or publication	Pampisford
Description	A4 bound report including text, figures, and plates
Entered by	Matt Jones (MJones@pre-construct.com)
Entered on	15 September 2016



**magnitude
surveys**

**Land East of Tunbridge Court,
Tunbridge Lane, Bottisham**

Geophysical Survey Report MSTL29

**For
Pre-Construct Archaeology Ltd**

**On Behalf Of Greensons Land
and Cattle Co**

Magnitude Surveys Ref: MSTL29

July 2016



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Draft Issued:

12 July 2016

Abstract

Magnitude Surveys was commissioned to assess the archaeological potential of a c. 0.8ha area of land east of Tunbridge Court, Bottisham, Cambridgeshire. A magnetic survey was successfully completed and no anomalies of probable archaeological origins were detected. The geophysical results primarily reflect modern and agricultural activity.

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1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by Pre-Construct Archaeology Ltd (PCA) on behalf of Greensons Land and Cattle Co. to undertake a geophysical survey on land east of Tunbridge Court, Tunbridge Lane, Bottisham (TL 547 609).
- 1.2. The geophysical survey comprised hand pulled, cart-mounted fluxgate gradiometer survey.
- 1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David et al., 2008), the Chartered Institute of Field Archaeologists (CIfA, 2014) and the European Archaeological Council (Schmidt et al., 2015).
- 1.4. The survey was conducted in-line with guidance outlined by Cambridgeshire's County Council's Historic Environment Team (2016), following a WSI submitted to Cambridgeshire County Council.
- 1.5. The survey commenced and was completed on 4 July 2016.

2. Quality Assurance

- 2.1. Project management, survey work, data processing and report production have been carried out by qualified and professional geophysicists to standards exceeding the current best practice (CIfA, 2014; David et al., 2008, Schmidt et al., 2015).
- 2.2. Magnitude Surveys is a corporate member of ISAP (International Society of Archaeological Prospection).
- 2.3. Director Graeme Attwood is a Member of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, as well as a member of GeoSIG, the CIfA Geophysics Special Interest Group.
- 2.4. Director Finnegan Pope-Carter is a Fellow of the London Geological Society, the chartered UK body for geophysicists and geologists, as well as a member of GeoSIG, the CIfA Geophysics Special Interest Group.
- 2.5. All MS managers have postgraduate qualifications in archaeological geophysics. All MS field staff have relevant archaeology degrees and at least three years field experience in undertaking archaeological geophysical surveys.

3. Objectives

- 3.1. The geophysical survey aimed to assess the potential archaeological landscape of the survey area.
- 3.2. The survey forms part of the archaeological mitigation required by Cambridgeshire Historic Environment Team and shall be used to inform the location of any trenches, should they be required.

4. Geographic Background

- 4.1. The underlying geology comprises West Melbury Marly Chalk formation – Chalk. No superficial deposits have been recorded (BGS, 2016). Historic England guidelines state the response of chalk to magnetometer survey is good (David et al., 2008: 15).
- 4.2. The soils consist of freely draining lime-rich loamy soils (Soilscapes, 2016).
- 4.3. Survey was undertaken over a single, flat field in pasture. The northern boundary consisted of a metal fence, whilst the southern boundary backed onto an area of housing. A number of trees scattered throughout the area were protected by small wooden and barbed wire fences.

5. Archaeological Background

- 5.1. The following is a brief summary of the significant heritage assets identified in the Cambridgeshire Historic Environment Team's (CHET) brief (2016) and within a 1km radius search of the survey area on Heritage Gateway.
- 5.2. The survey area is located within an area of high archaeological potential. Numerous trial-trenching and excavation schemes (E/02/00141/FUL, E/99/0824, E/00370/04, ECB2915 & MB20080) have identified a complex of high-status roman features indicating the existence of a Roman Villa within the vicinity. However, no main buildings associated with the potential villa have yet been found. Nearby excavations of the Ancient Meadows development area have discovered one tonne of ceramic building materials, suggesting a hypocaust heating system. CHET's brief (2016) indicates the potential for further Roman remains to lie within the survey area.
- 5.3. The deserted medieval village of Bottisham Park (HER01124) lies to the north of the survey area. This remains as a series of earthworks, moated sites, house platforms and ditched enclosures.

6. Methodology

6.1. Data Collection

6.1.1. Geophysical prospecting comprised the magnetic method as described in the following table.

6.1.2. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.3. The magnetic data were collected using MS' bespoke hand-pulled cart system.

6.1.3.1. MS' cart system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a Hemisphere S321 GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The Hemisphere S321 GNSS Smart Antenna is accurate to 0.008 m + 1 ppm in the horizontal and 0.015 m + 1 ppm in the vertical.

6.1.3.2. Magnetic and GPS data were logged on a USB flash drive housed in MS' bespoke data-logger and transferred to a laptop computer for processing.

6.1.3.3. A series of temporary sight markers were established in each survey area to guide the surveyor and ensure full coverage with the cart. Data were collected by traversing the survey area along the longest possible lines, to ensure that the data was efficiently collected and processed.

6.2. Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps were limited to:

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen et al. (2003).

Zero Median Traverse – The median of each sensor traverse was calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data were rotated to best fit an orthogonal grid projection and were resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data were interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produced images with square pixels for ease of visualisation.

6.3. Data Visualisation and Interpretation

6.3.1. This report presents geophysical results as greyscale images. Multiple greyscales images are used for data interpretation; these are at different plotting ranges and show different components of the vector magnetic field. This report presents the gradient of the sensors' total field data. Greyscale images should be viewed alongside the XY trace plots, found on the archive disk. XY trace plots visualise the magnitude and form of the geophysical response, aiding in anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against satellite imagery and historic mapping.

7. Results

7.1. Qualification

7.1.1. *Geophysical techniques are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports as well as reports of further work in order to constantly improve our knowledge and service.*

7.2. Survey Considerations

Survey Area	No. Survey Blocks	Surveyed Y/N	Ground Conditions	Further notes:
1	1	Y	Flat. Ground cover of short pasture.	Ferrous fence to the north. Backed on by housing to the south. Ferrous fencing around a number of trees in the survey area.

Refer to Figure 2 for survey area locations.

7.3. Discussion

7.3.1. The geophysical results, both greyscale images and XY traces, were interpreted in consideration with satellite imagery (Google Earth, 2016; Figure 5) and historic mapping (Ordnance Survey, 6" 2nd edition c.1882-1913; Figure 6).

7.3.2. The magnetic survey has responded well to the survey area's environment. The geophysical results reflect modern and agricultural activity. This activity is demonstrated in the geophysical results as strong, ferrous responses and weak, parallel linear anomalies, respectively. A number of anomalies have been interpreted as having an undetermined origin (see 7.4.1.2.). No anomalies of probable or possible archaeological origin have been identified.

7.4. Interpretation

7.4.1. General Statements

- 7.4.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually. Specific anomalies discussed within the text have been assigned numbers, which are emboldened within square parenthesis e.g. **[1]**.
- 7.4.1.2. **Undetermined** – Anomalies are classified as Undetermined when the anomaly origin is ambiguous through the geophysical results and there is no supporting or correlative evidence to warrant a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes--although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally not ferrous in nature.
- 7.4.1.3. **Ferrous** – Discrete ferrous-like anomalies are likely to be the result of modern metallic disturbance on or near the ground surface. Broad ferrous responses from modern metallic features, such as fences, gates, neighbouring buildings and services, may mask any weaker underlying archaeological anomalies should they be present.

7.4.2. Magnetic Results - Specific Anomalies

- 7.4.2.1. **Agricultural** – Two parallel, weak linear anomalies are in alignment with the former field boundaries in the historic mapping (Figure 6).
- 7.4.2.2. **Undetermined** – A large, discrete Undetermined anomaly **[1]** exhibits a characteristic geophysical response in the XY traces associated with burning activity. No evidence of burning was visible on the ground. As magnetic anomalies cannot be dated through gradiometer data, **[1]** could be the result of relatively modern activity or potentially be archaeological in origin.
- 7.4.2.3. **Undetermined** – Two weak linear anomalies were identified **[2]**. Due to their parallel alignments with the northern and southern field boundaries, as well as the nature of geophysical response, these anomalies are potentially agricultural in origin. However, given their discrete extent and relative isolation to other anomalies, a ploughing scheme cannot be explicitly identified. As a result, an Undetermined classification has been ascribed.
- 7.4.2.4. **Undetermined** – Two strong, parallel linear anomalies were identified **[3]**. These anomalies are partially obscured by overwhelming magnetic halos caused by the barbed wire in the trees' fences. The correlation of **[3]** with these ferrous materials makes a modern origin for these anomalies likely. However, as the nature of the geophysical response is obscured by the ferrous material, an archaeological origin cannot be entirely ruled out.
- 7.4.2.5. **Undetermined** – A number of discrete, pit-like anomalies have been detected through the survey area. These anomalies are likely natural or modern in origin;

however, given the high potential for archaeological remains in the survey area, an archaeological origin cannot be entirely ruled out.

7.4.2.6. **Ferrous (spread)** – An area of strong magnetic noise has been detected at the southern end of the survey area. This coincides with a previously fenced off area, visible in satellite imagery, that appears to have been used for dumping waste material (Figure 5). The magnetic noise is most likely to have been caused by remnants of this waste material.

7.4.2.7. **Ferrous** – The large ferrous anomalies scattered through the survey area are due to small wooden and barbed wire fences protecting the trees (Figure 5).

8. Conclusions

- 8.1. The magnetic survey has responded well to the survey area's environment. No anomalies of an archaeological or probable archaeological origin have been identified. The geophysical results primarily reflect agricultural and modern activity.
- 8.2. Agricultural activity has been detected in the form of former field boundaries.
- 8.3. A large proportion of the survey area is dominated by ferrous response, which is due to modern activity around the site. These overwhelming ferrous responses may mask any weaker archaeological signals, should they be present.
- 8.4. A number of anomalies of undetermined origin have been detected that likely reflect natural, agricultural and modern processes—though an archaeological origin cannot be entirely ruled out. The presence of overwhelming ferrous responses makes determining a specific origin for many of these anomalies difficult.

9. Archiving

- 9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This archive stores unprocessed and processed data.
- 9.2. MS contributes all reports to the ADS Grey Literature Library subject to any time embargo dictated by the client.
- 9.3. Whenever possible, MS has a policy of making data available to view in easy to use forms on its website. This can benefit the client by making all of their reports available in a single repository, while also being a useful resource for research. Should a client wish to impose a time embargo on the availability of data, this can be achieved in discussion with MS.

10. Copyright

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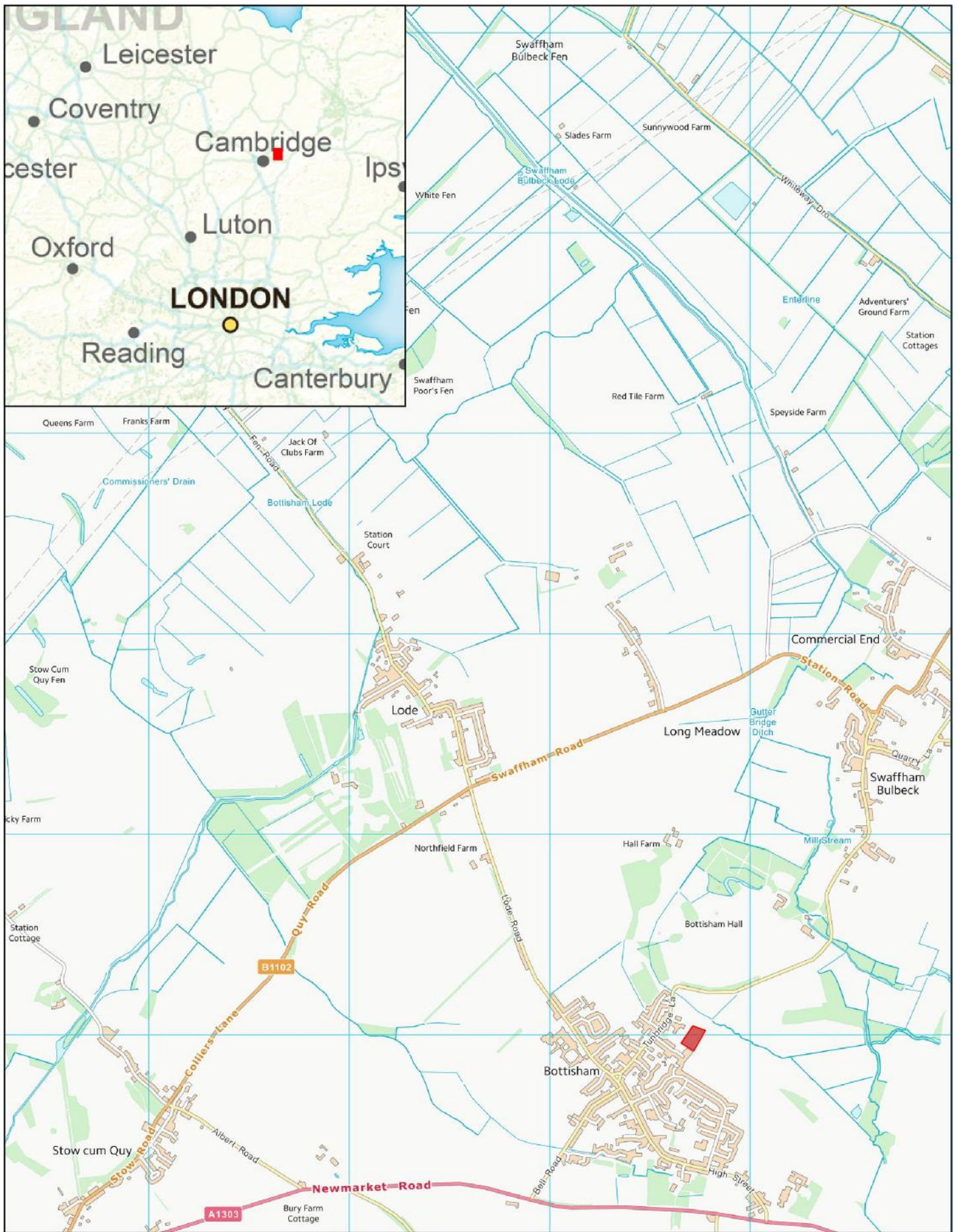
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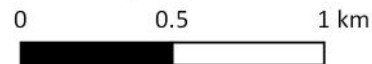
Figure 1 - Site Location

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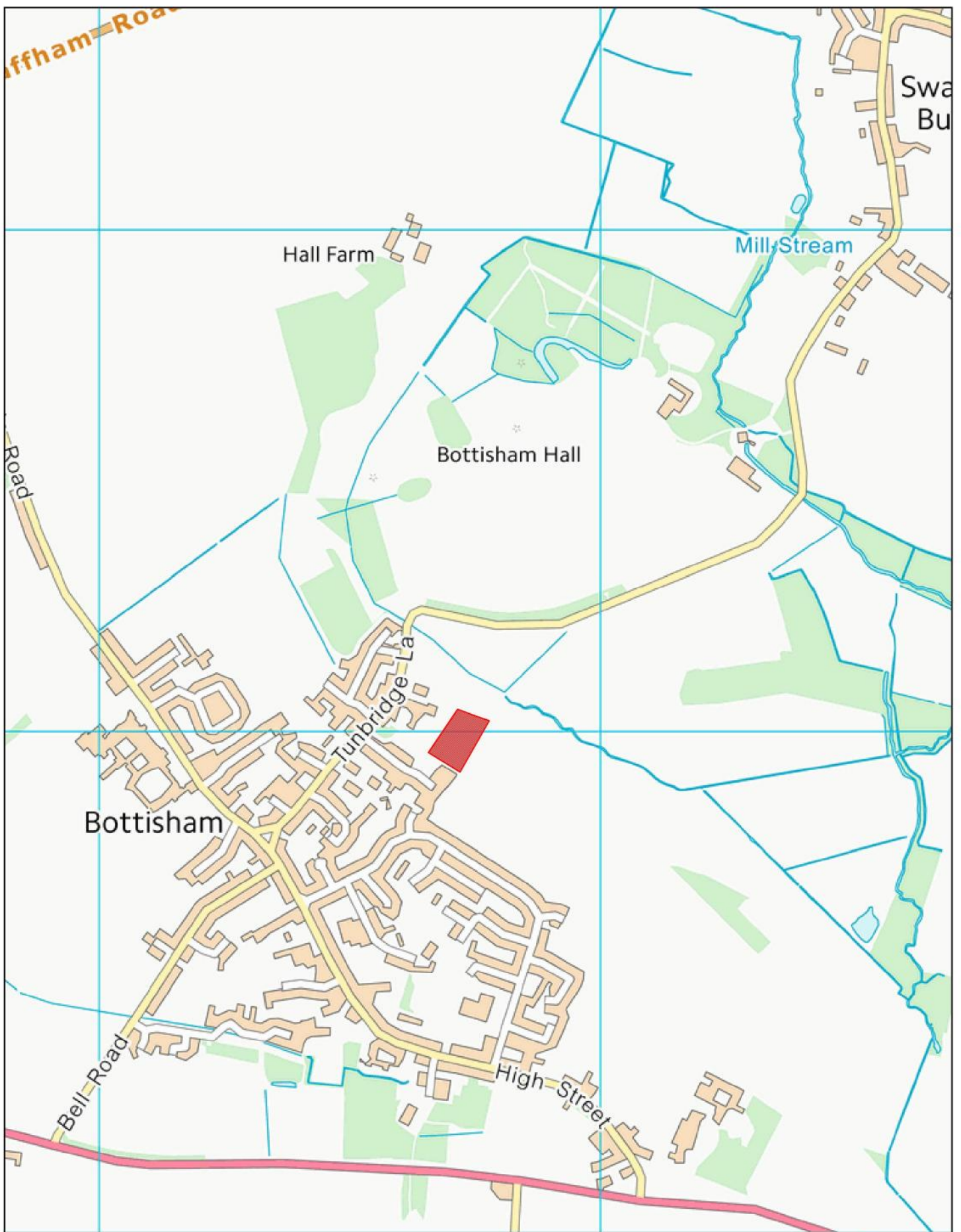
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 Survey Area



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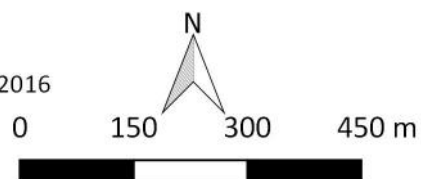
Figure 2 - Location of Survey Area

1 : 10,000 @ A4

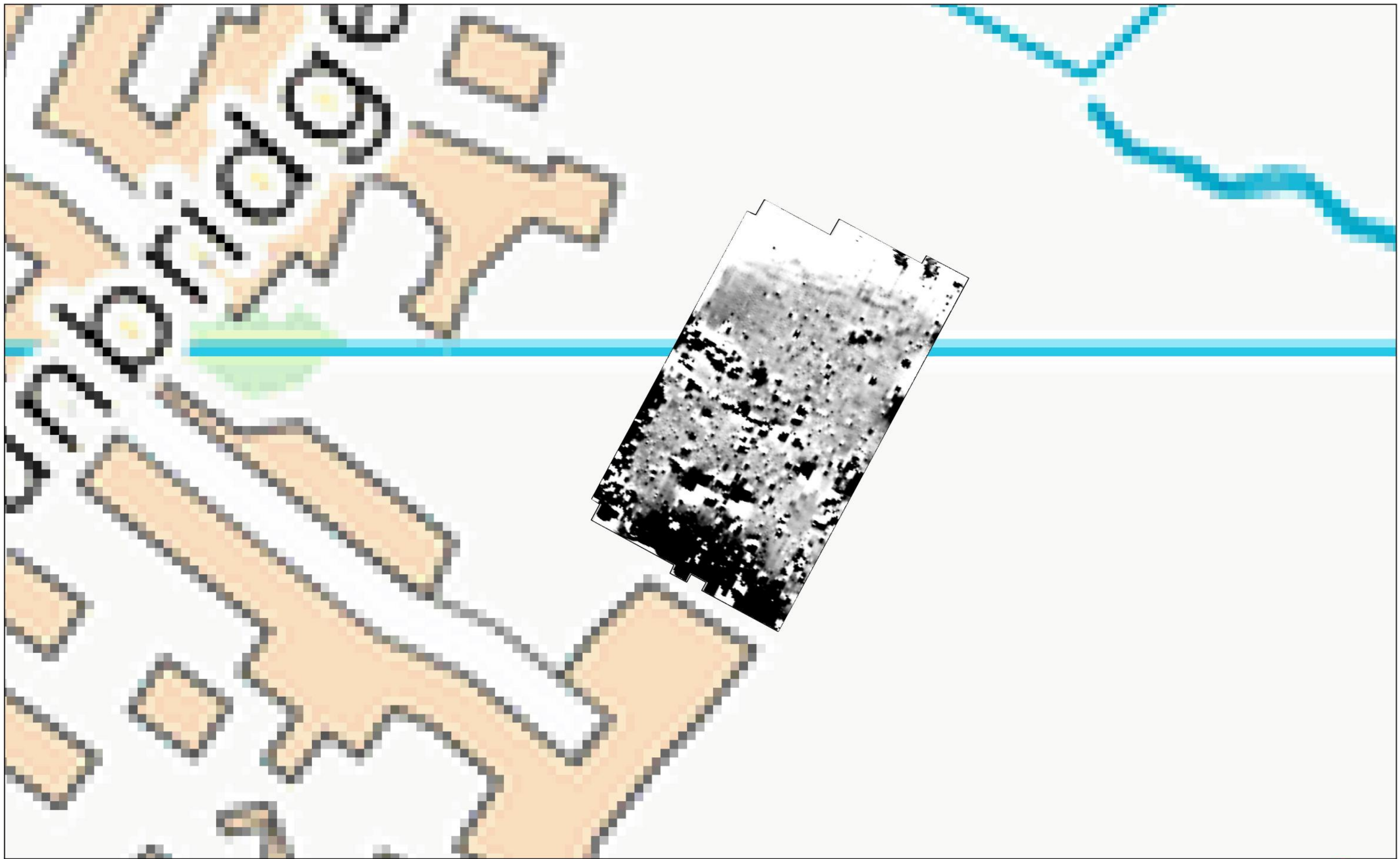
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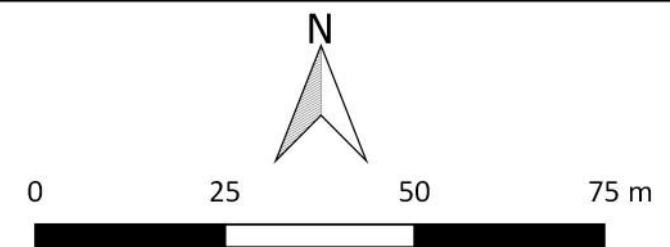
 Survey Area



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Figure 3 - Magnetic Greyscale
1 : 1000 @ A3
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OS (100056946)

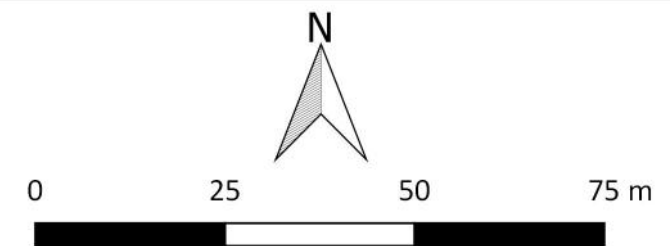


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 Figure 4 - Magnetic Interpretation
 1 : 1000 @ A3
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- | | |
|---|---|
|  Agricultural (Weak) |  Ferrous (Dipolar) |
|  Undetermined (Strong) |  Ferrous (Spread) |
|  Undetermined (Weak) |  Ferrous (Spike) |

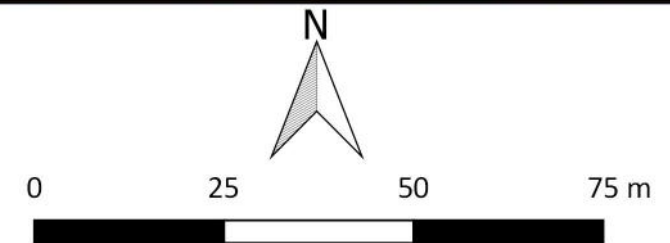


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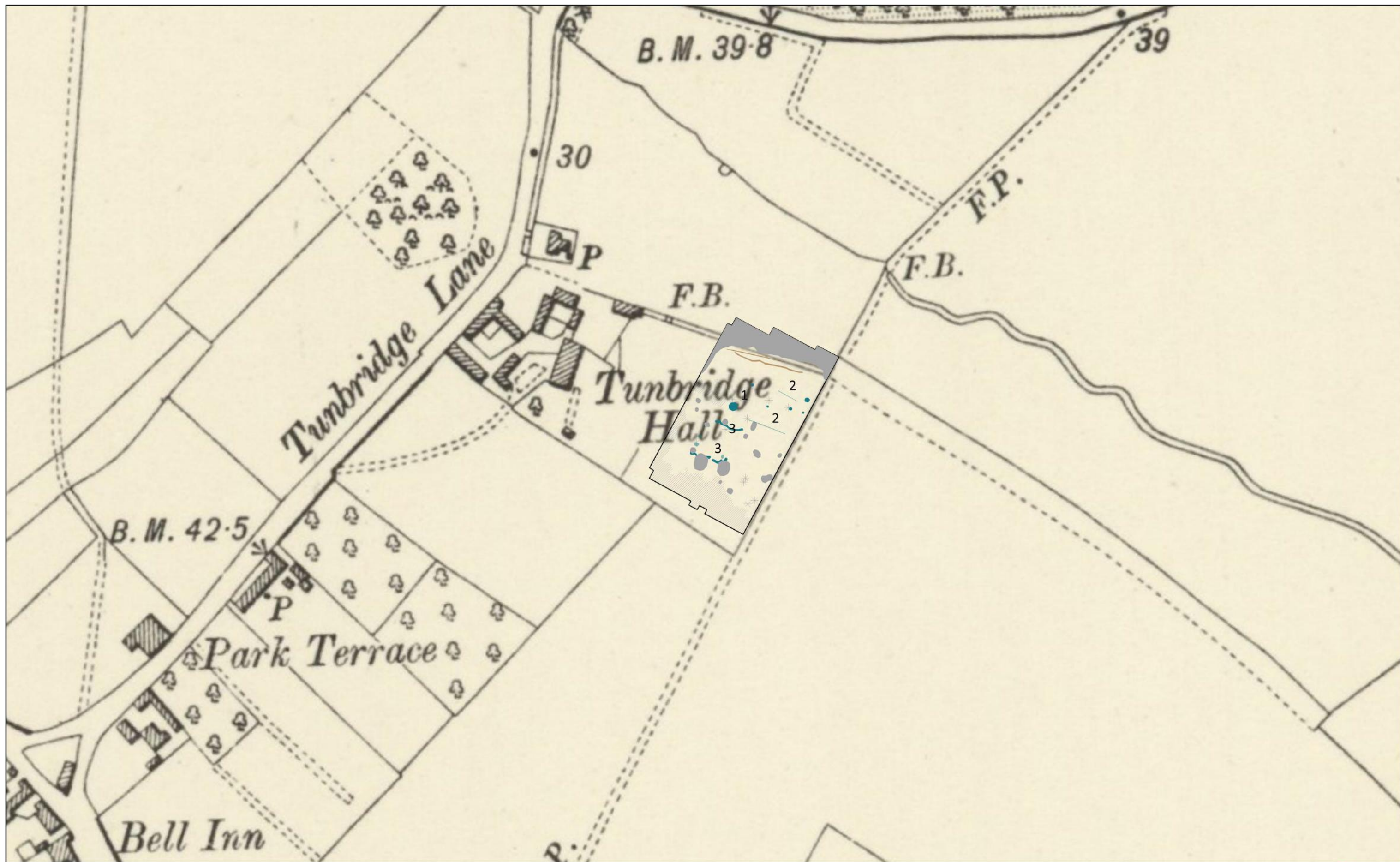


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 Figure 5 - Magnetic Interpretation - Satellite
 1 : 1000 @ A3
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- | | |
|---|---|
|  Agricultural (Weak) |  Ferrous (Dipolar) |
|  Undetermined (Strong) |  Ferrous (Spread) |
|  Undetermined (Weak) |  Ferrous (Spike) |

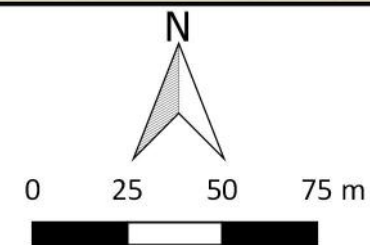


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 Figure 6 - Magnetic Interpretation - Historic Mapping
 1 : 2000 @ A3
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- | | |
|-----------------------|-------------------|
| Agricultural (Weak) | Ferrous (Dipolar) |
| Undetermined (Strong) | Ferrous (Spread) |
| Undetermined (Weak) | Ferrous (Spike) |



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