Archaeological Services & Consultancy Ltd

ARCHAEOLOGICAL EVALUATION:
LAND ADJACENT TO BLACK CAT ROUNDABOUT
CHAWSTON
BEDFORDSHIRE

NGR: TL 1597 5565

on behalf of Mr Tony Coates

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May 2011

ASC: 1353/CBC/2

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Site Data

ASC project code:	CBC	*ASC project no:*	1353
OASIS ref:	Archaeol2-83382	*Event/Accession no:*	BEDFM 2010.58
County:	Bedfordshire		
Village/Town:	Chawston		
Civil Parish:	Wyboston, Chawston and Colesden		
NGR (to 8 figs):	TL 1597 5565		
Extent of site:	*c.*2.9 hectares		
Present use:	Agricultural land		
Planning proposal:	Lorry park		
Planning application ref/date:	10/01334/M73		
Local Planning Authority:	Bedford Borough Council		
Date of fieldwork:	June 2010 and February 2011		
Client:	Mr Tony Coates 160 Celeborn Street South Woodham Ferrers Essex CM3 7AW		
Contact name:	Mr Tony Coates		

Internal Quality Check

Primary Author:	Martin Cuthbert	*Date:*	26th May 2011

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Figure 1: General location *(scale 1:25,000)*

Summary

In June 2010 Archaeological Services and Consultancy Ltd undertook geophysical survey of 2.9 hectares and then evaluation trenching in February 2011, at a parcel of arable land located slightly north of the Black Cat roundabout, Nr Chawston, Bedfordshire. The geophysics and trenching have defined an area of Romano-British ditches and pits at the northwest of the potential development area (pda). The excavated features form a continuation of an extensive cropmark site focussed at the field immediately to the west. Elsewhere the evaluation defined agricultural activity interpreted as dating to the medieval or later periods; except at the southeast where two or possibly three undated shallow ditches may predate the medieval period.

1. Introduction

1.1 In June 2010 *Archaeological Services and Consultancy Ltd* (ASC) carried out geophysical survey (detailed magnetometry) of 2.9 hectares of land adjacent to Black Cat Roundabout, Chawston, Bedfordshire. Trenching was subsequently carried out in February 2011. The project was commissioned by *Mr Tony Coates*, and has been defined in a brief (Saunders 2010) prepared on behalf of the local planning authority (LPA), *Bedford Borough Council,* by their archaeological advisor (AA), *Historic Environment Team of Bedford Borough Council*, and a project design prepared by ASC (Summerfield Hill 2010).

1.2 ***Planning Background***

This evaluation was required under the terms of *Planning Policy Statement 5* (PPS5), as a condition of planning permission for the development of the site. The relevant planning application reference is 10/01334/M73.

1.3 ***Archaeological Services & Consultancy Ltd***

ASC is an independent archaeological practice providing a full range of archaeological services including consultancy, field evaluation, mitigation and post-excavation studies, historic building recording and analysis. ASC is recognised as a *Registered Organisation* by the Institute for Archaeologists and is also accredited ISO 9001, in recognition of its high standards and working practices.

1.4 ***The Site***

1.4.1 *Location & Description*

The potential development area (pda) is located *c.*400m southeast of the village of Chawston, in the civil parish of Wyboston, Chawston and Colesden. The site lies within the administrative district of Bedford Borough Council, Bedfordshire (Fig. 1). It is centred on Ordnance Survey National Grid Reference TL 1597 5565.

The pda comprised a *c.*2.9 ha parcel of agricultural land situated immediately to the west of the A1 and *c.*100m north of the Black Cat roundabout. It lies between two west - east flowing tributaries of the River Great Ouse; South Brook, which is located *c.*150m to the north and Rockham Ditch which is

located *c.*500m to the south. The Great Ouse is located *c.*800m to the east of the site.

1.4.2 *Geology & Topography*

The solid and drift geology of the site *comprises river terrace deposits of silt, sand and gravel* (BGS, Sheet 204). The soils derive from the *Efford 1 Association* described as *well drained fine loamy soils often over gravel, associated with similar permeable soils variably affected by groundwater* (Soil Survey 1983, Sheet 6; 571s). The site was reasonably level at height of *c.*19.50m AOD.

1.4.3 *Proposed Development*

The development proposal is for the construction of a lorry park, a small number of buildings, associated services, infrastructure and landscaping. Current development plans were unavailable at the time of writing.

2. Aims & Methods

2.1 *Aims*

As described in the project design (Section 3.1), the aims of the evaluation were:

- To record the location, extent, date, character, significance and quality of any surviving archaeological remains within the area of proposed development.
- To use the results of the geophysical survey to target trenches on identified anomalies, whilst ensuring systematic trenching of the remainder of the site.

2.2 *Standards*

The work conformed to the project design, to the relevant sections of the Institute for Archaeologists' *Code of Conduct* (IFA 2000) and *Standard & Guidance Notes* (IFA 2001), to the Association of Local Government Archaeological Officers East of England Region *Standards for Field Archaeology in the East of England* (ALGAO 2003), and to the relevant sections of ASC's own *Operations Manual.*

2.3 *Methods*

The geophysical survey comprising detailed magnetometer survey of all suitable parts of the 2.9 hectare potential development area along 1m traverses with data collected at 0.25m sample intervals; it was carried out according to a strategy agreed with the AA and technical details are provided in Appendix 5. With the exception of constraints detailed in Section 2.4; the trenching was carried out in accordance with the requirements of a design brief (Saunders 2010) and the project design (Section 3.3).

- The results of the geophysical survey were used to target a number of trenches over identified magnetic anomalies. Blank areas were also tested so as to confirm the accuracy of the survey.
- Systematic coverage of the development area with sixteen 25m x 1.8m trenches in the attempt to ensure that any surviving archaeological deposits, features and structures were identified and sampled.
- Trial trenching of 4% (191 sq m) of an area of 4775 sq m located over a focus of archaeological activity identified by geophysical survey at the northwest of the area of proposed development (AREA A).
- Trial trenching of 2% (486 sq m) of the remaining area (2.43 hectare) of proposed development (AREA B).
- A contingency for trenching a further 1% of each area.

2.4 *Constraints*

On arrival at the site it was noted that all geophysical survey reference objects had been removed and set out of trenches with a total station was therefore not possible. Trenches 1-4 were located with measuring tapes and trenches 5-16 with a handheld GPS accurate to approximately 5m. After excavation the trench locations were tied in using a total station. The survey revealed that trench 11 had missed the geophysical anomalies it was meant to target by a few metres so an additional trench (T17) was opened at the position of the geophysical anomalies. In addition, trenches 9, 15 and 16 had to be moved due to large spoil heaps covering their proposed locations. These trenches were relocated as close to their proposed position as site conditions allowed.

3. Archaeological & Historical Background

3.1 The following section provides a summary of the readily available archaeological and historical background to the development site and its environs. The site lies within an area of archaeological and historical interest, and has the potential to reveal evidence of a range of periods.

This section has been compiled with information from Bedford Borough Historic Environment Record (HER) and ASC'S library.

3.2 ***Prehistoric*** *(before 600BC)*

The application site lies slightly west of the River Great Ouse (Fig.1). The river valley has been a focus of human activity since the early prehistoric periods (Dawson 2000). The area surrounding the proposed development contains many cropmarks identifying settlement and other types of activity that may date to the later prehistoric periods. Cropmarks of a ring ditch, a possible small rectangular enclosure and a linear feature of proposed Bronze Age date are located slightly north of Chawston (HER8818). Cropmarks near Spinney Road, *c.*700m east of the site comprise a number of irregular linear features and a possible ring ditch (HER1836). Cropmarks *c.*300m to the north-northeast are interpreted as two late Neolithic or Bronze Age barrows (HER1793) although these monuments were quarried away by the 1960's without archaeological investigation, other cropmarks located slightly east of the site of the two barrows suggest the presence of a sub-rectangular enclosure (HER1651). Cropmarks lying either side of the Rockham Ditch *c.*600m southwest of the site, identify possible sub-rectangular enclosures and other linear features (HER1833).

3.3 ***Iron Age - Roman*** *(600BC-c.450)*

Cropmarks locating possible settlement enclosures (HER2664) are present approximately 400m southeast of the site. The area containing the cropmarks has been subject to geophysical survey (HER: EBD272) and subsequent evaluation trenching (Ranson 2007); a small number of earlier prehistoric features were identified but results suggest that settlement activity was most prevalent during the late Iron Age and Roman periods.

The nearest cropmarks (HER745) to the proposed development are located immediately to its west and may extend into it; they may date to the late Iron Age and/or Roman periods. An extensive linear block of linked sub-rectangular enclosures with one or more containing probable circular structures is present.

In June 2010 ASC carried out a geophysical survey at the area affected by the proposed development. The survey identified a small number of features extending into the proposed development area from cropmark site HER745 (Section 4). The main focus of archaeological activity was located at the northwest corner of development area. Linear, curvilinear and discrete magnetic anomalies suggested the presence of a boundary ditch, a trackway or enclosure and a small number of pits. The origin and antiquity of other discrete magnetic anomalies distributed across the site was unclear.

3.4 ***Saxon*** *(c.450-1066)*

The date of origin of the village of Chawston is currently uncertain. Saxon remains are not known from the village but its inclusion in the Domesday Survey indicates that it was in existence by the latter part of the period. Roxton was also established by the late Saxon period and evidence for occupation of this date (HER13413) has been recorded near Roxton Road, *c*. 900m southwest of the proposed development. The evidence comprised three roughly parallel gullies and eleven pits or postholes, four of which may have formed a rectangular structure. One of the features interpreted as a pit may have been the southern end of a sunken featured building (Grubenhaus).

3.5 ***Medieval - Modern*** *(1066-Present)*

The site is situated on arable land *c.*400m southeast of the village of Chawston (HER17144) and *c.*800m northeast of the village of Roxton (HER17154). Both villages existed by the time of The Domesday Survey of 1086. Chawston, for example, is recorded in Barford Hundred and land was held by a number of individuals, *e.g.* Eudo fizHubert who held 1 hide and 1 virgate and William fitzRaineward who held of William 7 hides and 1 virgate (Williams and Martin 1992). The form of the village at this time is unclear but it currently exhibits a linear settlement pattern. ASC's geophysical survey identified ploughed out remnants of approximately north - south orientated ridge and furrow at the west of the proposed development area. The presence of ridge and furrow illustrates that the proposed development area lay within the medieval open field system of Chawston or Roxton

Chawston moated site (HER475) lies to the west of the Great North Road (A1) *c.*1km northwest of the site. The site comprises a medieval moated enclosure with an associated fishpond and supply channel forming the south and west sides of a subsidiary enclosure. Chawston Manor (HER1744) stands on the moated site and is a 17th century listed building. A further medieval moated enclosure with adjacent building platforms is at The Lane, Wyboston (HER474) *c.*1.1km north of the site.

A number of late post medieval buildings survive in Chawston, for example, Holly Cottage (*c.*500m northwest: HER1747) a listed cottage dating from the 19th century and Scuttle Cottage (*c.*600m north: HER12459) a listed cottage dating from the 18th century.

4. Results: Geophysical Survey

4.1 Isolated dipolar anomalies ("iron spikes") are widely distributed throughout the survey area although particularly prevalent at the east. These "iron spike" anomalies are characteristic of ferrous objects incorporated into the topsoil and subsoil, and are usually caused by modern cultural debris. Only the strongest of these anomalies are identified on the interpretation plot. On occasion, archaeological artefacts may cause them and significant clusters associated with other substantiating evidence may be included in the following discussion.

4.2 Large areas of magnetic disturbance are evident at the periphery of the survey area. The strongest disturbance is located at the east and southeast, respectively adjacent to a lay-by off the A1 and a service station. A small number of discrete areas of magnetic disturbance are also identified within the survey area. This type of magnetic anomaly is typically caused by proximity of survey to large ferrous objects such as wire strand fencing or by accumulations of modern ferrous and thermoremanent material.

4.3 NW – SE aligned weakly positive parallel linear trends are identified at the western half of the survey area. This type of anomaly is characteristically caused by past ploughing regimes. The distance between the trends suggests that remnants of ridge and furrow earthworks of a medieval open field system may be present.

4.4 Three NNW – SSE aligned weakly positive parallel linear trends **A, B,** and **C** are identified at the eastern half of the survey area (Fig. 3). These perhaps locate furrows of another phase of ploughing although the presence of remnants of infilled field system ditches cannot be discounted.

4.5 Large areas of strong magnetic enhancement at **D** and **E** are caused by large ferrous objects and/or intense burning (Fig. 3). The activity causing the anomalies was perhaps relatively recent but the presence of archaeological kilns/furnaces cannot be discounted.

4.6 Four small areas of weaker magnetic enhancement are present at the west of the survey area and could originate from infilled archaeological pits. However, relatively recent intrusive activity may cause some or all of these anomalies.

4.7 At the northwest of the survey area linear / curvilinear magnetic anomalies **G, H** and **I** locate three infilled archaeological ditches (Fig. 3). The ditches may define an area of archaeological activity associated with archaeological enclosures and trackways visible as crop marks to the west of the survey area.

4.8 Two discrete area of magnetic enhancement **I** are located in close proximity to the three archaeological ditches and probably identify infilled archaeological pits (Fig. 3). Two more tentatively identified areas of discrete magnetic enhancement are located nearby and could also originate from infilled archaeological pits.

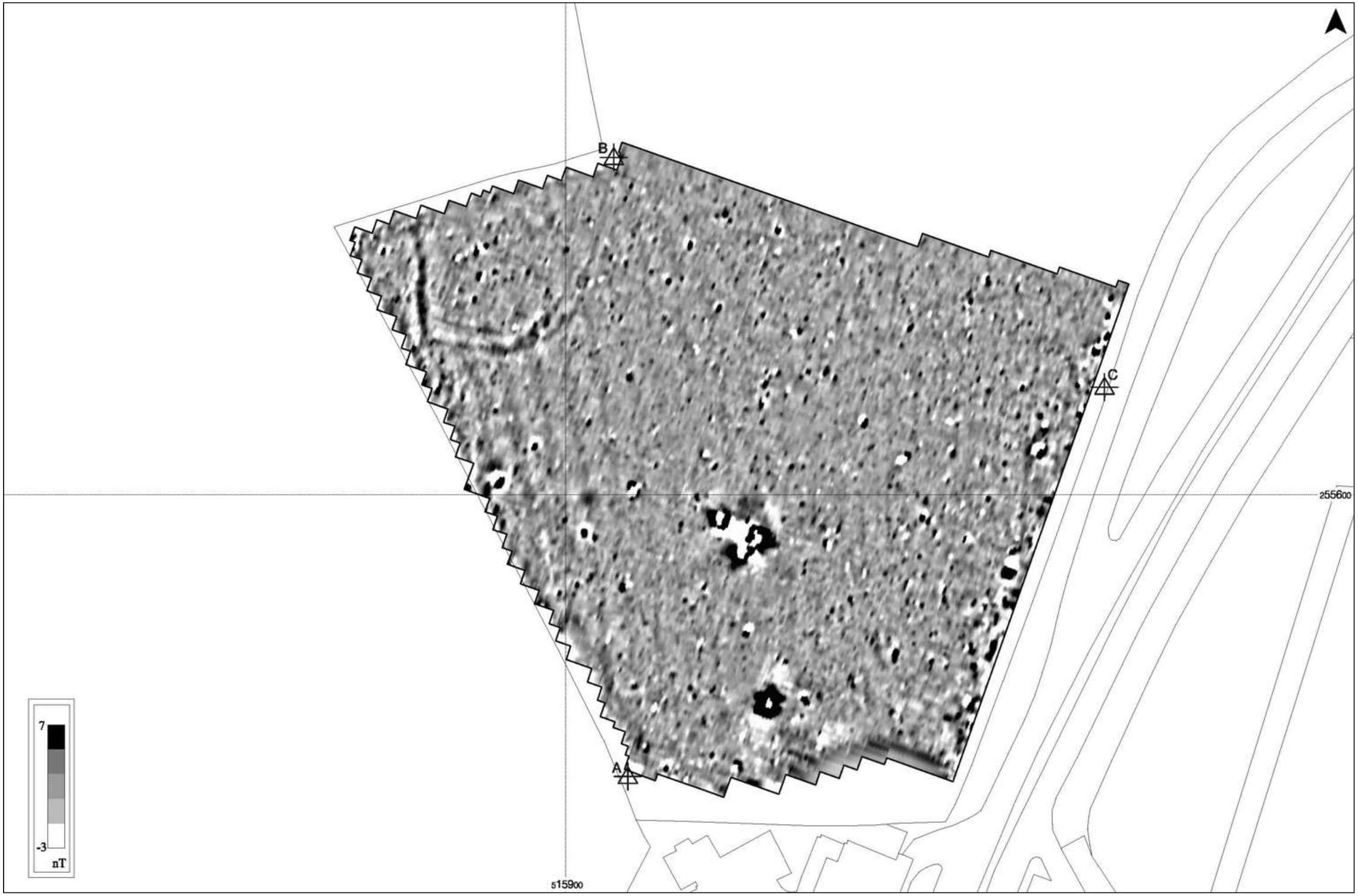


Figure 2: Greyscale plot of fluxgate gradiometer data (*scale 1:1000*)

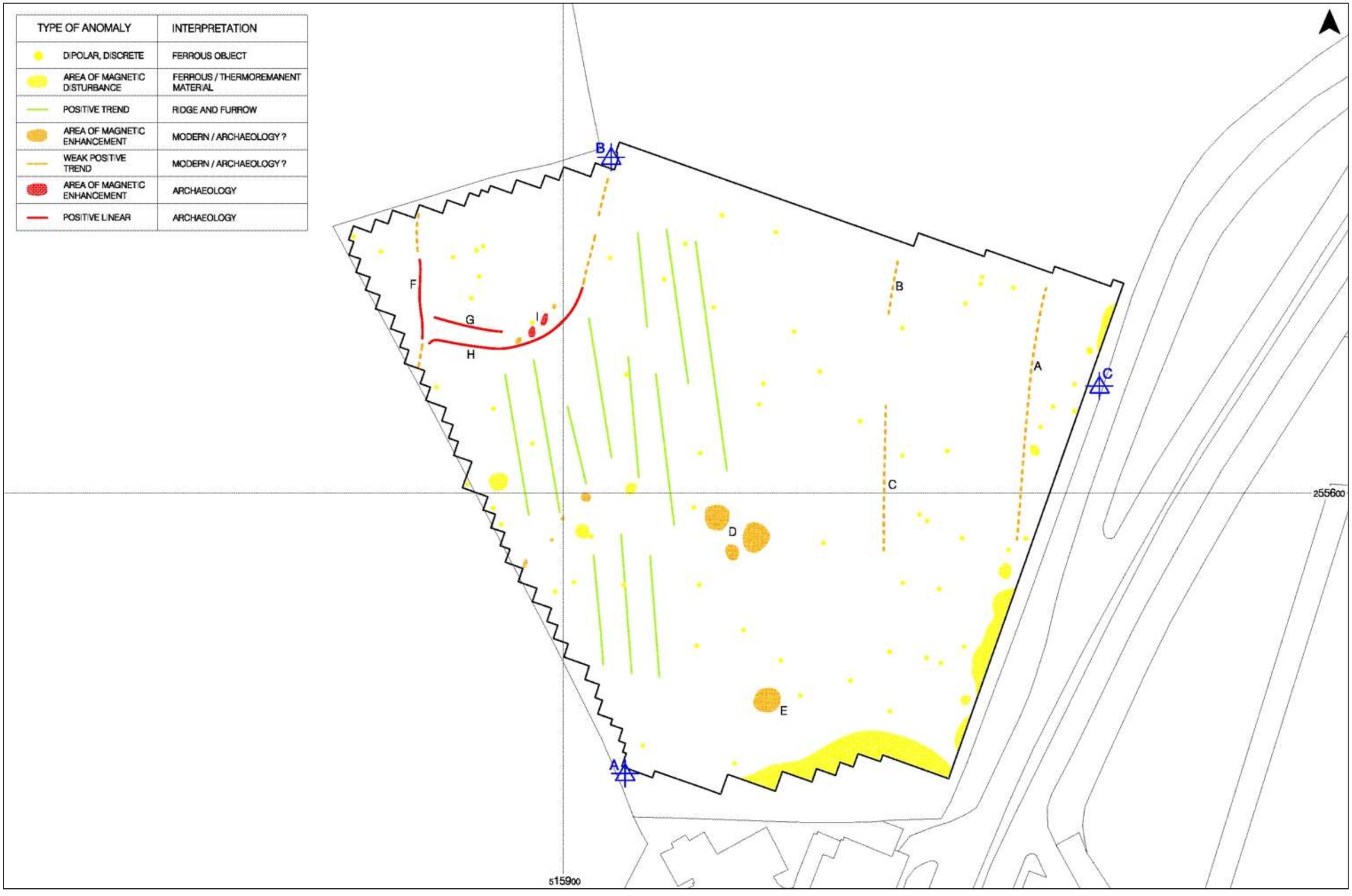


Figure 3: Interpretation of fluxgate gradiometer data (*scale 1:1000*)

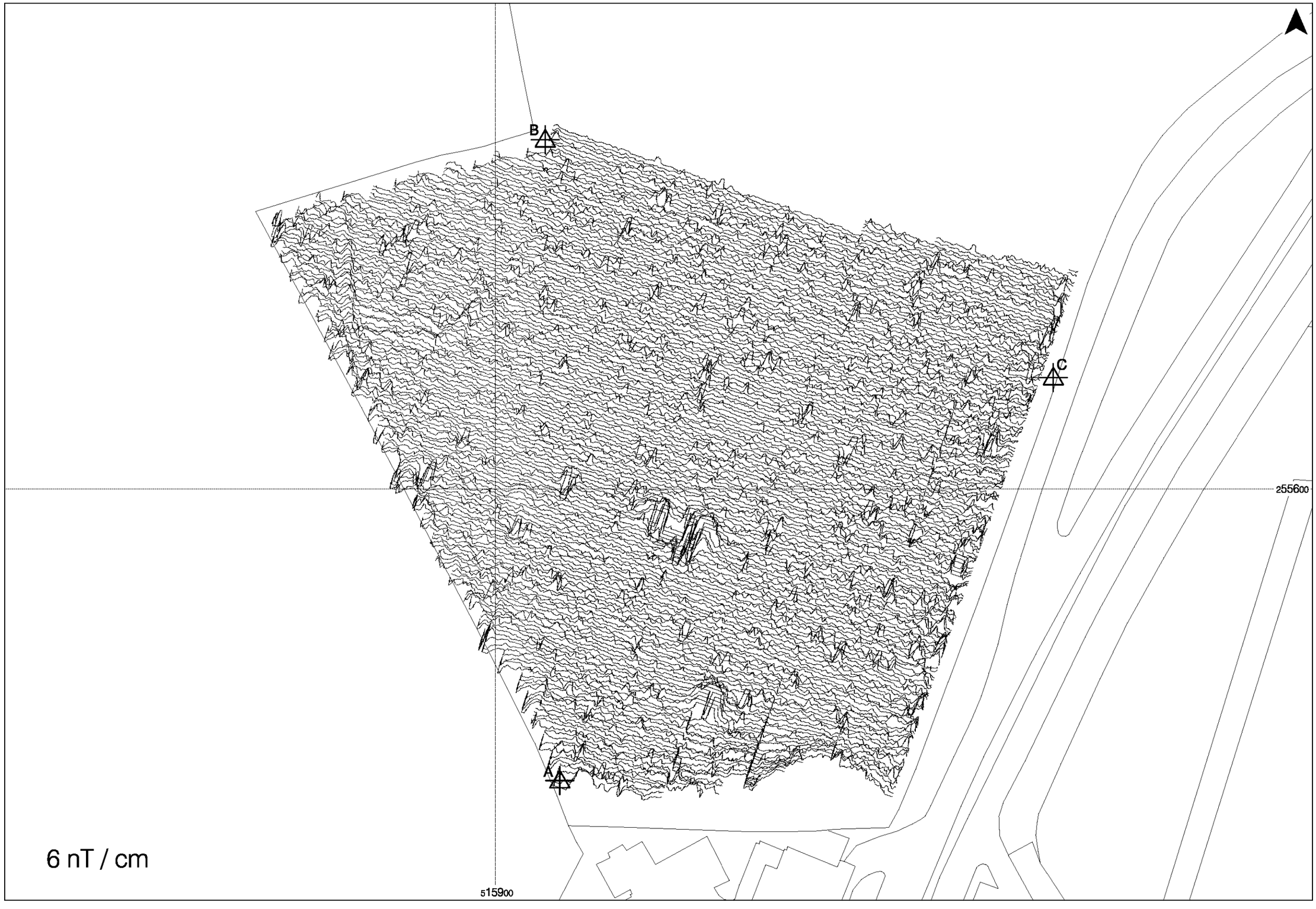


Figure 4: XY trace plot of unprocessed gradiometer data (*scale 1:1000*)

5. Results: Trenching

5.1 *Presentation of Results*

5.1.1 A summary of the findings of the evaluation trenching is presented in Sections 5.2 – 5.6. The locations of the evaluation trenches are shown in Figure 5 and detailed description of the individual trenches and context data is presented in Appendix 1.

5.1.2 Recovered finds and samples are summarily described in Section 5.6; more detailed information is presented in the specialist reports (Appendix 4). A summary of finds is also presented along with context information in the detailed trench descriptions (Appendix 1).

5.2 *Soils and Site Conditions*

5.2.1 The greater part of the pda had been arable land during modern and earlier periods. The observed soil and sediment profile varied in depth slightly, but was largely consistent and on average can be characterised as:

- Topsoil: Mid-dark brown organic (*c.*200-400mm)
- Subsoil: Mid orange brown loamy subsoil. (*c.*200-400mm)

5.2.2 The underlying natural deposit at the majority of the site was orange brown clay with patches of yellow sand.

5.2.3 The majority of the trenches remained dry during the evaluation. However, limited standing water accumulated in trenches 10, 14 and 15 at the southeast of the site after they were opened.

5.3 *Summary of Archaeological Features*

5.3.1 Nine of the seventeen evaluation trenches contained archaeological features.

5.3.2 Trenches at Area A (Fig. 5) were targeted on geophysical anomalies interpreted as archaeological ditches and pits. Investigation of cut features revealed by the trenches confirmed the existence of slightly truncated ditches and pits. Roman pottery was recovered from their fills.

5.3.3 Shallow archaeological ditches and pits not identified by the geophysical survey were present at the centre north (Trench 8) and at the centre south, (Trenches 10, 15, 17 and 14) of Area B.

5.3.4 The ditches and pits within trenches 8, 10, 15 and 17 were not dated by finds.

5.3.5 On the whole there was a paucity of artefactual or other evidence and interpretation of the date, character and significance of many of the features has proved problematic.

5.4 *Area A*

5.4.1 The majority of securely dated archaeological features were present within four trenches opened at Area A. The character of the excavated features suggests a combination of drainage, enclosure and agricultural activity peripheral to a focus of settlement, probably at the cropmark complex located immediately to the west of the evaluated area.

5.4.2 Trench 4 (Fig. 7) targeted a north - south aligned magnetic anomaly interpreted as a ditch. The trench confirmed the presence of a substantial boundary ditch, [405], (Plate 1) with a 3.70m wide and 1.32 m deep '*U'* shaped profile. The ditch continues to the south as a cropmark. A small undated pit [410] with a shallow '*U'* shaped profile was located slightly to the west of the aforementioned ditch.

5.4.3 A weakly magnetic curving geophysical anomaly was targeted by trenches 2, 3 and 5 and the presence of a ditch with a shallow '*U'* shaped profile was confirmed within all of the trenches; all investigated sections [212] [306] [504] had similar fills(Figs 6 & 8, Plates 2 & 3) .

5.4.4 Results of the geophysical survey suggest that the curving enclosure ditch discussed in the previous section terminated slightly west of the substantial boundary ditch present within trench 4 (Section 5.4.2). However, the relationship of the ditches was not investigated during the evaluation and it is uncertain whether the curving ditch forms the corner of a large sub-rectangular enclosure visible to the west as a cropmark, or if it bounds an unrelated small enclosure or trackway.

5.4.5 The geophysical survey indicated that another curving ditch may be located approximately 6m to the north of the curving ditch discussed in section 5.4.3. A WSW-ESE aligned segment of the proposed ditch which exhibited the strongest magnetic anomaly was targeted by trench 4 and the presence of a ditch [416] with a shallow '*U'* shaped profile was confirmed. A ditch [205] (Fig. 6) within trench 2 had a similar profile, this ditch was not identified by the geophysical survey but may form a continuation of the ditch [416] segment identified in trench 4. The ditch within trench 2 ran NW-SE and its fill contained one sherd of Roman pottery.

5.4.6 Trench 2 (Fig. 6) also revealed two undated linear features [207 and 209] with shallow '*U'* shaped profiles within the area bounded by the two curving ditches discussed in sections 5.4.3 – 5.4.5. They ran side by side, and were aligned NE-SW, similar to the orientation of weak magnetic trends located to the south, which are interpreted as remnants of ploughed out ridge and furrow. The two features may originate with agricultural activity of medieval or later date.

5.4.7 Trench 5 (Fig. 8, Plate 3) targeted magnetic anomalies interpreted as pits located within the area bounded by the two curving ditches discussed in sections 5.4.3 – 5.4.5. The presence of five sub-circular pits with shallow '*U'* shaped profiles was confirmed. Two of the pits [509, 511] contained single sherds of Roman pottery and another [507] contained three sherds of Roman pottery. Other forms of evidence were absent (Appendix 4) and the function of the pits remains uncertain.

5.5 *Area B*

5.5.1 Twelve trenches were opened at Area B. Trenches 6, 7, 9, 11, 12, 13 and 16 were negative.

5.5.2 Trenches 8, 10, 14, 15 and 17 contained shallow undated and often tentatively identified archaeological features. The majority of these were NNW – SSW aligned shallow linear features, similar to the orientation of weak magnetic anomalies interpreted as identifying remnants of ridge and furrow or more recent agricultural activity. The absence of secure dating evidence means that the significance of many of these features is uncertain and most are not discussed further. The location of all features within Area B is shown on Figure 5 and detail of all features is presented in the relevant trench tables.

5.5.3 Trench 8 contained two small shallow pits [808], [812], both were cut through the subsoil and are of relatively recent date. A larger possible pit [814] was only partially revealed at the southern side of the trench; it was sealed by the subsoil, but its very shallow profile and irregular base suggest that it is the result of bioturbation rather than human activity.

5.5.4 The features of most interest at Area B were not identified by the geophysical survey and are located at the southeast of the evaluated area. Two NE – SW aligned shallow ditches with *'U'* shaped profiles were present in trench 14 [1409, 1412] (Fig. 9). Two similarly aligned ditches were present within trench 15, one had a shallow *'U'* shaped profile [1505], and one remained unexcavated [1506] due to the presence of standing water. A sherd of Roman pottery was recovered from the surface of ditch [1409] but does not provide a secure date for this feature. The absence of magnetic anomalies may suggest that the ditches define agricultural activity located at some distance from settlement.

5.5.5 The ditches within trenches 14 and 15 and a small pit (unexcavated because of standing water) located at the eastern end of trench 14 were sealed by the subsoil; they are differently aligned to and may predate the medieval and later agricultural activity.

5.5.6 Trenches 11 and 17 were opened to examine the origin of three very strong magnetic anomalies. Archaeological features which may cause magnetic anomalies of this type were not present and a likely explanation is magnetic enhancement of soils through intense recent burning.

5.6 *Finds*

5.6.1 Roman pottery was recovered from the fills of ditches and pits at Area A. Dating of the pottery has suggested that the zenith of activity at this area may have occurred during the late 1st then into the 2nd century.

5.6.2 Bulk environmental samples were collected from the fills of archaeological features examined at Area A. No charred seed remains were present and nothing can be said about the contemporary environment or economy.

5.6.3. Fourteen animal bone fragments were recovered from archaeological features investigated at Area A. The results suggest a poor state of preservation. All bone fragments derive from large mammals with one fragment from ditch [306] displaying cut marks.

Plate 1: South facing section of ditch [405]

Plate 2: South facing section of ditch [305] (same as [212] & [504]?)

Plate 3: Trench 5-(ditch [504] in the foreground and pits [507-515] in the background, looking north

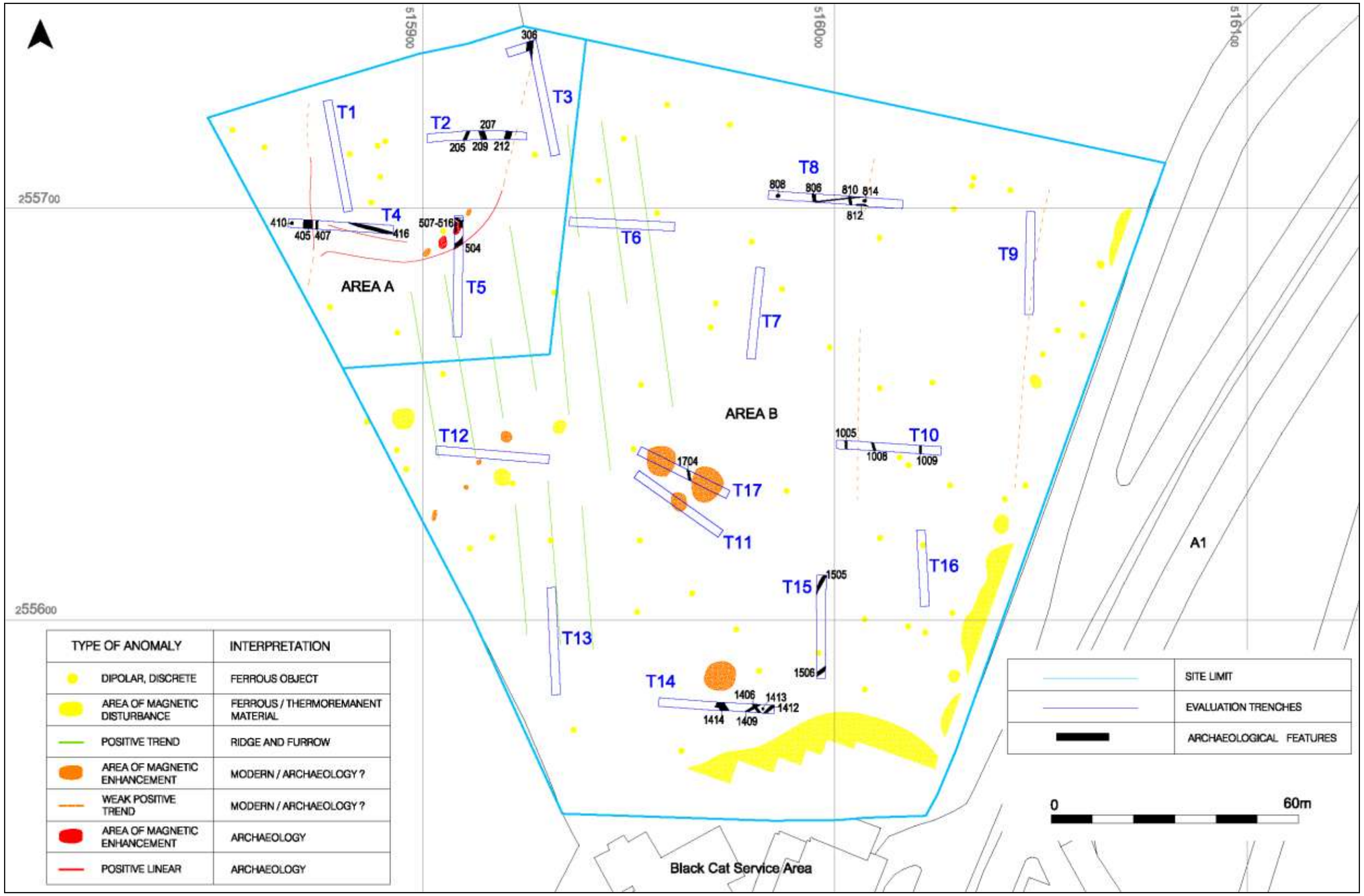
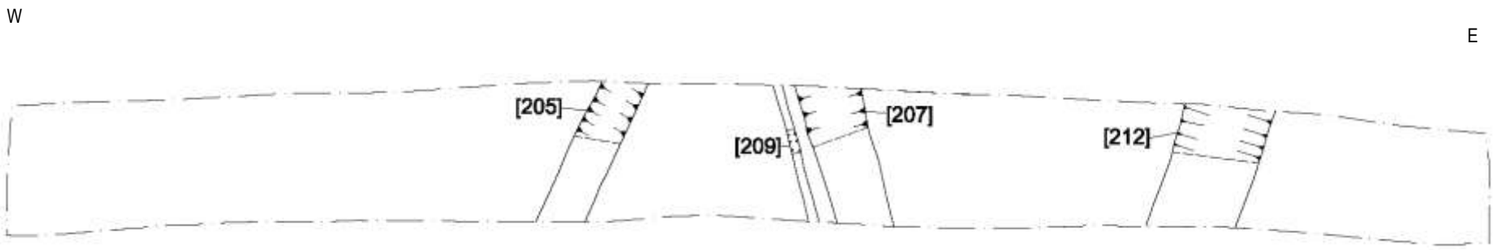
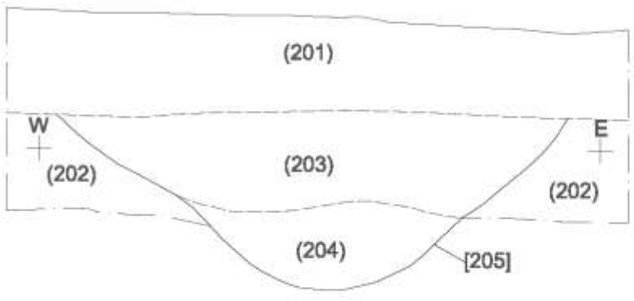


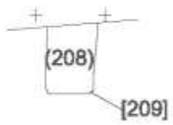
Figure 5: Trench locations and archaeological features overlying the interpretation of geophysical survey (*scale 1:1000*)



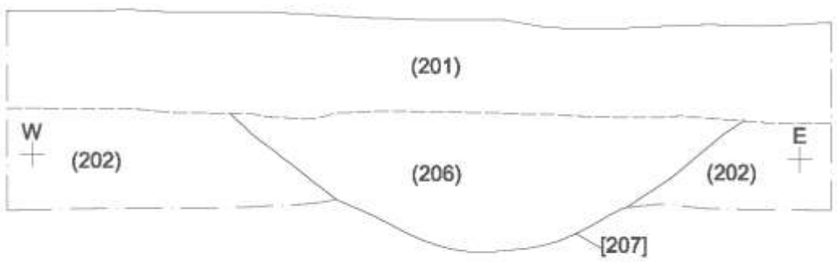
Trench 2 plan (*scale 1:100*)



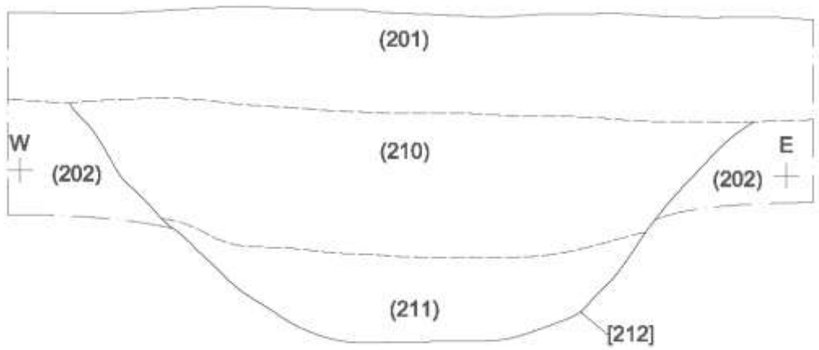
Section of ditch [205] *(scale 1:20*)



Section of feature [209] *(scale 1:20*)



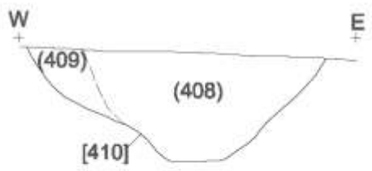
Section of ditch [207] *(scale 1:20*)



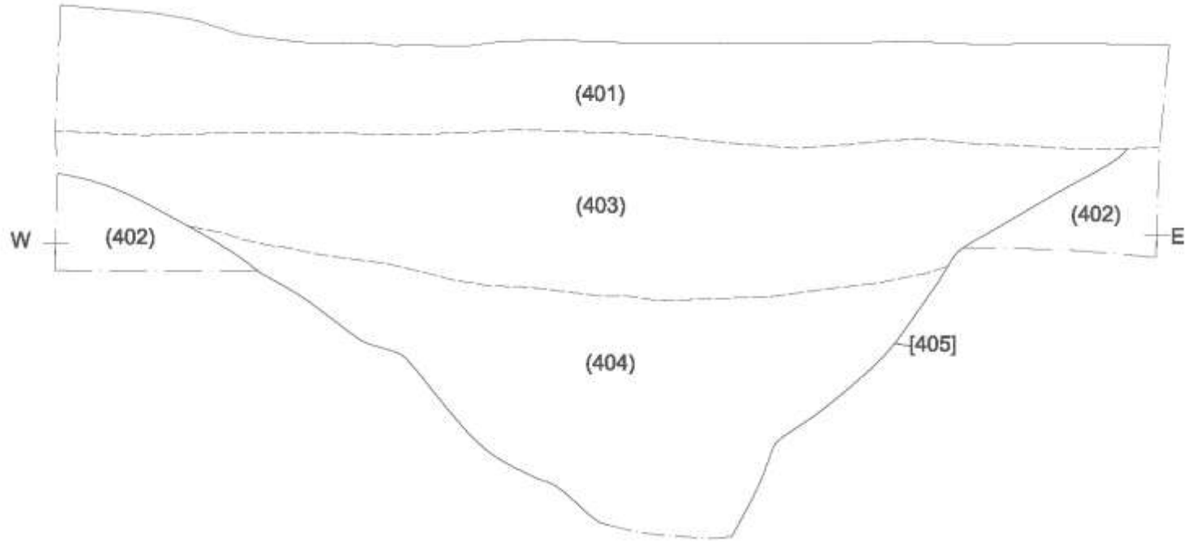
Section of ditch [212] *(scale 1:20*)

Figure 6: Trench 2, plan and sections

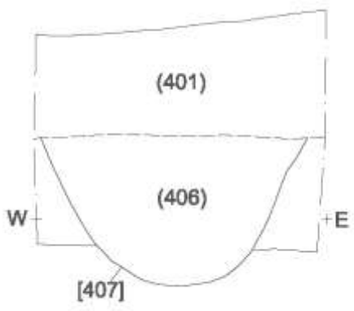
Trench 4 plan (*scale 1:100*)



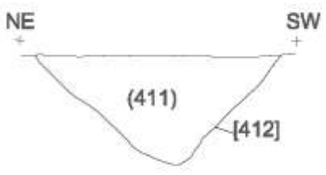
Section of pit [410] *(scale 1:20)*



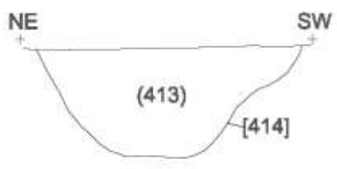
Section of ditch [405] *(scale 1:20)*



Section of ditch [407] *(scale 1:20)*

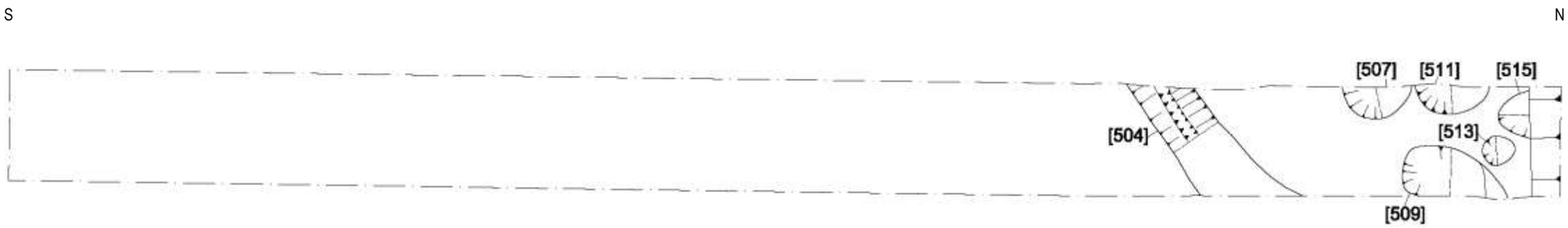


Section of ditch [412] *(scale 1:20)*

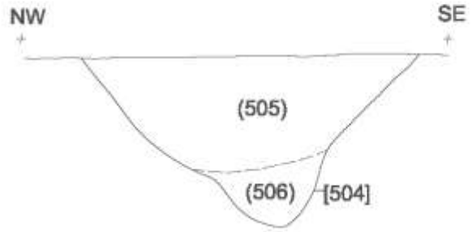


Section of ditch [414] *(scale 1:20)*

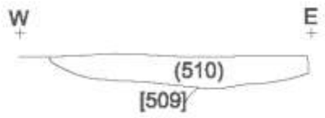
Figure 7: Trench 4, plan and sections



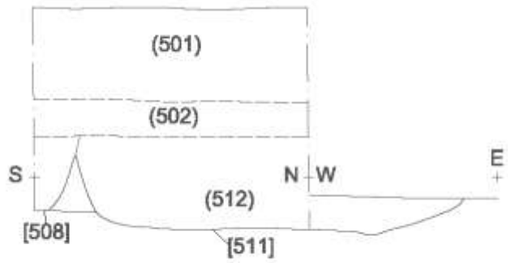
Trench 5 plan (*scale 1:100*)



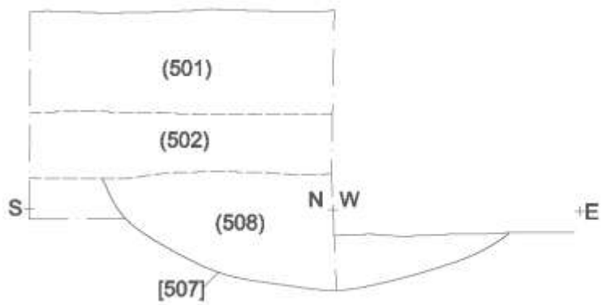
Section of ditch [504] *(scale 1:20)*



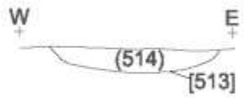
Section of pit [509] *(scale 1:20)*



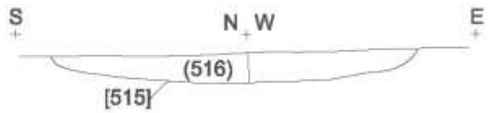
Section of pit [511] *(scale 1:20)*



Section of pit [507] *(scale 1:20)*

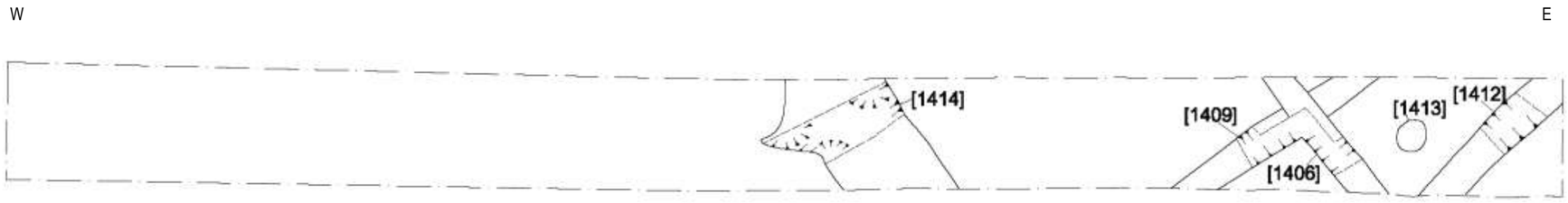


Section of pit [513] *(scale 1:20)*

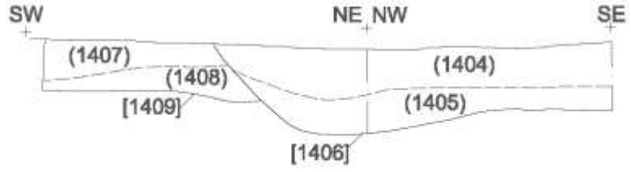


Section of pit [515] *(scale 1:20)*

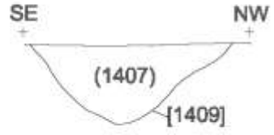
Figure 8: Trench 5, plan and sections



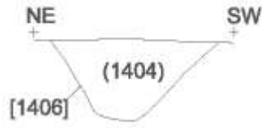
Trench 14 plan (*scale 1:100*)



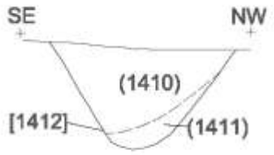
Section of ditches [1406 & 1409] *(scale 1:20*)



Section of ditch [1409] *(scale 1:20*)



Section of ditch [1406] *(scale 1:20*)



Section of ditch [1412] *(scale 1:20*)

Figure 9: Trench 14, plan and sections

5. Conclusions

5.1 The geophysical survey and evaluation trenching have identified and examined a *foci* of archaeological ditches and pits located at the northwest of the pda.

5.2 The ditches and pits are dated to the late 1st or 2nd century by recovered finds. They represent the westernmost extent of an area of intense archaeological activity comprising enclosures, structural features and pits which is identified within the field immediately to the west of the pda as cropmarks.

5.3 The results of the geophysical survey and the paucity of recovered finds or other evidence could suggest that the Roman features lie at some distance from the focus of contemporary settlement activity.

5.4 At the centre and east of the pda limited other features were present. On the whole they were relatively dispersed, aligned approximately north – south and all were undated and shallow. Many of the features have a similar orientation to parallel magnetic trends interpreted as medieval or later ploughing and the majority probably locate remnants of furrows of these periods.

5.5 An exception to the agricultural activity discussed in the previous section may be identified at the southeast of the pda where southwest - northeast aligned ditches were intersected by trenches 14 and 15. The ditches were not dated by finds but their alignment could suggest that they locate activity predating the medieval period.

5.6 Development of the northwest of the evaluated area may have a severe impact on heritage assets dating to the Roman period dependent on detailed design. The development is also likely to have a severe impact on undated ditches located at the southeast of the pda which are tentatively interpreted as predating the medieval period. Elsewhere, the majority of investigated archaeological features probably have an origin with medieval or later agricultural activity, the development will have a severe impact on these heritage assets but they are of relatively low significance.

5.7 *Confidence rating*

The geophysical survey and evaluation trenching was undertaken in dry, overcast weather conditions. On the whole there is a good correlation between the results of the geophysics and the trenching. During the trenching archaeological features were easily discernible from the surrounding natural matrix. Accordingly, a high confidence rating is attached to the results of the evaluation.

6. Acknowledgements

The evaluation was commissioned by *Mr Tony Coates*. The writer is grateful to the on site contractors of *Henry Haulage Ltd* for their assistance. The project was monitored by *Geoff Saunders* of the *Historic Environment Team of Bedford Borough Council* on behalf of the local planning authority. Thanks are also due to *Nick Cooper*, *Anita Radini* and *Jennifer Browning* from the *University of Leicester Archaeological Service (ULAS)*.

The project was managed for ASC by Alastair Hancock BSc PgDip MIFA. Fieldwork was carried out by Martin Cuthbert BA (Hons) PIFA, Chris Swain and Zoe Clarke. The report was prepared by Martin Cuthbert and edited by Alastair Hancock.

7. Archive

7.1 The project archive will comprise:

1. Brief
2. Project Design
3. Initial Report
4. Clients site plans
5. Site records
6. Finds records
7. Finds
8. Sample records
9. Site record drawings
10. List of photographs
11. B/W prints & negatives
12. Original specialist reports and supporting information
13. CDROM with copies of all digital files.

7.2 The archive will be deposited with *Bedford Museum.*

8. References

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Appendix 1: Trench Summary Tables

Trench 1

General Description	Orientation	N-S
The trench was devoid of archaeology. Top and subsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	26.70m
	Width	2.10m
	Avg. Depth	0.94m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
101	Layer	Dark brown silty clay loam-Topsoil	-	0.25m	-	-
102	Layer	Mid-dark orange brown plastic silty clay- Subsoil	-	0.60m	-	-
103	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 2

General Description	Orientation	E-W
Two NE-SW ditches [205] and [212] were present. A NW-SE ditch [207] and a shallow gully [209] running parallel to [207] were also revealed within this trench. The features were sealed by the topsoil and Roman pottery was recovered from the secondary fill of [205].	Length	25.30m
	Width	2.10m
	Avg. Depth	0.80m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
201	Layer	Dark brown silty clay loam-Topsoil	-	0.30m	-	-
203	Fill	Secondary fill of ditch [205]	1.60m	0.20m	Pot	RB
204	Fill	Primary fill of ditch [205]	0.90m	0.20m		RB
205	Cut	Linear, NE-SW	1.60m	0.60m		RB
206	Fill	Fill of ditch [207]	1.65m	0.45m	Fe	
207	Cut	Linear, NW-SE	1.65m	0.45m		
208	Fill	Fill of feature [209]	0.20m	0.25m		
209	Cut	Linear, NW-SE, runs parallel to [207]	0.20m	0.25m		
210	Fill	Secondary fill of ditch [212]	2.20m	0.45m		
211	Fill	Primary fill of ditch [212]	1.60m	0.30m	Bone	
212	Cut	Linear, NNE-SSW	2.20m	0.65m		
202	Layer	Mid-dark orange brown plastic silty clay- Subsoil	-	0.40m	-	-
213	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 3

General Description	Orientation	N-S & E-W
One ditch was present in this trench, aligned NE-SW at the trenches northern end. This ditch is thought to be the same as [212]. The feature was sealed by the topsoil	Length	26m & 6m
	Width	2.10m
	Avg. Depth	0.55m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
301	Layer	Dark brown silty clay loam-Topsoil	-	0.35m	-	-
304	Fill	Secondary fill of ditch [306]	1.80m	0.60m		
305	Fill	Primary fill of ditch [306]	1.33m	0.52m	Bone	
306	Cut	Linear, NNE-SSW	1.80m	0.97m		
302	Layer	Orange-mid brown plastic silty clay- Subsoil	-	0.20m	-	-
303	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 4

General Description	Orientation	E-W
A pit [410] was present at the western end of the trench. A large N-S aligned ditch [405] was present at the western end of the trench, east of the aforementioned pit. Alongside this, running parallel ran a shallow gully [407]. A NW-SE aligned ditch [412] & [414] was present within the trench running from the centre of the trench to the eastern end, Roman pottery was recovered from the fill.	Length	25.90m
	Width	2.10m
	Avg. Depth	0.90m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
401	Layer	Dark brown silty clay loam-Topsoil	-	0.35m	-	-
403	Fill	Secondary fill of ditch [405]	3.7m	0.34m	Pot & Bone	
404	Fill	Primary fill of ditch [405]	2.4m	0.78m		
405	Cut	Linear, N-S	3.7m	1.32m		
406	Fill	Fill of ditch [407]	0.85m	0.49m		
407	Cut	Linear, N-S	0.85m	0.49m		
408	Fill	Secondary fill of pit [408]	0.78m	0.35m		
409	Fill	Primary fill of pit [408]	0.30m	0.24m		
410	Cut	Pit, sub-circular	0.85m	0.35m		
416	Group Cut No	Excavated segments [412] and [414]				
411	Fill	Fill of ditch [412]	0.80m	0.35m	Pot	RB
412	Cut	Linear, NW-SE, same as [414]	0.80m	0.35m		RB
413	Fill	Fill of ditch [414]	0.85m	0.35m	Pot	RB
414	Cut	Linear, NW-SE, same as [412]	0.85m	0.35m		RB
402	Layer	Mid-dark orange brown plastic silty clay- Subsoil	-	0.55m	-	-
415	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 5

General Description	Orientation	N-S
A ditch [504] was located 5m from the northern end of the trench aligned NE-SW roman pottery was recovered from the primary fill oft this feature. Five shallow pits were located north of aforementioned ditch three of which contained Roman pottery.	Length	28m
	Width	2.10m
	Avg. Depth	0.7m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
501	Layer	Dark brown silty clay loam-Topsoil	-	0.40m	-	-
505	Fill	Secondary fill of ditch [504]	1.10m	0.39m		
506	Fill	Primary fill of ditch [504]	0.32m	0.21m	Pot	RB
504	Cut	Linear, NE-SW	1.10m	0.56m		RB
502	Layer	Orange plastic silty clay- Subsoil	-	0.30m	-	-
508	Fill	Fill of pit [507]	0.57m	0.37m	Pot	RB
507	Cut	Pit, shape in plan unknown	0.57m	0.37m		RB
510	Fill	Fill of pit [509]	0.80m	0.15m	Pot & bone	RB
509	Cut	Pit, sub-oval	0.80m	0.15m		RB
512	Fill	Fill of pit [512]	0.50m	0.25m	Pot	RB
511	Cut	Pit, sub-oval	0.50m	0.25m		RB
514	Fill	Fill of [513]	0.55m	0.08m		
513	Cut	Pit, circular	0.55m	0.08m		
516	Fill	Fill of pit [515]	0.63m	0.08m		
515	Cut	Pit, Shape in plan unknown	0.63m	0.08m		
503	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 6

General Description	Orientation	E-W
The trench was devoid of archaeology. Top and subsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	24m
	Width	2.10m
	Avg. Depth	0.65m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
601	Layer	Dark brown silty clay loam-Topsoil	-	0.35m	-	-
602	Layer	Mid-dark orange brown plastic silty clay- Subsoil	-	0.20m	-	-
603	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 7

General Description	Orientation	N-S
The trench was devoid of archaeology. Top and subsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	22m
	Width	2.10m
	Avg. Depth	0.60m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
701	Layer	Dark brown silty clay loam-Topsoil	-	0.30m	-	-
702	Layer	Mid-dark orange brown plastic silty clay- Subsoil	-	0.30m	-	-
703	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 8

General Description	Orientation	E-W
Two shallow ditches, aligned N-S, were present. Ditch [810] was located 12m from the trenches eastern end, whilst [806] was located 10m from the trenches western end. A shallow circular pit [808] was present at the western end of the trench. Two further pits [812 & 814] were present just east of ditch [810]. All were undated.	Length	32m
	Width	2.10m
	Avg. Depth	0.3-0.5m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
801	Layer	Dark brown silty clay loam-Topsoil	-	0-0.35m	-	-
804	-	Voided				
805 806	Fill Cut	Fill of ditch [806] Linear, N-S	0.85m 0.85m	0.40m 0.40m		
807 808	Fill Cut	Fill of pit [808] Pit, circular	0.95m 0.95m	0.20m 0.20m		
809 810	Fill Cut	Fill of ditch [810] Linear, N-S	1.50m 1.50m	0.50m 0.50m		
811 812	Fill Cut	Fill of feature [812] Possible natural feature, Sub-circular	1.60m 1.60m	0.10m 0.10m		
813 814	Fill Cut	Fill of truncated pit [814] Pit, circular	0.85m 0.85m	0.15m 0.15m		
802	Layer	Mid brown- orange plastic silty clay- Subsoil	-	0.20m	-	-
803	Layer	Orange clay and yellow sand and gravel – Natural	-	-	-	-

Trench 9

General Description	Orientation	N-S
The trench was devoid of archaeology. A highly truncated topsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	24m
	Width	2.10m
	Avg. Depth	0.1m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
901	Layer	Dark brown silty clay loam - Highly truncated topsoil	-	0.1m	-	-
902	Layer	Orange clay and gravelly sand – Natural	-	-	-	-

Trench 10

General Description	Orientation	E-W
A small ditch [1005] aligned N-S was present 2.5m from the trenches western end. Ditch [1008] was aligned NW-SE and was located in the centre of the trench. Ditch [1009] was not excavated due to excess water.	Length	25m
	Width	2.10m
	Avg. Depth	0.5m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1001	Layer	Dark brown silty clay loam-Topsoil	-	0.25m	-	-
1004	Fill	Fill of gully [1005]	0.50m	0.25m	-	-
1005	Cut	Linear, N-S	0.50m	0.25m	-	-
1006	Fill	Secondary fill of ditch [1008]	0.74m	0.16m	-	-
1007	Fill	Primary fill of ditch [1008]	0.61m	0.20m	-	-
1008	Cut	Linear, NW-SE	0.74m	0.4m	-	-
1009	Cut	Linear, N-S, not excavated due to excess water	-	-	-	-
1002	Layer	Mid brown yellow silty clay- Subsoil	-	0.20m	-	-
1003	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 11

General Description	Orientation	NW-SE
The trench was devoid of archaeology. Top and subsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	24m
	Width	2.10m
	Avg. Depth	0.75m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1101	Layer	Dark brown silty clay loam-Topsoil	-	0.30m	-	-
1102	Layer	Orange brown plastic silty clay- Subsoil	-	0.40m	-	-
1103	Layer	Orange clay and yellow sand patches – Natural	-	-	-	-

Trench 12

General Description	Orientation	E-W
The trench was devoid of archaeology. Top and subsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	26m
	Width	2.10m
	Avg. Depth	0.4m-0.75m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1201	Layer	Dark brown silty clay loam-Topsoil	-	0.30m	-	-
1202	Layer	Mid brown-orange plastic silty clay- Subsoil	-	0.30m	-	-
1203	Layer	Orange clay and gravel patches – Natural	-	-	-	-

Trench 13

General Description	Orientation	N-S
The trench was devoid of archaeology. Top and subsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	25m
	Width	2.10m
	Avg. Depth	0.65m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1301	Layer	Dark brown silty clay loam-Topsoil	-	0.30m	-	-
1302	Layer	Mid brown-orange plastic silty clay- Subsoil	-	0.35m	-	-
1303	Layer	Orange clay and gravel patches – Natural	-	-	-	-

Trench 14

General Description	Orientation	E-W
A natural feature possibly the remnants of a hedgerow was present at the centre of the trench. A NE-SW aligned ditch [1412] was present at the eastern end of the trench. A ditch [1406] aligned NW-SE was present 3m from the eastern end of the trench. This ditch cut a NE-SW aligned ditch [1409] which contained Roman pottery. A pit *c*.3m from the trenches western end was not excavated due to excess water.	Length	26.8m
	Width	2.10m
	Avg. Depth	0.5m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1401	Layer	Dark brown silty clay loam-Topsoil	-	0.30m	-	-
1404	Fill	Secondary fill of ditch [1406]	0.55m	0.26m		
1405	Fill	Primary fill of ditch [1406]	0.42m	0.12m		
1406	Cut	Linear NW-SE, cuts [1409]	0.55m	0.26m		
1407	Fill	Secondary fill of ditch [1409]	0.64m	0.26m	Pot	RB
1408	Fill	Primary fill of ditch [1409]	-	0.12m		RB
1409	Cut	Linear, NE-SW, cut by [1406]	0.64m	0.26m		RB
1410	Fill	Secondary fill of ditch [1412]	0.61m	0.30m		
1411	Fill	Primary fill of ditch [1412]	0.35m	0.07m		
1412	Cut	Linear, NE-SW	0.61m	0.35m		
1413	Cut	Pit, not excavated due to excess water	-	-		
1414	Cut	Natural feature, remnants of hedgerow	-	-		
1402	Layer	Mid brown-orange plastic silty clay- Subsoil	-	0.20m	-	-
1403	Layer	Light brown –yellow clay and gravel patches – Natural	-	-	-	-

Trench 15

General Description	Orientation	N-S
Two ditches were present both NE-SW aligned. Ditch [1506] at the trenches southern end was not excavated due to excess water. Ditch [1505] was located 3m from the trenches northern end.	Length	24m
	Width	2.10m
	Avg. Depth	0.5m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1501	Layer	Dark brown silty clay loam-Topsoil	-	0.25m	-	-
1502	Layer	Mid brown-yellow plastic silty clay- Subsoil	-	0.25m	-	-
1504	Fill	Fill of ditch [1505]	0.85m	0.35m	-	-
1505	Cut	Linear, NE-SW	0.85m	0.35m	-	-
1506	Cut	Linear, NNE-SSW, not excavated due to excess water	-	-	-	-
1503	Layer	yellow and light grey clay and sand patches – Natural	-	-	-	-

Trench 16

General Description	Orientation	N-S
The trench was devoid of archaeology. Top and subsoil overlay a orange-yellow sandy clay with frequent gravel inclusions	Length	20m
	Width	2.10m
	Avg. Depth	0.4m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1601	Layer	Dark brown silty clay loam highly truncated-Topsoil	-	0.10m	-	-
1602	Layer	Mid brown-yellow plastic silty clay- Subsoil	-	0.30m	-	-
1603	Layer	Orange yellow clay with grey sandy patches – Natural	-	-	-	-

Trench 17

General Description	Orientation	NW-SE
A small shallow ditch was present at the centre of the trench aligned N-S.	Length	24m
	Width	2.10m
	Avg. Depth	0.55m

Contexts

Context No	Type	Description and Interpretation	Width (m)	Depth (m)	Finds	Date
1701	Layer	Dark brown silty clay loam-Topsoil	-	0.25m	-	-
1702	Layer	Mid brown-orange plastic silty clay- Subsoil	-	0.25m	-	-
1705	Fill	Fill of ditch [1704}	0.57m	0.06m	-	-
1704	Cut	Linear, N-S	0.57m	0.06m	-	-
1703	Layer	Orange clay and yellow sandy patches – Natural	-	-	-	-

Appendix 2: List of Photographs

SITE NAME: Land Adjacent to Black Cat Roundabout, Chawston, Beds				**SITE NO/CODE:** 1353/CBC
Shot	Film/Neg	B&W	Digital	Subject
1	1/15	✓	✓	South facing section through ditch [205], 1x0.5m
2	1/14	✓	✓	South facing section through ditch [405], 1x1m
3	1/13	✓	✓	South facing section through gully [407], 1x1m
4	1/12	✓	✓	South facing section through gully [407], 1x1m
5	1/11	✓	✓	South facing section through ditch [207] and gully [209], 1x2m
6	1/10	✓	✓	South facing section through pit [410], 1x1m
7	1/9	✓	✓	Northwest facing section through ditch [412], 1x1m
8	1/8	✓	✓	Northwest facing section through ditch [414], 1x1m
9	1/7	✓	✓	South facing section though ditch [212], 1x1m
10	1/6	✓	✓	South facing section though ditch [306], 1x2m
11	1/5	✓	✓	Southwest facing section through ditch [504], 1x1m
12	1/4	✓	✓	South facing section through ditch [806], 1x0.5m
13	1/3	✓	✓	East facing section through pit [808]
14	1/2	✓	✓	South facing section through gully [1005], 1x0.5m
15	1/1	✓		South facing section through gully [1005], 1x0.5m
16	2/36	✓	✓	Film ID shot
17	2/35	✓	✓	South facing section through ditch [810]
18	2/34	✓	✓	Southeast facing section though ditch [1008], 1x0.5m
19	2/33	✓	✓	East & south facing sections through pit [507] 1x0.5m
20	2/32	✓	✓	South facing section through pit [509], 1x0.5m
21	2/31	✓	✓	North facing section through pit [812]
22	2/30	✓	✓	North facing section through pit [814]
23	2/29	✓	✓	East and south facing section through pit [511] 1x0.5m
24	2/28	✓	✓	South facing section through pit [513] 1x0.5m
25	2/27	✓	✓	Southeast facing section through ditches [1406] & [1409] 1x0.5m
26	2/26	✓	✓	East and south facing sections through pit [515], 1x0.5m
27	2/25	✓	✓	Northwest facing section through ditch [1406], 1x0.5m
28	2/24	✓	✓	Northeast facing section through ditch [1409], 1x0.5m
29	2/23	✓	✓	North facing section through shallow ditch [1704], 1x0.5m
30	2/22	✓	✓	Northeast facing section through ditch [1412], 1x0.5m
31	2/21	✓	✓	Southwest facing section through ditch [1505], 1x0.5m scale
32			✓	South facing section though ditch [212], 1x1m
33			✓	Southwest facing section through ditch [504], 1x1m
34			✓	South facing section through ditch [806], 1x0.5m
35			✓	General shot of feature [414]-possible hedgerow
36			✓	General shot of all features within Trench 5, 1x2m
37			✓	General shot of all features within Trench 5, 1x2m
38			✓	General shot of trench 1 looking north, 1x2m
39			✓	Trench 1 strat, looking east, 2x1m
40			✓	General shot of trench 2 looking east, 1x2m
41			✓	Trench 2 strat, looking north, 2x1m
42			✓	General shot of trench 3 looking south, 1x2m
43			✓	General shot of trench 3 looking west, 1x2m
44			✓	Trench 3 strat, looking east, 2x1m

45			✓	General shot of trench 4 (wrong number on board), looking east, 1x2m
46			✓	Trench 4 strat, looking south, 2x1m
47			✓	General shot of trench 5 looking south, 1x2m
48			✓	Trench 5 strat, looking east, 2x1m
49			✓	General shot of trench 6 looking west, 1x2m
50			✓	Trench 6 strat, looking south, 2x1m
51			✓	General shot of trench 7 looking north, 1x2m
52			✓	Trench 7 strat, looking east, 2x1m
53			✓	General shot of trench 8 looking east, 1x2m
54			✓	Trench 8 strat, looking south, 2x1m
55			✓	General shot of trench 9 looking north, 1x2m
56			✓	Trench 9 strat, looking west, 2x1m
57			✓	General shot of trench 10 looking east, 1x2m
58			✓	Trench 10 strat, looking south, 2x1m
59			✓	General shot of trench 11 looking northwest, 1x2m
60			✓	Trench 11 strat, looking northeast, 2x1m
61			✓	General shot of trench 12 looking west, 1x2m
62			✓	Trench 12 strat, looking south, 2x1m
63			✓	General shot of trench 13 looking south, 1x2m
64			✓	Trench 13 strat, looking west, 2x1m
65			✓	General shot of trench 14 looking east, 1x2m
66			✓	Trench 14 strat, looking south, 2x1m
67			✓	General shot of trench 15 looking south, 1x2m
68			✓	Trench 15 strat, looking east, 2x1m
69			✓	General shot of trench 16 looking north-northwest, 1x2m
70			✓	Trench 16 strat, looking west-southwest, 2x1m
71			✓	General shot of trench 17 looking southeast, 1x2m
72			✓	Trench 17 strat, looking southwest, 2x1m
73-91			✓	General site shots and working shots (x19)

Appendix 3: Finds Concordance

Context		Pottery		Bone		Other Finds	
Cut no.	**Fill no.**	**(no)**	**(g)**	**(no)**	**(g)**	**Type**	**(no)**
205	203	1	2				
207	206					Fe object	1 (35g)
212	211			2	3		
306	305			14	130		
405	403	1	25	3	10		
412	411	1	4				
414	413	36	195				
504	506	1	1				
507	508	3	15			Daub	1 (1g)
509	510	1	1				
511	512	1	2				
1409	1407	1	1				
Tr 4	U/S	1	2				

Appendix 4: Specialist Reports

Roman Pottery

Nicholas J. Cooper, ULAS

Introduction
A small and poorly preserved assemblage of 47 sherds (252g) of early Roman pottery was retrieved from nine contexts recorded in the evaluation trenches. The material was analysed by form and fabric, using low power microscopy, and with reference to the Bedfordshire Ceramic Type Series (Wells 2008, 231-34 and Unpublished Central Bedfordshire document supplied by Mike Luke, Albion Archaeology) and the Milton Keynes Fabric Series developed by Pauline Marney (1989) for which fabric examples are held at ULAS. It was quantified by sherd count and weight and assigned a likely date of deposition.

Results
The analysis and quantification of the assemblage is summarised in the following table.

Roman period Pottery from Chawston Black Cat, Bedford								
Cut	Context	Fabric Gen	Fabric Sp	Form	Type	Sherds	Weight	Date
205	203	Oxidised	R05A	misc	misc	1	4	L1st-2nd
405	403	Reduced	R06B	jar		1	25	2nd cent
412	411	Reduced	R07	bowl	beadrim	1	4	2nd cent
414	413	Reduced	R06C	jar	necked	23	100	L1st-2nd
414	413	Reduced	R06C	jar	necked	10	62	L1st-2nd
414	413	Reduced	R06C	jar	misc	2	21	2nd cent
414	413	Reduced	R06B	jar	hookrim	1	12	2nd cent
504	506	Shelly	R13	jar	misc	1	2	M1st-2nd
507	508	Reduced	R06B	jar	lidseat	1	7	L1st-2nd
507	508	Reduced	R06B	jar	necked	1	7	L1st-2nd
507	508	Reduced	R06B	jar	misc	1	1	2nd cent
509	510	Oxidised	R05A	jar	misc	1	2	Ncd 2nd?
511	512	White	R03	misc	misc	1	2	L1st-2nd
1409	1407	Reduced	R06B	jar	misc	1	1	2nd cent
Tr. 4	US	Reduced	R06B	jar	misc	1	2	2nd cent
Total						**47**	**252**	**ASW 5g**

Analysis and Assessment of Potential
The assemblage is in a rather abraded condition and this is emphasised by the low average sherd weight of 5g. Joining sherds from diagnostic vessels only occurred in ditch fill (413) which contained about 75% of the assemblage. The rest of the assemblage comprised single sherds, and their condition suggests the incorporation of manuring or midden material into later context fills, perhaps at some distance from the centre of settlement activity. This makes the assessment of dating based on the pottery alone, rather difficult but tentative suggestions can be made. The majority of the assemblage occurs in the range of locally-produced, reduced sand-tempered wares (Bedford Fabrics R06B and C, R07B and possibly the 'Belgic' Fabric F09; broadly equivalent to Milton Keynes Fabrics 3, 9 and 47 respectively) which are in use

during the later 1st and 2nd centuries in this area. This contention is supported by the diagnostic forms present including the necked jars with shoulder and neck corrugations from (413) paralleled at Wavendon Gate (Parminter 1995, 179, fig 102.1 and 4 in forms similar to the products of Caldecotte Kiln 2), and the lid-seated jar from (508) (Parminter 1995, 180, fig.103.14). The total lack of grog-tempered wares (Fabric F06/MK46) suggests the assemblage was not deposited until the later 1st or 2nd century although the occurrence of only a single sherd of shell-tempered wares (Fabric R13/MK1A) does appear rather anomalous. The lack of any other distinctive regional wares such as grey ware products of the Lower Nene Valley (Fabric R06A) or pink grog-tempered wares, for example, would equally suggest that the assemblage was deposited before the end of the 2nd century. The assemblage is therefore similar to the Phase 10 material from Biddenham Loop, Bedford (Wells 2008, 271). The assemblage therefore adds to knowledge of the local production of pottery in the early Roman period but no further work is required.

References

Marney, P.T., 1989 Roman *and Belgic Pottery from Excavations in Milton Keynes 1972-82*. Buckingham Archaeological Society Monograph 2

Parminter, Y., 1996 'The Roman coarse pottery' in R.J. Williams, P.J. Hart and A.T.L. Williams *Wavendon Gate: A Late Iron Age and Roman Settlement in Milton Keynes*, 176-194. Aylesbury: Bucks. Arch. Soc. Monograph 10.

Wells, J., 2008 'Pottery' in M. Luke *Life in the Loop: Investigation of a Prehistoric and Romano-British Landscape in Biddenham Loop, Bedfordshire*, 271-7 and Appendix 2. East Anglian Archaeology Report 125.

The Animal Bones

Jennifer Browning, ULAS

Introduction

A total of 14 animal bones were recovered during archaeological evaluation at Black Cat, Chawston, Bedfordshire. The bones were identified with reference to comparative material held by the University of Leicester, School of Archaeology and Ancient History.

Results

Ditches [212] (211); [405] (403) and [306] (305) produced animal bones which were generally in a poor state of preservation, exhibiting evidence of both modern and ancient breaks and with porous, abraded surfaces. Only (403) also contained Roman pottery, probably dating to the 2nd century. There were very few diagnostic specimens but all the bones recovered belong to large mammals. The lack of smaller species provides further evidence for the poor survival of bones on the site. No further work is required on this material.

Context	No	Taxa	Brief Description
403	2	Large mammal	Shaft fragments
403	1	Large mammal	Rib fragment
305	1	Large mammal	Shaft fragment
305	1	Cattle	Axis (fragment from cranial end)
305	1	Large mammal	Cervical vertebra. Several fragments present, parallel cut marks noted on facet.
305	1	Large mammal	Skull (fragment)
305	5	Large mammal	fragments

211	1	Large mammal	Vertebral fragment
211	1	Large mammal	Unidentified fragment
Total	14		

Table of animal bones

The Environmental Evidence

Anita Radini, ULAS

Introduction
Environmental samples were taken during the evaluation in order to assess the potential for the recovery of plant and animal remains and to possibly clarify land use around the site.

Sampling and processing
Five bulk samples (see Table 1) were taken for processing by wet-sieving with flotation in a sieving tank to recover charred and mineralized plant remains, small bones and other animal remains. The samples were taken from a construction pit fill and a ditch fill and were between twenty to thirty litres in volume.

An appropriate volume of each sample was wet-sieved using a 0.5mm aperture mesh for the retention of the heavy residue with flotation onto a 0.3mm mesh. The flots were then dried, packed in polythene bags and then sorted for this report.
Each selected sample was sorted completely as the concentration of remains was low. This was done using a stereo microscope with magnifications ranging from x7 to x45. Due to the absence of charred remains consisting of seeds and fruits (charred and un-charred) and the recovery of only small flecks of charcoal, modern roots and snails, remains were noted by estimating abundance (x = 1 to 5 items, xx = 5 to 10). The results are presented in Table 1

Results
Overall, the assemblage was very poor. The biological remains consisted only of small flecks of charcoal, in very low quantity, two species of snails, one being the burrowing snail *Cecilioides acicula*, and very few modern roots fragments. The presence of the modern roots, together with the burrowing snail, found in ditch fills, suggests modern intrusive material, and a degree of bio-disturbance.

Sample	Context	Feature	V*	Charcoal flecks	Snails	Roots
1	510	pit fill	10	x		x
2	508	pit fill	10	x		x
3	413	ditch fill	10	x	x	x
4	404	ditch fill	10	x		x
5	506	ditch fill	10	x	xx	x

Results of Environmental analysis **V***=volume in Litres

Discussion and Conclusion
Although the samples examined were otherwise unproductive, the presence of small fragments of charcoal points to some human activity on the site. Therefore, if further excavation takes place on the site, the potential for the preservation of environmental remains should still be investigated by an appropriate sampling strategy. No further work is required on the present assemblage.

Appendix 5: Magnetic Survey: Technical Information

1. Magnetic Susceptibility and Soil Magnetism

1.1 Iron makes up about 6% of the Earth's crust and is mostly present in soils and rocks as minerals such as maghaemite and haematite. These minerals have a weak, measurable magnetic property termed ***magnetic susceptibility***. Human activities can redistribute these minerals and change (enhance) others into more magnetic forms. These effects are often observable by measuring the magnetic susceptibility of the topsoil, which can enable identification of areas where human occupation or settlement has occurred by virtue of the attendant increase (enhancement) in magnetic susceptibility. If the enhanced material subsequently fills features, such as ditches or pits, localised isolated and linear magnetic anomalies can result and their presence can be detected by a magnetometer (fluxgate gradiometer).

1.2 In general, it is a contrast between the magnetic susceptibility of deposits filling cut features, such as ditches or pits, and the magnetic susceptibility of the surrounding matrix, i.e. topsoils, subsoils and rocks, into which these features have been cut that causes the most recognisable archaeological responses. This is primarily because there is a tendency for magnetic ferrous compounds to become concentrated in the topsoil, thereby making it more magnetic than the subsoil or bedrock. Linear features cut into the subsoil or geology, such as ditches, that have been silted up or have been backfilled with topsoil will therefore usually produce a positive magnetic response relative to the background levels. Discrete feature, such as pits, can also be detected. Less magnetic material such as masonry or plastic service pipes that intrude into the topsoil may give a negative magnetic response relative to the background level.

1.3 An alternative method of enhancement to the magnetic properties of soil or archaeological features is through sustained heating. This can lead to the detection of features such as hearths, kilns or burnt areas through thermoremanent magnetism.

2. Types of Magnetic Anomaly

2.1 In the majority of instances anomalies are termed ***'positive'***. This means that they have a positive magnetic value relative to the magnetic background on any given site. However some features can manifest themselves as ***'negative'*** anomalies that, conversely, exhibit a negative anomaly relative to the mean magnetic background. Such negative anomalies are often very faint and although archaeological structures can cause them they commonly originate with the presence of modern, non-ferrous, features such as plastic water pipes. Natural geomorphological features may appear as negative anomalies on some geologies.

2.2 Where the cause of an anomaly is uncertain a '?' is appended to the interpretative key.

2.3 It should be noted that some anomalies that are interpreted as modern in origin might be caused by ephemeral features that are present in the topsoil or upper layers of the subsoil. Removal of soil to an archaeological or natural layer can therefore remove the origin of the anomaly.

2.4 The types of response mentioned above can be divided into five main categories which are used in the graphical interpretation of the magnetic data:

Isolated dipolar anomalies (iron spikes)

These responses are typically caused by ferrous material either on the surface or in the topsoil. They cause a rapid variation in the magnetic response giving a characteristic 'spiky' trace. Although ferrous archaeological artefacts could produce this type of response, unless there is supporting evidence for an archaeological interpretation, little emphasis is normally given to such anomalies, as modern ferrous objects are common on rural sites, often being present as a consequence of manuring.

Areas of magnetic disturbance

These responses can have several causes often being associated with burnt material, such as slag waste or brick rubble or other strongly magnetised/fired material. Ferrous structures such as pylons, mesh or barbed wire fencing and buried pipes can also cause the same disturbed response. This type of anomaly is characterised by very strong, 'spiky' variations in the magnetic background. A modern origin is usually assumed unless there is other supporting information.

Linear trend

This is usually a weak or broad linear anomaly of unknown cause or date. An agricultural origin, either ploughing or land drains is a common cause.

Areas of magnetic enhancement/positive isolated anomalies

Areas of enhanced response are characterised by a general increase in the magnetic background over a localised area whilst discrete anomalies are manifest by an enhanced response (sometimes only visible on an X–Y trace plot) on two or three successive traverses. In neither instance is there the intense dipolar response characteristic of an area of magnetic disturbance or of an 'iron spike' (see above). These anomalies can be caused by infilled discrete archaeological features such as pits or post holes or by kilns, with the latter often being characterised by a strong, positive double peak response. They can also be caused by pedological variations or by natural infilled features on certain geologies. Deeply buried ferrous material can also give a similar response. It may be difficult to establish an anthropogenic origin without intrusive investigation or other supporting information.

Linear and curvilinear positive anomalies

Such anomalies have a variety of origins. They may be caused by agricultural practice (recent ploughing, earlier ridge and furrow regimes or land drains), natural geomorphological features such as palaeochannels or by infilled archaeological ditches.

3. Methodology

There are two main methods of using the fluxgate gradiometer for commercial evaluations. The first of these is referred to as ***scanning*** and requires the operator to visually identify anomalous responses on the instrument display panel whilst covering the site in widely spaced traverses, typically 10-15m apart. The instrument logger is not used and there is therefore no data collection. Once anomalous responses are identified they are marked in the field with bamboo canes and approximately located on a base plan. This method is usually employed as a means of selecting areas for detailed survey when only a percentage sample of the whole site is to be subject to detailed survey. In favourable circumstances scanning may be used to map out the full extent of features located during a detailed survey.

The second method is referred to as ***detailed survey*** and employs the use of a sample trigger to automatically take readings at predetermined points, typically at 0.25m intervals, on zig-zag traverses 1m apart. These readings are stored in the memory of the instrument and are later dumped to computer for processing and interpretation.

A Bartington Grad 601-2 fluxgate gradiometer was used for the detailed gradiometer survey. Readings were taken, on the 0.1nT range, at 0.25m intervals on zig-zag traverses 1m apart within 30m by 30m square grids.

4. Data Processing and Presentation

The detailed gradiometer data has been presented in this report in X-Y trace and greyscale formats. The former option shows the 'raw' data with no processing other than grid biasing whilst in the latter the data has been selectively filtered to remove spurious errors such as striping effects and edge discontinuities caused by instrument drift and inconsistencies in survey technique caused by poor field conditions.

An X-Y plot presents the data logged on each traverse as a single line with each successive traverse incremented on the Y-axis to produce a 'stacked' plot. A hidden line algorithm may be employed to block out lines behind major 'spikes' and the data may be clipped to reduce the size of "iron spikes". The main advantage of this display option is that the full range of data can be viewed, dependent on the clip, so that the 'shape' of individual anomalies can be discerned and potentially archaeological anomalies differentiated from 'iron spikes'.

ArchaeoSurveyor was used to process the data and produce the greyscale images and XY trace plots. The processing methods are listed in detail in Appendix 4.

5. Archive

The geophysical archive comprises:-

- an archive disk containing the raw data files, plot meshes, composites and metadata, report text (Word 2000), and graphics files (CorelDraw12 and AutoCAD 2008) files.
- a full copy of the report

At present the archive is held by ASC Ltd although it is anticipated that it may eventually be lodged with the Archaeology Data Service (ADS). Brief details may also be forwarded for inclusion on the English Heritage Geophysical Survey Database after the contents of the report are deemed to be in the public domain (*i.e*. available for consultation in the relevant Sites and Monument Record Office).

Appendix 6: ASC OASIS Form

PROJECT DETAILS			
Project Name:	Land Adjacent to Black Cat Roundabout, Chawston, Beds	OASIS reference:	Archaeol2-83382
Short Description:	In June 2010 Archaeological Services and Consultancy Ltd undertook geophysical survey of 2.9 hectares followed by evaluation trenching in February 2011 at land adjacent to the Black Cat roundabout, Nr Chawston, Bedfordshire. The geophysics and trenching have defined an area of Roman ditches and pits located at the northwest of the potential development area (pda), which is a continuation of an extensive cropmark site focussed at the field immediately to the west. Elsewhere the evaluation has defined agricultural activity interpreted as dating to the medieval or later periods except at the southeast where two or possibly three undated shallow ditches may predate the medieval period.		
Project Type:	Evaluation		
Previous work: (eg. SMR refs)	Geophysics 2010	Site status: (eg. none, SAM, listed)	None
Current land use:	Agricultural Land	Future work: (yes/no/unknown)	Unknown
Monument type:	Agricultural ditches and pits	Monument period:	Roman
Significant finds: (artefact type & period)	Pottery, Bone and FE object		

PROJECT LOCATION			
County:	Bedfordshire	OS reference: (8 figs min)	TL 1597 5565
Site address: (+ postcode if known)	Land Adjacent to Black Cat Roundabout, Chawston, Beds		
Study area: (sq. m. / ha)	*c.*2.9 hectares	Height OD: (metres)	*c.*19.50m AOD

PROJECT CREATORS			
Organisation:	Archaeological Services & Consultancy Ltd		
Project brief originator:	Geoff Saunders	Project design originator:	Carina Summerfield-Hill
Project Manager:	Alastair Hancock	Director/Supervisor:	Martin Cuthbert
Sponsor / funding body:	Tony Coates		

PROJECT DATE			
Start date:	14-02-2011	End date:	22-02-2011

PROJECT ARCHIVES		
	Location (Accession no.)	Content (eg. pottery, animal bone, files/sheets)
Physical:	Bedford Museum BEDFM 2010.58	B&W prints and negatives
Paper:		Site records, report, site plans
Digital:		Images, report

BIBLIOGRAPHY (Journal/monograph, published or forthcoming, or unpublished client report)			
Title:	Land Adjacent to Black Cat Roundabout, Chawston, Beds		
Serial title & volume:	ASC Ltd Report ref. 1253/CBC/2		
Author(s):	Martin Cuthbert BA (Hons) PIFA		
Page nos	40	Date:	27-05-2011