BEDFORD WESTERN BYPASS NORTHERN SECTION BROMHAM ROAD, BEDFORD

RESULTS OF ARCHAEOLOGICAL EVALUATION

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Preface

Every effort has been made in the preparation of this document to provide as complete an assessment as possible, within the terms of the specification. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

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Structure of this Report

Section 1 serves as an introduction to the project, describing its location, archaeological background and the aims of the project. Section 2 describes the methodology and Section 3 summarises the results. Section 4 discussed the results and Section 5 is a bibliography. Sections 6 and 7 contain detailed finds and contextual data.

Key Terms

Throughout this document the following terms or abbreviations are used:

BWB-NS Bedford Western Bypass – Northern Section

Client Waterman Energy, Environment and Design

CUCAP Cambridge University Collection of Aerial Photography

EA Evaluation Area

HER Bedford Borough Council's Historic Environment Record

HET Bedford Borough Council's Historic Environment Team

If A Institute for Archaeologists

LNOBR Land North of Bromham Road Development Scheme

LPA Local Planning Authority

NMRC National Monument Record Collection

OD Ordnance Datum

Procedures Procedures Manual Volume 1: Fieldwork, 2nd ed. (Albion 2001)

Manual

WSI Written Scheme of Investigation



Non-Technical Summary

A planning application (11/02114/EIA) has been made for a single carriageway route linking the A428 Bromham Road (at its junction with Gold Lane/Deep Spinney) with the A6 Clapham Road (at its junction with Bedford Road). The route crosses a landscape with a variety of potential heritage assets dating from the Pleistocene to the modern day. The western part of the route has been partially evaluated as part of a previous development proposal. This revealed a wide spread of archaeological features across the evaluation area. Unfortunately very little dating evidence was retrieved from any of the features and their nature was therefore difficult to ascertain.

Albion Archaeology was commissioned by Waterman Energy, Environment and Design to undertake an archaeological evaluation of the road scheme. This comprised aerial photograph analysis, geophysical survey, geoarchaeological investigation and trial trenching. These were executed sequentially with each stage of work informing the strategy behind the next. The evaluation area was concentrated in the western part of the route and two of the three balancing ponds (including one to the east) because the eastern part of the route is to be constructed on embankment.

The results of the evaluation can be summarised as follows:

- Palaeolithic- despite the proximity of known finds spots of artefacts and palaeoenvironmental material of this period no such remains were found during the geoarchaeological test pitting and it is believed that the bypass does not impinge on the Biddenham Terrace
- Late Neolithic/early Bronze Age- one definite ring ditch was located within balancing pond 1. Ring ditches represent burial monuments and sometimes became the focus of later Bronze Age or Iron Age burials.
- Late Bronze Age/early Iron Age- a ditched enclosure and trackway were located within the western part of the road corridor. The presence of postholes within the enclosure and domestic debris suggest that this was part of a settlement.
- Early-middle Iron Age- a possible roundhouse was identified within the western part of the road corridor. Although similar in form to ring ditches, the diameter of this feature was more comparable with a roundhouse than a burial monument. To the east of the road scheme within pond 5 small quantities of Iron Age pottery were found within features of later date. This, and previous discoveries of Iron Age finds and a possible roundhouse in this area, suggest the presence of a settlement of this period in the vicinity.
- Late Iron Age/early Roman- a settlement of this period was located to the east of the road scheme within pond 5. It comprised ditched enclosures which produced large quantities of pottery and a number of postholes, although not all of the latter could be firmly dated. At the western end of the road scheme no evidence was found for any Roman activity in the vicinity of the stone-lined well found during quarrying in the 19th century.
- **Post-Roman** no evidence was found for Saxo-Norman or medieval activity within the evaluation area. 19th-century quarrying was identified at the western end of the road scheme and some post-medieval disturbance was noted within pond 5 at the east end.



1. INTRODUCTION

1.1 Project Background

A planning application (11/02114/EIA) has been made for a single carriageway route linking the A428 Bromham Road (at its junction with Gold Lane/Deep Spinney) with the A6 Clapham Road (at its junction with Bedford Road). The application includes associated infrastructure — a bridge over the Midland Mainline railway, a footbridge, cycleways/footways, an underpass, attenuation ponds and outfalls to the River Great Ouse.

The route is part of the Land North of Bromham Road (LNOBR) scheme area between Bromham Road in the south and the River Great Ouse in the north, which is identified in the Local Plan as suitable for accommodating housing, employment, recreational and community facilities and an A428-A6 link road.

An outline planning application (01/02199/OUT) for this scheme was submitted in 2002. A desk-based assessment and field evaluation in the form of aerial photo interpretation, geophysical survey and intrusive trial trenching were carried out as part of this scheme between 1998 and 2001 (detailed references in HET 2011).

Separate planning applications have since been submitted for the residential component and the link road (this development). As the proposed development lies within an area of archaeological sensitivity within the valley of the River Great Ouse, Bedford Borough Council's Historic Environment Team (HET) recommended archaeological evaluation of the site to specifically target the route of the Bedford Western Bypass – Northern Section (BWB-NS).

This was in line with *Planning Policy Statement 5: Planning for the Historic Environment* (now superseded by the *National Planning Policy Framework* published on 27th March 2012) and saved Local Plan policy BE24.

A Written Scheme of Investigation (WSI) was prepared in response to a brief for the archaeological evaluation issued by the HET (Albion 2012a). The evaluation comprised aerial photographic analysis, geophysical survey, trial trenching and geoarchaeological test pit investigation. The results will inform future decisions concerning the archaeological potential of the site with regard to the proposed development

1.2 Site Location and Description (Figure 1)

The proposed development area lies on the north-west edge of Bedford to the north of the village of Biddenham and to the east of the village of Bromham. The proposed single carriageway route runs from the Bromham Road/Deep Spinney roundabout in the south-west (NGR TL 01911 50511) across the Midland Mainline railway line to the A6/Bedford Road roundabout in the north-east (NGR TL 03721 51010). In total, the road and its associated infrastructure footprint measure c. 24.8ha in size.



The land is currently made up of arable fields and pasture plus the landscaped grounds of the Ouse Valley Golf Course to the west of the railway line, and rough ground and disused allotments to the east of the railway line.

The western part of the route from the A428 to the Ouse Valley Golf Club will largely be sited within a cutting (Section A). This and the associated roundabouts, footbridges, underpasses and balancing pond 1 were subject to this evaluation. The eastern part of the BWB-NS will be sited on an embankment from the point where the route crosses into the Ouse Valley Golf Club land and this continues to the A6. This part of the route was excluded from the evaluation with the exception of balancing pond 5. Balancing pond 3, which lies within the Great Ouse Valley Golf Course, was also excluded from the evaluation (with the exception of the aerial photograph analysis).

1.3 Archaeological Background (Figure 2)

The BWB-NS crosses a landscape with a variety of heritage assets dating from the Pleistocene to the modern day. These are listed in the Bedford Borough Council Historic Environment Record (HER). The archaeological background of the western part of the bypass has been investigated by an archaeological evaluation as part of the planning framework for the LNOBR and its results are incorporated into this section.

A large number of Palaeolithic hand-axes and environmental material were revealed in 19th-century quarry pits adjacent to the Bromham Road, *e.g.* Deep Spinney Pit (HER 327) (Luke 2007, 21 and 24). The latter was partially reexamined in the early 1990s revealing an undisturbed section of Pleistocene deposits including artefacts and paleoenvironmental material (Harding *et al.* 1991). Further isolated Palaeolithic stone tools have since been recovered during investigations in the Biddenham Loop area (Luke 2008, 73).

Cropmarks indicating potential Neolithic and/or Bronze Age ring ditches (HER 730, HER 1868) lie to the north of the proposed route of the bypass. They may represent a continuation of an extensive ritual landscape along the gravel banks of the River Great Ouse. The landscape of the Biddenham Loop to the south of the Bromham Road was extensively investigated from 1996 to 2008 (Luke 2008 and Albion in prep) and 30 ring ditches, settlement areas and burials were excavated and recorded as part of these works.

The investigations also revealed that settlement continued in the area throughout the middle-late Bronze Age, Iron Age and Roman periods (Luke 2008).

In the LNBOR scheme area, evidence for later prehistoric and Roman activity takes the form of cropmarks of enclosures and a trackway (HER 1867) and the findspots of two Iron Age gold coins (HER 11988 and 15945). Part of a possible hut circle together with an assemblage of Iron Age pottery was revealed during the construction of the railway (HER 329). A Roman well (HER 330) was discovered near the Deep Spinney roundabout during gravel extraction in 1857. It consisted of a stone-lined shaft which contained pottery, animal bones, a human skeleton



and fragments of sculpture. The nature of the finds assemblage from the well suggests it may be part of a ritual villa complex (Simco 1984, 59 and fig. 56).

Very little evidence for Saxon or medieval occupation has so far been recorded in the LNOBR scheme area or its vicinity with the exception of the villages of Biddenham and Bromham. On the Biddenham Loop there is evidence that at least one of the Romano-British farmsteads continued in use into the early Saxon period, but after that the Loop contained arable fields (Albion in prep). It is likely that most of the land adjacent to Biddenham and Bromham would have been given over to agriculture or pasture in the medieval and post-medieval periods.

In the 19th century, gravel extraction took place in several areas in the fields adjacent to the Bromham Road. Gravel pits and a slake pit are recorded immediately north of the Deep Spinney roundabout (HER 974, HER 2873) and towards the railway line (HER 168, HER 5085). The site of a windmill close to the Bromham Road (HER 3192) indicates the processing of grain from the surrounding fields.

The previous trial trenching associated with the LNOBR scheme revealed a wide spread of archaeological features across the evaluation area. Unfortunately very little dating evidence was retrieved from any of the features and their nature was therefore difficult to ascertain. A concentration of Romano-British settlement activity was revealed in trenches in the southern part of the site, coinciding with cropmark complex HER 1867 (Foundations 2002).

1.4 Project Objectives

Frameworks for research devised for the region are the *Revised Framework for the East of England* (Medlycott 2011) and for the county *Bedfordshire Archaeology*. *Research and Archaeology: Resource Assessment, Research Agenda and Strategy* (Oake *et al.* 2007).

The project objectives were described in the Written Scheme of Investigation (Albion 2012) and are therefore only summarised here:

- 1. To assess the nature and significance of the Pleistocene deposits and Palaeolithic remains within the EA (for details see HET 2011);
- 2. Could any Neolithic or Bronze Age settlement sites be identified that might be contemporary with the funerary monuments (ring ditches)?
- 3. Obtain further evidence on the nature and date of the potential ring ditches.
- 4. Obtain further evidence on the nature and date of the potential settlement sites and field boundaries revealed in the previous evaluation.
- 5. Assess how the archaeological assets within the EA fit into the wider landscape of settlement evolution and distribution of all periods within the Great Ouse valley.
- 6. Assess how any identified archaeological assets within the EA fit into the wider prehistoric ritual landscape.

The general objectives of the investigation were:



- 1. To determine the presence or absence of buried archaeological assets in the EA:
- 2. To clarify the date, extent, layout and complexity of buried archaeological assets in the EA;
- 3. To identify the integrity and state of preservation of any archaeological features or deposits present in the EA;
- 4. To recover palaeo-environmental remains to determine local environmental conditions.
- 5. To produce an archive report/publication that fully describes the archaeological works and findings, defining the value of the EA and its potential heritage assets and disseminating the findings.



2. METHODOLOGY

2.1 Introduction

The field investigations comprised the following components, which were executed sequentially with each stage informing the strategy of the next:

- Aerial photographic analysis (Air Photo Services 2012)
- Geophysical survey (ArchaeoPhysica Ltd. 2012)
- A programme of archaeological observation and recording (Albion Archaeology)
- Trial trenching (Albion Archaeology)
- Geoarchaeological test-pitting (Allen *et al.* 2012)

Methodological statements on each stage of works are provided in the WSI (Albion 2012a) and the relevant specialist reports (references given above). A separate WSI was written for the programme of archaeological observation and recording (Albion 2012b). The methodology for the trial trenching is summarised below.

Throughout the project the standards set out in the following documents were adhered to:

- If A's Code of Conduct (2010)
- If A's Standards and Guidance for Field Evaluation (2008)
- Albion Archaeology's *Procedures Manual for Archaeological Fieldwork* and the Analysis of Fieldwork Records (2001)
- English Heritage's Management of Archaeological Projects (1991)

2.2 Trial Trenching (Figure 3 and Figure 4)

A c. 2.5% sample of the EA was investigated by the trial trenches. The sample took into account previously excavated trial trenches that fell within the road corridor (Foundations 2002). The final layout of the trenches was determined and agreed with the client and HET using the information from the aerial photographic analysis and the geophysical survey.

A total of 15 trenches were opened in accordance with the WSI. The trenches were positioned to examine geophysical anomalies, cropmarks and other known features. Areas that appeared 'blank' on the cropmark and geophysical survey were tested by trenches positioned at regular intervals.

The trenches were opened and investigated between 7th to 13th March (Trenches 1-13) and 3rd to 5th April (Trenches 14 and 15). Overburden was removed using a mechanical excavator, fitted with a toothless ditching bucket and operating under archaeological supervision. The deposits were removed down to either the top of possible archaeological deposits or undisturbed geological deposits, whichever was encountered first. The spoil heaps were scanned for artefacts.



Trenches were issued recording numbers in blocks, *e.g.* Trench 1: contexts 100-199; Trench 9: contexts 900-999, for ease of reference. All features and deposits were recorded using Albion Archaeology's *pro forma* sheets. The trenches were subsequently drawn and photographed as appropriate.

Monitoring meetings with the HET officer took place on 8th March and 3rd April. Upon the request of the HET officer Trench 14 was extended by a 2m x 4m box in order to ascertain the nature of a potential curvilinear feature revealed within the trench.

The project archive will be deposited with Bedford Museum (accession no. BEDFM 2011.91).



3. SUMMARY OF RESULTS

3.1 Introduction

This section briefly summarises the results of the aerial photographic analysis and geophysical survey which were undertaken in advance of the intrusive trial trenching. It also summarises the findings of the geoarchaeological investigations. The full results of each survey can be found in the respective specialist reports. The results of the trial trenching are given in full in Section 3.5. The conclusions in Section 4 refer to all components of the evaluation as a whole.

3.2 Aerial Photographic Survey

All available aerial photographs were examined in detail for the length of the proposed bypass plus an area of approximately one modern field beyond the road corridor (Air Photo Services 2011). While an aerial photographic survey had been undertaken as part of the previous evaluation, the decision was taken to re-asses the photographic material in its entirety as this was more cost-effective. Also, new images had been added to the archives which had not previously been examined.

The aerial photographic analysis identified several concentrations of cropmarks of potential human origin. These included three ring ditches, a number of linears, ridge and furrow and a number of former recent field boundaries, most likely of post-medieval date. Another circular feature, overlapped by a series of rectangular enclosures of uncertain date was re-interpreted as a windmill but this is located outside the EA. More extensive cropmarks over the area may indicate former paleochannels.

3.3 Geophysical Survey (Figure 3 and Figure 5)

Geophysical survey using a towed transverse magnetometer array was undertaken on the western part of the bypass route (ArchaeoPhysica 2012). The ground conditions on the eastern part were assessed as unsuitable due to a rough surface and a large amount of modern metallic objects in the soil, left by the clearance of the former allotments on the site.

The results of the geophysical survey confirmed the features plotted during the aerial photographic survey. It also revealed a number of additional anomalies of potential human origin. These included a possible rectilinear enclosure, a smaller circular gully and a number of linear features.

3.4 Archaeological Observation and Recording (Figure 6)

A programme of archaeological observation and recording was carried out during the relocation of an overhead electricity cable under ground. The electricity line crossed balancing pond 5 in the eastern section of the bypass and was re-routed around its northern perimeter. The excavated service trench was 0.3m wide and 1–1.10m deep.



Observation and recording was carried out from 22nd to 24th February 2012. No archaeological features or artefacts were revealed within the service trench. However, the observations within the trench confirmed that the ground was considerably contaminated with modern metallic materials and other refuse originating from the former allotments on the site.

3.5 Trial Trenching

The features and deposits of archaeological interest are described below in chronological order (Section 3). Numbers in brackets are used as follows [***] = feature number, (***) = fill number. Their location within the trenches, along with sections and photographs where appropriate, are shown on Figures 7–12. Detailed descriptions of individual contexts are provided in Appendix 1.

3.5.1 Geological deposits and overburden

The underlying drift geology consisted primarily of mid brownish orange sandy gravel with silty clay patches becoming more frequent further east. Limestone and bands of orange red clay were revealed within Trench 13. The banding is probably the explanation for some of the geophysical anomalies and cropmarks in this area. The exposed geological deposits within Trenches 14 and 15 at the east end of the road scheme were light orange clays.

The overburden varied from 0.40–0.60m in thickness. It consisted of a dark grey silty clay ploughsoil, overlying a brownish red silty sand subsoil.

3.5.2 Late Neolithic/early Bronze Age ring ditch within Trench 9 (Figure 7)

A possible ring ditch was located by aerial photographic analysis and geophysical survey within the eastern part of balancing pond 1. It was 22m in diameter and its existence was confirmed by Trench 9 which contained a curving ditch [903]. This had a wide V-shaped profile, and was c. 2.7m wide and 0.9m deep. The fills were positioned slightly asymmetrically within the ditch — possibly indicating the presence of an internal bank or mound. The ditch fills were sterile of finds.

A trench to the east, undertaken as part of an earlier evaluation, also located the northern part of the ring ditch which contained two worked flints (Foundations 2002). A second ditch within the same trench appears to coincide with the southern length of the ring ditch but, as recorded, would be on the wrong alignment. Its fills produced Iron Age or Saxon pottery (Foundations 2003).

Ditch [903] is a ring ditch and similar in character to those of late Neolithic/early Bronze Age date within the Biddenham Loop (Luke 2008, 24-8)

3.5.3 Late Bronze Age/early Iron Age enclosure within Trenches 10 and 11 (Figure 8)

Trenches 10 and 11 confirmed the presence of a ditched rectangular enclosure located by geophysical survey. Overall it was c.80m by at least 40m in extent. The western and eastern ditches of the enclosure were both c.2m wide and 0.8m deep, with V-shaped profiles. The western ditch was filled with a single uniform deposit whereas the eastern ditch [1103] contained three fills. Fill (1104) was



confined to the eastern side of the ditch and could indicate slumping from an outer bank. Alternatively, it might be a surviving original fill from a ditch which was later recut. Fill (1105) from the same segment contained two sherds of late Bronze Age/early Iron Age pottery and fragments of animal bone. The upper fill (1106) contained a secondary flint flake. Trench 11 also contained two possible postholes [1107] and [1109] which would fall within the interior of the enclosure. No post packing or finds were present.

Similar rectangular enclosures containing postholes were found at Gold Lane, Biddenham (Dawson 2004, 9-12), c. 0.5km to the south.

3.5.4 Possible trackway within Trench 12 (Figure 8)

Trench 12 was located to investigate a single linear geophysical anomaly to the east of the rectangular enclosure described above. However, two E-W ditches were located of which [1203] coincided with the geophysical anomaly. The second ditch [1206] was parallel and c. 10m to the south. Both ditches had similar profiles and fill sequences. They were c. 1m wide, 0.5m deep with thin primary fills. The main fill (1205) of ditch [1203] contained a single sherd of early Iron Age pottery and a secondary flint flake. A small gulley [1212] running parallel to and c. 2m to the south of the southern trackside ditch is likely to be associated.

The only other feature in this trench was a tree-throw hole [1209] which contained a single sherd of Iron Age pottery.

The possible trackway and adjacent gulley share the same alignment as the rectangular late Bronze Age/early Iron Age enclosure to the west, so are likely to be associated.

3.5.5 Possible Iron Age roundhouse within Trench 6 (Figure 9)

A small ring ditch was located by the geophysical survey on the edge of the road corridor. Its existence was confirmed within Trench 6 by the presence of a curving ditch [605]. This was c. 1.65m wide, 0.4m deep with an irregular profile possibly suggesting that it had been recut. The only find was a secondary flint flake. A small gully [607] within the interior of the ring ditch appeared to terminate on reaching its inner side and so may be contemporary.

The only other feature in this trench was a possible tree-throw hole [603], c. 12m to the north. However, c. 8m to the east within Trench 12 of one of the earlier evaluations a possible ditch containing an early Neolithic leaf-shaped arrowhead and two fragments of burnt clay were found (Foundations 2002).

The dating and interpretation of this ring ditch is uncertain. At 12m its diameter would be smaller than all those of late Neolithic/early Bronze Age date found within the Biddenham Loop (Luke 2008, 26). Given this, it is possible that rather than being a ditch defining a burial monument it represents the drainage ditch surrounding a roundhouse. A number of roundhouses of this size and type have been found on the Biddenham Loop and the majority date to the middle-late Iron Age (Luke 2008, 40-2).



3.5.6 Romano-British settlement (Figure 10)

Trenches 14 and 15 were situated within the area of balancing pond 5 in the eastern section of the bypass. No geophysical survey was possible in this area due to poor ground conditions (see above).

A large E-W aligned ditch [1408] was found in Trench 14; if its alignment is projected, it will have just been missed by Trench 15. It was c. 3m wide and 0.7m deep. Ditch [1411] and its recut [1413] were on a N-S alignment and, therefore, would have been perpendicular to and probably contemporary with ditch [1408]. The original ditch only survived as a feature 0.5m wide, but the recut was 1.8m wide and 0.5m deep.

Ditch [1408] contained 33 sherds of late Iron Age pottery while ditch [1411] contained single sherds of early Iron Age, late Iron Age and early Roman pottery.

Ditches [1503] and [1505] in Trench 15 may be contemporary with those to the west in Trench 14. The more substantial was [1505] which was 1.3m wide and 0.6m deep. It contained 18 sherds of pottery mainly dated to the late Iron Age. The dating of ditch [1503] is less certain because, although it contained a struck flint and a sherd of early Roman pottery, it also contained a fragment of postmedieval tile.

A number of other ditches, along with postholes, were found within Trench 15. Their date is uncertain because they either contained no finds or small quantities of post-medieval material. Of the three postholes only [1511] contained datable artefacts — a sherd of early Roman pottery and also a fragment of post-medieval brick. Given the extent of ground disturbance in this area it is likely that some of the post-medieval material is intrusive. These features are discussed under the "undated" and "post-medieval" sections below.

Ditches, some quite substantial, were found in this area and are probably part of a late Iron Age/early Roman enclosure system. Based on the quantity of pottery recovered, they are likely to be associated with a settlement rather than field systems. The presence of early Iron Age pottery hints at earlier activity.

3.5.7 Post-medieval quarry (Figure 11)

Trenches 1, 2 and 3 were situated at the western end of the bypass near the Deep Spinney roundabout. They confirmed the presence of extensive quarrying, suspected, but not proven, by the aerial photographic analysis and geophysical survey. The quarry backfill comprised a loose, fine, sandy gravel intermixed with darker patches. Geoarchaeological Test Pit 2 was dug c. 2m into this material and produced modern artefacts (not retained) but the base of the quarry was not reached. The northern edge [303] of the quarry was located half-way along Trench 3, coinciding with a change in geophysical responses.

Extensive quarrying is known to have occurred adjacent to the Bromham Road, resulting in the discovery of Palaeolithic and Roman artefacts (HER 974, HER 2873).



3.5.8 Other post-medieval and modern features

As mentioned above, Trenches 14 and 15 contained several features which may be of post-medieval or modern origin. Large, possibly rectangular pit [1515] terminated within the trench but was not fully exposed within it. It had nearly vertical sides, a flat base and contained a single sherd of post-medieval pottery. Some of the linear features within this trench, such as [1518], were clearly observed truncating the subsoil; while others, such as [1403], contained post-medieval roof tile. They were only c. 0.05 deep and contained gravel filled land drains, aligned N-S or E-W. In addition, the lack of compaction in the fills suggests they may be modern in date and associated with former allotments or land divisions in this area.

Trench 15 contained three post holes [1509], [1511] and [1513] which conceivably could be in a SW-NE running line. They were *c*. 0.3–0.5m in diameter and 0.05–0.15m deep. Although two contained no finds, [1511] contained a small fragment of post-medieval brick.

Finally, a buried soil (104), sealed by a makeup layer (101), was found at the southern end of Trench 2 and was clearly associated with the modern embankment of the Bromham Road.

3.5.9 Undated ditches

Several ditches within the trenches contained no finds and are therefore undated. Two were located at the western end of bypass in Trenches 4 and 5 (Figure 12). Ditch [403] was aligned NW-SE and contained a single, sterile, silty fill. Ditch [503] was aligned NNW-SSE; its profile was somewhat similar to that of the late Bronze Age/early Iron Age enclosure ditches in Trenches 10 and 11. Although their date is uncertain, it is likely that these ditches represent field boundaries.

Ditch [1403] was initially thought to be curvilinear in plan, which is why the HET officer requested a boxed extension of Trench 14 to ascertain its nature (Figure 14). However, extension of the trench demonstrated that the ditch continued on a linear alignment and was truncated by a modern field drain. It may therefore be part of the late Iron Age/early Roman enclosure system in this area.

3.6 Geoarchaeological Test Pits (Figure 13)

The geology in the vicinity of the western section of the bypass consists of Third, Second and First Terraces of the River Great Ouse (or Biddenham, Stoke Goldington and Felmersham Terraces respectively) all of which had previously revealed a high potential for artefactual and palaeoenvironmental information of relevance to the archaeological history of the terraces (Section 1.3). Accordingly, a number of test pits were excavated in order to further evaluate the potential for Palaeolithic deposits within the line of the proposed bypass.

Test pits were excavated by machine at the ends of Trenches 2, 3, 4, 5 and 6 and were given corresponding Test Pit numbers (TP02, TP03, TP04, TP05 and TP06). TP02 was abandoned at a depth of 2.0m when it became clear that it was located in quarry backfill. TP05 was excavated to a depth of 2.3m to ascertain the



presence of a band of gravel at that depth. TP03, TP04 and TP06 were excavated to Jurassic bedrock which was reached at a depth of 5.1m, 3.1m and 4.3m respectively.

The nature of the deposits within each Test Pit is discussed in detail in the specialist report (Allen *et al.* 2012). They mainly consisted of silty sandy gravel overlying laminated or thinly bedded silty sand. A sample was taken from silty sediments close to the contact with the limestone bedrock at the base of TP04 in order to investigate its paleoenvironmental potential.

The investigations indicated the line of the western section of the bypass does not impinge on the Biddenham Terrace, which yielded the pollen, plant macrofossils, molluscs, insects and ostracods and artefacts in the nearby Deep Spinney Pit (Harding *et al.* 1991).

The Test Pits were either on the bluff below the Biddenham Terrace or on the Stoke Goldington Terrace. No Palaeolithic artefacts were found but the molluscan assemblage sampled from TP04 indicated a quiet fluvial environment, with local woodland and grassland, but not necessarily an interglacial climate. The species were not biostratigraphically significant.



4. DISCUSSION

4.1 Introduction

Previous investigations and information recorded in the HER indicated that the LNOBR development area contained evidence for a landscape of settlement, field systems and burial monuments ranging from the prehistoric to the modern period.

The recent evaluation has identified late Neolithic/early Bronze Age monuments, late Bronze Age/early Iron Age enclosures, trackways and fields, early-middle Iron Age activity including a possible roundhouse and a late Iron Age/early Roman settlement. Many of these sites were unknown prior to the evaluation.

4.2 Palaeolithic

The geoarchaeological investigations 'clearly indicate the line of the western sector of the bypass does not impinge on the Biddenham Terrace, which yielded the pollen, plant macrofossils, molluscs, insects and ostracods and artefacts reported by Harding *et al.* 1991 in the nearby Deep Spinney Pit. The trial pits examined were either on the bluff below the Biddenham Terrace or on the Stoke Goldington Terrace. None revealed any Palaeolithic archaeology. The molluscan assemblage indicated a quiet fluvial environment, with local woodland and grassland, but not necessarily an interglacial climate. The species were not biostratigraphically significant' (Allen *et al.* 2012).

4.3 Late Neolithic | Early Bronze Age

One definite (within Trench 9) ring ditch and a second possible (within Trench 6) were identified within the area of the road corridor and associated ponds. The example in Trench 9 is comparable in size and form — a continuous ditch, c. 22m in diameter — to those found on the Biddenham Loop. The majority of the latter were dated to the early Bronze Age and contained cremation burials (Luke 2008, 24-31). A minority originated in the Neolithic and some became the focus of middle Bronze Age burial (Albion in prep). The presence of Iron Age or Saxon pottery in one of the previous trenches in this area (Foundations 2002) hints at later activity.

4.4 Mid-late Bronze Age | Early Iron Age

The enclosure and trackway within Trenches 10, 11 and 12 probably date to this period. The enclosure was defined by a large ditch; neither the trenching nor the geophysical survey produced evidence for an entrance. The eastern ditch contained a small quantity of late Bronze Age/early Iron Age pottery. This and the presence of two postholes within the eastern half of the enclosure suggest that this part of the enclosure may have been a focus of domestic activity. Although settlements of this period are rare in the county and region, two are known in the Biddenham area: one to the south of the Bromham Road at Gold Lane (Dawson 2004, 9-12) and one within the Biddenham Loop (Luke 2008, 34-8). The latter comprised clusters of postholes/pits, water pits, along with two-/four-post structures and at least one roundhouse. The quantities of domestic debris were



small but there is now some evidence to suggest that the settlement originated in the middle Bronze Age (Albion in prep). The ditches within Trench 12 were interpreted as a trackway, but it should be noted that some of the enclosures at Gold Lane appeared to be defined by double ditches (Dawson 2004, 9-12 and fig. 3.1).

Finally, although the ditches in Trenches 4 and 5 were undated, their alignment and profile is similar to those in Trenches 10, 11 and 12 and they may be contemporary. Field systems originating in the middle Bronze Age were defined by similar ditches on the Biddenham Loop; they extended over 30ha but very few ditch fills contained datable artefacts (Albion in prep).

4.5 Early-middle Iron Age activity

The only firm evidence for activity during this period is the possible roundhouse and adjacent features within Trench 6. While the date and interpretation of the possible roundhouse is uncertain, it is comparable in diameter to those found on the Biddenham Loop. Although one of these was found in isolation (Albion in prep), the majority were associated with farmsteads. The latter were characterised by the presence of clusters of large storage pits (Luke 2008, 42), but no such features were identified within the bypass evaluation. At the eastern end of the route small quantities of early Iron Age pottery were found residually in features within Trenches 14 and 15. This evidence is insufficient on its own to suggest the presence of a settlement. However, evidence for Iron Age activity, including a possible hut circle and Iron Age pottery (HER 329) was found during the construction of the adjacent railway, together with two Iron Age gold coins (HER 11988 and 15945), the precise findspot of which is unknown.

4.6 Late Iron Age / early Roman settlement

The discovery of a late Iron Age/early Roman settlement in Trenches 14 and 15 may explain the HER records suggesting the discovery of an Iron Age roundhouse and other finds during the construction of the railway (HER 329). Contemporary farmsteads along the edge of the River Great Ouse and Elstow Brook are known to occur at *c*. 0.5km intervals (Luke and Preece 2011, 170) so the existence of one in this area is perhaps not surprising. The majority of these farmsteads comprised rectangular enclosures covering an area of 1–3.3ha. They contained a domestic focus sometimes with evidence for roundhouses or rectangular buildings, water pits, kilns and burials (Luke and Preece 2011, 142). The settlement within Trenches 14 and 15 is interesting within the context of the probable villa at Manton Lane, Bedford, only 700m to the east. It is possible that the settlement within the balancing pond is within the villa estate.

Brief mention should be made of the stone-lined Roman well found during 19th-century quarrying adjacent to the Bromham Road (Simco 1984, 59 and fig. 56). This is recorded as HER 330 and based on these records would be located close to, if not within, the road corridor. The existence of a backfilled quarry was identified in Trenches 1, 2 and 3, but although this area was examined and metal detected in detail no Roman material was found. While the quarry may have been backfilled with material from elsewhere, it is perhaps surprising that no Roman material at all



was found in this area given the well is likely to be associated with a quite extensive Roman site.

4.7 Saxo-Norman and Medieval

No remains of these periods were found in the trial trenches. While it is likely that most of the land was utilised as open fields for Biddenham village to the south, the absence of sub-surface, former furrows is surprising.

4.8 Post-medieval and Modern

An area of quarrying was identified within Trenches 1, 2 and 3 to the north of the Bromham Road. This is clearly part of the complex of quarry pits dug in the 19th century on either side of the Bromham Road which have produced Palaeolithic artefacts and palaeo-environmental material (Luke 2007, 21 and 24). In addition, one of these pits HER 330, which is thought to be the one within the road corridor, uncovered a Roman stone-lined well (Simco 1984, 59 and fig. 56), although no other Roman material was found in this area.



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6. APPENDIX 1 – FINDS ASSEMBLAGE

6.1 Introduction

The evaluation produced a finds assemblage comprising mainly pottery, with smaller quantities of brick and tile, worked flint and animal bone (Table 1). The material was scanned to ascertain its nature, condition and, where possible, date range. No artefacts were recovered from Trenches 1-5, 7-10, or 13.

Tr.	Feature	Description	Context	Spot date*	Finds Summary	
6	605	Ditch	606	Undated	Worked flint (9g)	
11	1103	Ditch	1104	Undated	Animal bone (203g)	
	1103	Ditch	1105	Late Bronze / early Iron Age	Pottery (27g); animal bone (25g)	
	1103	Ditch	1106	Undated	Worked flint (8g)	
12	1203	Ditch	1205	Early Iron Age	Pottery (7g); worked flint (11g)	
	1209	Tree throw	1210	Early Iron Age	Pottery (4g)	
14	1403	Ditch	1405	Post-medieval	Ceramic roof tile (17g)	
	1408	Ditch	1409	Late Iron Age	Pottery (70g); animal bone (31g)	
	1408	Ditch	1410	Late Iron Age	Pottery (976g)	
	1411	Ditch	1412	Early Roman	Pottery (38g); animal bone (45g)	
15	1503	Ditch	1504	Post-medieval	Pottery (2g); ceramic roof tile (92g); worked flint (3g)	
	1505	Ditch	1507	Early Roman	Pottery (108g); animal bone (14g)	
	1511	Post hole	1512	Post-medieval	Brick (309g)	
	1515	Pit	1516	Post-medieval	Pottery (3g)	

^{* -} spot date based on date of latest artefact in context

Table 1: Artefact summary by trench and feature

6.2 Pottery

Sixty-six pottery sherds, weighing 1.2kg, were recovered. These were examined by context and quantified using minimum sherd count and weight. The pottery is moderately fragmented, with an average sherd weight of 19g, and survives in variable condition. Fourteen fabric types were identified using common names and type codes in accordance with the Bedfordshire Ceramic Type Series, currently maintained by Albion Archaeology (Table 2).



Fabric type	Common name	Sherd No.	Context/Sherd No.
Late Bronze Age / early Iron Age			
F16A	Vesicular shell	2	(1105):2
Early Iron Age			
F03	Grog and sand	4	(1205):3, (1507):1
F28	Fine quartz	1	(1507):1
F29	Coarse quartz	1	(1412):1
F35	Micaceous	2	(1210):2
Late Iron Age			
F05	Grog and shell	16	(1410):11, (1507):5
F06B	Medium grog	3	(1409):2, (1410):1
F06C	Coarse grog	12	(1410):12
F07	Shell	6	(1409):4, (1410):2
F08	Shell and grog	1	(1507):1
F09	Sand and grog	12	(1410):4, (1412):1, (1507):7
Early Roman			
R06F	Grey ware grog and sand	4	(1504):1, (1507):3
R14	Sand (red-brown harsh)	1	(1412):1
Post-medieval	,		
P01	Fine glazed red earthenware	1	(1516):1

Table 2: Pottery type series

The earliest pottery, recovered from ditch [1103], comprises two vesicular shell-tempered body sherds deriving from a late Bronze Age/early Iron Age vessel (27g). Both survive in poor condition and are highly abraded and leached. Eight sand-tempered body sherds representing six undiagnostic vessels (total weight 56g) are datable to the early Iron Age period. Three occurred in ditch [1203], three as residual finds in early Roman ditches [1411] and [1505], and two derived from tree throw [1209]. A carinated shoulder is the sole diagnostic element.

Pottery of late Iron Age date totals 50 sherds, 1.1kg, and comprises both wheel-thrown and hand-made vessels. A range of shell (F07), shell/grog (F05, F08), sand/grog (F09) and grog-tempered fabrics occur (F06B-C). Twenty-two individual vessels are represented, mainly by body sherds. Diagnostic forms are everted-rim jars, and large storage vessels, ranging in diameter from 180–380mm. The exterior surfaces of six shell-tempered vessels are sooted, suggesting their use as cooking pots. Late Iron Age pottery occurred solely in Trenches 14 and 15, the majority deriving from the fills of ditch [1408].

Five sand-tempered coarse ware body sherds datable to the early Roman period (total weight 19g) derived from the fills of ditches [1411], [1503] and [1505]. Post-medieval pit [1515] contained an abraded sherd of 17th-century glazed earthenware (3g).

6.3 Ceramic Building Material

Three pieces of post-medieval flat roof tile (total weight 109g) were recovered from ditches [1403] and [1503]. All are sand-tempered, and range in thickness from 13–16mm. An abraded brick fragment (309g), also of post-medieval date, derived from post hole [1511].



6.4 Worked Flint

Four worked flints occurred as residual finds in ditches [605], [1103], [1203], and [1503]. All are secondary flakes, each with cortex remaining along one lateral edge, and are made using grey-brown translucent flint — the most commonly encountered flint recorded from investigations within Biddenham Loop, south of the evaluation area (Bates 2008). All display evidence of hard hammer-struck flake removal scars on their dorsal surface, and two pieces possess relatively thick butts. These characteristics could suggest a late Neolithic or Bronze Age date for their manufacture. The limited assemblage and its dispersed nature do not suggest intensive activity, the flakes possibly representing 'ad hoc' knapping to meet immediate needs.

6.5 Animal Bone

Four features yielded 22 animal bone fragments, weighing 318g, the greatest concentration (228g) deriving from the fills of ditch [1103]. Individual pieces are small, with an average weight of 14g, and generally abraded. The fragmentary condition of the material means that, with the exception of single cattle and sheep molars, most are undiagnostic of species. Identifiable bone elements are limb bones, vertebra and scapula fragments. A damaged calcaneus from a large mammal (?cow) was recovered from ditch [1103].



7. APPENDIX 2 – TRENCH SUMMARIES



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.3 m. Max: 0.8 m.

Co-ordinates: OS Grid Ref.: 1N (Easting: 50195: Northing: 25057)

OS Grid Ref.: 1S (Easting: 50194: Northing: 25052)

Reason: Investigate area of possible post-medieval quarrying

Context:	Type:	Description:	Excavated:	Finds Present:
100	Topsoil	Friable mid grey brown sandy silt occasional small stones Thickness: 0.3-0.5m	✓	
101	Make up layer	Friable silty sand Thickness: 0.25m. Deposit found in strip adjacent to Bromham Road and seals 104	✓	
102	Quarry		✓	
103	Backfill	Loose light orange yellow sandy gravel Mixed backfill of quarry includes redeposited natural and patches of sub-soil.	✓	
104	Buried topsoil	Friable mid grey brown sandy silt occasional small stones Thickness: c.0.2r Deposit found in strip adjacent to Bromham Road and sealed by (101)	n. 🗸	



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.2 m. Max: 0.6 m.

Co-ordinates: OS Grid Ref.: 2N (Easting: 50188: Northing: 25058)

OS Grid Ref.: 2S (Easting: 50189: Northing: 25053)

Reason: Investigate area of possible post-medieval quarrying

Context:	Type:	Description:	Excavated: Finds I	Present:
200	Topsoil	Friable mid grey brown sandy silt occasional small stones Thickness: 0.2m	· •	
201	Quarry			
202	Backfill	Loose light orange yellow sandy gravel Mixed backfill of quarry includes redeposited natural and patches of sub-soil.		



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.25 m. Max: 0.47 m.

Co-ordinates: OS Grid Ref.: 3N (Easting: 50188: Northing: 25069)

OS Grid Ref.: 3S (Easting: 50188: Northing: 25064)

Reason: Investigate area of possible post-medieval quarrying

Context:	Type:	Description:	Excavated: Finds Pres	sent:
300	Topsoil	Friable mid grey brown sandy silt occasional small stones Thickness 0.17m	V	
301	Subsoil	Friable mid orange brown sandy silt Thickness: 0.3m	✓	
302	Natural	Friable mid brown orange silty sand frequent small-medium stones		
303	Quarry	Assymetrical sides: irregular		
304	Backfill	Loose light yellow brown sandy gravel Backfill of quarry. Re-deposited natura mixed with patches of subsoil.		



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.6 m. Max: 0.6 m.

Co-ordinates: OS Grid Ref.: 4NW (Easting: 50188: Northing: 25076)

OS Grid Ref.: 4SE (Easting: 50192: Northing: 25075)

Reason: Investigate area with no geophysical anomalies or cropmarks

Context:	Type:	Description:	Excavated:	Finds Present:
400	Topsoil	Friable mid grey brown sandy silt occasional small stones Thickness: 0.4m	✓	
401	Subsoil	Friable mid red brown silty sand moderate small-medium stones Thickness 0.2m	: ✓	
402	Natural	Compact mid brown red clay sand frequent small-medium stones		
403	Ditch	Linear NW-SE sides: concave base: concave dimensions: max breadth 0.8n max depth 0.2m	n, 🗸	
404	Fill	Friable mid brown grey sandy silt	✓	



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.43 m. Max: 0.43 m.

Co-ordinates: OS Grid Ref.: 5NE (Easting: 50200: Northing: 25081)

OS Grid Ref.: 5SW (Easting: 50196: Northing: 25078)

Reason: Investigate area with no geophysical anomalies or cropmarks

Context:	Type:	Description:	Excavated:	Finds Present:
500	Topsoil	Friable dark brown grey sandy silt Thickness 0.33m	✓	
501	Subsoil	Friable mid orange brown sandy silt occasional small stones Thickness: 0.1	m 🗸	
502	Natural	Compact mid orange red sandy gravel		
503	Ditch	Linear N-S sides: stepped base: concave dimensions: max breadth 1.95m, max depth 0.7m	✓	
504	Fill	Compact mid brown grey sandy silt frequent small-medium stones Thickness: $0.1 \mathrm{m}$	✓	
505	Fill	Friable mid brown grey sandy silt occasional medium-large stones, occasional small-medium stones Thickness: 0.6m	✓	



Max Dimensions: Length: 29.25 m. Width: 2.20 m. Depth to Archaeology Min: 0.45 m. Max: 0.6 m.

Co-ordinates: OS Grid Ref.: 6NE (Easting: 50206: Northing: 25084)

OS Grid Ref.: 6SW (Easting: 50204: Northing: 25081)

Reason: Investigate possible small ring ditch visible as geophysical anomaly

Context:	Type:	Description:	Excavated:	Finds Present:
600	Topsoil	Friable dark grey brown sandy silt Thickness: 0.35m	✓	
601	Subsoil	Friable mid yellow brown silty sand Thickness 0.25m	✓	
602	Natural	Friable mid orange yellow clay sand frequent small-medium stones		
603	Treethrow	Assymetrical N-S sides: irregular base: flat dimensions: max breadth 1.25mmax depth 0.52m Undercutting in places.	n, 🗸	
604	Fill	Friable mid yellow brown silty sand occasional small-medium stones Thickness 0.52m	:	
605	Ditch	Curving linear E-W sides: stepped base: concave dimensions: max breadth 0.26m, max depth 0.4m	✓	
606	Fill	Friable mid yellow brown silty sand $$ moderate small-medium stones $$ Thickness: $0.4m$	✓	✓
607	Gulley	Linear E-W sides: convex base: concave dimensions: max breadth 0.26m, max depth 0.17m	✓	
608	Fill	Friable mid yellow brown silty sand moderate small-large stones Thickness: 0.17m	✓	



Max Dimensions: Length: 30.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.5 m. Max: 0.6 m.

Co-ordinates: OS Grid Ref.: 7NE (Easting: 50217: Northing: 25088)

OS Grid Ref.: 7SW (Easting: 50215: Northing: 25086)

Reason: Target area with no geophysical anomalies or cropmarks adjacent to possible enclosure

Context:	Type:	Description:	Excavated: Finds Present:
700	Topsoil	Friable dark grey brown sandy silt Thickness: 0.45m	
701	Subsoil	Friable mid yellow brown silty sand Thickness 0.15m	V
702	Natural	Compact mid orange yellow sandy gravel	



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.4 m. Max: 0.4 m.

Co-ordinates: OS Grid Ref.: 8NE (Easting: 50200: Northing: 25090)

OS Grid Ref.: 8SW (Easting: 50197: Northing: 25086)

Reason: Investigate possible ditch visible as geophysical anomaly

Context:	Type:	Description:	Excavated: Finds Present:
800	Topsoil	Friable dark brown grey sandy silt Thickness 0.3m	
801	Subsoil	Friable mid orange brown silty sand frequent small-medium stones Thickness:0.1m	V
802	Natural	Loose mid brown red sandy gravel	
803	Treethrow	Assymetrical sides: irregular base: uneven	
804	Fill	Friable mid orange brown silty sand	



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.4 m. Max: 0.4 m.

Co-ordinates: OS Grid Ref.: 9NE (Easting: 50213: Northing: 25097)

OS Grid Ref.: 9SW (Easting: 50209: Northing: 25094)

Reason: Investigate possible ring ditch visible as cropmark and geophysical anomaly

Context:	Type:	Description:	Excavated:	Finds Present:
900	Topsoil	Friable dark brown grey sandy silt Thickness: 0.33m	✓	
901	Subsoil	Friable mid red brown silty sand moderate small-medium stones Thickness 0.11m	S	
902	Natural	Compact mid yellow red sandy gravel		
903	Ditch	Curving linear NW-SE sides: 45 degrees base: concave dimensions: max breadth 2.7m, max depth 0.9m	✓	
904	Fill	Compact mid brown grey sandy silt frequent small-medium stones Thickness: $0.28m$.	✓	
905	Fill	Friable mid red brown sandy silt Thickness: 0.2m	✓	
906	Fill	Friable mid red brown sandy silt moderate small-medium stones Thickness: 0.4	m 🗸	



Max Dimensions: Length: 49.45 m. Width: 2.15 m. Depth to Archaeology Min: 0.45 m. Max: 0.5 m.

Co-ordinates: OS Grid Ref.: 10E (Easting: 50224: Northing: 25089)

OS Grid Ref.: 10W (Easting: 50219: Northing: 25088)

Reason: Investigate west side of possible enclosure visible as geophysical anomaly

Context:	Type:	Description:	Excavated:	Finds Present:
1000	Topsoil	Friable dark grey brown sandy silt Thickness: 0.4m		
1001	Subsoil	Friable mid yellow brown silty sand Thickness: 0.1m	✓	
1002	Natural	Friable mid brown yellow sandy gravel		
1003	Ditch	Linear N-S sides: V-Shaped base: concave dimensions: max breadth 1.77n max depth 0.8m	ı, ✓	
1004	Fill	Firm mid yellow brown silty sand frequent small-large stones Thickness: 0.8m	✓	



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.41 m. Max: 0.54 m.

Co-ordinates: OS Grid Ref.: 11E (Easting: 50229: Northing: 25090)

OS Grid Ref.: 11W (Easting: 50224: Northing: 25090)

Reason: Investigate east side of possible enclosure visible as geophysical anomaly

Context:	Type:	Description:	Excavated: Fin	ds Present:
1100	Topsoil	Friable dark grey brown sandy silt occasional small stones Thickness: 0.39n	n 🗸	
1101	Subsoil	Friable mid orange brown silty sand Thickness: 0.3m	V	
1102	Natural	Compact light orange brown silty sand frequent small-medium stones		
1103	Ditch	Linear N-S sides: 45 degrees dimensions: max breadth 2.59m, min depth 0.88m	✓	
1104	Fill	Compact mid yellow brown sandy silt Thickness: 0.39m	\checkmark	~
1105	Fill	Compact mid grey brown sandy silt occasional small stones Thickness: $0.57m$ at LOE	✓	✓
1106	Fill	Friable light yellow brown sandy silt $$ moderate small-medium stones $$ Thickness: $0.37m$	~	✓
1107	Posthole	Oval sides: convex base: flat dimensions: max breadth 0.26m, max depth 0.14m, max length 0.37m	~	
1108	Fill	Compact mid brown grey silty silt Thickness: 0.14m	\checkmark	
1109	Posthole	Oval sides: concave base: flat dimensions: max breadth 0.11m, max depth 0.09m, max length 0.42m	✓	
1110	Fill	Compact mid brown grey sandy silt Thickness: 0.09m	\checkmark	



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.5 m. Max: 0.7 m.

Co-ordinates: OS Grid Ref.: 12N (Easting: 50233: Northing: 25093)

OS Grid Ref.: 12S (Easting: 50234: Northing: 25088)

Reason: Investigate possible ditch visible as geophysical anomaly

Context:	Type:	Description:	Excavated:	Finds Present:
1200	Topsoil	Friable dark brown grey sandy silt Thickness: 0.34m	✓	
1201	Subsoil	Firm light orange grey sandy silt Thickness: 0.24m	✓	
1202	Natural	Friable mid brown orange clay sand moderate small-medium stones		
1203	Ditch	Linear E-W sides: V-Shaped base: flat dimensions: max breadth 0.97m, madepth 0.5m	ıx 🗸	
1204	Fill	Compact mid orange brown sandy silt moderate small-medium stones Thickness 0.0.08m	s:	
1205	Fill	Friable mid grey brown clay silt occasional small-medium stones Thickness: 0.42m	✓	✓
1206	Ditch	Linear E-W sides: U-shaped base: concave dimensions: max breadth 0.95m max depth 0.46m	, v	
1207	Fill	Compact mid orange brown sandy silt $$ moderate small-medium stones $$ Thickness $$ $$ $$ $$ $$ $$ $$ $$ $$ $$	s:	
1208	Fill	Friable mid grey brown clay silt occasional small-medium stones Thickness: 0.41m	✓	
1209	Treethrow	Sub-oval N-S sides: Assymetrical base: concave dimensions: min breadth 0.53m, max depth 0.45m, max length 2.1m	✓	
1210	Fill	Friable mid brown grey sandy silt Thickness: 0.45m	✓	\checkmark
1211	Fill	Friable mid grey brown sandy silt occasional small stones Thickness: 0.22m	✓	
1212	Gulley	Linear E-W sides: concave base: concave dimensions: max breadth 0.2m, max depth $0.1\mbox{m}$	✓	
1213	Fill	Friable mid brown grey sandy silt Thickness: 0.1m	✓	



Max Dimensions: Length: 50.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.45 m. Max: 0.48 m.

Co-ordinates: OS Grid Ref.: 13NE (Easting: 50268: Northing: 25098)

OS Grid Ref.: 13SW (Easting: 50263: Northing: 25096)

Reason: Investigate area of geophysical anomalies and cropmarks

Context:	Type:	Description:	Excavated: Finds P	resent:
1300	Topsoil	Friable mid brown grey clay silt Thickness: 0.35m	~	
1301	Subsoil	Friable light brown grey clay silt Thickness: 0.13m	~	
1302	Natural	Compact mid orange grey silty clay		
1303	Natural	Compact light grey white clay limestone Banded limestone out-crop may have caused the linear geophysical anomalies		



Max Dimensions: Length: 54.00 m. Width: 2.00 m. Depth to Archaeology Min: 0.5 m. Max: 0.6 m.

Co-ordinates: OS Grid Ref.: 14NE (Easting: 50338: Northing: 25104)

OS Grid Ref.: 14SW (Easting: 50334: Northing: 25100)

Reason: Investigate area where ground conditions prevented geophysical survey being undertaken

Context:	Type:	Description:	Excavated:	Finds Present:
1400	Topsoil	Friable dark grey clay silt moderate small-medium stones Thicknesss: 0.5m	✓	
1401	Subsoil	Friable mid grey brown clay silt frequent small stones Thickness: 0.1m	✓	
1402	Natural	Firm light grey orange clay occasional medium stones		
1403	Gulley	Linear N-S $$ sides: U-shaped base: concave dimensions: max breadth 0.65m, max depth 0.28m $$	✓	
1404	Fill	Firm mid orange grey silty clay Thickness: 0.09	✓	
1405	Fill	Friable mid brown grey silty clay Thickness: 0.25m	✓	✓
1406	Posthole	Circular sides: concave base: concave dimensions: max depth 0.2m, max diameter 0.5m	✓	
1407	Fill	Firm mid grey silty clay moderate small stones Thickness: 0.2m	✓	
1408	Ditch	Linear E-W sides: stepped base: concave dimensions: max breadth 3.m, max depth 0.75m	x 🗸	
1409	Fill	Compact mid grey clay occasional small stones Thickness: 0.15m	✓	✓
1410	Fill	Firm mid brown silty clay moderate small stones Thickness: 0.5m	✓	✓
1411	Ditch	Linear N-S sides: 45 degrees base: flat dimensions: max breadth 0.8m, max depth 0.5m	✓	
1412	Fill	Firm light brown silty clay occasional small stones Thickness: 0.5m	✓	✓
1413	Ditch	Linear N-S sides: 45 degrees base: concave dimensions: max breadth 1.8m, max depth 0.45m	✓	
1414	Fill	Firm mid brown grey silty clay occasional flecks charcoal, occasional small stones Thickness: 0.45m	✓	



Max Dimensions: Length: 51.60 m. Width: 2.00 m. Depth to Archaeology Min: 0.37 m. Max: 0.41 m.

Co-ordinates: OS Grid Ref.: 15NE (Easting: 50344: Northing: 25105)

OS Grid Ref.: 15SW (Easting: 50340: Northing: 25101)

Reason: Investigate area where ground conditions prevented geophysical survey being undertaken

Context:	Type:	Description:	Excavated:	Finds Present:
1500	Topsoil	Friable dark brown grey silty clay moderate small-medium stones Thickness: 0.26m	✓	
1501	Subsoil	Friable mid grey brown clay silt occasional small-medium stones Thickness: 0.15m	:	
1502	Natural	Plastic light blue orange clay		
1503	Ditch	Linear E-W $$ sides: U-shaped base: concave dimensions: max breadth 0.77m, max depth 0.1m $$	~	
1504	Fill	Friable mid orange brown silty clay Thickness: 0.1m	✓	\checkmark
1505	Ditch	Linear E-W sides: U-shaped base: flat dimensions: max breadth 1.35m, max depth 0.58m	✓	
1506	Fill	Friable mid orange grey sandy silt occasional small-medium stones Thickness: 0.1m	✓	
1507	Fill	Friable dark brown grey clay silt occasional small-medium stones Thickness: 0.26m	✓	✓
1508	Fill	Friable dark brown grey clay silt occasional small-medium stones Thickness: 028m	✓	
1509	Posthole	Circular sides: U-shaped base: concave dimensions: max depth 0.13m, max diameter 0.26m	✓	
1510	Fill	Loose dark brown grey clay silt occasional small-medium stones Thickness: 0.13m	✓	
1511	Posthole	Sub-circular sides: U-shaped base: concave dimensions: max depth 0.1m, max diameter 0.46m	✓	
1512	Fill	Loose dark brown grey clay silt occasional small-medium stones Thickness: 0.1n	n 🗸	\checkmark
1513	Posthole	Circular sides: U-shaped base: concave dimensions: max depth 0.04m, max diameter 0.26m	✓	
1514	Fill	Loose dark brown grey clay silt occasional small-medium stones Thickness: $0.04\mathrm{m}$	✓	
1515	Pit	Linear E-W sides: near vertical base: flat dimensions: min breadth 1.8m, max depth 0.36m Terminates within trench	✓	
1516	Fill	Friable mid brown grey clay silt occasional small-medium stones Thickness: 0.22m	✓	✓
1517	Fill	Friable mid grey orange clay silt occasional small-medium stones Thickness: 0.14m	✓	
1518	Ditch	Linear N-S dimensions: max breadth 0.9m, max depth 0.05m	✓	
1519	Fill	Friable mid brown grey clay silt occasional small-medium stones Thickness: 0.05m	✓	



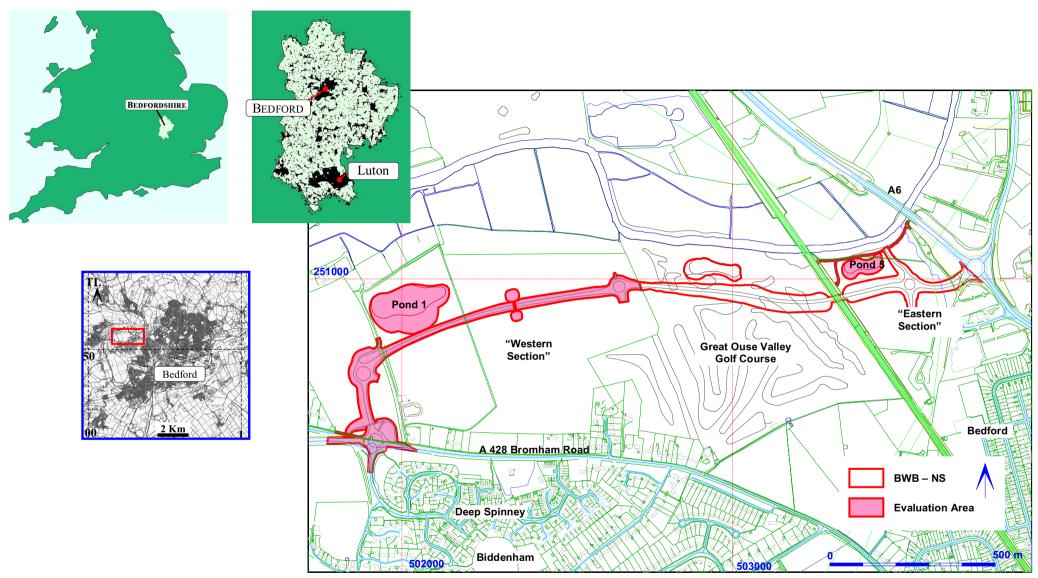


Figure 1: Site location and evaluation area

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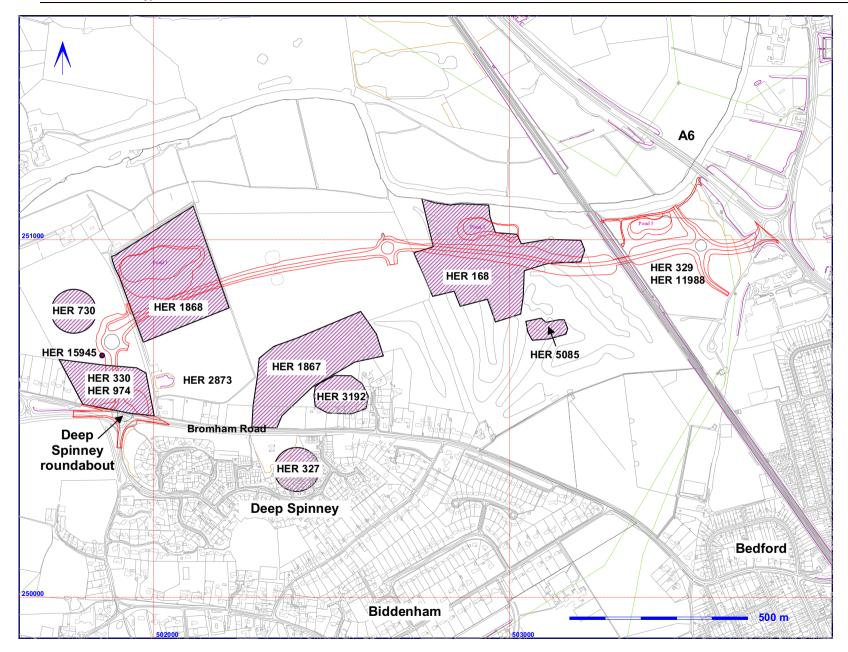


Figure 2: HER sites mentioned in report

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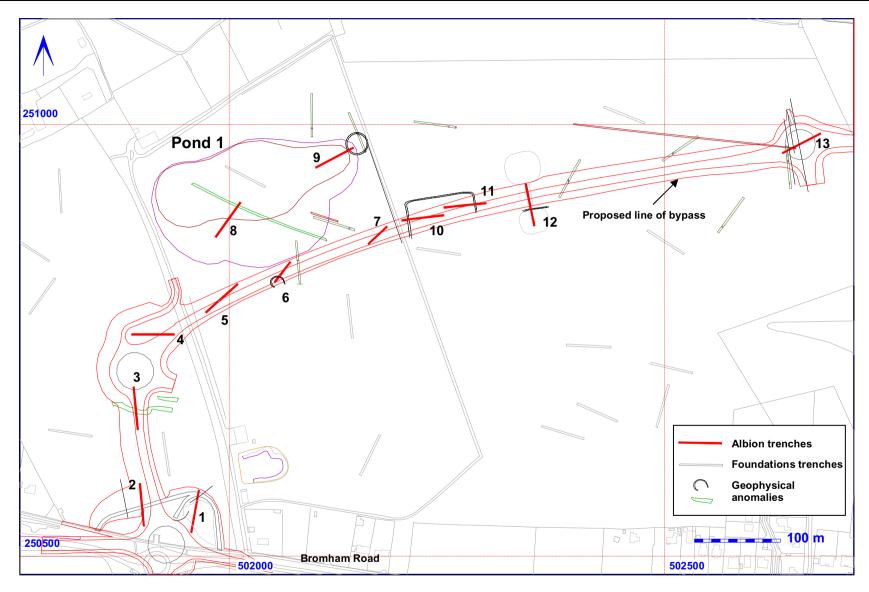


Figure 3: Location of trenches in western section with geophysical anomalies

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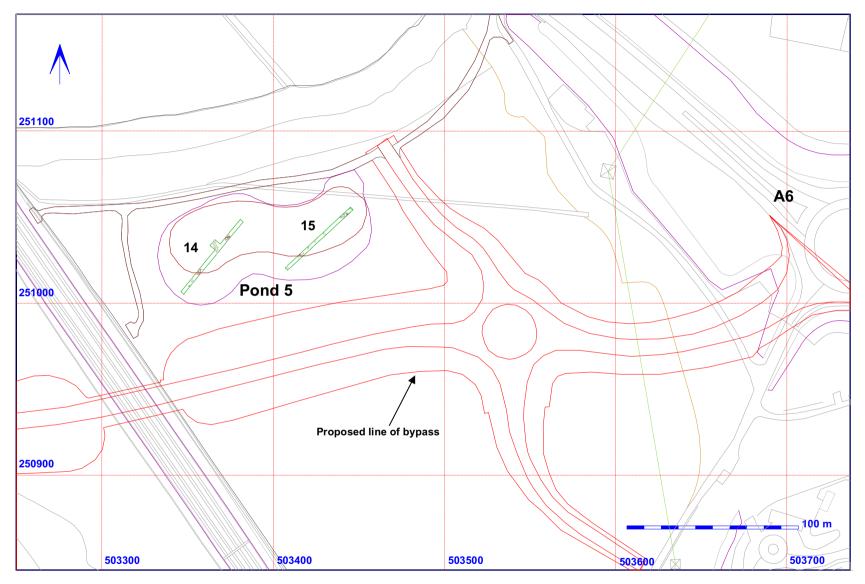


Figure 4: Location of trenches in eastern section

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Figure 5: Main area of geophysical anomalies within the road scheme Note: Numbers refer to those used in detailed geophysical survey report (ArchaeoPhysica 2012)



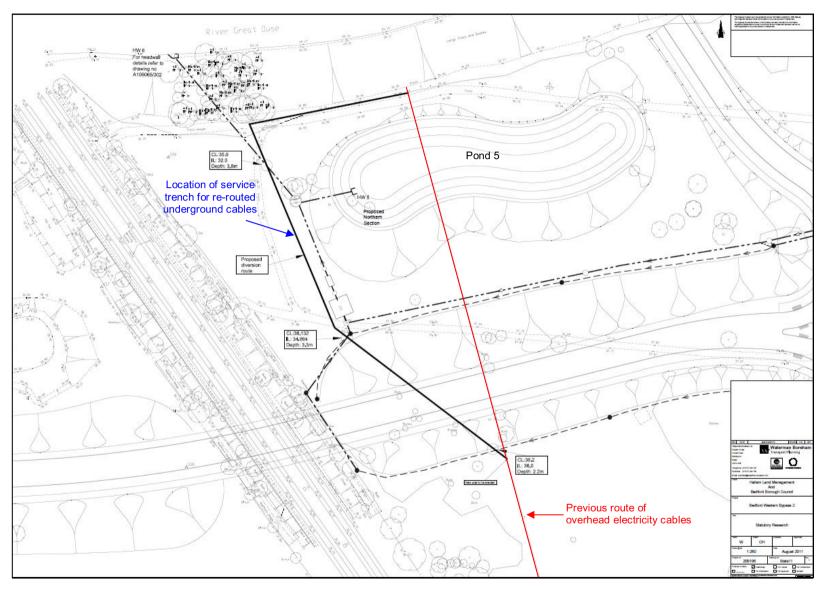
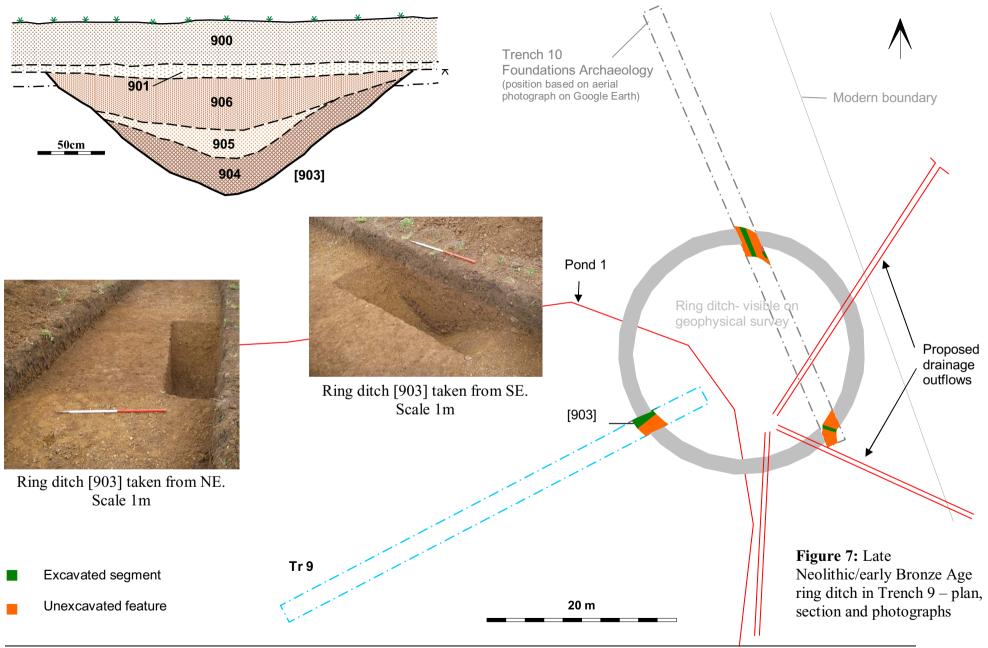
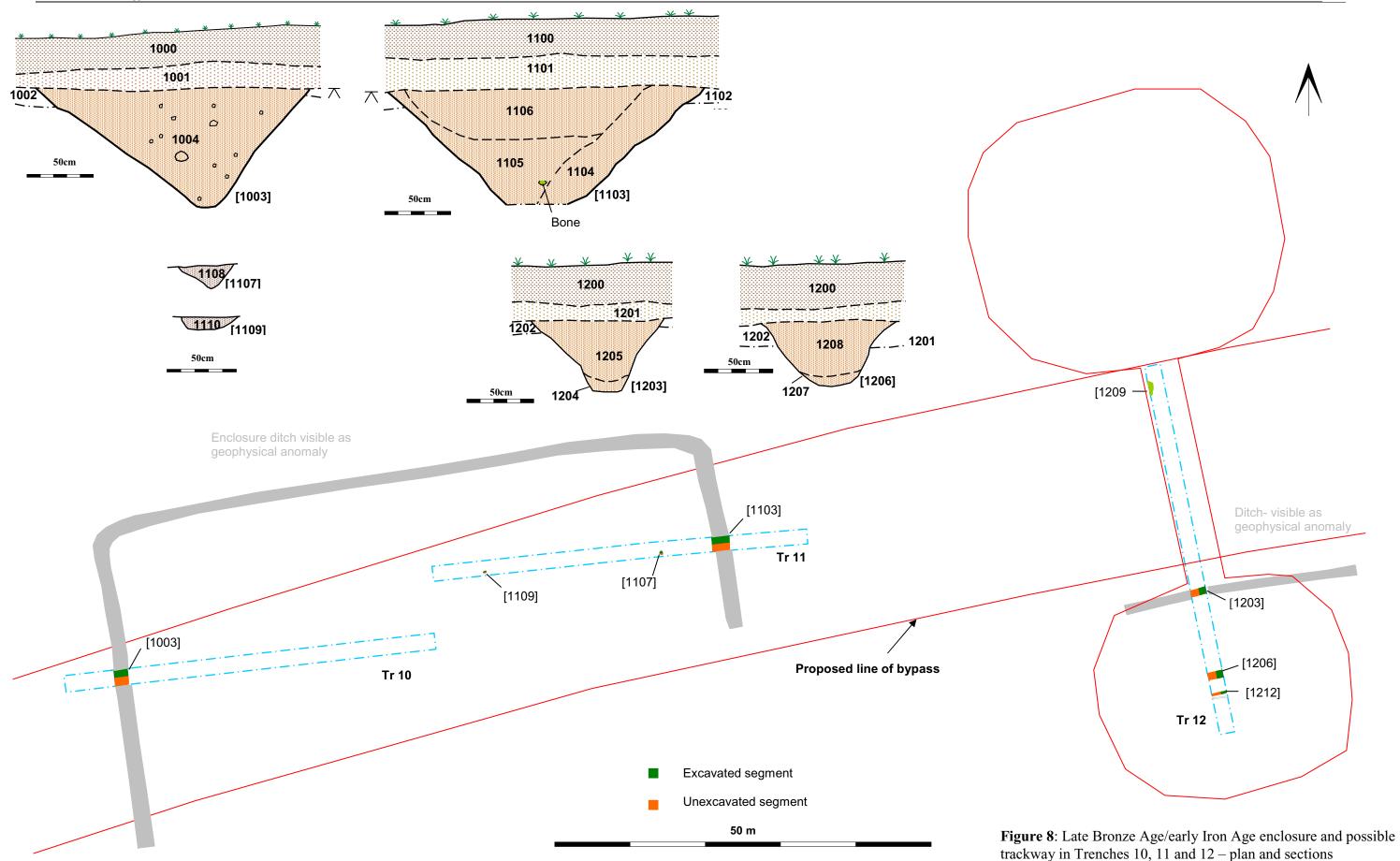


Figure 6: Location of electricity cable trench watching brief (Figure based on Waterman Boreham technical drawing)

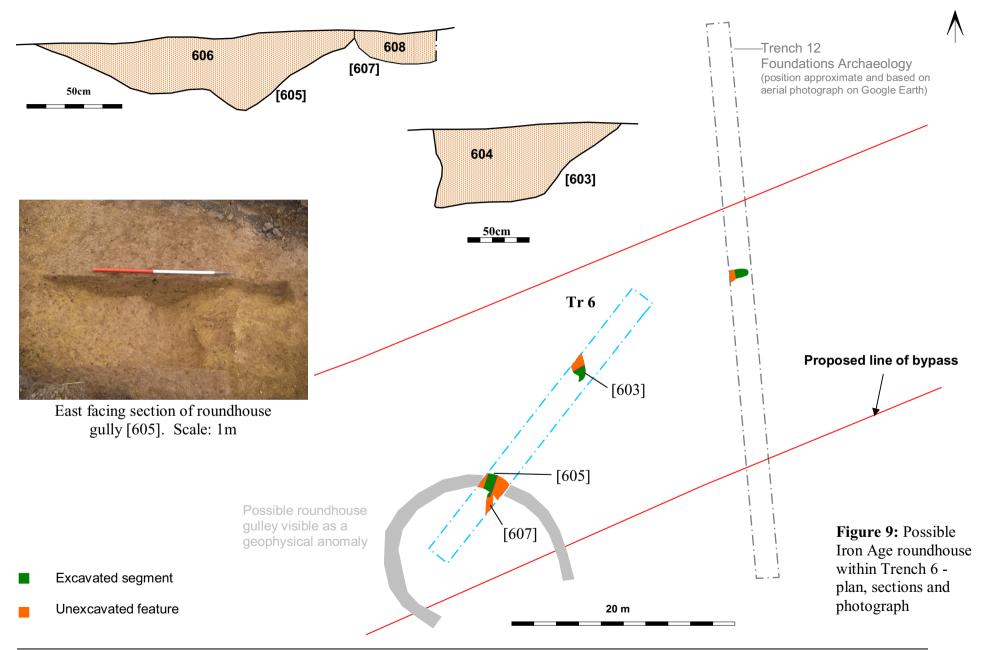




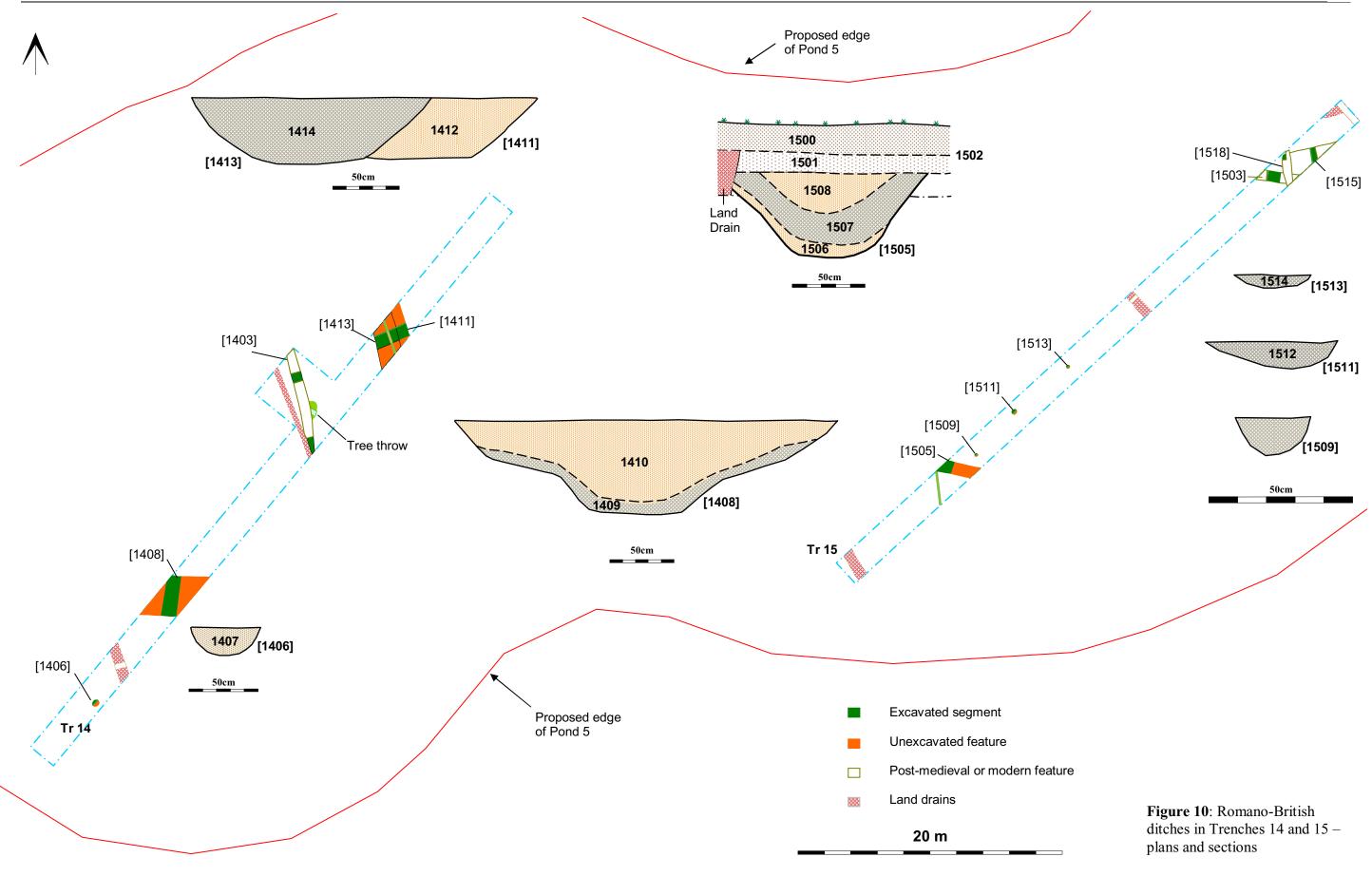












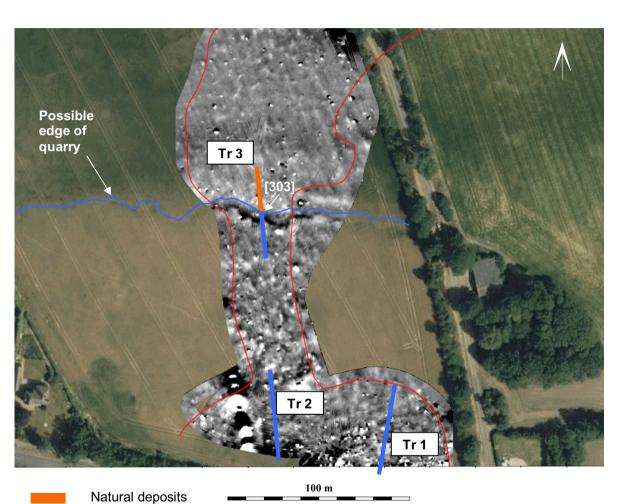




Trench 3 taken from south



Trench 2 taken from south

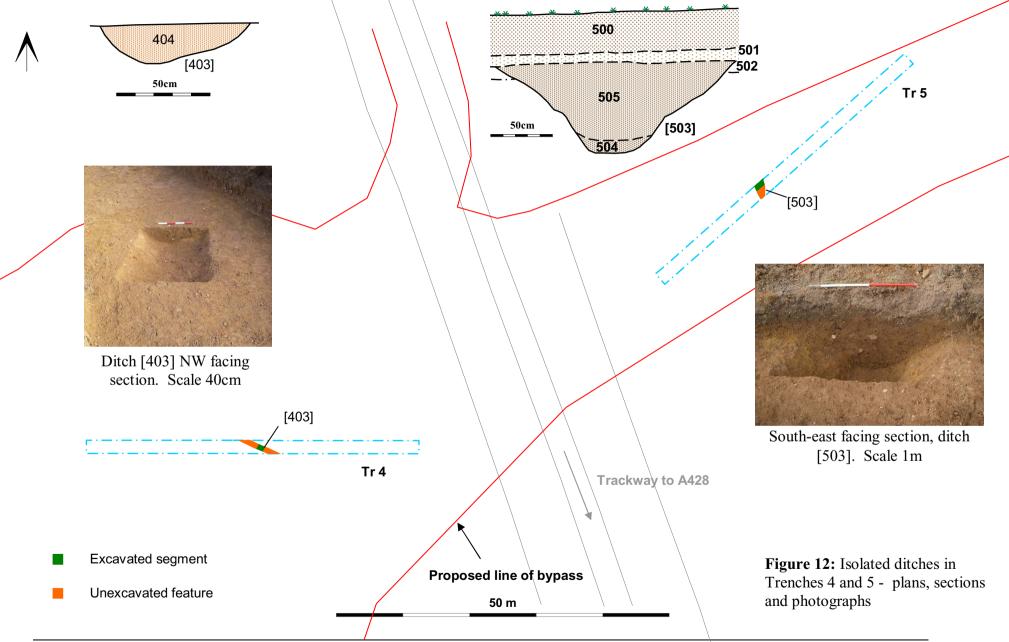


Trench 1 taken from south

Figure 11: Post-medieval quarrying in Trenches 1, 2 and 3 - plan and photographs, with geophysical anomalies and cropmarks

Quarry backfill





Bedford Western Bypass Northern Section, Bromham Road, Bedford Results of Archaeological Evaluation



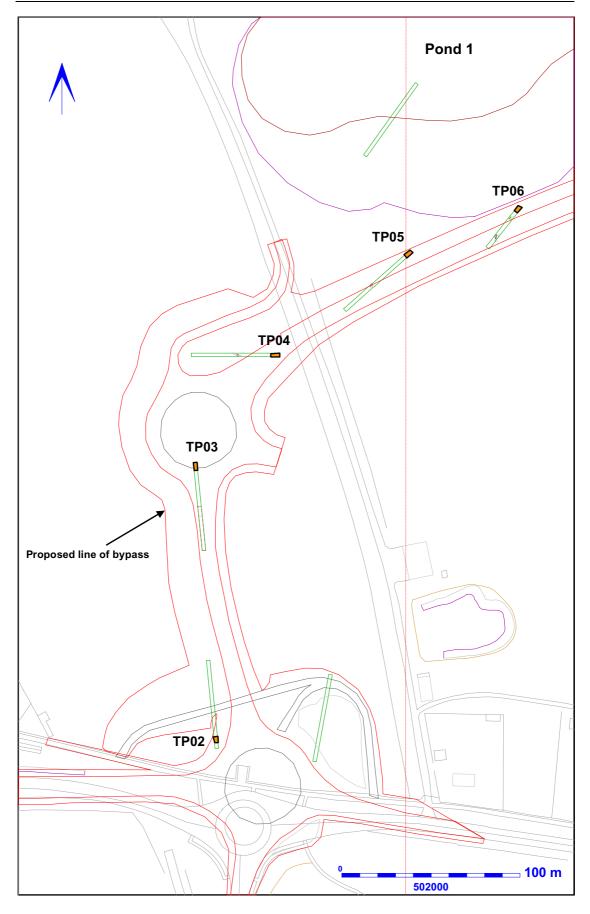


Figure 13: Location of geoarchaeological test pits

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