

Trial Trenching and Excavation along the Elstow to Wixams Replacement Main Water Pipeline, Bedfordshire



Archaeological Evaluation Report



November 2014

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Archaeological Evaluation and Excavation

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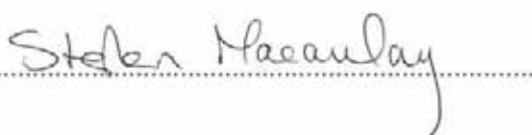
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Summary

Between the 19th and 29th of May 2014, Oxford Archaeology East conducted an archaeological evaluation along the line of the reinforcement main water pipeline from Houghton (Wixams) House to Elstow Depot. The pipe route is c.4.5km long with a working width of 15m.

This report includes the results of an initial phase of trial trenching with the excavation of 21 out of a total of 30 proposed trenches.

No archaeological features or finds were recorded during this first phase of works. Several furrows were recorded in trenches in the northern half of the pipe route.

Following the archaeological evaluation a programme of archaeological monitoring of the topsoil strip in the northern part of the scheme was undertaken. Two areas of the topsoil strip adjacent to the hamlet of How End, in the parish of Houghton Conquest, exposed a series of discrete and linear archaeological features cutting the natural geology.

A programme of full excavation of these two areas was required. These works were carried out by Oxford Archaeology East between the 8th and 30th of July 2014. The archaeological features uncovered dated from the medieval to post-medieval periods with the majority of features dating to the medieval period.

The excavation has demonstrated the presence of significant medieval and post medieval remains at How End that relate to settlement in the immediate vicinity. The archaeological remains have contributed greatly to our understanding of the surrounding cropmarks and earthworks known to be present in the area.

1 INTRODUCTION

1.1 Location and scope of work

- 1.1.1 Between the 19th and 29th of May 2014, Oxford Archaeology East conducted the first phase of an archaeological evaluation along the line of the reinforcement main water pipeline from Houghton (Wixams) House to Elstow Depot. The pipe route is c.4.5km long with a working width of 15m (Fig. 1). The project was undertaken on behalf of Anglian Water.
- 1.1.2 Subsequent to the evaluation a phase of archaeological monitoring of the topsoil strip in the northern part of the scheme was undertaken in June 2014. On the basis of this phase of archaeological monitoring two areas of archaeological excavation were carried out between the 8th and 30th July 2014.
- 1.1.3 These archaeological works were undertaken in accordance with a Brief issued by Martin Oake of Central Bedfordshire Council (CBC), supplemented by a Specification prepared by OA East.
- 1.1.4 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning Policy Statement 5: Planning for the Historic Environment* (Department for Communities and Local Government 2010). The results will enable decisions to be made by CBC, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found.
- 1.1.5 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

1.2 Geology and topography

- 1.2.1 The southern end of the route lies at a height of c.120m AOD, below the crest of the north facing scarp of the Greensand Ridge. As it continues northwards the route drops down the scarp to the low lying clay of Marston Vale. At the foot of the Greensand Ridge scarp the route drops gently down from a height of 70m AOD to 37m AOD at the northern end of the pipeline (Fig. 1).
- 1.2.2 The underlying geology at the southern end of the pipeline route comprises Woburn Sands Formation overlain by Glacial Till, West Walton Formation and Ampthill Clay Formation. From the foot of the Greensand Ridge scarp northwards the geology is Stewartby Member And Weymouth Member (undifferentiated) – Mudstone overlain in places by superficial Head deposits (clay, silt, sand and gravel). (<http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html> accessed 3rd September 2014).

1.3 Archaeological and historical background

- 1.3.1 The route lies in close proximity to a number of known archaeological sites and remains. A full search of the Historic Environment Record for Central Bedfordshire and Luton (HER) of a 1km square centred on the pipeline route through the parish of Houghton Conquest was commissioned from Central Bedfordshire Council. These are summarised below, from south to north.
- 1.3.2 At the very southern end of the route a surface scatter of post-medieval pottery has been found (HER 9881). This part of the pipe route lies immediately north-west of Houghton House, a mansion dating from the early 17th century (HER 789). This building is a Scheduled Monument and the pipeline also runs through its associated parkland (HER 9442).

- 1.3.3 A group of uncharacterised cropmarks lie the foot of the Greensand Ridge scarp (HER 9079). To the south-east of Field Farm are two further cropmarks delineating small irregular enclosures (HER 16470). Also close to the route in this area are scatters of 15th century pottery (HER 7479) and 17th century tile (HER 9882).
- 1.3.4 The majority of the pipeline route passes through the western part of Houghton Conquest approximately 4km to the south of Bedford. The Victorian County History for Bedfordshire describes the parish as part of the Redbornebroke Hundred. The hamlet of How End in the south-west of the parish (through which the pipeline route passes) is described as Haw End, which consists of one or two farms and a Methodist chapel. The Manor farm (HER 5388 to the west of the B530) is the site of a manor which formerly belonged to Reading Abbey and is described in the Domesday survey of AD1086 (Page 1912, pp289). Field Farm (HER 5682) is described as having a 17th century origin with the reputed remains of a medieval moated site (HER 9884). Road Farm (HER 16366) is described as a 19th century model farm complex.
- 1.3.5 Houghton Conquest may be an example of a dispersed settlement in the medieval period as evidenced by the smaller named units of How 'End' in the south-west as well as Duck End and Chapel End. The parish is situated on the clay-land of central Bedfordshire with a high incidence of moated sites which is a common feature of dispersed settlement. There is also a general association of irregular multi-field systems (Edgeworth 2007). It is these landscapes that have by far the most common examples of shrunken or deserted settlements (Lewis 2001). A pattern of decline and agricultural recession in the 14th Century has been identified in Bedfordshire (Oake *et al* 2007).
- 1.3.6 Archaeological investigation in advance of a gas pipeline to the east of Field Farm found Early to Mid Iron Age settlement remains in the form of ditches and pits (HER 18191, TL 0369 4034).
- 1.3.7 To the east of How End is a cropmark of a rectilinear enclosure which has produced surface finds of 4th century Roman pottery, coins, metalwork and a dolphin brooch (HER 15803, TL 0368 4092). South-west of How End are cropmarks of another rectangular enclosure which has produced surface finds of Roman pottery (HER 2425, TL 031 407). A metal detecting survey at How End centred on grid reference TL 03 40 recovered Roman artefacts including twenty four coins, three brooches and a knife handle (HER 18517).
- 1.3.8 Medieval settlement remains are also listed at How End including an area of earthworks (now largely ploughed out) is listed immediately to the west of Road Farm (HER 653/1889, TL 032 410). These are described as settlement remains and ridge and furrow. Listing HER 5223 (TL 031 411) also describes a moated site at this location. A medieval moated site is also described to the east of Road Farm (HER 3390, TL 038 412). Medieval pottery was also recovered in an area of cropmarks to the south of How End (HER 9883, TL 031 401).
- 1.3.9 Cropmarks comprising a rectangular enclosure and linear features (HER 3280), are recorded at the northern end of the route.
- 1.3.10 Although there has been some fieldwork and survey in the area of the pipeline route, archaeological sites and features are not often easily detectable. It has been assumed that the clay vale in particular was not heavily settled in the prehistoric and Roman periods. Archaeological investigations during the construction of a gas pipeline across the vale showed that well preserved remains of this period exist in a greater density than had previously been thought (Network Archaeology 2003).

1.4 Acknowledgements

- 1.4.1 The author would like to thank Terry Smith of BSP Associates and Andy Barnes of Anglian Water for commissioning the work. Stephen Macaulay managed the project and Martin Oake of Central Bedfordshire Council monitored the works. The field work was supervised by the authors with the assistance of James Fairbairn, Zoe Clarke and Chris Swain. The site survey was conducted by Gareth Rees. The illustrations were produced by Charlotte Davies.

2 AIMS AND METHODOLOGY

2.1 Evaluation

Aims

- 2.1.1 The objective of this evaluation was to determine as far as reasonably possible the presence/absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the development area.

Methodology

- 2.1.2 The Brief required that a total of thirty 50m trenches be opened along the line of the route to provide a sample evaluation of the development area (Fig. 2). It was not possible to excavate all of the trenches during this phase of works.
- 2.1.3 Trenches 8-14 (Chainage 1,100m-2,500m) lay in an area crossed by three high pressure gas mains and an oil pipeline. Trenches 24 & 25 (Chainage 3,900m-4,300m) were not accessible as a result of hedgerows. It was originally proposed that trenches 24 & 25 would be excavated once Anglian Water have taken possession of the land and a strategy for the investigations of the area of trenches 8-14 would be considered later, however these trenches would be located in an area of disturbed ground (due to the large scale utility trenches).
- 2.1.4 Of the remaining trenches, 1-7 (Chainage 0-1,000m) were situated in fields close to known newt habitats. As a result, the pipe route was inspected and signed off by an Ecologist prior to excavation. No archaeology was recorded here and they were backfilled on the same day in order to avoid the necessity of placing newt fencing around them.
- 2.1.5 Machine excavation was carried out under constant archaeological supervision with a tracked 360°-type excavator using a toothless ditching bucket.
- 2.1.6 The site survey was carried out by Gareth Rees.
- 2.1.7 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.
- 2.1.8 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.
- 2.1.9 Conditions on site were initially favourable, with bright and dry weather, deteriorating during the course of the project into prolonged periods of heavy rain. Trenches 15-23 lay under crop that was in places chest high. The remainder lay in freshly cropped or ploughed fields (1-4 & 26-30) and meadow (5-7).
- 2.1.10 Full details by trench/context appear in Appendix A.

2.2 Monitoring

Introduction

- 2.2.1 Following the archaeological evaluation along the route of the Elstow to Wixams Replacement Main Water Pipeline a programme of archaeological monitoring of the topsoil strip in the northern part of the scheme was undertaken between Ordnance Survey Grid ref: TL 0374 4006 and TL 0380 4337 (Fig. 2), in the location of proposed Trenches 8-14 (Chainage 1000m-2400m).

Results

- 2.2.2 The southernmost part of the topsoil strip (between Chainage 1000m-1200m) area exposed a series of discrete and linear archaeological features yielding medieval pottery sherds cutting the natural geology. This area was designated Area 1 (Fig. 2).
- 2.2.3 A further section of the topsoil strip area immediately to the north of Road Farm, Howe End (centred on TL 0322 4114, Chainage 2000m-2400m) exposed a series of discrete and linear archaeological features yielding medieval pottery sherds cutting the natural geology. This area was designated Area 2 (Fig. 2).
- 2.2.4 Based on the objective set out in the Specification by OA East in the event that archaeological remains were present, Martin Oake of Central Bedfordshire Council and Anglian Water were consulted. An appropriate methodology and resourcing for the excavation of these two areas was then agreed and implemented.

2.3 Excavation

Aims

- 2.3.1 The original aims of the archaeological investigation were set out in the Brief and Written Scheme of Investigation governing the evaluation phase of the Archaeological Works and further refined liaising with the CBC and Anglian Water following the topsoil strip monitoring phase. A programme of excavation of the two areas of interest revealed by the archaeological monitoring was agreed.
- 2.3.2 The main aims of this excavation were
- To mitigate the impact of the development on the surviving archaeological remains. The development would have severely impacted upon these remains and as a result a full excavation was required, targeting the areas of archaeological interest highlighted by the previous phases of evaluation and archaeological monitoring.
 - To preserve the archaeological evidence contained within the excavation area by record and to attempt a reconstruction of the history and use of the site.
- 2.3.3 The aims and objectives of the excavation were developed with reference to the national, regional and local frameworks, in particular English Heritage (1991 and 1997), whilst the local and regional research contexts are provided by Oake et al (2007), Glazebrook (1997), Brown and Glazebrook (2000) and Medlycott (2011).

Regional Research Objectives

- 2.3.4 The monitoring phase revealed archaeological remains from the medieval period and relating to known cropmarks and earthworks of this period. Medieval rural settlement has been identified as a significant topic in the Regional Research framework:
- Rural settlement diversity and the definition of the actual medieval settlement patterns across the region has been identified as a principal research requirement for the region (Glazebrook and Brown 2000).
 - The large number of medieval sites are recorded by the National Mapping Programme (NMP) represents a substantial body of data which remains largely unanalysed. There is a huge potential for further research into topics such as field systems, enclosures, or roads and trackways, in particular using historical maps and documents (Medlycott 2011, p70).

Site Specific Research Objectives

- 2.3.5 The excavation of these medieval remains would also relate to the following wider research objectives described in the Regional Research framework to characterise settlement forms and functions:
- The origins and development of the different rural settlement types need further research, also the dynamics of medieval settlements. More data will add to our understanding of the way places appear, grow, shift and disappear (Medlycott 2011, p70).
 - Evaluation by sample excavation of each category of site, producing building density data, artefact assemblages, ecofact assemblages and samples for radiocarbon dating (Brown 2000, p25).

Methodology

- 2.3.6 The CBC Brief required that two areas: Area 1 and 2, approximately 0.06ha and 0.13ha respectively, be machine stripped to the level of natural geology or the archaeological horizon (Fig. 2).
- 2.3.7 Machine excavation was carried out by a tracked 360° type excavator using a 2m wide flat bladed ditching bucket. under constant supervision of a suitably qualified and experienced archaeologist.
- 2.3.8 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.
- 2.3.9 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.
- 2.3.10 A total of 12 bulk samples were taken from the medieval features excavated in Area 2. These each totalled 40L and were processed by flotation at OA East's environmental processing facility at Bourn.
- 2.3.11 Site conditions were good with rain at times.

3 RESULTS

3.1 Introduction

3.1.1 The excavation phase uncovered evidence for activity spanning the medieval to post-medieval periods with the majority of features dating to the medieval period. Descriptions of the features identified and artefacts recovered are given in this section with full descriptions of each context presented in Appendix B, table 1, feature locations are shown in Figures 3 and 3b.

3.1.2 Very little complex stratigraphy was present on the site although some inter-cutting discrete and linear features were observed. The chronological phasing presented below is largely based on stratigraphic relationships, spatial associations and, to a certain extent, similarity of alignment of linear features. Where possible this has been combined with dating evidence provided by stratified artefacts. Two main periods of activity have been identified, these are summarised below.

- **Period 1: medieval (AD1066 – AD1500)**

The archaeological features in Area 1 belonged exclusively to this period and comprised ditched boundaries and agricultural furrows. The majority of features in Area 2 also belonged to this period with a variety of feature types including ditched boundaries, pits, post-holes and a cobbled surface.

- **Period 2: post-medieval (AD1500 – AD1800)**

Activity dated to this period comprised ditched boundaries and a pit in Area 2.

3.2 Period 1: Medieval (AD1066 – AD1500)

Area 1 (Fig. 3)

Ditches

3.2.1 Ditch **812** comprised the western terminus of a linear feature running east out of the excavation that measured 0.5m wide and 0.45m deep, with a U shape profile. It contained a single fill (811) which yielded some medieval pottery sherds.

3.2.2 Ditch **814** was aligned east to west and was 1.1m wide and 0.15m deep, with a shallow U shape profile with a single fill (813).

3.2.3 Ditch **818** comprised the northern terminus of a linear feature running south out of the excavation, measuring 1.1m wide and 0.12m deep, with a shallow U shape profile. It contained a single fill (817). This ditch may also be equated with the ditch **824** excavated further to the south, measuring 1.7m wide and 0.8m deep. It contained three fills (821, 822 & 823). Medieval pottery sherds and fragments of animal bone were recovered from the uppermost fill (821).

Furrows

3.2.4 Three furrows were identified in the northern part of the site. These ran east north-east to west south-west across the excavation. The northernmost furrow (**806**) was excavated and measured 1.16m wide by 0.1m deep with a wide shallow U shape profile. It contained a single fill (805).

Area 2 (Fig. 3b)

- 3.2.5 Two pits (**1010 & 1012**) were located near the western limit of the excavation. These measured 0.4m in diameter by 0.1m deep and had U shaped profiles. Each contained a single fill (1009 & 1011). An environmental sample taken from fill 1009 contained a high proportion of charcoal. Fill (1011) yielded fragments of animal bone and medieval pottery sherds.

Pit group 1023

- 3.2.6 A group of five pits (**1023, 1024, 1026, 1033 & 1036**) were located at the western end of the excavation area and appeared to be bounded by ditches **1008** and **1020**. Pit **1023** was sub-circular in plan, measuring up to 1.28m in diameter and 0.6m deep, with a steep side and flat base (Fig. 4). It contained two fills (1021 and 1022) which yielded fragments of charcoal, burnt clay and some medieval pottery sherds.

Pit **1024** was sub-circular in plan, measuring up to 1.55m in diameter and 0.1m deep, with a shallow U shape profile. It contained a single fill (1025) which yielded fragments of charcoal, animal bone and some medieval pottery sherds.

Environmental samples were taken from pits **1023** and **1024** (fills 1022 & 1025 respectively) but these yielded only unidentifiable fragments of charcoal:

Pit **1026** was circular in plan, measuring 1m in diameter and 0.25m deep with a U shape profile. It contained a single fill (1027) which yielded fragments of charcoal and some medieval pottery sherds;

Pit **1033** was sub-circular in plan, measuring up to 1.52m in diameter and 0.47m deep, with a steep side and a flat base (Fig. 4/Plate 2). It contained two fills (1031 & 1032) which yielded fragments of charcoal and some medieval pottery sherds.

Pit group 1108

- 3.2.7 A group of four pits (**1108, 1109, 1111 & 1117**) were located at the eastern end of the excavation and appeared to be bounded to the west by ditch **1102**. The easternmost pit could not be excavated as it lay mostly under the topsoil bund along the northern side of the excavation. As with pit group 1023 the fills contained varying quantities of charcoal.

Pit **1108** was circular in plan, measuring 3m in diameter and 0.8m deep, with a U shape profile (Fig. 4). It contained three fills (1105, 1106 & 1107) which yielded fragments of charcoal, animal bone and some medieval pottery sherds. Environmental samples taken from the fills yielded charred cereal and weed seeds.

Pit **1109** was sub-circular in plan, measuring up to 2m in diameter and 0.68m deep, with a U shaped profile (Plate 5). It contained a single fill (1110).

Pit **1111** lay mostly under the topsoil bund along the northern side of the excavation and could not be excavated. The surface of the exposed fill (1112) was cleaned for the purposes of finds retrieval but none were recovered.

Pit **1117** was amorphous in plan, measuring up to 4.25m in diameter and 1.38m deep, with 'stepped' sides and a U shape profile. It contained four fills (1113, 1114, 1115 & 1116) which yielded fragments of charcoal, some medieval pottery sherds and animal bone fragments.

Ditches

- 3.2.8 Ditch **1008** was aligned north-west to south-east, measuring 0.73m wide and 0.16m deep, with a U shape profile (Fig. 4). It contained a single fill (1007) which yielded fragments of charcoal, animal bone and some medieval pottery sherds.
- 3.2.9 Ditch **1020** was aligned north-east to south-west, measuring 0.5m wide and 0.1m deep, with a U shape profile. It contained a single fill (1019) which yielded some animal bone and medieval pottery sherds. This ditch may also be equated with the ditch cut **1039** excavated further to the south-west, measuring 0.63m wide and 0.15m deep. It

contained a single fill (1038) which yielded fragments of animal bone and medieval pottery sherds.

- 3.2.10 A set of five inter-cutting ditches were observed in the western part of Area 2. Excavation of these boundaries revealed two phases of activity within the medieval period. The earliest phase consisted of two parallel ditches (**1052 & 1054**) running north-east to south-west (Fig. 4). These boundaries were subsequently truncated by two parallel ditches (**1056 & 1058**) which terminated to the south-west immediately adjacent to ditch **1044** which ran north-west to south-east:

Ditch **1044** measured 0.85m wide and 0.27m deep, with a U shape profile. It contained a single fill (1043) which yielded a medieval pottery sherd;

Ditch **1052** measured 0.7m wide and 0.28m deep, with a U shape profile. It contained a single fill (1051);

Ditch **1054** measured 0.7m wide and 0.16m deep, with a U shape profile. It contained a single fill (1053) which yielded a medieval pottery sherd;

Ditch **1056** measured 0.6m wide and 0.22m deep, with a U shape profile. It contained a single fill (1055);

Ditch **1058** measured 0.2m wide and 0.2m deep, with a U shape profile. It contained a single fill (1057) which yielded a medieval pottery sherd. This ditch may be equated with the excavated ditch terminus **1068**.

- 3.2.11 Ditch **1071/1069** comprised the northern terminus of a linear feature running south out of the excavation, measuring 0.7m wide and 0.12m deep, with a shallow U shape profile. It contained a single fill (1070) which yielded a copper iron suspension ring.

- 3.2.12 To the east of this feature were three north-west to south-east aligned ditches spaced evenly at approximately 3m intervals (**1087, 1089 & 1095**).

Ditch **1087** measured 0.4m wide and 0.15m deep, with a U shape profile. It contained a single fill (1086).

Ditch **1089** was a 1.3m wide and 0.28m deep, with a U shape profile. It contained a single fill (1088) which yielded fragments of animal bone.

Ditch **1095** was 1.6m wide and 0.56m deep, with a U shape profile. It contained a four fills (1090, 1091, 1092, 1093 and 1094). The lowermost fill (1094) yielded fragments of medieval pottery.

- 3.2.13 Ditch **1102** lay at the eastern end of the excavation on a north to south alignment. It measured 1m in width by 0.4m deep and had a U shape profile. It contained two fills (1103 & 1104) which yielded fragments of animal bone and medieval pottery sherds.

Posts

- 3.2.14 A line of three posts (**1014, 1016 & 1018**) were located at the western end of the excavation area. This group may have formed part of a fence or a structure associated with and adjacent to pit group **1023**. They were all 0.2m in diameter and up to 0.16m deep, with U shape profiles (Fig. 4). Each post contained one fill (1013, 1015 & 1017 respectively), two of which (1013 & 1015) yielded medieval pottery sherds, a residual Early/Middle Saxon sherd was also recovered from 1013.

External surface

- 3.2.15 A cobbled surface (**1028**) was located at the western end of the excavation. It extended south from the line of ditch **1020/1039**, which it appeared to respect, to beyond the southern limit of the excavation. It consisted of frequent rounded flint gravels and cobbles pressed into the underlying clay. Large quantities of medieval pottery, one residual sherd of Roman pottery and some animal bone were recovered from this layer, which was up to 0.1m in thickness. It was truncated by the post-medieval pit cut **1030**.

3.3 Period 2: Post-medieval (AD1500 – AD1800)

Area 2

Ditches

- 3.3.1 Ditch **1048** was located in the western part of the site on a north-west to south-east alignment. It measured 2.9m in width by 0.28m deep and was U shaped in profile with a single fill (1047) that yielded fragments of charcoal, animal bone, CBM, slag, copper alloy and some pottery sherds. It heavily truncated ditch **1050**, which was on the same alignment and measured 0.95m in width by 0.25m deep and contained a single fill (1049) from which fragments of slag, animal bone, an iron nail, a common whelk shell and some pottery sherds were recovered.
- 3.3.2 Approximately six metres to the east was another ditch (**1059**) on the same alignment. This measured 2.1m in width by 1.05m deep and had a U shaped profile (Fig. 4/Plate 4) that contained five fills (1060, 1061, 1062, 1063 & 1064). Fill 1062 yielded fragments of CBM, animal bone and some iron nails.
- 3.3.3 Ditch **1078** lay 10m to the east on a north to south alignment. It was 3.8m in width by 0.95m deep and had a U shaped profile that contained six fills (1079, 1080, 1081, 1082, 1083 & 1101). Fill (1080) yielded fragments of CBM and animal bone.

Pit 1030

- 3.3.4 Pit **1030** truncated external surface **1028** at the western end of the site. It was sub-circular in plan, measuring up to 2.1m in diameter by 0.38m deep, with a U shaped profile. It contained two fills (1034 & 1035) which yielded charcoal fragments, medieval pottery fragments, CBM, iron nails and some animal bone.

3.4 Undated Features

- 3.4.1 A number of features were excavated in both Areas 1 and 2 that were found to be natural scars from pre-existing tree root systems or natural hollows. The features described below are not considered further in the subsequent discussion.

Area 1

Tree boles

- 3.4.2 Four tree boles (**808, 810, 816 & 820**) were encountered in this area. These were sub-circular in plan with irregular profiles up to 0.25m deep. Each contained a single fill (807, 809, 815 & 819), which with the exception of fill 807, all yielded medieval pottery.

Area 2

Tree boles

- 3.4.3 Six tree boles (**1003, 1045, 1067, 1073, 1075 & 1084**) were encountered in Area 2. These were also sub-circular in plan with irregular profiles up to 0.27m deep. Each contained a single fill (1004, 1046, 1068, 1072, 1074 & 1085) which, with the exception of fill 1073, yielded medieval pottery sherds.

Natural pond feature

- 3.4.4 A silted natural depression or possible shallow pond (**1041**) was encountered in the central part of the site. This feature was not fully exposed within the limits of the excavation but it was broadly linear in plan, aligned north-west to south-east. The visible portion was 8m wide and 0.12m deep, with a wide and shallow profile. It

contained a single fill (1042) which yielded some medieval pottery sherds, animal bone fragments and an iron nail.

3.5 Finds Summary

Introduction

3.5.1 Finds were recovered from both excavated areas and consisted of medieval and post-medieval pottery and ceramic building material, glass dating from the post-medieval period and fragments of metal and slag dating to the medieval period. Faunal remains were also recovered from both excavated areas from features dating to the medieval and post-medieval periods.

3.5.2 In addition, residual finds from earlier periods were recovered from medieval features. These included a fragment of Roman grog-tempered ware pottery recovered from the external surface **1028**; a fragment of Early /Middle Saxon pottery recovered from post-hole **1014**; and a Late Neolithic/Early Bronze Age flint flake recovered from the topsoil in Area 2.

Metalwork (Appendix B.1)

3.5.3 A small assemblage of predominantly iron objects dating from the medieval to post-medieval periods were recovered from Area 2. These included nail fragments, a harness pendant and a copper alloy coin. Two unidentifiable copper alloy fittings were also recovered.

Metalwork debris (Appendix B.2)

3.5.4 A small assemblage of 31 pieces of metal working debris were collected from two ditches (**1048** & **1050**) and the excavated modern field drain (**1005**) in Area 2. The largely undiagnostic assemblage is in poor condition and is not closely datable.

3.5.5 The metal working assemblage is small, and mostly undiagnostic, and is perhaps evidence of secondary metalworking in the vicinity of the site. Brick and tile fragments also recovered from ditch **1048** date this possible activity to the post-medieval period.

Glass (Appendix B.3)

3.5.6 The excavation produced an assemblage of bottle glass weighing 0.185kg in total, recovered from subsoil (801) in Area 1 and pit **1030** in Area 2. No complete vessels were recovered and the glass is not closely datable, however the fragments of glass recovered from pit **1030** are likely to be late 18th-19th century in date.

Pottery (Appendix B.4)

3.5.7 A total of 1085 sherds of pottery weighing 8.4kg were recovered from Areas 1 and 2. This is almost entirely of medieval date with just a few post-medieval sherds present from topsoil (99999) and subsoil (801) in Area 1 and from pit **1030** in Area 2.

3.5.8 The assemblage is dominated by medieval shelly ware and medieval grey sandy wares. These provide a 12th- to 14th-century date for both assemblages with only very slight evidence for occupation or activity before or after this.

3.5.9 The pottery recovered from pits **1108** and **1117** in pit group **1108** appear to be consistently earlier than that from other contexts on the site and most probably date this pit group to the mid 12th century. The pottery from pit group **1023** dates from the 12th-13th century.

Ceramic building material (Appendix B.5)

- 3.5.10 A total of 35 pieces of ceramic building material were collected from six features. The assemblage comprises fresh and abraded fragments of post medieval roof tile, floor tile and brick plus two pieces of modern drainpipe. The assemblage was collected from fills of five features in Area 2: pit **1030** and ditches **1048**, **1050**, **1059** and **1078**.
- 3.5.11 All the ceramic building material is redeposited, being collected from pit and ditch fills, and is not directly associated with any extant structures. The material almost exclusively represents debris from buildings of late post medieval date, with the exception of a small quantity of modern drainpipe.

Burnt Clay (Appendix B.6)

- 3.5.12 A total of six small fragments of baked clay, weighing 316g, were collected from the fills of two ditches **1008** and **1020** at the western end of Area 2.
- 3.5.13 The baked clay assemblage comprises a small quantity of abraded scraps in grogged fabrics. The presence of wattle or rod impressions on some fragments suggests that they are derived from domestic construction.

3.6 Environmental Summary

Faunal remains (Appendix C.1)

- 3.6.1 A total of 2.63kg of animal bone was recovered from the excavation of Area 2. The assemblage comprised 50 fragments of animal bone of which 34 were identifiable to species. All material was recovered from contexts dating from the medieval and post-medieval periods. The majority of identifiable fragments derived from the main domesticates, primarily cattle.

Environmental samples (Appendix C.2)

- 3.6.2 A total of 12 bulk samples were taken from the medieval features excavated in Area 2. Samples were taken from three pits (**1012**, **1023** & **1024**) and each of the three fills of pit **1108**. Samples were also taken from external surface **1028**, ditches **1078**, **1102** and the natural pond feature (**1041**). A sample was also taken from post-medieval pit **1030** which yielded no environmental remains.
- 3.6.3 Only a sparse quantity of charred plant remains were recovered from pits **1012**, **1024** and **1108**, and ditches **1078** and **1102**. The charred plant remains consist mainly of cereal grains that are poorly preserved. Whilst these remains most likely represent burnt food, the small quantities are not indicative of deliberate deposition other than in pit **1012**. It is likely that this pit was used for the disposal of culinary waste.

4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

- 4.1.1 Two periods of settlement activity were identified by the excavations at How End. The majority of archaeological remains excavated in Areas 1 and 2 related to medieval occupation and activity dating from the 12th to 14th centuries with little evidence for activity before or after this. Ditched boundaries and a pit dating to the post-medieval period were also revealed in Area 2.
- 4.1.2 The residual Late Neolithic/Early Bronze Age flint flake found in the topsoil is evidence of prehistoric activity in the vicinity of the site. However, as indicated in the desk study, no other finds or sites belonging to this period have been recorded in this locality.
- 4.1.3 The residual Roman pottery recovered from the cobbled surface (1028) is further evidence of activity in this period and probably relates to Roman settlement activity recorded to the east of the site.

Period 1: Medieval (AD1066 – AD1500)

- 4.1.4 The ditched boundaries encountered in Area 1 represent land division associated with the medieval settlement remains described in section 1.3.8. Although the limited extent of the excavations prevent further interpretation, it appears that the features encountered relate to the wider medieval landscape and known cropmarks located to the north and south of the excavation area. The agricultural ridge and furrows identified in this area probably also date to this period.
- 4.1.5 Possibly the earliest medieval activity was represented by pit group **1108**, at the eastern end of Area 2, which in all likelihood dated to the mid 12th century. The edge of this area of substantial pitting appears to have been delineated to the west by boundary ditch **1102**. This activity was mirrored at the western end of Area 2 with pit group **1023**, which was also delineated by ditched boundaries **1008** and **1020/1039**. These features yielded small quantities of pottery and other material that may represent refuse deposited as they fell into disuse. No deposits associated with the primary use of the pits were present and so their initial function remains unknown. Environmental sampling indicates that pits **1010** and **1012** at the western end of Area 2 were also waste pits.
- 4.1.6 A high proportion of the pottery recovered from the site came from the cobbled surface (1028) and was dated to AD1250-1400. This feature extended southwards beyond the limit of excavation, its northern extent was defined by ditch **1020/1039**. Further evidence for medieval activity was evident to the east in the form of boundary ditches aligned north-west to south-east, which are indicative of the formal division of the land into plots at this time.
- 4.1.7 The presence of ditches, pits and posts dating to the 12th to 14th-century supports the interpretation of the settlement remains immediately to the south of the site (section 1.3.8) as a medieval moated site (HER 3390).
- 4.1.8 It would appear that these areas of 12th to 14th-century activity subsequently fell out of use in the later medieval period. The paucity of archaeological remains dating from the 14th century onwards may be taken as further evidence for decline and agricultural recession previously identified in Bedfordshire in the later medieval period (Oake *et al* 2007). Many clay land settlements of the East Midlands and East Anglia were deserted in the late 14th and early 15th centuries. This corresponds with a climatic deterioration with many wet summers between AD1250 and AD1400. Extended periods of wet

weather would have had a detrimental effect on the clay-land arable farming settlements, which were dependent on reasonable weather and good drainage. This, coupled with the Black Death, forced many people to migrate to drier settlements or to specialise in pastoral farming. The subsequent enclosure of land for the grazing of sheep and cattle would preserve the arable ridge and furrow and other earthworks associated with deserted dispersed settlements such as How End (Beresford 1975).

- 4.1.9 Both areas of medieval activity were located adjacent to ponds. Water management was a very important activity in medieval period (Edgeworth 2007) and the creation of wildfowl lakes is documented at this time. With regards Area 1, a pond was located immediately to the east and this may be an example of such activity. Immediately to the south of Area 2, at Road Farm, was another pond which is located on the site of a possible medieval moated site (HER 5223). Fish ponds are commonly associated with medieval moated sites and this may be the remnant of one.

Period 2: Post-medieval (AD1500 – AD1800)

- 4.1.10 Post-medieval activity included three substantial ditched boundaries (**1048/1050**, **1059** & **1078**) running broadly north to south and pit **1030**, which truncated medieval surface **1028**. The pit contained glass, brick and tile fragments and probably represented a waste pit.
- 4.1.11 Ditches **1048/1050** and **1059** aligned with a broad depression in the land surface which was assumed to be associated with the medieval earthworks immediately to the south of the site. The recovery of post-medieval artefacts including metalworking debris and post-medieval tile and brick from these ditches, and ditch **1078**, might suggest that not all of earthworks in the vicinity are of medieval provenance.

4.2 Conclusions

- 4.2.1 The excavations have successfully fulfilled the aims of the investigation. These works have confirmed the nature and date of medieval and post-medieval cropmarks previously known only from aerial photography and cartographic evidence (Fig. 5) and recorded in the Central Bedfordshire Historic Environment Record.
- 4.2.2 The excavations have also provided evidence for the establishment of a settlement at How End during a known period of growth and settlement expansion on the clay-lands in 12th to 14th centuries. Evidence for continuity of the formal land divisions into the post medieval period has also been demonstrated.

APPENDIX A. EVALUATION SUMMARY AND TRENCH DESCRIPTIONS

Trenches 1-7

Trenches 1-7 lay in close proximity to an area of known Great Crested Newt habitation. As a result the pipe route was surveyed by an ecologist prior to their excavations. They were subsequently backfilled once it had been established that no archaeological remains were preserved within.

Trenches 1-3 were situated in the southernmost part of the pipe route on the north facing scarp of the Greensand Ridge. Trenches 1 and 2 contained a firm, mid grey brown, humic clay topsoil. The same deposit was recorded in Trench 3 sealing a light grey orange sandy clay subsoil. The underlying natural deposits varied from light grey brown silty clay with frequent chalk inclusions to a light orange grey clay with patches of silty sand. No archaeological finds or features were recovered from these trenches.

Trench 4 was the solitary trench situated in a field at the base of the afore-mentioned slope. It contained an orange brown, humic clay topsoil that sealed a light grey orange sandy clay subsoil. The natural deposits comprised a light orange grey clay with occasional patches of silty sand. A total of eight north-east to south-west aligned field drains were recorded in this trench.

Trenches 5-7 were located in a meadow at the base of the scarp of the Greensands Ridge. The topsoil recorded within this field comprised a dark grey brown, humic clay with occasional stone inclusions. This sealed a light grey orange silty clay subsoil, which in turn overlay the natural deposits, comprised as they were of light grey brown clay interspersed with patches of mid orange clay sand.

Trench 1						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of topsoil overlying a natural of silty clay and sand.					Avg. depth (m)	0.20
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
100	Layer	-	0.22	Topsoil	-	-
101	Layer	-	-	Natural	-	-
Trench 2						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of topsoil overlying a natural of clay and sand.					Avg. depth (m)	0.30
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
200	Layer	-	0.34	Topsoil	-	-
201	Layer	-	-	Natural	-	-
Trench 3						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of top and subsoil overlying					Avg. depth (m)	0.60m

natural clay and sand.					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
300	Layer	-	0.32	Topsoil	-	-
301	Layer	-	0.27	Subsoil	-	-
302	Layer	-	-	Natural	-	-
Trench 4						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and sand.					Avg. depth (m)	0.70
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
400	Layer	-	0.38	Topsoil	-	-
401	Layer	-	0.29	Subsoil	-	-
402	Layer	-	-	Natural	-	-
Trench 5						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and sand.					Avg. depth (m)	0.50
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
500	Layer	-	0.32	Topsoil	-	-
501	Layer	-	0.18	Subsoil	-	-
502	Layer	-	-	Natural	-	-
Trench 6						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and sand.					Avg. depth (m)	0.40
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
600	Layer	-	0.27	Topsoil	-	-
601	Layer	-	0.10	Subsoil	-	-

602	Layer	-	-	Natural	-	-
Trench 7						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and sand.					Avg. depth (m)	0.50
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
700	Layer	-	0.27	Topsoil	-	-
701	Layer	-	0.23	Subsoil	-	-
702	Layer	-	-	Natural	-	-

Trenches 15-23

This section of the pipeline ran close to the current Ampthill/Bedford Road (B530) within a relatively low lying, gently undulating landscape. The topsoil in this area comprised a dark brown, humic silty clay with occasional stones. No subsoil was present in a number of the trenches but within Trenches 15-17 and 20-21 it comprised a light grey brown sandy clay.

The underlying natural deposits varied markedly, both within the trenches and along the route. There was no apparent consistency to their composition, other than a broadly consistent inconsistency. The deposits observed included silty clay with occasional chalk inclusions and patches of light grey blue clay, interspersed with seams of sand and gravel.

Although no archaeological finds or features were recovered from these trenches a large number of field drains were noted on numerous alignments. Furthermore, Trenches 17 and 22 contained single examples of furrows (**1703 & 2202**), both of which ran perpendicular to the field boundary lying almost immediately to the west.

Trench 15						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural sands and clay.					Avg. depth (m)	0.70
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
1500	Layer	-	0.40	Topsoil	-	-
1501	Layer	-	0.28	Subsoil	-	-
1502	Layer	-	-	Natural	-	-
Trench 16						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and silt.					Avg. depth (m)	0.70
					Width (m)	2.10

					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
1600	Layer	-	0.45	Topsoil	-	-
1601	Layer	-	0.22	Subsoil	-	-
1602	Layer	-	-	Natural	-	-
Trench 17						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and sandy clay.					Avg. depth (m)	0.50
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
1700	Layer	-	0.28	Topsoil	-	-
1701	Layer	-	0.22	Subsoil	-	-
1702	Fill	0.55	0.25	Fill of 1703	-	-
1703	Cut	0.55	0.25	Ditch	-	-
1704	Layer	-	-	Natural	-	-
Trench 18						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and sand.					Avg. depth (m)	0.42
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
1800	Layer	-	0.32	Topsoil	-	-
1801	Layer	-	0.10	Natural	-	-
Trench 19						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural sandy clay.					Avg. depth (m)	0.50
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
1900	Layer	-	0.34	Topsoil	-	-
1901	Layer	-	0.18	Natural	-	-

Trench 20						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural sandy clay.					Avg. depth (m)	0.30
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2000	Layer	-	0.15	Topsoil	-	-
2001	Layer	-	0.15	Subsoil	-	-
2002	Layer	-	-	Natural	-	-

Trench 21						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and silty sand clay.					Avg. depth (m)	0.40
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
100	Layer	-	0.27	Topsoil	-	-
101	Layer	-	0.13	Subsoil	-	-
102	Layer	-	-	Natural	-	-

Trench 22						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural gravelly sandy clay.					Avg. depth (m)	0.40
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2200	Layer	-	0.32	Topsoil	-	-
2201	Fill	1.14	0.22	Fill of furrow	-	-
2202	Cut	1.14	0.22	Furrow	-	-
2203	Layer	-	-	Natural	-	-

Trench 23						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay sand.					Avg. depth (m)	0.30
					Width (m)	2.10
					Length (m)	50
Contexts						

context no	type	Width (m)	Depth (m)	comment	finds	date
2300	Layer	-	0.28	Topsoil	-	-
2301	Layer	-	-	Natural	-	-

Trenches 26-30

Trenches 26-30 were located at the northern end of the pipeline in a single large field that had recently been sown. As with the preceding batch of trenches the pipe was routed along the field boundary adjacent to the Ampthill/Bedford road.

The deposits recorded within these trenches were similar to those observed along the remainder of the site. The topsoil was a dark grey brown, humic clay overlying a light orange grey silty clay subsoil. Once again the natural was particularly varied, ranging from orange brown silty clays to lighter sands and gravels.

Trenches 26 and 27 both contained furrows, four in Trench 26, one of which was excavated (**2603**) and two in Trench 27, the southernmost of which was excavated (**2704**). Pit **2703** lay to the south of furrow **2704** and may have represented root disturbance.

Trench 26						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay, sand and gravel.					Avg. depth (m)	0.50
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2600	Layer	-	0.28	Topsoil	-	-
2601	Layer	-	0.22	Subsoil	-	-
2602	Fill	1.20	0.1	Fill of furrow	-	-
2603	Cut	1.20	0.1	Furrow	-	-
2604	Layer	-	-	Natural	-	-
Trench 27						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and clayey gravelly sand.					Avg. depth (m)	0.42
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2700	Layer	-	0.28	Topsoil	-	-
2701	Layer	-	0.16	Subsoil	-	-
2702	Fill	1.04	0.29	Fill of pit	-	-
2703	Cut	1.04	0.29	pit	-	-

2704	Feature	2.0	0.10	Furrow	-	-
2605	Layer	-	-	Natural	-	-
Trench 28						
General description					Orientation	NE-SW
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and clay sand.					Avg. depth (m)	0.30
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2800	Layer	-	0.16	Topsoil	-	-
2801	Layer	-	0.12	Subsoil	-	-
2802	Layer	-	-	Natural	-	-
Trench 29						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay.					Avg. depth (m)	0.35
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2900	Layer	-	0.17	Topsoil	-	-
2901	Layer	-	0.10	Subsoil	-	-
2902	Layer	-	-	Natural	-	-
Trench 30						
General description					Orientation	N-S
Trench devoid of archaeology. Consists of soil and subsoil overlying natural clay and sandy clay.					Avg. depth (m)	0.62
					Width (m)	2.10
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
3000	Layer	-	0.24	Topsoil	-	-
3001	Layer	-	0.38	Subsoil	-	-
3002	Layer	-	-	Natural	-	-



APPENDIX B. EXCAVATION CONTEXT INVENTORY

Area 1

Context	Cut	Period	Category	Feature Type	Colour	Fine component	Coarse component	Compaction	Shape in Plan	Side
800			layer	topsoil	very dark greyish olive brown	clay	moderate flint gravel	firm		
801			layer	subsoil	orange with light olive brown patches	clay	frequent flint gravel	firm		
805	806	1	fill	furrow	dark orange grey	silty clay	rare gravel	firm		
806	806	1	cut	furrow					linear	gentle
807	808		fill	natural	mid greyish brown	clay	occasional gravel	firm		
808	808		cut	natural					sub-circular	steep
809	810		fill	natural	mid greyish brown	silty clay	rare gravel	firm		
810	810		cut	natural					sub-circular	gentle
811	812	1	fill	ditch	mid greyish brown	silty clay	rare gravel	firm		
812	812	1	cut	ditch					linear	steep
813	814	1	fill	ditch	mid yellowish brown	silty clay	rare gravel	firm		
814	814	1	cut	ditch					linear	gentle
815	816		fill	natural	mid greyish brown	silty clay	rare gravel	firm		
816	816		cut	natural					complex	irregular
817	818	1	fill	ditch	mid greyish brown	silty clay		firm		
818	818	1	cut	ditch					linear	gradual
819	820		fill	natural	dark greyish brown	silty clay	rare gravel	firm		
820	820		cut	natural					complex	irregular
821	824	1	fill	ditch	light greyish orange	silty clay	occasional gravel	firm		
822	824	1	fill	ditch	mid greyish brown	clay	some flint gravel	firm		
823	824	1	fill	ditch	mid greyish orange	silty clay	rare gravel & charcoal frags	firm		
824	824	1	cut	ditch					linear	gradual

Area 2

Context	Cut	Period	Category	Group	Feature Type	Colour	Fine component	Coarse component	Compaction	Shape in Plan	Side
1000			layer		topsoil	very dark greyish olive brown	clay	moderate flint gravel	firm		
1001			layer		subsoil	orange and greenish brown	clay	frequent flint gravel	firm		
1002			layer		natural geology	orange with light olive brown patches	clay	frequent flint gravel	firm		
1003	1003		cut		natural feature					complex	gradual
1004	1003		fill		natural feature	olive brown	clay	occasional flint gravel	firm		
1005			cut		mod drain					linear	steep
1006			fill		drain	mid grey brown	clay	some gravel	firm		
1007	1008	1	fill		ditch	light brownish grey	silty clay	some gravel, charcoal fleck	firm		
1008	1008	1	cut		ditch					linear	gradual
1009	1010	1	fill		pit	light orange grey	silty clay	frequent charcoal	firm		
1010	1010	1	cut		pit					circular	gradual
1011	1012	1	fill		pit	light brownish grey	silty clay		firm		
1012	1012	1	cut		pit					sub-circular	steep
1013	1014	1	fill		post hole	mid brownish grey	silty clay	flint gravel and some charcoal	firm		
1014	1014	1	cut		post hole					sub-circular	steep
1015	1016	1	fill		post hole	mottled light orange brown	silty clay	rare gravel	firm		
1016	1016	1	cut		post hole					circular	gradual
1017	1018	1	fill		post hole	patchy light orange grey	silty clay	occasional chalk and charcoal flecks	firm		
1018	1018	1	cut		post hole					sub-circular	steep
1019	1020	1	fill		ditch	grey brown	silty clay	moderate flint gravel	firm		



1020	1020	1	cut		ditch					linear	gentle
1021	1023	1	fill	1023	pit	light brownish grey	silty clay	occasional gravel and cobbles, moderate charcoal and some burnt clay	firm		
1022	1023	1	fill	1023	pit	light greyish orange	silty clay	rare gravel and fragments of burnt clay	firm		
1023	1023	1	cut	1023	pit					sub-circular	steep
1024	1024	1	cut	1023	pit					sub-circular	gentle
1025	1024	1	fill	1023	pit	olive brown	clay	occasional flint gravel with some charcoal	firm		
1026	1026	1	cut	1023	pit					circular	gradual
1027	1026	1	fill	1023	pit	olive brown	clay	occ. gravel	firm		
1028			layer		surface (external)	olive brown	clay	frequent mostly rounded flint gravels and pot and bone fragments	firm		
1029	1030	2	layer		cleaning layer	dark greyish brown	clay	frequent tile, gravel and some roots	firm		
1030	1030	2	cut		pit					sub-circular	gentle
1031	1033	1	fill	1023	pit	light orange grey	silty clay	occasional gravel and some charcoal flecks	firm		
1032	1033	1	fill	1023	pit	light greyish orange	silty clay	occasional gravel with some charcoal flecks	firm		
1033	1033	1	cut	1023	pit					sub-circular	steep
1034	1030	2	fill		pit	mid greenish brown	clay	occasional tile	firm		
1035	1030	2	fill		pit	mid greyish brown	clay	frequent tile and stone fragments, occasional charcoal	firm		
1036	1036	1	cut	1023	pit					circular	gentle
1037	1036	1	fill	1023	pit	olive brown	clay	occasional charcoal	firm		
1038	1039	1	fill		ditch	greyish brown	silty clay	some flint gravel	firm		
1039	1039	1	cut		ditch					linear	gradual



1041	1041		cut		natural					linear	gentle
1042	1041		fill		natural	reddish olive brown	clay	frequent flint gravel	firm		
1043	1044	1	fill		ditch	mottled mid orange grey	silty clay with sand lenses	occasional gravel and some charcoal flecks	firm		
1044	1044	1	cut		ditch					linear	gradual upper slope with a step
1045	1045		cut		natural					circular	gentle
1046	1045		fill		natural	olive brown	clay	occasional flint gravel and charcoal flecks	firm		
1047	1048	2	fill		ditch	mottled mid yellowish brown	silty clay	occasional gravel, charcoal fragments and some CBM	firm		
1048	1048	2	cut		ditch					linear	gentle, irregular
1049	1050	2	fill		ditch	mid greyish brown	silty clay	occasional gravel	firm		
1050	1050	2	cut		ditch					linear	gentle
1051	1052	1	fill		ditch	dark slightly orange grey	silty clay	occasional gravel and some charcoal flecks	firm		
1052	1052	1	cut		ditch					linear	gradual
1053	1054	1	fill		ditch	light mottled orange grey	silty clay with orange sand lenses	occasional gravel and some charcoal flecks	firm		
1054	1054	1	cut		ditch					linear	gentle
1055	1056	1	fill		ditch	mid greyish orange	silty clay	gravel and some chalk	firm		
1056	1056	1	cut		ditch					linear	gradual
1057	1058	1	fill		ditch	mid brownish orange	silty clay with some orange sand lenses		firm		
1058	1058	1	cut		ditch					linear	steep



1059	1059	2	cut		ditch					linear	steep
1060	1059	2	fill		ditch	dark greyish brown	clay	frequent gravel	firm		
1061	1059	2	fill		ditch	greyish/yellowish brown	clay	frequent gravel	Firm		
1062	1059	2	fill		ditch	dark greyish brown	Clay	gravel	firm		
1063	1059	2	fill		ditch	light orange brown	Clay with sand patches	Frequent large gravels and cobbles of stone and flint	Firm		
1064	1059	2	fill		ditch	mid bluish brown	Clay		soft		
1065	1066	1	fill		ditch	mid orange grey	silty clay	rare fine gravel	firm		
1066	1066	1	cut		ditch					linear	gradual
1067	1067		cut		natural					sub-rectangular	gradual
1068	1069		fill		natural	dark greyish brown	silty clay	occasional gravel	firm		
1069	1069	1	cut		ditch					curvilinear	gradual
1070	1071	1	fill		ditch	mid greyish brown	silty clay	occasional gravel	firm		
1071	1071	1	cut		ditch					curvilinear	gradual
1072	1073		fill		natural	very dark greyish brown	silty clay	frequent charcoal, occasional gravel	firm		
1073	1073		cut		natural					sub-circular	irregular
1074	1075		fill		natural	mottled mid orange and orange grey	silty clay	occasional gravel and rare charcoal	firm		
1075	1075		cut		natural					complex	irregular
1078	1078	2	cut		ditch					linear	gradual
1079	1078	2	fill		ditch	yellow	sand	frequent flint gravel	dense		
1080	1078	2	fill		ditch	olive brown	clay	moderate flint gravel	firm		
1081	1078	2	fill		ditch	yellowish brown	clay	occasional flint gravel	firm		
1082	1078	2	fill		ditch	yellow and orange brown	clay	rare flint gravel	firm		
1083	1084		fill		natural	olive brown	clay	moderate flint gravel	firm		
1084	1084		cut		natural					complex	irregular

1085	1087	1	fill		ditch	mid greyish brown	clay	occasional gravel	firm		
1086	1087	1	fill		ditch	mid greyish brown	silty clay	rare gravel	firm		
1087	1087	1	cut		ditch					linear	steep
1088	1089	1	fill		ditch	mid brownish grey	silty clay	rare gravel	firm		
1089	1089	1	cut		ditch					linear	gradual
1090	1095	1	fill		ditch	light yellowish orange	silty clay	occasional gravel and chalk fleck	firm		
1091	1095	1	fill		ditch	light orange brown	slightly humic clay	occasional gravel	firm		
1092	1095	1	fill		ditch	mottled light orange and grey	silty clay	occasional chalk flecks	firm		
1093	1095	1	fill		ditch	mid orange	clayey sand	gravel	soft		
1094	1095	1	fill		ditch	light orange grey	silty clay	occasional gravel	firm		
1095	1095	1	cut		ditch					linear	steep, irregular
1101	1102	1	fill		ditch	olive brown	clay	moderate flint gravel	firm		
1102	1102	1	cut		ditch					linear	steep
1103	1102	1	fill		ditch	very dark grey	clay	frequent charcoal and fired clay fragments and occasional flint gravel	firm		
1104	1108	1	fill	1108	ditch	olive brown	clay	moderate fired clay and charcoal fragments with occasional flint gravel	firm		
1105	1108	1	fill	1108	pit	dark greyish brown	silty clay	occasional gravel and frequent charcoal	firm		
1106	1108	1	fill	1108	pit	light greyish brown	silty clay	charcoal	firm		
1107	1108	1	fill	1108	pit	mid orange brown	silty clay	charcoal fragments, and CBM and fired clay	firm		
1108	1108	1	cut	1108	pit					circular	steep
1109	1109	1	cut	1108	pit					sub-circular	steep



1110	1109	1	fill	1108	pit	dark olive brown	clay	frequent flint gravel	firm		
1111	1111	1	cut	1108	pit						
1112	1111	1	fill	1108	pit	dark greyish brown	clay	frequent flint gravel	firm		
1113	1117	1	fill	1108	pit	dark brownish grey	silty clay	moderate charcoal with occasional gravel, rare CBM fragment	firm		
1114	1117	1	fill	1108	pit	mottled mid yellowish grey	silty clay	frequent charcoal fleck and CBM fragments. Moderate medium rounded gravel	firm		
1115	1117	1	fill	1108	pit	light greyish orange	silty clay	frequent charcoal flecks. Moderate medium to large rounded gravels and cobbles.	firm		
1116	1117	1	fill	1108	pit	mottled mid orange blue	silty clay	occasional charcoal flecks and medium gravel	firm		
1117	1117	1	cut	1108	pit					complex	stepped gradual side

Table 1: Context Inventory

APPENDIX C. FINDS REPORTS

C.1 Metalwork

By Chris Faine

C.1.1 Sixteen metal small finds were recovered (see Table 2 below), with the majority of iron objects being nail fragments (most likely Medieval/Post-medieval in date), one harness pendant and one coin. The two copper alloy finds were unidentifiable fittings.

Small Find No.	Context No.	Description	Date
1	1070	Copper alloy ring. Width: 16.2mm.	Uncertain
2	1047	Copper alloy strip Length 35.3mm	Uncertain
3	1062	Collection of 4 iron nails. Two are large square-section masonry nails with round heads (average length: 71mm). Two are smaller (also square section) with little evidence of head shape remaining. One is clenched midshaft.	
4	1035	Square section clenched iron nail.	Uncertain
5	1000	Iron harness pendant. L: 34mm. Twin suspension loops, upper half missing.	Medieval
6	1049	Round section iron nail.	Uncertain
7	1042	Square section iron masonry nail with round head. Length: 67mm.	Med/Post-Med
8	1042	Round section iron nail.	Uncertain
9	1035	Round section iron nail.	Uncertain
10	1028	Square section iron masonry nail with round head. Length: 140mm.	Med/Post-Med
11	1035	Square section iron nail fragment.	Uncertain
12	1035	Square section iron nail fragment.	Uncertain
13	1035	Square section iron masonry nail. Length: 105mm.	Med/Post-Med
14	1035	Square section clenched iron nail.	Uncertain
15	1035	Square section clenched iron nail.	Uncertain
16	99999	Copper alloy coin. Charles II Farthing.	A.D 1672-1685

Table 2 Metalwork

C.2 Metalworking Debris

By Sarah Percival

Introduction

C.2.1 A small assemblage of thirty one pieces of metal working debris were collected from three contexts (Table 3). The largely undiagnostic assemblage is in poor condition and is not closely datable.

Feature	Context	Feature type	Quantity	Weight
1005	1006	Ditch	1	127
1048	1047	Ditch	22	935
1050	1049	Ditch	8	282
Total			31	1344

Table 3: Quantity and Weight of Metal Working Debris by Feature

Methodology

- C.2.2 The assemblage was examined by eye and physical characteristics recorded to determine type. The assemblage was counted and weighed to the nearest whole gramme by context and condition noted.

Nature of the assemblage

- C.2.3 The assemblage almost entirely consists of abraded, vesicular grey/green lumps with occasional charcoal and twig impressions, which may be smithing slag. Three scraps of possible hearth base have vitrified surfaces and a concave profile.
- C.2.4 All of the metalworking debris was collected from ditch fills (Table #) and none is associated with any burnt deposits of similar *in situ* evidence.

Discussion

- C.2.5 The metal working assemblage is small, and mostly undiagnostic, and is perhaps evidence of secondary metalworking at the site, though the date of this activity is unknown.

C.3 Glass

By Carole Fletcher

Introduction

- C.3.1 The excavation produced an assemblage of bottle glass weighing 0.185kg in total, recovered from three contexts. No complete vessels were recovered and the glass is not closely datable, however its condition suggests it is pre-1900.

Context	Weight (kg)	Description	Date
801	0.002	Shard of clear, dark green glass. The shard is flat and may be window rather than vessel glass, however the shard is too small to be certain of this.	Not closely datable
1029	0.007	Shard from an olive green glass vessel, most likely a bottle. The glass surface is iridescent and has some flaking. The condition of the glass suggests it is not modern, however it is not closely datable.	Not closely datable but likely to be pre-1900
1035	0.084	Base and body shards from a natural black glass, cylindrical, mould-blown bottle. The surface of the glass is slightly clouded internally and externally giving an opaque appearance.	Not closely datable but likely to be late 18th-19th century
	0.067	Body shards from a natural black glass cylindrical bottle. The external surface of the glass has a matt, opaque appearance.	Not closely datable but likely to be pre-1900
	0.019	Partial base shard from a dark olive green glass bottle.	Not closely datable
	0.005	Body shard from a dark olive green cylindrical bottle.	Not closely datable
	0.001	Small fragments of green glass recovered from sample <1002>.	Not closely datable
Total	0.185		

Table 4: Glass

C.4 Pottery

By John Cotter

Introduction and methodology

- C.4.1 A combined total of 1085 sherds of pottery weighing 8434g was recovered from Areas 1 and 2. This is almost entirely of medieval date with just a few post-medieval sherds present on both areas. All the pottery was examined and spot-dated during the present assessment stage. For each context the total pottery sherd count and weight were recorded on an Excel spreadsheet. In addition medieval and post-medieval sherds were also separately quantified. The spot-date provided is the date-bracket during which the latest pottery types in the context are estimated to have been produced or were in general circulation. A rough breakdown (by sherd count) of the main pottery fabrics present is provided in the comments field along with mention of vessel forms and any other attributes worthy of note (e.g. decoration etc.). This does not however constitute a full quantified catalogue.
- C.4.2 The pottery is mostly in a very fragmentary and fairly worn condition but some large and fairly fresh sherds also occur. An assemblage of 27 mostly very small sherds from sieved environmental samples was also briefly examined but these make no difference to the existing spot-dates and have not otherwise been recorded. The range of pottery types present is summarised below and detailed in table 5.

Medieval fabrics

- C.4.3 In the spot-dates spreadsheet (or scan catalogue) common names or traditions have been preferred to fabric codes as the identification of some types is only interim (e.g. medieval grey wares – which may be capable of sub-division). These however are based on the codings and chronology of the Bedfordshire fabric type series held by Albion Archaeology. Most of these are also described in a recent report by Paul Blinkhorn (Blinkhorn 2007) and are all types commonly encountered in Bedfordshire.

B01: St Neots-type ware, c 900-1150

B07: Medieval shelly ware (developed St Neots), 12th-13th centuries

C03: Fine reduced sandy ware (medieval grey wares), 12th-13th centuries

C09: Brill/Boarstall ware, mid 13th-15th centuries

C10: Potterspury ware, mid 13th-15th centuries

E01: Late medieval reduced ware, c 1350-1550

Date and nature of the assemblage

- C.4.4 Both area assemblages are dominated by medieval shelly ware (B07) and medieval grey sandy wares (C03 and probably some E01). These provide a 12th- to 14th-century dating emphasis for both assemblages with only very slight evidence for occupation/activity before or after this. These major pottery traditions almost certainly represent fairly local, probably Bedfordshire, products – though some may come from the border areas of neighbouring counties.
- C.4.5 The commonest vessel forms present in medieval shelly ware are jars/cooking pots and bowls but at least one jug rim and a handle were also noted and also a sherd from a small tightly-curved vessel such as a bottle or a drinking jug. The grey wares also occur as jars/cooking pots, bowls and also fairly commonly as jugs - sometimes with combed or

incised decoration. Both excavation areas also produced much smaller quantities of Brill/Boarstall ware from west Buckinghamshire (exclusively as 13th-14th century glazed strip jugs) and some Potterspury ware from Northamptonshire (jars/jugs and a bowl). Some sherds of St Neots-type ware (c 900-1150) may be present amongst the early shelly ware assemblage (mainly in Area 2) but, if so, are almost indistinguishable from the fabric of medieval shelly ware (B07). Most of the potential or possible St Neots ware pieces occur in a fabric transitional between the two traditions and therefore probably date to the 12th century. No definite late Saxon fabrics occur although a late 11th-century dating for a few pieces (shelly wares and possibly grey wares) may just be possible.

- C.4.6 A single residual scrap of coarse flint-tempered pottery from Area 2 may be of early/middle Saxon date or possibly of prehistoric date? A range of medieval grey (reduced) sandy ware fabrics is evident – including fine and coarser 12th-13th-century vessels but also more developed forms (jugs and jars) suggesting a 13th-14th century dating. These latest grey wares may include late medieval reduced ware (E01, from c 1350) but if so they probably represent the earlier products of this tradition (i.e. mid/late 14th century) as the fabric is not as hard as the classic 15th/16th-century fabric and the forms are more medieval-looking. The sequence, then, appears to end in the late 14th or possibly the early 15th century and thereafter only eight smallish post-medieval sherds are present. The latest of these is a bowl rim in post-medieval red earthenware which probably dates to the late 18th or 19th century.

Area 1

- C.4.7 This produced a total of 439 sherds of medieval pottery weighing 1957g, and just 3 sherds of post-medieval pottery weighing 9g (Area 1 subtotal: 442 sherds, 1966g). The date range is from the 12th to the late 14th or early 15th century. Medieval shelly wares and grey wares predominate. Three sherds of Brill/Boarstall ware come from two separate green-glazed jugs. One of these (ctx 802) is in the earlier coarser Brill/Boarstall fabric (Oxford Fabric OXAW) and is decorated with red and white applied and rouletted strips dating it to the 13th or early 14th century. The other piece (801) is a worn sherd from a jug handle in the commoner finer Brill fabric (OXAM/C09). There is no medieval Potterspury ware (C10, c 1250+) from this area but two of the small post-medieval sherds (ctxs 801 and Unstrat) may represent products of the 16th-17th century Potterspury industry, or more local post-medieval orange-buff wares. The other post-medieval item is a small sherd from the handle of a drinking vessel in Midlands Blackware and probably dates to the 17th century (801).

Area 2

- C.4.8 This produced a total of 638 sherds of medieval pottery weighing 6389g, and 5 sherds of post-medieval pottery weighing 79g (Area 2 subtotal: 643 sherds, 6468g). The date range is from the 12th to the late 14th or early 15th century. Medieval shelly wares and grey wares predominate. A single small sherd (1g) of pottery residual in a medieval context (1013) is tempered with coarse flint, quartz and ?chalk and may be of early/middle Saxon date (Fabric A22?), or possibly a prehistoric ware? A discrete group of contexts from Pit Group 1108 (including ctxs 1105, 1106 and 1107) and Pit 1117 (Ctxs 1113, 1114, 1115 and 1116) appear to be consistently earlier than other contexts on the site and most probably date to the mid 12th century as they include shelly ware forms and fabrics transitional between St Neots-type ware (B01) and medieval shelly ware (B07) – or possibly a mixture of both? The inturned rims on a couple of shallow bowl/platter profiles from (1105) are of classic St Neots form (Hurst 1976, fig. 7.18. no. 3) and some shelly ware jar rims (one with thumbled decoration) also appear to be of early form. At this point in time the distinction between St Neots-type ware and medieval shelly ware (formerly ‘developed St Neots ware’) is somewhat blurred. The presence in these contexts however of a couple of

sherds of early-looking medieval reduced ware (C03) confirms that a 12th-century dating is most likely. This group of contexts produced several well-preserved vessels (including one or two profiles) which would be suitable for illustration.

- C.4.9 Other Area 2 contexts produced a significant amount of 13th-14th century pottery. This includes 27 sherds of Brill/Boarstall ware from three separate strip jugs of c 1250-1400 (ctxs 1028, 1031 and 1035) and five sherds of medieval Potterspury ware from three vessels including a jug and a bowl (ctxs 1028, 1029 and 1042). One other unusual item is a small medieval shelly ware sherd from a narrow bottle-like form or a small drinking jug (residual in ctx 1029). The five post-medieval sherds are all in glazed post-medieval redware (c 1550-1900) and include four body sherds from two jars of jugs (cleaning layer 1029) and a bowl rim probably dating to the late 18th or 19th century (1035).

Context	Area	Spot-date	Med. sherds	Med. weight	Post-med. sherds	Post-med weight	Total sherds	Total weight	Comments
801	1	17C	102	400	2	7	104	407	2x small pmed incl prob handle from drinking vessel in Midlands Blackware with shiny black glaze (& prob coal measures fabric) & 1x small worn bo early PMR (post med redware) or L16/17C Potterspur fine orange ware with int brown glaze. Med fabrics mostly v small/worn: 1x Brill/Boarstall slashed jug handle base. 89x med greyware incl few cspot rims & bowl rims mainly or all 13-14C? but poss includes few late med reduced ware L14/15C?). Greys incl medium sandy jug/jar bo with combed wavy band dec separated by combed horiz bands (Prob JOINS ctx 802), some thin-walled, some thumbled strips. 10x shelly incl jug rim, handle & bowl rim
802	1	13-E14C?	27	128			27	128	2x joining bos from neck/shoulder highly dec strip jug (prob large) probably in early Brill/Boarstall ware – prob 13C (Oxford Fabric OXAW c1175-1350) v sandy with red/orange quartz, thick-walled, surfaces leached pale grey on pale buff fabric, traces ext green glaze, dec= horiz white strip with square rouletting on neck & traces curved red strips on body. 23x grey sandy ware, finer & coarser incl jug/jar bo with combed wavy & straight bands (prob JOINS ctx 801), 1 with thumbled strip, sag bases, many small scraps. 2x med shelly incl bowl rim
809	1	13-14C	2	24			2	24	Fresh. Joining rim & shoulder from hard grey coarse sandy cspot with everted slightly flanged rim
811	1	L12-13C	53	191			53	191	8x small scrappy med shelly bos. 45x med grey sandy incl shoulder from jug with bands of early med-style comb-stabbed dec (imitating rouletting?). 7 joining sherds from grey sandy fairly coarse cspot with squared/horiz flanged rim on short vertical neck & trace of applied thumbled vertical strip on body. Squared rim from 2nd cspot with row of pin-pricking on top. 6 bos prob from jug with spaced bands of horiz grooved dec. 2 bos jug/jar with fine horiz rilling
813	1	12-13C	17	53			17	53	1x med shelly smallish sag base. 16x med grey sandy bos (i.e. bodysherds) - poss 13C? Fresh & worn
815	1	L13-14C?	22	90			22	90	19x grey sandy smallish bos & 1 worn flanged/squared cspot rim – prob 13C. Bos incl some hard-fired poss late med reduced ware (?) incl jug/cspot bo with shoulder rilling/grooving. Some joining bos. 3x med shelly – fairly fresh incl sag base from wide bowl?
819	1	c1350-1425	106	519			106	519	Some large but mostly small sherds. 92x med grey sandy v prob including late med reduced ware – fresh cspot rims incl 1 with flanged rim & light decorative thumbing, thin-walled with horiz grooving or tooling. 1 worn grey bo with combed dec. 13x shelly ware – probably all from 1 fresh small cspot or pipkin with lid-seated rim (diam 120mm)
821	1	12-13C	3	19			3	19	Med shelly incl 2 joining from bowl with plain upright rim

1004	2	12-13C	1	1			1	1	Scrap med shelly
1006	2	12-13C	1	2			1	2	Small bo med shelly
1007	2	12-13C	68	870			68	870	Fresh sherds. Mostly 1-2 med grey sandy cpots (brown surfaces) incl rims & sag bases (profile?). 1x med grey jug strap handle with row of thumb dec down centre. 11x med shelly incl bowl & cspot rim
1011	2	12-13C	21	110			21	110	19x grey sandy ware – mostly smallish fresh bos & 2 v simple flaring flat-topped cspot rims. 1x sag base with tiny leaf/bracken impression int. 2x fairly large bos med shelly
1013	2	12-13C	3	18			3	18	Med shelly - 2x fresh joining sherds from wide bowl with plain upright rim. 1x scrap (1g) coarse angular flint/chert-tempered fabric with quartz & ?chalk – possibly Early-Mid Saxon (Fabric A22?) or poss Prehistoric?
1015	2	12-13C	1	68			1	68	Fresh bo from thick-walled handmade large cspot in fine early med grey sandy fabric
1019	2	c1250-1400	101	1134			101	1134	Mostly fresh sherds – large & small. 83x med grey sandy inc 13/E14 squared cspot rim & other everted cspot rim & distinctive jug rim with squared/flanged rim with radial comb-stabbed dec on top with a collar or cordon on neck with horiz row of thumb or pulled impressions each with vertical comb-slashing (similar in style to highly dec anthropomorphic jugs in Laverstock ware, London-type ware etc). 18x med shelly ware incl large fresh cspot rim & worn bowl rim
1021	2	12-13C	4	73			4	73	2x fresh cspot rims early med/med grey sandy ware – larger rim prob from handmade cspot with rounded shoulder & everted thickened rim (ILLUS?). Smaller rim plain everted/flat-topped, finer sandy, poss wheel-finished? Smaller bos same fabric
1022	2	L12-13C?	5	60			5	60	4x med grey sandy incl sag base in fine fabric, incl ?jug/pitcher bo in coarser fabric with red quartz (Fabric C02 12-13C), spaced horizontal grooving or combing down body. 1x fresh med shelly neatly-made deeply sagging base – poss from bowl with inward-leaning wall
1025	2	L12-13C	14	132			14	132	All grey sandy – prob 3-4 vess. Incl 3 joining bos from shoulder of large jug/pitcher prob WT with early med-style comb-edge notching/stabbing on neck cordon & body below with combed lattice dec. Damaged WT cspot rim hard dark grey with inward-leaning neck & broken flat-topped/flanged rim with single surviving pin-prick (fabric almost as late med reduced). Thin-walled sag base. 2-4 thicker fine sandy early-med grey from a single sooted prob cspot. Other bos
1027	2	L12-13C?	5	33			5	33	All grey sandy. Min 3 vess. Incl bo from small globular tightly curved vessel – poss from bulbous collared neck of jug with incised wavy line dec ext. 2x sag bases. 1x finer jar shoulder

1028	2	c1250-1400	84	671			84	671	11x Brill/Boarstall ware = 1 jug base with traces red strip dec & green glaze. 2x Potterspurry ware = 1 flat jug base. 3x small joining unidentified fine orange-buff sandy unglazed ware (poss 14/15C Hedingham ware or N Essex/Herts ware??). 63x fresh & worn grey sandy med ware incl squared cspot rims (poss incl late med reduced ware?), some with horiz grooving and thumbled strips. 5x fairly worn med shelly ware. (1x sherd of Roman grog tempered ware (Cotter pers. comm.)).
1029	2	17-19C	35	512	4	39	39	551	PMR bos from 2 ?jars with int glaze. Med = large fresh sherds, prob mid 14-15C incl bowl rim Potterspurry ware. Mostly med & some late med reduced cspot rims & stab-decorated jug handle. Small bos with combed dec. Thumbled jug base. 2x med shelly incl bo from a narrow bottle-like form or small jug
1031	2	c1250-1400	22	98			22	98	2x small bos (1 vess?) Brill/Boarstall strip jug with vertical red strip under yellow glaze – poss biconical form? 13x grey sandy incl sag base, some fresh. 7x med shelly incl sag base – fairly fresh
1032	2	12-13C	5	43			5	43	3x bos grey sandy poss early med (1 vess?). 2x scraps med shelly
1035	2	L18-19C	45	282	1	40	46	322	1x PMR glazed wide bowl rim of late form. Fresh & worn med prob c 1350-1400: incl 28 x med & late med greyware incl fresh late med cspot with downturned flanged rim & horiz shoulder grooves, 1x med squared rim. 14x bos Brill/Boarstall ware poss from a single green-glazed strip jug with red & white strips (c 1250-1400). 3x worn med shelly
1038	2	12-13C	36	361			36	361	Fresh med shell cspots incl rim = 2-3 vess?. 17x med grey sandy cspot
1040	2	12-13C	2	13			2	13	Fairly fresh. Fine grey sandy incl sag base
1042	2	c1250-1500	4	18			4	18	2x fairly fresh joining bos Potterspurry ware jar/jug prob unglazed. 2x worn bos med shelly
1043	2	12-13C	1	18			1	18	Med shelly. Carinated wall/shoulder sherd from bowl or wide jar?
1047	2	L12-13C	16	164			16	164	Med grey sandy incl jug neck with E13C-style thumbled or notched cordon. Thumbled bowl rim, grooved bos. 5x med shelly incl jug strap handle with thumbled edges & glaze speck. Bowl rim. Cspot rim
1049	2	L13-14C?	34	262			34	262	30x med grey sandy incl 4 joining sherds from rim of thin-walled jug with pouring lip (or poss late med reduced ware?). 12/13C cspot rim. 4x small worn med shelly incl jar/bowl rim
1053	2	12-13C	1	1			1	1	Scrap med shelly

1057	2	12-13C	1	12			1	12	Worn bo coarse med shelly
1065	2	12-13C	1	5			1	5	Bo fine grey sandy
1068	2	12-13C	22	246			22	246	Incl large fresh sherds. 1x small bo HM grey sandy early med/med prob cspot. Joining rims med shelly cspot with vertical neck & squared downturned rim (ILLUS?), sag base sherds poss from same vess? 4 thickened rims prob from 3 bowls. Sherds mostly sooted
1074	2	12-13C	5	23			5	23	All med shelly. Worn. Incl larger rim sherd from jar with int hollowed or lid-seated rim. Scrappy bos
1080	2	12-13C	2	18			2	18	Joining bos med shelly ?jar. Worn
1083	2	12-13C	1	5			1	5	Bo med shelly
1085	2	12C	12	147			12	147	Med shelly (or late/transitional St Neots-type ware?) incl 3 fresh joining rim sherds from bowl (diam 330mm) or wide jar with heavy broad flanged hollowed rim & joining sherd from shoulder with vertical applied thumbled strip, sooted ext, smaller joining bos from same bowl (ILLUS?). Fresh rim from a second bowl (diam 300mm) with plain upright thickened rim. Smaller bos 2-3 other vess
1094	2	12-13C	1	10			1	10	V worn everted ?jar rim with ext moulding/cordon – prob from large vessel. Med grey sandy with red quartz (or poss Late Iron Age/Roman?)
1099	2	12-13C	4	18			4	18	All worn med shelly incl 2 thickened jar rims
1103	2	12-13C	6	54			6	54	All med shelly incl large rim sherd from jar or bowl (diam 230mm) with broad flanged rim hollowed on top/int & joining neck/shoulder bo. Worn bos other vess
1105	2	12C	28	437			28	437	26x med shelly ware (or late/transitional St Neots-type ware?) incl large fairly fresh rims from at least 2 very shallow carinated bowls/platters with St Neots-style inturned rims and flat bases (form as Hurst 1976, fig. 7.18 no. 3 =St Neots, ILLUS?). 1x thickened everted jar rim. 1x worn ?jar rim or bowl carination with thumbled dec along edge. Large fresh sagging base sherds – prob from jars or rounded bowls? 2x smallish body sherds fine grey med sandy ware
1106	2	12C?	4	40			4	40	All fairly worn med shelly ware (or late/transitional St Neots-type ware?) incl split/flaked flaring rim from ?bowl. Bos from 2-3 vess? Poss JOINS ctx (1105)?

1107	2	L11-12C	6	88			6	88	Med shelly (or late/transitional St Neots-type ware?) incl fresh joining sherd from lower wall of bowl with damaged probably inturned rim with neat thumbbed dec along outer lip/projection, sooted ext (nb. inturned rim in sieved sample <1011> may be same vess?). 1x slightly worn simple everted thickened cspot rim with widely-spaced thumbbed dec on ext lip (ILLUS?). Thicker worn bo prob from 3rd vess & smaller scrappy bos
1113	2	12-E13C?	17	63			17	63	All small/scrappy but some fresh. 2x med fine grey sandy incl small fresh cspot with plain flaring flat-top rim (WT?). 15x worn med shelly – early looking incl 2 everted cspot rims
1114	2	12-E13C?	2	24			2	24	Med shelly (or late/transitional St Neots-type ware?) everted/flanged internally hollowed jar rim (diam 140mm), fairly worn int. Bo in coarser med shelly fabric
1115	2	12C	6	78			6	78	4x med shelly (or late/transitional St Neots-type ware?) incl typical St Neots-type inturned bowl rim (ILLUS?), slightly worn. 1x ditto shelly everted/flanged ?bowl rim (form more like med shelly), 2 bos. 2x joining handmade grey sandy ware bos – prob 12C?
1116	2	12-13C	2	77			2	77	Fresh joining bos from lower wall med shelly cspot, fairly thick-walled
99999	1	16-17C	107	533	1	2	108	535	Watching Brief. Surface finds. U/S finds between TR 7 & 8. [nb. Charles II copper farthing in this ctx 1672-1685]. 1x small pale buff bo poss early post-med Potterspury (16-17C)?. Rest med incl 11x med shelly (incl collared jug rim & jug handle). 88x med grey sandy - mainly 13-14C in style incl several cspot rims (1 pricked) & poss a few sherds (incl bowl rim) in late med reduced ware? Some jug sherds with combed or incised horiz grooves. Fresh & worn. Plus 5x med grey (reduced) sandy ware. 3x med shelly ware incl thickened bowl rim
TOTALS			1077						

Table 5: Pottery

C.5 Ceramic Building Material

By Sarah Percival

Introduction

- C.5.1 A total of 35 pieces of ceramic building material were collected from six features (Table 6). The assemblage comprises fresh and abraded fragments of post-medieval roof tile, floor tile and brick plus two pieces of modern drainpipe.

Feature	Context	Feature type	Form	Quantity	Weight
801	801	Natural	Roof tile (flat)	3	42
1029	1029	Cleaning layer	Drain pipe	2	105
			Floor tile	2	429
			Peg tile	1	41
			Roof tile (flat)	8	530
1030	1035	Pit	Late brick	1	153
			Roof tile (flat)	2	8
1048	1047	Ditch	Late brick	4	144
			Roof tile (flat)	6	228
1059	1062	Ditch	Peg tile	2	166
			Roof tile (flat)	2	98
			Tile	1	51
1078	1083	Ditch	Roof tile (flat)	1	50
Total				35	2045

Table 6: Quantity and Weight of Ceramic Building Material by Feature

Methodology

- C.5.2 The assemblage was quantified by context by fabric and form and counted and weighed to the nearest whole gram. Fabrics were examined using a x20 hand lens and were described by main inclusions present. Width, length and thickness were recorded.

Nature of the assemblage

- C.5.3 Roof tile fragments form the majority of the assemblage, most in red sandy fabrics. All are unglazed flat tiles, three have surviving peg holes, two of which are circular and one square cut, the latter example being close to a corner suggesting that the tile originally had two peg holes. The corners of the tiles, where these survive, are rounded and the undersides sanded. One example has mortar adhering to both sides, suggesting reuse. The average thickness of the tiles is 14mm.
- C.5.4 Five fragments from soft, red, medium-sandy bricks were collected. The fragments are small with no surviving measurable dimensions. The fabric and uniform firing of the brick fabrics suggests a post medieval date.
- C.5.5 Two fragments of floor tile were recovered in two fabrics (Table 7). The pieces are 30 and 40mm thick, have trimmed edges and upper surfaces which are smoothed from wear. Two fragments of modern ceramic drainpipe were collected from cleaning layer (1029).

Type	Fabric	Quantity	Weight (g)
Roof tile	Brown dense sandy	1	21
	Brown sandy with quartz inclusions mixed grey orange core	1	18
	Dense orange with quartz inclusions	1	83
	Dense orange with quartz inclusions, grey core	3	106
	Orange sandy with iron ore inclusions	3	113
	Orange sandy with iron ore inclusions, grey core	1	108
	Orange sandy with quartz	2	94
	Orange sandy with quartz, grey core	6	436
	Red sandy with grog	1	58
	Red sandy with grog, grey core	4	99
	Red sandy with quartz inclusions	2	27
Brick	Soft poorly mixed silty orange fabric with cream swirls and moderate large red grog inclusions	1	153
	Soft poorly mixed silty orange fabric with moderate large red grog inclusions	4	144
Floor tile	Dense orange with quartz inclusions, grey core	1	241
	Red sandy with grog, grey core	1	188
Tile	Sandy fabric with shell? Inclusions and sparse iron ore and grog inclusions	1	51
Drain pipe	Fine sandy with fine ferrous chalk and flint inclusions	2	105
Total		35	2045

Table 7: Quantity and Weight of Ceramic Building Material by Fabric

Discussion

- C.5.6 All the ceramic building material is redeposited, being mostly collected from within ditch fills, and is none is directly associated with any extant structures. The material almost exclusively represents debris from buildings of late post medieval date, with the exception of a small quantity of modern drainpipe.

C.6 Burnt clay

By Sarah Percival

Introduction

- C.6.1 A total of six pieces of baked clay weighing 316g were collected from two features. The assemblage comprises small fragments, all from redeposited contexts.

Feature	Context	Feature type	Form	Quantity	Weight (g)
1008	1007	Ditch	Superstructure	5	309
1020	1019	Ditch	Miscellaneous	1	7
Total				6	316

Table 8: Quantity and Weight of Baked Clay by Feature

Methodology

- C.6.2 The complete assemblage was analysed and the baked clay recorded by context, grouped by form and fabric, and counted and weighed to the nearest whole gram. Diameter of withy or round wood impressions was noted where available. Surface treatment and impressions were recorded along with the form and number of surviving

surfaces. Fabrics were identified following examination using a x10 hand lens and are classified by major inclusion present. The archive is held by OAE.

Nature of the assemblage

- C.6.3 The assemblage includes three pieces with one or more smoothed surfaces and opposing surface with rod or wattle impressions suggesting daub or superstructure and perhaps derived from an oven or walled structure. The remaining pieces are miscellaneous fragments with no surviving surfaces. Two fabrics were identified, both containing grog pieces (Table 9).

Context	Fabric	Quantity	Weight (g)
1007	Poorly mixed blocky clay with sparse grog and flint inclusions	5	309
1019	Fine silty with pale grog inclusions	1	7
Total		6	316

Table 9: Quantity and Weight of Baked Clay by Fabric

- C.6.4 The baked clay was collected from the fills of two ditches (**1008** and **1020**). The assemblage is entirely redeposited.

Discussion

- C.6.5 The baked clay assemblage comprises a small quantity of abraded scraps in grogged fabrics. The presence of wattle or rod impressions on some fragments suggests that they are derived from domestic construction of unknown date.

APPENDIX D. ENVIRONMENTAL REPORTS

D.1 Faunal Remains

By Chris Faine

Introduction

- D.1.1 2.63 kilograms of animal bone was recovered from the evaluation at Elstow yielding 50 fragments of animal bone of which 34 were identifiable to species. All material was recovered from contexts dating from the medieval and post-medieval periods. The species present are noted in table 10. The majority of identifiable fragments derived from the main domesticates, primarily cattle. The cattle assemblage largely consisted of butchered lower limb elements (radii, tibiae and metapodia), along with smaller numbers of meat bearing femoral fragments and mandibles. A single ageable mandible was recovered from context **1007** from an animal around 4-6 years of age. Sheep/goat remains are almost entirely of tibia fragments from contexts **1083**, **1038**, **1025** & **1103**. Single adult horse maxilla and dog tibia were recovered from contexts **1028** & **1080** respectively.

	NISP	NISP %	MNI	MNI %
Cattle (<i>Bos</i>)	25	74	11	64
Sheep/Goat (<i>Ovis/Capra</i>)	5	14	3	18
Pig (<i>Sus scrofa</i>)	1	3	1	6
Horse (<i>Equus</i>)	1	3	1	6
Unid Bird	2	6	1	6
Total	34	100	17	100

NISP=Number of Individual Specimens

MNI=Minimum Number of Individuals

Table 10

D.2 Environmental samples

By Rachel Fosberry

Introduction

- D.2.1 Twelve bulk samples were taken from features within the Area 2 at Elstow-Wixams Reinforcement Water Mains in order to determine whether plant remains are present, their mode of preservation and whether they are of interpretable value with regard to domestic, agricultural and industrial activities, diet, economy and rubbish disposal.
- D.2.2 Features sampled include ditches, pits and a possible pond all dating from medieval period.

Methodology

- D.2.3 The samples were soaked in a solution of sodium carbonate for three days prior to processing in order to break down the clay component of the soils. For the initial assessment, one bucket (up to ten litres) of each bulk sample was processed by water flotation (using a modified Siraff three-tank system) for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. Both flot and residues were allowed to air dry. A magnet was dragged through each residue fraction

prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and a complete list of the recorded remains are presented in Table 9. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (1997) for other plants. Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

- D.2.4 A rapid scan of the flots revealed the archaeobotanical potential of two of the samples that had larger charred plant assemblages. The remaining soil of these samples (Samples 1003 and 1009) was subsequently processed and the contents included in these results.

Quantification

- D.2.5 For the purpose of this initial assessment, items such as seeds, cereal grains and small animal bones have been scanned and recorded qualitatively according to the following categories:

= 1-10, ## = 11-50, ### = 51+ specimens ##### = 100+ specimens.

Items that cannot be easily quantified such as charcoal, magnetic residues and fragmented bone have been scored for abundance:

+ = rare, ++ = moderate, +++ = abundant.

Results

- D.2.6 Plant remains are preserved by carbonisation and are generally poorly preserved leading to difficulty in identification of the remains to species level. Most of the samples contain modern, intrusive roots which may have resulted in movement of material between contexts.
- D.2.7 Samples were taken from two out of the five medieval pits that were located at the western end of Area 2. Sample 1000, fill 1022 of pit **1023** and Sample 1002, fill 1025 of pit **1024** both contains numerous intrusive roots and occasional charcoal flecks. Sample 1002 also contains two charred wheat (*Triticum* sp.) grains, a single fragment of an oat (*Avena* sp.) or large grass (Poaceae) caryopsis and a small fragment of charred hazelnut (*Corylus avellana*) shell. Boundary ditch **1020** is thought to be contemporary with these pits and Sample 1004, fill 1019 of this ditch also contains occasional grains of charred cereals including wheat.
- D.2.8 Samples were taken from each of the three fills of pit **1108**, one of four pits located in the east of Area 2. Sample 1011, taken from the basal fill 1107 contains a moderate amount of charcoal and occasional charred wheat grains. Sample 1010 from middle fill 1106 contains only a single charred grain and sparse charcoal. The most abundant charred remains occur in Sample 1105 taken from the upper fill 1105. Charred grains of free-threshing wheat (*Triticum aestivum sensu-lato*) predominate and occasional grains of oats, barley (*Hordeum vulgare*) and possibly rye (*Secale cereale*) are also present. Legumes are common and a variety of sizes suggest that they are beans (*Vicia* cf. *faba*), peas (*Pisum* sp.) and vetches/small peas (*Vicia* sp.). Charred weed seeds include common weeds of cultivated soils such as stinking mayweed (*Anthemis cotula*), bromes (*Bromus* sp.), goosefoot (*Chenopodium* sp.) and dock (*Rumex* sp.) seeds. The sample also contained charred seeds of wetland plants; sedges (*Carex* sp.) and rushes (*Juncus*

sp.).

- D.2.9 Ditch **1078** was one of the larger ditches in this area and contained six fills, with sample 1007 taken from the second fill from the bottom 1080. It contains only a small fragment of charred grain that is indeterminate to species. A parallel ditch **1102** had two fills, one of which (1003) was sampled and contained occasional charred wheat grains and a moderate amount of charcoal.
- D.2.10 Feature **1012** was one of two pits found towards the western end of Area 2. Sample 2003 from fill 1011 is charcoal-rich and also contains numerous wheat grains along with dock seeds, fish scales, pottery fragments and animal bones. It is likely that the pit was used for the disposal of culinary waste.
- D.2.11 A single spheroid of hammerscale was recovered from the residue of Sample 1005 from a thin layer of soil comprising cobbled surface 1028. None of the other samples contain hammerscale in any form suggesting that it is unlikely that blacksmithing activities were taking place in the immediate vicinity despite the recovery of slag during the excavation.
- D.2.12 Sample 1006, fill 1042 of natural pond feature **1041** produced a small volume of flot that contains sparse charcoal only.

Discussion

- D.2.13 In general the samples were poor in terms of identifiable material. The charred plant remains consist mainly of cereal grains that are poorly preserved, either because of taphonomic factors or because they had been charred at a high temperature. The heavy clay component of the soil can cause carbonised remains to fracture during freeze/thaw action. Whilst these remains most likely represent burnt food, the small quantities are not indicative of deliberate deposition other than in pit **1012**. The charred weed seed assemblage has only limited species diversity but the presence of stinking mayweed is indicative of the cultivation of heavy clay soils as this plant has a particular ecological habitat for such soil. The presence of wetland plant species may represent the use of rushes and sedges as flooring material and, ultimately, fuel.
- D.2.14 The quantity of domestic waste in many of the excavated deposits is relatively sparse which may suggest that the features were backfilled either with midden deposits in which much of the waste had already decayed or that there was general refuse in the area that was incorporated accidentally. The plant assemblages are limited in diversity and further analysis is not required.

Sample No.	Context No.	Cut No.	Feature Type	Volume processed (L)	flot volume (ml)	Cereals	Legumes	Weed Seeds	Charcoal <2mm	Charcoal > 2mm	Small animal bones	Large animal bones	Pottery	Metal
1000	1022	1023	pit	6	2	0	0	0	++	+	0	#	0	0
1001	1025	1024	pit	9	5	#	0	0	+	+	#	0	#	0
1002	1035	1030	pit	9	3	0	0	0	+	0	0	#	#	0
1003	1011	1012	pit	26	70	###	0	#	+++	++	0	##	##	0
1004	1019	1020	ditch	8	20	#	0	0	+++	++	#	#	#	0
1005	1028		layer/surface	8	2	0	0	0	+	0	0	#	#	Fe +
1006	1042	1041	pond	8	2	0	0	0	+	0	0	#	0	0
1007	1080	1078	ditch	8	1	#	0	0	+	+	0	0	0	0
1008	1103	1102	ditch	9	45	##	0	0	+++	+	0	#	#	0
1009	1105	1108	pit	18	75	##	#	#	+++	++	0	0	#	0
1010	1106	1108	pit	6	5	#	0	0	++	+	0	0	0	0
1011	1107	1108	pit	8	10	##	0	0	+++	++	0	0	#	0

Table 11:Environmental samples

APPENDIX E. BIBLIOGRAPHY

- Beresford, G 1975 *The Medieval Clay-Land Village: Excavations at Goltho and Barton Blount*. The Society for Medieval Archaeology Monograph Series: No. 8
- Blinkhorn, P 2007 'Post-Roman pottery' in Timby, J, Brown, R, Hardy, A, Leech, S, Poole, C and Webley, L. *Settlement on the Bedfordshire Claylands: Archaeology along the A421 Great Barford Bypass*. Bedfordshire Archaeology Monograph 8, 258-265.
- Brown, N., and Glazebrook, J 2000 *Research and Archaeology: A framework for the Eastern Counties – 2 Research Agenda and Strategy*. East Anglian Archaeology Occasional Papers 8
- Bush, L 2013 *Late Iron Age to Early Roman and Medieval Activity at Manor Farm, Pertenhall, Bedfordshire. Archaeological Evaluation*. Oxford Archaeology East Report 1493 (unpublished)
- Cappers, R.T.J, Bekker, R.M., and Jans, J.E.A 2006 *Digital Seed Atlas of the Netherlands*. Groningen Archaeological Studies 4, Barkhuis Publishing, Eelde, The Netherlands. www.seedatlas.nl
- Davis, S 1992 *A rapid method for recording information about mammal bones from archaeological sites*. AML rep. 81/91 London.
- Dobney, K & Reilly, K 1988 A method for recording archaeological animal bones: the use of diagnostic zones. *Circaea* 5(2): 79-96
- Edgeworth, M 2007 'Anglo-Saxon' and medieval Bedfordshire AD400-1550. In M. Oake, M. Luke, M. Dawson, M Edgeworth and P. Murphy (eds) *Bedfordshire archaeology. Research and archaeology: Resource assessment, research agenda and strategy*. Beds. Monograph 9. 87-118
- Fairbairn, J 2013 *Archaeological Monitoring and Recording at Pulloxhill Water Treatment Works*. Oxford Archaeology East Report 1466 (unpublished)
- Hurst, J.G 1976 'The pottery' in Wilson, D M, (ed) *The Archaeology of Anglo-Saxon England*, 283-348.
- Jacomet, S 2006 *Identification of cereal remains from archaeological sites. (2nd edition, 2006)* IPNA, Universität Basel / Published by the IPAS, Basel University.
- Lewis, C., et al. 2001 *Village, Hamlet and Field. Changing Medieval Settlements in Central England*. Wingather Press
- Macaulay, S 2014 *Elstow to Wixams Main Replacement, Written Scheme of Investigation*. Oxford Archaeology East, dated 13th May 2014 (unpublished)
- Medlycott, M 2011 *Research and Archaeology Revisited: A revised Framework for the East of England*. East Anglian Occasional Papers 24
- Oake, M., et al. 2007 *Bedfordshire Archaeology – Research and Archaeology: Resource Assessment, Research Agenda and Strategy*. Bedfordshire Archaeology Monograph 9
- Oake, M 2014 *Brief for an archaeological evaluation at Elstow to Wixams Main*

Replacement. Central Bedfordshire Council, dated 13th June 2013 (unpublished)

- | | | |
|-------------------------|------|--|
| Page, W. (Ed.) | 1912 | <i>The Victoria History of the Counties of England. A history of Bedfordshire vol. III.</i> The University of London by Dawsons of Pall Mall |
| Stace, C. | 1997 | <i>New Flora of the British Isles. Second edition.</i> Cambridge University Press |
| Thatcher, C. | 2011 | <i>Saxon and Medieval settlement at Cranfield University, Silsoe, Bedfordshire. Post-Excavation Assessment and Updated Project Design.</i> OA East PXA report no. 1262 (unpublished) |
| Zohary, D. and Hopf, M. | 2000 | <i>Domestication of Plants in the Old World – The origin and spread of cultivated plants in West Asia, Europe, and the Nile Valley.</i> 3rd edition. Oxford University Press |

Electronic Sources (accessed 3rd September 2014)

<http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>

<http://old-maps.co.uk>

<http://www.lincstothepast.com/An-Act-for-inclosing-lands-in-the-parish-of-Houghton-Conquest--co-Bed/704887.record?pt=S>

APPENDIX F. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar3-188711		
Project Name	Trial Trenching and Excavation along the Elstow to Wixams Replacement Main Water Pipeline, Beds.		
Project Dates (fieldwork)	Start	19-05-2014	Finish 30-07-2014
Previous Work (by OA East)	No	Future Work	Unknown

Project Reference Codes

Site Code	XBDEWM14	Planning App. No.	na
HER No.	BEDFM2014.23	Related HER/OASIS No.	na

Type of Project/Techniques Used

Prompt	Direction from Local Planning Authority - PPS 5
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Please select all techniques used:

<input type="checkbox"/> Field Observation (periodic visits)	<input type="checkbox"/> Part Excavation	<input type="checkbox"/> Salvage Record
<input type="checkbox"/> Full Excavation (100%)	<input type="checkbox"/> Part Survey	<input type="checkbox"/> Systematic Field Walking
<input type="checkbox"/> Full Survey	<input type="checkbox"/> Recorded Observation	<input type="checkbox"/> Systematic Metal Detector Survey
<input type="checkbox"/> Geophysical Survey	<input type="checkbox"/> Remote Operated Vehicle Survey	<input type="checkbox"/> Test Pit Survey
<input checked="" type="checkbox"/> Open-Area Excavation	<input type="checkbox"/> Salvage Excavation	<input checked="" type="checkbox"/> Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the [NMR Monument Type Thesaurus](#) and significant finds using the [MDA Object type Thesaurus](#) together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
Ditches, pits, posts	Medieval 1066 to 1540	pot, bone, metal, cbm	Medieval 1066 to 1540
ditches, pit	Post Medieval 1540 to 1901	bone, metawork, cbm	Post Medieval 1540 to 1901
	None		None

Project Location

County	Bedfordshire	Site Address (including postcode if possible)
District	Central Bedfordshire	Elstow to Wixams Main Replacement water pipeline, Bedfordshire
Parish	Houghton Conquest	
HER	Bedford	
Study Area	0.19ha	National Grid Reference TL0364 3915-TL0380 4337

Project Originators

Organisation	OA EAST
Project Brief Originator	Martin Oake (Central Bedfordshire Council)
Project Design Originator	Stephen Macaulay (OA East)
Project Manager	Stephen Macaulay (OA East)
Supervisor	Graeme Clarke (OA East)

Project Archives

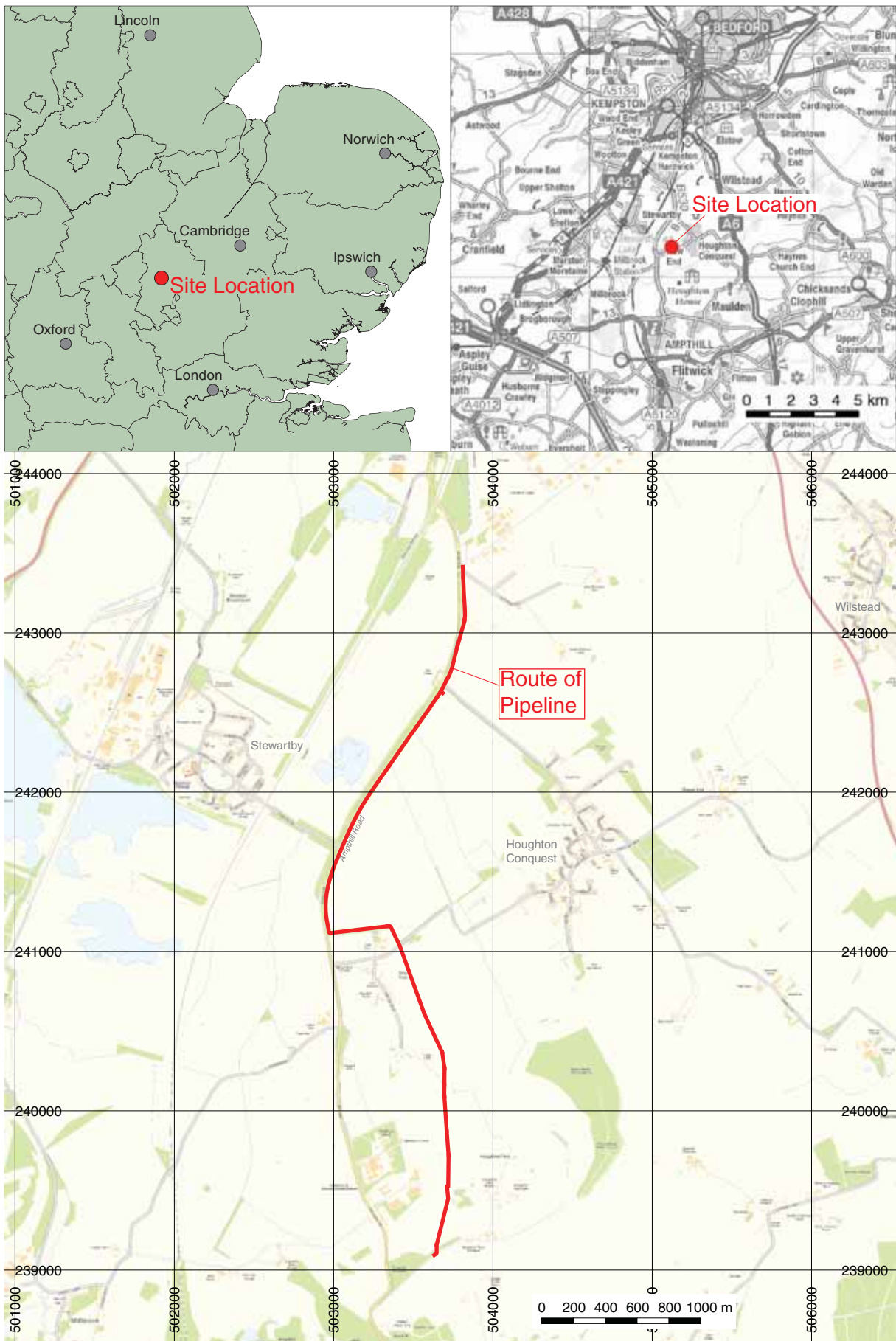
Physical Archive	Digital Archive	Paper Archive
Bedford Museum	OA East	Bedford Museum
BEDFM2014.23	XBDEWM14	BEDFM2014.23

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceramics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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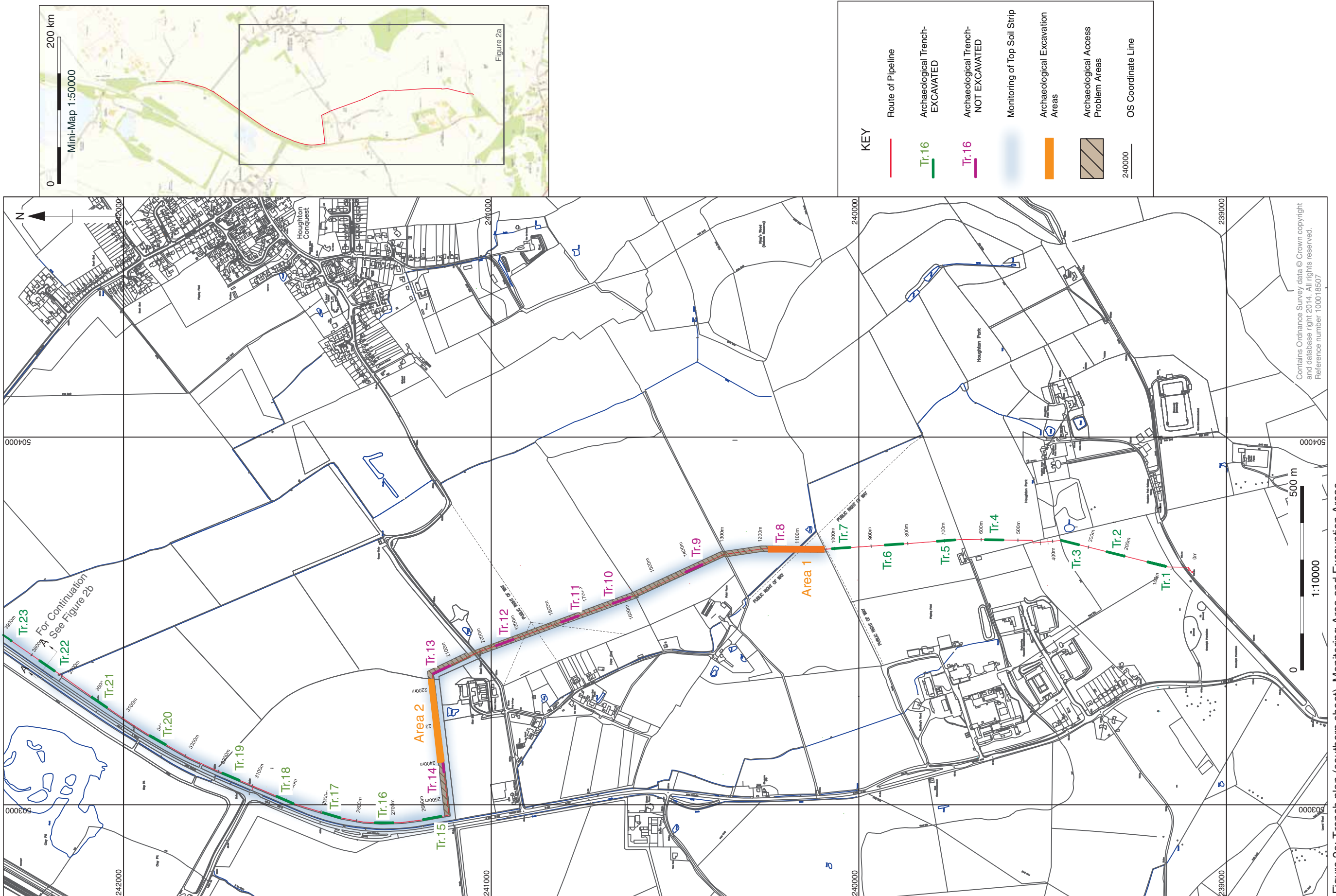
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	<input checked="" type="checkbox"/> Sections
	<input checked="" type="checkbox"/> Survey

Notes:



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Figure 1: Site location showing pipeline route (red)



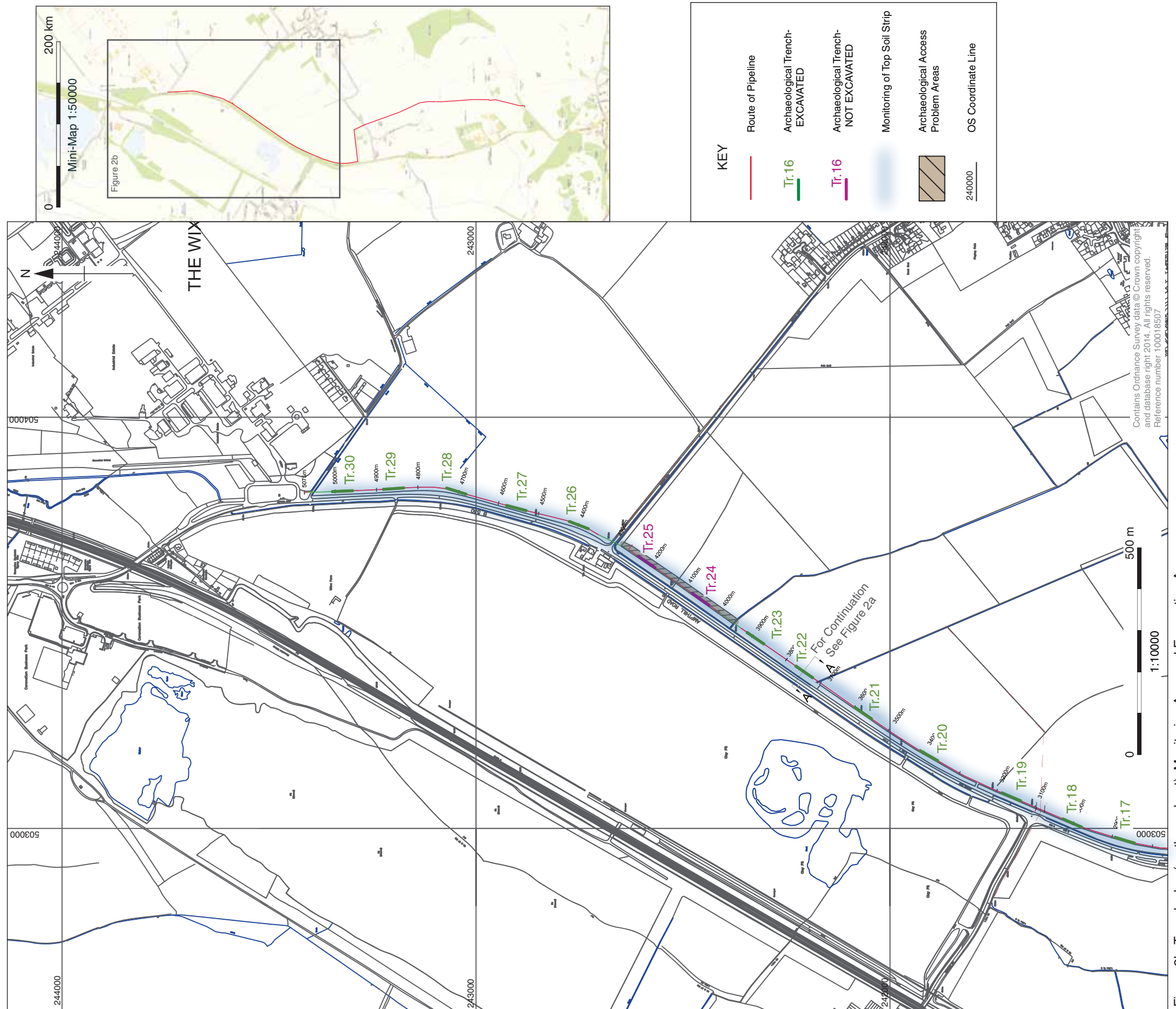


Figure 2b: Trench plan (northern sheet), Monitoring Area and Excavation Areas.

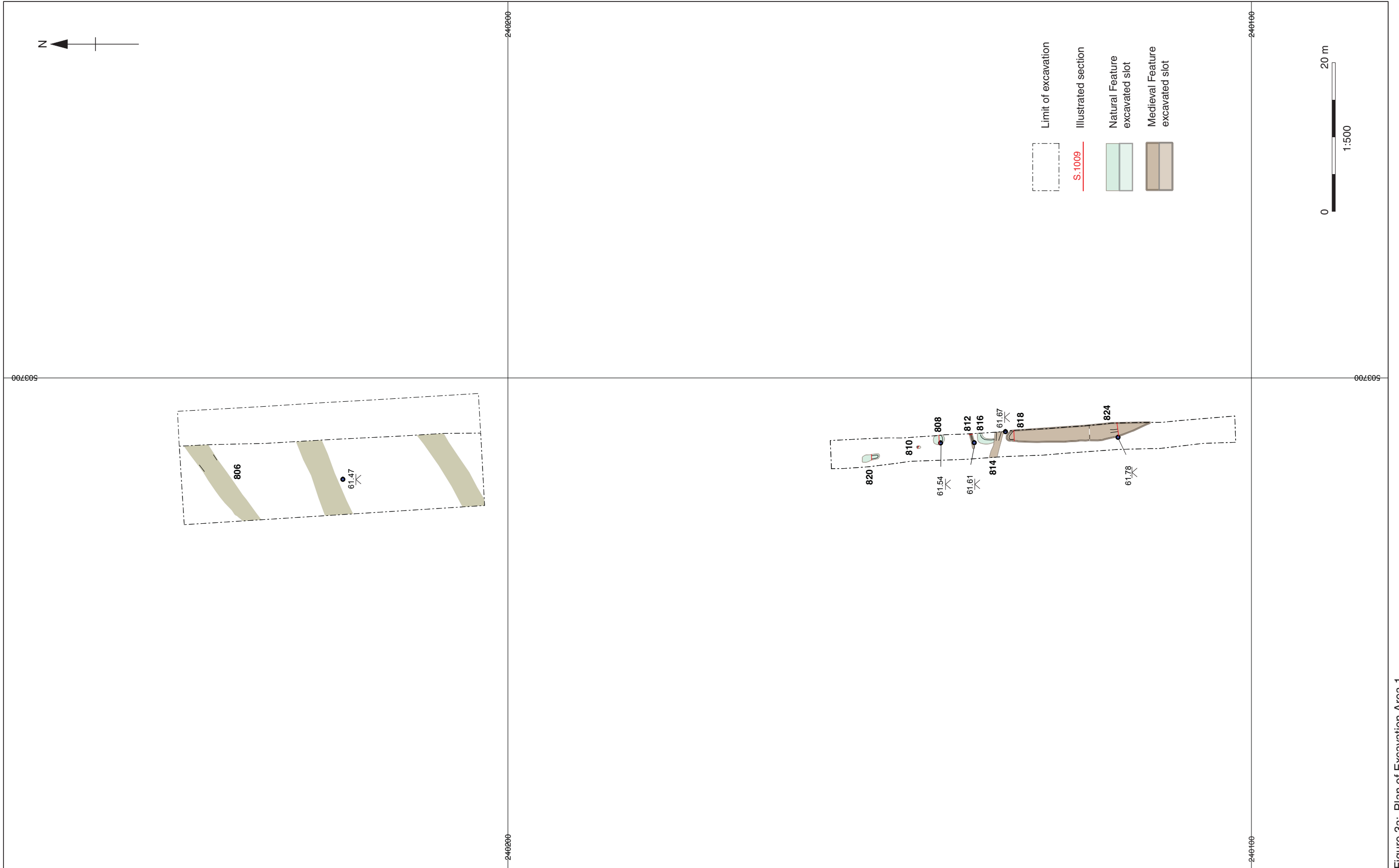


Figure 3a: Plan of Excavation Area 1

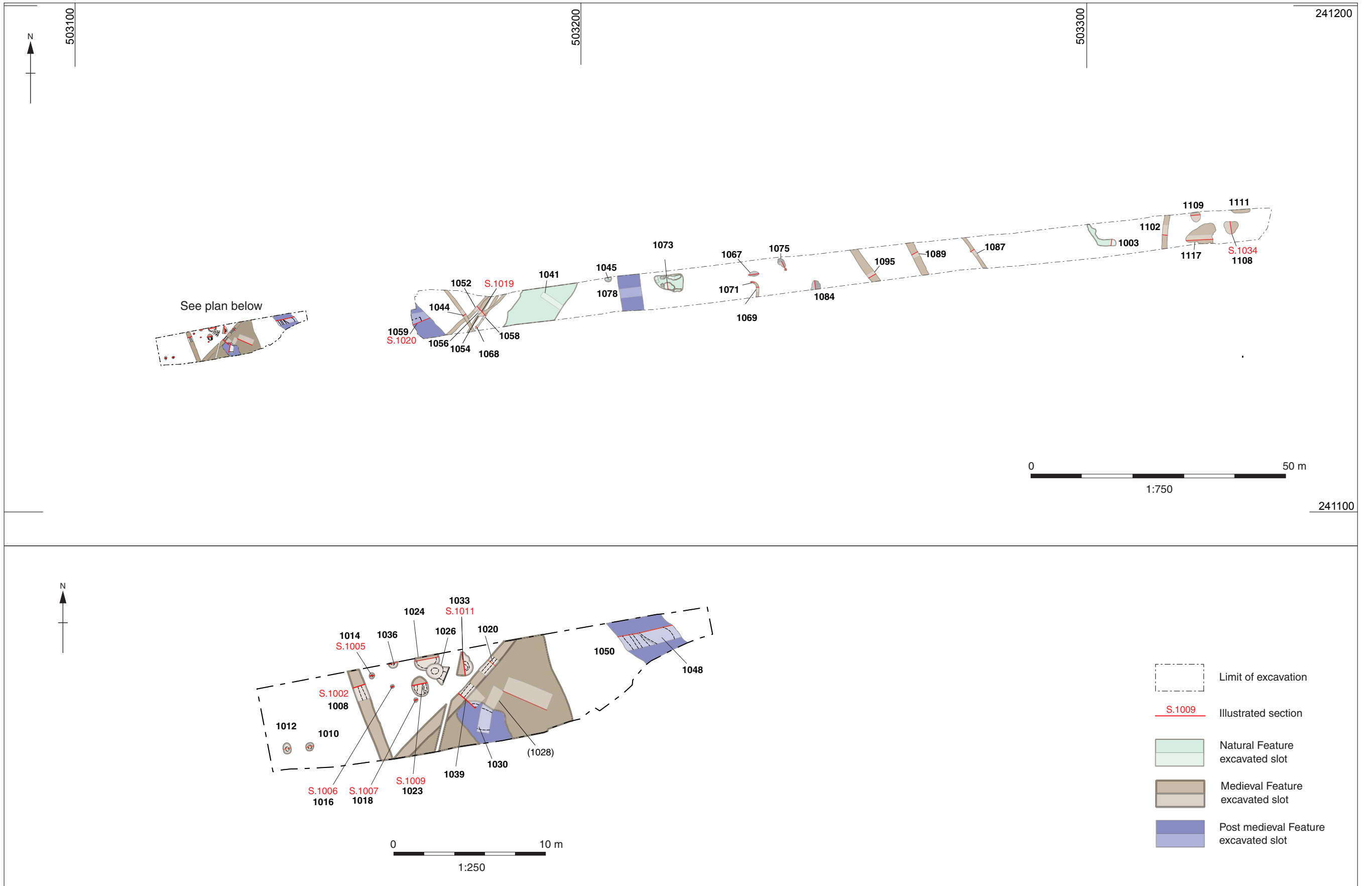


Figure 3b Plan of Excavation Area 2

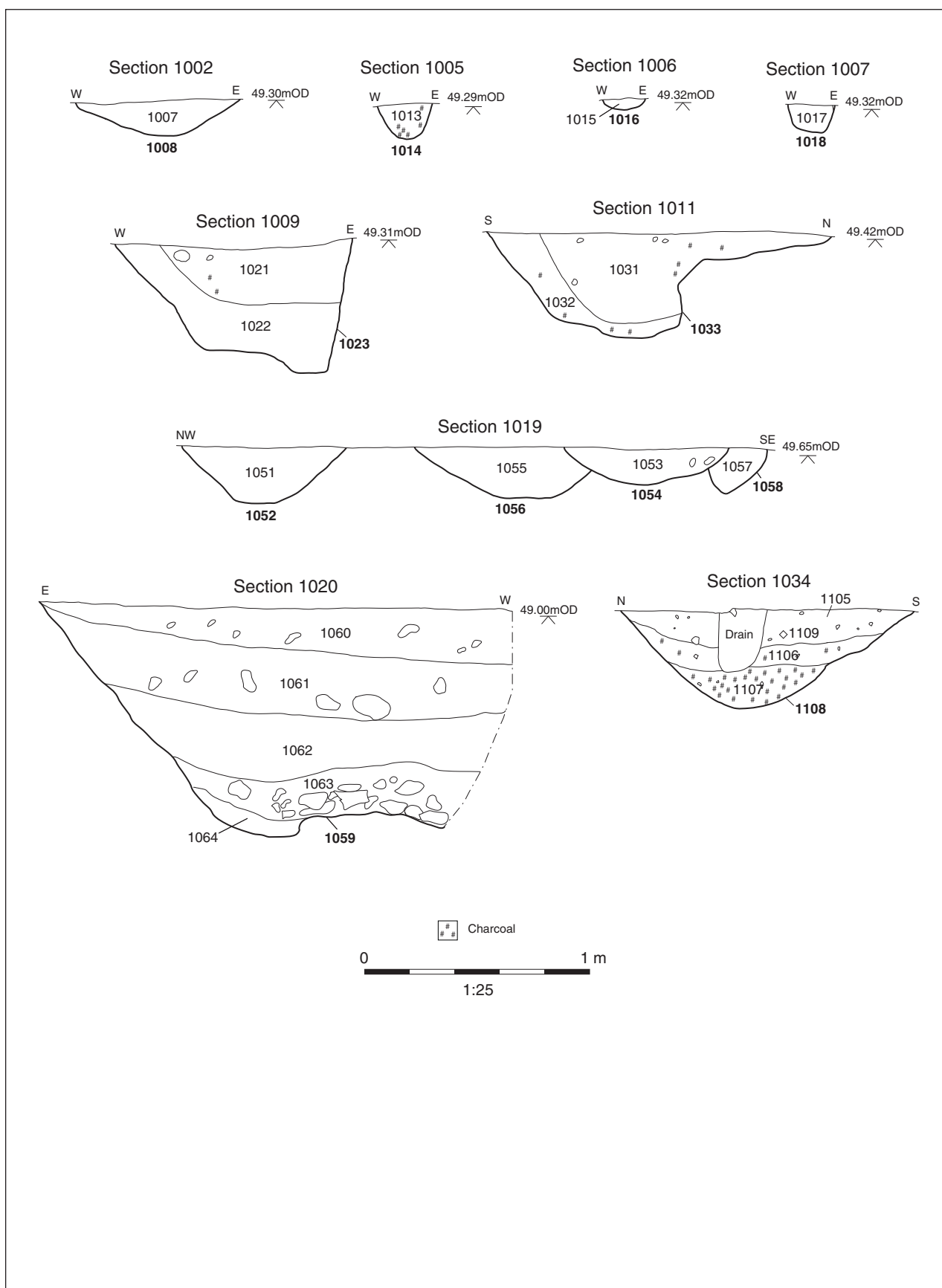


Figure 4: Selected Sections. Scale 1:25

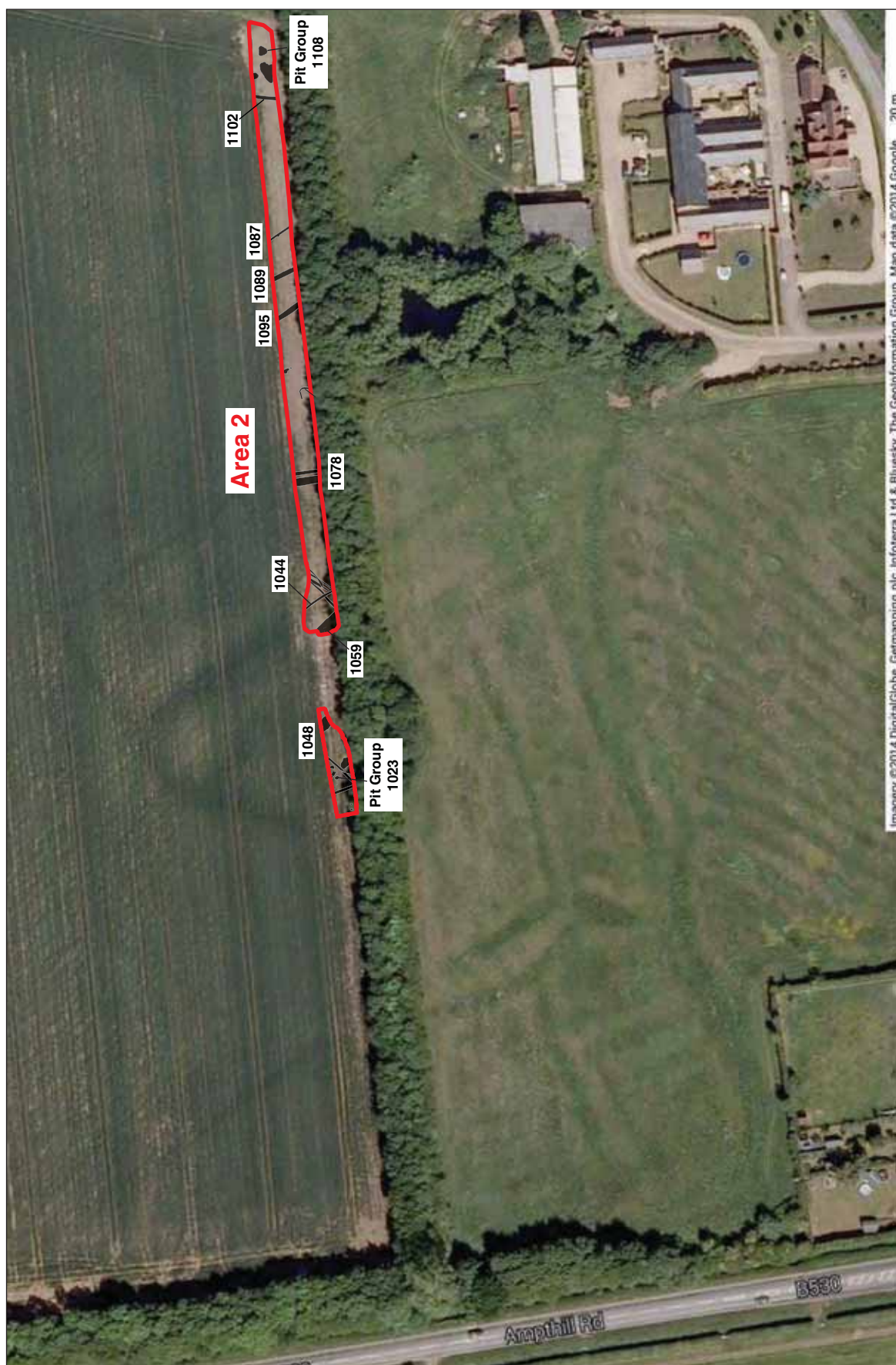


Figure 5: Plan of Features in Area 2 in Relation to Cropmarks



Plate 1: Post-excavation photo of Area 1 looking southwest.



Plate 2: Area 2 looking west showing pit 1033.



Plate 3: Post-excavation photo of western end of Area 2 looking west.



Plate 4: Area 2 looking south showing ditch **1059**.



Plate 5: Area 2 looking north showing pit 1109.



Plate 6: Working shot of eastern end of Area 2 looking east.



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