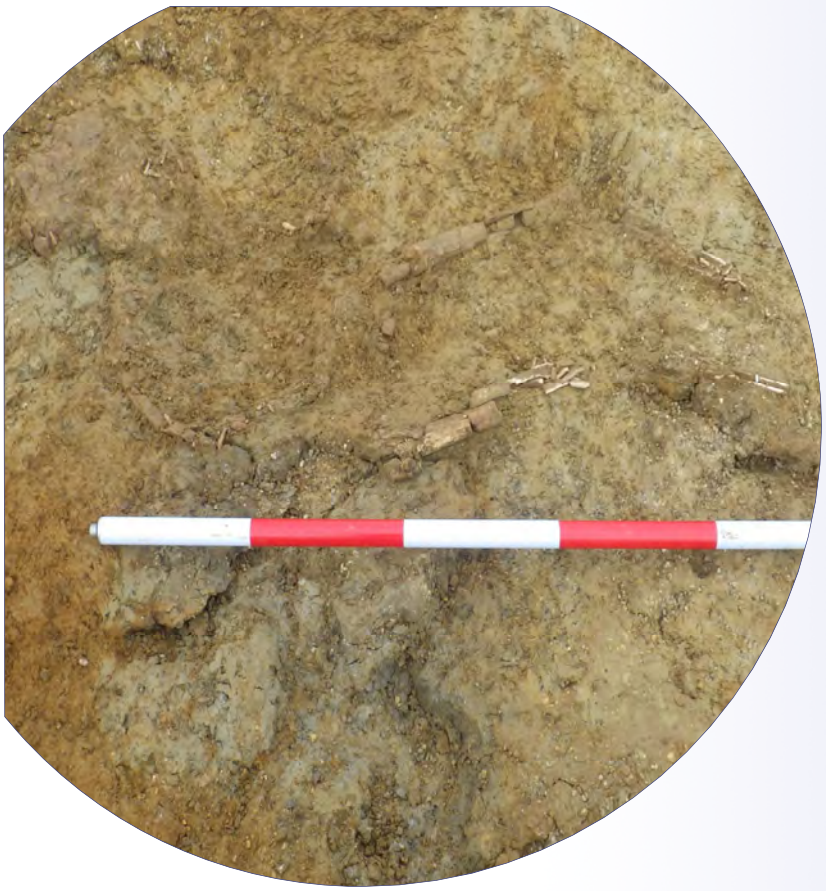

Area 1, Twigworth, Gloucestershire

Archaeological Excavation Report

August 2019

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Area 1, Twigworth, Gloucestershire

Archaeological Excavation Report

Written by Kirsty Smith

With contributions from Kate Brady, Sharon Cook, Lauren McIntyre and Ian R Scott, and illustrations by Matt Bradley and Magdalena Wachnik

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Summary

Oxford Archaeology undertook an archaeological excavation at Area 1, Twigworth, Gloucester, in February to March 2019. The site is situated immediately east of the possible course of the Gloucester to Tewkesbury Roman road and 100m north-west of a late Iron Age/early Roman settlement found in an earlier evaluation. The excavation uncovered a double-ditched Roman trackway aligned north-west to south-east, at right angles to the putative Roman road. An inhumation burial was recorded alongside the northern ditch of the trackway. This produced no dating evidence but is likely to also belong to the Roman period. Several intercutting ditches recorded in the southern part of the site contained post-medieval and modern material. The Roman trackway was truncated by a number of north-east to south-west aligned furrows which were recorded across the site.

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1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (OA) was commissioned by Robert Hitchins to undertake an excavation at the site of a proposed housing and leisure development at Twigworth, Gloucester. The 2019 excavation site was a small part (*c* 1.3ha) of the wider scheme development area.

1.1.2 The work was undertaken as a condition of planning permission (planning ref. 15/01149/OUT) to inform the Planning Authority. Although the Local Planning Authority did not set a brief for the work, the WSI for the work was approved by Tewkesbury Borough Council. The written scheme of investigation was produced by CgMs Heritage detailing the Local Authority's requirements for work necessary to discharge the planning condition (CgMs Heritage 2019). The work complied with the Chartered Institute for Archaeologists' (CIfA) *Standard and guidance for archaeological excavation*.

1.2 Location, topography and geology

1.2.1 The site is located on the southern side of the village of Twigworth, Gloucestershire, and is in use as part of an arable field (NGR: SO 84627 22076; Fig. 1). The site is bounded to the north-west by the A38 Tewkesbury Road, to the north-east by Orchard Park static caravan site, to the south-west by a house and garden and to the east by a continuation of the arable field in which the site is situated. The site is located within the Borough of Tewkesbury.

1.2.2 The area of the site is located at the north-western edge of a wider housing development. The larger development area was subjected to a geophysical survey (BCC 2013) and an evaluation in 2013 (CA 2013), including the area of the site (Fig.3).

1.2.3 The geology of the area is mapped as Rugby Limestone Member (interbedded mudstone and limestone). This is a sedimentary bedrock formed approximately 191 to 201 million years ago in the Jurassic Period. The bedrock is overlain in the area of the site by Cheltenham Sand and Gravel, a superficial deposit formed up to 3 million years ago in the Quaternary Period (British Geological Survey 2019).

1.2.4 The site is gently sloped southwards towards the Hatherley Brook which is located 300m south-east of the site. The north of the site is located at around *c* 11–13m AOD.

1.3 Previous archaeological work on the site

1.3.1 Previous archaeological investigations within the wider development area have identified late Iron Age/early Roman and medieval/post-medieval features. The trench locations of the previous investigations noted below are shown on Fig. 3. In the area of the site the previous investigations had only identified ridge and furrow.

Geophysical survey in 2013

1.3.2 A geophysical survey of the site and wider development area was undertaken in 2013 (BCC 2013). This survey identified a group of possible enclosures within the central part of the development area (Fig. 3). The survey also identified areas of ridge and furrow and land drains along with a number of other discrete and dispersed anomalies.

Evaluation in 2013

1.3.3 In 2013, a trial trench evaluation was undertaken in support of the current planning application (CA 2013). The evaluation comprised the excavation of 66 trenches across the 29.5ha development area (Fig. 3). The majority of the trenches across the site did not contain any significant archaeological features apart from the presence of medieval/post-medieval ridge and furrow cultivation. This activity along with modern ploughing had truncated earlier remains.

1.3.4 Within the centre of the development site, Trenches 22, 23–30 and 65 targeted the possible enclosures from the geophysical survey comprising pits, ditches and a posthole. These features may have been part of a later Iron Age to early Roman farmstead. The pottery recorded included 203 sherds of middle to late Iron Age pottery and 476 sherds of early Roman pottery (up to the 2nd century AD). To the south and west of the wider development area a number of ditches were identified which may have been part of a field system associated with the farmstead. It appears that topographically the focus of the settlement was located on the elevated ground above the Hatherley Brook to the south.

1.3.5 A former trackway noted on the 1799 Gloucester inclosure map was recorded, as was one other post-medieval field boundary.

1.4 Archaeological and historical background

1.4.1 The archaeological and historical background of the site has been described in detail in the 2013 desk-based assessment (CgMs Heritage 2013) which has been summarised below along with background from other sources.

1.4.2 There are no designated archaeological assets (Scheduled Ancient Monuments, Listed Buildings, Registered Parks and Gardens or Registered Battlefields) identified within the area of the site.

Prehistoric period (c 450,000 BC-AD 43)

1.4.3 There is limited evidence of early prehistoric activity in the area of the site. There is some evidence of Mesolithic/Neolithic activity in the general area suggestive of seasonal occupation and exploitation of natural resources along the course of Hatherley Brook, and associated palaeochannels.

1.4.4 A rectangular cropmark enclosure (NMR 115718) was identified from aerial photographic evidence within the western part of the wider development and adjacent to The Hawthorns. This cropmark is located just to the south-east and outside

the boundary of the site. Other cropmarks that have been identified in the vicinity have been determined to represent part of late Iron Age/Roman period farmsteads and settlements.

Romano-British period (AD 43-410)

1.4.5 The site is situated immediately east of the possible course of the Gloucester to Tewkesbury Roman road (now the A38). The exact location of this Roman road is not precisely known although it is likely to follow the A38 for part of its course. The site is also located 2.5–3km north-east of two Roman fortresses located in and around the city of Gloucester. The later fortress and settlement in Gloucester was founded in the late 1st century and developed from a *colonia* (CgMs 2013, 14).

1.4.6 The Severn Valley was intensively settled during the late Iron Age and throughout the Roman period, particularly the area around Tewkesbury and to the east of Gloucester. Within the Severn Valley there are numerous examples of late Iron Age farmsteads continuing in use into the Roman period and inhumation burials on rural sites are not unusual (Holbrook 2003, 108–14). These farmsteads may have served markets in and around Gloucester or may have been part of larger villa estates (Cotswold Archaeology 2013, 22).

1.4.7 The following late Iron Age/Roman settlements have been identified in the vicinity of the site through archaeological investigation (Fig. 2):

- **Longford farmstead** (NGR 384220 220770). A late Iron Age/early Roman enclosed farmstead, overlain by two settlement-related enclosures of early and middle Roman date which both contained pottery kilns (1st–2nd century AD). This site was also used in the later Roman period with further enclosures and field systems attributed to this period (Hughes 2017)
- **Innsworth enclosures** (NGR 385637 221537). A series of Late Iron Age/early Roman enclosures and associated trackways, cropmarks and discrete features located south of the Hatherley Brook. The site is not yet published but early spot dates from the excavation indicate the site may have been occupied from the middle Iron Age until the later Roman period (4th century AD).
- **Twigworth Roman villa** (NGR 385520 222931). A possible Roman villa has been identified at Twigworth 1km north-east of the site and immediately east of the A38 (Heritage Gateway 2019: Gloucestershire HER 5603) which may have field systems nearby which could be associated with it. This site was excavated by amateur archaeologists in 1964 and two Roman ditches were recorded nearby and east of the A38 in 1973. The 1964 excavation found a Roman building that was 20 x 40m long with a flagged floor and a number of Roman finds including a coin of Tetricus I (AD 270–273). This excavation also found a shallow adult supine burial, with head to the west. Both forearms and lower legs of the skeleton had been cut away by the plough. The grave for this burial had truncated a possible Roman floor level (at the time this was interpreted as a road) at approximately SO 85602292. This area was subject to fieldwalking by GADARG in 1995 and 2010 and over 250 sherds of Roman pottery was found dating between the 2nd-4th centuries AD, along with other small finds.

Early medieval period (AD 410-1066)

1.4.8 There are no known early medieval heritage assets recorded within the site or the vicinity.

Medieval period (AD 1066-1536)

1.4.9 The site is located 3km north-east of the medieval city of Gloucester, in an area that was historically occupied by agricultural land and small hamlets. Two medieval moated sites are located within 1km of the site, including one at Down Hatherley *c* 1km north-east and one at Innsworth 800m south-east of the site.

1.4.10 The settlement at Twigworth was first documented in 1216 and is likely to have remained a small hamlet during the medieval and into the post-medieval period. A rectangular enclosure is located west of the A38 and immediately west of the site (HER 5584). This feature is respected by nearby ridge and furrow and may be medieval in date. It is possible that these features could be part of a shrunken settlement of Twigworth.

1.4.11 Within the site itself and the wider vicinity ridge and furrow has been identified. The evaluation of the site in 2015 identified ridge and furrow below ground on a NE-SW alignment. This may have continued in fields to the south-west of the site as LiDAR data indicates extant remains of ridge and furrow on the same alignment as the ridge and furrow identified below ground across the site. This suggests that the site was part of an open field system of ridge and furrow during the medieval period.

Post-medieval period (AD 1536 to present)

1.4.12 The earliest detailed mapping of the site is Isaac Taylor's map of Gloucestershire dated 1777. This indicates that the settlement of Twigworth was linear and located either side of the A38. Twigworth retained a rural character until the later 20th century when a caravan park was built immediately north-east of the site.

1.4.13 The 1799 Gloucester inclosure map shows that the site was part of a series of enclosed fields owned by Mrs Catherine Hayward. The boundary of the site appears to correspond with land parcel 112 of the inclosure map. A small NE-SW aligned boundary line, possibly a ditch, is located in the approximate location and the same alignment as the eastern boundary of the site. The south-western boundary of the site appears to have remained the same from the 1799 map and subsequent maps. This was a hedged boundary between Catherine Hayward's and Elizabeth Crump's land to the south-west (CgMs Heritage 2013). The later 19th century OS maps indicate that the NE-SW boundary line had disappeared and that the site was part of a much larger field. The boundary line to the south-west of the site remained the same throughout the early to mid-20th century. The 1970s map indicates that Court Cottages were built directly south-west of the site and adjacent to the A38. The north-east boundary of Court Cottages forms the south-western boundary of the site.

1.5 Archive and publication

1.5.1 The archive will be deposited with Gloucester City Museum and Art Gallery under the accession code GLRCM:2019.1.

1.5.2 It is proposed that the results of this investigation should be incorporated into a future publication of the archaeology of the wider Twigworth development site (including the proposed Area 2 excavation).

2 EXCAVATION AIMS AND METHODOLOGY

2.1 General aims and objectives

2.1.1 The general aims and objectives of the excavation were set out in the WSI (CgMs Heritage 2019) and these were set for the whole of the development area, which includes the area of the site.

i. To determine or confirm the general nature of any remains present;
ii. To determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence;
iii. To produce an archive (finds and records) that will be organised and deposited in a registered museum, to facilitate access for future research and interpretation for public benefit.

2.2 Specific aims and objectives

2.2.1 The specific aims and objectives of the fieldwork were to:

iv. To further define the extent, date and nature of the central features possibly pertaining to a late Iron Age/early Roman enclosures/farmstead;
v. To establish a clearer understanding of the date, form, function, evolution, extent and economic status of the late Iron Age/early Roman occupation activity previously identified on the site by evaluation
vi. To demonstrate whether any such activity is contemporary with, or can be directly related to, the successive Roman settlement evidence within the Gloucester area, particularly the Glevum colonia established in the AD 90s; and
vii. To establish the land-use on the site in the post-Roman period

2.2.2 It is apparent from the archaeological works undertaken in the immediate area that the site has the potential to contribute to a wide range of research areas in connection with the Roman rural landscape of the wider Gloucester area. These objectives include:

- The site lies in the hinterland of Roman Gloucester, Glevum. What are the connections between the fort/town, villas and surrounding rural landscape? How interconnected were these elements and what was the relationship between these areas?
- To provide a better understanding of agricultural, social and economic life of rural areas that has so far had only limited consideration and will only be advanced through defining a wider set of research aims.

2.2.3 These aims tie in with the regional research framework (Webster 2007, 286–7), particularly research aim 29 (improve our understanding of non-villa Roman rural settlement) and research aim 34 (improve our understanding of early Roman settlement).

2.3 Methodology

2.3.1 The site was stripped of modern overburden with a machine using a toothless bucket operating under archaeological supervision. Those areas that contained

archaeological features were sufficiently hand-cleaned to produce a base plan, recorded digitally using a total station theodolite/GPS. After monitoring by the client all archaeological features were targeted for excavation by hand. They were excavated and recorded stratigraphically in accordance with the 2019 WSI by CgMs and OA's recording system.

2.3.2 Once archaeological deposits had been exposed, further excavation proceeded by hand as agreed with Nick Cooke (RPS) and Charles Parry (GCC). The exposed surface was sufficiently clean to establish the presence/absence of archaeological remains. The level of hand excavation of features was as outlined within the approved WSI (CgMs 2018). Upon agreement the site was signed off and handed back to the contractor.

3 RESULTS

3.1 Introduction

3.1.1 The results of the excavation are presented below, and include a stratigraphic description of the archaeological remains by chronological phase. Finds reports are presented in Appendix A and the environmental reports are presented in Appendix B. The results of the excavation are shown on Fig. 4 and selected sections are shown on Fig. 6.

3.1.2 Within the excavation area the upper stratigraphic sequence was uniform with a layer of brown-grey silty loamy clay topsoil (1) which was 0.15–0.35m thick and contained angular gravel. Below the topsoil was an orange-brown loamy clay subsoil (2) which was 0.08–0.21m thick. The natural (3) below the subsoil was an orange-brown clay with areas of light grey clay which contained patches of gravel. The natural to the west of the site was predominantly the light grey/orange-brown clay with more gravel towards the eastern side of the site. The variation in the depth of the subsoil and topsoil across the site is very likely due to medieval ridge and furrow activity and modern ploughing.

3.2 Phase 1 (Romano-British)

Roman trackway 60/61

3.2.1 Ditch groups 60 and 61 were two parallel ditches which were located in the central to southern part of the site. The ditches were aligned NW-SE and were spaced 4.1–5.1m apart. Together these ditches are likely to have formed drainage ditches either side of a trackway. Of the four sherds of pottery found in these ditches, one could be dated to the 2nd century, and the rest could not be dated more closely than the Roman period.

3.2.2 The southern ditch (group 60) was 0.58–1.06m wide and 0.12–0.32m deep with moderately steep sides (Fig. 6: Section 14; Plate 1). The base of the ditch varied between concave and flat. Cut 40 contained two sherds of Roman pottery and cut 58 contained one sherd of Roman pottery. The two sherds that were found within cut 40 were found towards the base of the deposit. Sample 5 from cut 58 produced a single cereal grain and another fragment that was not identifiable along with a small glume base fragment that may be from a glume wheat such as spelt or emmer. This sample also contained a single vetch seed; vetch was and is still used as fodder for animals.

3.2.3 The northern ditch (group 61) was 0.7–1.17m wide and 0.21–0.36m deep with a V-shaped profile (Fig. 6: Section 19; Plate 2). Cut 52 of group 60 contained one sherd of 2nd century Roman pottery.

Skeleton 64

3.2.4 Skeleton 64 was located at the western end of the site and immediately south of ditch group 61 (Fig. 5). No grave cut was discernible although the skeleton appeared to be partly covered by subsoil. Although no dating evidence was recovered in association

with the skeleton, its location adjacent to and aligned with ditch 61 suggests that it belongs to the Roman period.

3.2.5 The skeleton was heavily truncated with only fragmented remains of the skull, arm, leg bones and one scapula. The skull was located to the north and the body appeared to be possible lying on its back in a flexed position. The skull was lying on the left side and was crushed. The osteological analysis suggests this was a middle adult (36–45 years) and was tentatively sexed as male.

3.2.6 The skeleton is likely to have been heavily truncated by the ridge and furrow and/or later ploughing.

3.3 Phase 2 (medieval to post-medieval)

Ditch group 67

3.3.1 Ditch group 67 was located in the south-eastern corner of the site and was orientated NE-SW. The ditch was 0.3–0.44m wide and 0.12m deep with moderately steep sides and a concave base. This ditch was truncated by post-medieval ditch group 63 (Fig. 6: Section 1). This ditch was on the same alignment as the furrows and may have been a drainage ditch associated with this field system. This ditch also aligns with a boundary line shown on the 1799 Gloucester inclosure map and therefore may be a post-medieval field boundary (CgMs Heritage 2013).

Ditch 47 and ditch groups 62, 63 and 66

3.3.2 A series of intercutting ditches were located towards the southern part of the site. They all had similar brown silty/sandy fills. Ditch 47 may have been the earliest iteration of this series of tentatively dated post-medieval ditches. It was only observed at the north-western extent of ditch group 62/63 and was 0.42m wide and 0.1m deep. It was truncated to the north by ditch group 62 (cut 49) (Fig. 6: Section 16; Plate 3).

3.3.3 Ditch group 63 and its recut group 62 were orientated WNW-ESE for 30m at the western end of the site before changing alignment to NW-SE. At this point the two ditches followed diverging courses towards the south-eastern edge of the site.

3.3.4 Ditch 63 was typically 0.3–0.89m wide apart from at cut 37 where it was only 0.17m wide. The ditch was 0.08–0.17m deep with moderately steep sides and a concave or flat base. Cut 43 contained several relatively modern finds within fill 42, including two small fragments of glass and a washer, though it is possible that these are intrusive. Sample 6 from cut 43 also produced 12 fragments of charcoal, clinker and anthracite.

3.3.5 Group 63 was cut by group 62 to the south (Fig. 6: Section 12 and Section 16; Plate 4, Plate 3). This ditch had moderately steep sides and a concave base and was 0.3–0.8m wide and 0.1–0.25m deep. Cut 49 at the south-western end contained one sherd of post-medieval pottery within its fill, 48.

3.3.6 Ditch group 66 formed an L shape with one part orientated NW-SE and the other NE-SW. It comprised cuts 15 and 33 and was 0.2m wide and 0.1m deep. This ditch

truncated ditch group 63 and its relationship with ditch group 62 was not clearly established.

Furrows

3.3.7 A series of furrows crossed the excavation area on a NW-SE alignment. LiDAR data indicates that these furrows continued in the field to the south of the site where they are shown as extant features. This indicates that these furrows may have been part of a larger medieval to post-medieval open field system. The furrows truncated the Roman trackway ditches (groups 60 and 61) but were truncated in plan by ditch groups 62/63 to the south. The furrows were not excavated but were recorded in plan. The furrows were 1.5–2m wide and were spaced 5–6m apart.

3.3.8 A pocket or spring knife dated to the 18th century or later (sf 1: context 65) was recovered from a location corresponding with one of the furrows. This could indicate that the furrows were infilled by the later post-medieval period.

3.4 Undated

Pits 17, 18 and 20

3.4.1 Three shallow, undated pits were observed and recorded at the south-eastern end of the site during the excavation. Pit 17 was located north of ditch group 63 and was 0.54m wide and 0.18m deep with moderately steep sides and a flat base. Pits 18 and 20 were located 2m apart at the eastern limit of excavation. Pit 18 was 0.5m wide, 1.2m long and 0.13m deep with steep sides and a concave base. Pit 20 was 0.68m long, 0.4m wide and 0.14m deep with the same profile.

4 DISCUSSION

4.1.1 The site had been truncated by both ridge and furrow and by modern ploughing. This may explain why Trench 1 of the 2013 evaluation did not find traces of the Roman trackway as the northern ditch (group 61) had been truncated by a furrow. Trench 32 of the evaluation did not record the post-medieval ditches at the southern end of the site, although these may have been difficult to identify in oblique section.

4.1.2 The site contributes to an emerging picture of an intensively settled Roman agrarian landscape to the north of Gloucester. Although the precise route of the Gloucester to Tewkesbury Roman road is not known, a number of Roman sites appear to be associated with it (Fig. 2). This includes the late Iron Age/early Roman farmstead that was identified during the 2013 evaluation 100m south-east of the site. Further afield, 1km south-west of the site, another late Iron Age/early Roman enclosed farmstead was identified at Longford with later Roman enclosures and field systems (Hughes 2017). The Innsworth excavations, 1–1.5km south-east of the site, are not yet published but initial results suggest a settlement continuously occupied from the middle Iron Age until the later Roman period. These rural sites may have been organised as part of a larger villa estate. A Roman villa was identified by amateur archaeologists in the 1960s at Twigworth 1km north of the site, though this is unpublished (information from Gloucestershire HER). Later fieldwalking of this villa site by GADARG in 1995 and 2010 found over 250 sherds of Roman pottery dating to the 2nd-4th centuries AD.

4.1.3 The present excavation uncovered two ditches that defined a north-west to south-east aligned Roman trackway, and an associated skeleton. Only four sherds of Roman pottery were recovered from the trackway ditches, one of which can be dated to the 2nd century. The trackway was aligned at right angles to the suggested course of the Gloucester to Tewkesbury Roman road (now the A38). It is possible that this trackway may have led to the late Iron Age/early Roman farmstead 100m south-east of the site. Further excavation in the rest of the development site may shed more light on the route and purpose of the trackway, and provide more precise dating evidence for this feature.

4.1.4 The skeleton was aligned with the trackway and was located 0.5m south of the northern trackway ditch. There was no dating evidence with this skeleton but its alignment with the trackway strongly suggests that the burial was a contemporary feature. There was no grave cut recorded for this burial and the skeleton was heavily truncated, probably by modern ploughing. The individual was an adult and showed traces of cribra orbitalia, resulting from poor diet or disease. The position of the skeleton in the area of the trackway itself and between two drainage ditches suggests a deliberate placement on a communications route, perhaps on the periphery of a settlement, which was a common practice in the Roman period (Smith *et al*. 2018). A shallow grave was also found during the Twigworth villa excavation, under a road or floor, with the head to the west as with the burial from the present site.

4.1.5 The excavation also uncovered evidence for the medieval to post-medieval agricultural use of the site, in the form of furrows and boundary ditches. Ditch group 67, aligned NE-SW, corresponds with the approximate location of a field boundary on the 1799 Gloucester inclosure map (CgMs 2013). This feature was cut by further ditches (groups 62 and 63) that are likely to be of fairly recent date.

APPENDIX A FINDS REPORTS

A.1 Roman pottery

By Kate Brady

A.1.1 A total of five sherds weighing 25g was recovered from the site. The pottery was recorded using the standard OA system for Iron Age and Roman pottery. Three sherds were Severn Valley ware (O40) body sherds and had a broad Roman date (AD 40–410). This oxidised fabric was made at a number of centres within the Severn Basin throughout the Roman period, though the peak of production was during the 2nd and 3rd centuries. The single other sherd was a decorated body sherd of Central Gaulish samian ware (S30) from a 2nd-century vessel.

A.1.2 The condition of the pottery was poor. Sherds were small and abraded. The mean sherd weight was 6.25g. This is consistent with an assemblage whose appearance in features is accidental, having been relocated a number of times from its original place of discard.

Context	No. sherds	Weight (g)	Fabric	Spot date
41	2	18	O40	Roman
53	1	4	S30	2C
59	1	3	O40	Roman

Table 1: Roman pottery by context

Recommendations regarding the conservation, discard and retention of material

A.1.3 The pottery will be retained and will form part of the archive for the wider development site.

A.2 Metal finds

By Ian R Scott

A.2.1 There are just two metal objects. One appears to be the heavily corroded remains of folding or spring knife (sf 1; context 65) and the second a tiny non-ferrous washer (context 42, sample 6). The knife could be of later 18th-century or later date. The likelihood is that the small washer from context 42 is an intrusive recent object.

A.2.2 **Context 65**. Pocket or spring knife. The hinged blade appears to have a square end rather than a pointed tip. The back of the handle was formed by the spring. Attached to either side of the spring were metal lining plates. The bolsters and bone or wood scales (handle plates) were secured by pins or rivets through the spring. A pin through the bolsters acted as the pivot for the folding blade. Pins or rivets that secured the handle plates are still visible, with three showing on one side of the knife and four on the other. The handle plates or scales, of which only traces survive, were probably wider and slightly curved down at the outer end of the handle to form a pistol grip shape. L: extant 138mm. W: 30mm. Sf 1

A.2.3 **Context 42**. Washer. Non-ferrous, with D-shaped piercing. D: 7mm. Sample <6>

Recommendations regarding the conservation, discard and retention of material

A.2.4 These metal finds need no further work and do not need to be deposited within an archive.

A.3 Glass finds

By Ian R Scott

A.3.1 There are just two small fragments of glass, both from context 45 (sample 6). One fragment in bright green glass is vessel glass, although too small to permit the vessel form to be identified. The second piece of cloudy pale sage green glass is a flake with no original surfaces. Neither piece need be very old and could be intrusive.

Recommendations regarding the conservation, discard and retention of material

A.3.2 These glass finds need no further work and do not need to be deposited within an archive.

APPENDIX B ENVIRONMENTAL AND OSTEOLOGICAL REPORTS

B.1 Environmental samples

By Sharon Cook

Introduction

B.1.1 Six bulk samples were taken, of which two were processed for the recovery of charred plant remains (CPR) and artefacts. The remaining samples were taken from burial 64 for the retrieval of human bone and did not produce flot material.

B.1.2 The bulk CPR samples were processed in their entirety using a modified Siraf-type water flotation machine to 250µm (flot) and 500µm mesh (residue). The residue fractions were sorted by eye and all bone and artefacts removed and passed to the relevant specialists.

Method

B.1.3 The dried flots were sorted using a low power (x10) binocular microscope to extract cereal grains and chaff, smaller seeds and other quantifiable remains. Identifications were carried out using standard morphological criteria for the cereals (Jacomet 2006) and with reference to the Digital Seed Atlas of the Netherlands (Cappers *et al.* 2006) for identification of wild plant remains, as well as comparison with modern reference material held at OA. Classification and nomenclature of plant material follows Stace (2010).

The assemblages

B.1.4 Sample 5, from Roman ditch cut 58 (ditch group 60), produced only a small flot of 10ml, the majority of which comprised fine modern roots with occasional other uncharred material with a modern appearance. Charcoal is rare in the flot with only three fragments larger than 2mm, all of which have a metallic appearance and are heavily encrusted as a result of mineral precipitate.

B.1.5 A single cereal grain in a clinkered and vitrified condition is not identifiable to species due to its poor condition and a small number of fragments may be the remains of a second. A single small glume base fragment is too small to identify further although its presence would suggest the cereal grain is likely to be from a glume wheat such as spelt (*Triticum spelta*) or emmer (*Triticum dicoccum*). A single vetch seed (*Vicia*/*Lathyrus*) less than 2mm in size and badly damaged was the only other charred material present.

B.1.6 Sample 6, from post-medieval ditch 43, produced a larger flot of 50ml, the majority of which is indeterminate clinker and anthracite. Twelve fragments of charcoal larger than 2mm are present within the flot but as with sample 5 these have a metallic appearance and are heavily encrusted as a result of mineral precipitate. No charred seeds, grain or chaff are present.

B.1.7 Snails are present within both flots, sample 6 containing a small quantity of possible freshwater snails. In both samples the snails include *Cecilioides acicula* which is a modern burrowing snail.

Discussion

B.1.8 The lack of charred material within the samples and its generally small size means that it is not possible to further interpret the features or the assemblages. The presence of small quantities of material are likely to be the result of either charred remains being incorporated within material used for manuring the fields or as a result of the material being windblown or otherwise carried from an area of crop-related activity.

Recommendations regarding the conservation, discard and retention of material

B.1.9 The flots have little research value and deposition in the archive is not recommended.

B.2 Human bone

By Lauren McIntyre

B.2.1 One articulated inhumation burial (skeleton 64) was recovered.

Methodology

B.2.2 Recording was undertaken with reference to Brickley and McKinley (2004) and Mitchell and Brickley (2017). The skeleton was scored with reference to condition (Grade 0-5+, after McKinley 2004b, 16), completeness (0–25%, 26–50%, 51–75%, 76–100%) and fragmentation ('low', <25% of the skeleton fragmented, 'medium', 25–75% of the skeleton fragmented, or 'high', >75% fragmented). These scores were then employed to assign overall preservation as either ‘good’, ‘fair’ or ‘poor’. The age and sex of the skeleton was estimated, where possible, using relevant standards (Brothwell 1981; Miles 1962; 2001; Scheuer and Black 2000; Ferembach *et al*. 1980; Buikstra and Ubelaker 1994). Non-metric traits were systematically recorded for with reference to Berry and Berry (1967) and Finnegan (1978) and any pathologies were recorded with reference to standard texts (e.g. Aufderheide and Rodríguez-Martín 1998; Ortner 2019).

Results

B.2.3 Skeleton 64 was only 15% complete and highly fragmented. Surface preservation was scored at grade 4 (all surfaces affected by some degree of erosion; McKinley 2004, 16). Overall preservation was poor.

B.2.4 Only one sexually dimorphic cranial trait was observable, the left orbital margin. This was in keeping with a possible male individual. Age was estimated as middle adult (36–45 years), based on dental occlusal wear.

B.2.5 The skeleton was too fragmented and incomplete for metrical analysis (i.e. stature estimation, cranial and post-cranial indices) to be undertaken.

B.2.6 One non-metric trait was observed, an accessory orbital foramen superior to the left orbit. Accessory supraorbital foramen has a likely genetic origin (Veldman 2013, 75).

B.2.7 A total of 22 permanent teeth were present. All of the sockets were absent, being lost post-mortem. Dental calculus was observed on 11 teeth. This is a mineralised plaque deposit. It derives from a combination of saliva and micro-organisms and accumulates on the tooth surfaces (Hillson 1996, 255–6).

B.2.8 Cribra orbitalia (CO) was observed in the left orbit (grade 2, scattered fine foramina; Stuart-Macadam 1991). This condition predominantly occurs in infants and young children but is also visible as inactive or healed lesions in adults. The exact aetiology of CO is unknown, though it has been linked to a number of conditions including iron deficiency anaemia, infection and vitamin deficiency (Ortner 2019, 515; Walker *et al*. 2009).

Summary and discussion

B.2.9 The human skeletal remains comprise one middle adult possible male burial. The sex of the skeleton was estimated from one trait only and therefore this observation should be regarded as tentative. Generally, dental health was good, with the only observed dental pathology comprising slight calculus deposits affecting half of the preserved teeth. Calculus formation has been linked to diets high in protein and/or carbohydrates; this may, therefore, be an indication of diet (Hillson 1996, 254–5). The lack of large calculus deposits may also be suggestive of good oral hygiene practices, where the individual has attempted to keep the tooth crown surfaces clean (Ibid, 254–5). The presence of cribra orbitalia may be indicative of slight dietary deficiency or disease load (Ortner 2019, 515; Walker *et al*. 2009).

B.2.10 Any further interpretation of the burial is precluded by the lack of dating evidence. If a radiocarbon date can be obtained, it is recommended that the burial undergo comparison to contemporary burials from the local and wider geographical region, in order to ascertain whether it is typical or atypical for the period.

Recommendations regarding the conservation, discard and retention of material

B.2.11 The skeleton will be retained until work on the wider development site has been completed and will then be either reburied or deposited with the receiving museum.

APPENDIX C BIBLIOGRAPHY

Aufderheide, A C, and Rodríguez-Martín, C, 1998 *The Cambridge Encyclopedia of Human Paleopathology*, Cambridge, Cambridge University Press

BCC (Bartlett Clark Consultancy) 2013 *Land at Twigworth, Gloucestershire: Report on an Archaeological Geophysical Survey*

Berry, A C, and Berry, A J, 1967 Epigenetic variation in the human cranium, *Journal of Anatomy* **101**, 361–79

Brickley, M, and McKinley, J I, (eds.) 2004 Guidelines to the Standards for Recording Human Remains. IFA Paper No. 7, British Association for Biological Anthropology and Osteoarchaeology (BABAO)

British Geological Survey, 2018 Geology of Britain viewer http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html

Brothwell, D R, 1981 *Digging up bones,* Oxford, Oxford University Press

Buikstra, J E, and Ubelaker, D H, (eds.) 1994 *Standards for data collection from human skeletal remains*, Arkansas Archaeological Survey Research Series **44**

CgMs Heritage, 2013 Land at Twigworth, Gloucestershire, Archaeological Desk-Based Assessment, unpublished client report

CgMs Heritage, 2019 Land at Twigworth, Gloucestershire, Written Scheme of Investigation for a programme of archaeological mitigation, unpublished client report

Cotswold Archaeology, 2013 Land at Twigworth, Gloucestershire, Archaeological Evaluation, unpublished client report

Ferembach, D, Schwidetzky, I, and Stloukal, M, 1980 Recommendations for age and sex diagnoses of skeletons, *Journal of Human Evolution* **9**, 517–49

Finnegan, M, 1978 Non-metric variation of the infracranial skeleton, *Journal of Anatomy* **125**, 23–37

Heritage Gateway, 2019 Gloucestershire HER 5603: Roman site, Six Acre Field https://www.heritagegateway.org.uk/

Hillson, S, 1996 *Dental anthropology*, Cambridge, Cambridge University Press

Holbrook, N, 2003 The Roman period, in *Twenty-Five Years of Archaeology in Gloucestershire. A Review of New Discoveries and New Thinking in Gloucestershire South Gloucestershire and Bristol 1979-2004* (eds N Holbrook and J Jurica), Cotswold Archaeology, Bristol and Gloucestershire Archaeological Reports **3**, 97–131

Hughes, V, 2017 Land at Longford, Gloucestershire, post-excavation assessment and updated project design, unpublished client report, Oxford Archaeology

Miles, A E W, 1962 Assessment of the ages of a population of Anglo-Saxons from their dentitions, *Proceedings of the Royal Society of Medicine* **55**, 881–6

Miles, A E W, 2001 The Miles method of assessing age from tooth wear revisited, *Journal of Archaeological Science* **28**, 973–82

Mitchell, P D, and Brickley M, (eds.) 2017 *Updated guidelines to the standards for recording human remains*, Chartered Institute for Archaeologists (CIfA) and BABAO

Ortner, D J, 2019 *Identification of pathological conditions in human skeletal remains*, San Diego, Academic Press

Scheuer, L, and Black, S, 2000 *Developmental juvenile osteology,* Oxford, Elsevier Academic Press

Smith, A, Allen, M, Brindle, T, Fulford, M, Lodwick, L, and Rohnbogner, A, 2018 *Life and death in the countryside of Roman Britain*, Britannia Monograph **31**, London

Stuart-Macadam, P L, 1991 Anaemia in Roman Britain, in *Health in Past Societies. Biocultural interpretations of human remains in archaeological contexts* (eds H Bush and M Zvelebil), Oxford, Tempus Reparatum, BAR International Series **567**, 101–13

Veldman, J K, 2013 Non-Metric traits, An assessment of cranial and post-cranial non-metric traits in the skeletal assemblage from the 17th-19th century churchyard of Middenbeemster, the Netherlands, Unpublished Master's thesis, Leiden University

Walker, P L, Bathurst, R R, Richman, R, Gjerdrum, T, and Andrushko, V A, 2009 The causes of porotic hyperostosis and cribra orbitalia: A reappraisal of the iron-deficiency-anemia hypothesis, American *Journal of Physical Anthropology* **139** (2), 109–25

Webster, C J, 2007 *South West Archaeological Research Framework* 2007*, Resource Assessment and Research Agenda*

APPENDIX D SITE SUMMARY DETAILS

Site name:	Area 1, Twigworth, Gloucestershire
Site code:	OATWIG19
Grid reference:	SO 84627 22076
Type:	Excavation
Date and duration:	18/02/19 until 01/03/19 (2 weeks)
Area of site:	*c* 1.3ha
Location of archive:	The archive is currently held at Oxford Archaeology and will be deposited with Gloucester City Museum and Art Gallery in due course, under the accession code GLRCM:2019.1
Summary of results:	Oxford Archaeology undertook an archaeological excavation at Area 1, Twigworth, Gloucester, in February to March 2019. The site is situated immediately east of the possible course of the Gloucester to Tewkesbury Roman road and 100m north-west of a late Iron Age/early Roman settlement found in an earlier evaluation. The excavation uncovered a double-ditched Roman trackway aligned north-west to south-east, at right angles to the putative Roman road. An inhumation burial was recorded alongside the northern ditch of the trackway. This produced no dating evidence but is likely to also belong to the Roman period. Several intercutting ditches recorded in the southern part of the site contained post-medieval and modern material. The Roman trackway was truncated by a number of north-east to south-west aligned furrows which were recorded across the site.

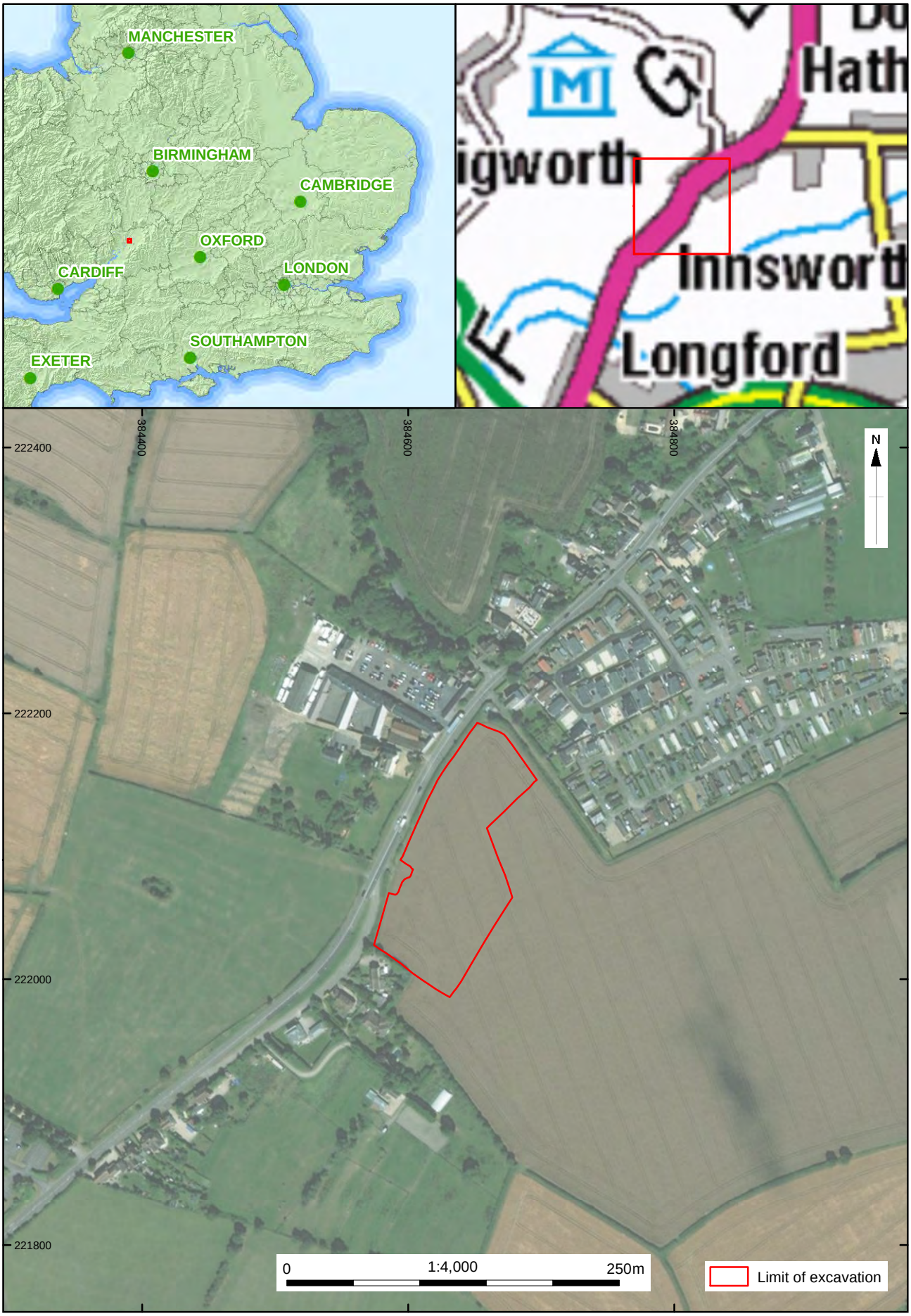

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Figure 1: Site location

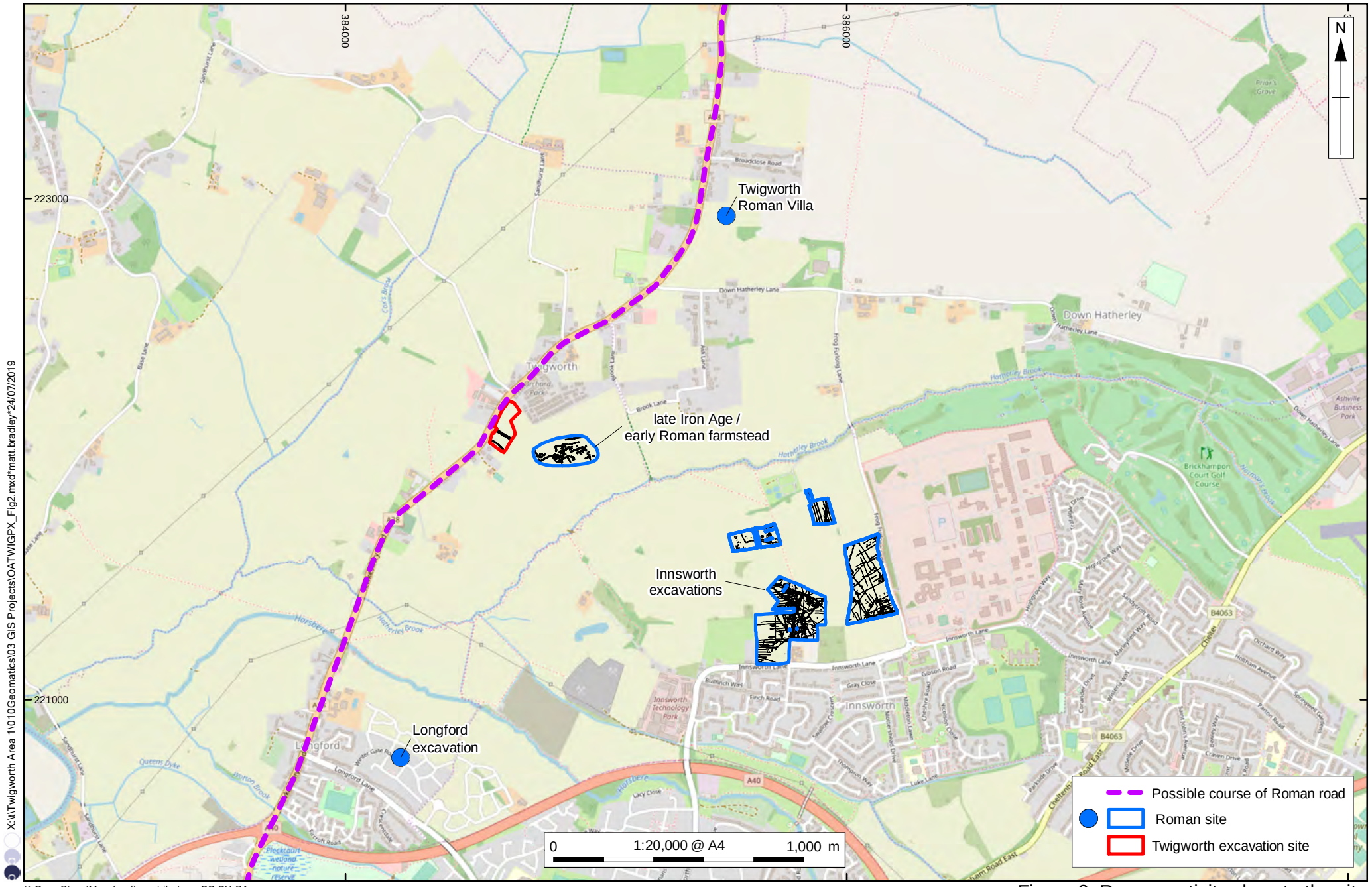
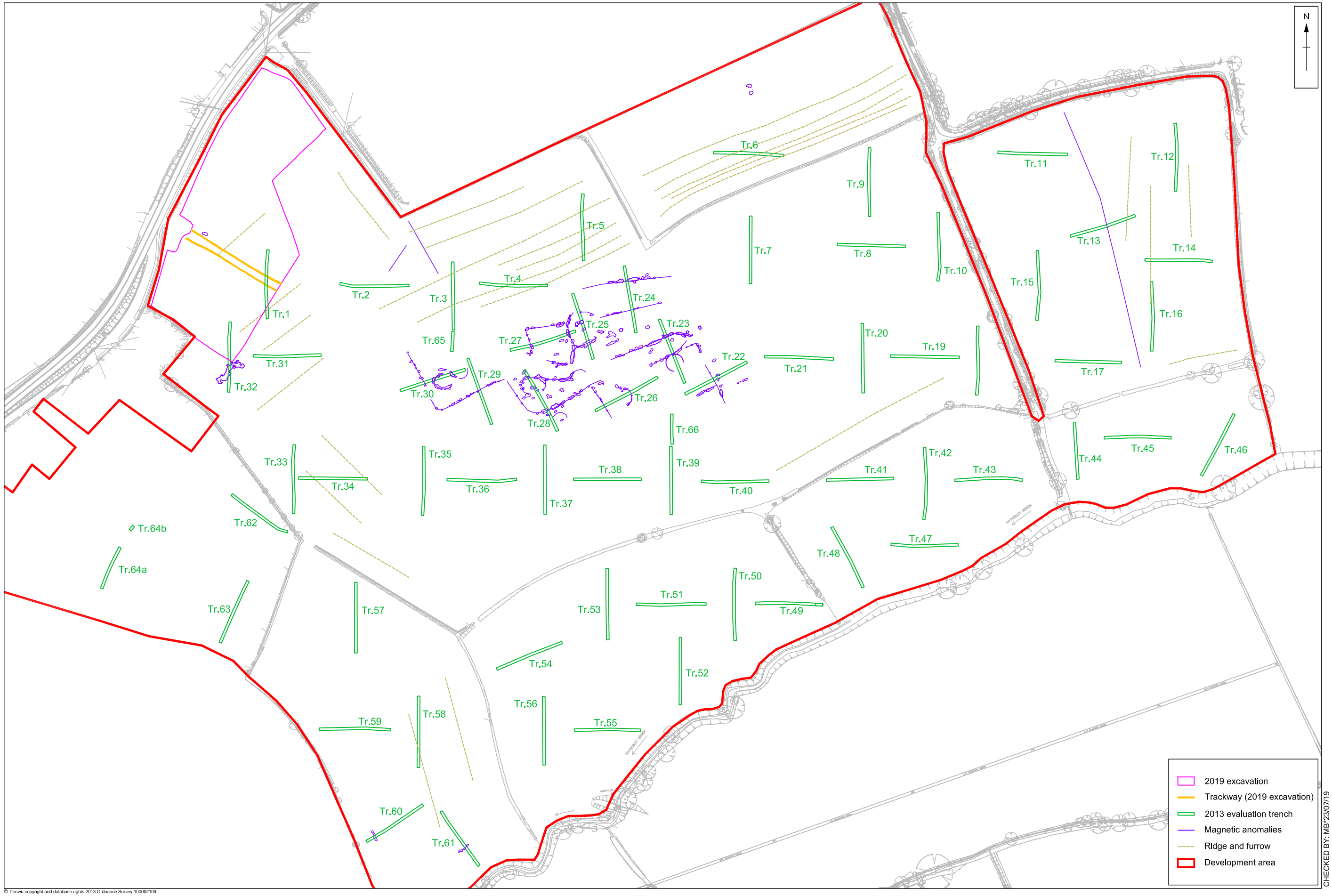


Figure 2: Roman activity close to the site



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CHECKED BY: MB*23/07/19

0 100m

Scale at A3 1:2500

Figure 3: Previous investigations

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0 20m

Scale at A3 1:400

Figure 4: Results of the 2019 excavation

X:\t\Twigworth Area 1\010Geomatics\02 CAD\OATWIGPX Twigworth 2019-07-22.dwg(A4 Fig5)*OATWIG19*OATWIGPX*Twigworth, Area 1*matt.bradley* 25 Jul 2019

Figure 5: Skeleton 64

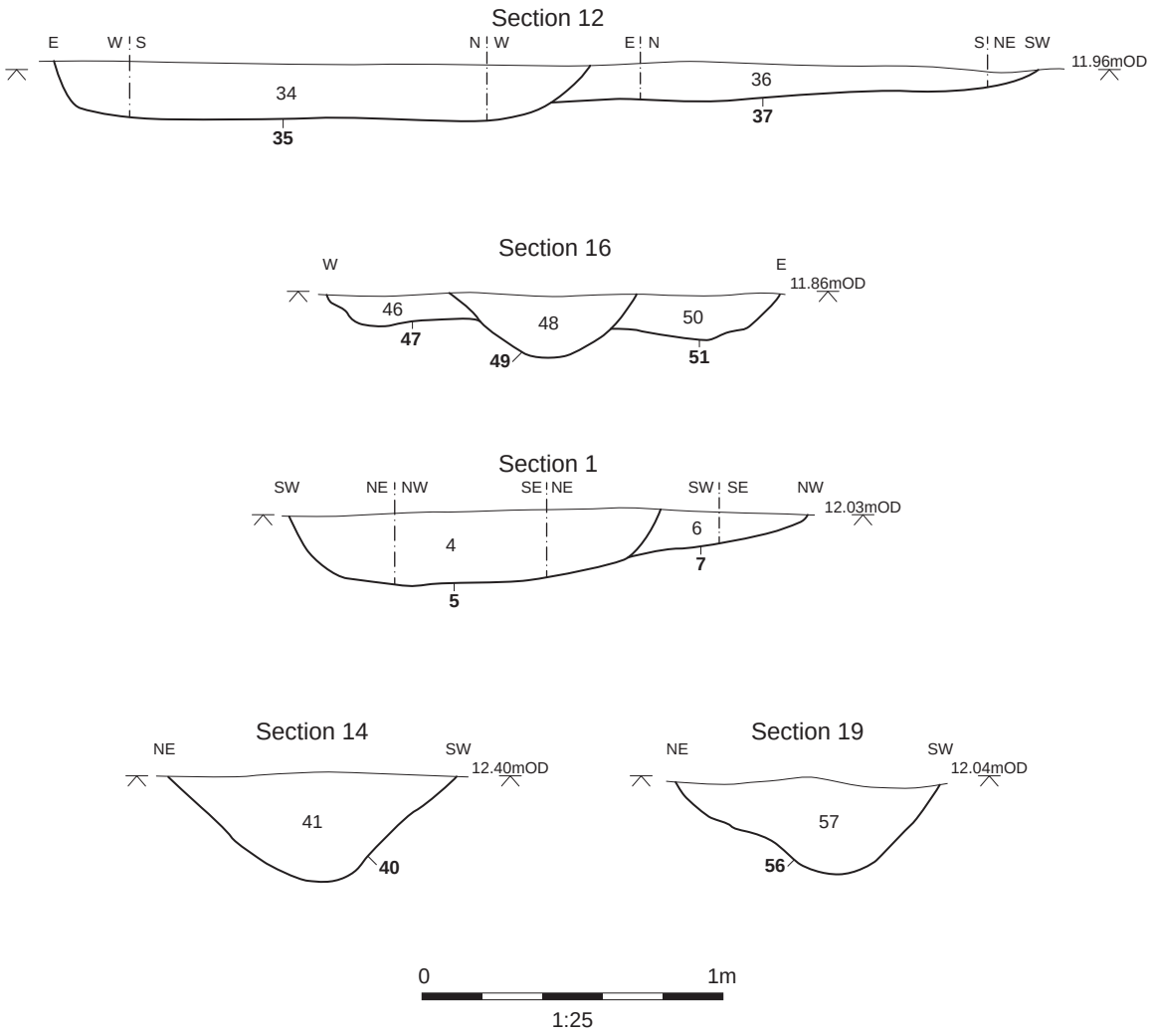

Figure 6: Selected sections

Plate 1: Ditch 40 (Group 61), section 14, facing south-east

Plate 2: Ditch 56 (Group 60), section 19, facing south-east

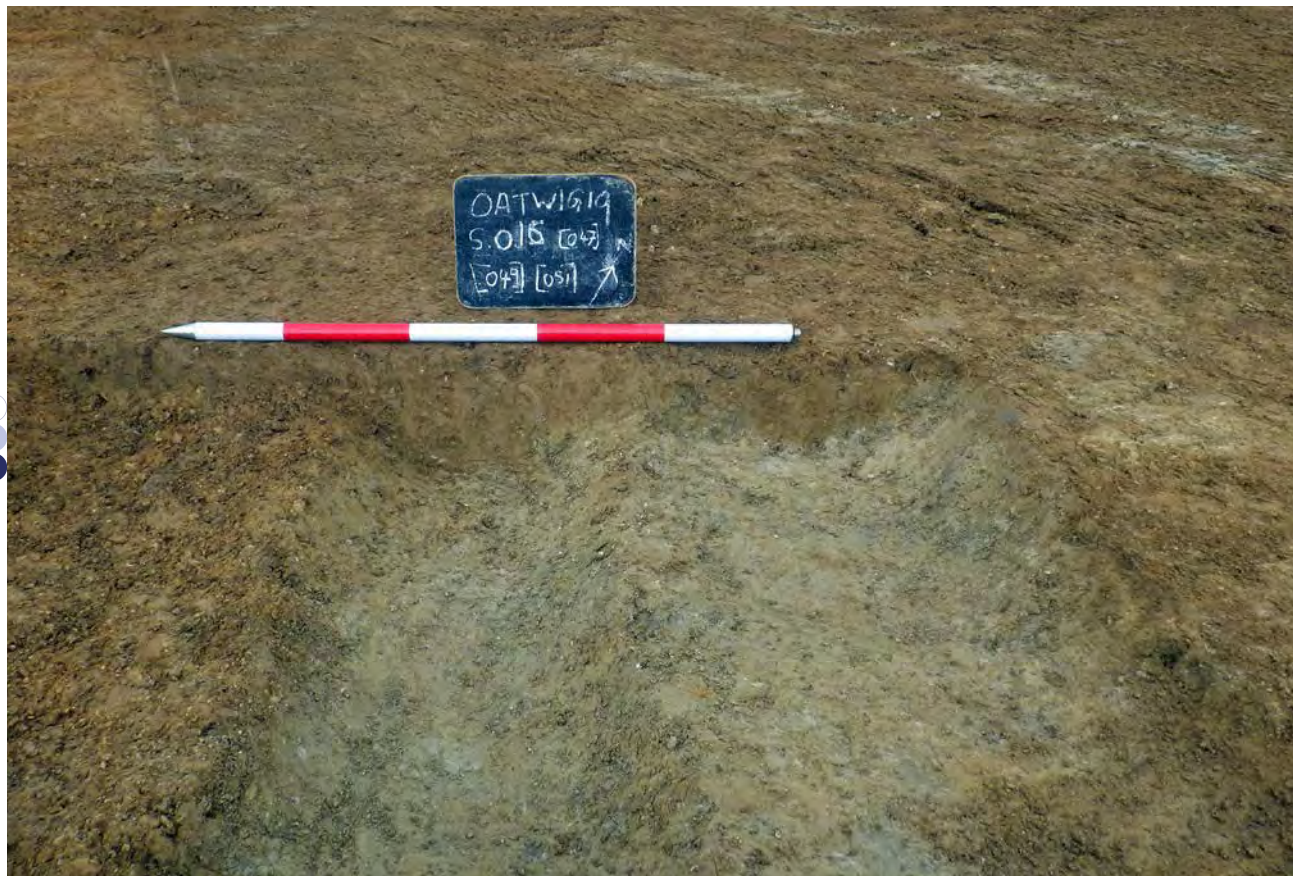

Plate 3: Ditches 47 and 49 (Group 62) and ditch 51 (Group 63), section 16, facing north-west

Plate 4: Ditch 35 (Group 62) cutting ditch 37 (Group 63), section 12, facing north-west

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