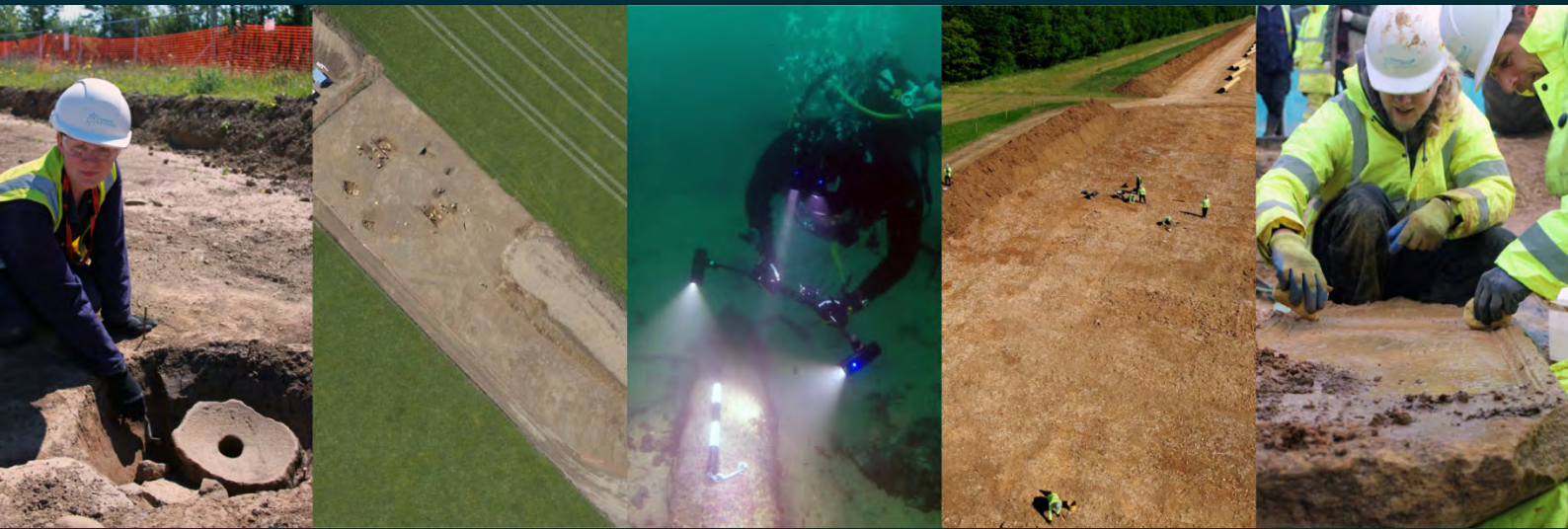


Waterloo Car Park Cirencester Gloucestershire

Archaeological Evaluation



for
The Environmental Partnership (TEP)

CA Project: CR0183
CA Report: CR0183_1

November 2019



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SUMMARY

Project Name:	Waterloo Car Park
Location:	Cirencester, Gloucestershire
NGR:	402644 202057
Type:	Evaluation
Date:	30 September to 11 October 2019
Location of Archive:	To be deposited with Corinium Museum
Site Code:	WCPC19

An archaeological evaluation was undertaken by Cotswold Archaeology from 30 September to 11 October 2019 at Waterloo Car Park, Cirencester, Gloucestershire. Four trenches were excavated.

A series of Roman made-ground deposits, surfaces and structural remains were recorded across the site, with associated occupation and demolition horizons. In the centre of the site the made-ground layers could be interpreted as evidence of land reclamation during the later Roman Period, potentially due to urban expansion or the establishment of the town defences in the mid 2nd century, when part of the River Churn was diverted outside of the city wall. A wall located in the centre of the site, combined with evidence from an evaluation in 1998, suggest that this area of the site was occupied by at least one building during the Roman period. In the south-western corner of the site two possible phases of limestone surfacing were identified. It is possible that these surfaces relate to a wall identified in the 1998 evaluation or that these surfaces represent a road.

These were all sealed by post-Roman 'dark earth' deposits or post-Roman alluvial layers associated with the nearby River Churn. One of these occupation deposits yielded an assemblage of charred plant remains indicative of a post-Roman date. The same assemblage was recovered from alluvial and "dark earth" deposits during previous investigations on the site earlier in 2019. It is possible that this material and the single sherd of post-Roman pottery (a sherd of amphorae of 5th to 7th century AD date) recovered during the current works derives from nearby post-Roman activities and has been dumped within the site area during this period; however, it also raises the possibility that settlement activity continued within the site during the post-Roman period.

1. INTRODUCTION

- 1.1 From 30 September to 11 October 2019 Cotswold Archaeology (CA) carried out an archaeological evaluation at the request of The Environmental Partnership (TEP) at Waterloo Car Park, Cirencester, Gloucestershire (centred at NGR: 402644 202057; Fig. 1). The evaluation was undertaken to accompany a proposed planning application for the construction of a multi-storey car park on the site. As these works have the potential to impact upon archaeological remains that form part of a Scheduled Monument, the Roman town of *Corinium* (Historic England (HE), ref. 1003426), a programme of archaeological evaluation was recommended by Mel Barge, Inspector of Ancient Monuments, HE, in conjunction with Charles Parry, Archaeologist, Gloucestershire County Council Archaeology Service (GCCAS).
- 1.2 The evaluation was carried out in accordance with a *Brief* for the works (HE 2019) and with a subsequent detailed *Written Scheme of Investigation* (WSI) produced by CA (2019a) and approved by Historic of England. The fieldwork also followed *Standard and guidance: Archaeological field evaluation* (ClfA 2014). It was monitored by Mel Barge and Charles Parry, including site visits on 3 and 9 October 2019.

The site

- 1.4 The proposed development area is approximately 0.58ha in extent, and comprises an open-air car park bounded to the north by the River Churn, to the south by The Waterloo road, and to the east and west by residential properties and gardens. The site lies at approximately 108.5m AOD and is flat.
- 1.5 The underlying bedrock geology of the area is mapped as mudstone of the Forest Marble Formation formed during the Jurassic Period, with superficial gravel River Terrace deposits of the Quaternary Period (BGS 2019). The natural geological substrate was not identified during the course of the evaluation.

2. ARCHAEOLOGICAL BACKGROUND

- 2.1 The proposed development is in an area of high archaeological interest. The area is a scheduled monument, part of *Corinium* Roman Town (NHLE No. 1003426). The

site has been a car park since 1963. Prior to that it was open ground and allotments to the rear of one of the main streets of Cirencester, Dyer Street.

- 2.2 The site has previously been the subject of a Desk-Based Assessment (DBA, CAT 1998a) and archaeological test-pit evaluations (CAT 1998b; CA 2019b) and geoarchaeological work during geotechnical works (ARCA 2019). The paragraphs below are a summary of the available information for the site.
- 2.3 The Roman town of *Corinium Dobunorum* was an important provincial civitas capital, the 2nd largest in Roman Britain, the extent of which underlies much of present-day Cirencester. Significant Roman structures and deposits have been recorded in the area (i.e. McWhirr 1986; Holbrook 1994) and the site lies within the Scheduled Monument of Roman *Corinium* (HE ref. 1003426). The site lies within insula XVI of the Roman town and the street between this insula and insula XVII (Street K) is considered to lie within the western part of the study area. This street was observed in 1974-5 approximately 90m to the south of the current site, where it was approximately 12m wide with a sequence of metalling 2m thick (Zeepvat 1979, 67).
- 2.4 One of the most significant factors governing archaeological activity within the site is the proximity of the River Churn (CAT 1998a). The river is currently divided into two channels, the Inner and Outer Churn. The former runs alongside the north-east boundary of the site and is thought to represent the approximate line of the pre-Roman course of the river. However, with the establishment of the town defences in the mid second century, (at least part of) the river was diverted to run outside the eastern section of the town wall. It has previously been unclear when the Inner Churn was established on its current course, although the preceding evaluation points to a date within the Roman period (CAT 1998b, 7). As such, there is a possibility of waterlogged deposits dating to the Roman period surviving within the site, as seen in nearby excavation works (CAT 1998a, 10), although the recent geoarchaeological work suggests this isn't the case (ARCA 2019, 5).
- 2.5 During the course of the earlier evaluation within the site (CA 1998b), six test pits were excavated (see Fig. 1). A level horizon of alluvial clay was sealed by Roman urban stratigraphy, including walls, surfaces and occupation deposits (CAT 1998b). The top of the Roman horizon ranged between depths of 0.68m (TP3) and 1.57m (TP6) below present ground level (*ibid.*). A Roman cobbled surface and probable

post-Roman 'dark earth' deposits were also identified within the northern half of the site during the recent evaluation (CA 2019b).

- 2.6 Little is known of the early post-Roman period in Cirencester, although it has been assumed that the basic foci of activity remained broadly the same (*ibid.*) and it is thought that the site lies within an area outside of the main settlement areas of the Anglo-Saxon town (Darvill and Gerrard 1994, 89). The latest Roman/earliest post-Roman deposits in Cirencester, as in many other Roman towns, generally consist of a layer of 'dark earth'. The formation process of this soil horizon is still unclear although the deposit may include compost, decayed wooden structures and cultivation soil. This material was recorded in two of the test-pits (TPs 2 & 3) excavated during the preceding evaluation (CAT 1998b) and in the 2019 test pits (CA 2019b).
- 2.7 During the medieval period, Cirencester was an important commercial, economic, political and religious centre. The site lies within the township, to the rear of medieval tenements on Dyer Street. As such, no medieval settlement remains are anticipated within the site, although some robbing of Roman structures and a medieval surface were recorded during the evaluation (CAT 1998b). During the medieval period water from the Outer Churn was drawn into a new channel, breaching the north-western defences of the Roman town, to feed the Abbey fishponds. This new watercourse then drained southwards as the Inner Churn in a channel which is still largely extant. It is this channel which runs alongside the north-eastern boundary of the site (*ibid.*).
- 2.8 Little is known of the land use and development of the study area during the late medieval and early post-medieval period. However, the town map of 1795 by Richard Hall & Son shows the study area as an open field (CAT 1998b). Cultivation soils were recorded throughout the preceding evaluation test-pits (*ibid.*). This picture is seen on mapping throughout the 19th and early 20th centuries. The current car park was constructed in the 1960s (*ibid.*). It was founded on substantial quantities of modern hardcore, observe in both the 1998 and 2019 test pits (CA 1998b and 2019b).



3. AIMS AND OBJECTIVES

3.1 The objectives of the evaluation were to provide information about the archaeological resource within the site, including its presence/absence, character, extent, date, integrity, state of preservation and quality. In accordance with *Standard and guidance: Archaeological field evaluation* (ClfA 2014), the evaluation has been designed to be minimally intrusive and minimally destructive to archaeological remains, although adequate levels of excavation will be undertaken to evaluate the site effectively and ensure that the aims and objectives of the project are met. The information gathered will enable HE and the archaeological advisor to GCCAS to identify and assess the particular significance of any heritage asset, consider the impact of the proposed development upon it, and to avoid or minimise conflict between the heritage asset's conservation and any aspect of the development proposal, in line with the *National Planning Policy Framework* (DCLG 2012).

3.2 The objectives of the archaeological works were:

- to identify, investigate and record all significant buried archaeological deposits revealed on the site during the course of the evaluation;
- at the conclusion of the project, to produce an integrated archive for the project work and a report setting out the results of the project and the archaeological conclusions that can be drawn from the recorded data.

3.3 The trenches were located to target specific aspects of the site:

- Trench 1 - North-east corner of site. This trench is positioned to look at the relationship of any archaeological deposits identified with the current channel of the Lower River Churn.
- Trench 2 - Centre of the site. This trench is located at the core of the proposed building in an area of high impact from the development.
- Trench 3 – South-west corner of the site. This trench is closest to the projected line of Street K. It also targets a number of walls that lie over a palaeochannel containing some Roman material.

3.4 More specific objectives of the archaeological works are to investigate:

- the depth, character and variability of any alluvial/waterlogged deposits present within the site, and any ancient soil horizons or organic deposits with environmental potential contained within them
- the potential for the survival of prehistoric evidence within (or below) any alluvium encountered within the site
- the survival depth, extent, quality and character of any Roman deposits/activity encountered and to assess whether any activity identified relates to domestic or civic activities, where possible
- the depth, character and potential date of any post-Roman 'Dark Earth' deposits encountered
- and enhance our understanding of medieval and later urbanism
- the potential for the survival of any post-medieval land surfaces and the depth, extent, character and date of any made-ground associated with the development of Cirencester during the post-medieval/modern period

4. METHODOLOGY

- 4.1 The fieldwork comprised the excavation of four trenches in the locations shown on the attached plan (Fig. 2). Trench 1 measured 15m in length, Trench 2 measured 12m in length, Trench 3 measured 10m in length and Trench 4 measured 5m in length. All trenches measured 2m in width. The locations of the trenches varied from those agreed in the WSI due to buried services and root protection areas, and were relocated with the approval of Mel Barge. Trenches were originally set out on OS National Grid (NGR) co-ordinates using Leica GPS and relocated by hand to avoid the previously mention constrains. After the excavation was completed, the trenches and archaeological features were surveyed in accordance with CA Technical Manual 4 *Survey Manual*.
- 4.2 The trenches were excavated by mechanical excavator equipped with a toothless grading bucket. All machine excavation was undertaken under constant archaeological supervision to the top of the first significant archaeological horizon. Archaeological deposits were excavated by hand in accordance with CA Technical Manual 1: *Fieldwork Recording Manual*.

- 4.3 Deposits were assessed for their palaeoenvironmental potential in accordance with CA Technical Manual 2: *The Taking and Processing of Environmental and Other Samples from Archaeological Sites* and nine bulk soil and two monolith samples were recovered. All artefacts recovered were processed in accordance with Technical Manual 3 *Treatment of Finds Immediately after Excavation*.
- 4.4 The archive and artefacts from the evaluation are currently held by CA at their offices in Kemble. Subject to the agreement of the legal landowner the artefacts will be deposited with Corinium Museum along with the site archive. A summary of information from this project, set out within Appendix E, will be entered onto the OASIS online database of archaeological projects in Britain.

5. RESULTS (FIGS 2-8)

- 5.1 This section provides an overview of the evaluation results; detailed summaries of the recorded contexts, finds and environmental samples (palaeoenvironmental evidence) are to be found in Appendices A, B and C respectively. Details of the relative heights of the principal deposits and features expressed as metres Above Ordnance Datum (m AOD) appear in Appendix D.
- 5.2 A broadly similar stratigraphic sequence was recorded across the site. The natural geological substrate was not encountered in any of the trenches and the earliest deposits identified consisted of alluvial material and made-ground deposits. Structural remains, including walls and surfaces, occupation deposits and demolition material were identified within all trenches, and are detailed below. The archaeological features were sealed by alluvial layers, “dark earth” deposits or modern levelling material for the surface of the car park.

Trench 1 (Fig. 3)

- 5.3 Alluvial deposit 108 was recorded at a depth of 1.2m below present ground level (bpgl), along the western half of Trench 1, measuring at least 0.42m in thickness (see Fig.3, Section CC). This deposit was sampled (Sample 7) and remains of barley and free-threshing wheat was identified (see Appendix C, Table 2). This deposit was sealed by further alluvial deposits 109 and 102; these were also sampled (Samples 1 and 6), with further barley and free-threshing wheat grain and rye fragments identified (see Appendix C, Table 2).

- 5.4 Alluvium 109 was overlain by limestone wall 105 (Fig. 3m, Sections BB and CC). Wall 105 was recorded at the south-eastern end of Trench 1 and was north-east/south-west aligned. It survived to a length of at least 1m and was at least 0.5m in width; it consisted of a single course of roughly-hewn limestone blocks.
- 5.5 At the north-eastern end of Trench 1, limestone rubble demolition deposit 104 was recorded (Fig. 3, Section AA). It measured 1.8m in length, 1.2m in width and 0.08m in thickness and a single sherd of 2nd-Century central Gaulish Samian was recovered.
- 5.6 Wall 105 and demolition deposit 104 were sealed by 0.31m of silty-clay alluvium 103/107, from which material of broad Roman date was retrieved, which was in turn sealed by 0.12m of alluvial material 106. Alluvial deposit 105 was also sampled (Sample 2) and grain fragments of free-threshing wheat and rye were identified. Alluvium 106 was covered by 0.92m of modern levelling and surfacing material.

Trench 2 (Figs 4 and 5)

- 5.7 Sandy-clay made-ground 207 was recorded at the northern end of Trench 2, at a depth of 1.54m bpgl (See Fig. 4, Section DD). Sample 3, recovered from this deposit, produced a total of 27 fragments of pottery, dated from the 2nd to 4th century, and one animal bone fragment. Within the southern end of Trench 2 stone surface 208 was recorded at a depth of 1.4m bpgl (Fig.4, Section EE). Made-ground 207 and surface 208 were covered by 0.45m of sandy-silt made-ground 206, from which five pottery sherds, dated from the mid-2nd to 4th century, were recovered.
- 5.8 Made-ground 206 was sealed by *opus signinum* deposits 205 and 210, which were in turn sealed by surfaces 204 and 209 respectively. Fourteen fragments of box flue tile and three pottery sherds, dating to the mid-2nd to 4th century, were recovered from surface 204.
- 5.9 In the central area of the trench, a brown-yellow sand-gravel made ground, 214, was encountered at a depth 1.2m bpgl and slopped down towards the south of the trench. This was covered by the *opus signinum* layer 212 and this deposit, and surface 209 to the north-west, was sealed by silty-sand made ground 213, from which seven pottery sherds and six fragments of ceramic building material, dated

from the 3rd to 4th century, and four fragments of animal bone were recovered. *Opus signinum* layer 211 was recorded overlying made-ground 213.

- 5.10 The Roman deposits in Trench 2 were sealed by the “dark earth” deposit 203, which measured up to 0.5m in thickness. In total thirteen CBM fragments, forty six fragments of pottery, three pieces of iron and one piece of glass, all dated from the Roman period, were recovered. Furthermore, one fragment of amphora, dated from the 5th to 7th century, twenty six animal bone fragments, identified as cattle and sheep, and molluscs, were also retrieved from this layer, which was overlain by a dumped deposit of burnt material, 202, and up to 0.75m of modern levelling and surfacing material.

Trench 3 (Fig. 6 and 7)

- 5.11 Limestone surface 309 was recorded at a depth of 1.54m bpgl within the centre of Trench 3 (Fig.6, Section GG). This was overlain by sandy-gravel made-ground material 308, clay-sand made-ground 307, limestone surface 306 and sandy-gravel made-ground 305, measuring a total thickness of approximately 0.54m. Roman dating material was recovered throughout these deposits (see Appendix B for detail). At the south-eastern end of the trench clay-sand made-ground 313 was also recorded (Fig.6, Section FF).
- 5.12 At the north-western end of Trench 3 a series of successive made-ground, rubble and demolition deposits 312, 311, 310 and 303 were identified, totalling at least 0.8m in thickness (Fig.6, Section HH). Each deposit contained material of Roman date (see Appendix B for detail).
- 5.13 Deposits 303, 305 and 313 were sealed by rubble deposit 304, which measured up to 0.24m in thickness and was identified throughout the excavated trench. This was sealed by 0.24m of “dark earth” material 302, which was sealed by up to 0.88m of modern levelling and surfacing.

Trench 4 (Fig. 8)

- 5.14 Within Trench 4, the earliest deposit identified consisted of sand-clay made-ground layer 418, which was recorded at a depth of 1.07m bpgl (see Fig.8, Section II). This was truncated by the construction cut, 416, for a south-west/north-east aligned wall 407, which measured at least 2m in length, 0.66m in width and a height of at least

0.32m; it was constructed of roughly-squared and finely-coursed limestone blocks with a pink lime mortar bonded rubble core 423.

- 5.15 Wall 407 was butted to the south and sealed by a series of made-ground deposits, 422, 421, 420, 424, 419 and 425, which measured a total of approximately 0.6m in thickness. Roman dating material was recovered from these horizons. To the north of wall 407, construction backfill 417 was sealed by a series of occupation deposits 415 and 414, which measured c. 0.2m in total thickness and from which material of 2nd to 4th century date was recovered. A sample taken from occupation deposit 415 (Sample 11) charred plant remains, identified as free-threshing wheat, barley, celtic bean and oats (see Section 7.13 and Appendix C), an assemblage which suggests a post-Roman date.
- 5.16 Occupation deposit 414 and made-ground 425 were sealed by limestone rubble demolition deposits 413 and 403 respectively, both of which contained material of later Roman (late 3rd to 4th centuries) date. Both of these deposits were truncated by robber cut 404 which was south-west/north-east aligned, and extended beyond the limits of the trench. The robber cut was backfilled by clay-silt fill 405, from which artefacts dating from the 3rd to 4th centuries was recovered.
- 5.17 Robber cut backfill 405 was sealed by the clay alluvial deposit 406 and by rubble and silt demolition deposit 402, measuring a total of up to 0.5m in thickness. These were then sealed by up to 0.64m of modern levelling material and associated surfacing.

6. THE FINDS

- 6.1 Artefactual material was hand-recovered from 34 deposits (including dark earth, a wall, surfaces, alluvium, and demolition and make-up layers). The recovered material dates to the Roman, post-Roman and modern periods, and quantities of the artefact types are given in Appendix B. The pottery has been recorded according to sherd count/weight per fabric and form/rim morphology where possible. Pottery fabric codes, in parenthesis in the text, are equated to the Cirencester pottery type series (Rigby 1982, Keely 1986), where possible. Where applicable, National Roman Fabric Reference Collection codes are also given in Appendix B (Tomber and Dore 1998).

Pottery: Roman

- 6.2 A total of 229 sherds (3387.8g) was retrieved. The majority present as coarse wares of broad Romano-British date (reduced fabrics F5 and GWOR, reduced/oxidised fabrics F98 and F106-9, oxidised fabrics OXI and OXFOX, and whiteware fabrics 90 and FSW). Of mid 1st to 2nd-century date is Savernake Grog-tempered ware (F6), which was produced in north Wiltshire. Southeast Dorset Black-burnished ware (F74) is a common regional import (115 sherds, 50% by sherd count) which dates to the 2nd to 4th centuries AD when found outside the manufacturing zone in Dorset (Davies *et al.* 1994, 107). The bulk of this was recovered from silting deposit 403, where at least three vessels are represented – Seager Smith and Davies Type 2 and 3 jars with everted rims and a Type 20 flat rim dish (Seager Smith and Davies 1993, 230–5). A small amount of ‘imitation’ Black-burnished ware (F102-4) was also present, which was made locally during the 3rd and 4th centuries (Cooper 1998, 335–9). Another regional type is Lower Nene Valley colour-coated ware (F81), which was manufactured in Cambridgeshire from the mid 2nd to 4th centuries (Tyers 1999, 103). Products of the Oxford potteries are Oxford Red-slipped ware (F83), which is of mid 3rd to 4th-century date (Young 1977, 123–4) and Oxford white ware. Included in the latter ware type is a rimsherd from a Young W2 ring-necked flagon, dating to the 2nd to mid 3rd centuries (*ibid.*, 100–1).
- 6.3 Small amounts of amphorae from France and Spain are present (F35 and F40), both of which were imported from the mid 1st to mid 3rd centuries (Tyers 1996, 87; 95). Samian from the central and east Gaulish manufacturing zones (F154B, F154C) forms 6.6% of the assemblage by sherd count (15 sherds). Identifiable forms, all in fabric F154B, include Drag. 30, 31 and 37 bowls. Samian was imported from central Gaul during the 2nd century and from east Gaul from the mid 2nd to mid 3rd centuries. The Drag. 31 bowl is more narrowly datable to the mid to late 2nd century (Webster 1996, 2–3; 35).

Pottery: Post-Roman

- 6.4 A body-sherd (39g), which has multiple grooves to its external surface, appears to derive from a B1 or B2 amphora and was recorded from dark earth deposit 203. B1 amphorae were manufactured in the Aegean area and B2 types were produced in south-east Asia Minor and the north-east Mediterranean. Both types date to the 5th

to 7th centuries and are occasionally found in post-Roman deposits in Britain, mainly in the south-west (<http://potsherd.net/atlas/Ware/B1>; <http://potsherd.net/atlas/Ware/B2>).

Ceramic building material

- 6.5 A total of 132 fragments (10712g), all of Roman date, was retrieved. Identifiable fragments include tegula and imbrex (roofing tile) and box flue tile (from a hypocaust heating system).

Other finds

- 6.6 One small fragment (7g) of blue/green coloured Roman vessel glass was retrieved from dark earth deposit 203. The only modern item recovered from the excavation is a fragment of colourless vessel glass from demolition layer 402.
- 6.7 Worked stone totals 14 fragments (4358g). The majority is in the form of thin sandstone slabs, which most likely represent roofing material. One fragment of dressed oolitic limestone, with attached mortar, is from wall 407.
- 6.8 A total of 42 objects/fragments of iron (284g) was recorded. The majority derives from nails and hobnails, but there are also two strip fragments and two fragments from unidentifiable objects.

7. THE BIOLOGICAL EVIDENCE

Animal Bone

- 7.1 Animal bone amounting to 72 fragments (672g) was recovered via hand excavation and the processing of bulk soil samples from 16 deposits. Artefacts dating from the Romano-British period were also recovered from these deposits. The bone was well preserved but highly fragmented resulting in 59% of the assemblage being unidentifiable to species. It was however possible to identify the remains of cattle (*Bos taurus*), sheep/goat (*Ovis aries/Capra hircus*) pig (*Sus scrofa sp.*), horse (*Equus caballus*) and pheasant (*Phasianus colchicus*). Each of the species identified were represented.
- 7.2 The remains of the three major domestics, cattle, sheep/goat and pig, were recovered in relatively equal numbers. Each species was identified almost

exclusively, by the bones of the lower legs and feet. While no actual cut or chop marks were observed, these bones are common to secondary butchery waste where a carcass is prepared before being further separated into individual cuts of meat.

- 7.3 Of note among the assemblage are three pheasant bones, a tibio-tarsus and carpo-metacarpus from deposit 312 and a partial humerus from deposit 418. As the recovery is so low there is little information to infer. However, this species is very rare in assemblages of this period occurring at only ten other locations, most of which are high-status sites (Poole 2010). The nearby villa complex of Barnsley Park is one such example where it is suggested that pheasant was “hand reared for the table” (Bramwell 1985). As there was no established wild pheasant population it is suggested that these birds represent imported luxury goods either reared for the table (Yalden and Albarella 2008) or kept as ornamental birds (pers. comm. Albarella 2019).

Palaeoenvironmental Evidence

- 7.4 A series of nine environmental samples (140 litres of soil) were processed from a series of deposits in Trenches 1, 2 and 4 with the intention of recovering environmental evidence of industrial and domestic activity on the site, as well as an indication of any waterlogged deposits on the site. The samples were processed by standard flotation procedures (250 micron flot, 500 micron residue) (CA Technical Manual No. 2).
- 7.5 Preliminary identifications of plant macrofossils are noted in Table 1, following the nomenclature of Stace (1997) for wild plants, and traditional nomenclature, as provided by Zohary *et al* (2012) for cereals. The presence of mollusc shells has been noted. Nomenclature is according to Anderson (2005) and habitat preferences according to Kerney (1999) and Davies (2008).
- 7.6 The flots varied in size and included between 5-60% rooty material and uncharred seeds. The uncharred weed seeds are most likely to be intrusive within the samples and included those of goosefoot (*Chenopodium* sp.), common nettle (*Urtica dioica*), small nettle (*Urtica urens*), buttercup (*Ranunculus* sp.) and brambles (*Rubus* sp.). These are species typical of scrub and waste/rough ground environments. There was no evidence within these assemblages for any waterlogged preservation and the geoarchaeological report has shown that the alluvial deposits in Trench 1 (closest trench to the River Churn) were water lain rather than waterlogged. The

charred material comprised varying levels of preservation within the samples. The charcoal was rather comminuted and some was also iron impregnated

Trench 1

- 7.7 A moderate charred assemblage was recovered from layer 109 (sample 6) and smaller quantities of material from layers 102 (sample 1), 103 (sample 2) and 108 (sample 7). These charred remains included free-threshing wheat (*Triticum turgidum/aestivum* type), rye (*Secale cereale*) and barley (*Hordeum vulgare*) grain fragments, seeds of possible garden pea (*Pisum sativum*), oats (*Avena* sp.) brome grass (*Bromus* sp.), vetch/wild pea (*Vicia/Lathyrus* sp.) and cornflower (*Agrostemma githago*), and fragments of charcoal greater than 2mm.
- 7.8 Free-threshing wheat became the predominant what species in the post-Roman period in Southern Britain (Greig 1991) and the presence of rye and corncockle would be compatible with a post-Roman date for these assemblages. The small number of weed seeds are those of species typical of grassland, filled margins and arable environments and the charred material may be representative of dumped (sample 6) or dispersed (samples 1, 2 and 7) remains from food preparation.
- 7.9 Moderate to high numbers of terrestrial mollusc shells and moderate quantities of aquatic mollusc shells were recovered and included those of the open country species *Vallonia costata*, *Vallonia excentrica*, *Vertigo* sp. and *Pupilla muscorum*, the intermediate species *Cochlicopa* sp., *Punctum pygmaeum*, *Limax/Deroceras* and *Trochulus hispidus*, the shade-loving species *Discus rotundatus*, *Merdigera obscura*, *Carychium* sp. and *Aegopinella nitidula*, the marsh species *Succinea/Oxyloma* sp., the amphibious species *Galba truncatula* and *Anisus leucostoma*, the intermediate species *Gyraulus albus*, the ditch species *Valvata cristata*, *Planorbis planorbis* and *Planorbis carinatus*, and the moving water species *Bithynia* sp.
- 7.10 The assemblages from this trench may be reflective of water lain alluvial material with some dumped/dispersed charred material.

Trench 2

- 7.11 Deposit 207 (sample 3) contained a few indeterminate grain fragments, a hazelnut (*Corylus avellana*) shell fragment and a moderate small number of charcoal fragments. The few mollusc shells noted included those of the open country species *Vallonia* sp., the intermediate species *Trochulus hispidus*, the shade-loving species

Carychium sp. and the amphibious species *Anisus leucostoma* and *Galba truncatula*.

Trench 4

- 7.12 No charred plant remains and only small quantities of charcoal were recovered from alluvial layer 406 (sample 10) and deposit 418 (sample 12), whereas sample 8 from deposit 421 contained a moderate amount of charcoal but also no charred plant remains.
- 7.13 Layer 415 (sample 11) produced a moderate number of charred plant remains and charcoal fragments. The charred plant remains included free-threshing wheat and barley grains, and seeds of celtic bean (*Vicia faba*), oats, vetch/wild pea, docks (*Rumex* sp.) and field madder (*Sherardia arvensis*). This assemblage may be representative of dumped material from food preparation. Again this assemblage would be compatible with a post-Roman date.
- 7.14 The small number of mollusc shells recovered, included those of the open country species *Vallonia costata*, *Vallonia excentrica* and *Pupilla muscorum*, the intermediate species *Trochulus hispidus* and *Cochlicopa* sp., the shade-loving species *Discus rotundatus* and *Carychium* sp., the marsh species *Succinea/Oxyloma*, and the amphibious species *Galba truncatula* and *Anisus leucostoma*.

Summary

- 7.15 There is a possible indication from these assemblages of some domestic activity taking place in the vicinity in the post-Roman period but there is no indication from these samples of any activity in the area during the Roman period. It was possible that some waterlogged deposits would be encountered within these trenches, but there is no evidence for preserved waterlogged material within these samples. The molluscan assemblages provide some indication for seasonal flooding and desiccation across the site, in particular around the area of Trench 1.

Geoarchaeological assessment

- 7.16 Two monolith samples (monolith 4 and 5) were taken from a single section recorded in evaluation Trench 1 (fig. 3, section CC). The sequences recorded in the trench are associated with the possible remains of a wall, structure 105.

- 7.17 The site is bounded to the north by the River Churn and lies on flat ground at approximately 108.5m AOD. The British Geological Survey (BGS 2019) shows the bedrock geology of the site as the Forest Marble Formation formed in the Middle Jurassic Period. The bedrock is unconformably overlain by a deposit mapped as the First Terrace Deposit of the River Churn. The basal superficial deposit was laid down on the braid plain by higher energy deposition processes in the Late Devensian stage. At the end of the Pleistocene the change in climatic condition allowed stabilisation of the land surface followed by formation of vegetation cover. Low energy silt/clays aggraded across the flood plain and occupied troughs within the First Terrace Deposit (Watson 2019).
- 7.18 During the previous geoarchaeological research in 2019 (fig. 2), conducted by Nick Watson (ARCA) on behalf of CA (Watson 2019), the gravel deposit was found to lie between 104.94m OD and 106.89m OD and its thickness varied between 3.36m and 6.55m across the site. The upper deposits overlying the gravel differ across the site. In the south-west part of the site, as shown in borehole T1/BH1, the gravel was covered by a dark cultural diamict which could be dated to the Roman period. In the south-eastern part of the site a thick oxidised cultural diamict associated with occupation of the floodplain was recorded covering the gravel in borehole T2/BH2. This deposit in turn was sealed by a high level flood deposit with no evidence of occupation and most likely post-Roman in date. In the central part of the site, as recorded in borehole T3/BH3, the terrace deposit was overlain by a sequence of construction levels for a cobbled surface which was then covered by a sequence of two fine diamicts associated with Roman occupation. All these natural and archaeological deposits were overlain by modern made ground and tarmac (Watson 2019).
- 7.19 Two monolith samples were taken from Trench 1 during the current archaeological evaluation in order to better understand the relationship of the archaeological deposits identified, and to assess the preservation of any organic material for potential further archaeological and environmental analysis. This section presents results of a geoarchaeological assessment carried out on these monolith samples. The main objectives of the assessment were to:
- describe encountered sediments in order to characterize the depositional processes and nature of the sediments;
 - correlate the results with previous geoarchaeological research at the site;

- assess the palaeoenvironmental potential of these sediments, including the potential for waterlogged remains and any ancient soil horizons or organic deposits with environmental potential;
- make recommendations for potential future environmental investigations.

Methodology

- 7.20 Monolith sample 4 and 5 were taken from evaluation trench 1 through a sequence of probable alluvial deposits associated with a wall. The monolith samples were retained in steel tins measuring: 100 x 100 x 250mm, then wrapped and labelled following standard sampling procedures (CA 2017). The monoliths were opened, and the deposits cleaned, photographed and recorded. The lithostratigraphy of the samples was described according to standard geological criteria provided by Jones *et al.* 1999; Munsell Color 2018; and Tucker 2011.
- 7.21 All sedimentary units were distinguished based on lithological characteristic of the sediments recorded in each monolith sample. The geoarchaeological observations were supported by sample sheets, photographs of samples locations and a summary report of the archaeological work. All observations were summarised in Appendix C, table 3 and 4.

Results

- 7.22 The lithological descriptions of monolith samples are presented in tables 3 to 4. The text description is in stratigraphic order with the earliest unit described first.

Monolith sample 4

- 7.23 The lowermost Unit 2, context 109, is c. 0.18m thick and consists of a (10YR 4/1) dark grey firm silty clay with frequent fine sand grains and common limestone granules. The limestone granules are well sorted in terms of size (c. 2mm) and sub-rounded/rounded clast predominate the fraction. The limestone is present throughout the Unit and is derived from the local geology. A coarse pebble-sized sub-angular limestone clast is present and may be linked with the structural debris. The Unit is heavily mottled which indicates a changing oxidation condition. Microspores are common throughout the Unit. A fragment of fibrous plant material, a shell fragment and very rare charcoal granules were noted within Unit 2.

- 7.24 According to the field observations context 109 (Unit 2) pre-dates the wall, structure 105, and was interpreted as an alluvium. Unit 2 is fine grained with common limestone granules. The overall texture suggests a low energy deposition mode and therefore it could be suggested that the Unit represents alluvial sediments accumulated due to overbank flooding of the River Churn. The Unit is heavily oxidised as a result of post-depositional processes associated with a possible changing water table. The changing hydrological conditions imply a lack of permanently waterlogged sediments and consequently a lack of well-preserved waterlogged remains. Micropores recorded throughout Unit 2 indicate the porosity of the sediments and the formation of some of the voids may be a result of biological activity (roots/earthworms). The presence of a plant fibre fragment supports this assumption. Furthermore, the intense iron mottling can be also linked with replacement of the organic matter by iron oxides (Rapp and Hill 1998: 47). Charcoal granules are very rare and could be redeposited within the sediments during accumulation (washed in) or translocated by later bioturbations or trampling from upper deposits.
- 7.25 A diffuse and weakly angled contact boundary separated Unit 2 from Unit 1, context 103. The uppermost Unit is c. 0.07m thick and consists of a (10YR 4/2) dark greyish brown, firm silt/clay with fine sand mineral grains and occasional limestone granules. The limestone granules are well sorted in terms of size and are mainly subrounded to rounded. Rare pores associated with relict root and/or earthworm channels are encrusted with iron oxides. A few coarse pebble-sized (c. 30mm) sub-angular bioclastic limestones are present within the Unit. A small (c. 10mm) fibrous fragment of unidentifiable plant remains was recorded. A possible shell fragment of a terrestrial mollusc *Oxychilius cellarius* mollusc was also recorded (S. Wyles pres. comm.) and indicates bioturbation of the deposit.
- 7.26 The diffuse contact boundary between Unit 1 and 2 suggests a slow and continuous deposition mode of fine sediments on the flood plain. According to the archaeological report and figure 1, Unit 1 (context 103) overlain wall, 105, thus post-date the structure and the lower Unit 2. The upper unit has occasional demolition inclusion such as CBM. It could be suggested that the diffuse contact boundary between the units may be an effect of post-depositional processes such as biological bioturbations or may be masked by mottling (Canti 2003; Hill and Rapp 1998). The character of the Unit indicates water lain sediments due to flooding of the river in post-Roman period. The common fragments of coarse pebble-sized

limestones are likely to be derived from the wall and floating in the fine matrix. Section CC, Fig.3, shows that the limestones are orientated in the same direction and their longer axes showing direction of their movement downslope.

Monolith sample 5

- 7.27 The lowermost Unit 2, context 108, is c. 0.19m thick and composed of (2.5Y 4/2) dark greyish brown firm silty clay with frequent sand grains and common round to sub-rounded limestone granules derived from the local geology. Reddish brown iron oxides accumulated along pores of relict roots and/or earthworms' channels is present. Two fragments of *Trochulus hispidus* were also recorded (S. Wyles pers. comm.).
- 7.28 According to sample sheet 4, context 109 is very compact without coarse inclusions and was described as a possible alluvium. The Unit is fine and homogenous with well sorted limestone granules. The character of Unit 2 suggests that the context was deposited by low energy processes associated with seasonal overbank flooding. The presence of mottling suggests changing oxidation conditions. The iron oxides are mainly accumulated along voids because during dryer cycles (drainage), pores, cracks, and root channels become dry and aerate more quickly, thus ferric iron precipitates in these places, forming reddish-brown encrustations. Furthermore, two well-preserved shells of the intermediate species *Trochulus hispidus* were recorded which can be found in a moist environment in base-rich grasslands (Kerney 1999: 179).
- 7.29 Unit 1, context 102, is divided from Unit 2 by a steeply angled and diffuse contact boundary. Unit 1 is c. 0.06m thick and is composed of a (2.5Y 4/2) dark greyish brown firm silt/clay with fine sands grains and granule-sized fragments of limestone. The uppermost Unit recorded in the monolith is less porous and oxidised than Unit 2. A fragment of a possible *Trochulus hispidus* shell was noted.
- 7.30 During the archaeological evaluation, fragments of CBM and inclusions associated with the demolition of the wall were found. Context 102 overlay wall, 105, and post-dates the lower Unit 2. Context 103 was initially interpreted as an alluvium and the overall texture of the Unit confirms this interpretation. Unit 1 was laid down by slow moving/standing water. The presence of *Trochulus hispidus* is compatible with a damp grassland environment (S. Wyles pers. comm).

Discussion

- 7.31 The lowermost Units recorded in both sequences are lain down by water action. The texture indicates a low energy deposition environment characteristic for a floodplain alluvium. The Units were encountered at c. 1.50m bgl and pre-date wall, 105. As stated on the sample sheets, both Units are relatively sterile in terms of cultural remains. The rare charcoal granules recorded in the samples could be bioturbated or less likely trampled by human activity prior the structure construction. In the course of the previous investigation, an oxidised greyish brown (10 YR 4/2) fine cultural diamict overlying the river gravels was recorded in TP2 (BH2). The deposit is predominantly a fluvial silt/clay and contains frequent grains and granules of CBM and charcoal (Watson 2019: 13). The texture and the post-depositional oxidation of the fluvial silt/clay corresponds with Unit 2, contexts 109 and 108, recorded in the monoliths from trench 1; however cultural material was not recorded in these monolith samples. Consequently, contexts 108 and 109 cannot be directly linked with the cultural diamicts recorded previously in the southern and western parts of the area (TP2; see figure 2). It could be suggested that both contexts are associated with alluvium overlaying the bedrock and that the area closer to the River was less affected by cultural activity possibly being further away from the centre of activity and more prone to seasonal flooding.
- 7.32 Unit 2 recorded in monolith sample 4 (context 109) is more oxidised than Unit 2 recorded in monolith sample 5 (context 108). Moreover, according to the stratigraphic matrix context 109 covers/abutting context 108. Thus, it is possible that the common reddish yellow mottling recorded throughout the context 108 indicates changing oxidation condition in upper parts of the floodplain alluvium, possibly due to drying and wetting processes or replacement of organic matter by iron oxides. As argued by Watson (2019: 18), the alluvium deposit is within the vadose zone in which the water content continuously fluctuates as a consequence of complex geological and geochemical processes. The specific hydrological and geochemical conditions are not favourable for preservation of organic remains. Nevertheless, the presence of relict root channels and land snails indicate some development of vegetation cover.
- 7.33 The upper Units recorded in the monolith samples were encountered at c. 1.20m bgl and covered the structure. According to the sample sheet the contexts contain relatively low number of cultural remains, mostly the demolition debris, CBM and charcoal. During the assessment no cultural material was recorded within the

monoliths. Hence, it is not possible to determine whether these Units can be linked directly with cultural diamict recorded in the boreholes. The upper Units were laid down by water action and most likely interpreted as the fine grained flood alluvium, as recorded in upper parts of TP2 (Watson 2019).

Conclusions and recommendations

- 7.34 The geoarchaeological examination of the sediments encountered in the monolith samples has characterised their composition and mode of origin. The sediments appear to have been mostly laid down in slack water as flood water regressed. No evidence for occupation activities were recorded within the examined monolith samples and this part of the site is likely to have been further away from the centre of any settlement activity.
- 7.35 As reported by Watson (2019), the sediments are within the vadose zone and its oxidising condition hinders preservation of organic remains. As a result of this, waterlogged remains or peat deposits would have been destroyed. Moreover, a floodplain environment that was not permanently waterlogged and was exposed to evaporation is more likely to provide depredated and damaged pollen grains (Brown 1997: 136).
- 7.36 The sediments recorded in these assessed monolith samples and also by N. Watson did not provided evidence for the preservation of any waterlogged remains or a peat deposit, due to unfavourable preservation conditions. As the palaeoenvironmental potential is low, no future analysis is recommended.

8. DISCUSSION

- 8.1 The objectives of the evaluation were specified in Section 3. Therefore, this summation of the results will follow that line of discussion.
- 8.2 The natural substrate was not encountered in any of the four excavated trenches. In previous archaeological investigations on the site the natural terrace gravels were encountered between 1.85m and 3.5m bpgl (CAT 1998; CA 2019b).
- 8.3 Alluvial deposits were encountered within the east of the site, in Trench 1. The samples recovered from these alluvial deposits indicate that these deposits were

“alluvial sediments accumulated due to overbank flooding of the River Churn”. This alluvial has similarities with those deposits observed in Trench 2 (CA 2019b), Test Pit 5 and Test Pit 6 (CAT 1998) of previous investigations. It seems likely that this area of the site was affected by the seasonal over flood of the channel of the River Churn.

Roman

- 8.4 Trench 3 was located at the south-western corner of the site, targeting the projection of Street K, possible walls and a palaeochannel. Two possible phases of limestone surfacing were identified within the trench and it is possible that these surfaces relate to wall 111 identified in 1998 (CAT 1998) or that these surfaces represent a subsidiary road, instead of the main Street K as previously proposed.
- 8.5 Trenches 2 and 4 were located in the centre of the site targeting the core of a possible building. In Trench 2, a series of surfaces and made-ground deposits dating to the Roman period were recorded. This area was located in close proximity to the channel of the River Churn and, therefore, may have been affected by seasonal flooding of the area. The made-ground layers could be interpreted as evidence of land reclamation during the later Roman Period, potentially due to urban expansion or the establishment of the town defences in the mid 2nd century, when part of the River Churn was diverted outside of the city wall.
- 8.6 The series of made-ground deposits, surfaces and wall 407 supports the findings of the previous phase of test-pit evaluation undertaken in 1998, when a wall on a very similar alignment, described as “constructed from large limestone blocks aligned along the external faces, centre filled with smaller limestone fragments”, was identified immediately to the south. This evidence and the results of this phase of fieldwork suggest that this area of the site was occupied by at least one building during the Roman period.

Post-Roman to modern

- 8.7 Occupation deposit 415, recorded in Trench 4, yielded an assemblage of charred plant remains indicative of a post-Roman date. The same assemblage was recovered from alluvial and “dark earth” deposits during previous investigations on the site (CA 2019b). It is possible that this material and the single sherd of post-Roman pottery recovered from Trench 2 derives from nearby post-Roman activities and has been dumped within the site area during this period; however, it also raises

the possibility that settlement activity continued within the site during the post-Roman period.

- 8.8 The “dark earth” horizons recorded in Trenches 2 and 4 are characteristic of post-roman *Corinium*, although the origin of this “dark earth” is not clear. In previous archaeological investigation within the site, post-medieval fragments of ceramic and pipes were recovered within this deposit. This “dark earth” was described as ‘allotment soils’ in the 1998 evaluation and identified in Trenches 1 and 3 in 2019.

9. CA PROJECT TEAM

- 9.1 Fieldwork was undertaken by Monica Fombellida, assisted by Megan Reid, Noel Boothroy, Annabel Johns, Neus Esparza and Marino Cardelli. The report was written by Monica Fombellida. The finds, biological evidence and geoarchaeological assessment reports were written Jacky Sommerville, Sarah F. Wyles, Andy Clark and Agata Kowalska respectively. The illustrations were prepared by Rosanna Price. The archive has been compiled by Monica Fombellida, and prepared for deposition by Hazel O'Neill. The project was managed for CA by Richard Young.

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APPENDIX A: CONTEXT DESCRIPTIONS

Trench No.	Context No.	Type	Fill of	Context interpretation	Description	L (m)	W (m)	D (m)	Spot-date
1	100	Layer		Modern surface	Tarmac	15	2	0.15	
1	101	Layer		Bedding	Yellow sand gravel	15	2	0.77	
1	102	Layer		Alluvial	Mid grey green silt clay with small CBM inclusions	15	2	0.25	
1	103	Layer		Alluvial	Mid grey brown silt clay with small CBM inclusions	15	2	0.31	RB
1	104	Deposit		Demolition	Large yellow sandstone	1.2	1.8	0.08	C2
1	105	Structure		Wall	NE/SW alligned form by a single course of roughly shaped sandstone	1.13	0.3	0.14	
1	106	Layer		Alluvial	Mid grey blue compact silt clay with CBM inclusions	>1.8	>3.7	0.12	
1	107	Layer		Alluvial	Mid grey green silt clay with small CBM inclusions	15	2	0.13	RB
1	108	Layer		Alluvial	Mid blue grey silty clay	>1	>0.5	>0.42	RB
1	109	Layer		Alluvial	Mid brown silty clay	>1	>0.5	>0.32	
2	200	Layer		Modern surface	Tarmac	20	2	0.13	
2	201	Layer		Bedding	Yellow sand gravel	20	2	0.7	
2	202	Layer		Burnt deposit	Black cinder deposit w/ CBM	20	2	0.05	RB
2	203	Layer		"Black earth"	Dark brown grey sand silt	20	2	0.58	C5-C7
2	204	Layer		Surface	Compact yellow clay sand w/ frequent sandstone	20	2	0.2	RB
2	205	Layer		Opus Signium	Fragmented tiles in a matrix of white sandy mortar	20	2	0.04	C2-C4
2	206	Layer		Made ground	Mid yellow grey clay sand w/ CBM	20	2	0.15	MC2-C4
2	207	Layer		Made ground	Grey sand clay with charcoal	20	2	0.12	C2-C4
2	208	Layer		Made ground	Light brown stone	>1	>1	n/a	
2	209	Surface		Surface	Compact yellow brown silt sand w/ stones	20	2	0.18	
2	210	Layer		Opus Signium	Fragmented tiles in a matrix of white sandy mortar	2	1.36	0.04	
2	211	Layer		Opus Signium	Fragmented tiles in a matrix of white sandy mortar	2	0.5	0.04	
2	212	Layer		Opus Signium	Fragmented tiles in a matrix of white sandy mortar	2	0.9	0.04	
2	213	Layer		Made Ground	Mid green grey silty sand w/ CBM	3.4	2	0.26	C3-C4
2	214	Layer		Made Ground	Light brown yellow gravel sand	2.4	2	0.14	RB
3	300	Layer		Modern surface	Tarmac	10	2	0.12	
3	301	Layer		Bedding	Yellow sand gravel	10	2	0.77	
3	302	Layer		"Black earth"	Dark brown grey silt clay	8	2	0.2	MC2-MC3
3	303	Deposit		Demolition	Line of sandstone w/ lime mortar, possible wall remains	1.8	0.9	0.15	MC2-C4
3	304	Layer		Rubble	Medium size limestone in a matrix of mid grey brown clay silt	8	2	0.1	RB
3	305	Layer		Made ground	Yellow Brown Gravel	1.5	2	0.05	RB
3	306	Layer		Surface	Light yellow brown angular sandstone slabs in sandy mortar	2	2	0.28	RB
3	307	Layer		Bedding	Grey brown clay sand	0.5	0.4	0.1	
3	308	Layer		Made ground	Light yellow brown gravel	0.5	0.4	0.09	RB
3	309	Layer		Surface?	Yellow brown stone (not excavated)	0.5	0.4	n/a	
3	310	Layer		Made ground	Mid grey brown sandy clay silt	0.965	0.8	0.25	C2-C4
3	311	Layer		Demolition	Light brown sandy silt w/ very frequent stones	0.9	0.8	0.25	MC2-C4
3	312	Layer		Made ground	Brown grey sandy silt	0.9	0.8	0.27	C2-C4

4	400	Layer		Tarmac	Car Park Surface	4.76	1.94	0.08	
4	401	Layer		Bedding	Yellow sand gravel	4.76	1.94	0.57	
4	402	Deposit		Demolition	Mid brown grey silt w/ very frequent stone and CBM	4.76	1.94	0.21	Modern
4	403	Deposit		Silting	Mid to dark grey silt clay w/ some CBM	0.42	0.58	0.14	LC3-C4
4	404	Cut		Robbery Cut	SW/NE aligned robbery cut	>1	0.85	0.32	
4	405	Fill	404	Backfill	Dark grey brown, clay silt with CBM inclusions.	>1	0.85	0.32	C3-C4
4	406	Layer		Alluvial	Brown yellow clay,	>1	>1	0.27	
4	407	Structure		Wall	SW/NE aligned made of roughly shaped limestone and bounded with yellow mortar	2.17	0.66	0.32	
4	413	Deposit		Demolition	Dark brown silty clay with very frequent assorted stones	1.2	2	0.2	RB
4	414	Layer		Made ground	Light yellow brown sandy gravel	1.4	1	0.1	C2
4	415	Layer		Occupation	Charcoal rich dark brown grey silt deposit to north of wall	1.7	1	0.07	C3-C4
4	416	Cut		Construction cut for 407	SW/NE aligned with steep sides and uneven base	>2	0.55	0.3	
4	417	fill	416	backfill	Dark brown silty clay	>2	0.55	0.3	
4	418	deposit		Made ground	Yellow brown, sandy clay with occ. pebbles.	>1	>1	0.18	
4	419	Layer		Occupation	Dark brown grey silt	>0.34	>0.58	0.08	
4	420	Deposit		Made ground	Mid brown grey silt clay	>0.54	>0.6	0.13	RB
4	421	Deposit		Made ground	Light grey brown silt clay	>0.41	>0.52	0.12	RB
4	422	Deposit		Made ground	Light yellow grey silt clay	>0.41	>0.57	0.08	
4	423	Deposit		Mortar	Mid red brown sandy silt				
4	424	Deposit		Made ground	Mid brown yellow silt gravel	>1	>0.43	0.09	
4	425	Deposit		Made ground	Mid brown grey silt clay	>0.48	>0.58	0.15	

APPENDIX B: THE FINDS

Context	Category	Description	Fabric Code/ NRFRC*	Count	Weight (g)	Spot-date
103	Roman ceramic building material	Box flue tile		1	242	RB
104	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	0.8	C2
107	Roman ceramic building material	Tegula, box flue tile, fragments		4	863	RB
108	Roman ceramic building material	Tegula		1	239	RB
<7>	Iron	Object		1	1	-
202	Roman ceramic building material	Imbrex, fragments		6	375	RB
203	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	4	39	C5-C7
	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	11	109	
	Roman pottery	Imitation Black-burnished ware	F102-4	3	33	
	Roman pottery	Oxford Red-slipped ware	F83/ OXF RS	3	28	
	Roman pottery	Oxford whiteware	F90/ OXF WH	1	4	
	Roman pottery	Oxford sandy oxidised fabric	OXFOX	1	22	
	Roman pottery	Savernake grog-tempered ware	F6/ SAV GT	1	35	
	Roman pottery	Severn Valley (oxidised) ware	F106-9/ SVW OX2	4	14	
	Roman pottery	Fine whiteware	F11	1	5	
	Roman pottery	Fine sandy whiteware	FSW	1	7	
	Roman pottery	North Wiltshire oxidised fabric	F98	7	52	
	Roman pottery	North Wiltshire reduced fabric	F98	7	91	
	Roman pottery	Black-firing, sand-tempered fabric	F5	1	13	
	Roman pottery	Oxidised fabric	OXI	1	6	
	Post-Roman pottery	Amphora B1 or B2?	AMP	1	39	
	Roman ceramic building material	Tegula, imbrex, fragments		13	858	
	Roman glass	Vessel		1	7	
	Iron	Nail		4	72	
	Mollusc			5	77	
204	Roman pottery	Severn Valley (oxidised) ware	F106-9/ SVW OX2	1	22	RB
	Roman pottery	North Wiltshire oxidised fabric	F98	2	6	
	Roman ceramic building material	Box flue tile, fragments		14	368	
	Iron	Nail, strip fragment		2	22	
205	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	1	7	C2-C4
	Roman ceramic building material	Tegula, fragments		7	755	
206	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	3	MC2-C4
	Roman pottery	East Gaulish samian	F154C	1	5	
	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	2	32	
	Roman pottery	Severn Valley (oxidised) ware	F106-9/ SVW OX2	1	3	

Context	Category	Description	Fabric Code/ NRFRC*	Count	Weight (g)	Spot-date
	Roman pottery	North Wiltshire oxidised fabric	F98	1	5	
	Worked Stone	Roofing		1	186	
207 <3>	Roman pottery	Gaulish amphora	F35/ GAL AM	6	173	C2-C4
<3>	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	4	43	
<3>	Roman pottery	North Wiltshire oxidised fabric	F98	2	10	
<3>	Roman pottery	North Wiltshire reduced fabric	F98	1	3	
<3>	Roman pottery	Severn Valley (reduced) ware	F106/ SVW OX2	1	7	
<3>	Roman ceramic building material	Brick, imbrex, fragments		11	75	
<3>	Iron	Nail		2	4	
213	Roman pottery	Baetican amphora	F40/ BAT AM	1	60	C3-C4
	Roman pottery	Savernake grog-tempered ware	F6/ SAV GT	1	12	
	Roman pottery	Imitation Black-burnished ware	F102-4	2	20	
	Roman pottery	North Wiltshire reduced fabric	F98	2	17	
	Roman pottery	Black-firing, sand-tempered fabric	F5	1	8	
	Roman ceramic building material	Fragment		6	60	
214	Roman ceramic building material	Fragment		2	38	RB
	Worked Stone	Roofing		1	20	
302	Roman pottery	East Gaulish samian	F154C	1	3	MC2-MC3
	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	7	
	Roman pottery	White-slipped flagon fabric	F95	1	4	
	Roman ceramic building material	Tegula, box flue tile, fragment		3	229	
303	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	1	22	MC2-C4
	Roman pottery	Lower Nene Valley Colour-coated ware	F81/ LNV CC	1	6	
304	Roman pottery	Gaulish amphora	F35/ GAL AM	1	27	RB
	Roman pottery	Greyware with dark grey surfaces and orange core	GWOR	1	3	
305	Roman pottery	North Wiltshire oxidised fabric	F98	1	54	RB
	Roman ceramic building material	Imbrex, fragments		7	511	
306	Roman ceramic building material	Tegula, fragments		3	290	RB
	Worked Stone			1	36	
	Iron	Nail		1	6	
	Mollusc			3	54	
308	Roman ceramic building material	Fragment		1	36	RB
310	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	1	25	C2-C4
	Roman pottery	Severn Valley (oxidised) ware	F106-9/ SVW OX2	2	87	

Context	Category	Description	Fabric Code/ NRFRC*	Count	Weight (g)	Spot-date
	Roman pottery	Severn Valley (reduced) ware	F106/ SVW OX2	1	22	
	Roman pottery	North Wiltshire oxidised fabric	F98	2	27	
	Roman pottery	North Wiltshire reduced fabric	F98	2	20	
	Roman pottery	Greyware with dark grey surfaces and orange core	GWOR	2	19	
311	Roman pottery	East Gaulish samian	F154C	1	29	MC2-C4
	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	55	
	Roman pottery	Severn Valley (oxidised) ware	F106-9/ SVW OX2	1	54	
	Roman pottery	South-west White-slipped flagon fabric	F88/ SOW WS	1	19	
	Roman ceramic building material	Tegula, imbrex, fragments		7	1303	
	Mollusc			1	64	
312	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	1	9	C2-C4
	Roman pottery	North Wiltshire oxidised fabric	F98	2	39	
	Mollusc			1	12	
402	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	5	Modern
	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	1	9	
	Roman pottery	Oxford whiteware	F90/ OXF WH	1	12	
	Roman ceramic building material	Tegula, fragments		6	125	
	Modern glass	Vessel		1	5	
	Iron	Nail		1	12	
403	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	90	1582	LC3-C4
	Roman pottery	North Wiltshire reduced fabric	F98	3	14	
	Roman ceramic building material	Fragment		11	116	
	Worked Stone	Roofing		6	345	
	Iron	Strip fragment		1	10	
405	Roman pottery	Baetican amphora	F40/ BAT AM	2	21	C3-C4
	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	2	15	
	Roman pottery	Imitation Black-burnished ware	F102-4	7	58	
	Roman pottery	Savernake grog-tempered ware	F6/ SAV GT	1	7	
	Roman pottery	North Wiltshire reduced fabric	F98	2	46	
	Roman ceramic building material	Tegula, box flue tile, fragments		14	2318	
	Worked Stone	Roofing		4	434	
	Iron	Nail		5	83	
406 <10>	Iron	Nail		2	7	-
407	Worked Stone	Masonry		1	3337	-
413	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	7	RB
	Roman pottery	North Wiltshire reduced fabric	F98	2	63	

Context	Category	Description	Fabric Code/ NRFRC*	Count	Weight (g)	Spot-date
	Roman ceramic building material	Tegula, fragments		4	1011	
414	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	8	C2
415	Roman pottery	Imitation Black-burnished ware	F102-4	1	7	C3-C4
	Roman pottery	North Wiltshire oxidised fabric	F98	1	3	
	Roman pottery	North Wiltshire reduced fabric	F98	1	6	
	Roman ceramic building material	Fragment		1	3	
<11>	Roman pottery	Southeast Dorset Black-burnished ware	F74/ DOR BB1	1	8	
<11>	Roman pottery	Imitation Black-burnished ware	F102-4	1	10	
<11>	Roman pottery	North Wiltshire reduced fabric	F98	3	30	
<11>	Iron	Hobnail, nails, fragment		6	23	
418 <12>	Iron	Nails, object		6	22	-
420	Roman ceramic building material	Tegula, fragments		7	722	RB
421	Roman pottery	Central Gaulish samian	F154B/ LEZ SA2	1	32	RB
<8>	Roman pottery	North Wiltshire oxidised fabric	F98	1	19	
	Roman ceramic building material	Fragment		1	3	
<8>	Roman ceramic building material	Brick, fragment		2	172	
<8>	Iron	Hobnails, nail		11	22	
<8>	Industrial waste			1	16	
423	Mortar			5	180	-

* National Roman Fabric Reference Collection codes in bold

APPENDIX C: THE PALAEOENVIRONMENTAL EVIDENCE

Table 1: Identified animal species by fragment count (NISP) and weight and context.

Cut	Fill	BOS	O/C	SUS	EQ	GAL	LM	MM	Ind	BB SS	Total	Weight (g)
	108		1								1	10
	203	1	5				9	4	5		24	214
	204	2							1		3	78
	207		1								1	2
	213			2			1	1			4	38
	304						1				1	27
	305						1				1	35
	306	2		2							4	48
	311	1		1							2	82
	312			2		2		3			7	12
	402	1									1	14
	403	1						2			3	53
404	405	1									1	20
	415			1				2			3	29
	418			1	1	1					3	5
	421						2			11	13	5
Total		9	7	9	1	3	14	12	6	11	72	
Weight		286	36	56	2	8	222	38	22	2	672	

BOS = Cattle; O/C = sheep/goat; SUS = pig; EQ = horse; Gal = pheasant; LM= cattle sized mammal; MM = sheep size mammal; Ind = indeterminate; BB SS = unidentifiable burnt fragments from bulk soil samples

Table 2: Assessment table of the palaeoenvironmental remains

Feature Type	Cont ext	Sample	Processed vol (L)	Unprocessed vol (L)	Flot size (ml)	Roats %	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Char coal > 4/2m m	Other
Trench 1													
alluvial layer	102	1	20	20	40	10	**	-	F-t wheat + rye grain frags	-	-	*/*	Moll-t (****), Moll-f (***)
alluvial layer	103	2	20	20	60	60	**	-	F-t wheat, barley + rye grain frags	*	<i>Agrostemma</i>	*/*	Moll-t (****), Moll-f (**)
alluvial layer	108	7	10	0	20	30	*	-	Barley + wheat grain frags F-t wheat + barley grain frags	-	-	*/*	Moll-t (****), Moll-f (***)
alluvial layer	109	6	10	0	70	30	***	-	F-t wheat + barley grain frags	**	<i>Avena, Bromus, Vicia/Lathyrus, ?Pisum</i>	**/**	Moll-t (***), Moll-f (**)
Trench 2													
made ground	207	3	10	0	50	10	*	-	Indet. grain frags	*	<i>Corylus avellana</i> shell frag	**/**	Sab/f (**), Moll-t (**), Moll-f (*)

Trench 4													
alluvial layer	406	10	20	0	20	50	-	-	-	-	-	*/*	Moll-t (**), Moll-f (*)
occupation layer	415	11	20	20	70	10	**	-	F-t wheat + barley grain frags	***	<i>Vicia faba</i> , <i>Avena</i> , <i>Sherardia</i> , <i>Rumex</i> , <i>Vicia/Lathyrus</i>	***/** ***	Sab/f (**), Moll-t (***)
made ground	418	12	20	10	25	5	-	-	-	-	-	**/**	Moll-t (**), Moll-f (*)
made ground	421	8	10	0	100	20	-	-	-	-	-	**/**	Sab (*)

Key: * = 1–4 items; ** = 4–20 items; *** = 21–49 items; **** = 50–99 items; ***** = >100 items, Moll-t = land snails, Moll-f = aquatic snails, Sab/f = small animal/fish bone

Table 3: Monolith sample 4



Monolith	Unit	Context	Depth [m]	Description
	1	103	0-0.07	10YR 4/2 dark greyish brown firm silty clay with fine sand. Coarse pebble-sized sub-angular limestone clast present. Few (5%) of limestone granules. Very rare (<1%) fibrous plant remains. Iron oxides accumulation along rare pores (roots/earthworms channels). Fragment of possible <i>Oxychilus</i> mollusc. Diffuse boundary to:
	2	109	0.07-0.25	10YR 4/1 dark grey firm silty clay with frequent fine sand grains and common (15%) limestone granules. Very rare (<1%) coarse pebble-sized sub-angular limestone clast. Frequent (35%) 7.5YR 4/3 brown iron oxides mottling. Common (15%) microspores. Very rare (<1%) plant fibres and shells. Very rare (<1%) charcoal granules.

Table 4: Monolith sample 5

Monolith	Unit	Context	Depth [m]	Description
	1	102	0-0.06	2.5Y 4/2 dark greyish brown firm sandy silt/clay with coarse pebble-sized and granule-sized fragments of limestone. Iron oxides mottling rare. Very few (<1%) shell fragments. Diffuse boundary to:
	2	108	0.06-0.25	2.5Y 4/2 dark greyish brown firm silty clay with frequent sand grains. Common (20%) limestone granules. 5YR 4/4 reddish brown iron oxides accumulation along pores (roots/earthworms channels). 2 fragments of <i>Trochulus hispidus</i> .

APPENDIX D: LEVELS OF PRINCIPAL DEPOSITS AND STRUCTURES

Levels are expressed as metres below current ground level and as metres Above Ordnance Datum (AOD)

	Trench 1	Trench 2	Trench 3	Trench 4
Current ground level	0.00m (108.5m)	0.00m (108.6m)	0.00m (108.7m)	0.00m (108.5m)
Limit of modern truncation	0.9m (107.6m)	0.62m (107.98m)	0.8m (107.9m)	0.47m (108.3m)
Top of "dark earth"	n/a	0.64m (107.9m)	0.8m (107.9m)	n/a
Top of Roman horizon	1.14m (107.36m)	0.96m (107.64m)	1.16m (107.54m)	0.93m (107.57)
Limit of hand excavation	1.6m (106.9m)	1.65m (106.95m)	1.6m (107.1m)	1.4m (107.1m)

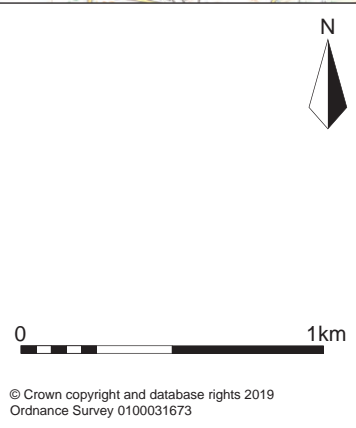
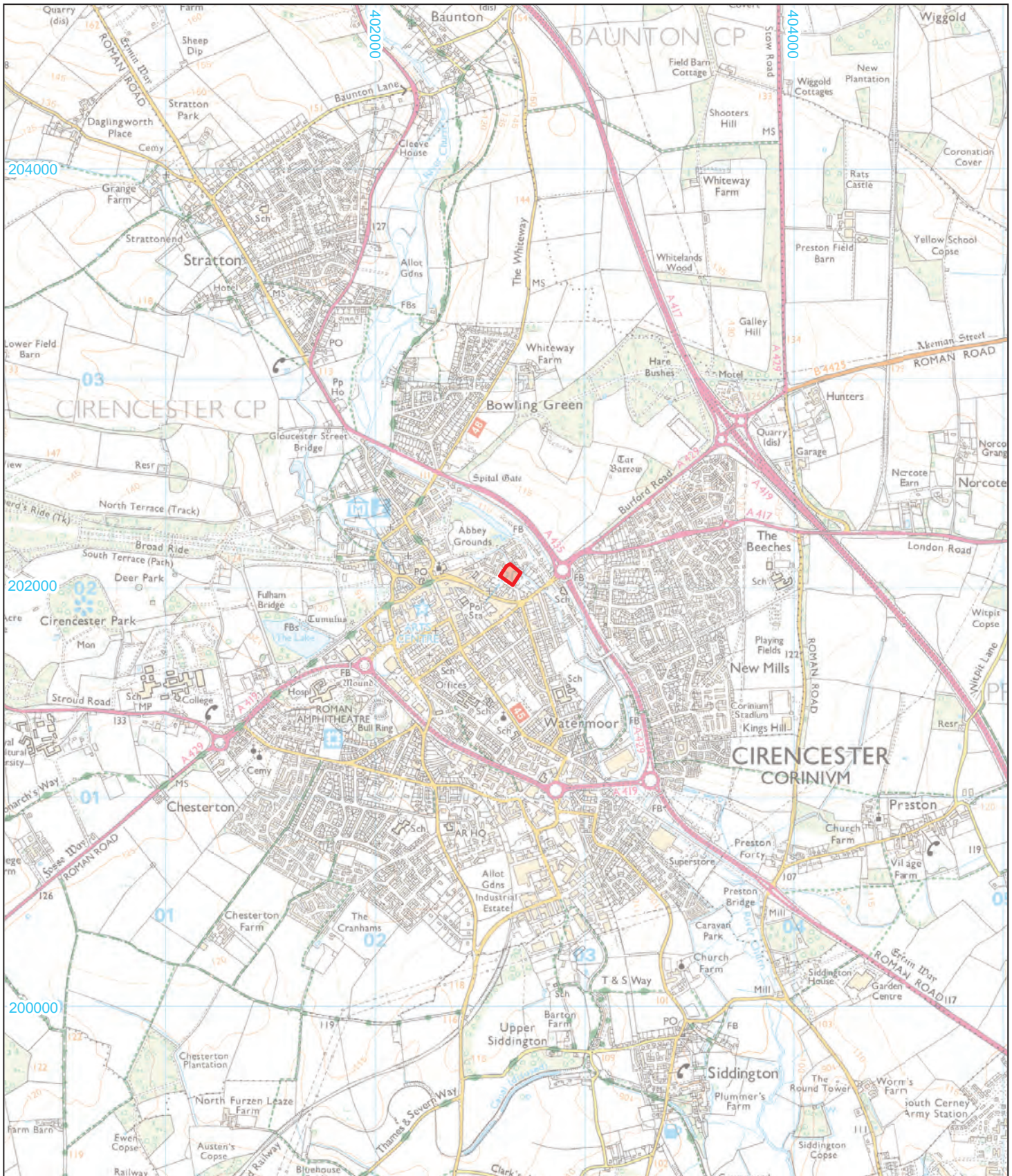
	Trench 1 (CA 2019b)	Trench 2 (CA 2019b)	Trench 3 (CA 2019b)
Current ground level	0.00m (108.74m)	0.00m (108.65m)	0.00m (108.47m)
Limit of modern truncation	0.9m (107.84m)	0.9m (107.75m)	0.58m (107.89m)
Top of 'dark earth'	0.9m (107.84m)	N/A	0.66m (107.81m)
Top of Roman horizon	N/A	N/A	0.72m (107.75m)
Limit of hand excavation	1.2m (107.54m)	1.2m (107.45m)	1.2m (107.27m)
Top of alluvial clays	N/A	0.85m (107.8m)	N/A
Natural substrate	1.85m (106.33m)	2.6m (106.05m)	2.2m (106.27m)

	Test Pit 1 (CAT 1998)	Test Pit 2 (CAT 1998)	Test Pit 3 (CAT 1998)	Test Pit 4 (CAT 1998)	Test Pit 5 (CAT 1998)	Test Pit 6 (CAT 1998)
Current ground level	0.00m (108.82m)	0.00m (108.69m)	0.00m (108.49m)	0.00m (108.54m)	0.00m (108.74m)	0.00m (108.21m)
Top of 'dark earth'/'allotment soil' deposits	1.01m (107.81m)	0.78m (107.91m)	0.67m (107.82m)	0.47m (108.07m)	1.01m (106.73m)	0.54m (107.67m)
Top of Roman horizon	1.14m (107.68m)	1.22m (107.47m)	0.68m (107.81m)	0.76m (107.78m)	2.20m (105.54m)	1.57m (106.64m)
Limit of hand excavation	1.60m (107.22m)	1.42m (107.27m)	1.12m (107.37m)	1.13m (107.41m)	2.23m (106.52m)	2.01m (106.20m)
Top of alluvial clays	2.20m (106.62m)	N/A	1.70m (106.79m)	N/A	2.30m (105.44m)	1.76m (106.03m)
Natural substrate	3.50m (105.32m)	N/A	2.20m (106.29)	2.00m (106.54m)	2.80m (104.94m)	1.97m (106.24m)

Upper figures are depth below modern ground level; lower figures in parentheses are metres AOD.

APPENDIX E: OASIS REPORT FORM

PROJECT DETAILS		
Project Name	Waterloo Car Park, Cirencester, Gloucestershire	
Short description	<p>An archaeological evaluation was undertaken by Cotswold Archaeology from 30 September to 11 October 2019 at Waterloo Car Park, Cirencester, Gloucestershire. Four trenches were excavated.</p> <p>A series of Roman made-ground deposits, surfaces and structural remains were recorded across the site, with associated occupation and demolition horizons. In the centre of the site the made-ground layers could be interpreted as evidence of land reclamation during the later Roman Period, potentially due to urban expansion or the establishment of the town defences in the mid 2nd century, when part of the River Churn was diverted outside of the city wall. A wall located in the centre of the site, combined with evidence from an evaluation in 1998, suggest that this area of the site was occupied by at least one building during the Roman period. In the south-western corner of the site two possible phases of limestone surfacing were identified. It is possible that these surfaces relate to a wall identified in the 1998 evaluation or that these surfaces represent a road.</p> <p>These were all sealed by post-Roman 'dark earth' deposits or post-Roman alluvial layers associated with the nearby River Churn. One of these occupation deposits yielded an assemblage of charred plant remains indicative of a post-Roman date. The same assemblage was recovered from alluvial and "dark earth" deposits during previous investigations on the site earlier in 2019. It is possible that this material and the single sherd of post-Roman pottery (a sherd of amphorae of 5th to 7th century AD date) recovered during the current works derives from nearby post-Roman activities and has been dumped within the site area during this period; however, it also raises the possibility that settlement activity continued within the site during the post-Roman period.</p>	
Project dates	30 September to 11 October 2019	
Project type	Field evaluation	
Previous work	Archaeological Assessment (CAT 1998) Field evaluation (CAT 1998) Field evaluation (CA 2019b)	
Future work	Unknown	
PROJECT LOCATION		
Site Location	Waterloo Car Park, Cirencester, Gloucestershire	
Study area (M ² /ha)	0.58ha	
Site co-ordinates	402644 202057	
PROJECT CREATORS		
Name of organisation	Cotswold Archaeology	
Project Brief originator	Historic England	
Project Design (WSI) originator	Cotswold Archaeology	
Project Manager	Richard Young	
Project Supervisor	Monica Fombellida	
MONUMENT TYPE		
SIGNIFICANT FINDS	none	
PROJECT ARCHIVES		
	Intended final location of archive	Content
Physical	Corinium Museum	Ceramics and animal bone
Paper	Corinium Museum	Field recording sheets
Digital	Corinium Museum	Digital photos
BIBLIOGRAPHY		
CA (Cotswold Archaeology) 2019 <i>Waterloo Car Park, Cirencester, Gloucestershire: Archaeological Evaluation</i> . CA typescript report CR0183_1		



Cotswold Archaeology

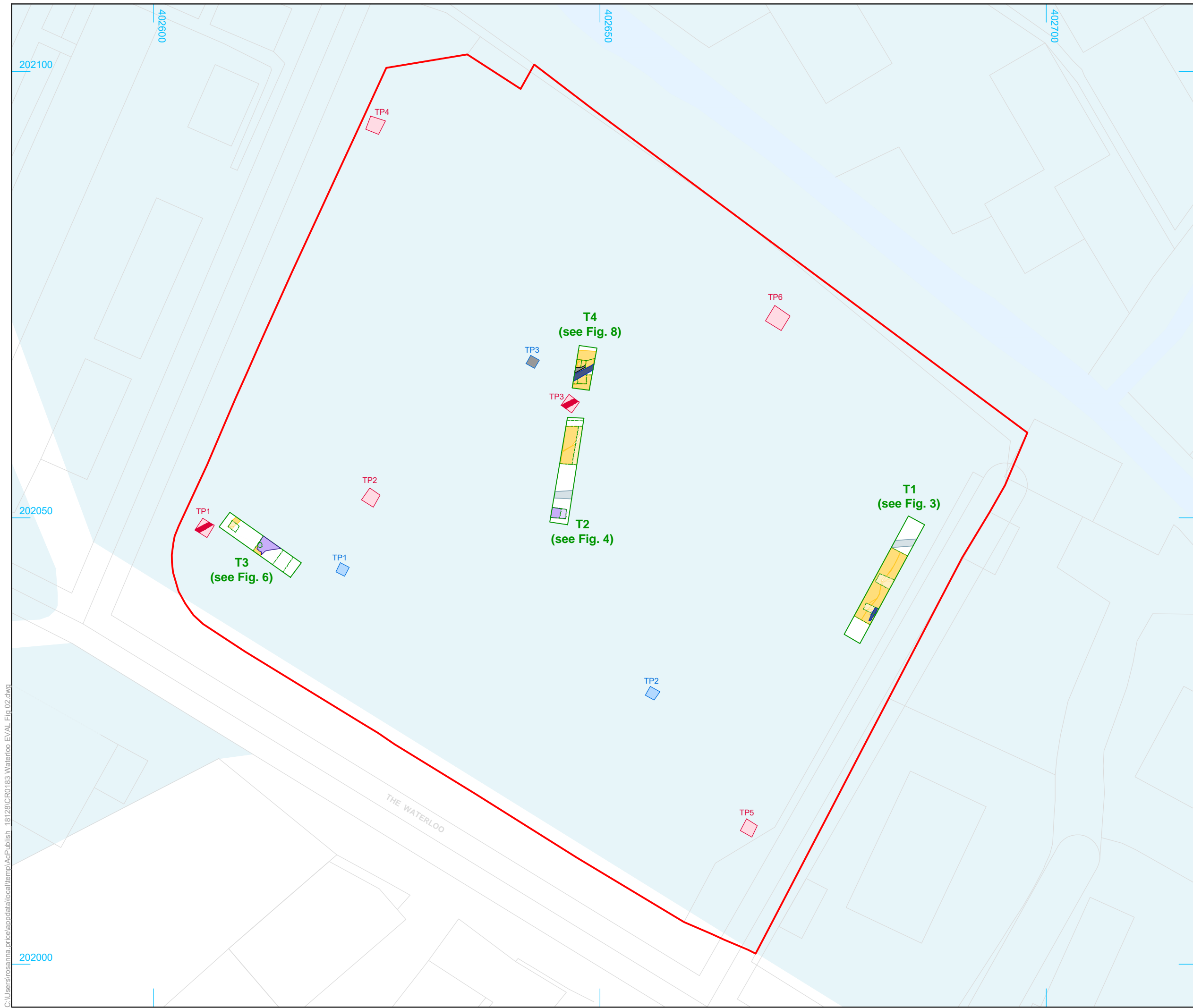
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 Cirencester 01285 771022
 Exeter 01392 573970
 Milton Keynes 01908 564660
 Suffolk 01449 900120
 www.cotswoldarchaeology.co.uk
 enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Waterloo Car Park, Cirencester,
 Gloucestershire

FIGURE TITLE
 Site location plan

DRAWN BY RP **PROJECT NO.** CR0183 **FIGURE NO.** 1
CHECKED BY DJB **DATE** 24/10/2019
APPROVED BY REY **SCALE@A4** 1:25,000

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 Ordnance Survey 0100031673



- Site boundary
- Scheduled Monument
- Evaluation trench
- April 2019 test pit (CA)
- 1998 test pit (CA)
- Wall identified in 1998 (CA)
- Archaeological feature (un/excavated)
- Deposit (un/excavated)
- Surface (un/excavated)
- Structure
- Modern



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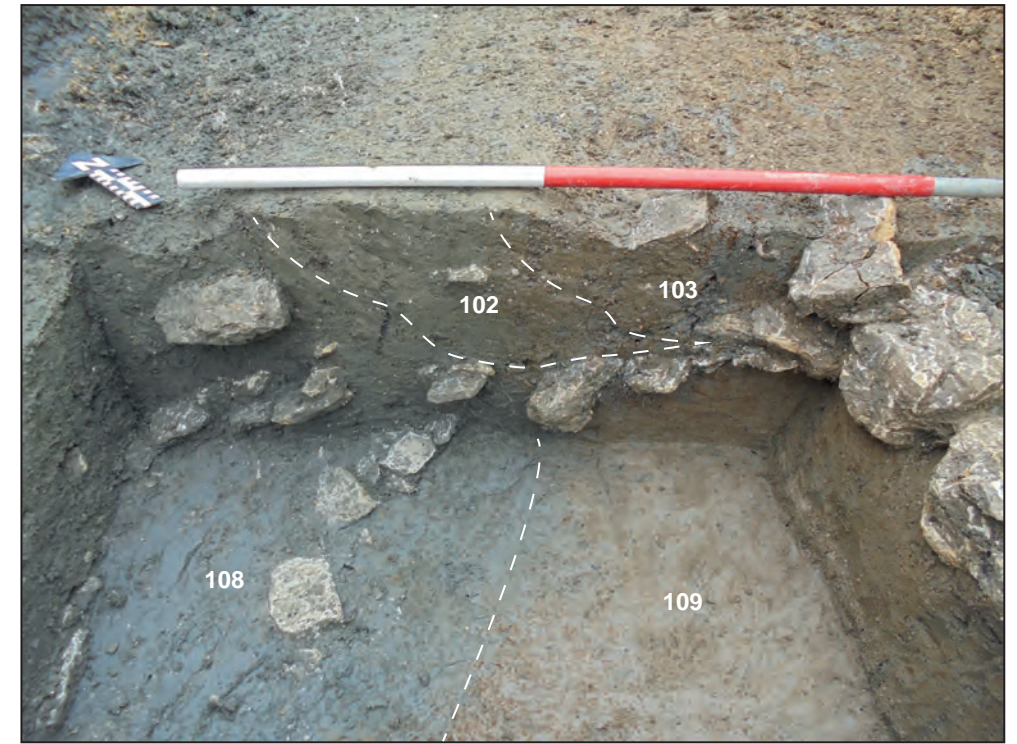
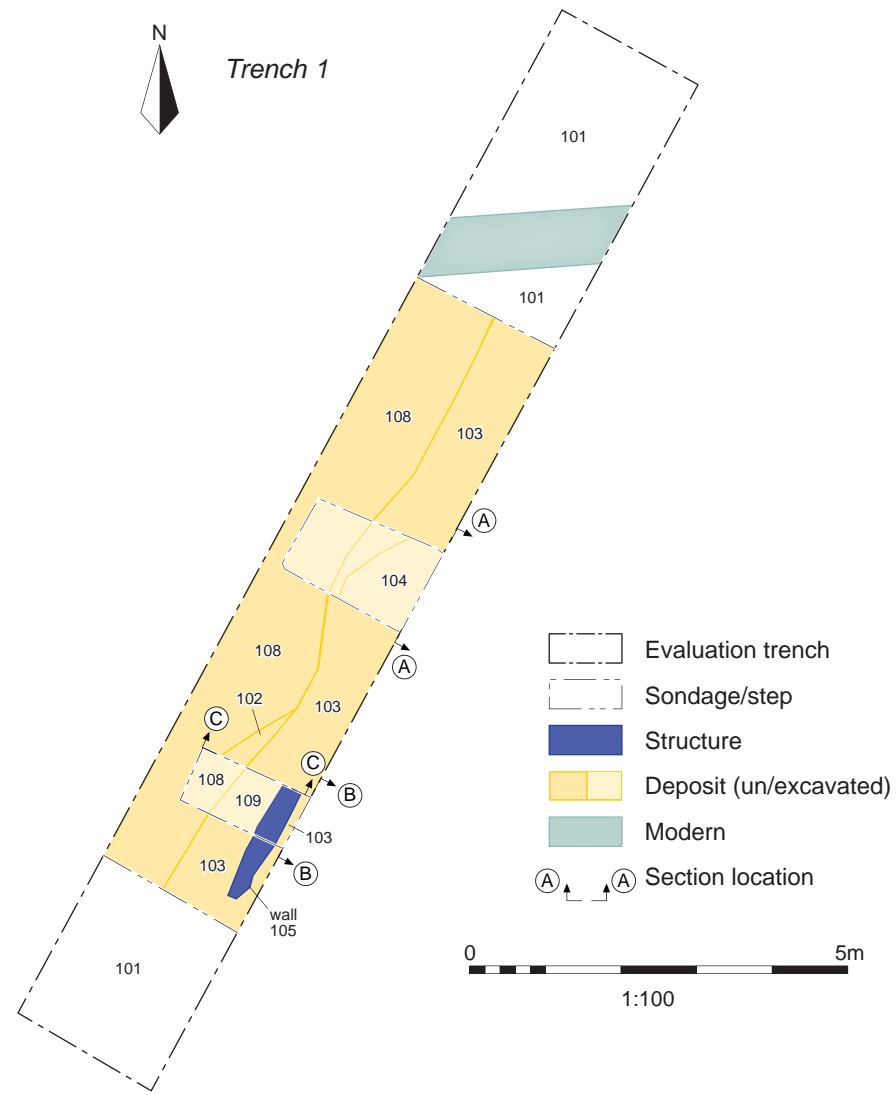
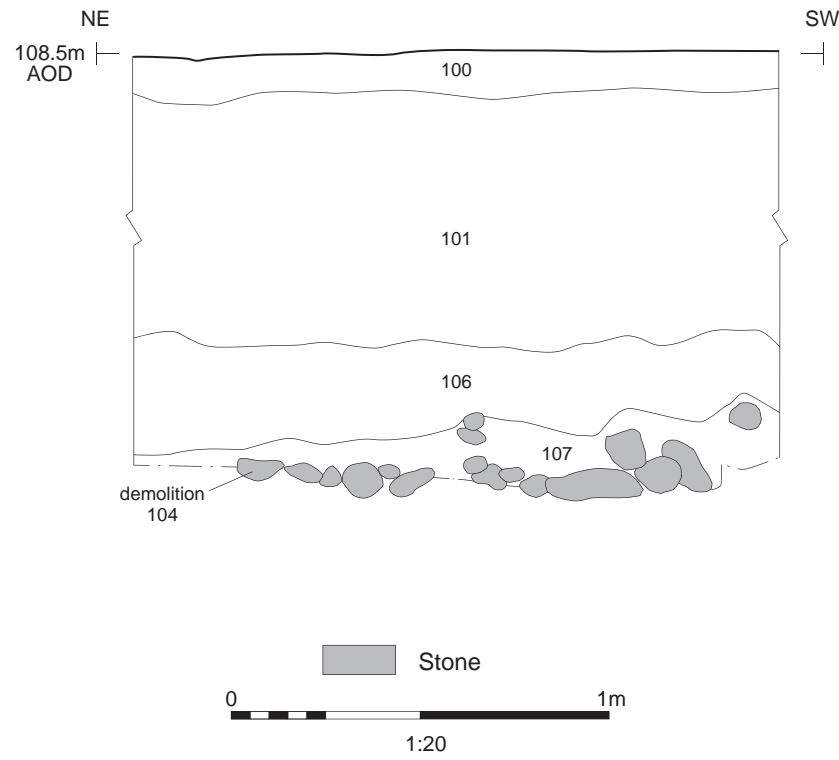
PROJECT TITLE
Waterloo Car Park, Cirencester,
Gloucestershire

FIGURE TITLE
Trench plan showing archaeological features and previous archaeological works

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APPROVED BY	REY	SCALE	@A3 1:400	

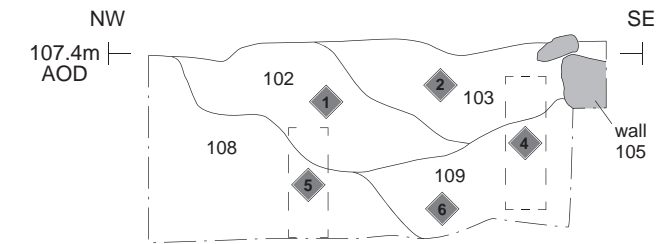
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Section AA



Alluvial deposits 102, 103, 108 and 109. Looking north-east (1m scale)

Section CC

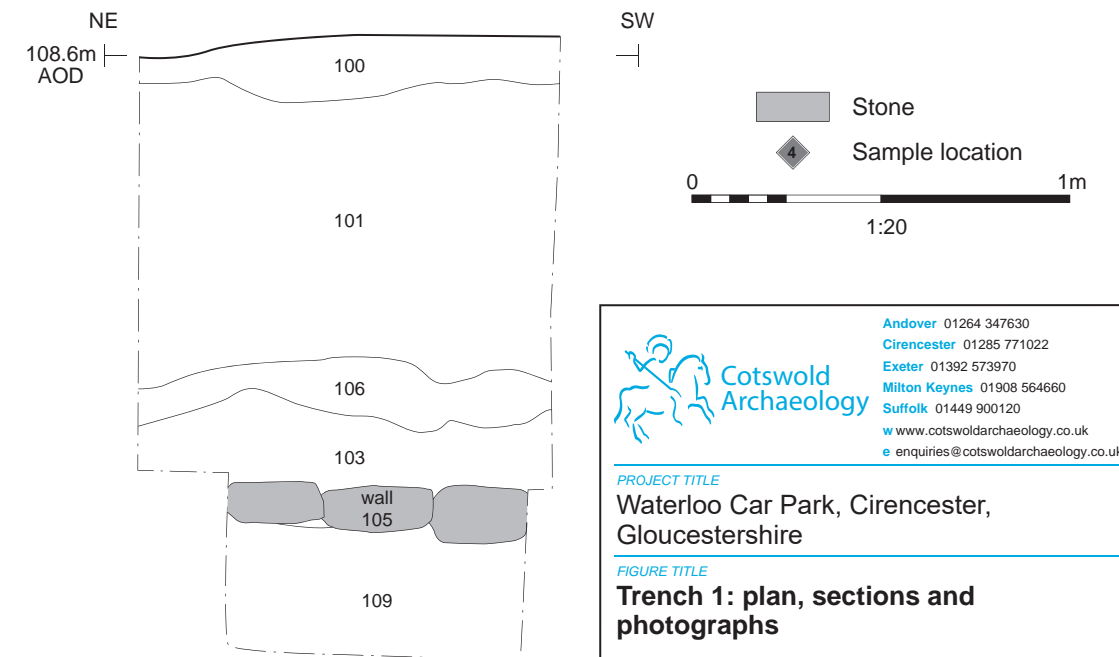


Demolition deposit 104; alluvial deposits 103 and 106; bedding layer and tarmac surface. Looking south-east (1m scales)



Wall 105; alluvial deposits 103, 102 and 108; bedding layer and tarmac surface. Looking south-east (1m scales)

Section BB





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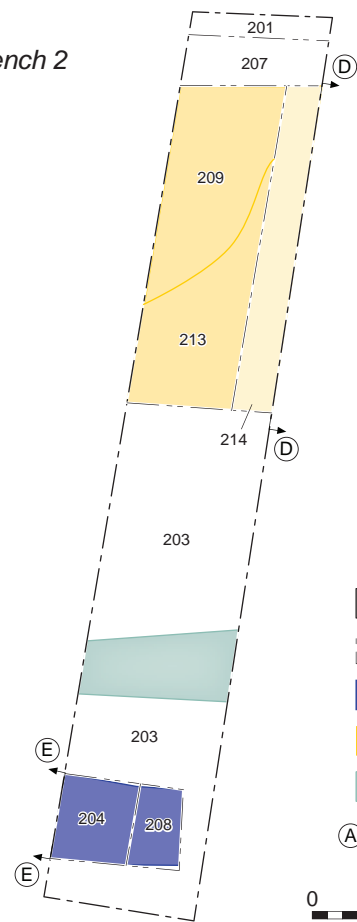
PROJECT TITLE
 Waterloo Car Park, Cirencester,
 Gloucestershire

FIGURE TITLE
**Trench 1: plan, sections and
 photographs**

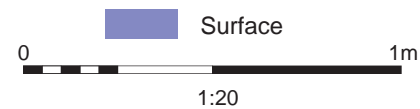
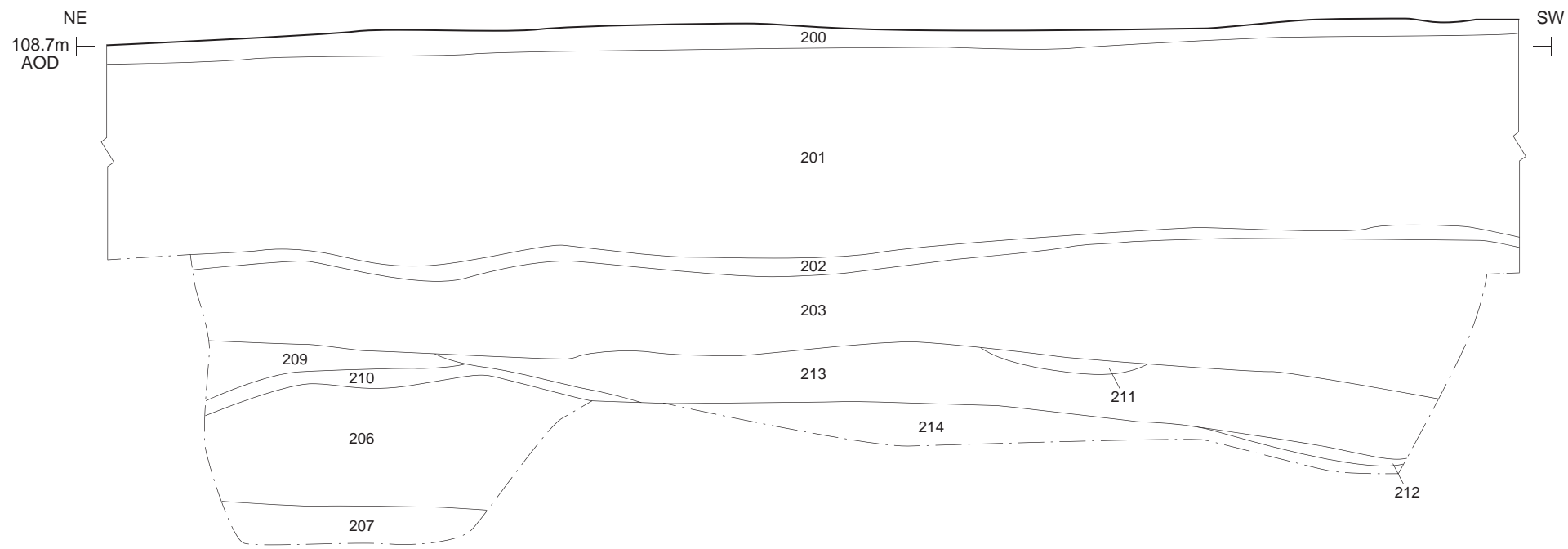
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CHECKED BY	DJB	DATE	24.10.19	3
APPROVED BY	REY	SCALE@A3	1:20, 1:100	



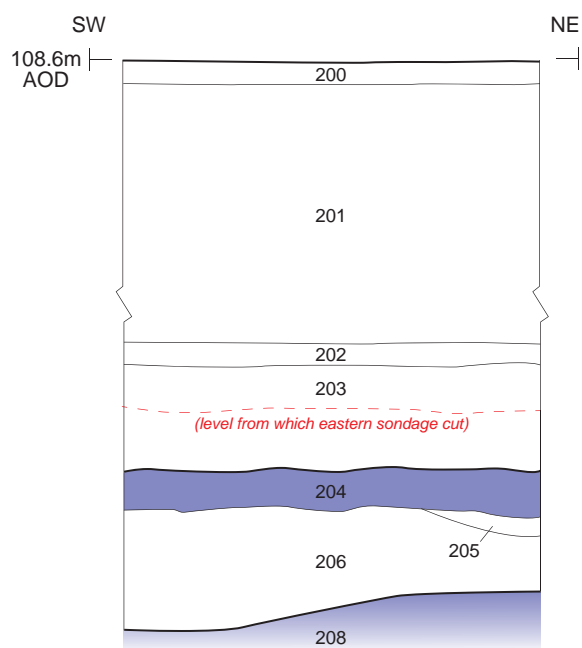
Trench 2



Section DD



Section EE



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PROJECT TITLE
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FIGURE TITLE
Trench 2: plan, sections and
photographs

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Sondage at the south of Trench 2. Made grounds 206 and 205; surface 204, "black earth"; bedding layer and tarmac surface. Looking west (1m scales)

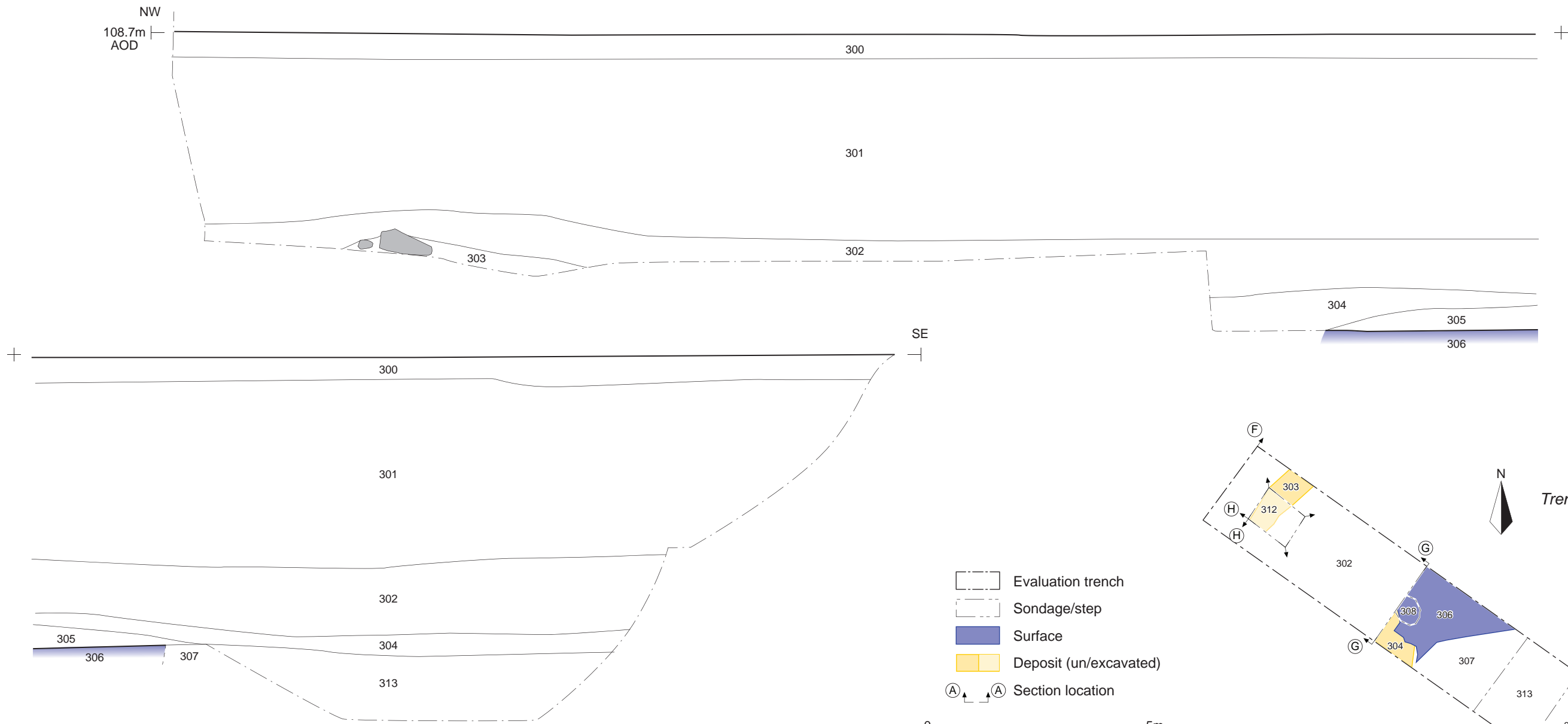


Deposits 214, 213 and 211; "black earth"; bedding layer and tarmac surface. Looking north-east (1m scales)



Sondage at the north. Deposit 207; made ground 206, 210 and 209; "black earth"; bedding layer and tarmac surface. Looking east (1m scales)

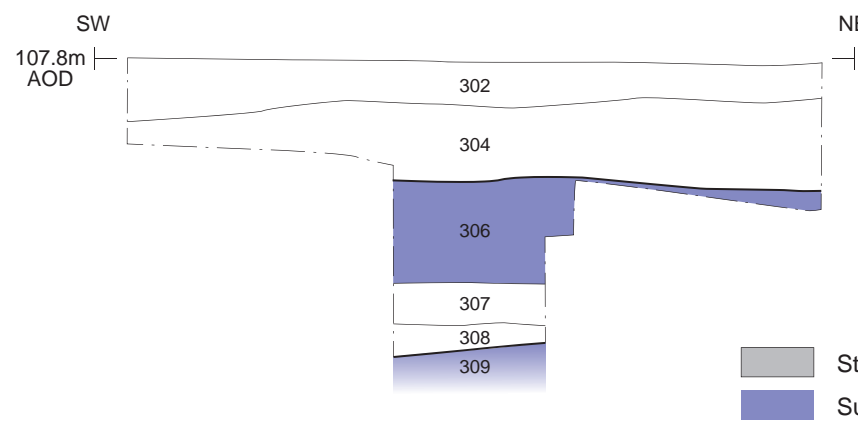
Section FF



- Evaluation trench
- Sondage/step
- Surface
- Deposit (un/excavated)
- Section location

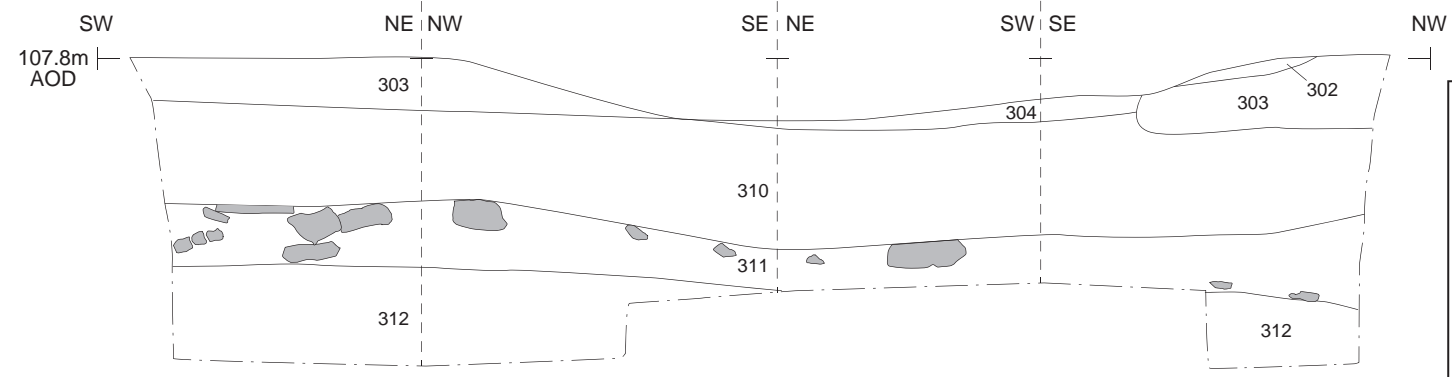
0 5m
1:100

Section GG



0 1m
1:20

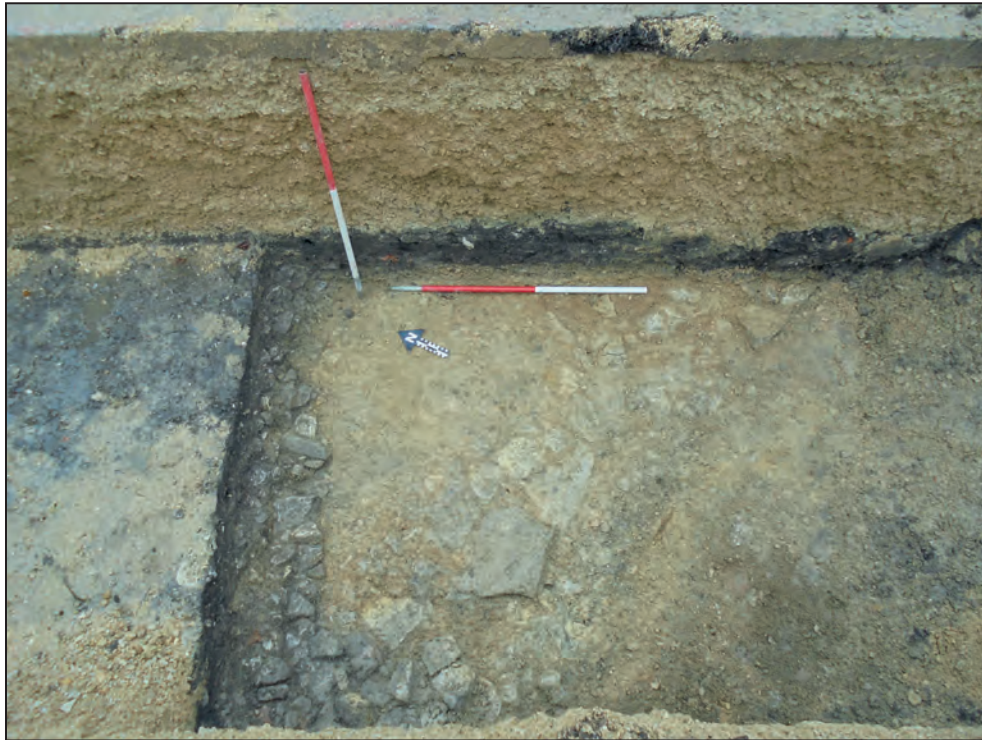
Section HH



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Waterloo Car Park, Cirencester, Gloucestershire

FIGURE TITLE
Trench 3: plan and sections



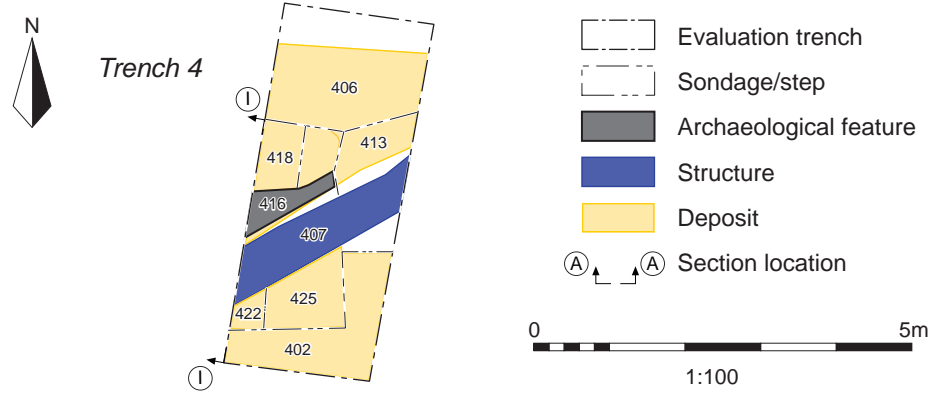
Surfaces 306 and 304, deposit, 307, "black earth", bedding layer and tarmac surface. Looking north-east (1m scales)



Sondage at the southeast end of Trench 3. Deposits 313 and 314, "black earth", bedding layer and tarmac. Looking north-east (1m scale)



Sondage at the northwest end of Trench 3. Deposits 303, 310, 311 and 312, looking north-west (0.5m scale)

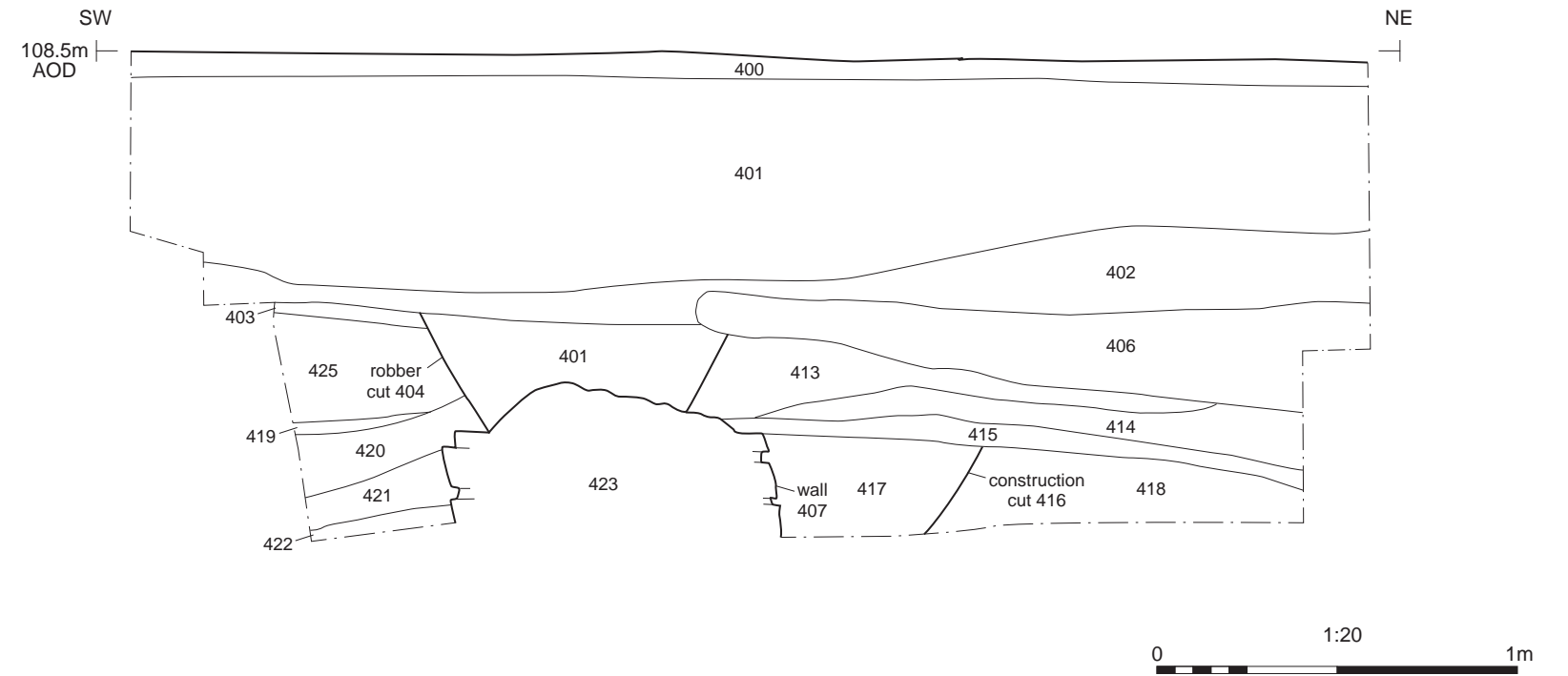


Robber cut 404, demolition deposits 402 and 403, abandon deposit 413, alluvial 406. Looking south (1m scale)



Occupation layer, 415. Looking west (0.5m scale)

Section II



Wall 407. Looking west (1m scales)

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FIGURE TITLE
**Trench 4: plan, section and
 photographs**

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