

1EW03 - Enabling Works Central

AWHi – Fieldwork Report for Construction Integrated Recording at Chetwode Mill, Buckinghamshire, AC250. C25147

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C01	Jonathan Orellana and Julian Newman	Derek Evans	Iain Williamson	12.09.22	For Acceptance

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1 Executive Summary

- 1.1.1 This document details the results of Construction Integrated Recording (CIR) undertaken at Chetwode Mill (hereafter referred to as 'the Site'), as commissioned by the Contractor as part of the enabling works for High Speed Two Phase 1. The Site is centred at NGR: 464852 228407 and lies within the parish of Chetwode, c. 1.5km south-east of the historic centre of Chetwode (Figure 1). It occupies one parcel of land, covering 986 sq. m (Fusion Site GIS ID no: C25147). The site code for the investigation is 1C21CWMCI. The fieldwork was carried out in May–July 2022.
- 1.1.2 The Site lies in an area where the archaeological potential is not well understood due to the limited amount of previous investigation. A detailed desk-based assessment was carried out by volunteers from Buckinghamshire Archaeological Society in June 2021 under Fusion guidance (Doc No. 1EW03-FUS-EV-REPCSo6_CL10-007824). This included documentary research and a Site walkover survey. Chetwode Mill is mentioned in the Domesday Book (compiled 1086) and is first depicted on maps in the early 17th century. The watermill ceased to function pre 1825 and was pulled down in the early 1940s after the last tenant died. The walkover highlighted the survival of several watermill features, including the leat, bypass channel, outflow pond and mill race, and masonry which may have held the waterwheel, suggesting it would have been of 'undershot' design. Several photographs of the watermill whilst still standing were also identified, showing it to be of stone construction, with a smaller lean-to building and thatched roof. A preliminary 16th century date for this structure derived from observation of the photographs. The mill ceased to function pre-1825, but remained occupied until the 1940s. Before the current fieldwork commenced, the area of the watermill building was overgrown but comprised a visible rubble pile on top of a building platform.
- 1.1.3 In accordance with a Location Specific Written Scheme of Investigation (LSWSI; Document No. 1EW03-FUS-_COP-EV-REP-CS06_CL10_000004) and Fieldwork Change Control Form (FCCF. Document No. 1EW03-FUS-EV-FRM-CS06_CL10_000011) the CIR was required to establish the location, extent, survival, and significance of any archaeological remains that were revealed during the ground reduction within area C25147. The CIR will contribute to the specific objectives in the AWHi – Fieldwork Change Control Form A (Spec C) for Construction Integrated Recording at Chetwode Mill, Buckinghamshire.
- 1.1.4 The CIR revealed archaeology dating to the prehistoric, medieval, post-medieval and modern periods. A Mesolithic mace head was recovered from the fill of a post-medieval quarry, located internally to a truncated ring ditch, likely dating to prehistoric period. The artefactual assemblage reveals activity on Site started in the 13th century, continuing through to the modern period. The earliest structural remains comprise the partially exposed remains of three timber beams, likely forming the corner of a building/ structure, tentatively dating to the 16th-17th century. A series of stone walls replaced the earlier timber structure, utilising the

same space and layout, with the final post-medieval phase still extent on Site at the start of the CIR.

2 Project Background and Scheme Design

- 2.1.1 The Site is required for the construction of Chetwode Embankment and associated assets, including drainage for the Godington Viaduct. These assets comprise the Bridleway CHW/24 Upgrade to a maintenance access road, and the installation of the Godington West Viaduct drainage, which will consist of an open drain. Works are being undertaken by EKFB (the Main Works Contractor). Vegetation clearance was undertaken by XYZ Rail.
- 2.1.2 An LSWSI for the CIR at Chetwode Mill was prepared in accordance with the GWSI: HERDS, the Technical Standard: AWHi Location Specific Written Scheme of Investigation for Construction Integrated Recording (Document No. 1EW03-FUS_COP-EV-REP-CS06_CL10-000004), the FCCF, the Technical Standards Specification for historic environment project plans and LSWSIs (Document no. HS2-HS2-EV-STD-000-000036), the Technical Standard: Specification for Historic Environment Investigations (Document No. HS2-HS2-EV-STD-000-000035) and relevant Chartered Institute for Archaeologists (CIfA) standards (CIfA 2014a; CIfA 2014b). The LSWSI detailed the scope and methodology for the archaeological works.

3 Description of the Site Location

- 3.1.1 The Site is centred at NGR: 464852 228407 and lies within the parish of Chetwode, c. 1.5km south-east of the historic centre of Chetwode (Figure 1). It occupies one parcel of land, covering 986 sq. m (Fusion Site GIS ID no: C25147).
- 3.1.2 The Site lies within Community Form Area (CFA) 13 and Archaeological Sub-Zone (ASZ) 23 (Chetwode), to the south of Southam and east of the A423. The ASZ is situated on a slight west-facing slope. Chetwode is a small settlement dispersed over a large area interspaced with agricultural fields and other features. Chetwode is of early medieval origin, and includes multiple moats, fishponds and other features of medieval date, including the watermill (HS2 asset ref.: CAL094,).

4 Geology and Topography

4.1 Geology

- 4.1.1 The British Geological Survey (BGS 2022) indicates that the underlying solid geology within the Site is primarily till, situated on Mudstone of the Peterborough Member, consisting of brownish-grey, organic-rich mudstones; often with shelly beds including Gryphaea shells. This member is a lower part of Oxford Clay Formation and formed in the Middle Jurassic Period.

- 4.1.2 The Quaternary superficial deposit is mapped as being River Terrace sand and gravel. This deposit formed in the Pleistocene, under cold climatic conditions in a landscape dominated by a braided river system. The change of climatic conditions at the end of the Pleistocene and beginning of the Holocene brought a stabilisation of the land surface and an end to channel gravel aggregation. Low-energy deposited silts and clays aggraded across floodplains in the area. The BGS maps an alluvial deposit in the southern part of the Site and along Padbury Brook.

4.2 Topography

- 4.2.1 The highest point of the Site, 87.147 above Ordnance Datum (aOD), was directly above the remains of the former building, with the land sloping in all directions. Two parallel east/west aligned ditches form the northern and southern limits of the Site.

5 Previous Works

5.1 Archaeological and Historical Background

- 5.1.1 The archaeological and historical background presented below has been summarised from the AWHI Fieldwork Change Control Form (Doc no.: 1EW03-FUS-EV-FRM-CS06_CL10-000011) and AWH – Detailed desk-based assessment concerning Chetwode Mill (Doc no.: 1EW03-FUS-EV-REP-CS06_CL10-007824).
- 5.1.2 The watermill at Chetwode is recorded in the Domesday Book (compiled in 1086), originating as part of an earlier Anglo-Saxon estate. This estate developed after the year 949 to support the establishment of the burh at Buckingham. Historical evidence indicates continued activity at the Site through the medieval period, with the pattern of the watermill, mill race, trail race, bypass channel and meadows remaining unchanged in the landscape certainly from 1638 and probably for longer. The watermill is first depicted on historic maps in the early 17th century and fell into disuse in the early 20th century, being pulled down in the 1940's. Features relating to the watermill, bypass channel, mill race and outflow pond are still extant on Site. The stone structures extent on Site, whilst undated, are considered likely to be of post-medieval or modern date.

5.2 Previous investigations

- 5.2.1 The Site lies within an area whose archaeological potential is not well understood due to the limited amount of previous investigation, although a number of non-intrusive surveys have been undertaken within parts of the Site and in its vicinity:
- The Site was included in a remote-sensing survey (interpretation of aerial photographs, hyperspectral imagery, and LiDAR imagery) as part of the HS2 Phase 1 Environmental Statement (Survey reports CH-004-013; ES 3.5.2.13.7). This did not identify and features potentially relating to the watermill.

- The Site was also subject to a Detailed Desk Based Assessment concerning Chetwode Mill, its history and social history (Doc no. 1EW03-FUS-EV-REP-CS06_CL10-007824).
- The land to the immediate south, 'Great Mill Meadow' was subject to geophysical survey by Connect in 2018 (Site Code 1C18GODMG, Report doc no. 1EW03-FUS-EV-REP-CS06_CL10-007814). Only modern ferrous disturbance was identified.
- Trial trenching was carried out approx. 200m to the west of the Site during Urgent Works (North of Moat Farm, Doc No. 1EW03-FUS-EV-REPCSo6_CL10-007813) and comprised five 30m x 2m trenches. Several pits and ditches were identified, possibly forming a late Roman farmstead.

5.2.2 No geophysical surveys were carried out on the Site due to extant trees and overgrown vegetation making the area unsuitable. The land to the immediate south, 'Great Mill Meadow,' was until recently used as a dirt bike racetrack; this has highly truncated and disturbed the ground, with the creation of artificial jumps, ramps and banks. Geophysical surveys were carried out in the field to the north of the Site by Connect Archaeology in 2018 (Site Code 1C18GODMG, Report doc no. 1EW03-FUS-EV-REP-CS06_CL10-007814); only modern ferrous disturbance was identified.

5.2.3 No archaeological trial trenching or any other form of intrusive survey has been carried out within the Site.

6 General Aims and Site-Specific Objectives

6.1 General Aims

6.1.1 The general aim of the CIR was to identify the character, extent, quality, preservation and significance of any surviving archaeological remains present within Area C25147 in order to inform an archaeological resource assessment of its knowledge value and ability to contribute to specific objectives set out in the GWSI: HERDS. The general aims can be set out as following:

- to confirm the presence/absence, extent and depth of any surviving archaeological remains within the Site, particularly those associated with the post-medieval Chetwode Mill and any evidence for a preceding medieval structure;
- to determine the nature, date, condition, state of preservation, complexity and significance of any archaeological remains;
- to determine the likely range, quality and quantity of artefactual and environmental

evidence present;

- to record in plan and section any archaeological remains; and
- to contribute to the delivery of GWSI: HERDS Specific Objectives as specified in Table 2 Section 12.1.2.

6.2 Site Specific Objectives

6.2.1 The Site has the potential to contribute to specific objectives set out in the GWSI: HERDS as set out below:

- **KC33:** Investigate the development of watermills from the Anglo Saxon through to the modern period. How did the technology of milling change, and what implications did this have for farming practice?
- **KC34:** Undertake research and investigation into medieval manorial complexes. What was their origin, development, and impact on the landscape?
- **KC40:** Identify patterns of change within medieval rural settlement from the 11th to the mid-14th century.

7 Scope and Methodology

7.1 Scope

7.1.1 The CIR was undertaken in May-July 2022 and comprised the investigation of one area (Figure 1):

- C25147, measuring 986 sq. m

7.1.2 The fieldwork was undertaken in accordance with the FCCF LSWSI, the standards and guidance detailed in section 2.1.2. The fieldwork also adhered to the ClfA Standard and Guidance for Archaeological Excavation (ClfA 2014b) and the Management of Research Projects in the Historic Environment (MORPHE): Project Managers' Guide (Historic England 2015).

7.2 Construction Integrated Recording Methodology

7.2.1 This section briefly summarises the methodology utilised during the works, as set out in the LSWSI and FCCF. A more detailed description can be found in the Project Plan (Document no. 1EW03-FUS-EV-REP-CS06_C000-009812).

Setting Out

7.2.2 All spatial setting out and recording was undertaken in accordance with the specific technical standards for setting out and the Ordnance Survey (OS) National Grid and Ordnance Datum

Newlyn (ODN) as defined by the OS Active Global Navigation Satellite System (GNSS) network and use of a virtual reference system. Permanent Ground Markers (PGM) were created using this system. Further details on setting out are provided in the Survey Report (Document No. 1EW03-FUS_COP-EV-REP-CS06_CL10-000006).

- 7.2.3 All interventions were located to a horizontal accuracy of +/-500mm, with surface heights recorded using Real Time Kinematic (RTK) GNSS and related to PGMs. Levelling accuracy was recorded to within 10 mmÖk: where 'k' is the total distance levelled in kilometres.

Machine / Hand Excavation

- 7.2.4 The CIR area was mechanically excavated after the removal of the trees from the Site. The removal of overburden was undertaken using excavators fitted with toothless ditching buckets under the constant supervision of a suitably trained, competent and experienced archaeologist, until the first archaeologically significant horizon was reached, or when the absence of any such horizon was adequately demonstrated. Further use of mechanical excavation was undertaken several times following discussion with the Contractor's HERDS Manager, who monitored the fieldwork.
- 7.2.5 Metal detectors were used by experienced staff to scan for metal finds following the mechanical stripping of the Site areas and during the hand excavation of key archaeological features and deposits.
- 7.2.6 Given the nature of the CIR investigation, a specific intervention strategy was not created. Nevertheless, the typical standards of stratigraphic sampling were applied, as stated in the LSWSI, and a sufficient number and proportion of features were hand excavated to meet the aims of the archaeological recording. Pits and discrete features were generally subject to a 50% sample by volume. Linear features were sectioned as appropriate, typically by means of 1m-long interventions positioned at regular intervals and amounting to c. 10% excavation by area of each linear feature. All structural remains were fully exposed where possible and investigated sufficiently in line with the aims and objectives of the CIR.
- 7.2.7 Archaeological hand excavation and recording was undertaken to the general requirements as described in the GWSI: HERDS and the Technical Standard Specification for historic environment investigations (Document no. HS2-HS2-EV-STD-000-000035). The sample strategy was guided by the ClfA Standard and guidance for archaeological field evaluation (ClfA 2014, Updated 2020) and other relevant guidance documents, as detailed in the LSWSI.

Fieldwork Recording

- 7.2.8 A sufficient sample of each feature was excavated to meet the requirements of the *GWSI: HERDS*. Archaeological recording included, as a minimum:
- A record of the full extent in plan of all revealed archaeological features and deposits based on digital survey data, supplemented where appropriate by hand-

drawn records on polyester-based drawing film (at a scale of 1:10 or 1:20 unless otherwise agreed);

- A written record of individual context descriptions on appropriate pro-forma recording sheets;
- Single context planning (used only if appropriate);
- Digital photographs; and
- Sections, including half-sections of individual layers or features drawn as appropriate to 1:10 or 1:20.

7.2.9 A 'site location plan' was produced, indicating site north and showing the locations of archaeological remains excavated in relation to the investigation area. Section drawings were located on relevant plans.

Environmental Sampling

7.2.10 In line with the Employer's *Technical Standard: Specification for Historic Environment Investigations*, the following bulk soil sampling strategy was implemented. This strategy was based on the existing information about the Site gathered from non-intrusive surveys and the *GWSI: HERDS* objectives outlined above.

7.2.11 All features were visually inspected for indications of organic preservation (i.e. charcoal) and, where appropriate, samples were retrieved from basal deposits that were visually rich and where finds were present. In the absence of these criteria, a spatial selection based on the closest criteria and in accordance with standard policies was implemented. Sampling also targeted deposits representing the main phases of activity on Site (to assess whether there were changes in rates of deposition or material survival over time).

7.2.12 Samples were collected using 10-litre plastic buckets (with lids and handles) for the recovery of bulk 'disturbed' environmental samples. Monolith samples were collected from relevant stratigraphic deposits using 0.25m Kubiena monolith tins for laboratory assessment. Labelling followed guidance set out in the *Technical Standard: Specification for Historic Environment Investigations*.

Change Control

7.2.13 The size of the CIR area was extended slightly from the area defined in the LSWSI (as detailed in Fieldwork Change Control Acceptance Sheet FCCF418; ; Doc No. 1EW03-FUS_COP-EV-FRM-CS06_CL10-000006) to incorporate small extensions to the Site, as detailed below:

- North-western LOE: Small extension in the north-western corner of the Site in the area of an undated posthole. Additional area = 42.4m²
- Eastern LOE: Area extended to fully reveal an area of loose stone which had the

potential to form a wall. Additional area = 19m²

- Southern LOE: Southern side of the mill race cleaned and stripped further to the south to fully reveal the southern mill race wall and investigate if the features revealed related to the ring ditch. Additional area = 46.6m².

8 Results of Construction Integrated Recording

8.1 Stratigraphic Sequence

- 8.1.1 The stratigraphic sequence across the Site can be split into two distinct areas, with the natural substrate (102), comprising variations of yellowish orange gravel sealing blue clays, was consistent across the Site. The western limits of the Site typically comprised topsoil and subsoil overlying the natural substrate with the central and eastern limits being more disturbed by later activity on Site.
- 8.1.2 In the western limits of the Site, subsoil, (101) sealed the natural substrate, comprising mid yellow/ orange sandy silt, between 0.2–0.35m thick. This was in turn sealed by topsoil, (100), comprising dark greyish brown sandy clay with occasional stone inclusions, which was between 0.2–0.3m thick. Both deposits were heavily disturbed by tree roots.
- 8.1.3 The central and western limits of the Site were disturbed by activity associated with the watermill, dating from the medieval through to modern periods. There was little evidence of subsoil (101) in this area. The topsoil had been disturbed as part of the demolition and levelling of the area associated with the 1940s demolition of the buildings on Site, forming layer (103), up to 0.6m thick (Figure 3).

8.2 Archaeology

Introduction

- 8.2.1 The results of the archaeological CIR are discussed below and shown on Figures 1-25. Archaeological features and structures were encountered across the excavation area. Contexts were numbered from 100 –274.

Summary

- 8.2.2 The archaeology revealed was spread across the Site, with a central concentration of activity, relating to the surviving structural remains of the watermill and associated buildings (Figures 5 & 5). In the southern and western limits of the Site ditches, pits and a posthole were revealed, which although largely undated, are considered to be associated with medieval and post-medieval activity on Site, with the exception of one probable Prehistoric ring ditch.

Prehistoric

- 8.2.3 A possible truncated ring ditch 104/115 was located in the western part of the Site. It was truncated by large post-medieval quarry pit 122/128/169 and by the mill race. The ditch measured 1.3m wide and 0.3m deep. It contained two fills that represent a gradual silting (Figures 4 & 7, Section 1).
- 8.2.4 Although no dateable artefactual material was recovered from the fills of this possible ring ditch feature, fills (105), (116) and (117) yielded 22 fragments of animal bone, largely unidentifiable by species, with one fragment of burnt bone and one fragment of cattle bone showing evidence of butchery. Environmental sample No1 processed from the lower fill (105) contained a small assemblage of oat seeds and charcoal, as well as a mollusc assemblage including a range of species indicating a mixed range of conditions. The terrestrial snail assemblage indicated a well-established open environment with shade, possibly from longer grass. The aquatic species present suggest seasonal flooding, desiccation and flowing water.
- 8.2.5 The mixed range of mollusc species revealed in the environmental sample does not clearly indicate a date for the feature. The Site has likely always been set in a well-established open environment adjacent to a watercourse, hence the watermill being sited there. However, a larger number of aquatic species may be expected if deposit (105) had formed while the watermill was active, inferring a pre-watermill date for the ditch 104/115.
- 8.2.6 A Mesolithic mace head was recovered from fill (172) of post-medieval quarry pit (169), which was located directly to the east of ditch 104/115 (Figures 4 & 8). The mace head is roughly oval in plan, with a central hourglass perforation and minor wear suggesting it was hafted. Both ends exhibit light impact damage suggestive of use as a percussive tool. While the mace head is clearly residual, it is possible that it was disturbed from the possible ring ditch or from an associated internal feature truncated by the post-medieval pit. As such, this artefact might provide a tenuous date for the possible prehistoric ring ditch.

Medieval

- 8.2.7 Features dating to the late medieval period were recorded across the Site, comprising ditches, a pit and three wooden beams, potentially relating to a structure.
- 8.2.8 Ditch 110 was located at the western limit of the Site. This ditch was aligned north-east/south-west. It terminated at its north-eastern end and extended to the south-west beyond the limit of excavation. The ditch survived to 0.38m width and 0.17m depth, with moderately sloping sides and a flat base (Figure 9, Section 2). It contained a single sedimentary fill (111) from which 33 sherds of medieval sandy ware dating from the 13th – 15th centuries were recovered. These pottery sherds most likely formed part of the same vessel with 20 conjoining sherds and were indicative of primary waste disposal.
- 8.2.9 Pit 204 was located in the east-central part of the Site, central to the later building remains (Figure 4). This pit was sub-circular in plan with a gentle profile and a concave base. It

contained two fills, (205) and (206) (Figure 10, Section 3). There was no clear identifiable function to the pit, which was filled with refuse and silting deposits.

- 8.2.10 Primary fill (205) contained 26 sherds of pottery dating to the 13th – 15th centuries, in addition to, a stone tile, a CBM roof tile and two fragments of animal bone and a flint flake considered to be residual to the deposit. A large part of a Potterspury-type flared bowl was preserved in the pit; this showed characteristic knife-trimming markings used to remove excess clay. Potterspury-type wares appeared around the third quarter of the 13th century and supplied Oxfordshire throughout the 14th century. Fragments of a sandy ware flared bowl with thickened rim were also present. This is a less common form and was made more unusual by having a post-firing perforation below the rim. The single fragment of CBM roof tile is medieval in date.
- 8.2.11 The fragment of squat hexagonal stone roof tile, considered residual in a medieval deposit, is comparable to examples elsewhere in Roman Britain and may indicate the presence of a stone-roofed late Romano-British farmstead in the area (stone roofing being common in the later Roman period). The lias stone from which this tile was made was likely quarried in north Buckinghamshire or possibly Northamptonshire. This tile may relate to the Romano-British farmstead recorded from works north of Moat Farm (Doc No. 1EW03-FUS-EV-REPCS06_CL10-007813), approximately 200m west of the Site, which indicated the potential for Romano-British buildings to be present.
- 8.2.12 The environmental sample No6, taken from fill (205), contained a large number of charred seeds, predominantly oats, including some still in their husks, in addition to a small assemblage of free threshing wheat, barley grains and charcoal. This assemblage is indicative of a dump of food preparation waste material, indicating domestic activity on Site.
- 8.2.13 Final fill (206) contained two iron nails, a medieval CBM roof tile and a further 57 sherds of pottery of the same fabrics and date. These included domestic wares, including a fragment of a jug and a bowl. A fragment of post-medieval pottery and a sherd of CBM are likely to be intrusive, presumably associated with construction of the post-medieval building.
- 8.2.14 Located directly to the north-west of pit 204, curved ditch 270/272 was 1.4m wide and 0.52m deep, with steep sides and a flat base (Figures 4 & 11, Section 4). It contained three fills: (271), (273) and (274). These fills, formed largely by natural silting, contained one sherd of pottery dating to the 13th – 15th centuries, one fragment of roof tile of probable 14th or 15th century date, and two animal bone fragments.
- 8.2.15 It was unclear if ditch 270/272 was truncated by the bypass channel in the northern part of the Site, or if it fed into this ditch; the former would indicate a potential water management function for ditch 270/272. There is no evidence for the excavation of the bypass channel, which was first recorded on the 1638 Chetwode manor estate plan, to infer a relationship.

8.2.16 At the southern limits of the Site, to the south of the mill race, ditch 241 was aligned north-east/south-west (Figure 10, Section 5). This ditch was truncated by landscaping associated with the mill race. It was 0.85m wide by 0.36m deep and terminated at its north-eastern end. A single sherd of pottery dating to the 13th – 14th centuries was retrieved fill (242).

8.2.17 The features discussed above are not clearly associated with activity relating to the watermill, although such a relationship cannot be ruled out. Pit 204 clearly indicates a proximity to late medieval domestic occupation.

Watermill related features

8.2.18 Ditch 190 was orientated north-west/south-east, with moderately sloping sides and a flat base (Figures 4 & 12, Section 6). It was 0.52m deep and survived to width of 2.05m before being truncated. It terminated at its north-western end. This ditch contained a single fill (191), representing a mix of gradual silting and dumps of refuse material. A total of 38 sherds of pottery dating to the 13th – 15th centuries were recovered, including 28 sherds of a sandy ware jug. Environmental sample No4 from fill (191) contained a small assemblage of cereal grains, including free threshing wheat and rye and charcoal, along with a large assemblage of charred weed seeds. The charred remains are likely representative of a dump of food production waste.

8.2.19 The western edge of ditch 190 was truncated by ditch 192, which was also north-west/south-east aligned and terminated at its north-western end. Ditch 192 was 1.6m wide and 0.8m deep with steep sides and a concave base. It contained two fills: (193) and (194) (Figure 12, Section 6). A large assemblage of pottery dating to the 13th – 14th centuries was recovered from lower fill (193), all of which came from a brill/ Boarstall ware jar. There was also an intrusive sherd of 16th – 17th century pottery. Environmental sample No5 from fill (192) contained a small assemblage of charcoal, indeterminate cereal grains and charred weed seeds representing dispersed waste material. The mollusc assemblage included some species that favour flowing water, inferring that there was flowing water in the ditch at times.

8.2.20 The function of ditches 190 and 192, which are considered broadly contemporary, is not clear. Both ditches terminate in the same place, perhaps indicating they respected another feature or structure which has not survived.

Early - mid post-medieval

8.2.21 The majority of the structural remains relating to the watermill and associated buildings date to the post-medieval period.

8.2.22 The final fill (194) of medieval ditch 192 comprised a compact, clean and largely sterile clay deposit, distinct from the underlying medieval deposits (Figure 12, Section 6). It contained eight sherds of medieval pottery dating to the 13th – 15th centuries and eight sherds of post-medieval pottery dating to the 16th – 17th centuries. Fill (194) may relate to a levelling event or

deliberate backfilling of the already partially silted up ditch 192, possibly associated with a remodelling of the Site.

- 8.2.23 Construction cut 248 was identified in the south-eastern edge of the excavation area (Figures 4 & 13, Section 7). Cut 248 was steep sided with a flat base. It was only partially exposed within the excavation area and measured greater than 2.2m by 1.2m in plan; it was 0.82m deep. Three timber beams (249, 250 and 251) were revealed at the base of cut 248. Packing deposits (252) and (266), consisting of a compact clay, was identified between the timber beams and was truncated by later construction cut 253.
- 8.2.24 Beams 250 and 251 were aligned north/ south, with the southern ends of the beams truncated by construction cut 182 of mill race wall 184 (Figure 14). Beam 251 was fully exposed and measured 1.95m in length by .33m in width and 0.22m in thickness. Beam 249 was aligned east/west and was only partially revealed within the excavation area.
- 8.2.25 The layout of the wooden beams does not appear disturbed, suggesting they form the north-western corner of a timber structure on the mill race and in the presumed area of the waterwheel and wheel pit based on the surviving post-medieval mill race walls. The location of the timber beams, directly north of the mill race and the outflow pond, would suggest that this structure may represent the western end of the southern wall of a watermill structure, through which the watermills drive mechanism would connect to the waterwheel. The clay packing around the wood beams and filling construction cut 248 would provide much needed structural support for the timber structure supporting a waterwheel.
- 8.2.26 A single sherd of glazed pottery dating to the post-medieval period was recovered from clay packing (252). This would indicate a post-medieval date for the timber structure, potentially marking the consolidation of a post-medieval watermill replacing an earlier medieval structure, of which there are no surviving remains. Clay packing deposit (252) is possibly contemporary with clay deposit (194), the only two deposits of this composition on Site.
- 8.2.27 North-west/south-east aligned construction cut 164 truncated the western edge of ditch 192 and its final fill (194). Ditch 164 was 0.98m wide and 0.56m deep (Figures 4, 12 & 15 Section 6). Contained within the construction cut was wall 163 and backfill deposits (162) and (165), which were undated.
- 8.2.28 Wall 163 was orientated north-east/south-west, with a slight curve to the east (Figures 4, 12 Section 6 & 15). The wall measured 5.15m in length, 0.56m in width and survived to a height of 0.52m, with a maximum of nine courses, presenting a well finished south-western face and an unfinished north-eastern face. The wall was made of worked and unworked limestone blocks placed in courses and bonded with a compact sand and lime mortar. The southern end of the wall was truncated by the construction cut for mill race wall 184.
- 8.2.29 The northern end of wall 163 adapted to the uneven base of the construction cut at this point. There was no obvious return to the wall, suggesting the surviving wall terminal represents the

true extent of the wall, terminating in the area where ditches 190 and 192 terminated (terminals recorded as 210 and 212 respectively). As noted above there is no clear reason why the ditches terminate at this point.

- 8.2.30 Wall 163 replicated the alignment of ditches 190 and 192, suggesting a continuation of the existing layout and function of this space.
- 8.2.31 It is possible that wall 163 represents a retaining wall, forming the south-western limits to a platform for a possible structure directly to the north-east. The western side of wall 163 is constructed at a lower level than the eastern face, inferring different levels for construction. Clay packing deposit (194) further indicates the potential for a structural feature in this area, requiring a solid foundation, possibly due to being located on a former ditch which molluscs indicate contained flowing water.
- 8.2.32 The truncation of the clay packing may indicate that wall 163 replaces an earlier retaining wall. There are no clear indications that wall 163 was part of a larger structure. While the wall itself is undated it likely represents a continuation of activity from the 16th – 17th century clay deposit.
- 8.2.33 Another possible interpretation for wall 163 is that it represented an earlier phase of the northern mill race wall, before the construction of wall 184, which truncates 163, collecting a greater working head of water. However, there is no evidence of a western return to the northern end of wall to contain the water, or any evidence of a matching wall on the southern side of the mill race, as seen in the later phases of activity. Based on the surviving evidence it is considered unlikely that wall 163 represents an earlier mill race wall.
- 8.2.34 Construction cut 253 was partially exposed in the CIR area, truncating clay packing deposits (252) and (266) (Figures 4 & 13, Section 7). Aligned east/west, cut 253 survived to 1.9m in width and 0.85m in depth, respecting the limits of construction cut 253. The backfill of cut 253 contained sherds of pottery dating from the 13th – 14th centuries and the 16th/17th centuries; the earlier pottery may potentially have originated from clay packing deposit (252).
- 8.2.35 Wall 254 was built within construction cut 253. This wall survived to 0.55m in width and 0.84m in height, with of up to six courses of limestone blocks bonded with clay that included a small amount of lime (Figure 13). There was no evidence of repair or later phases of construction. Two sherds of pottery dating to the 17th – 18th centuries were recovered from within the wall.
- 8.2.36 The limited surviving remains of wall 254 do not obviously indicate a function. The wall, which post-dates the timber structure and is considered earlier the final phase of mill race walls, physically respected the limits of construction cut 248. Wall 254 was constructed within the packed clay deposit forming the structural support for the timber structure. Considering the wall respects the limits of construction cut 248 it is possible that this could represent the removal of a wood beam then backfilled with stone to provide a solid foundation for a later wall. The location of wall 254, directly north of the mill race and the outflow pond would

suggest that this wall may represent surviving remains of the western end of the southern wall of a watermill building, through which the watermills drive mechanism would connect to the waterwheel.

Late post-medieval

Final phase of mill race walls

- 8.2.37 The final phase of mill race walls comprised wall 184, which was clearly evident to the north of the mill race prior to the CIR works commencing, and heavily truncated wall 155 to the south of the mill race (Figures 4, 16, 17, 18 & 19). These walls formed a funnel with an opening to the west, channelling water to the water wheel (presumed to have been located under the existing PRoW) (Figure 4). Neither wall was seen to continue beyond the PRoW towards the outflow pond. Construction cuts 154 and 182, for walls 184 and 155 respectively, were vertical sided with flat bases; they truncated alluvial layers within the mill race (Figure 17, Section 8).
- 8.2.38 The mill race walls were constructed upon 0.75m-thick alluvial layer (235), which sealed deposit (238); this was identified by auger survey at the base of wall 184. Deposit (238) was permanently waterlogged, due to the high-water table on Site, with the lower levels of deposits (235) and (236) indicative of fluctuating water levels (Figures 4 & 17, Section 8). The upper levels of (235) possibly represent a truncated or reworked stabilisation layer which was incorporated into the alluvial sequence. This would be consistent with the construction of new mill race walls and a partial remodelling associated with that construction. A fragment of blast furnace slag was recovered from deposit (236). No other evidence of industrial activity was revealed on Site, suggesting that the slag has been brought in from the wider environs, potentially by the watercourse.
- 8.2.39 The northern mill race wall, 184, was visible in the landscape prior to the CIR work (Figure 3). This wall was aligned north-west/south-east, with the south-eastern limits of the wall masked by the PRoW baulk. The exposed wall was 11.1m long and 0.6m wide; it survived to a height of 1.1m (Figures 17 & 18). The wall was constructed with worked limestone blocks and was eleven courses high. It was bonded with a compact gritty mortar and had a well-presented southern face.
- 8.2.40 An additional two courses of stone, 185, had been added to the top of wall 184, surviving for a length of 9m (Figures 4 & 18). These additional courses were constructed of the same stone as the original wall, with a sand/ clay/ chalk mortar. They were narrower than the original wall, possibly as a result of truncation associated with the 1940's demolition and levelling. Two courses of brick (186) had subsequently been added to the top of 185. The somewhat less solid nature of additional courses 185 and 186 may suggest that they were not intended to increase the capacity of the mill race, but their actual function is unclear. It is possible that the brickwork relates to the southern wall of the southern building fronting onto the mill race, as identified on historic mapping, with stone course 185 representing a foundation layer for the brickwork.

- 8.2.41 The southern mill race wall, 155, was aligned north-east/south-west. It survived to 9.4m in length, 0.48m in width and 0.7m in height (Figures 4, 16 & 19). It survived to three courses in height and was constructed of worked limestone bonded with gritty mortar. Both the limestone and mortar are similar to those used in wall 184 suggesting that these walls are contemporary. The limestone used in the walls' construction was likely sourced from an outcrop of hard stone Cornbrash to the immediate south of Buckingham (Eyers 2002, 22), just 1-2 miles north-east of Chetwode between Padbury and Thornborough.
- 8.2.42 Wall 155 was largely sealed below redeposited topsoil, likely as a result of modern mechanical management of the mill race as a drainage ditch. Some of the stone may have been reutilised for structures associated with domestic activity after the watermill falling into disuse c.1825, with the northern mill race wall remaining intact as this formed a retaining wall.

Building

- 8.2.43 The partial remains of a rectangular building, visible on historic mapping and recorded in the DBA, were identified directly to the north-east of the proposed water wheel location (Figures 4, 20, 21, 22 & 23). Historic mapping and photos indicate the presence of a watermill building fronting the mill race, with outbuildings on the northern side extending up to the northern bypass channel (Figure 21). The buildings were demolished in the 1940's. Due to the heavy truncation of the remains recorded in the CIR the potential to phase the building is limited. For ease of reference, these buildings have been divided into three sections, as illustrated in Figure 21.

Southern building

- 8.2.44 Very little evidence of the southern structure survived (Figures 20, 21, 22 & 23). The southern structure represents the main former watermill building, which would likely have housed the watermills drive mechanism connecting to the waterwheel. The historic photographs illustrate the buildings use as a cottage with no evidence of any watermill mechanism in the southern wall.
- 8.2.45 North/south aligned wall 157 was partially revealed under the PRow baulks section, directly to the south-east of the central building (Figure 4 & 22). This wall measured 0.8m in width and was constructed from unworked limestone blocks. It survived to three courses in height. Based on its proximity and similar alignment to the central building remains, wall 157 is possibly part of the southern structure which fronts onto the mill race, as seen on historic mapping and photographs. The stone construction of wall 157 is slightly wider than the surviving walls in the central structure, which may indicate a larger structure. No brick was evident in the wall, unlike some sections of the central structure, which may suggest, based on the limited section available, some phasing.
- 8.2.46 The truncated remains of a brick wall, 246, were identified to the immediate north of mill race wall 184 (Figures 4, 16 & 23). The brick wall was 0.8m wide and 0.4m high surviving to two

courses in height. The brick structure was constructed on stone rubble layer 257, which formed a construction level for the brick. As with wall 186 (see above), it is possible that wall 246 represents the remains of the southern wall of the principal watermill building.

Central building

- 8.2.47 The surviving building remains in this area were rectangular in plan, with their long axis orientated north/south. This building measured 7.35m in length and 3.8m in width (Figures 22 & 23). The building was constructed within a flat based, shallow (0.25m deep) construction cut, 225, utilising both unworked stone and brick, bonded with mortar. It is possible that the two different materials represent two separate phases, or a remodelling of an existing building. The building forming two separate rooms and was likely constructed directly off the main structure to the south.
- 8.2.48 Walls 142 and 144 formed the western side of the building, wall 188 formed the northern side, wall 187 formed the eastern side. Also present was internal wall 226. No southern wall survived. The walls were primarily constructed of rough limestone blocks bonded with a silt sand mortar, with occasional brick inclusions in the eastern wall. They survived to between two and four courses in height. The walls were constructed directly on to the natural substrate with no foundation layer evident. The construction of the walls for the southern room appears more substantial, which might indicate that the northern room was a later addition.
- 8.2.49 The southern room, enclosing brick floor 141 constructed on sand base (209), measured 5.4m, by 3.3m (Figures 22 & 23). The bricks, measuring 0.23 x 0.11 x 0.06m, date to the 18th century onwards. The brick floor, which sealed two brick drains (237 and 203), infers a domestic function to the room, although no internal features survived to support this interpretation.
- 8.2.50 The northern room measured 3.3m x 3.15m in plan. Brick surface 161 was present in the south-western corner of the room. The room was divided into two by a series of four east/west aligned postholes (227, 230, 260 and 263). These postholes averaged 0.25m in width and 0.2m in depth and contained CBM post packing dating to the post-medieval period (Figure 23). Fill (198) from posthole 197 contained a small number of charred weed seeds and charcoal, representing dispersed waste material (environmental sample No 3).
- 8.2.51 The postholes were cut directly into the natural substrate and were sealed by stone layer (189). Artefactual material from layer (189) dates to the post-medieval period, including a 16th century copper thimble, indicating the rough stone surface is contemporary with the building.
- 8.2.52 Brick surface 161 measured 1.3m by 1.6m. It lay in the south-western corner of the room and may have been associated with a possible internal entrance from the southern room and an external entrance blocked by wall 143 (see below). It is not clear from the truncated remains if the brick surface formerly covered the entire room or if it was specific to this corner.

- 8.2.53 Wall 143, a surviving 1.15m length of brick in an otherwise stone-constructed wall, may represent an alteration to the main wall of the building, possibly the closing of an entrance/exit to the room.

Northern building

- 8.2.54 The remains of a heavily truncated east/west brick wall (267), surviving to 1.6m in length, projected eastwards from the north-eastern corner of the central building. This wall may be the only surviving remnants of a possible northern building, as indicated by the historic mapping and photographs (Figures 20 & 21).

External features associated with the buildings

- 8.2.55 A series of features were identified external to the buildings discussed above (Figures 4 & 23). Two probable drains (145 and 203) were located directly to the west of the central building. These drains were of brick and stone construction. Fill (146) associated with drain 145 contained a spoon fragment dating to c. 1750-1850 and a shard of post-medieval window glass.
- 8.2.56 Directly to the north, truncated stone wall 148 leads to brick drain 149 in the north-western corner of the building. The bricks used to construct the drains were of the same fabric and manufacture as those used in floor surface 141, suggesting the drains and the building are contemporary. Post-medieval CBM and a fragment of early post-medieval window glass were recovered from fill (150) of drain 149.
- 8.2.57 Stone surface (153), located directly to the west of the building, was 3.7m long by 1.4m wide. This rough stone surface could represent the truncated remains of a former working area at the rear the building, with the eastern side of the building fronting on to a trackway.
- 8.2.58 Posthole (158), located to the east of the building, measured 0.25m in width and 0.3m in depth. This posthole utilised post-medieval CBM to pack a former timber post indicated by the presence of a post pipe (159). A single fragment of modern CBM likely represents an inclusion following the removal of the post and the 1940s demolition. The posthole was unlikely to have been an isolated feature; however, no other associated features were revealed.
- 8.2.59 A large pit, 122/128/169, was located to the west of the building, respecting wall 164 and mill race wall 184 (Figures 4 & 24, Section 9). This pit measured 11.5m by 6.5m in plan. It had an irregular shape and profile, varying in depth between 0.3m and 0.95m. It is likely representative of multiple phases of gravel excavation over a period of time.
- 8.2.60 Fills 123, 170, 171 and 172 (Figures 4 & 24, Section 9), represent natural silting and refuse deposition within the quarry pit from which a large amount of post-medieval artefactual material was recovered. These finds included pottery, CBM, glass, clay pipe and metal objects. A copper alloy shoe buckle and a pewter buckle with a large integral shank date to the 18th

century and were recovered from fill 123 along with a lead weight, which is presumed to be of contemporary date. The glass recovered from the quarry pit fills comprised bottles of 18th century date, including a rare octagonal bottle produced from c.1730 onwards.

- 8.2.61 The Mesolithic mace head discussed above was recovered from fill 172 (the final fill of the large quarry pit), representing a residual item from a possibly truncated earlier feature.
- 8.2.62 Ditch 112 truncated the eastern edge of ditch 110 before returning to the east; with the eastern limits of ditch 112 truncated by modern pit 136. Ditch 112 measured 1.94m in width and survived to a depth of 0.13m (Figures 4 & 9, Section 2). Fill (113), largely formed by natural silting, contained three sherds of medieval sandy ware, likely disturbed from fill (111), and one fragment of post-medieval CBM. Given the very small assemblage of dateable material for this feature, the dating is of lower certainty. It is possible that the CBM is intrusive and ditch 112 is contemporary with ditch 110; however, given the distinct differences in the surviving size and orientation of the ditches, it is considered that they likely represent separate phases of activity.

Modern

- 8.2.63 Pit 130 was located towards the centre of quarry pit 122/128/169, truncating the backfilled material. A single iron nail was recovered from fill (131).
- 8.2.64 Brick structure 133 was located at the northern limits of the quarry pit (Figures 4 & 25). This structure measured 1.15m by 0.75m in plan and survived to a height of 0.3m. Structure 133 was backfilled with deposit (134), which contained modern artefactual material. The function of this structure is unclear; while similar to a manhole in shape, the feature did not truncate the natural and there were no inflowing drains.
- 8.2.65 Pit 136 was located to the north-west of brick structure 133. This pit was sub-circular in plan and measured 3.7m in diameter and 0.18m in depth. Fill 138 contained both post-medieval and modern artefactual material, including a copper plain dress button of possible military attribution.
- 8.2.66 The building was demolished, and the Site was levelled in the 1940s. Demolition layer (103) contained predominantly modern material, with some residual medieval and post-medieval artefacts. A sizable proportion (27) of the metal finds originate from (103), including a 20th century claw hammer head (Ra 4), two pieces of bracket with mineralised wood remains which probably originate from a plank edge (Ra 8), a probable land drill (Ra 6) of 19th-20th century date, several chain lengths from modern machinery (one with a swivel link), a small-sized spanner, an 20th century iron harness buckle, and an octagonal nut – again, likely from modern machinery. A 'U' shaped structural staple was recovered from (103), which although of possible medieval date (Goodall 2011, 162, 179), could also very easily be later.
- 8.2.67 Three 20th century copper alloy harness buckles (two retaining their iron pins and sheet metal rollers) were recovered from (103), hinting at the use of draft animals in agricultural activity on

Site. A lead weight of spherical form with a central perforation was also recovered from (103), although it is virtually impossible to date this more closely than the post medieval period (c. 1500-1800) or suggest a more specific function.

- 8.2.68 A total of 31 glass vessels, 26 of which were complete, were recovered from (103). These date to the late 19th century and the early 20th century.

Undated

- 8.2.69 Possible truncated posthole 118 was identified in the north-western limits of the CIR area. This posthole was circular in plan, measuring 0.44 in diameter and 0.13m in depth, with steep sides to a flat base (Figures 4 & 25, Section 11). Fill (119) contained stone indicative of packing material, but no artefactual dating material. No further postholes were revealed in the vicinity that could indicate a function for this posthole or increase the confidence in 118 being a genuine feature.
- 8.2.70 Pits 107 and 120 were located in the north-western part of the CIR area. These pits were on average 1.2m long by 0.75m wide and 0.2m in depth, with moderate sloping sides and concave bases. No dating material was recovered from either of their fills. Environmental sample No 2 from fill 121 contained a small amount of cereal grains and charcoal indicative of dispersed waste material.
- 8.2.71 Sub-circular pit 239 was revealed towards the southern edge of the excavation area, truncated by the mill race. This pit was 1m long, 0.9m wide and 0.25m deep, and featured a single undated fill (240).
- 8.2.72 Pit 243 was revealed to the east of pit 239, truncating ditch 241. Pit 243 was sub-oval in plan. It measured 0.85m by 0.5m in plan and survived to a depth of 0.05m. No artefactual material was recovered from its single fill (244).
- 8.2.73 All of the undated features are considered likely to relate to medieval, post-medieval or modern activity on Site. The lack of comparable dated features means they cannot be apportioned to a particular period with any degree of confidence.

8.3 The finds

Introduction

- 8.3.1 Artefactual material was recovered from 39 deposits: the fills of ditches, pits and postholes, and from structures, layers and the subsoil (Appendix 4). The material was recovered by hand and is recorded in accordance with the ClfA Finds Toolkit (ClfA 2021, Level 2).

Pottery

By Lorraine Mephram BA, FSA, MCIfA

Introduction

- 8.3.2 The pottery assemblage recovered amounts to 320 sherds, weighing 7,294g. The assemblage is predominantly of medieval date (214 sherds), with a smaller proportion of post-medieval/modern wares (106 sherds).

Condition

- 8.3.3 Condition is fair to good. The assemblage is fragmentary, but levels of surface and edge abrasion are relatively low. Several groups of conjoining sherds were noted, mainly, but not exclusively, on fresh breaks (none are cross-context joins). Mean sherd weight overall is 22.8g, but this is skewed by the presence of larger, thicker-walled sherds and two larger ceramic objects in the post-medieval/modern group. When broken down by period, mean sherd weight falls to 20.3g for medieval sherds and rises to 27.8g for post-medieval/modern sherds.

Methods of assessment

- 8.3.4 The level of recording accords with the 'basic record' advocated by national standards for the purposes of rapidly characterising an assemblage (Barclay *et al* 2016, section 2.4.5).
- 8.3.5 The assemblage has been quantified by ware type within each context. Medieval wares have been correlated with regional types where possible (e.g. Potterspury-type wares, Brill wares), primarily using the Oxfordshire type series (Mellor 1994) in the absence of a comprehensive type series for Buckinghamshire, and as the Site lies close to the Oxfordshire border. The majority of types, however, comprise unidentified sandy wares, and these have been classified broadly on the basis of texture and surface finish (e.g. glaze). Classification of post-medieval/modern wares follows the Museum of London type series, although with the proviso that the coarsewares (redwares, slipwares and black-glazed redwares) do not share the same sources as the London-based types. Estimated Vessel Equivalents (EVEs) have not been used here, as the number of measurable rims is relatively low; instead, the Estimated Number of Vessels (ENV) has been used, counting conjoining sherds, or sherds almost certainly from the same vessel, as one. The total ENV is 186. The quantification of fabrics is presented in Table 3.

Assemblage composition: Medieval

- 8.3.6 Two-thirds of the assemblage (214 sherds; 66.9% by sherd count) is medieval. Amongst this chronological group, Potterspury-type wares predominate (35.1% by sherd count but 54.7% by ENV), while the lower proportion of Brill/Boarstall wares (only 5.3% by ENV) is perhaps surprising, as the two sources are roughly equidistant from the Site, both less than 20km away.
- 8.3.7 Brill wares include one jar in the medieval ware variant (OXAW), although the quartz sandy content is relatively fine and it is on the borderline with the finer late medieval ware (OXAM)

(Mellor 1994, 111, 117). The whole profile of the jar survived in ditch 192 (fill 193); the vessel is partly glazed on the interior and is externally sooted. Of the four late medieval Brill sherds, two definitely come from jugs (neatly slashed strap handle from ditch 192; rounded jug base from pit 204). The other two sherds, both glazed, are probably also from jugs.

- 8.3.8 Other sandy wares have been grouped together here, although they vary slightly in terms of texture (medium- to fine-grained) and colouring. Some could be described as 'greywares' and, as such, could fall within the regional medieval greyware and late medieval reduced ware traditions (Blackmore and Pearce 2010; Slowikowski 2011). A flared bowl with squared rim from quarry pit 169 (fill 172), for example, finds parallels amongst the assemblage from the mid-13th-century kiln site at Denham in Buckinghamshire (Blackmore and Pearce 2010, fig. 62, 568–572), but there are also similarities with the products of the 14th–15th-century kiln at Great Brickhill (Beamish 1989, fig. 2, 1–8). A flared bowl with thickened rim from pit 204 is a less common form and is more unusual in the fact that the vessel has a post-firing perforation below the rim. The presence of curvilinear tooling inside the rim is reminiscent of the Potterspury-type wares and this could be another fabric variant (see Blinkhorn 2010, 301 for some of the variations), but there are some similar bowls from Milton Keynes in 'Medieval Grey Sandy Ware' (Mynard 1994, fig. 65, 27, 30, 34). There are also two jar rims, one from a partial vessel in context 191.

Assemblage composition: Post-Medieval/Modern

- 8.3.9 The remaining 106 sherds are post-medieval/modern, with a potential date range from 16th to 19th/20th century. The majority of these (67 sherds, 63.2% of the chronological group) comprise coarsewares (redwares). These supplied the utilitarian component of the domestic assemblage, primarily bowls and dishes (some flanged) but also including jugs, a cylindrical mug and a tripod pipkin. Roughly one-quarter of the redwares are slip-decorated with simple trailed slip designs, enhanced in some cases with green mottling in the glaze; these appear to be confined to open forms (bowls and dishes). There are also two sherds from internally white-slipped vessels (again almost certainly bowls or dishes), also with green glaze mottling. Seven sherds are black-glazed (by the addition of iron or manganese to the lead glaze).
- 8.3.10 The redwares almost certainly represent the products of more than one source, including Brill, and possibly several other potteries in south Buckinghamshire (Farley and Hurman 2019, fig. 1). The fabrics are not particularly distinctive (although paler-firing examples are very similar to the late medieval Brill wares; see above). Two sherds firing off-white from layer 189 could be from the Surrey/Hampshire border industry, but the presence of small quantities of whitewares was noted amongst the 18th-century kiln products from Temple Street, Brill (*ibid.*, 56). Black glaze, in general a 17th–18th-century feature, was used on redwares by several of the Buckinghamshire potteries, including Brill, and a black-glazed mug which appears identical to the partial example found in quarry pit 169 (fill 171) was discovered *in situ* in a niche in one of the Temple Street kilns, having clearly been used by the potter while stoking the kiln (*ibid.*, 55). Decorative slip seems to have been in relatively uncommon use in Buckinghamshire,

perhaps because there are few sources in the county of white-firing clays that could have been used for this purpose (*ibid.*, 8). However, slip decoration is recorded from at least two of the 18th-century Brill kiln sites, including internal vertical lines (*ibid.*, 58), as seen on a flanged bowl from quarry pit 169 (fill 171), and marbled slip (*ibid.*, fig. 31), as seen on two body sherds from the same feature (fill 172). One flanged dish from fill 172 carries a cross-hatched design around the flange, for which no parallel has at this stage been found amongst the Brill products.

8.3.11 Other post-medieval/ modern wares appear in small quantities. There are two sherds of 17th-century Frechen stoneware, one with part of an applied medallion (layer 189, ditch 192); one sherd from a Staffordshire-type feathered slipware vessel, probably a cup of late 17th- or early 18th-century date (quarry 169); and one sherd from the rim (with a band of annular reeding) of an 18th-century cylindrical mug in Staffordshire-type mottled ware (layer 189). Five sherds of stoneware could also be Staffordshire products, including three sherds in dipped stoneware from at least one cylindrical mug with an iron-dipped rim (quarry pit 169); all these sherds are likely to be 18th century in date.

8.3.12 Later refined wares are confined to a few contexts. The largest group, from occupation layer 103 (creamware, pearlware, whiteware, yellow ware, porcelain and feldspathic-glazed stoneware), dates to the 19th century. Subsoil layer 101 produced a porcelain telegraph insulator, a whiteware doorknob and part of a whiteware swan figurine; this group is 19th-/20th-century in date. Other sherds of this date came from construction cut 132 (yellow ware slip-banded jug and refined redware teapot rim and spout) and pit 136 (feldspathic-glazed stoneware body sherd).

Distribution

8.3.13 The pottery was recovered from 27 contexts in quantities ranging from one to 48 sherds. Several of the larger context assemblages comprise or include conjoining medieval single-vessel (or likely single-vessel) sherd groups: a jar or bowl base from ditch 110, part of a jar from ditch 190, a jar profile from ditch 192 (fill 193) and a bowl profile from pit 204. While these suggest that these deposits have not been reworked to any great extent, there is evidence of some chronological mixing, for example in fill 193, which also contained a single sherd of Frechen stoneware.

8.3.14 Seven other contexts (ditch 112, pit 207, ditch 210, ditch 212, pit 241, ditch 270, and U/S) produced only medieval sherds (between one and three sherds each) but the small quantities of this material limit the confidence that can be placed on the use of these sherds as primary dating evidence.

8.3.15 Fifteen contexts produced post-medieval/modern pottery, of which the largest groups were from demolition layer 103 (24 sherds, 19th-/20th-century) and quarry pit 169, fill 172 (35 sherds, probably early 18th-century). Other contexts yielded negligible quantities.

Conclusions

- 8.3.16 The assemblage described here shows a marked contrast with that recovered from a previous phase of work at the nearby Manthorn Farm site (Gutierrez *forthcoming*). There is no sign here of the St Neots-type early medieval wares, or any of the other calcareous wares (shelly, oolitic, etc) that were commonly represented in the previous assemblage. The restricted range of sandy wares, alongside Potterspury-type and undecorated Brill wares, suggests a correspondingly restricted date range, perhaps focusing on the 14th century but with the possibility also of some 13th- and 15th-century material. The relatively good preservation of the pottery and the recovery of several reconstructable profiles suggests that this material represents primary waste disposal rather than reworked deposits.

Ceramic building material

By Dr Phil Mills BSc, MSc, MCIfA

- 8.3.17 A total of 35 fragments (13,072g) of ceramic building material (CBM) were presented for assessment. This material comprised 31 fragments 30,519g) collected as bulk finds from stratified contexts, and four bricks (10,021g), collected as samples. The full catalogue is shown in Table 4. The material was examined by context, with material grouped by fabric type and identified forms where possible. A fabric series already used for sites in Buckinghamshire was utilised. Unidentifiable fragments were classed as 'B/T' (Brick /tile). Metrics recorded were number of fragments (No), weight in grams (Wt), and no of corners (CNR). Complete dimensions were recorded in mm. Mean sherd weight (MSW) was calculated by Wt/No.
- 8.3.18 Table 5 shows the breakdown of the stratified CBM by context type. The majority of the material comes from layers, followed by post holes and pits, which is in line with material from a brick structure. CBM fragments can often be incorporated into cess pits in this period. The MSW is relatively high, although the small number of corners is typical of a largely reused group.
- 8.3.19 Additionally, four fragments of CBM, weighing 78g, were found amongst the pottery assemblage. All are from medieval roofing tiles, recovered from pits 172, 205 and 206, and detailed in Table 6.
- 8.3.20 The following fabrics and forms were noted:
- 8.3.21 **TZ12**, a light red fabric with common coarse sand inclusions and occasional clay pellets. The majority of the identified forms in this fabric are bricks, including the complete examples collected as samples. The dimensions are in the range 215mm-220mm x 105mm-110mm x 60mm-70mm, with wiped surfaces and regular sharp arises, which suggest that these are of 17th -19th century date. There is a fragment of a possible moulded brick, perhaps of 19th century or later date. There is also a fragment of floor tile with glossy green glaze patches surviving on the upper surface, probably of a similar date range.

- 8.3.22 **TZ13**, a hard red fabric with a sandy feel and irregular fracture. It has inclusions of common quartz at 0.4mm-0.6mm, with occasional coarse flint and black iron stone. This was noted on a possible black glaze wall tile, although the uneven surface suggests this may have been the base of an open form in black glaze ware, of 17th century or later date.
- 8.3.23 **TZ14.1**, a pale reddish yellow fabric with a clack core. It has inclusions of abundant coarse sand. This occurs as a single plain ridge tile, and the fabric would suggest a 14th or 15th century date.
- 8.3.24 **TZ61**, a yellow fired clay with brown salt glaze surfaces. This occurred as water pipe only and is likely of late 18th century or later date.

Result

- 8.3.25 The earliest fragment of CBM is the ridge tile in early fabric TZ14.1, which is possibly of 14th to 15th century date. The presence of only one tile in this fabric suggests that it is unlikely to derive from a nearby structure but is more likely to be from rural scatter. The majority of the material is 17th century or later, as suggested by the fabric and brick dimensions, and is probably of 18th -19th century date and associated with a brick structure.

Clay pipe

By Lorraine Mephram BA, FSA, MCIfA

- 8.3.26 Fourteen fragments of clay pipe were recovered from five contexts. Twelve of these fragments are plain stem fragments which, from their diameter, represent pipes from the 17th century onwards. One undatable bowl fragment was found in layer 189, and the only datable bowl came from quarry pit 169 (fill 171). This bowl, which dates c 1700–1740 (Jones 1985, type 17), has a short pedestal foot with the maker's initials W/F in relief on the sides. The maker is unknown.

Flint

By Pete Banks LLB, LLM, PCIfA

- 8.3.27 One flint flake (4g) made in grey brown flint was recovered from deposit 205. This flake has suffered light damage to the bulb of percussion and exhibits a large distal fracture. Due to the absence of diagnostic features, it is not possible to provide further meaningful commentary on this flint.

Glass

By Lorraine Mephram BA, FSA, MCIfA

- 8.3.28 The recovered glass assemblage amounts to 207 fragments, weighing 12,019g. It includes both vessel and window glass, all of it post-medieval/modern, with a chronological focus in the 19th to 20th century.

Vessel glass

- 8.3.29 Vessel glass comprises 151 fragments representing a maximum of 54 vessels, all containers (bottles or jars). Twenty-six of these vessels (all from context 103) are complete (although some are now fragmentary).
- 8.3.30 The earliest vessel glass consists of 25 fragments from free-blown or mold-blown green bottles which were predominantly used as wine containers. The most diagnostic of these came from quarry 169, fill 172 (which produced 19 of the 25 fragments), and these include part of a mold-blown octagonal bottle (there is one joining fragment from fill 171 in the same feature), the base of a second, free-blown bottle, probably of 'mallet' form, and a rim/neck from a bottle of similar form. Octagonal bottles are relatively uncommon; they appeared c 1730 when the introduction of more complex molds made possible the production of unusual bottle forms. The octagonal bottle, as well as being used for wine, was also used as a pharmaceutical container, and was produced until c 1790 (Dumbrell 1983, 87–90); lacking the more chronologically distinctive rim, this example cannot be dated more closely. 'Mallet' wine bottles date c.1725 – 1760; the rim/neck seen here dates towards the beginning of that date range, c.1725–1735 (*ibid*, 80). Other undiagnostic fragments of 17th/18th-century green bottle glass came from occupation layer 103, pit 136 and pit 207.
- 8.3.31 The remainder of the vessel glass is all of later date. It comprises machine-made bottles and jars. The majority of these were recovered from occupation layer 103, which produced 120 fragments representing a maximum of 31 vessels, 26 of them complete. While some of the bottles in the group could date to the late 19th century, more precise dating on others suggests that the whole group can be dated somewhere in the first half of the 20th century, and this is supported by the almost complete absence of stoneware bottles from the context (see above). Glass bottles had superseded stoneware containers by the end of the first decade of the 20th century (Service 2015, 32).
- 8.3.32 A breakdown of the vessel glass by form and function is given in Table 7. Fourteen are definitely (based on markings) or probably (based on form and/or colouring) beverage containers, and amongst these the (contents') manufacturers' marks (all from context 103) show a range of local and regional suppliers, from Oxford (Hall's), Banbury (Carter's), Brackley (Hopcraft & Norris), Aylesbury (North & Randall) and Hythe, Kent (Mackeson). Apart from Carter's, which supplied colourless bottles probably containing carbonated soft drinks, these were suppliers of beer. Most of the bottles have internal screw closures (and four vulcanite screw stoppers were found in the same context). A colourless square bottle (cork closure) could have contained spirits.
- 8.3.33 Twelve bottles and jars contained (or probably contained) other foodstuffs; all these were from layer 103. Only one carries a manufacturer's mark – a Shippams meat or fish paste jar (the company used glass jars from 1906). Four are jam jars (2lb size), while six square bottles (all with screw cap closures, two still *in situ*) are of a type often used for sauces and other

condiments. One other jar, of larger size, may also have been for foodstuffs; this has the mark C S & Co on the base, but the manufacturer has not been identified.

- 8.3.34 One bottle contained furniture cream, as indicated by the manufacturer's mark (Stephenson Brothers), while two bottles were for pharmaceutical use, including one bearing the mark of Califig, a product of the California Fig Syrup Co. The latter can be dated after c 1917; the basal mark of the United Glass Bottle (UGB) company was used from then until the 1960s (Lockhart and Schriever 2018, 11). The other probable pharmaceutical vessel is a tiny rectangular bottle probably used for scent. These three bottles all came from layer 103.

Window glass

- 8.3.35 There are 56 fragments of window glass, recovered from four contexts (fills of construction cuts 151 and 152, two fills of quarry 169). All but one are fragments in pale greenish glass and are typical of the slightly irregular window glass used in the early post-medieval period (from the 16th to the 18th centuries). A corner from a diamond-shaped glass fragment was noted in quarry pit 169 (fill 172), and there are a few edges which appear to have been finely grozed (clipped to shape).
- 8.3.36 There is one fragment from the corner of a piece of plate glass, with chamfered edges, from fill 172.

Industrial waste

By Pete Banks LLB, LLM, PCIfA

- 8.3.37 One fragment (125g) of blast furnace slag was recovered from layer 236.

Metalwork

By Alex Bliss BA, ACIfA

- 8.3.38 A total of 143 items of metalwork was recovered from the Site during evaluation, weighing a total of 5,756g. Of these, 127 are of iron, eight are of lead or lead alloys, six are copper alloy and two are copper alloy/iron composites. A basic quantitative summary of the attributes of these objects, including their individual weights and broad identifications, is presented in Table 8.
- 8.3.39 Of the iron objects, over 70% (92) were carpentry nails of various shapes and sizes and preserved to varying degrees. These objects are largely undiagnostic and can be dated only broadly from the Roman to the post medieval periods due to their unchanging form over the centuries. They were recovered from the following contexts: subsoil 101 (20, encompassing Ras 5 and 7), demolition/occupation layer 103 (38), fill 131 of pit 130 (1), fill 134 of construction cut 132 (1), fill 146 of construction cut 151 (1), fill 138 of pit 136 (2), fill 150 of construction cut 152 (4), fills 171 (1) and 172 (7) of cut 169, layer 189 (5), fill 206 of pit 204 (2), fill 252 of pit 248 (1) and fill 255 of pit 248 (1).

- 8.3.40 The remainder of the iron objects make up a highly varied group, most of which are modern, unidentifiable and/or undiagnostic. As such, they do not warrant detailed, individual discussion. However, a sizable proportion (27) of these modern finds originate from occupation layer/demolition deposit 103 – including a 20th century claw hammer head (Ra 4), two pieces of bracket with mineralised wood remains which probably originate from a plank edge (Ra 8), a probable land drill (Ra 6) of 19th-20th century date, several chain lengths from modern machinery (one with a swivel link), a small-sized spanner, a 20th-century iron harness buckle and an octagonal nut – again, likely from modern machinery.
- 8.3.41 The non-ferrous metalwork is equally undiagnostic and/or of generally quite modern origin. Three 20th century copper alloy harness buckles (two retaining their iron pins and sheet metal rollers) were recovered from occupation/demolition layer 103, hinting at the use of draft animals in agricultural activity on Site. A lead weight of spherical form with a central perforation was also recovered from layer 103, though this is virtually impossible to date this more closely than the post-medieval period (c. 1500-1800) or to suggest a more specific function.
- 8.3.42 Three copper alloy artefacts, all of 18th-19th century date, were recovered from fill 138 of pit 136. These consist of a domed lid (?) with internal projections on its inner face, a plain dress button with an integrally cast shank, and a very solid hinge or clasp element – possibly of military attribution. This last is triangular in plan with two drilled lugs extending from its back edge; the upper face of the clasp displays the engraved numbers '609'. The significance of this is not fully evident at the present time.
- 8.3.43 The bowl and handle of a post-medieval teaspoon or salt spoon was recovered from fill 146 of construction cut 151. This artefact is plain, without any identifying marks, and likely dates c. 1750-1850.
- 8.3.44 Layer 189 produced the two final non-ferrous artefacts. The first is a totally undiagnostic piece of rectangular sectioned lead strip, possibly representing something structural. The second (Ra 10) is a copper alloy thimble of probable 16th century date, with hand-stamped courses of oval pits arranged in a right-hand spiral running up its walls.
- 8.3.45 This assemblage of metalwork is of quite limited value in both dating and understanding the function of the Site, with the recovery of large quantities of modern ironwork indicating the heavy contamination of some layers. However, it is possible to say that the more diagnostic elements of the assemblage hint at agricultural and domestic activity from at least the post medieval period onwards, with Ra 10 inferring that this probably began at some point in the 16th century.

Mortar

By Richenda Goffin BA (Hons), PGDip, MCIfA

- 8.3.46 Two samples of mortar were recovered from the CIR area (Table 9).

- 8.3.47 Sample No 7 from wall 163 weighs 875g. It is made up of several discrete lumps and small pieces, as well as powdery remains. There is some variability in the appearance of the fragments examined. Some pieces were made of gingery soft fine sandy mortar with sparse small chalk and organic inclusions < 2mm in diameter. On one occasion, this was attached to an angular piece of hard stone (ragstone?). Other fragments appear to be more poorly mixed. The mortar is creamier in colour and more lime-rich, but it contains sparse angular pebbles up to 3mm in length. One fragment has a surviving organic inclusion which looks like a small piece of twig, and circular voids are visible where further organic material is likely to have been. One discrete lump of apparent conglomerate was present, consisting of a dense matrix of angular pebbles varying in length between 10mm and 35mm. It was encased in a gingery mortar as above.
- 8.3.48 Sample No 8 from wall 184 weighs 791g. It consists of several mortar lumps and powder but is more homogenous than sample No 7. The mortar is made up of hard angular lumps of the same type of fabric. A typical piece is an overall buff colour with a dense matrix consisting of fine, medium and larger quartz inclusions (up to 2mm). In addition, there are moderate inclusions of softer, more rounded, pale chalk up to 2mm and sparse angular dark pebble fragments up to 5mm in length. Sparse organic material was also detected.

Worked stone

By Dr Kevin Hayward FSA, PCIfA

- 8.3.49 Five individual items of stone, representative of the structures on Site, were recorded.

Geological setting

- 8.3.50 The Site lies in an area of north Buckinghamshire where the underlying geology consists of Anglian till cover, beneath which lies a Middle -Upper Jurassic Oxford Clay bedrock (BGS 2022). The mudstone cover which characterises much of the bedrock of central to northern Buckinghamshire (Eyers 2002, 7), forming an area of flat land called the Vale of Aylesbury (Historic England 2018,7), is made of clays too soft to be worked into walling stone, rubble, quern, hone, or more fine ornamental stone. This means that any hard stone (except for much older igneous, metamorphic, or sedimentary erratic deposits from the underlying glacial till) needs to be brought in from some distance.
- 8.3.51 Fortunately, this part of Aylesbury is sandwiched between younger, harder units of rock to the south (MidVale Ridge) (Historic England 2018, 9) and older units to the north (the Yardley to Whittlewood Ridge) (Historic England 2018, 7), both of which contain rock hard enough for walling construction. The younger deposits from the Lower Cretaceous (Wealden Beds; Lower Greensand) contain durable sandstones (Whitchurch sandstone; Bowel stone; Brickhill Ironstone) suitable for hard facing blocks and rubblestone. Here there are also small outcrops of Upper Jurassic Portland stone, a local development of the famous limestone that was used in many of the best quality buildings in Georgian and Victorian London. In central Buckinghamshire, however, the materials are harder, more heterogeneous limestones,

cream, buff or pale orange in colour with abundant small gastropods and bivalves in addition to (often large) ammonites (Historic England 2018).

- 8.3.52 Closer at hand are the harder stone materials from the Yardley to Whittlewood Ridge to the north. These include the very durable pale grey to buff hard sparry fossiliferous Middle Jurassic limestones, termed ragstones from the Cornbrash and the Forest marble. These have been worked locally in villages e.g., Ravenstone (Historic England 2018, 21). These, and other materials suitable for carving (freestones), are found at outcrop today at Thornborough Ridge (NGR SP731 332) and Coombs Quarry (NGR SP 733 327) (Eyers 2002, 18-21). Freestones, such as Blisworth limestone, are so called due to their open, even-grained, porous texture that enables the rock to be worked or carved in any direction (Stanier 2000).

Methodology

- 8.3.53 The stone fabric of each item was examined in good light at x10 magnification using a hand lens (Gowlland x10). The worked stone/samples were then compared with the specialist's own reference collection of worked freestone, roofing and outcrop samples (Coombe et al 2022). Local geological guides (Eyers 2002) and the *Historic England Rock Atlas for Buckinghamshire* (Historic England 2018) provided the necessary geological background.

Petrology and form overview

- 8.3.54 Hand specimen analysis was successful in identifying three rock types. Their character, source, quantity, function and suggested original period of use are summarised in Table 10.
- 8.3.55 The assemblage is dominated by use of local, very hard, shelly Cornbrash or possibly Forest Marble slabs, dating to the Middle Jurassic and sourced from the Yardley to Whitewood Ridge exposed today e.g., Coombs Quarry (NGR SP 733 327) (Eyers 2002, Figure 13). These slabs are used as flagstone rubble or as lacing courses in both the surviving northern (184) and southern (155) mill race walls. The use of the same gritty brown mortar in both the northern and southern mill race walls indicates that these builds are contemporaneous. The style of looser gritty mortar (rather than hard pebble concretionary *opus caementatum* of Roman date) may indicate that they are medieval or post medieval in date. The characteristic bivalve fauna in all of these blocks provide the necessary petrological match with these limestones.
- 8.3.56 The use of very hard durable limestones such as these makes some economic and practical sense. In a region where the underlying geology consists of soft Oxford Clay, the use of the nearest available outcrop of hard stone Cornbrash – which outcrops to the immediate south of Buckingham (Eyers 2002, 22), just 1-2 miles north of Chetwode – would enable a considerable saving in manpower and transport costs, as well as time.
- 8.3.57 The only other item of interest is a roofing tile made from a crinoidal limestone, dominated by pentacrinites (five star) sea lilies. This type of crinoid is most commonly found in the White Lias (Lower Jurassic) of southern England. The nearest available outcrop of White Lias is the Whitby Mudstone located towards the very north of Buckinghamshire, between Little Linford,

Stony Stratford and Pindon End, c.10km north-east of Chetwode. The tile, a small hexagonal form with a large round nail hole, is comparable with forms from Roman Cirencester (Hayward 2022) and, given that it is found in earlier medieval layers from this Site (from primary fill 205 of medieval pit 204), then it is possible that it relates to the probable Romano-British farmstead recorded to the north-west of the Site.

Summary

- 8.3.58 The use of hard, durable, fairly local Cornbrash stone as mill race walls at Chetwode Mill, in an area where the underlying geology is too soft for walling, makes economic and practical sense. Also of intrinsic interest is the identification of some Lias roofing tile, quarried at least 10km away in north Buckinghamshire or possibly Northamptonshire, from first fill 205 of medieval pit 204. The squat hexagonal form of this tile is comparable to examples elsewhere in Roman Britain and may provide an additional body of material evidence for the presence of a stone-roofed late Romano-British farmstead in the area (stone roofing is a later Roman phenomena; Boon 1974).

By Pete Banks PCIfA LLB, LLM, PCIfA

- 8.3.59 A quartzite pebble macehead (469g) was recovered from pit 169. This macehead is roughly oval/egg-shaped in plan (approximately 105mm x 74mm x 40mm), with a central hour-glass perforation (approximately 35mm-20mm diameter). Both ends of the macehead exhibit light impact damage, suggestive of its use as a percussive tool. There are also signs of minor wear at the narrow point of the central perforation, perhaps suggesting that the object was hafted. Similar pebble maceheads are known throughout Britain, including at Eton Rowing Lake, Berkshire (Roe 2013, 87), and Oakhanger, Hants (Rankine *et.al.* 1960, 252). They are likely to date to the Mesolithic period.

8.4 Biological remains

Animal bone

By Andy Clarke BA (Hons), MA, ACIfA

- 8.4.1 A small assemblage of animal bone, amounting to 93 fragments (16246g) was recovered from 24 pit and ditch fill deposits via hand excavation and the processing of bulk soil samples. Artefactual material dating from the medieval, post-medieval and modern periods was also recovered from these features (Table 12, Appendix C). The bone displayed a moderate level of preservation and was highly fragmented, a combination of factors that have rendered 60% of the assemblage unidentifiable. However, it was possible to identify the remains of cattle (*Bos taurus*), sheep/goat (*Ovis aries*/*Capra hircus*), pig (*Sus scrofa sp.*), horse (*Equus caballus*) and domestic fowl (*Gallus gallus*). Where damage was present and re-fitting was possible, the fragments were counted as a single bone.

- 8.4.2 Nine fragments (289g) were recovered from seven deposits (fills of ditch and pit features) associated with the milling activity in the eastern and northern parts of the Site. Cattle and horse were both identified, but with only five and one fragment recovered respectively, there is little information to be gained other than a species identification. However, a chop mark present on a partial cattle radius from ditch fill 213 suggests a possible origin in butchery waste.
- 8.4.3 A total of 45 fragments (847g) were recovered from seven deposits, with cattle and sheep/goat represented by 11 and nine fragments respectively. Despite the limited quantities, each species was identified from skeletal elements both rich and poor in meat yield, many of which display damage indicative of primary butchery. The presence of pig was confirmed from the recovery of a single molar tooth.
- 8.4.4 Ten fragments (245g) were recovered from 6 deposits. Cattle, sheep/goat, and domestic fowl were each identified from both meat-rich and meat-poor bones displaying damage indicative of both carcass dismemberment and kitchen waste. Pig and horse were also identified, each from two loose teeth. The level of preservation and fragmentation of this material is identical to that seen in the medieval assemblage and, as such, it is more than likely to have originated from the same activity.
- 8.4.5 The remaining 29 fragments (243.6g) were recovered from four deposits that remain undated. Cattle was identified from a partial femur and a cervical vertebra recovered from the fills of ditch 115. The latter of these two bones displayed small, repeated cut marks suggestive of carcass dismemberment. Domestic fowl was identified from a single distal phalanx from pit fill 121.

8.5 Paleoenvironmental remains

Environmental remains

By Emma Aitken BSc (Hons), MSC, ACIfA

- 8.5.1 Six environmental samples (90 litres of soil) were processed from a range of feature types (Table 13). This was done to evaluate the preservation of palaeoenvironmental remains in the area and with the intention of recovering environmental evidence of industrial or domestic activity on the Site, possibly relating to the watermill itself. The plant remains were recorded using an abundance scale (rare: + = 1-10 items, occasional: ++ = 11-50 items, moderate: +++ = 51-100 items, and abundant: ++++ = >100 items) and are discussed in diversity of species using a similar scale (low = 1-3 species, medium = 4-7 species, and high = >7 species).
- 8.5.2 The samples were processed following standard flotation procedures (CA 2012), using a 250µm sieve for the recovery of the flot and a 1mm sieve for the collection of the residue. Preliminary identifications of the plant remains in these samples were carried out using a stereo-binocular microscope. The plant identifications follow the nomenclature of Stace (1997) for wild plants and Zohary *et al* (2012) for cereals. The presence of mollusc shells has

also been recorded, following nomenclature according to Anderson (2005) and habitat preferences according to Kerney (1999) and Davies (2008).

- 8.5.3 The flots varied in size from small to large, with low to high numbers of rooty material and uncharred seeds. Due to the poor to moderate preservation levels, it was difficult to identify many of the charred cereal grains to species, but this was achieved where possible. Much of the charcoal was comminuted, with some fragments encrusted in silt residue.
- 8.5.4 The results are discussed in chronological order, with samples Nos 4, 5 and 6 dating to the medieval period, sample No 3 dating to the post-medieval period, and samples Nos 1 and 2 relating to undated deposits.
- 8.5.5 Fill 191 (sample No 4) of ditch 190 contained a moderately small number of cereal grains, including those of free-threshing wheat and rye (*Secale cereale*). A large number of charred weed seeds were noted, including seeds of oat (*Avena* sp.), brome grass (*Bromus* sp.), oat/brome grass (*Avena/Bromus* sp.), celtic bean/pea (*Vicia faba/Pisum* sp.), and vetch/wild pea (*Vicia/Lathyrus* sp.). Charcoal was also noted in a moderately small abundance. The charred remains are likely to be representative of a dump of food production waste material.
- 8.5.6 Fill 193 (sample No 5) of ditch 192 contained small numbers of indeterminate cereal grains and charred weed seeds. The weed seeds included those of oat/brome grass and oat. A minimal amount of charcoal was observed within the assemblage, as were a few snail shells. These shells included those of the open country species *Helicella itala* and the aquatic species *Valvata* sp. and *Bithynia tentaculata*, which are species that favour moving water. The charred remains are likely to be representative of wind-blown/dispersed waste material. The molluscan assemblage indicates that there was likely to be flowing water in the ditch at times.
- 8.5.7 Sample No 6 from pit 204 contained a small number of free-threshing wheat (*Triticum turgidum/aestivum* type) and barley (*Hordeum vulgare*) grains. A large volume of charred seeds was recovered, predominantly those of oats, including some that are still in their husks. Some of these oats are likely to be those of the cultivated variety (*Avena sativa*). As well as the oat seeds, a small number of curled dock (*Rumex crispus*), clover/medick (*Trifolium/Medicago* sp.), knotgrass (*Polygonum aviculare*), and buttercup (*Ranunculus acris/repens*) seeds were noted. A few remains of legumes preliminary identified as celtic bean/pea were observed in the assemblage. Charcoal was recorded in a small quantity. The environmental assemblage recovered from fill 205 of pit 204 is likely to be indicative of a dump of food preparation waste material.
- 8.5.8 Sample No 3 from posthole 197 contained a small number of charred weed seeds, including those of sheep's-sorrel (*Rumex acetosella*), red bartsia (*Odontites vernus*) and oat/brome grass alongside a small amount of charcoal. This assemblage is likely to be indicative of wind-blown/dispersed waste material.

8.5.9 Sample No 1 of ditch 104 contained a very small number of oat seeds and charcoal. Molluscs were noted in occasional abundancies and include the open country species *Helicella itala* and *Vallonia* sp., the intermediate species *Cepaea* sp., and *Cochlicopa* sp., and the shade-loving species *Carychium tridentatum*, as well as the aquatic species *Bathyomphalus contortus*, *Valvata* sp., *Anisus leucostoma*, *Pisidium* sp., and *Bithynia tentaculata* and its operculum. Some of these shells indicate seasonal flooding and dessication, whilst others prefer areas of moving water. The terrestrial snail assemblage is indicative of a well-established open environment, with possibly some longer grass near the ditch.

8.5.10 Sample 2 of pit 120 contained a small amount of cereal grains, including those of barley and wheat (*Triticum* sp.). A moderately small amount of charcoal was noted. This assemblage is likely to be indicative of wind-blown/dispersed waste material.

Summary

8.5.11 The environmental remains recovered from samples No 4 (medieval ditch 190) and No 6 (late medieval pit 204) are likely to be indicative of a dump of food preparation waste material. The range of cereals and possible food source species is compatible with assemblages of medieval/late medieval date in this part of Britain (Greig 1991). The oats may have been processed on Site for use in porridge or pottage, or as fodder.

8.5.12 The remaining four samples are all indicative of wind-blown/dispersed waste material and do not provide any insight into the possible use or functions of their respective features, nor do they aid in the dating of undated ditch 104 and undated pit 120. Pit 120 is located on the outer edge of the main areas of activity, which could be why there is little environmental material present.

8.5.13 The molluscan remains recovered from ditch 192 and ditch 104 indicate a well-established landscape that had areas of still/slow-moving water and areas that were subjected to seasonal flooding and desiccation.

Marine shell

8.5.14 A total of seven shell fragments, representing a minimum number of six individuals, was collected by hand excavation from four contexts. All shells have been tabulated by species and context and the results are summarised in Table 14 below. The species and habitat information follow that of Barrett (1958) and Younge (1960).

8.5.15 All of the shells recovered were those of oyster (*Ostrea edulis*), a species found commonly on rocky shores and in estuaries. The quantity of marine shells retrieved from the Site suggests that they did not represent a major food source on this Site at any time, but rather occasionally augmented the local diet during the medieval and post-medieval periods.

8.5.16 The assemblage is too small to make any comments on the likely source of the shells and the nature of the oyster beds.

8.6 Geoarchaeological remains

Geoarchaeological assessment

By Agata Kowalska BA, MSC, PCIfa

Introduction

- 8.6.1 Monolith sample No 9 was recovered from an alluvial sequence encountered on the Site under post-medieval mill race wall 184. Augering was conducted in the same location at the base of the slot to assess the depth of the alluvium. The recorded alluvial layers were infilling the mill race ditch.
- 8.6.2 The monolith was cleaned and fully recorded with the intention of describing and interpreting the sediments in order to characterise the depositional processes and provide recommendations for potential future work.

Geological background

- 8.6.3 The BGS (2022) maps the geological bedrock as Peterborough Member, consisting of brownish-grey, organic-rich mudstones; often with shelly beds including *Gryphaea* shells. This member is a lower part of Oxford Clay Formation and formed in the Middle Jurassic Period.
- 8.6.4 The Quaternary superficial deposit is mapped as being sand and gravel of a River Terrace Deposit. This deposit formed in the Pleistocene, under cold climatic conditions in a landscape dominated by a braided river system.
- 8.6.5 The change of climatic conditions at the end of the Pleistocene and beginning of the Holocene brought a stabilisation of the land surface and an end to channel gravel aggregation. Low energy deposited silts and clays aggraded across floodplains in the area. The BGS maps an alluvial deposit in the south part of the Site and along Padbury Brook.
- 8.6.6 The Padbury Brook and its small tributary channels bound the Site from the south. The brook is itself a small tributary of the River Great Ouse.

Methodology

- 8.6.7 Monolith sample No 9 was retained in a steel tin measuring 100 x 100 x 250mm and was then wrapped and labelled following standard sampling procedures. The monolith was unwrapped, and the deposits were cleaned, photographed and recorded. The lithostratigraphy of the samples was described according to standard geological criteria provided by English Heritage (2015); Jones *et al.* (1999), Munsell Color (2018) and Tucker (2011).
- 8.6.8 A Dutch auger was used to characterise, test the depth and sample of the alluvial sequence below the monolith tin. The total depth of the auger intervention from the lower limit of excavation was c. 0.72m.

- 8.6.9 The lithological description of the monolith sample is presented in Table 15. In the text, the units/contexts are described in stratigraphic order with the earliest unit first.

Results

- 8.6.10 The lowermost deposit (238) recorded in the sampled sequence consisted of a firm, dark blueish grey clay separated by a clear contact from the overlying Unit 3, deposit (235). Unit 3 consisted of a firm, (7.5YR 5/4) brown silt/clay with (7.5YR 6/1) grey mottling. The fine-grained texture of deposit (238) and Unit 3, is a product of low-energy natural depositional process, possibly related to flooding. The oxidised nature of the Unit 3 is an effect of post-depositional processes and is indicative of fluctuation in the level of the water table.
- 8.6.11 A sharp contact boundary separated Unit 3 from Unit 2, deposit (235) that was a firm (5YR 5/1) grey silt/clay with common reddish-brown mottling. As with the unit below, the deposition of this deposit is a result of the carrying and settling of the fine particles by flooding. The greyish hue may imply a relatively higher presence of organic matter in this unit and potential stabilisation.
- 8.6.12 A sharp contact boundary separated Unit 2 from Unit 1, deposit (236). Unit 1 consisted of a firm (7.5YR 6/4) light brown silt/clay with grey mottling. Common fine channels and root fragments were recorded throughout.

Discussion

- 8.6.13 The recorded sequence filled the mill race ditch associated with the watermill. The sequence consisted of silt and clays that likely were deposited by alluvial processes associated with flooding of the nearby Padbury Brook. Alternatively, the mill race ditch supplying the watermill with water may have silted up naturally, with sediments carried by flowing water within the mill race possibly combined with flooding at the Site.
- 8.6.14 The high-water table at the Site lead to the permanent waterlogging of deposit (238), whereas the oxidized nature of Units 3, 2 and 1 are effect of fluctuation in water levels (vadose zone).
- 8.6.15 A potential hiatus in sediment deposition can be noted in the sequence and may be represented by Unit 2. Although Unit 2 is well defined in the monolith sample, it is not clear in Table 15. It is possible that Unit 2 represents a truncated or reworked stabilisation layer that was then incorporated within the alluvial sequence by erosional processes. The presence of coarse inclusions indicates the erosion of the gravel terrace deposit recorded by BGS maps in the northern part of the Site.
- 8.6.16 The uppermost Unit 1 is truncated and mixed with layers and structures associated with the mill race walls associated with the watermill.

9 Assessment and Interpretation of Results

- 9.1.1 The general aim of the CIR was to identify the character, extent, quality, preservation and significance of any surviving archaeological remains present within Area C25147 in order to inform an archaeological resource assessment of its knowledge value and ability to contribute to specific objectives set out in the GWSI: HERDS. The specific HERDS objectives, as set out in Section 6, are discussed below in Section 12.
- 9.1.2 The results of the CIR indicate the potential for prehistoric activity on Site prior to the medieval, post-medieval and modern activity associated with the watermill. The residual mace head recovered from post-medieval quarry pit 169 is considered to be of Mesolithic date, based on comparisons with similar mace heads found throughout Britain. The mace head was likely hafted. It has only light impact damage to the ends, perhaps suggesting a ceremonial function, befitting the time spent to create the central hole.
- 9.1.3 The truncated remains of a possible prehistoric ring ditch 115 were recorded in this area of the Site, and it is possible that the Mesolithic mace head was disturbed from a former deposit internal to this ring ditch. No dating material was recovered from the ring ditch, despite additional excavation for finds retrieval beyond the surveyed slots. This feature does not obviously relate to the watermill activity, with the other ditches in this area of the Site being associated with later activity. Only animal bone was recovered from the ring ditch fill, in contrast to the medieval and post-medieval features which generally contained a mix of finds relating to domestic refuse deposition.
- 9.1.4 Ring ditches identified by aerial photography, possibly representing Bronze Age round barrows, are present near Godington, c. 1.km south-west of the Site, with two further ring ditches c. 3.6km north-west of the Site, nearer to Bronze Age cremation burials encountered at Finmere Quarry.
- 9.1.5 The Domesday book (compiled 1086) records a watermill at Chetwode as part of an earlier Anglo-Saxon estate built to support the late 8th/ early 9th century establishment of a burh at Buckingham (Document No: 1EW03-FUS-EV-REP-CS06_CL10-007824). However, no early medieval finds were recovered during the CIR works; such finds would be expected to be present on Site if a watermill had been located here during this period. Despite the intensive use of the Site from the medieval period onwards, it is unlikely that all artefacts associated with an earlier watermill would have been removed from Site. However, the ceramic assemblage from the excavation at Chetwode Manthorn Farm, on the southern limits of Chetwode, c. 1km to the north-west of the Site, clearly indicates that there was early medieval activity in the area of the Site in the 9th – 11th centuries (Document No:1EW03-FUS-EV-REP-CS06_CL21-000009).

- 9.1.6 The majority of the ceramic assemblage dates to the medieval period, between the 13th – 15th centuries, with a particular focus on the 14th century. The documentary evidence records a watermill as being part of the Chetwode estate in 1224, which, combined with the pottery, indicates a potential early 13th century date for the start of watermill activity on Site.
- 9.1.7 The earliest features on Site considered to be related to watermill activity are ditches 190 and 192. These intercutting ditches are considered broadly contemporary, dating to the 13th – 14th centuries. Both ditches appear to lead to the mill race from a northern terminus which appears to respect a boundary or marker of which no evidence survives. The domestic refuse deposits within pit 204 and ditch 272, located to the north-west, indicate domestic activity in the vicinity, although no further evidence of this was revealed within the Site.
- 9.1.8 There is no record of when the mill race was excavated. The straight nature of the mill race clearly shows that this was a manmade feature, rather than a natural watercourse. The resource and organisation required to undertake this construction would have been considerable, indicating oversight from either Chetwode Manor or Chetwode Priory (founded in 1245).
- 9.1.9 Three timber beams defined the potential north-western corner of a structure which was only partially exposed with the Site. The wooden beams were set in a substantial clay packing deposit which contained a single sherd of pottery dating to the post medieval period. The timber beams, which could not be exposed any further due to the adjacent farm track/ PRow still being in use, have the potential to be further investigated in further works undertaken by the Main Works Contractor to further establish the function of this possible structure and confirm construction date. The timber beams are situated in the area where the mill's waterwheel would likely have been located, based on the surviving post-medieval structures, which appear to continue to utilise the same area of the Site. Any timber structure would likely pre-date the stone structures revealed on Site.
- 9.1.10 Potentially contemporary with the clay packed timber beams was clay deposit (194), which backfilled ditch 192. No other features on Site are filled with a largely sterile clean clay. This clay deposit contained medieval pottery consistent with the fill below (193), and pottery of 16th-17th century date. It covered an earlier, already partially backfilled ditch, presumably in order to create a solid, stable and level platform for a structure, of which there are no surviving remains. The timber beams and clay packing likely represent further development of the Site; however, the limited surviving remains from this period present an incomplete picture of the activity taking place.
- 9.1.11 Wall 163 represents the first phase of stone construction recorded on Site. The construction cut for wall 163 truncates clay deposit (194). It replicates the alignments of the earlier features, indicating a continuation of activity and function in this area. Wall 163 is considered to act as a retaining wall, due to the nature of its construction and the change in levels on either side.

- 9.1.12 Wall 254 likely represents the foundation courses for a wall, possibly forming the southern side of a watermill building through which the drive mechanism would be connected to the waterwheel. The foundation is cut into the clay packing associated with the timber structure, utilising the structural support qualities of the clay. The foundation may relate to the removal of a wooden beam to create a solid foundation for a later stone structure, or may simply be the foundation for a later stone wall. However, the limited surviving remains from this area of the Site, due to the PRow constraint, present an incomplete picture of the activity taking place.
- 9.1.13 The documentary evidence for this period details the location of the watermill and the wills of those living there. Two millers from Chetwode were arrested during the Oxfordshire Rising of 1596, which was associated with the general crop failures of this period. The tenant of the watermill is recorded as having fallen in debt to the landlord at the end of the 1590s. The 1638 Chetwode Manor estate plan indicates the layout of the watermill buildings leat, mill race, bypass channel, outflow pond and trail race. This is consistent with that recorded on the 1888 OS map and identifies two windmills which would have reduced the reliance on the watermill. Both the mill race and the bypass channel are detailed on the 1638 map. By 1742 the bypass channel was still marked, although it was clearly not in use. It is possible that the disuse of the bypass channel relates to a new construction phase at the Site, with a continued focus of activity around the mill race, a variation in the working head of water, or a reduction of output from the watermill.
- 9.1.14 The final phase of watermill structures was constructed in the late post-medieval period and is still extant on Site. The walls are of solid construction, similar to wall 163, with the stone possibly coming from a quarry only 1-2 miles north of Chetwode. No earlier phase of mill race walls survived on Site to indicate if this constitutes a reuse/remodel of an existing alignment.
- 9.1.15 Mill races walls 184 and 155 were substantial structures designed to funnel water to the waterwheel, with wheel pit, probably located under the extant PRow/ farm track. The height of the walls and the wide funnel suggest the potential for a large volume of water to be flowing; however, the surviving ditch has a very gentle gradient, possibly as a result of modern management of the ditch following the watermill's disuse. Analysis of the clay deposits within the mill race indicates formation by flooding, which might indicate periodic water releases as opposed to a constant flow of water through the mill race. The mill race was surveyed as part of the DBA, which recording a gentle gradient along its surveyed length.
- 9.1.16 The surviving building remains were heavily truncated by the demolition in the 1940s. The remains of two rooms survive centrally to the building plot identified on historic mapping. No evidence survives of any buildings fronting the bypass channel at the northern end of the plot. Any structure fronting the mill race has similarly been heavily disturbed, with 157 possibly representing a stone wall and 186 and 246 possibly being brick walls.

- 9.1.17 Due to the heavy truncation, it is unclear if the remains of the two rooms represent one or multiple phases of activity. The walls are primarily constructed from stone, with CBM inclusions more prevalent in the northern room. The bricks used in the floor surface and CBM recovered from the postholes dividing the northern room date to the 18th century onwards.
- 9.1.18 No evidence of an earlier structure was revealed. The postholes dividing the northern room utilised post-medieval CBM for packing, strongly suggesting that they do not relate to an earlier phase.
- 9.1.19 By 1798, the documentary evidence indicates a very low output for the watermill, which had ceased to be active by 1825. The building was recorded as being in a deplorable condition in 1910, likely relating to a lack of investment. The artefactual assemblage recovered during the CIR reflects the continued activity on Site post the milling but does not offer any further information on the exact end of the milling activity or the abandonment of the building.

The watermill and landscape

- 9.1.20 No evidence of the waterwheel or metalwork associated with the mechanism was revealed on Site to inform how the watermill operated and indicate a potential level of output. The machinery may have been sold after the watermill ceased to function (by 1825), or it may have been removed from during 1940s demolition and levelling of the Site. Based on the surviving remains of the mill race and topography it is considered that the watermill was an undershot design. Undershot waterwheels are often located downstream where the flow of water is higher, but with a minimal working head of water (Historic England 2015). Initially, most waterwheels were constructed of wood and generally turned slowly, requiring a relatively slow flow of water. The gentle gradient of the mill race recorded in the DBA indicates a gentle flow of water. During the 18th and 19th centuries, technological developments and the use of metal for better bearings and gears allowed for increased efficiency.
- 9.1.21 The location of the watermill would have taken into consideration access to a suitable watercourse, topography, hydrology and proximity to the agricultural activity supplying the grain (Figure 2). Upstream of the watermill, an overflow leat was excavated from Padbury Brook. This leat was initially aligned north-east/ south-west before a gentle curve to an east/ west alignment, joining Padbury Brook to the east. It provided a new channel to manage the flow of water flowing towards the watermill and remove any debris that might damage the waterwheel. Enclosed within this area are the Square Meadow and Great Mill Meadow identified on the 1638 plan of the Chetwode Manor estate.
- 9.1.22 The course of Padbury Brook past the overflow leat is then straightened, with an 'S' bend, possibly an existing bend in the watercourse, leading into the mill race, bypass channel and site of the watermill. The mill race flows into an outflow pond and then the tail race before re-joining Padbury Brook. The curved nature of the bypass channel after the watermill, before the bypass channel joins with the tail race, suggests this indicates the original line of Padbury Brook, with the tail race entering Padbury Brook just upstream of the junction of Padbury

Brook and the overflow leat. The outflow pond, possibly used to control the flow of water into the trail race, may be a feature created once the bypass channel fell into disuse, sometime before 1742. There is no documentary evidence of when the ditches were excavated. Due to the limitations of the CIR and modern ditch management no dating material was recovered from the ditches to suggest any potential date.

- 9.1.23 A further leat was excavated entering Padbury Brook downstream of the overflow leat, at the point where Padbury Brook is straightened. The leat runs broadly parallel to Padbury Brook with the potential to access a large pond to the north, and pond to the south at its western recorded limit, north of Moat Farmhouse, Godington. This leat is not depicted on the Chetwode manor estate maps of 1638, 1742 or 1770, although the latter two maps lack sufficient detail to clearly indicate that the leat was not excavated at this point. This may indicate the leat had yet to be excavated, or that it had fallen into disuse. If the leat is not part of the primary construction phase, and is a later addition, it might represent additional water required for the watermill, resulting from a reduction in the flow of water from Padbury Brook.

10 Consideration of the Results in their Wider Context

- 10.1.1 A Mesolithic mace head was recovered from the fill of a post-medieval quarry pit. Mesolithic hunter-gather activity is believed to have focussed on resource-rich areas such as woodland and alongside watercourses, with recorded sites generally situated on dryer, rising ground. While the Site is located by Padbury Brook, the river terrace gravels, located to the west, hold the greatest potential for Mesolithic remains in this area, with any settlement appearing to favour higher ground overlooking watercourses (ES 3.5.2.13.5). There are no Mesolithic findspots recorded in the area on the Buckinghamshire HER; however, two worked flints were recovered c.1.5km to the north-west during trial trenching (Document No. 1EW03-FUS_COP-EV-REP-CS06_CL09-000008). These included a blade dating to the early Neolithic or Mesolithic, indicating some potential for activity in this period.
- 10.1.2 A curvilinear ditch in the western part of the Site was truncated by the post-medieval quarry pit, and it is possible that this ditch represents the truncated remains of a prehistoric ring ditch. It is possible that the Mesolithic mace head was disturbed from a truncated deposit internal to this putative ring ditch. Ring ditches identified by aerial photography, possibly representing Bronze Age round barrows, are present near Godington, c. 1.km south-west of the Site, with two further ring ditches c. 3.6km north-west of the Site, nearer to Bronze Age cremation burials encountered at Finmere Quarry.
- 10.1.3 During the medieval and post-medieval periods, the watermill was the sole activity on Site, although a small assemblage of finds indicative of agricultural activity in the environs of the Site was recovered. This agricultural activity was presumably associated with the villages of

Chetwode or Godington, to the north and south respectively, continuing the pattern of agricultural landscape use from the Roman period, with a Romano-British farmstead revealed to the immediate north-west of the Site (Document No. 1EW03-FUS-EV-REPCSo6_CL10-007813).

- 10.1.4 The results of the CIR are consistent with the written and cartographic records of the Site. The artefactual evidence does not suggest any early medieval activity on the Site, although this may have been truncated by later activity. Finds indicate occupation of the Site from the 13th century through to the 20th-century demolition of the buildings.

11 Scheme Impacts

- 11.1.1 The Site is required for the construction of Chetwode Embankment and associated assets, including drainage for the Godington Viaduct. These assets comprise the Bridleway CHW/24 Upgrade to a maintenance access road, and the installation of the Godington West Viaduct drainage, which will consist of an open drain. Works are being undertaken by the Main Works Contractor.

12 Statement of Archaeological Potential

- 12.1.1 The CIR set out to address a number of specific objectives defined in the *GWSI: HERDS*, in order to determine the requirement for and scope of any further appropriate investigation/mitigation measures. The specific objectives were partially achieved by the CIR. The individual objectives and the extent to which each was addressed are listed in Table 1 and summarised below.

Table 1 – Contribution to specific objectives

Specific Objective	Contribution
To confirm the presence/absence, extent and depth of any surviving archaeological remains within the Site, particularly those associated with the post-medieval Chetwode Mill and any evidence for a preceding medieval structure.	The CIR identified archaeological remains dating to the prehistoric, medieval, post-medieval and modern periods. No evidence of a medieval structure was revealed. A possible timber structure and later stone walls were revealed relating to the post-medieval watermill. Objective addressed.
To determine the nature, date, condition, state of preservation, complexity and significance of any archaeological remains.	The CIR revealed extensive truncation to the archaeology on Site. The CIR was able to reasonably determine the nature, date, condition, state of preservation, complexity and significance of any archaeological remains. Objective addressed.
To determine the likely range, quality and quantity of artefactual and environmental evidence present.	The artefactual material recovered dated to the prehistoric, medieval, post-medieval and modern periods sufficient to phase the activity on Site. The environmental evidence was limited. Objective addressed.
To record in plan and section any archaeological	The archaeological features revealed were

remains.	recorded. Objective addressed.
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- 12.1.2 The archaeological recording sought to contribute to the following *GWSI: HERDS* site-specific objectives. The extent to which these Herds objectives were addressed by the construction integrated recording is set out in Table 2 below.

Table 2 –Contribution to GWSI: HERDS Objectives

Specific Objective	Contribution
KC33: Investigate the development of water mills from the Anglo Saxon through to the modern period. How did the technology of milling change, and what implications did this have for farming practice?	The CIR did not reveal a watermill structure itself or any watermill mechanism, only a retaining wall of medieval date and post-medieval mill race walls. The structural and artefactual evidence does not allow for comment on the technology of milling or impact on farming practice. The water management features recorded correlate with those depicted on historic mapping, allowing some interpretation of the type, operation, and scale of the milling activity of the wider watermill landscape. A limited contribution can be made to this objective.
KC34: Undertake research and investigation into medieval manorial complexes. What was their origin, development, and impact on the landscape?	Chetwode Mill was located away from the main manor site. The CIR results support the known documentary evidence detailed in the DBA but offer little to enhance our understanding of the manor's development. The resource and organisation required to create the watermill landscape informs the landscape impact of the manor complex. A limited contribution can be made to this objective.
KC40: Identify patterns of change within Medieval rural settlement from the 11th to mid- 14th century	The results of the CIR indicate that medieval activity started in the 13th century. The location of the Site and limited artefactual material prior to this period does not allow for any contribution to the research aim. A limited contribution can be made to this objective.

- 12.1.3 The presumed location of the wheel pit and any structure supporting the mill's water wheel is located under the PRow, an area that was not accessible during the CIR works. Three wooden beams of likely 13th-14th century date may indicate the remains of a medieval structure under the PRow. However, any surviving remains will have been truncated by the insertion of a modern culvert and disturbed by post-medieval walls projecting into this area. The CIR recorded no structural or artefactual evidence to assess the technological change of milling over time, other than the observation that the earlier phases were of timber construction which was replaced by stone structures in the post-medieval period. The complete absence of fragments of waterwheel or any metalwork associated with the watermill mechanism would suggest that this was either sold at the end of the milling activity or removed during the 1940s

demolition and levelling of the Site. The structural and artefactual evidence does not allow for any understanding of how the watermill's development impacted on agricultural practice. Relatively few finds were recovered from the Site which indicated agricultural activity in the area. The results have limited potential to contribute to *GWSI: HERDS* objective KC33.

- 12.1.4 Chetwode Mill was located c.1.5k from the historic centre of the manor estate, the origin of which would likely have been influenced by the burh constructed at Buckingham in the late 8th or early 9th century. The watermill would likely have served the village of Chetwode until the construction of a windmill in the 17th century, suggesting further capacity was required at that time to serve the village and manor. The artefactual evidence recovered from the Site provides little information to assess the impact of the watermill of the landscape. The watermill clearly has an impact on the water meadows and surrounding landscape associated with the manor complex. The excavation of the leat, bypass channel, mill and tail race ditches required considerable resource and organisation along with the construction of a watermill building. The results have a limited potential to contribute to *GWSI: HERDS* objective KC34.
- 12.1.5 The Site is located on the periphery of medieval rural settlement. No evidence of settlement in this period has been identified directly adjacent to the Site, suggesting that the watermill activity was not affluent or successful enough to encourage settlement growth in close proximity to the watermill. The medieval artefactual assemblage recovered from Site dates to the 13th – 15th centuries, with a concentration of finds around the 14th century. Therefore, the artefactual evidence provides very little information to contribute to *GWSI: HERDS* objective KC40.

13 Evaluation of Methodology Used

- 13.1.1 The CIR strategy followed the standard iterative approach employed in British archaeology, initially using historical records and non-intrusive surveys, such as LiDAR and aerial photographic evidence, to enable specific features or areas of the Site with possible archaeological potential to be targeted. This evidence-led approach also drew on site-specific and local topographical and geological information and known areas of past human activity within the immediate vicinity.
- 13.1.2 The archaeology revealed during the CIR works corresponded well with the historical background of the Site set out in the DBA, identifying milling activity dating to the medieval and post-medieval periods. No evidence for the watermill recorded in the Domesday Book was revealed on Site. If an early medieval watermill had been located on the Site it is unlikely that there would be no surviving evidence, even allowing for the intensive usage and truncation of the Site.
- 13.1.3 Overall, the CIR strategy was very successful in providing a reliable indication of the presence of archaeological remains on Site. The archaeological works undertaken were akin to a full mitigation excavation, with assistance from the Main Works Contractor in supplying plant to

remove recorded archaeological deposits exposing further archaeological remains. The existing farm track/ PRow prevented full excavation of the timber beams and wall 254 in particular which afforded only a limited interpretation of these features.

14 Publication and Dissemination Proposals

- 14.1.1 The archaeological evidence from the CIR at Chetwode Mill revealed a concentrated area of archaeological remains and associated artefacts. Excavated remains comprise a potential prehistoric ring ditch, medieval and post-medieval features associated with the watermill, and modern activity. It is anticipated that this report, combined with further works on Site, monitored by The Mian Works Contractor, will have the potential to contribute towards any publications which arise from the HS2 works. The results of the CIR will be made publicly available via the Buckinghamshire County Historic Environment Record (<https://heritageportal.buckinghamshire.gov.uk/>). A copy of this report will also be deposited with the OASIS digital report archive.

15 Archive Deposition

- 15.1.1 The archive, comprising drawn, written and digital records, will be held at COPA's offices until final deposition in a Museum Association accredited store, in accordance with the Employer's archive deposition strategy.
- 15.1.2 All retained finds and environmental remains will be treated and conserved in accordance with Historic England's *A Strategy for the Care and Investigation of Finds* (Historic England 1995) and the UKIC's *Guidelines for the Preparation of Excavation Archives for Long term Storage* (UKIC 1990). Should no further work be required, an ordered, indexed and internally consistent Site archive will be prepared and deposited in accordance with *Archaeological Archives: A Guide to best Practice in Creation, Compilation, Transfer and Curation* (Archaeological Archives Forum 2007). A summary of information from the project has been entered onto the OASIS database of archaeological projects in Britain (Appendix 3).

16 Acknowledgements

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AWHi - Location Specific Written Scheme of Investigation for Construction Integrated Recording at Chetwode Mill, Buckinghamshire	1EW03-FUS_COP-EV-REP-CS06_CL10-000004
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18 References

18.1 Glossary of Terms

18.1.1 The following terms have been used in this report:

- **Contractor** – Fusion; the organisation undertaking the Enabling Works for Area Central on behalf of the Employer.
- **Detailed Desk Based Assessment (DDBA)** – analytical document that builds on the information gathered previously in the Environmental Statement to address particular issues, questions or uncertainties within a given area. It may be developed to provide a more detailed understanding of the resource in an area to inform design development or construction programming.
- **Employer** – HS2 Ltd, the organisation responsible for delivery of HS2 Phase One Scheme and all terms and conditions, policies, procedures, and payments
- **Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy (GWSI: HERDS)** – the framework for delivering all historic environment investigations undertaken as part of the HS2 Phase 1 programme.
- **Location** – a specific HS2 worksite or group of worksites that are being addressed as a combined historic environment investigation programme of assessment, evaluation and investigation.
- **Location Specific Written Scheme of Investigation (LSWSI)** - specification document assembling one or more Project Plans within an area of land defined primarily for construction programme purposes. The LSWSIs will be agreed with the Project Manager and would provide a costed and programmed approach to delivering outcomes.

- **Project Plan** – specification document for each specific package of activity (e.g. a survey, desk-based assessment, excavation, recoding project). The plans would respond to the Specific Objectives set out in the GWSI: HERDS and be delivered within an agreed budget.
- **Works** – the specific historic environment assessment, evaluation or investigation works at each location.

18.2 List of Acronyms

aOD	Above Ordnance Datum
ASZ	Archaeological Sub-zone
CBM	Ceramic Building Material
CFA	Community Forum Area
CIfA	Chartered Institute for Archaeologists
COPA	Cotswold Oxford Pre-Construct Archaeology
DDBA	Detailed Desk-Based Assessment
ES	Environment Statement
FCCF	Fieldwork Change Control Form
GCR	Great Central Railway
GDBA	Geoarchaeological Desk-Based Assessment
GNSS	Global Navigation Satellite System
GPR	Ground Penetrating Radar
GWSI: HERDS	Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy
HER	Historic Environment Record
LiDAR	Light Detection and Ranging
LSWSI	Location Specific Written Scheme of Investigation
MIA	Middle Iron Age
NGR	National Grid Reference
ODN	Ordnance Datum Newlyn
PGM	Permanent Ground Marker
RTK	Real Time Kinematic

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Appendix 2: Context List

Site code	Area / #	Context #	Context type	Fill of	Interpretive Category	Description	Length (m)	Width (m)	Depth (m)
1C21CWMCI	1	100	layer		Topsoil	Loose dark greyish brown sandy silt			0.3
1C21CWMCI	1	101	layer		Subsoil	Mid yellowish orange sandy silt			0.3
1C21CWMCI	1	102	layer		Natural substrate	Mid yellowish orange sandy gravel and blue clays			
1C21CWMCI	1	103	layer		Demolition layer	Stone, brick and CBM within a dark greyish brown sandy clay			0.6
1C21CWMCI	1	104	cut		Ditch	Curvilinear in plan, moderate sloping sides to flat base	>1	1.4	0.24
1C21CWMCI	1	105	fill	104	1 st fill of ditch	Mid greyish brown silty clay		1.05	0.12
1C21CWMCI	1	106	fill	104	2 nd fill of ditch	Mid reddish brown silty clay		0.95	0.11
1C21CWMCI	1	107	cut		Pit	Oval in plan, moderate sloping sides to concave base	1.2	0.5	0.23
1C21CWMCI	1	108	fill	107	Single fill of pit	Mid greyish brown silty clay		0.5	0.23
1C21CWMCI	1	109				Voided			
1C21CWMCI	1	110	cut		Ditch terminus	NE/SW orientated, moderate sloping sides to concave base	>1	0.38	0.17
1C21CWMCI	1	111	fill	110	Single fill of ditch	Mid yellowish brown sand and gravel		0.38	0.17
1C21CWMCI	1	112	cut		Ditch	NE/SW orientated, moderate sloping sides to flat base	>1	1.94	0.13
1C21CWMCI	1	113	fill	112	Single fill of ditch	Mid grey sand and gravel		1.94	0.13
1C21CWMCI	1	114				Voided			
1C21CWMCI	1	115	cut		Ditch	Curvilinear in plan, steep sides to flat base	>1	1.22	0.33
1C21CWMCI	1	116	fill	115	1 st fill of ditch	Mid bluish grey silty clay		1.22	0.33

1C21CWMCI	1	117	fill	115	2nd fill of ditch	Mid greyish brown silty clay		1.22	0.23
1C21CWMCI	1	118	cut		Posthole	Circular in plan, steep sides to concave base	0.45	0.44	0.13
1C21CWMCI	1	119	fill	118	Single fill of posthole	Mid greyish brown silty clay	0.45	0.44	0.13
1C21CWMCI	1	120	cut		Pit	Sub-circular in plan, moderate sloping sides to concave base	0.85	0.36	0.2
1C21CWMCI	1	121	fill	120	Single fill of pit	Dark greyish brown silty clay	0.85	0.36	0.2
1C21CWMCI	1	122	cut		Pit	Irregular shape in plan, moderate sloping side to flat base	>2	>1	0.19
1C21CWMCI	1	123	fill	122	Single fill of pit	Mid greyish brown sandy clay	>2	>1	0.19
1C21CWMCI	1	124				Voided			
1C21CWMCI	1	125	cut		Ditch	Curvilinear in plan, steep sides to concave base	>1	1.22	0.19
1C21CWMCI	1	126	fill	125	1t fill of ditch	Mid bluish grey silty clay		1.22	0.19
1C21CWMCI	1	127	fill	125	2nd fill of ditch	Mid greyish brown silty clay		1.22	0.1
1C21CWMCI	1	128	cut		Pit	Irregular in plan, moderate sloping sides to flat base		>0.85	0.19
1C21CWMCI	1	129	fill	128	Single fill of pit	Mid greyish brown silty clay		>0.85	0.19
1C21CWMCI	1	130	cut		Quarry Pit	Sub-circular in plan, moderate sloping sides to concave base	1.2	1.1	0.2
1C21CWMCI	1	131	fill	130	Single fill of pit	Dark greyish brown silty clay	1.2	1.1	0.2
1C21CWMCI	1	132	cut		Construction cut	Rectangular in plan, vertical sides to flat base	1.15	0.78	0.18
1C21CWMCI	1	133	structure		Brick structure	E/W orientated, rectangular shape in plan	1.15	0.78	0.3
1C21CWMCI	1	134	fill	133	Fill of structure	Mid greyish brown silty sand	1.15	0.78	0.08
1C21CWMCI	1	135				Voided			

1C21CWMCI	1	136	cut		Pit	Sub-circular in plan, moderate sloping sides to flat base	4.1	3.5	0.18
1C21CWMCI	1	137	fill	136	1st fill of pit	Mid brown sandy silt with frequent stone	1.9	3.5	0.1
1C21CWMCI	1	138	fill	136	2nd fill of pit	Dark greyish black silty clay	4.1	3.5	0.18
1C21CWMCI	1	139	structure		Concrete structure	N/S orientated, rectangular in plan	1.8	0.5	0.55
1C21CWMCI	1	140	structure		Concrete structure	N/S orientated, rectangular in plan	1.85	0.45	0.55
1C21CWMCI	1	141	structure		Brick floor surface	Rectangular shape in plan	3.9	3.2	0.12
1C21CWMCI	1	142	structure		Wall	N/S orientated, stone built	2.8	0.34	0.16
1C21CWMCI	1	143	structure		Wall	N/S orientated, stone built	1.15	0.11	0.12
1C21CWMCI	1	144	structure		Wall	N/S orientated, stone built	2.4	0.3	0.12
1C21CWMCI	1	145	structure		Drain	N/S orientated, stones and bricks	2.5	0.34	0.18
1C21CWMCI	1	146	fill	145	Fill of drain	Mid brownish grey silty sand	2.5	0.34	0.18
1C21CWMCI	1	147	layer		Gravel surface	Gravel and small stoned within a mid brownish grey sand	>4	>2	0.1
1C21CWMCI	1	148	structure		Wall	N/S orientated, stone built	1.2	0.2	0.1
1C21CWMCI	1	149	structure		Brick structure	N/S orientated, rectangular shape in plan	0.54	0.42	0.3
1C21CWMCI	1	150	fill	149	Fill of brick structure	Mid greyish brown silty sand	0.36	0.23	0.3
1C21CWMCI	1	151	cut		Construction cut	N/S orientated, rectangular shape in plan, vertical sides	2.5	0.34	0.18
1C21CWMCI	1	152	cut		Construction cut	N/S orientated, rectangular shape in plan, vertical sides	0.54	0.42	0.3
1C21CWMCI	1	153	layer		Gravel surface	Mid brownish grey silty sand	3.4	1.55	0.12
1C21CWMCI	1	154	cut		Construction cut	NE/SW orientated, steep sides to flat base	9.4	0.48	0.24

1C21CWMCI	1	155	structure		Wall	NE/SW orientated, limestone built	9.4	0.48	0.24
1C21CWMCI	1	156	cut		Construction cut	N/S orientated, not visible	>1.03	0.81	0.23
1C21CWMCI	1	157	structure		Wall	N/S orientated, stone built	>1.03	0.81	0.23
1C21CWMCI	1	158	cut		Posthole	Circular in plan vertical sides to concave base	0.24	0.23	0.3
1C21CWMCI	1	159	fill	158	Packing of posthole	Dark brown silty clay with fragments of brick	0.24	0.23	0.3
1C21CWMCI	1	160	fill	158	Postpipe	Dark brown wood staining	0.17	0.09	0.3
1C21CWMCI	1	161	structure		Brick floor surface	Rectangular shape in plan	1.3	1.6	0.12
1C21CWMCI	1	162	fill	164	Fill of construction cut	Dark bluish grey silty sand with frequent stone	7.5m	0.98	0.66
1C21CWMCI	1	163	structure		Wall	NW/SE orientated, slightly curving in plan, 9 courses of worked stone with lime mortar	5.2	0.56	0.52
1C21CWMCI	1	164	cut		Construction cut	NW/SE orientated, steep sides to concave base	7.55	0.98	0.66
1C21CWMCI	1	165	fill	164	Fill of construction cut	Dark bluish grey silty sand with frequent stone	7.55	0.98	0.66
1C21CWMCI	1	166	cut		Ditch	Heavily truncated, concave base	>0.5	1.3	>0.65
1C21CWMCI	1	167	fill	166	Fill of ditch	Mid brown clay		1.3	>0.65
1C21CWMCI	1	168	fill	166	Fill of ditch	Mid brown clay		1.3	>0.65
1C21CWMCI	1	169	cut		Pit	Irregular in plan, uneven sides and base	>4.65	>1	0.98
1C21CWMCI	1	170	fill	169	1st fill of pit	Dark greyish orange silty clay		2.02	0.32
1C21CWMCI	1	171	fill	169	2nd fill of pit	Mid grey silty clay		3.35	0.4
1C21CWMCI	1	172	fill	169	3rd fill of pit	Mid brown silty clay		>4.58	0.38

1C21CWMCI	1	173	cut		Ditch	Visible in section, heavily truncated, concave base		0.6	0.18
1C21CWMCI	1	174	fill	173	Fill of ditch	Mid greyish brown silty sand		0.6	0.18
1C21CWMCI	1	175	cut		Ditch	Visible in section, heavily truncated, concave base		0.57	0.66
1C21CWMCI	1	176	fill	175	Fill of ditch	Light brownish yellow clay		0.57	0.66
1C21CWMCI	1	177	cut		Construction cut	NW/SE orientated, steep sides to concave base		0.8	0.7
1C21CWMCI	1	178	fill	177	Fill of construction cut	Dark brown silty clay		0.36	0.7
1C21CWMCI	1	179	fill	177	Fill of construction cut	Dark brown silty clay		0.22	0.5
1C21CWMCI	1	180	cut		Ditch	Visible in section, heavily truncated, concave base		>0.18	0.58
1C21CWMCI	1	181	fill	180	Fill of ditch	Light brownish yellow clay		>0.18	0.58
1C21CWMCI	1	182	cut		Construction cut	NW/SE orientated, vertical sides to flat base	>1.45	0.49	0.83
1C21CWMCI	1	183	fill	182	Fill of construction cut	Dark greyish brown silty clay		0.14	0.81
1C21CWMCI	1	184	structure		Wall	NW/SE orientated, built in worked limestone blocks with lime mortar	10.8	0.6	0.9
1C21CWMCI	1	185	structure		Wall	NW/SE orientated, stone built	9.04	0.4	0.2
1C21CWMCI	1	186	structure		Wall	NW/SE orientated, brick built	1.52	0.23	0.12
1C21CWMCI	1	187	structure		Wall	N/S orientated, stone and brick built	7.2	0.42	0.35
1C21CWMCI	1	188	structure		Wall	E/W orientated, stone and brick built	3.75	0.25	0.23
1C21CWMCI	1	189	layer		Stone layer	Stones within a dark brownish grey silty clay	>4	3.1	0.14
1C21CWMCI	1	190	cut		Ditch	NW/SE orientated, moderate sloping sides and concave base	>1	>1.13	0.52

1C21CWMCI	1	191	fill	190	Single fill if ditch	Mid brownish grey silty clay		>1.13	0.52
1C21CWMCI	1	192	cut		Ditch	NW/SE orientated, steep sides and concave base	>1	1.6	0.8
1C21CWMCI	1	193	Fill	192	1st fill of ditch	Mid yellowish brown sandy silt		0.82	0.12
1C21CWMCI	1	194	fill	192	2nd fill of ditch	Compact light yellow clay		1.18	0.68
1C21CWMCI	1	195	cut		Posthole	Sub/circular in plan, moderate sloping sides to concave base		0.13	0.08
1C21CWMCI	1	196	fill	195	Single fill of posthole	Mid brownish grey silty clay	0.28	0.13	0.08
1C21CWMCI	1	197	cut		Posthole	Sub/circular in plan, moderate sloping sides to concave base	0.3	0.27	0.1
1C21CWMCI	1	198	fill	197	Single fill of posthole	Mid brownish grey silty clay	0.3	0.27	0.1
1C21CWMCI	1	199	cut		Pit	Circular in plan, gentle concave sides and base. Natural hollow	0.14	0.14	0.07
1C21CWMCI	1	200	fill	199	Fill of pit	Mid grey brown silty clay	0.14	0.14	0.07
1C21CWMCI	1	201	cut		Construction cut	N/S and E/E orientated, steep sides and flat base	>5	0.22	0.15
1C21CWMCI	1	202	fill	203	Fill of drain	Dark bluish grey silty clay	>5	0.22	0.15
1C21CWMCI	1	203	structure		Brick drain	N/S and E/W orientated, brick built	>5	0.22	0.15
1C21CWMCI	1	204	cut		Pit	Sub-oval in plan, moderate sloping sides to concave base	>1.16	>1.12	0.38
1C21CWMCI	1	205	fill	204	1st fill of pit	Dark bluish grey silty clay	>1.16	>1.12	0.08
1C21CWMCI	1	206	fill	204	2nd fill of pit	Mid grey silty clay	>1.16	>1.12	0.3
1C21CWMCI	1	207	cut		Pit	Sub-oval in plan, steep sides, uneven base	0.36	>0.2	0.22
1C21CWMCI	1	208	fill	207	Single fill of pit	Mid grey silty clay	0.36	>0.2	0.22

1C21CWMCI	1	209	layer		Bedding for brick surface	Light yellow fine sand	>5	>5	0.07
1C21CWMCI	1	210	cut		Ditch terminus	NW/SE orientated, steep sides to flat base	>0.8	0.46	0.32
1C21CWMCI	1	211	fill	210	single fill of ditch	Dark grey silty sand	>0.8	0.46	0.32
1C21CWMCI	1	212	cut		Ditch terminus	NW/SE orientated, steep sides to flat base	>0.4	>0.29	0.44
1C21CWMCI	1	213	fill	212	single fill of ditch	Mid yellowish grey clay	>0.4	>0.29	0.44
1C21CWMCI	1	214	cut		Construction cut	NW/SE orientated, steep sides and concave base	>0.8	0.7	0.34
1C21CWMCI	1	215	fill	214	Fill of construction cut	Mid brownish grey sandy silt and gravel	>0.8	0.7	0.34
1C21CWMCI	1	216	cut		Pit	Irregular in plan, moderate sloping side, uneven base	>0.54	>0.5	0.18
1C21CWMCI	1	217	fill	216	1st fill of pit	Dark bluish grey silty clay		>0.44	0.07
1C21CWMCI	1	218	fill	216	2nd fill of pit	Mid brownish grey sandy silt		>0.22	0.1
1C21CWMCI	1	219	fill	216	3rd fill of pit	Mid brownish grey silty clay		>0.45	0.12
1C21CWMCI	1	220	cut		Construction cut	NW/SE orientated, steep sides and concave base	>1.3	0.78	0.11
1C21CWMCI	1	221	fill	220	Fill of construction cut	Mid brownish grey silty clay		0.78	0.11
1C21CWMCI	1	222	cut		Modern pit	Sub-circular in plan, moderate sloping sides and flat base.		0.7	0.47
1C21CWMCI	1	223	fill	222	Fill of modern pit	Dark greyish brown sandy silt with stone inclusions		0.7	0.47
1C21CWMCI	1	224	fill	216	4th fill of pit	Light brownish grey sandy silt	>0.95	>1.4	0.47
1C21CWMCI	1	225	cut		Construction cut	N/S orientated, rectangular in plan, flat base	7.7	4.15	0.25
1C21CWMCI	1	226	structure		Wall	E/W orientated, stone built	3.15	0.7	0.24
1C21CWMCI	1	227	cut		Posthole	Circular in plan, steep sides and concave base	0.33	0.22	0.24

1C21CWMCI	1	228	fill	227	Postpipe	Dark brown timber		0.08	0.22
1C21CWMCI	1	229	fill	227	Packing of posthole	Dark grey silty clay	0.33	0.3	0.24
1C21CWMCI	1	230	cut		Posthole	Circular in plan, steep sides and concave base	0.32	0.25	0.2
1C21CWMCI	1	231	fill	230	Postpipe	Dark brown timber		0.13	0.2
1C21CWMCI	1	232	fill	230	Packing of posthole	Dark grey silty clay	0.32	0.3	0.2
1C21CWMCI	1	233	cut		Posthole	Circular in plan, steep sides and concave base		0.36	0.08
1C21CWMCI	1	234	fill	233	Single fill of posthole	Mid brownish grey silty clay		0.36	0.08
1C21CWMCI	1	235	layer		Alluvium	Compact mid orangey grey clay		>0.4	0.21
1C21CWMCI	1	236	layer		Alluvium	Firm mid orangey grey clay		>0.4	>0.36
1C21CWMCI	1	237	structure		Drain	E/W orientated, brick built	4	0.28	0.17
1C21CWMCI	1	238	layer		Alluvium	Firm dark bluish grey clay			>0.2
1C21CWMCI	1	239	cut		Pit	Sub-circular in plan, moderate sloping sides to concave base	1	0.9	0.26
1C21CWMCI	1	240	fill	239	Single fill of pit	Mid brownish grey silty clay	1	0.9	0.26
1C21CWMCI	1	241	cut		Ditch terminus	NE/SW orientated, moderate sloping sides to concave base	>1	0.85	0.36
1C21CWMCI	1	242	fill	241	Single fill of ditch	Mid grey silty clay		0.85	0.36
1C21CWMCI	1	243	cut		Pit	Sub-oval in plan, steep sides to concave base	0.85	0.4	0.1
1C21CWMCI	1	244	fill	243	Single fill of pit	Light bluish grey silty clay	0.85	0.4	0.1
1C21CWMCI	1	245	cut		Construction cut	Rectangular shape in plan, vertical sides, flat base	254	1.35	0.2
1C21CWMCI	1	246	structure		Brick structure	E/W orientated, heavily truncated	0.6	0.5	0.16

1C21CWMCI	1	247	layer		Demolition layer	Stone and brick within a light yellow sandy clay	2.5	0.6	0.2
1C21CWMCI	1	248	cut		Construction cut	N/S orientated, steep sides to flat base	>2.1	>1.25	0.43
1C21CWMCI	1	249	timber		Timber beam	E/W orientated, partially exposed	>0.2	0.2	0.2
1C21CWMCI	1	250	timber		Timber beam	N/S orientated, rectangular	>1.7	0.18	0.11
1C21CWMCI	1	251	timber		Timber beam	N/S orientated, rectangular	1.85	0.33	0.22
1C21CWMCI	1	252	fill	248	Packing of construction cut	Firm mid yellowish brown clay		0.8	0.44
1C21CWMCI	1	253	Cut		Construction cut	E/W orientated, moderate sloping sides and flat base	>1.4	0.6	0.82
1C21CWMCI	1	254	structure		Wall	E/W orientated, stone built, clay mortar	>1.12	0.5	0.82
1C21CWMCI	1	255	fill	253	Fill of construction cut	Dark grey silty clay	>1.4	0.94	0.68
1C21CWMCI	1	255				Voided			
1C21CWMCI	1	257	structure		Stone foundation	Heavily truncated, stone and brick built	1.1	0.75	0.2
1C21CWMCI	1	258	fill	253	Fill of construction cut	Light yellowish sandy silt		1.15	0.25
1C21CWMCI	1	259	fill	253	Fill of construction cut	Dark grey silty clay		0.48	0.52
1C21CWMCI	1	260	cut		Posthole	Circular in plan, steep sides and concave base	0.37	0.3	0.12
1C21CWMCI	1	261	fill	260	Postpipe	Dark brown timber	0.37	0.3	0.12
1C21CWMCI	1	262	fill	260	Packing of posthole	Dark grey silty clay	0.37	0.15	0.12
1C21CWMCI	1	263	cut		Posthole	Circular in plan, steep sides and concave base	0.35	0.3	0.16
1C21CWMCI	1	264	fill	263	Postpipe	Dark brown timber	0.25	0.16	0.16

1C21CWMCI	1	265	fill	263	Packing of posthole	Dark grey silty clay	0.35	0.08	0.16
1C21CWMCI	1	266	fill	248	Fill of timber structure	Mid grey silty clay		0.66	0.44
1C21CWMCI	1	267	structure		Brick wall	E/W orientated, heavily truncated	1.6	0.12	0.05
1C21CWMCI	1	268	cut		Ditch	Visible in section, steep sides, base not reached	1.1	0.92	0.45
1C21CWMCI	1	269	fill	268	Single fill of ditch	Mid yellowish grey clay	1.1	0.92	0.45
1C21CWMCI	1	270	cut		Ditch terminus	NW/SE orientated, moderate sloping sides, concave base	>1	1.33	0.3
1C21CWMCI	1	271	fill	270	Single fill of ditch	Dark grey silty clay	>1	1.33	0.3
1C21CWMCI	1	272	cut		Ditch	NE/SW orientated, steep sides, flat base	>1	1.43	0.5
1C21CWMCI	1	273	fill	272	1st fill of ditch	Mid yellowish grey clay		1.43	0.5
1C21CWMCI	1	274	fill	272	2nd fill of ditch	Dark grey silty clay		1.33	0.29

Appendix 3: OASIS Form

OASIS ID: hs2copa1-508499

Project details

Project name	Construction Integrated Recording at Chetwode Mill, Buckinghamshire. AC250.
Short description of the project	The CIR comprised the excavation of 986sq. m area in land parcel C25147. The Site was targeting the remains of a water mill recorded in earlier non-intrusive Heritage Surveys. A mill at Chetwode is recorded in the Domesday Book (compiled in 1086) with historical records recording activity through the medieval and post-medieval period. The Site lies in an area where the archaeological potential is not well understood due to the limited amount of previous investigation. The CIR revealed archaeology dating to the prehistoric, medieval, post-medieval and modern periods, truncated by 1940s demolition and levelling of the Site. A Mesolithic mace head was recovered from the fill of a post-medieval quarry, located internally to a truncated ring ditch, likely dating to prehistoric period. The artefactual assemblage reveals activity on Site relating to the water mill started in the 13th century, continuing through to the modern period. The earliest structural remains comprise the partial exposed remains of three timber beams, likely forming the corner of a building/ structure, tentatively dating to the 16th-17th century. A series of stone walls replaced the earlier timber structure, utilising the same space and layout, with the final post-medieval phase still extent on Site at the start of the CIR. The mill ceased to function pre 1825 with the Site demolished and levelled in the 1940s.
Project dates	Start: 16-05-2022 End: 08-07-2022
Previous/future work	Desk-Based Assessment / Excavation
Any associated project reference codes	1C21CWMCI – Site code
Type of project	Construction Integrated Recording
Site status	None
Current Land use	
Monument type	DITCH / Early prehistoric
Monument type	DITCH / medieval
Monument type	PIT / medieval
Monument type	DITCH / Post-medieval
Monument type	PIT / Post-medieval
Monument type	WALL / Post-medieval
Monument type	BUILDING / Post-medieval
Monument type	QUARRY PIT / Post-medieval
Monument type	MADE GROUND Modern

Monument type	PIT / Modern
Significant Finds	WORKED STONE / Early prehistoric
Methods & techniques	Watching Brief / Excavation
Development type	Rail links/railway-related infrastructure (including Channel Tunnel)
Prompt	Planning condition
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	CHETWODE, BUCKINGHAMSHIRE (AC250)
Study area	is 0.0986 Hectares
Site coordinates	Centred on NGR 464852 228407

Project creators

Name of Organisation	COPA
Project brief originator	HS2 Ltd
Project design originator	Fusion JV
Project director/manager	Julian Newman
Project supervisor	Isobelle Ward and Jonathan Orellana

Project archives

Physical Contents	Ceramic", "Environmental", "Animal Bone", "CBM", "Flint", "Glass", "Industrial waste", "Metalwork", "Mortar", Worked stone", "Marine shell"
Digital Media available	"Database", "GIS", "Images - raster / digital photography", "Spreadsheets", "Survey", "Text"
Paper Media available	"Context sheet", "Drawing", "Miscellaneous Material", "Photograph", "Section"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	AWHI - Fieldwork Report for Construction Integrated Recording at Chetwode Mill, Buckinghamshire. AC150
Author(s)/Editor(s)	Julian Newman

Author(s)/Editor(s) Derek Evans

Other bibliographic details 1EW03-FUS_COP-EV-REP-CS06_CL10-000005

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Appendix 4: Finds Tables

Table 3: Quantification of pottery fabrics (ENV = Estimated Number of Vessels)

Period	Ware type	Fabric code	No. sherds	Wt. (g)	ENV
MEDIEVAL	Potterspurty-type	OX68	75	1643	52
	Brill/Boarstall medieval	OXAW	46	821	1
	Brill/Boarstall late med	OXAM	4	327	4
	Misc medieval sandy wares	-	89	1553	38
	<i>Sub-total medieval</i>		<i>214</i>	<i>4344</i>	<i>95</i>
PMED/MOD	?Border ware	BORDG	2	14	2
	Creamware	CREA	1	8	1

Table 4: The CBM catalogue.

Context Type	Context	Sample no	Fabric Code	Function	NoSh	Wt	Corner	Length	Width	Thickness	Mortaring	Period	Comments
Topsoil	101		TZ12	B/T	1	22	0	0	0	0		Post med? +	
Occupation layer	103		TZ12	B/T	1	6	0	0	0	0		Post med? +	
Occupation layer	103		TZ12	Floor Tile	1	235	2	0	0	42		Post med? +	green glaze patches on surface glaze also on side and base
Occupation layer	103		TZ12	Brick	1	962	4	0	115	60	1	C17? +	Regular sharp arrises wiped surfaces
Occupation layer	103		TZ61	Water Pipe	4	356	0	0	0	15		c18+	150mm diameter drain female end with internal grooves/ screw

													brown salt glaze
Ditch	113		TZ12	B/T	1	5	0	0	0	0		Post med? +	
Pit	123		TZ12	Brick	1	160	0	0	0	0		C17+ ?	heavily abraded poss. frog
Pit	138		TZ12	Brick	1	354	0	0	0	65		c18+	Regular sharp arrises wipe marks sandy base
Pit	138		TZ12	Moulded Brick?	1	328	0	0	70	65		c18+	edged piece poss. decorative white mortar patches
Surface etc.	141	b	TZ12	Brick	1	2449	8	220	105	65	1	c18+	wiped surfaces solid brick regular sharp arrises, pressure mark along stretcher
Surface etc.	141	b	TZ12	Brick	1	2500	8	215	100	68	1	c18+	solid brick wiped surfaces regular sharp arrises, pressure mark along edge of stretcher
Wall	150		TZ12	B/T	1	6	0	0	0	0		Post med? +	
Posthole	159		TZ12	Brick	5	110	0	0	0	0		C17+ ?	
Posthole	159		TZ12	Brick	1	43	2	0	0	70	1	C19+	black vitrified surface poss. diaper regular sharp arrises
Pit	172		TZ12	Wall Tile	1	98	0	0	0	10	1	C18+	black glaze wall tile uneven or black glaze base
Wall	186	b	TZ12	Brick	1	2510	8	220	100	60	1	C17+ ?	a solid brick with regular sharp arrises wiped surfaces and pressure mark horizontal

													along stretcher face.
Wall	186	b	TZ12	Brick	1	2562	8	220	110	70	1	c18+	solid brick wipe marks upper wiped surfaces regular sharp arrises
Pit	206		TZ12	B/T	1	21	0	0	0	0		Post med? +	
Posthole	229		TZ12	Brick	4	93	0	0	0	0		Post med? +	
Ditch	271		TZ14- 1	Ridge Tile	1	166	1	0	0	12	1	C14- C15	Plain, fabric suggests early
Unknown	332		TZ12	B/T	1	5	0	0	0	0		Post med? +	

Table 5: The stratified CBM by context type.

Context Type	No%	Wt%	CNR%	MSW
Ditch	7.7%	5.8%	11.1%	85.50
Occupation layer r etc.	26.9%	52.9%	66.7%	222.71
Pit	19.2%	32.6%		192.20
Posthole	38.5%	8.3%	22.2%	24.60
Unknown	3.8%	0.2%		5.00
Wall	3.8%	0.2%		6.00
N/AVG	26	294.8	9	113.38

Table 6: CBM originally recorded as pottery (recorded as CBM by Lorraine Mephram)

Context type	Context	Sample no.	Fabric code	Function	NoSh	Wt	Corner	Length	Width	Thickness	Mortaring	Period	Comments
Pit	172			Roof Tile	1	36						Med	Pale-firing fabric with dark grey core (equivalent to

													Potterspury pottery fabric)
Pit	205			Poss. Ridge Tile	2	30						Med	Medieval glazed roof tile (flat but possibly ridge); 2 conjoining frags; pale-firing sandy fabric with dark grey core
Pit	206			Ridge Tile	1	12						Med	Medieval curved (ridge) tile, glazed; pale-firing sandy fabric with grey core

Table 7 – Quantification of glass by type (number of fragments)

Vessel type	Free-blown wine	Other beverage	Foodstuff	Household	Pharma	Unknown	Total
Bottle	17	14	6	1	4	1	43
Jar			6			2	8
Unspec						3	3
Total	17	14	12	1	4	6	54

Table 8 – Quantification of the metalwork assemblage.

Context	Ra. No.	Material	Count	Weight (g)	Broad identification
101		Lead	1	23	Weight
101		Iron	1	61	Horseshoe
101		Iron	1	262	Door stud
101		Lead Alloy	1	37	Weight
101	RA 3	Iron	1	34	Shears
101	RA 1	Iron	16	266	Nails
101	RA 2	Iron	4	19	Nails
103		Lead	1	25	Weight
103		Iron	1	214	Sickle
103		Iron	1	416	Chain
103		Iron	1	26	Chain link

103		Iron	1	122	Nut
103		Iron	1	68	Structural staple
103	RA 4	Iron	1	308	Hammer
103		Iron	13	394	Nails
103		Iron	1	50	Buckle
103		Iron	1	22	Spanner
103		Iron	4	77	Strips
103		Iron	1	300	Mount
103		Iron	1	58	Horseshoe
103		Iron	1	50	Ring
103		Iron	1	52	Uncertain
103		Iron	1	38	Collar
103		Composite	1	96	Buckle
103		Composite	1	42	Buckle
103		Iron	25	322	Iron
103		Iron	1	16	Iron
103		Iron	1	18	Iron
103		Iron	1	22	Iron
103		Iron	1	250	Iron
103		Iron	1	114	Iron
103		Iron	1	58	Iron
103		Copper Alloy	1	50	Buckle
103	RA 8	Iron	1	154	Bracket
103	RA 5	Iron	1	24	Nail
103	RA 7	Iron	7	41	Nails
103		Iron	1	5	Unidentifiable
103		Iron	1	232	Auger?
123		Pewter	1	3.63	Button
123		Copper Alloy	1	3.3	Buckle
123		Lead	1	30	Weight
123		Lead Alloy	1	26	Weight

131		Iron	1	22	Nail
134		Iron	1	10	Nail
138		Copper Alloy	1	62	Lid
138		Copper Alloy	1	4	Button
138		Copper Alloy	1	30	Hinge/clasp
138		Iron	2	20	Nails
138		Iron	1	172	Rod
138		Iron	1	28	Strip
138		Iron	1	178	Bracket/hook
146		Iron	1	3	Nail
146		Pewter	1	9	Spoon
150		Iron	4	47	Nails
171		Iron	1	3	Nail
172		Iron	7	62	Nails
172		Iron	1	32	Knife
189	RA 10	Copper Alloy	1	5	Thimble
189		Iron	5	192	Nails
189		Iron	1	14	Uncertain
189		Lead Alloy	1	46	Strip
206		Iron	1	4	Nail
206		Iron	1	4	Nail
206		Iron	1	340	Rod?
252		Iron	1	9	Nail
255		Iron	1	31	Nail

Table 9 – Quantification of mortar samples.

Wall	Sample No	Weight (g)
0163	7	875

0182	8	791
------	---	-----

Table 10 –Quantification of stone by type

Description	Geological Type and source	Feature on Site
Cornbrash – Forest Marble Very hard weathered pale-grey-buff coloured dense hard shelly limestone (ragstone) containing large oyster fragments. Fresh exposed surface grey to dark grey fine dark grey oyster fragments	Middle Jurassic (Bathonian to Oxfordian) Yardley to Whitewood Ridge intermittent outcrops exposed today e.g., Coombs Quarry (NGR SP 733 327) (Eyers 2002, Figure 13)	Flaggy walling rubble bonded with the same type of brown gritty mortar from the NE-SW (southern) [158] and NW-SE (northern) wall [184] of the Mill race. Rubble or natural from demolition layer (103) of rectangular post medieval house
Lower Lias - Pale cream buff crinoidal shelly limestone Pentacrinites (five star) cross section stem and lots of longitudinal profiles of small 5-10mm stems.	Lower Jurassic (Whitby Mudstone) nearest outcrop which outcrops north-west of Milton Keynes between Little Linford, Stony Stratford and Pindon End on border with Northamptonshire c10km northeast of Chetwode	Roofing tile small hexagonal form with nail hole. Could be Roman as this form seen recently in Roman Cirencester (Hayward 2022) recovered from first fill (205) of medieval pit [204]
Oxford Clay – concretionary claystone dark grey fine hard laminated	Middle to Upper Jurassic (Oxfordian) underlying beds Peterborough Member (Orellana 2022)	Natural fragment from the third fill (172) of modern gravel pit [169]

Table 11 –Registered artefact register

RA No	Context number	Material	Quantity	Description	Spot date
1	(101)	Iron	16	Nails	PM - Mod
2	(101)	Iron	2	Nails	PM - Mod
3	(101)	Iron	1	Knife	PM – Mod?
4	(103)	Iron	1	Hammer head	Mod?

5	(103)	Iron	1	Nails	PM - Mod
6	(103)	Iron	1	Drill bit	PM - Mod
7	(103)	Iron	3	Nails	PM - Mod
8	(103)	Iron	2	Hinges	PM - Mod
9	(172)	Stone	1	Worked stone	Prehistoric?
10	(189)	Copper	1	Thimble	PM – Mod?

Appendix 5: Biological Evidence Table

Table 12: 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)
Medieval												
192	193				1						1	40
192	194	1									1	32
204	205							2			2	15
204	206	1									1	4
210	211	1									1	14
212	213	1									1	66
272	273	1					1				2	118
Subtotal		5			1		1	2			9	289
Post-medieval												
122	123	1	1								2	97
128	129	1									1	116
145	146		2				1				3	65

169	170		2						1		3	54
169	171	3	1				1	8			13	118
169	172	3						4			7	224
	189	3	3	1			3	6			16	173
Subtotal		11	9	1			5	18	1		45	847
Modern												
	101	1									1	122
	103			1				1			2	8
130	131					2					2	6
133	134		1								1	12
136	138		1		1						2	47
149	150		1		1						2	50
Subtotal		1	3	1	2	2		1			10	245
Undated												
104	105						1	6		2	9	34
115	116	1									1	51

115	117	1					5	2	4		12	155
120	121					1		1		5	7	3.6
Subtotal		2				1	6	9	4	7	29	243.6
Total		19	12	2	3	3	12	30	5	7	93	
Weight		1033	183	5	97	6.5	176	108	15	1.1	1624.6	

BOS = Cattle; O/C = sheep/goat; SUS = pig; EQ = horse; GAL = domestic fowl; LM = large size mammal; MM = medium sized mammal; Ind = indeterminate; BB SS unidentifiable, burnt fragments from bulk soil samples

Appendix 6: Palaeoenvironmental Remains Table

Table 13 Assessment of the palaeoenvironmental remains

Feature	Context	Sample	Vol (L)	Flot size (ml)	Roots %	Grain	Chaff	Cereal Notes	Charred Other	Charred Other Notes	Charcoal > 4/2mm	Other
Medieval												
Ditch 190	191	4	18	13	98	++	-	indet grain; free-threshing wheat; cf. rye	++++	<i>Avena; Bromus; Avena/Bromus; Vicia faba/Pisum; Vicia/Lathyrus</i>	+/+	-
Ditch 192	193	5	6	4	95	+	-	indet grain	++	<i>Avena/Bromus; Avena</i>	+/+	moll-t+; moll-a+
Late Medieval												
Pit 204	205	6	15	110	98	+	-	free-threshing wheat; barley	++++	<i>Avena</i> (some still in husk); <i>Avena</i> husks; <i>Avena/Bromus</i> ; <i>Rumex crispus</i> ; <i>Trifolium/Medicago</i> ; <i>Polygonum aviculare</i> ; <i>Ranunculus acris/repens</i> ; <i>Vicia faba/Pisum</i>	+/+	-
Post-medieval												
Posthole 197	198	3	4	20	98	-	-	-	+	<i>Rumex acetosella</i> ; <i>Odontites vernus Dumort</i> ; <i>Avena/Bromus</i> (no embryo)	+/+	-
Undated												
Ditch 104	105	1	40	105	98	-	-	-	+	<i>Avena</i>	+/+	moll-t+; moll-a++
Pit 120	121	2	7	15	98	++	-	indet grain; barley; wheat	-	-	+/+	-

Key: * = rare: + = 1-10 items, occasional: ++ = 11-50 items, moderate: +++ = 51-100 items, and abundant: ++++ = >100 items

moll-t = terrestrial mollusc, moll-a = aquatic/freshwater mollusc

Table 14: Marine shell quantification

Spot Date	Feature	Context	Oyster		Total	Total MNI
			No.	Min		
Medieval	Ditch 192	194	3	2	3	2
	Construction 214	215	3	1	3	1
Post-medieval	Quarry 169	172	1	1	1	1
	Layer	189	2	2	2	2

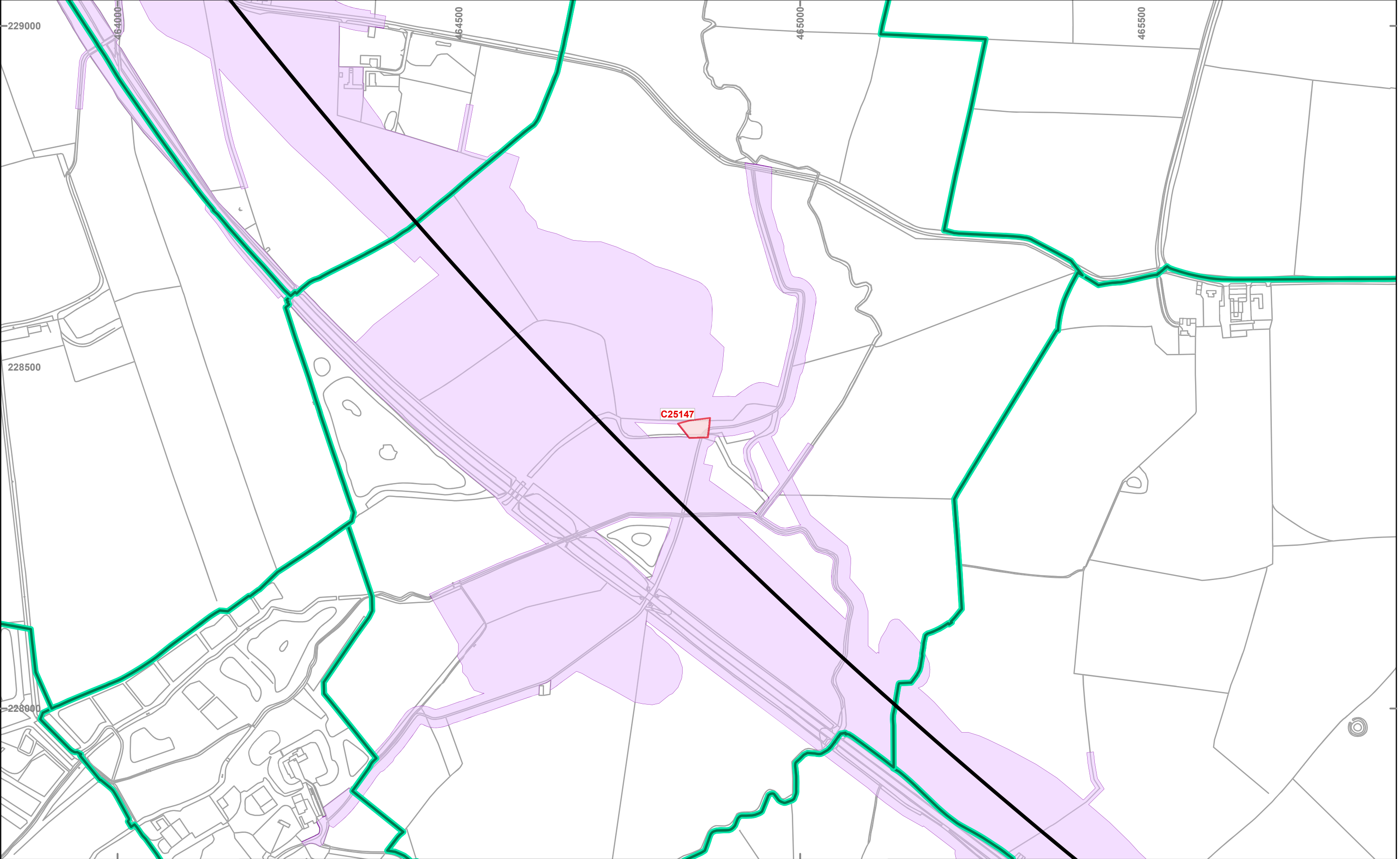
MNI = minimum number of individuals.

Appendix 7: Geoarchaeological assessment Table

Table 15 Monolith sample No 9

Monolith	Unit	Context	Depth [m]	Description
	1	236	0-0.17	7.5YR 6/4 light brown (oxidised) silt/clay with 7.5YR 6/1 grey mottling (depletion). Homogenous, firm and stoneless. Common (<15%) fine channels and root fragments. Sharp contact with:
	2	235	0.17-0.19	5YR 5/1 grey silt/clay. Homogenous and firm. Single Tertiary pebble at 0.19m. Common (15%) 5YR 5/4 reddish brown mottling. Sharp contact with:
	3	235	0.19-0.25	7.5YR 5/4 brown (oxidised) silt/clay with 7.5YR 6/1 grey mottling (depletion). Homogenous, firm and stoneless.

Appendix 8: Waterlogged wood report



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Legend

- Route
- Site Boundary
- Consolidated Construction Boundary
- Archaeological Character Sub Zones

High Speed Two

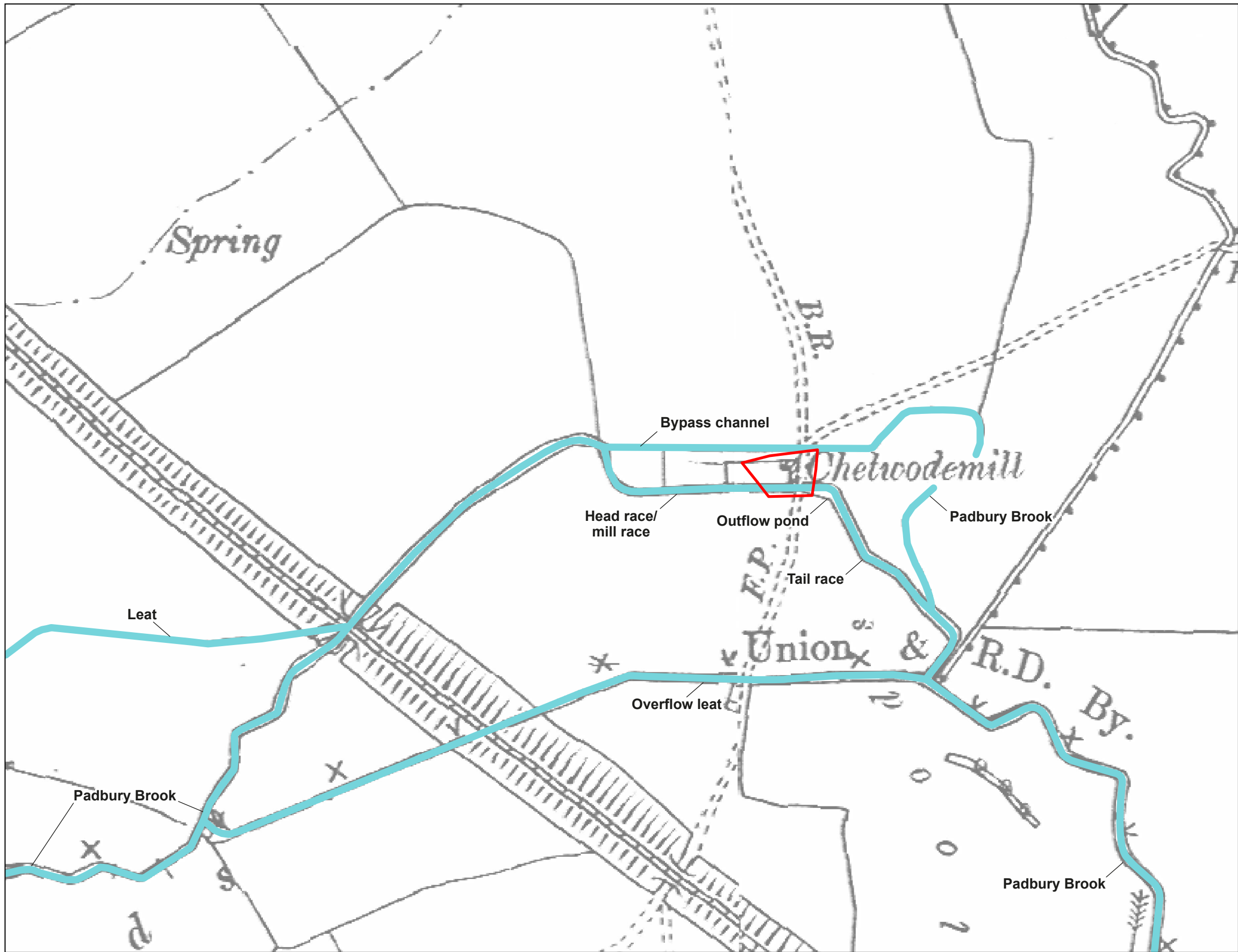
1C21CWMCI
Chetwode Mill (C25147) ,
Buckinghamshire
Site location plan
Fig. 1

Internal

Scale at A3: 1:5,000

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1900 historical map, originally plotted at 1:10,560

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- Legend**
- Site Boundary
 - Watercourse

High Speed Two

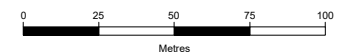
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
The watermill landscape
Fig. 2

Internal

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Scale at A3: 1:2500 approx.



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Date:30/08/22



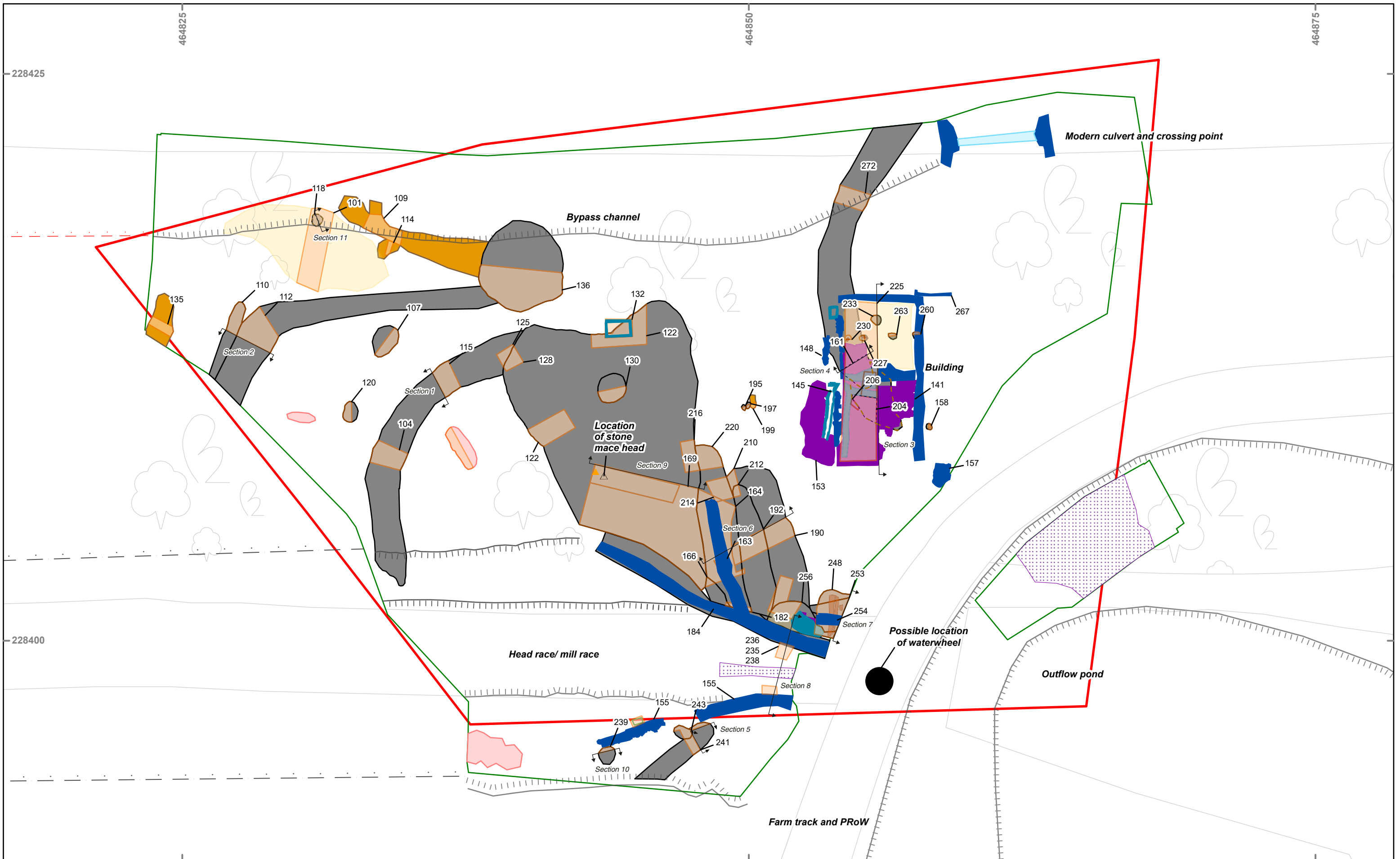
Monitoring of tree root removal, looking west.



General view of the excavation area, looking south-east



Head race/mill race wall 184 prior to tree root removal, looking west.



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Legend

Registered artefact	Modern truncation	Tree throw
Section	Excavated intervention (truncated)	Limit of excavation
Visible line of leat	Excavated intervention	Structure
Projected overflow ditch	Deposit	wall
Break of slope	Cut feature	structure
Site Boundary	Truncated cut feature	floor
Water pipe	Natural geology	timber

Aylesbury Vale District

Cherwell District

High Speed Two

1C21CWMCI

Chetwode Mill (C25147),

Buckinghamshire

Post excavation site plan

Fig. 4

Internal

HS2

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Registered office: 2 Snowhill, Queensway, Birmingham B4 6QA.

Scale at A3: 1:150

0 2 4 5 7
Meters

Doc Number: 1EW03-FUS_COP-GI-MAP-CS06_CL10-000002

Date: 31/08/22



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Legend

- Break of slope
- Projected overflow ditch
- Visible line of leat
- Truncated cut feature
- Excavated intervention (truncated)
- Excavated intervention
- Structure
- Modern truncation

Deposit

Water pipe

Phases

- Prehistoric
- Medieval
- Post-medieval
- Modern
- Undated

High Speed Two

1C21CWMCI
Chetwode Mill (C25147),
Buckinghamshire

Phased post excavation site plan
Fig. 5

Internal

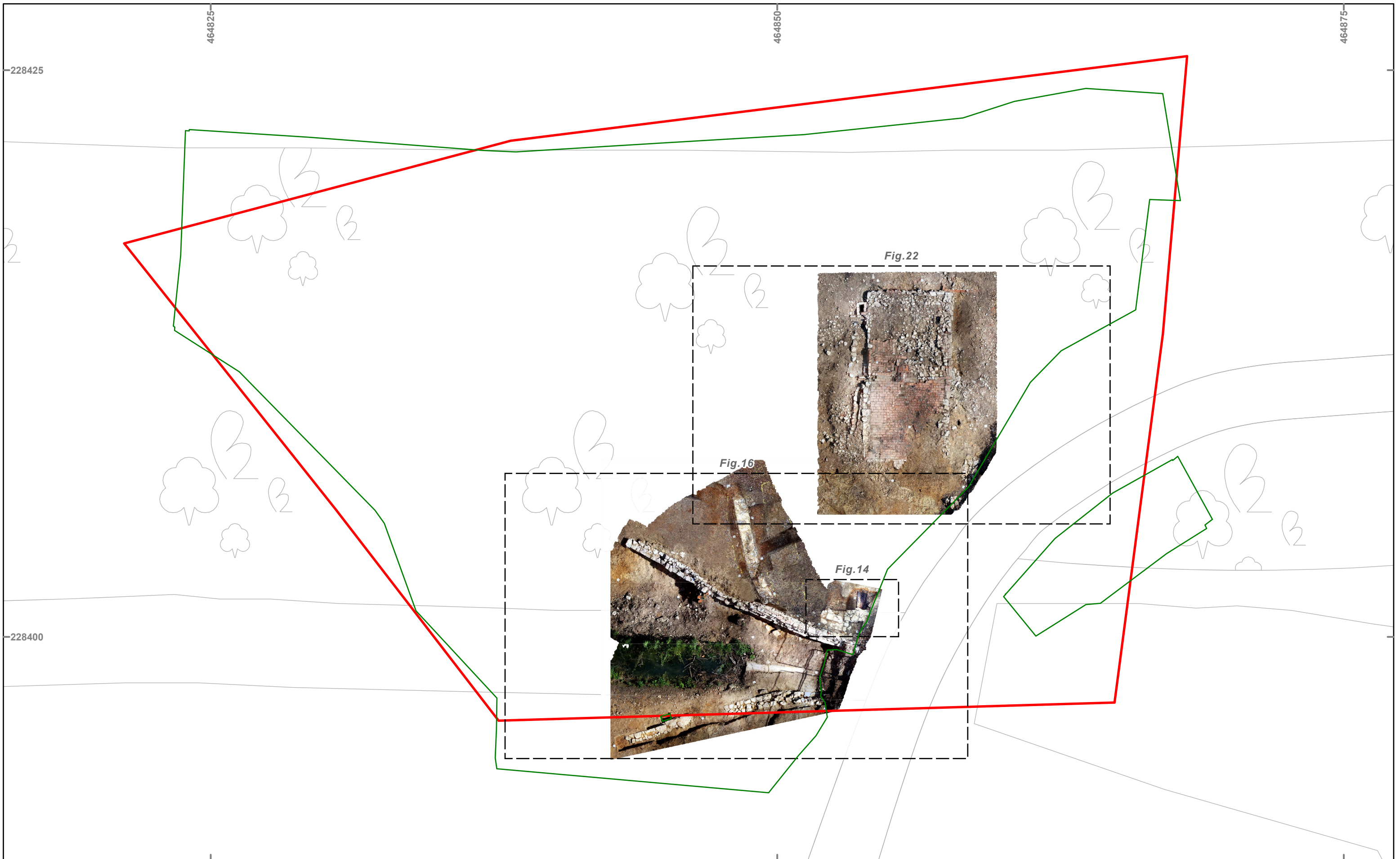
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Scale at A3: 1:150

0 2 4 5 7
Meters

Doc Number: 1EW03-FUS_COP-GI-MAP-CS06_CL10-000002
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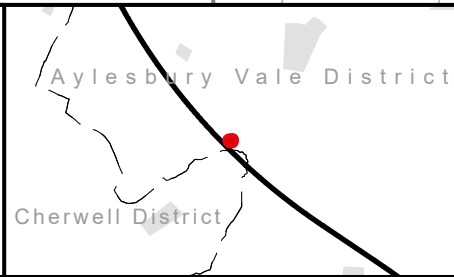
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Legend

- Site Boundary
- Limit of excavation
- Figure extent



High Speed Two

1C21CWMCI
Chetwode Mill (C25147) ,
Buckinghamshire

Overview of orthomosaic photographs

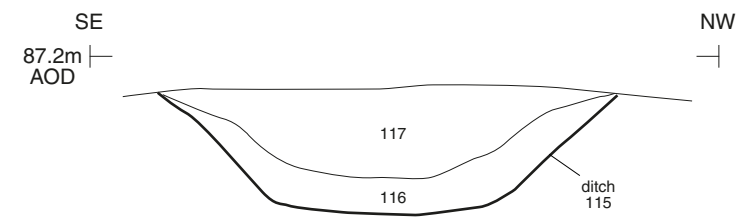
Fig. 6
Internal

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Date: 10/08/22

Scale at A3: 1:150

Section 1



Ditch 115, looking south-west (1m scale)

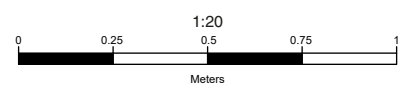
High Speed Two
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Section and photograph
Fig. 7

Internal

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Scale at A3: 1:20



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Date:27/07/22



0 1:1 50mm

High Speed Two
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Mesolithic mace head
Fig. 8

Internal

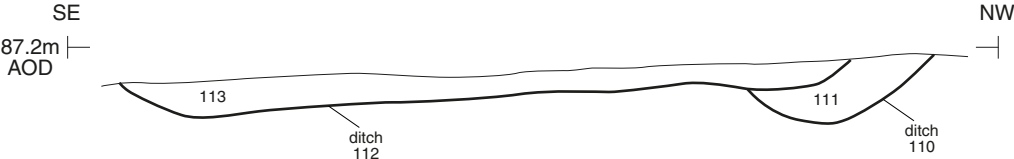
HS2

Registered in England. Registration number 06791688.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6QA.

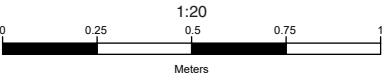
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1EW03-FUS_COP-GI-MAP-CS06_CL10-000002

Date:27/07/22

Section 2

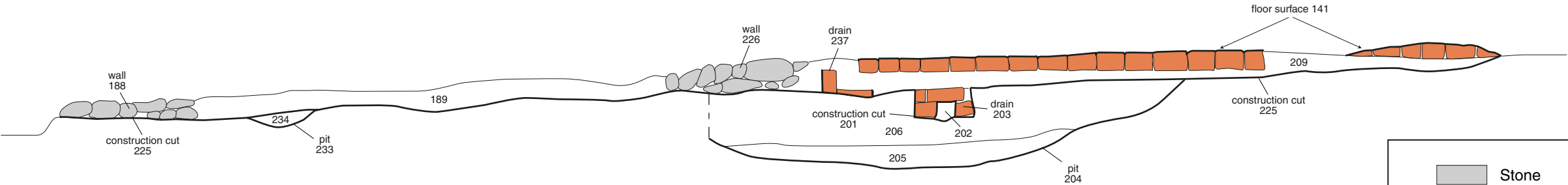


Ditches 112 and 110, looking south-west (1m scale)



Section 3

N
86.7m
AOD



Stone
Brick



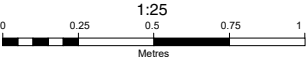
Detail of pit 204 overlayed by drain 203 and floor surface 141, looking north-east (0.5 scale)

High Speed Two
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Section and photograph
Fig. 10

Internal

HS2

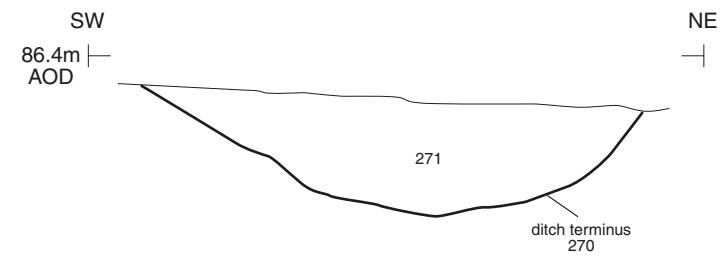
Scale at A3: 1:25



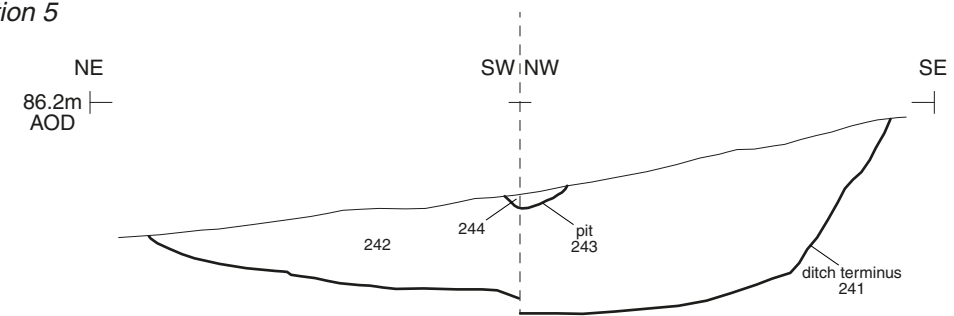
Doc Number:
1EW03-FUS_COP-GI-MAP-CS06_CL10-000002

Date:27/07/22

Section 4



Section 5



Ditch terminus 270, looking north-west (1m scale)



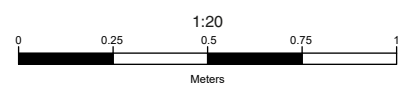
Ditch 241 and pit 243 looking west (0.5m scale)

High Speed Two
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Sections and photograph
Fig. 11

Internal

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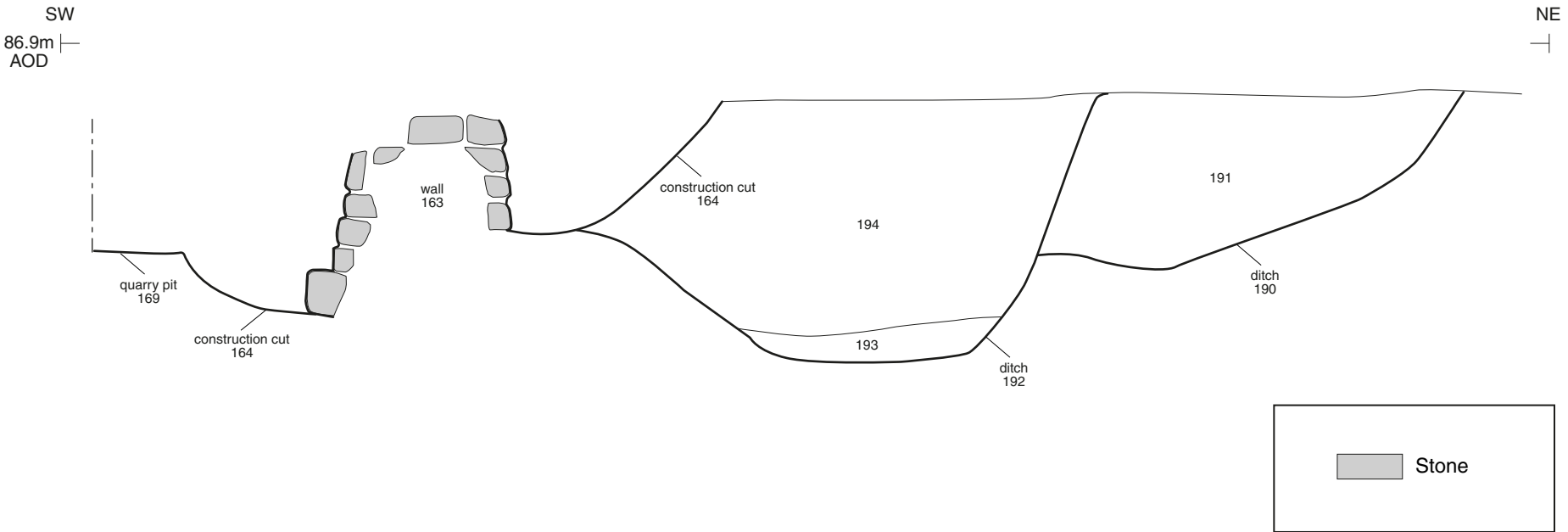
Scale at A3: 1:20



Doc Number:
1EW03-FUS_COP-GI-MAP-CS06_CL10-000002

Date:27/07/22

Section 6



Wall 163 and ditches 190 and 192, looking north-west (1m scale)

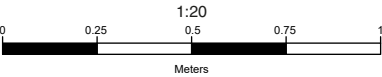
High Speed Two
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Section and photograph
Fig. 12

Internal

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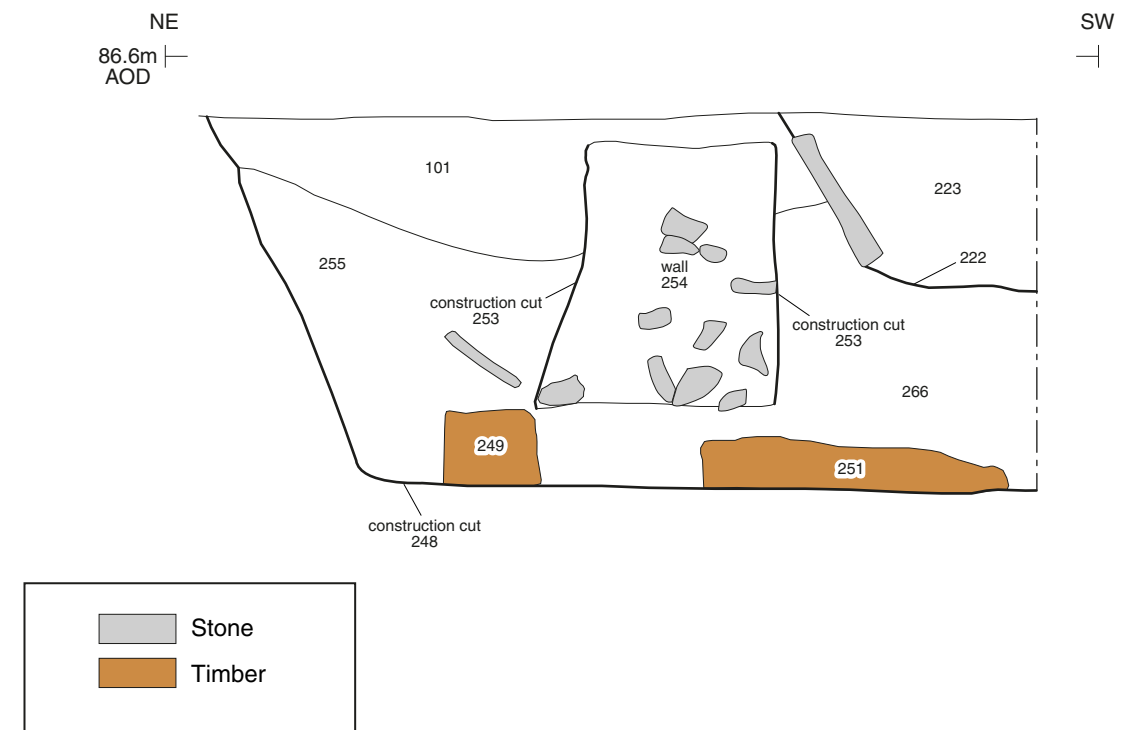
Scale at A3: 1:20



Doc Number:
1EW03-FUS_COP-GI-MAP-CS06_CL10-000002

Date:27/07/22

Section 7



Timber beams, looking south (0.3m scale)



Timber beams 249, 250 and 251, looking east (0.3m scale)



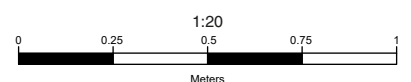
Timber beams 249, 250, 251, clay deposit 255/266, walls 254 and 257, looking south (0.3m scale)

High Speed Two
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Section and photographs
Fig. 13

Internal

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Scale at A3: 1:20

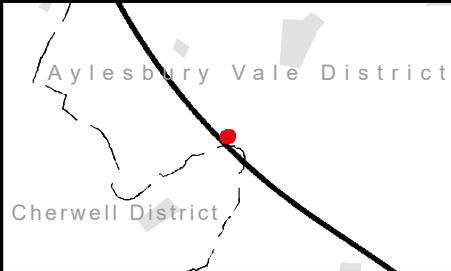


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Date:28/07/22



Legend



High Speed Two
1C21CWMCI
Chetwode Mill (C25147) ,
Buckinghamshire
Orthomosaic photograph

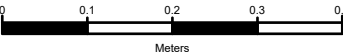
Fig. 14
Internal



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Date: 11/08/22

Scale at A3: 1:10





Ditch terminals 210 and 212 and wall 163, looking south-east (0.5m scale)



Detail of wall 163, looking east (0.3m scale)



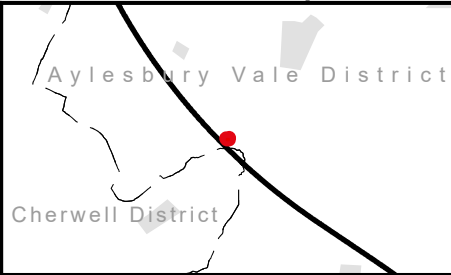
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High Speed Two

1C21CWMCI
Chetwode Mill (C25147) ,
Buckinghamshire
Mill race walls

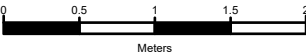
Fig. 16
Internal



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Scale at A3: 1:50



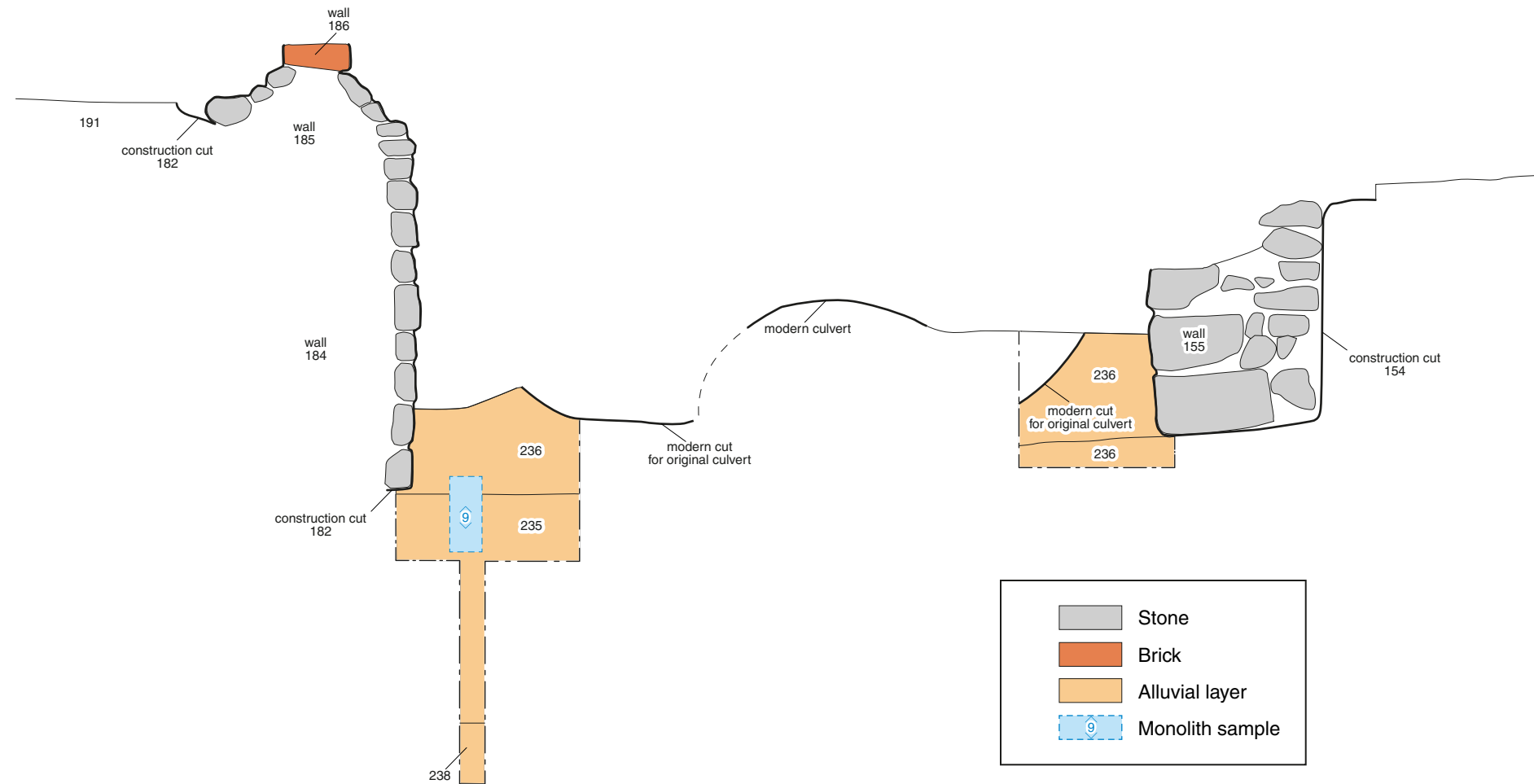
Meters



Section 8

NE
86.7m
AOD

SW



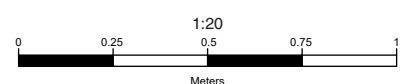
High Speed Two
1C21CWMCI
Chetwode Mill (C25147) ,
Buckinghamshire
Section
Fig. 17

Internal

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Scale at A3: 1:20

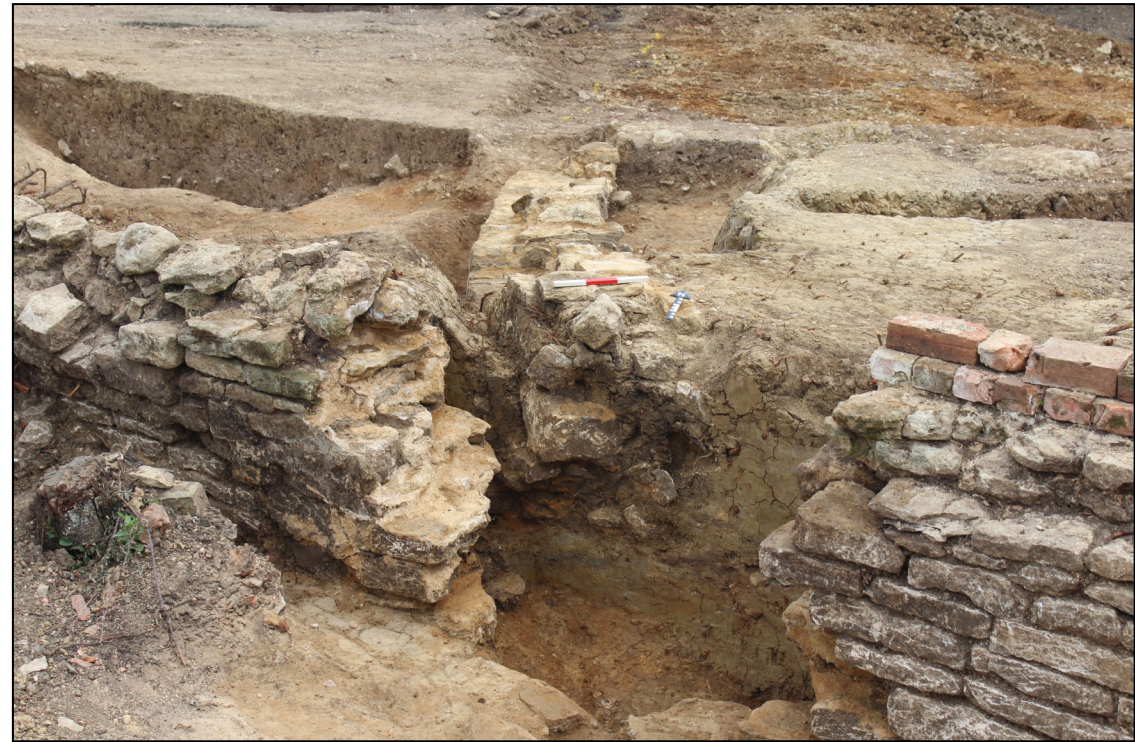


Doc Number:
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Date:27/07/22



Northern head race/mill race wall 184, looking north-east (0.3m scale)



Section excavated through wall 184 showing earlier wall 163, looking north-west (0.3m scale)



Southern head race/mill race wall 155, looking south (0.2m scale)



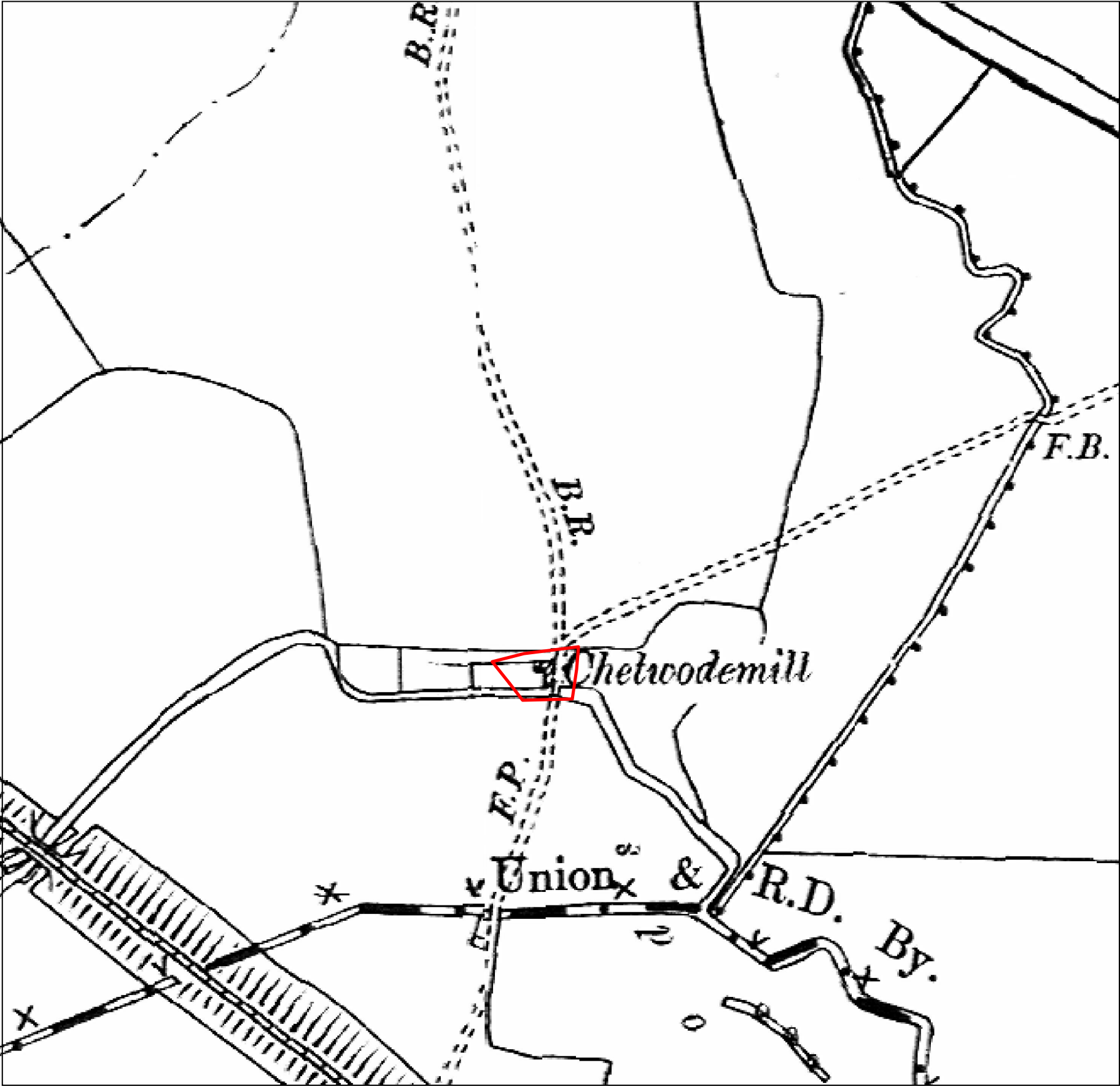
Detail of alluvial layers truncated by wall 184, looking south-east (0.2m scale)



General view of head race/mill race walls 184 and 155, looking east



Wall 155, looking south-west (1m scale)



1900 historical map, originally plotted at 1:10,560

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Legend

 Site Boundary

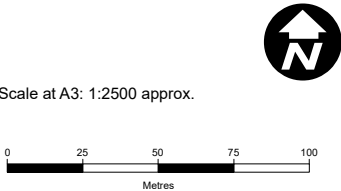
High Speed Two

1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Historic mapping 1900
Fig. 20

Internal

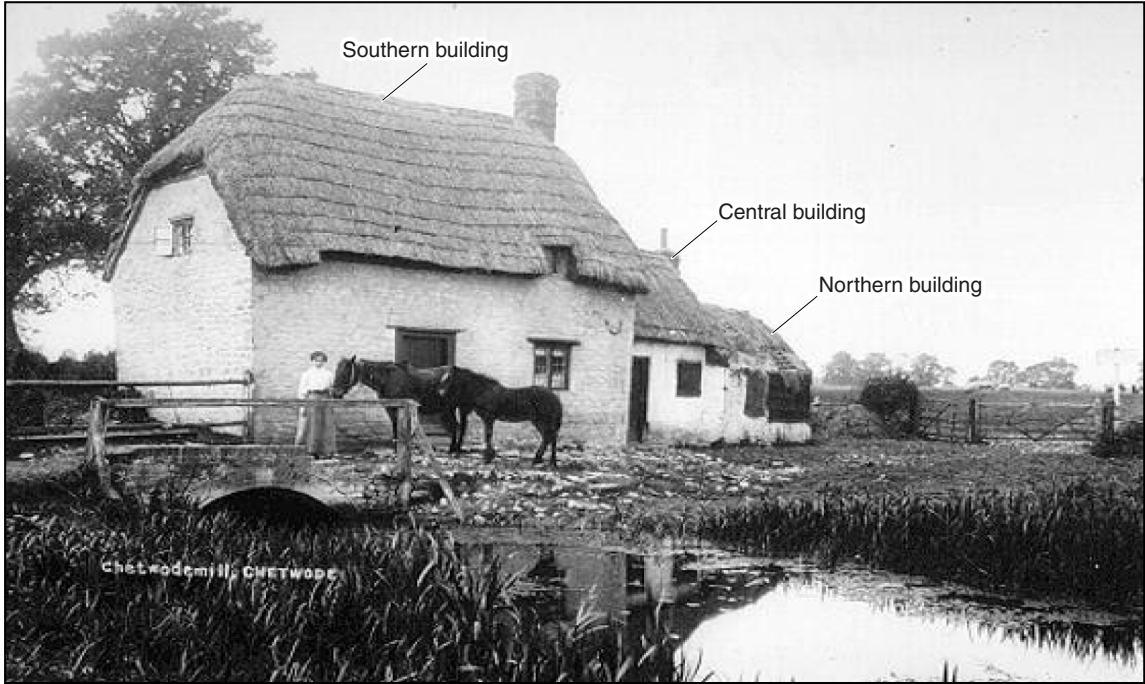
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Date:30/08/22



Old mill house in 1908



Old mill house in 1939

High Speed Two
1C21CWMCI
Chetwode Mill (C25147) ,
Buckinghamshire
Photographs of the mill house
Fig. 21

Internal

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Date:27/07/22



Wall 157, looking south (0.5m scale)



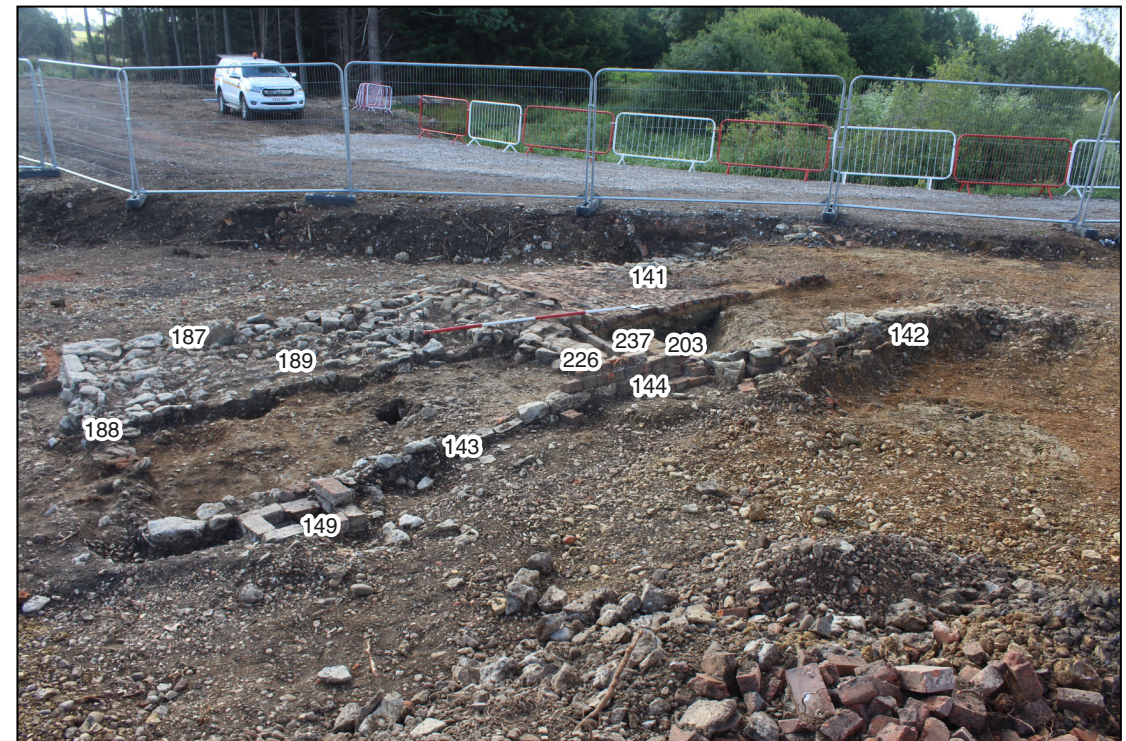
Walls 184, 185, 186, 246, 254 and rubble layer 257, looking south (0.4m scale)



Posthole 260, looking east (0.2m scale)

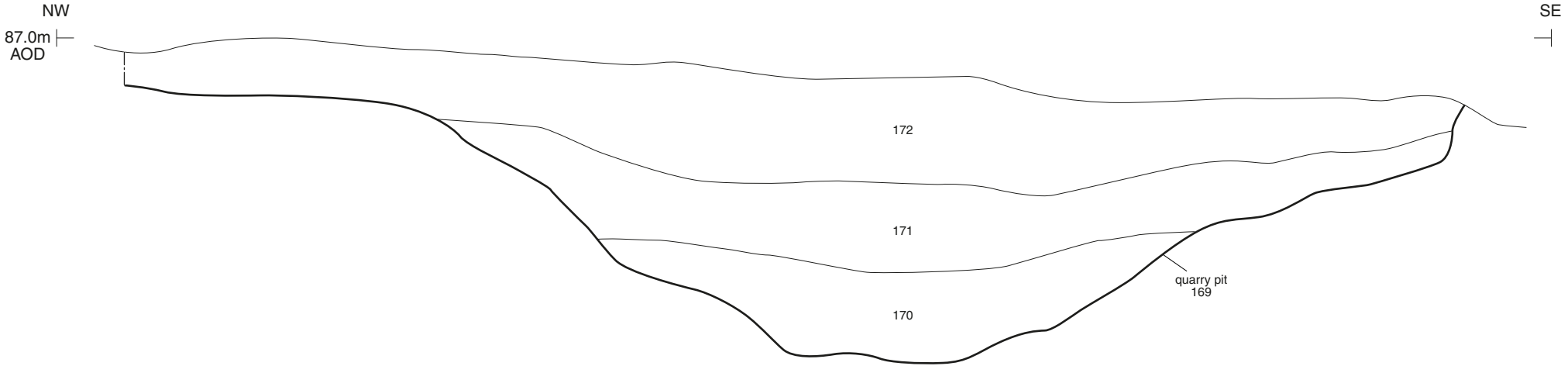


Mid excavation photograph, brick floor, 141, 161, walls 142, 143, 144, drains 145, 148 and stone surface 153, looking south (0.4m scale)



Mid excavation photograph, drains 149, 203, 237, walls 142, 143, 144, 188, 226, floors 141 and 189, looking south-east (2m scale)

Section 9



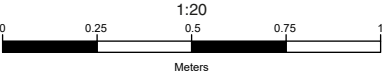
Quarry pit 169, looking north-east (1m scale)

High Speed Two
1C21CWMC1
Chetwode Mill (C25147) ,
Buckinghamshire
Section and photograph
Fig. 24

Internal

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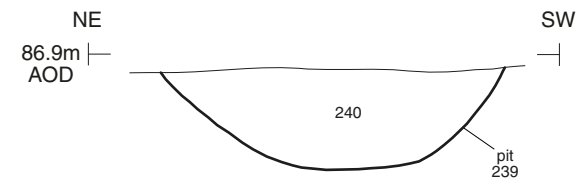
Scale at A3: 1:20



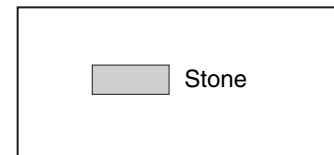
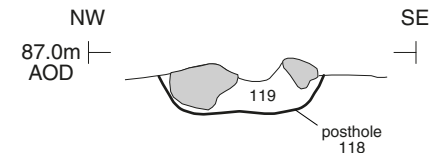
Doc Number:
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Date:27/07/22

Section 10



Section 11



Posthole 118, looking north-east (0.4m scale)



Brick structure 133, looking east (0.4m scale)



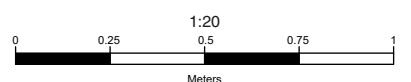
Pit 120, looking east (1m scale)

High Speed Two
1C21CWMCI
Chetwode Mill (C25147) ,
Buckinghamshire
Sections and photographs
Fig. 25

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