



NAA

PUBLICATION REPORT

**BRONZE AGE, LATE IRON AGE
AND ROMAN OCCUPATION AT
MARSH HOUSE FARM,
GREATHAM, TEESSIDE**

prepared for

The Environment Agency

NAA 15/79
April 2016



PUBLICATION REPORT

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NAA 15/79
April 2016

NAA Document Authorisation

Project name		Greatham Managed Realignment, Hartlepool		Project number	
Report title		Bronze Age, Late Iron Age and Roman Occupation at Marsh House Farm, Greatham, Hartlepool		943	
Report No.		15-79			
Revision	Date	Filename	NAA_943_Rpt_15-79.pdf		
v.2	12/11/15	Description	Final version for client approval		
			Prepared by	Edited by	Approved by
		Name	David Fell and Gav Robinson	Richard Fraser	Richard Fraser
v.3	19/1/16	Description	Final version for Tees Archaeology approval		
			Prepared by	Edited by	Approved by
		Name	David Fell and Gav Robinson	Richard Fraser	Richard Fraser
v.4	21/4/16	Description	Final version		
			Prepared by	Edited by	Approved by
		Name	David Fell and Gav Robinson	Richard Fraser	Richard Fraser



This document has been approved for release by:

BRONZE AGE, LATE IRON AGE AND ROMAN OCCUPATION AT MARSH HOUSE FARM, GREATHAM, HARTLEPOOL

Summary

Significant new evidence for occupation during the Bronze Age, Iron Age and Roman period was recorded during archaeological mitigation works to the north of Greatham Creek, Hartlepool (centred on NZ 505 260). The groundworks were associated with the creation of a nature reserve and upgrade of the Tees Estuary tidal defences and archaeological investigation was carried out by Northern Archaeological Associates Ltd (NAA) on behalf of the Environment Agency. The areas of investigation included part of Cowpen Marsh and a low-lying coastal plateau which was suitable for arable agriculture from at least medieval times.

Across the stripped areas the most significant findings included a group of features and deposits found in close proximity to a channel at the edge of the salt marsh. This group included a ring-gully of a probable roundhouse, truncated pits and a midden layer containing charcoal radiocarbon dated to the Early and Middle Bronze Age, along with assemblages of contemporary pottery, flint tools and a jet dress fitting.

A short distance inland from the Bronze Age activity a plateau was occupied by a multi-phased Late Iron Age and Roman period settlement with an associated field system and two possible conjoined 'barrowlets'.

The recorded evidence indicated utilisation of the salt-marshes and surrounding higher ground throughout prehistory and into the Roman and medieval periods. As was the case in Hartlepool Bay, the nature of activity in Cowpen Marsh probably varied with respect to the environment and fluctuating sea level, though the areas of settlement recorded during the project were above the maximum extent of sea level.

Historic sources indicate salt-extraction in the surrounding area throughout the medieval period and extensive exploitation of the deeper salt beds from the late 19th century until 1970. The question of whether this invaluable resource was extracted from the area before records began, however, remains open.

INTRODUCTION

Regionally significant Early and later Bronze Age settlement activity was recorded during archaeological mitigation works associated with the Greatham Managed Realignment project to the north of Greatham Creek, Hartlepool (centred on NZ 505 260; Fig. 1; Plate 1). Mesolithic and Neolithic worked flints were also recovered and two intersecting ring-ditches on higher ground probably represented the truncated remains of a double burial monument. Furthermore, the eastern edge of a multi-phased enclosed settlement and associated field systems spanning the later Iron Age to Early Roman period were identified (Figs. 2–8). Features of medieval origin, comprising field boundaries and possible structural elements, were also present, as were modern industrial features associated with historical boundaries and salt extraction.

The project was commissioned by the Environment Agency and formed part of the Tees Tidal Flood Risk Management Strategy. Implementation of this Strategy resulted in the loss of intertidal habitats and the Environment Agency had a legal requirement to mitigate this impact.

Thus, the scheme comprised the construction of a new flood embankment and the creation of salt flats, freshwater and grassland habitats via landscaping and the breaching of the existing tidal defences. Material for the new embankment was obtained from three 'borrow pits' (Areas 1, 2 and 3); these areas were later landscaped to provide wetland habitats. Topsoil was removed under archaeological supervision in these areas and all remains encountered were recorded prior to quarrying taking place. Area 4 encompassed part of Cowpen Salt Marsh and groundworks in this zone were designed to avoid damage to four nationally significant saltern mounds (Rowe 1999, 12) and a small number of other heritage assets (NAA 2012). These salterns were potentially medieval in date (Cranstone 2008), though the limited archaeological work undertaken upon them to date has provided little conclusive evidence (Burns 1980; Annis 1993).

This publication forms the culmination of a programme of archaeological fieldwork and analysis undertaken between 2010 and 2015 by Northern Archaeological Associates on behalf of the Environment Agency. Detailed excavation results and assessments of the recovered artefactual and ecofactual material are presented in earlier reporting (NAA 2015a) and the archive associated with this project was deposited with Tees Archaeology. This publication, therefore, is focused upon the more significant remains uncovered, namely the Bronze Age marsh-side occupation and elements of the Iron Age and Romano-British activity.

To the east of Marsh House Farm (Fig. 1) Area 3 represented a broad low rise at approximately 5mOD. To the north (Areas 1 and 2) the land gradually rose to over 10mOD at the north-eastern limit of the development. These areas were under arable cultivation prior to the groundworks.

The whole area to the south-east of Marsh House Farm (Area 4) fell to below 5mOD except where the land had been artificially raised by the construction of flood defences, a large spoil-tip, the saltern mounds and the A178 road embankment. This lower-lying land was reclaimed from salt-marsh during the 19th and early 20th

centuries, and was the site of former salt workings. The southern part of the development area was crossed by a dendritic network of drainage channels, some of which were cleared of debris and redefined in order to re-establish drainage in the intertidal zone. A small area in the central part of the site had been converted to improved pasture, and ploughing had served to level any indications of former channels.

Historical brine well records for the area (Halcrow Group Ltd. 2011) show that bedrock occurs at depths of 24–31m below ground level (bgl) and consists of Triassic Sherwood Sandstone (BGS 2014). Below this are Permian Upper Marls, Sherburn Anhydrite and Rotten (or Carnallitic) Marls, with Boulby Halite occurring at a depth of approximately 270m bgl. This 25m thick salt bed was the source of an extensive extraction industry from the late 19th century (Rowe 1999, 20–1) until 1970 when the Cerebos factory, (the remains of which were located to the west of Area 2), closed. Overlying the bedrock, glacial till (boulder clay) and laminated clay occur at depths of between 1m and 10m bgl towards the western side of the site. This is overlain by estuarine deposits measuring up to 14m thick (Halcrow Group Ltd. 2011). The soils in the area are mapped as being pelo-alluvial gley soils of the Wallasea 2 Association, which are deep stoneless clayey soils (Soil Survey of England and Wales 1983; Jarvis *et al.* 1984, 292–5).

The early Holocene (post-glacial) history of this part of the north-east coast has been the subject of considerable palaeogeographical study, in part because of peat layers preserved in the Tees Estuary (e.g. Plater *et al.* 2000; Shennan *et al.* 2000) and Hartlepool Bay (Waughman 2005). The peat layers were formed in freshwater or brackish conditions during periods of lower sea level, and were subsequently buried by marine deposits during periods of marine transgression.

During investigations within Hartlepool Bay Mesolithic, Neolithic, Early and later Bronze Age layers were recorded (*op. cit.*, 121–42). Each of these layers (identified in a series of trenches, test pits and areas) provided dating, palaeoenvironmental and hydrological evidence as well as glimpses of human activity during the different chronological periods.

Of specific relevance to the Marsh House Farm site, which was 5.5km to the south-west of the core area of the Hartlepool Bay investigations, were changes identified between the Early Bronze Age and later periods (*op. cit.*, 134–9). In summary, during the earlier Bronze Age, sea level was lower than at present and evidence of woodland clearance combined with mixed farming regimes on the margins of the Hartlepool wetlands were recorded.

During the Middle Bronze Age, sea level rose but then fell during the later Bronze Age causing fluctuations in wetland areas. This corresponded with an apparent increase in the intensity of exploitation of the area. Within the investigated areas, repeated small-scale clearances by burning, a prolonged phase of cultivation, potential management of woodland pasture and/or wild food resources and evidence of some use of the reed-swamp and areas of open water were evident. Interestingly, possible hoof-prints recorded in the peat surfaces in two areas that were potentially a former channel hinted at the use of coastal salt-marshes for livestock grazing (*op. cit.*, 138).

From the Iron Age onwards sea level rose and combined with a lack of human activity recorded at Hartlepool bay suggested a move towards higher elevations. The possibility of yet undiscovered Iron Age and Romano-British utilisation of the area for salt extraction, a common occurrence within other estuaries (e.g. the Lincolnshire coast), however, remains (Willis 1999, 101; Waughman 2005, 139; Petts and Gerrard 2006, 151).

EXCAVATION RESULTS

Across the site, the earliest identifiable activity was represented by assemblages of worked flint belonging to the Mesolithic, Neolithic and Early Bronze Age. Although many of the artefacts were residual in reworked deposits, they signify nearby early prehistoric activity. The first phase of prehistoric occupation was represented by finds-rich deposits dumped within a curving channel, a C-shaped gully, a group of pits and a ring-gully in Area 3. The artefacts recovered from features in this area suggest periods of activity from the Mesolithic and Neolithic periods, with direct evidence for occupation during the Middle and Late Bronze Age.

The second phase of occupation was characterised by Late Iron Age and Roman period features comprising an evolving enclosed settlement and field system in Area 2. Part of an undated field system in Area 1 has also been tentatively attributed to this phase, along with two conjoined later prehistoric 'barrowlets' (see Powlesland and May 2009) and two pits.

A third phase was represented by a range of features of medieval and post-medieval origin identified across the site. The remains of a ridge-and-furrow field system were identified across Areas 1, 2 and 3, along with a number of field boundaries.

Phase 1: Bronze Age

In Area 3 a natural curving channel formed the western limit of two groups of prehistoric features and deposits which occupied a low shoulder of land thought to provide a focal point for Bronze Age activity (Fig. 3). The northern group comprised: a cluster of pits; a C-shaped gully or truncated ring-gully; stakeholes; extensive dumped layers at the base of the channel, and two features cut into the channel (Fig. 4a). These features and deposits appeared to represent a coherent group associated with activity for which heated stones were a key component. The combined radiocarbon and pottery dating suggested that the features were in use during the Bronze Age, and possibly during the Early Bronze Age.

To the south was a marginally better preserved ring-gully with a south-east facing entrance and a nearby stone-filled pit. A section of the gully and its fills survived well enough to provide artefactual and environmental finds which suggested a Middle and Late Bronze Age date.

Northern group

A total of seven pits (**5189**, **5224**, **5225**, **5227**, **5230**, **5232** and **5239**) were located along the eastern edge of the curving channel, with pit **5189** partially sealed by its

upper fills. Feature **5189** contained no diagnostic finds but an Early Bronze Age radiocarbon date was obtained from a fragment of oak charcoal recovered from its fill (1756–1613 cal. BC; SUERC-48129). A short distance to the north, the fill of a shallow pit (**5230**), yielded a residual fragment of fired clay and a pottery sherd of probable Bronze Age date.

The burnt and fire-cracked stones recovered from the majority of pits were similar to those found at the base of channel **5157** (see below). All but pit **5230** were devoid of diagnostic finds, but their locations and comparable fills suggest a common function and period of origin.

Near the corner of the channel was a heavily truncated C-shaped gully (**5181**), which may have originally been a ring-gully with a 12.9m span and probable south-east facing entrance, though its putative south-western side had been removed by medieval and later ploughing. At one of the excavated sections its shallow surviving fill (**5182**) contained a fragment of fired clay and sherds of un-diagnostic handmade pottery of probable prehistoric origin. The fill (**5174**) of a recut (**5015**) contained a single jar rim sherd which was also undated. Despite the absence of diagnostic finds, it was thought that the gully dated from the same period as the pits and basal channel fills.

A short distance to the south, the lower fills of the channel sealed three stakeholes or small postholes (**5243**, **5245** and **5247**) which could represent some form of light structure along the eastern bank. Close by, the upper fills of the channel overlay a deposit (**5191**), which extended up the eastern bank and contained: a retouched flint thumbnail scraper of Neolithic or Early Bronze Age date; a flint flake with a pronounced hinge of later prehistoric origin; and two undiagnostic sherds of handmade pottery of probable prehistoric origin.

This group of features were thought to be purposefully situated in close proximity to the channel which was apparently open at the time of Bronze Age occupation. At the base of the channel (Fig. 5, section 5054) the primary deposit (**5275**, including contexts **5217**, **5164**, **5197**, **5238**, **5248**, **5249**, **5250**, **5251**, and **5254**) and secondary deposit (**5252**, not illustrated) comprised extensive dumps of fire-cracked stones along with a relatively large assemblage of handmade pottery, worked flints, and a few fragments of animal bone and teeth. Below this finds rich layer was a short gully (**5193**) that was angled toward the base of the channel. Its fill (**5192**) contained a reduced flint flake of Mesolithic date, along with some fired clay and fire-cracked stone.

The combined pottery assemblage from the primary and secondary fills of the channel included sherds of open jars and rims of varying tempers, one decorated with an incised line and a body fragment with fingernail pinching. Analysis of the vessels suggests that although the crushed stone tempering was strongly characteristic of later Iron Age traditions, decoration styles were indicative of earlier ceramic types (Manby this volume).

Lithics recovered from the base of the channel included: a Mesolithic core and flake; a Late Mesolithic or Early Neolithic blade; numerous undiagnostic flakes; and examples of Neolithic and Early Bronze Age tools. These later tools included seven scrapers

(including end, end and edge, thumbnail and double end examples), a fabricator, a knife or scraper fragment and a bifacial arrowhead (Rowe this volume).

These lower layers contained little material suitable for radiocarbon dating so the process was attempted upon fragments of tooth enamel from primary deposit **5250** and an equivalent deposit (**5249**). Tooth enamel is known to produce artificially young dates when subject to radiocarbon measurement (Gordon Cook pers comm.), thus the results should be treated with caution. The samples (SUERC-48134 and SUERC-48130) returned dates within the Late Bronze Age (see Table 10), which if artificially young, suggest the deposit was forming sometime before this.

An understanding of depositional processes within the channel was important for interpreting the finds assemblages recovered from the base of the sequence. A column sample was taken (Plate 2) through these deposits (from 4.81mOD to 5.31mOD), assessment of which demonstrated that the finds and fire-cracked stones were dumped into a low energy water system (see Palaeoenvironmental monolith section below). These results corroborated the suggestion that the basal deposits represented an accumulation of midden-like material from nearby activity, rather than an accumulation washed along the channel from further 'up stream'.

Two undated features (ditches **5270** and **5208**) may have represented later activity in this area as they cut feature **5015** and layer **5217** respectively. Both have been assigned to this phase, though their actual chronology remains unclear.

Sinuuous ditch **5208** (part of group **5276**) was cut through the lower three layers within channel **5157** (Fig. 5, section 5054). It had been recut at least once and was sealed by the upper channel fills. This feature followed the edge of the channel and may have represented some form of water control or drainage.

Southern group

Approximately 20m to the east of channel **5175** and 120m south-east of the C-shaped gully (Fig. 4b) a ring-gully (**5001**) was recorded along with a nearby cobble-filled pit (**5087**). The ring-gully enclosed an area c.11m in diameter and had a 2.2m wide south-east facing entrance, though the eastern third of its circumference lay outside the excavated area. The south-western portion was poorly preserved with a surviving depth of less than 0.1m, whereas the western section survived to a depth of 0.27m.

Gully **5001** was generally U-shaped in profile with shallow-sloped sides, which, in combination with its laminar silty fills (Fig. 5, section 5022), suggested it was a drainage feature (drip-gully) rather than structural. Significant assemblages of finds including fragments of charcoal suitable for radiocarbon dating along with over a hundred sherds of handmade pottery were recovered mainly from the gully fills near the eastern terminal.

At the edge of excavation (Fig. 5, section 5022) a primary fill (**5109**) of the gully contained four pieces of undiagnostic pottery; an equivalent deposit (**5179**) produced a further 39 pieces. A charcoal-rich tertiary fill (**5108**) which only appeared on the internal side of the gully contained a total of 20 sherds, including examples of a

decorated handmade carinated jar with incised decoration. The deposit also yielded fragments of clinker (burnt coal) and fired clay, possibly from a hearth or other high-temperature activities (see Starley this volume). Three fragments of oak charcoal recovered from this deposit were radiocarbon dated, returning the following date ranges: 1518–1417 cal. BC (SUERC-48128); c.1743–1560 cal. BC (SUERC-52183) and c.1611–1439 cal. BC (SUERC-52184). These measurements suggested origins for this material within the later Early Bronze Age (periods 2 or 3 Manby *et al.* 2003, 61-5) or within the following Middle Bronze Age, notwithstanding any ‘old wood’ effect.

Part of a jet fitting (recorded find (RF) 3) of Bronze Age origin was recovered from the upper fill (**5101**) of the ring-gully (Plate 3), along with a flint flake of later prehistoric date and sherds of handmade pottery. The jet fitting had the appearance of a napkin ring and was of an artefact type found predominantly in lowland Scotland and northern England (Speed this volume). The objects are believed to have functioned as cloak fastenings, with a large eyelet and drilled holes for a pin. Examples from elsewhere have suggested Early and Middle Bronze Age dates, with most recovered from burials rather than domestic settings. The Marsh House Farm fitting was also of particular interest because it was formed from jet, rather than cannal coal or oil shale, thus increasing its value and potential significance. The perceived date of the fitting was corroborated by a radiocarbon date obtained from a fragment of heather charcoal, which returned a range of 1442–1290 cal. BC (SUERC-52182).

A worked fragment of cannal coal was recovered from the backfill of a land drain cut through the ring gully at the edge of excavation. It had been drilled, but the material had failed before the object took shape. It was presumed to have originated from the ring-gully fill. A short distance to the west an additional fragment of a cannal coal thought to be a lathed chuck was recovered from a medieval plough furrow (**5024**). Its date and place of origin are unknown.

The upper fill (**5002**) of the south-west facing ring gully terminal contained thirty pottery sherds belonging to three jars, one of which was decorated with comb imprints and another with ‘maggot’-shaped combs markings, both diagnostic in character and, like the forms described above, thought to date from the Middle to Late Bronze Age.

A line of three shallow postholes (**5123**, **5125** and **5126**) within the diameter of the ring-gully may have been contemporary, though the presence of a small sherd of medieval pottery within the eastern post (**5123**) and the proximity of medieval and later parallel boundaries suggested these were later.

The combined evidence for Bronze Age activity within Area 3 was particularly significant. The radiocarbon dates supported the assessment of the pottery, jet and flint assemblages, which indicated that domestic, and potentially industrial activities were carried out on the fringes of Cowpen Marsh during the Bronze Age.

Phase 2: Late Iron Age and Roman period

Archaeological evidence for a series of Iron Age and/or Roman period settlement enclosures, an associated field system and a multi-phased sinuous boundary were identified on the low-lying plateau in Area 2; outlying components of the field system

were also recorded in Areas 1 and 3. A figure-of-eight feature located at the highest point of the site in Area 1 was also investigated and tentatively attributed to the same period of activity. The modest assemblages of pottery recovered from features belonging to this phase mostly comprised handmade fabrics dated broadly to the later Iron Age or Roman period. The pottery was therefore unsuitable for helping to further refine the chronological sequence of the enclosures.

Area 1: The barrowlets and enclosures

In the northern corner of Area 1, the truncated remains of two sub-circular gullies (**28** and **30**) formed a figure-of-eight shaped feature (Fig. 6; Plate 4). Both un-broken gullies measured approximately 5.5m in diameter. It is suggested that the features represented two connected barrowlets (see Powlesland and May 2009), though there was no evidence for burials, possibly as a result of plough damage.

Although no finds were recovered from the primary fills of features **28** and **30**, artefacts were identified in the fills of a recut (**56**), which extended around the south-western half of the feature. These included a residual Early Mesolithic microlith recovered from context **66** (secondary fill of **56**). The majority of the other recovered finds were located around the junction between features **28** and **30** on the western side. These comprised worked flint, fragments of burnt bone (with possible fragments of human skull from fill **77** – see Fig. 5, section 46) and a sherd of handmade pottery of probable later prehistoric or Early Roman date. A single grain of barley retrieved from deposit **66** produced a radiocarbon date range of cal. AD87–315 (SUERC-52176).

It is unlikely that the Mesolithic flints can be interpreted as primary dating evidence for the infilling of the recut gully. It is more credible that the radiocarbon date and handmade pottery provide a broad *terminus ante quem* of the Iron Age or Roman period for the monument (see discussion). This, and the small diameter of the ring-gullies suggests the monuments represent 'barrowlets' rather than their larger and earlier round barrows of the later Neolithic and Bronze Age.

To the south of the monument was a network of gullies defining two enclosures. The features apparently respected the figure-of-eight feature, indicating that the mounds may have been extant when the gullies were dug. The only find recovered from the gullies was a fragment of burnt bone. A north-west to south-east aligned boundary (**39**), which respected the western side of the monument, yielded 20 fragments of fired clay but no datable finds. Gully **149** extended to the north-east beyond the edge of the development area, whilst to the south the complex also appeared to extend northwards.

Two shallow ovate pits (**4** and **6**) of unclear function were recorded to the south-east of the enclosures in Area 1. The fill of pit **4** contained three sherds of Iron Age or Roman period pottery, whilst pit **6** yielded a further two sherds and a burnt flint fragment of prehistoric origin which may have been residual.

Area 2

The archaeological remains in Area 2 (Fig. 7) comprised the eastern edge of a multi-phased Late Iron Age and Roman period settlement that extended westwards beyond the development area and associated fields to the south and north-east. To the east was a major boundary (group **1001**) that may have pre-dated the settlement, but also formed a reference for the developing systems of enclosure that grew up around the settlement core. The course of the boundary apparently survived into the post-medieval period, though its position varied.

The enclosures

The settlement remains comprised a series of enclosures (Fig. 8) formed by numerous recut ditches, and a small number of associated pits. Assemblages of Late Iron Age and Roman period handmade pottery were recovered from ditch and pit fills, but were insufficiently diagnostic to refine the date and phasing of the features. Stratigraphical relationships suggested a sequence of alteration and expansion, cumulating in a system of fields that respected the edges of some of the earlier enclosures. The only enclosure not to form part of the later system of ditches was Enclosure A, which given its stratigraphical relationships, may have been the earliest phase of occupation.

Enclosure A was replaced by Enclosure B, however, no stratigraphical relationships existed between these and Enclosures C and D to the south. The exact chronology is therefore unclear, however, Enclosures A and C may have been contemporary (Fig. 8a), with Enclosures B and D representing later replacements (Fig. 8b).

A later phase potentially comprising a system of fields was apparent from recuts of the ditches of Enclosure D that extended southwards as features **1196** and **1039**. Possible contemporary features included perpendicular ditch **1220** and ditch **1022** and Enclosure B to the north. The final phase of enclosure comprised a recut of the eastern edge of Enclosure B that extended southwards as ditch **1596** bridging the gap between the earlier enclosures.

Enclosure A

Enclosure A was located near the northern end of Area 2 and measured some 35m wide (north to south). The associated ditch fills contained animal bone, some fired clay, marine shell and a single sherd of Roman period grey ware. This enclosure also contained the only convincing structural feature in the settlement, comprising an angled gully (**1599**) which appeared to form the part of a drip-gully or fence line.

Within the arc of this gully, pit **1603** contained a sandstone object from the Vale of Clwyd and part of the lower stone of a broken disc quern RF23 (Plate 5). The dressing was consistent with pre-Conquest beehive querns, though the narrow central perforation is believed to be a post-Conquest innovation (Cruse and Gaunt this volume). It was also deduced from the smooth state of the grinding surface that the stone could have later been used for non-grinding purposes, perhaps associated with small-scale industrial metalworking, suggested by concentrations of charcoal/coal slag, hammerscale and fired clay recovered from within the pit.

Two radiocarbon dates were acquired for the upper pit fill (**1626**) including one measured from charcoal returning a date of c.41 cal. BC–cal. AD116 (SUERC-52180). A second measurement (taken from tooth enamel) returned a date range of cal. AD382–539 (SUERC-52181), though this was thought to be artificially young because of technical problems associated with dating tooth enamel (Gordon Cook pers. comm.). The first radiocarbon date confirms the interpretation of the date for the quern, and accounts for the presence of a Roman period iron hobnail and sherd of pottery of later prehistoric or Roman period date within the same deposit.

Enclosure B

Enclosure A was cut by ditch **1356** which formed an irregularly-shaped enclosure (B) that extended southwards.

Enclosure C

Approximately 10m to the south was a rectangular enclosure (C) formed by ditches **1708** and **1343** and measuring c.25m by 35m. A sherd of Roman period grey ware and three sherds of pottery of Late Iron Age or Roman date were recovered from ditches **1708** and **1343**. Towards the centre of the enclosed area ditch **1480** may have formed a subdivision of the internal space of Enclosure C. Its fill (**1479**) yielded a single sherd of Roman pottery. Gully **1624**, which cut ditch **1480** was aligned at 90 degrees and may have represented further internal division of this enclosure. A sherd from a Tees Valley B Ware jug rim was recovered from its primary fill (**1481**) but was thought intrusive, whilst a deposit (**1628**) from another section yielded a rim sherd of a Roman period grey ware bowl.

Enclosure D

A subsequent phase of enclosure (D) formed by ditches **1041**, **1264** and **1370** represented the expansion of Enclosure C to the south and its redefinition to the north. A group of recut ditches (including feature **1394**), gullies and pits was contained within Enclosure D near the western corner of Area 2. The largest and deepest pit (**1443**) yielded animal bone and an assemblage of Late Iron Age and Roman period pottery including examples of a grey ware jar, handmade pottery and two sherds of Mortarium. A quantity of animal bone was found in pit **1520** and in its recut (**1707**). Although the features were suggestive of nearby settlement and contained more abundant assemblages of finds than elsewhere on the site, relatively few diagnostic artefacts were recovered.

The field systems and eastern boundary (1001)

On its northern side Enclosure A was cut by a ditch (**1022**) and its recut (**1020**) which extended towards the north-western end of Area 2 (Fig. 7). Feature **1022** (equivalent to **1008**) curved northwards towards boundary **1001**, whilst **1020** (equivalent to **1007**) curved away westwards to the corner of a possible enclosure. The finds recovered from ditch **1007/1020** included a single un-abraded rim sherd of samian ware dating from AD150–200, sherds of Roman grey ware pottery, some animal bone, cinder and coal, a

flint flake of later prehistoric date, fragments of ceramic building material and some coal.

To the south, the southern edge of Enclosure B was cut by a large irregularly shaped pit (**1670**). A fill (**1673**) of this pit contained a fragment of Roman period ceramic roof tile (*tegula*), along with fragments of fired clay, and some coal. A sherd from a Tees Valley A jug handle (late 12th to mid- to late 13th century) was also recovered from the upper fill but was considered to be intrusive. This pit was cut into a deposit of clay and hence may represent quarrying.

To the south and east of the settlement core the ditch forming the eastern edge of Enclosure D (**1041**) was recut as part of a field system that extended to the south as a narrow ditch (**1039** and **1196**) on a similar alignment as boundary **1001**. This long straight feature was thought to represent part of the Roman period field system that developed organically in reference to the settlement enclosures. It may also have been associated with enclosure **1222** at the western edge of the area as this was respected by two inter-cutting parallel ditches (**1218** and **1220**) which turned southward, terminating marginally before joining ditch **1039**, probably linking the long boundary to the enclosure.

Enclosure **1222** contained a gully and two possible postholes, but no finds were recovered from these internal features. It is not known if these features belonged to a settlement enclosure beyond the excavated area to the west or was an additional field boundary.

Two parallel gullies (**1065** and **1072**) extended from the western edge of excavation on a parallel alignment with the ditches to the north. A sherd of later prehistoric or Roman period handmade pottery was recovered from the southern gully (**1065**). Both **1072** and **1065** were ploughed away at their eastern ends so their original extents could not be established.

The major boundary (group **1001**) extended across Area 2 from north-west to south-east and through Area 3 (Fig. 3) on the same alignment as group **5026**. The feature comprised a sequence of sinuous ditches cut roughly along the same alignment, representing several phases of redefinition of the same boundary. It appeared to be respected by the settlement and field enclosures. The boundary had apparently been most frequently refurbished in the area adjacent to the settlement core, and finds were also concentrated in this zone, though they were generally sparse in quantity. The range of cultural material recovered from the various fills included: Late Iron Age or Roman period pottery including grey ware, some industrial fuel waste, animal bone, a horn core and a crab claw. The fill (**1161**) of ditch **1154**, one of the later incarnations located to the north-east of Enclosure A, contained cattle bone that returned a radiocarbon date range of to AD71–224 (SUERC-49243).

To the south, opposite Enclosure B, deposit **1111** from ditch **1010** contained two sherds of Roman period grey ware. The fill (**1119**) of an adjacent ditch (**1118**) yielded some caprovid bone that was suitable for C14 dating. It returned a range of 48 cal. BC to cal. AD74 (SUERC-48127).

In the south-east corner of Area 2 on the east side of boundary **1001** a group of three ditches (**1002**, **1037** and **1086**) of Late Iron Age or Roman origin were recorded.

Phase 3: Medieval and post-medieval

During the medieval period ridge-and-furrow cultivation was introduced in four plots that spanned Areas 1, 2 and 3. The medieval field systems appeared to have influenced the alignments of a number of features of medieval date (Fig. 7), though some of these did not appear to relate to arable agriculture.

A field system belonging to post-medieval period but with a possible medieval origin was recorded on the First Edition OS map of 1860 (Fig. 2). This boundary was represented by ditch **1074** in Area 2 (Fig. 7), which extended across Area 3 as group **5277** and eastwards as **5120** (Figs. 3 and 4b).

FINDS AND ENVIRONMENTAL EVIDENCE

Flint (Peter Rowe)

A total of 78 flint items were recovered during the excavations, Table 1. The full results of their analysis are detailed in earlier reporting (Rowe 2014; NAA 2015a). Below is a summary presented by area.

Table 1: Summary of flint artefacts

Area	Top/Subsoil	Excavated	From samples	Total
1	2	5	1	8
2	1	3	1	5
3	3	40	22	65
Total	6	48	24	78

Area 1

Excavations in this area produced eight pieces of flint, which included one natural gravel piece from the subsoil (**2**) and a pot-lid (thermally) fractured natural piece from the fill (**142**) of the northern gully (**28**) of the burial monument.

Table 2: Summary of flint artefacts from Area 1

Natural	Waste				Tools	Total
	Core	Flake	Burnt	Angular	Microlith	
2	1	1	2	1	1	8

The earliest item from Area 1 was a microlith fragment from the primary fill (**55**) of the northern ring-gully (RF4; Fig. 9, no. 1). This was a broad blade microlith (13mm wide) knapped from a distinctive red-brown raw material. The microlith had abrupt retouch

along the left edge forming an obliquely truncated point; the tip (proximal end) was missing. This microlith type was characteristic of the Early Mesolithic period, although they were noted in small numbers (and are perhaps residual) on later Mesolithic sites. As previously discussed, it was undoubtedly residual in this context.

A small natural pebble of dark brown flint used as a core (Fig. 9, no. 2) was recovered from the subsoil (2). This piece had evidence for at least four blade-like removals from two opposed platforms. The small number of removals, the poor quality of the raw material and crushing on one of the platforms indicated a later prehistoric date (Young and Humphrey 1999).

An angular chunk, hard-hammer struck, with a pronounced bulb of percussion and flat platform was recovered from context 33 (fill of northern barrowlet gully 28). This was undiagnostic but is more likely to be Bronze Age or later in date rather than earlier. The same is true of a small flake from context 112 (from the same feature). This also had an unprepared platform and was more likely to be of post-Neolithic date rather than any earlier.

The small assemblage from Area 1 was generally later prehistoric in date. Those items from the fills of the barrowlets were largely undiagnostic, but displayed the cruder knapping characteristics of the later prehistoric periods (i.e. post-Neolithic). The Early Mesolithic microlith was interesting in its own right as demonstrating a hunter-gatherer presence in the Tees Estuary during this period.

Area 2

This large area produced very little in the way of lithics with only five items recovered. All were knapped with no natural pieces noted.

Table 3: Summary of flint artefacts from Area 2

Natural	Waste		Tools	Total
	Flake	Blade		
0	4	1	0	5

The assemblage from Area 2 included several items with Mesolithic affinities; these included two pieces produced in the distinctive red-brown flint utilised to manufacture the microlith from Area 1. A red-brown flint flake with blade scars on its dorsal face and a carefully curated platform was recovered from the subsoil (1005; Fig. 9, no. 3). It had a deliberate notch on its left edge and damage along its right edge consistent with use. Notched flakes are often noted on Mesolithic sites, and this item certainly has knapping characteristics typical of the period. A narrow blade of almost blood-red flint was recovered from context 1113 (fill of boundary feature 1001; Fig. 9, no. 4). This was a proximal end with a notch on the right hand side. It is likely that this was a mis-struck microburin with the snap occurring beneath the intended fracture point. A flake from context 1201 (fill of ditch 1188; Fig. 8, section 5054) had a parallel sided blade scar on its dorsal face and was also likely to be Mesolithic or Early Neolithic in date.

The two remaining flints were a flake from context **1015** (fill of boundary ditch **1007**) and an undiagnostic flake fragment from context **1626** (from pit **1603**). The flake from ditch **1007** had an unprepared platform and a prominent bulb of percussion. It is likely to be post-Neolithic in date.

The lithics from Area 2 suggest some level of residual Mesolithic activity with a maximum of two flakes possibly contemporary with the later prehistoric settlement.

Area 3

This area produced the majority of the lithics recovered during the project, 65 in total. However, 25 of these items were natural, the majority of the rest came from the various fills of the palaeochannel.

Table 4: Summary of flint artefacts from Area 3

Natural	Waste					Tools				Total
	Flake	Blade	Core	Angular	Burnt	Arrowhead	Fabricator	Scraper	Tool frag.	
25	20	2	1	6	1	1	1	7	1	65

The earliest technology represented in this area of the site was a Mesolithic blade industry. A single platform, pyramidal, core was recovered from context **5249** (primary palaeochannel fill; Fig. 9, no. 5). This had the scars of at least eight blade removals and a prepared platform, and is typical of the Mesolithic period. Its red-brown colour linked it circumstantially to the Mesolithic material from Areas 1 and 2. A complete blade was recovered from context **5250** (primary palaeochannel fill) with a blade distal end from context **5093** (unstratified). These were both on a light brown flint.

The dominant technology from this area was flake production. Three of the 20 items had knapping characteristics typical of the Mesolithic or Early Neolithic period, including two flakes residual in later contexts and a flake from the fill (**5192**) of gully **5193**. These had prepared platforms, diffuse bulbs of percussion and parallel scars on the dorsal face. The remainder were more likely to be post-Neolithic in date with flat platforms, pronounced bulbs of percussion and a tendency to terminate in hinge, step or plunging fractures. Many of these were likely to be contemporary with the cut features of the site. Three flakes demonstrated evidence of retouch. In all cases this was crudely executed and was limited in its extent. Again, this evidence might be a pointer to the later, more expedient lithic industries of the later Bronze Age and Iron Age (Young and Humphrey 1999).

The chronologically diagnostic tools from this area represented a broad temporal span. A fabricator was recovered from **5214** (upper palaeochannel fill; RF13; Fig. 9, no. 6). This had been burnt and had a grey patina with some pitted damage to its surface. The item had the highly worn and polished appearance of this enigmatic tool type which is current in the Neolithic and Early Bronze Age.

Also of this broad period was a broken or unfinished arrowhead. This was based on a thin flake of light brown flint with pressure flaking along both edges and on both faces but with breaks at proximal and distal ends. This item was recovered from a primary fill of the palaeochannel (**5250**; Fig. 9, no. 7).

Also within the fills of the palaeochannel was a collection of seven scrapers. The collection included two circular scrapers with retouch along one edge and around the end. Both were on robust flakes with flat platforms and pronounced bulbar ends. The item from fill **5250** was burnt but intact with the example from deposit **5191** having a break on the left edge (Fig. 9, no. 8). This type of scraper was most commonly associated with Early Neolithic period but remains current in to the later Neolithic/Early Bronze Age. The tool fragment from primary fill **5249** was likely to be from a similar scraper, but is too fragmentary for further comment.

The dominant scraper type was the thumbnail or button scraper. There were five items that fit this class or share affinities with it. Recorded Find 20 (secondary fill **5252**; Fig. 9, no. 9) was the closest to a textbook example with a small thick circular flake forming the blank with semi-invasive retouch along one edge and the end. Variants included an example on a natural flake (**5249**), an example with the retouch executed from the bulbar side (**5250**) and two items with some bifacial working (e.g. **5250**; Fig 9, no. 10) but of the same size and style of working as the thumbnail class.

Area 3 produced an interesting assemblage with a bias towards to the Late Neolithic/Early Bronze Age period, particularly from items retrieved from contexts associated with the palaeochannel. The deposition of lithics in this natural or enhanced natural feature might be significant given the high proportion of tools, particularly scrapers. This might be function related, e.g. steeping/washing and processing skins, or have a ritual significance in the form of deposition of artefacts in a watery environment.

Discussion

The scheme has produced a modest amount of lithic material. Areas 1 and 2 have produced very small assemblages, the majority of which is unstratified or residual.

All three areas demonstrated small numbers of lithics characteristic of Mesolithic activity. Of particular interest was an early form of microlith and a bias towards the use of a distinctive red-brown drift flint. Although suspected, this is the first direct evidence of a hunter-gatherer presence in the Tees Estuary outside of Hartlepool Bay (Vaughman 2005). There appeared to be an apparent bias for material of a Mesolithic character to favour the red-brown flint.

None of the cut features in any area of the site (e.g. ditches, pits or gullies) produced significant lithic assemblages that could be useful in site phasing. However the palaeochannel in Area 3 had a significant collection of lithics including tools particularly characteristic of the Late Neolithic or Bronze Age. Whilst these could be casual losses the possibility of deliberate deposition should be considered.

The flint from all areas was generally various shades of brown in colour with well-reduced cortical surfaces where present. The majority was a light brown in colour but

with some variability in hue with toffee or red/brown coloured flint present. The source of all this material is likely to be the local glacial tills or beaches of the Yorkshire coast. Flints from these deposits have been noted as having excellent knapping properties (Durden 1995, 410).

Prehistoric pottery (T. G. Manby)

Prehistoric pottery was recovered from 31 contexts, 23 of which were from Area 3. In total the assemblage comprised 262 sherds weighing c.2.5Kg. The assemblage was examined in accordance with the guidelines set-out in the Prehistoric Ceramic Research Group's published handbook (2011) and a detailed catalogue was compiled for incorporation with the site archive (Manby 2014).

The ceramic material comprised:

69 Sherds (in excess of 2.5cm square);

90 Small Sherds (between 1cm to 2.5cm square);

24 Flakes (angular pieces split off vertically from the sherd wall); and

79 Crumbs (abraded and featureless pieces less than 1cm square).

There were no complete profiles, though some partial profiles were possible due to rejoining pieces. The majority of the material consisted of a hard fabric with much crushed angular stone as tempering, surfaces were harsh and exteriors tending to be oxidised. A second fine fabric with sand tempering was identified; this comprised less than 5% of the total assemblage.

Several distinctive features were identified within the assemblage including some rims with an incurving profile to a simple flattish lip. A single externally beaded lip was noted. Two small flat-base fragments were also identified as were sherds decorated with incised lines (spaced diagonals and horizontal), paired fingernail pinching and impressed "maggot" imprints.

Diagnostic groups

Context 5002: A large assemblage: 33 Sherds; 22 Small Sherds; and 3 Flakes. Weight 1280g. At least three vessels were represented including: large pieces of a single barrel-shaped jar (Fig. 10, no. 1), plain with an incurving rim; an inward curving rim profile with diagonal incised lines below the lip (Fig. 10, no. 2); and sherds with finger-nail pinched decoration (Fig. 10, no. 3).

Context 5108: 5 Sherds; 3 Small Sherds; 1 Flake; and 5 Crumbs. Weight 190g. Largest piece was an angle shoulder sherd with spaced diagonal incised decoration (Fig. 11, no. 7).

Context **5249**: 10 Sherds; 24 Small Sherds; and 1 Crumb. Weight 305g. Included: four rim fragments, one decorated with an incised line (Fig. 11, no. 13); and a body fragment with finger nail pinching.

Significance

The physical character of the fragmentary pottery is consistent with that of occupational type assemblages in a range of fragment size and condition. Further local comparison is difficult as south-east Durham County has few published later prehistoric occupation sites and assemblages (Waughman 2005, 137–139; Annable 1987, 284–259). The Marsh House Farm assemblage did, however, have a few diagnostic characteristics useful for dating:

- The vessels were all handmade and low-fired to a generally oxidised colour;
- Vessels rims were inward curving with simple flattened lips;
- Decoration was limited to fingernail pinching, incised lines and ‘maggot’ type imprints; and
- Coarse grained angular stone temper extensive used.

Hard fabrics with profuse crushed-stone tempering are a strong characteristic within the pottery tradition of the later Iron Age throughout Northern England (i.e. later centuries of the 1st Millennium BC) (Challis and Harding 1975, 94–104; Heslop 1987, 63; Evans 1995, 48). However, decoration by fingernail pinching and ‘maggot’ imprinting are features of earlier ceramic types as are the simple rim forms of Middle and Late Bronze Age ceramic assemblages (Challis and Harding 1975, 30–39; Manby *et al.* 2003).

The radiocarbon dating of the deposits containing this pottery was consistent with Middle Bronze Age activity, notwithstanding any ‘old timber effect’ arising from the samples being oak charcoal. The available ceramic features and associated radiometric dating is, therefore, strongly in favour of a Middle/early Late Bronze Age activity phase at this site.

An artefactual assemblage of this date in the later centuries of the 2nd Millennium BC is a significant addition to the settlement history of the northern Tees Estuary/Hartlepool Bay hinterland.

Later handmade pottery (C. G. Cumberpatch)

The assemblage consisted of 40 sherds weighing 263g representing a maximum of 33 vessels. The analysis of the handmade pottery assemblage followed the principles and conventions set out at some length in the report on the much larger assemblages recovered from the East Coast Pipeline and related sites (Cumberpatch 2014b). Of the two principal fabric types which typically comprise later prehistoric and Roman period domestic assemblages in north-east England, one was completely absent. This was the calcite tempered component (H1/H4) which usually forms a minor but significant

element of such assemblages but is rarely, in the author's experience, completely absent. The significance of the distinction made between calcite tempered wares (H1/H4) and quartz and rock tempered fabrics (H1) by the original makers and uses of the handmade pottery remains obscure and as a result no clear explanation for the widely varying proportions of the two types can be offered at the present time and the reason for its absence from the assemblage discussed here is likewise unclear.

The dating of the handmade pottery has proved resistant to the normal techniques used by archaeologists. What is clear is that many of the forms and fabrics enjoyed an extremely long life, spanning the Iron Age and the Roman period and very similar fabrics continued in use into the post-Roman period.

The work on the East Coast Pipeline sites has allowed some of the vessel forms to be dated, at least in broad terms, although the fabrics remain impossible to date with any useful degree of accuracy. As a result the dating scheme can only be employed where identifiable vessel forms are recovered and this was not the case here.

All of the later handmade pottery was recovered from contexts in Area 2 and in the majority of cases the quantities from individual contexts were low. Only context **1540** contained more than a handful of sherds, including the only rim in the group. The majority of sherds showed significant signs of abrasion perhaps implying that they were redeposited or had been exposed to mechanical weathering prior to their burial. In one case (context **1005**) the sherds were associated with much later material, implying that they were residual in a later context.

Table 5: Later handmade pottery

Context	Type	No	Wt (g)	ENV	Part	Form	Decoration
1005	H2 Fine Quartz	3	7	2	BS	Hollow ware	U/Dec
1021	H2 Fine Quartz	2	4	2	BS	U/ID	U/Dec
1023	H2 Quartz	1	6	1	BS	Hollow ware	U/Dec
1023	H2 Rock	2	2	2	BS	Hollow ware	U/Dec
1044	H2 Fine Quartz	1	4	1	BS	U/ID	Fragment
1168	H2 Fine Quartz and rock	1	23	1	BS	Hollow ware	Smoothed ext
1229	H2 Fine Quartz	8	7	8	BS and flakes	Hollow ware	U/Dec
1287	Sandy ware	1	1	1	BS	U/ID	U/Dec
1299	H2 Fine Quartz and rock	3	68	1	BS	Hollow ware	U/Dec
1309	H2 Quartz	1	7	1	BS	Hollow ware	U/Dec
1372	H2 Fine Quartz	2	8	2	BS	Hollow ware	U/Dec
1389	H2 Quartz	1	6	1	BS	Hollow ware	U/Dec
1479	H2 Rock	1	8	1	BS	Hollow ware	U/Dec
1540	H2 Fine Quartz	1	1	1	BS	Hollow ware	U/Dec
1540	H2 Fine Quartz	4	61	1	Rim	Open jar	Smoothed int and ext
1540	H2 Fine Quartz and rock	1	9	1	BS	Hollow ware	U/Dec
1540	H2 Fine Quartz and rock	5	17	4	BS and flakes	Hollow ware	U/Dec
1540	H2 Fine Quartz and rock	1	12	1	Base	Hollow ware	U/Dec
1681	H2 Quartz	1	12	1	BS	Hollow ware	U/Dec

Romano-British coarse wares (R. S. Leary)

A small assemblage of Romano-British coarse ware pottery comprising 25 sherds weighing 264g was recovered during the project. An archive catalogue (Leary 2014) was compiled according to the standard laid down by the Study Group for Romano-British Pottery (Darling 2004). Key groups are catalogued below and other material is summarised. National fabric collection codes (Tomber and Dore 1998) are included where possible.

Fabric descriptions

GRB1: grey to dark grey, rough feel and irregular fracture. Moderate, medium quartz, sub-angular and sub-rounded quartz similar to texture of BB1

GRB2: Ebor grey ware type. Medium grey with darker grey surface. Moderate, sub-angular and angular medium quartz

GRB3: rough dark grey fabric, hard with glittery grits on surface. Sparse, medium, angular quartz and fine mica, probably some igneous inclusions

Table 6: Romano-British coarse ware

Area	Context	Type	No	Wt	Date range	Comments
2	1010	Grey ware	4	5	Roman	GRB1 bodysherd with zone of burnished wavy line defined by two grooves, optimum date late 2nd/3rd century and after
2	1021	Grey ware	4	8	Roman	GRB1 bodysherds
2	1111	Grey ware	2	1	Roman	GRA1 bodysherds, very abraded
2	1179	Grey ware	1	21	Roman	GRB1 basal sherd
2	1201	Grey ware	1	4	Roman	GRB1 bodysherd
2	1299	Grey ware	1	1	Roman?	GRB1 bodysherds
2	1518	Grey ware	1	7	Roman	GRB1 bodysherd with acute lattice burnish 2nd century
2	1540	Grey ware	1	20	Roman	GRB2 basal sherd, jar
2	1540	Grey ware type	5	18	Roman	GRB1 bodysherds of jar with faint linear burnish marks, probably 2nd century
2	1540	Mortarium	2	159	Roman	Ebor type mortarium base
2	1628	Grey ware	2	14	Roman	GRB1 bead rim bowl, late 2nd to mid-3rd century
2	1702	Grey ware type	1	6	Roman?	GRB3 bodysherd

Vessel types

Most of the sherds were undiagnostic bodysherds or simple base sherds, belonging to closed vessels. Two GRB1 bodysherds had traces of linear burnished decoration (**1518** and **1540**) and one had a zone of wavy line burnish defined by horizontal grooves (**1010**). The linear decoration is likely to date to the Hadrianic–Antonine period from around AD120 until the mid-3rd century. The wavy line burnish motif is common in the late second to third centuries. A diagnostic rim and bodysherd from a GRB1 bead-rim bowl from deposit **1628** dated from the late 2nd to the mid-3rd century (Monaghan 1997, type DP5) and a mortarium base is in York area oxidised ware and dates to the

late first to early third centuries (Monaghan 1997, 931 and Swan and MacBride 2002, 200).

Samian ware (G. Monteil)

Three sherds of samian ware were recovered during the project. Two small, very abraded fragments with excoriated surfaces were recovered from context **1134**. None of the original slip remained on these, but one was probably from a South Gaulish vessel whilst the other was from a Central Gaulish vessel. The third sherd (context **1021**) was less abraded and was the rim of a Central Gaulish dish of Dr.31 form.

Although small, this samian assemblage in conjunction with the other Roman pottery recovered would indicate some form of Roman occupation nearby in the 2nd century AD. The Dr31 from **1021** would suggest a date range in the 2nd half of the 2nd century.

Catalogue

Context **1021**: one rim, Dr.31, Lezoux, 16g, RE=0.08, diam.=220mm. AD150–200

Context **1134**: one bodysherd, extremely worn, South Gaulish, 1g. 1st century AD

Context **1134**: one bodysherd, extremely worn, Central Gaulish, 1g. AD120–200

Medieval and later pottery (C. G. Cumberpatch)

An assemblage of 77 sherds of medieval and later pottery weighing 597g representing a maximum of 70 vessels was recovered during the project. This material is detailed in earlier reporting (NAA 2015a; Cumberpatch 2014c). Overall the assemblage was characterised by a high degree of abrasion, suggesting that the material had been subject either to redeposition or had been exposed to forces of mechanical weathering prior to its incorporation into the contexts from which it was recovered.

The medieval pottery assemblage recovered was of small size and limited inference potential. It indicated activity on or close to the site in the earlier medieval period, tailing off in the later medieval period and falling to virtual imperceptibility in the post-medieval, early modern and recent periods. The assemblage lacked a distinctive character and there was nothing to indicate that it represented more than the casual disposal of locally manufactured domestic pottery.

Ceramic building material (Sophie E. Tibbles)

The ceramic building material (CBM) assemblage from Marsh House Farm comprised 30 fragments, recovered from 13 contexts; Area 2 produced the majority (73%), the remainder came from Area 3. No complete examples of building materials were present, with 40% of the assemblage being recovered from the processing of the environmental samples. This material comprised amorphous 'crumbs'. The Romano-British examples comprised 19 fragments with a total weight of 1186.9g. The remainder was of medieval and possible post-medieval date with seven fragments being

chronologically undiagnostic. The post-Roman CBM is summarised briefly in Table 7; detailed analysis can be found in earlier reporting (Tibbles 2014; NAA 2015a).

Fabrics

One principal Romano-British fabric (Fabric 1), and two sub-variants (Fabrics 1a and 1b) were identified. The sub-variants reflect slight but significant variations in composition. The unidentifiable ‘crumbs’ of Romano-British CBM were of a generic ‘Romano-British fabric’, which was predominant (68% of the assemblage).

Fabric 1: Hard red 10R/5/8 to reddish yellow 5YR/5/6. Occasional light brownish grey 2.5Y/6/2 cores. Abundant fine quartz (0.1–0.25mm). Occasional fine black flecks (0.1–0.25mm). Occasional fine mica flecks (0.1–0.25mm). Occasional coarse ?ironstone (0.5–1mm). Occasional white-firing clay lenses.

Fabric 1a: Hard. As Fabric 1 with inclusions of: Occasional voids from organic temper and/or stones.

Fabric 1b: Hard. As Fabric 1 with inclusions of: Occasional red-firing clay pellets or lenses.

Forms

Two forms were identified within the Romano-British assemblage: brick and roof tile (Table 7). The remainder was not identifiable by form or type (RBCBM U-F/T).

Table 7: Ceramic building material forms present

Form	Quantity	Weight (g)
<i>Bessalis</i>	1	516
<i>Pedales</i>	2	407
Possible <i>Tegula</i>	2	213
RBCBM (U-F/T)	14	30.6
Medieval CBM (U-F/T)	2	0.7
Post-medieval? CBM (U-F/T)	2	19
Un-dated CBM (U-F/T)	7	0.6
Total	30	1186.9

The Romano-British ceramic building material

Tegulae

The only roof tiles identified within the assemblage comprised two fragments of *tegulae* from context **1070** (the fill of ditch **1002**), and context **1673** (the quaternary fill of pit **1670**) within Area 2. No evidence of bonding material (e.g. mortar or *opus signinum*), or heat discolouration was recorded.

The *tegula* from **1673** had an incomplete thickness of >14mm, a weight of 197g and was of Fabric 1b. The remnant of a finger-smoothed flange was recorded, possibly identifiable as a Type 2a, though identification of type is inconclusive due to damage in antiquity. The original external surface of the flange was finger-smoothed and finely sanded.

The small fragment of tile from **1070** is probably a *tegula*, this identification is based on the presence of a possible scar made by a blade, indicative of a knife-trimmed upper cut-away. The original non-flanged surface (underside) was finely sanded. The tile was of Fabric 1, with an incomplete thickness of >20mm and a weight of 16g.

Bessales

The fragment of *bessalis* recovered from context **1463** (fill of gully **1394**) within Area 2, was the only example of Fabric 1a within the assemblage. The brick had a weight of 516g and a complete thickness of 41mm. Although abraded, the remnants of three original finger-smoothed surfaces (edge, upper and underside) were recorded. Possible indirect exposure to heat in the form of reddish yellow (5YR/5/6) discolouration was evident on the original surfaces, more so on the upper.

Pedales

The quaternary (**5143**) and quinary (**5144**) fills of the medieval boundary ditch **5139** within Area 3, produced two fragments of *pedalis*. The bricks had a combined weight of 407g with thickness dimensions of >44mm and 60mm, respectively.

The brick from **5143** was possibly a corner fragment, with three original finger-smoothed surfaces (upper/underside and two edges). Three finger-smoothed surfaces (upper, underside and one edge) were also recorded on the brick from **5144**, the underside was finely sanded.

Although of differing fabrics the two fragments are potentially from the same *pedalis*, the slight difference in the fabrics a result of poorly prepared clays.

Unidentifiable by form or type (RBCBM U-F/T)

Fourteen pieces of unidentifiable Romano-British CBM were recovered from five contexts, the majority (64%) from the processing of environmental samples. Eleven pieces were abraded and 93% of the material had no original surfaces or distinguishing features. The remnants of a finely sanded original surface recorded on a fragment from a fill (**1167**) of boundary feature **1001** retained patches of bonding material, a very pale brown (10YR/8/2) mortar. This was probably from original use. No further evidence of bonding material was present.

Although the lack of complete dimensions and the fragmentary nature ('crumbs') of this material prevents conclusive identification by form or type, this assemblage is considered to be of Romano-British date. Thirteen fragments were recorded as generic 'RB fabric', a fragment from context **1070** (fill of ditch **1002**) was of Fabric 1.

Discussion

Despite the small size and fragmentary nature of the assemblage, there is a range of types of Romano-British ceramic building materials present, namely *bessales*, *pedales* and *tegulae*. No complete examples were present and no adjoining fragments or inter-contextual joins were evident. Bonding material was sparse, however, the abraded surfaces could account for the loss of this evidence, if originally present. Based on fabric (the sub-variants considered a result of poorly prepared clays) it is estimated the assemblage represents one *tegula*, one *bessalis* and one *pedalis*.

Area 2 produced the majority of the assemblage (73%), with the remainder being recovered from Area 3. None of material was found *in situ* and distribution was sporadic within ditches and pits, with no apparent concentrations in either area. No evidence for a substantial building(s) was encountered during the archaeological works which suggests that the material was either from a building(s) within the surrounding area; possibly within close proximity to the development site or alternatively such a small quantity of bricks and tile could have been easily transported from much further afield. The assemblage is of relatively good quality although there are no indicators to suggest the material originated from a 'high status' building, such as box-flue tile or decorated forms.

The assemblage could represent redeposited material that had been reused for a variety of purposes, such as post-packing, metalling and/or repair within areas associated with human and/or animal traffic. Another possibility is that the items were aspects of a free-standing structure(s) associated with occupation such as an oven or hearth (Evans *et al.* 2005, 143). The latter is possibly more likely as indicated by the heat discolouration.

The source of production is unknown and, at present, fabric counterparts have not been identified. This is not unusual within Romano-British assemblages (Betts 1990, 165; *ibid* 1998, 226) and there are numerous suggestions for potential categories of production sites, including "small rural brickyards" (Peacock 1987, 139–140). The assemblage could reflect local products from an as yet unknown kiln site within the area, however, production sites such those at Malton or York (Betts 1990, 166) should not be discounted; York products have been noted at Catterick (Isserlin 2002, 525; Tibbles 2012).

Recorded finds

A small assemblage of recorded finds (RFs) were recovered during the project including a Victorian period half-penny, fragments of clay tobacco pipe and glass and objects of lead, copper alloy, iron, jet, jet-like material and stone. The majority of this material was post-medieval and is detailed elsewhere (NAA 2015a). Objects recovered from Phase 1 and 2 deposits and prehistoric or Roman period items are detailed below.

Iron

Four iron objects were recovered during the excavations, three of which were post-medieval nails and strips that were part of a collapsed jetty recorded within Area 4 (NAA 2015a). A complete hobnail typical of the Roman period was recovered from the

fill (1626) of pit 1603. The form appeared to be flat headed; the hobnail was 13mm in length with a head 7mm in diameter. The width of the shank was 2mm.

Jet and jet-like materials (Greg Speed)

Three objects of jet or jet-like materials were recovered during the excavations. These included part of a jet 'napkin ring' (a dress-accessory of probable Bronze Age date) and two worked fragments probably of cannel coal. Although the latter two items were residual within undated or modern contexts (subsoil and a land-drain), all three came from the same part of the site (Area 3). Whilst the jet 'napkin ring' might have arrived at the site as a finished item, both of the coal items are indicative of on-site working, employing relatively sophisticated techniques including drilling and possibly lathe-turning.

Jet 'napkin ring'

Context **5101**: RF3. Area 3, fill of ring-gully **5001**

Approximately 30% of a concave-sided ring, with one edge flared more than the other. The ring is slightly irregular with surviving dimensions of 46mm by 15mm (maximum width) by 17mm (height) and a weight of 3.97g. Visual inspection suggests that the material is high-quality hard jet. Such material could have been acquired nearby either as beach-finds, or from outcrops utilised by Victorian miners that occur within paddling/walking distance of the site on the western fringes of the North York Moors. Alternatively, the raw material or finished object could have been traded locally.

The remaining fragment includes a single circular perforation of c.1.5mm diameter drilled through the centre of the wider flare. The hole is slightly conical, marginally wider on the outer face and evenly tapering. The piece retains a fine polish around the narrower lip and that half of the interior, with a duller polish elsewhere. Numerous small scratches or cuts are present on the exterior of the waist of the object, although these appear to have been partially polished out.

The class of objects known as 'napkin rings' has a limited geographical distribution; the majority (at least 46) having been found within southern Scotland (mainly south-west Scotland). Elsewhere they only occur in Northern England with two examples from Lockton Pastures in North Yorkshire, a fragment from Fylindales Moor (Blaise Vyner pers. comm.) and a possible piece from Hepburn Moor in Northumberland (Hunter 1998, 80–82; Elgee 1930, 112; Jobey and Weyman 1981, 40–2, fig. 8.16). The example from Marsh House Farm therefore represents a significant addition to the English corpus.

It is currently thought that the objects were used as large eyelets for the fastening of a cloak. This is based upon the presence of a pair of 'napkin rings' at the throat of a burial at Camps Reservoir, Lanarkshire (Ward 1994), although other uses may have been possible. Other examples show the reduced quality of finish on the outer face of the waist exhibited by the Marsh House Farm example, perhaps suggesting that they were covered in use by cloth. The Camps Reservoir pair lay with the wider flare towards the wearer's body, and this is where pierced examples (as at Marsh House

Farm) normally have the holes (Hunter 1998, 81) which perhaps served to attach the piece directly to the clothing. The Scottish Archaeological Research Framework (ScARF) online resource states that "All of the examples so far discovered appear to have been of cannel coal or oil shale, rather than jet." Together with the standard of workmanship and finish, the choice of material therefore makes the example recovered at Marsh House Farm of increased significance.

Although most of the known examples are not dated, 'napkin rings' are generally considered to be of Early Bronze Age date, the examples from Lockton Pastures and Camps Reservoir having been found within Early Bronze Age burial contexts (Hunter 1998, 80). Sheridan and Davis (2002, 815–6) note a significant increase in the use of black jewellery and dress accessories in Scotland through the later part of the third millennium BC, with the appearance of 'napkin rings' towards the end of the this period or into the early second millennium.

However, two examples recovered from scientifically dated 'domestic' contexts have returned slightly later dates. One from Blairhill Burn, Amisfield, Dumfriesshire, recovered from a pit thought to have been internal to a roundhouse, provided a date of 1880–1530 cal. BC (3420±60BP, Beta-73950). This date was derived from aggregated small fragments of mixed-species charcoal from the primary fill of a posthole forming part of the roundhouse (Strachan 1998, 86–7), and hence must have been residual, only providing a *terminus post quem* for the structure and associated features. A fragmentary and uncertain example from Green Knowe, Peebleshire was recovered from a hut platform which provided several radiocarbon dates from small-roundwood charcoal (Jobey 1980, 76–80) spanning c.1400–1000 cal. BC (Hunter 1998, 80). A radiocarbon date of 1442–1290 cal. BC (SUERC-52182) obtained at Marsh House Farm from short-lived heather charcoal (context **5101**) was supported by three slightly older dates from oak charcoal from an earlier fill within the same feature. These dates sit comfortably with the existing dating evidence but perhaps suggest that 'napkin rings' had an extended period of currency spanning much of the Early and Middle Bronze Ages. The previously accepted earlier dating may stem in part from their common presence in distinctively Early Bronze Age contexts (barrows and cists) compared to examples from more rarely identified or excavated later deposits.

Ring

Context **5024**: RF5. Area 3, subsoil

This find represents c.50% of a broken ring, probably produced in cannel-coal, as the material is rather laminar. The ring has an external diameter of 35.0–37.5mm, an internal diameter of 20.0–23.5mm, and a maximum thickness of 6.5mm. The inner and outer edges are regular and have a slight polish, although no tool-marks are visible. The upper and lower faces are heavily fractured, although on one face (corresponding with the thickest part of the object) there is a small area of smoother surface with a dull polish.

This item is either an unfinished object which has failed during manufacture, or possibly a chuck from lathe-turning. If it had been intended as a ring, the finished item would have been very thin and fragile by the time the faces had been smoothed down.

The slightly tapering form and unfinished faces perhaps support the chuck interpretation.

'Chucks' of jet or jet-like materials (including shale) are a relatively common find on Iron Age and Romano-British rural settlement sites in north-eastern England, and provide evidence for a thriving 'cottage industry' manufacturing jewellery items such as lathe-turned bracelets. The chucks represent the central core remaining after the circumference of the original blank has been cut away to form the final bracelet. They have been found at a string of sites, for instance in Eskdale on the North York Moors near Newbiggin Hall, Grosmont (Hayes 1968, 123–4) and at Larpool (Greg Speed pers. comm.).

Worked fragment

Context **5111**: Area 3, backfill over modern land-drain – note that the find came from the immediate area of the ring-gully, which the drain cut

The overall surviving dimensions of this item are 33mm by 12mm by 4.8mm (maximum thickness); it weighs 1.97g.

This is an irregularly shaped fragment of probable cannel-coal. It is fine-grained with a dull natural polish. It is worn smooth (probably by water) on the two larger faces and along the longest edge, whilst there is a worn irregular natural fracture along the opposite edge. The material is laminar where there is a 'fresh' fracture at one end resulting from a failed attempt to drill a hole through the piece. Although the base of the hole is slightly pointed at the centre, it has a very obtuse angle showing that whatever was being used as a drill-bit was not sharply pointed. It is possible that a small flint flake mounted in the end of a narrow stick or bone had been used in drilling the piece.

It is not clear what, if anything, the craftsman was aiming to create with this piece. The failed drill-hole is positioned at a point where the piece is rather wedge-shaped in profile, meaning that any finished item would have been extremely lop-sided. It may merely have been a test-piece, perhaps trying out a new drill on a fragment of waste.

Quern (John Cruse with lithology by Geoff Gaunt)

A single fragment of a Roman hand quern base was found in a pit (**1626**), together with metalworking debris (see Starley this volume). The fragment (RF23), represents c.50% of a 360–370mm diameter disc quern base, with a rim thickness of 85–90mm. The base is roughly concave. The fragment features a conical central perforation, 30mm diameter, narrowing to a 15mm minimum separation. Based on the weight of the fragment (7kg), it is estimated that the complete quern would have weighed around 14.5kg. Its rounded, peck-dressed exterior and flat grinding surface reflect the traditions of pre-Conquest beehive querns. However, the narrow central perforation is a post-Conquest innovation and its diameter exceeds that normally found for beehive querns (typically 280–350mm), so typologically it may well date from the earlier Roman period.

It was made from Basal Sands (Permian), possibly from the area a short distance from Ferryhill Gap (c.25km away from the site) (Smith and Francis 1967, 97–101). The central perforation is normally interpreted as enabling a central metal shaft to adjust the height of the rotating upper stone, for control of the grinding separation. In this case, the narrowness of the perforation and the absence of the customary flat base to fit within a table-top framework, suggest that this particular quern was not adjustable. The very smooth, non-abrasive state of the grinding surface indicates that, in its final phase, this stone was probably used for a non-grinding purpose, perhaps associated with the metalworking in the area.

Two C14 dates were measured from material recovered from pit **1626**; c.41 cal. BC–cal. AD116 (SUERC-52180) from unidentified charcoal and cal. AD382–539 (SUERC-52181) from tooth enamel. Neither of these determinations were taken from ideal material (see Discussion) as the first sample could well be too early due to ‘old wood’ effects and the latter may be artificially young. As disc querns from 3rd and 4th century AD contexts tend to be significantly larger than this example (i.e. 400–500mm diameter), a late 1st to 2nd century AD date is the suggested period of likely use.

Stone object

Context **1626**: fill of pit 1603 RF24. Area 2

Sandstone: pale yellowish brown, with darker brown weathering ‘halos’, fine grained, well sorted, well compacted, but slightly incohesive.

Probably from ‘Permo-Triassic’ rocks filling the Vale of Clwyd.

Metalworking (David Starley)

Metalworking debris was recovered during excavation by hand-collection and from bulk environmental samples. Area 2 produced the majority of material; Areas 1 and 3 yielded only small quantities.

Table 8: Summary of industrial waste, all areas

Activity	Slag Classification	Total weight (g)	Total contexts
Iron-smithing	Smithing hearth-bottoms	1815	4
	Flake hammerscale	<1	2
	Spheroidal hammerscale	<1	1
Undiagnostic ironworking	Undiagnostic ironworking slag	1661	10
	Iron-rich cinder	11	1
Metalworking or other high-temp process	Fired clay	716	20
	Vitrified hearth/furnace lining	193	5
	Cinder	249	3
	Burned stone	144	1
	Fuel Ash Slag	41	1

Activity	Slag Classification	Total weight (g)	Total contexts
Fuel	Coal	270	18
	Clinker/burned coal/ coke	70	14
Non-slag	Stone	67	4
Total		5237	

Area 2 with its remains of a settlement which may have spanned from the Iron Age to Roman period produced the clearest evidence of metalworking activity, particularly from the fills of pit **1603** and to a lesser extent one of the fills of boundary **1001**. Of the diagnostic material, the 15 pieces of slag known as smithing hearth-bottoms, together with hammerscale from processed soil samples and within the bulk finds bag show this activity to be iron-smithing. In the absence of any diagnostic material for other metallurgical processes, it can be assumed that the undiagnostic iron-working slag, generally from the same contexts, also derives from this industry. It would also seem likely that much of the fired clay and other categories of “possibly metallurgical” debris, found in the same and associated contexts originated from the iron smithing. The fuel used is less clear. The fills of pit **1603** certainly contained coal, but the excavators noted high concentrations of charcoal also. A feature of much of the iron-smithing slag (with the possible exception of a hearth-bottom from **1056**) is its cindery nature, a probable indicator of coal-fuelled smithing. Coal was used for smithing from the Roman period (Dearne and Branigan, 1995), and increasingly through the medieval and post-medieval, periods. On the other hand statistical analysis (Table 9) of the mass and dimensions of these show them to be very small for any period, except perhaps the Iron Age.

Table 9: Smithing hearth-bottom dimensions, Area 2

Iron n=15	Weight (g)	Length (mm)	Width (mm)	Depth (mm)
Range	39–445	45–120	40–80	01/05/40
Mean	121	75	53	24
Std dev	15	20	11	10

Some forms of slag are visually diagnostic, providing unambiguous evidence for a specific metallurgical process. There was no evidence of iron-smelting, but, iron-smithing evidence was identified in two forms, bulk and micro slags. Of the bulk slags, the most easily recognisable were smithing hearth-bottoms which have a characteristic plano-convex section, typically having a rough convex base and a vitrified upper surface which is flat or even slightly hollowed as a result of the downward pressure of air from the tuyère. Compositionally, smithing hearth-bottoms are predominantly fayalitic and form as a result of high temperature reactions between the iron, iron-scale and silica. The 15 smithing hearth-bottoms made up one third of the Marsh House Farm assemblage by weight.

In addition to bulk slags, iron smithing also produces micro slag of two types (Starley 1995) flake and spheroid hammerscale. Hammerscale was noted within the sample

residues and occasionally within soil attached to bulk debris recovered during the project, however, quantities were extremely small.

The other categories of material recovered can be produced by a wide range of high temperature activities and are of little help in distinguishing between these processes. The fired clay without any surface vitrification could have derived from structures associated with metallurgical purposes or from those used for other high temperature activities, including domestic purposes, or perhaps salt extraction.

Vitrified hearth/furnace lining forms as a result of higher temperature reactions between the clay lining of the hearth/furnace and the alkali fuel ash and is likely to be more industrial in origin. It shows a compositional gradient from unmodified fired clay on one surface to an irregular cindery material on the other.

A material associated with vitrified lining was classed as cinder. This comprises only the lighter portion of this, a porous, hard and brittle slag formed by the reaction between the alkali fuel ash and fragments of clay that had spalled away from the hearth/furnace lining. Fuel ash slag is a light-coloured, low density porous material which could be a waste product from a range of high temperature processes.

Animal bone and marine mollusca (Louisa Gidney)

A small quantity of animal bone and marine mollusca were recovered mainly from Area 2 during the project. The assemblage is detailed in previous reporting (NAA 2015a; Gidney 2013) but a summary of the main findings is presented below.

The overall preservation of the faunal assemblage was poor with a bias towards the survival of large and robust bones. Large mammal long bones were splintered with surface erosion on many; the majority of the recovered teeth were represented only by enamel as the dentine had been eroded.

The paucity of faunal remains from Area 1 suggested that the features encountered did not have a function related to food preparation, consumption and refuse disposal. A few burnt skull fragments from a sample associated with the double barrowlet (context 77) were not readily identifiable but possibly were human. This could indicate that this fragment and some of the other calcined bone also recovered may have derived from ceremonial activities associated with the prehistoric features.

In contrast, Area 2 appeared to have been an agricultural settlement consuming and disposing of the remains from cattle, sheep/goat, pig and horse. The small amounts of marine shell recovered demonstrated that despite the proximity of littoral resources, these were rarely exploited, although fish bone was unlikely to have survived the unfavourable burial conditions. The prehistoric activity on Area 3 appeared to have involved the demise of one elderly horse and an old bovine.

Environmental samples (Lynne F. Gardiner)

A total of 2990.5kg (2481.5 litres) of soil from 189 bulk environmental samples was processed during the course of the project. Detailed methodologies and results,

including sample data tables, are presented in previous reporting (NAA 2015a; Gardiner 2013; 2014).

Overall minimal amounts of charred plant remains, artefacts and ecofacts were recovered. Furthermore, preservation of palaeoenvironmental ecofacts was mostly poor. Charcoal was present in comminuted form and was, in general, not suitable for identification. However, sample **5108** AA (tertiary fill of ring-ditch **5001**) yielded 30.8g of material which was identified as oak (*Quercus* sp.) in both roundwood and timbered form.

Palaeoenvironmental monolith

A 0.5m column sample (at 4.81mOD to 5.31mOD) was taken of a sequence of horizons within channel 5157 in Area 3 (Figs. 4a and 8). The sequence comprised an artefact-rich deposit, overlain by three silting layers. The artefact-rich deposit (**5217**) contained fire-cracked stones, worked flint and small pottery fragments. Particle-size analysis, plant macrofossil assessment, pollen assessment and diatom assessment were undertaken of the four layers within the column sample (ASDU 2013).

Particle-size analysis indicated that the sediments sampled in the column were dominated by fine-grained silts and clay. The fine-grained matrix of the artefact layer may have supported the interpretation that this material represented a dumped deposit in a low energy water system, rather than having been washed into the feature as a result of a high energy flood event.

Waterlogged plant macrofossils were absent from the samples. Charred plant remains included very small fragments of charcoal, a few indeterminate tuber/rhizome and a single spelt wheat glume base. Pottery was recovered from the artefact layer and a very small flint flake was present in the uppermost silt layer.

Diatom assemblages were absent and a few poorly preserved pollen grains and spores were noted.

Radiocarbon dating

A total of 20 samples were submitted for radiocarbon dating, four from Area 1, nine from Area 2, and seven from Area 3. Eight of the tested samples failed to return successful results due to a lack of collagen.

Radiocarbon samples were processed at the Scottish Universities Environmental Research Centre (SUERC) Accelerator Mass Spectrometry (AMS) facility. The resulting dates were calibrated using the University of Oxford Radiocarbon Accelerator Unit calibration programme OxCal3. Unless stated otherwise calibrated radiocarbon date ranges have been quoted within the text at a probability range of 95.4%.

It should be noted that measurements from tooth enamel are known to provide unreliable results (Gordon Cook pers comm.)

Table 10: Radiocarbon dating results

Context	Lab Code	Feature	Area	Material	Radiocarbon result BP	95.40%
31	GU31360	Barrowlet ring ditch 56	1	Animal bone	FAIL	
31	GU31361	Barrowlet ring ditch 56	1	Animal bone	FAIL	
34	GU33453	Secondary fill of 56 at section 22	1	Cremated bone	FAIL	
66	SUERC-52176	Secondary fill of 56 at section 32	1	Grain cf. Barley	1827 ± 30	cal. AD87(2.6%)107 cal. AD121(91.2%)254 cal. AD302(1.5%)315
1119	SUERC-48127	Boundary ditch 1118, group 1001	2	Sheep / goat Caprovid bone	1989 ± 30	48 cal. BC–cal. AD74
1161	GU31363	Boundary ditch 1154, group 1001	2	Cattle bone	FAIL	
1161	SUERC-49243	Boundary ditch 1154, group 1001	2	Cattle bone	1874 ± 28	cal. AD71–224
1330	GU31364	Enclosure ditch 1264	2	Cattle bone	FAIL	
1330	GU31365	Enclosure ditch 1264	2	Cattle bone	FAIL	
1440	GU31366	Ditch 1404	2	Cattle bone	FAIL	
1440	GU31367	Ditch 1404	2	Cattle bone	FAIL	
1626	SUERC-52180	Fill of pit 1603	2	Charcoal	1964 ± 29	41 cal. BC (94.4%) cal. AD86 cal. AD110(1.0%)116
1626	SUERC-52181	Fill of pit 1603	2	Tooth enamel	1619 ± 30	cal. AD382(95.4%)539
5108	SUERC-48128	Mid fill of ring-gully 5001	3	Charcoal: oak	3196 ± 30	1518–1417 cal. BC
5108	SUERC-52183	Mid fill of ring-gully 5001	3	Charcoal: oak	3362 ± 29	1743(11.0%)1709 cal. BC 1701(81.1%)1607 cal. BC 1582(3.3%)1560 cal. BC
5108	SUERC-52184	Mid fill of ring-gully 5001	3	Charcoal: oak	3240 ± 29	1611(15.1%)1573 cal. BC 1566(80.3%)1439 cal. BC
5101	SUERC-52182	Upper fill of ring-gully 5001	3	Charcoal: heather	3114 ± 30	1442(95.4%)1290 cal. BC
5188	SUERC-48129	Pit 5189	3	Charcoal: oak	3392 ± 30	1756–1613 cal. BC
5249	SUERC-48130	Channel 5157, group 5275	3	Cattle tooth enamel	2791 ± 30	1012(87.4%)890 cal. BC 881(8%)845 cal. BC
5250	SUERC-48134	Channel 5157, group 5275	3	Tooth enamel	2877 ± 30	1192(1.8%)1177 cal. BC 1161(2.1%)1144 cal. BC 1132(88.2%)972 cal. BC 960(3.4%)936 cal. BC

DISCUSSION

The Greatham Managed Realignment project has provided an important opportunity to investigate a broad swathe of landscape close to Copwen Salt Marsh. This area is known for its archaeological potential both in terms of prehistoric utilisation (Waughman 2005) and as the possible source of the region's Iron Age and Roman salt industry (Willis 1999, 101; Waughman 2005, 139; Petts and Gerrard 2006, 151).

The groundworks associated with this project were designed to avoid any impact upon the upstanding saltern mounds in Area 4 and hence the lower-lying area of the former marsh remained largely unsampled by archaeological excavation. What was clear, however, was that the higher ground to the north was a focus for activity from the Mesolithic to modern times. This activity need not have always been permanent, nor is it likely that the nature of this activity was consistent. The resources utilised would have included wild game from the carr woodland, reed-swamps and open water during the earlier prehistoric periods, but following episodes of forest clearance lush grazing would also have been available, as indicated by work in Hartlepool Bay (Vaughan 2005, 137–9). The Iron Age and later evidence recorded at Marsh House Farm indicated that the higher ground was also suitable for agriculture, and indeed earthwork evidence of ridge and furrow ploughing within lower lying areas suggests this may have been widespread.

Salt has been an invaluable resource throughout human history from as early as food storage appeared (Weller 2015, 68–9), though without the presence of specific pottery vessels (briquetage) used during the Iron Age and later, identification of salt exploitation can be problematic. Salt-extraction from the briny silts of Cowpen Marsh and Greatham Creek is known to have occurred during the medieval period; a reference of AD1290 indicates that there was an established industry in the area by the late 13th century (Page 1907, 293). But little excavation has been undertaken upon the saltern mounds thought to represent the remains of this industry (Burns 1980; Annis 1993). Nor has the surrounding area been subject to intrusive archaeological work. The possibility therefore remains, though still unproven by the excavations undertaken to date that the saltern mounds in Cowpen Marsh originated in the prehistoric or Roman period, and indeed may provide a context for the focus of settlement recorded during the groundworks.

Across the site, the presence of flint tools and flakes belonging to the Mesolithic and Early Neolithic indicated some level of activity during those periods, comprising the first direct evidence for hunter-gatherer presence in the Tees Estuary outside Hartlepool Bay (Rowe 2013; Vaughan 2005). None of the recorded features or deposits were contemporary with this activity, though the remains recorded in Area 3 indicated Early and later Bronze Age occupation, and the possibility of preceding Late Neolithic activity. The northern group of features were suggestive of settlement activity, with Late Neolithic or Early Bronze Age flint tools being incorporated within a layer of heat-fractured stone along with sherds of pottery and poorly preserved animal remains. Interpretation of the scant remains, however, requires a careful consideration of taphonomic conditions (Stallibrass 2000; Wilson 2000, 103).

The ground conditions across the excavated areas were not conducive for the survival of animal bone or charred plant remains (Gidney and Gardiner this volume). Furthermore, the area was severely truncated by medieval and later ploughing; the majority of the recovered finds only surviving 'in context' due to their incorporation within the lower layers of an adjacent channel. The features that did survive later truncation included stakeholes, pits (also containing heat-fractured stone) and a partial ring- (or C-shaped) gully. The gully had silted up over time in a similar way as the less damaged gully (5001) to the south, and hence may have been a 'drip' gully associated with a structure.

These features may have been part of an open settlement beside the channel that, over time, produced a midden of waste and burnt stone which slumped (or was dumped) into the channel. The possibility remains, however, that the area was the site of activity other than occupation. The burnt stone may have derived from a ploughed-out burnt mound site, or indeed be the result of seasonal resource-gathering including salt extraction.

Dating of this activity was hampered by the undiagnostic pottery and the lack of suitable material to provide high precision radiocarbon dates. The date achieved from charcoal within pit **5189**, was consistent with the majority of the diagnostic flint tools within the finds-rich layer in the base of the channel, suggesting that the radiocarbon dates from tooth enamel from the same layer was (as advised) artificially young.

The ditch (**5276**) cut into the channel fills at a later date indicated some longevity to the activity, as did the 20 lithics with knapping characteristics typical of the Mesolithic or Early Neolithic period recovered from Area 3. Radiocarbon dating also showed that ring-gully **5001** to the south was probably silting up during the Middle Bronze Age. This longevity, however, doesn't necessarily indicate permanence.

The size of the southern ring-gully, c.11m in diameter, its interpretation as a sizeable roundhouse and the accumulations of heat fractured stones in the northern area, however, were suggestive (at least) of consistent activity the same location. With the taphonomic conditions in mind, the interpretation of ring-gully **5001** as a drip-gully associated with a roundhouse fits well with existing models. With a south-east facing entrance, concentrations of pottery in its terminals and charcoal, small amounts of cinder, fired clay and worked flint recovered from its other fills the feature has a multitude of Iron Age and Romano-British regional parallels (see Harding 2004; Petts and Gerrard 2006). What was unusual, however, was the Bronze Age style decorations on the pottery, the recovery of a Bronze Age jet clothes fastener and four radiocarbon determinations confirming a date within c.1743–1417 cal. BC for the silting up of the ring-gully.

Non-funerary Bronze Age remains are sparse with the vicinity of Marsh House Farm (Fig. 14), and well dated examples are fewer still. At Catcote an early phase comprising stake- and posthole structures may have been of a Bronze Age date (Vyner and Daniels 1989). Excavations at 'Site P' Ingelby Barwick included stakeholes overlain by Bronze Age flint scatters interpreted as an open settlement (Adams and Carne 1995, 33). Similarly trial-trenching at Little Maltby Farm (Archaeological Services 1997) and Low Lane (Archaeological Services 2004) revealed hints of Bronze Age settlement including a potential ring-gully at Low Lane. At Windmill Fields a single pit accompanied a Bronze Age cemetery recorded during rescue excavations (YAS 1998). A more convincing parallel for the Marsh House Farm roundhouse, however, was recorded during excavations at 44 to 48 High Bridge, Newcastle upon Tyne (Brogan 2000, fig. 3) where charcoal from part of a circular structural setting returned a Middle Bronze Age date.

Possible contemporary activity in the marshes around the Tees estuary and Hartlepool Bay exists in the form of a shell midden at Cowpen Marsh and a possible settlement site at Saltholme (Waughman 2005, 137). Furthermore, three possible prehistoric dug-

out canoes, found in the bed of the River Tees are suggestive of the use of such vessels along the river and by inference within Cowpen Marsh. These vessels comprise a likely Bronze Age example recovered from opposite Thornaby High Wood in 1926 (ADS online), a log boat found somewhere in Middlesbrough, containing a human femur and fragments of a 'dog skeleton' (McGrail 1978, 204) and an example reportedly discovered south of the Tees near Yarm sometime before 1852 during the building of a railway (*op. cit.*, 304). These, with the extensive evidence recorded in Hartlepool Bay (Waughman 2005), provide a tantalising glimpse of a potentially extensively utilised landscape (*op. cit.*, 142).

An important aspect of the Bronze Age evidence recorded at Marsh House Farm was the dating of the pottery assemblage and its implications for regional typologies (Cumberpatch 2013; Manby this volume). The fact that the Bronze Age vessels were made from what is usually identified as fabrics of an Iron Age date raises the possibility that previously recorded assemblages not subject to extensive radiocarbon dating may have been misidentified as belonging to later traditions. Similarly, roundhouses with ring-gullies identified as being of an Iron Age date without complementary radiometric dating may in fact be earlier than previously thought.

These problems can only be resolved by continual routine and extensive absolute dating targeted on settlement features containing handmade pottery combined with less reliance on typological assumptions, as stated in regional and national guidelines (Haselgrove *et al.* 2001; Petts and Gerrard 2006).

The Iron Age and/or Romano-British remains in Areas 1 and 2 comprised the majority of the recorded features and, although the core of settlement activity lay beyond the excavated area, the evidence represented a significant addition to the corpus of settlements recorded in the region. Ground conditions were unfavourable for the preservation of ecofactual evidence and hence, other than small-scale metalworking and the grinding of grain (the quern), little can be stated about the kinds of activities undertaken during occupation. As a result, the scale and variety of agricultural and industrial practices carried out by the inhabitants and variations of these through time cannot be inferred. Hence, the relative importance of each phase of occupation within the local hierarchy of contemporary sites is unclear. What is evident is that a sequence of definition and redefinition occurred, potentially implying longevity of occupation. Also, this occupation seemed aligned with reference to a long-lived sinuous boundary running along high ground from the edge of the salt marsh inland.

The only potential Iron Age or Romano-British structure identified was a curving gully (**1599**) within and probably contemporary with Enclosure A. This feature may have been a drip-gully of a rectangular structure containing pit **1603** and hence may have been associated with metalworking. The gully extended beyond the excavated area but may have enclosed a sub-rectangular area larger than 3m wide by 5m long. If this was indeed the case then it can be paralleled with a rectilinear drip gully and associated postholes (structure 2) recorded at Pig Hill during the Cowpen Bewley to Warden Law gas pipeline (NAA 2004). The Pig Hill feature was heavily truncated and enclosed an area measuring 9m by up to 6.4m wide with an entrance in its south-eastern corner and evidence of metalworking. These features, however, may have defined work-areas or lean-to type structures rather than a substantial buildings or dwellings. Evidence of

rectangular dwellings does, however, exist (Moore 2003, fig. 1) and caution is required when assuming a non-domestic function to Iron Age rectangular structures (*op. cit.*, 55).

Although no evidence of a contemporary salt industry was recovered, it seems unlikely that the Iron Age and/or Romano-British inhabitants of the settlement didn't take advantage of such an important resource literally on their doorstep. None of the usual trappings of such an industry such as boiling tanks or briquetage were associated with the settlement though it should be noted that very few finds were retrieved from Area 2 and the core areas of activity lay outside excavated area. Furthermore, activities associated with salt-extraction would more likely be located closer to the source of the salt, the brine-rich silts to the south and east. Transport of the extracted salt inland via boats would seem the easiest and most likely strategy and hence any settlements associated with a production site need not contain any fragments of the evaporation or storage vessels (briquetage) used.

Archaeological work on the saltern mounds, the closest of which was a mere 900m from the focus of settlement, has, to date, been limited. Some recording of features cut into the upper (and later) layers produced a single sherd of medieval pottery and a single borehole excavated c.1m into the top of another provide scant evidence. Given the available evidence elsewhere of similar medieval saltern sites incorporating earlier industries (Biddulph *et al.* 2012), it seems possible that the undisturbed lower-lying area contains evidence of salt-extraction during the Roman period or earlier and indeed raises the possibility that the mounds themselves may have been initially constructed much earlier than documentary sources suggest.

The possible double funerary monument represented by the figure-of-eight feature in Area 1 was suggestive of a Bronze Age burial rite (see Roberts 2005, fig. 32) where a second burial monument was attached to a primary round barrow in an 'annex' (*op. cit.*, 44). Similar 'double-barrows' are known elsewhere (see Stoertz 1997), but no known parallel exist within the vicinity of the Greatham development. The Marsh House Farm examples were, however, smaller than Bronze Age (or earlier) round barrows and fell into the category of cremation barrowlets of the later Iron Age recorded in the Heselton Parish (Powlesland and May 2009) and during projects in the East Riding of Yorkshire (Robinson forthcoming).

The lack of associated burials at Marsh House Farm was similar to examples excavated in the Heselton Parish (Powlesland and May 2009, section 4.3.2.1) and may be explained by the extensive truncation evident as a wide plough furrow cut across the centre of the monument. The recovery of fragments of burnt bone from the gully fills supported a funerary interpretation; the small circuit of the ring-gullies, a lack of entrances and the sparsity of domestic waste suggested a domestic function was unlikely.

The regional background of previously recorded Late Iron Age and Romano-British settlements suggests that the Marsh House Farm site lay within a settled agricultural landscape, though it represents the first definitive evidence of such occupation on the north Tees estuary. This contemporary regional landscape included 'lower status' settlements that were often enclosed with one or more roundhouses which employed

mixed farming regimes. Previously excavated examples include: Foxrush Farm (Sherlock 2004; Sherlock and Vyner 2013), Kilton Thorpe (Johnson and Sherlock in prep.), Bonny Grove/Dixon Bank (Annis 1996; Sherlock 2012, 167) to the south of Marsh House Farm; Amazon Park, Newton Aycliffe (Wardell Armstrong Archaeology 2015) to the west; and Coxhoe (Haselgrove and Allon 1982), West Brandon (Jobey 1962), Shadforth (Haselgrove 1980), Harehill Moor, High Haswell Farm and Pig Hill (NAA 2004) to the north. A cluster of sites recorded around the recently excavated Green Lane settlement at Yarm (NAA 2015b) and cropmark evidence (Still and Vyner 1986, 4) advocates a density of settlement in the lower Tees valley approaching that of pre-industrial revolution modern levels (Still and Vyner 1986, 4).

This pattern of rural small-scale and low-status sites, however, existed within a hierarchy of larger and higher-status settlement including Thorpe Thewles (Heslop 1987), Catcote (Long 1988), Stanwick (Haselgrove *et al.* 1990), Sedgfield (Carne 2006; 2007; 2009) and a cluster of sites, potentially parts of an administrative centre (NAA forthcoming), around Scotch Corner (Fitts *et al.* 1999, 47; Abramson 1995). Also, the settlement site at Street House Farm (Sherlock 2007) with a dense area of occupation and evidence of salt-working may also have been a higher status site. It is important to consider, however, that the difficulties in closely dating phases of activity on these sites is likely to have oversimplified what must have been a complex and dynamic pattern of settlement and social integration (Haselgrove 2002, 50).

CONCLUSION

The archaeological investigations associated with construction of a nature reserve and flood defences at Greatham Creek provided a unique opportunity to study past human activity adjacent to Cowpen Marsh via large-scale open excavation. These groundworks uncovered significant new evidence suggestive of long-lived utilisation of the fringes of the salt-marshes of the Tees Estuary.

The evidence recorded indicated that the salt-marshes and surrounding higher ground were focal points for activity throughout prehistory and into the Roman and medieval periods. As was the case in Hartlepool Bay, the nature of activity in Cowpen Marsh probably varied with respect to the environment and fluctuating sea level (Vaughman 2005), though the areas of settlement at Marsh House Farm were above the maximum extent of sea level.

Early and later Bronze Age activity, probably including settlement of some permanence or longevity, was recorded closer to the marsh edge along a former channel. Later occupation comprising a long-lived boundary and associated phases of Iron Age and Romano-British settlement and field enclosure were focused further north on higher ground close to Marsh Farm.

Historic sources indicate salt-extraction in Cowpen Marsh throughout the medieval period and extensive utilisation of the deeper salt beds from the late 19th century until 1970. The question of whether this widely available and invaluable resource was extracted from the area before records began, however, remains open.

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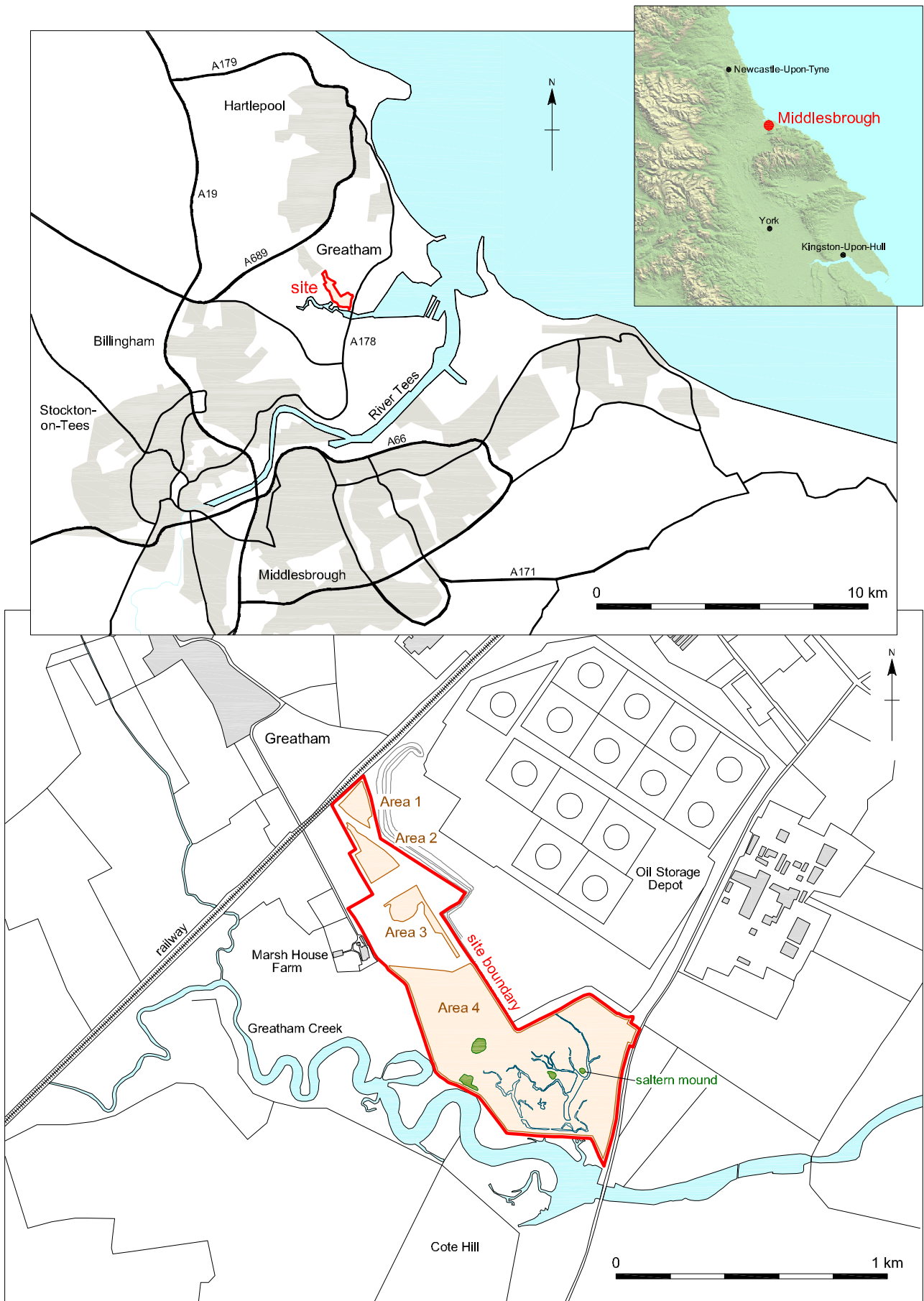
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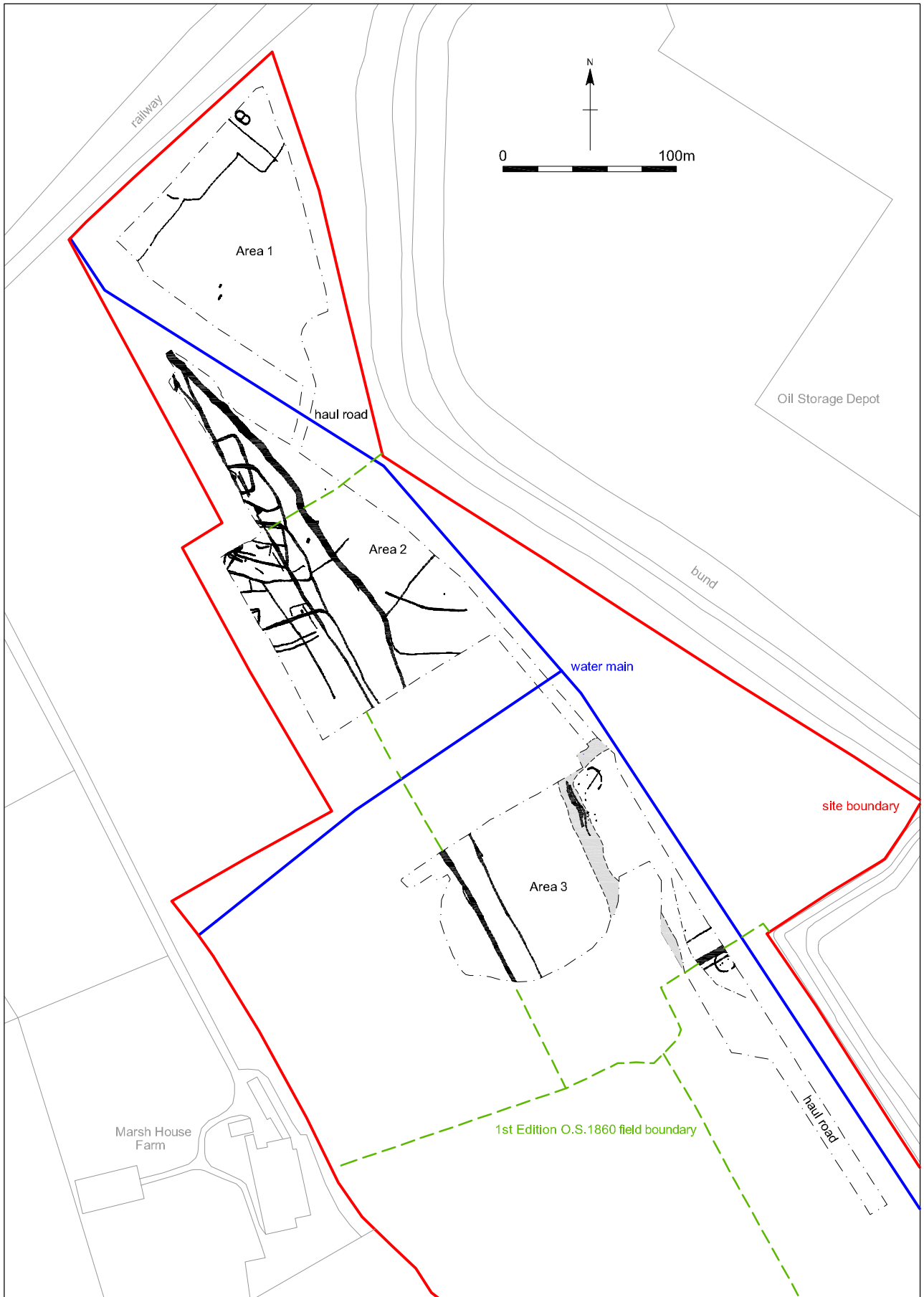
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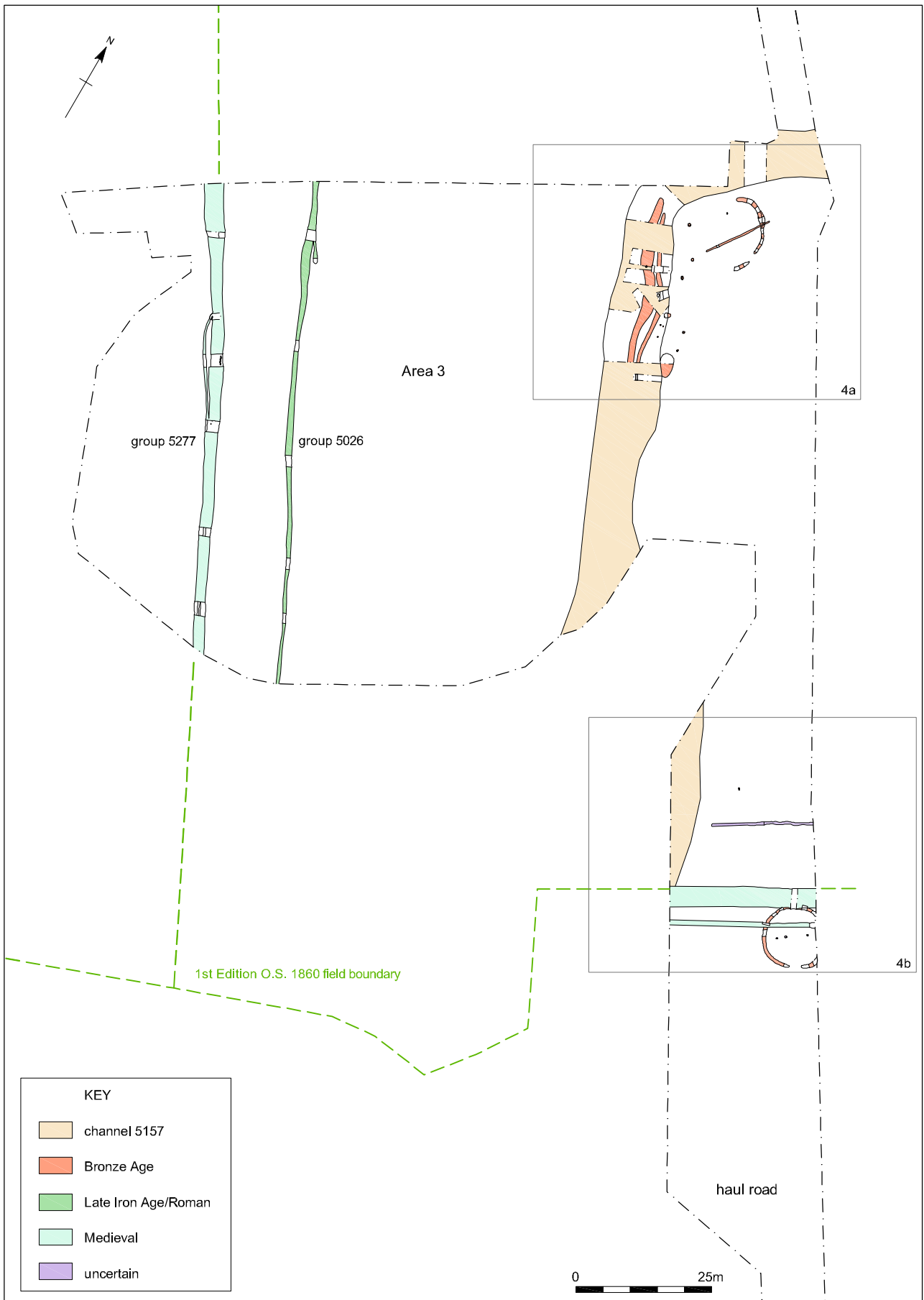
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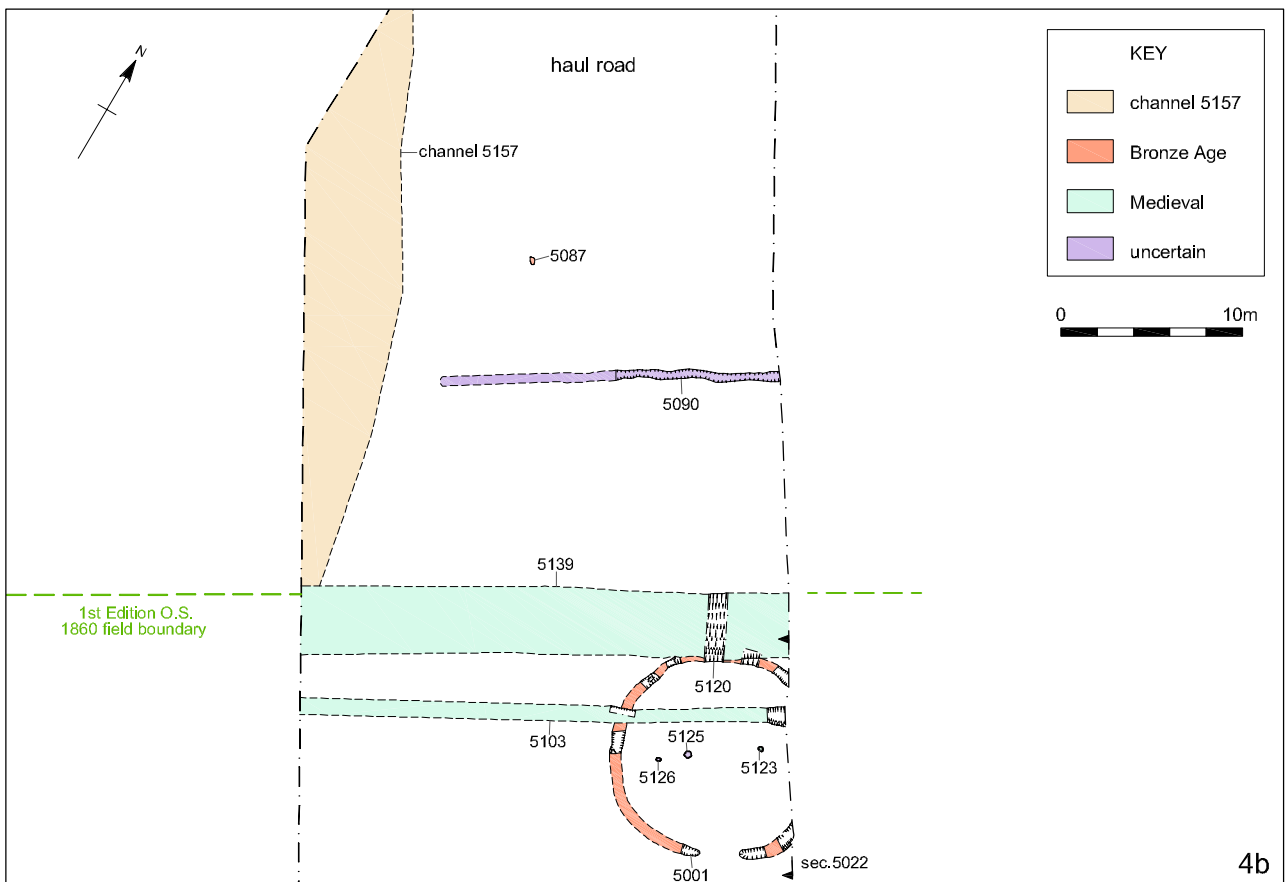
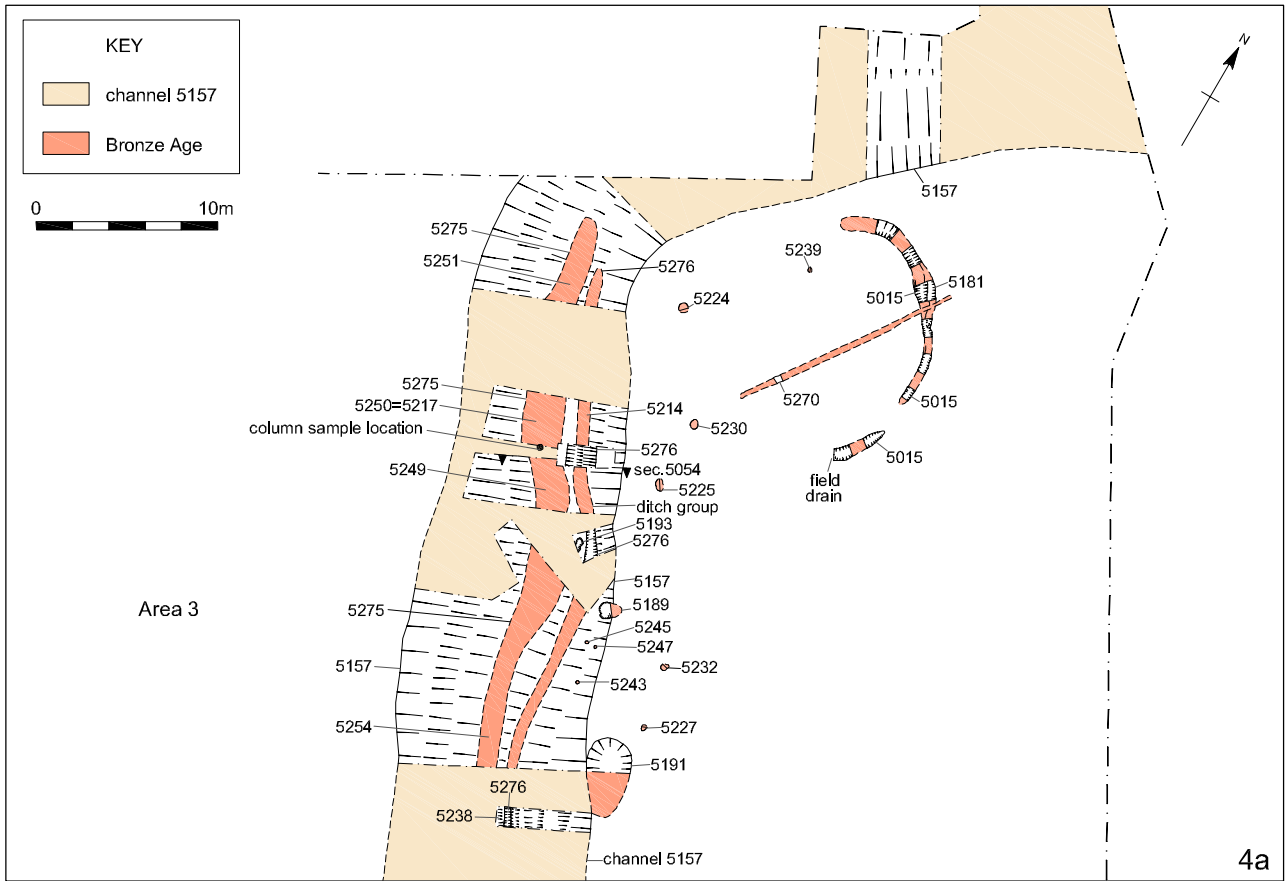


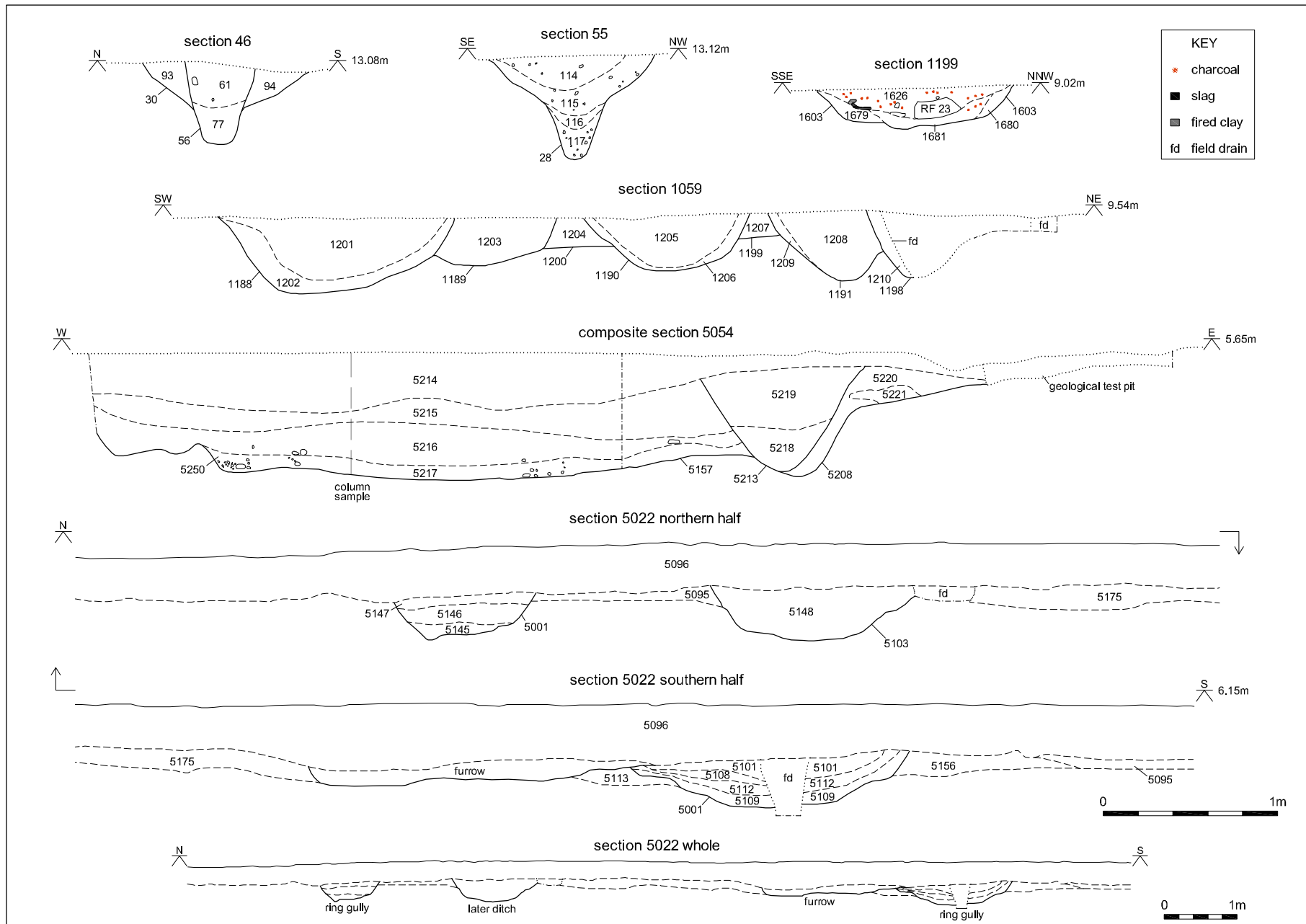
Marsh House Farm, Greatham: site location

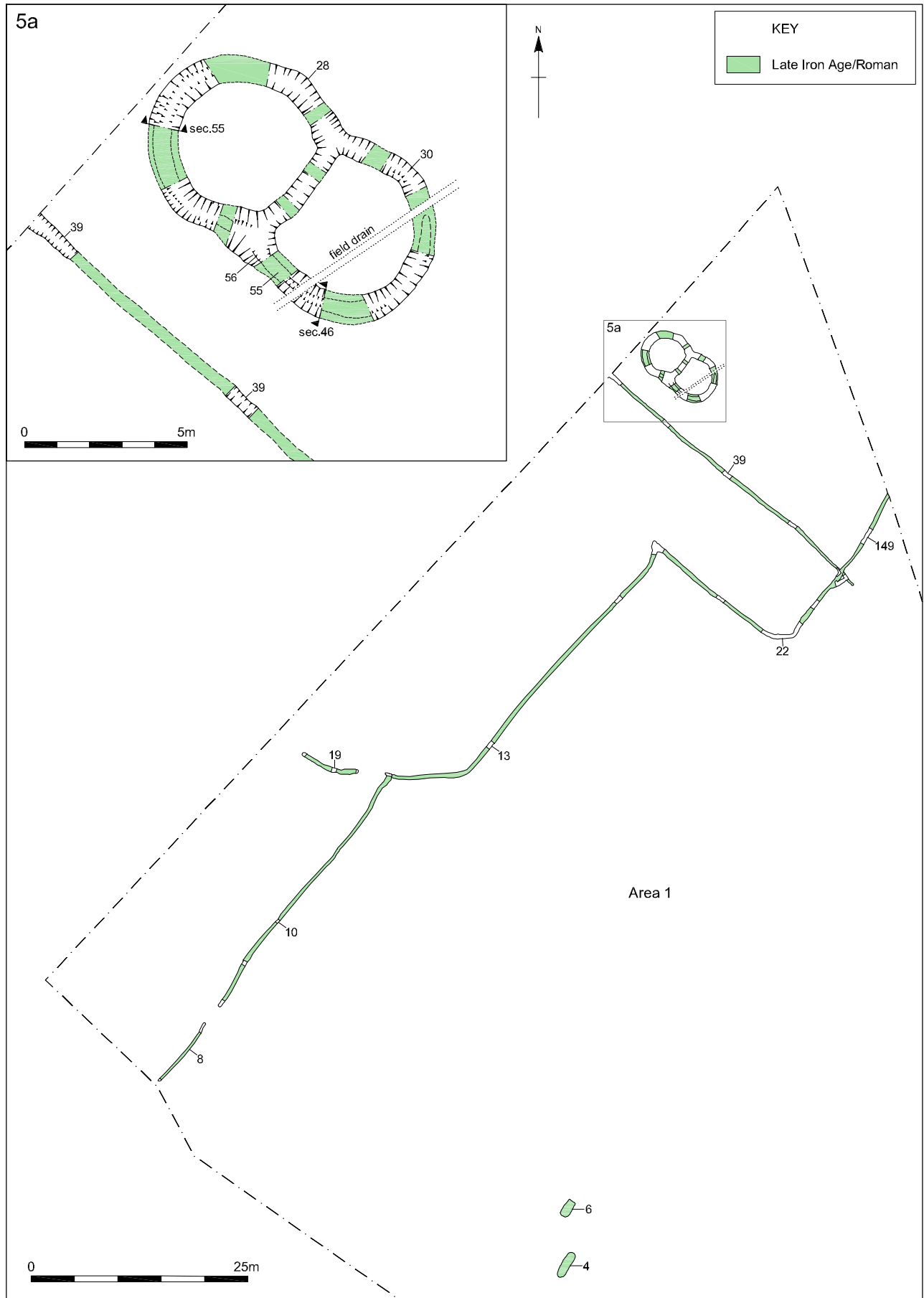
Figure 1

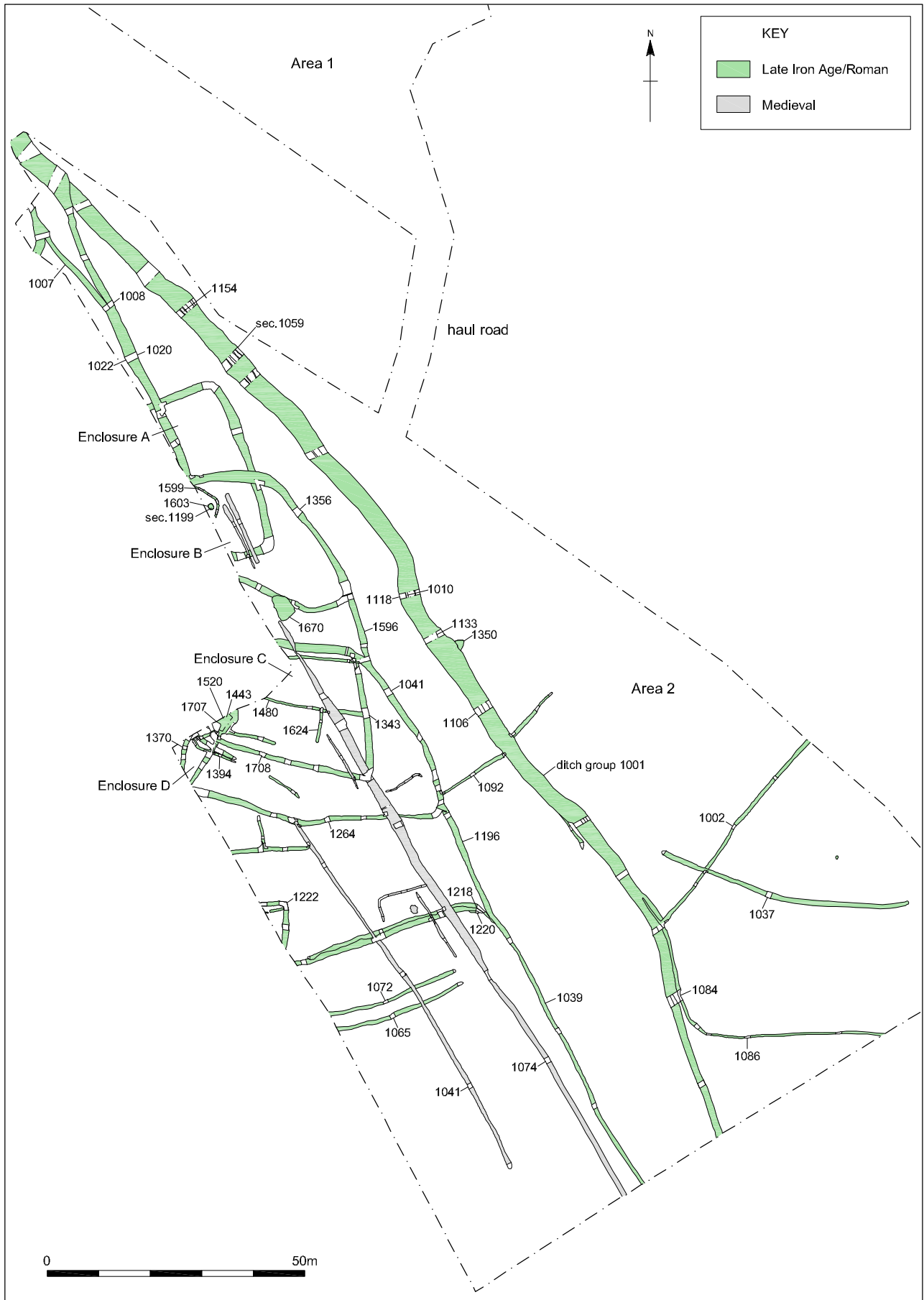






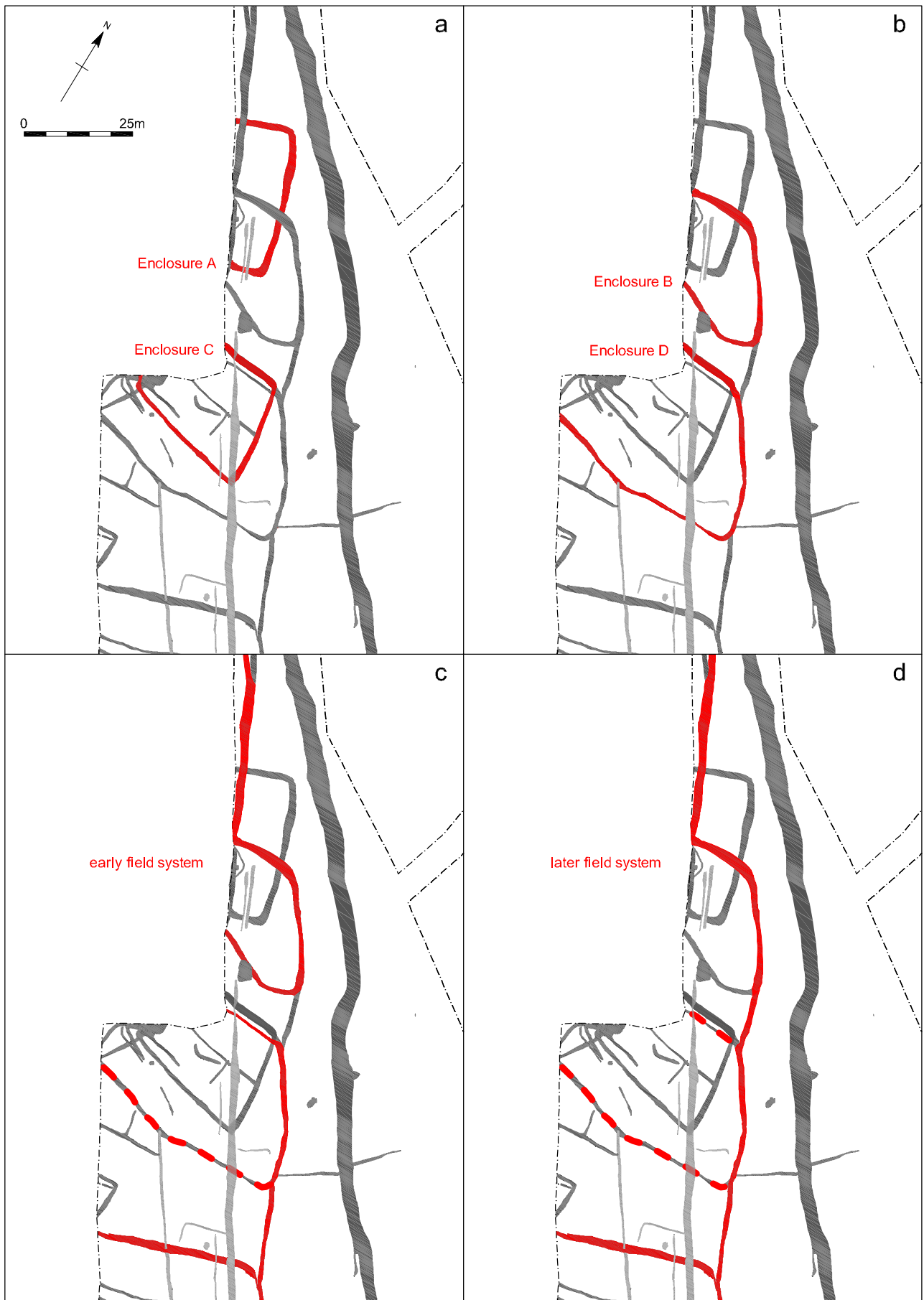


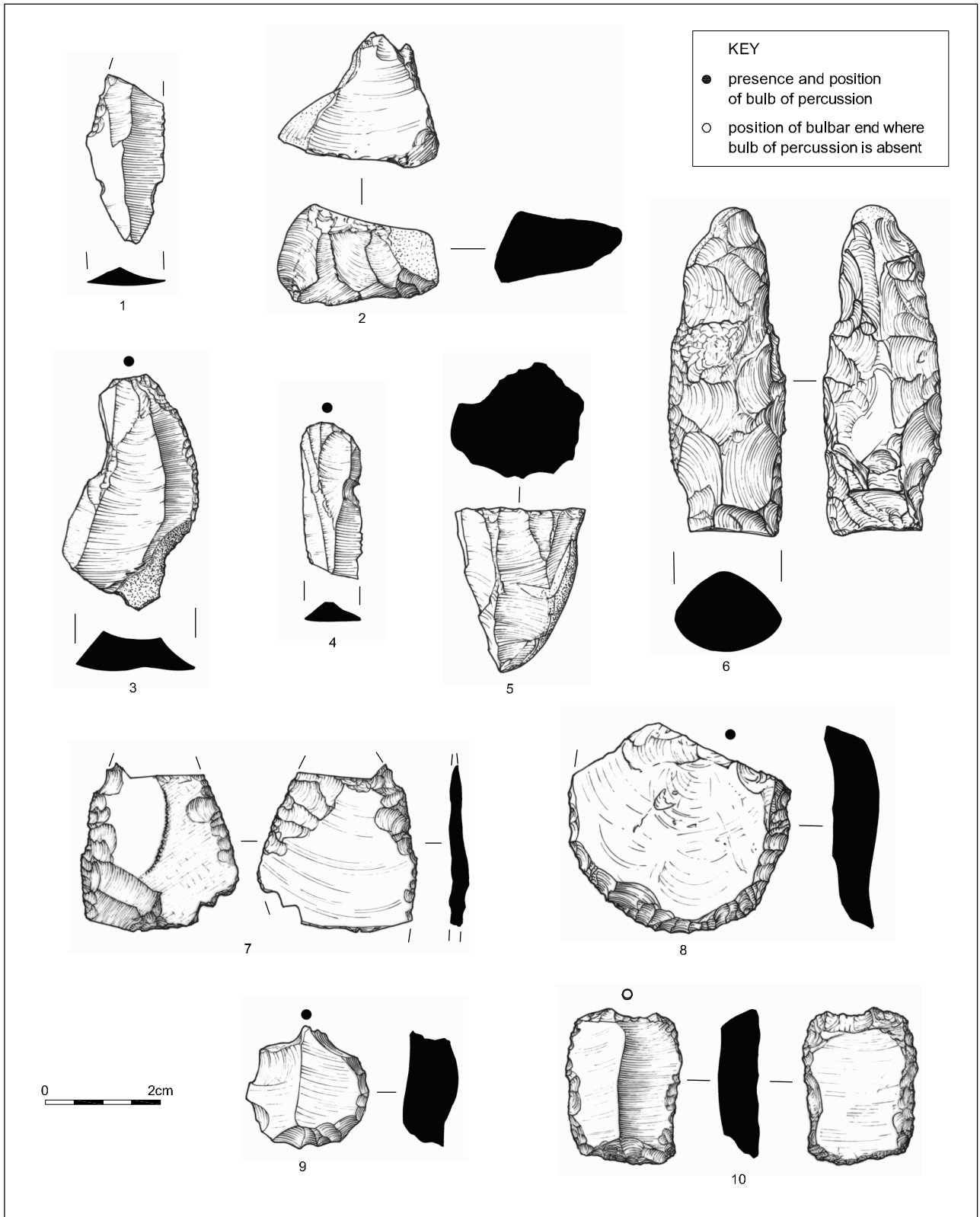


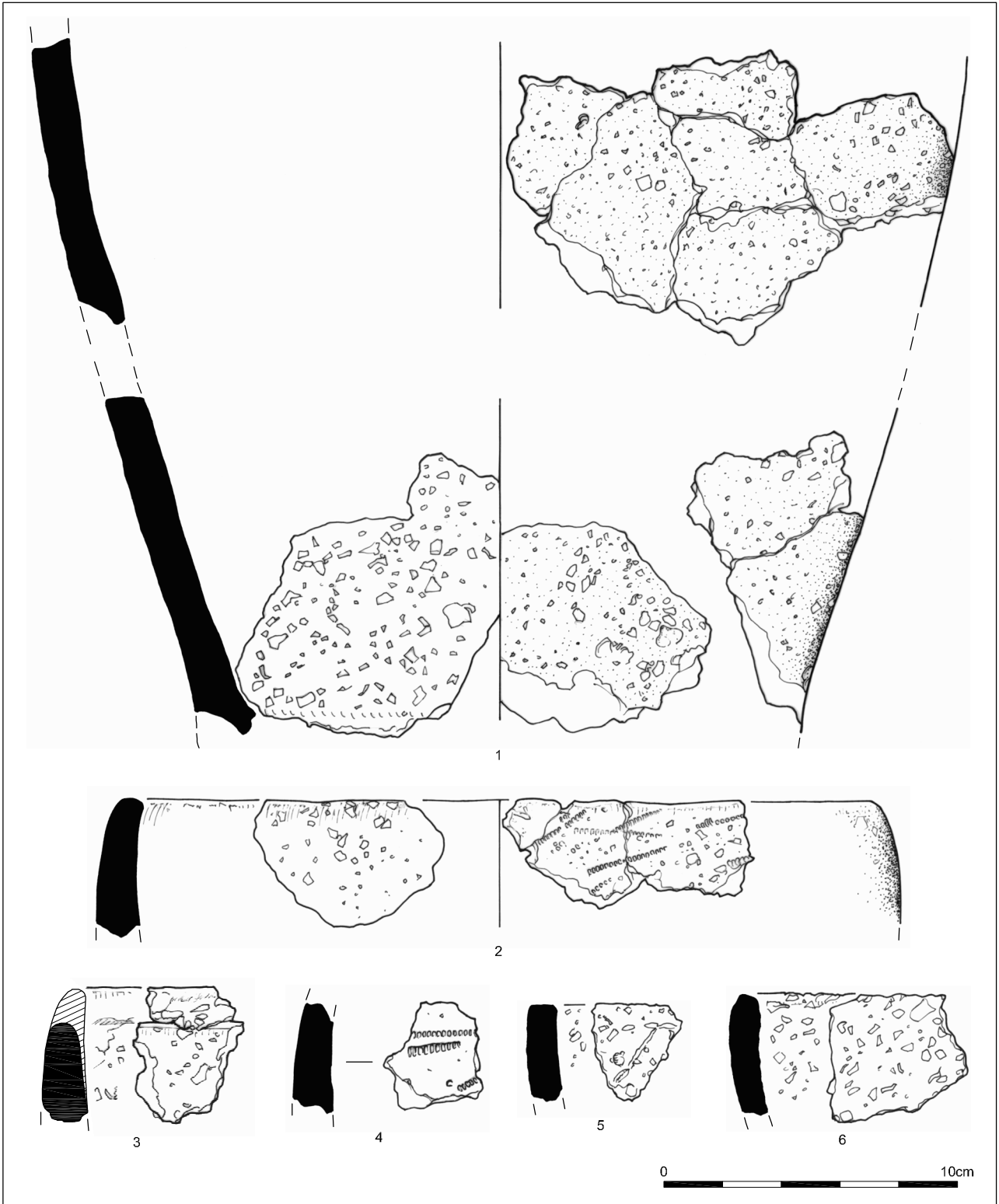


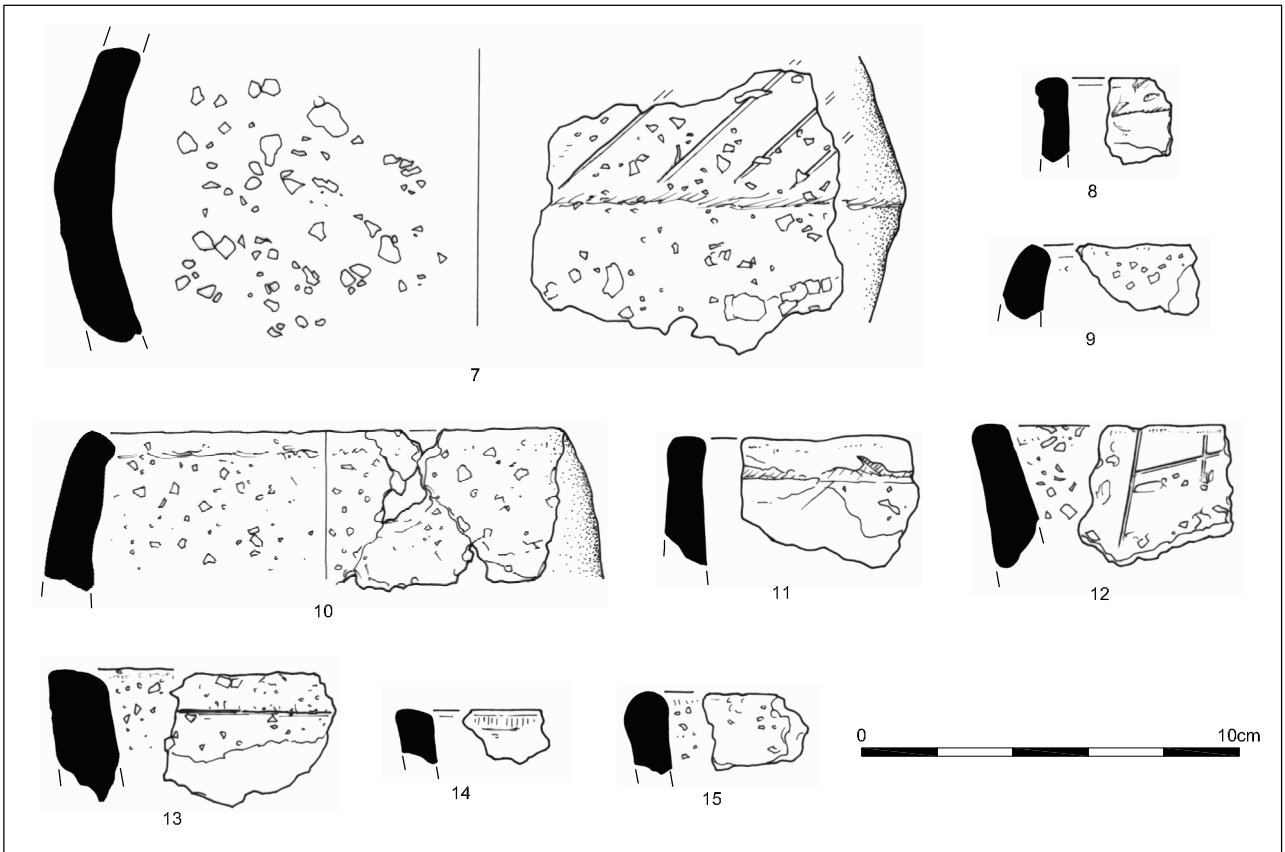
KEY

- Late Iron Age/Roman
- Medieval





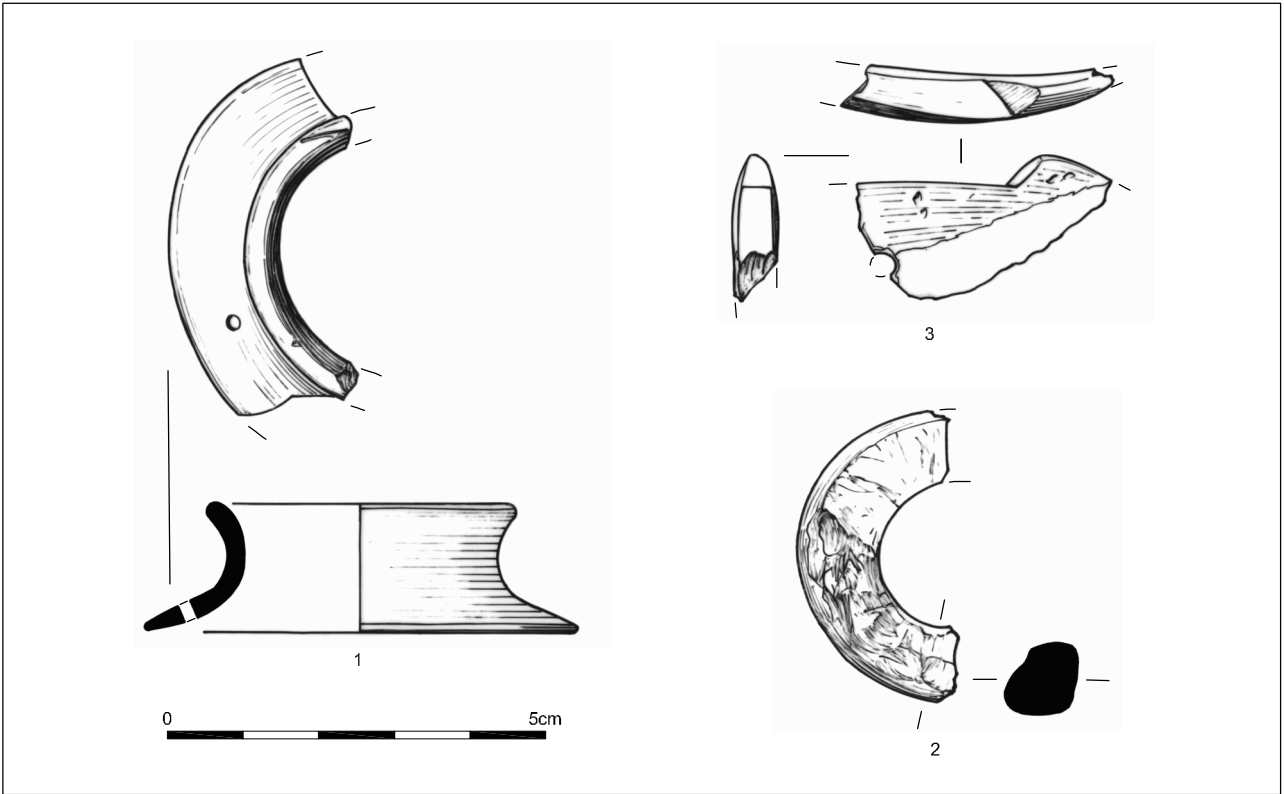




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Marsh House Farm, Greatham: early prehistoric pottery

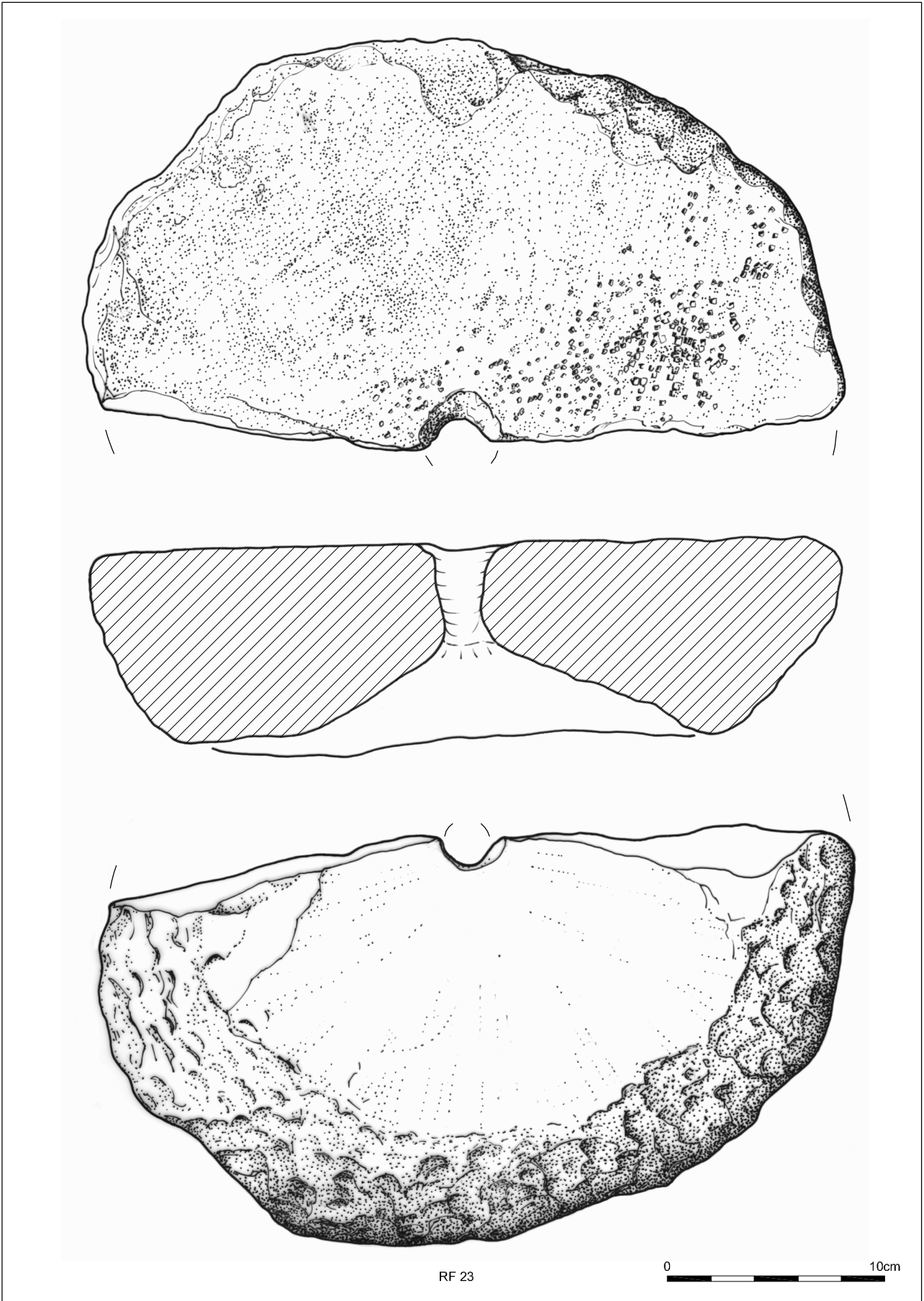
Figure 11



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Marsh House Farm, Greatham: jet and jet-like objects

Figure 12





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*Marsh House Farm, Figure 14
 Greatham: excavated non-funerary
 Bronze Age sites in the vicinity*



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Marsh House Farm, Greatham: Greatham site and environs

Plate 1



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Marsh House Farm, Greatham: section within channel 5157

Plate 2



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Marsh House Farm, Greatham: jet 'napkin ring' fragment

Plate 3



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Marsh House Farm, Greatham: barrowlets under excavation

Plate 4



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Marsh House Farm, Greatham: pit 1603

Plate 5