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The southern extent of the Late Roman settlement of *Rutupiae:* archaeological investigations relating to the Thanet supply main, Richborough, Kent

By Andrew Margetts, Lucy Allott, Luke Barber, Trista Clifford, Anna Doherty, Sarah Porteus, Susan Pringle, Lucy Sibun and Elke Raemen

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THE SOUTHERN EXTENT OF THE LATE ROMAN SETTLEMENT OF *RUTUPIAE*: ARCHAEOLOGICAL INVESTIGATIONS RELATING TO THE THANET SUPPLY MAIN, RICHBOROUGH, KENT

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FIGURES

4 RF <1> *Copper-alloy harness pendant*

5 RF <30> *Copper-alloy buckle*

6 RF <32> *Iron link from two-link snaffle bit*

7 RF <7> *Iron ?bucket handle mount*

8 RF <38> *Copper-alloy suspension hook*

9 RF <45> *Iron ?double-spiked loop*

10 RF <46> *Iron spike*

11 RF <6> *Iron collar*

Fig.14 Plan of Evaluation and Excavation Trenches in Relation to English Heritage Geo-physics and Aerial Photographic Results (English Heritage 2007)

APPENDICES

THE SOUTHERN EXTENT OF THE LATE ROMAN SETTLEMENT OF *RUTUPIAE*: ARCHAEOLOGICAL INVESTIGATIONS RELATING TO THE THANET SUPPLY MAIN, RICHBOROUGH, KENT

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SUMMARY

From the winter of 2006 to the autumn of 2008 a large programme of archaeological investigation occurred in relation to the installation of a new Thanet Supply Main by 4Delivery Limited (4D). This water pipeline stretches from the Goshall valley to the Weatherlees Water Treatment Works on the Isle of Thanet (see Fig.1). The work took place within a landscape well known for its archaeological importance and would include such areas as the Wantsum Channel, Richborough Island and the Ebbsfleet Peninsula. Archaeological activity dating from the late prehistoric to post-medieval periods was represented at various locations along the pipe-route with late prehistoric and late Roman features being the most numerous and significant.

The evidence gathered has provided insights into the possible density of late prehistoric settlement on Richborough Island as well as the nature and probable southern extent of the late Roman settlement surrounding Richborough Castle. In addition to these discoveries the deep and linear excavations allowed paleogeographical analysis into the development of the landscape both as it was in antiquity and as it is today.

INTRODUCTION (Figs. 1 and 2)

This publication details and interprets the results from nine stages of archaeological fieldwork, geophysical survey and desktop work undertaken on the site by Archaeology South-East (ASE), Canterbury Archaeological Trust (CAT) and Wessex Archaeology (WESX). These took place between December 2006 and October 2008 (Appendix 1) in accordance with the progress of the pipeline scheme and began with an archaeological watching brief during installation of hand-dug starter pits in advance of bore-holing at two locations near to Castle Farm and King's End Cottage (Stage 1: BH1 and BH2). Following on from these, a further archaeological watching brief was conducted during the excavation of nine geo-technical test pits (Stage 2:TP1-9; Parfitt, 2007a). These works revealed useful information pertaining to the underlying soil sequence across the Wantsum Channel and the higher ground on Richborough Island (*ibid*). Archaeological field-walking prior to ploughing (Stage 3) was followed by a magnetometry survey by GSB Prospection Ltd (Stage 4). Previous geophysical survey work to the south and west of the Roman fort conducted by English Heritage proved a useful tool for revealing evidence of the Roman remains at Richborough (Millet and Wilmott, 2003) and it was determined that five other locations within the corridor would be the subject of further survey. However, the GSB magnetometry survey produced limited results identifying three pit-like features and faint linear anomalies in geophysical areas C and D.

Stages 1 to 4 were reported on in the Kent-Thanet Supply Scheme (KTSS): Archaeological Impact Assessment of the Route-Corridor, which also detailed the archaeological potential of the site and gave recommendations for further mitigation (Stage 5; Parfitt, 2007a). Following this, a programme of evaluation took place along the route-corridor at designated KTSS trench locations 1–11 (Stages 6 and 7). KTSS Trench 11 resulted in the exposure of significant archaeological remains (*ibid* and Parfitt, 2008) and subsequent to consultation between CAT, 4D, Heritage Conservation Group at Kent County Council (HCGKCC) and English Heritage (EH) it was decided that further excavation was needed to allow insertion of the pipe following complete excavation of all impacted archaeological deposits in the pipe-trench. Modifications to the trench to accommodate the precise pipe alignment also took place at this stage, and thus not all features revealed in KTSS Trench 11 were impacted upon. In addition to this a further trench to the southeast of KTSS Trench 11 was required to evaluate the remainder of the proposed pipeline (Stage 8; Margetts, 2008). The final phase of archaeological work was a watching brief conducted during the excavation of the pipe trench in conjunction with geo-archaeological sampling (Stage 9; Wessex, 2008). Due to the close proximity of the Scheduled Ancient Monument Site of Richborough all work was closely monitored by both HCGKCC and EH.

ARCHAEOLOGICAL BACKGROUND

The Wantsum Channel

Historically, the Wantsum Channel divided the Isle of Thanet from the mainland to the west, effectively forming a southern extension of the Thames estuary. It ran for 20km from the east Kent coast north of Deal to the Thames estuary at Reculver. Over the centuries washed-in sediments silted-up the channel until by the medieval period it had become marshland. The channel was well recognised as an important routeway in antiquity allowing a more direct passage both to the Thames and the North Sea, thus negating the need to round the eastern tip of Kent formed by the Isle of Thanet. The Impact Assessment stressed that the area of the proposed pipeline had the archaeological potential to add to understanding of the evolution of the Wantsum Channel and also highlighted the possibility that buried land surfaces, sites and preserved timber may also be encountered during any excavations (Parfitt, 2007a).

Richborough Island

Richborough is well known for being an area of high archaeological importance. Its historic situation as a small island within the Wantsum Channel meant that it was on a shipping-route from the continent presumably travelled since prehistory through to the medieval period when the channel became impassable. Roman and Iron Age occupation is well known in the vicinity. The most notable example of this is the Roman fort and town of *Rutupiae* (Richborough Castle). The fort was the subject of large-scale excavations from 1922–1938 by Bushe-Fox and the Society of Antiquaries (Bushe-Fox 1926; 1928; 1932; 1949; Cunliffe 1968) which resulted in an understanding of the forts' development and a large body of artefact retrieval that has been the subject of continued research over time. The earliest features identified during excavations included ditched enclosures and traces of possible palisade slots associated with Iron Age pottery (Bushe-Fox 1949; Cunliffe 1968). This, combined with other evidence (such as coins), may indicate that Richborough was already operating as a port prior to the Roman Invasion of AD 43 (Millett and Wilmott, 2003).

The earliest traces of identified Roman activity comprise of two parallel 'V-cut' ditches associated with a timber gateway along the line of Watling Street, the road to London and Wroxeter. These features were associated with ovens and were closely dated to the Roman invasion of AD 43 (Cunliffe, 1968). From AD 43–85 streets and timber buildings associated with granaries of distinct military character evolved on the site. This phase has been interpreted as a period when the site was an important supply base and may have continued as such into the late Flavian period (Frere and Fulford, 2001). At the end of the Flavian period a transition from military facility to civilian port and town seems to have been completed. Timber buildings were dismantled, and new roads were built possibly linked to the construction of a massive quadrifrons arch (Millett and Wilmott, 2003). This arch together with evidence for settlement, expansion and development testifies to the status of the site at this time. During the latter part of the 2nd century the excavated evidence shows that the town was falling into decline. Buildings and roads went out of use and burials encroached into the area around the arch (Millett and Wilmott, 2003). Following this decline in the middle of the 3rd century the monumental arch (probably in disrepair) was converted into a watchtower surrounded by defensive ditches. This attests to the beginning of a reversion

of the site to its military roots (Millett, 2007) and in *c.* AD 275 the watchtower was replaced by a substantially walled fortified base forming part of the unified chain of commands known as the 'Saxon Shore' (*ibid*).

In addition to the Roman Fort and Watling Street the remains of a Roman Amphitheatre also exist dating to the Saxon Shore phase and consist of a large oval depression with slight traces of banking on the east and west sides.

Surrounding both the fort and the amphitheatre are a dense set of linear features and crop marks which have been traced by both aerial photography and geophysical survey. They show that the fort and amphitheatre were surrounded by a considerable settlement. The data suggests that development of the town was irregular and superimposed anomalies imply several phases of activity. These phases seem to relate to two separate settlement nuclei either aligned on the NNE-SSW axis of the fort and main road or on a NE-SW alignment delineated by a curving roadway (English Heritage, 2002).

It is recognised that the settlement surrounding the fort is still little understood and little excavation has taken place here. However, in 2001 two trenches were opened to re-examine a temple previously excavated by Bushe-Fox which showed that in the early 4th century extensive rubbish pitting had taken place in the temple area possibly indicating decline and shrinkage of the settlement at this time (Bushe-Fox 1949; Millett and Wilmott, 2003).

The Ebbsfleet Peninsula

The Ebbsfleet peninsula comprises an area of higher ground that extends from the southern side of the Isle of Thanet into the Wantsum Marshes. The peninsula would have been an attractive area in antiquity possibly providing an accessible landing place on the edge of the Wantsum Channel. The appealing geography and topography of Ebbsfleet is certainly reflected in the archaeological evidence with significant widespread settlement known from the later prehistoric to medieval periods (Parfitt, 2007a).

Lowton

Situated on the southern slopes of Richborough Island is the probable medieval site of 'Lowton'. Known from cartographic evidence this habitation probably originated as a farmstead situated to exploit both the marshland of the Goshall Valley and the soils of Richborough Island itself (Parfitt, 2007a). It is mentioned in 1872 by antiquarian George Dowker as a place where 'a few cottages remain' (Dowker, 1872) and can probably be seen as a topographic feature in an area of pasture close to where the map evidence suggests the site to be.

ARCHAEOLOGICAL RESULTS

The trenching across Richborough Island revealed the top of underlying Thanet Beds at between 0.35 and 1.25m below present ground level sealed beneath subsoil and colluvial deposits. Trenches that revealed archaeological features were surprisingly scarce (Parfitt, 2007b) being confined to KTSS

Trenches 2, 8, 10 and 11 and ASE Trenches 1, 2 and 3, however, a moderate assemblage of finds was recovered from overburden and stratified contexts across the island.

Situated in an area that had already been covered by geo-physical survey, intrusive investigations associated with Trench 10 revealed 17 features of archaeological interest. Ever thickening deposits of hill wash were recorded sealing the natural as the land fell away to marsh level and at the southern end of the trench the natural was only marginally buried (Parfitt, 2007b).

Most of the features investigated and planned by CAT in KTSS Trench 11 were subsequently dealt with by ASE, however, up-to seven additional features were mapped and five investigated by CAT before the Stage 8 excavation phase was implemented. In addition to the archaeological features, a small sondage was cut into a large soil discolouration that may represent where the dry ground slopes away into the edge of the Wantsum Channel.

For the Stage 8 investigations CAT's original and correctly aligned trench was designated ASE Trench 1, ASE's amendment was designated ASE Trench 2 and the final evaluation trench was assigned ASE Trench 3 (Figs. 2 and 3).

ASE Trenches 1 and 2 were situated on a small spur that juts out into the lower marshy ground of the Goshall Valley. The overlying deposits in the trenches comprised topsoil that remained fairly consistent in depth. The topsoil sealed subsoil deposits beneath which were, throughout much of the trench, a deposit of colluvium. This hill-wash deposit contained late Roman pottery and Roman tile including box flue. Archaeological features were either noticeable within the colluvium or sealed below it. ASE Trench 3 produced a small amount of evidence for archaeological activity as well as probable deposits of marsh or estuarine silts laid down during the infilling of the Wantsum Channel and its subsequent marshland phase prior to draining (Figs. 2 and 4). The excavation of sondages confirmed that these silts overlay deposits of marine alluvium and sealed a pit filled with *in-situ* burning and oyster shell.

The sequence of stratigraphy identified through the low ground surrounding Richborough Island proved to be regular with up-to 0.25m of topsoil over up-to 0.7m of subsoil. In areas of lower reclaimed marsh, the subsoil was largely absent with topsoil overlying estuarine alluvial and semi-alluvial deposits observed to a depth of 2.5m within the pipe-trench.

PHASE 1 LATE PREHISTORIC

Archaeological features of probable late prehistoric date were encountered at four locations along the pipe route corridor. The first of these comprised a partially truncated east west aligned prehistoric ditch. This was revealed during excavations for the pipe-trench near to Weatherlees Water Treatment Works close to the northeastern end of the scheme (see Fig. 1). It was broadly dated from the Late Bronze Age to Early Iron Age by four flint-tempered sherds recovered from its fill.

A single archaeological feature comprising a shallow curving gully was encountered mid-trench in KTSS Trench 8 (see Fig. 4). This feature was filled by light grey-brown sandy clay with inclusions of flint pebbles and occasional carbon flecks. Despite being fully excavated no datable finds were retrieved from

its fill, however, its ephemeral nature and the fact that it was completely sealed by colluvium suggests that it is more likely to be prehistoric rather than Roman or later in origin.

KTSS Trench 10 revealed several features belonging to this phase including a substantial flat-bottomed ditch (CAT 106 see Fig. 5). This was aligned roughly south-east by north-west. It was filled by silt clay deposits that produced finds of calcined and struck flints as well as a small pedestal base of a sandy flint-tempered fabric. This pottery type may be from a native tradition S-profile jar or an Aylesford-Swarling style pedestal form and can be dated broadly to around 100 BC–AD 60. Two further features in KTSS Trench 10 including a ditch and a pit or ditch terminal were also assigned a prehistoric date. They shared similar fills and finds of calcined and struck flints as well as abraded late prehistoric pot fragments.

The earliest evidence encountered in ASE Trenches 1 and 2 comprised linear features of probable Late Bronze Age – Late Iron Age date (Features A, B, and C; see Fig. 5). Feature A was orientated roughly NE-SW it was filled by mid grey brown firm silt clay with moderate inclusions of sub-rounded pebbles and occasional fire-cracked flint and charcoal flecks. This shallow ditch like feature contained pottery of late prehistoric date as well as a piece of struck flint. Feature B was filled by mid grey brown silt clay of firm consistency that contained inclusions of occasional sub-rounded pebbles and charcoal flecks as well as finds of late prehistoric pottery. Feature B cut and was therefore later than Feature C. This slightly curvilinear feature is interpreted as a ditch or gully and contained a single fill of a mid brown grey coloured silt clay with three sherds of late prehistoric pottery and fire-cracked flint. Feature C continued out of the area of excavation but has been provisionally interpreted as a probable drainage ditch.

PHASE 2 ROMAN

As would be expected given the proximity of Richborough Fort, Roman archaeological activity was the most prevalent encountered.

KTSS Trench 2 (Fig. 2) was located to investigate the area of the projected line of Watling Street, however, the trench revealed that much disturbance had occurred. Truncated natural Thanet Beds were overlain by a thin layer of orange-brown sandy clay loam with frequent inclusions of flint pebbles. This was in turn overlain by a thicker layer of dumped tarmac and brick hardcore. At the north-eastern end of the trench a gully like feature was noted outside of the spread of the pebble rich deposit (Fig. 4; Parfitt, 2007b). The disturbance of this area and the lack of archaeological material (a single sherd of mid 12th to early 13th century Canterbury Sandy Ware cooking pot base) led to the misinterpretation of these deposits as the result of recent activity associated with the field entrance with the gully feature seeming to be the result of a wheel rut. However, the author had the benefit of encountering similar features elsewhere on the site (see below) and has confidently reinterpreted these deposits to be the disturbed remains of Watling Street, the pebble rich deposit being the remnant of the road surface and the gully like feature forming the northernmost roadside ditch.

As has been noted above not all features revealed within KTSS Trench 11 were investigated in detail. The mapped features were mainly filled by dark soil, rich in clearly Roman finds and probably represented a single gully, two pits, two ditch like linear features, a spread and a surface that may have related to the remains of a building. The investigated features comprised two pits, two gullies and a ditch (Parfitt, 2008). Spatial analysis shows some correlation between the features encountered in this area of excavation and those recorded in ASE Trench 2. It is likely that similar activities were taking place in both areas with a possible building plot fronting on a road with associated pitting and boundaries.

Phase 2a Roman 2nd and 3rd century

A small amount of archaeological activity encountered within ASE Trenches 1 and 2 (Figs 3 and 6) relates to the 2nd and 3rd centuries. The features dated to this phase comprised a pit that was half sectioned against the baulk and a ditch Feature E. Feature E was cut by Feature F. This sequence was supported by the dating evidence recovered from the features, which suggested that Feature F belongs to the later phase (phase 2b) of the site's development. Feature E continued beyond the limit of excavation and was on a similar alignment to Feature A, rather than the linear features that belong to Phase 2b. This feature is interpreted as a boundary and drainage ditch that possibly formed part of a field system.

Phase 2b Roman 4th and 5th century

The major activity at the site takes place in the late Roman period and this comprises several elements of land use that, although suffering from difficult field conditions and a confined excavation area, may be tentatively interpreted. An area of rubbish pitting and/or associated domestic or industrial activity may be alluded to in the northern limits of ASE Trench 1 (Figs 3 and 6). This seemed to be bounded by Feature F and some of the undated pits in this area may also be associated with this activity. It was also noted that Feature J within ASE Trench 2 shows similarities to Feature F. This could be an indication that similar archaeological activity was being carried out in these two locations.

Ditches encountered within the excavation may have served several purposes including drainage and enclosure. Two large similarly orientated features, G and I, stand out upon investigation. This is primarily because they ran perpendicularly to the road discussed below and may delineate activity upon the spur of land they were situated on. It can be suggested that they may have served some kind of role in running across a known route way (such as drainage or control of movement). Similarly, Feature K defined the limit of the spur between the slightly higher drier ground and the Wantsum Channel.

Several deposits of domestic waste, a posthole and linear gully recorded at the southern end of Trench 1 suggest that this was a midden or a structure, but limitations of the excavation area and the waterlogged conditions of the site made further clarification impossible.

A distinct group of features in ASE Trench 2 formed a roadway with associated ditches. An approximately 12m wide layer of mid brown grey clay silt mixed with very frequent compacted sub-round pebbles was found to be up to 0.20m in depth and ran the width of the trench (Figs. 6 and 7). A definite

camber could be seen to this shingle layer, and it sloped slightly to the south-west. Amidst the shingle was pottery dating to AD 300–400, CBM (including a possible kiln bar), bone and iron — all probably utilised as metalling.

Running parallel, on either side of the roadway were two roadside ditches of similar size. The northerly of these had gradually sloping sides and a flattish base. It measured 1.66m wide and *c.* 0.25m deep and was filled by dark black grey clay silt that contained frequent inclusions of sub-rounded pebbles and charcoal as well as finds of pottery (AD 240–400), CBM (including a possible kiln bar), bone and a diamond shaped iron rivet. The southerly of the two was 1.6m wide and *c.* 0.35m deep. It was filled by dark black grey clay silt that contained frequent inclusions of sub-rounded pebbles and occasional charcoal flecks. The finds retrieved from this feature included pottery (AD 270–420), CBM (including a combed tile), bone and a 4th century military buckle. Environmental samples included fragments of indeterminate cereals.

The surface of the road was cut by three later features, an irregular feature that possibly represents disturbance; a linear feature only discernable upon excavation of the adjacent roadside ditch; and also a small pit like feature filled by a mid brown grey clay silt. Environmental samples from this last feature included chaff and placed centrally within the pit was a large swan's head harness pendant (Fig. 8). Located to the southeast of the road were several features interpreted as the remains of a timber-framed building. Two substantial postholes were joined by a foundation trench that would have probably contained a wattle and daub wall. The pottery evidence retrieved from these features indicated a date of AD 240–400. Amongst the other finds retrieved were several nails, a possible large staple and Roman CBM. The pottery dates from the structure have a slightly earlier range than that of Feature J which truncates it. This demonstrates that the structure was probably fairly short lived, maybe only lasting a decade or two. The structure did not appear in KTSS Trench 11 to the south.

PHASE 3 MEDIEVAL

The most significant Phase 3 feature encountered relates to the substantial extant bank known as 'Monks Wall'. Measuring 11m in width and 1.88m in height the bank section comprised a dumped mid brown clay capped by turf (Wessex, 2008). The bank had an associated large ditch that ran along the northern side and is part of a sea wall defence system thought to date to 12th century land reclamation. Interestingly, the deposits recovered in monoliths 4, 5 and 6 (see below) were on the seaward side of this defence and continued beneath it thus suggesting that the protected area had already been 'inned' by the walls construction date of the 12th century.

The only other medieval remains encountered (apart from finds retrieved from unstratified contexts) were located within KTSS Trench 10 and comprised a further pit or ditch terminal and ditch dated by abraded Tyler Hill pottery sherds to the mid 13th to mid 14th century.

PHASE 4 POST-MEDIEVAL

Two irregular shaped pits encountered in KTSS Trench 10 were interpreted as possible tree-throws and probably represent remains relating to an orchard shown on early 20th century maps of this area. In addition, at the northern end of the trench an approximately southwest by north-east orientated drainage ditch was encountered. This feature is shown on the 1897–1900 O.S. maps as an early field boundary which was later decommissioned and realigned into its current position. The northern end remains open and in use (Parfitt, 2007b)

A further ditch was encountered close to Castle Farm (see Fig. 1). This was aligned roughly north-south on the west side and parallel to Richborough Road. No dating material was derived from the fill of the ditch, and it was believed to relate to post-medieval or modern roadside activity or drainage

UNDATED

A small number of undated features were excavated during archaeological investigations associated with ASE Trench 1. The majority of these were pits with no known function, however, an additional linear feature (Feature D) that extended into KTSS Trench 11 was encountered together with small sub-circular feature. This comprised a 0.50m diameter and 0.17m deep pit with sharp sloping sides and a rounded base. It was filled by dark black brown silt clay with moderate inclusions of charcoal and burnt bone as well as occasional sub-rounded pebbles. This feature represented either a pyre deposit or an unaccompanied human cremation possibly an adult (see section on cremated bone below). No other finds indicating the date of the cremation were retrieved.

Most of the features encountered within KTSS Trench 10 also remain undated and probably relate to the aforementioned orchard, however, the possibility that some at least may date from the prehistoric period remains.

Field walking Results

Ploughing between Kings End and Drove Cottages allowed archaeological field-walking of this area of the pipe-route corridor (see Fig. 2). A 30 by 220m strip of ground was searched using a standard transect field-walking method. Citing of the area on the gently sloping land of the northern side of Richborough Island produced a surprisingly small finds assemblage (see Appendix 2). The relatively small quantities of Roman material recovered suggested that this area may be largely outside the focus of Roman occupation or that much archaeological material had been washed down slope in deposits of colluvium noted during nearby excavations. Similarly, prehistoric material comprising struck and calcined flint was also rather low in quantity, however, when taken with further fragments of burnt flint recovered from TP3 and from previous work in the area, a light scatter of this material across the island may be suggested.

The later material such as medieval and post-medieval tile and pottery found during this stage of investigations and during the excavation of borehole starter pits and TP 1 was interpreted as the result of farming activity (i.e. manuring and ploughing from the 13th to 19th centuries) (Parfitt, 2007a).

Paleogeographical Results

Most geotechnical pits were excavated through alluvial clays relating to the silting of the Wantsum (TP 1, 2, 4, 5, 6, 7 and 8). The underlying Thanet Beds were only reached in two of these pits (4 and 8), which are probably located at the edge of the former channel.

Test pits 3 and 9 were the only excavations that did not reveal alluvial clays. TP 3 was sited just above marsh level and revealed natural Thanet Beds at between 0.55 and 1m below the current ground surface. The natural horizon was sealed by a colluvial deposit derived from hill wash from Richborough Hill. Upon removal of this layer no buried land-surface was encountered. Test pit 9 (located close to Ebbsfleet Lane) revealed Thanet Beds in this area to be at a shallow depth below current ground level, as well as some evidence that disturbance had occurred during the construction of the nearby Weatherlees Water Treatment Works (Parfitt, 2007a).

Seven monoliths and a single bulk sample were taken during the geo-archaeological watching brief (these are shown in Appendix 3 and Fig.1) Monoliths 1 and 2 were located in an area mapped by the British Geological Survey (Woodland, 1977) as Thanet Beds Sands. More recent shallow marine/alluvial deposits including significant sand and gravel content were recorded in these monoliths. This is potentially a significant demonstration of the maximum extent and previous shoreline of the Wantsum Channel in this area. Deposits associated with Monolith 3 were indicative of alluvial and/or shallow marine deposition with subsequent emergent vegetation and peat development possibly derived from intertidal salt marsh. A final inundation of this peat was suggested by overlying alluvial clays. The peat was encountered at 1.647m A.O.D and appeared to rest upon alluvial/shallow marine deposits. The remaining deposits recorded in Monoliths 4, 5, 6 and 7 indicated a terrestrial environment developing upon probable estuarine alluvial sediments.

THE FINDS

The Prehistoric and Roman Pottery *by Anna Doherty*

The assemblage amounts to 615 sherds, weighing 14.85kg (12.61 EVEs), mostly dating to the later 4th to early 5th centuries AD. This total includes material excavated in KTSS trench 11, and in subsequent work by ASE (trenches 1–3). Stratified pottery recovered by CAT during evaluation in trenches 1–10, and by WESX during the Stage 9 watching brief, is also included in the quantification.

The pottery was examined using a x20 binocular microscope and quantified by sherd count, weight and EVEs on pro-forma recording sheets which are retained in the archive. In the absence of an accessible published type-series for Kent, fabrics and forms were recorded using the Southwark typology (Marsh & Tyers 1979). Where possible, suggested concordances to fabric codes used by CAT (Macpherson-Grant & Green 1983) are provided in Appendix 4.

Prehistoric pottery

Only 23 sherds, weighing 185 grams, are of prehistoric date. A few feature relatively coarse and ill-sorted flint temper and fairly sand-free matrixes: traits more typical of post-Deverel-Rimbury (PDR) fabrics of the Late Bronze Age to Early Iron Age. Discounting clearly residual material, these comprise just eight bodysherds from three features (ASE Feature B and Feature C, and the Wessex prehistoric ditch near Weatherlees WTW). As coarser flint fabrics can persist in smaller quantities throughout the Iron Age, these sherds cannot be dated with any certainty; however, some probable decorated phase PDR pottery has previously been illustrated from Richborough (Cunliffe 1968, plate LXIX). The better sorted, sandier flint-tempered fabrics are probably Late Iron Age in date. A small pedestal base (from CAT 106) of this type may be from a native-tradition S-profile jar or an Aylesford-Swarling style pedestal form, and can be dated broadly to around 100 BC–AD 60.

Roman Pottery

Around 40% of the assemblage is made up by late Roman grog-tempered wares, comparable to Fulford's 'Portchester A' fabric: a handmade ware imitating black-burnished ware plain rim dishes, bead and flange bowls and everted rim jars (Fulford 1975, 286). Although there is very little kiln evidence associated with these fabrics, probably indicating that they were fired in bonfire kilns lacking structural elements, it seems likely that they were locally produced in less specialised industries. The widespread return to handmade, grog-tempered coarse wares is a feature of Roman assemblages in Kent from around AD 270. However, their dominance over other coarse wares is typical of mid 4th to early 5th century assemblages elsewhere in east Kent (Pollard 1988, 151).

A smaller proportion of coarse wares are made up by local sandy fabrics and pottery from large-scale industries further afield, particularly BB1, Alice Holt/Farnham white-slipped greywares and Portchester D ware. Although both of the latter fabrics were produced from the later 3rd century, their distribution in Kent is thought to post-date the mid 4th century. By contrast North Kent BB2, known in moderate quantities from earlier 4th century groups at Canterbury (*ibid.*, 153), is absent from the assemblage.

Also of note are imported coarse-wares from the Eifel region of Germany, including lid-seated jars and plain rim bowls. *Eifelkeramik* wares are particularly concentrated in later 4th to early 5th century deposits on military and urban sites and may have been imported by the state as part of the *annona militaris* (*ibid.*, 149). The lack of quantification or illustration of pottery in context groups, in the published literature from Richborough, makes it difficult to assess the extent to which assemblages from outside the fort differ from those within it. However, it is interesting to note that a ware with strong military associations still appears in significant quantities (almost 10% of the total weight) in what is assumed to be part of a civilian settlement peripheral to the fort itself. On current evidence it is difficult to assess whether this material simply indicates that refuse from the fort was being dumped outside. However, it

also seems possible that civilian populations were benefiting from the supply networks set up to serve the Roman army.

The late Roman period was marked by intensification of production in some of the major fine ware producing industries. Oxfordshire red-slipped wares, chiefly consisting of samian style bowl and mortarium forms, often decorated with stamped rosettes or demi-rosettes, make up around 20% of the assemblage. High proportions these wares have been noted in later 4th century stratified assemblages elsewhere in Kent (Pollard 1988, 139). Nene Valley wares in the assemblage mostly consist of later bowl forms, which can be paralleled in the corpus of pottery produced at Water Newton (Perrin, 1999, fig 63, 103; 257, fig 64, 105).

Mortaria are generally quite common, making up around 15% by EVE, and most of these are variants of Young's form M22 in Oxfordshire white ware (Young 1977). However, there are also several locally-produced forms in an orange/buff fabric with common opaque angular crystalline quartz grits and short, thick down-turning flanges with in-turning beads. These are probably similar to Hartley's fabric C, and may be residual within the stratified groups, since most Kent mortaria are thought to pre-date the 4th century (Hartley 1968, 174).

Two groups have been selected for illustration, both of which are typical of the range of fabrics and forms encountered more generally in the assemblage. Since there was relatively typological change at the end of the Roman period, the groups could be dated anywhere within the range AD 350–420. However, it is notable that most coins from the site cluster around the mid 4th century, with none produced after AD 378, so the groups are less likely to date to the later end of this range. It is also worth noting that both groups feature a high average sherd weight (around 30g) and relatively low levels of abrasion, suggesting that they represent primary rubbish deposits.

The fill of curvilinear Feature F, contained an assemblage of 91 sherds weighing 2.81kg (4.0 EVEs. The group from the spread interpreted as a midden deposit, consists of 130 sherds, weighing 3.81kg (3.5 EVEs). It contained 10 coins of mid and late 4th century date, with a *terminus post quem* of AD 367 provided by coins of Gracian and the House of Valentinian.

The Ceramic Building Material *by Sarah Porteus and Susan Pringle*

A total of 574 fragments of Roman CBM weighing a total of 61958g were recovered from all phases of archaeological works. A single fragment of medieval peg tile and a small quantity of post-medieval peg tile and brick, all unstratified, were also recovered and recorded in the archive.

The CBM was recorded by fabric, form, weight and fragment count. Fabric descriptions were compiled with the aid of a x20 binocular microscope. A provisional type series was created and, where possible, has been compared to the known fabric series' of Canterbury Archaeological Trust (CAT) and Museum of London (MoL) by Susan Pringle. Approximately 50% of the material has been discarded.

The Roman fabrics and forms

All the stratified contexts examined contain only Roman ceramic building materials. The majority of the tile, 46% of the Roman tile (by fragment count and weight) is in a fine sandy orange-red fabric speckled with abundant fine black iron-oxides (fabric TSM/2). Also common, 41% are an orange-red fabric with moderate amounts of poorly-sorted quartz (TSM/1) and 6% of all fabrics were a coarser variant of TSM/2, found mainly in bricks (TSM/3). Of the less common fabrics accounting for the remaining 8%, two orange fabrics with cream silty banding are present, with coarse cream and dark orange silty inclusions (TSM/4) and with dark-red quartz (TSM/7); the latter is similar to the fabrics from Roman kilns at Reigate, Surrey. Another orange fabric, with abundant fine quartz, has distinctive white banding and white calcareous inclusions (TSM/6). Also present are single instances of a light brown fabric with abundant fine grey shell (TSM/5) and a pale orange-pink fabric similar to that from the Eccles villa kilns north of Maidstone (TSM/8). Fabric 5 belongs to a group of late Roman tile fabrics from southern England with a distribution centred on the Solent area; the period of production is c. AD 150 to 300 (Betts & Foot 1994).

In the fabric descriptions the following conventions are used: the frequency of inclusions is described as being sparse, moderate, common or abundant; the size categories for inclusions are fine (up to 0.25 mm), medium (between 0.25 and 0.5 mm), coarse (between 0.5 and 1 mm), and very coarse (greater than 1 mm). Reference has been made to fabric types from CAT and the Museum of London (MoL).

TSM/1. orange-red with moderate poorly sorted (fine to coarse) quartz, calcareous material and darker red iron-rich inclusions. Some examples are of poorly mixed clay, with fine silty bands or lumps of clay in the matrix. Near CAT 1, MoL 3006.

TSM/2. orange-red, abundant very fine to fine quartz, speckled with fine black iron oxides, white shell and gold mica; sparse dark red iron-rich clay and lighter silty clay lumps, also containing fine quartz. = CAT 10?, near MoL 3060.

TSM/3. similar to fabric 2, but with coarser and more abundant silty/sandy inclusions. Usually a brick fabric.

TSM/4. orange with cream silty streaks; variable amounts of quartz, generally sparse but more frequent in lenses, mode is fine to medium, although sparse coarse crystals present < c. 1mm; common poorly sorted inclusions of cream and darker orange clay/silt. Near CAT 15, MoL 3238.

TSM/5. brown fabric with paler silty lumps and abundant fine calcareous material, including grey shell; sparse dark red iron-rich rounded inclusions and medium quartz grains. = MoL 2457, CAT 16.

TSM/6. light orange fabric with abundant fine quartz and lenses of white clay; very coarse inclusions of white, yellow and orange clays and sparse brown iron-rich material.

TSM/7. orange with yellow silty streaks and speckles; common fine to medium quartz, mainly rose coloured with moderate dark red (near black) grains. MoL 3050, CAT 17(?).

TSM/8. pale orange-pink fabric with sparse fine to medium quartz (clear or rose-coloured) and fine calcium carbonate inclusions. = CAT 8, MoL 2454.

Roofing tile, *tegula* and *imbrex*, and brick are well represented within the material (Appendix 5). Although *imbrices* are present in sufficient numbers to suggest that some of the tile represents roof demolition, the high proportion of *tegulae* suggest that the material does not derive from primary deposition of roofing material. It is more likely that many of the flat tiles (*tegulae* and bricks) have been re-used in some way, probably for hearths or the construction of kilns. Rectangular nail holes were noted in two *tegula* fragments.

Fragments of box flue or *voussoir*, either plain or with combed keying, come from ASE Trench 1 hill wash deposits, pit [128], Feature G, Feature F and the midden deposit. Part of a curved vent cut in a plain face was observed on two *tegula* fragments. These cannot be closely dated, but combed keying is rare before the end of the 1st century AD.

There are three unusual items in the assemblage. A large flat tile 25mm thick, perhaps a thin brick or *tegula* from the southern roadside ditch, has bands of combed keying on the top surface. Two small bricks or tiles were recovered with complete surviving lengths of c. 70mm, and are 27 x 23mm and 29 x 22mm in section. All original faces seem to be sanded (from the northern roadside ditch and the road-surface itself). The exact function of these bricks is unknown, they may be tiles for setting in a decorated floor or wall or possibly had been utilised as kiln bars. All three items are from ASE Trench 2.

Signature marks, broad lines drawn into the surface of the brick or *tegula*, were identified on eight fragments these include five examples of the double semicircular arc, two examples of the single semicircular arc and a single fragment with three semicircular arcs.

The majority of the CBM recovered from the earliest phase of works was highly abraded and residual. The Roman assemblage from ASE Trench 1 and KTSS 11 consists mainly of the tile types common to good quality Roman buildings: *tegulae, imbrices*, flue tiles and bricks. The flue tiles will have come from a hypocausted building, but there is nothing other than that they occur only in ASE Trench 1 to indicate primary deposition. The assemblage is likely to represent re-use of material, probably in the 4th or early 5th centuries AD. If correctly identified, the kiln bars suggest that pottery production was taking place in the vicinity of the site. The consistency of the tile fabrics suggests that much of the material was locally sourced, although some tiles must have been obtained from more distant sources in Kent or along the south coast.

The types of Roman tile found on the site indicate the presence of a high-status structure or structures in the vicinity with a hypocaust, probably dating to the AD 2nd century or later.

The Geological Material *by Luke Barber*

There are a number of irregular pieces of well-weathered/eroded oolitic limestone from the site, almost certainly Marquise limestone from north-west of Boulogne. This stone was used at Richborough Fort (Pearson 2002, 203) and it is likely the present assemblage derives from re-use of these materials.

Although most is unstratified, its re-use in the late Roman period is suggested by its presence in the midden deposit (KTSS T11/ASE T1). The stone was found in:

KTSS Trench 1 topsoil: 3/82g

KTSS Trench 1 subsoil/hillwash: 1/441g

KTSS Trench 4 topsoil: 2/10g

KTSS Trench 5 subsoil/hillwash: 1/9g

ASE Trench 1 midden deposit dated 350-420AD: 1/56g

In addition, the CAT assemblage contains several pieces of weathered/eroded white marble slab (possibly Carrara). These are also likely to have been derived from the re-use of materials associated with the triumphal arch located at the fort in the late Roman period (Pearson 2002, 204). Marble was found in:

KTSS Trench 1 topsoil: 1/291g. A 27mm thick slab fragment. Moderate erosion.

ASE Trench 1 midden deposit dated 350-420AD: 1/144g. A 25mm thick slab fragment. Heavy erosion

KTSS Trench 11 unexcavated feature 236 tentatively dated 350-420AD: 2/531g. A 29mm thickslab fragment and a rounded lump. Both heavily eroded

The Metalwork *by Elke Raemen*

A small assemblage consisting of 115 pieces of ironwork, nine pieces of copper-alloy and eight lead waste fragments was recovered during the excavations. These include finds recovered during the excavation by ASE as well as finds from other phases sent by Cat and WESX. The post-Roman metalwork (all from the topsoil), Roman nails (81 pieces), amorphous pieces/iron concretions and the lead waste (all unstratified) are fully listed in the archive and are not considered here. Finds have all been X-radiographed and conserved as appropriate by the Fishbourne Conservation Laboratory.

Given the small size of the assemblage, a relatively large range of categories is represented. However, the artefactual evidence is too scarce to be reliably indicative of the type of occupation.

Catalogue

Dress Accessories

1. RF <50> *Copper-alloy brooch* (Fig 11.1)
Subsoil KTSS T8.

Incomplete. Headstud brooch. Bow decorated with lozenges of champlevé blue enamel. Head stud consists of two circles; enamel missing. Foot, most of bow and pin missing. Late 1st to 2nd century. Brooches of this type were previously recovered from Richborough (i.e. Bayley and Butcher 2004, 96, Type T149, Fig 77).

2. RF <51> *Copper-alloy brooch* (Fig 11.2)
Topsoil KTSS T11.
Incomplete. Crossbow brooch. Plain, rectangular-sectioned crossbar with fragment of upper bow from a P-profiled brooch. Mid 3rd to early 4th century. (Compare Bailey and Butcher 2004, Type 191B, Fig 86-87).

3. RF <52> *Copper-alloy finger ring* (Fig 11.3)
Subsoil KTSS T6.
Complete. Penannular ring with ridge spiralling around band (up to three ribs high). Probably of Roman date.

Military Equipment

4. RF <1> *Copper-alloy harness pendant* (Fig 11.4)
Depositional pit in road. No pottery date.
Near complete "bird-headed" horse harness pendant, mid to later 1st century. Bishop type 7b (Bishop 1988, Fig 46). W 111mm+, H 105mm. Evidence for cavalry in the shape of pendants though of different type previously attested i.e. Richborough IV, Plate 56, no. 275, Richborough V, Plate 39, no 146-147.

5. RF <30> *Copper-alloy buckle* (Fig 11.5)
Southern Roadside Ditch ASE T2. 270-420.
Incomplete. Military buckle with integral openwork triangular plate. Frame broken; probably D-shaped. Traces of iron pin and possible tinning. 4th century.

Horse Equipment

6. RF <32> *Iron link from two-link snaffle bit* (Fig 11.6)
Feature J. dated by pottery to 350-420.
Incomplete. One ring terminal missing. See Manning 1989, Plate 28, H10. L 69mm+

Household Equipment

7. RF <7> *Iron ?bucket handle mount* (Fig 11.7)
Feature F. .dated by pottery to 350-420.
Incomplete. End missing. Similar to Scott 1998, Fig 60.4.1, 104.

8. RF <48> *Iron chain link*
Feature F dated by pottery to 350-420.
Incomplete. Figure-of-eight. Fragment. See Manning 1989, Plate 64, S14-S17.

9. RF <38> *Copper-alloy suspension hook* (Fig 11.8)
Road Surface ASE T2 dated by pottery to 300-400.
Incomplete. C-shaped, for steelyard. Rectangular-sectioned. Tip missing. Similar to Garrard 1995, Fig 441, no. 453, 1034. A steelyard head was previously recorded from the south-west area of the fort (Richborough V, 105, no. 214).

Tools

10. RF <39> *Iron ?tool*
Southern Posthole of Structure ASE T2.
Incomplete. Unidentified oval-sectioned fragment. Rounded end.

11. RF <44> *Iron ?tool*
Hillwash KTSS T10 dated by pottery to 350-420.
Incomplete. Possible tool blade end. Oval-sectioned.

Structural Metalwork

12. RF <45> *Iron ?double-spiked loop* (Fig 11.9)
Hillwash KTSS T10 dated by pottery to 350-420.
Incomplete. Spikes broken. Compare Manning 1989, Plate 61, R39-46.

13. RF <46> *Iron spike* (Fig 11.10)
Hillwash KTSS T10 dated by pottery to 350-420.
Incomplete. Loop-headed spike. Shank broken. L 122mm+.

14. RF <47> *Iron bolt*
Hillwash ASE T1 dated by pottery to 350-420.
Incomplete. Dome-headed bolt. Head di. 42.9mm; L 25mm+.

15. RF <37> *Iron ?rove or rivet*
Hillwash KTSS T10 Pottery: 240-400.
Complete. Diamond-shaped. Dim 22 by 26mm, c. 2mm thick.

Miscellaneous

16. RF <6> *Iron collar* (Fig 11.11)
Hillwash ASE T1 dated by pottery to 350-420.
Complete. Ferrule for the binding of the end of a spear or staff or handle from tanged tool (Manning 1989, 141). Di. 34mm.

17. RF <43> *Iron ?rod*
Midden Deposit ASE T1 dated by pottery to 350-420.
Incomplete. Round-sectioned.

The Coins *by Elke Raemen with identifications by Trista Clifford and CAT*

A total of 37 coins and 1 token were recovered during the excavations. Five are of the post-medieval period including an Elizabeth I penny and two Charles II farthings as well as a 17th-century lead token (all top-or subsoil finds). All other coinage consists of generally heavily corroded Roman examples, most of which are virtually illegible. A large group of these was recovered from the top-or subsoil (15 examples).

The midden deposit (KTSS T11/ASE T1) contained the largest 'stratified' group (13 examples; 4th century). The earliest coin consists of a fairly worn Republican denarius dating to 78–77 BC. A few 3rd-century AD examples were recovered as well. The vast majority, however, date to the 4th century, mainly consisting of issues of the House of Constantine. A catalogue of the Roman coins can be found in Appendix 6, with abbreviations as specified by English Heritage (Brickstock 2004). All coins have been recorded in full for archive.

The Cremated Bone *by Lucy Sibun*

The only cremated bone assemblage from the site was recovered from an environmental sample taken from a shallow sub-circular pit.

The bone assemblage was small and only weighed 44grams. It was highly fragmentary and in a moderate state of preservation with only a minimal quantity of trabecular bone surviving. The majority of the assemblage (77%) was from the 5–10mm fraction and consisted of 30 grams of limb fragments and 4 grams identified as skull. The 10 grams recovered in the 1–5mm fraction (23% of the whole) also consisted of limb and skull fragments. Due to fragmentary nature of both fractions, it was not always possible to distinguish between upper and lower limb fragments.

The remains are thought to represent one adult individual, but the age assessment is based on fragment size alone. There were no recognisable sexually diagnostic fragments present or fragments displaying pathological lesions. The off-white calcined appearance of the bone suggests an efficient cremation process. No animal bone was noted in the assemblage.

The small quantity of bone could result from truncation of the feature, which was only 170mm in depth. However, it is also possible that the small quantity is representative of deposit type and that perhaps this was a pyre deposit rather than un-urned cremation. The sample was found to contain a significant quantity of wood charcoal in addition to the bone.

The Environmental Samples *by Lucy Allott*

Bulk environmental samples taken during all phases of work have recovered small assemblages of charred and uncharred macrobotanical remains, molluscs and wood charcoal. These samples provide some evidence for vegetation habitats contemporaneous with the accumulation of estuarine alluvium deposits in the medieval period as well as a very limited amount of information regarding plant use during the late Roman land use (3rd and 4th centuries AD).

All samples were processed using flotation and in each instance environmental and artefact remains were sorted from the dried residues and the flots were scanned under stereozoom microscopes at magnifications ranging from x7–45. Identifications have been made with reference to modern comparative material and reference atlases and nomenclature used follows Stace (1997). Charcoal fragments from a small pit/cremation feature were fractured following standardised procedures (Gale and

Cutler 2000) and were identified under an incident light microscope at magnifications of x50, 100, 200 and 400 through reference to comparative material and literature (Hather 2000; Schoch *et al.* 2004).

Wood charcoal fragments were uncommon, however, the richest sample, taken from a small pit/cremation pyre deposit, was dominated by deciduous oak (*Quercus* sp.). The majority were from mature wood of indeterminate diameter although two small roundwood/twig fragments were also noted. In addition, a single charcoal fragment with anatomical characteristics consistent with taxa in the Maloideae subfamily was noted. This group of taxa includes hawthorn (*Crataegus* sp.), whitebeam (*Sorbus* sp.) as well as apple and pear (*Malus* sp. and *Pyrus* sp.) but unfortunately they cannot be satisfactorily distinguished using their wood anatomy. Several fragments of vitrified charcoal were present and some of these were identified as oak wood. Charcoal becomes vitrified when charred at high temperatures, although it may also result from sustained exposure to heat both of which are probable in a cremation pyre. The dominance of oak wood within this assemblage may suggest a high degree of selection in the fuel used for the cremation or that the wood is derived from a single burning event, however, interpreting the contents of this isolated feature are problematic.

Small assemblages of charred plant remains including poorly preserved cereal grains, a glume base fragment and weed seeds were recovered in six samples from late Roman occupation. In each of these samples the charred plant remains were too poorly preserved for further identification and they do not therefore contribute greatly to the evidence for agricultural activities in the area.

Uncharred macro botanical remains identified during assessment (Wessex 2008) of a possible medieval estuarine alluvium deposit are indicative of a range of different vegetation habitats. Blinks (*Montia fontana* subsp. *chondrosperma*), water plantain (*Alisma plantago-aquatica*) and lesser water plantain (*Baldellia ranunculoides*) are wetland and freshwater riverine indicators, water-crowfoot (*Ranunculus* subg. *batrachium*) and horned pondweed (*Zannichellia palustris*) occur in both freshwater and brackish conditions while sea-blite (*Suaeda maritima*) suggests a marine influence. Further evidence for damp ground and possible fen-carr vegetation has been noted by the presence of 'tooth stems of possible fen-sedge (*Cladium mariscus*) as well as fruits and catkin fragments of alder (Wessex 2008). Further uncharred botanical remains of mint (*Mentha* sp.), thistles (*Carduus/Cirsium* sp.), chickweed (*Stellaria media*), oxtongue (*Picris* sp.) and brambles (*Rubus* sp.) are indicative of disturbed wasteground and rough grassland. Molluscs in this sample also provide evidence for a mixture of freshwater (*Bithynia* sp.), brackish (*Hydrobia* sp.) and marine/estuarine (cockle - *Cardium* sp.) conditions (Wessex 2008).

It is likely that the alluvium accumulated over an extended period of time. The plant and mollusc remains support this suggestion as they provide evidence for fresh and saltwater conditions as well as a range of vegetation habitats.

DISSCUSSION

The investigations associated with the Thanet Supply Main have provided a transect across this archaeologically important area of northeast Kent. Although it may be said that given the archaeological

potential of the area the number of features encountered during works was relatively moderate, some important discoveries have been made.

Topographic factors played a significant role in the location of archaeological activity. As has been mentioned previously the landscapes bordering the Wantsum Channel as well as Richborough Island were attractive places for settlement in antiquity and this is reflected in the archaeological remains. Activity clearly shows a predilection to the slightly higher ground bordering the edge of the Wantsum. As the ground drops away into the low-lying Goshall Valley and former Wantsum Channel archaeological activity also diminishes. It is clear that higher dryer ground would have been a more preferable location for occupation or agricultural activity.

The excavation allowed the investigation of the archaeological remains in relation to the geological substrata of the site. The relatively impermeable nature of the underlying deposits combined with the low-lying topography of the surrounding area necessitated the excavation of deep ditches in antiquity to facilitate drainage in areas of settlement and agricultural usage.

Monolith samples and the recording of encountered deposits have provided important geoarchaeological information for the little studied Wantsum Channel. The probable location of the northern shore of Richborough Island has been plotted in the area of Monoliths 1 and 2 together with a nearby deposit of peat (Monolith 3) that probably represents a terrestrial surface within the marine and estuarine deposits of the channel (Wessex, 2008). The location of this peat provides dating and environmental opportunities associated with the Wantsum as well as potential for waterlogged remains to be encountered in future work (Wessex, 2008).

Test pitting and the cutting of evaluation trenches also added to the picture of the infilling and previous limits of the Wantsum with a possible northern edge of the channel provided by TP 8. The continuation of alluvial clays on the southern side of Richborough Island was also confirmed (ASE Trench 3) together with a small projecting spur of terrestrial ground occupied by KTSS Trench 11 and ASE Trenches 1 and 2.

Prehistoric

The investigations succeeded in confirming prehistoric features at three locations along the pipe-route. The ditch situated in the area of Weatherlees Water Treatment Works probably represents a continuation of nearby prehistoric activity detected during previous excavations in the area (Carrie *et al*, 1995) and adds to our knowledge of prehistoric settlement on the Wantsum shore. The late prehistoric features found within KTSS Trench 10 and ASE Trenches 1 and 2 at the site appear to relate to agricultural activity. The linear features that comprise this phase are probable boundary and drainage ditches and probably part of wider field systems. These findings could have important implications for our understanding of the Roman site of Richborough.

It has long been speculated that the Roman port and settlement had an Iron Age predecessor (Millett and Wilmott, 2003). Bushe-Fox during his investigations identified ditched enclosures and

possible palisade slots, and during excavations in 2001 pre-Roman features were also identified (Muldowney and Wilmott forthcoming). In addition, there have also been significant quantities of Iron Age coins found on the island (Bushe-Fox 1949; Cunliffe 1968). The evidence from this most recent excavation adds further weight to the model of Richborough as an area of prehistoric activity before the Claudian invasion. This said the evidence by no means implies a prehistoric forerunner to *Rutupiae* but it does increase the evidence for Richborough being settled in the later prehistoric period. To find cut features on what would have been the very edge of the Wantsum Channel (in the case of the ASE trenches) and also on the high ground (in the case of KTSS Trench 10) may indicate fairly dense prehistoric settlement of the island. In addition, finds of worked and calcined flint throughout this and preceding excavations demonstrates that a probable scatter of prehistoric material is present across Richborough.

The transect provided by the pipeline demonstrates the dense archaeological activity relating to the prehistoric period on the shores of the Wantsum. It seems that from Weatherlees to Richborough Island and onto the probably connected site at Each End (see below) prehistoric people were utilising this area.

The areas surrounding KTSS Trenches 8 and 10, and ASE Trenches 1 and 2 all have considerable potential for the discovery of prehistoric remains. It is likely, however, that evidence for the focus of prehistoric settlement probably underlies Roman occupation in the area of the fort.

Roman

There was little evidence within the investigations of either early post-invasion activity or from what is thought to have been the high point in the settlement's history, the decades surrounding the creation of the triumphal arch. Rather it is the 2nd and 3rd century evidence that represents the first significant phase of activity. Although this is sparse and difficult to interpret, the difference in comparison to the 1st century negative evidence outlined above is interesting in itself. Land away from the central focus of the settlement in ASE Trenches 1 and 2 was being actively utilised if only in a limited capacity, but is this a demonstration of expansion spreading into this apparently marginal piece of the island?

Of the archaeological activity encountered, that dating to the late Roman period in ASE Trenches 1 and 2 is the most significant and of the densest concentration. Set around a route-way this activity can be seen as an extension of the settlement surrounding the fort by the fact it is joined by a road (see below). However, whether the 'vicus' itself ever extended along this roadway is unknown; no geophysical survey has been undertaken on the line of the road south-west of the amphitheatre and (possibly due to presence of colluvial deposits) aerial photography has failed to show features extending as far as ASE Trenches 1 and 2. To answer this question a programme of geo-physics and possibly intrusive excavation would need to be undertaken.

It is probable that the NE to SW orientated road encountered within ASE Trench 2 relates to a continuation of a curving stretch found during geo-physical and aerial photographic survey of the area

around the fort by English Heritage (see Fig. 14; English Heritage, 2002). It may also be related to a piece of Roman road investigated at Each End, Ash. This metalled surface was wider than that found in Trench 2 but of similar thickness and on the same orientation (Canterbury Archaeological Trust 1993). If this was indeed a continuation of the routeway found in Trench 2 a crossing over the Wantsum, probably a ferry, would have been required.

Evidence from finds and environmental samples suggest the kind of traffic that was moving along it. Firstly, a military buckle was recovered from one of the roadside ditches and a horse harness pendant deposited in one ditch probably shows that the road was in military usage. Industrial finds including kiln bars retrieved from both the road surface itself and from one of the side ditches show that industrial traffic was probably also moving along this route way. Finally, limited evidence of cereal grains again from one of the side ditches may indicate grain being brought to the settlement and fort from outlying agricultural sites, possibly the purported farmstead at Each End, Ash (Canterbury Archaeological Trust 1993).

In addition to the industrial evidence found in relation to the road, an area of pitting and finds in the vicinity of ASE Trenches 1 and 2 suggests that this form of activity, possibly including pottery production, was taking place during the late Roman period at the site. Re-use of Roman tile possibly for kilns and hearths as well as the presence of Oolitic limestone fragments (possibly derived from the fort) and an eroded marble slab (possibly from the triumphal arch) present in the spread of midden material very likely attests to practical re-cycling of building materials in domestic or industrial contexts at this time.

Some evidence of ritual behaviour was encountered at the site. A small cremation burial or pyre deposit was found within ASE Trench 1. This individual was not accompanied by any grave goods and if it was indeed an un-urned cremation rather than a pyre deposit it was probably placed in a bag or other organic container before being buried. Similar cremations were found grouped near to the road at Each End Ash (Canterbury Archaeological Trust 1993).

In addition to this funerary activity the apparent ritual deposition of a horse harness pendant was also found. The pendant seemed to be carefully and deliberately placed in the centre of a small pit that appeared to be cut for the purpose. David Rudling, an authority on Roman ritual activity in the South-East, when consulted also commented on the apparent care with which the pendant looked to have been placed (Rudling *pers comm.*) Ritual deposition of equipment is well attested at Roman military sites (Fulford 2001 and Bishop 1986) and this probable votive offering placed centrally within a small cut in the road surface shows the continuation of this activity into the late Roman period. Interestingly a cheek piece from a harness pendant was also found at Each End although no record of the context of its deposition is given (Canterbury Archaeological Trust 1993).

Medieval

Relatively little evidence of the medieval settlement of Lowton was encountered within its purported location (ASE Trenches 1 and 2). However, some medieval and post-medieval pottery from unstratified contexts in these trenches was recovered as well as CBM that was likely to have a come from a structure close to the site. It seems probable that these trenches were sited near but did not extend into the focus of Lowton and it is likely that the settlement comprises a confined site in the area of the associated crop marks to the east of ASE Trenches 1 and 2. More tangible medieval activity was encountered during investigations associated with KTSS Trench 10. Two features of mid 13th to mid 14th century date were excavated in this location and together with finds of similarly dated pottery, thought to be derived from manuring, suggest that medieval agricultural and possible settlement activities were taking place in the vicinity of the transect across the island.

CONCLUSIONS

Development on this spur of land began in late prehistory with linear features of various orientations being laid out. Evidence for other periods, most notably late pre-history, has also been encountered during this work and together with the palaeo-geographic element; a greater understanding of the historic landscape of this important part of north-east Kent has been increased.

Significant findings were made, particularly in the trenches to the south where it is clear that the Roman settlement surrounding the fort identified by geophysics and aerial photography (English Heritage 2002) stretches beyond the surveyed area. More work along the length of the road identified in ASE Trench 2 is needed to clarify the nature and extent of this settlement. Peripheral areas of the island have been shown to have wider links with other sites in the contemporary landscape (e.g. Each End, Ash) as well as providing more intimate knowledge of the island and its inhabitants themselves. As would have been expected, late Roman military evidence in the form of finds has also been obtained as well as evidence for local industry. Pottery production and other industrial processes were probably carried out in some proximity, and much re-use of earlier building materials adds to a picture of the replacement of grand Roman buildings with more utilitarian and functional structures.

Perhaps the most significant outcome of the work was the demonstration that — rather than seeing a contraction in settlement towards the end of the Roman period — *Rutupiae* remained extensively occupied right up until the late 4th/early 5th century. This expansion of activity may be related to wider contemporary events and military crises that were befalling the western Roman Empire, and Britain at this time. Could the expansion in activity reflect the insecurity of Britain's 'Romanised' elite? A population seeking the protection of a site that allows not only refuge and defence, but also a link to the continent and a route out of a troubled province?

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BIBLIOGRAPHY

Bayley J. and Butcher S. 2004 *Roman Brooches in Britain: A Technological and Typological Study based on the Richborough Collection* (Reports of the Research Committee of the Society of Antiquaries of London **68**) London.

Betts, I.M. and Foot, R. 1994, A newly identified late Roman tile group from southern England, *Britannia* 25, 21–34

Bishop M. C. 1986, The distribution of military equipment within Roman forts of the first century A.D. in C. Unz (ed.) *Studien zu den Militärgrenzen Roms III. 13. internationaler Limeskongreß Aalen 1983 Vortrage* (Stuttgart 1986), 717-23

Bishop M. C. 1988 Cavalry Equipment of the Roman Army in the First Century A.D. in: Coulston J. C. (ed.) *Military Equipment and the Identity of Roman Soldiers. Proceedings of the Fourth Roman Military Equipment Conference*. BAR International Series **394**, Oxford, 67-195.

Brickstock R. J. 2004 *The Production, Analysis and Standardisation of Romano-British Coin Reports* (English Heritage).

Bushe-Fox, J.P. 1926; 1928; 1932; 1946, *First/Second/Third/Fourth report on the Excavation at the Roman Fort at Richborough, Kent*, Reports of the Research Committee of the Society of Antiquaries of London, Nos VI, VII, X, XVI.

Canterbury Archaeological Trust.1993, Interim report on work carried out in 1993 by the Canterbury Archaeological Trust, Archaeologica Cantiana, CXII, 377-380

Carrie, M. Hearne, D.R.J. Perkins and Andrews P. 1995, The Sandwich Bay Wastewater Treatment Scheme Archaeological Project, 1992-1994, Archaeologica Cantiana, CXV, 239-354

Cunliffe, B. W. (ed) 1968, *Fifth Report on the Excavations of the Roman Fort at Richborough, Kent,* Reports of the Reasearch Committee of the Society of Antiquaries of London. No.XXIII

Dowker, G. 1872, Account of the Society's Researches in the Roman Castrum at Richborough, *Arch Cant.* VIII, 1-7

English Heritage, 2002, *Richborough Environs Project, Kent: Report on the Aerial Photographic Transcription and Analysis*

Frere, S. S. and Fulford, M. 2001,The Roman invasion of AD 43, *Britannia* **32**, 45-56

Fulford, M.G. 1975. 'The Pottery' in Cunliffe B. *Excavations at Portchester Castle. Vol. 1, Roman.* Reports of the Research Committee of the Society of Antiquaries of London; no 32.

Fulford, M.G. 2001. 'Ritual' Behaviour in Roman Britain, *Britannia* 32, 199–218

Gale, R. & Cutler, D. 2000 Plants in Archaeology. Otley/London:Westbury/Royal Botanic Gardens, Kew

Garrard I. P. 1995 Other Objects of Copper Alloy and Silver, in: Elder J. (ed.) *Excavations in the Marlowe Car Park and Surrounding Areas. Part II: The Finds* (The Archaeology of Canterbury. Volume 5), Canterbury, 1005-1062.

Hather, J. G. 2000. The Identification of the Northern European Woods: A Guide for archaeologists and conservators. Archetype Publications Ltd, London.

Hartley, K.F. 1968. 'The Mortaria and Their Origins' in Cunliffe B.W. 172-183

HCGKCC, 2007, *Specification for Archaeological Excavation in advance of the construction of a new Supply Pipeline at Richborough, Kent.*

Macpherson-Grant, N. and Green, M. 1983. *Canterbury Ceramics: The Processing and Study of Excavated Pottery.* Canterbury Archaeological Trust

Manning W. H. 1989 *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum*, London.

Margetts, A. 2008, *Archaeological Investigations in Advance of the Thanet Supply Main, Lowton, Richborough, Kent* A.S.E, Archive Report No: 2008054, Nov. 2008

Marsh, G. and Tyers, P. 1979. *The Roman pottery from Southwark, Southwark Excavations 1972–74*. LAMAS and Surrey Arch reprint

Millett, M. 2007, Roman Kent. in Williams, J. H. (Ed), *The Archaeology of Kent to AD 800*. Kent History Project 8, (2007)135-186

Millett, M. and Wilmott T. 2003. *Rethinking Richborough* in Wilson P. ed The Archaeology of Roman Towns: Studies in honour of John S. Wacher, p. 184-194

Parfitt, K. 2007a, *Kent Thanet Supply Scheme: Archaeological Impact Assessment of the Route-corridor* C.A.T, Archive No: 2351

Parfitt, K., 2007b, *Report on Evaluation Trenching near Castle Farm, Richborough, June & September, 2007* C.A.T, Archive Report submitted to 4D, Nov. 2007

Parfitt, K., 2008, *Report on Discoveries by the Canterbury Archaeological Trust, at Lowton, Richborough (Trench 11)* C.A.T, Archive Report submitted to 4D, Jan. 2008

Pearson, A. 2002, Stone Supply to the Saxon Shore Forts at Reculver, Richborough, Dover and Lympne, Archaeologica Cantiana CXXII, 197-220

Perrin, J.R. 1999. 'Roman Pottery from Excavations at and Near to the Roman Small Town of *Durobrivae*, Water Newton, Cambridgeshire, 1956-58'. *Journal of Roman Pottery Studies*. Vol. 8. Oxbow books: Oxford

Pollard, R.J. 1988. *The Roman Pottery of Kent*. Kent Archaeological Society: Maidstone

Schoch, W., Heller, I., Schweingruber, F. H., & Kienast, F. 2004. Wood anatomy of central European Species. Online version: www.woodanatomy.ch

Scott I. 1998 Household Utensils and Furniture. Iron Objects, in: Timby J. R. *Excavations at Kingscote and Wycomb, Gloucestershire. A Roman Estate Centre and Small Town in the Cotswolds with Notes on the Related Settlements*, Cirencester, 103-105.

Stace, C. (1997) New Flora of the British Isles. Cambridge: Cambridge University Press.

Wessex Archaeology, 2008, *Kent Thanet Pipeline, Richborough Road, Sandwich, Kent* Wessex, Archive No: 69180.03

Woodland, A. W. 1977. Geological Survey of Great Britain (England and Wales) Solid

and Drift. Sheet 290 Dover. 1:50000

Young, C.J. 1977. *The Roman Pottery Industry of the Oxford Region,* British Archaeological Reports. 43. Oxford.

APPENDICES

APPENDIX 1- STAGES OF ARCHAEOLOGICAL INVESTIGATION

STAGE	ARCH UNIT	PROJECT TYPE	SITECODE	DATE
1	CAT	WB1	KTSS-DASS-06	Dec-06
2	CAT	WB2	KTSS-DASS-06	Jan-Feb 2007
3	CAT	FW	KTSS-DASS-06	Feb-07
4	GSB/CAT	GPH	KTSS-DASS-06	Feb-07
5	CAT	DBA	KTSS-DASS-06	Mar-07
6	CAT	EV	KTSS-EV-07	Nov-07
7	CAT	EV	KTSS-EV-07	Jan-08
8	ASE	EX/PXA	TSM07	Nov-08
9	WESX	WB	69180	Oct-08

APPENDIX 2- FINDS QUANTIFICATION OF STAGE 3 FIELDWALK

Area	Context	Material	Quantity	Weight	Notes
CAT FW	Ploughsoil	Calcined flint	14	467	
CAT FW	Ploughsoil	Medieval Pottery	1	6	*sandy ware*
CAT FW	Ploughsoil	Post Med. Pottery	14	111	
CAT FW	Ploughsoil	Roman Pottery	4	21	*incl. 1 samian*
CAT FW	Ploughsoil	Roman Tile	32	3309	*1 tegula, 1 box flue*
CAT FW	Ploughsoil	Struck flint	7	206	*incl. 1 scraper*
CAT FW	Ploughsoil	Tile	10	388	*medieval*

APPENDIX 3- RESULTS OF GEO-ARCHAEOLOGICAL WATCHING BREIF

SAMPLE No.	TYPE	EASTING	NORTHING
1	monolith	632074	160718
2	monolith	632075	160718
3	monolith	632092	160772
4	monolith	632279	161936
5	monolith	632279	161936
6	monolith	632277	161934
7	monolith	632318	162106
8	bulk		

APPENDIX 4- QUANTIFICATION OF PREHISTORIC AND ROMAN POTTERY FRAGMENTS

Fabric	Expansion	CAT	Sherds	Weight (g)	EVE
AHFA	Alice Holt/Farnham ware	LR5	29	684	0.4
BAETL	Late Baetican Dressel 20 fabric	R50	6	730	
BB1	Black-burnished ware 1	R13.2	5	130	0.25
BBS	Black-burnished style ware		2	64	0.06
CCRB	Unsourced colour-coated wares		3	10	
EIFL	Eifelkeramik	LR19	30	1370	0.72
FLIN	Flint-tempered wares		22	179	
GROG	Grog-tempered wares	LR1	241	6154	4.41
KOLN	Cologne colour-coated ware	R25	1	4	
MORT	Unsourced mortarium fabrics	R62?	7	934	0.32
NKGW	North Kent grey ware	R16	1	8	
NVCC	Nene Valley colour-coated ware	LR11	30	492	1
OXID	Unsourced oxidised wares	R74	34	238	0.08
OXIDF	Unsourced fine oxidised fabric		11	48	
OXRC	Oxfordshire red colour-coated ware	LR10	122	1802	2.3
OXWW	Oxfordshire white ware	LR22	15	870	1.28
PORD	Portchester ware D	LR6	4	88	0.31
SAMEG	East Gaulish samian ware	R46	1	26	
SAMLG	La Graufesenque samian ware	R42	1	<2	
SAND	Unsourced sand-tempered wares	R73	49	1015	1.28

APPENDIX 5- ROMAN FABRIC FORM BY COUNT AND WEIGHT

Form	**count**	**% of total count**	**weight**	**% of total weight**
Tegula	132	23	20631	33
Imbrex	50	8	4417	7
Brick	102	18	28326	46
Flue/voussoir	8	1	1070	2
Kiln spacer/ small brick	2	<1	158	<1
tile	280	49	7356	12
Total	574		61958	

APPENDIX 6- SUMMARY CATALOGUE OF THE ROMAN COINS

RF No	**CONTEXT**	**DENOM**	**DIAMETER**	**ISSUER**	**DATE**	**CAT**	**WEAR**
ASE-2	Midden	AE	17.72	VALENS	364-378		W/SW
ASE-3	Midden	AE	14.9	-	C4th		C
ASE-4	Midden	AE	16	CONSTANTINE I	330-333	c. of RIC 7 Constantinople 63	SW/SW
ASE-5	Midden	AE	17.7	-	C3rd-4th		EW/EW
ASE-8	Midden	AE	18	HOUSE OF CONSTANTINE	330-335		VW/W
ASE-20	Feature F	AE	13.76	-	C4th		C
ASE-21	+ T1	FOLL	23.54	HOUSE OF CONSTANTINE	C4th		W/W
ASE-22	+ T1	AE	18.45	HOUSE OF CONSTANTINE	343-348		SW/SW
ASE-23	+ T1	AE	14.36	-	C4th		EW/EW

RF No	CONTEXT	DENOM	DIAMETER	ISSUER	DATE	CAT	WEAR
ASE-24	+ T1	AE	-	-	C4th		C
ASE-31	Midden	AE	15.62	-	C4th		VW/EW
CAT-2	Tr 1N +	AE	14.4	HOUSE OF CONSTANTINE	355-365		VW/VW
CAT-3	Tr 1S +	AE	14.8	CONSTANTINE I	335-345		W/W
CAT-4	Tr 1S +	AE	14.65	HOUSE OF CONSTANTINE	335-345	c.	VW/W
CAT-5	Tr 1S +	AE	12.2	BARBAROUS RADIATE	275-286		EW/EW
CAT-7	Tr 1S +	AE	13.2	-	275-365		EW/EW
CAT-8	Tr 1S +	AE	14.85	BARBAROUS RADIATE	275-286	c. of Tetricus I	W/W
CAT-9	Tr 1S +	AE	14.75	HOUSE OF CONSTANTINE	335-345	c.	EW/VW
CAT-10	Tr 1S +	AE	-	-	275-365	c.	EW/EW
CAT-11A	Tr 1S +	AE	15.55	HOUSE OF CONSTANTINE	355-365	c.	VW/W
CAT-11B	Tr 10 +	ANT	22.55	CARAUSIUS	287-293		VW/VW
CAT-13B	Tr 10 +	DEN	18.25	L. Procilius	78-77 BC	Crawford 379/1	W/W
CAT-14	Midden	AE	17	CONSTANS	333-334	RIC 7, Trier 552	W/W
CAT-15	Midden	AE	13.8	CONSTANTINE I	335-345	c. of RIC 7, Lyons 241	SW/SW
CAT-16	Midden	AE	17	HOUSE OF CONSTANTINE	347-348		EW/EW

RF No	CONTEXT	DENOM	DIAMETER	ISSUER	DATE	CAT	WEAR
CAT-17	Unex F 236	AE	16.6	-	330-378		C
CAT-18	Unex F 236	AE	17.15	VALENS	367-375	LRBC 2, 1417 or 1429	W/W
CAT-19	Unex F 236	AE	16.2	VALENS	364-378		W/W
CAT-20	Midden	AE	17.8	GRATIAN	367-375	LRBC 2, 714 or 720	W/W
CAT-21	Midden	AE	18	HOUSE OF VALENTINIAN	367-375		VW/W
CAT-22	Midden	AE	-	-	330-378		C
CAT-23	Midden	AE	17.35	VALENS	367-378	LRBC 2, 725 or 730	W/W

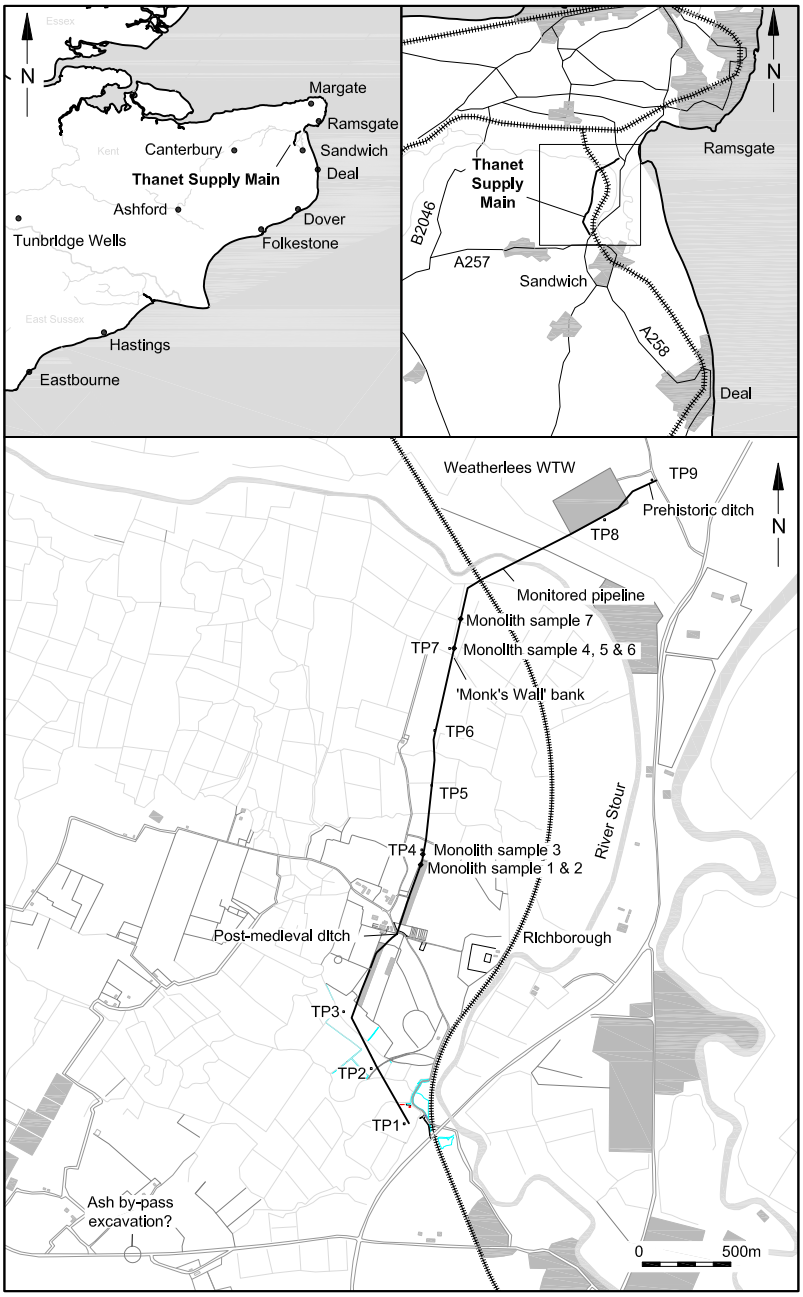

Fig. 1: Site location

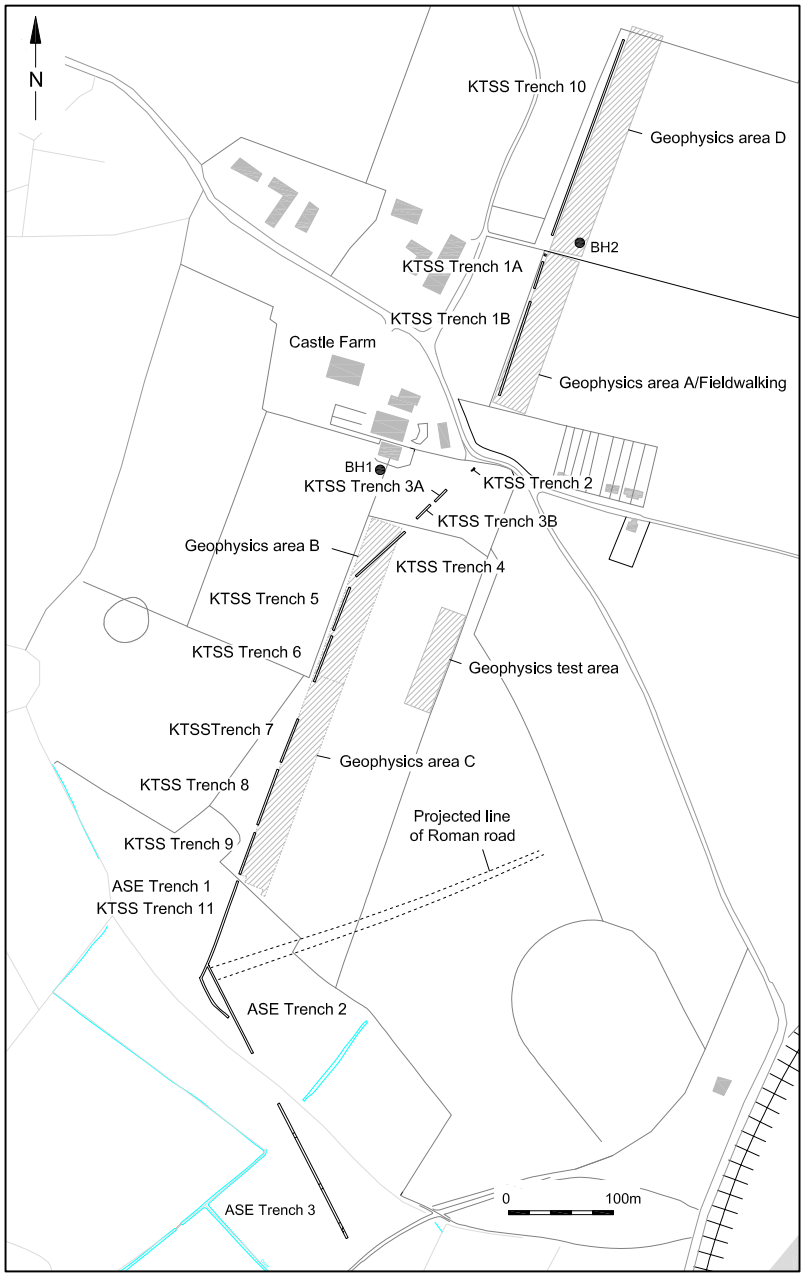

Fig. 2: Plan of archaeological works on Richborough Island

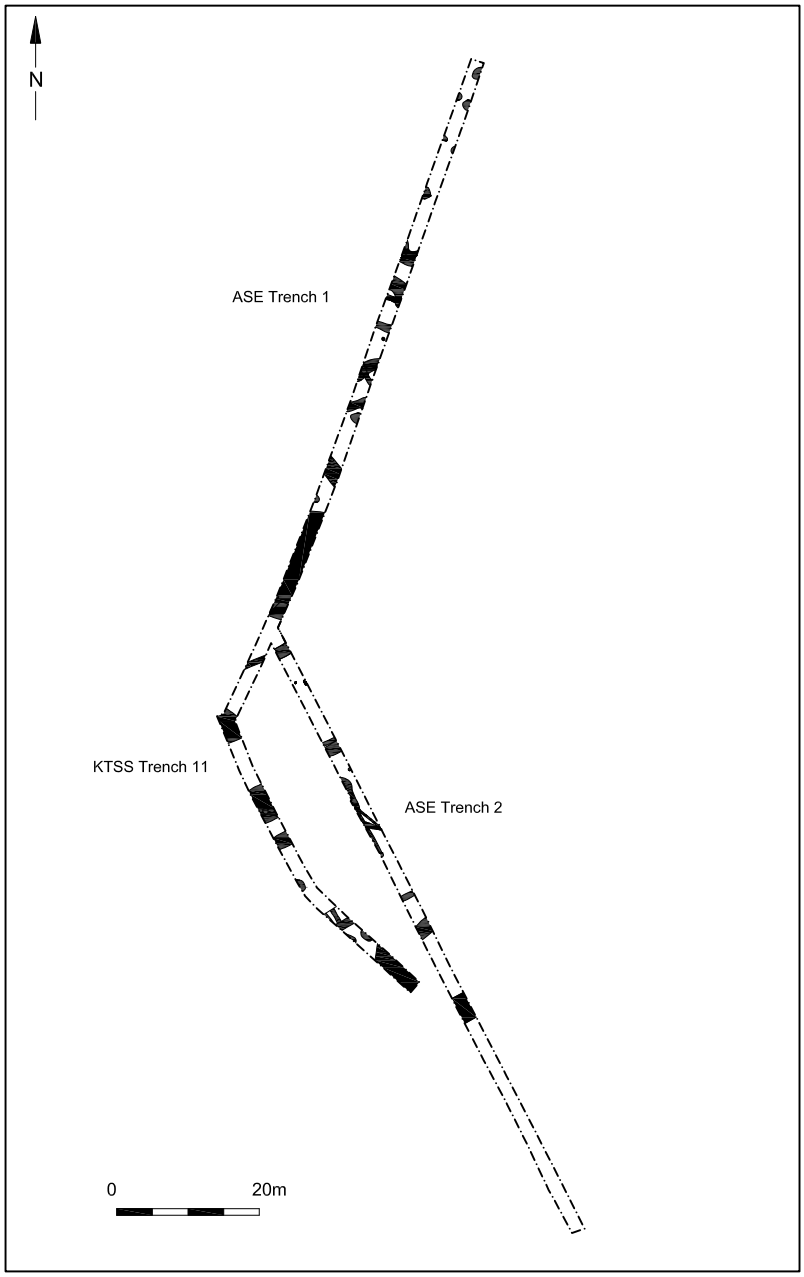

Fig. 3: Plan of features within ASE trenches 1 and 2 and KTSS trench 11

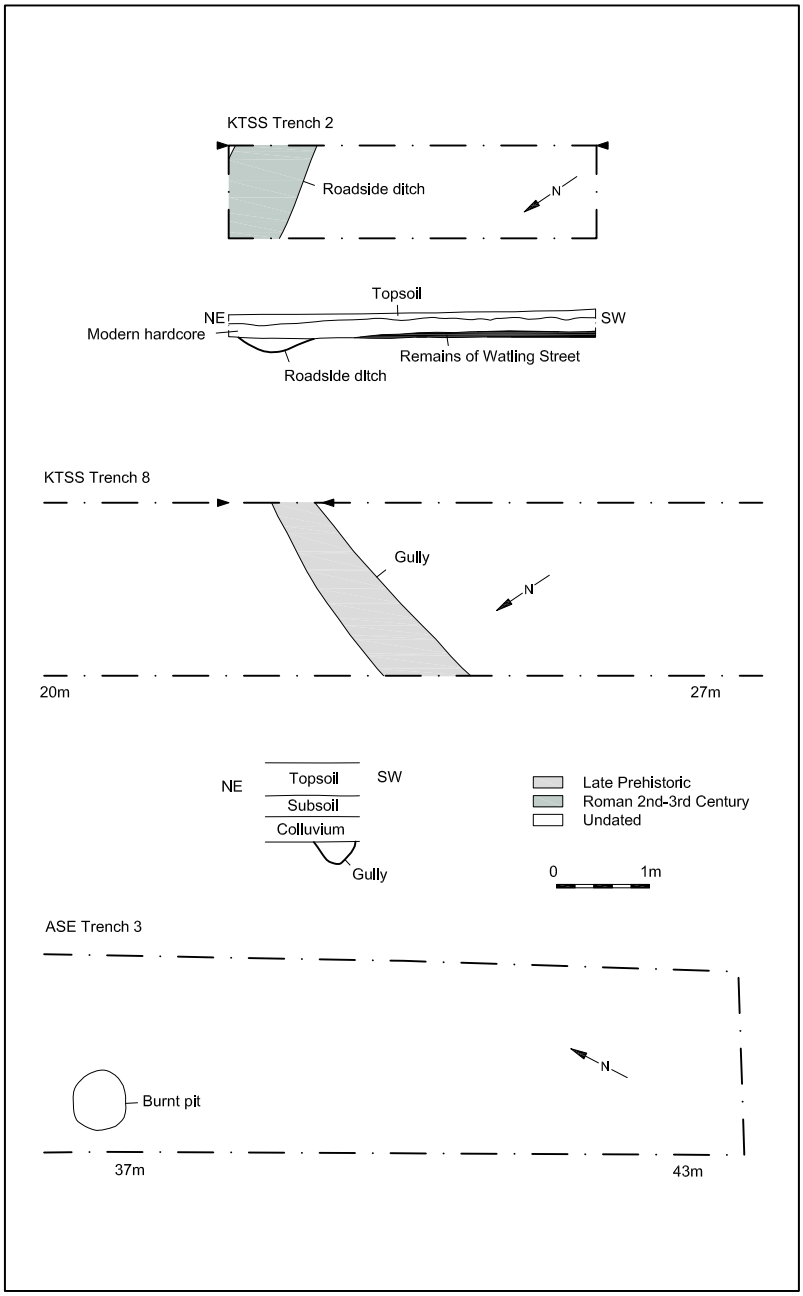

Fig. 4: Detail plans of KTSS trenches and ASE trench 3

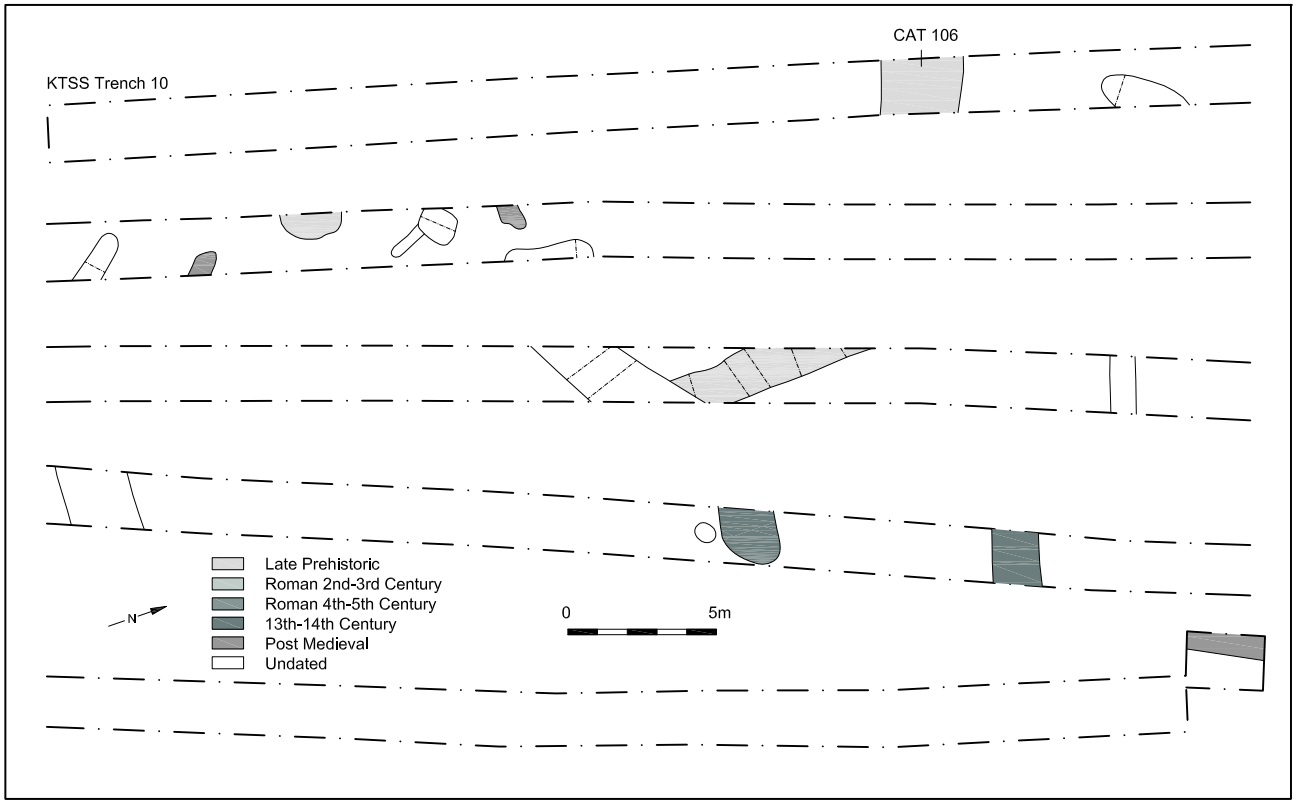

Fig. 5: Detail of KTSS trench 10

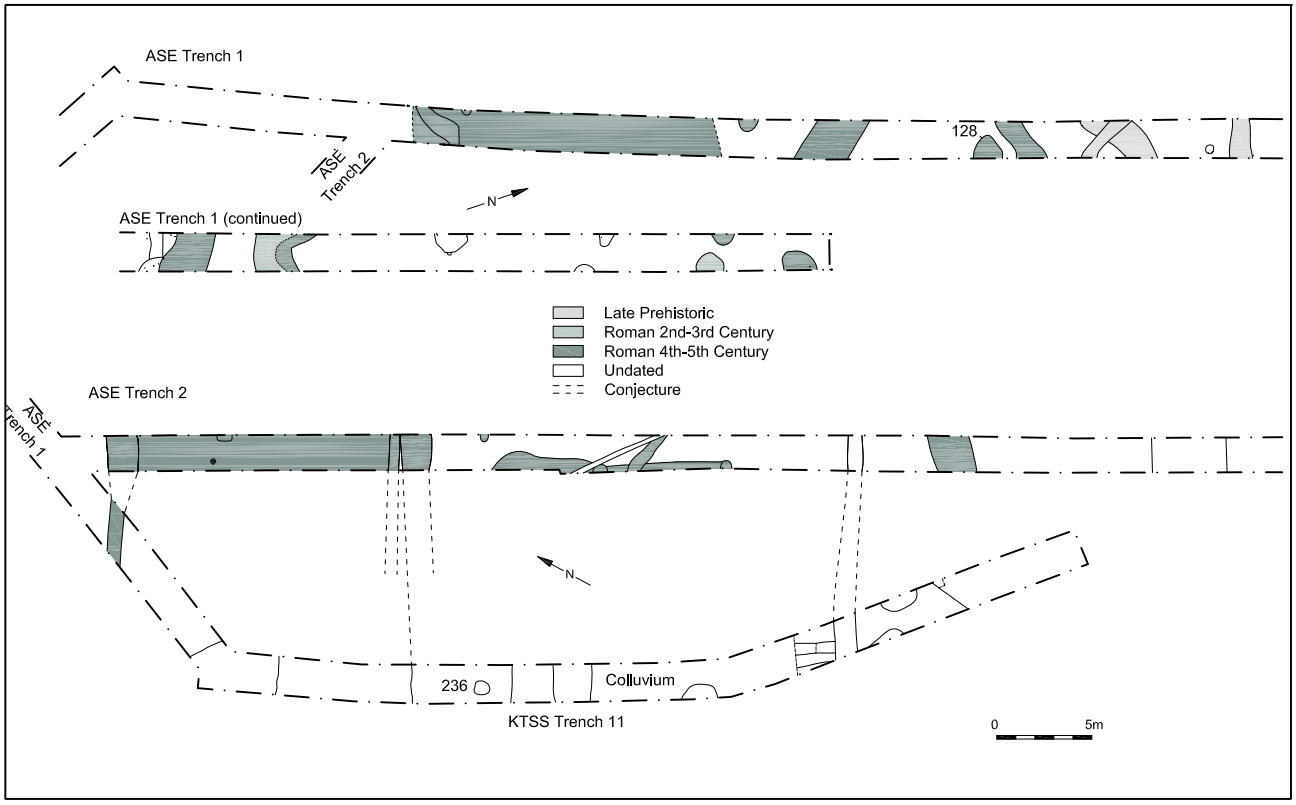

Fig. 6: Detail plans of ASE trenches 1 and 2 and KTSS trench 11

Photograph showing the road in ASE trench 2, viewed from the north-west

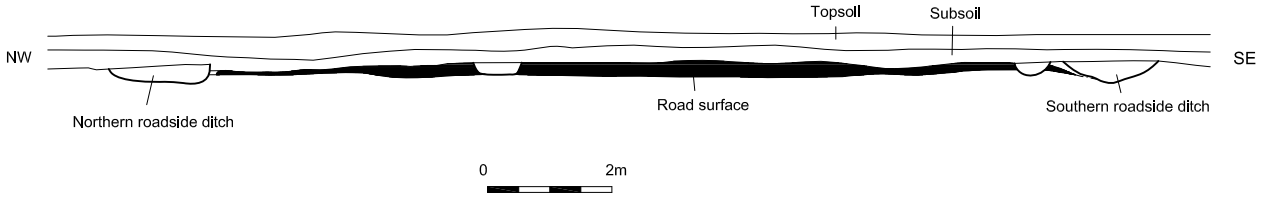

Fig. 7: Section of road surface in ASE trench 2

Photograph of the harness pendant *in-situ*

Photograph of the harness pendant under excavation

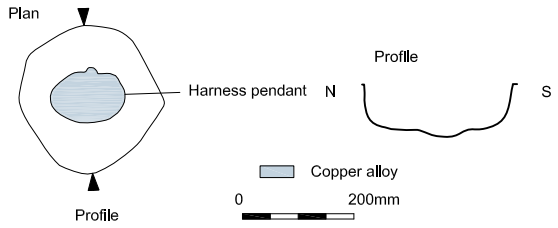

Fig. 8: Photographs, plan and profile of depositional pit

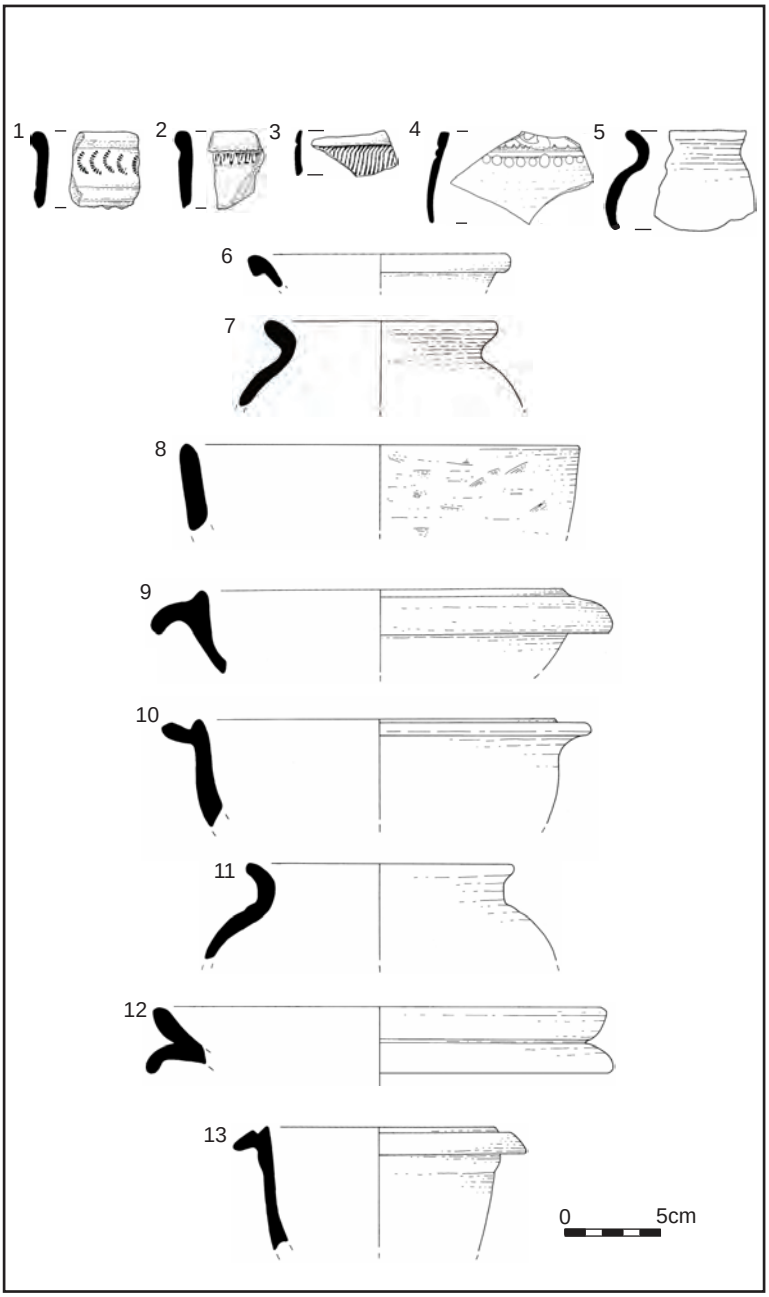

Fig. 9 - Pottery Assemblage from Feature F Group

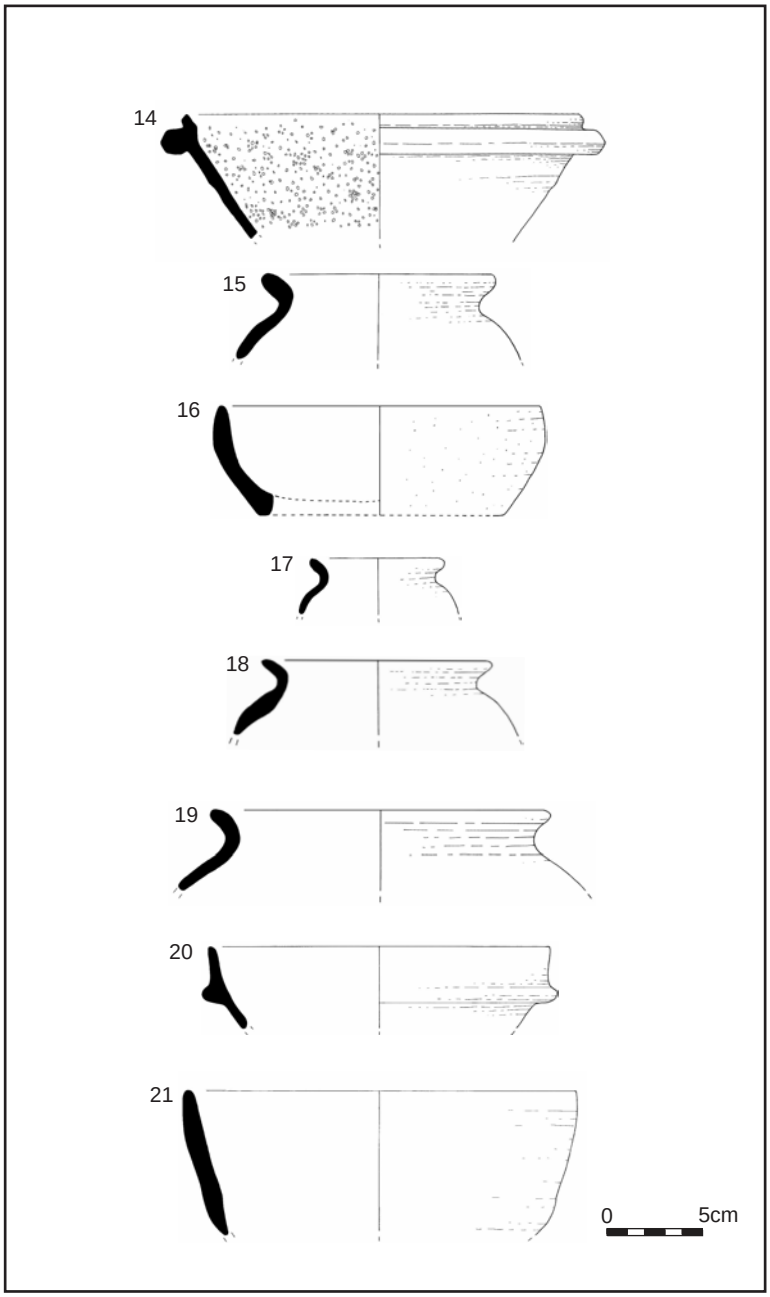

Fig. 10 - Pottery Assemblage from Feature F Group

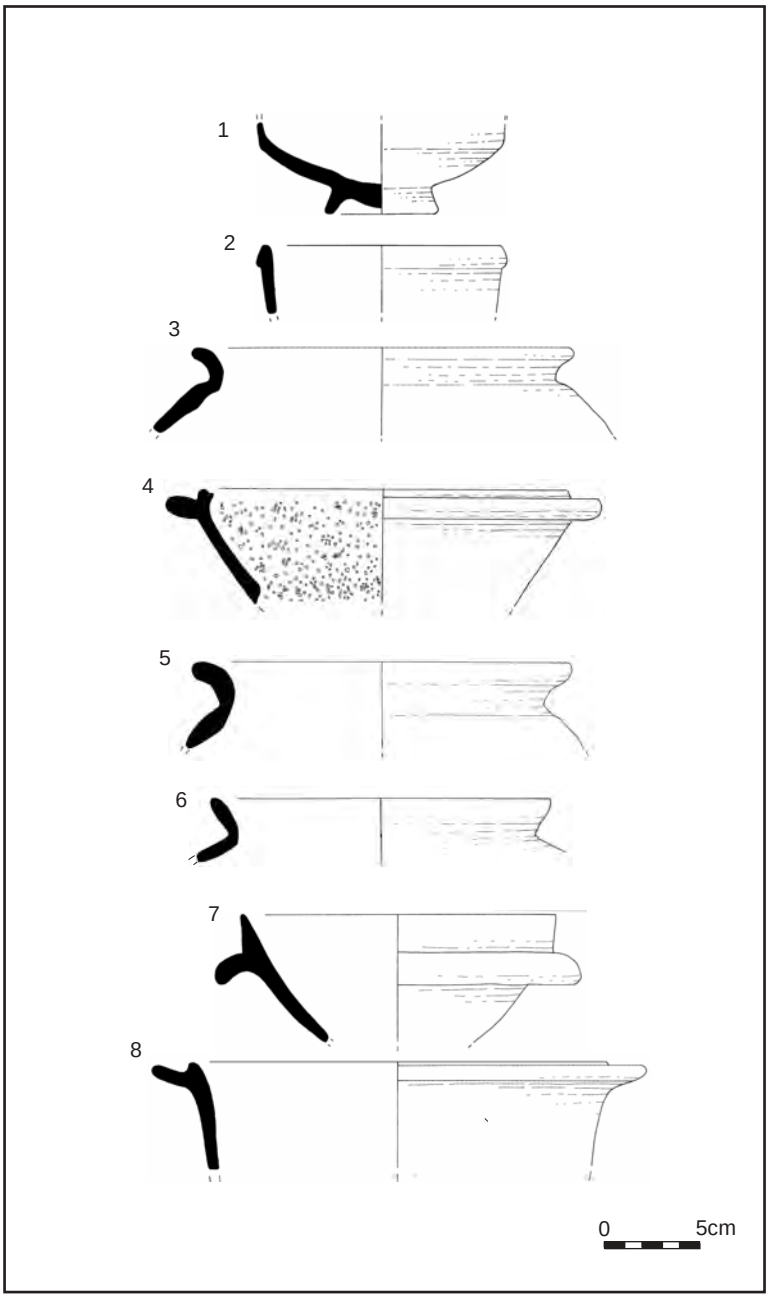

Fig. 11 - Pottery Assemblage from Midden Group

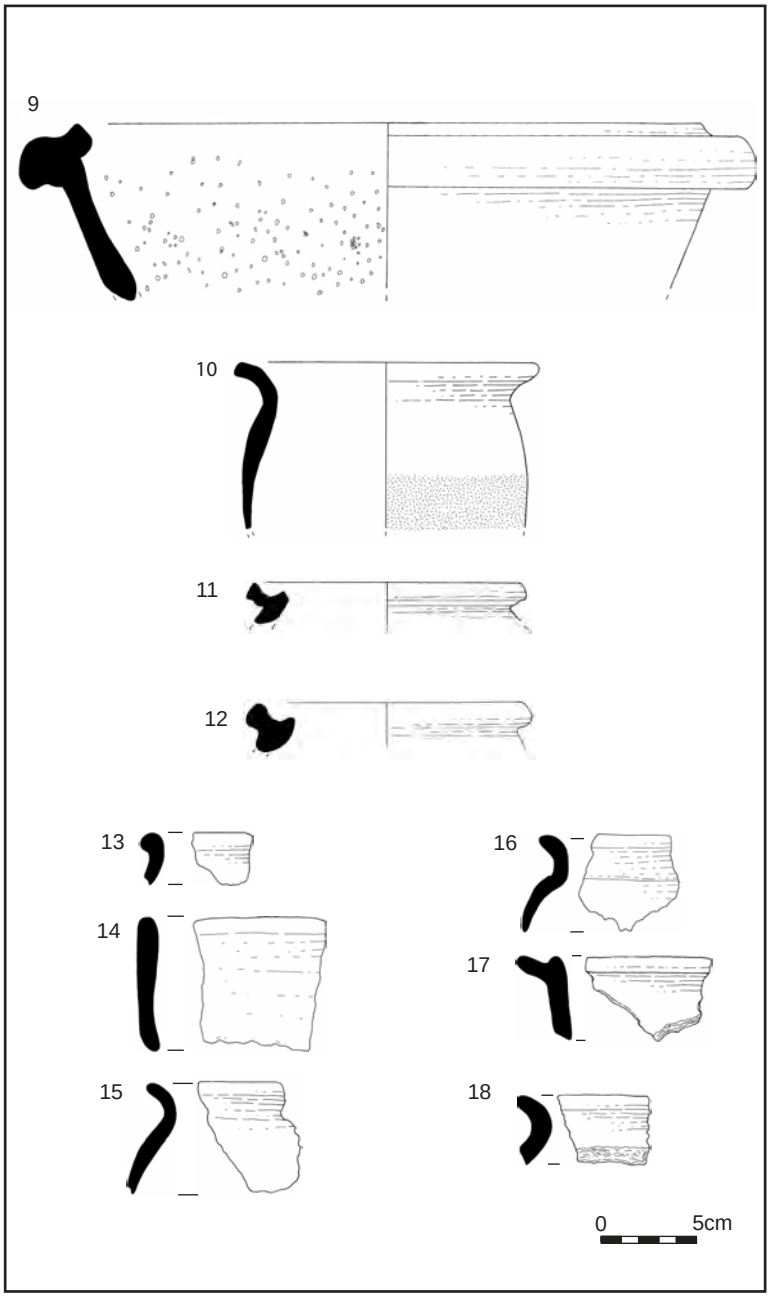

Fig. 12 - Pottery Assemblage from Midden Group

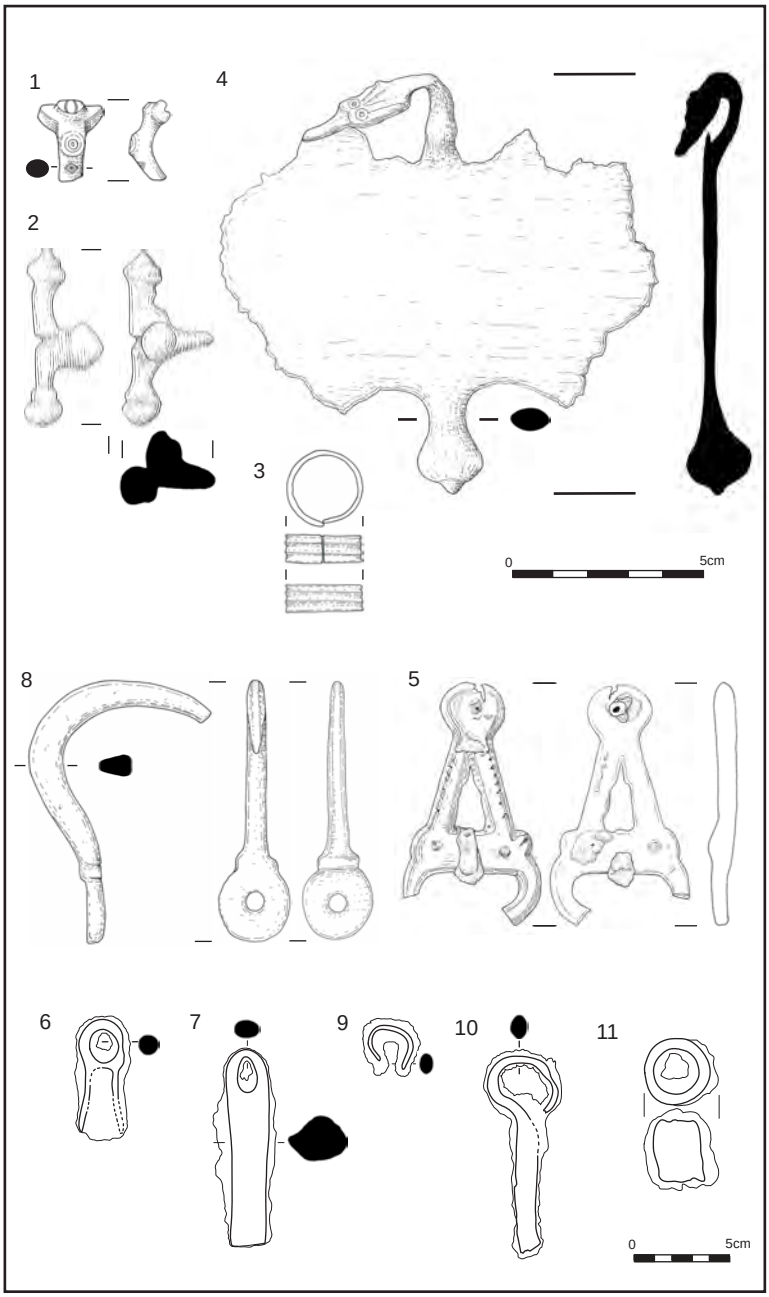

Fig. 13 - Metalwork Finds

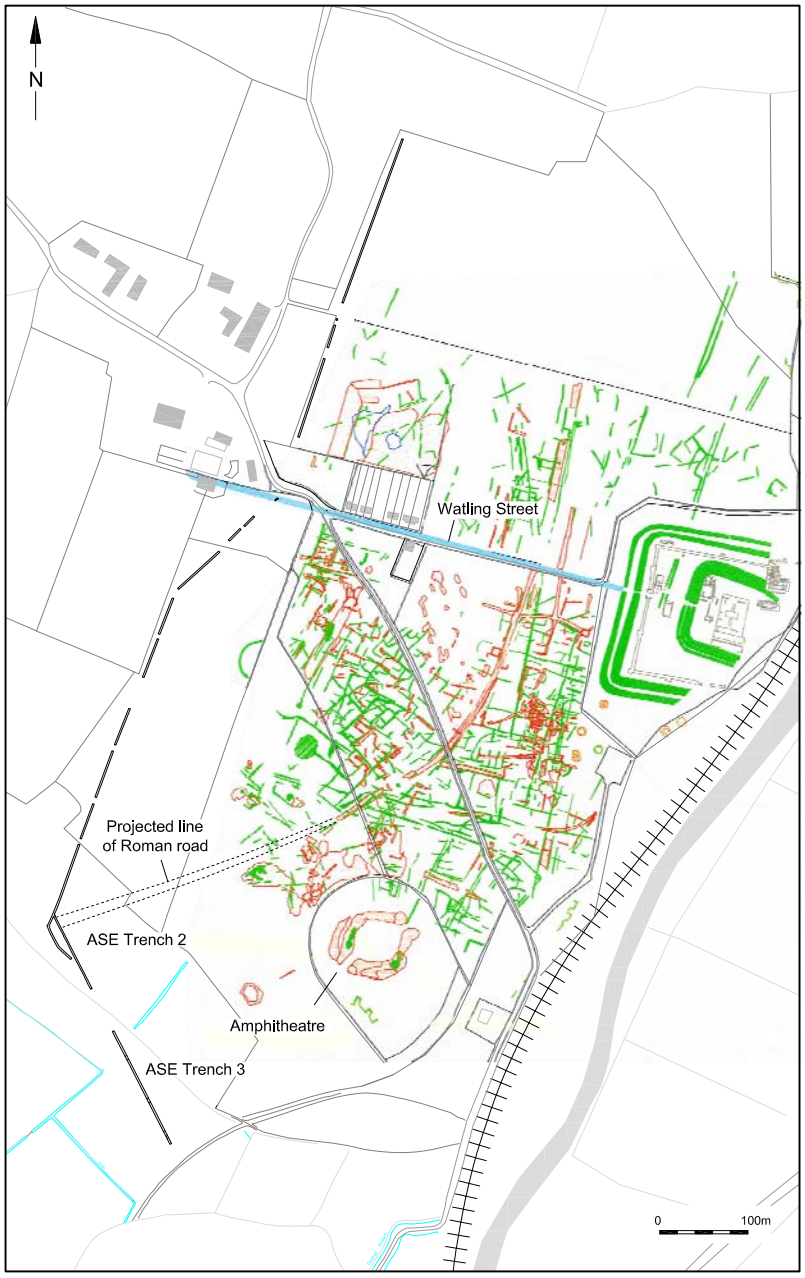

Fig. 14: Plan of evaluation and excavation trenches in relation to English Heritage geophysics and aerial photograph results (English Heritage 2007)