

Archaeological monitoring and evaluation at Hanningfield Water Treatment Works, West Hanningfield, Essex

November 2009 and April 2010

**report prepared by
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**commissioned by MWH
on behalf of Essex & Suffolk Water**

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1 Summary

A 4% evaluation by 90 trial trenches identified 70 archaeological features. The majority of these were undated (30% of all features), including a group of similarly-aligned but undated field ditches (17%). The majority of the dated features were prehistoric pits or ditches (18%), natural features including tree-throw pits (17%), and Roman pits or ditches (15%).

The dated prehistoric and Roman features indicated two concentrations of prehistoric and Roman activity. First, limited Bronze Age activity in the centre of the evaluation site (centred on Trench 49), and second, Late Iron Age or Roman activity in the eastern part of the site (centred on Trenches 5 and 6). However, there was no indication of contemporary buildings here.

The wetness of the site and marginal nature of the ground make it arguably an unsuitable place for permanent settlement. The land is better suited to agriculture, as is shown by the ditches of the undated N/S orientated field system found on the higher and dryer ground in the centre and on the eastern side of the site. Although this field system is undated, it shares the alignment of the Roman ditches.

2 Introduction (Fig 1)

- 2.1 This is the archive report on archaeological monitoring and evaluation on land west of Hanningfield Water Treatment Works, West Hanningfield, Essex, CM3 8HS. (NGR TQ 726 988, centre).
- 2.2 The archaeological work was commissioned by MWH on behalf of Essex & Suffolk Water, and was carried out by the Colchester Archaeological Trust (CAT) in November 2009 (the monitoring of geotechnical test pits), and in April 2010 (the evaluation). Post-excavation work was carried out in April and May 2010.
- 2.3 The L-shaped site consists of 12.8ha of arable farmland, covering an area of approximately 600m east-west by 400m. The land gently slopes down towards the west.
- 2.4 Proposed work involves the creation of a series of open sludge beds tiered down the slope of the site. The final number of beds and their location has not yet been decided.

3 Planning Background

- 3.1 A Planning application (09/00139/EIASO) was submitted to Chelmsford Borough Council in 2009. Given the impact these works would have on potential archaeological deposits, Essex County Council Historic Environment management Team (HEM) recommended that a full archaeological condition should be attached to any future planning permission. This recommendation was based on the advice given in *Planning Policy Guidance Note 16: Archaeology and Planning* (DOE 1990) the wording was as follows:

“No development/conversion or preliminary groundwork’s of any kind shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted and approved by the local planning authority”

- 3.2 HEM issued a Brief in July 2009 giving details of the recommended archaeological work (HEM 2009a). An Addendum was issued in November 2009 (HEM 2009b).

- 3.3 Required archaeological work (HEM 2009a, 2009b) was:
- First, the monitoring of the excavation of a number of geo-technical trial pits and boreholes to investigate ground conditions.
 - Second, a 4% trial-trenching evaluation with 1% left in reserve should further investigation be needed.
- 3.4 All archaeological work described in this report was carried out in accordance with a WSI (Written Scheme of Investigation) produced by CAT in response to the HEM team brief (and Addendum) and agreed with the HEM team (CAT 2009).
- 3.5 In addition to the WSI, all fieldwork and reporting was done in accordance with CAT's *Policies and procedures* (CAT 2008), the Institute for Archaeologists' *Standard and guidance for archaeological watching brief* (IfA 2008a), *Standard and guidance for archaeological field evaluation* (IfA 2008c) and *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (IfA 2008c). The guidance contained in the documents *Management of research projects in the historic environment* (MoRPHE) and *Standards for field archaeology in the East of England* (EAA 14) was also followed.

4 Archaeological and historical background

This section is based on records held by the Essex Historic Environment Record (EHER).

- 4.1 No previous investigation has been carried out within the proposed development area or nearby, however finds of material dating from prehistoric to later medieval date have been recovered from the surrounding fields, including mesolithic flints and Bronze Age metalwork.
- 4.2 The RCHME maps a Roman road running north-east / south-west to the north of the proposed development (RCHME 119x). The Roman road crosses the village of West Hanningfield which lies on a ridge of land and has possible Anglo-Saxon or earlier origins.
- 4.3 The historic settlement pattern would have comprised dispersed farmsteads, moated sites and the small village of West Hanningfield to the north with a medieval church. The site retains some of its historic field boundaries and hedgerows. A track forms the southern boundary of the site, on the 1st edition Ordnance Survey this is depicted as a road along which stood the historic farmstead of Little Prestons, which is no longer extant.
- 4.4 The Historic Environment Characterisation Report (2006) commissioned by Chelmsford Borough Council indicates that both the potential and survival for below ground remains within this area (HECZ 10.6) is good, and that undeveloped areas are sensitive to change.

5 Aim

In fulfilment of the Brief, the aim of the archaeological work was to identify and record the location, extent, date and character of any surviving archaeological remains within the proposed development.

6 Results of the monitoring of the geo-technical trial pits (Fig 2)

by Donald Shimmin

Methodology

The geo-technical investigations were carried out over two days (30/11/2009 & 17/12/2009) and consisted of 11 trial pits (TP) and 8 window samples (WS). Nine of the trial pits and all the window samples were dug on the main site. In addition 2 trial pits (TP2 & TP3) were dug in a field to the north-east, on the site of a proposed access road. The trial pits were dug approximately 2.5m long and 2-3m deep; the window samples were drilled 4m deep. The position of the trial pits and window samples is shown on Fig 2.

After the removal of the modern topsoil in the trial pits, the surface of the subsoil was scraped clean and checked for archaeological features; geo-technical sampling and recording then followed.

Results

The modern topsoil (Watching Brief Layer or WBL1) in the trial pits and window samples was 0.25-0.35m thick. It sealed the natural subsoil (WBL2), which was a brownish-yellow clay with occasional thin patches of sand and gravel. This was found across the whole site and was at least 4m thick.

No archaeologically significant features were observed on the main site, or in TP2 in the field to the north-east. However in this field, two shallow features (WB Feature or WBF1 and WBF2) were uncovered at the south end of TP3. They were parallel gully-like features aligned roughly east-west and both had light brown clayey fill with charcoal flecks. The more southerly feature (WBF1) was 0.85m wide and 0.15m deep, and contained burnt daub flecks and ferromanganiferous inclusions; a small fragment of burnt daub was recovered from WBF1. The more northerly gully (WBF2) was 0.9m wide and 0.2m deep; a small fragment of probable prehistoric pottery was retrieved from WBF2. Although rather ephemeral, these features may be indicative of prehistoric settlement in this area.

Elsewhere very few finds of archaeological significance were seen on the surface of the fields during the geo-technical investigations.

More details can be found in the site archive.

7 Results of the evaluation (Figs 1-10)

The required 4% evaluation equated to a total trench length of 2,480m, or 90 trenches 1.8m wide but varying in length from 10m to 25m. Of the 90 trenches, only 23 contained archaeological features.

Unless stated otherwise, the trenches were excavated through modern, thin and clay-rich topsoil (L1), and into natural coarse gravels within a boulder clay matrix (L2). The accumulated layer of 'subsoil' found on many Essex site was absent here.

Trenches 1-2

No archaeological features

Trench 3: summary

T3 was located at the north end of the evaluation site on the line of the new site access road.

T3 contained four archaeological features: two post-medieval or modern pits F1 and F4; and two stake-holes F2 and F3. These were on a NW/SE alignment, and may represent a fence line or similar boundary.

Trench 3 – context and finds data.

Context no	Type	Dated finds	Phase
F1	pit	modern pottery, brick, post-medieval glass	modern
F2	stake-hole	prehistoric and post-medieval pottery, peg-tile	modern
F3	stake-hole	--	undated
F4	pit	pottery, brick, peg-tile (not retained)	post-medieval

Trench 4

No archaeological features

Evaluation trenches 5-29 were located in the eastern half of the evaluation site in a cultivated field, in the area of the new reed beds and the associated infrastructure.

Trench 5: summary

T5 was located on the eastern side of the evaluation site, at the high point of a slight ridge that slopes away to the south. T5 contained nine archaeological features: pits F6, F26, F30 and F41, and ditches F5, F7, F27, F28 and F29. Associated finds indicate that these were predominantly Late Iron Age/Roman in date.

The ditches were relatively shallow, and may be agricultural drains or boundaries. Ditches F5 and F7 may join at right-angles (beyond the south side of the trench), and may therefore be associated (a small enclosure?).

The pits were small, with the exception of F30 which truncated the northern half of ditch F29 and contained substantial deposits of LIA/Roman pottery and charcoal (sample #1). F30 may also have some agricultural function.

Trench 5 – context and finds data.

Context no	Type	Dated finds	Phase
F5	ditch	Roman pottery	Roman
F6	pit		LIA/Roman
F7	ditch		Roman
F26	pit	Roman pottery, daub	LIA/Roman
F27	ditch	scorched flint	prehistoric?
F28	undated ditch or gully	prehistoric pottery	prehistoric
F29	ditch	Roman and prehistoric pottery	prehistoric (LIA)
F30	pit	Roman pottery, daub	LIA/Roman
F41	pit	--	undated

Trench 6: summary

T6 contained six archaeological features: pits F8, F9 and F17, and ditches F10, F11 and F12. The ditches were generally aligned WNW/ESE – NNE/SSW and were probably field boundaries. With the exception of F10, they were not seen in adjacent trenches. F10 appeared to align with F13 in T8 to the south.

Trench 6 – context and finds data.

Context no	Type	Dated finds	Phase
F8	pit – natural?	--	undated
F9	pit	Iron Age pottery	Roman
F10	ditch	--	undated
F11	pit	Roman pottery	Roman
F12	ditch	prehistoric pottery	LIA/Roman
F17	pit	--	undated

Trench 7: summary

T7 was located in the east half of the evaluation site. It contained a pit F14 and a post-hole F20. The pit contained a substantial deposit of Roman pottery and some minor charcoal concentrations. Post-hole F20 was in close proximity to the pit and, although undated, may be contemporary and possibly associated.

Trench 7 – context and finds data.

Context no	Type	Dated finds	Phase
F14	pit	Roman pottery	Roman
F20	post-hole	--	undated

Trench 8: summary

T8 was located in the eastern half of the evaluation site. It contained ditch F13. F13 was undated, although it appears to be a continuation of F10 recorded in T6.

Trench 8 – context and finds data.

Context no	Type	Dated finds	Phase
F13	ditch	--	undated

Trenches 9-12

No archaeological features

Trench 13: summary

T13, located in the eastern half of the evaluation site, contained three archaeological features: pit F16, ditch F18 and gully F19.

F16 and F18 contained prehistoric pottery and scorched flints, indicating a prehistoric (possible Late Bronze Age) activity.

F19 was a narrow and shallow feature which was most likely to have been the base of a modern plough scar.

Trench 13 – context and finds data.

Context no	Type	Dated finds	Phase
F16	pit	scorched flint	prehistoric
F18	ditch	prehistoric pottery	prehistoric (LBA?)
F19	gully – plough scar	--	undated - modern

Trench 14: summary

T14, located in the eastern part of the evaluation site, contained a single archaeological feature - ditch F15. F15 was similar in dimensions to F19 in T13 and may also have been the base of a modern plough scar.

Trench 14 – context and finds data.

Context no	Type	Dated finds	Phase
F15	ditch	--	undated

Trench 15

No archaeological features

Trench 16: summary

Located in the eastern half of the evaluation site, T16 contained undated pit F21. Its leached fill and irregular profile indicate a natural origin (tree-throw pit?)

Trench 16 – context and finds data.

Context no	Type	Dated finds	Phase
F21	natural (tree-throw?) pit	--	?

Trenches 17-19

No archaeological features

Trench 20: summary

T20, located in the eastern half of the evaluation site, contained a single pit (F22). Its leached fill and irregular profile indicate a natural origin (tree-throw pit?)

Trench 20 – context and finds data.

Context no	Type	Dated finds	Phase
F22	natural (tree-throw?) pit	--	?

Trenches 21-24

No archaeological features

Trench 25: summary

T25, located on the eastern edge of the evaluation, contained three archaeological features: ditch F23, and pits F24 and F25.

Ditch F23 follows the broadly N/S alignment of the ditches found across the evaluation site. Ditch F23 cut pit F24, whose irregular profile and manganese-rich fill indicate that it was a tree-throw pit.

F25 was also undated, but its proximity to the eastern edge of ditch indicates that the two may be associated.

Trench 25 – context and finds data.

Context no	Type	Dated finds	Phase
F23	ditch	--	undated
F24	natural (tree-throw?) pit	--	?
F25	pit	--	undated

Trenches 26-28

No archaeological features

Trench 29: summary

Located in the eastern half of the evaluation site, T29 contained two archaeological features: pit F31 and post-hole F32.

F31 appeared to be a tree-throw pit, with charcoal flecking which may indicate that it was burnt down during agricultural clearance, rather than being natural wastage. Post-hole F32 may have been part of a fence.

Trench 29 – context and finds data.

Context no	Type	Dated finds	Phase
F31	natural (tree-throw?) pit	--	?
F32	post-hole	--	undated

Evaluation trenches 33-56 were located in the central part of the evaluation site in a cultivated field, in the area of the new reed beds and the associated infrastructure.

Trenches 30-32

No archaeological features

Trench 33: summary

Located in the central part of the evaluation site, T33 contained two archaeological features: ditch F33 and erosion hollow F34.

F33, although undated, conforms with the broadly N/S, E/W orientation of field ditches observed across the evaluation site.

F34 consisted of a wide and shallow area of erosion with an irregular base, possibly caused by stock trample. Peg-tile recovered from the fill may indicate an attempt to consolidate the area.

Trench 33 – context and finds data.

Context no	Type	Dated finds	Phase
F33	ditch	--	undated
F34	erosion hollow	peg-tile	post-medieval/modern

Trenches 34-36

No archaeological features

Trench 37: summary

Located in the central area of the evaluation, T37 contained five archaeological features: pits F46-48 and F66, and ditch F52.

Ditch F52 was a post-medieval field boundary. Pit F46 contained post-medieval pottery. Pits F47 and F48 both had irregular profiles indicative of a tree-throw pits, but the presence of post-medieval pottery in F48 may indicate more recent stump removal. Pit F66 was undated.

Trench 37 – context and finds data.

Context no	Type	Dated finds	Phase
F46	pit	medieval and post-medieval pottery	post-medieval
F47	natural (tree-throw?) pit	--	?
F48	pit	Roman and post-medieval pottery, daub	post-medieval
F52	ditch	Roman and modern pottery	modern
F66	pit	--	undated

Trench 38

No archaeological features

Trench 39: summary

Located central area of the evaluation, T39 contained a single feature: ditch terminus F64. Its alignment differs slightly to the majority of other ditches on the site, and its irregular profile indicates a natural origin.

Trench 39 – context and finds data.

Context no	Type	Dated finds	Phase
F64	natural linear	--	?

Trenches 40-42

No archaeological features

Trench 43: summary

Located in the central area of the evaluation, T43 contained three archaeological features: ditch F37, and pits F35 and F36.

Ditch F37 followed the broadly N/S E/W orientation of other field ditches on the site. Although it contained no finds, the fact that it started to fill with ground water soon after excavation may indicate a disused boundary or drainage feature.

Pits F35 and F36, both small regular features, may be agricultural and associated with ditch F37.

Trench 43 – context and finds data.

Context no	Type	Dated finds	Phase
F35	pit	--	undated - post-medieval?
F36	pit	--	undated - post-medieval?
F37	ditch	--	undated - post-medieval?

Trenches 44-45

No archaeological features

Trench 46: summary

Located in the central part of the evaluation site, T46 contained two archaeological features: pit F43 and ditch F42.

Ditch F42, although undated, follows the broadly N/S alignment of other field ditches on the site. Pit F43 was an isolated and undated feature whose fill (containing charcoal and daub flecks) was in character with other prehistoric features on this site.

Trench 46 – context and finds data.

Context no	Type	Dated finds	Phase
F42	ditch	--	undated
F43	pit	daub flecks	undated – prehistoric?

Trench 47: summary

Located in the central part of the evaluation site, T47 contained a single archaeological feature: pit F49.

Pit F49 contained a large quantity of modern debris, and may have been a small infilled pond. Finds included a half-penny dated to the second half of the 19th century.

Trench 47 – context and finds data.

Context no	Type	Dated finds	Phase
F49	pit – infilled pond?	pottery, brick, copper alloy coin, fe nails	modern

Trench 48: summary

Located in the central part of the evaluation site, T48 contained a ditch F45, and two pits F44 and F59.

Ditch F45 broadly followed the E/W N/S orientation of other field ditches on the site. Both pits appear natural (with leached-out fills and irregular profiles). However, both contain peg-tile and/or post-medieval pottery, showing they are more recent.

Trench 48 – context and finds data.

Context no	Type	Dated finds	Phase
F44	tree-throw pit		post-medieval?
F45	ditch	--	undated
F59	tree-throw pit	peg-tile	post-medieval?

Trench 49: summary

Located in the central part of the evaluation site, T49 contained seven archaeological features: pits F53, F55, F57-58, ditches F54 and F56, and a post-hole (F65).

Pits F53 and F55 appeared to be natural tree-throw pits, (irregular cuts and leached out fills). Pits F57 and F58 both contained prehistoric pottery (possibly Late Bronze Age), F58 a significant quantity of it. The lower levels of its fill also contained slight concentrations of charcoal. Adjacent to and possibly associated with pit F58 was a post-hole F65.

Ditch features F54 and F56 conform to the broadly N/S E/W alignment seen in other post-medieval ditches across the evaluation site.

Trench 49 – context and finds data.

Context no	Type	Dated finds	Phase
F53	natural (tree-throw?) pit	--	?
F54	ditch	--	undated
F55	natural (tree-throw?) pit	--	?
F56	ditch	Roman pottery, daub	prehistoric (LIA?)
F57	pit	Roman pottery	prehistoric (LIA?)
F58	pit	Iron Age pottery	prehistoric (LBA?)
F65	post-hole	--	undated

Trench 50: summary

Located in the central part of the evaluation site, T50 contained a single archaeological feature: pit F68.

F68, a large shallow pit contained minor pottery and daub flecks (none of which was sufficient to retain) which may indicate a prehistoric date for this deposit.

Trench 50 – context and finds data.

Context no	Type	Dated finds	Phase
F68	pit	pottery flecks	prehistoric?

Trench 51: summary

Located in the central part of the evaluation site, T51 contained Roman pit F60 and natural pit F62 (possibly a tree-throw pit).

Trench 51 – context and finds data.

Context no	Type	Dated finds	Phase
F60	pit	Roman pottery	Roman
F62	natural (tree-throw?) pit	--	?

Trench 52: summary

Located in the central part of the evaluation site, T52 contained two archaeological features: pits F50 and F51. Both contained LIA/Roman pottery, and F50 also had charcoal concentrations in its lower fill.

Trench 52 – context and finds data.

Context no	Type	Dated finds	Phase
F50	pit	Roman pottery	LIA/Roman
F51	pit	Roman pottery	LIA/Roman

Trench 53

No archaeological features

Trench 54: summary

Located in the central part of the evaluation site, T54 contained three archaeological features: pit F39, and ditches F38 and F40.

Both ditches followed the N/S E/W orientation of field ditches seen so widely across this evaluation site, but in this case at least one ditch (F38) was datable to the LIA/Roman period. Pit F39 is natural (irregular profile and manganese rich fill), possibly a tree-throw pit.

Trench 54 – context and finds data.

Context no	Type	Dated finds	Phase
F38	ditch	prehistoric pottery	prehistoric (LIA)
F39	natural (tree-throw) pit		?
F40	ditch	--	undated

Trench 55

No archaeological features

Trench 56: summary

Located in the central part of the evaluation site, T56 contained a pit F63 and a ditch F61.

Pit F63 contained LIA/Roman pottery. Ditch F61 is undated, although it does follow the general N/S E/W alignment of other field ditches on this site.

Trench 56 – context and finds data.

Context no	Type	Dated finds	Phase
F61	ditch	--	undated
F63	pit	Iron Age pottery	LIA/Roman

Trenches 57-59

No archaeological features

Trench 60: summary

Located in the west half of the evaluation site, T60 contained a single linear feature (F69). This undated feature follows the general alignment of other field ditches on this site.

Trench 60 – context and finds data.

Context no	Type	Dated finds	Phase
F69	ditch	--	undated

Trenches 61-62

No archaeological features

Trench 63: summary

Located in the west half of the evaluation site, T63 contained a pit F67 whose charcoal-rich fill indicates that the feature is man-made. Minor daub flecking may indicate a prehistoric date, though this is difficult to prove.

Trench 63 – context and finds data.

Context no	Type	Dated finds	Phase
F67	Pit	daub flecks	prehistoric?

Trench 64: summary

Located in the western half of the evaluation site, T64 contained pit F70, which was shallow with poorly-defined edges. It may be the result of a lump of soil being pulled up by the plough (ploughsoil L1 being extremely thin in the western half of the evaluation site).

Trench 64 – context and finds data.

Context no	Type	Dated finds	Phase
F70	pit	--	undated

8 Finds

8.1 Prehistoric pottery

by S Benfield

Introduction

In total 24 sherds of prehistoric (pre-Belgic) pottery, together weighing 180 g, were recovered during the evaluation. These sherds came from twelve features located in eight of the evaluation trenches. The prehistoric pottery was recorded using the fabrics series devised for the recording of prehistoric pottery in Essex (Brown 1988). The Fabrics recorded are listed in Table 1. A full catalogue of the pottery is provided in the archive.

Fabric B	flint, S-M 2
Fabric C	flint, S-M with occasional L
Fabric E	flint and sand S-M 2
Fabric H	sand, S 2
Fabric I	sand S-M 2-3
Fabric J	sand, S2 with vegetable voids, particularly on surface
Fabric N	vegetable temper

Table 1: description of prehistoric pottery fabrics used in this report

size of inclusions: S-small (<1 mm), M-medium (1-2 mm), L large (>2 mm), density of inclusions: 1 = <6 per square cm, 2 = 6-10 per square cm, 3 = >10 per square cm.

Prehistoric pottery discussion

Small quantities of prehistoric pottery were recovered from F2 (T3); F5, F6 & F30 (T5); F9 & F12 (T6); F18 (T13); F20 (T7); F28 & F29 (T5); F38 (T54) & F63 (T56). These features consist mainly of pits and linear features which are probably ditches. The largest single quantity, 12 sherds (77 g), was recovered from the pit F58 (T49). All of the other contexts produced just one or two sherds each.

Most of the prehistoric pottery is abraded to some extent; a few sherds considerably so. This was especially noted for some of the sherds from F58 (T49). However, the frequent recording of abrasion to edges or surfaces suggests that aggressive soil conditions may be a factor in addition to possible residuality or a significant depositional history for some of the sherds. Also the average overall sherd weight is not particularly low at 7.5 g. The majority of the sherds are exclusively flint-tempered (Fabrics B & C), although one sherd contains a mix of flint and sand-temper (Fabric E). A few other sherd are exclusively sand-tempered (Fabrics H & I) or are sand-tempered but also have some burnt out vegetable-temper (Fabric J). A single sherd recorded as Fabric N (vegetable-tempered) is possibly also a sand-tempered fabric to which vegetable-temper has also been added. The quantities of these fabrics are set out in Table 2.

Fabric	sherd no.	wt. g.
Fabric B	9	37
Fabric C	11	127
Fabric E	1	6
Fabric H	1	2
Fabric I	1	6
Fabric N	1	2
<i>totals</i>	24	180

Table 2: quantity of prehistoric pottery by fabric types

While flint-temper is in common use from the Neolithic to the Early Iron Age, so that it would be unwise to date many of the sherds too closely, there are a number of traits which suggests that at least some of this pottery is probably of later Bronze Age or Early Iron Age date. At a general level it can be noted that no decoration is present on any of the sherds. Also, several sherds which are a little more diagnostic

because of their combination of fabric and form are mostly may to date to the period of the Later Bronze Age or Early Iron Age. Two sherds from F58 (T49) can probably be dated to this period. One is a badly abraded base sherd in an exclusive flint-tempered fabric. This comes from a vessel such as a jar or bowl which had a flat base and suggesting a Bronze Age or Early Iron Age date. The other sherd is a rim, also in an exclusive flint-tempered fabric. This is badly abraded, but can be seen to be of simple form, with a narrow flat or rounded top and is slightly everted; the shape of the neck suggests a curve into the body of the vessel. While by no means conclusive, this shape suggests it is most may from a round bodied open bowl (possibly Form H, Brown 1988) and these types of vessel commonly appears among assemblages of Late Bronze Age and Early Iron Age date. A flint-tempered carinated body sherd from F12 (T6) is also may to date to the Later Bronze Age or Early Iron Age. In addition to these a rim sherd was recovered from F4 (T7). This is of rounded form, externally thickened creating a groove below it, and comes from an open bowl form. This fabric contains some sand-temper as well as flint-temper. The combination of sand with flint-temper and the form both suggest an Early Iron Age date.

The few sherds which contained just sand or fine sand with burnt out vegetable-temper are probably of Middle or possibly Late Iron Age date. These were recovered from F9 (T6), F58 (T49) & F63 (T56). The small vegetable-tempered sherd from F58 (T49) suggests that the larger quantity of flint-tempered pottery from this context, much of which was quite abraded, may be residual.

8.2 Late Iron Age and Roman pottery

by S Benfield

Introduction

The evaluation produced 118 sherds of Late Iron Age or Roman pottery weighing a total of 895 g. This was recovered from thirteen features located in seven of the evaluation trenches. The pottery was recorded, where possible, using the Chelmsford Roman fabric series (Table 3) and pottery form types (Going 1987), although reference is made to the Colchester Camulodunum (Cam) Roman pottery type series (Hull 1963). The weight of each fabric group, the number of sherds and Eve was recorded for each finds number. Any identifiable pot forms were noted. Dating of the pottery broadly follows the dating in Going (1987) and *CAR 10*. A full catalogue of the pottery is provided in the archive.

Much of the pottery is abraded to some extent, a few sherds considerably so. Also, among the probable shell tempered pottery sherds (Fabric 50) the calcareous shell fragments have completely dissolved out of them, leaving numerous small voids. This, together with the frequent recording of abrasion to edges or surfaces of these sherds, suggests that soil conditions are a factor in the varied condition of the pottery in addition to possible residuality or any significant depositional history.

The Fabric BSW (Black surfaced wares) has been used to cover a number of fabric types which are not easily separated by visual inspection, but which for the most part are visually distinct from the Roman sandy grey wares (Fabric 47). The Black surfaced wares generally have a red-brown or buff-brown fabric with dark-grey to black surfaces. Where any grog was noted in these fabrics the sherds were assigned to Fabric 45 (Romanising grey wares). For a discussion of Black surfaced wares see Martin (2003, 129-132).

Fabric name	code	sherds		
		no.	wt. g	Eve
Black surfaced wares	BSW	60	309	0.59
'London-Essex' stamped wares	19	3	6	
'North-Essex' stamped wares	20	1	4	

Fabric name	code	sherds		
		no.	wt. g	Eve
Miscellaneous oxidised red wares	21	6	28	
Storage jar fabrics	44	11	403	
Romanising grey wares	45	1	11	
Sandy grey wares	47	32	117	0.38
?South-Essex shell-tempered ware	50	4	17	
<i>totals</i>		<i>118</i>	<i>895</i>	<i>0.97</i>

Table 3: The quantity of Late Iron Age and Roman pottery by fabric type

Late Iron Age and Roman pottery discussion

Most of the pottery was recovered from three contexts. These are pit F14 (T7) 44 sherds (537 g), linear feature (ditch) F5 (T5) 36 sherds (100 g) and pit F30 (T5) 16 sherds (119 g). None of the other contexts produced any more than 6 sherds (F50 (T52)) and usually only one or two sherds each. These contexts are F11 (T6), F26 (T5), F29 (T5), F48 (T37), F51 (T52), F52 (T37), F56 (T49), F57 (T49) & F60 (T51).

In general the pottery is in a fair to poor condition. That some of the pottery is in a poor condition is probably at least partly due to soil conditions degrading some surfaces and fabrics. This has made it difficult to identify with certainty fabric type and period of a few sherds, especially some small pieces. While many sherds could only be dated as Roman, where sherds could be closely dated by fabric or form there is nothing that need date later than the 2nd or 3rd century.

The earliest dated pottery are sherds that are almost certainly ?South-Essex shell tempered ware (Fabric 50), although the shell has dissolved away, from F5 (T5) & F50 (T52). These are current during the Late Iron Age and the Early Roman period in the 1st century AD. Apart from this other more closely datable pottery consist of sherds from two early Roman stamped ware bowls of late 1st or early 2nd century date (discussed below) and a rim sherd from a bead rim bowl of form B4, from F14 (T7) which is dated c 140 to mid-late 3rd century at Chelmsford (Going 1987, 14-15). However, the bead is has triangular shape, Colchester form Cam 37A, suggesting that it may be of 2nd century rather than 3rd century date. This rim variant at Colchester appears to date primarily from the Trajanic/Hadrianic period to late 2nd or early 3rd century (CAR 10, 469).

Sherds from two early Roman stamped ware pots are of particular interest. One of these comes from F14 (T7) finds number 10. This is a single sherd in a pale grey, fine sandy fabric. The surviving surface decoration is part of a larger motif and is abraded so that it is not entirely clear. It appears to consists of an unenclosed single(?) row of dots around part of edge of an oval? which is defined by more than one concentric line. This decoration can probably be associated with Rodwell's Group 4, East Anglian Wares (Going 1987 Fabric 20) because of the dot stab decoration (Rodwell 1978). Sherds from the other pot (three non-joining sherds) are from F5 (T5) finds number 4. The sherds are almost certainly part of a bowl which has been decorated with circle (ring) and block stamps. Although more of the decoration is present than on the sherd from F14, the surfaces are very abraded so that it is difficult to make out the design on the block stamp clearly. The fabric is a reddish brown with very fine sand and fine mica (Going 1987 Fabric 19) and the pot can be assigned to Rodwell's Group 2 (London Essex Wares) (Rodwell 1978). Rodwell dated these stamped wares overall to c AD 75-125 with some possibly dating slightly later together with some later use of block stamps on mortaria (Rodwell 1978, 271). This dating is generally supported at Chelmsford where early stamp decorated wares are dated Flavian-early 2nd century (Going 1987, 6 Fabric 19 & 18 C23) and at Colchester where they appear from the late 1st century and are current through the early part of the 2nd century appearing to become residual by the mid 2nd century (CAR 10, Fabric GP 434 & Fabric GQ 438). Overall they are dated by Tyers (1996, 169-70) as Flavian-early 2nd century with an emphasis on production in the early 2nd century.

Also of interest are a four greyware sherds from F51 (F52) finds number 25. These form part of a narrow pottery funnel 30 mm long with an internal diameter of about 30 mm at its base. This is in a relatively fine (silty) greyware fabric (Fabric 47). It does not appear to be part of a narrow flagon or neck of a pottery bottle, or of a vessel foot, and its length appears too short for a handle. Also it does not appear to have been subjected to any unusual degree of heat as might occur on a bellows end. While the type of vessel from which they derive and the function of the funnel is unclear, it seems possibly that it might either be part of a pottery funnel of a type recorded at Chelmsford (Going 1987, Type N), however, the funnel tube here appears rather short in comparison with published examples (Going 1987, fig 19 N2-N4), or possibly the spout of a pottery strained bowl.

All of the pottery recovered consists of local or regional coarse wares, although this includes early Roman decorated stamped wares, with little or no indication of any Roman fine ware imports such as samian, or specialist pots or containers such as mortaria or amphorae, although these wares are not particularly common on most rural sites. The indications are that the site is probably of a relatively low level economic status, with little access to, or possibly little inclination to acquire more specialist Roman cultural goods.

8.3 The post-Roman pottery

by Howard Brooks

Description of pottery

Fabrics present are as follows (after *CAR 7*): Fabric 20 (medieval sandy grey ware); Fabric 40 (Post-medieval red earthenware – PMRE); Fabric 48d (modern ironstone).

Comment

This is a very small and rather uninformative group of pottery (8 sherds, 44g) dating entirely to the post-medieval and modern periods.

Catalogue

Trench 3

F1

Finds number 1

Fabric 48d (modern ironstone), 1 sherd 7g

F2

Finds number 2

Fabric 40 (PMRE), 1 sherd 7g

Trench 37

F46

Finds number 21

Fabric 20 (medieval sandy grey ware), 1 sherd, 5g

Fabric 40 (PMRE), 1 burnt rim sherd 17g

F48

Finds number 27

Fabric 40 (PMRE), 2 sherds 3g

F52

Finds number 26

Fabric 48d (modern ironstone), 1 sherd 3g

Trench 48

F44

Finds number 19

Fabric 40 (PMRE), 1 sherd 2g

8.4 The Glass

by Howard Brooks

Trench 3

F1

Finds number 1

2 fragments of green glass from the omphalos base of an 18th century wine bottle, 50g

8.5 Ceramic building material (CBM)

by S Benfield

Six pieces of ceramic building material (CBM), together weighing 151g, were recovered from four contexts.

The most clearly identifiable pieces are a pieces of modern agricultural drain from F2 (T3) and a piece of post-medieval or modern brick from F1 (T3). A second small fragment of CBM from F1 is also of probable similar post-medieval or modern date. The remaining pieces are all in moderately sandy, orange-red fabrics and are abraded. One from F59 (T48), weighing 25g, is from the edge of a flat tile about 15 mm thick. Although this might possibly be a piece of Roman *imbrex*, it is almost certainly a piece of peg-tile and most may of post-medieval or modern date. The two other pieces are from F43 (T33). One, weighing 31g, is a large flake from the surface of a flat tile; the other is a small abraded tile piece weighing 3g. Neither can be closely dated, but in the absence of any clear pieces of Roman tile from the site are most probably also parts of peg-tiles of post-medieval or modern date.

8.6 Heated stones

by S Benfield

Five pieces of heated (burnt) flint with a total weight of 62g were recovered, together with one small piece of sandstone/quartzite which may also have been affected by heat.

The flints, all of which are heat crazed, came from F16 (T13), 3 pieces weighing 26g; F27 (T5) 1 pieces weighing 18g and F30 (T5) 1 piece weighing 18g. The single sandstone/quartzite piece (weighing 8g) was recovered from F11 (T6). Only two of these features, F11 (T6) & F30 (T5) produced any pottery and this is of Roman date. However, it is most may that the heat altered flint and other heated(?) stone piece are part of the prehistoric occupation as heat altered stones are a common finds from prehistoric sites. The two pieces associated with Roman pottery may be residual.

9 Discussion

Archaeological features were only thinly spread across the evaluated site, at a rate of only 70 features in 90 trenches. Twenty one features were undated (ie, 30% of all features), and most of them were field ditches (17% of all features). The majority of the dated features were prehistoric pits or ditches (18%), natural features including tree-throw pits (17%), and Roman pits or ditches (15%).

Groups of pits and ditches represented two concentrations of activity: one prehistoric and one Roman. The first of these concentrations was in the eastern part of the site, centred on Trenches 5 and 6. Here, large pits (including F30 which contained a large quantity amount of LIA/Roman pottery and a substantial charcoal deposit) may indicate domestic activity, although no structural remains indicating the presence of buildings were seen. The ditches were probably connected with stock management.

The second concentration of activity was in the central area of the evaluation site, and clustered around T49. Here, pits (particularly F58), ditches and a post-hole associated with pit F58 indicate Late Bronze or Early Iron Age activity.

The two concentrations of activity were located on the high points in a dry valley. Soil conditions appear marginal by modern standards (a clay-rich topsoil sealing boulder clay and occasional coarse gravels). The ground is also wet and in places boggy, and arguably unsuitable for permanent settlement. The land is better suited to limited agricultural operations, as is shown by the ditches of the N/S orientated field system found here on the dryer areas of high ground in the centre and on the eastern side of the evaluation site.

10 Acknowledgements

CAT would like to thank Essex & Suffolk Water for commissioning and funding the work, through MWH. The project was managed and carried out by B Holloway, with Chris Lister and Adam Wightman, assisted by Mark Baister, Lawrence Driver, Brian Hurrell, and Nigel Rayner. Digital survey and Figures 1-8, by CL. Figs 9-10 by Emma Spurgeon.

The project was monitored for the ECC HEM team by Teresa O'Connor.

11 References

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12 Abbreviations and glossary

AOD	above Ordnance Datum
BAR	British Archaeological Reports
Bronze Age	the period from circa 2500 BC to 700 BC
CAT	Colchester Archaeological Trust
context	specific location on an archaeological site, especially one where finds are made
EAA	East Anglian Archaeology
ECC	Essex County Council
EHHER	Essex Historic Environment Record (Essex County Council)
EIA	Early Iron Age <i>circa</i> 700 – 400 BC
fe	iron
feature	an identifiable thing like a pit, a wall, a floor; can contain 'contexts'
fill	the soil filling up a hole such as a pit or ditch
HEM	Historic Environment Management (Essex County Council)
IFA	Institute of Field Archaeologists
Late Bronze Age	<i>circa</i> 1000 – 700 BC
Late Iron Age	<i>circa</i> 100 to AD 43
natural	geological deposit undisturbed by human activity
NGR	National Grid Reference
RCHME	Royal Commission for Historical Monuments (England)
Roman	the period from AD 43 to around AD 430
RRSCAL	Report of the Research Committee of the Society of Antiquaries of London

13 Archive deposition

The paper and digital archive is currently held by the Colchester Archaeological Trust at 12 Lexden Road, Colchester, Essex CO3 3NF, but will be permanently deposited with Chelmsford Museum (accession code not yet issued).

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Distribution list:

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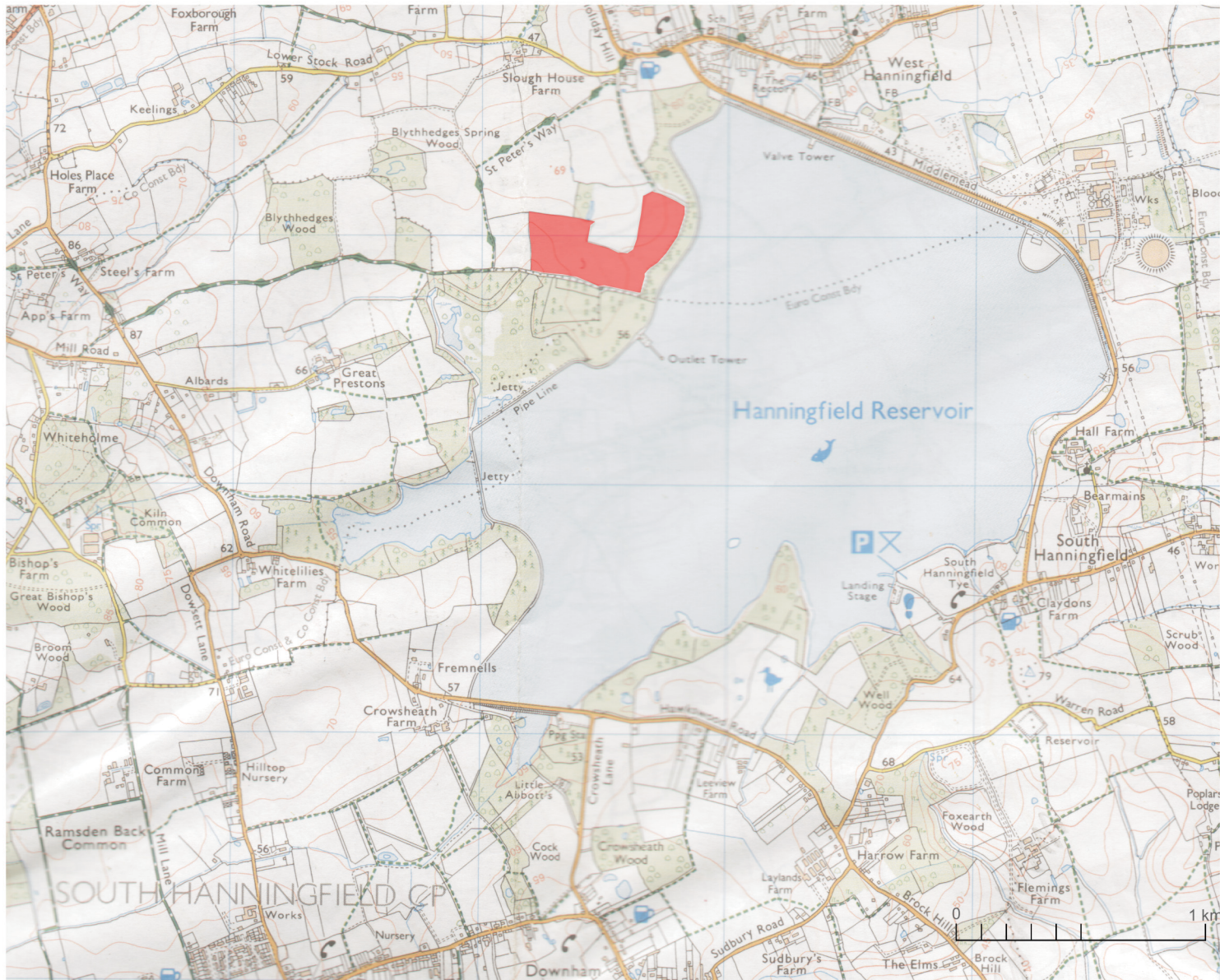
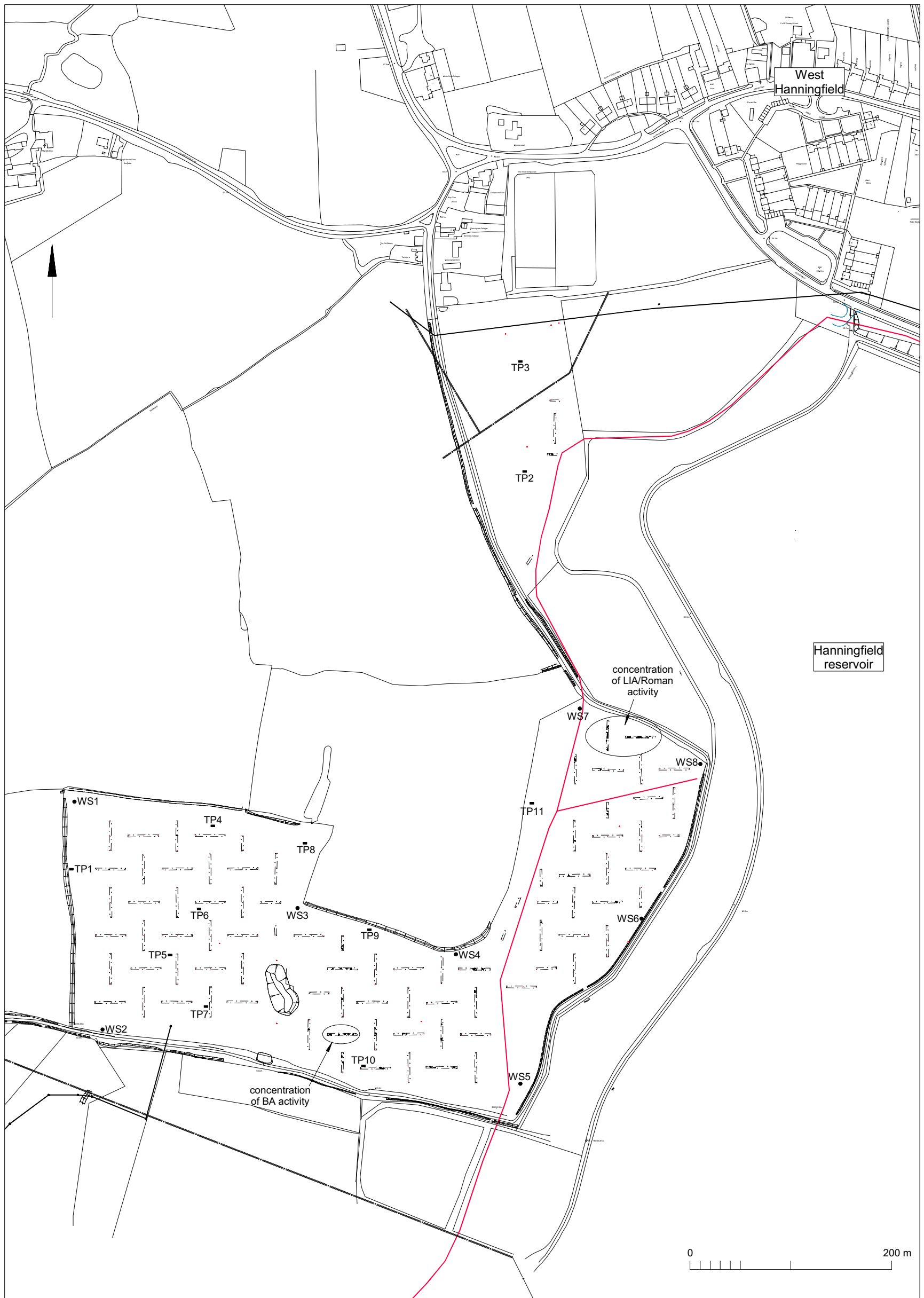


Fig 1 Site location, with evaluation area shown in red.

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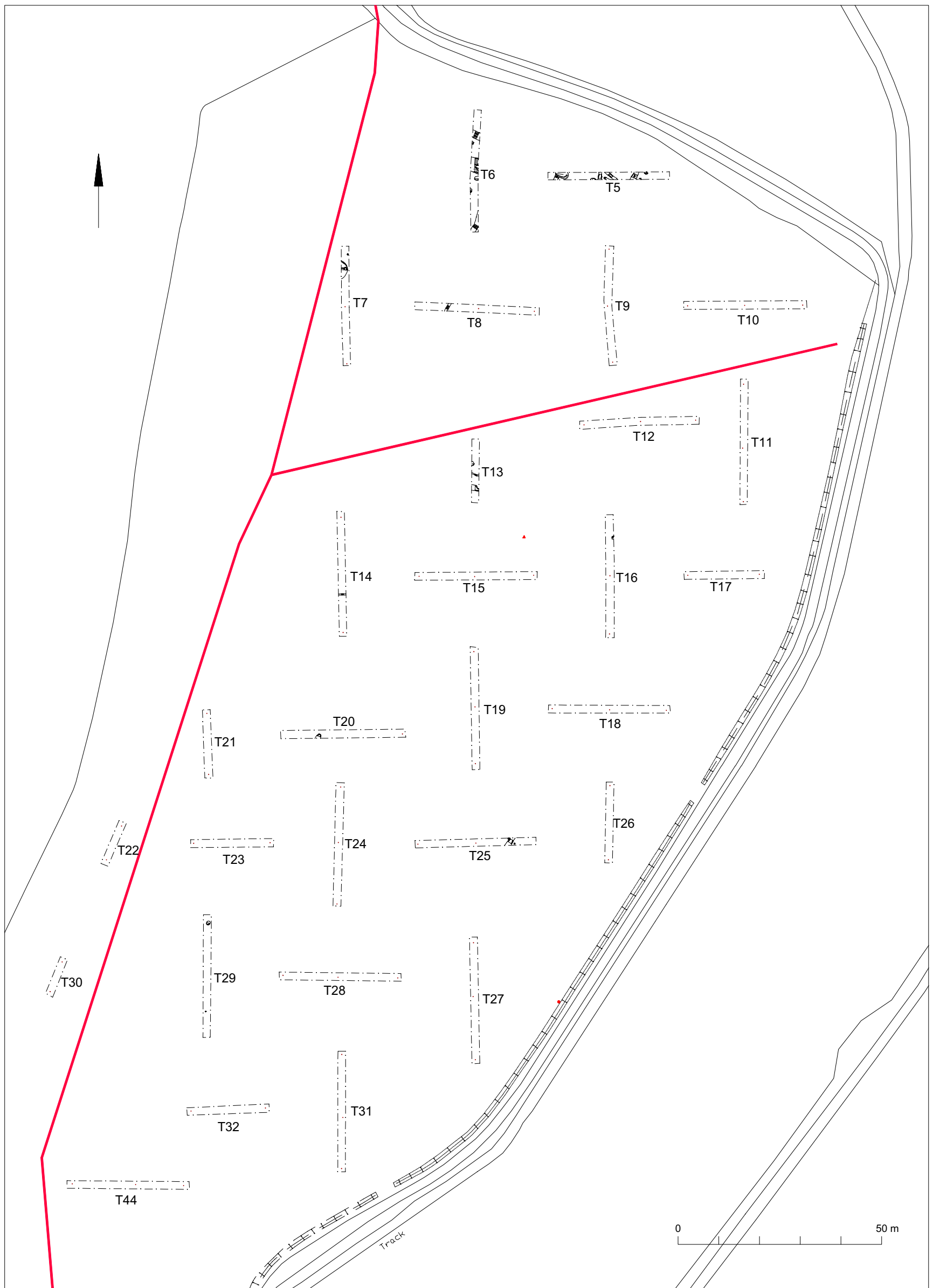
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Fig 2 Evaluation area.



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Fig 3 Northern area of evaluation.



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Fig 4 Eastern area of evaluation.



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Fig 5 Western and central areas of evaluation.

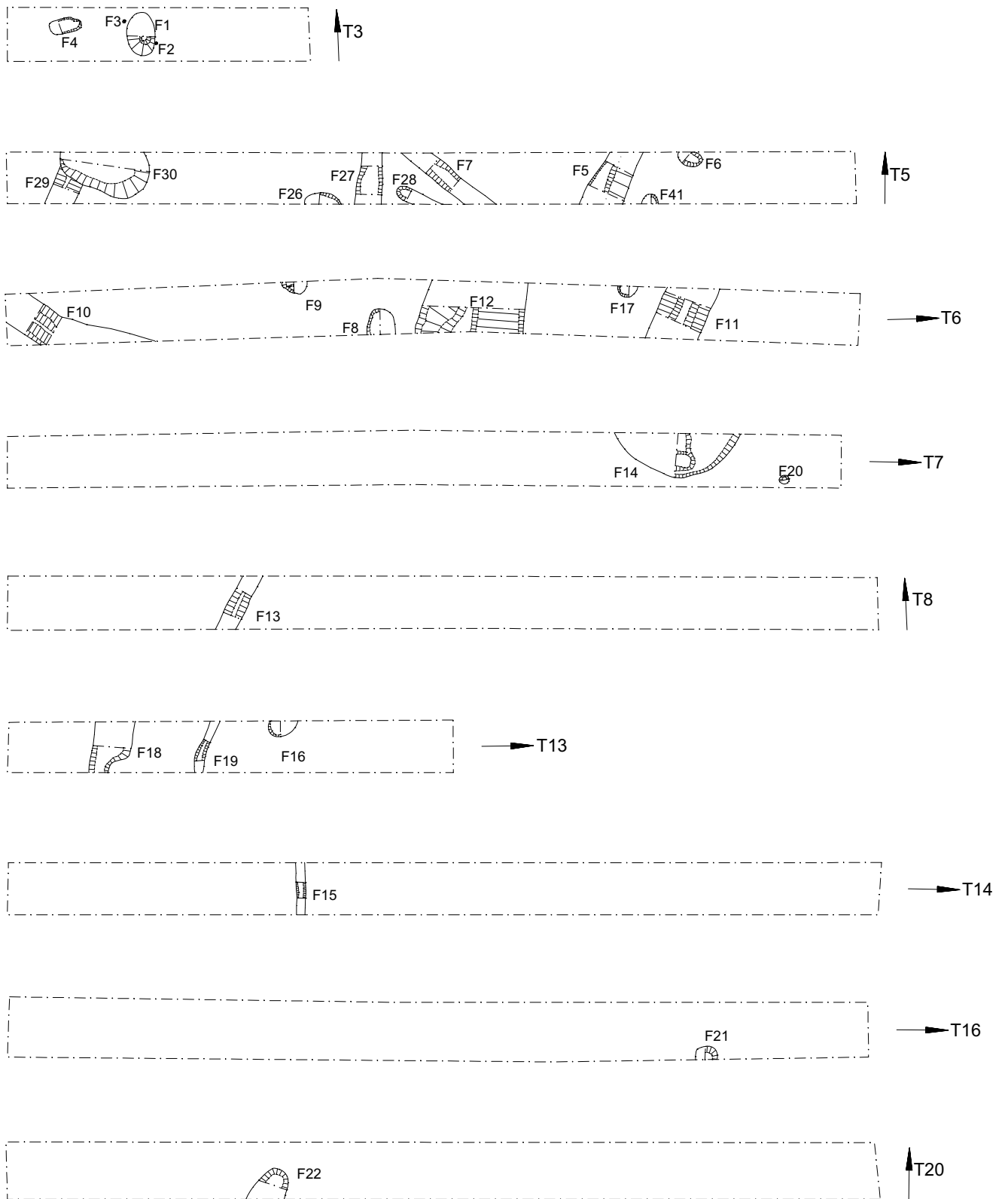


Fig 6 Results (T3, T5, T6, T7, T8, T13, T14, T16, T20).

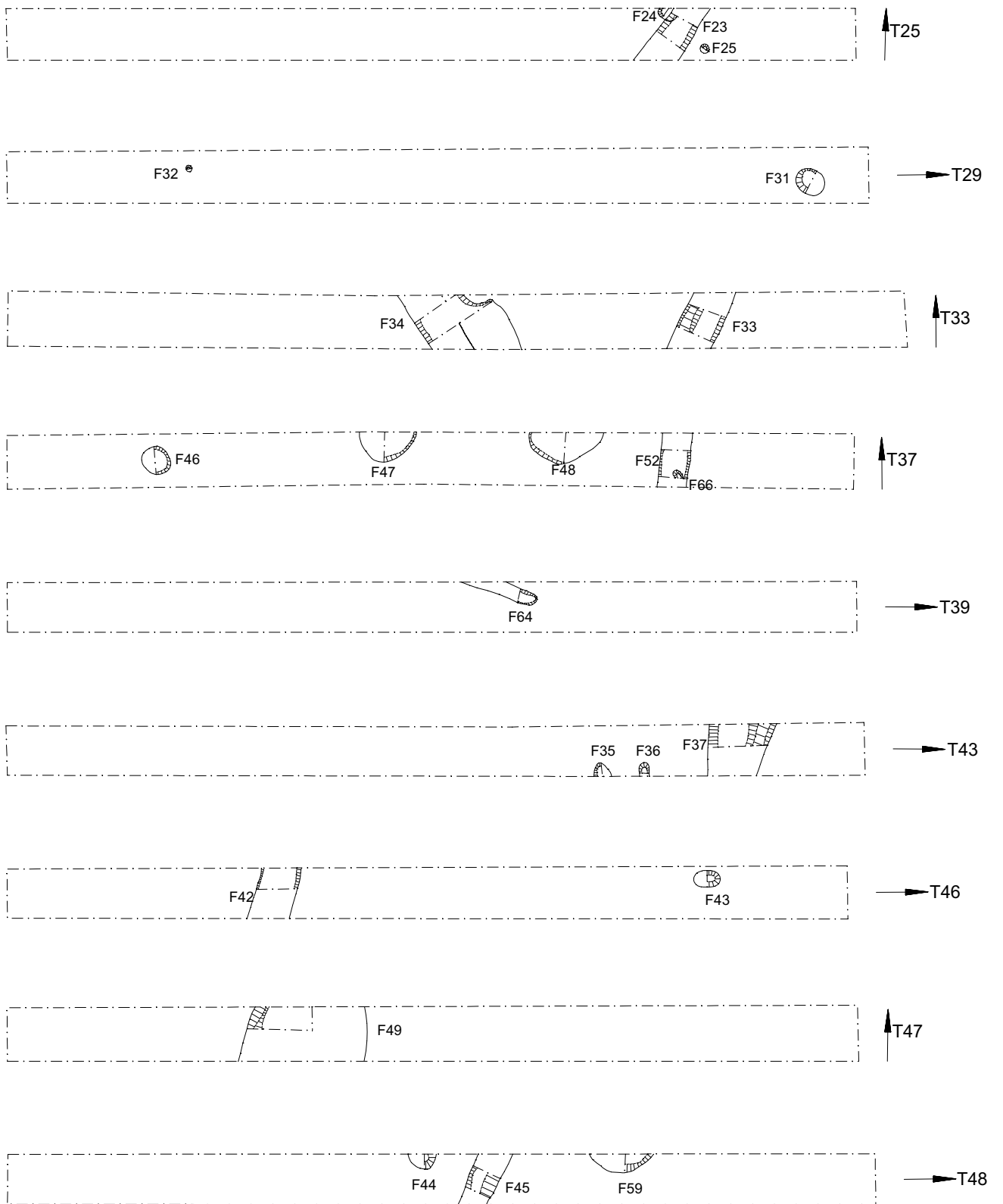


Fig 7 Results (T25, T29, T33, T37, T39, T43, T46, T47, T48).

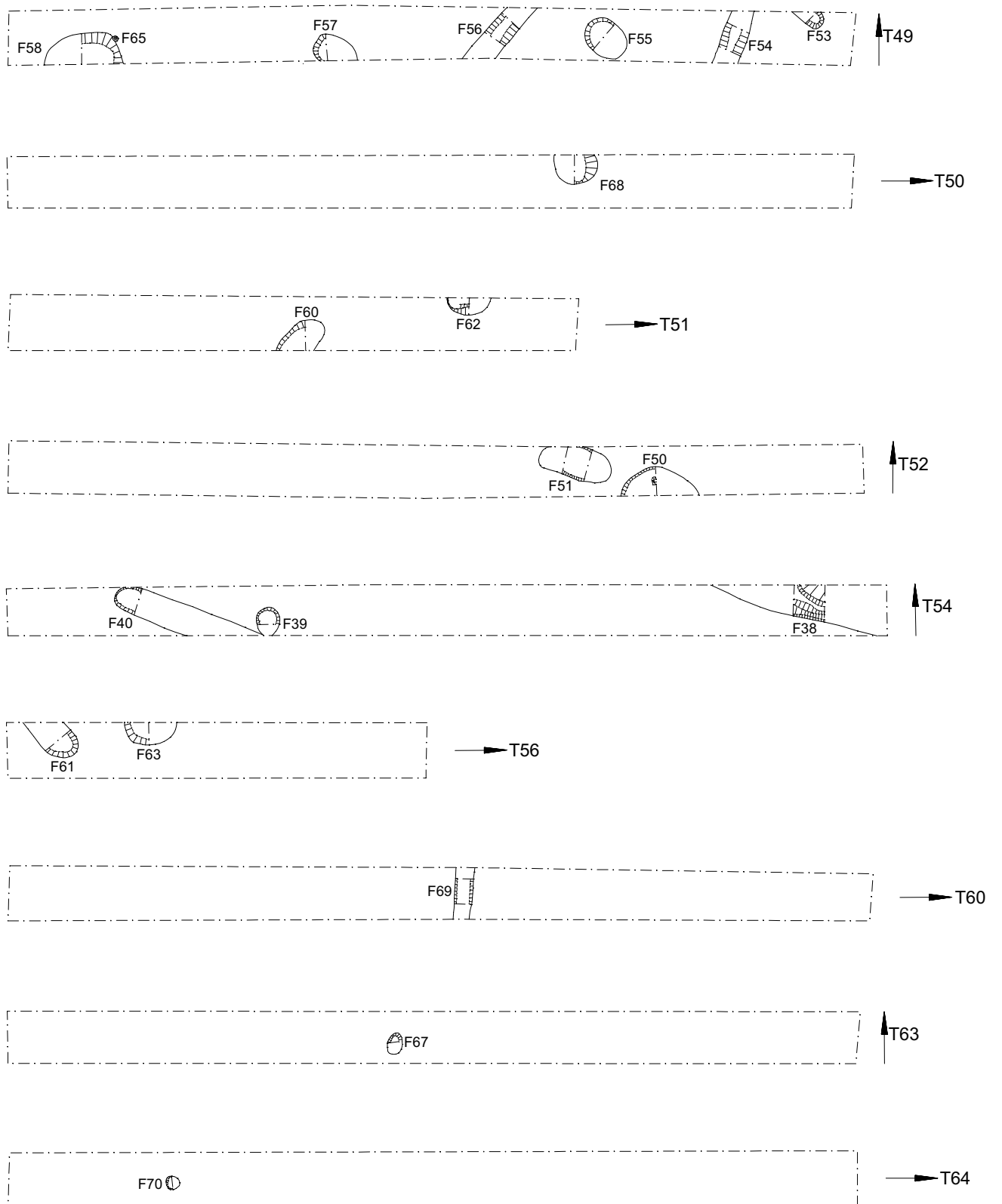


Fig 8 Results (T49, T50, T51, T52, T54, T56, T60, T63, T64).

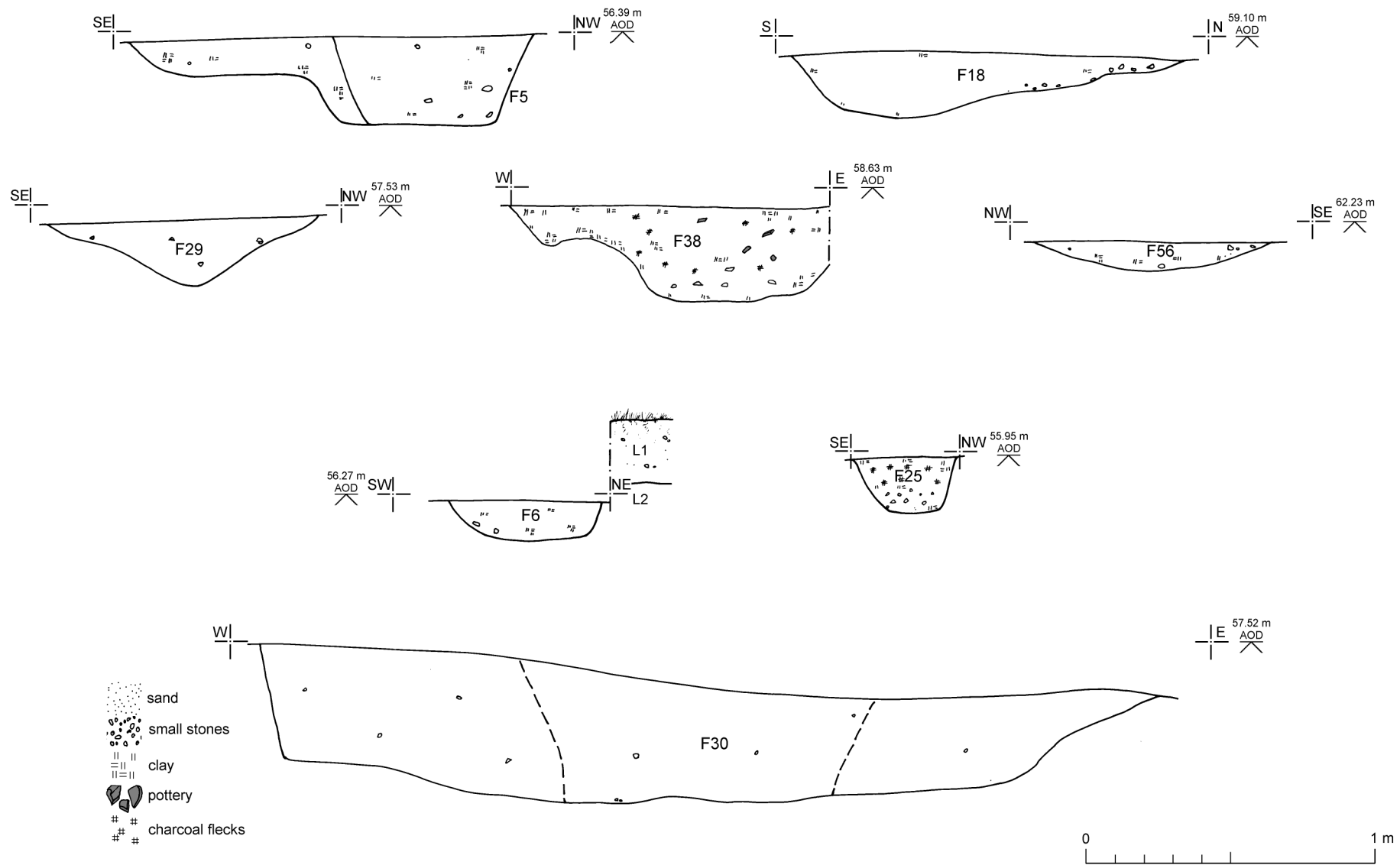


Fig 9 Linear features (F5, F18, F29, F38 and F56) and pit features (F6, F25 and F30): sections.

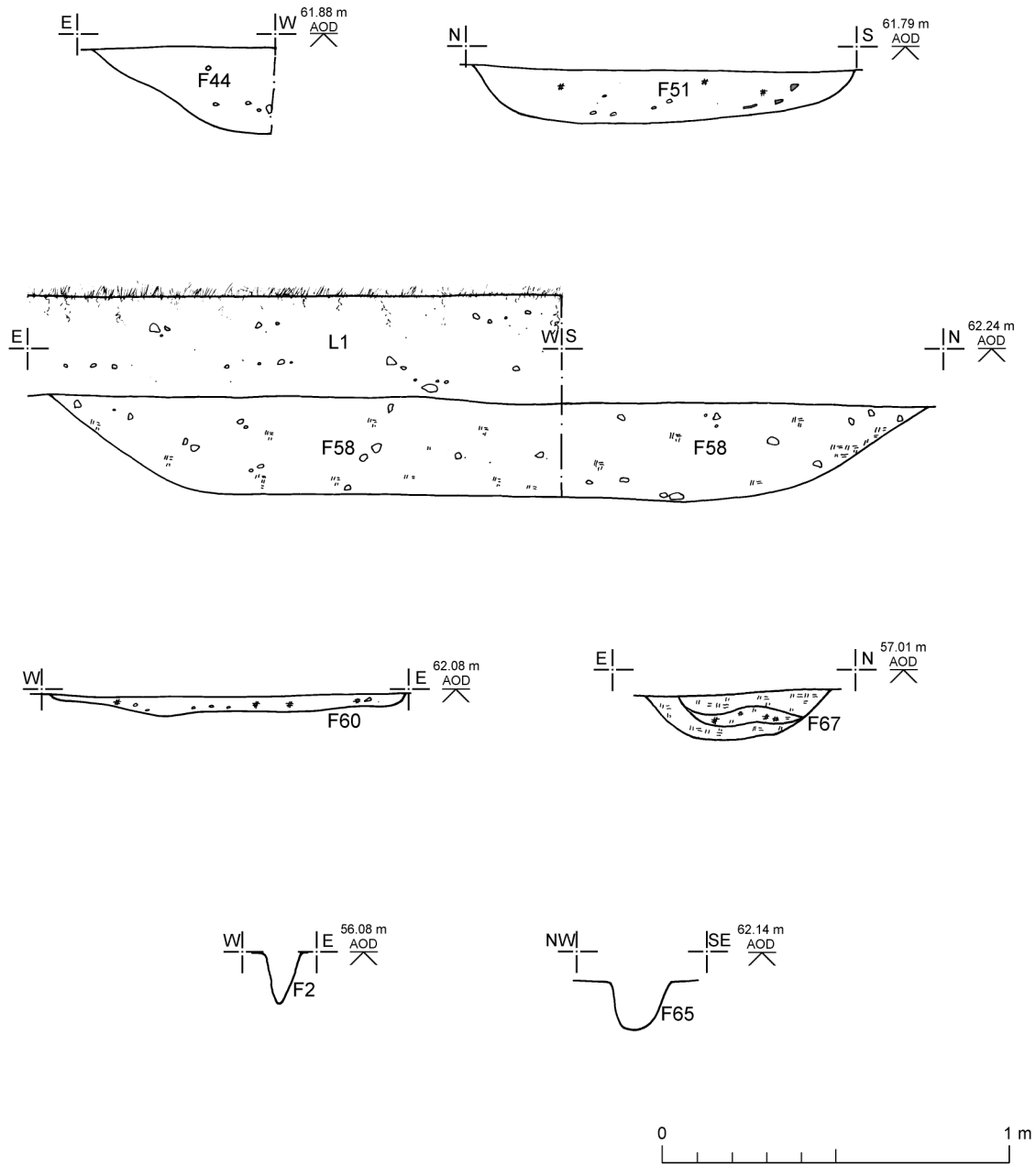


Fig 10 Pit features (F44, F51, F58, F60 and F67) and post-holes (F2 and F65); sections.

Essex Historic Environment Record/ Essex Archaeology and History

Summary sheet

Site address: Hanningfield Water Treatment works, West Hanningfield, Essex	
Parish: West Hanningfield	District: Chelmsford
NGR: TQ 726 988 (c)	Site codes: HEM code – WHAHW 09 CAT code 09/11b
Type of work: Monitoring and valuation	Site director/group: Colchester Archaeological Trust
Date of work: November 2009 and April 2010	Size of area investigated: 2480 m of trenching in a site of approximately 12.8 ha
Location of curating museum: Chelmsford Museum accession (code awaited)	Funding source: Developer
Further seasons anticipated? No	Related EHER no:
Final report: CAT Report 549 and summary in <i>EAH</i>	
Periods represented: prehistoric, Roman, post-medieval, modern	
<p>Summary of fieldwork results:</p> <p>A 4% evaluation by 90 trial trenches identified 70 archaeological features. The majority of these were undated (30% of all features), including a group of similarly-aligned but undated field ditches (17%). The majority of the dated features were prehistoric pits or ditches (18%), natural features including tree-throw pits (17%), and Roman pits or ditches (15%).</p> <p>The dated prehistoric and Roman features indicated two concentrations of prehistoric and Roman activity. First, limited Bronze Age activity in the centre of the evaluation site (centred on Trench 49), and second, Late Iron Age or Roman activity in the eastern part of the site (centred on Trenches 5 and 6). However, there was no indication of contemporary buildings here.</p> <p>The wetness of the site and marginal nature of the ground make it arguably an unsuitable place for permanent settlement. The land is better suited to agriculture, as is shown by the ditches of the undated N/S orientated field system found on the higher and dryer ground in the centre and on the eastern side of the site. Although this field system is undated, it shares the alignment of the Roman ditches.</p>	
Previous summaries/reports: None	
Keywords: prehistoric and Roman pits and ditches	Significance: */**
Author of summary: Howard Brooks	Date of summary: May 2010