

**Archaeological Monitoring &  
Trial Trench Evaluation**

**Essex and Suffolk Water Pipeline,  
South Woodham Ferrers to Hullbridge,  
Essex**

**ASE Project No: 180080  
Site Code: SWFPL18**

**ASE Report No: 2018184**



**April 2019**

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## Essex and Suffolk Water Pipeline, South Woodham Ferrers to Hullbridge, Essex

NGR: TQ 8134 9904 to TQ 8098 9294

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Site Code: SWFPL 18

ASE Report No: 2018184  
OASIS id: 348176

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<b>Version:</b>	1	
<b>Date of issue:</b>	April 2019	

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**Abstract**

*This report presents the results of an archaeological evaluation and watching brief carried out by Archaeology South-East on the South Woodham Ferrers to Hullbridge Pipeline, Essex, in April-June and September 2018. The fieldwork was commissioned by Essex and Suffolk Water in advance of the installation of a new water pipeline.*

*The archaeological watching brief was undertaken during groundworks associated with the laying of the pipeline. This involved the monitoring of the turf and topsoil strip of an area for the site compound, as well as the topsoil strip and excavation of pipeline trenches in two areas of the pipeline route, Areas 1 and 2. The excavation of the pipeline trenches revealed modern made-ground deposits likely associated with the levelling of the playing field to the north in Area 1 and subsoil and natural deposits in Area 2. The watching brief encountered no evidence of archaeological deposits or features predating the modern period.*

*The evaluation was undertaken across the c.7km long x 20m wide route of the pipeline easement and comprised the investigation of forty-four of an intended sixty trenches (ten trenches being inaccessible and a further six located along branches of the pipeline that have now been omitted from the scheme).*

*Six of the excavated trenches contained a low density of archaeological remains, generally comprising ditches/gullies and pits, with a slight concentration of features in the central part of the site, both north and immediately south of the River Crouch.*

*The presence of an Early Iron Age pit in a ditch in two trenches to the south of the River Crouch suggests a low intensity of land use activity occurred during this period here.*

*Late Iron Age/Early Roman pits and a ditch, again located south of the River Crouch, probably relate to settlement and agricultural activities that may have had some continuity on from the earlier Iron Age activity in this general vicinity.*

*A single demonstrably medieval ditch was recorded south of the river, possibly associated with an undated gully.*

*A low density of possibly medieval but more probably early post-medieval ditches/gullies and a pit were encountered in trenches to either side of the River Crouch. These may relate to agricultural and water management activities in this poorly-draining part of the landscape.*

*Undated remains of ditches and pits were also recorded in various trenches. It is likely that most, if not all, relate to medieval/post-medieval agricultural land use.*

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## **1.0 INTRODUCTION**

### **1.1 Site Background**

1.1.1 Archaeology South-East (ASE), the contracting division of UCL's Institute of Archaeology's Centre for Applied Archaeology, was commissioned by Essex and Suffolk Water, to undertake a programme of archaeological monitoring and evaluation trenching during groundworks associated with the installation of a water pipeline between South Woodham Ferrers and Hullbridge, in south-east Essex.

1.1.2 The archaeological work was undertaken in fulfilment of an archaeological condition attached to planning consent.

### **1.2 Location, Geology and Topography**

1.2.1 The site follows the pipeline route for c.7km, from just south of Edwin's Hall Road, South Woodham Ferrers (NGR TQ 8134 9904; Fig. 1) to Blountswood Road/Hullbridge Road, Hullbridge (NGR TQ 8098 9294), with a working width of approximately 20m. Continuing to the east of South Woodham Ferrers, it crosses the River Crouch and passes to the east of Hullbridge, terminating south of the town.

1.2.2 The overlying topsoil on the site consisted of a 0.11-0.56m thickness of mid to dark grey brown clay silt. Subsoil was present occasionally and consisted of 0.08-0.22m of light reddish grey brown clay silt.

1.2.3 The site geology is recorded on the British Geological Society (BGS 2019) website as comprising London Clay (clay, silt and sand) with superficial quaternary deposits, Tidal Flat deposits (clay and silt) and Head deposits (clay, silt, sand and gravel).

### **1.3 Planning Background**

1.3.1 The Historic Environment Advisor for Essex County Council (ECC) was consulted by Essex and Suffolk Water regarding the proposed pipeline scheme in early November 2014. Comments were made upon the archaeological implications of the works by Alison Bennett of ECC Place Services. The proposed pipeline passed through, or near to, an area of archaeological interest, and a programme of archaeological monitoring followed by full excavation of any archaeological features or deposits identified was requested. This was amended to monitoring and trial trenching at the request of Essex and Suffolk Water in January 2018.

1.3.2 A brief for the works was issued by ECC Place Services (ECC 2018). ASE was subsequently commissioned by Essex and Suffolk Water to undertake the archaeological work. A Written Scheme of Investigation (WSI) detailing the programme and methodology of the fieldwork was produced by ASE (ASE 2018), which was submitted to and approved by the ECC Place Services Archaeological Advisor prior to the commencement of fieldwork.

## **1.4 Scope of Report**

- 1.4.1 This report describes and assesses the results of the archaeological monitoring and trenching evaluation of the South Woodham Ferrers to Hullbridge Pipeline. The first phase of archaeological monitoring and trial trenching, on the South Woodham Ferrers section of the pipeline course, was carried out between 30 April and 06 June 2018. The second phase of trial trenching was carried out between 03 and 13 September 2018
- 1.4.2 The fieldwork was directed in the field by James Alexander (Archaeologist) and Rob Cullum (Archaeologist) with survey undertaken by Rob Cullum and Nathalie Gonzalez. The fieldwork was managed by Gemma Stevenson and the post-excavation process by Mark Atkinson.

## 2.0 ARCHAEOLOGICAL BACKGROUND

### 2.1 Introduction

2.1.1 The following archaeological and historical background information is drawn from the WSI (ASE 2018), based on evidence held in the Essex Historic Environment Record (EHER) and other readily available sources. The locations of specific known sites and findspots in the vicinity of the site are shown on Figure 1.

2.1.2 Extensive data has been amassed on the geomorphology, quaternary sediments and soils of south-east Essex and the Crouch Estuary, including palaeoenvironmental work undertaken in the 1980s. The Eocene clay lands are characterised by imperfect drainage and have hence historically remained largely under pasture.

### 2.2 Prehistoric and Roman

2.2.1 The prehistoric and Roman archaeological record is sparse. Submerged early prehistoric forest beds have been identified in the vicinity of Marsh Farm Country Park at Woodham Ferrers (e.g. Crouch Sites 7-8, EHER 13671-2, Clementsgreen Creek, EHER 13561), and peat deposits are generally well conserved in this area (Wilkinson 1983, section 1.2.2). A possible prehistoric fish weir was exposed in such deposits in the intertidal zone on the north side of the Crouch, c.500m to the east of the scheme (Wilkinson 1983, section 3.2, Site 18; EHER 13678). South of Hullbridge, isolated findspots attest to a transitory presence from the Mesolithic to the Bronze Age.

2.2.2 Roman salt production may have been confined further to the east towards the mouth of the estuary. Isolated Roman findspots have been found south of the scheme in the vicinity of Rayleigh (Wilkinson 1983).

### 2.3 Medieval

2.3.1 There is evidence that the surrounding landscape was managed and exploited in the medieval period. At the north end of the scheme, the village of Woodham Ferrers, to the west, is medieval in origin. The north end of the route lies just south of the moated site of Edwins Hall, a Grade II\* Listed Building and the remaining part of a much larger late 16th-century moated house (List No. 1236906; EHER 13593-4). On Burnham Road, there is an incomplete moat at Champions Hall (formerly Champions Farm) (EHER 13521); it is assumed that this has a medieval origin, as suggested by a record of medieval pottery being found here, although the existing Grade II Listed timber-framed house on the site is 18th-century in date (List No. 1237046; EHER 30918). To the west, opposite Lambert's Farm, evidence of a pottery kiln of late 14th- or early 15th-century date was indicated by pottery, wasters and kiln furniture, though no structure was recorded (EHER 13550). That the area had a pottery industry in the medieval period is supported by documentary evidence, namely a 1404-5 lease of two crofts called "Potter's Croft" (EHER 9903).

2.3.2 The pipeline crosses an area of medieval salterns immediately to the east of South Woodham Ferrers (EHER 13522). Approaching the River Crouch, the



pipeline route passes c.450m to the west of a Scheduled Monument (List No. 1020491; EHER 13497-8) comprising the remains of another medieval salt manufacturing area (saltern), visible as a group of earthworks with associated buried remains situated adjacent to Hawbush Creek, a tributary of the River Crouch. South of the river, at Hockley c.1km east of the route, the Grade II Listed church of St Peter and St Paul's (List No. 1112667; EHER 35113) indicates the medieval origins of settlement at this location.

- 2.3.3 Hullbridge is thought to be at least medieval in origin, the name denoting a bridge across the river at this point (Benton 1857, 287). A further moated site (EHER 7520) thought to be medieval in date lies just over 1km to the west of the south end of the scheme at the site of Trenders Hall, a 16th-century Grade II Listed Building (List No. 1147885; EHER 35137).

## 2.4 Post-Medieval/Modern

- 2.4.1 In the post-medieval, usage of the area and its surroundings has been agricultural or horticultural in nature. The 1771 map of Champions Farm and its land shows various buildings in the period. On Crow's Lane is the Grade II Listed early 17th-century Wellinditch Farmhouse (List No. 1110858; EHER 38568) and its associated barn (List No. 1169045; EHER 38569). To the west, near Burnham Road, is a Grade II Listed range of 17th- or 18th-century timber-framed cottages known as William Tabrums Copyhold (List No. 1264306; EHER 30919). East of South Woodham Ferrers is the Grade II Listed late 17th-century Hogwell's Farmhouse (List No. 1337437; EHER 38570). South of the River Crouch, the 17th-century Grade II Listed Hockley Hall lies near the medieval church at Hockley (List No. 1112665; EHER 35110).

- 2.4.2 Usage of the area continued in a similar vein into and throughout the modern period. A Cold War monitoring post was established at Mill Hill, to the west of the site (EHER 46670). South Woodham Ferrers began to develop around the railway junction and station to the south in the 19th century. Intensive, planned development took place in the intervening fields in the later 20th century, and in the 1970s, housing estates were built on the land south of Burnham Road and to the west of the site.

## 2.5 Project Aims and Objectives

- 2.5.1 The general aim of the archaeological investigation, as set out in the WSI (ASE 2018), was to determine the extent, date and significance of any archaeological remains that may have been present and to ensure their preservation by record prior to damage or destruction.
- 2.5.2 With reference to the *Research and Archaeology: A Framework for the Eastern Counties 2. Research Agenda and Strategy* (Brown and Glazebrook 2000) and *East of England Research Framework* (Medlycott 2011), the archaeological work was identified to have the potential to contribute to the following regional research aims:

### *Bronze Age*

- Identification of a Bronze Age presence in the landscape, coupled with a search for Bronze Age saltern sites (Medlycott 2011, 29)

### *Iron Age*

- The importance of cereal and salt production should be assessed (Medlycott 2011, 30).
- The development of industrial production from the household to the commercial workshop level, especially wheel-thrown pottery, iron and salt (Brown and Glazebrook 2000, 17).

### *Medieval*

- The role of water management and land reclamation (Medlycott 2011, 70).
- Further work is needed on the medieval pottery industries, both at a local and regional scale (Medlycott 2011, 71).
- Establishing whether there is evidence of the extraction of raw materials or manufacture associated with the local medieval pottery industry.
- Establishing if there is evidence for medieval (or earlier) salt production and/or fish weir structures in the vicinity of the River Crouch.

### *Wetlands*

- Investigation and analysis of the Hullbridge palaeo-channel in Essex (Medlycott 2011, 86).
- The impact of changing management of wetland or former wetland areas (Medlycott 2011, 87).

### 3.0 ARCHAEOLOGICAL METHODOLOGY

#### 3.1 Fieldwork Methodology

3.1.1 The methodology specified for the archaeological work can be found in full in the WSI (ASE 2018). What follows is a brief summary of this and discussion of any changes made during the monitoring and evaluation.

##### *Evaluation Trial Trenching*

3.1.2 The archaeological evaluation comprised the excavation of forty-four trenches along the pipeline route, each measuring 30m by 1.8m and generally positioned in accordance with the WSI (ASE 2018; Figs 2 and 3). Exceptions to the proposed trench layout in the WSI were as follows:

- Trenches 11-13 and 34-36 were not excavated, as these were located along two branches of the pipeline that Essex and Suffolk Water have informed will not now be part of the scheme.
- Trenches 43-46 were not excavated, as permission from the landowner could not be acquired.
- Trenches 55-60 were not excavated, as permission from the landowner (golf course) could not be acquired.
- Trench 47 was re-aligned from NW/SE to north/south and moved c.7m to the west in order to avoid an electric fence and field.
- Trench 48 was re-aligned from NE/SW to north/south and moved c.7.5m to the west in order to avoid an electric fence and livestock field. The trench was extended by 2.0m in order to compensate for a break mid-trench, in order to avoid a water pipe.
- Trench 49 was shortened to 18.5m length in order to avoid an electric fence enclosing a field holding livestock. A break was also necessary mid-trench to avoid a water pipe.
- Trench 52 was repositioned c.15m to the south to avoid an electric fence and livestock field.
- Trench 53 was re-positioned c.30m to the north and re-aligned to NW/SE in order to avoid a horse trial course

3.1.3 The fieldwork was carried out in accordance with the Chartered Institute for Archaeologists (CIfA) *Code of Conduct* (CIfA 2014a) and *Standard and Guidance for Archaeological Field Evaluation* (CIfA 2014b), and in compliance with *Standards for Field Archaeology in the East of England* (Gurney 2003).

3.1.4 All trenches were mechanically excavated using a toothless ditching bucket and under constant archaeological supervision. Machine excavation continued until the top of archaeological deposits or the surface of natural geology was reached.

- 3.1.5 The trenches were accurately located using a Digital Global Positioning System (DGPS) and were scanned for the presence of underground services using a CAT scanner prior to excavation.
- 3.1.6 Where required, discrete features were half-sectioned and slots excavated across linear features by hand. Trenches and features were recorded on ASE *pro forma* sheets, and sections were recorded at 1:10 scale on A3-size drawing film sheets.
- 3.1.7 Where present, finds were collected from excavated deposits, bagged, labelled and retained for specialist identification and study, in accordance with the ASE artefact collection policy and ClfA guidelines (ClfA 2014c).
- 3.1.8 A photographic record comprising colour digital images was made. All trenches and individual contexts were photographed (trench and context shots). In addition, a number of representative photographs of the general work on site were taken (working shots).
- 3.1.9 Spoil heaps and trench bases were scanned with a metal detector, as was the spoil derived from excavated features.
- 3.1.10 Backfilling and compaction was undertaken by the machine on completion of the work, but there was no requirement for reinstatement to existing condition.

#### *Archaeological Monitoring*

- 3.1.11 An archaeological watching brief was undertaken, monitoring three areas during the groundwork phase of the development (Fig. 2). Groundworks were monitored until natural deposits/formation depth/the area could be demonstrably proven to contain no archaeological remains. In the event that archaeological remains were identified, groundworks were halted until archaeological recording had been completed.
- 3.1.12 Sketch plans and sections, and basic soil descriptions, were made on *pro forma* Watching Brief record sheets. A photographic record was made using a compact digital camera. All excavated deposits were examined for artefacts.

## **3.2 Archive**

- 3.2.1 Guidelines contained in the ClfA *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* (2014d) will be followed for the preparation of the archive for deposition.
- 3.2.2 The site archive is currently held at the offices of ASE. Subject to agreement with the legal landowner, the archive will be deposited with Chelmsford Museum in due course. The contents of the archive are tabulated below (Tables 1a and 1b).

Context sheets	40
Section sheets	3
Plans sheets	0
Colour photographs	0
B&W photos	0
Digital photos	355
Context register	0
Drawing register	1
Watching brief forms	8
Trench Record forms	44

Table 1a: Quantification of site paper archive

Bulk finds (quantity e.g. 1 bag, 1 box, 0.5 box, 0.5 bag )	1 box
Registered finds (number of)	0
Flots and environmental remains from bulk samples	2
Palaeoenvironmental specialists sample samples (e.g. columns, prepared slides)	0
Waterlogged wood	0
Wet sieved environmental remains from bulk samples	0

Table 1b: Quantification of artefact and environmental samples

## 4.0 RESULTS

### 4.1 Overview

- 4.1.1 The archaeological watching brief was undertaken on groundworks associated with the laying of the pipeline and comprised monitoring the turf and topsoil strip of the site compound and the topsoil strip and excavation of pipeline trenches in two areas. No archaeological features were identified during these works. The results of this work are discussed below (4.2) and the locations of the monitored areas are shown on Figures 2 and 3.
- 4.1.2 In addition, forty-four evaluation trenches, the majority each measuring 30m by 1.8m, were excavated across the site, generally in accordance with the WSI (ASE 2018). Trenches 11-13, 34-36, 43-46 and 55-60 were not excavated due to the lack of landowner permission or that the proposed trenches did not coincide with the pipeline route. Trenches 47-49, 52 and 53 were realigned and/or extended or shortened to allow for site constraints (3.1.2).
- 4.1.3 A low density of simple intercutting archaeological features was identified in six of the forty-four excavated trenches (Trenches 16, 24, 27, 28, 30, 32). Excavated features comprised ditches/gullies and pits ranging in date from the Iron Age to medieval/post-medieval periods, all of which were cut into the natural deposits and were overlain by topsoil and subsoil, where present.
- 4.1.4 A simple deposit sequence comprising a 0.11-0.56m thickness of topsoil, occasionally overlying 0.08-0.22m of subsoil, was recorded along the pipeline route. The topsoil consisted of dark grey brown clay silt and the subsoil, where present, consisted of light reddish grey brown clay silt. These deposits overlaid the natural deposits of mid orange brown clay and alluvial deposits of dark blue grey gravel clay close to the River Crouch. Any exceptions to this sequence are noted below.
- 4.1.5 The evaluation trenches that contained archaeological features are described individually in sections 4.3-4.8. The thirty-eight archaeologically negative trenches are summarised in section 4.9, with further details presented in Appendix 1.

### 4.2 Monitored Areas (Figs 2 and 3)

- 4.2.1 Archaeological monitoring of the topsoil strip for the construction of the Essex and Suffolk Water compound area was carried out on 09 April 2018 (Fig. 2). The works comprised the stripping of turf and topsoil within a c.18m long x 10m wide area. Excavations were limited in depth to the top of natural deposits, which were reached at c.0.47m below ground level. Overburden deposits consisted of a modern layer of brownish grey sandy/silty clay, c.0.12m thick, possibly related to landscaping associated with the construction of the adjacent Creekview Road, below which was c.0.35m of redeposited dark grey brown clay silt topsoil. These deposits overlaid natural deposits of friable, greyish brown gritty sand, previously disturbed by modern activity. No archaeological features were uncovered.
- 4.2.2 Monitoring was also undertaken during the easement strip and subsequent

pipe trench excavation at two specific locations along the pipeline route (Figs 4 and 5):

- Area 1: located approximately between evaluation Trenches 17 and 18, with groundworks were monitored between 21 May and 06 June 2018.
- Area 2: located roughly between Trenches 22 and 23, with groundworks were monitored on 09-11 May 2018.

4.2.3 Areas 1 and 2 measured c.225m long x 4-12m wide and c.345m long x c.4-10m wide, respectively, and both were stripped of topsoil deposits generally comprising dark brown sandy silt with frequent gravel inclusions. Pipe trenches, measuring c.1.30-1.60m wide, were subsequently excavated along the lengths of both monitored areas. The pipe trenches were excavated to a depth of c.1.20-1.70m, generally through modern made-ground deposits of mottled mid orangey brown clay containing modern debris, including concrete, bricks, timber, iron and plastics. In the north of Area 1, a subsoil, c.0.22m thick, of dark greyish brown clayey silt was recorded overlying mixed natural deposits of blue grey alluvial gravel clay or mid brown orange silt clay.

4.2.3 Given the restrictive dimensions of the pipe trenches and their depth, it was rarely possible to enter the trenches in order to make detailed records. Smearing of the trench sides by the machine bucket led to poor deposit clarity. In addition, the pipe trench within Area 2 to the south became partially flooded with groundwater almost as soon as it was excavated.

4.2.4 No archaeological features were observed in either of the monitored areas, either during the area strip or excavation of the pipe trench.

*Evaluation Trenches*

**4.3 Trench 16 (Fig. 6)**

Context	Type	Interpretation	Length m	Width m	Depth m	Height m AOD
16/001	Layer	Topsoil	30.00	2.00	0.16-0.19	3.51-3.95
16/002	Layer	Subsoil	30.00	2.00	0.19-0.22	
16/003	Deposit	Natural	30.00	2.00	0.06-0.07	3.04-3.51
16/004	Fill	Fill, single	5.83+	0.62	0.19	
16/005	Cut	Ditch	5.83+	0.62	0.19	
16/006	Fill	Fill, single	2.00	1.61	0.35	
16/007	Cut	Ditch	2.00	1.61	0.35	
16/008	Fill	Fill, single	2.00	0.42	0.20	
16/009	Cut	Ditch	2.00	0.42	0.20	
16/010	Fill	Fill, single	2.00	0.20	0.18	
16/011	Cut	Ditch	2.00	0.20	0.18	
16/012	Fill	Fill, single	2.00	0.18	0.27	
16/013	Cut	Ditch	2.00	0.18	0.27	

Table 2: Trench 16 list of recorded contexts

- 4.3.1 Trench 16 was located in the South-Woodham Ferrers part of the site, south of the railway line and north of the River Crouch, and orientated NNW/SSE (Fig. 2). Four linear features were recorded within the trench (Fig.6).
- 4.3.2 Located on a NW/SE alignment, ditch [16/005] crossed the south-eastern end of the trench for 5.83m, extending beyond the trench limits. It measured 0.62m wide and 0.19m deep, and had moderately sloping sides breaking into a concave base. It contained a single fill, [16/004], of soft, mid grey silty clay with occasional charcoal flecks. Two fragments of medieval/post-medieval roof tile were recovered from this feature.
- 4.3.3 Towards the NNW end of the trench was east/west aligned ditch [16/007]. Extending beyond the trench limits, it measured 1.8m+ long x 1.61m wide and 0.35m deep, and had moderately sloping sides breaking into a concave base. Its single fill, [16/006], comprised a soft, mid brownish grey silty clay with occasional charcoal fleck inclusions, from which three fragments of medieval/post-medieval roof tile, two oyster shell fragments and three pieces of animal bone showing signs of butchery and gnawing were recovered.
- 4.3.4 Situated at the NNW end of Trench 16 and aligned NNW/SSE was ditch [16/009], measuring 3.10m+ length x 0.42m width x 0.20m depth, extending beyond the NNW trench limit and terminating within the trench. The ditch exhibited steep sloping sides breaking to a concave base and contained single fill [16/008] of soft, mid grey silty clay. Eight small pieces of roof tile and brick recovered from this fill were of early post-medieval date. An oyster shell fragment was also recovered from this feature.
- 4.3.5 Running along the eastern edge of the trench for c.22.0m, on a NNW/SSE orientation, was ditch [16/011], measuring 0.20m+ wide x 0.18m+ deep, extending beyond the trench limits to the NNW and NNE. Very little of the ditch was exposed, though it appeared to have a moderately sloping western side; the base was not reached. A single fill, comprising a soft, mid grey silty clay with occasional CBM and charcoal flecks, was recorded. No finds were hand collected from this feature. The relationship between ditch [16/007] and [16/011] was unclear, their intersection occurring at the trench edge.
- 4.3.6 A further partially exposed segment of this ditch was excavated mid-trench and recorded as [16/013], where it measured 0.18m+ wide x 0.27m+ deep, extending beyond the trench limit. It had a similarly moderately sloping side, though its base was not exposed, as it was situated beyond the NNE trench limit. Its single fill, [16/012], comprised a soft, mid brownish grey silty clay with charcoal flecks, and contained four pieces of early post-medieval roof tile.



**4.4 Trench 24 (Fig. 7)**

Context	Type	Interpretation	Length m	Width m	Depth m	Height m AOD
24/001	Layer	Topsoil	30.00	1.92	0.29-0.32	1.74-1.96
24/002	Deposit	Natural alluvial deposit	30.00	1.92	0.42-0.43	
24/003	Deposit	Natural	30.00	1.92	0.06-0.09	0.88-1.00
24/004	Fill	Fill, single	0.71	0.67	0.15	
24/005	Cut	Pit	0.71	0.67	0.15	
24/006	Fill	Fill, upper	0.58	0.46	0.08	
24/007	Fill	Fill, basal	0.58	0.46	0.27	
24/008	Cut	Pit	0.58	0.46	0.35	
24/009	Fill	Fill, single	2.60	0.71	0.29	
24/010	Cut	Ditch	2.60	0.71	0.29	

Table 3: Trench 24 list of recorded contexts

- 4.4.1 Trench 24 was located in the South Woodham Ferrers part of the site, approximately 400m north of the River Crouch, and aligned NE/SW (Fig. 2). Three archaeological features, comprising two pits and a ditch, were encountered within the trench (Fig. 7).
- 4.4.2 Located towards the south-west end of the trench was circular pit [24/005], measuring 0.71m long x 0.67m width x 0.15m deep. It had moderately sloping sides and a slightly concave to flat base. Its single fill, [24/004], comprised a firm, dark grey silty clay with charcoal and daub fleck inclusions. No finds were recovered from this feature.
- 4.4.3 Situated c.2.4m north-east of [24/005] was pit [24/008]. This was circular in plan, extending beyond the south-east trench limit, its exposed extent measuring 0.58m length x 0.46m+ width x 0.35m depth. It had steeply sloping sides breaking to a flat base and contained two fills. Its upper fill, [24/006], comprised a soft, dark grey silty clay with occasional inclusions of charcoal and daub flecks, whilst its basal fill, [24/007], consisted of a firm, mottled mid grey brown silty clay with occasional charcoal and small stone inclusions. No finds were retrieved from either fill.
- 4.4.4 Crossing the south end of the trench on an ENE/WSW alignment was ditch [24/010]. Extending beyond the trench limits, it measured 2.6m+ long x 0.71m wide and 0.29m deep, and had steep to moderately sloping sides breaking into a concave, U-shaped, base. Its single fill, [24/009], comprised a firm, plastic, mottled dark greyish brown silty clay with occasional charcoal fleck and daub fleck inclusions. No finds were retrieved from this fill.

#### 4.5 Trench 27 (Fig. 8)

Context	Type	Interpretation	Length m	Width m	Depth m	Height m AOD
27/001	Layer	Topsoil	30.00	1.80	0.29- 0.30	0.00- 0.01
27/002	Deposit	Natural	30.00	1.80	0.02- 0.03	0.02- 0.00
27/003	Fill	Fill, single	6.26+	0.62	0.28	
27/004	Cut	Ditch	6.26+	0.62	0.28	
27/005	Fill	Fill, single	2.00	0.42	0.20	
27/006	Cut	Ditch	2.00	0.42	0.20	
27/007	Fill	Fill, single	2.00	0.26	0.05	
27/008	Cut	Gully/ditch	2.00	0.26	0.05	
27/009	Fill	Fill, single	0.73	0.65	0.18	
27/010	Cut	Pit	0.73	0.65	0.18	
27/011	Drain pipe	Land drain	2.00	0.12	-	
27/012	Fill	Fill, upper	2.00	1.27	0.55	
27/013	Fill	Fill, basal	2.00	0.55	0.05	
27/014	Cut	Ditch	2.00	1.27	0.6	

Table 4: Trench 27 list of recorded contexts

- 4.5.1 Located in the Hullbridge part of the site, on the southern bank of the River Crouch, in a playing field, Trench 27 was positioned on a NNE/SSW alignment (Fig.3). It contained four archaeological features (Fig. 8). Topsoil [27/001] contained frequent crushed ceramic building material (rubble) and seemed to be a mix of made-ground and turf, perhaps indicating landscaping and levelling of the area for its use as a playing field. Modern drainage runs for the playing field were also present, very partially truncating features in the NNE end of the trench.
- 4.5.2 Situated on an east/west alignment, ditch [27/004] crossed the SSW end of the trench for approximately 6.26m+, extending beyond the western trench limits and ending in a rounded terminal at its east. It measured 0.62m wide and 0.28m deep, and had steeply sloping sides breaking sharply to a flat base. It contained a single fill, [27/003], of firm, light orange grey silty clay with occasional charcoal flecks. Ten small sherds of medieval pottery (dated 1250-1350) were recovered from this ditch segment, two of which were abraded and may be residual. A further segment was excavated and recorded as [27/006] in order to investigate the relationship with [27/008]. It exhibited the same morphological characteristics as [27/004] and a similar fill, [27/005], from which no finds were retrieved.
- 4.5.3 Narrow ditch or gully [27/008] was situated at the SSW end of the trench and aligned north/south, perpendicular to and extending northwards from ditch [27/004 / 27/006]. Measuring c.1.1m+ long x 0.26m wide and 0.05m deep, it had moderately sloping sides leading to a flat base. Its single fill, [27/007], comprised a firm, light grey clayey silt with occasional charcoal fleck inclusions but no finds. No clear relationship with [27/004 / 27/006] was established, though it is possible that they were broadly contemporary.
- 4.5.4 Pit [27/010], situated approximately mid-trench, was sub-circular in plan shape,

measuring 0.72m long x 0.65m wide and 0.18m deep, with steeply sloping to vertical sides breaking sharply to a flat base. Its single fill, [27/009], was a loose, dark brown silty sand with charcoal inclusions. It contained seven pieces of CBM, the majority of which was medieval/post-medieval in date, though one fragment was more characteristic of the Roman period and so may be residual.

- 4.5.5 Situated at the NNE end of Trench 27 and aligned north/south was ditch [27/014], measuring 2.0m+ length x 1.27m width by 0.60m depth, extending beyond the trench limits. It was partially truncated by a modern land drain, [27/011]. The ditch exhibited steep sloping to vertical edges breaking sharply to a concave base and contained two fills. Its upper fill, [27/012], comprising a firm, light grey brown clayey silt with occasional pebbles, contained five sherds of Early Roman pottery (AD 50-80). Basal fill [27/013] was a firm, mid grey brown clayey silt with occasional charcoal fleck inclusions, from which no finds were retrieved.

#### 4.6 Trench 28 (Fig. 9)

Context	Type	Interpretation	Length m	Width m	Depth m	Height m AOD
28/001	Layer	Topsoil	30.00	1.80	0.27-0.35	6.64
28/002	Deposit	Natural	30.00	1.80	0.04-0.08	6.33
28/003	Fill	Fill, upper	4.03+	1.58	0.26	
28/004	Fill	Fill	4.03+	1.70	0.16	
28/005	Fill	Fill	4.03+	1.78	0.24	
28/006	Fill	Fill	4.03+	0.32	0.13	
28/007	Fill	Fill	4.03+	1.46	0.32	
28/008	Cut	Pit	4.03+	2.00	0.93+	
28/009	Fill	Fill, single	0.48	0.46	0.06	
28/010	Cut	Pit	0.48	0.46	0.06	
28/011	Fill	Fill, single	1.97+	0.60	0.09	
28/012	Cut	Ditch	1.97+	0.60	0.09	

Table 5: Trench 28 list of recorded contexts

- 4.6.1 Trench 28 was located on the Hullbridge side of the site, within a playing field, and positioned on a NW/SE alignment (Fig. 3). Three archaeological features, comprising two pits and a ditch, were recorded within the trench (Fig. 9). Two modern land drains were also observed crossing the trench.
- 4.6.2 Exposed in the north-west end of the trench was extensive pit [28/008]. Extending beyond the trench limits, it measured 4.03m+ long x 1.8m+ wide and 0.93m+ deep, and had a steeply sloping south-eastern edge. The base of the pit was not reached for safety reasons given the depth of the feature. Five fills were recorded. Upper fill [28/003] was a firm, mid orange brown silty clay and contained moderate inclusions of rounded pebbles, though no finds. Below this was fill [28/004], a firm, dark grey silty clay with very frequent charcoal flecks and occasional small pebbles. Ninety-seven sherds of Late Iron Age/Early Roman pottery (882g), including many fragments of a single black-surfaced ware jar, as well as four fragments of fired clay, sixty pieces of animal bone and one small piece of fuel ash slag were recovered from it. Below this was a

light orange silty clay fill [28/006], from which no finds were recovered. Underlying fill [28/005] consisted of a firm, mid brownish grey silty clay with inclusions of frequent charcoal flecks, small pebbles and fire-cracked flint. This fill contained eighty-one sherds of Late Iron Age/Early Roman pottery (664g) dated to AD 10-80, as well as twenty-two pieces of fired clay, two residual pottery sherds of Early/earliest Middle Iron Age (600-300 BC) date and one intrusive fragment of post-medieval CBM. The lowermost excavated fill [28/007] was a mid greyish brown silty clay, from which forty-one Late Iron Age/Early Roman pottery sherds (526g) were retrieved. This fill also contained seventy-three pieces of animal bone, including cattle, horse and pig, and three fragments of fired clay. Environmental soil sample <1>, collected from fill [28/004], contained small quantities of charcoal and charred plant remains of spelt and emmer wheat. Soil sample <2>, collected from fill [28/005], produced 244 fragments of mainly unidentified animal bone, some of which had been burnt at high temperatures, as well as small quantities of charcoal and charred remains of cereal caryopses and wild weed/grass seeds.

- 4.6.3 Towards the south-east end of Trench 28 was circular pit [28/010]. Measuring 0.48m long x 0.46m wide and 0.06m deep, it had straight sides and a flat base. Its single fill, [28/009], was a firm, light brownish grey silty clay with frequent rounded flints and occasional charcoal inclusions. Two sherds (8g) of Early Iron Age (800-300 BC) pottery were recovered from it.
- 4.6.4 Situated approximately mid-trench was NNW/SSE aligned ditch [28/012], measuring 1.97m+ length x 0.60m width and 0.09m deep. It had a rounded southern terminal and extended beyond the north-east trench limit. It had gentle to moderately sloping sides breaking to a slightly uneven base. Its single fill, [28/011], consisting of a compact, light grey brown silty clay with frequent rounded stone inclusions, contained one fragment of Roman CBM.

**4.7 Trench 30 (Fig. 10)**

Context	Type	Interpretation	Length m	Width m	Depth m	Height m AOD
30/001	Layer	Topsoil	30	1.8	0.30-0.31	4.69-5.70
30/002	Deposit	Natural	30	1.8	0.06	4.43-5.35
30/003	Fill	Fill, single	0.70	0.45	0.09	
30/004	Cut	Ditch	0.70	0.45	0.09	

Table 6: Trench 30 list of recorded contexts

- 4.7.1 Trench 30 was located in the southern, Hullbridge side, of the site and aligned NNE/SSW (Fig. 3). A single archaeological feature was recorded in the trench (Fig. 10). Modern plough scars were observed within the trench, one of which partially truncated the archaeological remains.
- 4.7.2 Located approximately mid-trench was ditch [30/004], running east/west, continuing beyond the ESE trench limit, and ending in a rounded western terminal within the trench. Its exposed extent measured 0.7m+ x 0.45m and 0.09m deep. It had moderately sloping sides and a concave base. It contained

a single fill, [30/003], comprising a firm, mid greyish brown silty clay with occasional inclusions of charcoal flecks and chalk. No finds were recovered.

#### 4.8 Trench 32 (Fig. 11)

Context	Type	Interpretation	Length m	Width m	Depth m	Height m AOD
32/001	Layer	Topsoil	30.00	1.80	0.25- 0.29	12.23- 13.27
32/002	Deposit	Natural	30.00	1.80	0.06- 0.10	11.90- 12.88
32/003	Fill	Fill, single	1.80	0.64	0.16	
32/004	Cut	Ditch	1.80	0.64	0.16	

Table 7: Trench 32 list of recorded contexts

4.8.1 Trench 32 was located c.212m south of Trench 30 on the Hullbridge side of the site, and positioned on a north/south alignment (Fig 3). A single linear feature was recorded here (Fig. 11).

4.8.2 Located in the south of the trench was ditch [32/004], running east/west, extending beyond the trench limits. It measured 1.8m+ x 0.64m and 0.16m deep, and had moderately sloping sides breaking to a slightly concave to flat base. It contained a single fill, [32/003], of firm, dark brownish grey silty clay, with occasional charcoal fleck inclusions, from which a single sherd of Early Iron Age (800-300 BC) was recovered.

#### 4.9 Archaeologically Negative Trenches (Figs 12-16)

4.9.1 Trenches 1-11, 14, 15, 17-23, 25, 26, 29, 31, 33, 37-42 and 47-54 were devoid of archaeological remains.

4.9.2 The trenches all revealed a sequence of topsoil (0.11-0.56m thick) and subsoil (0.08-0.22m thick), where present, overlying natural deposits. The overburden and natural deposits were consistent with the rest of the site. Further details of the deposit sequence noted in these trenches are presented in Appendix 1.

4.9.3 Variations in the natural deposits were observed in a number of blank trenches. These variations included areas of mid brownish orange silty clay, dark bluish grey gravelly silty clay and patches of gravel. A sondage was excavated in the west end of Trench 26 to investigate these variations and confirmed to be entirely natural in origin. Modern made-ground deposits were observed in Trenches 14 and 22. These varied in composition from mid brownish grey silty clay to firm, mid yellowish brown gravelly clay, all of which contained inclusions of modern concrete, brick and plastic waste.

4.9.4 Modern impacts were identified in a number of blank trenches, including plough scarring in Trench 29, land drains in Trenches 5, 6, 7, 8, 10, 14, 15, 17, 18, 22, 25, 37 and 40, and modern services Trenches 37, 40, 41, 42, 48, 49 and 52. A high degree of root disturbance was also noted in blank Trenches 47-49, likely deriving from the adjacent hedgerow.

## 5.0 FINDS

### 5.1 Summary

5.1.1 A small assemblage of finds was recovered during the evaluation on the South Woodham Ferrers to Hullbridge Pipeline. All finds were washed and dried, or air-dried, as appropriate. They were subsequently quantified by count and weight, and bagged by material and context. The hand-collected bulk finds are quantified in Table 8; material recovered from the residues of environmental samples is quantified in Appendix 2a. All finds have been packed and stored following ClfA guidelines (2014c).

Context	Pottery	Weight (g)	CBM	Weight (g)	Slag	Weight (g)	Bone	Weight (g)	Burnt Flint	Weight (g)	Fired Clay	Weight (g)	Shell	Weight (g)
15/002			5	3034										
16/004			2	73										
16/006			3	201			3	104					2	8
16/008			8	132							1	1	1	3
16/012			4	124										
27/003	10	72												
27/009			10	162										
27/012	5	26												
28/004	98	882			1	18	7	46			4	188		
28/005	83	664	1	10			51	244	1	92	24	608		
28/007	42	526					72	704	2	166	3	22		
28/009	2	8												
28/011			1	26										
32/003	1	4												
<i>Total</i>	<i>241</i>	<i>2182</i>	<i>34</i>	<i>3762</i>	<i>1</i>	<i>18</i>	<i>133</i>	<i>1098</i>	<i>3</i>	<i>258</i>	<i>32</i>	<i>819</i>	<i>3</i>	<i>11</i>

Table 8: Quantification of hand-collected bulk finds

### 5.2 Prehistoric Pottery by Anna Doherty

5.2.1 Six sherds of prehistoric pottery, weighing 32g, were recovered during the evaluation. They were potentially *in situ* in fill [28/009] of pit [28/010] and fill [32/003] of ditch [32/004], but they were almost certainly residual, alongside a large group of Late Iron Age/Early Roman pottery, in fill [28/005] of pit [28/008]. All are associated with relatively well-fired, quartz-rich, flint-tempered fabrics with fairly sparse frequencies of flint, mostly of less than 1mm but occasionally up to 2.5mm. The sherds from [28/005] and [28/009] appear to come from the same vessel, which has coarser quartz grains in its fabric. The sherd from [32/003] has a finer and more micaceous sandy matrix. Context [28/005] contained a rim from a necked, shouldered jar with a flattened rim profile and possible very light finger-tipping along the rim top. This form is very typical of the Early Iron Age to earliest Middle Iron Age (600-300 BC).

5.2.2 More generally, fabrics of this type could appear in assemblages across the earlier part of the Iron Age (c.800-300 BC), though the absence of non-flint-tempered wares suggests that they are less likely to belong to the latest part of this range.

**5.3 Late Iron Age/Early Roman Pottery** by Isa Benedetti-Whitton

5.3.1 A total of 224 pieces of Late Iron Age/Early Roman pottery, weighing 2,062g, was collected from four contexts across two trenches: fill [27/012] of ditch [27/014] and fills [28/004], [28/005] and [28/007] of pit [28/008]. With the exception of some post-Conquest sherds collected from [27/012], all the material was of a clear c.mid 1st-century AD date.

5.3.2 The pottery was examined using a x20 binocular microscope and quantified by sherd count, weight, Estimated Vessel Number (ENV) and Estimated Vessel Equivalent (EVE). Fabric and forms were recorded using fabric codes developed for Elms Farm, Heybridge (Biddulph *et al.* 2015) and form codes devised by Going (1987) for sites in Chelmsford. Fabric descriptions and quantification of pottery by fabric type, ENV, EVE and weight is shown below in Table 9.

Fabric	Description	Sherd count	ENV	EVE	Weight (g)
GROG	Un sourced grog-tempered wares	133	13	1	1407
BSW 2	Grog tempered black-surfaced wares	86	4	1	633
RED	Un sourced oxidised sandy wares	2	2		5
MWSRS	Miscellaneous white- or cream-slipped sandy red wares	1	1		12
BSW 1	Sand-tempered black-surfaced wares	1	1		3
ESH	Early shell-tempered wares	1	1		2
<i>Total</i>		224	22	2	2062

Table 9: Quantification of Roman pottery by fabric

5.3.3 Nearly 99% of the assemblage in terms of weight comprised grog-tempered wares (GROG), although some of these were well-fired, wheel-thrown, sparsely grog-tempered black-surfaced wares, which were probably made around or after the Roman Conquest (BSW 2). Most contexts produced only grog-tempered sherds, with the exception of [27/012], which produced a greater range of post-Conquest fabrics, including oxidised sandy wares (RED) and a single micaceous and oxidised sherd with some abraded white slip on the surface (MWSRS). These are clearly post-Conquest fabrics, although the presence of grog-tempered sherds alongside these sherds continues to suggest a 1st-century date of c.AD 50-80. Those contexts containing only grog-tempered sherds could date even earlier, c.AD 10-80.

- 5.3.4 A small shell-tempered rim sherd was found alongside the grog-tempered sherds from [28/004], but shelly wares are not uncommon in early assemblages and suggest a similar date to the grog-tempered sherds.
- 5.3.5 Only sherds from [28/004] and [28/007] could be associated with any known form type, the former containing many fragments of a black-surfaced (BSW 2) jar, including cordoned shoulder fragments of a Going G16 jar. Similar cordoned fragments were noted in [28/005], but these were less diagnostic. Large and well-preserved fragments of a Cam. 229 jar were collected from [28/007], which is approximately coeval with G16 jars but could date even earlier, perhaps to the Late Iron Age.
- 5.3.6 Pottery certainly attributable the post-Conquest period was only found in context [27/012], being noticeably absent from the fills of pit [28/008], which produced by far the greatest quantities of pottery, as shown in Table 10 below.

Context	Sherd count	% of total	Weight (g)	% of total
27/012	5	2.2	26	1.3
28/004	97	43.3	877	42.5
28/005	81	36.2	645	31.3
28/007	41	18.3	514	24.9
<i>Total</i>	<i>224</i>	<i>100%</i>	<i>2062</i>	<i>100%</i>

Table 10: Roman pottery by context

#### 5.4 Post-Roman Pottery by Luke Barber

- 5.4.1 The archaeological work recovered ten sherds of post-Roman pottery, weighing 72g. All was recovered from fill [27/003] of ditch [27/004]. The material has been fully listed in Table 11.

Context	Fabric	No	Weight	Comments (including estimated number of vessels)
27/003	F1 Fine/medium sandy ware	2	16g	Cooking pot x1 (oxidised with externally sooted base); bowl x1 (oxidised, small out-turned rim)
27/003	F2 Medium sandy ware	3	36g	Cooking pot x1 (oxidised, externally sooted with tapering club rim)
27/003	F3 Well fired medium/coarse moderate sandy ware	5	20g	Cooking pot x1 (oxidised, externally sooted)

Table 11: Post-Roman pottery assemblage

- 5.4.2 Overall, the pottery consists of small to medium-sized sherds. Although the F1 sherds show moderate signs of abrasion, the others are fresh and include conjoining pieces. Given this, the material does not appear to have been subjected to any significant reworking, though the F1 sherds could be residual. All would probably fit under Cunningham's medieval coarsewares grouping (Cunningham 1985, Fabric 20). Considering the fabrics present, together with



the finish of the vessels, a date between c.1250 and 1350 is considered likely.

#### 5.4. Ceramic Building Material by Isa Benedetti-Whitton

- 5.4.1 Thirty pieces of ceramic building material (CBM), weighing 3,462g, were collected from eight contexts across Trenches 15, 16, 27 and 28. Of these, Trench 16 produced the most CBM, although this was not inherently dateable. The latest dating material was collected from Trench 15 and included some bricks of early modern date. The comparative quantities of different CBM forms are shown below in Table 12.

Form	Quantity	Weight (g)
<i>Roman</i>		
Imbrex	1	26
Misc Roman	2	64
<i>Post-Roman</i>		
Roof tile	21	592
Brick	6	2780
<i>Total</i>	<i>30</i>	<i>3462</i>

Table 12: Quantification of CBM by form

- 5.4.2 All the material was quantified by form, weight and fabric, and recorded on standard recording forms. This information was entered into a digital Excel table. Fabrics were identified with the aid of a x20 binocular microscope and, where possible, catalogued using Museum of London Archaeology's (MOLA) fabric reference codes. In those instances where the MOLA equivalent was unknown, site-specific codes have been applied and use the following conventions: frequency of inclusions (sparse, moderate, common, abundant); the size of inclusions: fine (up to 0.25mm), medium (0.25-0.5mm), coarse (0.5-1.0mm) and very coarse (larger than 1.0mm). Fabric descriptions are provided in Table 13.
- 5.4.3 Roman CBM made up only a small proportion of the assemblage and comprised one small and abraded piece of imbrex from fill [28/011] of pit [28/012] and some non-diagnostic but Roman-looking CBM pieces from fill [27/009] of pit [27/010]. The fact that even this small amount of Roman CBM was dispersed across more than one trench, and in the case of the latter fragments found alongside later-dating CBM, suggests that the Roman CBM is residual or re-deposited.
- 5.4.4 As can be seen in Table 12, post-Roman roof tile fragments were the most numerous in the assemblage. Two or three fabric types were present. T1 was distinct and inclusion free enough to be a clearly different fabric type. There were, however, some 2586 fragments—specifically those collected from fill [16/008] of ditch [16/009] and fill [27/009] of pit [27/010]—that were significantly more quartz-rich and micaceous than the others and therefore may represent a distinct fabric type. Nevertheless, the sample was too small and fragmentary to make such a distinction at this stage. Approximately 71% of all the roof tile collected was recovered from contexts in Trench 16: fill [16/004] of ditch

[16/005], fill [16/006] of ditch [16/007], fill [16/008] of ditch [16/009] and fill [16/012] of ditch [16/013].

- 5.4.5 The quantity of peg tile fragments compared to brick pieces could be an indication of a medieval date for the CBM deposits, as structural red brick (like MOLA 3033) did not become common in England until after c.1480; medieval bricks do not survive as well as their post-medieval counterparts. Apart from some large brick fragments retrieved from context [15/002], the only brick piece found alongside the medieval/post-medieval roof tile was a small crumb of 3033 in fill [16/008] of ditch [16/009].
- 5.4.6 Larger abraded pieces of 3033 were also present in [15/002], alongside late 18th-/19th-century 3035 bricks, and two partial London Brick Company bricks in MOLA fabric 3038. These date to the 1890s at their earliest, but were used until the 1970s.

Fabric	Description
<i>Roman</i>	
R1	Fine orange fabric with varying quantities of quartz.
<i>Roof tile</i>	
T1	Micaceous brown soapy fabric; no apparent quartz.
2586	Orange fabric with varying quantities (moderate-common) of medium and coarse quartz. Also present: micaceous variant with common coarse quartz.
<i>Brick</i>	
3033	Fine fabric with scatter of quartz (up to 0.8mm), sparse calcareous inclusions and black iron oxide, both up to 1.5mm. Occasional flint fragments and small pebbles up to 7mm.
3035	Generally yellow fabric with common burnt black ash and chalk inclusions (up to 4mm). Scatter of quartz (up to 0.6mm). The fabric is hard and riddled with tiny air pockets where organic matter has burned out during firing
3038	Very hard and distinctive granular fabric with numerous small white inclusions.

Table 13: Fabric descriptions for CBM

## 5.5 Fired Clay by Elke Raemen

- 5.5.1 A small assemblage of fired clay, comprising twenty-nine fragments weighing 893g, was recovered from three individually numbered contexts (fills [28/004], [28/005] and [28/007] of pit [28/008]). All three contexts also contained pottery dating to c.AD 10-80.
- 5.5.2 Three different fabrics were encountered. An overview can be found in Table 14. Most fragments recovered are amorphous or retain one flat surface. Five fragments retained wattle impressions, and it is likely that the majority of the assemblage represents daub. Two thick slab fragments (52mm+ to 61mm thick) were found in [28/005], including a corner. They are insufficiently diagnostic, however, to extrapolate their original use.

Fabric	Description
F1	Moderate to common fine quartz, rare coarse quartz, rare fine to medium chalk and rare flint (pebbles) to 4mm.
F2	Common fine quartz.
F2b	Common fine quartz and moderate organic temper.

Table 14: Summary of the fired clay fabrics

## 5.6 Slag by Luke Barber

5.6.1 The evaluation produced a single piece of hand-collected slag (fill [28/004] of pit [28/008]). This consists of an 18g fragment of green/grey brittle aerated slag with areas of vitrification that is best classed as fuel ash slag. This type can be formed from any high temperature event, including domestic hearths, and is not necessarily an indication of industrial activity. The slag has no potential for further study and has been discarded.

## 5.7 Animal Bone by Emily Johnson

5.7.1 An assemblage of 383 animal bones, weighing 1,161g in total, was recovered from just four evaluation contexts. Material derived from both hand-collected and bulk-sampled contexts and was largely moderately preserved (Table 15).

Context	ENV	N	NISP	Preservation %		
				Poor	Moderate	Good
16/006		3	3	0.0	33.3	66.7
28/004	1	63	9	6.3	85.7	7.9
28/005	2	244	9	0.0	98.8	1.2
28/007		73	25	12.3	84.9	2.7
<i>Total</i>		383	46	3.4	93.5	3.1

Table 15: Zooarchaeological assemblage by context showing total fragment count (N), the number of identifiable specimens (NISP) and the proportion of bones displaying varying preservation levels.

### Method

5.7.2 The assemblage has been recorded onto an Excel spreadsheet. Where possible, bones were identified to species and element (Schmid 1972; Hillson 1992) and the bone zones present noted (Serjeantson 1996). Determination of sheep and goat specimens used criteria outlined in Halstead and Collins (2002), Zeder and Lapham (2010) and Boessneck (1969); where this was not possible, a combined ovicaprid class was used. Elements that could not be confidently identified to species, such as long bone, rib, cranial and vertebral fragments, have been categorised by taxa size (large/ medium/ small) and type (mammal/ bird/ fish). Approximate counts were made of the indeterminate material from the 2-4mm and 4-8mm fractions from context [28/005] <2>.

5.7.3 Mammalian age-at-death data was collected where possible. The state of

epiphyseal bone was recorded as fused, unfused and fusing, and any determinations of age made using Silver (1969). Although no teeth were recovered in the mandible, Levine (1982) was used for ageing horse teeth by height. Specimens have been studied for signs of butchery, burning, gnawing, non-metric traits and pathology. The assemblage contained no measurable long bones of domestic mammals.

*Results*

5.7.4 Four contexts, comprising the fills of two features, contained animal bones (Table 16). A total of forty-four bones were identifiable to taxa and a further two to taxa size.

Context	Sample	N	NISP	Cattle	Ovicaprid	Pig	Horse	Vole sp.	Mouse sp.	Vole/ mouse sp.	Large mammal	Indeterminate
16/006		3	3	2	0	0	0	0	0	0	1	0
28/004	1	63	9	8	0	0	1	0	0	0	0	54
28/005	2	244	9	0	4	2	0	1	1	1	0	235
28/007		73	25	8	0	1	15	0	0	0	1	48

Table 16: Taxa abundance per context by NISP (where sample numbers are given, they include both hand-collected and bulk-sampled material where present)

5.7.5 Fill [16/006] of ditch [16/007], which produced broadly dated post-Roman CBM, contained a cattle radius diaphysis refitted from two fragments and a large mammal long bone fragment from a juvenile individual. Both were split mid-shaft using cleaver chops. The radius had both rodent and canid gnawing.

5.7.6 Three fills from a probable Late Iron Age/Early Roman pit, [28/008], contained animal bone. Pit fill [28/004] <1> contained cattle horncore fragments, a horse mandibular premolar aged at 6-7.5yrs (Levine 1982) and a number of indeterminate fragments of which three were burnt at high temperatures (calcined white). Pit fill [28/005] <2> contained ovicaprid and pig tooth fragments, a mouse sp. mandible, a vole tooth and a mouse/vole sp. femur. In addition, a large quantity of indeterminate fragments was recovered, of which seven were burnt at a range of high temperatures resulting in black, grey and white specimens. Two indeterminate fragments and an ovicaprid astragalus showed evidence of digestion. Finally, pit fill [28/007] contained cattle, horse and pig bones. Cattle were represented by a right calcaneum, a right scapula fused distally, two left fused proximal radii and two mandibular fragments, one of which had cut marks. Horses were represented only by teeth, including maxillary teeth and incisors. Pigs were represented by a mandibular fragment. Aside from fully identifiable specimens, this context also contained a large mammal pelvis fragment and a number of indeterminate specimens.

## **5.8 Shell by Elke Raemen**

- 5.8.1 Three oyster shell (*Ostrea edulis*) fragments with a combined weight of 10g were found during the evaluation, in fill [16/006] of ditch [16/007] (two fragments) and fill [16/008] of ditch [16/009] (one fragment). Included are a left valve and two right valve fragments. All three are abraded, although evidence of parasitic activity is still visible on a piece from [16/006].

## 6.0 ENVIRONMENTAL SAMPLES by Lucy Allot

### 6.1 Introduction

6.1.1 During evaluation work at the site, two bulk soil samples were collected in order to recover environmental material, such as charred plant macrofossils, wood charcoal, fauna and Mollusca, as well as to assist finds recovery. The samples were collected from fills [28/004] and [28/005] of Late Iron Age/Early Roman pit [28/008]. This report summarises the contents of these samples and considers their contribution to discussions of environment, diet, fuel use and economy at the site.

### 6.2 Methodology

6.2.1 Bulk samples of 40L were processed in their entirety by flotation, and the flot and residue were retained on 250µm and 500µm meshes, respectively, and air dried. The dried residues were passed through graded sieves of 8mm, 4mm and 2mm, and each fraction sorted for environmental and artefactual remains. Artefacts recovered from the samples are incorporated in the finds reports where relevant. The dried flots were scanned under a stereozoom microscope at 7-45x magnifications and their contents recorded (Appendix 2). Identifications of macrobotanical remains have been made through comparison with published reference atlases (Cappers *et al.* 2006; Jacomet 2006; NIAB 2004), and nomenclature used follows Stace (1997).

### 6.3 Results

6.3.1 Both samples consisted predominantly of uncharred modern rootlets with very small quantities of charred plant macrofossils and wood charcoal evident. The residues also produced small quantities of animal bone, including some burnt bone fragments, although no other environmental remains were recovered. Finds recovered from the samples comprised possible slag, fire-cracked flint, pottery and magnetic material.

6.3.2 Charred macrofossils were infrequently present in both samples. They were represented by poorly preserved cereal caryopses and occasional wheat (*Triticum* sp.) caryopses in both samples and fragmented glume bases of either spelt or emmer wheat (*Triticum spelta/dicoccum*) in sample <1> [28/005]. Individual specimens of goosefoot (*Chenopodium* sp.), sedge (*Carex* sp) and a grass culm were recorded in sample <1> [28/004], while sample <2> [28/005] produced a medium-sized grass (Poaceae) seed.

6.3.3 Charcoal fragments were infrequent in both samples, and the assemblages were considered too limited to warrant further identification work.

### 6.4 Discussion

6.4.1 The dominance of modern plant matter in the flots suggests that some degree of bioturbation has occurred within the sampled contexts and that some material may be intrusive or have been subjected to post-depositional movements within the pit. Although the assemblages are very small and may have been subject to bioturbation, the presence of grain, chaff and weeds

suggests that crops may have been processed, stored or used in the near vicinity. During crop processing, there are several points at which grains, their associated chaff and weeds can come into contact with fire. For example, glume wheats, such as spelt and emmer, require parching to remove their husks, and the small elements of chaff can become charred either during this process or latterly if discarded in the fire. While the current assemblage is too small to attribute directly to these activities, it is likely that they derive from crops that were partially processed rather than grain already cleaned of chaff and weeds.

- 6.4.2 The evaluation soil samples highlight the potential for preservation of charred plant macrofossils and charcoal in the vicinity, and it is recommended that a programme of targeted environmental sampling continues to be implemented in any future archaeological investigations at the site.

## 7.0 DISCUSSION AND CONCLUSIONS

### 7.1 Overview of stratigraphic sequence

- 7.1.1 A deposit sequence of topsoil overlying either subsoil or natural deposits was recorded across the site. The topsoil varied in thickness, measuring 0.11-0.56m thick. Subsoil was present intermittently across the site and ranged in thickness from 0.08m to 0.22m. The underlying geological deposits predominately consisted of clay.
- 7.1.2 Archaeological features were recorded to be present in six of the forty-four evaluation trenches; none were encountered in the monitored areas. These features were cut into the underlying natural geological deposits and were overlain by topsoil and subsoil, where present.
- 7.1.3 The range of recorded remains comprised pits and ditches/gullies. The archaeological features exhibited a low density and low intercut complexity. The majority of the recorded features were concentrated in Trenches 27 and 28, immediately south of the River Crouch, and in Trenches 16 and 24 on the South Woodham Ferrers side of the river.

### 7.2 Deposit survival and existing impacts

- 7.2.1 Deposit survival was mostly good, with all features cut into natural deposits and sealed by 0.25-0.36m of overburden deposits comprising topsoil and subsoil, where present.
- 7.2.2 Some degree of horizontal truncation of the upper portions of all features has occurred, presumably as a result of recent agricultural activity, but this was minimal and did not affect the excavation and recording of features. Some landscaping seems to have occurred in Trenches 27 and 28, but this has not significantly impacted the archaeological remains. Modern land drains, services and plough scarring were also identified in a number of the evaluation trenches, some of which have had a localised impact upon archaeological remains present.

### 7.3 Discussion of archaeological remains by period

- 7.3.1 Archaeological remains encountered within the site comprised a low density and low intercutting complexity of ditches/gullies and pits. The recorded features, where possible, have been dated on the basis of their diagnostic artefact content and are discussed below by broad period.

#### *Early Iron Age*

- 7.3.2 The potentially earliest dated features encountered during the evaluation were recorded in Trenches 28 and 32, located just to the south of the River Crouch. Pit [28/010] and ditch [32/004] both contained small quantities of Early Iron Age (800-300 BC) pottery that may have possibly been *in situ*, given the lack of other dated finds encountered within the features. Two residual sherds of Early to earliest Middle Iron Age (600-300 BC) pottery were also found in Late Iron Age/Early Roman pit [28/008]. Although limited, the finds are suggestive of



later prehistoric activity within the vicinity, alongside the river.

#### *Late Iron Age/Early Roman*

- 7.3.3 Late Iron Age/Early Roman features were present immediately south of the River Crouch in Trenches 27 and 28. It is perhaps significant that these broadly coincided with the occurrence of earlier Iron Age remains, which may hint at some degree of continuance of land use here.
- 7.3.4 Presumably extensive pit [28/008] contained a large quantity of pottery of Late Iron Age/Early Roman date. This appears to have been a conquest / transition period feature, but since it was not fully uncovered, its full form and function are not clear. The pit also contained animal bone, fired clay and charred plant remains, including cereal grains, suggesting that both agricultural and domestic settlement activities were being undertaken in the vicinity.
- 7.3.5 Tentatively dated LIA/Early Roman ditch [28/012] and Early Roman ditch [27/014] may constitute associated land use – perhaps being parts of a field system.

#### *Medieval and Post-Medieval*

- 7.3.6 Medieval and post-medieval remains were limited, encountered in Trenches 16 and 27.
- 7.3.7 The only demonstrably medieval feature, ditch [27/004 / 27/006], was found south of the River Crouch and contained pottery sherds dated AD 1250-1350.
- 7.3.8 A number of features have been tentatively identified as being broadly medieval/post-medieval, or else early post-medieval, on the basis of their CBM content. Pit [27/010] could therefore be contemporary with medieval ditch [27/004]. The four ditches in Trench 16 ([16/005, 16/007, 16/009 and 16/011 / 16//013), to the north of the river, all contain roof tile of medieval or early post-medieval date. Although these ditches may simply be agricultural field boundaries and/or drains, their intercutting hints at some complexity of the development of the later agricultural landscape here. On balance, these all probably date to the early post-medieval period.

#### *Undated*

- 7.3.7 A small number of undated pits and ditches were recorded in Trenches 24, 27 and 30, all lacking dated finds. These most likely relate to the post-medieval agricultural land use.

## 7.4 Consideration of research aims

7.4.1 The archaeological evaluation has been successful in determining the presence, extent, date and significance of archaeological remains encountered on the route of the South Woodham Ferrers to Hullbridge pipeline. The dated features uncovered during the evaluation are generally of Late Iron Age/Early Roman and medieval/early post-medieval date, though two features may be indicative of Early Iron Age land use. Some features remain undated, but the majority are likely related to post-medieval land management and drainage. The nature of the site, with trenches dispersed over a large linear area, limits the potential for the evaluation results to address the identified project research aims (2.5.2). Despite this, the significance of these remains in relation to the research aims are considered below, under period specific headings.

### *Bronze Age*

7.4.2 No features of Bronze Age date were encountered on site. The evaluation has provided no tangible evidence for land use of this period that involves, or is related to, saltern sites.

### *Iron Age*

7.4.3 A low incidence of Iron Age remains was encountered on site. A pit in Trench 28 and a ditch in Trench 32 contained small quantities of Early Iron Age (800-300 BC) pottery, whereas the large pit in Trench 28 and ditch in Trench 27 were of transitional Late Iron Age/Early Roman date. Charred plant remains recovered from the later pit provides some evidence of crop processing within the vicinity. However, it is unclear whether the recorded remains relate to agricultural settlement or production. No evidence indicative of salt production during the Iron Age was encountered.

7.4.4 All of the Iron Age and Early Roman remains were found to the south of the River Crouch, across Trenches 27-32. It is possible that they relate to a general continuance of settlement and farming here.

### *Medieval and Post-Medieval*

7.4.5 Ditches of medieval/early post-medieval date were encountered in Trenches 16 and 27 and further, undated, ditches and pits uncovered in Trench 24 may be speculated to be of a similar period. These features probably relate to the agricultural land use of this vicinity either side of the river – presumably constituting field boundaries and drains. As such, they provide little information that can be used to address the specific aims identified for the medieval to post-medieval period (see 2.1.2).

7.4.5 The evaluation and monitoring work has produced no evidence for the management of wetland or former wetland areas nor encountered deposits associated with the Hullbridge palaeo-channel.

## **7.5 Conclusions**

- 7.5.1 The results of the archaeological evaluation and monitoring work demonstrate the presence of a low density of Early Iron Age, Late Iron Age/Early Roman and medieval/early post-medieval remains within the route of the South Woodham Ferrers to Hullbridge pipeline, with these dated remains being found in Trenches 16, 27, 28, and 32.
- 7.5.2 The presence of an Early Iron Age pit in Trench 28) and a ditch in Trench 32 suggests a low intensity of land use activity occurred during this period to the south of the River Crouch.
- 7.5.3 Late Iron Age/Early Roman remains in Trenches 27 and 28, comprise single large and small pits and a ditch, again located south of the River Crouch. These probably relate to settlement and agricultural activities and may have some continuity on from the earlier Iron Age activity in this general vicinity.
- 7.5.4 A single demonstrably medieval ditch was recorded in Trench 27, possibly associated with an undated gully.
- 7.5.5 A low density of possibly medieval but more probably early post-medieval ditches/gullies and a pit were encountered in Trenches 16 and 27. These may relate to agricultural and water management activities in an area known to exhibit poor drainage either side of the river.
- 7.5.6 Undated remains of ditches and pits were recorded in Trenches 24, 27 and 30. It is likely that most, if not all, relate to medieval/post-medieval agricultural land use.
- 7.5.7 It is noted that within the current pipeline route, ten trenches (Trenches 43-46 and 55-60) were not investigated due to access problems. These were located toward the south end of the route.

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## ACKNOWLEDGEMENTS

ASE would like to thank Essex and Suffolk Water, for commissioning the work, and for their assistance throughout the project. Richard Havis, the ECC Place Services Archaeological Advisor, is thanked for his guidance and monitoring on behalf of the LPA. The fieldwork was variously directed by Mark Germany (09 April 2018), James Alexander (30 April - 6 June 2018) and Rob Cullum (03-13 September 2018). The authors would like to thank all participating archaeologists. Sara Munoz produced the figures for this report. Gemma Stevenson project managed the fieldwork and Mark Atkinson managed the post-excavation process

**Appendix 1: Archaeologically negative trenches: list of recorded contexts**

Context	Type	Interpretation	Length (m)	Width (m)	Depth (m)	Heights AOD (m)
1/001	Layer	Topsoil	30.00	1.80	0.26-0.33	58.66-59.84
1/002	Deposit	Natural	30.00	1.80	0.07-0.10	58.35-59.36
2/001	Layer	Topsoil	30.00	1.80	0.31-0.32	54.02-57.37
2/002	Deposit	Natural	30.00	1.80	0.06-0.01	53.73
3/001	Layer	Topsoil	30.00	1.80	0.27-0.33	40.99-44.56
3/002	Deposit	Natural	30.00	1.80	0.12-0.16	40.75-44.10
4/001	Layer	Topsoil	30.00	1.80	0.35-0.36	35.48-38.24
4/002	Deposit	Natural	30.00	1.80	0.12-0.23	35.05-37.89
5/001	Layer	Topsoil	30.00	1.80	0.25-0.36	29.80-33.25
5/002	Deposit	Natural	30.00	1.80	0.09-0.16	29.55-32.72
6/001	Layer	Topsoil	30.00	1.80	0.25-0.30	29.84-30.35
6/002	Deposit	Natural	30.00	1.80	0.08-26.00	29.50-29.91
7/001	Layer	Topsoil	30.00	1.80	0.20-0.25	28.03-29.28
7/002	Deposit	Natural	30.00	1.80	0.10-0.16	27.69-28.91
8/001	Layer	Topsoil	30.00	1.80	0.32-0.36	23.50-24.13
8/002	Deposit	Natural	30.00	1.80	0.07-0.14	23.04-23.80
9/001	Layer	Topsoil	30.00	1.80	0.37-0.39	18.03-19.19
9/002	Deposit	Natural	30.00	1.80	0.08-0.15	17.54-18.48
10/001	Layer	Topsoil	30.00	1.80	0.33-0.36	13.75-14.82
10/002	Deposit	Natural	30.00	1.80	0.08-0.12	13.34-14.20
14/001	Layer	Topsoil	30.00	1.80	0.14-0.26	7.95-9.48
14/002	Deposit	Made ground	30.00	1.80	0.61	7.48-8.73
15/001	Layer	Topsoil	30.00	1.80	0.19-0.26	5.22-5.93
15/002	Deposit	Natural	30.00	1.80	0.07-0.18	4.73-5.50
17/001	Layer	Topsoil	30.00	1.80	0.19-0.29	3.54-3.68
17/002	Deposit	Natural	30.00	1.80	0.09-0.12	2.29-3.38
17/003	Deposit	Made ground	30.00	1.80	0.29-0.31	
17/004	Deposit	Natural alluvial deposit	30.00	1.80	0.37	2.29-3.38
18/001	Layer	Topsoil	30.00	1.80	0.37-0.38	
18/002	Deposit	Natural	30.00	1.80	0.09-0.11	
19/001	Layer	Topsoil	30.00	1.92	0.36-0.38	
19/002	Deposit	Natural	30.00	1.92	0.09-0.12	
20/001	Layer	Topsoil	30.00	1.94	0.11-0.13	
20/002	Deposit	Made ground	30.00	1.94	0.45-0.58	
20/003	Deposit	Natural	30.00	1.94	0.06-0.08	
21/001	Layer	Topsoil	30.00	1.80	0.32-0.33	4.25-4.32
21/002	Deposit	Natural	30.00	1.80	0.06-0.10	3.78-4.32
22/001	Layer	Topsoil	30.00	1.80	0.27-0.33	4.01-4.66
22/002	Deposit	Made ground	22.00	1.80	0.29-0.44	

Context	Type	Interpretation	Length (m)	Width (m)	Depth (m)	Heights AOD (m)
22/003	Deposit	Made ground	22.00	1.80	0.37-0.48	
22/004	Deposit	Natural	30.00	1.80	0.13-0.15	3.42-3.61
23/001	Layer	Topsoil	30.00	1.80	0.21-0.23	2.60-2.95
23/002	Deposit	Natural alluvial deposit	30.00	1.80	0.36-0.53	
23/003	Deposit	Natural	30.00	1.80	0.09-0.12	1.77-2.35
25/001	Layer	Topsoil	30.00	1.80	0.42-0.44	1.50-1.57
25/002	Deposit	Natural alluvial deposit	30.00	1.80	0.53-0.74	
25/003	Deposit	Natural	30.00	1.80	0.06-0.08	0.23-0.52
26/001	Layer	Topsoil	30.00	1.80	0.46-0.56	
26/002	Deposit	Natural alluvial deposit	30.00	1.80	0.93-2.73	
29/001	Layer	Topsoil	30.00	1.80	0.28-0.31	6.74-6.89
29/002	Deposit	Natural	30.00	1.80	0.03-0.06	6.38-6.54
31/001	Layer	Topsoil	30.00	1.80	0.25-0.31	8.75-9.45
31/002	Deposit	Natural	30.00	1.80	0.02-0.04	8.47-9.12
33/001	Layer	Topsoil	30.00	1.80	0.23-0.30	15.87-16.91
33/002	Deposit	Natural	30.00	1.80	0.03-0.04	15.79-16.56
37/001	Layer	Topsoil	30.00	1.80	0.25-0.28	18.90-19.76
37/002	Deposit	Natural	30.00	1.80	0.03-0.06	18.61-19.50
38/001	Layer	Topsoil	30.00	1.80	0.26-0.31	21.14-21.48
38/002	Deposit	Natural	30.00	1.80	0.04-0.07	20.90-21.24
39/001	Layer	Topsoil	30.00	1.80	0.25-0.30	21.39-21.76
39/002	Deposit	Natural	30.00	1.80	0.02-0.04	21.18-21.50
40/001	Layer	Topsoil	30.00	1.80	0.28-0.30	17.35-18.16
40/002	Deposit	Natural	30.00	1.80	0.04-0.10	17.02-17.86
41/001	Layer	Topsoil	30.00	1.80	0.30-0.36	16.45-16.49
41/002	Deposit	Natural	30.00	1.80	0.03-0.04	16.14-16.17
42/001	Layer	Topsoil	30.00	1.80	0.26-0.32	16.63-17.13
42/002	Deposit	Natural	30.00	1.80	0.03-0.04	16.36-16.83
47/001	Layer	Topsoil	30.00	1.80	0.30-0.34	25.10-25.56
47/002	Deposit	Natural	30.00	1.80	0.03-0.05	24.87-25.21
48/001	Layer	Topsoil	30.00	1.80	0.33-0.40	26.41-26.87
48/002	Deposit	Natural	30.00	1.80	0.02-0.03	26.06-26.51
49/001	Layer	Topsoil	18.50	1.80	0.30-0.40	28.35-28.39
49/002	Deposit	Natural	18.50	1.80	0.05-0.10	27.89-28.08
50/001	Layer	Topsoil	30.00	1.80	0.11-0.15	28.36-28.38
50/002	Layer	Subsoil	30.00	1.80	0.08-0.12	
50/003	Deposit	Natural	30.00	1.80	0.02-0.03	28.14-28.17
51/001	Layer	Topsoil	30.00	1.80	0.18-0.22	21.22-22.83
51/002	Deposit	Natural	30.00	1.80	0.02-0.04	21.05-22.46
52/001	Layer	Topsoil	30.00	1.80	0.24-0.25	21.23-21.53
52/002	Deposit	Natural	30.00	1.80	0.02-0.05	20.87-21.20

<b>Context</b>	<b>Type</b>	<b>Interpretation</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Heights AOD (m)</b>
53/001	Layer	Topsoil	30.00	1.80	0.24-0.25	21.63-22.40
53/002	Deposit	Natural	30.00	1.80	0.05-0.09	21.35-22.09
54/001	Layer	Topsoil	30.00	1.80	0.23-0.25	24.38-25.58
54/002	Deposit	Natural	30.00	1.80	0.02-0.08	24.14-25.24



Appendix 2: Environmental Tables

2a: Residue quantification (\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = > 250), weights in grams

Sample Number	Context	Spit (if relevant eg. cremation)	Context / deposit type	Sample Volume litres	Sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charcoal Identifications	Charred botanicals (other than charcoal)	Weight (g)	Mineralised Botanicals	Weight (g)	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone and microfauna	Weight (g)	Marine Molluscs	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
1	28/004					*	<1	**	1		* cf. Triticum sp. (3).	<1									*	<1							Slag (*1g); FCF (*1g); Mag mat >2mm (**6g); Mag mat <2mm (***/1g)
2	28/005					*	1	*	1		* indet ceralia (1) in charcoal 2-4mm bag	<1			**	60			*	<1	*	<1						Pottery (*18g); Mag mat >2mm (**2g); Mag mat <2mm (***/1g)	

**2b: Flotation Quantification** (\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = > 250)

Sample Number	Context	Spit (if relevant eg. cremation)	Weight (g)	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Other botanical charred	Identifications	Preservation	Min botanicals	Identifications	Preservation	Insects, Fly Pupae etc min	Large mammal bone	Burnt bone	Fish, amphibian, small mammal bone	Land Snail Shells	Marine molluscs	Lithics	Industrial debris hammerscale	
1	28/004		35	450	100	90	5	*	**	***	*		Triticum sp. (1), cereal ia indet. (2)	+	*	cf. Carex sp. (1), Chenopodium sp. (1)	++	*	Triticum spelta/dic occum gb ~8, Poaceae culm (1)	+/ ++												* fas?
2	28/005		3	40	40	90	5		*	***	*		Indet cereal ia, Triticum sp.	+	*	cf Poaceae frag (1), Poaceae med (1)	+/ ++															

**Appendix 3: HER Summary**

<b>Site name / Address:</b> South Woodham Ferrers to Hullbridge Pipeline	
<b>Parish:</b> South Woodham Ferrers/Hullbridge	<b>District:</b> Chelmsford/Rochford
<b>NGR:</b> TQ 8134 9904 to TQ 8098 9294	<b>Site Code:</b> SWFPL18
<b>Type of Work:</b> Watching brief and Evaluation	<b>Site Director:</b> James Alexander & Rob Cullum, Archaeology South-East
<b>Date of Work:</b> April-June, September 2018	<b>Site Area:</b> c.7 km
<b>Location of Finds / Curating Museum:</b> Chelmsford Museum	<b>Funding source:</b> Client
<b>Further Seasons Anticipated?:</b> Unknown	<b>Related HER Nos:</b> None
<b>Final Report:</b> ADS grey lit report	<b>OASIS No:</b> 348176
<b>Periods Represented:</b> Early Iron Age, Late Iron Age/Early Roman, medieval/early post-medieval, undated	
<b>SUMMARY OF FIELDWORK RESULTS:</b>	
<p>An archaeological watching brief, monitoring the topsoil strip of the site compound and the topsoil strip and excavation of pipe trenches in two areas, was undertaken. The excavation of the pipe trenches revealed modern made-ground deposits in Area 1 and subsoil overlying natural deposits in Area 2. No archaeological deposits or features predating the modern period were encountered.</p> <p>Evaluation of the c.7km long x 20m wide water pipeline route from South Woodham Ferrers to Hullbridge comprised the investigation of forty-four trenches, six of which contained a low density of archaeological remains, generally comprising ditches/gullies and pits, with a slight concentration to the north and immediately south of the River Crouch.</p> <p>The presence of an Early Iron Age pit in a ditch in two trenches to the south of the River Crouch suggests a low intensity of land use activity occurred during this period here.</p> <p>Late Iron Age/Early Roman pits and a ditch, again located south of the River Crouch, probably relate to settlement and agricultural activities that may have had some continuity on from the earlier Iron Age activity in this general vicinity.</p> <p>A single demonstrably medieval ditch was recorded south of the river, possibly associated with an undated gully.</p> <p>A low density of possibly medieval but more probably early post-medieval ditches/gullies and a pit were encountered in trenches to either side of the River Crouch. These may relate to agricultural and water management activities in this poorly-draining part of the landscape.</p> <p>Undated remains of ditches and pits were also recorded in various trenches. It is likely that most, if not all, relate to medieval/post-medieval agricultural land use.</p>	
<b>Previous Summaries / Reports:</b>	
None	
<b>Author of Summary:</b> R. Cullum	<b>Date of Summary:</b> 04/04/2019

**Appendix 4: OASIS Form****OASIS ID: 348176****Project details**

Project name	Essex and Suffolk Water Pipeline, South Woodham Ferrers to Hullbridge, Essex
Short description of the project	An archaeological watching brief, monitoring the topsoil strip of the site compound and the topsoil strip and excavation of pipe trenches in two areas, encountered no archaeological deposits or features predating the modern period. Evaluation of the c.7km long x 20m wide water pipeline route comprised the investigation of forty-four trenches, six of which contained a low density of ditches/gullies and pits of Early Iron Age, Late Iron Age/Early Roman and medieval/early post-medieval date.
Project dates	Start: 09-04-2018 End: 13-09-2018
Previous/future work	No / Not known
Any associated project reference codes	180080 - Contracting Unit No.
Any associated project reference codes	SWFPL18 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Other 14 - Recreational usage
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	PIT Early Iron Age
Monument type	PIT Roman
Monument type	DITCH Early Iron Age
Monument type	DITCH Roman
Monument type	DITCH Medieval
Significant Finds	POTTERY Early Iron Age
Significant Finds	POTTERY Medieval
Significant Finds	POTTERY Roman
Significant Finds	CBM Roman
Significant Finds	CBM Medieval
Significant Finds	ANIMAL BONE Roman

**Project location**

Country	England
Site location	ESSEX CHELMSFORD SOUTH WOODHAM FERRERS Essex and Suffolk Water Pipeline, South Woodham Ferrers to Hullbridge
Study area	7 Kilometres
Site coordinates	TQ 580791 195772 50.953339965752 0.250895304242 50 57 12 N 000 15 03 E Point

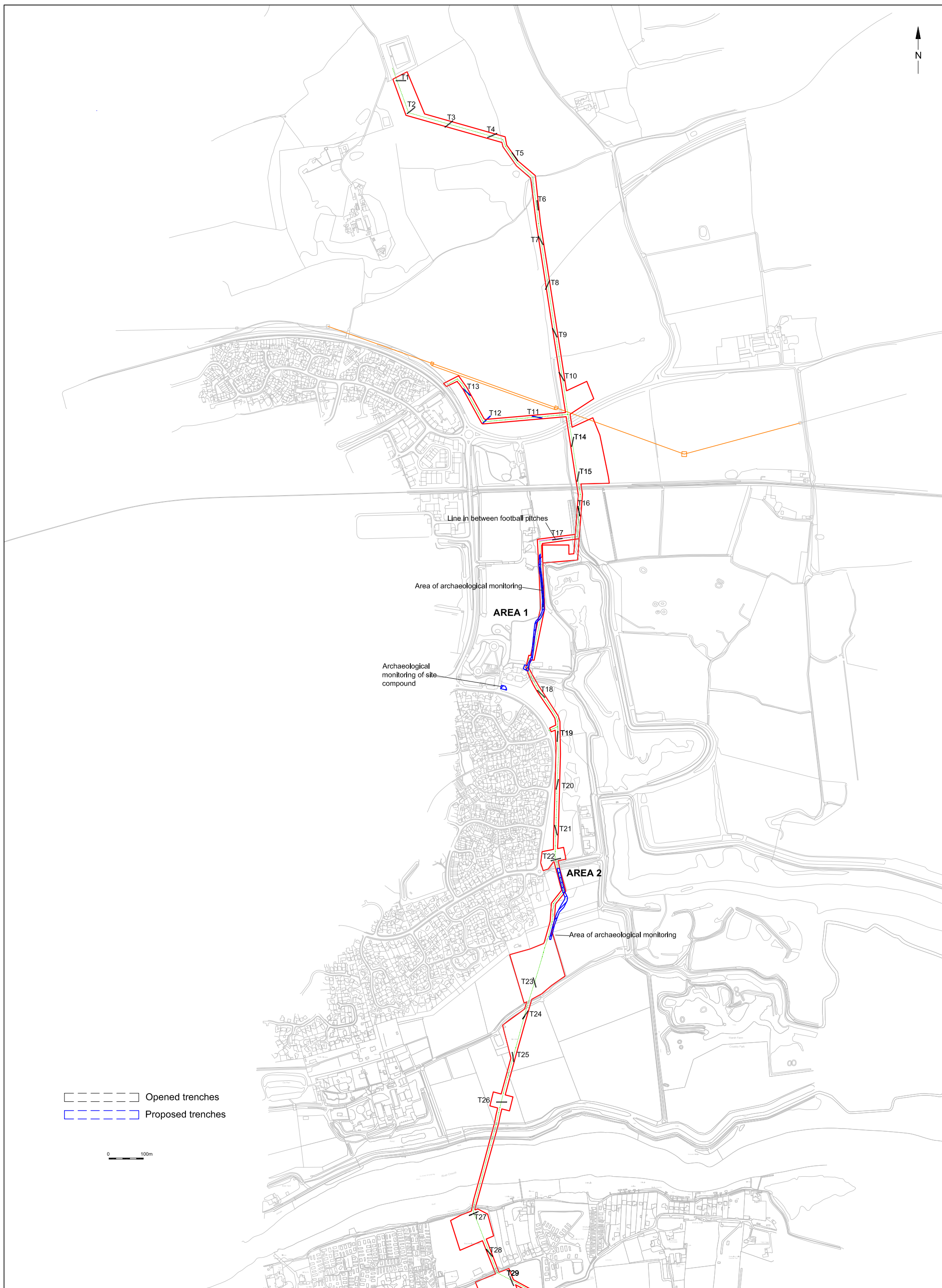
**Project creators**

Name of Organisation	Archaeology South-East
Project brief originator	Essex County Council Place Services
Project design originator	Archaeology South-East
Project	Gemma Stevenson

director/manager	
Project supervisor	James Alexander Rob Cullum
Type of sponsor/funding body	client
<b>Project archives</b>	
Physical Archive recipient	Chelmsford Museum
Physical Contents	"Animal Bones", "Ceramics", "Environmental"
Digital Archive recipient	Chelmsford Museum
Digital Contents	"Animal Bones", "Ceramics", "Environmental", "Stratigraphic"
Digital Media available	"Database", "Images raster / digital photography", "Spreadsheets", "Text"
Paper Archive recipient	Chelmsford Museum
Paper Contents	"Animal Bones", "Ceramics", "Environmental", "Stratigraphic"
Paper Media available	"Context sheet", "Drawing", "Miscellaneous Material", "Photograph", "Plan", "Report", "Section", "Survey "
<b>Project bibliography</b>	
Publication type	Grey literature (unpublished document/manuscript)
Title	Archaeological Monitoring and Trial Trench Evaluation: Essex and Suffolk Water Pipeline, South Woodham Ferrers to Hullbridge, Essex
Author(s)/Editor(s)	Alexander, J. Cullum, R.
Other bibliographic details	ASE Report No. 2018184
Date	2019
Issuer or publisher	ASE
Place of issue or publication	Witham
Description	A4 report approx. 60 pages, including figures and appendices
URL	archaeologydataservice.ac.uk



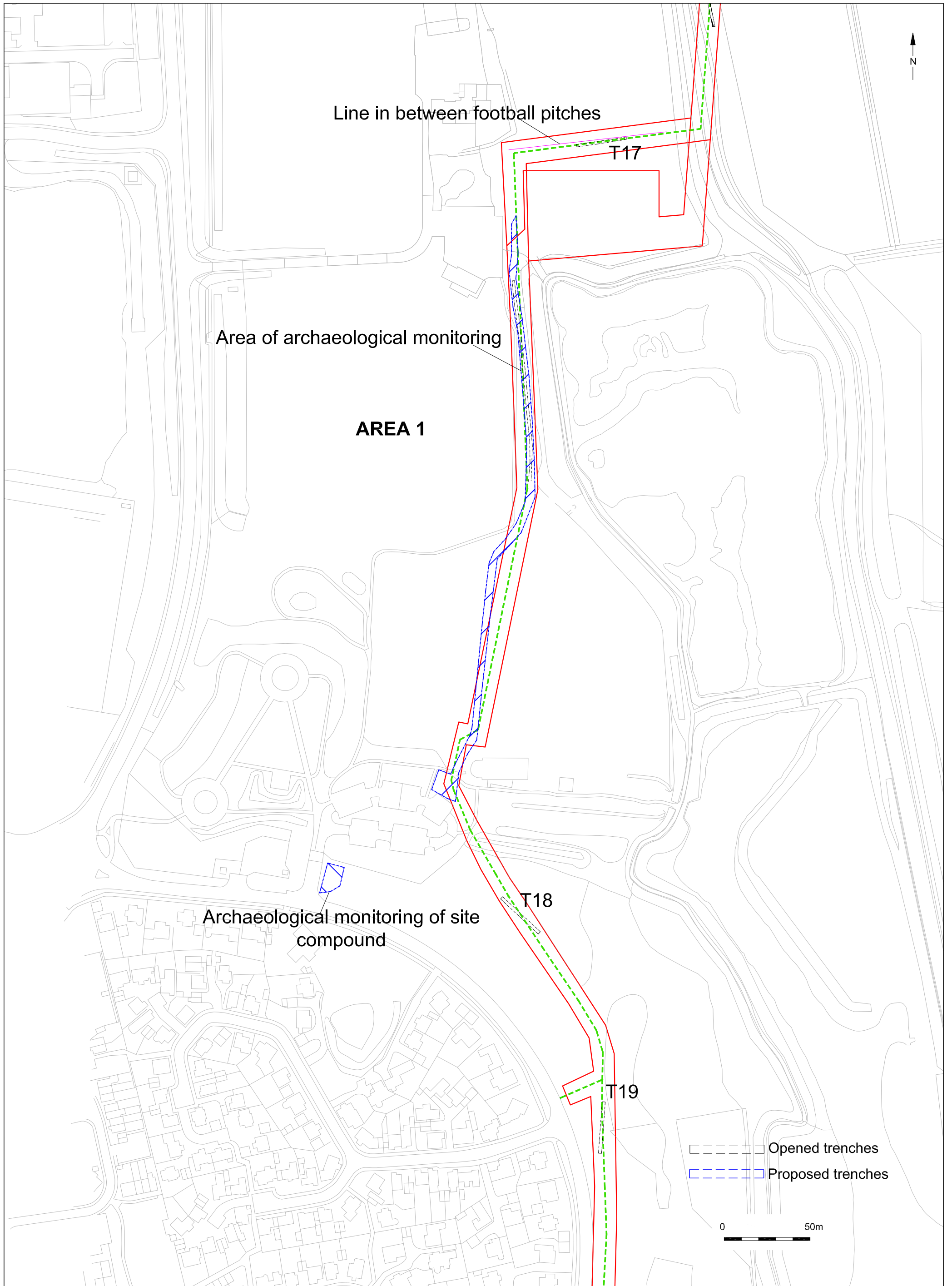
© Archaeology South-East		South Woodham Ferrers to Hullbridge main trunk replacement	Fig. 1
Project Ref: 180080	April 2019	Site location with selected HER references	
Report No: 2018184	Drawn by: SM		

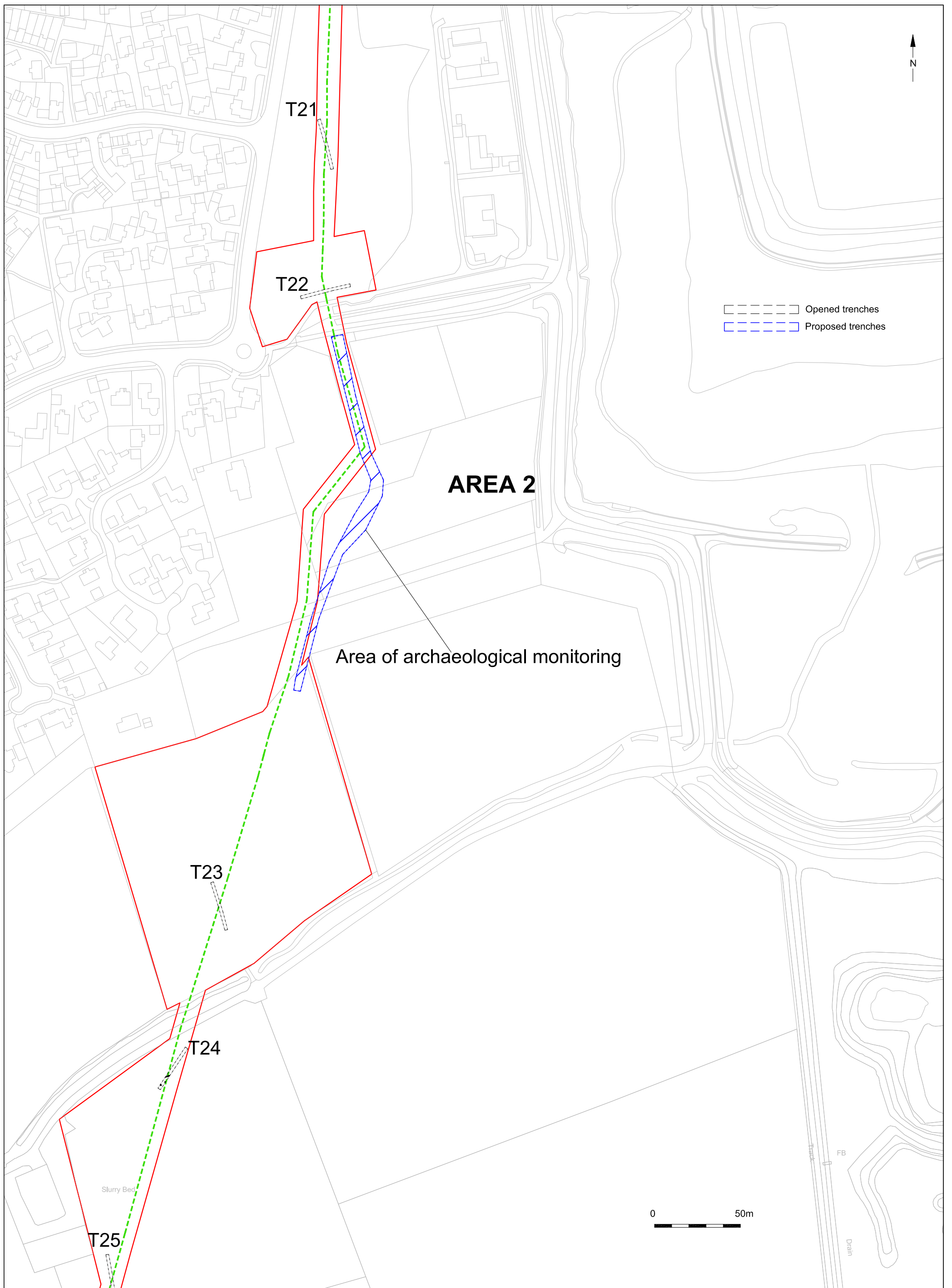


© Archaeology South-East		South Woodham Ferrers to Hullbridge main trunk replacement	Fig. 2
Project Ref: 180080	March 2019	Location plan of archaeological works - north or river Crouch	
Report Ref: 2018184	Drawn by: SM		

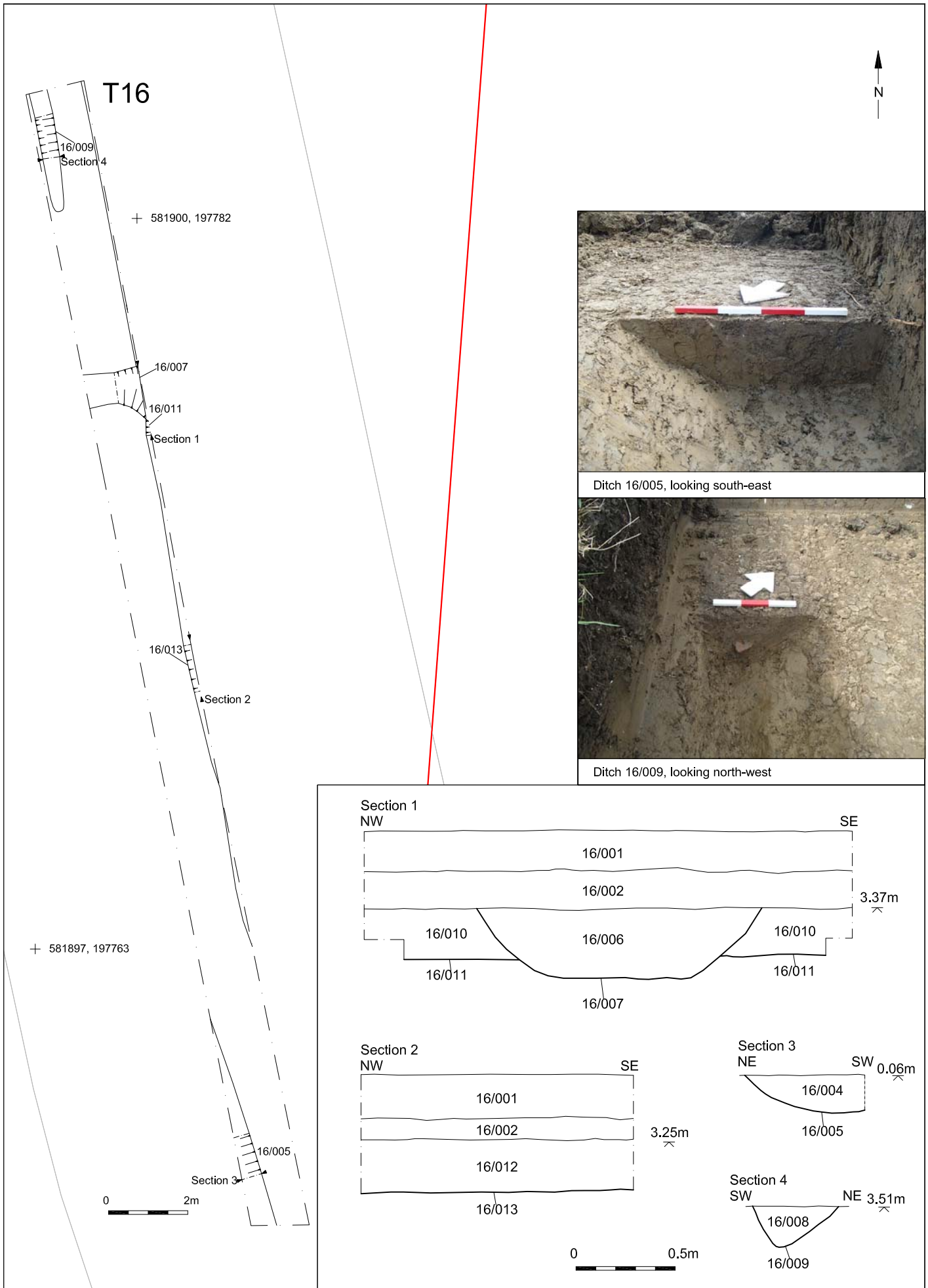




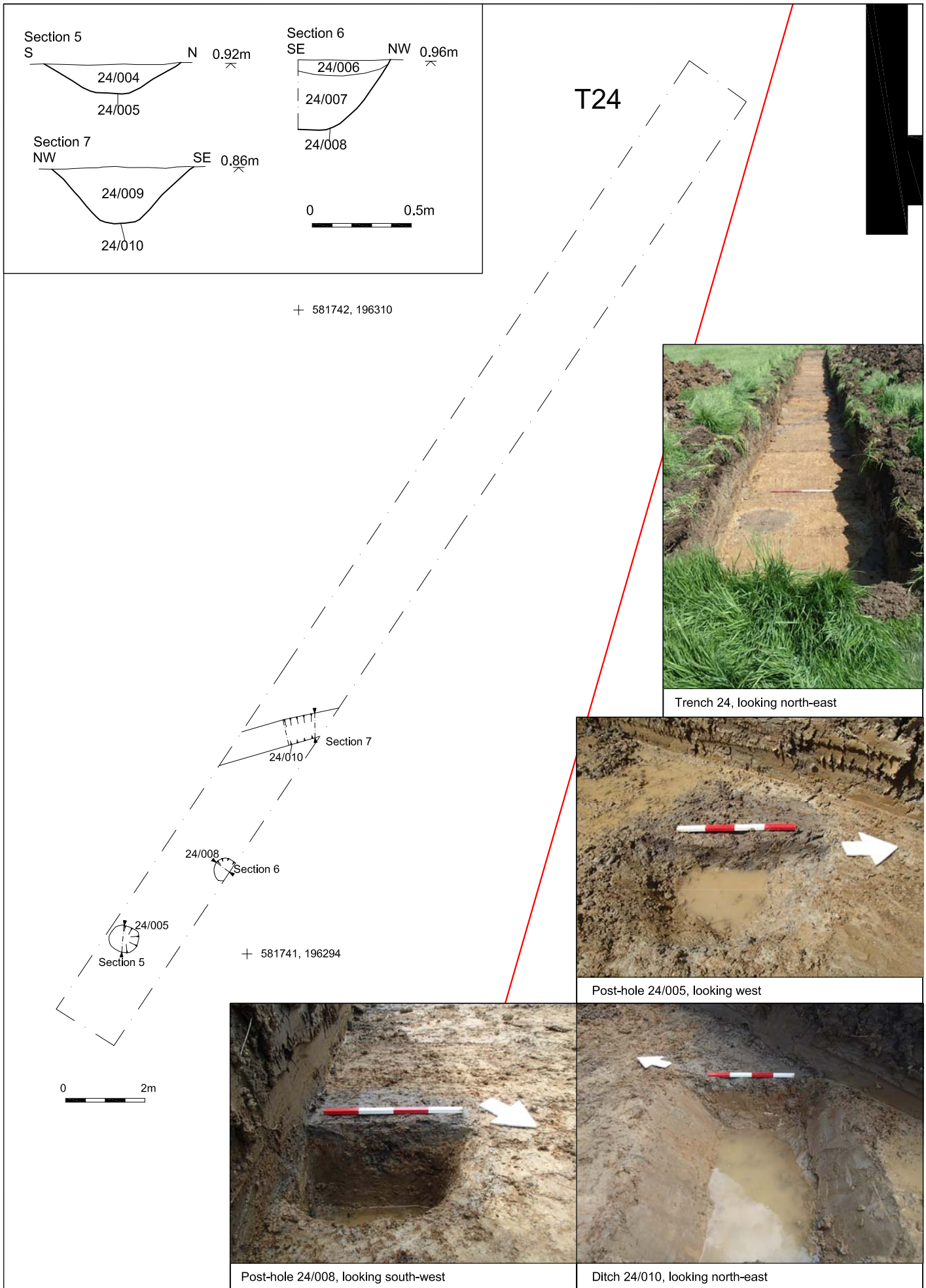




© Archaeology South-East		South Woodham Ferrers to Hullbridge main trunk replacement	Fig. 5
Project Ref: 180080	March 2019	Location plan of archaeological monitoring Area 2	
Report Ref: 2018184	Drawn by: SM		



© Archaeology South-East		South Woodham Ferrers to Hullbridge main trunk replacement	Fig.6
Project Ref: 180080	March 2019	Trench 16: plan, sections and photographs	
Report Ref: 2018184	Drawn by: SM		



© Archaeology South-East		South Woodham Ferrers to Hullbridge main trunk replacement	Fig.7
Project Ref: 180080	March 2019	Trench 24: plan, sections and photographs	
Report Ref: 2018184	Drawn by: SM		

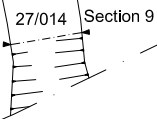


Trench 27, looking south-west

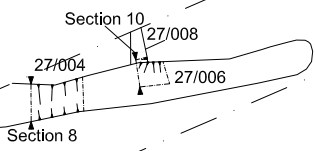
T27



+ 581606, 195728



+ 581579, 195722



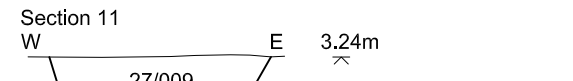
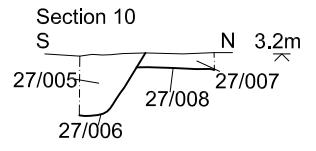
Ditches 27/006 & 27/008, looking west



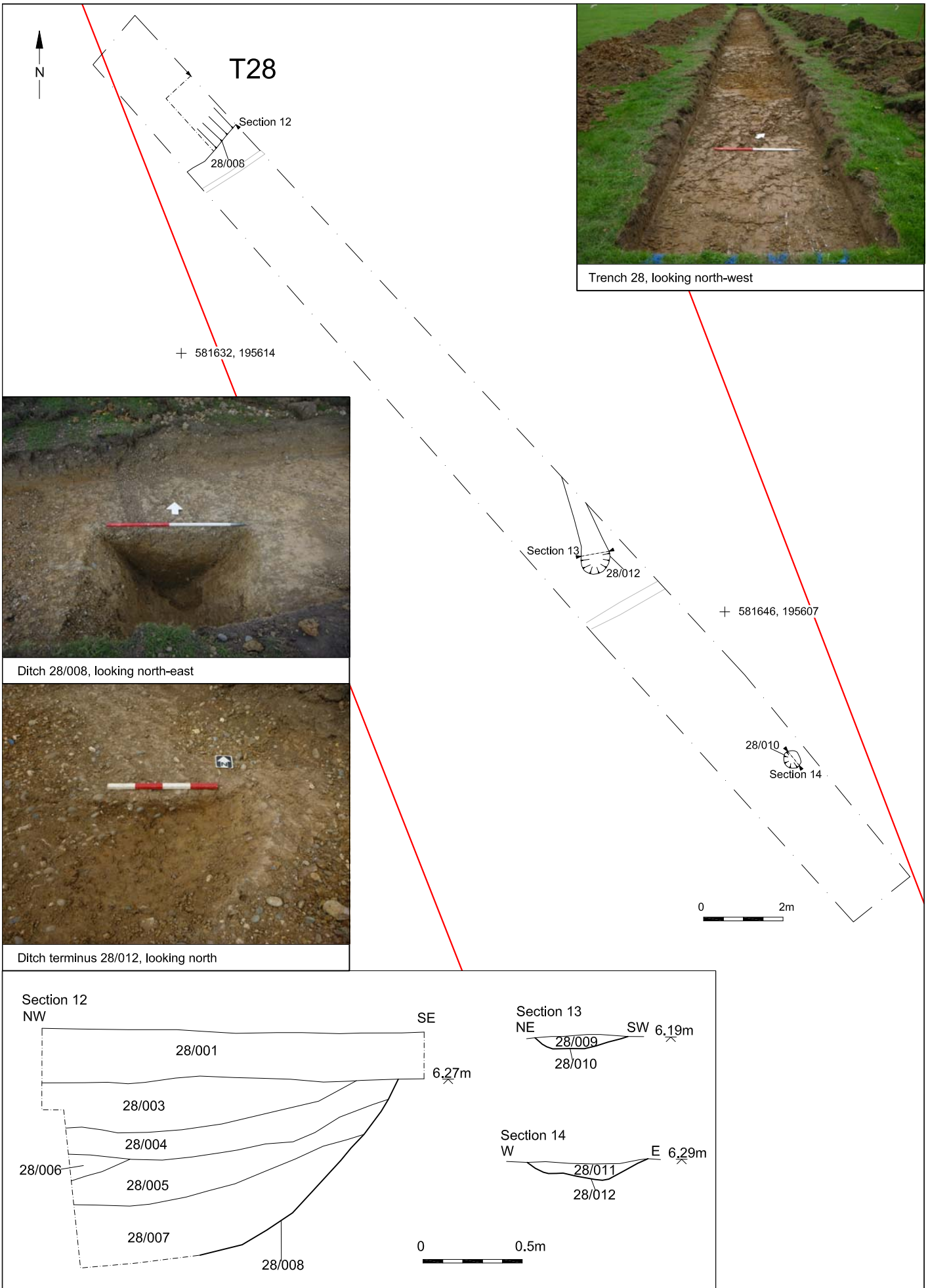
Ditch 27/004, looking north-east



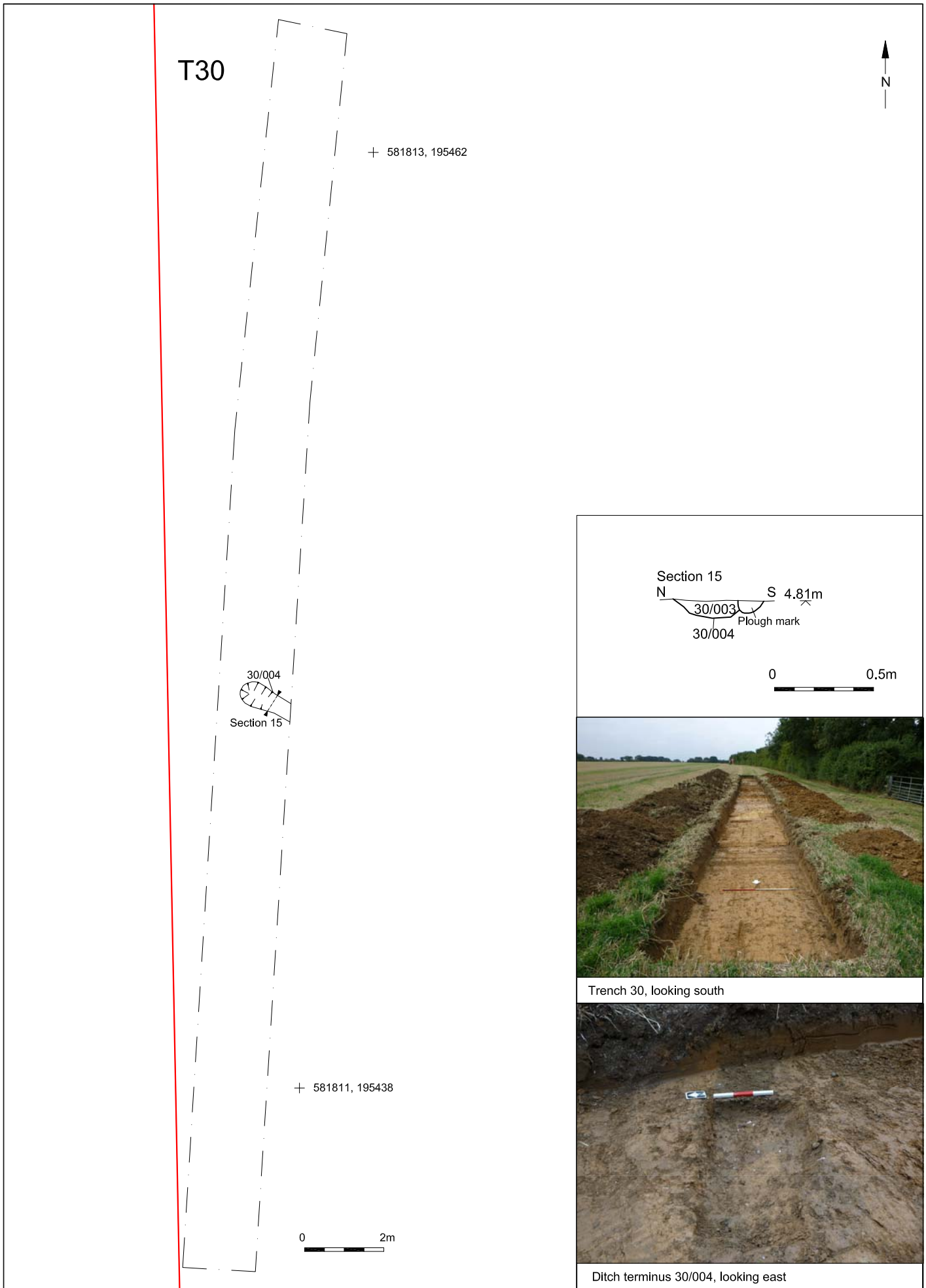
Ditch 27/014, looking north



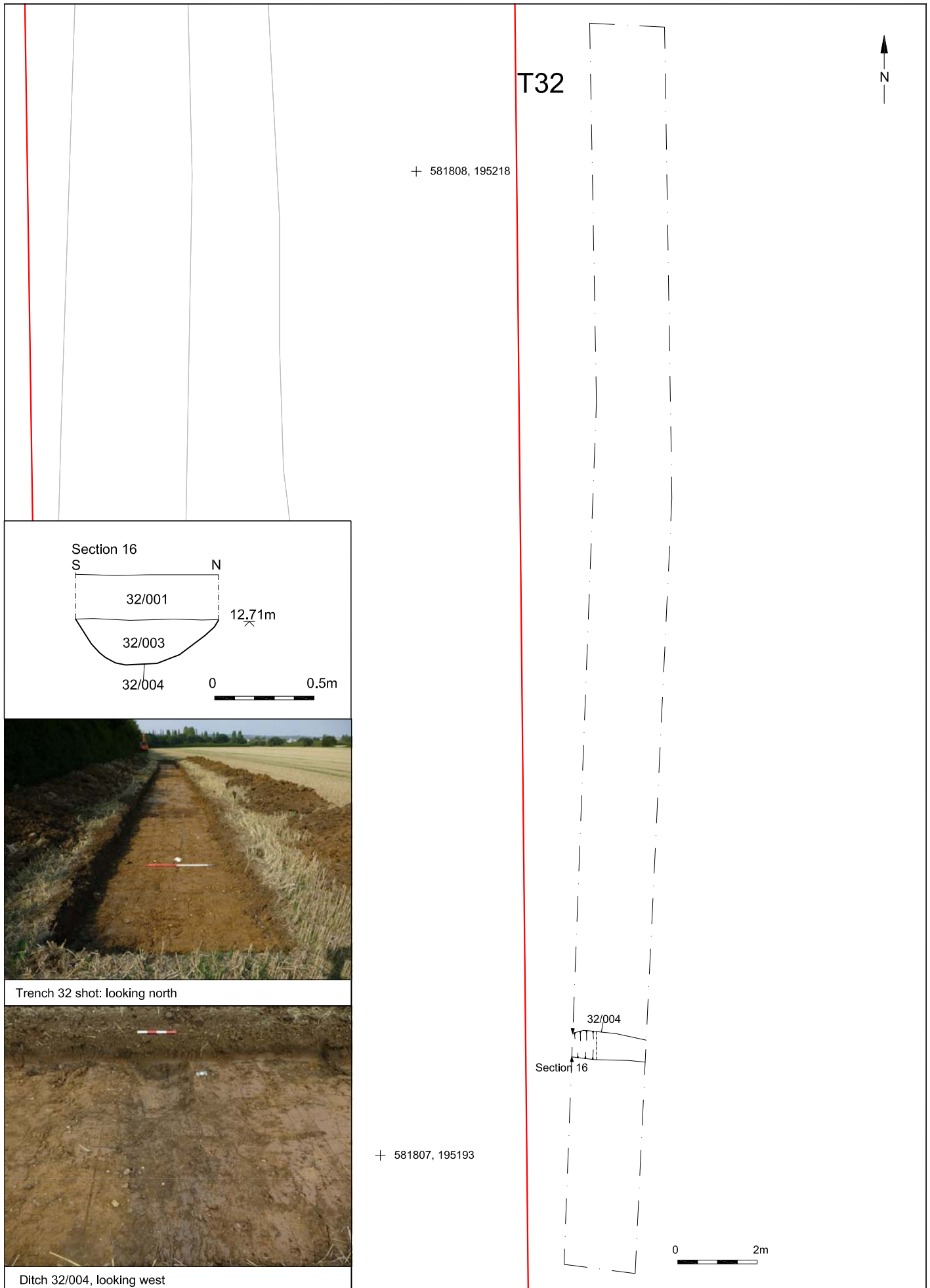
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Project Ref: 180080	March 2019	Trench 27: plan, sections and photographs	
Report Ref: 2018184	Drawn by: SM		



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Project Ref: 180080	March 2019	Trench 28: plan, sections and photographs	
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Project Ref: 180080	March 2019	Trench 30: plan, section and photographs	
Report Ref: 2018184	Drawn by: SM		



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Project Ref: 180080	March 2019	Trench 32: plan, section and photographs	
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Trench 1, looking west

Trench 2, looking south-west

Trench 3, looking north-east

Trench 4, looking south-west

Trench 5, looking north-west

Trench 8, looking south

Trench 6, looking north-west

Trench 7, looking north-west

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Project Ref: 180080	March 2019	Archaeologically negative trench photographs	
Report Ref: 2018184	Drawn by: SM		



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Project Ref: 180080	March 2019	Archaeologically negative trench photographs	
Report Ref: 2018184	Drawn by: SM		



Trench 21, looking south



Trench 22, looking west



Trench 23, looking north



Trench 25, looking north



Trench 26, looking east



Trench 29, looking south-east



Trench 31, looking south

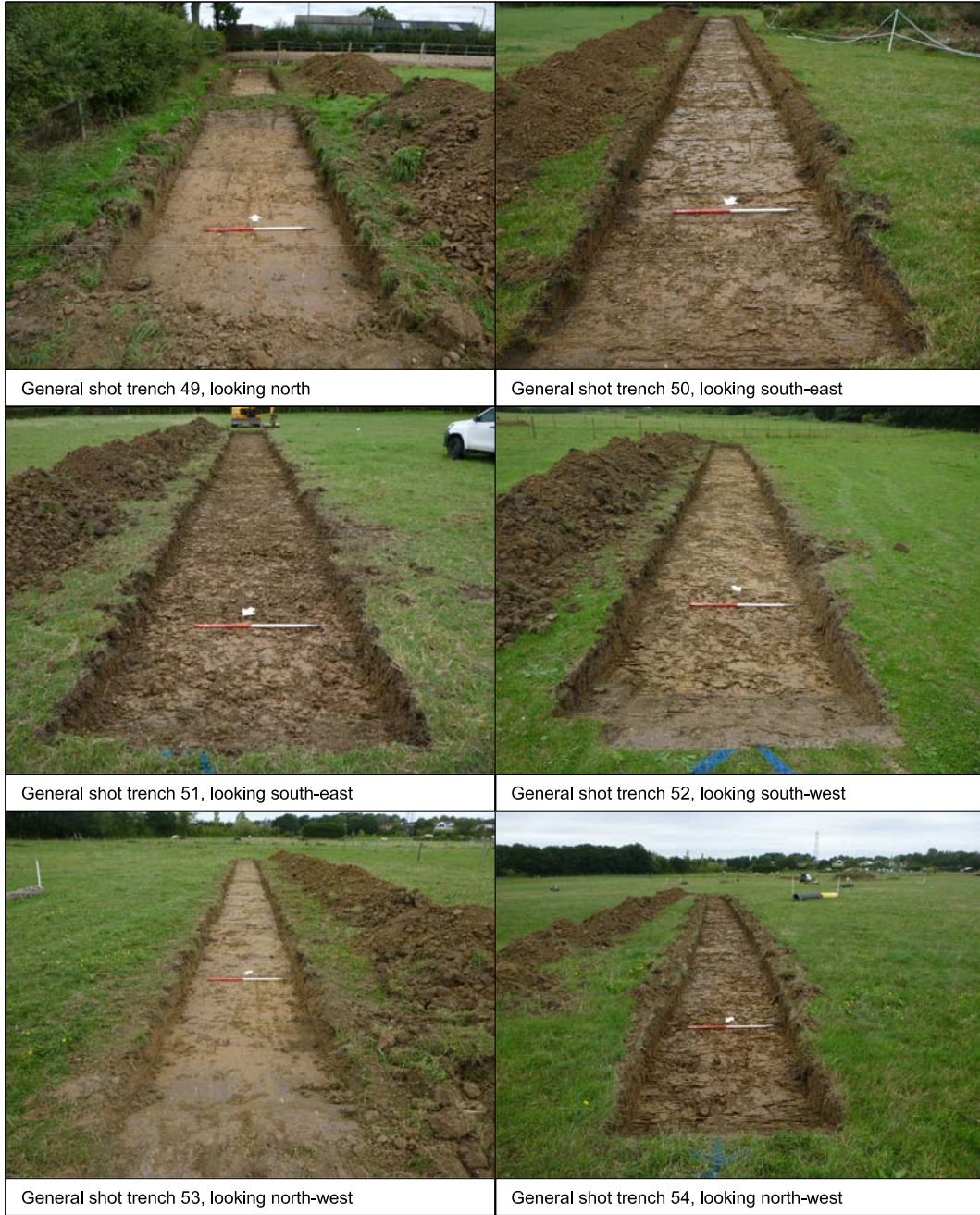


Trench 33, looking north-west

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Project Ref: 180080	March 2019	Archaeologically negative trench photographs	
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Project Ref: 180080	March 2019	Archaeologically negative trench photographs	
Report Ref: 2018184	Drawn by: SM		



© Archaeology South-East		South Woodham Ferrers to Hullbridge main trunk replacement	Fig.16
Project Ref: 180080	March 2019	Archaeologically negative trench photographs	
Report Ref: 2018184	Drawn by: SM		

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