

**Land North of Maldon, Essex
Geotechnical Investigations (Phase 1)**

Archaeological Monitoring Report

**ASE Project No: 160054
Site Code: HYLN16**

ASE Report No: 2016042



February 2016



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Abstract

Archaeology South-East undertook a programme of archaeological monitoring during the excavation of 41 geotechnical test pits across a large area of agricultural land to the north of Maldon, Essex. Numerous cropmarks have been identified across the area and nearby archaeological investigations at Langford Hall Reservoir have identified prehistoric to Roman remains.

Archaeological remains were identified in four pits; a deposit containing a single sherd of 1st century AD pottery, a gravel layer which may be the surface of a trackway, an undated pit and an infilled post-medieval gravel pit. Whilst not individually significant they demonstrate that archaeological remains are present.

The geological sequence has also been recorded and comprises a sequence of superficial deposits of clayey sands and gravels and silty sands and gravels over the London Clay.

It should be noted services are present on site; these include a buried gas main and high powered electricity overhead lines.

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1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE) was commissioned by RPS to undertake a programme of archaeological monitoring and recording during the excavation of geotechnical test pits within an area of land to the north of the town of Maldon, Essex (Fig. 1).

1.1.2 An area of c.80 hectares of land situated to the north of Langford Road and Heybridge, is proposed for development. Countryside Properties PLC is understood to be preparing a masterplan for these works. The development lies approximately to the south of a line of electricity pylons which bisect the site on a roughly south-west to north-east axis. As part of the development a new flood embankment and associated drainage ditch system (Fig. 1) is planned for construction along the northern edge of the development area (PDA). The excavation of geotechnical test pits along the route of the embankment was subject to archaeological monitoring and recording. For the purposes of this report the 'Site' has been taken to be those fields through which the embankment runs and in which test pits were excavated, rather than the PDA as a whole. Further geotechnical investigations may be undertaken at a future date over the wider PDA (Richard Jackson Ltd., Pers. Comm.).

1.1.3 Both the PDA and the Site lie within an archaeologically sensitive area. Extensive cropmark complexes have been recorded within the PDA (e.g. Fig. 3), prehistoric ring-ditches, field systems and trackways have all been excavated at Langford Hall Reservoir and the Late Iron Age and Roman settlement at Elms Farm lies to its south (discussed in more detail below). Accordingly a programme of archaeological works is being undertaken to inform the scheme, under the direction of RPS (Archaeological Consultants for Countryside Properties) and Essex County Council (ECC) Place Services (Archaeological Advisors to the Local Planning Authority, Maldon District Council).

1.1.4 These monitoring works are part of this wider programme of works which have, to date, included Archaeological Desk-Based Assessment (OAE 2014) and Geophysical Survey (Britannia Archaeology 2014).

1.2 Geology and Topography

1.2.1 The site is located in an area of farmland to the north of Heybridge and the east of the village of Langford. It is bounded to the west by Langford Road and a disused railway line, to the north by agricultural tracks and field boundaries and to the west by Broad Street Green road. The southern part of the site is also delineated by field boundaries. Boundaries are typically defined by water-filled drainage ditches, with some hedgerows. The site is bisected by Maypole Road, which leads to Wickham Bishops, a village lying to the north and west of the site.

1.2.2 The site lies on the northern side of the River Blackwater, close to its confluence with the River Chelmer at Beeleigh. This river system, which has

been partially canalised as the Langford Cut and Chelmer and Blackwater Navigation, feeds into the Blackwater Estuary at Maldon/Heybridge. The site is situated on a south/south-east facing slope which drops from its highest point at 12mAOD in the vicinity of Howells Farm Offices to c.5.5mAOD in the vicinity of Mitchells Farm to the south. Reference to the topographic survey of the site, provided by Richard Jackson Engineering, shows a number of imperceptible dry 'valleys' incised into the valley sides; Maypole Lane would appear to run along one of these, there being a notable variation in the heights of the fields to its west and east in the vicinity of TP 216. To the north of the site the landscape rises to the 'Tiptree Ridge' to the north.

- 1.2.3 The solid geology of the site is mapped as the London Clay Formation (BGS Geology of Britain Viewer, accessed Feb. 2016), deposited c. 50 million years ago. It is overlain in the area of the Chelmer and Blackwater by a complex sequence of Superficial (Drift) Deposits related to the Anglian Glaciation, the retreat of the ice and development of the river systems through the Quaternary Period (inter and post-glacial). The evolution of the river systems in the area can be summarised as follows (after Bristow 1985).
- 1.2.4 During the Anglian the glacial ice margin extended south to the Tiptree Ridge (Fig. 2) and Danbury Hill, plugging a gap in this ridge which was incised by the River Brain - the Brain Gap. A 'tunnel valley' was incised below the ice to the north of the ridge. Mapped deposits in mid Essex of Anglian date include 'Boulder Clay' (e.g. Maldon Till/Springfield Till), Sands and Gravels (Chelmsford/Danbury Gravels).
- 1.2.5 In the Late Anglian the ice retreated back from the ridge, and the 4th and 5th terraces formed in the gap. A (geologically) short-lived lake was established to the north of the ridge which was drained when the River Brain/Domsey Brook resumed its course through the Brain Gap. The route of the Chelmer was also re-established. The former lake was infilled by the 3rd terrace gravels and lacustrine deposits which have been subsequently weathered.
- 1.2.6 By the Hoxnian the river patterns had been established in roughly their present courses. During subsequent cold-warm climatic cycles, a process of down-cutting and deposition (e.g. Bridgland 2000) reworked local gravels to form river terrace deposits.
- 1.2.7 Along the River Chelmer, River Terrace Deposit 1 (RTD1) and River Terrace Deposit 2 (RTD 2) date to interglacial periods, that is intervals of warmer temperatures separating the glacial periods in an ice age; RTD 1 is dated to the Ipswichian Interglacial, MIS 5e, about 100,000– 120,000 years age and RTD 2 can be inferred to relate to the next oldest interglacial, informally known as the Aveley Terrace, dated to MIS 7, about 200,000 years ago. The deposits are described as comprising angular to sub-rounded flints, quartzite pebbles and quartzite sands with more fines.
- 1.2.8 Along the River Blackwater five terraces have been identified, the earliest of which (5th, 4th and 3rd - discussed above) lie to the rear (north) of the Tiptree ridge (Bristow 1985). The 2nd Terrace extends along much of the River Blackwater, merging with the 2nd terrace of the Chelmer at the confluence of the two rivers (Fig. 2). The 1st terrace is sporadically

developed along the course of the river. It is thought that these terraces correlate directly with those of the Chelmer (Bristow 1985). Observations have noted no significant variation between the composition of the 1st and 2nd terraces to the east of the Blackwater, and irregular patches of Brickearth have been recorded overlying them in some places (Bristow 1985).

- 1.2.9 The site lies largely on mapped RTD 2 deposits (sands and gravel), with a band of Head (Undifferentiated) along its northern extents. Mapped 'Head' is typically made up of heterogeneous deposits which don't fall into a specific division and can result from solifluxion, periglacial freeze/thaw movement, etc (Bristow 1985). The sheet memoir for this area, whilst of some age, notes that these deposits are only mapped if greater than 1m in thickness and that they are difficult to distinguish from the parent geological body or weathered *in situ* deposits (Bristow 1985). Reference to the geological and topographic mapping (Fig. 2), and the development of the area, would suggest that the Head deposits on the site are perhaps most likely to have derived from Glaciofluvial Deposits/ London Clay.

1.3 Planning Background

- 1.3.1 This land north of Maldon is proposed for development in line with the emerging Maldon District Local Development Plan¹. The LDP includes a draft Strategic Masterplan Framework (SMF) for the development of the 'North Heybridge Garden Suburb'. The SMF defines the key development principles and strategic concepts, provides guidance to inform detailed masterplans at the planning application stage.
- 1.3.2 As noted above, the site lies within a wider area of established archaeological significance and as such, during pre-planning discussions, ECC Place Services, who provide advice to MDC on archaeological matters, requested that an Archaeological Desk-Based Assessment be undertaken as a first stage of works (OAE 2014).
- 1.3.3 A part outline/part detailed planning application has been submitted by Countryside Properties for development (MAL/00419/OUT) for mixed use development including residential development, residential care and neighbourhood facilities².
- 1.3.4 As nearby central Heybridge and the area south of Holloway Road are affected by localised flooding resulting from the volumes of water running from the area to the north in severe weather into the constrained Heybridge system (SMF). Accordingly the LDP seeks to implement strategic flood alleviation infrastructure to address this. Thus the Countryside Properties application (MAL/00419/OUT) includes detail of the flood alleviation strategy, including the Flood Alleviation Bund, which is the subject of the current geotechnical investigations.

1.4 Aims and Objectives

- 1.4.1 The general aim of the archaeological works was to determine the presence or absence of any archaeological remains impacted by geotechnical test-pitting and, if possible, to establish the extent, date and character and significance of any such remains in order to contribute to the development of archaeological mitigation strategies for the proposed development.
- 1.4.2 Given the geological and archaeological background to the site, discussed in Section 2.0, particular consideration was to be given to:
- The location of any surviving archaeological remains (including surface artefacts in the vicinity of the pits);
 - The recording of the stratigraphic sequence of archaeological deposits/features; and
 - The recording of the geological deposits.
- 1.4.3 All significant discoveries were to be investigated and assessed in relation to relevant regional research questions as identified in: *Research and Archaeology: A Framework for the Eastern Counties 2. Research agenda*

¹ http://www.maldon.gov.uk/info/856/local_development_plan/83/maldon_district_local_development_plan_ldp/12

² <http://www.heybridgenorth.co.uk/index.html>

and strategy (Brown and Glazebrook 2000) and *Research and Archaeology Revised: A Revised Framework for the East of England* (Medlycott 2011).

1.5 Scope of Report

- 1.5.1 This report details the results of the archaeological monitoring undertaken by Ellen Heppell (ASE Senior Archaeologist) in January and February 2016. The fieldwork was project managed by Andy Leonard and the post-excavation process by Jim Stevenson.

2.0 ARCHAEOLOGICAL BACKGROUND

2.1 Introduction

- 2.1.1 The Archaeological Desk-Based Assessment, undertaken as a first stage of works provides an extensive archaeological background to the PDA and the site and, as such, only a summary of the immediately relevant material is provided here (OAE 2014).
- 2.1.2 Overall, the archaeological background illustrates that the area is one of considerable archaeological interest, with remains of prehistoric, Roman and Saxon date being recorded within the PDA and the vicinity, extending the full east-west width of the PDA to the south.

2.2 Prehistoric

- 2.2.1 Evidence of early prehistoric activity in the vicinity of the PDA is limited, with no recorded Palaeolithic remains and those of the Mesolithic limited to artefacts. However, cremated remains, subsequently interpreted to be redeposited pyre debris, were found in a pit c. 2km west of the site during works along a replacement effluent pipeline route in 2014. Radiocarbon dating has established these to be of Mesolithic date (Gilmour and Loe 2015).
- 2.2.2 The Neolithic period is far better represented in the record. Archaeological excavation at Langford Hall Reservoir, within the PDA, recorded two round barrows of middle-later Neolithic date, the remains of which comprised rings-ditches, cremation burials, pits, post-holes and stake holes (Cooper-Reade 1996; Roy and Heppell forthcoming). One of the barrows was re-modelled in the Middle Bronze Age.
- 2.2.3 These ring-ditches, which had not been visible on aerial photographs, were situated within a landscape of extensive cropmark complexes which include more ring-ditches, linear features, trackways and enclosures (e.g. OAE 2014, fig. 4; Fig. 3 this report). Where investigated at the reservoir, it was concluded that number of these enclosures were established by the Middle Iron Age, and may perhaps have had earlier origins. These enclosure ditches were augmented by the addition of a trackway, which was surfaced or at least repaired with silt and gravel 'metalling' in places (Roy and Heppell forthcoming).
- 2.2.4 On the north-eastern edge of the site a Middle Iron Age settlement was identified at Howell's Farm. To the south-east of the PDA archaeological investigations at Heybridge Hall/Heybridge Chalet site also identified a multi-phase landscape which included some prehistoric pits (Archaeological Solutions 2006).

2.3 Late Iron Age and Roman

- 2.3.1 To the south of the Site, close to the confluence of the Blackwater and Chelmer rivers, an important Late Iron Age settlement was established at Elms Farm (e.g. Atkinson and Preston 1998 and 2015; Barber 1994; Langton

and Holbrook 1997; Timby 1993; Wickenden 1986), with further occupation and land use evidence in the general surrounding area. Around the time of the Conquest, the settlement was 'Romanised' with a more structured layout, public areas and temples. The settlement spanned the 1st-4th centuries. Remains of extensive field systems have been investigated on the northern periphery of this settlement. The PDA is likely to have fallen within the same agricultural hinterland of this significant Late Iron Age and Roman settlement.

- 2.3.2 At the Langford Reservoir site the prehistoric trackway seems to have continued in use, although the system of enclosures was replaced by a new field system at some point in the Late Iron Age/ Roman period (Roy and Heppell forthcoming).
- 2.3.3 Evidence of Iron Age settlement has also been found elsewhere to the south of the PDA for example at the site of the new cemetery in Heybridge. At the Heybridge Hall/Heybridge Chalet site an Iron Age enclosure and associated features were identified along with two cremations (Archaeological Solutions 2006).
- 2.3.4 At Heybridge Primary School, Rowan Way, to the east of the site, Late Iron Age features and pottery were recorded which suggested the presence of a farmstead in the vicinity situated within a widespread field-system (Ennis 2010).
- 2.3.4 It has been suggested that both Maypole Road and Holloway Road may have their origins as Roman road (OAE 2014).

2.4 Anglo-Saxon

- 2.4.1 Although the Roman settlement at Elms Farm declined in the 4th century AD and was probably abandoned, Early Saxon occupation was established on its northern peripheries, at Crescent Road, with some lesser occupation activity within the remains of the former Roman settlement (Atkinson and Preston 1998 and 2015; Drury and Wickenden 1982; Wickenden 1986).
- 2.4.2 At the Heybridge Hall/Heybridge Chalet site an Anglo-Saxon cremation cemetery was identified, situated within a complex of linear features and penannular enclosures (Newton 2008).

2.5 Medieval and Post-Medieval

- 2.5.1 Medieval activity in the area is less well represented in the archaeological record. Nearby settlement was probably focussed in the vicinity of the parish churches of Langford and Heybridge, with scattered farmsteads and motes.
- 2.5.2 It is possible that the current field system, which is much the same as that depicted on historic 19th century mapping, has its origins in the Medieval period. Subsequent centuries have seen some gradual alterations to the field system but no significant changes.

3.0 ARCHAEOLOGICAL METHODOLOGY

3.1 Fieldwork Methodology

3.1.1 The archaeological monitoring was undertaken during the excavation of 35 of the 41 test-pits, each of which has been assigned an individual number which has been used by both the archaeological and geotechnical teams. The draft geotechnical logs were obtained from Ground Engineering Ltd. (the contractor). These contained information with regards to deposit strata in each of the pits along with various comments. The data from the logs for those pits not subject to archaeological monitoring has been incorporated with the archaeological records. The observations for each test pit were inputted into a single table for the purposes of analysis and interpretation. These are provided in tabulated form in Appendix 1 of this report. The locations of the test pits and selected photographs are presented on Figures 4, 5 and 6.

3.1.2 The locations of the test pits were set-out by the engineers in advance of the works. In the majority of cases the test-pits were excavated in these locations but a number had to be moved due to the presence of obstructions such as services (a gas main and high powered overhead cables). Test Pits 203, 204, 220, 221 and 224 were moved, their locations, as indicated on the plans in this report, are indicative, obtained by Mobile Phone GPS. Seven additional pits, 206, and 206GP1-6, were excavated in the vicinity of a gravel pit shown on the 1st Edition of the Ordnance Survey, 1876 (Fig. 5). The locations of these pits are also indicative.

3.1.3 Watching brief record sheets were completed and additional written, drawn and photographic records made as appropriate.

3.1.4 For the purposes of these works individual Context Numbers were not assigned to each strata observed where they were principally geological in character. In the case of those pits in which archaeological features or deposits were identified context numbers have been used.

3.1.5 Where artefacts were identified they were retained for specialist analysis, with the exception of clearly post-medieval material; indeed very few were present and comprised only occasional fragments of clearly post-medieval and modern brick and roof tile, along with ceramic field drains both as fragments on the surface and in Test Pit 223. In those fields with a ploughed surface a general background scatter of post-medieval material was present, consisted with the results of earlier fieldwalking which has been undertaken in the past on parts of the site (Lavender 1991). These are likely to be derived from manuring scatters.

3.1.6 No bulk soil samples for environmental study were collected as part of these works.

3.2 Site Archive

3.2.1 The site archive is currently held at ASE offices and will be deposited with Colchester Museum in due course. The contents of the archive are tabulated

below (Table 1).

Number of Contexts	23
No. of files/paper record	1 file incl. 35 test pit record sheets
Plan and sections sheets	0
Bulk Samples	0
Photographs	111 (Digital)
Bulk finds	1 x sherd
Registered finds	0
Environmental flots/residue	0

Table 1: Quantification of site archive

4.0 RESULTS

4.1 Overview

4.1.1 The following section of the report describes the results of the archaeological monitoring.

4.2 Deposit Sequence

4.2.1 The geological deposit sequence across the site was broadly comparable but, given the complex nature of the superficial geology in the area, made up of a number of different strata. For the purposes of this report summary descriptions of the lithology of each strata were prepared (see Appendix 1) and assigned to more general units based on their physical characteristics. The character and distribution of these units is discussed below.

4.2.2 Topsoil/Subsoil: Topsoil was present in each test pit and generally comprised a soft, dark grey brown, friable clayey sandy loam with frequent gravel inclusions (generally rounded to sub-angular). The boundary between this deposits and the underlying subsoil, a slightly paler material with similar characteristics, was poorly distinguished in most cases and as such a separate subsoil layer was only identified in nine of the test pits. Topsoil/Subsoil was generally c.0.3m to 0.6m thick.

4.2.3 Unit A: This deposit comprised an orange/ light brown silty clay which was slightly sandy. It had a clean appearance and few inclusions and was between c. 0.2m and 0.9m thick. It is best described as a 'Brickearth'. This deposit was identified in the majority of the test pits and there was no clear pattern to its distribution, for example it does not correlate with the mapped distribution of Head deposits. The stratigraphic position of this deposit, above sands and gravels (discussed below) would suggest that, whilst similar in character to 'Head Brickearth' mapped elsewhere in the Chelmer and Blackwater area (Bristow 1985, 37), it is not this unit, but more akin to a solifluxion deposit arising from the weathering of upslope clayey deposits.

Unit B: This unit comprises various strata of sandy gravels, visible in layers, which are within a clayey matrix which is their unifying characteristic. The gravels are typically rounded to sub-angular and small, with occasional cobbles. The deposits which make up this unit are typically brownish orange in colour, and become a cleaner orange with depth. Pockets and bands of grey silty sandy gravels (Test Pits 210, 212, 220, 227 and 229) and fine orange/grey clayey sand (Test Pits 213, 217, 220, 221, 222, 233) were present within the strata, perhaps relating to localised variations in the depositional environment. There was generally a sharp boundary between Unit B and the immediately underlying units. Water seepage also generally occurred at this interface. As with Unit A there is no clear distribution of Unit B in relation to the mapped geology and it is not possible to correlate it with a specific geological unit.

4.2.4 Unit C: This Unit comprises a brownish silty clay which was distinguished from Unit B as it only contained a small proportion of gravel. It only occurred in Test Pits 205, 206, 209, 212, 216 and 219.

- 4.2.5 Unit D: This Unit comprised various silty sands and gravels which were characterised by their loose nature in contact to the compact clayey sands and gravels of Unit C. The sands were typically coarse with some grit and the gravel component rounded to angular. Colours comprised a mix of grey and orange strata, with some evidence of iron-pan/iron staining, typically towards the interface with Unit B/C. Unit D is interpreted as being a River Terrace Deposit.
- 4.2.6 The solid geology, London Clay, was only identified in Test Pit 225 at 2.4m below the Present Surface Level (6.63m AOD).

4.3 Archaeological Remains

- 4.3.1 Archaeological remains were identified in four of the Test Pits (Fig. 3). They comprised an infilled post-medieval gravel pit, a small undated feature, a layer of gravel which may be part of a trackway and a silty clay layer containing a single sherd of 1st century pottery. Whilst occasional fragments of CBM were noted within pits 206 and 216 these were not retained for specialist analysis as they were very small and undiagnostic.

Test Pit 206

- 4.3.2 The infilled remains of an old gravel pit were identified in Test Pit 206 (Fig. 5), located to the east of Maypole Road. A slight hollow was visible in the ground surface in this area. The base of the cut for the gravel pit was identified but the sides were not. The deposit sequence in the pit was as follows:
- Context 206-001: Topsoil (0.55m thick)
 - Context 206-002: Infill. Dark grey black slightly gravelly sandy clay with occasional CBM fragments (0.25m thick)
 - Context 206-003: Infill. Brown slightly gravelly sandy clay with occasional fragments of charcoal and CBM (0.4m thick)
 - Context 206-004: Infill. Light brown coarse sand and gravel with grit and occasional ash fragments (1.1m thick)
 - Context 206-005: Basal fill. Dark grey-black slightly sandy slightly silty clay with fragments of organic debris towards the base of the pit, 2.4m (> 0.2m thick). Bottom of the Gravel Pit.
 - Test pit abandoned at 2.5m due to collapse.
- 4.3.3 Whilst this feature contained no dating material, the CBM components in its fills being occasional and very small, reference to the First Edition of the Ordnance Survey (1876) shows a 'Gravel Pit' at this location. This small pit was presumably excavated to obtain material to repair the adjacent road. It had been infilled by 1897, by which time the field boundary immediately to its south was established.
- 4.3.4 An additional six test pits were excavated in the vicinity of Test Pit 206 to establish the extents of the infilled gravel pit. The backfill deposits were noted in Test Pits 206GP4 (c. 10m to the west of 206), 206GP1 (c. 10m south of 206) and 206GP5 (c. 20m south of 206). The depth of the pit, recorded at c. 2.4m in 206, shallowed off to the west (c.1.8m) and south (c.1.4m). The fill sequence was as noted in Test Pit 206 and as with 206 these pits were unstable and prone to collapse.

4.3.5 The natural deposit sequence only was noted in Test Pits 206GP2 (c. 10m east of 206), 206GP3 (c. 10m north of 206) and 206GP6 (c. 30m south of 206), indicating that the pit did not extend to these locations.

Test Pit 212

4.3.6 A small pit was recorded in the east facing section of Test Pit 212 (Fig. 4 B), which lay to the west of Maypole Lane and north of Mitchells Barn. This feature, 212-003, was c. 0.9m wide and c. 0.4m deep with a rounded base. As it was only visible in one section it has been interpreted as pit rather than a ditch but could conceivably represent the remains of a ditch terminal. No dating material was recovered from 212-002, the fill of the feature.

- Context 212-001: Topsoil (0.40m thick)
- Context 212-002: Infill. Dark grey slightly gravelly sandy clay with occasional CBM fragments (0.4m thick)
- Context 212-003: Cut. (0.9m wide, 0.4m deep)
- Context 212-004: Natural gravels. Unit B

Test Pit 216

4.3.7 A gravel layer, 216-003 (Fig. 4C), was recorded below the topsoil/subsoil (216-001 and 216-002) in Test Pit 216. This comprised a compact silty sand and gravel layer, 0.2m thick, with clear boundaries with the overlying subsoil and underlying natural gravels. Rare small fragments of CBM were noted in the deposit. Given the limited size of the test pit the interpretation of layer 216-003 is tentative, but it is possible that it could be the remains of metallurgy associated with a north-south trackway plotted by the National Mapping Programme.

- Context 216-001: Topsoil (0.30m thick)
- Context 216-002: Subsoil; brown sandy gravelly silty clay (0.4m thick)
- Context 216-003: Gravel layer (0.2m thick)
- Context 216-004: Natural gravels. Unit B

Test Pit 231

4.3.8 A grey slightly silty clay layer, 231-002, was recorded below the topsoil (Fig. 6C). Occasional charcoal flecks and burnt woody pieces were present. The deposit extended across the extents of the test pit and was of a relatively even thickness, c. 0.4-0.5m. A single sherd of 1st century AD pottery (see below) was recovered from this context. The deposit sequence was as follows:

- Context 231-001: Topsoil (0.40m thick)
- Context 231-002: Layer; grey slightly silty clay (0.4-0.5m thick)
- Context 232-003: Natural gravels. Unit D

4.4 Pottery by Anna Doherty

4.4.1 A single bodysherd of grog-tempered pottery, weighing 7g, was recovered from test pit context [231-002]. The sherd is relatively well-fired with black surfaces, suggesting it belongs to the 1st century AD and probably to within a few decades either side of the Roman Conquest.

5.0 DISCUSSION AND CONCLUSIONS

- 5.1 The archaeological monitoring of the contractor's excavation of geotechnical test pits on land to the north of Maldon has identified the presence of a low density/complexity of archaeological remains in the form of an undated pit, a gravel layer which may be associated with a trackway and a layer containing a sherd of 1st century pottery. In addition, an infilled 19th century gravel pit was recorded that is depicted on historic OS mapping.
- 5.2 Whilst the archaeological remains recorded during this monitoring work are not of particular significance as individual features they do serve to establish that, like at the nearby Langford Hall Reservoir, archaeological remains have the potential to be present and to have survived within the site and the wider landscape. This serves to confirm the results of the earlier archaeological investigations in the vicinity, desk-based assessment and aerial photographic surveys. The latter best demonstrate the archaeological potential of the landscape, with a palimpsest of ring-ditches, enclosures, trackways and field systems identified. The identified and plotted cropmarks do not necessarily show all features present below-ground; for example, at Langford Hall Reservoir neither of the two ring-ditches had been previously plotted. Remains such as small pits, shallow gullies and post-holes are unlikely to be discernible as cropmark anomalies.
- 5.3 Whilst no archaeological remains were noted in the test pits located in relatively close proximity to plotted cropmarks, such as those to the south of the reservoir (Fig. 3), this is not considered proof that they do not survive as below-ground remains, but rather that the test pits did not coincide with them. There is likely to be a degree of inaccuracy in plotting and scale factors also need to be considered. NMP cropmarks, as illustrated on Fig. 3, are plotted at a scale of 1:10000 and thus a 1mm weight line on these plots represents some 8m on the ground.
- 5.4 Where present archaeological remains were typically encountered below the topsoil/subsoil which was between 0.3m and 0.6m thick. Given that they are relatively shallowly buried, disturbance or damage to archaeological remains is likely to have arisen through agricultural activities, particularly ploughing. In the area of the former gravel pit any pre- 19th century remains are likely to have been destroyed.
- 5.5 The 'brickearth' deposits of Unit A, the uppermost natural strata, may be a solifluxion/wethering deposit. These brickearth and silt deposits were recorded in places at Langford Hall Reservoir following the machine-stripping of topsoil/subsoil. Following the initial topsoil strip the surface level was reduced mechanically by a further 50mm to remove brickearth/silt and expose the underlying gravels to improve the legibility of the archaeological features (Roy and Heppell forthcoming). Archaeological features at this site were generally recognised where they intruded into the natural gravels and typically contained clay-silt or sandy silt fills which contrasted with the more gravelly natural deposits.

- 5.6 The underlying geological units comprise clayey gravels and sands, clays, and silty sands and gravels. No organic remains, peats or mineralogenic peats were noted in these sequences.
- 5.7 It should be noted for the purposes of any further field investigation that there are services on the site that restrict plant access. A gas main runs along the western edge of the site, c. 20-25m from the field boundary. The National Grid was consulted and its engineer pegged out the route of the pipeline and supervised the construction of a crossing point, using metal plates. Works were not permitted within 15m of the pipeline. A high voltage cable on pylons also crossed the site, running approximately south-west to north-east, and other low voltage lines and BT telecommunications lines are present.

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Test Pit No	Dimensions (in m.)			Topsoil/Subsoil (depth below surface in m.)			Artificial (depth below surface in m.)		UNIT A (depth below surface in m.)		UNIT B (depth below surface in m.)					UNIT C	UNIT D (depth below surface in m.)					London Clay				
	Width	Length	Depth	Topsoil - dark grey brown, friable clayey sandy loam with gravel inclusions.	Subsoil - Orangish Brown / Light Brown Silty Clay	Topsoil/Subsoil (Thickness in m.)	Artificial Ground (Feature/Layers) - Presence/Absence.	Artificial Ground - thickness	Orange Silty Clay / Light brown silty clay - slightly sandy with occ. gravel inclusions (Brickearth)	Sandy gravel in slightly silty clay (brownish orange)	Sandy gravel in silty clay (brownish grey)	V. sandy Gravels, pockets of light grey sandy clay and reddish brown iron staining	Sands and Gravels (silt/clay) with laminated bands of pale grey sands and iron pan/staining	Clayey sand (Fine) Orange/Pale Grey	Silty sands and gravels (brownish orange)	Sandy clay (pale grey), becoming laminated towards the base.	Sandy silty clay (orangish brown) - occ. Gravel inclusions. (depth below surface in m.)	Sands and gravels (silty), loose (Brownish orange)	Sands and gravels (Loose) - Pea Grit	Sandy gravels (Loose) w. laminations of pale grey clay	Gravelly Sand - Orange Brown		Gravelly clay (orange brown)	Coarse sand (occ. Patches of grey clayey sand)	Stiff clay silt with partings of fine sand	
T215	0.50	3.50	2.50	0.00		0.30			0.30	1.00							2.40									
T216	0.50	2.50	2.35	0.00	0.30	0.30	Y	0.20		0.90						2.00	2.30									
T217	0.50	3.10	3.00	0.00		0.40			0.40	0.70				1.50			2.20									
T218	0.50	2.70	2.40	0.00		0.35			0.35	0.70	1.10						1.20	1.70								
T219	0.50	3.20	2.80	0.00		0.30			0.30	0.60						0.90			1.00							
T220*	0.50	2.90	1.90	0.00		0.30			0.30				0.90				1.20									
T221*	0.50	3.05	2.15	0.00	0.30	0.30				0.60							1.00									
T222	0.50	3.80	2.80	0.00		0.35			0.35	0.80				1.50			1.65									
T223	0.50	4.50	3.10	0.00		0.40			0.40	0.60				1.50			1.80									
T224	0.50	3.40	2.80	0.00		0.50			0.50	1.00							2.00									
T225	0.50	2.80	2.80	0.00	0.30	0.60			0.60	0.90							1.20							2.00		2.40
T226	0.50	2.90	2.70	0.00		0.30			0.30	0.60							1.00			2.65						
T227	0.50	3.00	2.65	0.00	0.50	0.60			0.60	0.70	0.90		1.30				1.90									
T228	0.50	2.70	2.20	0.00	0.40	0.60				0.60							1.00							1.45		
T229	0.50	3.50	3.30	0.00	0.40	0.60			0.60				0.80									2.00	3.00	3.10		
T230**	0.50	2.90	2.40	0.00	0.30	0.40				0.40							1.55	1.90								
T231	0.50	2.70	2.25	0.00		0.40	Y	0.70									1.10			1.80						
T232	0.50	2.70	2.00	0.00		0.30			0.30								0.80	1.50								
T233	0.50	2.10	1.95	0.00		0.38			0.38	0.80				1.00			1.70									

Test Pit No	Dimensions (in m.)		Topsoil/Subsoil (depth below surface in m.)	Artificial (depth below surface in m.)	UNIT A (depth below surface in m.)	UNIT B (depth below surface in m.)	UNIT C	UNIT D (depth below surface in m.)
	Width	Length	Depth					
			Topsoil - dark grey brown, friable clayey sandy loam with gravel inclusions.	Artificial Ground (Feature/Layers) - Presence/Absence.	Orange Silty Clay / Light brown silty clay - slightly sandy with occ. gravel inclusions (Brickearth)	V. sandy Gravels, pockets of light grey sandy clay and reddish brown iron staining	Sandy silty clay (orange brown) - occ. Gravel inclusions. (depth below surface in m.)	Sands and gravels (silty), loose (Brownish orange)
			Subsoil - Orangish Brown / Light Brown Silty Clay	Artificial Ground - thickness	Sandy gravel in slightly silty clay (brownish orange)	Sands and Gravels (silt/clay) with laminated bands of pale grey sands and iron pan/staining		Sands and gravels (Loose) - Pea Grit
			Topsoil/Subsoil (Thickness in m.)		Sandy gravel in silty clay (brownish grey)	Clayey sand (Fine) Orange/Pale Grey		Sandy gravels (Loose) w. laminations of pale grey clay
						Silty sands and gravels (brownish orange)		Gravelly Sand - Orange Brown
						Sandy clay (pale grey), becoming laminated towards the base.		Gravelly clay (orange brown)
								Coarse sand (occ. Patches of grey clayey sand)
								Stiff clay silt with partings of fine sand
								London Clay

* Indicative locations only

**230A dug adjacent to this pit for soakaway test.

APPENDIX 2: Test Pit Locations

No.	Easting	Northing	Height (AOD)
TP201	584051.61	584051.61	9.60
TP202	584192.68	584192.68	9.19
TP203*	584169.79	584169.79	8.99
TP204*	584147.14	584147.14	8.74
TP205	584124.85	584124.85	8.39
TP206*	584799.72	584799.72	7.95
TP206B	584104.38	584104.38	
TP206GP1*	584799.54	584799.54	
TP206GP1*	584789.34	584789.34	
TP206GP2*	584810.72	584810.72	
TP206GP3*	584798.95	584798.95	
TP206GP5*	584799.93	584799.93	
TP206GP6*	584800.32	584800.32	
TP207	584339.65	584339.65	7.41
TP208	584350.49	584350.49	7.28
TP209	584361.55	584361.55	7.19
TP210	584384.80	584384.80	6.76
TP211	584395.74	584395.74	6.60
TP212	584516.38	584516.38	7.73
TP213	584535.25	584535.25	7.78
TP214	584754.80	584754.80	8.68
TP215	584744.01	584744.01	8.80
TP216	584769.11	584769.11	10.12
TP217	584917.56	584917.56	9.63
TP218	584930.48	584930.48	9.42
TP219	584943.66	584943.66	9.21
TP220*	584954.72	584954.72	9.21
TP221*	584979.18	584979.18	9.02
TP222	585065.30	585065.30	9.33
TP223	585214.25	585214.25	9.74
TP224	585300.70	585300.70	9.02
TP225	585423.69	585423.69	9.03
TP226	585523.13	585523.13	8.62
TP227	585674.35	585674.35	10.78
TP228	585677.60	585677.60	10.48
TP229	585688.33	585688.33	10.08
TP230	585699.14	585699.14	9.79
TP231	585709.89	585709.89	9.27
TP232	585856.77	585856.77	10.27
TP233	586005.89	586005.89	9.62

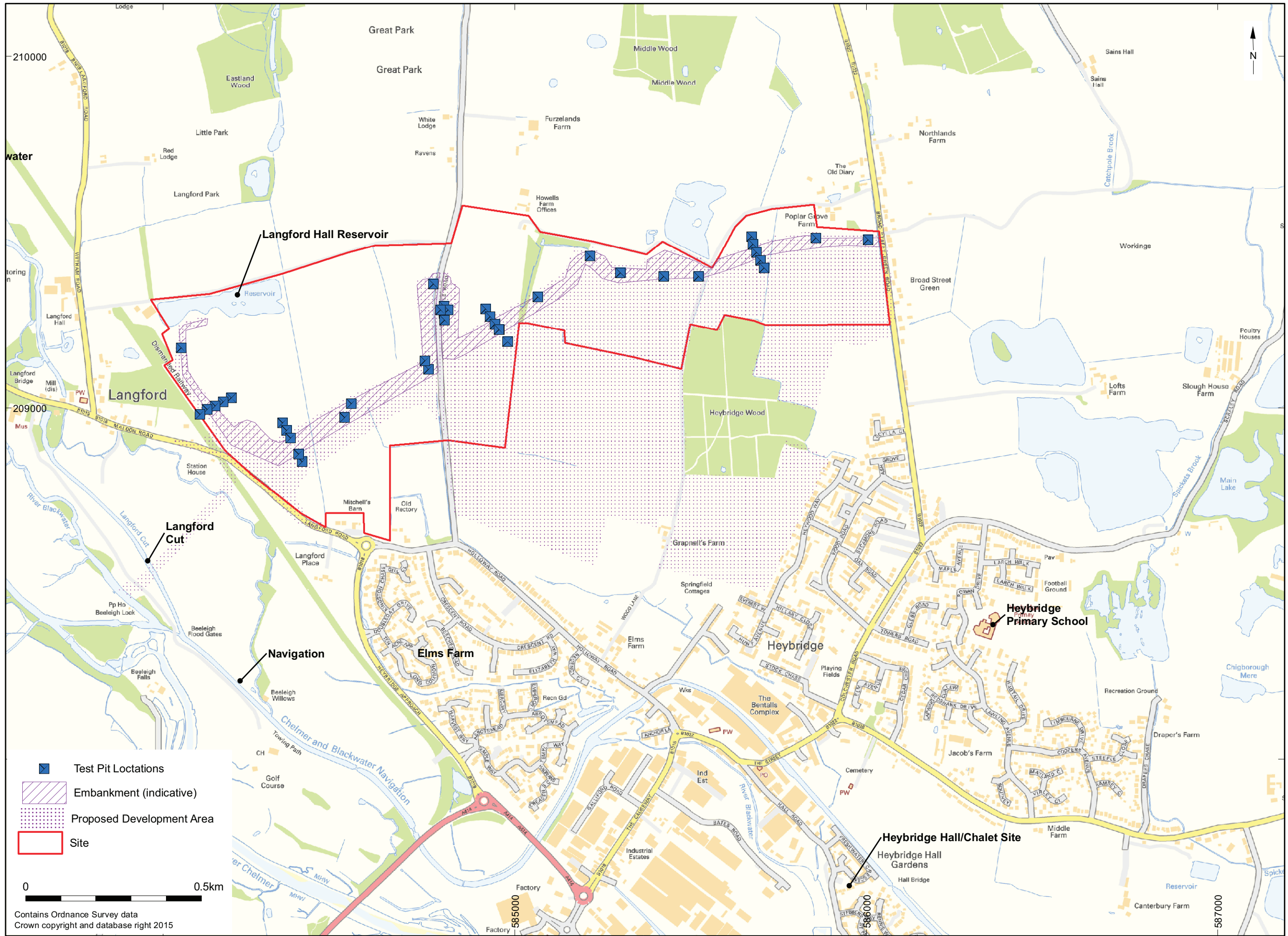
Appendix 3: HER Summary





Site name/Address: Land North of Maldon, Essex	
Parish: Heybridge, Langford, Great Totham	District: Maldon
NGR: TL 84280 09167	Site Code: HYLN16
Type of Work: Monitoring	Site Director/Group: E. Heppell; Archaeology South-East
Date of Work: January-February 2016	Size of Area Investigated:
Location of Finds/Curating Museum: Colchester	Funding source: Client
Further Seasons Anticipated?: Yes	Related HER No's:
Final Report: EAH Roundup	OASIS No: 241270
Periods Represented: Late Iron Age/Roman, Post-medieval	
SUMMARY OF FIELDWORK RESULTS:	
<p><i>Archaeological monitoring was undertaken during the excavation of 41 geotechnical test pits across a large area of agricultural land to the north of Maldon and Heybridge. Numerous cropmarks have been identified across the area and nearby archaeological investigations at Langford Hall Reservoir have previously identified prehistoric to Roman remains.</i></p> <p><i>Archaeological remains were identified in four pits; a deposit containing a single sherd of 1st century AD pottery, a gravel layer which may be the surface of a trackway, an undated pit and an infilled post-medieval gravel pit.</i></p> <p><i>The geological sequence has also been recorded and comprises a sequence of superficial deposits of clayey sands and gravels and silty sands and gravels over the London Clay.</i></p>	
Previous Summaries/Reports: None	
Author of Summary: E. Heppell	Date of Summary: February 2016

Appendix 4: OASIS Form

Project details	
Project name	Land North of Maldon, Essex
Short description of the project	Archaeological Monitoring of geotechnical pits on land North of Maldon and Heybridge, Essex.
Project dates	Start: 01-01-2016 End: 28-02-2016
Previous/future work	Yes / Yes
Associated project reference codes	HYLN16 - Sitecode
Type of project	Recording project
Current Land use	Other 15 - Other
Monument type	PIT Uncertain LAYER Uncertain TRACK Uncertain GRAVEL PIT Post Medieval
Significant Finds	POTTERY Late Iron Age
Investigation type	"Watching Brief"
Prompt	General structure plan/local plan/minerals plan guidance
Project location	
Country	England
Site location	ESSEX MALDON HEYBRIDGE Land North of Maldon
Postcode	CM9 4ST
Study area	211 Hectares
Site coordinates	TL 84280 09167 51.750325157852 0.66998044941 51 45 01 N 000 40 11 E Point
Height OD / Depth	Min: 6m Max: 12m
Project creators	
Name of Organisation	Archaeology South-East
Project brief originator	RPS Consulting
Project design originator	ASE
Project director/manager	Andy Leonard/Jim Stevenson
Project supervisor	E Heppell
Type of sponsor/funding body	Client

Project archives	
Physical Archive recipient	Colchester and Ipswich Museums Service
Physical Contents	"Ceramics"
Digital Archive recipient	Colchester and Ipswich Museums Service
Digital Contents	"other"
Digital Media available	"Images raster / digital photography", "Spreadsheets", "Text"
Paper Archive recipient	Colchester and Ipswich Museums Service
Paper Contents	"Ceramics"
Paper Media available	"Correspondence", "Map", "Miscellaneous Material", "Notebook - Excavation", ' Research', ' General Notes', "Report"
Project bibliography	
Publication type	Grey literature (unpublished document/manuscript)
Title	Land North of Maldon, Essex. Geotechnical Investigations (Phase 1). Archaeological Monitoring Report
Author(s)/Editor(s)	Heppell, E.
Other bibliographic details	Report no 2016042
Date	2016
Issuer or publisher	Archaeology South-East
Place of issue	Witham
Description	A4/A3 Typescript report with illustrations
Entered by	E. Heppell (e.heppell@ucl.ac.uk)
Entered on	10 February 2016

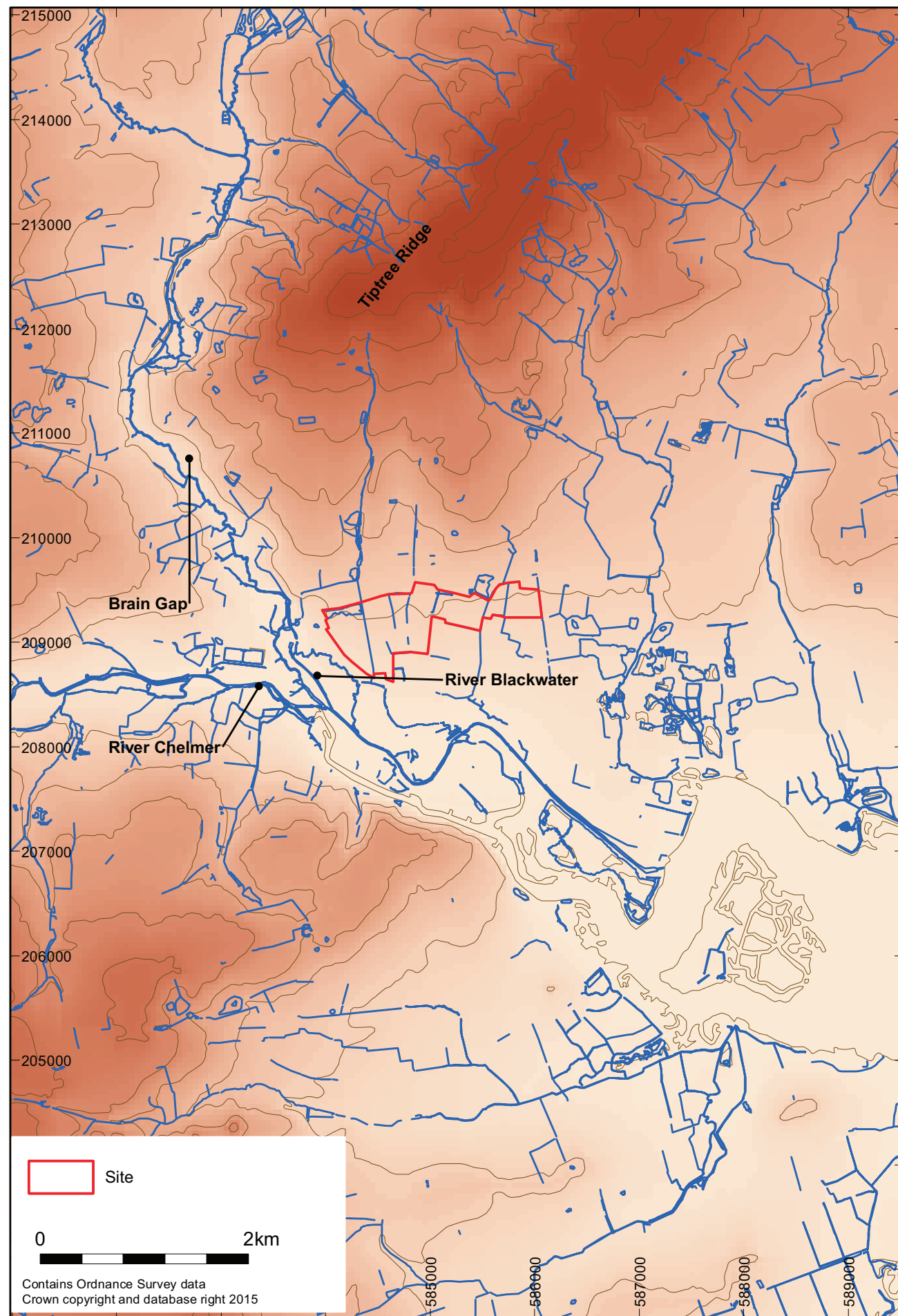


-  Test Pit Locations
-  Embankment (indicative)
-  Proposed Development Area
-  Site

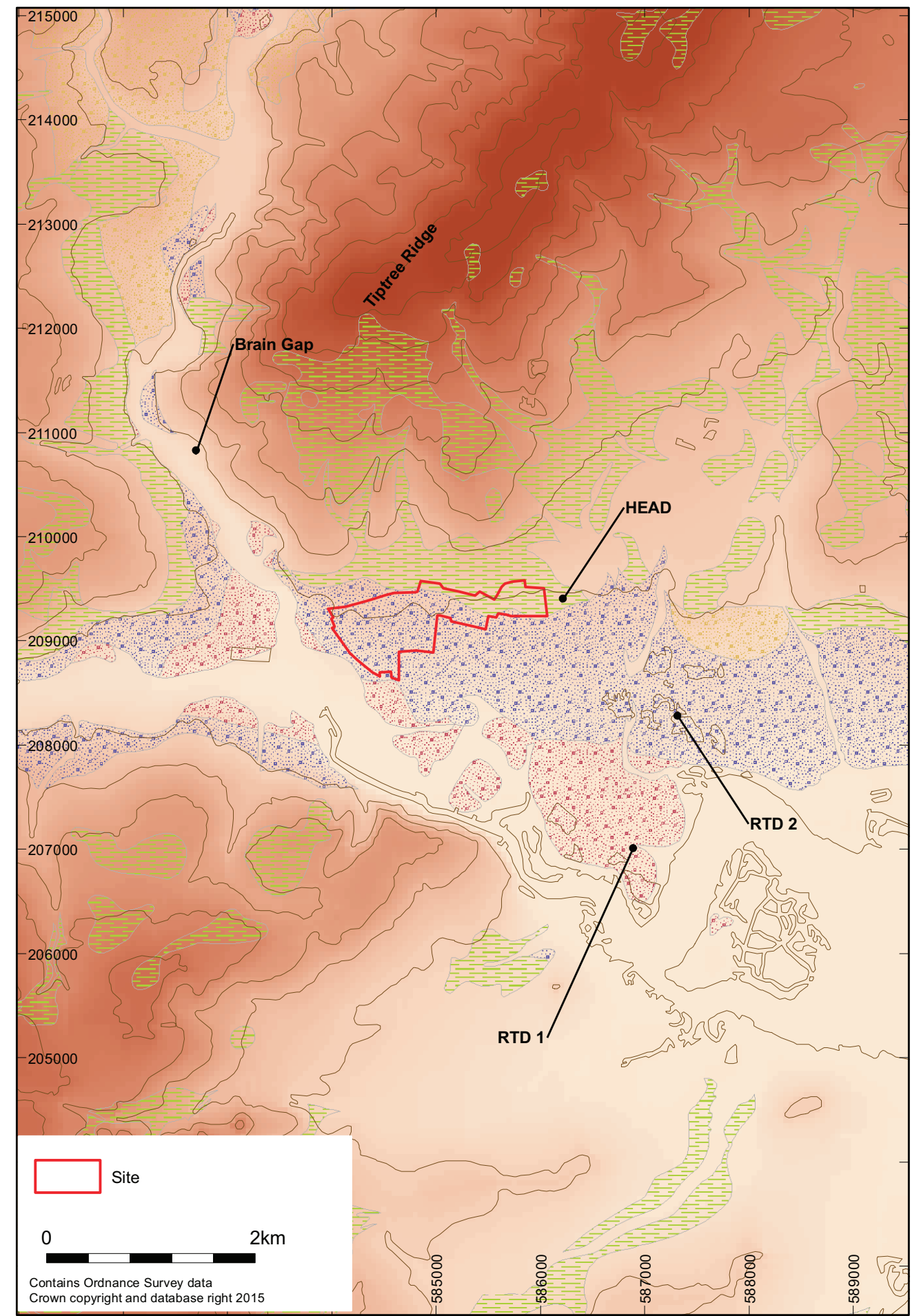
0 0.5km

Contains Ordnance Survey data
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© Archaeology South-East		Land North of Maldon, Geotechnical Test Pits		Fig. 1
Project Ref: 160054	Feb 2016	Site location		
Report Ref: 2016042	Drawn by: EMH			

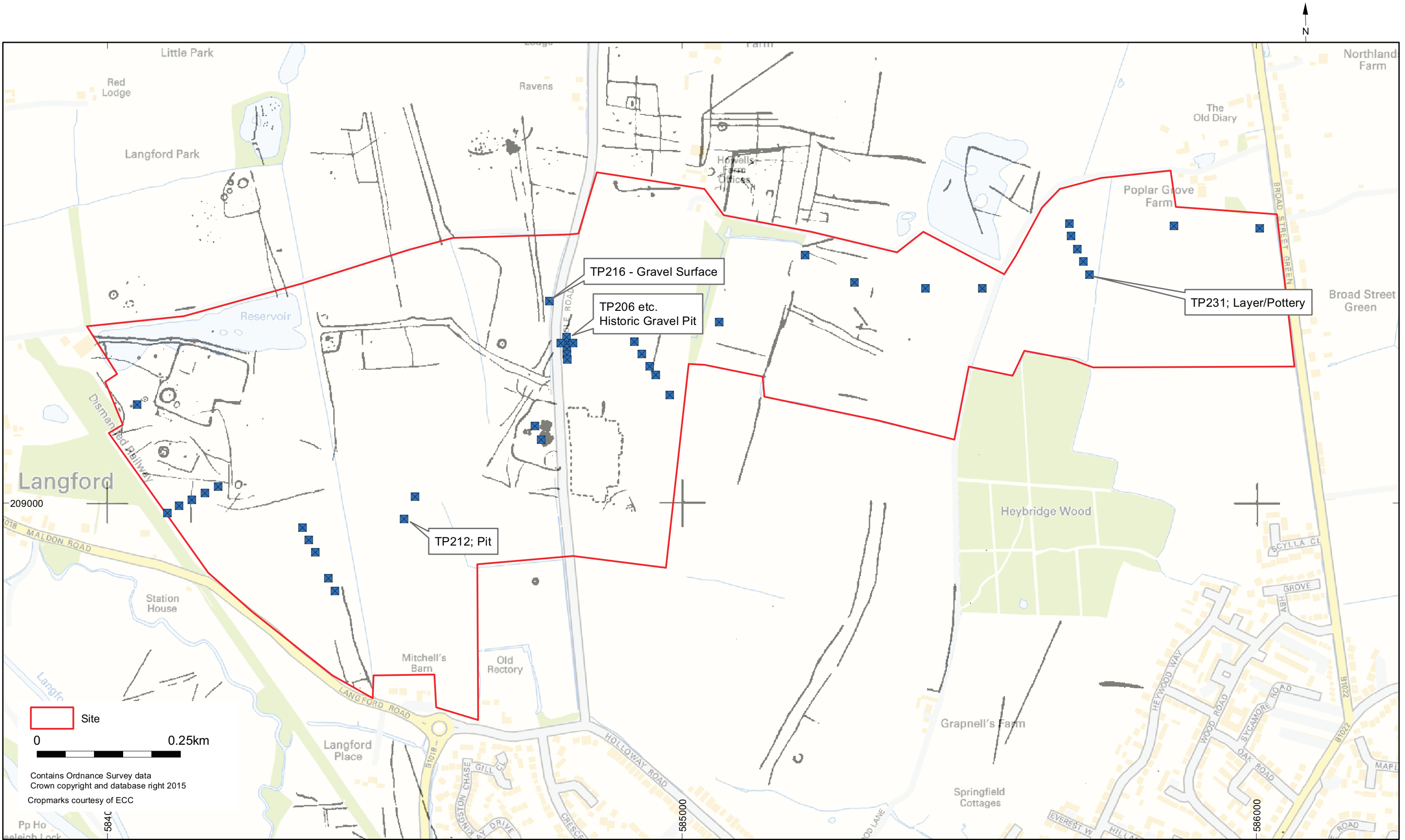


A. Site location - Showing Topography



B. Site location - Showing Topography and Geology (Head and RTD only)

© Archaeology South-East		Land North of Maldon, Geotechnical Test Pits	Fig. 2
Project Ref: 160054	Feb 2016	Site location showing topography and geology	
Report Ref: 2016042	Drawn by: EMH		



© Archaeology South-East		Land North of Maldon, Geotechnical Test Pits	Fig. 3
Project Ref: 160054	2013	Test Pit Locations - showing cropmarks and archaeological remains	
Report Ref: 2016042	Drawn by: EMH		



A. Test Pit 201 - example of topsoil/subsoil (1m scale)

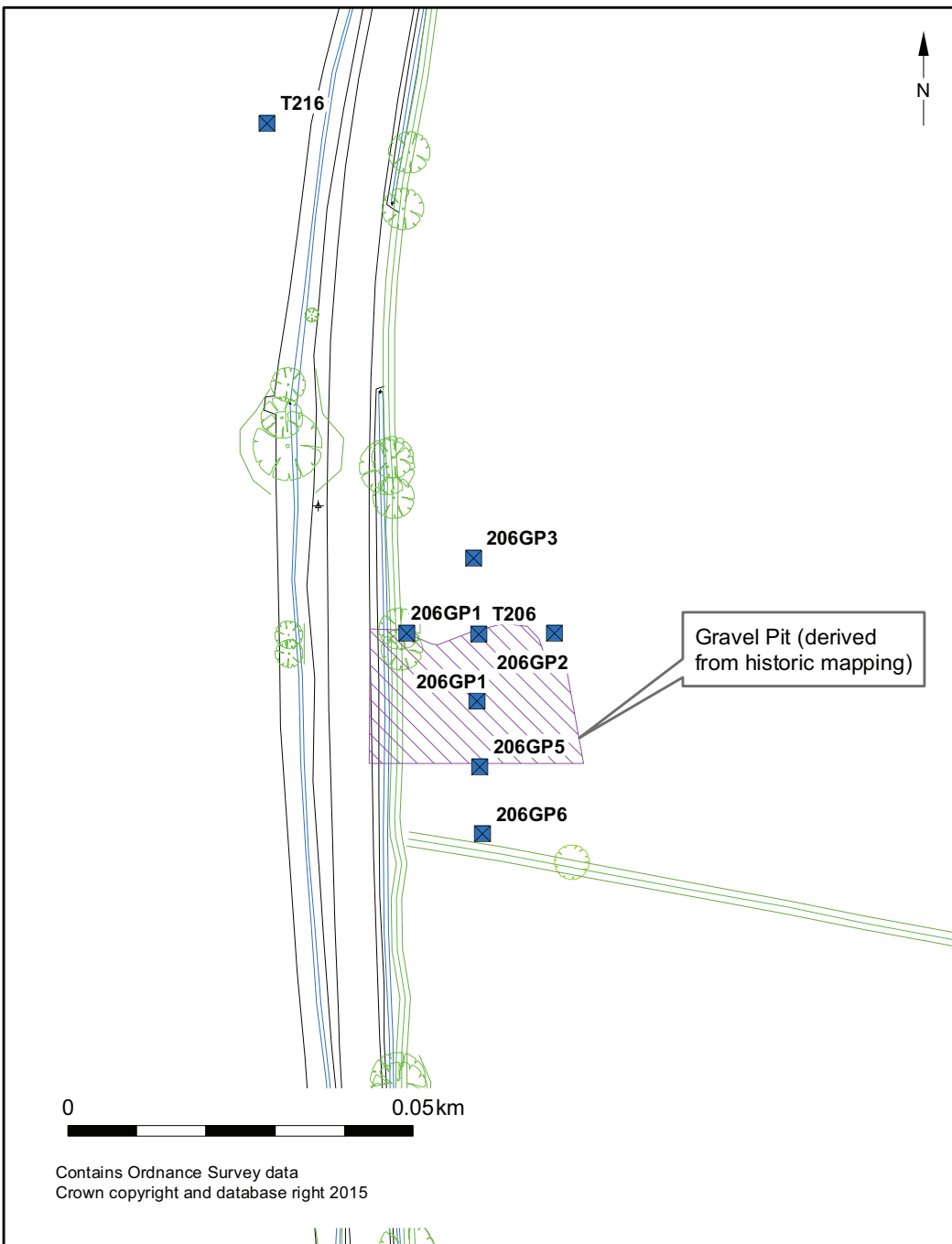


B. Test Pit 212 - Pit 212-003 (1m scale)



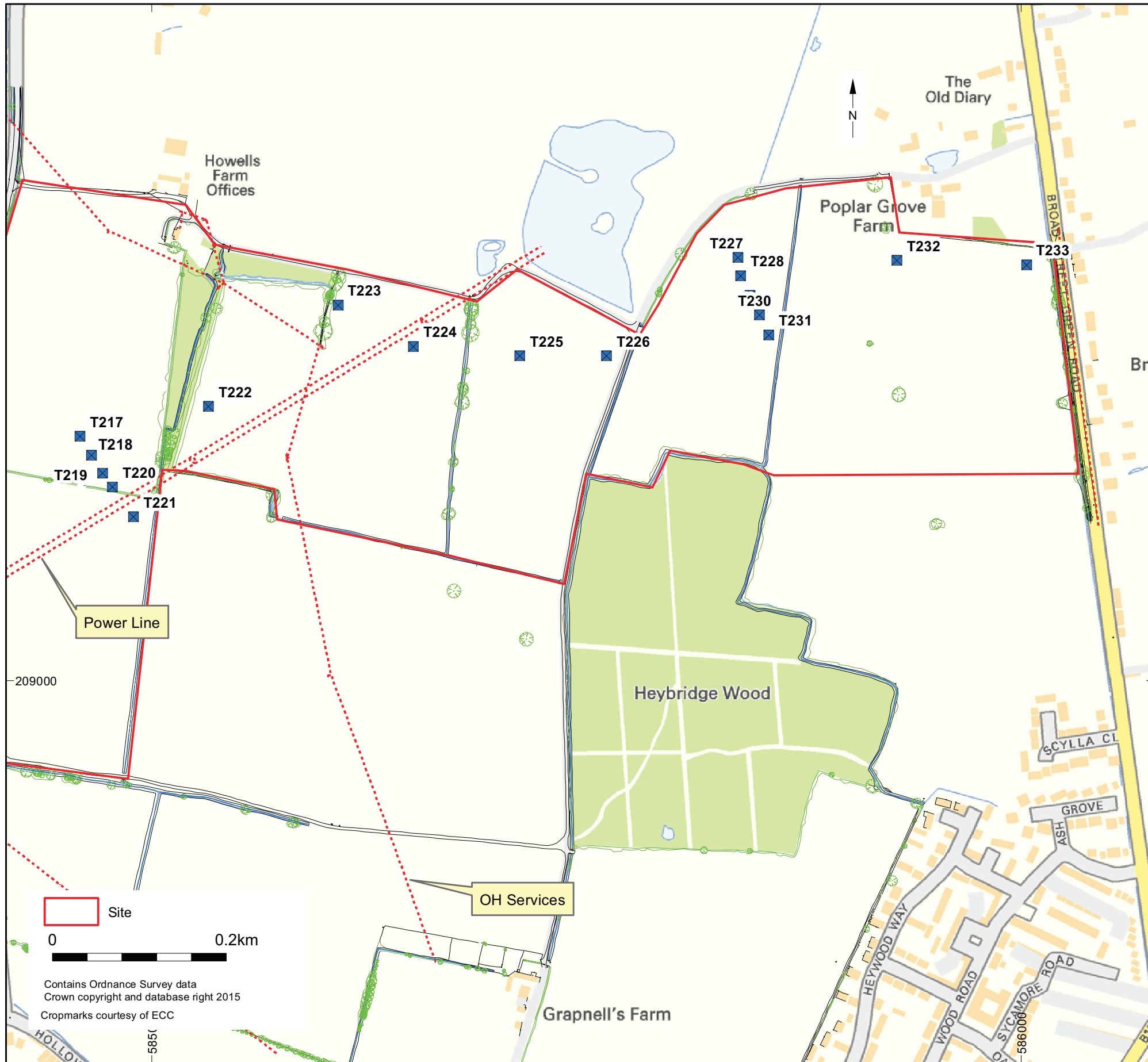
C. Test Pit 216 - Layer 216-003 (0.5m scale)

© Archaeology South-East		Land North of Maldon, Geotechnical Test Pits	Fig. 4
Project Ref: 160054	2013	Test Pits - West of Maypole Road	
Report Ref: 2016042	Drawn by: EMH		



Test Pit 206 - Gravel Pit backfill (0.5m scale) - prior to collapse

© Archaeology South-East		Land North of Maldon, Geotechnical Test Pits	Fig. 5
Project Ref: 160054	2013	Test Pits - 206, 206GP1-6	
Report Ref: 2016042	Drawn by: EMH		



A. Test Pit 218 - example of strata (0.5m scale)



B. Test Pit 224 - example of strata



C. Test Pit 231 - Layer 231-002 at the bottom of the photograph (0.5m scale)

© Archaeology South-East		Land North of Maldon, Geotechnical Test Pits		Fig. 6
Project Ref: 160054	2013	Test Pits - East of Maypole Road		
Report Ref: 2016042	Drawn by: EMH			

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