

Lower Thames Crossing

6.3 Environmental Statement Appendices Appendix 6.12 – Scheme-wide Written Scheme of Investigation for Trial Trenching north of the River Thames

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Trenching north of the River Thames

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Contents

Section	Page
1 Introduction	7
1.1 Project Details	7
1.2 Location, topography and geology.....	12
2 Archaeological Background.....	14
2.1 Introduction.....	14
2.2 The geoarchaeological background of the Thames estuary	19
2.3 Geoarchaeological overview of the Mar Dyke and dry valleys	21
2.4 Chronological summary of known archaeology	23
2.5 Archaeological Potential	67
3 Project Aims and Objectives	72
3.1 General Aims.....	72
3.2 Specific Objectives	73
4 Project-specific Excavation and Recording Methodology	77
4.1 Health and Safety and Constraints	77
4.2 Liaison with Landowners and the public	79
4.3 Scope of Works	80
4.4 Programme.....	82
4.5 Specific Methodology for Trial Trenching	83
4.6 Reinstatement	88
4.7 Human Remains.....	89
4.8 Artefacts	89
4.9 Environmental sampling	90
4.10 Scientific Dating.....	91
4.11 Contingencies and Unforeseen Circumstances.....	91
4.12 Monitoring of Works.....	92
5 Report and Archive	93
5.1 Standards and content	93
5.2 Timetable for delivery	95
5.3 Copyright	96
5.4 Archive preparation and deposition	96
6 Personnel.....	98
7 References.....	104
8 Appendices.....	111
9 Annexes	112
10 Abbreviations and Glossary.....	113

Figures

Figure 1 – Scheme location map

Figure 2a – Map showing the scheme route north of the Thames (north)

Figure 2b – Map showing the scheme route north of the Thames (south)

Figure 3a – Bedrock and superficial geology of the scheme corridor north of the Thames (north)

Figure 3b – Bedrock and superficial geology of the scheme corridor north of the Thames (south)

Figure 4a - Landuse of the scheme corridor north of the Thames (north)

Figure 4b - Landuse of the scheme corridor north of the Thames (south)

Figure 5a - Overview of the topography of the Havering-Essex scheme corridor (north)

Figure 5b - Overview of the topography of the Havering-Essex scheme corridor (south)

Figure 5c - Detail of the topography of Mar Dyke Valley

Figure 6a - Aerial mapping plot for scheme corridor – overview (northern half)

Figure 6b - Aerial mapping plot for scheme corridor – detail (north)

Figure 6c - Aerial mapping plot for scheme corridor – detail (central-north)

Figure 6d - Aerial mapping plot for scheme corridor – overview (southern half)

Figure 6e - Aerial mapping plot for scheme corridor – detail (central)

Figure 6f - Aerial mapping plot for scheme corridor – detail (central-south)

Figure 6g - Aerial mapping plot for scheme corridor – detail (south)

Figure 7a – Previous archaeological investigations within or close to the scheme (north)

Figure 7b - Previous archaeological investigations within or close to the scheme (central north)

Figure 7c - Previous archaeological investigations within or close to the scheme (south central)

Figure 7d - Previous archaeological investigations within or close to the scheme (south)

Figure 8a - HER data and other known or suspected Prehistoric archaeology (north)

Figure 8b - HER data and other known or suspected Prehistoric archaeology (south)

Figure 9a - HER data and other known or suspected Roman archaeology (north)

Figure 9b - HER data and other known or suspected Roman archaeology (south)

Figure 10a - HER data and other known or suspected Medieval archaeology (north)

Figure 10b - HER data and other known or suspected Medieval archaeology (south)

Figure 11a - HER data and other known or suspected Post-Medieval archaeology (north)

Figure 11b - HER data and other known or suspected Post-Medieval archaeology (central)

Figure 11c - HER data and other known or suspected Post-Medieval archaeology (south)

Figure 12a - HER data and other known or suspected Modern and Unknown Period archaeology (north)

Figure 12b - HER data and other known or suspected Modern and Unknown Period archaeology (south)

Figure 13a – Historic map (OS map 2nd edn 1897) and cropmarks in Havering (north)

Figure 13b – Historic map (OS map 2nd edn 1897) and cropmarks in Havering and Essex (central)

Figure 13c – Historic map (OS map 2nd edn 1897) and cropmarks in Essex (south)

Figure 14a - Scheme corridor showing extents of detailed WSIs and their land parcels (north)

Figure 14b - Scheme corridor showing extents of detailed WSIs and their land parcels (south)

Figure 15a - UXO risk and bomb sites in the Havering-Essex part of the scheme (north)

Figure 15b - UXO risk and bomb sites in the Havering-Essex part of the scheme (south)

Figure 16a Ecological constraints for the Havering-Essex part of the scheme (north)

Figure 16b Ecological constraints for the Havering-Essex part of the scheme (south)

Figure 17a Services and Utilities - Havering (north)

Figure 17b Services and Utilities - Havering (south)

Figure 17c Services and Utilities - Essex (north)

Figure 17d Services and Utilities - Essex (south)

Figure 18a - Plan of trenching areas and trench layouts (north)

Figure 18b - Plan of trenching areas and trench layouts (central - north)

Figure 18c - Plan of trenching areas and trench layouts (central-south)

Figure 18d - Plan of trenching areas and trench layouts (south)

Tables

Table 1 – Trench register

Appendices

Appendix 1 - Gazetteer (compiled by LTC from HER data)111

1 Introduction

1.1 Project Details

- 1.1.1 The Project is located between the A2 in Kent and the M25 in the London Borough of Havering, passing through the Borough of Thurrock in Essex (Fig. 1). At the southern end of the Project a new road will connect to a new junction on the A2 east of Gravesend. The route would run north in a cutting to the Project's southern tunnel portal. The Project will run underneath the River Thames in a tunnel and emerge on the northern side of the river at East Tilbury. From the northern tunnel portal the road will run to the M25 at Junction 29 via the A13 and passes in between North and South Ockendon.
- 1.1.2 Excluding the tunnel but including M2/A2 and M25 improvements, the road runs for 27 kilometres through the London Borough of Havering, the Essex Boroughs of Brentwood and Thurrock, and the Kent Borough of Gravesham (Fig. 1). The development of the project is being managed by LTC, a partnership between Highways England and a consultancy joint venture set up to oversee the scheme.
- 1.1.3 The development boundary includes areas of proposed ecological habitat mitigation areas, flood compensation schemes, temporary haul roads and car parks, lay-down areas and zones for material fabrication. Temporary zones for staff accommodation are also required, as are areas of permanent land take.
- 1.1.4 The potential impact of the scheme upon cultural heritage is a material consideration under the Ancient Monuments and Archaeological Areas Act of 1979, which imposes a requirement for Scheduled Monument Consent for any works of demolition, repair, and alteration that might affect a Scheduled Monument.
- 1.1.5 The NPSNN December 2014 provides planning guidance for promoters of Nationally Significant Infrastructure Projects on road and rail networks. It defines considerations concerning the Historic Environment and heritage assets, both designated and non-designated, and includes requirements to assess their significance including any contribution made by the setting. Such assessments shall be based upon documentary research, desk-based assessment and where necessary field evaluations.
- 1.1.6 For non-designated archaeological assets, protection is also afforded through the development management process as established both by the Town and Country Planning Act 1990 and the National Planning Policy Framework (NPPF). A revised National Planning Policy Framework was published on 24 July 2018, which sets out the Government's planning policies for England and how these should be applied to contribute to the achievement of sustainable development (DCMS 2018).

- 1.1.7 Following a study and public consultation by Highways England in 2016, the Preferred Route Announcement was made in April 2017, and an Environmental Impact Assessment - Scoping Report issued (Highways England 2017), section 7 of which sets out the requirements for Cultural Heritage. This was followed by a second phase of public consultation and more detailed development prior to the submission of the Development Consent Order (DCO) application timetabled for 2020.
- 1.1.8 In support of this application, and following the requirements of the NPSNN, a desk-based Archaeological Assessment has been prepared, which was to have been followed by trial-trenching to clarify the extent and character of the archaeological resource affected by the scheme. A Scheme-wide Specification for Trial-Trenching was provided by LTC (Highways England 2018), detailing the structure and overall content of the Project-wide Written Scheme of Investigation (hereafter WSI).
- 1.1.9 LTC commissioned Balfour Beatty to deliver the pre-Enabling Works, and Oxford Archaeology (hereafter OA) was appointed by Balfour Beatty to prepare the Project-wide WSI for trial trenching, followed by a series of site-specific or group-site specific WSIs for approval by the key archaeological stakeholders in advance of trial trenching to inform the DCO.
- 1.1.10 Following consultation with the key archaeological stakeholders, who comprise Historic England both advising in regard to Scheduled Monuments and acting as the Greater London Archaeological Advisory Service (hereafter GLAAS) advising the London Borough of Havering, Place Services, Essex County Council advising Brentwood and Thurrock Borough Councils and the Kent County Council Archaeological Service advising Gravesham Borough Council, the Project-wide WSI has been divided into two parts, one dealing with the road scheme north of the Thames, the other the scheme south of the Thames. This document deals with the area north of the Thames (Fig. 2).
- 1.1.11 The Desk-Based Assessment (DBA) was well-advanced when OA were appointed, but had not been completed. Consultation between LTC and the key archaeological stakeholders had already taken place, and the Scheme-wide Specification (Highways England 2018) had included provisional trench layouts based upon aerial survey and analysis for the part of the scheme north of the Thames, and upon geophysical survey for those parts surveyed south of the Thames.
- 1.1.12 In order to meet the requirements of the timetable for submission of the DCO application, and to take into account the presence of buried utilities, a first draft of this Project-wide WSI was prepared before completion of the DBA in order to allow trial trenching to proceed. HER data was obtained from Kent and Essex County Councils and from GLAAS by LTC in 2018, and this data has been used to create the gazetteers for the DBA, which were then used by OA to inform the Archaeological Background for the Project-wide and detailed site-specific or group site-specific WSIs.
- 1.1.13 The Project-wide WSI provided a framework from which more detailed WSIs for individual sites or groups of sites were to be prepared. The further detail was to involve closer examination of the archaeological evidence behind the HER entries, including any archaeological reports, and the consideration of Historic Map evidence.

- 1.1.14 Following the preparation of the first draft of this WSI, and amendments made following receipt of comments from the Key Archaeological Stakeholders advising the London Borough of Havering, Essex County Council and the Borough of Thurrock, development of the scheme design resulted in changes to the scheme boundary that necessitated significant additions to the scope of the Project-wide WSI. In addition, important changes to the design of the route also affected the level of impact proposed in different areas.
- 1.1.15 As a result, and due to the desire to start trial trenching at the earliest opportunity, it was agreed that the existing draft Project-wide WSI should be used as the starting point for the preparation of detailed WSIs for the scheme north of the Thames, and that the Project-wide WSI would be revised and updated only when most of the detailed WSIs had been completed, when it would be possible to incorporate the key additional information obtained in their preparation.
- 1.1.16 This WSI does not deal with the tunnel beneath the Thames or the potential impact of the scheme upon Palaeolithic deposits, for which LTC have appointed Palaeolithic specialist Francis Wenban-Smith to develop a strategy for investigation of deposits of Palaeolithic potential. The Thames floodplain at either end of the tunnel will involve the excavation of deep sequences of deposits, and geoarchaeologist Martin Bates has been appointed by LTC to develop a deposit model for these and for other areas of deep deposits. Francis Wenban-Smith and Martin Bates will be working together on the Palaeolithic aspects of the deposit model, and developing a targeted strategy for the investigation of these deep sequences. The Palaeolithic and Quaternary Deposit Model (PQDM), and Preliminary Assessment of Archaeological Potential has now been prepared (Wenban-Smith and Bates 2020), which includes a series of transects of the deposit sequence across the line of the scheme, constituting a first step towards a scheme deposit model.
- 1.1.17 The impact upon the Thames floodplain in Essex will be considerable. Other areas of deep deposits in Essex and Havering comprise the Mar Dyke valley and a northern tributary, together with a number of dry valleys that run south, south-east and south-westwards through the site towards the Thames. A first phase of geotechnical Investigations (GI) has been monitored by Wessex Archaeology, and reports produced (Wessex Archaeology 2020). Further geotechnical Investigations (GI) are ongoing, and these are being monitored by Wessex Archaeology. The borehole logs are being made available as work proceeds, and will hopefully inform trial trenching in areas still to be examined. The GI reports will be made available to the scheme geoarchaeologist and Palaeolithic specialist when phases of investigation are finished to feed into the development of the geoarchaeological deposit model.
- 1.1.18 Due to problems of land access, it has not been possible to complete the geophysical surveys proposed for the areas of deep Holocene stratigraphy along the scheme, comprising the Thames floodplain, the Mar Dyke valley and the most extensive dry valley area, at the time when this revision was prepared, and the GI investigations are not yet complete. As a result the trench layouts for these areas have not been finalised. Other than this, this WSI provides all of the information for trial trenching of the scheme corridor in Essex and Havering,

- 1.1.19 LTC appointed Alex Godden, a specialist in Military remains from Wessex Archaeology, to prepare a Desk-based Assessment (DBA) of the 20th century military remains within the scheme, which include the former military airfield at Gravesend, crash sites and an assortment of lesser defensive emplacements. The report upon this was completed early in 2020, and is referenced in the part of Section 2.3 below dealing with modern remains.
- 1.1.20 Detailed WSIs for each group of land parcels within the scheme to be investigated by trial trenching in Essex and Havering have been prepared. The land in the scheme corridor north of the Thames has been divided into nineteen detailed WSIs, which have been distinguished by letters A-S. The areas covered by each WSI, and the land parcels included in each, are shown on Figures 14a and 14b. Each detailed WSIs was submitted for approval on completion, in order to facilitate trial trenching as soon as possible.
- 1.1.21 The results of other specialist investigations have been included in the detailed WSIs if available at the time. The GI reports have been passed to the scheme geoarchaeologist and Palaeolithic specialist for incorporation into the scheme deposit model, and the provisional results have also been taken into account where available in the planning for deeper trial trenches within the detailed WSIs. The implications and recommendations of the military DBA were not available when the first detailed WSIs were written, but have been taken into account in those produced later on.
- 1.1.22 The Archaeological Background section uses a 1km study corridor in order to provide an overview of the archaeology likely to be affected by the scheme, but does not consider most standing buildings or issues of setting, which are dealt with by the DBA. To provide appropriate context, however, Scheduled Monuments and any medieval or early post-medieval listed buildings within the wider study corridor are included.
- 1.1.23 When the detailed WSIs were written, the detailed scheme design was not sufficiently advanced to be sure whether areas within the scheme limits could be preserved *in situ*, and this has still not been fully resolved, so is not addressed in the revised Project-wide WSI.
- 1.1.24 Preparation of the detailed WSIs began with those for the Phase 1 Priority areas within the scheme (those where early works are anticipated, or where archaeological remains require more urgent investigation), and continued with the other (Phase 2) sites. Each detailed WSI was submitted for approval on completion, in order to facilitate trial trenching as soon as possible.
- 1.1.25 Phase 1 trial trenching started north of the Thames in November 2019, and has so far examined WSIs A-E, K and L (see Figs 14a and 14b). Trenching of further areas will be carried out wherever land access is granted, whether these are Phase 1 or Phase 2 areas, and is planned to continue until summer 2021.
- 1.1.26 This Project-wide WSI provides an overview of the known archaeological resource along the line of the scheme, indicates the archaeological aims and objectives appropriate to their investigation by trenching, and sets out the methodology by which LTC's archaeological contractors will implement the requirements for archaeological trial trenching.

- 1.1.27 All work will be undertaken in accordance with local and national planning policies. Details of the relevant national policies are described in the DBA (Highways England 2020) and summarised in sections 1.4-1.6 above. Policies within the Local Plans for Thurrock, Havering and Brentwood are also relevant, and are also set out in detail in the DBA.
- 1.1.28 All work will also follow the MoRPHE Project Manager's guide (Historic England 2015), and the Code of Conduct of the Chartered Institute for Archaeologists (CifA). The archaeological works will adhere to the Standards and guidance for archaeological evaluation, excavation and archiving (CifA 2014a; CifA 2014b).
- 1.1.29 The work will be monitored by Highways England and by the Historic Environment Advisor to Thurrock Borough Council (the Essex County Council Senior Archaeological Consultant), the Historic England Ancient Monuments Inspector for the East of England Region and Historic England Greater London Archaeological Advisor, and the Historic England Science Advisor for the East of England.

1.2 Location, topography and geology

- 1.2.1 The scheme north of the Thames runs from the bank of the Thames (NGR 567450 175500) on the south to 2.1km north of Junction 29 of the M25 (NGR 190400 557175), and covers a total length of just under 22km (Fig. 2). In the northern (Havering and Brentwood) section ancillary extensions run from the junction west along the north edge of Upminster for 2.2km and south-east for 2.4km (Figs 2a and 2b). The main route follows the M25 south for 4 km before turning eastwards just south of North Ockendon across open land. The route continues east for 3.5km and then curves SSE to meet the A13 at the A13-A1089 junction west of Orsett. In this section there are further side extensions on a NNW-SSE axis either side of the main route, that to the north being 1.55km long, and that to the south, which rejoins the main route east of South Ockendon, 1.6km long.
- 1.2.2 South of the A13 junction the road skirts around the north side of Chadwell St Mary and curves gradually southwards west of Linford, entering the Thames floodplain midway between East and West Tilbury and just south of the railway line. The road crosses the floodplain for a distance of around 1km before reaching the portal.
- 1.2.3 The solid geology of the scheme north of the Thames (Figs 3a and 3b) comprises a mixture of Thanet Sand Formation, Lambeth Group gravels, sands, silts and clays and Harwich Formation silty clays and clayey sandy silts, in the southern part, with outcrops of London Clay throughout the northern part, and Bracklesham Group clays and marls underlying the Bagshot sands at the very north end of the scheme (BGS 2019).
- 1.2.4 The solid geology of the scheme area is mostly covered by superficial deposits of Head clay from Junction 29 southwards, with smaller outcrops of Lynch Hill Gravel Sand and Gravel in the northern part, particularly west and north of North Ockendon, and outcrops of Boyn Hill Gravel Sand and Gravel east of that. The river valley of the Mar Dyke (east of North Ockendon and north-west of Orsett) is filled with alluvial silts and peats. Further extensive outcrops of Boyn Hill Gravel Sand and Gravel occur west and south of Orsett, giving way to Taplow Gravel from Linford southwards (Figs 3a and 3b). Alluvial deposits and peats are present on the floodplain of the River Thames.
- 1.2.5 The landscape on the north side of the Thames estuary is characterised by flat, low-lying lands comprising open beaches, mudflats and marshland. Beyond this (just south of West Tilbury) the land rises up the slopes and onto the surface of the gravel terraces, and the scheme runs north and then WNW along the terrace plateau to the junction with the A13 north-east of Grays. The scheme then turns north-west, still on the terrace, before dropping down into the Mar Dyke River Valley, and continues north and then west across this for 3.6km, before rising again onto the surface of the gravel terrace plateau. There is a second smaller river valley around 1.7km across associated with the Mar Dyke east of Upminster, extending north almost to Junction 29 of the M25, where the scheme rises onto clay downland, the highest part of the scheme.

- 1.2.6 Landuse is mostly agricultural, but includes a small area of woodland east of the B186 and 800m south of Top Meadow Golf Course and strips of woodland within the Thames Chase Forest Centre, north of St Mary's lane and south of the a127 just west of Junction 29 of the M25 (Figs 4a and 4b).
- 1.2.7 The topography of the scheme is shown on Figures 5a-c). The route rises from just above sea level on the floodplain to an elevation of around 20m on the gravel terrace near to West Tilbury, and continues at that elevation (with variations of as much as 5m) until the edge of the Mar Dyke Valley west of Orsett. From here the terrace slope drops to a height of 10m aOD, and from this dips gently downwards to the centre of the valley, where the elevation is only 5m aOD. The slope is reversed northwards from this, reaching a height of 20m aOD at the top of the terrace slope to the north of South Ockendon, and continuing with a gradual rise to 30m aOD past North Ockendon, where it drops again into the minor Mar Dyke river valley. The terrace slope is fairly steep, dropping to a height of 12m aOD, and this river valley has a steeper slope, reaching a lowest elevation of only 5m aOD at the Mar Dyke in the middle. From here the ground rises again, and reaches a maximum elevation of 80m aOD on the clay downland just south of the very north end of the scheme.
- 1.2.8 The gravel terrace is cut by one major dry valley, which begins just west of Orsett, and runs south-eastwards, being crossed by the A13 south of the village. As the scheme runs ESE it follows the south-western edge of the valley until the scheme route turns southwards, where there is a tributary valley coming in from the west, and from this point the scheme runs SSE down the dry valley. Another tributary valley runs in from the north-east between Linford and East Tilbury, and the dry valley then turns SSW, running obliquely across the scheme line and exiting just before the edge of the gravel terrace and the floodplain.
- 1.2.9 The main watercourse crossing the route is the Mar Dyke, which runs south-westwards down towards the Thames. No sizeable permanent stream remains within the smaller northern Mar Dyke valley, although in places hedgerows indicate a former stream along its south edge. The dry valleys further south presumably provide temporary drainage in times of significant rainfall, and the Thames floodplain is criss-crossed by minor watercourses.

2 Archaeological Background

2.1 Introduction

- 2.1.1 The archaeological and historical significance of the route was initially set out in the 2017 LTC EIA Scoping Report (HE540039-CJV-GEN-GEN-REP-ENV-00001).
- 2.1.2 Gazetteers and a baseline description of the archaeological resource have been prepared by LTC for the DBA, using a corridor extending outwards for 1km from the development boundary for background (LTC 2020). The numbers used in this report are mostly those already issued by LTC, except for scheduled monuments and selected older listed buildings, for which Historic England numbers are used, and HER events, which (except in a very few cases) have not been numbered by LTC. Additional gazetteer numbers have been issued for sites discovered during preparation of the detailed WSIs that area not included in the Essex or Havering HERs. The background provided in this project-wide WSI for trial trenching has also used the 1km area, but has not considered all standing buildings or issues of wider setting. It has however taken account of scheduled monuments and any medieval or early post-medieval listed buildings in the wider corridor, and has also referred to the wider context of the archaeology of the scheme area beyond the 1km corridor.
- 2.1.3 Other than the HER data, several other sources were used in researching the medieval and post-medieval period in the area of the site. The history of the medieval and post-medieval manors for the northern part of the site (parishes of Cranham, Upminster, Great Warley and North and South Ockendon) has been covered by the VCH and references are included to this volume (VCH 1978). The southern part of the site (Orsett, East and West Tilbury) within the Hundred of Barnstable has not been completed by the VCH, which makes obtaining information for this area more complex. The Domesday Survey of 1086 (recording ownership of 1066) has been digitised online by the University of Hull (Palmer 2019) and this is a useful resource to determine the size of late Saxon settlements. Ordnance Survey maps were also used in identifying changes to the landscape during the period c.1880-1940, and the 1897 map covering the scheme corridor is reproduced as Figures 13a and 13b. In addition, the tithe maps for much of the scheme were examined, and features identified from these maps
- 2.1.4 Cropmarks show well on all of the gravel terrace areas in the northern, central and southern parts of the scheme area, but are unsurprisingly rare in the clay downland at the very north end, in the river valleys of the Mar Dyke and in the dry valley in the southern part of the scheme. With very few exceptions, only recent field systems are visible on the Thames floodplain. The data obtained from the Aerial Investigation and Mapping report (Place Services 2019), and from an updated report for the Orsett area (Place Services 2020) has been used in assessing the archaeological resource (Figures 6a-g).

Previous investigations (Figs 7a-7d)

- 2.1.5 A number of investigations have taken place within and adjacent to the scheme in both Havering and Essex. Simplified plans of the most important of these are shown in Figures 7a-7d. In the detailed WSIs cropmarks and previous investigations (whether seen as cropmarks, found by geophysical survey, found by trial trenching or by accident) are shown together in order to provide the best picture of current knowledge of archaeology in their areas, but this was not practical for a WSI dealing with the whole of the scheme. Those excavated sites that were first discovered from cropmarks are, however, also included on Figures 6a-6g, to give a sense of the full extent of the cropmark resource and the geology on which they appear.
- 2.1.6 The range of previous investigations includes road schemes (the A13 and M25 improvements), several gas pipelines, quarry extraction sites (including Mucking) and housing developments such as Bata Fields. The main archaeological investigations are summarised below (roughly from north to south) and are also referenced in the text below.
- 2.1.7 Several archaeological investigations in the vicinity of the northern part of the scheme were undertaken between 2008 and 2011 as part of the M25 widening scheme. From north to south these comprise the Warley Road to Beredens Lane Strip Widening - M25014.10 (**165**), the Folkes Lane Strip Widening (**166**), the Codham Hall Bund, Tank 1762 and Strip Widening (M25018.10) (**167**), the Hobbs Hole evaluation and excavation (M25001.08/09) (**168**), Upminster Bund (M25008.09) (**169**), the Pond 1776 - M25021.11 (**170**), Pond 1791 and Strip Widening (M25023.11) (**172**), the Ockendon Cutting Palaeolithic watching brief (M25026.11) (**173**) and the Pond 1812 and Strip Widening (M25025.11) (**174**) (Biddulph and Brady 2015). The majority of these excavations found only limited or modern features, the exceptions being excavations at Codham Hall Bund (**167**), Hobbs Hole (**168**) and Upminster Bund (**169**) which are discussed below. These excavations recorded Bronze Age, Iron Age, Roman and medieval features within and adjacent to the scheme.
- 2.1.8 MoLAS undertook an extensive excavation at Manor Farm directly west of the northern part of the scheme in 1983-4 (**710a** and b). This excavation is recorded by a single HER number, but has been split in the gazetteer to differentiate between the western focus of activity (**710a**) and the eastern focus (**710a**), which is closer to the scheme. This excavation recorded Mesolithic and Neolithic flints, Late Bronze Age and Iron Age features (**710a**), Roman rectilinear enclosures (**710b**), Saxon ditches (**710a**) and post-medieval finds (MOLA 2011).
- 2.1.9 Rescue excavations took place along the M25 and the A13 in 1979-80, several of which were located adjacent or within the scheme including Sites 6-8 near Dennises Farm along the M25 and Sites 1 and 2 (Rectory Road and Baker Street) along the A13. Evidence of medieval settlement (191) was recorded near Dennises Farm adjacent to the M25. Further south, several late Bronze Age or early Iron Age features (**194**) were recorded along the route of the A13 as well as a small early Iron Age open settlement (**270**) (Wilkinson, 1988).

- 2.1.10 In 1946 a rhomboidal, double-ditched enclosure was identified by aerial photography within the central part of the scheme. This site, known as ‘Orsett Cock’ was trial-trenched in 1956-7 and watching briefs took place in 1960-61 and in 1968-70 during the laying of gas pipelines. This site was subsequently excavated in 1976-79 in advance of the A13 widening. The archaeological investigations (Carter 1998) revealed occupied in the middle to late Iron Age (**509**), a defensive enclosure and subsequent farmstead with pottery kilns of Roman date (**510**), and Saxon occupation including five sunken-featured buildings (**511**).
- 2.1.11 In 2018-2019 there were junction alterations and further widening to the A13 within the area of the scheme and for several kilometres north-eastwards. Trial trenching by LP Archaeology was followed by several targeted excavations, and a summary of the findings was kindly provided by John Duffy in advance of completion of the report. The investigation was split into eight areas (A-H): areas E, G and H lay within the scheme and Areas A and B just south and east respectively. Further east Area D had already been heavily truncated by the construction of the A13, while Area C 2km to the north-east contained the most archaeology, comprising Mesolithic pits (sic) and medieval and post-medieval ditches. A sequence of Roman ditches were also recorded in Area H just south of the scheme and several other ditches contained a little prehistoric and medieval dating evidence. Areas A and B east of the A13/A128 junction also confirmed linear cropmark features, tentatively interpreted as part of a prehistoric field system.
- 2.1.12 South of the A13 and c.80m north-east of the scheme a scheduled causewayed enclosure (**10092867**, Aerial Mapping Report site 17A) was excavated in 1975. The excavation revealed Mildenhall type pottery and struck flint dating to the early Neolithic, and the secondary ditch silts of the enclosure also contained a small quantity of late Neolithic/early Bronze Age pottery. The Neolithic causewayed enclosure was overlain by an unenclosed early Iron Age site and a middle Iron Age sub-rectangular enclosure (207) (Hedges and Buckley 1978, 219-308).
- 2.1.13 A multiperiod site at Mucking was identified initially from extensive cropmarks showing on the gravel terrace overlooking the River Thames, and was excavated prior to gravel extraction between 1965-1978. This extensive 18.2ha site lay adjacent to and only 0.2km north-east of the scheme. The excavations identified finds and/or features of every period from the Mesolithic to the post-medieval periods. Of particular significance were two late Bronze Age ringforts (**332**, **333**), an Iron Age settlement (**334**), a highly organised landscape of the Roman period (**335**) and an extensive settlement and two cemeteries of the Saxon period (**336**, **337**). Publications have been produced on the prehistoric (Bond 1998, Evans, Appleby and Lucy 2015), Roman (Evans and Lucy 2016) and Saxon phases of the archaeology (Hamerow 1993).
- 2.1.14 In 2010 a photographic cropmark survey and evaluation (**3539**) was undertaken at Mill House Farm 0.6km west of the scheme. The cropmarks were targeted by the trial trenching, and were followed by excavation (report forthcoming) that recorded an extensive late Bronze Age/early Iron Age settlement site with an associated funerary monument and an extensive Saxon settlement (Schofield 2010; Place Services 2019, 11).

- 2.1.15 In the central part of the scheme the initial results from the 2019/2020 Lower Thames Crossing evaluation of WSIs A-E, K and L has shown that this area includes settlement activity dating to the Bronze Age, Iron Age, Roman, medieval and post-medieval periods. Gazetteer numbers (**3553-3559**, **3565-3582**) have been assigned to these features located within Land Parcels 1, 3, 4, 5, 21, 22 and 23, and their locations are shown in Figure 7c. These initial results have been included as they may significantly alter the research agenda and ongoing mitigation strategy for adjacent WSI areas.
- 2.1.16 Highlights from the evaluations so far dating to the earlier prehistoric period include pits containing beaker pottery (**3558**, **3567**) in Land Parcels 3 and 5, an earlier prehistoric large ring ditch in Land Parcel 4 (**3571**), and a ring ditch in Land Parcel 22 of early or middle Bronze Age date (**3581**). There is middle and late Bronze Age and/or early Iron Age activity in Land Parcel 5 (**3553-3557**) and late Bronze Age features in Land Parcel 4 (**3572**). Late Bronze Age and/or early Iron Age pottery has been recovered from pits and ditches in Land Parcels 22-3. Middle Iron Age pottery has been recovered from one rectangular enclosure in Land Parcel 22, and from several circular or penannular enclosures and other features in Land Parcel 21 (**3578**). One urned and one unurned cremation was found in Land Parcel 21 (**3579**), and both are likely to be of later prehistoric date.
- 2.1.17 Highlights from later periods include a substantial late Iron Age/Roman settlement with associated pottery kilns in Land Parcel 3 (**3569**) and a possible late Iron Age/Roman pottery production site within Land Parcels 22 and 23 (**3582**). Due to the difficulty of distinguishing late Iron Age from early Roman pottery in the absence of imported wares, sites with this pottery are described as late Iron Age/early Roman, or late Iron Age Roman where the origin of the Roman settlement is unclear, in this document. The medieval/post-medieval remains of Seaborough Hall were also found in Land Parcel 4 (**3577**), and medieval quarries of 12th/13th century date in Land Parcel 5 (**3559**). These interim results are presented in Highways England 2020, HE540039-BAL-GEN-GEN-REP-HER-00047.
- 2.1.18 Further archaeological investigations have taken place within the southern part of the scheme. In 1959-60 a double ring ditch south of Muckingford Road was excavated and found to be a Bronze Age Barrow (**444** – AP 40A). The barrow had subsequently been partly levelled in the Iron Age (**445**) and reused for domestic activity. In the early 1990s a British Gas pipeline passed through the scheme close to the excavated Bronze Age barrow, and found a middle Bronze Age cremation cemetery (**365**) (Smoothy 1993). In addition, worked flints were also found along the route but were not dated any more specifically than prehistoric in date (**63**, **64**, **65**, **66** and **67**).
- 2.1.19 A geophysical survey (**107**) followed by an archaeological excavation (**104**) was undertaken in 2005 west of Linford that included an area within the scheme (Oxford Archaeology 2005). This evaluation found a Bronze Age settlement adjacent and east of the scheme that was subsequently excavated (**110**), and a number of Roman field ditches and a possible area of settlement (**104**) within the scheme area.

2.1.20 In 1974-6 Essex County Council undertook archaeological monitoring (**488**) at Ferris Aggregate Gravel Pit located 0.4km north-west of the scheme. This monitoring found a buried soil of unknown date which contained cut features. This was overlain by a layer of peat overlain by layers of clay, indicating that the area had been submerged below water. A ditch containing waterlogged wood was cut into these clay layers, but was not visible on aerial photographs; it may have been associated with attempts to reclaim this marshy area. Although undated, the sequence demonstrates the survival of occupation layers at some depth in this area, and the limited value of aerial photography in an area of deep deposits.

2.2 The geoarchaeological background of the Thames estuary

- 2.2.1 The scheme involves both dryland and wetland environments, the latter most notably associated with the floodplain and estuary of the Lower Thames on the Essex banks, plus the marshlands of the Mar Dyke and its tributary.
- 2.2.2 In order to understand the distribution of potential archaeological sites in the lower estuary area and the reasons behind major changes in settlement patterns in the past, it is necessary to understand the changing nature of the estuary. Today the estuary is characterised as “tide-dominated” (*sensu* Dalrymple *et al.*1992) in which major sandbars occur within the outer estuary area, a marine-dominated zone, and tidal meanders in an inner, mixed energy zone. The LTC scheme lies in the eastern part of the mixed energy zone, which extends c 4-5 km downstream as far as Mucking (Essex) and the Shorne Marshes (Kent) (Bates and Stafford 2013, fig 3).
- 2.2.3 The recent geomorphologic development of the area and the establishment of the modern topography have resulted from major drainage pattern modifications during the Quaternary, and in particular events during the last 500,000 years (Gibbard 1994). Holocene sediments (<12, 000 years BP) within the development area are part of a continuum forming a wedge thickening downstream from less than 2m at Tower Bridge to reach a maximum thickness of 35m east of the scheme area at Canvey Island (Marsland 1986).
- 2.2.4 The Holocene sediments of the Lower Thames consist of complex intercalated sequences deposited in a variety of environments representing variously: freshwater alder carr, fen, reedswamp, intertidal salt marsh and mudflats. The sediments have been grouped by Gibbard (1999) into the Tilbury Member and are dominated by peats and clay-silts in the inner estuary, with marine sands recorded near the Isle of Grain and Yantlet Channel and Sea Reach south of Canvey Island. The basis for subdivision of these deposits was established by Devoy during the 1970s (Devoy 1977;1979; 1980; 1982). His ‘Thames-Tilbury’ model used borehole stratigraphies integrated with biostratigraphic studies to infer successive phases of marine transgressions (typified by clay-silt deposition) and regressions (typified by peat formation).

- 2.2.5 Devoy's work has resulted in a view of sediment accumulation being controlled within the area by a combination of factors dominated by sea-level change and tectonic depression of southern England. However, more recent work (eg Bates 1999; Bates and Barham 1995; Bates and Stafford 2013; Haggart 1995; Sidell *et al.* 2000; Sidell *et al.* 2002; Sidell and Wilkinson 2004) has highlighted several problems suggesting that the model cannot always be easily applied in terms of lithology or age/altitude analysis, particularly at the scale of a single archaeological site. This is in part a reflection of the complex nature of floodplain environments where sequence accumulation may be influenced by very local factors such as proximity to the terrace edge, the presence of tributaries, islands or 'eyots' and areas of impeded drainage. More recently a simplified (tripartite) regional model for floodplain development was presented by Long (Long *et al.*(2000). A similar cultural landscape model set out by Bates and Whittaker (2004) examined the likely impact of these changes on human activity and provides a useful framework for archaeological investigation.
- 2.2.6 Over the last two decades a large number of detailed site-specific investigations have been undertaken along the Lower Thames, many in association with developer-funded archaeological work on large infra-structure projects, that are beginning to address the complex range of factors responsible for sequence accumulation. It should be noted however, that much of this work has been focussed upstream within the more sheltered part of the inner estuary in east and central London, along tributaries, or at the margins rather than the deeper parts of the floodplain.
- 2.2.7 Large-scale geoarchaeological investigations located closer to the marine dominated zone, thereby offer valuable comparative data. Adjacent to the LTC in Essex recent projects include the London Gateway Port Development at Shellhaven (Bates *et al.* 2012; Biddulph *et al.* 2012), the London Distribution Park (Batchelor *et al.* 2014), Tilbury Docks (Schulting 2013) and the new port terminal of Tilbury2 (Batchelor and Young 2017). In Kent, in addition to HS1 through the Ebbsfleet Valley (Bates and Stafford 2013) to the west of the LTC, smaller geoarchaeological investigations to the east around Denton include Dalefield Way (Young 2016), the Lion Business Park (Champness 2006, 2007) and the Denton Relief Road (Priestly-Bell 1999; Weaver 2003). These investigations have demonstrated that Holocene sequences in excess of 15m with multiple peat horizons are likely to be preserved in the deeper parts of the floodplain dating back to the early Holocene.
- 2.2.8 The waterlogged floodplain sediments have potential to preserve a range of palaeoenvironmental indicators suitable for high resolution landscape reconstruction in terms vegetation patterns, past hydrological regimes, climate and sea-level studies and past human interactions, when accompanied with a robust chronology provided by scientific dating (eg. radiocarbon and OSL dating). This includes both the organic peat units representing semi-terrestrial environments and inorganic clays, silts and sands deposited in alluvial and estuarine conditions though the study of pollen, plant remains, insects, molluscs, diatoms, ostracods and foraminifera.

- 2.2.9 On the floodplain, the undulating surface of the underlying Pleistocene gravel, a relict feature of the late glacial braided stream systems, may be considered a key archaeological horizon, a buried land-surface dissected by meandering channels, that existed prior to the expansion of wetland environments in the early to middle Holocene. However, semi-terrestrial peats located within the sedimentary stack may also preserved evidence of activity and wetland exploitation, notably intact artefact scatters, burnt mounds and waterlogged wooden structures such as trackways and platforms. Activity associated with estuarine sedimentation may include evidence of local industries such as salt-making, recorded extensively across the marshes in both Kent and Essex and in the vicinity of the LTC.
- 2.2.10 Towards the edges of the floodplain and overlying buried floodplain islands sediment sequences maybe shallower with shifting ecotonal zones (the interface between wet and dry ground) and channel margins acting as a focus for activity. In locations where the underlying gravel surface slopes steeply, such ecotonal zones may have remained relatively static for periods of time before being buried, in such circumstances the potential for multi-period *in situ* remains to be preserved is high.

2.3 Geoarchaeological overview of the Mar Dyke and dry valleys

- 2.3.1 The route of the LTC crosses a tract of alluvium associated with the middle reaches of the Mar Dyke immediately northwest of Orsett, Essex. Here the floodplain topography forms a large flat basin underlain by London Clay, previously occupied by Orsett and Bulphan Fens, mostly drained during the medieval period. A further tract of Mar Dyke alluvium is traversed in the vicinity of the junction with the M25.
- 2.3.2 The lower reaches in the vicinity of Stifford and Purfleet have been the subject of considerable geoarchaeological study, particularly the fossiliferous Pleistocene gravels associated with the ‘Ockendon meander’, a former course of the River Thames. There are areas of the scheme where Pleistocene deposits are likely to be exposed, for instance alongside the M25, and LTC has appointed a Palaeolithic specialist, Francis Wenban-Smith, who worked on the Pleistocene deposits within the Mar Dyke valley exposed during the M25 widening between 2008 and 2011 (Wenban-Smith *et al.*, 2014), and a geoarchaeologist, Martin Bates, to provide a strategy for the investigation and recording of these deposits where the scheme impacts upon them. This is discussed in the Palaeolithic and Quaternary Deposit Model (PQDM), and Preliminary Assessment of Archaeological Potential (Wenban-Smith and Bates 2020).

- 2.3.3 The Mar Dyke valley floor alluvium (Holocene) was investigated during improvements to the A13 further downstream in the vicinity of North Stifford, where they reached over 5m in thickness (Wilkinson 1988). The sedimentary sequences at this location were complex, comprising intercalated freshwater peat and estuarine silt clay units dating back to the middle Holocene. Diatoms from the basal silts indicated estuarine conditions prevailed at this location, and a radiocarbon date of 4780-4380 cal BC (HAR 4522, 5740 ± 80 BP) from the top of this unit correlated it with Devoy's Thames II marine transgression (Devoy 1979). The lower wood peat, formed in freshwater alder carr, was correlated with Devoy's Tilbury III regression (*ibid.*) and provided pollen evidence for the early Neolithic elm decline. Evidence of human activity associated with the peat consisted of wood charcoal and a late Neolithic to early Bronze Age flint knife from the top of the unit. Later prehistoric burnt flint, pottery and charcoal was also recovered from the overlying sediments. Upper peat units were radiocarbon dated to the late Roman to Saxon periods, although altitudes diverged from the Devoy model, possibly due to local micro-topography of the valley floor (Wilkinson 1988, 106).
- 2.3.4 In contrast, the sedimentary sequences associated with the middle reaches of the Mar Dyke have been subject to little geoarchaeological study. The current course of the Mar Dyke has been realigned and straightened, and the only borehole data available from the BGS online dates from the 1970s (the Mar Dyke Improvement Scheme) and consists of hand-written logs without overall interpretation. The descriptions in the boreholes vary with alluvial type deposits (silt and clay) noted at c 1.5 to >4.0m in thickness. In several locations the alluvium was described as peaty with laminations and waterlogged wood. Gravel was noted in the base of some of the sequences; where absent the presence of selenite or gypsum crystals may indicate tertiary bedrock, although the transition with the overlying alluvium is not always clear. The limited evidence is currently insufficient to provide an interpretation of the deposit sequence.
- 2.3.5 The Mar Dyke was still tidal up to Stifford bridge in the eighteenth century and navigable to Orsett Hall and into the fens (Allison 1966, 11). While it is possible that it was tidal even further upstream earlier than this, it is more probable that the sequence of deposits in the middle reaches will be shallower and formed in differing depositional environments than the deep estuarine sequences recorded downstream towards the Thames confluence (Bates and Stafford 2013; Wilkinson 1988).
- 2.3.6 The Holocene sedimentary sequences associated with the floodplain of the Mar Dyke where crossed by the Lower Thames Crossing scheme have the potential to preserve buried archaeological and palaeoenvironmental remains of significance. The current course of the Mar Dyke has been realigned and straightened, but clear evidence for former channels is visible on Lidar data (Figure 5c) and further palaeochannels along with floodplain islands may lie buried at depth.

- 2.3.7 One major dry valley runs ESE and then south along the line of the proposed route from a point south of Orsett (Figs 5a-c). There are also several smaller 'tributary' valleys running into this, and another dry valley running NNW into the Mar Dyke valley. Colluvial (hillwash) deposits contained within peripheral dry valleys and at the base of slopes at the floodplain edge, intercalated with alluvium, also have the potential to contain stratified archaeological remains and buried soils.
- 2.3.8 The PQDM document highlighting the Palaeolithic potential of the Quaternary deposits along the scheme (Wenban-Smith and Bates 2020) has already been mentioned (section 1.1.16). This includes a series of transects showing the deposit sequence, and incorporates the results of the Geotechnical Investigation programme monitored by Wessex Archaeology available at the time. Work on the Holocene deposit sequence has, however, not yet been completed. Borehole data has been examined where available during the preparation of the detailed WSIs, and during trial trenching the scheme geoarchaeologist Martin Bates will be informed and consulted should any trenches expose deep sequences of deposits that could be of use in the further development of the detailed deposit model. Other than the known areas of deep stratification within the Thames floodplain and the Mar Dyke valley, trenches dug into the sides or base of dry valleys are most likely to prove useful in the preparation of the detailed deposit model.
- 2.3.9 Further borehole logs produced as the GI investigations progress that lie within these valleys will be examined where relevant during trial trenching, and consultation with the scheme geoarchaeologist Martin Bates and Palaeolithic specialist Francis Wenban-Smith will form part of the strategy for trial trench investigation.

2.4 Chronological summary of known archaeology

- 2.4.1 This summary is accompanied by plots of HER data for the scheme area and the surrounding area. A study area of 1km was chosen for the gazetteer compiled by LTC for the DBA, but within this the particular focus of this document has been upon an area 250m wide either side of the centre line of the route. The HER data has been grouped into the following periods: prehistoric (15000BC-AD43), Roman (AD43-410), medieval (AD 410-AD1540), post-medieval (AD1540-1901) and modern, and Figures 7-11 illustrate the distribution and types of data present for each period. These period plans also show the cropmark and geophysical survey interpretation results, but due to the fact that the dating of many of the cropmarks is only provisional, cropmarks and features interpreted from the geophysical survey of all periods are shown.

Prehistoric (Figs 6a-g, 7a-7d and 8a-8b)

- 2.4.2 **Late Upper Palaeolithic.** The Lower Thames Crossing Palaeolithic and Quaternary Deposit Model (PQDM) and Preliminary Assessment of Archaeological Potential (Wenban-Smith and Bates 2020) outlines the potential for Palaeolithic remains within the scheme and study area. This potential is for Palaeolithic remains in general (Lower, Middle and Upper) and is not specific to late Upper Palaeolithic remains, which is the only part of the Palaeolithic period strictly covered by this WSI. A very brief summary of its findings regarding the rest of the Palaeolithic is given below because of the potential for finding derived Palaeolithic artefacts in later deposits.
- 2.4.3 There are several areas of high potential, including the Boyn Hill gravels in the Ockendon area, the Pleistocene Head deposits on the sides of the Mar Dyke valley, the Boyn Hill gravels in the area of Orsett and Chadwell St Mary and to the east at Mucking, and the Taplow gravels at the south-east end of the scheme. Pleistocene Head deposits are also likely to be encountered in the dry valleys running between these gravel terraces in the south-eastern part of the scheme.
- 2.4.4 Stray Paleolithic finds have been recorded along the line of the scheme. A handaxe (**724**) was found on the surface at South Ockendon Hall in 1978 when a windmill on the south side of the moat was demolished. An Acheulian handaxe (**441**) located c.100m east of Princess Margaret Road. This may be a duplicate entry with (**723**) by Pastscape as this entry suggests a broken handaxe was found north of the church but the NGR places it further south.
- 2.4.5 A number of Paleolithic finds have been recorded in the surrounding area. South of Orsett this includes a handaxe (**728**) and flint flakes (**423, 492, 647**). A cluster of four handaxes, one retouched flake and nine flakes (**729**) have also been found in this area. Another group of 115 handaxes, 2 roughouts and 6 flakes (**726**) were found 500m south of the scheme and just north-east of Chadwell-St-Mary. Further south, a number of Palaeolithic finds have been recorded 0.8km west of the scheme at Gun Hill (**468, 636**) and also at Piggs Pit (**503, 725**). These find spots are located on the higher ground of the terrace nearly 1km west of the scheme. Further east Palaeolithic implements and flakes (**1718**) were found in a gravel pit at Mucking in the 19th century, although the location of these is not exact.
- 2.4.6 No Upper Palaeolithic flint scatters or stray finds have been recorded within the scheme or surrounding 1km area in Essex/Havering, but more widely a Late Upper Palaeolithic flint scatter was found at Tank Hill Road, Purfleet, close to the mouth of the Mar Dyke (Leivers *et al.* 2007), and west of that, a small late Upper Palaeolithic flint scatter was found in the Beam valley, Dagenham (Champness *et al.* 2015).

- 2.4.7 **Mesolithic (Figures 7a and 7b).** There is a paucity of Mesolithic archaeological evidence recorded within this part of the scheme, and all of this consists of individual findspots. Very little is marked on Jacobi's summary of the Mesolithic of Essex (Jacobi 1980, fig. 6), and relatively little has been added in the vicinity of the scheme since then. During widening of the M25 a Mesolithic microlith was found just over 1km from the scheme limits north-west of South Ockendon (Biddulph and Brady 2015, 27), and Mesolithic flints were also found in the MoLAS excavations at Manor Farm just west of the scheme. Residual Neolithic and Mesolithic flints (**27**) were recorded at William Edwards School in 1997, located on the outskirts of Grays 0.6km west of the scheme.
- 2.4.8 Within the scheme limits single Mesolithic flints (**228** and **686**) are recorded on the sand and gravel terrace north of Chadwell St Mary, and another (**491**) some 250m south of the scheme here. A further Mesolithic flint (**416**) was found 750m to the south-west at Greyhound Lane, and Mesolithic flints (**469, 646**) have also been recorded at Gun Hill west of West Tilbury (600m west of the scheme). The most concentrated evidence for Mesolithic activity comes from Mucking, where both microliths and a tranchet axe were among the 91 flints of this period from the site (Evans *et al.* 2016, 64). A possibly Mesolithic flint macehead axe (**21**) was recorded within the scheme 3m above the Mucking valley bottom. Two other Mesolithic findspots are recorded in the HER in this area, one a flint (**329**) at Mucking, the other unspecified (**1708**) north-east of Linford, both east of the scheme.
- 2.4.9 To the south-west, Mesolithic flintwork has been found as residual finds at Great Arnold's Farm, Rainham (MoLA 2011) and as displaced surface flint scatters of both early and later Mesolithic date at Tank Hill, Purfleet, and at Dagenham (Leivers *et al.* 2007; Champness *et al.* 2015).
- 2.4.10 **Neolithic (Figs 6a-g, 7a-7d and 8a-8b).** No early Neolithic archaeology is known in the northern part of the scheme either on the clay downland, the Mar Dyke valleys or the gravel terrace between them. A flint scraper of late Neolithic or early Bronze Age date (**167**) was found during the M25 widening north of Junction 29 on its east side at Codham Hall Bund (Biddulph and Brady 2015, 17), and pits containing struck flints of similar date 1km south-west of the scheme during the M25 widening (*ibid.*, 27).
- 2.4.11 On the gravel terrace between the Mar Dyke valley and its northern tributary, a possible large sub-circular enclosure 45m across and with opposing entrances was recorded as a cropmark (**184**; Aerial Mapping Report site 8), and if archaeological, this might well represent a late Neolithic henge monument. It is however also possible that this is a natural feature in the vegetation. A smaller cropmark penannular enclosure is marked nearby within the scheme (**1802**; Aerial Mapping Report site 68), and this could conceivably also be of earlier prehistoric date. During the Horndon to Barking Gas Pipeline Watching brief (Site 7) a shallow pit (**382**) was recorded just north of these enclosures and 0.3km north of the scheme. The pit contained the cremated bones of a mature/older adult female (25 years plus), and although undated, the cremation could date from the later Neolithic or Bronze Age.

- 2.4.12 Further south-west and north of South Ockendon the cropmarks of two parallel lines with a rounded terminal (**353**) were identified 0.8km south-west of the scheme. This feature may have been a long-barrow or long mortuary enclosure of early of middle Neolithic date.
- 2.4.13 A scheduled early Neolithic causewayed enclosure (**1009286**, **7** Aerial Mapping Report site 17A) is located to the south of Orsett on a bluff at the edge of the terrace, c 85m to the north-east of the site boundary. The monument was identified as a cropmark consisting of three concentric ditches and was partly excavated in 1975. The excavation revealed that pottery found within the causewayed enclosure was of Mildenhall type dating to the early Neolithic along with flints of the same date. The secondary ditch silts of the enclosure also contained a small quantity of late Neolithic/early Bronze Age pottery (Hedges and Buckley 1978, 219-308). Neolithic flints (**483**) were also found 0.6km south-west of the causewayed enclosure including blades, scrapers, arrowheads, cores and hammer stones. The largest number of these flints were collected from NGR 564700 180000 immediately south of the scheme area.
- 2.4.14 South of the causewayed enclosure, the 2019 evaluation of Land Parcel 4 for the scheme found a small pit (**3572**) containing several sherds of Neolithic pottery (Highways England 2020). In addition, a large ring ditch located in Land Parcel 4 contained early prehistoric pottery, though more probably early Bronze Age than Neolithic (**3571**). A possible east-west aligned sub-rectangular mortuary enclosure (**1812**) was recorded as a cropmark within the scheme in Land Parcel 3, 0.6km west of the causewayed enclosure (**1009286**). Trial trenching for the scheme in 2019 however found ditches surviving only 0.2m deep, but no associated finds or other features. The identification of this feature as Neolithic therefore remains uncertain. A possible long barrow (**325**) is also recorded in the HER 0.2km south of **1812**, but this may be a duplicate entry for the same feature. No trace of this was found by the aerial cropmark survey or during trial trenching.
- 2.4.15 In the wider landscape, an earlier Neolithic ring ditch was found at Great Arnold's Farm, Rainham (MoLA 2011). A Neolithic burial or possible 'cemetery' (**393/637**) (now dug away) is also recorded within the scheme north-west of Coalhouse Fort towards the south-east end of the gravel terrace, and a Neolithic flint chisel (**641**) was recovered from the Thames estuary east of this. Early Neolithic settlement features (**330**) were found in the excavations at Mucking, together with Mildenhall pottery, leaf-shaped arrowheads and blade-like flakes, as were late Neolithic features (also **330**) with Grooved Ware and transverse arrowheads. These features were recorded 200-400m north-east of the scheme. A beaker burial was also recorded along with a domestic assemblage of Beaker pottery (**331**).
- 2.4.16 Otherwise the evidence consists of findspots. There are two Neolithic findspots (**278**, **458**) in the landscape surrounding the causewayed enclosure to the south and south-east, the latter within the scheme corridor, and to the north a Neolithic find on the line of the A13 within the scheme (**507**) and a Neolithic arrowhead (**638**) just outside the scheme limits. Flints of late Neolithic or early Bronze Age date came from Chadwell St Mary (**490**) and from Gun Hill west of West Tilbury (**470**), both over 500m from the scheme.

- 2.4.17 A Mesolithic or Neolithic flint macehead axe (**21**) was recorded within the south-eastern part of the scheme and 3m above the Mucking valley bottom. Further Neolithic finds (**458, 1717**) have come from west and east of Linford, **458** within the scheme limits, and three others further south (**397, 396 and 638**) lie on or just beyond the terrace edge, the last two within the scheme area. Two of the Neolithic findspots are from Mucking (**1716, 1717**), and another close by (**1709**) is described as early Neolithic to late Bronze Age. A Neolithic ground axe (**1741**) was also found east of these. All of these lie several hundred metres beyond the limits of the scheme, the axe nearly 1km from it.
- 2.4.18 Finally, another Neolithic find (**489**) came from the marshland just north of Tilbury Fort just west of the scheme limits. Within the Thames floodplain Neolithic horizons are likely to be deeply buried, though close to the terrace edge they may be found at relatively shallow depth, like a horizon of middle Neolithic flintwork found only 1.5m below ground during the excavations at London Gateway to the north-east (Biddulph *et al.* 2012, 57-9 and Fig. 3.1).
- 2.4.19 **Early and middle Bronze Age (Figs 6a-g, 7a-7d and 8a-8b).** A Beaker flat grave (**235**) was found at Orsett Cock on the line of the A13 500m east of the scheme (Carter 1998, 165), and another furnished Beaker grave (**331**) north-east of Linford at Mucking 250m north of the scheme. A further Beaker grave was also found at Mucking, as were pits indicating domestic activity and barbed-and-tanged arrowheads (Evans *et al.* 2016).
- 2.4.20 Beaker pottery was found South of Orsett and the A13 in a pit in Trench 47 in Land Parcel 5 (3558) during the 2019/2020 scheme evaluations, and thirty-four sherds of late Neolithic/early Bronze Age pottery in a ditch terminus or pit (**3567**) in Trench 18 of Land Parcel 3 (Highways England 2020). In Land Parcel 5 the dry valley in the northern part of the site also contained a buried horizon with small fragments of early prehistoric pottery and struck flints.
- 2.4.21 Early Bronze Age barrows, or ploughed out ring ditches, are known from several parts of the scheme. At the north-west end a possible ring ditch (**1684**) is recorded at Upminster more than 1km west of the scheme corridor, and three others (**593, 808, 809**) south of Cranham. A further enclosure or ring ditch (**523**) is recorded just east of North Ockendon, and a very small ring ditch is part of a group of cropmarks (**186**) 400m further south. The cropmark of a small ring ditch (**117**, Aerial Mapping Report site 6), interpreted as the remnants of a Bronze Age round barrow, is nearby to the south-west, east of the M25 and within the scheme.
- 2.4.22 Six hundred metres west of site 5A a middle Bronze Age pit (**174**) was found during construction of a pond just east of the M25 and just north of Dennis Road (Biddulph and Brady 2015, 25-27).
- 2.4.23 A circular ring ditch 32m diameter (**1807**) is located on the edge of the gravel terrace where it forms the southern slope of the Mar Dyke valley, some 250m east of the scheme, and this probably represents the remains of an early Bronze Age barrow (Aerial Investigation and Mapping Report 82). Close to the south edge of the valley a Bronze Age findspot (**1713**) is recorded 750m north-east of the scheme..

- 2.4.24 South of this, the Orsett (Grey Goose Farm) Cropmark Complex (**1002134**) is a scheduled monument situated on the ridge of a sand and gravel terrace at the top of the terrace slope. The monument, referred to as sites 13, 14 and 15 by the Aerial Investigation and Mapping Report (Place Services 2019). This site constitutes Land Parcels 22 and 23 within the scheme, and evaluation of this trenched a ring ditch of possibly early Bronze Age date, although the finds recovered were all of mid-late Bronze Age date, and the ring ditch may instead be middle Bronze Age (Highways England 2020). Two adjacent circular (or strictly penannular) ring ditches on the edge of the terrace, north of the main cropmark concentration, are more likely to represent later Bronze Age or Iron Age roundhouse enclosures than earlier barrows, as each has an entrance,
- 2.4.25 Cropmarks of other small ring ditches such as (**117**), and others nearby (**361**, **596** and **597**, Aerial Mapping Report sites 5A, 7B) within the scheme, have been interpreted as ploughed-out Bronze Age round barrows (Place Services 2019), but are rather small for barrows of the early Bronze Age. Ring ditches of even smaller size are known in the East of England, for example at Colne Fen, Earith (Evans *et al.* 2013, fig. 4.17), but these are rare. Clusters of small ring ditches associated with cremations of middle Bronze Age date have been found at Brightlingsea (Bradley 2007, fig. 4.8). Close to the scheme, a group of loosely paired ring ditches at Mucking were mostly of later Bronze Age date (Evans *et al.* 2016, 88-124), and a ring ditch accompanied by middle Bronze Age cremations (**237**) was found along the line of the A13 south of Orsett, within the scheme limit (Carter 1998, 165). If the cropmark small ring ditches were burial monuments, it is probably the middle and later Bronze Age to which they belong. They may however be earlier or later in date; a number of small hengiform monuments are known or suspected in Essex, although testing of some of these (Brown and Germany 2002) showed that some were for medieval windmills.
- 2.4.26 Another ring ditch of similar size, though lacking an entrance, is visible as a cropmark (**261**) at Baker Street (Fig. 6d, Aerial Survey site 49), also on the north edge of the terrace and only 200m from the scheme, and an isolated cropmark ring ditch (**219**), very likely to be Bronze Age, is evident further south west of Five Chimney Cottages (Fig. 6d, Aerial Mapping Report site 21). A possible ring ditch (**231**) was also recorded south of Orsett (Grey Goose Farm) Cropmark Complex and west of Nevilles Farm and within the scheme.
- 2.4.27 Further south-west, cropmarks of ring-ditches, one large and one small (**351**) north of Chadwell St Mary and another small example (**342**) on its north-east edge (Aerial Mapping Report sites 18, 56) were also thought to represent Bronze Age round barrows (Place Services 2019). The larger of the two represented by 351, a ring ditch some 20m in diameter, was sectioned by trial trenching for the scheme in Land Parcel 4, and produced both struck flint and scraps of early prehistoric pottery, confirming an early Bronze Age date. The smaller ring ditch was not located by the trench placed to look for it. Another small isolated ring ditch (within cropmark cluster **459**) was located by some 550m to the east of **342** (within Aerial Mapping Report site 24A) just south of the scheme.

- 2.4.28 Two large adjacent circular or penannular ring ditches (**450**) are visible within Aerial Mapping site 26, part of an extensive cropmark complex comprising Aerial Mapping Report sites 53, 24B, 73, 74 and 26) that runs along the edge of the dry valley followed by the scheme route between Chadwell St Mary and Linford (Fig. 6d). These ring ditches, which are approaching 40m across, may be ploughed-out large Bronze Age barrows, or possibly earlier prehistoric monuments. Further cropmarks of ring ditches in the vicinity include **345**, **456** and **479** located east and west of Blue Anchor Lane and Hoford Road within the western part of the study area (Fig. 6d).
- 2.4.29 Several middle Bronze Age features were recorded in Land Parcel 5 north-east of Chadwell St Mary during the Lower Thames Crossing evaluations. Two middle Bronze Age ditches probably belonging to a cropmark small sub-rectangular enclosure, and containing much of a Bucket Urn, and one other middle Bronze Age ditch, all lay within Trench 139 (**3556**). Further middle Bronze Age sherds of pottery were found in the subsoil within Trench 41 just west of High House Lane (**3557**), together with a small pit containing a further sherd. This all suggests the presence of a middle Bronze Age settlement focus in this part of the scheme (Highways England 2020).
- 2.4.30 During the Mucking excavations, eight barrows (**332**) were recorded c 0.5-0.8km north-east of the scheme and these were dated to c. 1700-1400 cal. BC (middle Bronze Age). The barrows were 4.25-14m diameter and were mostly associated with inhumation burials (Lucy and Evans 2016, 5-8). The Mucking excavations also revealed an extensive area of middle Bronze Age field system, and this may continue into the scheme area to the south. A possible ring ditch (**160**) was also recorded nearby at Walton Hall Farm, Linford during an evaluation in 2014.
- 2.4.31 Three barrows and a trackway (**446**) were recorded due south of these at East Tilbury within the scheme (AP site 40A). The largest of the three, central barrow (**444**), was double-ditched, and was excavated in 1959-60 (Bannister 1961; 1962). The inner and outer ditch were found but no trace of a mound, which may have been removed by ploughing. Human cremated bone and a few small pieces of pottery were recorded in the ditches. In the centre of the barrow was a cylindrical cairn containing calcined bone of an adult and a child and a faience bead and metalwork. The cremated bone was radiocarbon dated to 1740-1610 cal BC (GrA28939; 3365±40 BP) (Sheridan 2008, 58). This dates the barrow to the end of the early Bronze Age (or just possible the start of the middle Bronze Age). Two smaller ring ditches (**446**) located adjacent to the larger barrow (**444**) were identified as cropmarks in 1980, although one of these was incomplete. A curved trackway was also located next to the ring ditches.

- 2.4.32 The Hordon to Coalhouse Gas Pipeline scheme passed through the south eastern part of the scheme. A cremation cemetery (**365**) was recorded along the eastern edge of the scheme and close to the large barrow (**444**) (Smoothy 1993). Four urned and two un-urned cremations were recorded and one of these was within a pit lined with flints, similar to the cairn within the double ring ditch. Pottery from three of the urns was dated to the middle Bronze Age and the fourth possibly to the early Bronze Age, although this urn was very fragmentary. One piece of unburnt human bone was also recorded, suggesting that an inhumation burial was formerly present. These cremations could be associated within the nearby Bronze Age barrow (**444**). The aerial survey identified a number of possible pits south of the large ring ditch, which might also be related to the cremation cemetery (Aerial Mapping Report site 40A).
- 2.4.33 In 2014 an excavation (**110**) was undertaken at Bata Fields in East Tilbury some 500m south-east of ring ditch 444, and c.300m south-east of the site. The excavation identified a late Neolithic/Early Bronze Age double enclosure consisting of a sub-square annular ditch with a sub-rectangular annexe attached to the west side, together measuring 11m x 15m. Within the sub-rectangular enclosure was a single cremation dated to 1750-1530 cal. BC (Oxford Archaeology 2016), similar to the date for the cremated bone from barrow (**444**), i.e. the end of the early Bronze Age or the start of the middle Bronze Age. The excavation also located three larger enclosures, two of which produced middle Bronze Age finds, the third middle-late Bronze Age pottery and other finds. The enclosures were also associated with trackways, a trampled surface and a six-post building. One of the enclosures contained three small circular ditches (perhaps representing roundhouse gullies). Unaccompanied cremations were found in the north-west part of the excavation area (closest to the site), but these may have been of later date.
- 2.4.34 Further south-east, close to the south-east edge of the gravel terrace, and in the vicinity of Coalhouse Fort, there is a cropmark penannular enclosure (**452**) within the scheme that may be Bronze Age, though the gap in the ditch on the north-east side may indicate an earlier or later date (Aerial Mapping Report site 45). Two whetstones of probable Bronze Age date (**399**, **645**) were found nearby.
- 2.4.35 **Later prehistoric settlement: Later Bronze Age and Iron Age – north (Figs 6a-c, Figs 7a-7b and 8a).** Towards the north end of the scheme, Later Bronze Age activity was found within the scheme limits on the clay downland during improvements to the M25 from Junction 29 southwards (Biddulph and Brady 2015, 19-27). A single unaccompanied cremation was found beneath the bund between Upminster and the M25 on the west (**169**, **172**). This cremation was radiocarbon dated to 1270-1050 cal BC at 95% confidence (SUERC-43695; 2949 ± 29 BP) (Middle-Late Bronze Age transition). The Upminster cremation lay alongside an interrupted pit alignment that contained fragments of late Bronze Age or early Iron Age pottery. Prehistoric activity of similar date (**168**) was also identified within a broad, shallow valley at Hobbs Hole south-east of Junction 29 (Biddulph and Brady 2015, 19). The earliest feature within this area comprised a late Bronze-Age or early Iron Age hollow located on the upper slope of the valley.

- 2.4.36 North of this a prehistoric finds scatter (**615**) is recorded west of the scheme, but is not further described. This is more likely to be struck flint than pottery, and so Bronze Age or earlier rather than Iron Age, but this remains uncertain. A prehistoric settlement (**1696**) is also recorded just beyond the end of the scheme north-west of Upminster. Just west of the scheme and north of M25 Junction 29 aerial survey identified a possible cropmark enclosure and ditches (Fig. 8a, **584** and **585**), which may well be of later prehistoric or Roman date.
- 2.4.37 Hobbs Hole adjacent to M25 Junction 19 produced a number of late Iron Age cremations that lay within an enclosure located at the top of the valley slope (Biddulph and Brady 2015, 19-22). A series of late Iron Age to early Roman ditches (**167**) enclosing an area of activity were also excavated within the site, to the north of Junction 29 (*ibid*, 17-18).
- 2.4.38 Only a single feature dating to the late Bronze Age and Iron Age has been recorded within the northern Mar Dyke river valley south of the clay. This was the unaccompanied single later Bronze Age cremation mentioned in 2.4.35 above (**172**), which was found on the east (midway between Upminster and North Ockendon) towards the southern edge (*ibid.*, 25). Prehistoric finds (not further specified) have come from the scheme route in the centre of the valley (**614**) and near to its south edge west of the scheme (**567**).
- 2.4.39 Archaeological evidence of later prehistoric activity becomes clearer on the gravel terraces between the Mardyke valleys. A series of cropmarks have been identified by the HER and by the Aerial Survey south of Hall Farm (**117, 595-597, 605**), Aerial Mapping Report sites 6 and 5A) and either side of North Road north of South Ockendon (**184, 187, 189**; Figs 6a & 6b Aerial Mapping Report sites 7A, 7B, 8 and 9 and 68). These cropmarks include penannular enclosures 20m and 45m across (sites 68 and 8) and part of a possible further example (site 6), a rectangular enclosure over 60m long (site 5A), a square enclosure (**189**) 25m across (site 7A) together with partial enclosures of similar shape and dimensions (sites 5A and 7A), small circular enclosures around 10m in diameter (**117**, sites 5A, 6 and 7B, scatters of possible pits (sites 5A, 7A, 7B and 9) and lengths of boundary ditch or trackway (sites 6, 7A, 8 and 9). While not dated, the character of the enclosures, particularly the penannular examples, suggests a prehistoric date. The small circular enclosures are rather small to represent ploughed-out Bronze Age barrows, and may instead represent Iron Age or Roman house enclosures, or agricultural features of these or even later date.
- 2.4.40 An Iron Age ditch (**521**) is recorded just east of site 5A, and a probable Bronze Age cremation (**382**) was recorded during archaeological watching briefs on the Horndon to Barking pipeline just north of site 8 (Birbeck and Barnes 1994), perhaps indicating a Bronze Age date for some of the adjacent cropmarks. Bronze Age and Iron Age pottery (**515, 516**) were recovered from a mound 300m of South Ockendon Old Hall, which was the second of three Roman barrows once present around Old Hall. Two residual sherds of Iron Age pottery (**198**) were also found during the excavation of the Roman scheduled barrow (**1019106**) located south of the scheme.

- 2.4.41 A ring ditch possibly representing a late Bronze Age or Iron Age roundhouse along with an associated pit (**710a**) was recorded during the MOLA excavation at Manor Farm, 0.4km to the west. The pottery from these features ranged in date from 1000BC-300BC although the assemblage was mostly dated to the early to middle Iron Age with a small amount of late Bronze Age pottery (MOLA 2011). This site was also occupied in the Roman period (see below). Nearby a rectangular cropmark enclosure (**186**) over 60m long is recorded just outside the scheme area. This lies adjacent to a north-south trackway, which is recorded in the GLHER (**598**), as is a ditch continuing north on the same line (**599**). A scatter of discrete cropmarks possibly indicating pits lies to the east of **598**, a few of which extend into the scheme area. Three sides of a square enclosure are also shown as a cropmark north-west of 186 (Aerial Mapping Survey site 5A), and this may well be of Iron Age date, though it could be Roman. Further west and 0.9km from the scheme, another Iron Age settlement (**2000**, **2002**, **2003**, **2005**) was recorded at Great Sunnings Farm in 1983.
- 2.4.42 Six hundred metres to the east on the edge of the terrace and the Mar Dyke valley a ditch containing late Bronze Age finds (**380**) was found on the same pipeline within the scheme area.
- 2.4.43 The southern and larger Mar Dyke valley has little evidence of later prehistoric activity, but has seen very little development due to its low-lying nature. Large quantities of burnt and worked flint and a single sherd of pottery were found in a grey silty deposit which was cut by three intercutting ditches, overlain by an accumulation of alluvium that represent episodes of flooding of the Mardyke (Birbeck and Barnes 1994). Bronze Age and Iron Age pottery (**515** and **516**) were found on the northern valley edge south of South Ockendon Hall, and a further Bronze Age find from an extraction pit to the south-east. A Bronze Age pit burial (**234**) was found east of the scheme where it turns south, and Iron Age pottery (**73**) further south east. Both lay within 250m of the scheme limits, while an Iron Age gold ring and stater (**54**) lay almost 1km to the east. In 1966, 13 Bronze Age weights (**200**) were found in a clay pit 0.6km west of the scheme and just west of the Mar Dyke. The exact purpose of these weights is unknown but they may have been roof weights or loom weights. These finds were recorded in the vicinity of the cropmarks of a circular feature (**201**; Fig. 6a). The feature was recorded by the HER as a ploughed-out mound but it is possible this may have been a Bronze Age enclosure.
- 2.4.44 The cropmark of an irregular C shaped ditch (**3552**) was recorded as part of the aerial mapping survey on the east edge of the valley. This defines the western edge of a promontory and follows the topography of an area of higher ground. This feature can also be seen as an earthwork on LiDAR imagery and it is therefore possible that there is a bank and a ditch at this location. Late Iron Age pottery (**73**) was found nearby on the edge of this promontory during the Hordon to Barking gas pipeline located 400m east of the scheme. It is possible that that the bank and ditch are of later prehistoric date and the siting of it may suggest a defensive site. Alternatively, these features may represent a medieval or post-medieval field boundary although it differs in character to the regular north-south post-medieval field boundaries just to the east (**1792**).

- 2.4.45 **Later prehistoric settlement south of the Mar Dyke: Later Bronze Age and Iron Age – (Figs 6d-g, Fig. 7c-7d and 8b).** The quantity of archaeology of these periods is such that it has been subdivided into late Bronze Age and Iron Age. Because the pottery fabrics in both the late Bronze Age and early Iron Age are similar, it is sometimes difficult to distinguish them without large assemblages or radiocarbon dating. Because of this, some sites cannot be dated to one or the other period. These are described as late Bronze Age/early Iron Age. There is also some overlap between the fabrics used for pottery of the early and middle Iron Age (as seen at Manor Farm, section 2.4.39 above), but this is generally less of an issue.
- 2.4.46 **Late Bronze Age and early Iron Age.** The most significant feature type of the late Bronze Age and early Iron Age in this part of the scheme are 'ringworks' or Springfield-type enclosures (named after an example excavated at Springfield Lyons, near Chemsford), of which several are known in Southern Essex. One of these is scheduled monument (**1009287**), which lies on the edge of the gravel terrace overlooking a dry valley that runs north into the Mar Dyke valley. It consists of a cropmark circular enclosure 70m in diameter, and is overlain by a complex of settlement enclosures containing smaller ring ditches or penannular gullies and pits believed to date to the Iron Age. The late Bronze Age circular enclosure lies nearly 1km from the main scheme corridor, but a narrow extension runs right past it, and several possible Iron Age enclosure ditches and one possible roundhouse lie within the scheme here. Further cropmarks nearby may also be contemporary with the Bronze Age enclosure or Iron Age enclosures (Place Services 2020, 8, fig. 6, AP site 85).
- 2.4.47 A Pastscape record (**687**) identifies a circular enclosure 70m in diameter just over 100m south of Scheduled Monument (**1009287**), but this is clearly a duplication of the scheduled Monument.
- 2.4.48 The Orsett (Grey Goose Farm) Cropmark complex lies west of the dry valley on the line of the main scheme route, and is also situated on the gravel terrace that borders the south edge of the Mar Dyke valley. The main concentration of enclosures, ring ditches (probable prehistoric round house gullies), trackways and field systems (**247**) are located in the northern part of the monument (Aerial Mapping report sites 13, 14 and 15). In 1979 a swathe across the southern part of the Orsett (Grey Goose Farm) Cropmark Complex (**1002134**) was excavated during alterations to the A13, and several late Bronze Age or early Iron Age features (**194**) were recorded. These features were mostly located in the A1089 loop junction just north of the A13 (Wilkinson 1988, 13-16). The A13 investigations also found that some of the 'pits' were of geological origin (Wilkinson 1988), and the Lower Thames Crossing evaluation of Land Parcels 22 and 23 (part of this complex) also found that two-thirds of the cropmark pits that were tested were geological. There were however also archaeological pits (**3580**) including an alignment, some containing late Bronze Age/early Iron Age pottery, penannular enclosures (one with middle Iron Age pottery) and other ditches. Trenching of Land Parcel 21 to the north included the northern edge of the Grey Goose Farm complex, and included several curvilinear features that may represent roundhouses (**3578**) with pottery of middle Iron Age date. There were also two cremations (**3579**), one urned and one unurned, both of which are likely to be of later prehistoric date (Highways England 2020).

- 2.4.49 Archaeological activity of the late Bronze Age/early Iron Age extends beyond the scheduled area. To the west excavation at William Edwards school (**27**) also revealed settlement of this date (Lavender 1998). To the south-east, two possible prehistoric cropmark enclosures (**356**), referred to as site 69 by the Aerial Investigation and Mapping Report, have been identified on the edge of the dry valley. Other cropmarks (Aerial Mapping Report sites 23, 70) including bands of possible pits and small ring ditches have also been identified to the south of the monument (Place Services 2019).
- 2.4.50 The area to the west of Nevilles Farm and south of Orsett (Grey Goose Farm) Cropmark Complex within the scheme includes a number of cropmarks. This includes possible enclosures, linear features, large sub-circular pits and a possible ring-ditch (**231** – Aerial Survey site 23). Further east, extensive groups of discrete features (either geological features or pits) and several linear features were identified across a wide area within the scheme (Fig. 6d, **262**). Evaluation of the scattered discrete features to the east has shown that most of these are of geological origin, but it remains possible that some relate to late Bronze Age/early Iron Age settlement activity.
- 2.4.51 A number of late Bronze Age and late Bronze Age/early Iron Age features were found to the south-east during the Lower Thames Crossing 2019 and 2020 evaluation of Land Parcels 1, 3, 4 and 5 (Highways England 2020). These land parcels were numbered from west to east (see Fig. 13b). Several features containing late Bronze Age pottery were found in Land Parcel 1 including a ditch, pit and a posthole (**3565**), while in the eastern half of Land Parcel 3 several ditches including a curvilinear ditch were also dated to the late Bronze Age/early Iron Age (**3568**), and a ditch at the west edge of Land Parcel 4 probably belongs to the same area of activity. Other undated ditches, postholes and pits in land parcel 3 (**3566**) and land parcel 4 (**3574-3576**) may be associated. In Land Parcel 5 many of the trenches in the north-eastern part of the site, which lay within a dry valley, produced pottery of the late Bronze Age/early Iron Age, either from ditches or in colluvium, and occasional pits of this date were also found here and further to the south. A cropmark U-shaped enclosure (**3553**) was dated to the middle Bronze Age, but may have continued into the late Bronze Age, as a sherd of late Bronze Age pottery came from one slot across it, and small gullies adjacent also contained late Bronze Age/early Iron Age pottery.
- 2.4.52 In the late Bronze Age the southern part of the scheme area in Essex was dominated by two late Bronze Age ring-forts found at Mucking just east of the scheme, the North Ring (**326**) adjacent to the middle Bronze Age field system, the South Rings (**333**), overlying the fields and dating to the late Bronze Age to early Iron Age transition. In addition to many other finds, both enclosures produced significant quantities of briquetage and salt-making equipment, indicating a link with the Thames floodplain to the east and south-east. Further late Bronze Age features were found in evaluation to the south-east (Fairclough 2014).

- 2.4.53 In 2010 a photographic survey and evaluation (**3539**) was undertaken at Mill House Farm located 500m south of the scheme (Schofield 2010). The evaluation was followed by excavation (report forthcoming) that revealed an extensive late Bronze Age/early Iron Age settlement site with an associated funerary monument (Fig. 6g, **450**; Place Services 2019, 11). South of Mill House Farm, Bronze Age settlement activity (**471**) was recorded by excavation at Gun Hill located 0.8km west of the scheme. This settlement was located on top of a plateau of higher ground.
- 2.4.54 Within the scheme just west of East Tilbury, archaeological evaluation in 2005 recorded evidence of a late Bronze Age field system (**104**). Subsequent excavation just south-east of the scheme found several Bronze Age enclosures, one of which was contained pottery of the middle-late Bronze Age (**110**). Adjacent findspots (**67** and **68**) presumably relate to this. Flints found along a gas pipeline further south (**63-66**), two of them just within the scheme boundary, suggest that prehistoric activity continues all along the gravel terrace to the south-east, though whether the activity is later Bronze Age or earlier is not clear.
- 2.4.55 Several Bronze Age metalwork hoards have been found in the borough of Thurrock (Tripp 2018, 66-71), though none is recorded as being within 1km of the scheme. The exact provenance of some of the hoards has not however been established, as they derive from the purchase of items found in early gravel quarrying in the area, so some may have come from within or close to the scheme.
- 2.4.56 **The Iron Age (Figs 6a-g, 7a-7d and 8b).** The late Bronze Age Springfield-type enclosure (Scheduled monument (1009287) was overlain by a complex of settlement enclosures containing smaller ring ditches or penannular gullies and pits believed to date to the Iron Age, and several possible Iron Age enclosure ditches and one possible roundhouse lie within the scheme. Further cropmarks nearby may also be contemporary with the Iron Age enclosures (Place Services 2020, 8, fig. 6, AP site 85).
- 2.4.57 An enclosure of the early Iron Age (**207**) overlies the causewayed enclosure south of Orsett, and is also part of the scheduled monument (**1009286**). This extends further south than the causewayed enclosure, ie even closer to the scheme boundary (Hedges and Buckley 1978, 219-308). Cropmarks extend from the area of the scheduled early Iron Age enclosure both south-east towards the Orsett enclosure and further north-west (**7**, Aerial Mapping Report sites 17A, 17B and 72), and consist of a scatter of pits close to the scheduled monument, and a mixture of linear boundaries on a north-west alignment, a small ring ditch and arcs of curving gully.
- 2.4.58 Additional cropmarks (**243**) are recorded by the HER extending further east and 0.5km north of the scheme including trackways and linear features and some of these were mapped by the aerial survey (Aerial Investigations and Aerial Mapping Report site 19A). Just north-west of this group of cropmarks an excavation along the A13 recorded a small early Iron Age open settlement (**270**). This excavated settlement comprised a scatter of post-holes and pits including a storage pit with carbonized grain on the base (Wilkinson 1988, site 1). The site continues either side of the A13 within the scheme.

- 2.4.59 An enclosure and a scatter of early to middle Iron Age pottery (**508**) has been excavated at Orsett Cock along the A13 just within the scheme limits, and an early Iron Age hearth and pit (**238**) have also been excavated on the A13 500m further east. Some 750m to the north-west, a probable Iron Age enclosure is evident (Fig. 6c, **358**) (Aerial Mapping report site 72) north of the scheme, and further Iron Age findspots (**1712, 1714**) are recorded north of Orsett.
- 2.4.60 The earlier Iron Age site at Orsett Cock was followed by a concentration of late Iron Age features (**509**) (Aerial Investigation and Mapping Report site 57), including a palisaded enclosure, evidence of an industrial site and several hut circle and enclosures (Carter 1998). An extensive cropmark complex (**220**) (Aerial Investigation and Mapping Report site 16) situated immediately to the north, may be an extension of this settlement and/or later activity.
- 2.4.61 In the northern part of Aerial Mapping Report site 72 there are two alignments of linear boundaries in site 72, probably indicating that more than one period of activity is represented. Those on an east-west alignment appear to be a continuation of those to the east (**220**, Aerial Mapping Report site 16), the others on a north-west alignment are similarly aligned to a complex of extensive cropmarks west, south-west and south of the Orsett early Iron Age enclosure, many of which are within the scheme (**482, 351**, Aerial Mapping report sites 21, 20, 32, 22. 56 and 24A). These include discrete enclosures east of Heath Place and south of Old House Wood (both outside the scheme), parallel trackways bordering larger fields or enclosures, which themselves contain smaller enclosures, and bands of possible pits. These give the impression of elements of settlement linked along an east-west boundary stretching over 600m. While the large NE-SW fields or enclosures have been shown by evaluation for the scheme to belong to a Roman settlement (**3569**); Highways England 2020; see below), it is likely that much is of Iron Age date, particularly as an Iron Age coin (**51**) was recovered from within the cropmarks west of Heath Place. A group of evaluation trenches within scheme Land Parcel 3 produced pottery of late Iron Age/early Roman date from a group of smaller enclosures, possibly indicating that the activity in this area began before the Roman conquest.
- 2.4.62 South-east of the Orsett enclosure (1009286) there is a string of cropmark sites (Aerial Mapping report sites 53,24A, 24B, 73, 74, and 79) along the southern edge of the gravel terrace bordering the dry valley that runs along the line of the scheme (Fig. 6f). These include bands of possible pits, ditches forming boundaries or field systems and circular enclosures (already mentioned), some within the scheme, some outside. On the north side of the dry valley, a possible trackway with two widely spaced parallel ditches aligned NE-SW (Fig. 6f Inset B, **271**) runs south into the scheme (Aerial Investigations and Aerial Mapping Report site 79).

- 2.4.63 Continuing south of the string of sites mentioned above, cropmarks have been recorded 300m west of the scheme including linear features and an extensive number of pits (Fig. 6f, **447**) (Aerial Investigations and Mapping Report sites 71 and 26). An extensive area of cropmarks was also identified c.200m west of the scheme and east of Mill House Farm just north of the Muckingford Road (Aerial Investigations and Mapping Report site 26). This site (**450**) includes linear features, ring ditches, pennanular ditches and pits (Aerial Investigations and Mapping Report site 26). Excavation of a field immediately to the west at Mill House Farm (**3539**) uncovered multi-period settlement including a dense site of late Iron Age date with a number of enclosures, cremations, ring ditches, smelting pits and over 8000 sherds of pottery (Andy Peachy pers comm.).
- 2.4.64 South-west of Mill House an Iron Age settlement that continued into the Roman period was excavated at Gun Hill Farm (**369**), and another cropmark enclosure of probable Iron Age date was observed, cut by a late Iron Age or early Roman trackway (Drury and Rodwell 1973). The latter enclosure lay just south of Linford Road, and an Iron Age trackway has been recorded west of Mill House and north of Linford Road (**454**).
- 2.4.65 On the opposite (east) side of the dry valley, and within the scheme area, much of a cropmark sub-square enclosure is visible, together with a small circular ring ditch and a boundary ditch (**457**) (Aerial Mapping report site 25). Part of an Iron Age settlement was excavated in Rainbow Wood just to the north (**203, 432**), on the very edge of the scheme. This site (**203**) included pits, hearths and a possible hut, hearths and several pottery kilns containing early Iron Age pottery (Barton 1962, 57-104). North of this enclosure, and extending into the scheme, was the multi-period site at Mucking (now quarried away), at which the late Bronze Age-earliest Iron Age ring-forts were followed by extensive Iron Age settlement activity in the form of enclosures, pits and postholes, and late Iron Age enclosures and cremation burials (**333, 334, 1706, 1734**).
- 2.4.66 Another slightly smaller sub-square cropmark (**435**) enclosure is evident 1400m further south on the east side of the dry valley, also within the scheme (Aerial Mapping Report site 41A). This enclosure lay adjacent to a very small circular cropmark, and another was visible some 300m to the north (**444**) (Aerial Mapping Project site 40A). The sub-square enclosure may have been associated with a system of rectilinear fields or enclosures (Fig. 6g, **435, 456, 497**) running NNE-SSW along the gravel terrace to the edge of the dry valley on its east side (Aerial Mapping Report sites 40, 41 and 43). This group of cropmarks may be of later prehistoric or Roman date.
- 2.4.67 During the late 1960s a salvage excavation was undertaken west of Princess Margaret Road and 0.3km east of the scheme. This excavation recorded a sub-rectangular enclosure with a ditch 1.5m wide by 0.76m deep and a number of associated pits (**437**). The pottery was dated to the Iron Age and charcoal and animal bones were also found. Cropmarks of an enclosure (**636**) were also recorded just west of this and 0.2km east of the scheme. A further cropmark site (**451**) was located 300m north of this recorded rectilinear enclosure. The Iron Age enclosure (**437**) and nearby cropmarks (Fig. 6g **452**, Fig. 6d **496** and **636**) are located on a gravel plateau of higher ground adjacent to the south-eastern part of the scheme. Two findspots of Iron Age pottery (**635**) and (**394**) were also recorded on the gravel plateau.

- 2.4.68 At the very south-eastern end of the gravel terrace (and north-west of Coalhouse Fort) there is a further group of cropmarks within the scheme area (Aerial Mapping Report sites 44 and 45). Other than the penannular enclosure mentioned earlier, this consists mainly of a series of ditches, some of which form right angles, together with occasional discrete features including one possible very small enclosure. Although these ditches could be later, Iron Age pottery (635) was recovered from just to the east, and two Iron Age findspots (405, 440) in an area of further ditches on the edge of the terrace slope at its junction with the marshland. The finds at 440 included fired clay (possible briquetage) together with Iron Age and Roman pottery, so may have been a prehistoric saltern.
- 2.4.69 In 1959 pottery sherds dating to the 1st century B.C and also the 4th century AD (639) were found nearby during repairs to the sea wall. Iron Age pottery (394) was also recorded just south of the scheme. A nearby geophysical survey in 2014 revealed a possible saltern (161, located just east of the scheme) and another undated saltern was located further east (409). Two other salterns (442, 643) were located 0.4km south of the scheme. Some of these salterns may be of Iron Age date, although Roman finds (406, 407, 408, 448) have also been recorded nearby along the Thames foreshore.
- 2.4.70 Late Iron Age activity has also been recorded close to the scheme and the Thames foreshore. In 1903 a quarry was excavated (Fig. 9b, **285**) just east of the Church of St Katherine (**1337129**), adjacent to and just south of the scheme. This quarry can be seen on the OS map of 1923 (not illustrated). The east face of this quarry was re-excavated during the construction of the North Sea Gas Pipeline in 1971, which cut across the quarry on a south-east to north-west alignment. During the pipeline excavation a series of deep stratified layers were excavated, and a large quantity of Late Iron Age and Roman pottery was found along with an Iron Age coin and animal bones (Fig. 9b, **440**). The pottery included an early amphora fragment of Late Iron Age date. Fired clay fragments were also found (perhaps briquetage) which suggests that there may have been an Iron Age/Roman saltern in the vicinity. This information is from the HER record (MEX6279).

- 2.4.71 **The Roman period (Figs 6a-g, 7a-7d and 9a-9b).** The routes of four possible Roman roads are projected across the area surrounding and crossing the scheme (**714, 715/484, 716, 717**), although direct evidence for the Roman origin of these roads is lacking. If genuine, they may have acted as foci for Roman settlement, as well as providing arteries of communication between them. A possible Roman road (**715**) ran from Brentwood to the Thames foreshore along the line of what is now the A128 (Historic England, Linear 385), before splitting into two to pass either side of the large dry valley running south to the Thames, one branch leading to West Tilbury (**715**) and the other to East Tilbury (**716, 484**). At Orsett a metalled road incorporating late Roman material (**1683**) was found on a NNW-SSE alignment some 700m west of road **715**, but this may be later and unconnected. There is no other direct evidence for this road within the scheme area. The projected route of an east-west Romano-British road (**714**), from London to Bradwell crosses the northern part of the scheme, and running through the northern Mardyke river valley. Another Roman road (**717**) is thought to have run east-west along the edge of the terrace, crossing the southern part of the scheme and now followed by the Linford-Muckingford road east of Chadwell St Mary, and a spur (**718**), though less clear, is believed to have run NNW from this east-west road at Grays. The West Tilbury road (**715**) and East Tilbury road (**484**) could both have led to ferry crossing points over the River Thames to Kent.
- 2.4.72 **Roman – north (Figs 6a-c, Figs 7a-7b and 9a).** At the northern end of the scheme, the excavation of the Hobbs Hole site (**168**) adjacent to Junction 29 during the M25 Widening Scheme identified early-mid Roman rectilinear enclosures and ditches along with six cremation burials and several large quarry pits, and may have continued in use into the late Roman period. The enclosures were interpreted as livestock enclosures and there was no domestic activity recorded (Biddulph & Brady 2015, 19-24). This site extended westwards into the northern part of the scheme.
- 2.4.73 A late Iron Age/early Roman site (**167**) was also identified at Codham Hall Bund 800m north-west of the Hobbs Hole excavation and within the area of the scheme. This excavation found a series of ditches which had silted up by the 1st-century AD, although a jar dated to the 2nd-4th-century AD was also found within a pit (Biddulph & Brady 2015, 18).
- 2.4.74 To the south of the east-west Roman road (**714**) two areas of Roman activity (**710 a and b**) were investigated at Manor Farm in 1983-4, west of the scheme boundary. The closer of these (**710b**) was situated immediately adjacent to the scheme, and comprised two rectangular enclosures 26m by 30m wide containing occupation debris dating to the 2nd and 3rd centuries AD, cut by three large ditches containing late Roman occupation material. The other area (**710a**) was located 0.2km west of the scheme and this comprised several Roman ditches, together with five cremation burials and two pits of early Roman date. There was also some evidence of industrial activity in the form of slag and burnt clay (MOLA 2011). Residual Roman pottery was also found nearby during the excavation of the Tudor foundations of the manor house at Stubbers (**557**). Further south, Roman latrines (**180**) containing 1st century finds were recorded at Little Belhus Farm located outside the area of the scheme.

- 2.4.75 In 1957 a burial mound (**1019106**), was excavated adjacent to the scheme and 260m north-east of South Ockendon Hall. The trench through this barrow found 17 sherds of Roman pottery, although the central burial was not disturbed. This barrow is situated on the high ground of the terrace edge on the western side of the Mar Dyke river valley. It may have been one of three barrows recorded by antiquarians 500m apart. A second barrow (**517**) was located c.400m south of the scheduled barrow (**1019106**), and the location of the third barrow (now destroyed) is now unknown. The second barrow (**517**) was excavated prior to being removed, and the finds dated to the late second century AD. An east-west trackway (**187**) and other linear features (**265**) that may be Roman in date were identified in the vicinity of South Ockendon Hall by the aerial mapping survey (Aerial Investigations and Mapping Report site 9). Other cropmark features recorded in this area by the Essex HER include rectilinear features (**260**) and linear features (**264**), either or both of which may be Roman in date.
- 2.4.76 In 1858 farm labourers found Roman pottery, animal bones and charcoal within shallow pits of black earth 3-12m diameter wide in a field (**232**) within the Mardyke valley, directly east of Harrow Road and the scheme. This site extended for 2.4 hectares. A number of these pits contained parts of vessels, and were located equidistant from one another, indicating a possible cemetery. One of the fields in which the remains were found in was called 'Ruin Field' and so it is possible that these features may have been part of a settlement which contained one or more buildings. Another Roman cemetery (**682**) was recorded by Historic England directly north of the scheme and 500m west of the Harrow Road site. The information recorded as part of this Pastscape record is the same as that for the Harrow road site. Both sites may have been separate cemeteries for a single site, or there may be duplication in the records.
- 2.4.77 Two rectilinear enclosures (**1805**) have been identified as cropmarks just south of the possible Roman cemetery (**232**, **682**) and within the scheme (Aerial Investigations and Mapping Report site 80). The first may be associated with several linear features which may post-date the enclosure or may be contemporary. The double ditched linear feature is aligned WSW-ESE and does not align with post-medieval field boundaries in the vicinity and may therefore pre-date them (Fig.7). These enclosures are located on slightly higher ground just above the floodplain. Given their proximity to the possible Roman cemetery (**232**, **682**) it is possible that these enclosures may be of Roman date. Alternatively, they may be later prehistoric in date.
- 2.4.78 A number of Roman findspots have been recorded to the north and south of the east-west Roman road (**714**). Within the scheme this includes findspots (**617**, **558**, **190**) and within the 250m buffer it includes findspots **522** and **616** to the north-west and **568** to the west. The locations of these findspots could indicate further Roman activity.
- 2.4.79 **Roman – south (Figs 6d-g, Figs 7c-7d and 9b)**. Archaeological investigations within the southern part of the scheme and wider environs (Fig 9b) have revealed evidence of Roman domestic, agricultural and industrial activity on the gravel terrace south of the Mardyke valley (**717/484**, **715** and **717**). Sites of Iron Age, and earlier, settlement within this section appear to have remained a focus for activity into the Roman period.

- 2.4.80 The Orsett cropmark complex (**1002134**), located within the scheme, includes evidence for Roman activity. Results from the Lower Thames Crossing evaluation of Land Parcels 22 and 23 (covering much of the scheduled complex **1002134**) indicate a rectilinear system of ditches with late Iron Age and Roman pottery (**3582**), together with Roman small finds and kiln furniture suggesting pottery production at this location (Highways England 2020).
- 2.4.81 A cropmark site to the west at Stifford Clays-Primrose Island (**216**) was excavated in the 1960s and 1970s, and revealed a farmstead (**28**) that was in use from the late Iron Age to the late Roman period with enclosures, ditches, pits, cremations and a corn drying oven. Another Roman enclosure site (**684**) was identified close to the Orsett cropmark complex, on the edge of the terrace, just east of the scheme boundary. Roman finds have also been recorded on the plateau of higher ground (**223, 685**). All of these sites are strung along the north edge of the gravel terrace, and may well have been linked by tracks or a road to Roman settlements around Orsett Cock further east, close to Roman road (**715**).
- 2.4.82 Site (**203**), located 0.3km north-east of the scheme, produced Iron Age pottery, but may have also been used during the Roman period. The 1955 excavation of the gravel pit recorded that workers found six bottle neck shaped structures, cut into the gravel and lined with clay, that were full of pottery. It is possible that these structures, now destroyed, were late Iron Age or Roman pottery kilns (**204**). The 1955 excavation also found Roman pottery dating to the 2nd-4th century (**203**) scattered over a wide area, suggesting a possible agricultural use for this area in the Roman period (Barton 1962, 57-104).
- 2.4.83 Several other Roman settlement sites have been investigated along the course of the postulated Orsett to East Tilbury Roman road (**716**). A Roman enclosure dating to the 1st-4th century was identified by excavation at Orsett Cock (**510**) within the area of the scheme. This Roman site had several buildings, pottery kilns and associated field system and may have been founded as a late Iron Age settlement (**509**) (Aerial Investigation and Mapping Report site 57). The Roman enclosure, which formed the focus of the settlement, was interpreted a one of a possible series of farmstead units situated among a regular pattern of fields on the fertile gravel ridge (EHER 2019). Indeed, cropmarks suggestive of a Roman field system (**220, 239**) (Aerial Investigation and Mapping Report site 16) are recorded in this area and just south of Orsett.

- 2.4.84 The aerial mapping survey identified extensive cropmarks (**245**) of a rectilinear enclosure within the central -southern part of the scheme (Aerial Investigations and Mapping Report site 20). This site is located 1.5km south-west of the Roman enclosure at Orsett Cock. The large enclosure is on a north-west to south-east alignment and contains sub-divisions, pits and curvilinear smaller enclosures. The Lower Thames Crossing evaluation of this enclosure revealed a late Iron Age/Roman settlement (**3569**). This settlement may have begun as a group of much smaller, linked enclosures in the late Iron Age before the large main rectilinear enclosure (**245**) was created in the early to middle Roman period. Two pottery kilns were recorded in the south-eastern part of this complex. This settlement also appears to have been involved in arable and pastoral farming, crop processing and possibly butchery of animals on an industrial scale. On the basis of a limited amount of late Roman pottery, occupation may have continued in use until the later Roman period. The NW-SE aligned field boundaries and trackway in the southern part of the site were undated but may be contemporary with the main enclosure. Further east a possible Roman NW-SE aligned trackway (**3573**) was recorded within Land Parcels 3 and 4 of the scheme and may be contemporary with the settlement (**3569**) (Highways England 2020).
- 2.4.85 Another cropmark enclosure south of the scheme, linked by a trackway at right angles to those of the large enclosure at 245, was characterized as late Iron Age or Roman (Priddy and Buckley 1987).
- 2.4.86 The Orsett to East Tilbury Roman road (**716/484**), for which there is currently no physical evidence, is thought to have been located along what is now Princess Margaret Road, running down the gravel ridge east of the large dry valley running south to the Thames. Just east of this there was a large Roman settlement at Mucking (**335**) located 0.3-1km north-east of the scheme. This extensive site had previously been occupied in the Iron Age, and in the Roman period comprised a series of large rectilinear enclosures with internal subdivisions. A number of kilns were excavated across the site, showing that it was used for pottery production from the 1st to the mid-3rd century AD. This site also contained five cemeteries. The settlement itself continued into the fifth centuries AD where it was remodeled as a Saxon settlement (**336**) (Lucy and Evans 2016, Summary). Roman pottery (**680**) has also been found to the south of the Mucking settlement and 0.5km east of the site. This pottery was found within a quarry on the slopes of the terrace near Walton Hall Farm and dated to the 1st-2nd century. Another possible square and rectangular enclosure (**1801**) was identified by cropmarks just to the south of this, located 0.3km east of the site (Aerial Investigations and Mapping Report site 67).

- 2.4.87 Remains relating to a Roman field system (**104**) have been excavated within the area of the scheme on the west side of Princess Margaret road between Mucking and East Tilbury. The ditches were orientated NW-SE and NE-SW, and the system may have extended further east as further cropmarks were noted nearby, just east of the scheme and west of the Bata factory (**451**). Rectilinear enclosures and trackways (**493**) have also been recorded nearby by the HER and the aerial mapping survey (Aerial Investigation and Mapping Report 39). Further west within the scheme, some of the rectilinear enclosures and enclosure systems visible as cropmarks along the east edge of the dry valley (Aerial Mapping Report sites 25, 44 and 45) may have been Roman rather than Iron Age, or have continued in use in the Roman period.
- 2.4.88 The proposed Roman road (**716/484**) is believed to have led to a ferry crossing point over the River Thames to Kent. There is certainly archaeological evidence of a Roman settlement at the end of this putative road close to the foreshore, consisting of a Roman mosaic (**453**), ceramic building material (**286, 289, 700**), undated human remains (**283**) and Roman finds (**286, 439, 631**). Further evidence for a Roman settlement in this area was found during the excavation of a quarry (**285**) in 1903 just east of the Church of St Katherine (**1337129**) and just west of the scheme. This quarry was re-exposed in 1971 (**440**) and a deep series of deep stratified layers were found containing Late Iron Age and Roman pottery and fired clay.
- 2.4.89 A number of Roman sites have been identified either side of the proposed east-west Roman road (**717**, now followed in part by the Linford and Muckingford road) which may have cut across the southern part of the scheme. In the 1920s a Roman kiln and a large number of Roman finds (**368**) were found at Sandy Lane, Chadwell, located at an intersection between two of the possible Roman roads (**715, 717**) but now mostly destroyed by modern quarrying. An early Roman kiln site and later agricultural settlement was also excavated nearby at Gun Hill (**472**; see Fig. 7d), like Sandy Lane located west of the scheme. A cluster of Roman activity (**411, 630, 642**) was recorded during gravel extraction at Condoovers Pit located immediately west of the scheme and south of Church Road. This includes a Roman updraft pottery kiln (**630**), 2nd century pottery (**411**) and possible Roman burials (**398/642**) but the location of this last site is unclear as Pastscape and the Essex HER disagree on the location. The 2019 aerial survey also noted the presence of a possible circular enclosure (**1806**) in the area of Condoovers Pit (Aerial Investigations and Mapping Report site 81). It is possible this may have been a Roman enclosure associated with the Roman kiln, although it may also have been earlier or later.

- 2.4.90 Further Roman sites south of the proposed east-west Roman road (**717**) are located within the scheme area (**435, 436, 497, 642, 410**). The aerial mapping survey identified a rectangular enclosure (**435**) in an area where Roman pottery had been found dating to the 2nd century (**436**) (Aerial Investigations and Mapping Report site 41A). Further undated enclosures and trackways (**497**) have also been identified to the south-west of this (Aerial Investigations and Mapping Report site 41B, 43). A walkover of this area as part of the scheme in 2019 recorded a coarse and angular roof tile (**1854**) in this area, probably Roman in date. Another burial site (**410**), comprising three Roman cremation urns, was discovered further east during the construction of the London, Tilbury and Southend Railway in the mid-19th century. It lay towards the southern edge of the gravel terrace.
- 2.4.91 A number of red hills/salterns (**161, 442, 643**) have been found with associated Roman pottery within the marshlands, and **442** and **643** are located within the area of the scheme. Fired clay fragments (**440**) were also found along with Iron Age and Roman pottery to the north of Coalhouse Fort. In addition, Roman fired clay briquetage (**700**) has been recorded nearby and just south of the scheme. Two other salterns (**409, 502**) have been recorded and are shown on Fig. 8b, but these are as yet undated. The undated saltern **502** is located within the scheme area and these finds were recorded just north of a possible enclosure (**1797**) identified by aerial survey in the southern part of the scheme (Aerial Investigations and Mapping Report site 61). This possible earthwork enclosure may be associated with creeks on the salt marsh and may be a saltern enclosure. The water-filled ditches were visible five days after the 1953 flood of this area (Aerial Investigations and Mapping Report site 61), and although this earthwork enclosure has now been covered by landfill and probably levelled, it is possible that it survives in part below ground. Another earthwork (**1856**) was noted during the LTC walkover 0.3km west of the scheme. This could also represent another saltern site, although it may instead be the result of modern drilling activity.
- 2.4.92 The aerial survey identified a possible enclosure close to the foreshore (within **348**) which may also be a Roman saltmaking site (Aerial Investigations and Mapping Report site 33). In 2014 a geophysical survey (**161**) was undertaken north of Coalhouse fort and east of the East Tilbury battery, partly within and partly to the east of the scheme (Smith 2014). Two possible circular salterns 15-20m diameter were identified and one of these (**3560**) was located within the scheme (Fig 7d). These features gave only a relatively low magnetic signal and so may be buried over 1m below the surface. Eight discrete circular features of uncertain date and origin were also recorded, although it remains possible that these features may also relate to salt making. A recent excavation of an Iron Age and Roman salt making industrial site on the foreshore is that 3km north-east of the site at Stanford Wharf Nature Reserve (Biddulph *et al.* 2012).
- 2.4.93 Remains of a Roman settlement (**412**), were found in 1920 just west of the scheme and on the southern edge of the marshland. This site, now below the present high tide level, comprised the well-preserved remains of hut circle and quantities of 1st to 2nd-century pottery (RCHME 1923). A former trackway was also recorded along the old river edge. Additional finds of Roman pottery (**501, 433, 434**) have been made on the foreshore in the nearby vicinity.

- 2.4.94 Further east, and south of the Roman settlement near to St Katherine's church and Coalhouse Fort, Roman pottery (**406, 407, 408**) has also been recorded along the foreshore area just east of the scheme. Ten 4th century Roman coins (**448**) have also been recorded 0.4km north-east of the scheme. These finds could suggest that Roman activity continued along the foreshore just east of the scheme. Alternatively, these finds may have been moved from their original location by estuarine and riverine processes.
- 2.4.95 **The early Medieval period (Figs 6a-g, 7a-7d and 10a and 10b).** In the northern part of the scheme (Figs 7a-b and 10a) Anglo-Saxon finds and deposits were recorded during the M25 excavations at Codham Hall Bund (**167**) and Hobbs Hole adjacent to Junction 29 (**168**). The Saxon finds were mostly recovered from earlier features and may indicate reuse of the late Roman site. A sunken-featured building at Hobbs Hole contained 5-7th century pottery and is the only certain pagan Saxon feature recorded from excavations within this northern part of the scheme (Biddulph and Brady 2015, 18-19, 24). A pit containing charred grain at Upminster Bund was radiocarbon dated to the mid-Saxon period (Biddulph and Brady 2015, 25). Only 200m west of the scheme, Saxon ditches were found at Manor Farm (**710a**).
- 2.4.96 In the southern half of the scheme (Figs 7c-d and 10b) early medieval archaeology is more evident. The scheduled Orsett Cropmark Complex (**1002134**, Aerial Investigation and Mapping Report, sites 13-14) was believed to contain Saxon grubenhouse (sunken-featured buildings) (Place Services 2019). However, excavations directly to the south-east of the monument (**196**) and trial trenching for the scheme (Highways Agency 2020) indicated that features identified as pits by cropmark interpretation were primarily of natural origin. A few Saxon artefacts have however been recorded.
- 2.4.97 Excavation at Orsett Cock (**511**) within the area of the scheme during the 1970s found Saxon pottery within the upper fills of Roman enclosure ditches (**510**), indicating possible reuse of the late Roman settlement. Another excavation to the north-east (**240**) and within the scheme found three sunken-featured buildings (SFB's), two postholes and a ditch dating to the period AD 400-700. A Saxon find spot was also found in this area (**273**). Further cropmark evidence suggest that the excavated features could be part of a larger settlement (Aerial Investigation and Mapping Report site 57) with additional sunken-featured buildings. The possible locations of the Mucking and Orsett settlements are close to the projected lines of several possible Roman roads (**715, 716**) leading southwards towards the Thames.
- 2.4.98 Four or five cropmark ring ditches (**210**) within the inner circuit of a Neolithic causewayed enclosure (**1009286**) 500m south of Orsett Cock have proven to be middle Saxon. Two of the three excavated had graves with finds dating to the 7th-8th centuries. It is possible that this cemetery is related to the Saxon settlement to the north, although the graves appear to be later. This site lies less than 100m north of the scheme. The aerial investigation and mapping survey (Place Services 2019; 2020) identified a large number of linear cropmarks and pits around the causewayed enclosure (**7**), some of which may date from the early medieval period (Aerial Investigation and Mapping Report site 17).

- 2.4.99 Some 3km south of the Orsett middle Saxon burials, a series of sunken-featured buildings and other features of Saxon date were found at Mill House Farm (**3539**) on the gravel terrace above the dry valley running south to the Thames, indicating a substantial settlement (Place Services 2019, 11). This site, which is 0.6m west of the scheme, was excavated by Archaeological Solutions in 2014, but is not yet published.
- 2.4.100 Archaeological excavations at Mucking east of the dry valley revealed an extensive Anglo-Saxon settlement at Mucking (**336**). The settlement comprised at least 53 posthole buildings and 203 sunken featured buildings, and was occupied from the 5th to the 7th-century AD (Clark 1993; Hamerow 1993). Evidence of metalworking and two contemporary cemeteries were also excavated. Another area of settlement (**205**) has been excavated directly to the west at Linford, and is probably a continuation. This site (**205**), which was excavated in 1955 revealed a possible weaving hut with twenty loom weights. Some of the Saxon pottery had continental parallels and dated to the end of the fourth or fifth century (Barton 1962, 57-104). Previous studies have noted the similarity between the 5th-7th century Saxon material culture of Kent and south-east Essex (Hamerow 1993, 95), and it is almost certain that a trade network operated across the Thames, perhaps from East Tilbury. In the middle Saxon period the settlement at Mucking diminished, and field systems (**337**) were recorded across the area.
- 2.4.101 At least 20 Saxon sceattas (**280**) have been found across an arable field located on the southern edge of the terrace at East Tilbury. It has been suggested that these finds may indicate that a middle Saxon settlement or religious site was located within this area, or this may represent a dispersed hoard.
- 2.4.102 A series of cropmarks (**594**), interpreted as possible early to later medieval field boundaries are recorded within the south of the scheme and are identified as site 5B by the Aerial Investigation and Mapping Report (Place Services 2019). A nearby cropmark enclosure (**595**), included among cropmarks in site 5A, may also have early-medieval origins.
- 2.4.103 During the late Saxon period the scheme area was very likely part of several manorial estates and settlements including Great and Little Warley, Upminster, Cranham, North and South Ockendon, Orsett, Mucking and Tilbury (Figs 9a and 9b). These settlements are noted in the Domesday Survey of 1086 which recorded information about the land ownership and resources in 1066 and 1086. These settlements are likely to have been founded in the late Saxon period or earlier as indicated by several excavations.
- 2.4.104 The Domesday survey notes that North and South Ockendon was the largest settlement in the vicinity of the northern part of the scheme with 90 households, which was very large for this period. Great and Little Warley had 45 households, Upminster had 35 and Cranham had 29 households (Palmer 2019).

- 2.4.105 The location of one of the late Saxon manors of Great Warley (**38**) may have been c.600m east of the scheme in the vicinity of the demolished church of St Mary (**39**). The other late Saxon manor may have been in the vicinity of Franks Manor (**1079879**) only 60m west of the scheme. Franks Manor was established prior to 1066 and the site continued in use during the medieval and post-medieval period. Late Saxon ditches, pits and postholes (**174**) were found on the site of a pond for the M25 Widening scheme only 150m west of the scheme, but this is the only excavated evidence for late Saxon settlements within the northern part of the scheme.
- 2.4.106 **The later Medieval period - north (Figs 6a-c, 7a-d and 10a).** In the later medieval period the northern part of the scheme was part of the parishes of Upminster to the north-west, Cranham to the north, Great Warley to the north-east with the parishes of North Ockendon, South Ockendon and Orsett further south. The Mar Dyke river, a prominent feature, marked the boundary between the parish of South Ockendon and Orsett (VCH 1978, 117). The topography of the northern part of the scheme is higher to the north-west (the clay downland) with a low-lying area (the Mar Dyke valleys divided by the gravel terrace) to the south-east. The parishes of Upminster, Cranham and Great Warley are long and narrow and this may have been to take advantage of both the dryer upland regions to the north and the wetter floodplain to the south.
- 2.4.107 The roads within this part of the scheme appear to have a roughly north-south and east-west alignment and this could relate to the formation of the parishes or the use of more ancient droveways. The medieval road network is probably much the same as is shown on the OS First edition of 1805 (not illustrated), as the area remained undeveloped into the 20th century (VCH 1978). This map shows a major road running from Brentwood to the north running down to the Essex coastline (now the A128). Another major road shown on this map is the north-south road from Puddle Dock to North and South Ockendon (now the B186). The major east-west road through the scheme was the road from Upminster to East and West Horndon (the B187 and now a lane to the east). Another east-west road linked North Ockendon to the village of Bulphan.
- 2.4.108 The major areas of settlement in this northern area in later medieval period may have been focused around the medieval parish churches and manor houses, although this part of Essex is generally characterized by a settlement pattern of dispersed farms and hamlets (Bennett 2011). The churches that were close to the scheme included St Mary's Church (**39**), Great Warley, the Church of Mary Magdalene (**1183610**) in North Ockendon, the Church of St Nicholas (**1337095**) in South Ockendon and the Church of St Giles and All Saints in Orsett (**1147049**). In addition, there was likely to have been a cluster of settlement activity around the manors of North Ockendon Hall (**562**) and South Ockendon Hall (**1002155**).

- 2.4.109 Several north-south aligned roads in the vicinity of the scheme may have originated in the medieval period. This includes the two forks of Folkes Lane in the parish of Cranham (adjacent to the scheme), the lane from Great Warley to Codham Hall and St Mary's Lane from Great Warley to North Ockendon and Upminster. These routes passed medieval manors such as Beredens Manor (**536/537**), Warley Franks Manor (**1079879**), Codham Hall (**40**) and Great Warley Hall (**37**) along with the site of the medieval church of St Mary (**39**). It is possible that several or all of these routes were used by pilgrims who made their way southwards towards the River Thames and the Shrine of Saint Thomas Becket in Canterbury. The pilgrims would have stopped at settlements and religious houses along the way (Yates 2018), and may have stopped at Brentwood at the Chapel of St Thomas a Becket (now scheduled **1017452**) before continuing on to Great Warley and then continuing southwards.
- 2.4.110 The late Saxon settlement of Great Warley (**38**) may have been located c.0.5km east of the scheme. The original church of Great Warley (**39**) was demolished in the early 20th century (VCH 1978, 163-174) and it is possible that the settlement of Great and Little Warley mentioned in the Domesday survey was established around this church. It is likely that Great Warley later became a linear dispersed settlement (**40**) that developed along a NW-SE aligned road (now the B186), with another part of the settlement established 1km north-east of the scheme.
- 2.4.111 The HER notes that a possible fishpond, mill and dam (**367**) is located at Hobbs Hole Grove within the eastern part of the scheme and c.600m west of the Great Warley settlement (**40**). The grove was formed by a lake created by an L-shaped dam which abutted the steeply rising side of the valley in which it sits. The grove may have been the site of a medieval mill site or a fish-pond, and part of this possible fishpond was recorded just south-west of this grove in the footprint of the M25 (**541**). The aerial survey found no trace of these features (**367**) but this area is covered in woodland, which may have impeded the survey (Aerial Investigations and Mapping Report site 2). Several east-west medieval ditches (**366**- AP site 1) were recorded during the M25 excavation c.400m further north, east of the scheme (Biddulph and Brady 2015, 19), and several banks and ditches were also noted on the LiDAR during the aerial survey (Aerial Investigations and Mapping Report site 1).
- 2.4.112 Beredens Manor (**536/537**) and an associated settlement (**538**) were situated within the parish of Cranham and were located within the northern part of the scheme (Fig. 9a). Beredens existed by AD 1357, and remnants of 13th-14th-century buildings (**712**) have been excavated to the south of the manor house, located on the edge of the M25. The medieval manor was destroyed during the Second World War (VCH 1978, 103-109). To the south of the site of Beredens Manor, medieval buildings (**546, 550**) have been recorded along Folkes Lane which lies directly to the north-west of the scheme boundary. Ridge and furrow earthworks recorded within the northern part of the scheme (**169, 621**) indicate that these areas may have been open fields during the medieval period, although they may be later.

- 2.4.113 Warley Franks Manor (**1079879**), located north of St Mary's Lane (now the B187) on the edge of the northern Mar Dyke valley, was a moated manor established by 1086 (VCH 1978, 163-174) and was located immediately west of the scheme. The current listed manor house on the site dates from the 15th century and is associated with a moat (**578**) to the south that has been significantly altered (Aerial Investigations and Mapping Report site 3).
- 2.4.114 The Grade I listed Church of Mary Magdalene (**1183610**) is located on the gravel terrace south of the northern Mar Dyke valley in the parish of North Ockendon, and is c.200m east of the scheme. The church has elements of 12th century architecture and may date from this period. The church may have been the focus of the medieval settlement (**566**) of North-Ockendon which may have been located around the church. A later medieval manor (**562**) may have been located in the area of the post-medieval North Ockendon Hall (**574**), just 100m north-east of the scheme. An archaeological watching brief in this area in 1997 exposed timber remains of the possible medieval manor house (**562**). A T-shaped moat (**559**; (Aerial Investigations and Mapping Report site 4) is still extant south of the church and just east of the scheme and this may have been associated with the medieval manor house. It is unclear whether the moat originally extended further west, i.e. into the scheme. This timber structure (**562**) and nearby moat (**559**) may have been the site of the medieval manor of *Ockendon Setfountayns*, which was formed in the early 13th century. The timber hall was replaced by a red brick building in the 16th century, henceforth known as North Ockenden Hall (**574**) (VCH 1978, 110-117). The modern Hall Farm occupies the area of the former medieval and post-medieval manor.
- 2.4.115 Several cropmarks extend southwards from Hall Farm (**574**), within the scheme and may be associated with a medieval settlement (**566**) at North Ockendon. This includes six linear features aligned NNW-SSE located within the scheme (Aerial Mapping Report site 5B). These may be field boundaries of later medieval or early post-medieval origin, as all but one do not appear on the 19th century OS maps (Fig.13).
- 2.4.116 A green lane (**1810**) is located within the northern part of the scheme on an ENE-WSW alignment (Figs 6a and 10a). The origins of this track may be medieval as it linked North Ockendon Hall with Pea Lane to the west before it was truncated by the M25. The green lane was a trackway that was extant until the mid-19th century. Medieval ditches and pit groups of 12th-13th century date (**191**) were excavated just south of the green lane just 100m west of the scheme, near to Dennises Farm (Wilkinson 1988, 65-8). The Aerial Investigation and Mapping Report (site 30) identified cropmarks of an enclosure and field boundaries of possibly late medieval date directly to the north of the settlement (**191**).
- 2.4.117 Further linear medieval ditches were recorded just south of green lane (**1810**) and c.200m west of the scheme during the M25 widening excavations (**174**). The activity may have begun in the late Saxon period, as the pottery from them dated to the 10th-12th centuries. Pits and post-holes were also recorded.. These features were interpreted as enclosures, paddocks and a trackway, and fired clay and smelting debris also suggest industrial activity (Biddulph and Brady 2015, 26-27). On the basis of these discoveries, there may be further medieval farmsteads located either side of the green lane.

- 2.4.118 A medieval moated manor was located at South Ockendon Hall on the east edge of the gravel terrace overlooking the Mar Dyke valley and is scheduled (**1002155**). This site lies just south of the scheme (Fig. 9a). The present building is modern but the moat is still extant. There are very likely to be medieval features surviving below ground within the area of the moat, as the aerial survey identified possible medieval structures, including a building and watermill, within the monument (Aerial Investigations and Mapping Report site 10B).
- 2.4.119 The medieval manor at South Ockendon Hall was known as ‘Bruyns’ and was certainly established by the 12th century, though it may have late Saxon origins. This manor house may have been rebuilt several times during the post-medieval period. The moated site does not have any remaining structures internally except part of a medieval gatehouse (**514**), but it is likely that medieval and post-medieval remains survive below ground. This manor was split in the early 16th century and the manor of Groves (**29**) was created to the north (VCH 1978, 117-126; see below). A possible watermill, which was later replaced by a windmill (**266**) was located on the south side of the moat. Both are thought to be medieval, but the watermill may have been medieval in origin, contemporary with the medieval moat. The watermill would have required an extensive water management system of drainage ditches, leats and sluice gates which may have extend into the area of the site. It seems plausible that the moat and possible watermill were fed by a spring line on the terrace, since the Mar Dyke river is located downslope to the east.
- 2.4.120 There may have been a medieval settlement attached to the moated manor that may extend into the area of the scheme. Cropmarks have been identified 400m north-west of the moated manor house. These include rectangular enclosures, linear features and pits (**265**), which may have defined stock enclosures and field systems associated with the manor house. In addition, an east-west trackway (**187**) was identified by the aerial survey to the north-west of the hall along with a rectangular enclosure (Aerial Investigations and Mapping Report site 9), and these could be medieval or earlier in date. Further linear features (**185**) have been recorded as cropmarks 0.5km west of the scheme. Alternatively, these features may be associated with the later manor house, and of post-medieval date..
- 2.4.121 The former later medieval or early post-medieval moated manor of Groves Barns (**29**) is located within the scheme, to the north of South Ockendon Hall. This manor house may have been established c.1531 when the manor of Bruyns (South Ockendon Hall) was split, or there may have been an earlier building on this site. The manor house was extant until at least c.1772, but was demolished soon after (VCH 1978, 117-126). A survey of the site in 1992 identified several earthworks and areas of former fishponds. The aerial survey did not identify any features related to this manor, but this may have been because part of the manor is now situated in an area of woodland.
- 2.4.122 The church of St Nicholas (**1337095**) in South Ockendon is located 800m south of the scheme and dates from the 12th century (VCH 1978, 117-126). There may have been a settlement around the medieval moated manor at South Ockendon Hall (**1002155**) or this church during the medieval period.

- 2.4.123 A number of possible medieval or post-medieval field boundaries were identified by the aerial mapping survey within this part of the scheme, some on the gravel terrace (Aerial Investigations and Mapping Report sites 37, 5B), others in the Mar Dyke valley (**12, 31, 38, 52, 66, 81**). These comprise field boundaries (**1790**) north-west of the Church of Mary Magdalene (**1183610**), field boundaries south-west of North Ockendon Hall, field boundaries west of Grove Farm, field boundaries north-west of the Mar Dyke (**118**) (Aerial Mapping Report site 38) and field boundaries east of the Mar Dyke (**109, 1792, 1788**), (Aerial Mapping Report sites 12, 52 and 31). Ridge and furrow earthworks (**61**) are recorded within the scheme within the Mardyke river valley.
- 2.4.124 The cropmarks of a possible medieval moated site (**267**) were identified within the Mar Dyke valley just south of the river and within the scheme. Several other possible medieval moated sites have been identified as cropmarks just east of the scheme and within the parish of Orsett. This includes the cropmarks of two sub rectangular enclosures jointed by a wide ditch (**263**) located just north-east of the scheme (Aerial Investigations and Mapping Report site 11). This could indicate the site of a double medieval moated site. An additional ditch is located just north of the easterly ditch. Another possible moat was recorded nearby (**229**) but the HER recorded this as destroyed so it may be on the site of a modern reservoir. Another medieval moat (**519**) is recorded by the HER at Spinny Farm located 0.5km north-east of the scheme.
- 2.4.125 South of the Mar Dyke (Fig. 10b), the site of Bishop Bonners Palace is scheduled (**1111592**) and is located 0.4km north-east of the scheme on the north edge of Orsett. This ringwork and bailey earthwork belonged to the Bishops of London during the medieval period. The extent of this site was mapped by aerial survey by Place Services in 2020 (Fig. 6c) and it includes several defensive ditches and a fishpond (Place Services 2020, 7, AP site 83). The later medieval settlement of Orsett was situated south of Bishop Bonners Palace around the Church of St Giles and All Saints (**1147049**). The Church of St Giles and All Saints has elements of architecture dating to the 12th century with extensive 14th and 15th century alterations. The later medieval settlement of Orsett was located c.200m north of and outside the scheme. The hamlet of Baker Street, west of Orsett, may have been founded in the later medieval period, as this hamlet has an extant 15th to early 16th-century house, the Mill House (**1111624**), c 100m to the east of the scheme boundary.
- 2.4.126 In 1994 a watching brief was undertaken at Grey Goose Farm located c.100m south of the scheduled area and just west of the scheme. A domestic rubbish pit (**20**) was found including oyster shell, burn organic material and medieval pottery dating to the 12-13th century. This suggests that there may have been medieval activity close to the scheme, possibly in the form of a farmstead situated south of the Stifford Road. To the north-east, fieldwalking (**251**) in the area of the scheduled Orsett cropmark complex within the scheme produced a handful of medieval finds, but no features of this period, so this was probably a manuring scatter.

- 2.4.127 The later Medieval period - south (Figs 6d-g, 9b). The location of the Saxon settlement of Tilbury is unknown, but possible locations for the mid-late Saxon settlements of Orsett and Mucking have been suggested by excavations. The Domesday survey notes that Orsett had 61 households which was very large for this period (considering only the head of each household was counted). Mucking was also very large with 40 households and Tilbury was smaller with 16 households (Palmer 2019). According to Domesday, these 16 households were divided between three manors, two of which had only one smallholder each but the largest manor had one villager, 11 smallholders and two slaves. These manors in Orsett, Mucking and Tilbury were located in the Saxon Hundred of Barnstable.
- 2.4.128 The Saxon settlements are very likely to have been situated on the upland areas and not the marshland near the Thames foreshore. The marshland may have been used for seasonal sheep pasture, as appears to be indicated by the large number of sheep and pasture land noted in the Domesday survey (Darby, 1971, fig. 63, 241); Mucking had pasture for 300 sheep and the largest manor within Tilbury had pasture for 260 sheep. Ploughland, meadow and woodland for pigs is also noted in the Domesday survey for these settlements, suggesting that there were different zones of land use during the late Saxon period.
- 2.4.129 In the later medieval period the southern area of the scheme and environs was located within the historic parishes of East and West Tilbury and a small part in the parishes of Mucking and Chadwell. The Saxon settlements at Gun Hill (**473**) and Mill House Farm (**3539**) lie in the area of three manors in Tilbury that are mentioned in Domesday. The later medieval settlements were very probably located in close proximity to the parish churches of West Tilbury (**111541**) and East Tilbury (**1337129**) with a number of dispersed hamlets along major routeways. The medieval church of Mucking was demolished and rebuilt in the 19th century and is located outside and north-east of the scheme area (Essex Churches website 2019).
- 2.4.130 The parishes of East Tilbury and West Tilbury were probably formed during the later medieval period, and may have originally been associated with two separate manors, West Tilbury Hall and East Tilbury Hall. Part of the boundary between the two parishes is defined by a creek aligned roughly north-south in the south-eastern part of the scheme. The medieval West Tilbury manor house may have been located in the vicinity of the 17th century West Tilbury Hall (**111625**) and associated 16th century barn (**1308889**) 500m west of the scheme. The medieval East Tilbury Hall (later East Tilbury Place) may have been located north of Love Lane and the Coal Road (**1828** – discussed below), c.700m south-east of the scheme. In the later medieval period the majority of the southern part of the scheme was probably used as agricultural land associated with the manors of Condoovers (**111624**), Goshems, East Tilbury Hall and West Tilbury Hall.

- 2.4.131 The site of the medieval to post-medieval manor of Seaborough Hall (**1808**) was located within the central part of the scheme and just west of Brentwood Road. This hall is first mentioned in the 13th century and it appears on the OS map of 1897. This manor house was demolished in the 20th century and all that remains above ground is a wall adjacent to Brentwood Road (Thurrock Local History Society 2019). The Lower Thames Crossing evaluation of Land Parcel 4 found remains of brick walls and a beam slot (Fig. 6c, **3577**) relating to the medieval to post-medieval manor house (Highways England 2020). Further investigation may ascertain the date of these below ground features and how the manor house may have developed from the medieval to post-medieval period. To the south-east, evaluation of Land Parcel 5 revealed several medieval 12th-13th century quarry pits (fig. 7c, **3559**) just west of High House Lane. These may represent quarrying either for the manor house or for roadbuilding, and it suggests that High House Lane may date to the medieval period (Highways England 2020).
- 2.4.132 Medieval field boundaries and trackways have been identified through excavation and non-intrusive investigations within the scheme and in close proximity. Excavation of the Orsett Neolithic causewayed enclosure (**1009286**) in 1975 found parallel ditch alignments and linear ditches which were proved to be medieval and-or post medieval trackways and medieval field boundaries (**211**). Medieval ditches (**196, 197, 241**) and field boundaries (**236, 261, 512**) have also been excavated and appear as cropmarks (Aerial Investigation and Mapping Report sites 18 and 49) on the terrace to the north in the vicinity of Orsett. The widespread occurrence of these features in this area show that both the lower lands and the terraces were being utilised as agricultural land during the medieval period.
- 2.4.133 Although later, the Map of Essex 1777 by John Chapman and Peter Andre may preserve the medieval road layout and settlement pattern in the southernmost part of the scheme. This map shows Muckingford to East Tilbury Road (**484**), the Hoford Road, the Chadwell to Muckingford Road, Low Street Road, Coopers Shaw Road, Church Street/Station Road and the Coal Road. The first two of these roads are putatively of Roman origin. The Coal Road is now just a farm track and it bisects the scheme on a north-west to south-east alignment. Although the name suggests a post-medieval function, the Coal Road (Figs 11c and 13c, **1828**) may be of greater antiquity, and it could have defined the boundary between the medieval manors of East Tilbury Hall and Goshems (Bigley 1982). In addition, the north-south creek may have defined the boundary between Goshams/West Tilbury Hall and Condovers.
- 2.4.134 The 1777 map also shows that there were three trackways extending northwards from the Muckingford Road within the area of the scheme. Two possible north-south aligned trackways (**3547, 3548**) and one hedgerow can be seen on satellite imagery in this area and may be the remains of the three trackways shown on the 1777 map. The more easterly trackway is in alignment with Low Street Lane (itself of some antiquity) to the south of Muckingford Road, the more westerly is in alignment with a hedgerow to the west that possibly represents the third trackway. These are also aligned with Hoford Road. It is possible that these linear features may be former droveways used to take livestock down to the marshes for grazing.

- 2.4.135 The road (**484**) through East Tilbury to the Thames foreshore (already mentioned as possibly of Roman origin) appears to have been an important medieval roadway leading to a crossing point over the Thames. Documentary evidence suggests that there was a ferry between East Tilbury and Higham in Kent from the 13th century (Brown and Pattison 2003).
- 2.4.136 The Church of St James (**1111541**), located within the 1km buffer in West Tilbury dates from the late 11th or early 12th century. Earthworks located west of this church have been scheduled (**1002199**) and this may be the location of the medieval village of West Tilbury. Medieval pottery (**630**) was found nearby during the excavation of Condovers Pit within the scheme and there may be further medieval activity in this area. The nearby hamlet of Low Street, within the scheme may have later medieval origins as there is a 15th century house within this settlement, Condovers, now known as Walnut Tree Cottage (**1111624**).
- 2.4.137 The Church of St Margaret, now renamed as the Church of St Katherine (**1337129**), was the parish church for East Tilbury, and is located within the 250m buffer and immediately east of the scheme. This church is located alongside Princess Margaret road (**484**) (already discussed as possibly of Roman origin) and 300m north-west of the River Thames shoreline. The cemetery associated with this church is located outside and east of the site. Human bone (**284**) and medieval finds (**281**) have, however, also been found along with Roman pottery within the field to the west of the church, which is within the scheme. There may, therefore, have been an earlier medieval churchyard, or possibly a Roman cemetery, here.
- 2.4.138 Another medieval site within the parish of East Tilbury was St Mary's Hospital, later a chantry (**392, 633**), but the precise location of this structure is unknown. Documentary evidence suggests that it was founded in c.1213 and was extant until the mid-16th century (Powell 1988, 154-158). The HER places the hospital (**633**) in the vicinity of the post-medieval Old Rectory (**1826**) and within the scheme, whereas PastScape places the hospital (**392**) in woodland to the south of and outside the scheme. Both of these locations are, however, based on limited information and only four-figure grid references. There is also a tentative record of human bone (**388**) in the HER found just south of the scheme (and in the same position as **392**), but again with only a four-figure grid reference.
- 2.4.139 The human bone (**284**) and medieval finds (**281**) to the west of the Church of St Catherine (**1337129**) may indicated that the hospital and an associated cemetery was located opposite the Church of St Margaret (**1337129**). Powell suggested that there were two later medieval chantries in the vicinity and that one was redeveloped as a Tudor blockhouse on the Thames foreshore (**89**) (Powell 1988). It seems possible that a small chantry could have been located on the foreshore, but a hospital is more likely to have been located on slightly elevated ground near the church (**1337129**).
- 2.4.140 The cropmark of a ploughed-out windmill (**452**) was identified west of East Tilbury within the 1km buffer, and this may be medieval in origin (Aerial Investigations and Mapping Report site 45). The aerial survey also identified a number of possible medieval features to the west of East Tilbury including probable late medieval field boundaries (**496**) (Aerial Investigation and Mapping Report site 44).

- 2.4.141 Land reclamation may have taken place during the medieval period within the low-lying marshland adjacent to the River Thames, as a possible medieval sea wall (**500**) was located further west by the Essex HER c260m north of the current sea wall. Land reclamation is known to have taken place in the coastal marshes of Essex and the enwalling of the marshes was mostly complete by AD 1500 (Rackham 1980, 106). This would have allowed the marshes to be converted from seasonal pasture into arable use when salinity had reduced.
- 2.4.142 The former marshland area towards the south of the scheme contains evidence for a number of co-axial ditches and earthworks of north-south aligned trackways. The co-axial field boundaries are almost certainly former field boundary ditches of possible medieval or post-medieval date. A system of drainage would have been essential to use the low-lying area for pasture. The trackways (**1795, 1796**) appear as earthworks consisting of ditches on either side of central tracks visible for over 1.5 km. Four of these trackways are visible running in a north-south direction across the former salt marsh (Aerial Investigation and Mapping Report sites 58, 60). It is possible that these tracks were possible droveways of late medieval or post-medieval date. Some of these droveways appeared to start at farms (such as Gravel Pit Farm) or settlements (like Low Street) via green lanes that appear to still be in existence in places, often defined by parallel ditches. These droveways may have been used to take livestock down to the marshes for grazing. A number of these droveways and field boundaries have been levelled by later activity such as Tilbury Power Station and recent landfill sites and a large modern development towards the coast.
- 2.4.143 Several areas of ancient woodland (as classified by Natural England) are dispersed throughout the scheme area. These include Hobbs Hole to the south of Junction 29 and Clay Tye Wood to the east of the scheme, both of which extend into the scheme boundary. Ancient woodland is defined as land that has been continuously wooded since at least AD 1600 (Natural England & Forestry Commission 2014), although their exact date is uncertain. Additional areas of woodland (**83-86**) of unknown date are also identified within the buffer area.
- 2.4.144 **Post-medieval period – north (Figs 6a-g, 11a-11b and 13a-c).** Archaeological and documentary evidence indicates that the post-medieval landscape in the northern part of the scheme (Fig. 11a and 11b) continued to comprise small settlements and farmsteads set within agricultural land. There were also several settlements which continued in use from the medieval period including Great Warley (**40**), North Ockendon (**574**), South Ockendon (**1337095**) and Orsett (**1147049**).

- 2.4.145 Aside from the construction of the two railways that bisect the scheme (**738, 739**) this area retained a largely rural character with dispersed settlements along key roads. Post-medieval buildings were sited at the medieval manor site of Beredens (**536/537, 712**) and archaeological features indicative of settlement activity have also been excavated at Dennises Farm (Fig. 11a, **192**). Several houses (**550, 554, 711**) and barns (**622, 577**) are recorded as having been sited in close proximity to the scheme boundary, and post-medieval Grade II listed buildings are extant at Broadfields (**1358548**), North Ockenden (**1079926, 1252711, 1300500**) and Kemps Farm (**1111627, 1308865**). Two Grade II listed registered parks and gardens associated with estates at Warley Place (**1000746**) c 915m to the north-east of the scheme and Upminster Court (**1001586**) c 500m to the north-west of the scheme are situated within the 1km study area.
- 2.4.146 Several archaeological watching briefs have been undertaken c.100m east of the scheme in the area of the former North Ockendon Hall (**574**). Post-medieval remains of the manor and outbuildings have been found (**560, 573, 619**) along with a well (**620**) and a wall (**576**). North Ockenden Hall (**574**) was damaged in the Second World War by bombing and was later demolished in the 1960s (VCH 1978, 110-117).
- 2.4.147 A small house (**1827**) was located just west of the scheme and this may explain the rectangular cropmark and linear cropmarks just west of Pea Lane (Fig. 6a) as recorded by Place Services in 2019 (Aerial Survey site 30). This house is shown on the tithe map of 1841 but not on the OS map of 1872 and so must have been demolished in the mid-19th century.
- 2.4.148 The Grade II listed remains of a late 16th to early 17th-century gateway (**1147431**) are located to the north of Grange Farm, just beyond the scheme boundary. This gateway could be associated with the later medieval or early post-medieval manor house of Groves Barns (**29, 30**) located within the area of the scheme. Remains and earthworks of the manor house and associated structures and features (**29, 30**) have been recorded within the area.
- 2.4.149 The Grade II listed remains of a gatehouse and 18th-century bridge are situated within the north-west part of South Ockenden Hall outside the scheme (**1002155**). A post-medieval mill (**266**) was also located within the monument, although no remains survive above ground. Several post-medieval field boundaries (**1800**) were recorded by the HER just east of the Mar Dyke. These would have been located within the South Ockendon manor estate, but these have subsequently been levelled (Fig. 6b).
- 2.4.150 Orsett House (**1111610**) is a Grade II* listed building located 70m east of the scheme and just west of Orsett. This building was constructed in 1740 for Captain Samuel Bonham (Bettsley and Pevsner 2007, 619) and the tithe map indicates that Orsett House remained in the Bonham family until at least the mid-19th century.

- 2.4.151 The tithe maps and later 19th century OS maps (Fig. 13b) indicate that there were a number of post-medieval farms located close to the Mar Dyke. Four were located within the scheme and two adjacent to the scheme. The four within the area of the scheme include Thrifts and Abrahams (**2060**), Botny Farm (**2062**), Hobletts Farm (**2057**) and Middle Farm (**3551**). The two farms located just outside the scheme include Old Barn (**2063**) and Chantry Farm (**2061**). The topographical position of these farms is of note as they are all located on the slopes just above the floodplain of the Mar Dyke (Fig.5c). At least three of these farms originated in the later medieval period including Thrifts and Abrahams (**2060**), Chantry Farm (**2061**) and Hobletts (**2057**). All of these farms apart from Hobletts (**2057**) were demolished by the 1970s. These medieval to post-medieval farms may be partly extant above ground or may survive below ground.
- 2.4.152 Just north of the A13, and west of Orsett, a number of undated discrete cropmarks are evident within the area of the scheme. If not of geological origin, these may be of post-medieval date. Several of these pits were sampled in the late 1970s and early 1980s and one located just south-west of the site was interpreted as a post-medieval pit (**253**). Another sample excavation along the western boundary of the scheme found no evidence of archeological features but did find post-medieval surface finds including pottery, glass, clay pipe stems, bone and tile (**249, 256**).
- 2.4.153 The Barking and Pitsea railway (**738**) and the Upminster and Grays branch railway (**739**) both bisect the scheme. Both branches were part of the London, Tilbury and Southend Railway. This part of the Barking and Pitsea railway was built in 1888 and the Upminster and Grays branch railway in 1892 (VCH 1978, 143-153). Neither stretch of railway crossing the scheme included any features of particular note.
- 2.4.154 Cropmarks of post-medieval agricultural features (**582, 586, 624**) have been identified within the scheme, and field boundaries (**169**) consistent with those visible on historic mapping have been excavated. The Aerial Investigation and Mapping Report identified areas (referred to as sites 27, 29 and 37) of additional such features within the site (Place Services 2019). A number of other linear cropmarks have been recorded in the vicinity of South Ockendon Hall, some of which are post-medieval field boundaries shown on historic mapping (Fig. 13).
- 2.4.155 At the north-west end of the scheme, north of Upminster, an industrial brick, tile and pipe making works was located to the east of Hall Lane and 1km west of the scheme. This was known as Chapman's or Potkiln Farm and was established in the 18th century and expanded in the later 19th century. The first kiln was an up-draft brock kiln (**1691**) with several more kilns built further east (**1693**). These kilns were located north of Bird Lane and are outside the scheme. The later 19th century further additions to this industrial complex included two north-south aligned drying sheds with kilns at the south and another kiln just south of the two sheds (**1809**). A tramway (**1692**) with associated shed was also added to link the two parts of the site together and to the London, Tilbury and Southend Railway further south. The later 19th century kiln, drying sheds and the tramway are located within the area of the scheme. This complex ceased to operate in the late 1920s and the majority of the buildings were demolished soon after (Benton and Grant 2018).

- 2.4.156 A possible brick kiln (**1811**) may have been located within the scheme to the south-west of North Ockendon Hall. A field labelled as ‘Brickclamps’ is shown on an estate map of North Ockendon Hall dating to 1779 (D/DBe P4). There must have been extraction pits located nearby, and the map includes several features, particularly ponds, that may represent former quarries to provide clay and sand for this kiln. Further extraction pits may exist within the scheme here.
- 2.4.157 Several post-medieval landfill sites (**564, 565, 1698**) are situated within the buffer area although none are recorded within the scheme.
- 2.4.158 **Post-medieval period - south (Figs 6d-g, Figs 11b-11c and 13b-13c).** The OS Old Series map of 1805 indicates the overall pattern of settlement and land use for this area of the scheme. The major routeways through the scheme from north to south appear to have been the Brentwood to Chadwell road passing through Orsett and the road from Horndon-on-the-Hill to East Tilbury. The major east-west roads were Stifford to Hordon passing through Orsett, Stifford to Stanford-le-Hope (now the A13) and the Thurrock to East Tilbury road passing through Chadwell. The post-medieval settlements and farmsteads appear to have been concentrated at East Tilbury, West Tilbury, Chadwell, Orsett and along the major roads. John Chapman and Peter André’s Map of Essex 1777 (Map of Essex website 2019) shows that aside from activity around Tilbury Fort and Coal Wharf there were no settlements or farmsteads on the West and East Tilbury Marshes. Historic mapping indicates that the landscape surrounding the settlements and farmsteads remained in mostly agricultural use throughout the post-medieval period.
- 2.4.159 There are over 20 listed buildings located either within the area of the scheme or within the 250m buffer and these are farmhouses and cottages clustered around the hamlets of Baker Street, Low Street and along the Stanford road (now part of the A1013). There are a number of listed buildings located within East Tilbury, West Tilbury and Orsett but these are located further from the scheme and within the 1km buffer. The listed buildings which are located within the scheme include the 17th century Thatched Cottage (**1111644**) and the early 19th century 1 & 2 Grays Corner Cottages (**1337056**) which are located at the southern end of Baker Street. Murrells Cottages (**1337096**), an early 18th century listed building on Stanford Road, is also located within the scheme. Other nearby listed buildings are located within the 250m buffer including a late 16th-early 17th century house known as Little Wellhouse (**1147812**) and two 17th-18th century farmhouses known as Whitecrofts and Greygoose (**1111566, 1111567**). Post-medieval pits (**253**) have been excavated within the scheme, immediately adjacent to Grey Goose Farm (**1111567**).

- 2.4.160 Several post-medieval Grade II listed buildings are located close to the scheme north of the A13 and close to Orsett including Loft Hall (**1111649**), Old Hall Farm House (**1111592**), Orsett House (**1111610**), Poplars Farmhouse (**1146717**) and Slades Hold Cottages (**1111608**). Others south of the A13 and close to the scheme including Heath Cottage (**1111574**), Heath Place (**1111575**) and Whitecrofts Farmhouse (**1111566**). There is also a cluster around Baker Street including the late 16th century house called Whitefields (**1146709**) and associated barn (**1111630**), an early 18th century house called the Wilderness (**1111631**) and a 17th-century windmill (**1111643**). This windmill became a steam mill in the 19th century (**193**) and is located south of the 15th century Mill House (**1111642**). Towards the south of this section of the scheme there is one 17th century listed building within the hamlet of Low Street called Polwicks (**1111623**). Other listed buildings are located east of Linford including Waltons Hall (**1111568**) and barn (**1337098**) and the 18th century Turners Farm (**1307175**). There is also an early 19th century house at Buckland (**1147796**) and a 19th century rectory in East Tilbury (**1111553**) within the 250m buffer.
- 2.4.161 Several non-designated post-medieval farm buildings and cottages were located within or close to the scheme along Baker Street, Mill Lane and the Stifford-Stanford Road. This includes a post-medieval post mill (**116**) that was located west of Mill Lane and just east of the scheme. The circular base for this mill is extant and may date to the 17th century. Five Chimney Cottages (**1823**) were located within the scheme and adjacent to the Stifford-Stanford Road (now the A1013). The 1840 tithe map and the OS map of 1873 show several buildings at Five Chimneys (**1823**) which were replaced by the mid-20th century with one long building. Potash Cottages (**1824**) were located within the scheme and adjacent and north of the Stifford-Stanford Road. These cottages are shown on the 1840 tithe map and the OS map of 1873 and were also demolished by the mid-20th century although there appear to have been cottages south of the A1013 that were also called Potash Cottages.
- 2.4.162 The Stifford-Stanford Road (A1013) appears to have been widened in the mid-20th century which may have led to the demolition of several buildings along its route. Mobbs Farm (**1825**) was located just west of Mill Lane within the scheme. The tithe map indicates this farm belonged to the Orsett Poor and it is shown on subsequent later 19th century OS maps (Fig. 13). There is still a farm at this location although the original farm buildings may have been demolished. Another terrace of cottages (**3525**) was located in the eastern part of the site and north of the Stifford-Stanford Road. These cottages were shown on the 1841 tithe map and on the late 19th century and 1920s OS maps as Ridgwell Cottages. These cottages are not shown in OS mapping after the 1930s and so must have been demolished by this date. Other farmhouses located in the vicinity of the scheme included Barringtons Farm and Cock Farm just east of the site and Nevilles Farm located just west of the scheme.
- 2.4.163 During the Lower Thames Crossing evaluation of Land Parcel 3 a later post-medieval ENE-WSW field boundary was identified in the central part of the scheme along with a north-south post-medieval trackway (Fig. 7c, **3570**). These features may be associated with Heath Place, the farm to the east of Hornby Lane (Highways England 2020).

- 2.4.164 A cottage and garden (**3549**) were located within the scheme just north of the Muckingford Road as it turned 45 degrees north-eastwards towards the east Tilbury Road. This may be the same cottage that is shown on Map of Essex 1777 and the 1873 OS map at this location. Subsequent OS maps show several buildings at this location, perhaps a row of four small cottages. These cottages are shown on the OS maps until 1938 and were demolished soon after as they do not appear on the OS map of 1959. Just to the west, there was a farmstead at the edge of the scheme and this was Beckland Farm and barn (**3550**) as shown on the 1838 tithe map. This may be the building shown on the Map of Essex 1777 and the 1873 OS map at this location. This post-medieval farm building and barn may still be extant within a modern farm at this location.
- 2.4.165 Several post-medieval buildings were located in the village of East Tilbury within the scheme, but have now been demolished. A complex of buildings, the Old Rectory House (**1826**), was located just east of the intersection of Princess Margaret Road and Station Road. This is described as buildings and a yard in the 1839 East Tilbury tithe award (D/CT 359A) belonging to Revd. Evan Lloyd. On later OS mapping it is labelled as 'Old Rectory' (Fig.13). This set of buildings does not appear on the later 20th century OS maps and so must have been demolished during this period. In the early 19th century another rectory was built at the end of Princess Margaret Road and opposite the church. This is Grade II listed (**1111553**) and is also confusingly called Old Rectory. A 19th century Methodist chapel (**59**) was located west of Princess Margaret Road and south of the scheme, but was demolished in 2003.
- 2.4.166 The manor of South Hall in East Tilbury was established in the medieval period, although the location of the medieval manor house is unknown. The location of the post-medieval manor house (**3561**) is shown clearly on a map of the estate dated 1874 (E01/02/113) (Rochester Bridge Trust 2020). The manor house was on the west site of Princess Margaret Road and opposite a trackway leading eastward to part of the scheme. The post-medieval barn (**3562**) associated with South Hall manor was located just north of this track and just north of the scheme. A number of field boundaries (**1798**) were recorded nearby which have now been leveled but may exist below ground. An early 19th century Whitechapel Charity School property boundary stone (**2**) is located nearby in a hedge between two parts of the scheme.
- 2.4.167 The Map of Essex 1777 by Chapman and Andre shows that the Coal Road (**1828**) (which crosses the scheme) was a major highway linking Chadwell with East Tilbury. The importance of this road diminished in the later 19th century (Fig. 13) and by the 20th century it had become a farm track. Part of the reason for its decline may have been the construction of the London, Tilbury and Southend Railway which was constructed in the mid-19th century. This railway line cuts across the farm track, although there is a rural crossing at this point.

- 2.4.168 The marshes towards the south of this part of the scheme are very likely to have been reclaimed by the post-medieval period. The medieval enwalling (**500**) have required additional maintenance and reworking to protect this low-lying area from inundation. The 1777 map shows what may be an earthwork parallel to the coastline and this may have been a post-medieval earthen sea wall. These earthwork sea defences (**90, 91**) are likely to have been rebuilt several times. This map also shows a Milk House to the north-west of Tilbury Fort and within the 1km buffer, which suggests that the enwalled marsh may have been used for cattle grazing at this time. The OS maps of 1805-1923 indicate that the area south of the sea wall were still labelled as Saltings apart from the area immediately east of Tilbury Fort where the sea wall was along the shoreline. The remains of a wall foundation (**93**) were found in this area, which could have been associated with Marsh Farm. Modern satellite imagery suggests that further reclamation took place towards the south of the scheme in the mid to later 20th century to bring this foreshore area into arable use.
- 2.4.169 The southern part of the scheme is likely to contain a number of post-medieval and modern drainage ditches relating to the reclamation of this former area of marshland. During the LTC walkover of this area a series of drainage ditches and earthworks (1833) were noted west of Coalhouse Fort and it is likely that some of these are modern in date. A sinuous feature or group of features 100m-200m wide and aligned east-west (498) is located on the edge of the gravel terrace above the floodplain just south of the scheme. This group of features is defined by an earthwork to the north and a drainage ditch to the south. It is possible that this sinuous feature was the course of a former stream channel which has now dried up. An area of possible quarrying (1858) was noted at the interface between the Thanet Sand and the bedrock chalk, as shown on the OS map of 1897 (Fig. 13c).
- 2.4.170 The marshland areas within the southern part of the scheme may contain evidence for pastoral activity and shepherd cottages. The West Tilbury tithe map of 1838 (D/CT 360) shows two buildings associated with a trackway and four fields, one of which was called 'Beast House Marsh'. This may be the building described as 'Wick House' (**399**) located c.200m west of the scheme in the Essex HER but with no other details. These cottages are shown on the later 19th and early 20th century OS maps but were removed by the 1940s. The exposed position of these cottages in the marshland suggest they were farm cottages, perhaps for tending sheep. The LTC walkover observed a raised platform earthwork (**1857**) nearby within the scheme. This earthwork was situated directly west of a driveway (**1795**) and may be the remains of a building, perhaps another farm cottage

- 2.4.171 Evidence of post-medieval agriculture has been identified on the upland areas including the area around the A13 (**212**, **242**) and also to the north-east of Linford (**339**). Field ditches (**242**) have been excavated to the north-east of this section of the scheme and the Aerial Investigation and Mapping Report identified cropmarks of field boundaries consistent with those on historic mapping. This includes the cropmarks of interesting field boundaries (**246**) of medieval or post-medieval date around Grey Goose Farm (Aerial Investigation and Mapping Report site 70). South of the A13 a north-south aligned linear cropmark (**1789** – AP 32) was recorded within the scheme. This is likely to be a post-medieval or modern field boundary as it extends from an existing boundary.
- 2.4.172 This section of the scheme held a strategic position during the post-medieval period as it was located on the north-bank of the River Thames, only 30km east of London and at a point where the mouth of the Thames narrowed. There was also a ferry between East Tilbury and Higham on the Kent side of the river and in the post-medieval period remains of the jetty are located on the foreshore (**740**). In 2000, possible timbers (**89**) were observed within the inter-tidal area which may be remains of the Coal Wharf. In 1539-40 five artillery blockhouses were constructed along the Thames including Higham, Gravesend and New Milton in Kent and Tilbury (**1021092**) and East Tilbury (**1013943**; **89**) on the Essex side of the Thames. These forts were constructed to protect London and the Woolwich and Deptford dockyards against an invading fleet (Brown and Pattison 2003).
- 2.4.173 In the late 17th century Tilbury coastal fort (**1021092**) was constructed on the site of the 16th century East Tilbury blockhouse. This fort is located in the 1km buffer located south-west of the scheme. In the late 19th century two more forts were constructed in East Tilbury, Coalhouse Fort (**1013943**) which was located c.300m north of the East Tilbury blockhouse and East Tilbury battery (**1013880**) located 400m north-west of Coalhouse Fort. Coalhouse Fort is located within the 250m buffer directly east of the scheme and East Tilbury is located within the 1km buffer to the north. An earthwork (**291**) has been observed 100m north of Coalhouse Fort which may be associated with the defences of this fort.
- 2.4.174 The London, Tilbury and Southend Railway (**737**) was constructed in the mid-19th century and it bisects the southern part of the scheme. There was one railway station located within the scheme, Low Street Station (**690**) which was associated with this railway. Modern satellite imagery indicates that this station has been demolished. The OS map of 1923 indicates that there were sidings and outbuildings associated with this station. Further south-west and outside of the 1km buffer were several railway stations within Tilbury town which served the docks, and these were constructed in the later 19th century. East Tilbury Station (**693**) located 0.4km east of the scheme was constructed in the 1930s to serve the expanding village of East Tilbury.

- 2.4.175 This part of the scheme contains a number of buildings and localities where industrial activity took place. Chapman and André's Map of Essex 1777 (Map of Essex 2018) shows that there were two windmills located within the site and 250m buffer, one at Baker Street (**1111643**) and one just north of the Muckingford Road (**487**). The Grade II listed windmill (**1111643**) is located just east and outside the scheme and dates from 1674 but is now ruinous. The Muckingford Road windmill (**487**) is located within the 1km buffer to the west of the scheme. The site of the windmill was later used as Mill House (**1111577**) a 19th century house with associated outbuildings which likely took its name from the previous windmill. Evidence for post-medieval gravel pits (**513**) were found during the excavation of Orsett Cock enclosure.
- 2.4.176 **Modern period – north (Fig. 12a).** In the 20th century the northern part of the scheme retained a rural character aside from the rapid urban expansion of the settlements of Cranham, Upminster and South-Ockendon located outside and north-west and west of the scheme. The expansion of these settlements is linked to the railway lines (**739, 739**) which still serve these towns and link this area to the London railway and underground network. The M25, constructed between c 1975-86, extends through this section of the scheme although the surrounding landscape has remained largely in agricultural use. The majority of the north-western part of the scheme forms part of the London Borough of Havering formed in 1965 (VCH 1978). In the 20th century the village of Orsett expanded along the east-west B188 High Road and north-south Rectory Road. The village of Orsett is located within the 1km buffer and 500m north of the scheme. Orsett forms part of the unitary authority area of Thurrock in Essex which was formed in the 1970s (VCH 1978).
- 2.4.177 A First World War landing field (**30**) is located 0.5km north of the scheme and several Second World War Anti-Aircraft batteries (**124, 581**) are located within the 1km buffer area to the east of the scheme. A Second World War Ground Control Intercept Station (**749**) and observation post (**122**) were also located in the buffer area to the east of the scheme.
- 2.4.178 In the northern part of the scheme several undated features were recorded during the M25 excavation. This included undated linear ditches and postholes, likely to be post-medieval or modern in date (**171**).
- 2.4.179 During the 20th century several areas within the buffer zones were subjected to quarrying. This includes quarrying (**70, 71**) in the area west of the scheme and east of South Ockendon and extensive modern quarrying is known to the north of the scheme, north of Codham Hall Bund (**167**). The fields to the north-east and south-east of South Ockendon Hall were used in the 20th century as landfill sites which may have disturbed any underlying buried features.
- 2.4.180 **Modern period – south (Figs 6a-g, Fig. 12b).** In the 20th century the southern low-lying part of the scheme was subjected to more intensive reclamation which brought some of this area into agricultural use. The settlements of Chadwell and Tilbury located west and outside of the study area expanded rapidly. The majority of the southern part of the scheme including South-Ockendon, East and West Tilbury and Orsett (discussed above) form part of the unitary authority area of Thurrock in Essex which was formed in the 1970s (VCH 1978).

- 2.4.181 The medieval and post-medieval village of East Tilbury originally built up along the Princess Margaret Road towards the ferry crossing point to Kent. In the mid-20th century a new part of the village was constructed 1.7km north-west of the medieval church. This part of the village was served by East Tilbury train station which was constructed in the 1930s. The relocation and expansion of the village relates to the Bata Shoe Factory which became a major employer in this area. The estate that grew up around the factory was constructed as a 1930s model settlement (**44**). The factory itself is listed (**1393327, 1224103**) as are a number of 1930 of houses along Bata Avenue and these are located 0.4-0.6km north-east of the scheme. The later 20th century settlement of East Tilbury is located within the 250m and 1km buffer to the east of the scheme.
- 2.4.182 Aside from the Bata Shoe factory (**44**) the scheme and 1km buffer contains further evidence for 20th century industry. Tilbury Power Station (**43**) is located within the 1km buffer to the south-west of the site. This complex comprises two stations A, and B with A constructed by 1958 and B completed by 1969. Both sites were originally coal fired but were adapted as heavy oil power stations. A large jetty is located in the Thames to the south of the power station was associated with the running of the plants. Both stations A and B have been decommissioned but the buildings remain.
- 2.4.183 The earthworks of a drainage system (**1799**) were recorded by the aerial mapping survey (site 64) in the dry valley east of West Tilbury. This drainage system of ditches was visible on aerial photographs dating from 1940, but have since been destroyed by the construction of a pond and modern drainage system. The ditches probably drained into the north-south stream that divides the parishes of East and West Tilbury.
- 2.4.184 In 1904 a pumping station (**57**) was established by the South Essex Waterworks Co at Linford, located c.50m east of the scheme. This building is still extant and is located on the south side of Lower Crescent Road. A brickworks (**47**) was located to the east of the hamlet of Low Street and within the scheme which was active from the early 1900s until 1967, although it was closed during the 1910s-1920s. This site was owned by Harry G. Miller and it produced pressed red facing bricks in the early 20th century as well as gravel and flint from the nearby gravel pit. In the mid-20th century this site produced several types of brick including yellow stock bricks, bull noses, sand faced reds, facing stocks and squints. The bricks from this site are marked 'L.S.B.' (Low Street Brickworks). The sidings that branched off from the London, Tilbury and Southend Railway may have been constructed to serve this brickworks and gravel workings. During the 20th century extensive quarrying (**24**) took place to the south of the A13.
- 2.4.185 This section of the scheme continued to be a heavily defended area (from attack by air, sea and land) in the 20th century due to the strategic location on the Thames.
- 2.4.186 In the First World War a landing ground was located at Orsett (**6**) north-east of and outside the area of the scheme. This area was also used as a Prisoner of War camp. A second landing ground was in use at North Ockendon.

- 2.4.187 The coastal defences of Tilbury Fort (**1021092**) and Coalhouse Fort (**1013943**) were both reused during the Second World War but the East Tilbury battery (**1013880**) was decommissioned before the First World War. A Second World War radar mast (**741**) is located within the scheduled area of Coalhouse Fort (**1013943**) and formed part of an early warning system of air attack. Another scheduled site further west (and just east of and outside the scheme) is the Second World War anti-aircraft battery at Bowaters Farm (**1012185**). The aerial survey mapped this site and found that it extended further north-west with associated roads, outbuildings, a magazine and command post (Aerial Investigations and Mapping Report site 46).
- 2.4.188 A Second World War searchlight battery (**287**) was located east of the church and the cemetery of St Katherine's has now been extended over this battery. A Second World War military camp (**130**) was located south of the A13 which had over 300 buildings. This area was levelled and later used for gravel extraction (**24**) and it is likely that the remains of these buildings have been destroyed.
- 2.4.189 This area also had a number of fixed Second World War defensive positions including a number of Alan-Williams Steel Turrets (**126, 288, 322**), road barriers (**310, 311, 313**) and Spigot Mortar sites (**312, 315, 316, 317, 318, 319, 320**) which were located along major roadways. A large number of anti-glider ditches (**348, 349**) were dug on the Thames marshlands to prevent gliders landing as part of an invasion force. These anti-glider ditches, many of which lie within the scheme, were recorded by the 2019 aerial investigation and mapping survey and have now been levelled but may exist below ground (Aerial Investigations and Mapping Report site 33).
- 2.4.190 Several Second World War pillboxes (**314, 321, 742, 743**) were located on the Thames foreshore. There may have only been two along the foreshore but one set has been recorded by the Essex HER (**314, 321**) and the other set by PastScape (**742, 743**).
- 2.4.191 An elongated regular rectangular cropmark feature (**1794**) was noted within the marshland during the aerial survey (Aerial Investigations and Mapping Report site 54). This feature is aligned NW-SE and its possible it could have been constructed during the Second World War as it does not appear on later 20th century photographs.
- 2.4.192 During the Cold War a Nuclear Monitoring Post (**105**) was constructed to the north of the A13 and to the south of Orsett. This monitoring post was located on the boundary of the scheme. Monitoring posts were constructed below ground with equipment on the surface. It is possible there may be remains of this structure below ground (Subterranea Britannica 2019).
- 2.4.193 In the later 20th century the area of the scheme west of Linford (Land Parcels 7 and 131) became part of an extensive gravel extraction site and concrete plant. The gravel extraction pits extended either side of Hoford Road. Hoford Road itself became downgraded to a green lane in the later 20th century.

- 2.4.194 LTC appointed Alex Godden, a specialist in Military remains from Wessex Archaeology, to prepare a Desk-based Assessment (DBA) of the 20th century military remains within the scheme in Essex and Kent. He has prepared Statements of Significance for the military First World War landing grounds near Orsett (6) and North Ockendon (36) and also for Bowaters Second World War Anti-Aircraft Battery which is a scheduled monument (1012185). None of these sites are located within the scheme but there may be an impact upon the setting of the Bowaters scheduled monument (Godden and Piggott 2020). This will be assessed further in the forthcoming Environmental Statement.
- 2.4.195 The Thames foreshore continues to be a strategic location and a new landing stage is in the process of being constructed at the southern end of the scheme, 1km east of Tilbury Fort. Satellite imagery indicates that the construction of this possible ferry site or industrial site has created disturbance over a wide area.
- 2.4.196 **Undated features and cropmarks (Figs 6a-g, Figs 11a and 11b).** The majority of the cropmark features that were identified by the Aerial Investigation and Mapping Report within the scheme (Place Services 2019) have been tentatively dated and are discussed within the period sections above. A limited number of undated cropmarks and features remain and are noted below.
- 2.4.197 The LTC walkover survey indicated several undated features within the southern part of the scheme. This includes a NE-SW aligned gully (1862) or drainage ditch running downslope, and a platform (1863) on top of a ridge nearby that did not appear to be a natural feature. Potentially this platform could be archaeological but there was a large amount of quarrying in this area during the later 20th century, and it could result from spoil from this.

2.5 Archaeological Potential

- 2.5.1 In general the archaeological potential of the gravels in prehistory appears to be much higher than that of the clay downland at the north end of the scheme and the valleys of the Mar Dyke. This is however partly a result of the visibility of cropmarks on the gravels, and not elsewhere. Recent work on the M25 has shown that archaeology of most prehistoric periods is present on the clay, and it is likely that with further investigation archaeological sites will be found in the Mar Dyke valleys and the dry valley in the southern part of the scheme, possibly much better preserved than on the exposed gravel terraces.
- 2.5.2 **Late Upper Palaeolithic and Mesolithic.** In the absence of significant survey or development, activity of these periods is normally represented only by occasional findspots. Late Upper Palaeolithic sites are rare, although the presence of two such sites south-west of the scheme shows that people were present in the general area during this period. For the Mesolithic period, there is also the problem that flint blades may be either Mesolithic or early Neolithic, and attribution to the Mesolithic may not therefore be secure for flint blades found close to the Orsett causewayed enclosure. Nevertheless, the scatter of Mesolithic flints along the scheme, and the clear evidence of activity at Mucking, makes it likely that further activity of these periods will be found within the scheme area. Valley bottoms and floodplain areas are potentially areas where *in situ* activity may have been preserved by colluvium or alluvium, and the former may also provide evidence of eroded activity areas on higher ground. The potential for Late Upper Palaeolithic archaeology within the scheme north of the Thames should be considered to be low-moderate, but that for Mesolithic activity must be considered to be moderate.
- 2.5.3 **Neolithic and Early Bronze Age.** An early Neolithic causewayed enclosure was partly excavated between two arms of the scheme, and a Neolithic burial was excavated at the south-east end of the scheme area north of the Thames. Early Neolithic features and finds were found at Mucking, and Neolithic finds appear to be concentrated either in the area around the causewayed enclosure, or further south along the gravel terrace, while evidence from further north is limited. Late Neolithic Grooved Ware pits and finds were present at Mucking, and potentially Neolithic pits have been found from trial trenching for the scheme to the west. Stray Neolithic axes and arrowheads have also been found within the scheme. Several of the cropmark enclosures identified on the gravel terrace elsewhere along the scheme could potentially be later Neolithic in date.

- 2.5.4 Three Beaker flat graves have come from the area of the scheme, and other such features may well be encountered, while other Beaker features and finds were also found at Mucking. Beaker pits have been found by trial trenching for the scheme south of the causewayed enclosure, and such pits are likely to occur scattered across the landscape elsewhere. Barrows and ring ditches of the early (and middle) Bronze Age have been found adjacent to the scheme, and one example south of the Neolithic causewayed enclosure has been confirmed by trial trenching (HA 2020). Others of the many cropmark ring ditches plotted within the scheme boundary are likely also to be of the early Bronze Age. Flat burials (inhumation or cremation) of the early Bronze Age are often found around such monuments, as are pits. The same considerations regarding valley bottoms and the floodplain are relevant as for the Mesolithic period. The potential for encountering archaeology of Neolithic or early Bronze Age date within the Havering-Essex part of the scheme must therefore be considered to be very high.
- 2.5.5 **Later prehistoric: Later Bronze Age.** Middle Bronze Age activity is found all along the scheme, and includes enclosures, field systems, linear boundaries, pits, burial monuments and isolated cremations. One particularly large ring ditch of this period with a cemetery of cremation burials lay just outside the scheme, and another smaller ring ditch with both middle and late Bronze Age burials along the line of the A13. There is a tradition of small ring ditches associated with burials of middle Bronze Age date in Essex, as for instance at Mucking, and some of the many cropmark ring ditches along the scheme may well be of this date. Trial trenching for the scheme has demonstrated that one such ring ditch within the scheduled Orsett cropmark complex (**1002134**) has evidence of middle Bronze Age activity in its ditches (HA 2020). A Bronze Age pit burial (presumably later Bronze Age) is also recorded from the Mar Dyke valley. Evaluation for the scheme has identified a small U-shaped cropmark enclosure south-east of the causewayed enclosure as of middle Bronze Age date.

- 2.5.6 Three late Bronze Age enclosures or 'ring-forts' lay close to the scheme, a very high concentration of such monuments, and there is ample evidence of settlement in the form of enclosures, ditches and pits in both the northern and the southern half of the scheme north of the Thames. Postholes of both the middle and late Bronze Age have also been found within the scheme area, and although no structures have yet been identified, posthole structures are also likely. Cremation burials include isolated examples dated to the middle-late Bronze Age transition, and another associated with an interrupted boundary. Further burials, which may be isolated, associated with linear boundaries or with ring ditches, are likely. The presence of briquetage in the Mucking ring-forts also indicates that late Bronze Age salterns, or at least areas of salt-evaporation, were also present in the mudflats of the adjacent estuary. A number of metal hoards have also been recovered from the Thurrock area. The virtual absence of activity of this period from the Mar Dyke valleys may be a reflection of the wetness of these areas, or may indicate that activity of this period is now buried beneath later alluvium. Even if wet, it is likely that the valleys were utilised for a variety of off-site activities in this period. As for earlier periods, there is also potential for later Bronze Age sites to be buried below colluvium in dry valleys; one such horizon of late Bronze Age date has been found by trial trenching south of the causewayed enclosure (HA 2020) Overall, the potential for archaeology of the later Bronze Age along the scheme north of the Thames is very high.
- 2.5.7 **Iron Age.** Late Bronze Age/early Iron Age enclosures and open settlements have been excavated both adjacent to the scheme and within it, and include circular or penannular ditches around houses, posthole structures, hearths and pits, as well as boundary ditches and findspots. It is uncertain how much of this activity belongs to the early Iron Age, but there appears to be continuity from the late Bronze Age on many sites. Middle Iron Age activity is less common, though present on sites such as the Orsett cropmark complex, Orsett Cock and Mucking. This may in part be the result of conservative potting traditions (ie the relative absence of diagnostic ceramics of this phase of the Iron Age), and a paucity of radiocarbon dates, rather than a genuine lack of activity. A number of enclosed cropmark sites may prove to be of this period. In contrast, late Iron Age sites are relatively common, and include both enclosed and open settlements, linear boundary systems and cremation cemeteries. Finds of coins, including examples in precious metals, and other metal finds, have also been recovered from the vicinity of the scheme. Iron Age pottery has been recovered in association with a saltern on the mudflats of the Thames estuary, indicating that salt-extraction was also being carried out in this period. As in the later Bronze Age, the very small number of findspots of the Iron Age from the Mar Dyke valleys may indicate that these were wet in this period, but may alternatively indicate that activity horizons are buried beneath later alluvium, and may be very well-preserved. Overall, the potential for Iron Age archaeology along the scheme north of the Thames is therefore very high.

- 2.5.8 **Roman.** Roman settlements, including enclosures, masonry buildings with mosaics and timber buildings, corn drying ovens, pottery kilns, trackways and field systems, and burials including barrows, cremation and inhumation cemeteries have been found within or close to the scheme. Evidence for pottery production is also widespread in the Essex part of the scheme, and further kilns have been identified by trial trenching (HA 2020). Roman salterns are known within and close to the scheme area on the mudflats of the estuary, as well as a substantial settlement close to the current edge of the river. The discovery of both a cemetery and another extensive site within the larger southern Mar Dyke valley, apparently at shallow depth, and the projected line of a Roman road crossing the middle of the northern valley, strongly indicates that the valley was no longer flooding as extensively by this time, and was available (at least in part) for settlement and burial. The potential for encountering remains of the Roman period throughout the Havering-Essex scheme area is thus very high.
- 2.5.9 **Medieval.** Early medieval occupation is known from several parts of the scheme, both from scattered activity in the northern half and in greater density in the southern half of the scheme. In the south, there was an extensive settlement and two Anglo-Saxon cemeteries at Mucking, and settlements at Mill House Farm and in and around Orsett Cock. Mid-Saxon barrows were found at the Orsett scheduled monument (SM **1009286**). Activity in the northern half of the scheme includes some settlement evidence on the clay downland at Hobbs Hole, Codham Hall Bund, at Upminster Bund and at Manor Farm.
- 2.5.10 A fair number of manors are recorded in Domesday very close to the scheme, and it is likely that many of these will have had late Saxon origins. The size of some of the recorded manors suggests that associated settlements may well be found within the scheme area, and despite a tradition of generally dispersed settlement during the late Saxon and medieval period in this part of Essex, there may well be medieval settlement associated with the medieval manors that extends into the scheme. Settlement of the 10th-12th century has been found very close to the scheme during the M25 widening, and medieval features have been found by trial trenching south of Orsett. The late medieval or early post-medieval manor house of Groves Barns lies entirely within the scheme, and although demolished, below-ground remains are likely to be extensive and varied, including former fishponds. Features associated with the late medieval Seaborough Hall have been found by trial trenching. From their current shapes, it is likely that some of the moats associated with manors and churches may well have been partly filled in, and some parts of these moats may therefore be found within the scheme. A fishpond, mill and dam are recorded at Hobbs Hole next to Junction 29 of the M25, and these too are likely to be impacted by the scheme.
- 2.5.11 Within the Mar Dyke valley there may also be structures associated with exploitation of the river. The marshlands of the Thames estuary have a system of trackways and fields or small enclosures that may be of medieval origin, as the marshland was enclosed by walls by AD 1500. Salterns of medieval date are not recorded within or very close to the scheme, but there are undated examples (mentioned under the Roman period above) that could also belong to the medieval period prior to the enwalling.

- 2.5.12 There is therefore a moderate potential for remains of the early medieval period, and a high potential for archaeology of the later medieval period within the Havering and Essex part of the scheme.
- 2.5.13 **Post-medieval and modern.** Buildings and other remains of the post-medieval period are spread throughout the scheme area north of the Thames. The archaeological potential of a number of demolished manor houses and other significant buildings, the surroundings of the early post-medieval standing buildings and the industrial remains of the several brickworks and associated tramway is of particular note. There are also defensive works of a variety of periods along the coast, and although most of these have been demolished, should remains of some of these, such as the Alan-Williams Steel Turrets survive, these would be significant. The potential for encountering significant remains of the post-medieval and modern period is very high.

3 Project Aims and Objectives

3.1 General Aims

- 3.1.1 To establish the presence or absence of archaeological remains along the line of the scheme, and the extent of any areas where remains appear likely to be absent;
- 3.1.2 In areas where archaeological remains are known or suspected, to clarify the reliability of the cropmark or geophysical survey evidence;
- 3.1.3 In areas where no archaeological remains are indicated by aerial or geophysical survey, to clarify whether this apparent absence of remains is genuine;
- 3.1.4 To determine the degree of complexity of any surviving horizontal or vertical stratigraphy, and in particular, to investigate areas where topography indicates the likelihood of deep deposit sequences for evidence of buried archaeological horizons and palaeo-environmental sequences;
- 3.1.5 Where remains are present, to determine the period(s) represented, the extent, state of preservation and character of the archaeological remains;
- 3.1.6 To establish the range and state of preservation of archaeological artefacts, and through their recovery and examination, to establish the potential for information about the economy, status and contacts of past inhabitants of the scheme footprint;
- 3.1.7 To determine whether palaeo-environmental remains are preserved, and, where these are found, to determine their types (eg, charred plant remains, waterlogged remains, molluscan remains), state of preservation and potential for environmental information. This will be achieved through the recovery of samples from sedimentary sequences and archaeological features suitable for assessment of a range of palaeoenvironmental remains (eg. charred and waterlogged plant remains, charcoal, insects, pollen, diatoms, ostracods/foraminifera and molluscs) and scientific dating (eg. radiocarbon and OSL dating);
- 3.1.8 To investigate and record the extent, character and chronology of the sedimentary sequences, in particular those immediately adjacent to and in floodplains, contained within palaeochannels or in dry valleys, and to use the data to refine existing geoarchaeological (predictive) deposit models.
- 3.1.9 To place any identified archaeological remains into their local and, where appropriate, regional or national context, and to assess the implications of any such discoveries for our current understanding of settlement and landscape change in the area, including an assessment of the associations of any remains with reference to the historic landscape;
- 3.1.10 To provide sufficient information to enable the LTC archaeological advisor, in consultation with the Key Archaeological Stakeholders, to determine the significance of the archaeological assets identified within the land parcel;
- 3.1.11 To provide reports upon the discoveries to inform the Environmental Statement (ES) supporting the Development Consent Order (DCO) and support the preparation of a further archaeological mitigation strategy for the Enabling Works and Construction phases of the scheme;

- 3.1.12 Following the DCO, to deposit the report in the public domain, and to generate an accessible and useable archive which will allow future research of the evidence to be undertaken.

3.2 Specific Objectives

- 3.2.1 To conduct the programme of archaeological investigation within the general research parameters and objectives defined by the revised East of England Research Framework (ed Medlycott 2011), and to take account of the aims and objectives of the Greater Thames Estuary Historic Environment Research Framework. All of the aims will not be repeated here, as many can only be addressed effectively during further archaeological mitigation. The aims set out below are those thought appropriate to trial trenching.
- 3.2.2 Overarching research themes that span a wide range of periods include:
- 3.2.3 Chronologies and processes of change – specific aspects of innovation need further study, including monument comparisons, tradable artefacts (such as stone axes and Roman foodstuffs), animal and plant introductions, technological innovations (such as Dutch drainage techniques and duck-decoy ponds), the spread of ideas and people, including evidence for migration into and within the region.
- 3.2.4 Landscape and environment – the importance of inter-relationships between sites and/or material remains, agricultural advances and the economic growth stemming from them, changes caused by agricultural disruptions and the inter-relationships between rural agricultural food production and urban centres.
- 3.2.5 Geographically specific objectives comprise those relating to the Thames tidal floodplain, the Mar Dyke valleys and dry valleys. In the tidal floodplain, to clarify the sediment depth and sequence, and if possible date this using artefacts or scientific dating.
- 3.2.6 To relate the observed sequence to that previously observed at Tilbury just upriver, and determine if and how this varies from the pattern of tidal transgressions and regressions previously established there.
- 3.2.7 To establish the location of any 'islands' that may have been favoured areas for activity may have been in the past, and their longevity.
- 3.2.8 To clarify the date at which the floodplain was enclosed, and changed from regularly inundated estuary to marshland.
- 3.2.9 In the Mar Dyke valleys, to establish the sequence and character of deposits across the valleys, and date them by means of artefacts or scientific dating.
- 3.2.10 To clarify the changing extent of the alluviated area over time, and look for evidence of agriculture, settlement or burials that might support the evidence of the sediments themselves.
- 3.2.11 To establish the areas where organic deposits are present, and to sample these to help establish the broad sequence of environmental change within the valleys over time.
- 3.2.12 In the dry valleys, to establish whether deep sequences of colluvium exist, and if so, to aim to determine whether the pattern of accumulation can be related to particular periods in the past, whether standstill phases occur, and how the periods of accumulation relate to human activity on the terraces.

- 3.2.13 To look for buried archaeological horizons within the colluvial sequence.
- 3.2.14 For the late Upper Palaeolithic, Mesolithic and Neolithic periods, to investigate Landscape Processes, and in particular, the potential for sites being eroded and buried beneath colluvium or Head deposits at the foot of slope areas (Aims C.6 and C.7), and for the survival of undisturbed occupation surfaces below colluvium or beneath later alluviation in the Mar Dyke and Thames floodplains.
- 3.2.15 To investigate the potential for preserved environmental evidence associated with lithic assemblages of late Upper Palaeolithic or Mesolithic date, particularly in areas of colluvium or on the low-lying Mar Dyke and Thames floodplains (Aim B.14 and B.18).
- 3.2.16 To clarify whether the possible early Neolithic mortuary enclosure is of this date, and if so, to establish its state of survival, whether burials are present, its complexity and the longevity of use;
- 3.2.17 To investigate activity carried out around causewayed enclosures and burial monuments of the Neolithic and early Bronze Age, whether peripheral burial, deposits related to visits, or reuse for burial or other purposes in later periods.
- 3.2.18 To clarify whether circular and penannular ditched enclosures known from cropmarks within the scheme could be hengiform monuments.
- 3.2.19 To investigate the wider relationships between monuments and their contemporary landscapes, looking for evidence of the more ephemeral activities carried out around them, and to characterise the landscapes in which these activities took place. For example, several causewayed enclosures in the East of England were constructed in already cleared landscapes, but was this also the case at Orsett?
- 3.2.20 To clarify the extent and density of Neolithic and early Bronze Age 'settlement' activity indicated by pits, finds in tree-throw holes and other features on the gravel terrace areas along the scheme.
- 3.2.21 For the Neolithic and Bronze Ages, to investigate the possibility of the preservation of upstanding monuments and buried land surfaces below later alluvium in the Mar Dyke valleys and colluvium in dry valleys.
- 3.2.22 To clarify whether the circular ring-ditches scattered along the scheme are the remains of burial monuments or 'shrines' of the Bronze Age, and if so, to establish their date and duration of use within and beyond the period.
- 3.2.23 To look for evidence of early Bronze Age settlement or other activity in the vicinity of burial monuments or 'shrines', and to determine whether such activity is more common in these locations, or elsewhere within the scheme area.
- 3.2.24 To further clarify the density and range of sites of the later Bronze Age within the scheme corridor, and to use both artefactual and scientific dating to assist in establishing whether occupation was long-lasting, repeated or shifting.
- 3.2.25 To establish whether elements of the cropmark field system identified on the gravel terraces north and south of the Mar Dyke valley within the scheme limits are of later Bronze Age origin, and if so, to characterise activity within them and in relation to activity beyond them.

- 3.2.26 To establish whether settlements and burial monuments of the Bronze Age within the scheme corridor are contemporary, or whether, as at the Orsett scheduled cropmark complex at Grey Goose Farm, occupation is later than the ring ditch or ditches that may represent burial monuments adjacent.
- 3.2.27 To investigate the potential for buried or eroded sites of later prehistoric date below colluvium in dry valleys, and below alluvium on the Thames floodplain.
- 3.2.28 To clarify the potential for well-preserved deposits in these protected locations, whether structural or environmental.
- 3.2.29 To look for evidence of wetland sites specific to the Thames floodplain, such as Bronze Age and Iron Age salterns.
- 3.2.30 To look for evidence of the relationships between activities taking place in later prehistory in different geographic zones, and in particular, for evidence of settlements linked to salt-making on the gravel terrace, as has been found in North Kent.
- 3.2.31 To clarify whether the predominance of early and late Iron Age activity currently apparent within the scheme area is genuine, or whether sites of middle Iron Age date are equally common.
- 3.2.32 With the assistance of metal detectors, to look for further evidence of high status activity of the late Iron Age such as coins, torcs, brooches or weapons within the trenches, particularly in the Mar Dyke valleys.
- 3.2.33 To establish the extent, character and density of Roman activity within the scheme area, and in particular, whether the undated cropmark enclosures are Roman, and if so, establish their duration of use.
- 3.2.34 To clarify whether further Roman burials exist within the scheme area, and if so, to clarify their extent and to date and characterise these (using artefactual and/or scientific dating).
- 3.2.35 To determine whether further evidence of pottery production is present within the scheme area, and if so, to date and characterise this. To look for evidence of the projected Roman roads within the scheme area, and in particular where the roads are believed to cross the northern Mar Dyke valley and the dry valley at the south end of the scheme, where preservation may prove to be good.
- 3.2.36 To determine whether Roman salterns or other evidence of wetland use of the Thames floodplain exist within the scheme area.
- 3.2.37 For the early medieval period, to determine whether Anglo-Saxon sunken-featured buildings and other buildings are limited to only a few locations, or are more widely spread, and to determine whether these occur solely in groups, or are also found in isolation.
- 3.2.38 To clarify the extent and character of the Saxon activity around that found on the A13 at Orsett Cock, and clarify the date and development of this within the Saxon period, and its relationship to the middle Saxon burials found at the causewayed enclosure site to the south.
- 3.2.39 To clarify the extent and character of the Saxon settlement for which limited evidence was found at Hobbs Hole at the north end of the scheme

- 3.2.40 To be aware of the possibility of low-status or ephemeral sites without substantial below-ground buildings such as transhumance settlements, and, bearing in mind their probable poverty of artefactual evidence, take samples for scientific dating.
- 3.2.41 To examine the environs of the late Saxon and medieval manors that lie adjacent (where these extend into the scheme) for evidence of associated settlement or agricultural buildings, moats or fishponds, and by so doing, contribute to the larger issue of the settlement pattern of the late Saxon and medieval periods in this part of Essex.
- 3.2.42 To look for evidence of specialised medieval structures such as mills and their associated watercourses and ancillary buildings, and to date and characterise them
- 3.2.43 To investigate the environment of moats, fishponds and other former water-filled features by environmental sampling and assessment.
- 3.2.44 To clarify whether the trackways and field systems attributed to the medieval period by the HER are genuinely of this date, and to investigate the date of the ridge-and-furrow noted within the scheme.
- 3.2.45 To look for evidence of medieval origins at the scattered farmsteads and hamlets of the post-medieval period across the area of the scheme.
- 3.2.46 Post-medieval and modern. To investigate the environs of early post-medieval standing buildings for evidence of associated buildings and other structures that would enhance our understanding of the layout, functions and development of these sites.
- 3.2.47 To investigate the two former brickworks and determine their state of preservation, and whether other structures not shown on historic maps also survive.
- 3.2.48 To investigate and record the preservation of any defensive remains within the scheme area, both inland and in the coastal zone at the south end of the scheme, and to record any additional structures that may not be known from historic maps or other documentary evidence.

4 Project-specific Excavation and Recording Methodology

4.1 Health and Safety and Constraints

- 4.1.1 The constraints described below prevent trial trenching within them at this stage of the project. Appropriate archaeological mitigation for the areas covered by these constraints will be undertaken at a later stage of the project, taking account of the results of the trial trenching in adjacent areas, and will be agreed between Highways England and the Key Archaeological Stakeholders in advance of any construction works. The agreed measures will be set out in the WSI for Further Archaeological Mitigation.
- 4.1.2 These constraints have been observed (as far as is practicable) when drawing up trench layouts in the detailed WSIs for each land parcel along the route. The Principal Contractor Balfour Beatty will be responsible for ensuring that the constraints are observed through the Permit to Dig system. A brief summary of the types of constraint is given below, but detailed RAMS for the Health and Safety risks will be the responsibility of the archaeological subcontractor and will be reviewed and approved by the Principal Contractor before trial trenching can begin.
- 4.1.3 **Areas of low, medium and high risk of UXO** exist along the scheme, and are indicated on Figures 15a and 15b. Guidance as to the procedures to be followed in these area has been provided by Zetica, a specialist firm qualified in the detection and removal of UXO.
- 4.1.4 For any given land parcel, should the risk of UXO be low, then following a geophysical survey by the specialist UXO team, and before trial trenching is allowed to commence, a site briefing of all staff on the fieldwork team for that land parcel will be carried out on the appropriate action to be taken in the event of the discovery of a Suspicious Object.
- 4.1.5 If the risk of UXO is considered to be moderate, then a specialist from Zetica will survey each area to be trenched in advance, and will also be present throughout the laying out, the opening of the trenches and any subsequent machine extensions to trenches. No archaeological trenching will be allowed to take place until the appropriate surveys have taken place, and the Zetica specialist has confirmed that it is safe to proceed.
- 4.1.6 Where the presence of UXO is suspected, trenches will be relocated and the area specified by the UXO specialist cordoned off for the duration of trial trenching in that land parcel.

- 4.1.7 Areas of ecological sensitivity are present at various points along the route (Figures 16a, b and c). No archaeological trial trenching may take place within the specified exclusion zones (for example badger setts, root protection zones). In areas where great-crested newts or other reptiles are known, permission from Natural England will need to be obtained and appropriate protective measures implemented before trenching can take place. Protected ground-nesting birds such as larks will also make areas unavailable for trenching, but these have not been identified in advance, and so will be taken account of as fields become available and ecological searches are undertaken. The Principal Contractor's Environmental Manager will provide suitably qualified ecologists to supervise the protective measures and provide staff briefings before trenching commences. Where appropriate, more detailed ecological information regarding exclusion zones and times and areas where trial trenching will not be possible is provided in the detailed site-specific or group site-specific WSIs.
- 4.1.8 Woodland. One or two small areas of woodland exist within the area of the scheme, and attempting to evaluate these by trial trenching while the trees are still standing will not be productive. Lidar survey and walkovers have been used to assess the potential of these areas for archaeological remains such as earthworks (Desk-based Assessment, Highways England 2020). Archaeological mitigation of these areas by evaluation or other means will be agreed between Highways England and the Key Archaeological Stakeholders once the trees have been felled, and will take into account the results of trial trenching in adjacent areas.
- 4.1.9 **Buried and overhead services** cross the scheme route at various locations, and no trenching will take place across the line of buried services, or inside safe working distance from them. Details of the service locations are given in Figures 17a-d), and in the plans accompanying the detailed WSIs. Work under high overhead cables carried on pylons will generally be possible using mechanical excavators with appropriate restrictors to the height of the jib arm, or using small machines, but working below these and other overhead cables will be determined on a case by case consideration of Health and Safety. No work under overhead cables should be undertaken without a Permit to Dig from the Principal Contractor Balfour Beatty, who will be responsible for providing service plans, and for marking out exclusion zones on the ground to ensure that services are not disturbed and that safe working practices are followed. Where it is necessary for machines or other vehicles to pass under the lower overhead cables, this will only be possible at specified crossing points marked by goalposts. Safety briefings from the Principal Contractor will provide details of the procedures to be followed.

- 4.1.10 **Contaminated ground and asbestos.** Areas of ground contaminated by chemicals/heavy minerals or by spreads of asbestos may occur within the scheme boundary. Some previous industrial areas are known, and a programme of ground investigation is programmed to be taking place in parallel to the archaeological trial trenching, which may provide further advance notice of contamination in some areas. Where areas of severe contamination are known, these will be excluded from trial trenching. It is however unlikely that ground investigation information upon contamination will be available for all areas in advance of trial trenching, so it will be necessary for archaeological subcontractors through their RAMS to brief their staff in advance about the possibility of encountering contaminated ground during the trial trenching programme. Should any suspected areas of contamination be found, work should cease and the Principal Contractor informed.
- 4.1.11 The Principal Contractor Balfour Beatty will be responsible for determining the level of contamination in any suspected areas, and thereafter for implementing procedures for working in such areas if safe to do so. In such circumstances the archaeological subcontractors should have in place through their RAMS procedures for dealing with finds and environmental samples from potentially contaminated areas. The removal of contaminated ground will be the responsibility of the Principal Contractor for the construction works.
- 4.1.12 **Livestock.** Where fields are used as pasture, livestock may well be present. Arrangements will need to be made in advance with the landowner for the removal of livestock for the duration of the evaluation, and for a period thereafter until the backfill or replaced turf has fully settled and the ground is firm enough for livestock to return. Arranging for the removal of livestock is a matter for Highways England (or the Principal Contractor if delegated to do so). If livestock cannot all be removed, it may be possible to give consideration to a staged evaluation within a given land parcel, provided that livestock are confined in a safe manner by electric fencing.

4.2 Liaison with Landowners and the public

- 4.2.1 Overall liaison with landowners will be handled by the LTC Land and Property team. Archaeological subcontractors will be provided with the names of landowners and tenant farmers in advance of trial trenching, to ensure that they are properly informed should the landowner or tenant farmer come onto site, and will work closely with the LTC team to develop and maintain excellent landowner relationships.
- 4.2.2 All archaeological subcontractors will take care to ensure that the damage caused by the trial trenching is kept to the minimum practicable level. Photographs of each field will be taken on entering each field to provide a record of conditions before trial trenching begins. Copies will be provided to the landowner or his/her agent, to the Principal Contractor and to the LTC Land and Property team. Measures to be observed will include using only approved access routes to fields, making use of existing tracks within fields wherever possible, and limiting tracking between trenches to clearly defined routes and keeping spoil heaps under tight control. Track matting will be provided by the Principal Contractor in high traffic areas to reduce impact on the ground.

- 4.2.3 Topsoil will be stored separately from subsoils, and in areas of pasture, turf will be stored according to the requirements of the landowner, and will be reinstated if required.
- 4.2.4 The staff of archaeological subcontractors will be polite to landowners and members of the public at all times. Should the landowner or tenant farmer have a problem, they should be referred to the LTC liaison team, unless this is a minor matter that can be resolved immediately by the team on the ground. If a member of the public comes onto site, they should be politely advised that this is a working area that is not safe, and asked to leave. If they do not comply, the matter should be referred to the Principal Contractor.
- 4.2.5 Reinstatement. Responsibility for reinstatement of trenches lies with the Principal Contractor. All trenches will be pumped dry prior to backfilling. Backfilling will be carried out in reverse stratigraphic order, and each layer of subsoil will be compacted before reinstatement continues. Any land drains disturbed by the trenching will be repaired during reinstatement. Topsoil will be compacted after reinstatement, and the machine driver will take care to ensure that the area surrounding the trench is clean and level. In areas of pasture, turf will be replaced, or the ground reseeded, should the landowner require it.
- 4.2.6 Photographs of each trench will be taken following reinstatement, and wider photographs of groups of trenches in each field, as a record of the conditions at the conclusion of archaeological trial trenching. Copies will be provided to the landowner or his/her agent, to the Principal Contractor and to the LTC Land and Property team.
- 4.2.7 Further details of the individual requirements of landowners will be provided to the archaeological subcontractor by the Principal Contractor in advance of trial trenching.

4.3 Scope of Works

- 4.3.1 The total scheme area north of the Thames is 1,171.36ha. Of this, however, 311.77ha cannot be accessed due to constraints, leaving a total area of 859.59ha. available for trenching, subject to access to the land. The trenching of late Upper Palaeolithic and Holocene archaeology is divided into Phase 1 Priority areas totalling 207ha. and Phase 2 areas comprising the remainder. Priority Phase 1 areas are those where early works are proposed, and consist of the land covered by WSIs A-F and K-M (Figs 14a and 14b). The specific methodologies for the trial trenching and reporting are set out in sections 4.5-5.2 below.
- 4.3.2 Phase 2 includes both the Mar Dyke valley and a substantial area on the Thames floodplain; evaluation will require a review of ongoing GI borehole data, further geophysical survey and a programme of either test-pitting or purposive boreholes to inform a specifically designed strategy for the trenching of deep deposit sequences. The trenching strategy for these areas will be designed in consultation with the scheme geoarchaeologist. For this reason, the detailed WSIs for these areas (WSIs O, P, R and S) have not yet been completed, although the archaeological background and introductory sections have already been written.

- 4.3.3 The upper 2m of sequences of deep colluvial and Head deposits in the dry valleys will be tested by the trial trenches, but Pleistocene Head deposits will be the subject of separate evaluation by the Palaeolithic and Geoarchaeological specialists for the scheme, who are preparing a strategy for investigation of Palaeolithic deposits to inform the geoarchaeological deposit model still in preparation. The trial trenching will however be aware of areas of Palaeolithic potential when trenching, as residual Palaeolithic finds may well be encountered, and will inform the Palaeolithic scheme specialist when work in these areas is taking place. Similarly, the scheme geoarchaeologist will be informed when work involving dry valleys is taking place.
- 4.3.4 There are several areas in which military remains may be expected. Some of these are standing structures, large and small, others negative features. Investigation of the structures is not part of the work covered by this WSI, but negative features may be included. Detailed WSIs for areas that include military remains will be developed in consultation with the military specialist appointed by LTC, Alex Godden of Wessex Archaeology.
- 4.3.5 The approach to trial trenching set out in the Scheme-wide Specification (Highways England 2018, revised April 2019) has been modified by further consultation with the Key Archaeological Stakeholders. It consists of a combination of targeted trenching where cropmark or geophysical anomalies have been identified, and in areas of shallow overburden where cropmarks are not visible due to past and current landuse (ie pasture), a 4% sample on a standard grid will be used. The current land use (ie whether under pasture, under cultivation or other use) is indicated in Figure 4. A 1% contingency is also provided for extending trenches should the Key Archaeological Stakeholders require it.
- 4.3.6 Trenching in the areas of potential deep stratigraphy will vary from this. On the Thames floodplain, and in the Mar Dyke valleys, trenching will need to be preceded by a review of available borehole data and previous investigations, by electro-magnetic and or electrical-profiling survey and by geoarchaeological test-pitting and/or boreholes to characterise the floodplain edge and to define 'gravel islands' buried within the floodplain, as these locations were often used for settlement and other activities in the wetland in the past. These investigations will also assist in the identification of major peat deposits with potential for environmental information and preserved organic objects and structures. Geoarchaeological investigation will follow Historic England guidelines (Historic England 2015). These investigations will allow the development of a strategy for targeted trenching, which will be defined in the relevant detailed WSIs in the light of the results of these preliminary investigations.
- 4.3.7 Consultation with the scheme geoarchaeologist will take place in advance of excavation to ensure that deposits are appropriately recorded and sampled. Should investigation be required to greater depth, this will only take place following consultation and agreement between Highways England, the scheme geoarchaeologist, the Principal Contractor Balfour Beatty, the Key Archaeological Stakeholders, the archaeological contractor and the landowner, upon the appropriate strategy to pursue, and following a further Instruction from Highways England.

- 4.3.8 Trenching in dry valleys may also be modified in the light of further GI results and upon the records from the trenching of deep colluvial deposits in adjacent areas, and may include more closely-spaced transects to provide a clear view of the deposit sequence across the valleys. The trench layout for the largest area of dry valley (covered by WSI Q) has not yet been prepared for this reason.
- 4.3.1 The indicative trenching in Thurrock, Brentwood and Havering is principally informed by the aerial mapping studies (Place Services 2019; 2020), but also draws upon the results of the Essex and Historic England HER, historic maps and LiDAR information. Where fieldwalking has been carried out within the limits of the scheme, as for example, within the area of the scheduled Orsett Cropmark Complex, the results of this have also been included when considering the potential of the site, and the layout of trenches. In a few areas geophysical survey has also been carried out previously, and the results of this have also been taken into consideration when preparing the trench layouts.
- 4.3.2 The overview of the archaeological background presented in Section 2 of this WSI set out data available to inform the trial trenching, in particular with reference to sites that may not be evident through cropmarks or geophysical survey. Examples of such types of site include many earlier prehistoric sites, cemetery sites and post-medieval industrial sites that are marked on historic maps. In addition, topographic analysis of LiDAR data has been used to identify areas of likely colluvium and alluvium, where archaeological sites may be deeply buried, and so not visible from cropmarks or geophysical survey.
- 4.3.3 Evaluation of the Phase 1 Priority areas began in late November 2019, and continued until early March 2020, but was not able to access all of the Phase 1 areas. Reporting upon these areas was largely completed by the end of March 2020. Trial trenching to date has been carried out by Oxford Cotswold Archaeology (hereafter OCA). Further trial trenching is planned for summer 2020.
- 4.3.4 Due to problems with land access, the evaluation of Phase 2 areas may take place immediately following completion of the Phase 1 trenching within the same land parcels, or even in tandem with evaluation of Phase 1 trenching. Where possible, the results of the Phase 1 trenching will be fed into the proposals for Phase 2 trenching in the same or adjacent areas, and the detailed WSIs for those land parcels will be amended as necessary to take account of the results of the Phase 1 trenching. Phase 2 trenching will continue (if required) until the end of May 2021, and the reports on the Phase 2 evaluations will be completed and approved prior to the end of September 2021.

4.4 Programme

- 4.4.1 Further Phase 1 trenching and Phase 2 trenching will begin in summer 2020m and continue thereafter for as long as is required to complete the Phase 2 evaluation by trenching. Following evaluation of Phase 1 areas, any discoveries that might affect the layout or scope of the trenching for adjacent areas will be incorporated into the relevant detailed site-specific or group site-specific WSIs. According to the Scheme-Wide Specification for Trial Trenching (Highways England 2018), fieldwork must be completed by the end of May 2021 in order to ensure that the Phase 2 trial trenching reports have been completed before the end of September 2021.

- 4.4.2 Several excavation teams will work in parallel with the aim of meeting the deadlines set for completion of the Phase 1 and Phase 2 trial trenching. Each team will consist of a Team Supervisor, directing up to seven Project Archaeologists. Several teams will work under the control of a Project Officer, who will be responsible to the subcontractor's Senior Project Manager. Depending upon the number of teams required, and over what area these are spread, more than one Project Officer may be required.
- 4.4.3 Plant, welfare and all other necessary attendances will be provided by the Principal Contractor Balfour Beatty, who will also arrange land access and undertake any necessary advance surveys (for example for ecology, UXO, buried services or contaminated ground).
- 4.4.4 In practice, trenching will take place in phases as access becomes available.

4.5 Specific Methodology for Trial Trenching

- 4.5.1 In dryland areas, trenches will comprise a mixture of those targeted upon archaeological features, deposits or areas of interest, and blanket coverage of apparently blank areas using a 4% sample. Trenches in the blanket sample areas will be 30m long and 1.8-2m wide, and will aim to provide even coverage of the area. In targeted areas trenches will generally be 30m in length, but may vary according to the feature or features being investigated, and on occasion small areas may be stripped in preference to trenches, particularly over dense clusters of discrete cropmarks. The overall percentage sampled by targeted trenching will be around 4%. Variations to standard trench sizes have been agreed with the Key Archaeological Stakeholders in advance.
- 4.5.2 Where archaeological features cannot be adequately understood within the trench exposure, a contingency is available for extending the trench following consultation with the Highways England representative and the Key Archaeological Stakeholder(s).
- 4.5.3 In areas where deep sequences of deposits occur, trenches will be wider and longer, as they will need to be stepped out and provided with ramps to allow safe access for entry, hand-excavation and recording as necessary. This may well be necessary in dry valleys. Where this proves to be necessary, the scheme geoarchaeologist will be consulted as to whether they wish to inspect and sample the exposed deposits, and the archaeological contractor's geoarchaeologist will be informed in advance so that they can attend and record such sequences. Should the soils prove to be unstable, consideration may be given to shoring the trenches, provided it is safe to do so.
- 4.5.4 All trench layouts will be provided in the detailed WSIs approved in advance of trial trenching, and each trench will be provided with a unique number. Should any variations to the locations of trenches be necessitated by local conditions on site, the archaeological subcontractor will immediately inform the relevant Key Archaeological Stakeholder(s), and will send them a revised layout as soon as the new locations have been recorded by GPS. Relocation of trenches will as far as is practicable ensure that the same features are targeted, and will aim to maintain the same percentage sample in blanket sample areas.

- 4.5.5 A register of trenches will be maintained throughout the duration of the trial trenching using the pro forma table provided (Table 1) and via the OA webmap. This will allow the progress of the work to be monitored by Highways England and by the Key Archaeological Stakeholders, whose site visits will also be recorded.
- 4.5.6 Trenches will be laid out using a GPS or (in areas of poor signal) a TST, their NGR locations logged, and the trenches plotted onto the Ordnance Survey. The archaeological subcontractor(s) will have at least one surveyor working full-time on this scheme to ensure a rapid turnaround of surveyed data for review and validation in the field, for site progress meetings and project updates, and to aid the archaeological teams in interpretation.
- 4.5.7 Once the trenches have been set out, in conjunction with the Principal Contractor's Supervisor, the archaeological Supervisor will check the areas against service plans provided, and the Principal Contractor's Supervisor will ensure that a full CAT scan has been carried out before the ground is broken.
- 4.5.8 Trenches will be excavated using a mechanical excavator fitted with a toothless ditching bucket under close archaeological supervision. All Machine Supervisors will have previous experience of machining archaeological trenches, and because of the potential for scatters of worked flint in the topsoil/ploughsoil, machine stripping will be supervised by archaeologists with experience of identifying lithic artefacts.
- 4.5.9 Topsoil and subsoils will be excavated stratigraphically until the first archaeological horizon or the surface of the natural geology is reached, whichever is the higher. If deposits are more than 200mm thick, they will be excavated in spits and any finds recorded by spit within the deposit. Where it is uncertain whether the natural is colluvium or bedrock, the contractor's geoarchaeologist on site will be consulted, and colluvial deposits will also be excavated up to a depth of 1m. Should the natural bedrock not have been reached at this depth, the procedures for deepening the excavation will be implemented (as described in 4.5.3, 4.5.15 and 4.5.25-28).
- 4.5.10 The spoil and the soil surfaces exposed during machining will be scanned by eye and using a metal detector to recover artefacts. Metal detecting will be carried out by archaeologists with extensive knowledge and experience of metal detecting.
- 4.5.11 Soil will be stored at a safe distance from the edge of the trenches.
- 4.5.12 Should struck flints be found in quantity within the topsoil or subsoil in any trench, Highways England's representative and the Key Archaeological Stakeholders will be contacted, and an appropriate strategy for recovery agreed before continuing with machining of that trench. Unless otherwise specified, this should involve the recovery and bagging of flints from spoil excavated in 1m or 2m lengths of the trench in spits no more than 100mm thick.

- 4.5.13 Should metal finds (other than those of recent date) be found, these will be recorded 3-dimensionally, and if either prehistoric or of precious metal, will fall under the provisions of the Treasure Act (see 4.7.6 below). Should several finds be recovered, and a hoard be suspected, then machining will cease and Highways England and the Key Archaeological Stakeholder(s) will be contacted, and a specific methodology for excavation and retrieval will be prepared for approval. If the finds prove to be Treasure Trove, the Coroner and the landowner will be informed immediately.
- 4.5.14 Should mechanical excavation expose masonry remains, the machine will be stopped until the extent of the masonry has been determined by hand-excavation. The archaeological Project Officer should be informed immediately, and he/she should inform the archaeological Project Manager, who will in turn inform Highways England and the relevant Key Archaeological Stakeholders. Should the machine monitor not be able to establish the orientation and limits of the masonry rapidly, then the machine will be instructed to stop excavation above the highest exposure of the masonry, and will only recommence deeper excavation at a distance judged to be beyond the limit of the remains. For walls, this will depend upon their orientation in relation to the trench; for stone surfaces, a minimum distance of 2m should be allowed, and further mechanical excavation should proceed in very shallow spits under very close archaeological supervision until it is clear that no further masonry is present. Should further masonry be encountered further along the trench, this process should be repeated.
- 4.5.15 Trenches will normally be excavated to the safe working depth limit, ie no greater than 1.0m; should natural geology or an archaeological horizon not have been encountered at that depth, then, following consultation with Highways England, the Key Archaeological Stakeholders and the geoarchaeologist, the trench may be stepped out to allow safe excavation to greater depth. In such cases, the scheme geoarchaeologist will be kept informed of progress, and a geoarchaeologist from the archaeological contractor's team will be available to help record and interpret deposits.
- 4.5.16 Mechanical excavation under close archaeological supervision will often result in a surface sufficiently clean to distinguish archaeological features and deposits clearly. If this is not the case, then once the relevant horizon has been reached the trench will be hand-cleaned prior to photography (a minimum of one record photograph from either end, and one in the central part of the trench).
- 4.5.17 Any archaeological features and changes in the underlying geology will then be planned by GPS. Trenches devoid of archaeology need not be planned, but a representative section or sections of the deposit sequence will be drawn, depending upon whether the depth or sequence of the overlying deposits vary significantly along the trench.
- 4.5.18 Following stripping, hand-cleaning as necessary, photography and planning, all trenches will be left open for at least 48 hours before backfilling can commence, in order to allow buried features to weather out. After this, the trench will be inspected and any archaeological features that have weathered out will be planned. Further hand-cleaning will be carried out as necessary.

- 4.5.19 A representative sample of archaeological features will be investigated by hand to characterise and (if possible) date them, and sections of all investigated archaeological features will be drawn at an appropriate scale. The excavated sample should include at least one of each type of feature present (eg. pit, ditch, posthole), and should finds of more than one period be evident, at least one feature of each period and type.
- 4.5.20 Discrete features and deposits will normally be excavated by hand, unless otherwise agreed with the Key Archaeological Stakeholder. In general discrete features (pits, postholes, tree-throw holes) will be half-sectioned. Larger features such as quarries, shafts, very large pits and suspected sunken-featured buildings will be sampled using a smaller percentage sufficient to establish their character. Pits that prove to have complex stratigraphy, and include artefact-rich deposits, will only be excavated until this has been established, after which excavation will cease, unless agreed otherwise with the Key Archaeological Stakeholders. Features that prove to be more than 2m deep (shafts or wells) should not be excavated below this depth, although they should be augered to provide further information on likely depth.
- 4.5.21 A sample of tree-throw holes and other possible features will also be tested by hand-excavation, as tree-throw holes can contain significant collections of earlier prehistoric artefacts, particularly those of early Neolithic date. Sampling other potential features will determine whether these are man-made or natural, and if the latter, will characterise them to aid recognition of others and avoid the need for further testing.
- 4.5.22 A minimum length of 20% of all linear features, or a length of 1m, will be hand-excavated, whichever is the greater. If ditches more than 1m deep are found, then (with the agreement of the Key Archaeological Stakeholders) these may be bottomed by machine under close archaeological supervision. All soil excavated by machine must be sorted for finds by hand. Unless otherwise agreed with the Key Archaeological Stakeholders, provision must be made by stepping the trench sides or shoring for safe access for further hand-excavation or, following machine excavation, to recover finds and environmental samples from deeper fills, and to record them.
- 4.5.23 More extensive deposits (layers) should initially be investigated by one or more hand-dug trenches 1m wide to establish their depth, character and date, and to determine whether they overlie further archaeological features or deposits.
- 4.5.24 Should a layer prove to contain concentrations of finds (>3 per m²), then the Key Archaeological Stakeholders should be informed and consulted as to whether further excavation is necessary at evaluation stage. If further excavation is considered essential, then consideration should be given to sampling by hand using a 1m grid in spits no more than 50mm thick. If finds are not concentrated, then following agreement with the Key Archaeological Stakeholders the layer should be removed by machine under close archaeological supervision and the spoil sorted for finds.

- 4.5.25 Should complex or vertical stratigraphy, or masonry structures, be encountered, Highways England and the Key Archaeological Stakeholders will be contacted and (except for initial hand-clearance to clarify the character and preservation of the remains) further excavation of these will be halted until a site meeting has taken place to discuss and agree an appropriate strategy for further investigation.
- 4.5.26 Should a deeper sequence of deposits be encountered, trenches will need to be stepped out and provided with ramps to allow safe access for entry, handexcavation and recording as necessary. Trenches will not normally be excavated to a greater depth than 2m for reasons of Health and Safety. Should deposit sequences continue below this depth, a hand-held auger may be used to probe the deposits to greater depth.
- 4.5.27 Trial trenching will not excavate geological deposits such as gravel terrace deposits or extensive Head deposits at this stage. These are the province of the Palaeolithic specialist, who will devise an appropriate strategy for their investigation to be implemented at a later stage in the project. The archaeological subcontractor will, however, be aware of the potential for recovering Palaeolithic finds from areas in which the underlying geology is Head deposits, particularly from features cut into these deposits, and will alert the LTC Palaeolithic specialist should such finds be made. If a cluster of such finds is recovered, he should be invited to visit the trench prior to backfilling.
- 4.5.28 Should consultation with the scheme geoarchaeologist, Key Archaeological Stakeholder(s) and Highways England representative result in an alternative trenching excavation strategy, a supplementary Method Statement will be written and approved prior to its implementation.
- 4.5.29 Should masonry, hearths, kilns or corndriers be found, these should be investigated by hand sufficiently to establish their character, level of preservation, information potential and date. In the absence of artefactual dating, consideration should be given to scientific dating. Structures will not be fully excavated at trial trenching stage, unless agreed otherwise between Highways England, the Key Archaeological Stakeholders and the archaeological trial trenching contractor, and upon Instruction from Highways England. For masonry, recording should be by GPS and photogrammetry, supplemented if appropriate by hand planning, and the sizes, form and types of stone or brick, treatment eg dressing, coursing, jointing and bonding materials should be recorded using pro forma sheets, and samples should be taken to assist detailed recording and sourcing of materials. All associated stratigraphic relationships should be recorded both graphically and on context records.
- 4.5.30 Should industrial sites of other types be found, Highways England and the Key Archaeological Stakeholders should be consulted to establish an appropriate approach to evaluation, and a supplementary Method Statement prepared if required. Investigation of historic industrial sites will follow the guidelines of Science for Historic Industries provided by Historic England (English Heritage 2006). Archaeometallurgical sites will be evaluated in accordance with the recommendations of Historic England (Historic England 2015).

- 4.5.31 Upstanding earthworks will be surveyed prior to trenching, unless a detailed survey already exists. A specific trenching strategy will be prepared for discrete features, and particularly those possibly belonging to burial mounds, in consultation with the Key Archaeological Stakeholders. Linear earthwork features such as hedge banks will normally be sectioned by machine under close archaeological supervision in the first instance to establish their general character, date and complexity, which will be recorded in section. Should they prove to have a complex sequence of deposits and artefactual evidence of ancient date, machine excavation will cease and further excavation will continue by hand. Should they not, following machine excavation and recording a further sample of these deposits may be dug by hand to retrieve artefacts or environmental samples.
- 4.5.32 Test-pits or trenches within standing buildings may be excavated by hand or by machine, depending upon access. Such trenches will be excavated and recorded stratigraphically context by context. Removal of modern deposits such as concrete floors, and ensuring that buildings remain safe during trial trenching, will be the responsibility of the Principal Contractor. DONE TO HERE
- 4.5.33 Investigation of areas of former military installations such as airfields should be carried out only after maps of the facilities have been obtained, and following consultation with the Military specialist appointed by LTC. The trenches should be laid out to take account of the features indicated by these maps. The location and character of these remains should be established, as well as the level of truncation they may have caused to any potential earlier archaeological remains. No trenching should be carried out of designated MoD crash sites.
- 4.5.34 All excavated deposits and features will be recorded using single context recording on *pro forma* context sheets and will be recorded in plan and section. Lists of finds and environmental samples will be kept. Small finds/special finds will be recorded 3-dimensionally and will be individually numbered and listed.
- 4.5.35 Plans and sections will be at a scale of 1:20 or 1:50, unless the level of information requires a more detailed graphic record at 1:10 or greater. The information will be transferred onto an OS-referenced CAD or GIS plan. Plans of trenches being stripped under archaeological supervision will be provided by email or via the OA webmap twice a week to Highways England and the Key Archaeological Stakeholders, and regular site visits on a weekly basis, or as otherwise requested by the Key Archaeological Stakeholders, will be arranged.
- 4.5.36 A digital plan of the whole site subject to trial trenching, together with all archaeological features, will be maintained and updated as work progresses. Records will be made of all areas, even those that generate negative results.
- 4.5.37 Digital photographs will be taken of all trenches and archaeological features and of the general works in progress.

4.6 Reinstatement

- 4.6.1 Unless unsafe to do so, trenches will be left open until the Key Archaeological Stakeholders have confirmed that monitoring requirements have been satisfied.

- 4.6.2 Reinstatement will be the responsibility of the Principal Contractor (see section 4.3.5-6 above). Each trench will be reinstated using the materials excavated, and the backfilling of deposits will be done in the reverse order to the sequence of excavation. Any land drains damaged by the trenching will be repaired to working order by the Principal Contractor during reinstatement.

4.7 Human Remains

- 4.7.1 Should human bones be found, the Ministry of Justice, the coroner, Highways England and the relevant Key Archaeological Stakeholder(s) will be informed, and a Ministry of Justice licence under Section 25 of the Burial Act 1857 will be obtained. No further excavation will be carried out until the appropriate strategy for preservation *in situ* or removal has been agreed with Highways England and the Key Archaeological Stakeholders. Human burials are not normally excavated at evaluation stage, but should this be considered necessary, then the following procedures must be followed.
- 4.7.2 All exhumation and post-excavation treatment of the remains will be carried out in accordance with published guidelines (Historic England 2018).
- 4.7.3 All inhumations, cremations and any grave goods that it is decided must be excavated at evaluation stage, will be recorded by photogrammetry and pro-forma skeleton sheets, and will be sketched or hand-planned as appropriate. Objects will also be surveyed in 3-dimensionally. Photographs of the excavation will be taken as directed by the supervising osteologist, and photographs of the emptied graves will also be taken for photogrammetric reconstruction.
- 4.7.4 Provision will be made for sampling of the grave fill of inhumations both to recover additional finds, and to sample for small bones/foetal remains, calcified or ossified soft tissue and (if appropriate) intestinal worms. Details of the procedures followed as standard by the archaeological contractor will be provided to the Key Archaeological Stakeholders, including the Historic England Science Advisor for the East of England, in advance, in order that they can ensure that relevant research objectives are being considered.
- 4.7.5 Cremations will be cleaned, photographed and sketched or hand-planned as appropriate, and if it is agreed that they should be excavated at evaluation stage, will either be excavated in spits, photographed and recorded by an osteologist on site, or if within a vessel, will be lifted in its entirety for excavation and recording in the laboratory by an osteologist. If excavated on site, all of the cremation fill will be recovered as a sample for flotation and sieving.

4.8 Artefacts

- 4.8.1 All finds will be collected, unless in the special circumstances detailed below. Where features contain recent finds, a note on the types of material present should be made on the context sheet, and a photograph taken of the finds. These may thereafter be discarded, unless the site under evaluation is itself of recent date, in which case the detailed WSI will specify the finds retention and discard policy.

- 4.8.2 Where large assemblages of a ceramic building material or stone roofing are encountered *ex situ*, such as bricks from a brickworks discarded into quarry pits or incorporated into a surface, or large assemblages of animal bones in pits, only a representative sample of the material types present should be retrieved in evaluation. The aim of evaluation should be to leave most of the material *in situ* for further mitigation, when more considered strategies for sampling, retention and discard can be formulated.
- 4.8.3 Finds will be bagged and identified by context, unless their distribution warrants recording individually in 3-D (as for instance for flint concentrations). Finds will be removed from site to a secure location at the end of each working day, unless otherwise agreed with Highways England and the Key Archaeological Stakeholder(s).
- 4.8.4 In addition to in-house expertise in lifting and on-site packaging of all finds categories, each archaeological subcontractor will have a conservator on call to advise or visit should significant and fragile finds be encountered that warrant lifting with especial care.
- 4.8.5 Finds processing and curation will follow best practice (UKIC 1983; UKIC 1988; Watkinson & Neal 1998). Waterlogged wood and other waterlogged organic artefacts will be dealt with following the recommendations of English Heritage (2010; 2012). X-radiography of metal artefacts will follow English Heritage guidelines (English Heritage 2006).
- 4.8.6 For significant features or deposits that lack artefactual dating, scientific dating, particularly radiometric dating, should be considered. This may involve the retention of sherds that are covered with burnt residues unwashed, and taking appropriate samples from waterlogged wood before it is sent for conservation.
- 4.8.7 All gold or silver artefacts will be reported to the coroner, in line with the Treasure Act 1996 and ClfA Code of Practice. This includes both precious metals and base metals where they are of prehistoric date. Suitable measures will be taken to ensure their security where removal cannot take place immediately. The Portable Antiquities Scheme (PAS) Finds Liaison Officer will also be informed.

4.9 Environmental sampling

- 4.9.1 Bulk environmental samples (40 litres, or whole deposit samples if less) will be taken from deposits with visible signs of well-preserved or frequent environmental remains. Column samples will be taken from deposit sequences if appropriate. Environmental sampling will be guided by the advice of the regional Historic England Science Advisor for the East of England, who will be kept informed of progress, and by the archaeological contractor's Head of Environmental Archaeology, who will visit site, and will be consulted on sampling and scientific dating.

- 4.9.2 Sampling may be carried out on sequences that inform the development of the general past environment as well as on deposits within archaeological features, but should only be carried out upon deposits where the date of the deposit or sequence can be established by artefactual or scientific dating. Samples should include those taken specifically for scientific dating of significant features or deposits where artefactual evidence is not present.
- 4.9.3 Digital plans showing the locations from which environmental samples have been taken will be updated as work proceeds, and provided on a weekly basis or via webmap to the Key Archaeological Stakeholders.
- 4.9.4 In consultation with the archaeological contractor's Head of Geoarchaeology, the scheme geoarchaeologist and Historic England Science Advisor for the East of England, a specific Method Statement will be prepared for the sampling, assessment, dating and reporting of deep alluvial, fluvial or marine deposit sequences, following the Historic England guidelines for geoarchaeological investigations (Historic England 2015).
- 4.9.5 Sampling, processing and assessment will be carried out as specified by Historic England (English Heritage 2011), and curation of flots likewise (English Heritage 2008). Animal bones will be recovered, processed and assessed as recommended by Historic England (Baker and Worley 2019). Environmental sampling should also bear in mind the potential use of materials for scientific dating, for example dendrochronology or radiocarbon dating (see section 4.10 below).

4.10 Scientific Dating

- 4.10.1 For significant features or deposits that lack artefactual dating, scientific dating, particularly radiometric dating, should be considered. Selection of material for radiocarbon dating will be carried out in consultation with the archaeological contractor's scientific dating specialist, and should follow the advice of the Historic England Science Advisor for the East of England region. This may involve the retention of sherds that are covered with burnt residues unwashed, and taking appropriate samples from waterlogged wood before it is sent for conservation.
- 4.10.2 Dendrochronology, archaeomagnetic and luminescence dating should be carried out in accordance with English Heritage guidelines (English Heritage 2004; 2006; 2008). Advice will be taken from the archaeological contractor's scientific dating specialist.
- 4.10.3 Further guidance on scientific dating will be obtained where necessary from the Historic England Science Advisor for the East of England region.

4.11 Contingencies and Unforeseen Circumstances

- 4.11.1 In most areas, a contingency is provided to allow extension to trenches where the archaeology that has been uncovered cannot be adequately understood within the confines of the trench. This will normally follow consultation with the Key Archaeological Stakeholder(s) and Highways England, but where it is immediately evident following stripping that something significant cannot be adequately characterised within the limits of the trench, the archaeological subcontractor's Project Officer in charge may extend the trench to clarify what has been revealed. Hand-sampling in such cases will follow a specific strategy agreed with Highways England and the Key Archaeological Stakeholder(s) (see below).
- 4.11.2 In the event that unforeseen archaeological discoveries are made during the trial trenching, the archaeological subcontractor shall inform Highways England and the Key Archaeological Stakeholder(s), and if required prepare a short, written statement with plan detailing the archaeological evidence. Following assessment of the archaeological remains by the Key Archaeological Stakeholder, the archaeological subcontractor shall, upon instruction by Highways England, implement an amended scheme of investigation as appropriate.

4.12 Monitoring of Works

- 4.12.1 At least 5 days' notice of the commencement of the archaeological evaluation trenching works will be given to the Key Archaeological Stakeholders, who will be given a timetable for the evaluation in each land parcel, and will be updated on any changes to this as work proceeds.
- 4.12.2 The latter will have free access to the site (subject to Health and Safety considerations) and all records to ensure the works are being carried out in accordance with this WSI, the provisions of the detailed WSI for each land parcel, and all other relevant standards.
- 4.12.3 All Key Archaeological Stakeholders will be required to comply with the Health & Safety requirements of the principal contractor, Balfour Beatty, and will be accompanied by a Project Officer at all times while on site.
- 4.12.4 Key Archaeological Stakeholders will be kept updated with the progress of the trenching on a weekly basis or via the OA webmap, and regular weekly site meetings, supplemented if required by additional site meetings, will be agreed for the monitoring of work in progress. Site meetings involving Key Archaeological Stakeholders will be charged for by the relevant curatorial body.
- 4.12.5 In order to speed up the work and to avoid unnecessary site meetings, photographs and a summary record of empty trenches will be sent to the relevant Key Archaeological Stakeholder(s) in order that they can sign these off without having to visit site.

5 Report and Archive

5.1 Standards and content

- 5.1.1 All trial trenching reports will be prepared in accordance with ClfA standards (ClfA 2014).
- 5.1.2 All trial trenching reports will be presented using the LTC report format provided by Highways England. The reports will be identified by the letter given to each site-specific or group site-specific WSI, and (where access was not possible to all of the areas) by the relevant land parcel numbers, which are shown on Figures 14a and 14b of this project-wide WSI.
- 5.1.3 All finds and environmental materials will be assessed by specialists of significant experience within their specialist field and with expertise in the areas of assessment, analysis and reporting of finds. All specialists will be named, and summary CVs supplied if required by the Key Archaeological Stakeholders.
- 5.1.4 The trial trenching reports will vary according to the scope set out in each detailed WSI, but will contain (as a minimum):
- Non-technical summary
 - Introduction including location, geology/topography, archaeological background, scope of work, constraints and duration of fieldwork
 - Aims and objectives
 - Methodology
 - Results
 - Review of Aims and objectives including an interpretation of the recorded archaeological remains in the context of the relevant Research Framework for the East of England (ed Medlycott 2011) objectives
 - Conclusions including a statement of Significance of the remains following Historic England's first Research Theme: 'A. *Discovering, studying and defining historic assets and their significance*' (English Heritage 2005).
 - Archive location
 - Finds and Environmental Appendices
 - Illustrations
 - References and Bibliography

- 5.1.5 As the Priority Phase 1 trial trenching will be followed by evaluation of adjacent areas in Phase 2, only a brief summary overview of the results at the end of Phase 1 will be prepared.
- 5.1.6 Following completion of the Phase 2 trial trenching, an overview of the results considered both chronologically and geographically, and of the significance of the discoveries, will be prepared for the approval of the Key Archaeological Stakeholders to inform further archaeological mitigation. The former will be carried out by the trial trenching archaeological contractor selected by LTC, and the latter by LTC's own archaeological team. The Statements of Significance will be drawn up following Historic England guidance (Historic England 2017).

5.2 Timetable for delivery

- 5.2.1 The scheme-wide Specification for Archaeological Trial Trenching asked for a single report upon the Phase 1 Priority trenching. Due to the time constraints and requirements of the DCO, as well as the time required for review by Key Archaeological Stakeholders, reports will instead be prepared and submitted on a rolling programme in tandem with fieldwork. Initial processing of finds and environmental samples, and spot-dating of finds, will take place during and immediately following fieldwork, and an interim summary of the results from each detailed WSI will be sent to LTC within 2 weeks of the completion of fieldwork. The interim statement should contain a preliminary assessment of the significance of the remains sampled. Should access to all land parcels not have been possible at the same time, interim reports upon the first land parcel(s) to be completed will be provided, and the reports updated as further parcels become available and are trenched. Depending upon the size of the area, the final report for each WSI area will be provided 4-8 weeks after the completion of the final trial trenching on site, unless agreed otherwise agreed with LTC and the Key Archaeological Stakeholders.
- 5.2.2 Due to the need for detailed examination of soil sequences and assessment of a wide range of environmental remains, reporting of trenches with deep deposit sequences is likely to take longer than usual, but unless agreed otherwise with LTC and the Key Archaeological Stakeholders, the report will be submitted for comment within six-ten weeks of the completion of the fieldwork.
- 5.2.3 Digital copies of the completed reports in Adobe Acrobat (.pdf) format will be provided to Balfour Beatty, to LTC and to the relevant Key Archaeological Stakeholder(s) for the County or Greater London Borough in which the site-specific area is situated. If agreed with the relevant Key Archaeological Stakeholder(s) prior to the start of trial trenching, bound copies will also be provided.
- 5.2.4 Once approved, copies of the reports for those sites in Essex and Havering will be deposited with the relevant Historic Environment Record, and will become available to consultees of the Greater London and Essex County Council HERs six months after deposition of the reports.
- 5.2.5 Trenching of the remaining Phase 1 areas is expected to take place over the summer of 2020, depending upon access to the land. An interim summary of the findings will be prepared following the completion of fieldwork and reporting upon the Phase 1 areas made available for trenching by the end of September 2020.
- 5.2.6 Following completion of the Phase 1 Priority trenching, further trenching will continue as land parcels become available, and will be completed by the end of May 2021. Reporting upon the further trenching will be completed by the end of July 2021, and will be followed by an overview of the discoveries and the significance of the remains sampled and of any other significant archaeological remains that will be affected by the scheme.

- 5.2.7 Release of trial trenching results to the wider public is not normally undertaken at trial trenching stage, as any significant discoveries are likely to be followed by further archaeological mitigation, providing a much greater level of information about what has been discovered. LTC has appointed a LTC Legacy and Benefits Officer Michelle Baker, who will liaise with Key Archaeological Stakeholders about how the results of the trial trenching work can be made available to the wider public. The archaeological subcontractor carrying out the trial trenching will liaise with the LTC Legacy and Benefits Officer to agree the basis for providing information in the appropriate media and formats at regular intervals.

5.3 Copyright

- 5.3.1 Copyright of all reports and materials generated in pursuance of this project will be vested in LTC, without prejudice to the intellectual property copyright of the authors of the reports.

5.4 Archive preparation and deposition

- 5.4.1 Archiving will be carried out in accordance with the CIFA Standards and Guidance for the creation, compilation, transfer and deposition of archaeological archives (Cifa 2014b), and following Historic England guidelines (Brown 2011).
- 5.4.2 All primary records will be security copied, and a copy kept in a separate building.
- 5.4.3 The site archive will be deposited in a repository consistent with the standards required by the Museums and Galleries Commission, ie where it can be permanently conserved and managed and made available for public access and dissemination, following completion of the archaeological phase of the project. This may either be with the appropriate local receiving museums in Kent, Essex and Havering or, if no such repositories are available, with a repository for the whole project designated by LTC. The digital data generated by the overall trial trenching scheme archive for Essex and Havering will be made available to the Essex and Greater London HERs in a format agreed with them at the conclusion of the project.
- 5.4.4 Oxford Cotswold Archaeology will be carrying out the Priority Phase 1 trial trenching, and will make contact with the receiving museum(s) prior to the start of trial trenching using the museum's own notification forms. These notification forms will be copied to the Key Archaeological Stakeholders. For the Phase 2 trenching, the same process will be followed.
- 5.4.5 If trial trenching of a particular land parcel does not produce archaeological remains then only a paper archive will be generated for deposition. A summary report will still need to be produced, and will be submitted to the relevant HER.
- 5.4.6 The results of the evaluation in each site-specific or group site-specific area will be uploaded onto OASIS following completion and approval of the report for that area.
- 5.4.7 The digital archive will be uploaded to the Archaeology Data Service (ADS).

- 5.4.8 If the evaluation generates significant results then an accession number will be drawn, and the finds and paper archive will be deposited in line with the museum's guidelines.
- 5.4.9 The relevant Key Archaeological Stakeholder(s) will be notified by email on final deposition.

6 Personnel

- 6.1.1 The archaeological subcontractor, or contracting joint venture, will be a Registered Organisation with the ClfA, with a proven track record of delivery of archaeological programmes for major infrastructure projects. The Phase 1 Priority trial trenching will be carried out by Oxford Cotswold Archaeology, a joint venture both of whose members are Registered Organisations.
- 6.1.2 The archaeological subcontractor will designate a manager to fulfil the role of Lead Archaeologist for the trial trenching. For Phase 1 this will be Steve Lawrence assisted by Adrian Scruby.
- 6.1.3 The manager will be responsible for:
- end-to-end project management, including planning and safely delivering the fieldwork and ensuring delivery of post-excavation reports
 - detailed design of archaeological trial trenching, utilising available resources, including the LTC aerial mapping study and geophysical surveys in Kent
 - creating the programme for archaeological trenching in accordance with the agreed property access arrangements
 - assisting in the progress of the programme and the objectives within this specification and the WSI by attending all start-up and site meetings, as required
 - liaising with the LTC cultural heritage team and the assorted subconsultant specialists employed by LTC e.g. Palaeolithic and geoarchaeology specialists
 - have previous experience of having worked in Essex and/ or other areas where ‘Thames gravels’ are present
 - co-ordinating all archaeological trial trenching across the scheme
 - ensuring all fieldwork is undertaken in accordance with the agreed parcel-specific WSI
 - overseeing the post-excavation manager (below) in reporting and publication
 - will be the point of contact for heritage stakeholders such as the Historic England scheme lead and the local planning authority archaeological advisors
 - overseeing the transition of the fieldwork to the post-excavation reporting
 - ensure that the trial trenching is delivered on time and to the agreed budget
 - ensure Health and Safety standards are maintained on site

- 6.1.4 The manager will have appropriate experience as set out in the Scheme-wide Specification for Trial Trenching (Highways England 2018).
- 6.1.5 Project Officers
- 6.1.6 The project officers will be responsible to the Lead Archaeologist. For Phase 1, the Project Officers will be Mark Dodd, Anna Moosbauer and Lee Sparks.
- 6.1.7 The project officers will be responsible for:
- the day-to-day running of the trial trenching in individual parcels, or groups of parcels as directed by the lead archaeologist
 - ensuring professional standards of work are maintained and the agreed scope of work in the WSI is adhered to
 - ensuring that all site work is carried out to the agreed programme
 - collaborating with the lead archaeologist in hosting site monitoring visits from the local authority archaeological advisors and Historic England
 - liaising with the LTC cultural heritage team and the assorted sub-consultant specialists employed by LTC e.g. Palaeolithic and geoarchaeology specialists
 - liaising with the post-excavation manager, including ensuring the site records are handed over and are fit for purpose
 - ensuring Health and Safety standards are maintained on site
- 6.1.8 The project officers will have the appropriate experience as set out in the Scheme-wide Specification for Trial Trenching (Highways England 2018).
- 6.1.9 Post-excavation Manager
- 6.1.10 The post-excavation manager will direct the post-excavation phase of the trial trenching. For Phase 1 this will be Leo Webley.
- 6.1.11 The post-holder will:
- manage the post-excavation phase of the Project in consultation with the lead archaeologist
 - ensure the delivery of parcel-specific reports to the deadlines stipulated in the WSI
 - ensure the post-excavation work adheres to the WSI, current guidance and, technical standards and best practice
 - lead on the publication of the results, if appropriate
 - manage the production of the Project archive in line with the standards stipulated in the WSI

- 6.1.12 The professional requirements and competencies of the Post-excavation Manager will be as set out in the Scheme-wide Specification for Trial Trenching (Highways England 2018).
- 6.1.13 Site Supervisors and Archaeological Technicians
- 6.1.14 These posts will form the majority of the staffing during the archaeological fieldwork. For Phase 1 the supervisors will be Robert McIntosh, Molly Day, Dan Firth and John Carne.
- 6.1.15 The Site Supervisors will:
- be responsible to the Project Officers
 - direct a small team of Archaeological Technicians during the trial trench evaluation and assigning specific tasks
 - ensure that the trial trenches are located accurately, as agreed in the WSI
 - act as an archaeological banksman and direct the tracked excavator drivers in removing the overburden in the way stipulated in the WSI
 - ensure Health and Safety standards are maintained on site
- 6.1.16 The project officers will have the appropriate experience as set out in the Scheme-wide Specification for Trial Trenching (Highways England 2018).

LTC Trenching		Parcel:		Landowner:				Tenant farmer:			Start date:	
Trench No.	Permit to Dig	Before photos	Opened	Survey pre-X	Features present	Features Dug	Photos (initials)	Recorded (initials)	Surveyed (initials)	Visited by KAS	Backfilled	After photos
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
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20												
21												
22												
23												
24												
25												
26												

27												
28												
29												
30												
Date parcel completed:						Signed:						

Table 1 – Trench Register

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8 Appendices

Appendix 1 – Gazetteer of Lower Thames Crossing historic features and finds – Kent

Project ID	Source Reference	EHCR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
1	MEX1010723	35316		Orsett Hall	Structure	House	Post-Medieval	Essex HER	565101	182333	
2	MEX1010726	35319		Boundary stone	Feature	Boundary stone	Post-Medieval	Essex HER	568930	177184	
3	MEX1031017	17125		Kemps Farm	Enclosure; Field	Rectilinear enclosure; trackway; field boundary	Unknown	Essex HER	558258	183702	
5	MEX1031025	18125		Finds	Findspot (metal)	Findspot	Bronze Age	Essex HER	565000	180000	
6	MEX1031027	16685		WWI landing ground at Orsett	Structure	Military airfield	Modern	Essex HER	565941	181114	
7	MEX1031028	5158		Orsett Causewayed Enclosure	Enclosure	Causewayed enclosure; ditch; post hole; palisade; building?; pit; earthwork?; portal	Neolithic	Essex HER	565018	180585	
8	MEX1031055	18132		Cropmarks	Feature	Field boundary	Unknown	Essex HER	561343	186072	
9	MEX1031059	18129		Bomb Crater at Tooks Farm	Feature	Bomb crater	Modern	Essex HER	558471	190239	
10	MEX1031234	18303		East of the Decoy	Feature	Linear feature	Unknown	Essex HER	564054	182406	
11	MEX1031657	18060		Coombe Lodge	Structure	Great house; garden	Post-Medieval	Essex HER	558051	190375	
14	MEX1032105	17775		Land east of Sabina Road, Chadwell St. Mary	Findspot (pottery)	Findspot	Medieval	Essex HER	565223	178913	
15	MEX1032117	18454		West Tilbury Commons - REVOKED see 18614	Feature	Drainage ditch	Modern	Essex HER	565392	177002	
16	MEX1032121	18614		West Tilbury Commons	Feature	Drainage ditch	Modern	Essex HER	565647	177420	
17	MEX1032122	18615		East or West Tilbury	Findspot	Findspot	Roman	Essex HER	566000	177000	
19	MEX1032217	14842		Orsett Causewayed Enclosure	Findspot	Findspot	Medieval	Essex HER	565080	180490	
20	MEX1032218	14843		Grey Goose Farm, Thurrock	Feature	Pit	Medieval	Essex HER	562557	180664	
21	MEX1032235	18616		Mucking Creek Valley	Findspot (flint)	Findspot	Prehistoric	Essex HER	566400	179540	
23	MEX1032255	18621		5 The Goslings, Orsett	Findspot (pottery)	Findspot; findspot	Post-Medieval & Modern	Essex HER	562425	181173	
24	MEX1032261	18622		Welling Road, Orsett	Industry (quarry)	Quarry	Modern	Essex HER	565857	181151	
25	MEX1032284	18712		Oak Lodge, Station Road, East Tilbury	Feature	Feature	Unknown	Essex HER	568395	177518	
26	MEX1032293	18625		South Stifford	Findspot (metal)	Findspot	Roman	Essex HER	565000	180000	
27	MEX1032322	18456		William Edwards School	Settlement?	Lithic working site?; pit; ditch	Mesolithic to Iron Age	Essex HER	561943	180873	
28	MEX1032446	18457		William Edwards School	Feature	Ditch; gully	Roman	Essex HER	561943	180873	
29	MEX1032737	19210		Grove Barns, South Ockendon	Structure; Feature	Manor; moat?; fishpond	Medieval	Essex HER	559972	183995	
30	MEX1032738	19211		Grove Barns, South Ockendon	Structure; Feature	Manor house; ornamental pond	Post-Medieval	Essex HER	559972	183995	
31	MEX1032741	17419		Rear of 25-31 High Road, Orsett	Industry (quarry); Feature	Quarry; gully; tenement	Medieval	Essex HER	564403	181880	
32	MEX1032742	17420		Rear of 25-31 High Road, Orsett	Feature	Ditch; gully; tenement	Post-Medieval	Essex HER	564403	181880	
33	MEX1032743	18458		William Edwards School	Feature	Pit; post hole	Medieval	Essex HER	561943	180873	
34	MEX1032745	0		Stanford Le Hope STW Water Pipeline	-	No finds or features	-	Essex HER	566955	178844	
36	MEX1032827	19356		WWI landing ground at North Ockendon	Structure	Military airfield	Modern	Essex HER	560193	184646	
37	MEX1032839	19105		Great Warley Hall manor	Structure	Manor house	Early Medieval to Medieval	Essex HER	559640	188682	
38	MEX1032841	19107		Possible Domesday settlement at Great Warley	Settlement	Settlement	Early Medieval	Essex HER	559621	188440	

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39	MEX1032842	19108		St Mary's Church, Great Warley	Structure	Church	Early Medieval to Medieval	Essex HER	559650	188405	
40	MEX1032843	19109		Great Warley Historic settlement	Settlement; Structure	Manor house; church; hospital; vicarage; common land; settlement; barracks	Medieval to Post-Medieval	Essex HER	558664	190360	
41	MEX1032844	19110		Rectory, Great Warley	Structure	Vicarage	Medieval	Essex HER	559530	188940	
42	MEX1032851	15573		Pumping station, Great Warley	Structure	Pumping station	Post-Medieval	Essex HER	559360	189540	
43	MEX1032967	15093		Tilbury Power Station	Industry; Structure	Coal fired power station; oil fired power station	Modern	Essex HER	565987	175917	
44	MEX1032994	15138		Bata Estate - Factory and Model Settlement	Structure; Settlement	Shoe factory; housing estate; leather factory; rubber works	Modern	Essex HER	568003	178569	
45	MEX1033028	15382		Orsett Union Workhouse	Structure	Workhouse; casual ward block; infirmary	Post-Medieval	Essex HER	564204	181710	
47	MEX1033058	15474		Low Street Brick Works	Industry	Brickworks	Post-Medieval	Essex HER	567330	177699	
48	MEX1033073	15720		The Brick Yard at Stifford Clays	Industry	Brickworks; tile works	Post-Medieval	Essex HER	561840	181027	
49	MEX1033087	15651		Thurrock District Hospital	Structure	Infectious diseases hospital	Post-Medieval	Essex HER	562280	180080	
51	MEX1034076	19472		Heath Place	Findspot (metal)	Findspot	Iron Age	Essex HER	564450	180350	
52	MEX1034095	19487		Land to the North of Riverside Station, Tilbury	-	No finds or features	-	Essex HER	564792	175748	
53	MEX1034114	19505		Heraldic Horse Mount	Findspot (metal)	Findspot	Medieval	Essex HER	564000	184000	
54	MEX1034115	19504		Gold Ring and Iron Age Stater	Findspot (metal)	Findspot	Iron Age	Essex HER	564000	184000	
55	MEX1034116	19506		Tilbury Riverside - Earthworks linear features	Field	Ridge and furrow; drain	Post-Medieval to Modern	Essex HER	564529	175644	
56	MEX1035105	0		Proposed widening of the M25 an Archaeological Assessment	Event	-	-	Essex HER	548232	188969	
57	MEX1035334	15581		Linford Pumping Station	Structure	Pumping station	Post-Medieval	Essex HER	567170	179280	
58	MEX1035555	20274		Road Barrier (destroyed), Gt. Warley St, Great Warley	Structure	Road barrier	Modern	Essex HER	558403	190605	
59	MEX1035591	19997		Old Methodist Chapel	Structure	Wesleyan Methodist Chapel	Post-Medieval	Essex HER	568587	177330	
60	MEX1036394	45368		Whitmore Arms, Rectory Road, Orsett	-	No finds or features	-	Essex HER	564464	181924	
61	MEX1036400	45374		South Ockendon Clay Quarry	Field	Ridge and furrow	Medieval	Essex HER	560549	183489	
62	MEX1036402	45376		Tilbury landing stage and passenger terminal	Structure	Landing stage; ferry terminal	Modern	Essex HER	567300	175100	
63	MEX1036414	45379		HCF: Horndon - Tilbury (Coalhouse Fort) Gas Pipeline.	Findspot (flint)	Findspot	Prehistoric	Essex HER	568030	177510	
64	MEX1036415	45380		HCF: Horndon - Tilbury (Coalhouse Fort) Gas Pipeline.	Findspot (flint)	Findspot	Prehistoric	Essex HER	567800	177710	
65	MEX1036416	45381		HCF: Horndon - Tilbury (Coalhouse Fort) Gas Pipeline.	Findspot (flint)	Findspot	Prehistoric	Essex HER	567530	178150	
66	MEX1036418	45382		HCF: Horndon - Tilbury (Coalhouse Fort) Gas Pipeline.	Findspot (flint)	Findspot	Prehistoric	Essex HER	567810	177590	
67	MEX1036420	45383		HCF: Horndon - Tilbury (Coalhouse Fort) Gas Pipeline.	Findspot (flint)	Findspot	Prehistoric	Essex HER	567420	178640	
68	MEX1036421	45384		HCF: Horndon - Tilbury (Coalhouse Fort) Gas Pipeline.	Findspot (flint)	Findspot	Prehistoric	Essex HER	567240	178910	
69	MEX1036422	45385		HCF: Horndon - Tilbury (Coalhouse Fort) Gas Pipeline.	Findspot (flint)	Findspot	Iron Age	Essex HER	567190	180090	
70	MEX1036479	45410		Grangewaters, South Ockendon	Industry (quarry)	Quarry	Modern	Essex HER	560957	181663	
71	MEX1036480	45411		Former Quarry, now part of Mar Dyke Country Park, South Ockendon	Industry (quarry)	Quarry	Modern	Essex HER	560999	181944	

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72	MEX1036514	6764		North Ockendon Hall	Structure	House; building; garden wall	Post-Medieval	Essex HER	558700	184800	
73	MEX1036566	45444		Findspot on the Epping-Horndon Gas Pipeline	Findspot (pottery)	Findspot	Iron Age	Essex HER	563010	184010	
74	MEX1036567	45445		Findspot on the Epping-Horndon Gas Pipeline	Findspot	Findspot	Roman	Essex HER	561640	185900	
75	MEX1036569	45446		Findspot on the Epping-Horndon Gas Pipeline	Findspot (pottery)	Findspot	Post-Medieval	Essex HER	562080	184170	
76	MEX1036570	0		Fieldwalking along the Epping-Horndon Gas Pipeline	Findspot (pottery; flint)	Findspot	Unknown	Essex HER	558508	191109	
77	MEX1036731	45512		Bermuda or Island Wood, Boyles Court, Brentwood	Landscape (wood)	Plantation	Modern	Essex HER	557804	191085	
78	MEX1036732	45513		Bridge Wood, Boyles Court, Brentwood	Landscape (wood)	Wood	Modern	Essex HER	557352	190905	
79	MEX1036733	45514		Hole Wood, Boyles Court, Brentwood	Landscape (wood)	Wood; ditch	Unknown	Essex HER	557206	190721	
80	MEX1036734	45515		Jacksons Wood, Boyles Court, Brentwood	Landscape (wood)	Coppice; wood bank	Unknown	Essex HER	557423	190826	
81	MEX1036735	45516		Jermains Wood, Boyles Court, Brentwood	Landscape (wood)	Wood	Unknown	Essex HER	557128	190910	
82	MEX1036739	45520		Wormwalk Shaw, Boyles Court, Brentwood	Landscape (wood)	Wood bank; wood	Unknown	Essex HER	557052	190950	
83	MEX1036740	45521		Franks Wood, Codham Hall Estate, Cranham	Landscape (wood)	Wood	Unknown	Essex HER	558306	187452	
84	MEX1036741	45522		Un-named Wood I, Codham Hall Estate, Great Warley	Landscape (wood)	Wood; wood bank	Unknown	Essex HER	558753	189322	
85	MEX1036742	45523		Un-named Wood II, Codham Hall Estate, Great Warley	Landscape (wood)	Wood; wood bank	Unknown	Essex HER	558537	189389	
86	MEX1036743	45524		Un-named Wood III, Codham Hall Estate, Great Warley	Landscape (wood)	Wood	Unknown	Essex HER	558552	189219	
87	MEX1036759	45540		Tyler's Shaw, Boyles Court, Upminster	Landscape (wood)	Wood	Unknown	Essex HER	557411	191162	
88	MEX1037278	15722		Brickworks at North Ockendon	Industry	Brickfield	Post-Medieval	Essex HER	560110	185132	
89	MEX1037623	45786		Coalhouse Wharf and Coastguard Station	Structure	Wharf; coastguard station	Post-Medieval	Essex HER	568942	176250	
90	MEX1037624	0		Sea-wall, Coalhouse Arable	Feature	Sea defences	Post-Medieval	Essex HER	568553	176094	
91	MEX1037625	0		Relict sea-wall, East Tilbury saltings	Feature	Sea defences	Post-Medieval	Essex HER	569163	177413	
93	MEX1037738	45888		Biosolids Dryer at Tilbury sewage works	Building	Farm; open site?	Post-Medieval	Essex HER	565541	175611	
94	MEX1037748	1781		School at Sockets Heath	Findspot (pottery)	Findspot	Roman	Essex HER	562450	179950	
95	MEX1038266	46054		Torells School, Buxton Road, Grays	-	No finds or features	-	Essex HER	563605	179613	
96	MEX1038452	40677		Warley Road and Great Warley Street, Great Warley	Structure	Signpost	Modern	Essex HER	558348	190711	
97	MEX1038468	40692		Signpost at Baker Street, Orsett	Structure	Signpost	Modern	Essex HER	563389	181411	
98	MEX1038469	40693		Signpost in Rectory Road, Orsett	Structure	Signpost	Modern	Essex HER	564506	182216	
99	MEX1038470	40694		Signpost, High Road, Orsett	Structure	Signpost	Modern	Essex HER	564522	181944	
101	MEX1038727	46253		Warley Hill, Warley Road, Havering	-	No finds or features	-	Essex HER	557069	190480	
102	MEX1039152	46560		Farthings, Rectory Road, Orsett, modern features	Feature	Post hole; pit	Modern	Essex HER	564598	181828	
103	MEX1039202	46578		Orsett Churches Centre, High Road, Orsett	-	No finds or features	-	Essex HER	564411	181908	
104	MEX1039326	46650		Land at East Tilbury and Linford Area of Prehistoric ritual landscape and Roman field boundaries	Field; Settlement	Field system; field system; Settlement	Bronze Age & Roman	Essex HER	567559	178561	

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105	MEX1039383	46678		Cold War Nuclear Monitoring Post, Orsett	Structure	Underground monitoring post; royal observer corps site	Modern	Essex HER	564400	181150	
106	MEX1039718	46888		Tilbury Power Station Archaeological evaluation and monitoring report	Structure	Coal fired power station; oil fired power station	-	Essex HER	565400	176200	
107	MEX1039719	0		Geophysical Survey Report - Land at East Tilbury, Essex	Enclosure; Field	Rectilinear enclosure, ring ditch, field system	Unknown	Essex HER	567305	179027	
109	MEX1040048	47054		Green Lane	Field	Field boundary	Post-Medieval	Essex HER	562200	182054	
110	MEX1040410	46649		Land at Bata Field East Tilbury	Enclosure	Enclosure	Bronze Age	Essex HER	567750	178650	
111	MEX1040412	47473		Tilbury Pond Wildlife Site, Tilbury	-	No finds or features	-	Essex HER	565950	176700	
112	MEX1040423	0		Mill of unknown type at Bulphan	Structure	Windmill	Post-Medieval	Essex HER	562521	185360	
113	MEX1040428	47492		Tilbury Wildlife Pond Site, Tilbury	-	No finds or features	-	Essex HER	565911	176626	
115	MEX1040564	0		South Ockendon Congregational Chapel and associated cemetery	Structure; Cemetery	Congregational chapel; cemetery	Post-Medieval	Essex HER	559503	183092	
116	MEX1040595	47636		Orsett Post Mill Roundhouse	Structure; Feature	Post mill; post mill roundhouse; windmill mound	Post-Medieval	Essex HER	564135	181430	
117	MEX1040708	47725		Redcrofts Farm	Feature	Round barrow	Prehistoric	Essex HER	558739	183811	6
118	MEX1040709	47726		Mar Dyke	Field	Field boundary	Post-Medieval	Essex HER	561535	182185	38
119	MEX1040710	47727		Coronation Avenue	Structure	Sea defences	Post-Medieval	Essex HER	568551	178782	
120	MEX1041055	48149		Junction of Blue Anchor Land and Muckingford Road, West Tilbury	-	No finds or features	-	Essex HER	566050	178630	
121	MEX1041070	48164		South Essex College, Grays, Thurrock	Feature	Fire pit	Prehistoric	Essex HER	563478	178968	
122	MEX1041229	21504		Observation Post (destroyed), Blankets Farm, Bulphan	Structure	Observation post	Modern	Essex HER	562190	185270	
124	MEX1041234	21485		WWII HAA Gun Site 'TN14 Orsett', NW of Orsett, Thurrock	Structure	Heavy anti-aircraft battery	Modern	Essex HER	563667	182763	
125	MEX1041235	21486		Road Barrier (destroyed), Rectory Road, Orsett	Structure	Road barrier	Modern	Essex HER	564530	181970	
126	MEX1041236	21487		Alan-Williams Turret (destroyed), Chapel Field, Orsett	Structure	Alan Williams turret	Modern	Essex HER	564640	181680	
127	MEX1041237	21488		Spigot Mortar Emplacement, Orsett Park Farm, Orsett	Structure	Spigot mortar emplacement	Modern	Essex HER	564750	182260	
128	MEX1041238	21489		Pillbox, Orsett Road, Orsett	Structure	Pillbox (type fw3/22)	Modern	Essex HER	565530	182350	
129	MEX1041239	21490		Road Barrier (destroyed), Orsett Road, Orsett	Structure	Road barrier	Modern	Essex HER	565550	182340	
130	MEX1041240	21491		Military Camp (destroyed), S of Stanford Road, Orsett	Structure	Military camp	Modern	Essex HER	565940	180924	
135	MEX1041248	21498		D-Day Assembly Area, Tilbury	Structure	Military camp	Modern	Essex HER	564626	176615	
136	MEX1041251	21500		Eighteen Air Raid Shelters (destroyed), Recreation Ground, Tilbury	Structure	Air raid shelter	Modern	Essex HER	564586	176272	
137	MEX1041252	21501		Six Air Raid Shelters (destroyed), between railway and Tilbury Fort	Structure	Air raid shelter	Modern	Essex HER	564626	175347	
139	MEX1041364	48317		Herringham Primary School	Field	Field boundary	Unknown	Essex HER	564939	178957	
140	MEX1041498	50097		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER	568000	178000	
141	MEX1042081	48383		Orsett hall Hotel, Prince Charles Avenue, Orsett	-	No finds or features	-	Essex HER	565060	182390	
142	MEX1042099	48400		West and East Tilbury Marsh	Landscape (marsh)	Marsh	Medieval to Post-Medieval	Essex HER	565107	177057	
143	MEX1042100	48402		East Tilbury Marsh	Landscape (marsh)	Marsh	Medieval to Post-Medieval	Essex HER	569040	176487	
144	MEX1042101	48403		Mucking Marsh	Landscape (marsh)	Marsh	Medieval to Post-Medieval	Essex HER	569019	177516	
145	MEX1042105	48401		West Tilbury Marshes	Landscape (marsh)	Marsh	Medieval to Post-Medieval	Essex HER	565164	175759	

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146	MEX1042207	48518		Grey Goose Farm Cottage, Orsett, Essex	Feature	Pit	-	Essex HER	562546	180773	
147	MEX1042208	48519		Heath Place, Hornsby Lane, Orsett, Grays, Essex	Feature	Pit	Modern	Essex HER	564644	180368	
149	MEX1043327	51636		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER	564000	179000	
150	MEX1043328	51637		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER	564000	181000	
151	MEX1043341	51650		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER	567300	180300	
152	MEX1043347	51656		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER	568000	177000	
153	MEX1043348	51657		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER	568000	178000	
154	MEX1044018	52327		A Portable Antiquities Scheme findspot of Medieval date.	Findspot	Findspot	Medieval	Essex HER	558400	190500	
155	MEX1044080	52389		A Portable Antiquities Scheme findspot of Medieval date.	Findspot	Findspot	Medieval	Essex HER	563700	181700	
156	MEX1044101	52410		A Portable Antiquities Scheme findspot of Medieval date.	Findspot	Findspot	Medieval	Essex HER	567500	180200	
157	MEX1044753	53062		A Portable Antiquities Scheme findspot of Medieval date.	Findspot	Findspot	Medieval	Essex HER	559778	188340	
158	MEX1045849	54158		A Portable Antiquities Scheme findspot of Medieval to Post-Medieval date.	Findspot	Findspot	Medieval to Post-Medieval	Essex HER	568500	178500	
159	MEX1049022	57331		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER	568843	176882	
160	MEX1049080	48558		Land adjacent to Walton Hall Farm, Linford, Stanford Le Hope	Settlement	Ditch; ditch; ring ditch; ditch	Bronze Age & Roman	Essex HER	567762	180607	
161	MEX1049097	48575		Barvilles Solar Farm, East Tilbury, Thurrock	Feature; Industry?	Saltern	Roman	Essex HER	568893	177514	
162	MEX1049257	48833		Archaeological monitoring No 4 Farm Road, Tilbury, Essex.	Event	No finds or features	-	Essex HER	568280	178497	
163	MEX1049310	48878		Lambourne House, North Road, South Ockendon	Event	No finds or features	-	Essex HER	559490	183340	
164	MEX1049361	48964		M25 - Tank 1740 and Strip Widening - M25015.10	Event	-	-	Essex HER	557298	190664	
165	MEX1049362	48965		M25 - Warley Road to Berdenis Lane Strip Widening - M25014.10	Event	No finds or features	-	Essex HER	557438	190070	
166	MEX1049363	48966		M25 - Folkes Lane Strip Widening		-	Medieval	Essex HER	558086	189153	
167	MEX1049364	48967		M25 - Codham Hall Bund, Tank 1762 and Strip Widening - M25018.10		-	Late Neolithic to Medieval	Essex HER	558228	189168	
168	MEX1049365	48968		M25 - Hobbs Hole evaluation and excavation - M25001.08/09		-	Prehistoric to Early Medieval	Essex HER	558970	188395	
169	MEX1049366	48969		M25 - Upminster Bund	Feature; Field	-	Bronze Age to Iron Age & Medieval to Post-Medieval	Essex HER	558578	187877	
170	MEX1049367	48970		M25 - Pond 1776 - M25021.11	Field	-	Post-Medieval	Essex HER	558856	187645	
171	MEX1049368	48971		M25 - Pond 1787 and Strip Widening - M25020.11	Field	-	Unknown	Essex HER	558855	186782	
172	MEX1049369	48972		M25 - Pond 1791 and Strip Widening	Cemetery?	Cremation	Unknown	Essex HER	558668	186286	
173	MEX1049370	48973		M25 - Ockendon Cutting Palaeolithic watching brief - M25026.11		-	Palaeolithic	Essex HER	558520	185490	
174	MEX1049371	48974		M25 - Pond 1812 and Strip Widening - M25024.11	Event	-	-	Essex HER	558305	184475	
175	MEX1049461	49024		Hill View, Stanford Road, Orsett: Evaluation		No finds or features	-	Essex HER	565622	181242	
176	MEX17492	5057		North Ockendon	Structure	Windmill	Post-Medieval	Essex HER	559868	185014	
177	MEX17493	5058		Baldwin's Farm	Feature	Moat	Medieval	Essex HER	557587	183233	
178	MEX17507	5064		The Rectory	Feature	Moat	Medieval	Essex HER	559274	182581	
179	MEX17509	5065		The Rectory	Structure	House	Post-Medieval	Essex HER	559300	182600	
180	MEX17510	5066		Little Belhus Farm Pit	Settlement	Pit; latrine pit	Roman	Essex HER	558094	182991	
181	MEX17513	5067		Little Belhus Farm Pit	Findspot	Findspot	Unknown	Essex HER	558400	182150	
182	MEX17535	5078		South Ockendon-The Green	Findspot (metal)	Findspot	Roman	Essex HER	559400	182900	
183	MEX17560	5084		Near Belhus wood country park	Feature	Pit; linear feature	Unknown	Essex HER	557422	182715	
184	MEX17597	5096		Near Red Crofts Farm	Enclosure	Natural feature; circular enclosure	Prehistoric	Essex HER	559793	183956	8
185	MEX17603	5098		East of South Ockendon	Feature	Ring ditch; ditch; linear feature; pit	Unknown	Essex HER	559787	182909	
186	MEX17605	5099		South of Hall Farm	Enclosure; Feature	Ring ditch; pit; rectangular enclosure	Unknown	Essex HER	558677	184420	5A

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187	MEX17609	5100		North of South Ockendon	Enclosure; Settlement?	Grubenhous; ring ditch; ditch; pit; trackway; linear feature; rectilinear enclosure	Medieval	Essex HER	559756	183436	9
188	MEX17611	5101		South of Kemps Farm	Enclosure; Feature	Pit; post hole; ditch; ring ditch; rectangular enclosure	Unknown	Essex HER	558609	183174	
189	MEX17631	5108		West of Redcrofts Farm	Feature	Linear feature; pit	Prehistoric	Essex HER	559260	184157	7
190	MEX17638	5110		Near Dennises Cottages, Thurrock	Findspot (pottery)	Findspot	Roman	Essex HER	558300	184300	
191	MEX17639	5111		Medieval-Post-Medieval features excavated near Dennises Farm	Settlement	Settlement	Medieval	Essex HER	558247	184250	
192	MEX17640	5112		Medieval-Post-Medieval features excavated near Dennises Farm	Settlement	Settlement	Post-Medieval	Essex HER	558247	184250	
193	MEX17657	5122		Orsett-Baker Street Mills (also HER 35154)	Structure	Steam mill	Post-Medieval	Essex HER	563306	181290	
194	MEX17660	5123		Orsett-Baker Street	Settlement	Settlement; pit; ditch; post hole; cremation	Bronze Age	Essex HER	563213	181041	
195	MEX17665	5124		Orsett-Baker Street	Findspot	Findspot	Unknown	Essex HER	563200	181000	
196	MEX17666	5125		Orsett-Baker Street	Settlement?	Settlement	Early Medieval	Essex HER	563213	181041	
197	MEX17667	5126		Orsett-Baker Street	Feature	Ditch	Medieval	Essex HER	563213	181041	
198	MEX17696	5136		South Ockendon Hall - 'The Mount'	Findspot (pottery)	Findspot	Iron Age	Essex HER	560300	183360	
199	MEX17697	5137		South Ockendon Hall - 'The Mount'	Findspot (pottery)	Findspot	Medieval	Essex HER	560300	183360	
200	MEX17698	5138		South Ockendon - Great Mollands Lane	Findspot	Findspot	Bronze Age	Essex HER	561290	182301	
201	MEX17701	5139		South Ockendon - Great Mollands Lane	Feature	Mound	Unknown	Essex HER	561290	182301	
202	MEX17735	5149		Mucking-Gas Council Pipe Line		Quarry	Unknown	Essex HER	567986	180295	
203	MEX17737	5150		Mucking-Linford-Holford Wood Road-Rainbow Shaw Pits	Settlement	Settlement; house; post hole; pit; hearth	Iron Age	Essex HER	566828	180212	
204	MEX17743	5151		Mucking-Linford-Holford Wood Road-Rainbow Shaw Pits	Structure; Settlement?	Corn drying kiln; ditch; pottery kiln	Roman	Essex HER	566828	180212	
205	MEX17744	5152		Mucking-Linford-Holford Wood Road-Rainbow Shaw Pits	Settlement	Village; settlement; house; grubenhous; pit; post hole; hearth; ditch; enclosure; palisade; palisaded enclosure; post hole; floor; workshop	Early Medieval	Essex HER	566828	180212	
206	MEX17747	5153		Mucking-Linford-Holford Wood Road-Rainbow Shaw Pits	Feature	Pit	Medieval	Essex HER	566828	180212	
207	MEX17761	5159		Orsett-Causewayed Enclosure	Settlement	Pit; post hole; hollow; house	Iron Age	Essex HER	565018	180585	
208	MEX17774	5160		Orsett-Causewayed Enclosure	Findspot (metal)	Findspot	Roman	Essex HER	565300	180600	
209	MEX17775	5161		Orsett	Findspot (pottery)	Findspot	Roman	Essex HER	565400	180600	

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210	MEX17776	5162		Orsett-Causewayed Enclosure	Cemetery; Feature	Ring ditch; round barrow; coffin; inhumation; post hole	Early Medieval	Essex HER	565018	180585	
211	MEX17779	5163		Orsett-Causewayed Enclosure	Field; Feature	Field boundary; trackway; ditch	Medieval	Essex HER	565018	180585	
212	MEX17782	5164		Orsett-Causewayed Enclosure	Field; Feature	Field boundary; trackway; ditch	Post-Medieval	Essex HER	565018	180585	
213	MEX17783	5165		Orsett-Causewayed Enclosure	Enclosure; Feature	Ditch; rectangular enclosure; post hole; linear feature; ring ditch; pit; field boundary	Unknown	Essex HER	565018	180585	
214	MEX17786	5166		South Ockendon	Feature	Linear feature; ditch; pit	Unknown	Essex HER	560449	182541	
215	MEX17792	5167		Stifford Clays-Primrose Island	Settlement; Structure; Feature	Pit; pit; ring ditch; house; house; farmstead; post hole; ditch	Bronze Age to Iron Age	Essex HER	561943	180873	
216	MEX17804	5168		Stifford Clays-Primrose Island	Settlement; Structure; Feature	Farmstead; cremation; rectangular enclosure; ditch; field boundary; stock enclosure; pond; corn drying kiln; pit	Roman	Essex HER	561943	180873	
217	MEX17812	5169		Stifford Clays-Primrose Island	Structure; Feature	Building; post hole; moat	Medieval	Essex HER	561943	180873	
218	MEX17818	5170		Stifford Clays-Primrose Island	Enclosure; Feature	Ditch; pit; linear feature	Unknown	Essex HER	562064	180961	
219	MEX17873	5180		Nevilles Farm	Feature	Ring ditch	Prehistoric	Essex HER	563738	180669	
220	MEX17900	5191		Orsett-Barrington's Farm, Loft's Farm	Settlement; Enclosure; Feature	Ditch; ring ditch; linear feature; trackway; house; pit; grubenhaus; field boundary; square enclosure; enclosure; henge	Prehistoric to Roman	Essex HER	565328	181692	16
221	MEX17929	5194		South Ockendon	Enclosure; Feature	Ring ditch; linear feature; ditch	Unknown	Essex HER	560324	182100	
223	MEX17940	5196		Stifford Clays	Findspot	Findspot	Roman	Essex HER	561950	181300	
224	MEX17945	5197		Orsett-Maltings Lane	Findspot (pottery)	Findspot	Roman	Essex HER	564300	182200	
225	MEX17949	5199		Church of St Giles and All Saints, Orsett	Findspot (pottery)	Findspot	Iron Age	Essex HER	564400	181900	
226	MEX17952	5200		Church of St Giles and All Saints, Orsett	Findspot	Findspot	Post-Medieval	Essex HER	564400	181900	
227	MEX17955	5203		Orsett	Findspot (flint)	Findspot	Prehistoric	Essex HER	564500	182000	
228	MEX17957	5204		Orsett-Heath Place Farm	Findspot (flint)	Findspot	Mesolithic	Essex HER	564700	180000	
229	MEX17965	5206		Fen Lane, North west of Orsett	Feature	Moat	Medieval	Essex HER	563362	182862	
230	MEX17973	5208		Blankets	Feature	Moat	Medieval	Essex HER	562147	185557	

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231	MEX17990	5213		West of Nevilles Farm	Enclosure; Settlement; Feature	Enclosure; linear feature; ditch; pit; grubenhaus; ring ditch; square enclosure	Prehistoric	Essex HER	563303	180407	
232	MEX17998	5215		Holme Farm, Bulphan Fen	Cemetery; Settlement	Pit; cemetery; burial; settlement	Roman	Essex HER	562270	184504	
234	MEX18007	5217		Holme Farm, Bulphan Fen	Findspot (flint)	Findspot	Prehistoric	Essex HER	562100	184600	
235	MEX18008	5218		Orsett-Barrington's Farm-Orsett Cock Beaker Burial	Cemetery; Feature	Burial; pit	Bronze Age	Essex HER	565698	181444	
236	MEX18016	5219		Orsett-Barrington's Farm-Orsett Cock, trial trenching of fire station	Field; Feature	Field boundary; ditch; post hole	Roman	Essex HER	565700	181446	
237	MEX18019	5220		Orsett-Orsett Cock	Cremation; Feature	Ring ditch; cremation	Bronze Age	Essex HER	565696	181444	
238	MEX18022	5221		Orsett-Orsett Cock	Feature	Pit; hearth	Iron Age	Essex HER	565698	181444	
239	MEX18023	5222		Orsett-Orsett Cock	Field; Feature	Ditch; field boundary	Roman	Essex HER	565702	181448	
240	MEX18026	5223		Orsett-Orsett Cock	Settlement	Grubenhaus; settlement	Early Medieval	Essex HER	565700	181446	
241	MEX18029	5224		Orsett-Orsett Cock	Feature	Ditch	Medieval	Essex HER	565698	181448	
242	MEX18030	5225		Orsett-Orsett Cock	Feature	Ditch	Post-Medieval	Essex HER	565700	181448	
243	MEX18031	5226		Mucking Heath	Enclosure; Feature	Linear feature; ditch; ring ditch; trackway; rectangular enclosure	Prehistoric	Essex HER	565865	180452	
244	MEX18050	5234		Near William Edwards School	Feature	Moat	Medieval	Essex HER	561906	180770	
245	MEX18051	5235		Near Heath Place	Enclosure; Feature	Trackway; pit; ring ditch; linear feature; rectilinear enclosure	Roman	Essex HER	564412	180414	
246	MEX18071	5236		North East edge of Grays	Feature	Linear feature?	Post-Medieval	Essex HER	563038	180355	
247	MEX18075	5237		Orsett-Grey Goose Farm	Settlement; Enclosure; Field; Feature	Trackway; ditch; field system; field boundary; enclosure; ring ditch; pit; house; linear feature; grubenhaus; square enclosure	Unknown	Essex HER	562760	181028	
248	MEX18096	5238		Orsett-Grey Goose Farm	Feature	Pit	Palaeolithic	Essex HER	562760	181028	
249	MEX18105	5239		Orsett-Grey Goose Farm	Findspot (pottery)	Findspot	Post-Medieval	Essex HER	562610	181040	
250	MEX18106	5240		Orsett-Grey Goose Farm	Findspot (pottery)	Findspot	Unknown	Essex HER	562610	181040	
251	MEX18107	5241		Orsett-Grey Goose Farm	Findspot	Findspot	Medieval	Essex HER	562610	181040	
252	MEX18108	5242		Orsett-Grey Goose Farm	Findspot	Findspot	Post-Medieval	Essex HER	562610	181040	
253	MEX18109	5243		Orsett-Grey Goose Farm	Feature	Pit	Post-Medieval	Essex HER	562760	181028	
254	MEX18114	5244		Orsett-Grey Goose Farm	Structure; Industry (quarry?); Feature	Dene hole; pit	Unknown	Essex HER	562760	181028	
255	MEX18116	5245		Orsett-Baker Street Pit	-	No finds or features	Unknown	Essex HER	562760	181028	

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256	MEX18121	5246		Orsett-Baker Street Pit	Findspot	Findspot	Post-Medieval	Essex HER	562600	181100	
257	MEX18122	5247		North of Heath Place	Enclosure; Feature	Linear feature; rectilinear enclosure; trackway; ditch; ring ditch	Unknown	Essex HER	564768	180794	
258	MEX18126	5248		Orsett	Feature; Field	Pit; field boundary; ditch	Unknown	Essex HER	566193	181813	
259	MEX18140	5254		West of Brook Farm	Feature	Ring ditch	Unknown	Essex HER	565385	180234	
260	MEX18153	5260		Near South Ockendon Hall	Feature	Trackway; ditch; linear feature	Unknown	Essex HER	560170	182958	
261	MEX18157	5261		East of Baker Street	Enclosure; Feature; Field	Field boundary; rectangular enclosure; trackway; pit; linear feature; ditch	Prehistoric	Essex HER	563637	181316	49
262	MEX18160	5262		West of Whitecrofts Farm	Settlement; Feature	Grubenhous; linear feature	Prehistoric	Essex HER	563903	180365	
263	MEX18163	5263		Orsett Farm	Feature; Structure	Moat; ditch; linear feature; ring ditch; house	Medieval	Essex HER	563101	183254	
264	MEX18174	5266		South of South Ockendon Hall	Feature	Linear feature; ditch; pit	Unknown	Essex HER	560500	182700	
265	MEX18185	5271		North of South Ockendon Hall	Enclosure; Feature	Rectangular enclosure; pit; ditch; linear feature; trackway	Roman or Medieval	Essex HER	560214	183407	
266	MEX18190	5275		South Ockendon Wind Mill	Structure	Smock mill; watermill	Post-Medieval	Essex HER	560420	183080	
267	MEX18195	5276		Cropmarks of a moat	Enclosure; Feature	Enclosure; moat	Unknown	Essex HER	562317	182725	
268	MEX18205	5280		West of Mill House	Feature	Linear feature	Unknown	Essex HER	563903	181320	
269	MEX18208	5281		Orsett-High Road, Village Lock-up or Cage	Structure	Prison; pound	Post-Medieval	Essex HER	564101	182078	
270	MEX18216	5285		Boyn Hill terrace - Orsett	Settlement; Feature	Pit; post hole; settlement	Iron Age	Essex HER	564744	181085	
271	MEX18220	5287		East of Brook Farm	Enclosure; Feature	Trackway; rectangular enclosure; linear feature; ditch	Unknown	Essex HER	565879	180095	
272	MEX22270	6774		Orsett Cock	Findspot (pottery)	Findspot	Roman	Essex HER	565400	181300	
273	MEX22271	6775		Orsett Cock	Findspot	Findspot	Early Medieval	Essex HER	565400	181300	
274	MEX22272	6776		Orsett Cock	Findspot (pottery)	Findspot	Post-Medieval	Essex HER	565400	181300	
275	MEX27426	8546		Warley Place	Feature	Garden	Post-Medieval	Essex HER	558000	190000	
276	MEX27432	8547		Warley Place	Structure; Feature	House; garden	Post-Medieval	Essex HER	558000	190000	
277	MEX28558	8932		Orsett Causewayed Enclosure	Findspot (flint)	Findspot	Mesolithic	Essex HER	565120	180550	
278	MEX28562	8933		Orsett Causewayed Enclosure	Findspot (flint)	Findspot	Neolithic	Essex HER	565050	180610	
279	MEX28563	8934		Orsett Causewayed Enclosure	Findspot (flint)	Findspot	Neolithic to Bronze Age	Essex HER	565120	180520	

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280	MEX28712	9001		Field West of St Catherine's Church, Thuurock	Findspot (metal)	Findspot	Early Medieval	Essex HER	568850	176920	
281	MEX28713	9002		Field West of St Catherine's Church, Thuurock	Findspot (metal)	Findspot	Medieval	Essex HER	568850	176920	
282	MEX28714	9003		Field West of St Catherine's Church, Thuurock	Findspot (metal)	Findspot	Post-Medieval	Essex HER	568850	176920	
283	MEX28716	9004		Field West of St Catherine's Church, Thuurock	Cemetery	Human remains	Roman	Essex HER	568725	176927	
284	MEX28719	9005		Field West of St Catherine's Church, Thuurock	Cemetery	Human remains	Medieval	Essex HER	568725	176927	
285	MEX28721	9006		East Tilbury - Quarry and Field East of St Catherine's Church	Findspot (pottery; metal)	Findspot	Roman	Essex HER	569000	177050	
286	MEX28725	9007		St Catherine's Church Cemetery, East Tilbury	Findspot (CBM)	Findspot	Roman	Essex HER	568930	176990	
287	MEX28727	9008		St Catherine's Church Cemetery, East Tilbury - a small searchlight/ gun battery	Structure	Searchlight battery; battery	Modern	Essex HER	569001	177020	
288	MEX28728	9009		Alan Williams Turret, Love Lane/Princess Margaret Road, East Tilbury	Structure	Alan Williams turret	Modern	Essex HER	568267	177832	
289	MEX28729	9010		East Tilbury - Field West of Coalhouse Fort	Findspot (pottery; CBM)	Findspot	Roman	Essex HER	568750	176800	
290	MEX28730	9011		Church Green, East Tilbury	Structure	Battery; war memorial	Modern	Essex HER	568999	177012	
291	MEX28731	9012		St Catherine's Church Boundary (N, E, S), East Tilbury	Feature	Fortification; dyke (defence)	Post-Medieval	Essex HER	569001	177020	
294	MEX31784	10263		Spigot Mortar Site (destroyed), Allotments, Sockett's Heath	Structure	Spigot mortar emplacement	Modern	Essex HER	562680	179370	
295	MEX31786	10264		Road Barrier (destroyed), Sockett's Heath	Structure	Road barrier; anti-tank pimple	Modern	Essex HER	562700	179290	
296	MEX31787	10265		Pillbox (destroyed), Sockett's Heath	Structure	Pillbox	Modern	Essex HER	562710	179320	
297	MEX31788	10266		Spigot Mortar Base, E of roundabout, Sockett's Heath	Structure	Spigot mortar emplacement	Modern	Essex HER	562900	179320	
298	MEX31791	10269		WWII HAA Gun Site "TN15 Chadwell", Thurrock	Structure	Anti-aircraft battery	Modern	Essex HER	564202	179314	
306	MEX31801	10277		Spigot Mortar Site (destroyed), N of Chadwell St. Mary	Structure	Spigot mortar emplacement	Modern	Essex HER	564630	179070	
307	MEX31802	10278		Spigot Mortar Site (destroyed), N of Chadwell St. Mary	Structure	Spigot mortar emplacement	Modern	Essex HER	564610	179120	
308	MEX31805	10281		Road Barrier (destroyed), Nr Level Crossing, Fort Rd, W. Tilbury	Structure	Road barrier	Modern	Essex HER	565302	176379	
309	MEX31806	10282		Turret (destroyed), Allotments, Fort Road	Structure	Tett turret?; Alan Williams turret?	Modern	Essex HER	565336	176429	
310	MEX31807	10283		Road Barrier (destroyed), Cooper's Lane, West Tilbury	Structure	Road barrier	Modern	Essex HER	565770	177470	
311	MEX31809	10284		Road Barrier (destroyed), Rectory Road, West Tilbury	Structure	Road barrier	Modern	Essex HER	565690	177970	
312	MEX31810	10285		Spigot Mortar Base, Top of Gun Hill, West Tilbury	Structure	Spigot mortar emplacement	Modern	Essex HER	565640	177990	
313	MEX31811	10286		Road Barrier (destroyed), Muckingford Road. West Tilbury	Structure	Road barrier	Modern	Essex HER	565710	178630	
314	MEX31812	10287		Pillbox, S of Tilbury Power Station	Structure	Pillbox	Modern	Essex HER	566320	175360	
315	MEX31813	10288		Spigot Mortar Pit, corner of field, St. James Church, W. Tilbury	Structure	Spigot mortar emplacement	Modern	Essex HER	566190	177710	
316	MEX31814	10289		Spigot Mortar Pit, Church Road, West Tilbury	Structure	Spigot mortar emplacement	Modern	Essex HER	566210	177710	
317	MEX31815	10290		Spigot Mortar Site (destroyed), Manor Farm, West Tilbury	Structure	Spigot mortar emplacement	Modern	Essex HER	566110	178000	
318	MEX31816	10291		Spigot Mortar Site x 2 (destroyed), Muckingford Road	Structure	Spigot mortar emplacement	Modern	Essex HER	567233	178932	
319	MEX31818	10292		Spigot Mortar Site (destroyed), Muckingford Road	Structure	Spigot mortar emplacement	Modern	Essex HER	567400	179050	

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320	MEX31819	10293		Spigot Mortar Site (destroyed), "George and Dragon", Linford	Structure	Spigot mortar emplacement	Modern	Essex HER	567500	179330	
321	MEX31820	10294		Pillbox, Thames Foreshore, East Tilbury Marshes	Structure	Pillbox	Modern	Essex HER	568100	175850	
322	MEX31821	10295		Alan-Williams Steel Turret (destroyed), Love Lane/Prin. Marg	Structure	Alan Williams turret	Modern	Essex HER	568260	177850	
323	MEX31834	10301		Pillbox (destroyed), sea wall, East Tilbury marshes	Structure	Pillbox	Modern	Essex HER	569450	178250	
324	MEX34893	12004		Site of former buildings near Tilbury junctions	Structure; Settlement	Building; farmstead; tile works	Post-Medieval	Essex HER	564412	175655	
325	MEX37972	13745		N of Rose Cottage, Chadwell St Mary	Enclosure; Cemetery	Long barrow; mortuary enclosure	Unknown	Essex HER	564170	180268	
326	MEX38148	13834		North Ring, Mucking	Structure; Enclosure; Feature; Cemetery?	Circular enclosure; cremation; building; fence; post hole	Bronze Age	Essex HER	567405	181159	
327	MEX38150	13835		North Ring, Mucking	Settlement	Settlement; grubenhous	Early Medieval	Essex HER	567405	181159	
328	MEX38151	13836		Mucking: Palaeolithic	Findspot (flint)	Findspot	Palaeolithic	Essex HER	567550	180510	
329	MEX38154	13837		Mucking: Mesolithic	Findspot (flint)	Findspot	Mesolithic	Essex HER	567542	180529	
330	MEX38156	13838		Mucking: Neolithic	Feature; Findspot (flint; pottery)	Pit; rubbing stone	Neolithic	Essex HER	567556	180514	
331	MEX38158	13839		Mucking: Beaker period	Cemetery	Burial; inhumation	Bronze Age	Essex HER	567556	180514	
332	MEX38160	13840		Mucking: Early to Middle Bronze Age	Cemetery; Feature	Burial; ring ditch; barrow; clay pit	Bronze Age	Essex HER	567556	180514	
333	MEX38162	13841		Mucking: Late Bronze Age	Settlement; Enclosure	Circular enclosure; building; pit; settlement	Bronze Age	Essex HER	567556	180514	
334	MEX38163	13842		Mucking: Iron Age	Settlement; Enclosure; Cemetery	Enclosure; structure; settlement; hut circle; hillfort; cemetery; cremation; inhumation	Iron Age	Essex HER	567556	180514	
335	MEX38165	13843		Mucking: Roman	Settlement; Enclosure; Industry	Double ditched enclosure; trackway; settlement; farmstead; building; granary; pottery kiln; metal working site; cemetery; mortuary enclosure; round barrow	Roman	Essex HER	567556	180514	
336	MEX38166	13844		Mucking: Early to Middle Saxon	Settlement; Cemetery	Settlement; grubenhous; building; cemetery; cremation; inhumation; hearth; pit	Early Medieval	Essex HER	567556	180514	
337	MEX38170	13845		Mucking: Middle to Late Saxon	Field; Feature	Field system; field system; ditch	Early Medieval	Essex HER	567556	180514	

Project ID	Source Reference	ECHR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
338	MEX38171	13846		Mucking: Medieval	Structure; Field	Field system; windmill; aisled barn	Medieval	Essex HER	567556	180514	
339	MEX38172	13847		Mucking: Post-Medieval	Field; Feature	Field system; field boundary	Post-Medieval	Essex HER	567556	180514	
340	MEX39591	14537		The Paddock, Orsett	Findspot (pottery; CBM; metal)	Findspot	Post-Medieval	Essex HER	564520	181857	
341	MEX39618	14540		Emmanuel Church, Chadwell St. Mary	Findspot (CBM; pottery)	Findspot	Modern	Essex HER	564920	179590	
342	MEX39649	14550		Cropmarks NW of High House	Feature	Ring ditch	Prehistoric	Essex HER	565088	179878	18
343	MEX39652	14551		East Tilbury Marshes	Feature; Deposit	Oyster beds; bomb crater	Unknown	Essex HER	569396	178347	
344	MEX39661	14554		Cropmarks N of High House	Enclosure; Feature	Linear feature; enclosure?	Unknown	Essex HER	565829	179442	
345	MEX39663	14555		Cropmarks N of Linford Road	Feature; Field	Ring ditch; linear feature; field boundary	Unknown	Essex HER	565508	178829	
346	MEX39665	14556		Oyster beds c. 1km E of Tilbury Power Station	Feature	Oyster beds	Unknown	Essex HER	567001	176281	
347	MEX39670	14557		Anti-glider ditch E of Gobions	Feature	Aircraft obstruction; bomb crater; rectilinear enclosure; bank (earthwork)	Modern	Essex HER	568576	179474	
348	MEX39672	14558		Anti-Glider Ditches SE of Bowaters Farm	Feature	Aircraft obstruction	Modern	Essex HER	568287	176585	
349	MEX39674	14559		Anti-glider ditches SE of Bowaters Farm	Feature	Aircraft obstruction	Modern	Essex HER	566053	176835	
350	MEX39676	14560		Anti glider ditches N of Orchard House	Feature	Aircraft obstruction	Modern	Essex HER	569018	178485	
351	MEX39688	14572		Cropmarks to SE of Old House Wood	Enclosure; Feature	Rectangular enclosure; ring ditch; linear feature; pit	Prehistoric	Essex HER	564874	179708	56
352	MEX39804	14635		Cropmark S of Fen Covert	Field	Field boundary	Unknown	Essex HER	563587	183036	
353	MEX39806	14636		Cropmarks in grounds of South Ockendon Hospital	Cemetery; Enclosure	Long barrow; mortuary enclosure	Bronze Age	Essex HER	559769	182508	
354	MEX39809	14639		Cropmarks S of William Edwards Comprehensive School	Feature	Ring ditch; pit; linear feature	Unknown	Essex HER	561884	180636	
355	MEX39812	14640		Cropmarks SE of Poplars Farm	Field; Feature	Field boundary	Unknown	Essex HER	563692	181827	
356	MEX39815	14641		Cropmarks W of Field House Farm	Feature	Pit	Prehistoric	Essex HER	563284	181119	
357	MEX39818	14642		Cropmarks W of Nevilles Farm	Field; Feature	Pit; field boundary	Unknown	Essex HER	563432	180567	
358	MEX39821	14643		Cropmarks S of Orsett Primary School	Field; Feature	Field boundary; pit; ring ditch; linear feature	Prehistoric	Essex HER	564457	181205	
360	MEX39827	14645		Cropmarks SE of Grey Goose Farm	Enclosure; Feature	Enclosure; pit; trackway	Unknown	Essex HER	562824	180408	
361	MEX39853	14659		Cropmark SE of Redcrofts Farm	Feature	Ring ditch; mound	Prehistoric	Essex HER	559233	183795	
362	MEX39864	14663		Cropmark S of Freeman's Shaw	Enclosure	Rectilinear enclosure	Unknown	Essex HER	557738	183397	
363	MEX39946	14701		Cropmarks NE of Turner Farm	Field; Feature	Field boundary; linear feature	Unknown	Essex HER	567808	180122	
364	MEX39957	14706		Cropmarks SW of Dame Elyns	Field; Feature	Field boundary	Unknown	Essex HER	566311	181324	
365	MEX40514	14985		Linford - Cremation Cemetery (H-CHF93)	Cemetery; Feature	Cemetery; cremation; pit; human remains	Bronze Age	Essex HER	567339	178841	

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366	MEX41042	16279		Codham Hall Wood, Codham Hall Estate, Great Warley	Feature	Bank (earthwork); ditch; boundary marker; parish boundary	Medieval	Essex HER	558461	188721	1
367	MEX41073	16278		Hobbs Hole, Codham Hall Estate, Great Warley	Feature; Structure	Dam; fishpond; mill	Medieval	Essex HER	558698	188138	2
368	MEX41456	1686		Sandy Lane, Chadwell St Mary	Settlement; Industry	Settlement; settlement; pottery kiln	Roman	Essex HER	564882	178338	
369	MEX41474	1790		West Tilbury-Gun Hill	Settlement; Industry; Field	Field system; ditch; field boundary; house; pit; building; workshop; pit; post hole	Iron Age	Essex HER	565539	177962	
370	MEX42068	16740		South Ockendon Hospital, South Road	Settlement	Post hole; settlement; post hole; ditch; ditch; post hole; settlement; post hole	Bronze Age to Iron Age	Essex HER	559769	182508	
371	MEX42071	16741		South Ockendon Hospital South Road	Findspot (pottery)	Findspot	Roman	Essex HER	559800	182500	
372	MEX42073	16742		south Ockendon Hospital South Road	Findspot (pottery)	Findspot	Medieval	Essex HER	559800	182500	
373	MEX42075	16743		South Ockendon Hospital South Road	Findspot (pottery)	Findspot	Post-Medieval	Essex HER	559800	182500	
374	MEX42152	16797		Blackshott's Lane, Thurrock	-	No finds or features	Unknown	Essex HER	562996	179620	
376	MEX43028	16870		Horndon to Barking Gas Pipeline - Site 2	Field; Feature	Ditch; field boundary	Post-Medieval	Essex HER	564109	183954	
377	MEX43030	16871		Horndon to Barking Gas Pipeline - Site 2	Feature	Pit	Bronze Age to Iron Age	Essex HER	564109	183954	
378	MEX43034	16872		Horndon to Barking Gas Pipeline - Site 3	Field	Ditch; field boundary; field system	Medieval	Essex HER	563024	183957	
379	MEX43037	16873		Horndon to Barking Gas Pipeline - Site 4	Field	Ditch; field boundary	Bronze Age to Iron Age	Essex HER	562171	183995	
380	MEX43038	16874		Horndon to Barking Gas Pipeline - Site 5	Feature	Ditch	Bronze Age	Essex HER	560538	184020	
381	MEX43040	16875		Horndon to Barking Gas Pipeline - Site 6	Structure	Wall; well; yard	Post-medieval	Essex HER	559933	184427	
382	MEX43041	16876		Horndon to Barking gas Pipeline - Site 7	Cemetery; Feature	Cremation; pit; human remains	Bronze Age	Essex HER	559729	184121	
383	MEX43043	16877		Horndon to Barking Gas Pipeline - Site 7	Field	Ditch; field boundary	Post-Medieval	Essex HER	559770	184020	
387	MEX5919	1642		East Tilbury	Findspot (pottery)	Findspot	Unknown	Essex HER	568000	177000	
388	MEX5920	1643		East Tilbury	Cemetery?	Human remains	Unknown	Essex HER	568000	177000	
392	MEX5948	1652		St Mary's Hospital, East Tilbury	Structure	Hospital; chapel	Medieval	Essex HER	568000	177000	
393	MEX6006	1667		East Tilbury	Cemetery?; Feature	Burial	Neolithic	Essex HER	568000	177000	
394	MEX6010	1668		East Tilbury	Findspot (pottery)	Findspot	Iron Age	Essex HER	568000	177000	
395	MEX6015	1669		Tilbury	Findspot (flint)	Findspot	Palaeolithic	Essex HER	566800	177680	
396	MEX6018	1670		Tilbury	Findspot (flint)	Findspot	Neolithic	Essex HER	567000	177000	

Project ID	Source Reference	ECHR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
397	MEX6022	1671		Tilbury	Findspot (flint)	Findspot	Neolithic	Essex HER	569000	177000	
398	MEX6025	1672		West Tilbury	Cemetery	Burial	Roman	Essex HER	566000	177000	
399	MEX6028	1673		East Tilbury	Findspot	Findspot	Bronze Age	Essex HER	568000	177000	
400	MEX6055	1680		Little Thurrock - Hangman's Wood	Findspot (metal)	Findspot	Roman	Essex HER	563100	179300	
403	MEX6079	1684		Chadwell St Mary	Enclosure	Rectilinear enclosure	Unknown	Essex HER	564882	178338	
404	MEX6084	1685		Sandy Lane, Chadwell St Mary	Settlement	Post hole; granary; settlement; pit; ditch	Iron Age	Essex HER	564882	178338	
405	MEX6090	1687		East Tilbury Foreshore	Findspot	Findspot	Iron Age	Essex HER	569200	177500	
406	MEX6091	1688		East Tilbury Foreshore	Findspot	Findspot	Roman	Essex HER	569200	177500	
407	MEX6092	1689		East Tilbury Foreshore	Findspot	Findspot	Roman	Essex HER	569300	177300	
408	MEX6093	1690		East Tilbury Marshes	Findspot	Findspot	Roman	Essex HER	569200	177100	
409	MEX6094	1691		East Tilbury	Feature; Industry?	Saltern; red hill	Roman	Essex HER	569244	177300	
410	MEX6095	1692		West Tilbury - Low Street	Cemetery	Burial	Roman	Essex HER	567149	177829	
411	MEX6098	1693		West Tilbury - Condoover's Pit	Findspot (pottery)	Findspot	Roman	Essex HER	566540	177500	
412	MEX6102	1694		East Tilbury Foreshore	Settlement	Settlement; hut circle; wood; floor; oven; trackway	Roman	Essex HER	567290	175645	
414	MEX6188	1713		Little Thurrock "Dene holes Roundabout	Findspot (flint)	Findspot	Palaeolithic	Essex HER	562750	179290	
415	MEX6191	1714		Little Thurrock - Laird Avenue	Findspot (flint)	Findspot	Neolithic	Essex HER	562700	179900	
416	MEX6192	1715		Orsett - Orsett Heath, Greyhound Lane	Findspot (flint)	Findspot	Mesolithic	Essex HER	564200	179500	
417	MEX6195	1716		Tilbury - Quebec Road	Findspot	Findspot	Roman	Essex HER	564400	176600	
423	MEX6214	1722		Orsett - Orsett Heath, Pit west of Greyhound Lane	Findspot (flint)	Findspot	Palaeolithic	Essex HER	564110	179600	
424	MEX6218	1723		Terrels Heath	Findspot (flint)	Findspot	Palaeolithic	Essex HER	562740	177940	
427	MEX6229	1727		Thurrock Technical College, Chadwell St Mary	Findspot (flint)	Findspot	Palaeolithic	Essex HER	563585	178850	
429	MEX6235	1729		South of Herringham School, Chadwell St Mary	Findspot (flint)	Findspot	Palaeolithic	Essex HER	564800	178900	
430	MEX6238	1730		Tilbury - Feenan Highway	Findspot (flint)	Findspot	Palaeolithic	Essex HER	564600	176700	
432	MEX6251	1733		Mucking - Rainbow Wood	Feature	Pit; post hole	Iron Age	Essex HER	566325	179842	
433	MEX6254	1734		West Tilbury - Foreshore	Findspot (pottery)	Findspot	Roman	Essex HER	566600	175500	
434	MEX6255	1735		West Tilbury	Findspot (pottery)	Findspot	Roman	Essex HER	566700	175600	
435	MEX6256	1736		West Tilbury - Coal Road, East of Low Street Lane	Enclosure; Feature	Ring ditch; rectangular enclosure; ditch	Prehistoric to Roman	Essex HER	566918	178316	
436	MEX6263	1737		West Tilbury - Coal Road, East of Low Street Lane	Findspot (pottery)	Findspot	Roman	Essex HER	566918	178316	
437	MEX6264	1738		East Tilbury - East Tilbury Place	Feature	Pit	Iron Age	Essex HER	568199	177653	
438	MEX6272	1739		East Tilbury - Near Picon's Pit	Findspot (flint)	Findspot	Neolithic to Bronze Age	Essex HER	568651	177633	
439	MEX6275	1740		Church of St Margaret, now St Katherine, East Tilbury	Findspot (CBM)	Findspot	Roman	Essex HER	568912	176968	
440	MEX6279	1743		East Tilbury	Findspot (pottery)	Findspot	Roman	Essex HER	569000	177050	
441	MEX6286	1744		North of Church, East Tilbury	Findspot (flint)	Findspot	Palaeolithic	Essex HER	568900	177100	

Project ID	Source Reference	EHCR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
442	MEX6289	1745		East Tilbury - Bowaters Farm	Feature; Industry?	Saltern; red hill	Roman	Essex HER	567532	176864	
443	MEX6294	1746		East Tilbury - Muckingford Lane	Findspot (flint)	Findspot	Neolithic to Bronze Age	Essex HER	567339	178841	
444	MEX6295	1747		East Tilbury - Muckingford Lane	Cemetery	Round barrow; cremation; ditch	Bronze Age	Essex HER	567339	178841	
445	MEX6308	1748		East Tilbury - Muckingford Lane	Settlement	Wood; settlement	Roman	Essex HER	567339	178841	
446	MEX6309	1749		East Tilbury - Muckingford Lane	Feature	Trackway; ditch; ring ditch	Unknown	Essex HER	567339	178841	
447	MEX6312	1750		Cropmarks to the north of Mill House Farm	Enclosure; Feature	Ring ditch; gully; circular enclosure; pit; circular enclosure; linear feature; trackway; enclosure; ditch; rectangular enclosure	Roman	Essex HER	566023	179030	72
448	MEX6320	1751		East Tilbury - Foreshore		Findspot	Roman	Essex HER	569300	177700	
449	MEX6325	1752		West Tilbury- High House	Enclosure	Enclosure	Unknown	Essex HER	565976	179677	
450	MEX6327	1753		East of Mill House, Chadwell St Mary	Enclosure; Feature	Circular enclosure; ring ditch; pit; ditch; linear feature; hut circle; trackway; rectilinear enclosure	Prehistoric to Roman	Essex HER	566158	178776	
451	MEX6341	1754		East Tilbury	Enclosure; Feature	Pit; rectilinear enclosure	Unknown	Essex HER	567696	177976	
452	MEX6343	1755		East Tilbury	Enclosure; Feature; Structure	Pit; ring ditch; windmill mound; windmill; linear feature; ditch; trackway; rectilinear enclosure	Prehistoric and Medieval	Essex HER	568290	177254	
453	MEX6391	1762		East Tilbury	Findspot (CBM); Settlement?	Mosaic	Roman	Essex HER	568961	176939	
454	MEX6401	1764		High House Lane, Chadwell St Mary	Feature	Trackway	Iron Age	Essex HER	565600	178700	
456	MEX6409	1766		East of West Tilbury	Enclosure; Feature	Linear feature; trackway; ring ditch; pit; ditch; rectilinear enclosure	Unknown	Essex HER	566179	177914	
457	MEX6411	1767		Mucking Creek Valley	Enclosure; Feature	Trackway; linear feature; ditch; rectangular enclosure	Prehistoric	Essex HER	566342	179611	
458	MEX6418	1768		Mucking Creek Valley	Findspot (flint)	Findspot	Neolithic	Essex HER	566342	179611	
459	MEX6420	1769		West Tilbury - Mill House Farm	Enclosure; Feature	Pit; linear feature; rectangular enclosure	Prehistoric	Essex HER	565747	179804	
464	MEX6455	1778		West Tilbury	Findspot (flint)	Findspot	Palaeolithic	Essex HER	566500	177600	
466	MEX6469	1784		Find from Tilbury Fort, West Tilbury	Findspot (flint)	Findspot	Palaeolithic	Essex HER	565100	175250	

Project ID	Source Reference	ECHR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
468	MEX6475	1786		West Tilbury - Gun Hill	Findspot (flint)	Findspot	Palaeolithic	Essex HER	565680	177870	
469	MEX6484	1787		West Tilbury - Gun Hill	Findspot (flint)	Findspot	Mesolithic	Essex HER	565539	177962	
470	MEX6488	1788		West Tilbury - Gun Hill	Findspot (flint)	Findspot	Neolithic to Bronze Age	Essex HER	565539	177962	
471	MEX6489	1789		West Tilbury - Gun Hill	Field; Settlement?	Post hole; building; field system; field boundary; ditch; post hole	Bronze Age	Essex HER	565539	177962	
472	MEX6505	1791		West Tilbury - Gun Hill	Enclosure; Industry; Field	Pottery kiln; pit; ditch; field system; field boundary; rectilinear enclosure	Roman	Essex HER	565539	177962	
473	MEX6510	1792		West Tilbury - Gun Hill	Settlement	Grubenhau; post hole; wall	Early Medieval	Essex HER	565539	177962	
474	MEX6513	1793		West Tilbury - Gun Hill	Field; Feature	Ditch; field boundary; field system; trackway; road	Medieval	Essex HER	565539	177962	
475	MEX6518	1794		West Tilbury - Gun Hill	Field?; Feature	Pit; ditch; lynchet; linear feature	Unknown	Essex HER	565539	177962	
476	MEX6520	1795		West Tilbury - Gun Hill	Settlement; Feature	Grubenhau; ditch; pit; linear feature	Unknown	Essex HER	565539	177962	
477	MEX6521	1796		West Tilbury - Gun Hill, Cropmarks east of Turnpike Lane	Settlement; Enclosure; Feature	Road; pit; grubenhau; ditch; trackway; ring ditch; linear feature; rectangular enclosure; circular enclosure	Unknown	Essex HER	565837	178302	
479	MEX6530	1798		North of Holford Farm	Feature	Ditch; ring ditch; linear feature	Unknown	Essex HER	566040	178475	
480	MEX6533	1799		West of High House	Feature	Linear feature	Unknown	Essex HER	565520	179257	
481	MEX6535	1800		Linford	Feature; Cemetery?	Trackway; linear feature; pit; ring ditch	Unknown	Essex HER	567394	179695	
482	MEX6539	1801		Orsett	Enclosure; Feature	Ring ditch; trackway; house; pit; ditch; linear feature; rectilinear enclosure	Prehistoric	Essex HER	564575	179737	
483	MEX6544	1802		Orsett - (see 1801 for cropmarks)	Findspot (flint)	Findspot	Neolithic	Essex HER	564575	179737	
484	MEX6549			Mucking, East Tilbury	Feature	Road	Roman	Essex HER	567950	178500	
485	MEX6551	1804		Chadwell St Mary	Feature; Findspot	Mound; pit; millstone; windmill mound	Medieval	Essex HER	564909	179629	
486	MEX6555	1805		Chadwell St Mary	Findspot	Findspot	Post-Medieval	Essex HER	564909	179629	
487	MEX6556	1806		Mill House	Structure	Windmill	Post-Medieval	Essex HER	565905	178715	
488	MEX6558	1807		East Tilbury - Ferris Aggregate Gravel Pit	Feature	Ditch	Unknown	Essex HER	569125	178228	
489	MEX6567	1808		West Tilbury Marsh	Findspot (flint)	Findspot	Neolithic	Essex HER	565200	176000	
490	MEX6574	1810		Within Chadwell St Mary	Findspot (flint)	Findspot	Neolithic to Bronze Age	Essex HER	565100	178800	

Project ID	Source Reference	ECHR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
491	MEX6583	1813		Orsett Heath	Findspot (flint)	Findspot	Mesolithic	Essex HER	564200	179700	
492	MEX6587	1815		Orsett - Heath Farm	Findspot (flint)	Findspot	Palaeolithic	Essex HER	563800	179650	
493	MEX6596	1817		Linford	Enclosure; Feature	Trackway; pit; ditch; rectilinear enclosure	Roman	Essex HER	567160	179048	
494	MEX6598	1818		East of Merrie Loots Farm	Feature	Bomb crater; ring ditch; ditch; pit; linear feature	Modern; Unknown	Essex HER	567694	179554	
495	MEX6600	1819		East Tilbury	Enclosure; Feature	Rectilinear enclosure; linear feature; ditch; ring ditch	Unknown	Essex HER	568522	178502	
496	MEX6603	1820		West of Gravel Pit Farm	Settlement	Settlement	Medieval	Essex HER	567360	177323	
497	MEX6607	1821		East of West Tilbury	Enclosure	Enclosure	Prehistoric and Roman	Essex HER	566528	177899	
498	MEX6609	1822		East Tilbury - 'Soldier's Graves'	Feature	Earthwork	Unknown	Essex HER	568574	176962	
499	MEX6627	1826		Tilbury - Wick House	Structure	House	Unknown	Essex HER	566461	176046	
500	MEX6629	1827		Tilbury	Feature	Sea defences	Medieval	Essex HER	566552	175754	
501	MEX6630	1828		Tilbury Foreshore	Findspot (pottery)	Findspot	Roman	Essex HER	566500	175400	
502	MEX6632	1829		West side of East Tilbury Marshes	Feature; Industry?	Saltern; red hill	Roman	Essex HER	567131	176518	
503	MEX6633	1830		Pigg's Pit, Chadwell St Mary	Findspot (flint)	Findspot	Palaeolithic	Essex HER	565250	178450	
504	MEX6644	1835		Orsett	Findspot (pottery)	Findspot	Iron Age	Essex HER	564000	181000	
505	MEX6648	1836		Orsett	Findspot (metal)	Findspot	Unknown	Essex HER	564000	181000	
506	MEX6657	1839		Orsett	Findspot (flint)	Findspot	Palaeolithic	Essex HER	563850	181040	
507	MEX6731	1856		Orsett - Orsett Cock	Findspot	Findspot	Neolithic	Essex HER	565380	181280	
508	MEX6735	1857		Orsett - Orsett Cock	Settlement	Settlement	Iron Age	Essex HER	565292	181365	
509	MEX6743	1858		Orsett - Orsett Cock	Enclosure; Industry	Pit; industrial site; square enclosure; hut circle; post hole; ditch; palisaded enclosure; rectangular enclosure; hut circle	Iron Age	Essex HER	565294	181364	57
510	MEX6774	1859		Orsett - Orsett Cock	Enclosure; Industry	Enclosure; ditch; building; pottery kiln; ditch; pottery kiln; ditch; post hole; hearth; furnace; industrial site; ditch; pit	Roman	Essex HER	565292	181365	57
511	MEX6775	1860		Orsett - Orsett Cock	Settlement	Grubenhaus; building; post hole; pit; ditch; post hole; boundary marker; settlement	Early Medieval	Essex HER	565294	181364	
512	MEX6784	1861		Orsett - Orsett Cock	Field	Field boundary; field system; ditch	Medieval	Essex HER	565292	181365	

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513	MEX6787	1862		Orsett - Orsett Cock	Industry (quarry)	Quarry	Post-Medieval	Essex HER	565294	181364	
514	MEX6790	1863		South Ockendon Old Hall	Settlement; Structure	Moat; gatehouse; bridge; aisled barn; watermill; fishpond; kitchen; hall house; barn; well; privy house; chimney; chapel; wall; manor; beehive	Medieval	Essex HER	560285	183119	
515	MEX6818	1865		South Ockendon Hall-Mound South of	Findspot (pottery)	Findspot	Bronze Age	Essex HER	560400	182900	
516	MEX6823	1866		South Ockendon Hall-Mound South of	Findspot (pottery)	Findspot	Iron Age	Essex HER	560400	182900	
517	MEX6824	1867		Mound South of South Ockendon Hall	Cemetery; Feature	Round barrow; pit; ditch; round barrow	Roman	Essex HER	560448	182937	
518	MEX6835	1868		South Ockendon Hall-Mound South of	Findspot (metal)	Findspot	Post-Medieval	Essex HER	560400	182900	
519	MEX6858	1876		Bulphan-Downes Farm or Spenny Farm	Feature	Moat	Medieval	Essex HER	563258	184795	
520	MEX6914	1898		Orsett-Collingwood Farm	Feature	Linear feature	Unknown	Essex HER	566626	180884	
521	060092/02/00			Ockendon Rd North Ockendon	Feature	Ditch; ditch	Iron Age	GLHER	559075	184355	
522	060111/00/00			Rainham	Findspot	Findspot	Roman	GLHER	557405	188605	
523	060363/00/00			Fen La North Ockendon	Enclosure; Feature	Enclosure; ring ditch	Prehistoric	GLHER	0	0	
524	060444/00/00			Tylers Common Upminster	Feature	Spring	Post-Medieval	GLHER	556795	190595	
525	060454/00/00			Ockendon Rd North Ockendon	Structure; Settlement	Farmhouse; manor house	Post-Medieval	GLHER	557350	184580	
526	060454/01/00			Stubbers La North Ockendon	Structure	Cellar	Post-Medieval	GLHER	557365	184585	
527	060454/02/00			Ockendon Rd North Ockendon	Structure	Outbuilding	Post-Medieval	GLHER	557375	184585	
528	060454/03/00			Ockendon Road, North Ockendon, Havering {Post-Medieval ice house}	Structure	Icehouse	Post-Medieval	GLHER	557645	184525	
529	060454/04/00			Ockendon Rd North Ockendon	Structure	Fishpond; boating lake	Post-Medieval	GLHER	557445	184655	
530	060454/05/00			Ockendon Rd North Ockendon	Structure	Barn; barn	Medieval to Post-Medieval	GLHER	557375	184615	
531	060454/06/00			Ockendon Rd North Ockendon	Structure	Dovecote	Post-Medieval	GLHER	557405	184585	
532	060454/07/00			Ockendon Rd North Ockendon	Structure	Dairy	Post-Medieval	GLHER	557385	184585	
533	060454/08/00			Ockendon Rd North Ockendon	Structure	Garden temple	Post-Medieval	GLHER	557445	184275	
534	060454/09/00			Ockendon Rd North Ockendon	Structure	Garden	Post-Medieval	GLHER	557355	184555	
535	060460/00/00			Church La North Ockendon	Structure	School; school house	Post-Medieval	GLHER	558845	185075	
536	060462/00/00			Beredens La Cranham	Structure	Manor house; manor house	Medieval to Post-Medieval	GLHER	557700	189790	
537	060462/01/00			Beredens La Cranham	Structure	Manor house; manor house	Medieval to Post-Medieval	GLHER	557705	189795	
538	060462/02/00			Beredens La Cranham	Settlement	Occupation site	Medieval	GLHER	557705	189795	
539	060464/03/00			Beredens La Cranham	Structure	Farmhouse; wall	Post-Medieval	GLHER	557705	189795	
540	060530/00/00			Stubbers Lane, North Ockendon {Prehistoric enclosure?}	Enclosure	Enclosure	Prehistoric	GLHER	557045	184685	
541	060901/00/00			Warley St Near Great Warley	Feature	Fishpond; dam; dam; fishpond	Medieval to Post-Medieval	GLHER	558547	188018	

Project ID	Source Reference	EHCR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
542	060983/00/00			Tylers Common Upminster	Settlement	Settlement	Early Medieval to Medieval	GLHER	556775	190845	
543	060984/00/00			Tylers Common Upminster	Structure	Building	Roman	GLHER	556775	190845	
544	061033/00/00			Stubbers La North Ockendon	Structure	House; house	Medieval to Post- Medieval	GLHER	557365	184565	
545	061034/00/00			Beredens La Cranham	Structure	House	Medieval	GLHER	557705	189795	
546	061037/00/00			Folkes Lane Cranham	Structure	House	Medieval	GLHER	558055	188665	
547	061038/00/00			Pike Lane, Cranham	Structure	House	Medieval	GLHER	558395	186145	
548	061040/00/00			Cranham	Settlement	Settlement	Early Medieval to Medieval	GLHER	557185	186155	
549	061041/00/00			Warley Road, Cranham (Formerly)		Wood	Medieval	GLHER	557311	190244	
550	061044/00/00			Folkes La Cranham	Structure	House	Medieval to Post- Medieval	GLHER	558015	188555	
551	061045/00/00			The Chase Cranham	Structure	Church; church	Medieval to Post- Medieval	GLHER	557215	186155	
552	061045/01/00			The Chase Cranham	Structure	Wall; wall	Medieval to Post- Medieval	GLHER	557185	186145	
553	061046/00/00			Front La Cranham	Structure	House	Post-Medieval	GLHER	557305	187745	
554	061053/00/00			Clay Tye Rd Great Warley	Structure	House	Medieval to Post- Medieval	GLHER	559255	186355	
555	061057/00/00			St Marys La Great Warley	Structure	House	Medieval	GLHER	558665	187375	3
556	061071/00/00			Fen La North Ockendon	Structure; Settlement	Farmstead	Medieval to Post- Medieval	GLHER	561115	185795	
557	061704/00/00			Ockendon Rd North Ockendon	Deposit	Dump	Roman	GLHER	557365	184585	
558	062025/00/00			Maybank Ave	Findspot	Findspot	Roman	GLHER	558305	185105	
559	062180/00/00			2 Hall Farm North Ockendon	Feature	Moat; ditch	Medieval	GLHER	558705	184805	
560	062181/00/00			2 Hall Farm North Ockendon	Findspot	Findspot	Post-Medieval	GLHER	558705	184805	
561	062262/00/00			Ladyville Lodge	Feature	Pit	Post-Medieval	GLHER	559605	185105	
562	062644/00/00			Hall Farm	Structure	Building; structure; yard; yard; structure; building; building; structure; yard	Medieval to Post- Medieval	GLHER	558805	184805	
563	062735/00/00			Stubbers La	Feature	Landfill site	Post-Medieval	GLHER	557405	184505	
564	062742/00/00			Ockendon Rd Hall Farm	Feature	Landfill site	Post-Medieval	GLHER	559305	184505	
565	062756/00/00			Bury Farm	Feature	Landfill site	Post-Medieval	GLHER	559905	186705	
566	062834/00/00			Church La	Settlement	Settlement	Medieval	GLHER	558705	184705	4
567	062844/00/00			Broadfields Farm	Findspot	Findspot; findspot; findspot; findspot	Prehistoric	GLHER	558005	186005	
568	062845/00/00			Broadfields Farm	Findspot	Findspot	Roman	GLHER	558005	186005	
569	062846/00/00			Broadfields Farm	Findspot	Findspot	Medieval	GLHER	558005	186005	
570	062847/00/00			Broadfields Farm	Findspot	Findspot; findspot; findspot	Post-Medieval	GLHER	558005	186005	
571	062848/00/00			Broadfields Farm	Findspot	Findspot	Unknown	GLHER	558005	186005	
572	062849/00/00			Broadfields Farm	Findspot	Findspot	Unknown	GLHER	558005	186005	
573	062925/00/000			Hall Farm	Structure	Building	Post-Medieval	GLHER	558765	184835	
574	211323/00/00			Church Lane, North Ockendon	Structure; Settlement	Manor house; moated site; moated site; manor house	Medieval to Post- Medieval	GLHER	558755	184805	
575	211323/02/00			Church La North Ockendon	Findspot	Outbuilding	Post-Medieval	GLHER	558795	184795	

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576	211323/02/001			Church La North Ockendon	Structure	Wall	Medieval to Post-Medieval	GLHER	558795	184795	
577	211410/01/00			St Marys La Upminster	Structure	Barn	Post-Medieval	GLHER	558725	187450	
578	211410/02/00			St Marys La Upminster	Feature	Moat	Medieval	GLHER	558655	187325	3
579	211421/02/00			Tomkyns Lane	Feature	Moat	Medieval	GLHER	556685	189525	
580	MLO100555			Upminster {Palaeolithic Handaxe}	Findspot	Findspot	Palaeolithic	GLHER	556500	188000	
581	MLO100557			North Ockenden {Second World War heavy anti-aircraft battery}	Structure	Anti-aircraft battery	Modern	GLHER	559900	185600	
582	MLO100577			Moor Lane, Queens Gardens, Cranham {cropmarks}	Field; Feature	Field boundary?	Post-Medieval	GLHER			
583	MLO100582			Little Tomkyns Farm (east of) {cropmark}	Enclosure; Cemetery?	Barrow?; circular enclosure?	Palaeolithic to Post-Medieval	GLHER			
584	MLO100583			Folkes Lane (west of) {cropmark}	Enclosure; Feature	Enclosure?; ditch?	Palaeolithic to Post-Medieval	GLHER			
585	MLO100584			Folkes Lane (east of) {cropmark}	Feature	Ditch?	Palaeolithic to Post-Medieval	GLHER			
586	MLO100586			Moor Lane, Queens Gardens, Cranham {cropmark}	Field; Feature	Field boundary?	Post-Medieval	GLHER			
587	MLO100589			The Chase [Cranham Farm], Upminster, Havering {Possible prehistoric field system}	Field; Feature	Field system?; ditch	Prehistoric	GLHER			
588	MLO100590			Fen Lane {cropmark}	Enclosure; Feature	Ditch?; enclosure?	Palaeolithic to Post-Medieval	GLHER			
589	MLO100594			Ockenden Road {cropmarks}	Enclosure; Feature	Enclosure?; ditch?	Palaeolithic to Post-Medieval	GLHER			
590	MLO100769			Aveley Road (Cockhide Farm) {cropmarks}	Field; Feature	Field boundary?	Post-Medieval	GLHER			
591	MLO100815			Pike Lane, Upminster, Havering {Possible prehistoric field boundary}	Feature	Ditch	Prehistoric	GLHER			
592	MLO100816			Pike Lane, Upminster, Havering {Possible prehistoric linear cropmark}	Feature; Field	Trackway; field boundary	Prehistoric	GLHER			
593	MLO100817			Pike Lane, Upminster, Havering {Possible prehistoric ditched enclosure}	Enclosure; Feature; Settlement?	Ring ditch; ditched enclosure; farmstead?	Prehistoric	GLHER			
594	MLO100818			Ockendon Road, North Ockendon, Havering {possible early medieval cropmarks}	Field; Feature	Field boundary	Early Medieval to Post-Medieval	GLHER			5B
595	MLO100819			Ockendon Road, North Ockendon, Havering {enclosure cropmark}	Enclosure	Rectilinear enclosure	Palaeolithic to Early Medieval	GLHER			5A
596	MLO100820			Ockendon Road, North Ockendon, Havering {Prehistoric or Roman Ring ditch}	Feature	Ring ditch	Lower Palaeolithic to Roman	GLHER			5A
597	MLO100821			Ockendon Road, North Ockendon, Havering {prehistoric or Roman cropmark}	Feature	Ring ditch?	Lower Palaeolithic to Roman	GLHER			5A
598	MLO100822			Ockendon Road, North Ockendon, Havering {undated linear cropmarks}	Feature	Ditch	Unknown	GLHER			
599	MLO100823			Ockendon Road, North Ockendon, Havering {undated linear cropmark}	Feature	Ditch	Unknown	GLHER			
600	MLO102547			Tomkyns Lane [Great Tomkyns], London {Post-Medieval cut features}	Feature	Pit; ditch; gully	Post-Medieval	GLHER	556644	189479	
601	MLO103900			Ockendon Road, [Upminster Cemetery] Corbets Tey, Upminster, Havering {20th century cemetery}	Cemetery; Structure	Cemetery; mortuary chapel; crematorium; cemetery chapel	Modern	GLHER			
602	MLO104533			The Chase [Cranham Hall] Upminster, Havering {16th century private gardens}	Feature	Garden; pond	Post-Medieval to Modern	GLHER			
603	MLO104564			Nags Head Lane/Warley Road [Tylers Common] Havering {Common land}	Landscape (common)	Common land	Medieval to Modern	GLHER			

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604	MLO137			Ockendon Road, [Manor Farm], North Ockendon, Havering {Late Bronze Age to Roman occupation site}	Feature; Enclosure; Settlement?; Industry?; Cemetery?	Post hole; pit; gully; ditch; hut?; ditch; enclosure; farmstead; settlement; metal working site; cremation; ditch	Bronze Age to Early Medieval	GLHER			
605	MLO139			Ockendon Road, North Ockendon, Havering {possible prehistoric cropmarks}	Enclosure; Feature	Enclosure; pit?; ring ditch	Palaeolithic to Roman	GLHER			5A
606	MLO13921			Pike Lane, Upminster, Havering {Possible prehistoric field system}	Field	Field system	Prehistoric	GLHER			
607	MLO14188			The Chase, [Cranham Hall Farm], Cranham {Dovecote}	Structure	Dovecote	Post-Medieval	GLHER	557155	186175	
608	MLO144			Fen Lane, North Ockendon, Havering {undated cropmarks}	Feature?	Site	Unknown	GLHER			
609	MLO23414			The Chase [Cranham Farm], Upminster, Havering {site of a medieval windmill}	Structure	Windmill	Medieval	GLHER	557127	186180	
610	MLO54550			Church Lane, North Ockendon, Havering {probable Post-Medieval moat}	Feature	Moat	Post-Medieval to Modern	GLHER			
611	MLO58272			Ockendon Road, North Ockendon, Havering {undated cropmarks}	Enclosure	Oval enclosure	Unknown	GLHER			
612	MLO5871			Fen Lane, North Ockendon, Havering {Post-Medieval post mill}	Structure	Post mill	Post-Medieval	GLHER	559805	184965	
613	MLO71925			Fen Lane, North Ockendon, Havering {Old Road}	Structure	Road	Unknown	GLHER			
614	MLO75999			Great Barn	Findspot	Findspot	Prehistoric	GLHER	558505	186505	
615	MLO76051			Hole Farm	Findspot	Finds scatter	Prehistoric	GLHER	557505	189505	
616	MLO76898			Hole Farm	Findspot	Finds scatter	Roman	GLHER	557550	189550	
617	MLO76902			Great Barn	Findspot	Findspot	Roman	GLHER	558550	186550	
618	MLO76903			Great Barn	Findspot	Findspot	Unknown	GLHER	558550	186550	
619	MLO76918			Hall Farm, North Ockendon	Structure	Manor house	Post-Medieval	GLHER	558765	184835	
620	MLO76919			Hall Farm, North Ockendon	Structure	Well	Post-Medieval	GLHER	558765	184835	
621	MLO77396			Chapmans Farm	Field	Ridge and furrow	Medieval to Post- Medieval	GLHER	556300	189200	
622	MLO84865			Large Barn to North East of Franks Farmhouse	Structure	Timber framed barn	Post-Medieval	GLHER	558707	187467	
623	MLO98647			The Chase, [Cranham Hall Farm], Cranham {19th century model farm}	Structure; Settlement; Industry?	Model farm; farm; forge; farmhouse	Post-Medieval to Modern	GLHER			
624	MLO99045			Clay Tye Road, Pike Lane, [area between], {undated ditches and possible pits}	Feature	Drainage feature; ditch; pit?	Post-Medieval to Modern	GLHER			
625	411640			A Palaeolithic flint implement, between Tylers Common and Brentwood.	Findspot (flint)	Findspot	Palaeolithic	Historic England Archive			
630	413468			A Romano British pottery kiln at Condoovers Pit, Saxon and Medieval pottery and a circular cropmark.	Feature; Findspot (pottery); Structure; Industry?	Pottery kiln; findspot; ring ditch	Roman; Early Medieval; Medieval	Historic England Archive	566540	177560	
631	413474			Roman vase, East Tilbury.	Findspot (pottery)	Findspot	Roman	Historic England Archive			
632	413475			Roman pottery.	Findspot (pottery)	Findspot	Roman	Historic England Archive			
633	413477			St Marys Hospital and Chapel	Structure	Hospital; chapel	Medieval	Historic England Archive			
634	413478			'U' earthwork.	Feature	Earthwork	Unknown	Historic England Archive	568300	176900	

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635	413480			Iron Age pottery.	Findspot (pottery)	Findspot	Iron Age	Historic England Archive			
636	413481			`U' enclosure.	Enclosure; Feature	Enclosure; pit	Unknown	Historic England Archive	568000	177600	
637	413483			Possible Neolithic burial	Cemetery?	Burial site	Neolithic	Historic England Archive			
638	413484			Neolithic arrowhead.	Findspot (flint)	Findspot	Neolithic	Historic England Archive			
639	413486			Iron Age and Roman pottery associated with areas of burnt material and ditches recorded on the foreshore.	Findspot (pottery); Feature	Findspot; ditch	Iron Age; Roman	Historic England Archive	569200	177200	
640	413488			Palaeolithic implements including 1 handaxe, 11 retouched flakes and 6 flakes, Tilbury and West Tilbury.	Findspot (flint)	Finds scatter	Palaeolithic	Historic England Archive			
641	413489			A Neolithic small chipped flint axe or chisel, dredged from the Thames off Tilbury	Findspot (flint)	Findspot	Neolithic	Historic England Archive			
642	413490			Roman burials with bronze and iron bracelets, West Tilbury.	Cemetery?; Findspot (metal)	Burial; findspot	Roman	Historic England Archive			
643	413494			Three Red hills found along with Roman pottery.	Feature; Industry?	Salt works	Roman	Historic England Archive	567500	177000	
644	413495			Roman lamp.	Findspot (metal)	Findspot	Roman	Historic England Archive			
645	413496			Whetstone of possible Bronze Age date	Findspot	Findspot	Bronze Age	Historic England Archive			
646	413497			Four Acheulian hand axes and flakes possibly Palaeolithic, Gun Hill. Possible Mesolithic flint flakes, a leaf-shaped arrowhead and scrapers.	Findspot (flint)	Finds scatter	Palaeolithic; Neolithic	Historic England Archive	565700	177800	
647	413503			Palaeolithic flakes found in gravel pit.	Findspot (flint)	Finds scatter	Palaeolithic	Historic England Archive	563980	179750	
653	413530			Monastery founded by Bishop Cedd c.654 AD. Exact location unknown, probably either at Tilbury or Chadwell St Mary.	Structure; Settlement	Monastery	Early Medieval	Historic England Archive	564500	176700	
655	413534			Roman finds.	Findspot	Findspot	Roman	Historic England Archive			
656	413554			A Palaeolithic handaxe and a lump, Little Thurrock.	Findspot (flint)	Findspot	Palaeolithic	Historic England Archive			
658	413571			A Palaeolithic handaxe found on Terrell's Hill, Little Thurrock, Grays.	Findspot (flint)	Findspot	Palaeolithic	Historic England Archive	563700	179100	
680	414100			Romano British potsherds, Walton Hall Farm	Findspot (pottery)	Findspot	Roman	Historic England Archive	567800	180090	
681	414133			Pottery of possible Roman date	Findspot (pottery)	Findspot	Roman	Historic England Archive			
682	414139			The remains of a Romano British cremation and inhumation cemetery.	Cemetery?; Findspot (pottery)	Cemetery; burial site; findspot	Roman	Historic England Archive			
683	414144			Iron Age pots; `U' spur.	Findspot (pottery; metal)	Findspot; spur	Iron Age	Historic England Archive			
684	414148			Documented site of a Romano-British double ditched enclosure.	Enclosure; Feature	Enclosure; ditch	Roman	Historic England Archive			
685	414156			Roman glass bottle neck.	Findspot	Findspot	Roman	Historic England Archive	561950	181200	
686	414159			A Mesolithic flint blade was found.	Findspot (flint)	Findspot	Mesolithic	Historic England Archive	564500	180000	

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687	414162			The faint cropmarks of a circular enclosure, circa 70 metres in diameter.	Enclosure	Circular enclosure	Bronze Age	Historic England Archive			
688	416214			Neolithic axe found near Knight's Place, Cuxton.	Findspot (flint)	Findspot	Neolithic	Historic England Archive			
689	498133			Windmill documented on the Orsett tithe Map of 1758.	Structure	Windmill	Post-Medieval	Historic England Archive	561400	181400	
690	502033			Low Street Station	Structure	Railway station; railway	Post-Medieval	Historic England Archive			
691	502039			Ockendon Station	Structure	Railway station; railway	Post-Medieval	Historic England Archive			
693	502269			East Tilbury Station	Structure	Railway station	Post-Medieval	Historic England Archive			
700	621829			Roman briquetage	Findspot	Findspot	Roman	Historic England Archive	568900	177000	
704	896342			Three Sisters	Feature; Structure	Boat; barge	Post-Medieval	Historic England Archive			
705	896638			Sultan	Feature; Structure	Boat; barge	Post-Medieval	Historic England Archive			
706	896657			Georgian	Feature; Structure	Boat; cargo vessel	Post-Medieval	Historic England Archive			
707	896945			Pearl	Feature; Structure	Boat; schooner	Post-Medieval	Historic England Archive			
708	897434			H C	Feature; Structure	Boat; barge	Post-Medieval	Historic England Archive			
709	965375			Site of Tylehurst, Upminster possibly in the area of Tylers Common or Tylers Hall, suggests a tile kiln or building in the vicinity.	Structure; Industry	Tile kiln; tile factory; building	Post-Medieval	Historic England Archive			
710	965453			Iron Age and Roman enclosed settlement consisting of two rectangular enclosures and two small ditched enclosures	Settlement; Enclosure; Feature	Settlement; enclosure; ditch	Iron Age to Roman	Historic England Archive			
711	965468			Md and PM house and dovecote, Stubbers, North Ockendon	Structure	House; dovecote	Medieval ; Post- Medieval	Historic England Archive			
712	965531			Medieval and Post-Medieval buildings excavated at Beredens Manor, Upminster.	Structure	Building	Medieval; Post- Medieval	Historic England Archive			
713	965545			St Peters Church	Feature	Church	Post-Medieval	Historic England Archive	559650	188440	
714	1043713			Possible Roman road running from London to Othona (Bradwell).	Feature	Road	Roman	Historic England Archive			
715	1043721			Possible Roman road running from Brentwood to Tilbury.	Feature	Road	Roman	Historic England Archive			
716	1043728			Possible Roman road running from Orsett Hall to East Tilbury.	Feature	Road	Roman	Historic England Archive			
717	1043729			Possible Roman road running from Mucking Road to Grays.	Feature	Road	Roman	Historic England Archive			
718	1044002			Possible Roman road at Grays.	Feature	Road	Roman	Historic England Archive			
719	1076539			THURROCK HOSPITAL	Structure	Hospital; sanatorium	Post-Medieval	Historic England Archive	562200	180100	
723	1142655			A broken handaxe found to the north of the church at Marsh Level, East Tibury	Findspot (flint)	Findspot	Palaeolithic	Historic England Archive			
724	1142664			A Palaeolithic handaxe found on the surface of the ground at South Ockendon	Findspot (flint)	Findspot	Palaeolithic	Historic England Archive	560400	183100	
725	1143781			A Palaeolithic handaxe, Piggs Pit, Chadwell Saint Mary, east of Sandy Lane	Findspot (flint)	Findspot	Palaeolithic	Historic England Archive	565400	178500	

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726	1143782			Palaeolithic implements including 115 handaxes, 2 roughouts and 6 flakes, Chadwell Saint Mary or Chadwell	Findspot (flint)	Findspot; finds scatter	Palaeolithic	Historic England Archive			
728	1145076			A Palaeolithic handaxe found at Socketts Heath Pit, Grays	Findspot (flint)	Findspot	Palaeolithic	Historic England Archive			
729	1145511			Palaeolithic implements including 4 handaxes, 1 retouched flake and 9 flakes, Orsett and Orsett Heath	Findspot (flint)	Findspot; finds scatter	Palaeolithic	Historic England Archive			
732	1180031			Anne Royal	Feature; Structure	Ship; ship wreck	Post-Medieval	Historic England Archive			
735	1308909			Andyville	Structure	House; cottage	Post-Medieval	Historic England Archive	564520	182210	
737	1368964			London Tilbury and Southend Railway	Structure	Railway	Post-Medieval	Historic England Archive			
738	1368966			Barking and Pitsea Railway	Structure	Railway	Post-Medieval	Historic England Archive			
739	1368976			Upminster and Grays Branch Railway	Structure	Railway	Post-Medieval	Historic England Archive			
740	1375151			The remains of a timber and concrete jetty, on the eastern bank of the River Thames and south-east of the village of East Tilbury.	Structure	Jetty	Medieval; Post-Medieval	Historic England Archive			
741	1416228			Remains of a Second World War or later radar mast near Coalhouse Fort. Precise location not known.	Structure	Radar mast	Modern	Historic England Archive	568596	176497	
742	1421283			Second World War pillbox with continuous 'firing slits'. On the North back of the Thames foreshore, circa 1 mile West of Coalhouse Fort and circa 2 miles East of Tilbury Fort.	Structure	Pillbox	Modern	Historic England Archive	568000	175800	
743	1423397			Non-hexagonal Second World War pillbox, Tilbury Power Station.	Structure	Pillbox	Modern	Historic England Archive	566200	175400	
747	1473568			Heavy Anti-Aircraft Battery Thames And Medway Tn15	Structure	Anti-aircraft battery	Modern	Historic England Archive	564300	179600	
749	1478888			Ground Controlled Interception Station 40g	Structure	Radar station	Modern	Historic England Archive	562000	185300	
761	1549291			East Tilbury	Settlement	Settlement	-	Historic England Archive			
808	1575754			The cropmark of a single ring ditch, possibly the remains of a Bronze Age round barrow or a later prehistoric hut circle.	Feature; Cemetery?	Ring ditch; round barrow; hut circle	Bronze Age	Historic England Archive	557230	185740	
809	1575755			The cropmarks of a single ring ditch, possibly a Bronze Age round barrow, and adjacent linear ditch or boundary	Feature; Cemetery?	Ring ditch; round barrow; linear ditch; boundary	Bronze Age	Historic England Archive	557110	185810	
1681	411371			Lilliputts	Structure	House	Post-Medieval	Historic England Archive	555330	188390	
1682	891103			The remains of ridge and furrow cultivation, preserved as slight earthworks on Upminster Hall playing fields. The earthworks are situated on an east-facing slope immediately to the north of Upminster Hall, a 16th century house.	Field	Ridge and furrow	Medieval to Post-Medieval	Historic England Archive	556800	187800	
1683	1143573			A 3rd and 4th century Roman building and a Medieval rectangular enclosure were excavated at Cherry Orchard Farm, Orsett, in 1964.	Structure; Enclosure	Building; enclosure	Roman; Medieval	Historic England Archive	564300	182400	
1684	1595287			The incomplete cropmark of a possible Bronze Age ring ditch can be seen on aerial photographs taken in 2010. This cropmark is situated within the golf course to the south of the main building of the Upminster Golf and Bowling Club.	Feature	Ring ditch	Bronze Age	Historic England Archive	556500	187640	
1685	1595288			The cropmark of a possible later prehistoric enclosure can be seen on aerial photographs taken in 2010. This polygonal enclosure is situated within Upminster Hall Playing Fields and is cut by the cropmark of a Post-Medieval field boundary.	Enclosure	Enclosure	Prehistoric	Historic England Archive	556720	187930	
1686	060052/00/00			Southend Arterial Rd Upminster		Findspot	Palaeolithic	GLHER	556505	189005	

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1687	060095/00/00			Tomkyns La Upminster	Feature	Ditch	Undated	GLHER	555905	189505	
1688	060278/00/00			Wingletye La Hornchurch	Structure	Farmhouse; farmhouse	Medieval - Post-Medieval	GLHER	555435	188275	
1689	060288/00/00			Southend Arterial Rd Hornchurch	Structure	Farmhouse; farmhouse	Medieval - Post-Medieval	GLHER	555345	189255	
1690	060296/00/00			Berkshire Way, Hornchurch	Structure	Farmhouse; farmhouse	Post-Medieval	GLHER	555355	188955	
1691	060419/00/00			Bird La Upminster	Structure; Industry?	Brick kiln	Post-Medieval	GLHER	556595	188765	
1692	060420/00/00			Bird La Upminster	Structure	Tramway	Post-Medieval	GLHER	556575	188705	
1693	060421/00/00			Bird La Upminster	Structure; Industry?	Brick kiln	Post-Medieval	GLHER	556575	188705	
1694	060445/00/00			Bird La Upminster	Feature	Spring	Post-Medieval	GLHER	556695	188755	
1695	061052/00/00			St Marys La Great Warley	Structure	House	Medieval	GLHER	560195	186565	
1696	062396/00/00			Nags Hall Lane	Settlement	Settlement; settlement	Prehistoric	GLHER	555905	189305	
1697	062415/00/00			120-122 Hall La	Settlement	Occupation site	Post-Medieval	GLHER	556445	187785	
1698	062752/00/00			Bird La Adjacent to Chapmans Farm	Feature	Landfill site	Post-Medieval	GLHER	556705	188805	
1699	211338/01/00			Hall La Upminster	Structure	Chapel; chapel	Medieval - Post-Medieval	GLHER	556575	187655	
1700	211338/01/001			Hall La Upminster	Cemetery	Cemetery	Medieval	GLHER	556575	187655	
1701	211338/02/00			Hall Lane Upminster	Feature	Fishpond; moat	Medieval	GLHER	556585	187655	
1702	211434/01/00			27 Wingletye La Hornchurch	Feature	Moat; pond	Medieval	GLHER	555380	188350	
1703	MEX1032848	19116		Great Warley School	Structure	School	Post-Medieval to Modern	Essex HER	559450	189590	
1704	MEX1033035	15457		Chapman's Farm (now The Strawberry Farm)	Structure; Settlement?	Model farm; cow house	Modern	Essex HER	556530	188795	
1705	MEX17724	5144		Mucking-West of Bluehouse Farm		Findspot	Roman	Essex HER	567800	181000	
1706	MEX17728	5145		Mucking-West of Bluehouse Farm		Findspot	Iron Age	Essex HER	567800	181000	
1707	MEX17729	5146		Mucking - Bluehouse-Gravel pits		Findspot	Early Medieval	Essex HER	567700	181000	
1708	MEX17731	5147		Mucking - Gas Council Pipe Line		Findspot	Mesolithic	Essex HER	568100	180400	
1709	MEX17734	5148		Mucking-Gas Council Pipe Line		Findspot	Early Neolithic to Late Bronze Age	Essex HER	568100	180400	
1710	MEX17760	5157		Orsett	Findspot (pottery)	Findspot	Roman	Essex HER	564400	182400	
1711	MEX17946	5198		Orsett-North of Maltings Lane	Findspot (metal)	Findspot	Roman	Essex HER	564250	182300	
1712	MEX17963	5205		Orsett-Orsett Hall-North Boundary	Findspot (pottery)	Findspot	Iron Age	Essex HER	564500	182600	
1713	MEX18042	5230		Orsett-Cherry Orchard Farm	Findspot (metal)	Findspot	Bronze Age	Essex HER	564300	182300	
1714	MEX18043	5231		Orsett-Cherry Orchard Farm	Findspot (flint)	Findspot	Iron Age	Essex HER	564300	182300	
1715	MEX18044	5232		Orsett-Cherry Orchard Farm	Findspot (pottery)	Findspot	Roman	Essex HER	564300	182300	
1716	MEX6671	1843		Mucking Heath - only 4 fig NGR		Findspot	Neolithic	Essex HER	568000	180000	
1717	MEX6675	1844		Mucking Marshes - only 4 fig NGR		Findspot	Neolithic	Essex HER	568000	180000	
1718	MEX6676	1845		Mucking Marshes - only 4 fig NGR		Findspot	Palaeolithic	Essex HER	568000	180000	
1721	MLO100588			Thames Chase (south of) {cropmark}	Feature; Cemetery?	Barrow?	Prehistoric to Post-Medieval	GLHER	555850	189190	
1722	MLO26029			Arterial Road (A127), Upminster, Havering {Palaeolithic occupation site}	Settlement	Occupation site; lithic working site	Palaeolithic	GLHER	556505	189005	

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1723	MLO76002			Pages Farm		Findspot	Medieval to Post-Medieval	GLHER	555550	189550	
1724	MLO76216			Hall Lane, Upminster	Deposit	Subsoil	Undated	GLHER	556250	189550	
1725	MLO76899			Pages Farm		Findspot	Undated	GLHER	555550	189550	
1726	MLO76900			Pages Farm		Findspot	Undated	GLHER	555550	189550	
1727	MLO77398			Chapmans Farm	Feature	Ditch	Undated	GLHER	556150	189250	
1729	MLO100580			Hall Lane (Harold Wood Park) {cropmarks}	Field; Feature	Field boundary?	Medieval to Post-Medieval	GLHER	0	0	
1730	MLO100581			Great Tomkyns Farm (west of) {cropmark}	Enclosure; Feature; Cemetery?	Barrow?; circular enclosure?	Lower Palaeolithic to Post-Medieval	GLHER	0	0	
1731	MLO99046			Hall Lane, [Harold Wood Park], Havering {undated linear features, palaeochannel, ditch and possible boundary}	Feature	Linear feature; ditch; boundary?; palaeochannel	Unknown	GLHER	0	0	
1732	MEX1040077	0		Sewage Pipeline, Warley, Essex	Feature; Cemetery?	Gully; pit; cremation	Undated, Early Medieval to Medieval	Essex HER	559787	189525	
1733	MEX17720	5143		Mucking-West of Bluehouse Farm	Feature	Ditch; ditch; pit	Early Iron Age?	Essex HER	567866	181015	
1734	MEX18041	5229		Mucking	Settlement	Settlement	Iron Age	Essex HER	568213	180856	
1735	MEX41461	1711		Little Thurrock-Palmer's 6th Form College (formerly Girls' School)	Cemetery; Structure; Industry; Field	Ditch; fortification; pottery kiln; pottery kiln; field boundary; ditch; field boundary; field system; pit; post hole	Roman	Essex HER	563453	178679	
1736	MEX42204	0		Golf Course, St. Cleres Hall	Findspot (CBM)	Findspot	Post-Medieval	Essex HER	567574	181445	
1737	MEX6182	1712		Little Thurrock - Palmer's Sixth Form College	Structure; Industry (quarry)?	Dene hole	Undated	Essex HER	563453	178679	
1740	414146			Palaeolithic handaxes were found at Orsett no date or exact provenance of find is known.		Findspot	Palaeolithic	Historic England Archive	0	0	
1741	414091			A partly ground Neolithic stone axe of grey flint was found on Mucking Heath and is now in Colchester Museum (Accession number 3496-16).		Findspot	Neolithic	Historic England Archive	0	0	
1748	ELO9505			Church Lane- laid timbers located beneath chalk deposits	Deposit	Laid timbers acting as levelling deposit	Unknown	GLHER Events			
1750	ELO10463			Tomkyns Lane [Great Tomkyns]- brick fragment dating to the Tudor period/17th century along with late Post-Medieval deposits.	Structure; Feature; Findspot	Brick foundations; pits; findspots	Medieval to Post-Medieval	GLHER Events			
1751	ELO2786			Pike Lane flint (some bunt) and pottery finds.	Findspot	Findspots	Prehistoric to Post-Medieval	GLHER Events			
1766	ELO1224			Rose Cottage Farm- 2 medieval rings registered as treasure.	Findspot (metal)	Findspot	Medieval	GLHER Events			
1781	N/A1			Small Settlement of Farmstead 1	Structure; Settlement	Farmstead	Medieval to Post-Medieval	Thames Chase Community Forest Assessment			
1782	N/A2			Small Settlement of Farmstead 2	Structure; Settlement	Farmstead	Medieval	Thames Chase Community Forest Assessment			
1783	N/A3			Small Settlement of Farmstead 3	Structure; Settlement	Farmstead	Medieval	Thames Chase Community Forest Assessment			

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1784	N/A4			Roman features	Feature	Archaeological features	Roman	Thames Chase Community Forest Assessment			
1785	N/A5			Romano-British Pottery	Findspot (pottery)	Findspot	Roman	Thames Chase Community Forest Assessment			
1788	AP mapping new			Cropmarks of extensive former field boundaries forming a lost field system, many of these features are visible on the 1st edition OS mapping of the 1880s			Medieval or Post-med		563336	182652	31
1789	AP mapping new			Cropmarks of a trackway which is probably a continuation of the Iron Age track/funnel associated the enclosure to the south-east (Site 22). There are also a large group of small pits of an unknown date			Unknown		564375	179903	32
1790	AP mapping new			Cropmarks of former field boundaries forming a field system, these features are visible on the 1st edition OS mapping of the 1880s but may have earlier origins			Medieval or Post-med		558461	185427	37
1791	AP mapping new			Cropmarks of a probable field system, some are visible on 1st edition OS mapping of the 1880s, but other boundaries that contribute to the field system are not visible. An incomplete rectangular enclosure, 54m by 36m of an unknown date and function			Unknown		559162	183578	51
1792	AP mapping new			Extensive former field boundaries forming a lost field system, these features are visible on the 1st edition OS mapping of the 1880s			Post-Medieval		562738	183599	52
1793	AP mapping new			Cropmark of a linear ditch with right angle at eastern end. This cropmark could represent an incomplete rectangular cropmark enclosure of unknown date and function.			Unknown		567119	176103	53
1794	AP mapping new			An enclosure elongated enclosure that crosses the marsh, possibly associated with WWII activity in the area. Not visible on later photographs			Unknown		566770	176770	54
1795	AP mapping new			Earthworks consisting of ditches on either side of central tracks visible for over 1.5 km. Four of these droveways are visible running in a north-south direction across the former salt marsh.			Medieval		567555	176874	58
1796	AP mapping new			Continuation on the north side of the railway of the earthworks consisting of a ditch on either side of a central track to form a droveway from the settlements on the ridge above the marsh (Site 58).			Medieval		566323	177326	60
1797	AP mapping new			A possible earthwork enclosure that uses creeks on the salt marsh. The site is visible with shallow water filled ditches 5 days after the 1953 flood. Could be a salt making site. Site now covered by landfill site.			Roman		567230	176336	61
1798	AP mapping new			Cropmarks of a former field boundary visible on the 1st edition OS mapping of the 1880s. No sign of the potential red hills identified from geophysics.			Unknown		568988	177485	62
1799	AP mapping new			Earthworks of a small field or drainage system visible on aerial photographs from the 1940. The ditches were visible as earthworks, but have since been destroyed by the construction of a pond and drainage system.			Unknown		567032	177788	64
1800	AP mapping new			Earthworks of a series of short field boundaries of a probable post-medieval date that have subsequently been levelled.			Unknown		561863	183353	66
1801	AP mapping new			Cropmarks of a possible square enclosure and a larger, but incomplete rectangular enclosure, both of an unknown date and function. No internal features or entrances were visible on the available photography.			Roman		567598	179930	67
1802	AP mapping new			Cropmarks of a possible ring-ditch, that may represent a ploughed-level Bronze Age round barrow. The ring-ditch is not clearly visible on several photographs and may only be a geological mark.			Unknown		559973	183820	68

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1803	AP mapping new			Site of Castle Farm which is marked on 1st edition OS mapping from the 1880s, but may have much earlier origins. Photographs from the 1940s and 1950s show the location of buildings related to the farm.			Unknown		562968	183985	76
1804	AP mapping new			Cropmarks of a possible ring ditch were visible on a single aerial photograph, however the mark is not thought to be archaeological in origin (possible agricultural mark) and was therefore not mapped.			Unknown		563408	180659	77
1805	AP mapping new			Cropmarks of former field boundaries of a possible late medieval date and two rectangular enclosures.			Medieval or Post-med		561306	184118	80
1806	AP mapping new			Cropmarks of a possible incomplete circular enclosure of an unknown date. The cropmark is truncated by trees			Medieval or Post-med		566468	177542	81
1807	AP mapping new			Cropmarks of a possible ring-ditch 32m in diameter. Located to the north of the Grey Goose Farm Scheduled Site.			Unknown		563124	181801	82
1808	Thurrock Local History Society 2019			Seaborough Hall was a medieval manor house that was also used in the post-medieval period. It was demolished in the early 20th century and all that and all that remains is a wall adjacent to Brentwood Road	Building		Medieval to Post-Medieval		565339	180480	
1809	Late 19th century OS maps			Later 19th century drying sheds and kiln as part of a brickworks at Chapman's or Potkiln Farm	Structure; Industry	Kiln, brickworks	Post-Medieval		556753	188550	
1810	North Ockendon tithe map			Green lane shown on the c.1841 tithe map (D/CT 261) of North Ockendon	Trackway	Track	Medieval to Post-Medieval		558616	184524	
1811	Estate map of the North Ockendon Hall Farm 1775 (D/DBe P4)			Brick Kiln Field shown on map of the North Ockendon Hall Farm estate dating to 1775 (D/DBe P4)	Structure?	Possible brick kiln	Medieval to Post-Medieval		558627	184351	
1812	Place Services 2019			East-west mortuary enclosure. Mortuary enclosures are extremely rare (with only around 35 examples in England) and they may have been used as ceremonial monuments during the Early and Middle Neolithic (3200-2500 BC). These monuments are usually located within a wider ceremonial landscape of other Neolithic features	Feature; Cemetery?		Neolithic		564160	180280	
1813	Headland 2019 Geophysical survey			Cropmarks of a possible ring-ditch identified during the 2019 Geophysical Survey by Headland	Feature; Cemetery?		Bronze Age		568527	172082	
1814	Headland 2019 Geophysical survey			Possible sub-rectangular enclosure of unknown date located 100m north of the A226.	Settlement; Enclosure	Enclosed settlement	Unknown		568029	172771	
1815	Shorne tithe map of 1842 and also the late 19th and early 20th century OS map			Baynards Cottage which appears on the Shorne Tithe map of 1842 and also the late 19th and early 20th century OS maps. Demolished by the late 20th century.	Structure	Cottage	Post-Medieval		568198	170884	
1816	Kent HER supplied info and they will update HER soon in relation to this site			A Roman cemetery excavated by Network Archaeology in 1999 at roughly NGR 568426, 172105 - as part of the Shorne to Farningham Gas Pipeline. The cemetery was found just south of the A226 at the north end of the pipeline scheme. Awaiting further info from Kent HER.	Cemetery		Roman		568426	172105	

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1817	Headland 2019 Geophysical survey			Parts of several enclosures? identified from NMP cropmark data and also from the 2019 geophysical survey by Headland. This complex also includes several linear features which may be trackways	Settlement; Enclosure	Enclosed settlement	Unknown		567104	171164	
1818	Headland 2019 Geophysical survey			Several enclosures located within a larger sub-rectangular enclosure from the 2019 geophysical survey. This enclosure contained a circular area of disturbance - could be remains of a building. The enclosure also contained a number of discrete features - could be pits. This enclosure may be associated with a trackway to the south which leads eastwards to the settlement of Thong which was founded by the 12th century. This feature may also be associated with trackway 1819 to the west. Not shown on the later post-medieval mapping and could be medieval in date.	Settlement; Enclosure	Enclosed settlement	Medieval		566986	170648	
1819	Headland 2019 Geophysical survey			A U shaped trackway and a circular area of disturbance (possibly a building) which appears to follow the topography of dry valley and may be associated with possible medieval enclosure 1818. This trackway is not shown on the later post-medieval and 20th century OS mapping and could be medieval in date.	Trackway; Building		Medieval		566706	170600	
1820	Headland 2019 Geophysical survey			A rectilinear enclosure containing a number of discrete features (possibly pits). Similar in size to other possible Roman enclosures in the area.	Settlement; Enclosure	Enclosed settlement	Roman		567280	170254	
1821	Headland 2019 Geophysical survey			A possible ditch in alignment with the A2 and with an additional division. This is located just north of late Iron Age/Roman settlement 1524 and may be associated with it.	Ditch	Ditch	Roman		567077	170111	
1823	Orsett tithe map 1840 and later 19th century OS maps			Five Chimney Cottages. The 1840 Orsett tithe map (D/CT 264/1a) and the OS map of 1873 show several buildings at Five Chimneys which were replaced by the mid-20th century with one long building	Building	Building	Post-Medieval		564183	180665	
1824	Orsett tithe map 1840 and later 19th century OS maps			Potash Cottages. These cottages are shown on the 1840 tithe map and the OS map of 1873 and were also demolished by the mid-20th century although there appear to have been cottages south of the A1013 which were also called Potash Cottages	Building	Building	Post-Medieval		564376	180764	
1825	Orsett tithe map 1840 and later 19th century OS maps			Mobbs Farm was located just west of Mill Lane. The tithe map indicates this farm belonged to the Orsett Poor and it is shown on subsequent later 19th century OS maps. There is still a farm at this location although the original farm buildings may have been demolished.	Building	Building	Post-Medieval		564283	180978	
1826	East Tilbury tithe map of 1839			The Old Rectory. The 1839 East Tilbury tithe map indicates this complex belonged to the Revd. Evan Lloyd and it is shown on subsequent later 19th century OS maps. These buildings were demolished by the later 20th century and the field reverted to pasture. There may be remains of these buildings below ground.	Building	Building	Post-Medieval		568496	177514	
1827	North Ockendon tithe map of 1841			House shown on the 1841 tithe map of North Ockendon but not on the OS map of 1872. Owned by Richard Benyon of Ockendon Hall. May explain cropmarks in this area as recorded by Place Services 2019 - site 30.	Building	Building	Post-Medieval		558110	184700	

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1828	Bingley 1982. Map of Essex 1777 by Chapman and Andre			The Map of Essex 1777 by John Chapman and Peter Andre may indicate the medieval road layout and settlement pattern in this area. This map shows the Coal Road as a highway between Chadwell and East Tilbury. The Coad Road is now just a farm track and it bisects (WSI I) on a north-west to south-east alignment. It is possible that the Coal Road is of some antiquity and it could have defined the boundary between the medieval manors of East Tilbury Hall and Goshems (Bigley 1982).			Medieval to Post-Medieval		567077	178272	
1829	Walkover			Hedge acting as field boundary, extends part way across field. Not shown on modern map.	Earthwork	Earthwork	Unknown		562275	181505	
1830	Walkover			Barn, with courtyard arrangement (AG has photos).	Earthwork	Earthwork	Unknown		567665	177057	
1831	Walkover			Very shallow linear depression, possible archaeological feature but could be route of pipe/service.	Earthwork	Earthwork	Unknown		563265	181237	
1832	Walkover			Unknown circular stone sunken feature.	Earthwork	Earthwork	Unknown		563193	181286	
1832	Walkover			Unknown circular stone sunken feature.	Earthwork	Earthwork	Unknown		563198	181287	
1833	Walkover			Drainage from Coalhouse Fort (SM14) moat, direction of flow (from fort) SW, N, W and S. Precise route of watercourse along northern section unclear. Info provided by Coalhouse Ranger Ray Reeves 4.7.18.	Earthwork	Earthwork	Unknown		568124	176665	
1834	Walkover			Probable quarry scoop.	Earthwork	Earthwork	Unknown		569703	169314	
1835	Walkover			Area of depressions masked by overgrown vegetation. Unclear if archaeological features but may hold archaeological interest.	Earthwork	Earthwork	Unknown		567776	169482	
1836	Walkover			Rectangular shaft entrance with metal lining at top. Filled in but main shaft appears to be concrete where visible. Likely WWII RAF camp association.	Earthwork	Earthwork	Unknown		567522	169572	
1837	Walkover			Concrete wall with three fragments visible. Drain visible on northern edge of western most fragment. Likely associated with WWII RAF camp.	Earthwork	Earthwork	Unknown		567530	169565	
1838	Walkover			Hole with rubble fill of possible former RAF camp building material. Could however, be modern disturbance.	Earthwork	Earthwork	Unknown		567533	169566	
1839	Walkover			Drain with possible man hole cover. Drain heading ESE. Likely associated with RAF camp.	Earthwork	Earthwork	Unknown		567530	169569	
1840	Walkover			Probable toilet block associated with RAF camp.	Earthwork	Earthwork	Unknown		567770	169551	
1841	Walkover			Concrete opening, possible shaft. Possible associations with known WWII RAF camp activity in area.	Earthwork	Earthwork	Unknown		567722	169563	
1842	Walkover			Probable air raid shelter, with associations to former RAF camp in area.	Earthwork	Earthwork	Unknown		567518	169574	
1843	Walkover			Possible former building as part of RAF camp. Bank depression with N/S/E bank clear but western bank less clear. No visible structural remains in place but some internal rubble pieces present.	Earthwork	Earthwork	Unknown		567861	169789	
1844	Walkover			Rectangular depression in ground with banks providing footprint. Some building material present primarily three courses of brick in SE corner and drain in SW corner. Likely former building of RAF camp.	Earthwork	Earthwork	Unknown		567812	169803	
1845	Walkover			Undefined structure, probably associated with RAF camp.	Earthwork	Earthwork	Unknown		567827	169781	
1846	Walkover			Earth mound to northern edge of footpath. Unclear how far NW feature extends. Project	Earthwork	Earthwork	Unknown		568325	169835	
1847	Walkover			Earthen mound on southern side of footpath. Extent of feature is unclear.	Earthwork	Earthwork	Unknown		568332	169819	
1848	Walkover			Shallow linear depression, possible former boundary or drainage ditch/ former watercourse.	Earthwork	Earthwork	Unknown		567892	173336	
1849	Walkover			Linear depression. Raised ground in corner to SE and low bank along outside of northern edge.	Earthwork	Earthwork	Unknown		567870	173235	
1850	Walkover			Shallow linear depression. Probable former drainage ditch or watercourse.	Earthwork	Earthwork	Unknown		567793	173411	
1851	Walkover			Quarry. No access, barbed wire fence. However, edges of what appears to be large hole visible.	Earthwork	Earthwork	Unknown		568344	171243	
1852	Walkover			Remnant of field boundary, only visible as low bank.	Earthwork	Earthwork	Unknown		568052	171363	

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1853	Walkover			Lighter area of vegetation, in slight hollow, possible old pond.	Earthwork	Earthwork	Unknown		566253	178636	
1854	Walkover			Find spot of potential terracotta pot of possible Roman origin spot date. Very coarse and rectangular- floor tiling?	Earthwork	Earthwork	Unknown		566762	178027	
1855	Walkover			Circular depression in western part of field. Poss former quarry pit.	Earthwork	Earthwork	Unknown		565400	176520	
1856	Walkover			Possible earthworks. Earthen mound however, maybe depression/accumulation of earth possibly as a result of modern drilling activity.	Earthwork	Earthwork	Unknown		566181	176606	
1857	Walkover			Raised platform earthwork.	Earthwork	Earthwork	Unknown		566477	176678	
1858	Walkover			Possible quarry scoop in steep bank on northern side of field.	Earthwork	Earthwork	Unknown		568271	176994	
1859	Walkover			Possible spot dated fragmented Roman pot find in ploughed field.	Earthwork	Earthwork	Unknown		562635	183685	
1860	Walkover			Slightly raised ground in otherwise flat field- maybe of archaeological interest.	Earthwork	Earthwork	Unknown		562988	183101	
1861	Walkover			Ridge in field- poss former field boundary or maybe modern service trench.	Earthwork	Earthwork	Unknown		567388	179772	
1862	Walkover			NE SW gully/shallow valley in field.	Earthwork	Earthwork	Unknown		566155	179958	
1863	Walkover			Platform on top of ridge in undulating landscape. Platform doesn't appear natural when compared across wider landscape.	Earthwork	Earthwork	Unknown		565980	180031	
1864	Walkover			Concrete platform.	Earthwork	Earthwork	Unknown		562612	182731	
1865	Walkover			Former water channel ESE WNW orientation on west facing slope.	Earthwork	Earthwork	Unknown		569980	170120	
1866	Walkover			Small roadside ditch, likely for drainage on side of road between road surface and fence to plot of land on the west		Ditch	Unknown				
1867	Walkover			Uneven ground with possible former field boundary banks. Possible former paddocks now replaced. Banks form rough rectangular shape with possible internal squares. Small trees in field may have associations as remaining extant features if boundaries.		Earthwork	Unknown				
1868	Walkover			Possible platform		Platform	Unknown				
1869	Walkover			Former field boundary with possible associated banks which may be former enclosure		Field boundary and earthworks	Unknown				
1870	Walkover			Platform in field		Earthwork	Unknown				
1871	Walkover			Depression at peak of undulations in field		Earthwork	Unknown				
1872	Walkover			Visible earth works, east West Bank and bowl features		Earthwork	Unknown				
1873	Walkover			Remnants of toilet block associated with RAF camp		Foundations	Modern				
1874	Walkover			WWII air raid shelter		Structure	Modern				
1875	Walkover			WW2 air raid shelter		Structure	Modern				
1876	Walkover			Area of probable quarrying activity		Quarrying	Unknown				
1877	Walkover			Potential quarrying activity creating large bowl feature in area.		Quarrying	Unknown				
1886	MLO106812		MLO106812	Possible Roman road running from London to Chelmsford. {Line of Roman Road}		Road	Roman	GLHER			
1887	MEX1041253	21502		ARP shelter / Guard post, Tilbury Fort		AIR RAID WARDENS POST?; GUARDHOUSE?	Modern	Essex HER	564830	175310	
1888	MEX1049387	48921		Archaeological evaluation at Stables, Hatch Farm, Fen Lane, Bulphan, Essex		FARMYARD	Post Medieval	Essex HER	562998	185805	
1889	MEX17506	5063		East of Bramble Farm		FINDSPOT	Roman	Essex HER	557000	183700	
1890	MEX18131	5252		Bulphan-Primary School		FINDSPOT	Roman	Essex HER	563600	186000	
1891	MEX31803	10279		Spigot Mortar Base, NW Bastion, Tilbury		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER	565147	175477	
1892	MEX31804	10280		Spigot Mortar Base, SE Bastion, Tilbury Fort		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER	565147	175477	
1893	MEX31822	10296		Radar Tower, Coalhouse Point		RADAR STATION	Modern	Essex HER	568973	176232	
1894	MEX31824	10297		Spigot Mortar Pedestals (2) at Coalhouse Fort		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER	569074	176576	
1895	MEX31830	10298		Tett Turret (destroyed), Coalhouse Fort		TETT TURRET	Modern	Essex HER	569074	176576	

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1896	MEX31832	10299		Minefield Control Tower at Coalhouse Fort		Minefield Control Tower	Modern	Essex HER	569074	176576	
1897	MEX31833	10300		Concrete Building, Coalhouse Fort		BUILDING	Modern	Essex HER	569074	176576	
1898	MEX6347	1756		East Tilbury - Coalhouse Fort		BLOCKHOUSE	Medieval to Post Medieval	Essex HER	569074	176576	
1899	MEX6352	1757		East Tilbury - Coalhouse Point, Site of 1540 blockhouse		BLOCKHOUSE	Post Medieval	Essex HER	568942	176294	
1900	MEX6355	1758		East Tilbury - Coalhouse Fort, Quick Firing Battery		BATTERY	Post Medieval	Essex HER	569050	176493	
1901	MEX6359	1759		East Tilbury - Coalhouse Fort, Quick Firing Battery		SEARCHLIGHT BATTERY	Modern	Essex HER	569050	176493	
1902	MEX6361	1760		East Tilbury - Coalhouse Fort		BATTERY; BATTERY; FORT; BATTERY; MAGAZINE; BARRACKS; MOAT; BATTERY	Post Medieval	Essex HER	570695	179645	
1903	MEX6378	1761		East Tilbury - Coalhouse Fort		BATTERY; SEARCHLIGHT BATTERY; PILLBOX; GUN EMPLACEMENT; COASTAL BATTERY	Post Medieval to Modern	Essex HER	569074	176576	
1904	MEX31777			Mulberry Harbour Construction Site (destroyed), Tilbury Dock		DRY DOCK		Essex HER			
1905	MEX39684			Site N of Little Thurrock Marshes		RING DITCH; MOUND		Essex HER			
1906	MLO72741		062732/00/00	BRAMBLE LA BALDWINS FARM QUARRY		LANDFILL SITE	Post Medieval	GLHER			
1907	MLO72743		062734/00/00	BRAMBLE LA		LANDFILL SITE	Post Medieval	GLHER			
1908	MLO72765		062755/00/00	AVELEY RD WHITEHALL WOOD		LANDFILL SITE	Post Medieval	GLHER			
1909	MLO72771		062759/00/00	SUNNINGS LA ADJACENT TO BUSH FARM		LANDFILL SITE	Post Medieval	GLHER			
1910	MLO9639		061026/00/00	SUNNINGS LAUPMINSTER		HOUSE	Medieval to Post Medieval	GLHER			
1911	MLO9873		060516/00/00	SUNNINGS LA UPMINSTER		DITCHED ENCLOSURE	Prehistoric	GLHER			
1912	MLO109076		MLO109076	Church Lane [St Cedd's Well] North Ockendon Havering {Spring and Shrine}		SPRING?	Post Medieval	GLHER			
2000	MLO23657	23375	060094/00/00	SUNNINGS LA UPMINSTER		FARMSTEAD; FARMSTEAD; FARMSTEAD	Early Iron Age to Roman	GLHER			
2001	MLO23759	23391	060454/00/00	OCKENDON RD NORTH OCKENDON		FARMHOUSE; MANOR HOUSE	Post Medieval	GLHER			
2002	MLO54023	28852	060094/01/00	SUNNINGS LA UPMINSTER		WELL; WELL; WELL	Early Iron Age to Roman	GLHER			
2003	MLO55638	29037	060094/02/00	SUNNINGS LA UPMINSTER		DITCH; DITCH; DITCH	Early Iron Age to Roman	GLHER			
2004	MLO72746	39971	062737/00/00	SUNNINGS LA GREAT SUNNINGS FARM		LANDFILL SITE	Post Medieval	GLHER			
2005	MLO7593	42280	061699/00/00	SUNNINGS LA UPMINSTER		CREMATION CEMETERY; CREMATION CEMETERY	Iron Age	GLHER			
2006	MLO100770	237	MLO100770	Aveley Road (Cockhide Farm) {cropmark}		DITCHED ENCLOSURE?	Lower Palaeolithic to Post Medieval	GLHER			

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2007	MLO13926	5707	060363/00/00	FEN LA NORTH OCKENDON		ENCLOSURE; RING DITCH	Prehistoric	GLHER			
2008	MLO109079	63044	MLO109079	The Chase, Cranham, [All Saints' Churchyard], Havering, RM14 3YB {medieval churchyard}		CHURCHYARD	Medieval to Modern	GLHER			
2009	MLO109094	63101	MLO109094	Ockendon Road / Meadowside Road / Park Drive/ Argyle Gardens / The Chase, Cranham [Cranham Marsh], Havering, RM14 {marshland, now nature reserve}		MARSH; WOOD; NATURE RESERVE	Unknown	GLHER			
2010	MLO109158	63288	MLO109158	Church Lane, North Ockendon, [St Mary Magdalene's Churchyard, Havering, RM14 3QH {medieval churchyard}		CHURCHYARD; TREE AVENUE	Medieval to Modern	GLHER			
2011	MLO109162	63293	MLO109162	Ockendon Road / North Ockendon Road, [Stubbers Adventure Centre], Havering, RM14 2TY {remnant of country estate grounds}		COUNTRY ESTATE; PRODUCTIVE WALLED GARDEN; TREE AVENUE; WALLED GARDEN; LANDSCAPE PARK; CAMPSITE; LAKE; WATER SPORTS CENTRE; FISHPOND	Medieval to Modern	GLHER			
2012	MLO109163	63294	MLO109163	Hall Lane, Upminster [Upminster Hall Playing Fields], Havering, RM14 {mid-20th century park on former medieval manorial estate}		MANOR; TREE AVENUE; PLAYING FIELD	Medieval to Modern	GLHER			

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2013	MLO109189	63392	MLO109189	Colchester Road [Former Maylands Aerodrome Site] Romford Havering RM3 {Early 20th Century Airfield}		AIRFIELD	Modern to World War Two	GLHER			
2014	MEX1010702	35296		Grange Farm House		TIMBER FRAMED HOUSE	Post Medieval	Essex HER			
2015	MEX1010763	35353		St Cleres Hall		TIMBER FRAMED BUILDING; FARMHOUSE	Post Medieval	Essex HER			
2016	MEX1031021	17450		Stifford Clays Estate - NGR is centre of estate	Findspot	Findspot	Roman	Essex HER			
2017	MEX1031054	18131		Bomb crater		BOMB CRATER	Modern	Essex HER			
2018	MEX1032042	17281		Chadwell St Mary County Primary School		PIT; POST HOLE; BUILDING	Early Medieval	Essex HER			
2019	MEX1032098	17282		Chadwell St. Mary County Primary School, River View	Findspot	Findspot	Roman	Essex HER			
2020	MEX1032172	18882		WWII anti-aircraft ditches N of Little Thurrock Marshes		AIRCRAFT OBSTRUCTION	Modern	Essex HER			
2021	MEX1032236	18617		Sandy Lane, Chadwell St. Mary	Findspot	Findspot	Palaeolithic	Essex HER	565090	178130	
2022	MEX1032251	18619		Site south of Little Mollands Farm, South Ockendon		GRAVEL PIT	Modern	Essex HER			
2023	MEX1032253	18620		Site south of Little Mollands Farm, South Ockendon		GRAVEL PIT	Modern	Essex HER			
2024	MEX1032840	19106		Warley Franks Manor		MANOR HOUSE	Early Medieval to Medieval	Essex HER			
2025	MEX1033045	15473		Daniel Defoe's brickworks in Tilbury		BRICKWORKS; TILE WORKS	Post Medieval	Essex HER			
2026	MEX1033074	15719		Stifford Brickworks		TILE WORKS; BRICKWORKS	Modern	Essex HER			
2027	MEX1033085	15658		South Ockendon Hospital		PSYCHIATRIC HOSPITAL	Modern	Essex HER			
2028	MEX1033094	15638		Tilbury Cottage Hospital		COTTAGE HOSPITAL	Post Medieval to Modern	Essex HER			
2029	MEX1034110	19503		Dubnovellaunus Celtic Coin from Thurrock	Findspot	Findspot	Iron Age	Essex HER			
2030	MEX1035069	19874		North of Culverhouse School		FIELD BOUNDARY	Unknown	Essex HER			
2031	MEX1035292	15170		Boundary post, Nags Head Lane, Brentwood, opposite entrance to sewage works		BOUNDARY POST	Modern	Essex HER			
2032	MEX1035529	20238		Alan-Williams Turret (destroyed), Brook House, Brook Street		ALAN WILLIAMS TURRET	Modern	Essex HER			
2033	MEX1035530	20239		Spigot Mortar Emplacement (destroyed), Brook St.		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2034	MEX1036736	45517		Lower Belt Wood, Boyles Court, Brentwood		WOOD	Unknown	Essex HER			
2035	MEX1036737	45518		Manor Wood, Boyles Court, Brentwood		PLANTATION	Unknown	Essex HER			
2036	MEX1036738	45519		Pipeline Wood, Boyles Court, Brentwood		WOOD	Modern	Essex HER			

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2037	MEX1038512	40695		Little Warley Hall Farm Barn & outbuildings		TIMBER FRAMED BARN; STABLE	Post Medieval to Modern	Essex HER			
2038	MEX1038580	46211		Peat deposits at the new Gateway Community College, Tilbury			Unknown	Essex HER			
2039	MEX1038927	46375		Lime kilns in Chalk Farm Pit Quarry		LIME KILN	Post Medieval to Modern	Essex HER			
2040	MEX1040495	47544		Sleeper's Farm, River View, Chadwell St. Mary		DITCH	Post Medieval	Essex HER			
2041	MEX1041232	21483		Ammunition Shelter (destroyed), Gravel Pit, Long Lane, Stifford		AMMUNITION SHELTER	Modern	Essex HER			
2042	MEX1041233	21484		Spigot Mortar Emplacement (destroyed), Crossways Caf [†] , Stifford		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2043	MEX1041241	21492		D-Day Embarkation Hard ÖÿNZ1 Main Dock WestÖÿ (destroyed), Tilbury Docks		EMBARKATION HARD	Modern	Essex HER			
2044	MEX1041242	21493		D-Day Embarkation Hard ÖÿNZ2 Main Dock EastÖÿ (destroyed), Tilbury Docks		EMBARKATION HARD	Modern	Essex HER			
2045	MEX1041243	21494		D-Day Embarkation Hard ÖÿNZ3 West Branch DockÖÿ, Tilbury Docks		EMBARKATION HARD	Modern	Essex HER			
2046	MEX1041244	21495		D-Day Embarkation Hard ÖÿNZ4 Centre Branch DockÖÿ, Tilbury Docks		EMBARKATION HARD	Modern	Essex HER			
2047	MEX1041245	21496		D-Day Embarkation Hard ÖÿNZ5 East Branch DockÖÿ, Tilbury Docks		EMBARKATION HARD	Modern	Essex HER			
2048	MEX1041246	21497		Eight Air Raid Shelters (destroyed), Ellerman Road Broadway, Tilbury		AIR RAID SHELTER	Modern	Essex HER			
2049	MEX1041256	21499		Military Camp (destroyed), junc St. ChadÖÿs Road / Feenan Highway, Tilbury		MILITARY CAMP	Modern	Essex HER			
2050	MEX1043326	51635		A Portable Antiquities Scheme findspot of unknown date.	Findspot	Findspot	Unknown	Essex HER			
2051	MEX1045783	54092		A Portable Antiquities Scheme findspot of Post Medieval date.	Findspot	Findspot	Post Medieval	Essex HER			
2052	MEX1049155	48688		Butts Lane, Stanford-Le-Hope, Essex			Unknown	Essex HER			
2053	MEX1049179	48714		Benton's Farm evaluation, Molland Lane , South Ockenden		DITCH	Post Medieval	Essex HER			
2054	MEX1049311	48879		Bentons Farm, Mollands Lane, South Ockenden		BUILDING	Post Medieval	Essex HER			
2055	MEX1049360	48963		M25 - Tank 1727 - M25019.10			Unknown	Essex HER			

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2056	MEX1049921	49282		William Edwards School, Stifford Clays Road, Stifford Clays, Grays.			Unknown	Essex HER			
2057	MEX1049923	49283		Hobletts Farm, Orsett Fen			Unknown	Essex HER			
2058	MEX1049924	49285		Fen Farm, Orsett Fen		FARM	Post Medieval	Essex HER			
2059	MEX1049925	49286		Castles Farm, Orsett Fen		FARM	Medieval to Post Medieval	Essex HER			
2060	MEX1049926	49287		Thriffts and Abrahams Farm, Orsett Fen		FARM	Medieval	Essex HER			
2061	MEX1049927	49288		Chantry Farm, Ockendon		FARM	Medieval to Post Medieval	Essex HER			
2062	MEX1049928	49289		Botny Farm, South Ockendon			Unknown	Essex HER			
2063	MEX1049929	49290		Old Barn, Ockendon		FARM	Post Medieval	Essex HER			
2064	MEX1049933	49164		Heath Farm Cottages		RING DITCH?; ROUND BARROW?; FOOTBALL GROUND?	Later Prehistoric	Essex HER			
2065	MEX17380	5019		North Stifford-Ardale School		RECTANGULAR ENCLOSURE; ENCLOSURE; DITCH	Middle Iron Age	Essex HER			
2066	MEX17388	5020		North Stifford-Ardale School		ENCLOSURE	Roman	Essex HER			
2067	MEX17389	5021		North Stifford-Ardale School		GRUBENHAUS; INHUMATION; CREMATION; CEMETERY; BARROW; SETTLEMENT; COFFIN	Early Medieval	Essex HER			
2068	MEX17514	5068		North of Culverhouse School		DITCH; OVEN; LATRINE PIT	Roman	Essex HER			
2069	MEX17633	5109		North of Andale school		RING DITCH	Unknown	Essex HER			
2070	MEX17691	5135		Roman Barrow 260m NE of South Ockendon Hall		ROUND BARROW; DITCH	Roman	Essex HER			
2071	MEX17706	5140		Mar Dyke -north of North Stifford	Findspot	Findspot	Mesolithic	Essex HER			
2072	MEX17711	5141		Mar Dyke -north of North Stifford	Findspot	Findspot	Bronze Age	Essex HER			
2073	MEX17927	5192		North Stifford-Hill Farm		CREMATION	Roman	Essex HER			
2074	MEX17928	5193		South Ockendon-Mount Cottages		CREMATION	Roman	Essex HER			
2075	MEX17937	5195		Stifford Clays-Silverwood Close-12	Findspot	Findspot	Roman	Essex HER			

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2076	MEX17970	5207		Stanford le Hope		MOAT	Medieval	Essex HER			
2077	MEX17979	5211		Near 'Little Palmers Shaw'		RING DITCH	Unknown	Essex HER			
2078	MEX17984	5212		Cropmarks S of Hill House, Baker Street		SETTLEMENT; FIELD BOUNDARY; ENCLOSED SETTLEMENT; CIRCULAR ENCLOSURE; RING DITCH; LINEAR FEATURE; PIT; DITCH; GRUBENHAUS; RECTANGULAR ENCLOSURE	Iron Age	Essex HER			
2079	MEX18037	5228		South Garden Farm	Findspot	Findspot	Lower Palaeolithic to Post Medieval	Essex HER	566620	182250	
2080	MEX18168	5264		Stanford le Hope		TRACKWAY; DITCH; RING DITCH	Unknown	Essex HER			
2081	MEX18172	5265		West of Grange Farm		PIT; RECTANGULAR ENCLOSURE; RING DITCH	Unknown	Essex HER			
2082	MEX18179	5269		Stifford	Findspot	Findspot	Lower Palaeolithic to Middle Palaeolithic	Essex HER	561300	180100	
2083	MEX18182	5270		Grays A13 junction		PIT; RECTANGULAR ENCLOSURE	Unknown	Essex HER			
2084	MEX18197	5277		Recreation ground east side of Grays		RECTANGULAR ENCLOSURE; LINEAR FEATURE; DITCH; PIT; TRACKWAY	Unknown	Essex HER			
2085	MEX18200	5278		Near Great Palmer's Shaw		PIT; LINEAR FEATURE; DITCH; ENCLOSURE	Unknown	Essex HER			
2086	MEX18203	5279		Near Great Palmer's Shaw		LINEAR FEATURE; DITCH; FIELD BOUNDARY; ENCLOSURE	Unknown	Essex HER			
2087	MEX18211	5282		Stifford Clays		ENCLOSURE; DITCH; ENCLOSURE; DITCH	Middle Iron Age to Late Iron Age	Essex HER			
2088	MEX18214	5283		Stifford Clays		DITCH	Roman	Essex HER			
2089	MEX18215	5284		Stifford Clays		HOUSE; POST HOLE; DRAINAGE DITCH; SETTLEMENT	Early Medieval	Essex HER			
2090	MEX22240	6763		North Ockendon Hall		MOAT; HOUSE; BUILDING; GARDEN WALL	Medieval	Essex HER			
2091	MEX28709	9000		Near Dame Elyns		RING DITCH	Unknown	Essex HER			

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2092	MEX28877	9082		WWII HAA Gun Site "TN13 Bucklands", Bowaters Farm, Thurrock		GUN EMPLACEMENT; ANTI AIRCRAFT BATTERY; HEAVY ANTI AIRCRAFT BATTERY	Modern	Essex HER			
2093	MEX31772	10257		WWII HAA Gun Site "TN23 Belmont Castle", W of Grays		HEAVY ANTI AIRCRAFT BATTERY	Modern	Essex HER			
2094	MEX31779	10261		P.L.U.T.O. Line Construction & Assembly Site (destroyed), Tilbury Main Dock		FACTORY	Modern	Essex HER			
2095	MEX31782	10262		Spigot Mortar Site (destroyed), Parade, Sockett's Heath		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2096	MEX31789	10267		Alan-Williams Turret (destroyed), Rookery Hill		ALAN WILLIAMS TURRET	Modern	Essex HER			
2097	MEX31790	10268		Spigot Mortar Site (destroyed), Dock Road		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2098	MEX31793	10270		Spigot Mortar Base, W of St. Chad's Rd/Feenan Highway juncti		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2099	MEX31795	10271		Tett Turret (destroyed), Adj. junc. St. Chad's Rd/Feenan Hig		TETT TURRET	Modern	Essex HER			
2100	MEX31796	10272		Spigot Mortar Site (destroyed), OS138 Grassland E of Chadwell		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2101	MEX31797	10273		Tett Turret (destroyed), S of Chadwell St. Mary		TETT TURRET	Modern	Essex HER			
2102	MEX31798	10274		Spigot Mortar Site (destroyed), Chadwell House, Chadwell St.		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2103	MEX31799	10275		Spigot Mortar Site (destroyed), N of Cross Keys Inn, Chadwell		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2104	MEX31800	10276		Spigot Mortar Site (destroyed), 24 Brentwood Rd, Chadwell		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2105	MEX31836	10302		Road Barrier (destroyed), Stanford-le-Hope by-pass		ROAD BARRIER	Modern	Essex HER			
2106	MEX31838	10303		Road Barrier (destroyed), London Road, Stanford-le-Hope		ROAD BARRIER	Modern	Essex HER			
2107	MEX38140	13833		North Ring, Mucking		CIRCULAR ENCLOSURE	Late Bronze Age	Essex HER			
2108	MEX39484	14444		Cropmarks S of Hill House, Baker Street		CIRCULAR ENCLOSURE; PIT; CIRCULAR ENCLOSURE; RING DITCH	Prehistoric	Essex HER			

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2109	MEX39686	14569		Cropmark N of Belmont Farm (site of Chalk Pit Farm)		DENE HOLE	Unknown	Essex HER			
2110	MEX39793	14638		Cropmark N of Little Palmer's Shaw		MORTUARY ENCLOSURE	Prehistoric	Essex HER			
2111	MEX39807	14637		Cropmark S of Middle Farm		FIELD BOUNDARY; RECTILINEAR ENCLOSURE; PIT	Unknown	Essex HER			
2112	MEX39824	14644		Cropmarks W of Stifford Clays Farm House		HOLLOW WAY; PIT; FIELD BOUNDARY	Unknown	Essex HER			
2113	MEX39856	14660		Cropmark N of Bonnygate Wood		FIELD BOUNDARY	Unknown	Essex HER			
2114	MEX39858	14661		Cropmark NE of Bonnygate County Primary School		PIT; FIELD BOUNDARY; RING DITCH	Unknown	Essex HER			
2115	MEX39869	14665		Late Prehistoric settlement and Roman occupation. Cropmark in grounds of Ockendon Academy		SETTLEMENT; PIT; LINEAR FEATURE	Middle Iron Age	Essex HER			
2116	MEX39955	14705		Cropmarks S of Saffron Garden		CURVILINEAR ENCLOSURE	Unknown	Essex HER			
2117	MEX40672	16048		Ring ditch to W of Mushroom Farm		RING DITCH	Unknown	Essex HER			
2118	MEX42203	16818		Golf Course, St. Cleres Hall		HEARTH	Medieval	Essex HER			
2119	MEX5915	1638		Chadwell St Mary	Findspot	Findspot	Palaeolithic	Essex HER	565000	178300	
2120	MEX5916	1639		Tilbury	Findspot	Findspot	Neolithic	Essex HER			
2121	MEX5917	1640		Chadwell [Barking, London]	Findspot	Findspot	Neolithic	Essex HER			
2122	MEX5921	1644		Grays or Stifford-Stifford Clays Estate	Findspot	Findspot	Roman	Essex HER			
2123	MEX5927	1646		Chadwell St Mary	Findspot	Findspot	Early Medieval	Essex HER			
2124	MEX5935	1648		Tilbury Dock	Findspot	Findspot	Prehistoric	Essex HER			
2125	MEX5939	1649		Tilbury Dock	Findspot	Findspot	Neolithic	Essex HER			
2126	MEX5940	1650		Tilbury Marshes	Findspot	Findspot	Early Medieval	Essex HER			
2127	MEX5957	1654		West Tilbury	Findspot	Findspot	Unknown	Essex HER			

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2128	MEX6031	1674		West Tilbury		EARTHWORK; FORTIFICATION	Unknown	Essex HER			
2129	MEX6047	1677		Tilbury Fort, West Tilbury		ROAD; DITCH	Medieval	Essex HER			
2130	MEX6058	1681		Dene Holes, Hangman's Wood, Little Thurrock		DENE HOLE	Medieval to Post Medieval	Essex HER			
2131	MEX6072	1682		Chadwell St Mary		MOUND	Unknown	Essex HER			
2132	MEX6078	1683		Chadwell St Mary	Findspot	Findspot	Medieval	Essex HER			
2133	MEX6168	1709		Tilbury - Original Dock area	Findspot	Findspot	Neolithic	Essex HER			
2134	MEX6198	1717		Chadwell St Mary		MOSAIC	Roman	Essex HER			
2135	MEX6201	1718		Purleby Pit, Chadwell St Mary	Findspot	Findspot	Roman	Essex HER			
2136	MEX6203	1719		Chadwell St Mary	Findspot	Findspot	Palaeolithic	Essex HER			
2137	MEX6206	1720		Rectory, Chadwell St Mary	Findspot	Findspot	Late Iron Age to Roman	Essex HER			
2138	MEX6209	1721		Tilbury - Tilbury Docks		HUMAN REMAINS	Late Mesolithic	Essex HER			
2139	MEX6221	1724		Tilbury - Original Dock area	Findspot	Findspot	Roman	Essex HER			
2140	MEX6226	1725		Near Palmer's Sixth Form College, Chadwell St Mary	Findspot	Findspot	Roman	Essex HER			
2141	MEX6227	1726		Palmer's Sixth Form College, Chadwell St Mary	Findspot	Findspot	Roman	Essex HER			
2142	MEX6234	1728		Tilbury - Central Dock	Findspot	Findspot	Roman	Essex HER			
2143	MEX6249	1732		57 and 67 Sabina Road, Chadwell St Mary	Findspot	Findspot	Palaeolithic	Essex HER	565150	178600	
2144	MEX6404	1765		St Chads Well, Hobhill Farm, Chadwell St Mary		MOAT	Medieval	Essex HER			
2145	MEX6437	1772		Tilbury	Findspot	Findspot	Roman	Essex HER			
2146	MEX6438	1773		Tilbury	Findspot	Findspot	Mesolithic	Essex HER			
2147	MEX6453	1776		Chadwell St Mary	Findspot	Findspot	Palaeolithic	Essex HER			
2148	MEX6454	1777		Rectory, Chadwell St Mary	Findspot	Findspot	Late Iron Age to Roman	Essex HER			
2149	MEX6468	1783		West of West Tilbury - Tilbury Fort	Findspot	Findspot	Roman	Essex HER			
2150	MEX6471	1785		West Tilbury - Tilbury Fort	Findspot	Findspot	Roman	Essex HER			
2151	MEX6529	1797		West Tilbury - Gun Hill	Findspot	Findspot	Early Iron Age	Essex HER			
2152	MEX6578	1812		Connaught Road, Grays, Thurrock	Findspot	Findspot	Neolithic	Essex HER			
2153	MEX6641	1834		Stanford le Hope - only 4 fig NGR	Findspot	Findspot	Iron Age	Essex HER			

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2154	MEX6649	1837		Stifford - NGR is for general vicinity	Findspot	Findspot	Prehistoric	Essex HER			
2155	MEX6653	1838		Stanford le Hope - only 4 fig NGR	Findspot	Findspot	Iron Age	Essex HER			
2156	MEX6660	1840		Bank of Mar Dyke at North Stifford - NGR is very approximate	Findspot	Findspot	Mesolithic	Essex HER			
2157	MEX6665	1841		Stifford - NGR is very approximate	Findspot	Findspot	Neolithic	Essex HER			
2158	MEX6686	1847		Stifford - Mar Dyke	Findspot	Findspot	Neolithic	Essex HER			
2159	MEX6814	1864		South Ockendon Old Hall		AISLED BARN; GATEHOUSE; HOUSE; BRIDGE; WINDMILL; WATERMILL	Post Medieval	Essex HER			
2160	MEX6839	1871		Little Warley Hall		HOUSE; MOAT	Medieval	Essex HER			
2161	MEX6844	1872		Little Warley Hall		HOUSE	Post Medieval	Essex HER			
2162	MEX1031053	18130		cropmark		LINEAR FEATURE	Unknown	Essex HER			
2163	MEX1031054	18131		Bomb crater		BOMB CRATER	Modern	Essex HER			
2164	MEX1032042	17281		Chadwell St Mary County Primary School		PIT; POST HOLE; BUILDING	Early Medieval	Essex HER			
2165	MEX1032172	18882		WWII anti-aircraft ditches N of Little Thurrock Marshes		AIRCRAFT OBSTRUCTION	Modern	Essex HER			
2166	MEX1032251	18619		Site south of Little Mollands Farm, South Ockendon		GRAVEL PIT	Modern	Essex HER			
2167	MEX1032253	18620		Site south of Little Mollands Farm, South Ockendon		GRAVEL PIT	Modern	Essex HER			
2168	MEX1032751	19213		Former Ardale School, Clockhouse Lane, North Stifford - see also 15398		BUILDING; PIT; POST HOLE; AIR RAID SHELTER	Modern	Essex HER			
2169	MEX1032752	15398		Stepney Cottage Homes, North Stifford, Grays		COTTAGE HOME; WORKSHOP; INFIRMARY; WATER TOWER; SWIMMING POOL; PORTERS LODGE; RECEIVING BLOCK; AIR RAID SHELTER?; BUNKER?; SCHOOL	Modern	Essex HER			
2170	MEX1033045	15473		Daniel Defoe's brickworks in Tilbury		BRICKWORKS; TILE WORKS	Post Medieval	Essex HER			

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2171	MEX1033071	15463		Grays Chalk Quarries Co. Limited's Brick Works		TILE WORKS; BRICKWORKS; CLAY DRAINAGE PIPE WORKS	Post Medieval to Modern	Essex HER			
2172	MEX1033074	15719		Stifford Brickworks		TILE WORKS; BRICKWORKS	Modern	Essex HER			
2173	MEX1033085	15658		South Ockendon Hospital		PSYCHIATRIC HOSPITAL	Modern	Essex HER			
2174	MEX1033094	15638		Tilbury Cottage Hospital		COTTAGE HOSPITAL	Post Medieval to Modern	Essex HER			
2175	MEX1034097	19489		St Clere's Golf Course Mucking - Prehistoric Ditches?		DITCH	Later Prehistoric	Essex HER			
2176	MEX1034101	19492		St Clere's Hall Golf Course - Roman ditches		DITCH	Roman	Essex HER			
2177	MEX1034102	19493		St Clere's Hall Golf Course - Anglo-Saxon pits?		PIT	Early Medieval	Essex HER			
2178	MEX1035069	19874		North of Culverhouse School		FIELD BOUNDARY	Unknown	Essex HER			
2179	MEX1035529	20238		Alan-Williams Turret (destroyed), Brook House, Brook Street		ALAN WILLIAMS TURRET	Modern	Essex HER			
2180	MEX1035530	20239		Spigot Mortar Emplacement (destroyed), Brook St.		SPIGOT MORTAR EMPLACEMENT	Modern	Essex HER			
2181	MEX1036469	45399		Former chalk quarry, Mill Lane/Warrens Lane, Thurrock		QUARRY	Modern	Essex HER			
2182	MEX1036488	45419		Quarry (EX628), Buckles Lane (N of), South Ockendon	Findspot	Findspot	Palaeolithic	Essex HER	560240	180930	
2183	MEX1036736	45517		Lower Belt Wood, Boyles Court, Brentwood		WOOD	Unknown	Essex HER			
2184	MEX1036737	45518		Manor Wood, Boyles Court, Brentwood		PLANTATION	Unknown	Essex HER			
2185	MEX1036738	45519		Pipeline Wood, Boyles Court, Brentwood		WOOD	Modern	Essex HER			
2186	MEX1037737	19148		Coward Industrial Estate, Thurrock			Unknown	Essex HER			
2187	MEX1038580	46211		Peat deposits at the new Gateway Community College, Tilbury			Unknown	Essex HER			
2188	MEX1038927	46375		Lime kilns in Chalk Farm Pit Quarry		LIME KILN	Post Medieval to Modern	Essex HER			
2189	MEX1040495	47544		Sleeper's Farm, River View, Chadwell St. Mary		DITCH	Post Medieval	Essex HER			
2190	MEX1041256	21499		Military Camp (destroyed), junc St. Chad's Road / Feenan Highway, Tilbury		MILITARY CAMP	Modern	Essex HER			
2191	MEX1049155	48688		Butts Lane, Stanford-Le-Hope, Essex			Unknown	Essex HER			

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2192	MEX1049179	48714		Benton's Farm evaluation, Molland Lane , South Ockenden		DITCH	Post Medieval	Essex HER			
2193	MEX1049360	48963		M25 - Tank 1727 - M25019.10			Unknown	Essex HER			
2194	MEX17380	5019		North Stifford-Ardale School		RECTANGULAR ENCLOSURE; ENCLOSURE; DITCH	Middle Iron Age	Essex HER			
2195	MEX17388	5020		North Stifford-Ardale School		ENCLOSURE	Roman	Essex HER			
2196	MEX17389	5021		North Stifford-Ardale School		GRUBENHAUS; INHUMATION; CREMATION; CEMETERY; BARROW; SETTLEMENT; COFFIN	Early Medieval	Essex HER			
2197	MEX17393	5022		North Stifford-Ardale School		BUILDING	Unknown	Essex HER			
2198	MEX17514	5068		North of Culverhouse School		DITCH; OVEN; LATRINE PIT	Roman	Essex HER			
2199	MEX17592	5095		East of Brick kiln wood		DITCH; RECTANGULAR ENCLOSURE; GRUBENHAUS	Post Medieval	Essex HER			
2200	MEX17633	5109		North of Andale school		RING DITCH	Unknown	Essex HER			
2201	MEX17691	5135		Roman Barrow 260m NE of South Ockendon Hall		ROUND BARROW; DITCH	Roman	Essex HER			
2202	MEX17927	5192		North Stifford-Hill Farm		CREMATION	Roman	Essex HER			
2203	MEX17928	5193		South Ockendon-Mount Cottages		CREMATION	Roman	Essex HER			
2204	MEX17970	5207		Stanford le Hope		MOAT	Medieval	Essex HER			
2205	MEX17979	5211		Near 'Little Palmers Shaw'		RING DITCH	Unknown	Essex HER			
2206	MEX17984	5212		Cropmarks S of Hill House, Baker Street		SETTLEMENT; FIELD BOUNDARY; ENCLOSED SETTLEMENT; CIRCULAR ENCLOSURE; RING DITCH; LINEAR FEATURE; PIT; DITCH; GRUBENHAUS; RECTANGULAR ENCLOSURE	Iron Age	Essex HER			
2207	MEX18168	5264		Stanford le Hope		TRACKWAY; DITCH; RING DITCH	Unknown	Essex HER			
2208	MEX18172	5265		West of Grange Farm		PIT; RECTANGULAR ENCLOSURE; RING DITCH	Unknown	Essex HER			
2209	MEX18182	5270		Grays A13 junction		PIT; RECTANGULAR ENCLOSURE	Unknown	Essex HER			

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2210	MEX18197	5277		Recreation ground east side of Grays		RECTANGULAR ENCLOSURE; LINEAR FEATURE; DITCH; PIT; TRACKWAY	Unknown	Essex HER			
2211	MEX18200	5278		Near Great Palmer's Shaw		PIT; LINEAR FEATURE; DITCH; ENCLOSURE	Unknown	Essex HER			
2212	MEX18203	5279		Near Great Palmer's Shaw		LINEAR FEATURE; DITCH; FIELD BOUNDARY; ENCLOSURE	Unknown	Essex HER			
2213	MEX18211	5282		Stifford Clays		ENCLOSURE; DITCH; ENCLOSURE; DITCH	Middle Iron Age to Late Iron Age	Essex HER			
2214	MEX18214	5283		Stifford Clays		DITCH	Roman	Essex HER			
2215	MEX18215	5284		Stifford Clays		HOUSE; POST HOLE; DRAINAGE DITCH; SETTLEMENT	Early Medieval	Essex HER			
2216	MEX22240	6763		North Ockendon Hall		MOAT; HOUSE; BUILDING; GARDEN WALL	Medieval	Essex HER			
2217	MEX28709	9000		Near Dame Elyns		RING DITCH	Unknown	Essex HER			
2218	MEX28877	9082		WWII HAA Gun Site "TN13 Bucklands", Bowaters Farm, Thurrock		GUN EMPLACEMENT; ANTI AIRCRAFT BATTERY; HEAVY ANTI AIRCRAFT BATTERY	Modern	Essex HER			
2219	MEX31772	10257		WWII HAA Gun Site "TN23 Belmont Castle", W of Grays		HEAVY ANTI AIRCRAFT BATTERY	Modern	Essex HER			
2220	MEX31779	10261		P.L.U.T.O. Line Construction & Assembly Site (destroyed), Tilbury Main Dock		FACTORY	Modern	Essex HER			
2221	MEX39484	14444		Cropmarks S of Hill House, Baker Street		CIRCULAR ENCLOSURE; PIT; CIRCULAR ENCLOSURE; RING DITCH	Prehistoric	Essex HER			

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2222	MEX39686	14569		Cropmark N of Belmont Farm (site of Chalk Pit Farm)		DENE HOLE	Unknown	Essex HER			
2223	MEX39793	14638		Cropmark N of Little Palmer's Shaw		MORTUARY ENCLOSURE	Prehistoric	Essex HER			
2224	MEX39807	14637		Cropmark S of Middle Farm		FIELD BOUNDARY; RECTILINEAR ENCLOSURE; PIT	Unknown	Essex HER			
2225	MEX39824	14644		Cropmarks W of Stifford Clays Farm House		HOLLOW WAY; PIT; FIELD BOUNDARY	Unknown	Essex HER			
2226	MEX39856	14660		Cropmark N of Bonnygate Wood		FIELD BOUNDARY	Unknown	Essex HER			
2227	MEX39858	14661		Cropmark NE of Bonnygate County Primary School		PIT; FIELD BOUNDARY; RING DITCH	Unknown	Essex HER			
2228	MEX39860	14662		Cropmark N of Culverhouse School		BOUNDARY; LINEAR FEATURE	Unknown	Essex HER			
2229	MEX39867	14664		WWII HAA Gun Site "TN16 Buckles", Buckles Lane, South Ockendon		HEAVY ANTI AIRCRAFT BATTERY	Modern	Essex HER			
2230	MEX39869	14665		Late Prehistoric settlement and Roman occupation. Cropmark in grounds of Ockendon Academy		SETTLEMENT; PIT; LINEAR FEATURE	Middle Iron Age	Essex HER			
2231	MEX39941	14699		Cropmark S of Bentons		RECTANGULAR ENCLOSURE	Unknown	Essex HER			
2232	MEX39955	14705		Cropmarks S of Saffron Garden		CURVILINEAR ENCLOSURE	Unknown	Essex HER			
2233	MEX40672	16048		Ring ditch to W of Mushroom Farm		RING DITCH	Unknown	Essex HER			
2234	MEX41070	16277		Warley Place Historic Garden		FISHPOND; GREAT HOUSE; GARDEN; GATE LODGE; FERNERY (GARDEN)	Medieval to Modern	Essex HER			
2235	MEX42199	16816		Golf Course, St. Cleres Hall	Findspot	Findspot	Late Bronze Age	Essex HER			

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2236	MEX42199	16816		Golf Course, St. Cleres Hall	Findspot	Findspot	Late Bronze Age	Essex HER			
2237	MEX42199	16816		Golf Course, St. Cleres Hall	Findspot	Findspot	Late Bronze Age	Essex HER			
2238	MEX42202	16817		Golf Course, St. Cleres Hall	Findspot	Findspot	Early Medieval	Essex HER			
3525	Orsett tithe map 1840 and later 19th century OS maps			A terrace of cottages was located in the eastern part of the site and north of the Stifford-Stanford Road. These cottages were shown on the 1841 tithe map and on the late 19th century and 1920s OS maps as Ridgwell Cottages. These cottages are not shown in OS mapping after the 1930s and so must have been demolished by this date.	Building	Building	Post Medieval	Research	565072	181134	
3526	Headland 2019 Geophysical survey			Ring ditch - poss. round barrow, cropmark	Feature; Cemetery?	Round barrow; pit	Bronze Age	Research	567245	172393	
3527	Headland 2019 Geophysical survey			Ring ditch - poss. round barrow, cropmark	Feature; Cemetery?	Round barrow; pit	Bronze Age	Research	567298	172400	
3539	Schofield 2010			In 2010 a photographic survey and evaluation (1808) was undertaken at Mill House Farm located 500m south of WSI Q. A number of cropmarks were recorded in this area prior to the evaluation and these were targeted by the trial trenching. The evaluation recorded a number of enclosure ditches, pits, postholes, gullies and ring ditches. Pottery (94 sherds) was found within several ditches, a pit and the ring ditch dating to the late Bronze Age/early Iron Age. This site was interpreted as a late Bronze Age/early Iron Age enclosure settlement with an associated funerary monument (Schofield 2010). This site has been excavated but is not yet published by Archaeological Solutions (as of 2019).	Enclosure; Feature	Enclosed settlement	Late Bronze Age/early Iron Age	Research	565836	179044	
3540	HOWE Cropmark data?			Parallel linear features in Kent Cropmark data	Feature; Cropmark	Linear Features		Research			
3541	OS map first edition of 1872			North-south linear within Land Parcel 94 shown on OS map first edition of 1872	Field Boundaty	Field Boundaty	Post-Medieval	Research	569918	170014	
3547	Map of Essex 1777 by John Chapman and Peter Andre and Aps			The Map of Essex 1777 by John Chapman and Peter Andre shows several trackways leading north from Muckingford Road although they stop after a short distance. Satellite imagery shows two north-south aligned cropmarks which may have continued from these. This number is assigned to the westerly of the two which continued to Beckland Farm. These cropmarks may indicate former droveways.	Feature; cropmark	Trackway	Unknown	Research	567416	179091	

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3548	Map of Essex 1777 by John Chapman and Peter Andre and Aps			The Map of Essex 1777 by John Chapman and Peter Andre shows several trackways leading north from Muckingford Road although they stop after a short distance. Satellite imagery shows two north-south aligned cropmarks which may have continued from these. This number is assigned to the easterly of the two which is located just north of and in alignment with Low Street Lane. These cropmarks may indicate former droveways.	Feature; cropmark	Trackway	Unknown	Research			
3549	Map of Essex 1777 by John Chapman and Peter Andre, 1839 tithe map of East Tilbury (D/CT 359A) and OS maps			The 1839 tithe map of East Tilbury (D/CT 359A) shows that a cottage and garden were located within the site just north of the Muckingford Road as it turned 45 degrees north-eastwards towards the east Tilbury Road. This cottage was owned by Mary Driverin 1839 and was occupied by Thomas Howell. This may be the same cottage that is shown on Map of Essex 1777 and the 1873 OS map at this location. Subsequent OS maps show several buildings at this location, perhaps a row of four small cottages. These cottages are shown on the OS maps until 1938 and were demolished soon after as they do not appear on the OS map of 1959.	Farm	Farm	Post-Medieval	Research			
3550	1777 by John Chapman and Peter Andre, 1838 tithe map of West Tilbury (D/CT 360) and OS maps			The West Tilbury Tithe map of 1838 (D/CT 360) shows there was one farmstead at the south-western edge of the site and this was Beckland Farm and barn as shown on the 1838 tithe map. This may be the building shown on the Map of Essex 1777 and the 1873 OS map at this location. This post-medieval farm building and barn may still be extant within a modern farm at this location.	Farm	Farm	Post-Medieval	Research			
3551	OS maps			Middle Farm. Shown on the first edition OS map of 1872. Demolished in the later 20th century.	Farm	Farm	Post-Medieval	Research	560878	184369	
3552	Cropmark data			The cropmark of a possible ditch which defines the edge of a promontory. LiDAR shows that there may have been a bank associated with this. It may have had a defensive function or perhaps a field boundary which defines the edge of a slope.	Feature	Bank and ditch	Unknown				
3553	LTC Archaeological evaluation of Land Parcel 5			U-shaped cropmark enclosure on the east side of Land Parcel 5 of the LTC scheme which was tested with two trenches during an evaluation. Trenches 134 and 136 tested this feature and it produced pottery of late Bronze Age/early Iron Age date	Enclosure; Feature	Enclosed settlement	Late Bronze Age/early Iron Age	LTC evaluation 2019	565968	179805	WSI Q
3554	LTC Archaeological evaluation of Land Parcel 5			Ditches east of High House Lane. Recorded as part of the evaluation of Land Parcel 5 of the LTC scheme (Trenches 61, 64, 68 and 69). The ditches of this enclosure produced flint-tempered pottery of late Bronze Age or Iron Age date.	Enclosure; Feature	Enclosed settlement	Late Bronze Age/early Iron Age	LTC evaluation 2019	565593	180010	WSI Q
3555	LTC Archaeological evaluation of Land Parcel 5			Archaeological features recorded within Trenches 122 and 123 of Land Parcel 5 of the LTC scheme which may be a continuation of the activity within Trenches 61-69 (3554).	Enclosure; Feature	Enclosed settlement	Unknown	LTC evaluation 2019	565849	179924	WSI Q

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3556	LTC Archaeological evaluation of Land Parcel 5			Middle Bronze Age activity found within Trench 139 during an LTC evaluation of Land Parcel 5. This includes Trench 139, located towards the south-eastern end of the site, which contained two ditches producing diagnostic middle Bronze Age pottery; one of these (Ditch 13914) appeared to align with a cropmark indicating the presence of a sub-rectangular enclosure extending to the north-west of the trench and produced 150 sherds weighing over 4 kg, and representing most of a freshly broken bucket urn. The other feature (Ditch 13903) produced four sherds with carbonised cooking residue, also from a bucket urn. This all suggests the presence of a middle Bronze Age settlement focus in this part of the site.	Enclosure; Feature	Enclosed settlement	Bronze Age	LTC evaluation 2019	565988	179773	WSI Q
3557	LTC Archaeological evaluation of Land Parcel 5			Middle Bronze Age activity just recorded in Trench 41 just west of High House Lane recorded during an LTC evaluation. This activity was recorded west of the small cropmark part-enclosure on the east side of the lane. This included a revealed a subsoil (4101) which produced 66 sherds of diagnostic middle Bronze Age pottery. In addition, a pit (4107) produced a single sherd of middle Bronze Age material.	Enclosure; Feature	Enclosed settlement	Bronze Age	LTC evaluation 2019	565447	179796	WSI Q
3558	LTC Archaeological evaluation of Land Parcel 5			Pit containing Beaker pottery found in Trench 47 during the LTC evaluation of Land Parcel 5	Enclosure; Feature	Enclosed settlement	Bronze Age	LTC evaluation 2019	565449	179758	WSI Q
3559	LTC Archaeological evaluation of Land Parcel 5			Medieval quarry pits and pottery recorded in Trench 26 just west of High House Lane during the LTC evaluation of Land Parcel 5.	Enclosure; Feature	Enclosed settlement	Medieval	LTC evaluation 2019	565452	179861	WSI Q
3560	Smith 2014			In 2014 a geophysical survey (161) was undertaken within Land Parcel 18 of the site and within the field to the north and west. Two possible circular salterns 15-20m diameter were identified and one of these was located within the eastern part of Land Parcel 18. These features returned a relatively low magnetic signal and so may be buried over 1km below the surface. Smith, J, 2014 Barvilles Solar Farm, East Tilbury, Thurrock, Essex: Geophysical Survey. Archaeological Project Services, APS Report No: 128/14	Earthwork	Earthwork	Unknown				WSI S
3561	Map of South Hall estate 1874 E01/02/113			The post-medieval manor house of South Hall is shown clearly on a map of the estate dated 1874 (E01/02/113) (Rochester Bridge Trust). This may be the location of the medieval manor which was in existence from at least the 13th century.	Building	Manor House	Medieval to post-medieval		568762	177049	WSI S
3562	Map of South Hall estate 1874 E01/02/114			The post-medieval barn associated with the manor of South Hall shown clearly on a map of the estate dated 1874 (E01/02/113) (Rochester Bridge Trust).	Building	Barn	Medieval to post-medieval		568845	177160	WSI S
3563	AP mapping new			The aerial mapping survey by Place Services in 2019 identified a C shaped earthwork with an L shaped additional area to the north-east. The earthwork is c.150m in length from north to south. Was part of gaz 348 (AP site 33).	Earthwork	Earthwork	Unknown				WSI S
3564	AP mapping new			The aerial mapping survey by Place Services in 2019 identified a C shaped cropmark and a nearby circular feature. It is possible the C shaped feature was part of an enclosure and the circular feature may have been a barrow. The date of these features is unknown. Was part of gaz 348 (AP site 33).	Cropmarks	Cropmarks	Unknown				WSI S

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3565	LTC Archaeological evaluation of Land Parcel 1			Trenches 28 and 40 in the north-western part of the site contained a NE-SW aligned ditch, a pit and a posthole containing pottery of the late Bronze Age, indicating a focus of late Bronze Age activity in this area.	Features	Pit, ditch, posthole	Late Bronze Age	LTC evaluation 2019			WSI 1
3566	LTC Archaeological evaluation of Land Parcel 1			A number of undated archaeological features were identified within the northern, eastern and south-western part of the site, comprising two postholes, a NW-SE aligned ditch, a NE-SW aligned ditch, a NW-SE aligned gully and four pits.	Features	Pits, ditches, postholes	Unknown	LTC evaluation 2019			WSI 1
3567	LTC Archaeological evaluation of Land Parcel 3			Thirty-four sherds of late Neolithic/early Bronze Age pottery were found in a ditch terminus or pit encountered in Trench 18 in the western part of the site. The pottery from this feature included large fragments of a beaker vessel.	Features	Pit/ditch	Late Neolithic/Early Bronze Age	LTC evaluation 2019			WSI 3
3568	LTC Archaeological evaluation of Land Parcel 3			Several late Bronze Age/early Iron Age features were identified on the site. This included a NW-SE aligned ditch in Trench 42, a north-south aligned ditch in Trench 78 and a possible curvilinear ditch 11416 in Trench 114. Ditch 11416 also contained one worked flint of later prehistoric date.	Features	Ditches	Late Bronze Age/Early Iron Age	LTC evaluation 2019			WSI 3
3569	LTC Archaeological evaluation of Land Parcel 3			A putative Roman settlement was located on the site, with cropmark evidence identifying a large NW-SE aligned enclosure with an associated trackway, internal subdivisions and further enclosures to the south-east. This was confirmed by the current investigation, which found Roman pottery in several of the ditches, along with late Iron Age/early Roman domestic activity in the area of Trenches 39-45. The large, main enclosure with associated trackway was possibly created in the early to middle Roman period and was then recut several times. It is likely that settlement activity continued in the eastern part of this enclosure (Trenches 39-45) during the middle to late Roman period. Trenches 45 and 47 in the south-eastern part of the enclosure contained several pottery kilns. This settlement appears to have been involved in arable and pastoral farming, crop processing and possibly butchery of animals on an industrial scale. This enclosure may have continued in use until the later Roman period. The NW-SE aligned field boundaries and trackway in the southern part of the site were undated but may be contemporary with the main enclosure.	Enclosure; Feature; Kilns	Enclosed settlement; kilns	Roman	LTC evaluation 2019			WSI 3
3570	LTC Archaeological evaluation of Land Parcel 3			A later post-medieval ENE-WSW field boundary was identified in the eastern part of the site along with a north-south post-medieval trackway. These features may be associated with Heath Place, the farm to the east of Hornby Lane.	Field Boundaty	Field Boundaty	Post-Medieval	LTC evaluation 2019			WSI 3

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3571	LTC Archaeological evaluation of Land Parcel 4			The presence of a large ring ditch in the south-east corner of the land parcel (Trenches 121 and 122) and the adjacent linear ditches have been confirmed. The ring ditch yielded both struck flint and small fragments of early prehistoric pottery. The smaller curvilinear cropmark was not encountered in Trench 88; trenching in Land Parcel 3 has shown an error range of up to 2m in the plotting of cropmarks, so there is some possibility that the trench may have missed any potential feature, although elsewhere in Land Parcel 4 the features in the trenches match the cropmarks very closely.	Ring ditch	Ring ditch	Early prehistoric	LTC evaluation 2019			WSI 4
3572	LTC Archaeological evaluation of Land Parcel 4			Trench 37 contained a ditch that yielded late Bronze Age pottery, while Trench 19 revealed a large pit (matching a cropmark feature) which produced several worked flints and pottery fragments. In Trench 51 a small pit was investigated and found to contain 36 pieces of flint and several fragments of possibly Neolithic pottery.	Features	Ditches, pit	Neolithic; Bronze Age	LTC evaluation 2019			WSI 3
3573	LTC Archaeological evaluation of Land Parcel 4			Later activity was revealed in Trenches 37 and 51, both of which contained ditches producing possible Roman pottery. The ditch in Trench 37 may represent the continuation of a parallel pair of trackway ditches which were encountered further north-west in Land Parcel 3.	Features	Ditch	Roman	LTC evaluation 2019			WSI 4
3574	LTC Archaeological evaluation of Land Parcel 4			An undated possible enclosure ditch was encountered in Trenches 123 and 124 at the north-western end of the site; the feature closely matched the alignment of an L-shaped cropmark	Feature	Ditch	Unknown	LTC evaluation 2019			WSI 3
3575	LTC Archaeological evaluation of Land Parcel 4			Trenches 22, 23 and 24 contained a continuous, roughly linear, feature containing much burnt material. This appears to coincide with a distinct change in topography as indicated on LiDAR and may consequently represent a boundary marker	Feature	Ditch	Unknown	LTC evaluation 2019			WSI 4
3576	LTC Archaeological evaluation of Land Parcel 4			Trenches 54, 76 and 113 and Trenches 61 and 63 revealed two linear ditches which match an alignment of two perpendicular linear cropmarks. Corresponding boundaries are lacking on the 1st edition Ordnance Survey map, although their arrangement fits in with those shown to the immediate west suggesting that they are part of the same field arrangement.	Feature	Ditch	Unknown	LTC evaluation 2019			WSI 3
3577	LTC Archaeological evaluation of Land Parcel 4			Trenches 138 and 139 revealed more of the historic landscape with the remains of brick walls and a possible beam slot relating to the now demolished Seaborough Hall. The walls encountered in Trench 138 closely match the location of a building marked on the 1st edition Ordnance Survey map.	Building	Building	Medieval to Post-Medieval	LTC evaluation 2019			WSI 4

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3578	LTC Archaeological evaluation of Land Parcel 21 Whitfield North			Trenches 77 and 78 revealed several curvilinear features that are likely to represent the remains of drip gullies and correlate with two penannular cropmark features in this area. Elsewhere, the archaeological record is dominated by large enclosure ditches displaying multiple recuts, many of which cannot be fully excavated due to either the high water table or restrictions of the depth of hand excavation. The vast majority of the deeper features show evidence of partially gleyed fills, but none so far have produced any waterlogged deposits. Exceptionally wide features were identified in Trenches 74 and 100.	Ring ditch	Ring ditch	Unknown	LTC evaluation 2019			Land Parcel 21
3579	LTC Archaeological evaluation of Land Parcel 21 Whitfield North			Two cremations have also been encountered in Trenches 87 and 96. The truncated base of an urned cremation was recovered from Trench 96 and an urned cremation was recorded in Trench 87. Several corroded fragments of copper alloy were found in association with the cremation in Trench 87, but this was also heavily truncated by ploughing.	Cremation	Cremation	Unknown	LTC evaluation 2019			Land Parcel 22
3580	LTC Archaeological evaluation of Land Parcels 22 and 23 Whitfield South			The majority of the cropmark pit-like features were of geological origin meaning that the southern two-thirds of the site contained few significant remains other than the linear ditches extending north-south. A few of the features exposed in Trench 53 had single struck flints on the surface, although more detailed excavation demonstrated that these were not significant features and were probably of natural origin. Further north, a line of cropmark pits running WSW-ENE that continues as a ditch (Trenches 37, 38 and 40) appears to be archaeological.	Features	pits	Unknown	LTC evaluation 2019			Land Parcels 22 and 23
3581	LTC Archaeological evaluation of Land Parcels 22 and 23 Whitfield South			The ring ditch in Trench 6 has been identified and yielded several fragments of worked flint and small fragments of pottery. This feature is more likely to represent the remains of an early Bronze Age barrow than a later prehistoric roundhouse. An urned cremation was revealed in Trench 66 and the ring ditch in Trench 6.	Barrow	Barrow	Bronze Age	LTC evaluation 2019			Land Parcels 22 and 23
3582	LTC Archaeological evaluation of Land Parcels 22 and 23 Whitfield South			In the northern third of the field, the presence of the rectilinear system of cropmarks was confirmed and both late Iron Age and Roman pottery was recovered from this area. Significant finds include iron hobnails, a copper alloy needle or awl and fragments from a kiln bar suggesting pottery production at this location.	Rectilinear systems of ditches, features, pottery production	Rectilinear systems of ditches, features, pottery production	Iron Age; Roman	LTC evaluation 2019			Land Parcels 22 and 23
4000				Rainham, gen. finds from vicinity of 23 Berwick Road					553700	183300	
4001				Hornchurch, 24 Globe Road (found in garden, post-1945)					552210	188190	
4002				Havering, Launderers Lane Pit					554200	182000	
4003				Havering, Upminster, A127 cutting - "North of Martins" - fluvial terrace sequence above till, with mint condition flint artefacts in terrace sequence, as well as burnt flints					556560	189020	
4004				Rainham, Gerpins Pit					555500	184100	
4005				Rainham, Moor Hall Farm					555750	181150	
4006				Havering, 54 Coniston Avenue - one handaxe found in rear garden, in 1939					556385	185715	
4007				South Ockendon, site of windmill (found on surface after demolition)					560425	183070	

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4008				Purfleet, Botany Pit - handaxes, debitage, Levallois cores/flakes and fossils mammalian remains - BUT, mostly from talus and channel-side areas where interdigitated with chalk-rich valley-side slopewash, rather than in situ in main fluvial gravel bed, so uncertainty over provenance/age					555720	178500	
4009				Purfleet Greenlands Pit - classic sequence in NE corner. Lowest part of sequence is peak MIS 9 interglacial, but few/no artefacts from this horizon, so uncertain how the more-implimentiferous horizons higher up the very thick sequence relate to peak MIS 9.					556890	178515	
4010				Purfleet, Bluelands Pit: early artefact recovery by Palmer (1975), then tripartite interpretation by Wymer (1985), then further artefact recovery from upper levels by Schreve, but latter unpublished and artefacts are missing.					556840	178600	
4011				Hornchurch rail cutting - Boyn Hill/Orsett Heath (sensu Bridgland) deposits, cut into chalky till - "boulder clay" - associated with Anglian glaciation.					554665	187335	
4012				Rainham, Aylett's Pit, Warwick Lane					554800	182900	
4013				Brentwood, South Weald - large ovate HA, found pre-1977, but otherwise no provenance info.					557600	194300	
4014				South Ockendon, Gate Hope Drive - ?blade core, and ?Levallois, according Wymer [possibly slightly wishful thinking, based on unsubstantiated lower elevation than main Belhus cutting sequence, and desire to echo the sequence at Purfleet, Greenlands]. No info on provenance.					557700	181080	
4015				Lion Pit tramway cutting, West Thurrock - Levallois working floor (attrib MIS 8) below thick sequence of fossiliferous sands/silts that are attributed to MIS 7.					559800	178200	
4016				Grays, Grays Thurrock - general area					562000	178200	
4017				Chadwell St. Mary, Sandy Lane (pit to west of, at top/northern end of Sandy Lane, started in 1960s)					565100	178380	
4018				Pit to north-east of Hangman's Wood, by road to Orsett - "implements" obtained from c. 7 feet of gravel/sand					563530	179980	
4019				Palaeo-environmental remains from brown clayey/sandy silt deposits in sewer cutting at Park Corner Farm, Upminster					555050	185030	
4020				Belhus Park cutting, M25 - 2011 investigations					557500	181200	
4021				Belhus Park cutting, M25 - 1980-1981 Essex Field Club monitoring					557420	181250	
4022				Grays Brickearths - early faunal recovery					561950	178145	
4023				Higham Pits, "Brown's findings" - pits between Dartford and Higham, gravels resting on Chalk, levels ranging from 70 ft to 105 ft OD (Stopes 1895b)					570950	172800	
4024	MEX5918			Globe Pit, Grays - early finds					562500	178150	
4025	MEX6120			Grays, Dell Road, old chalk pit					561620	178600	
4026	MEX6135			Socketts Heath Pit					562300	179250	
4027	MEX6144			Globe Pit, Little Thurrock - preserved deposits where Wymer and Snelling excavations (1950s-1960s) in wooded/thorny area at foot of garden of Mr/Mrs Croot (13 Overcliff Road).					562520	178290	
4028	MEX6172			Grays/Tilbury, two "Mousterian" HAs, one of them a fine bout coupe, possibly found during expansion of Tilbury docks c. 1910-1913, or dredging Thames or tidal basin at/near dock entrance.					563330	175460	
4029	MEX6172			Tilbury, ovate HA found by R Doyle during dockyard extension in 1968					562630	176500	
4030	MEX6235			Chadwell St. Mary, housing estate to north-east of church					564800	178700	
4031	MEX6235			Chadwell St. Mary, housing estate to north-east of church					564800	178900	
4032	MEX6465			Little Thurrock, general area - listed by Roe as "Grays, Little Thurrock" which is slightly to east of main Grays/Grays Thurrock area.					562600	178200	

Project ID	Source Reference	EHCR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
4033	MEX6681			Stanford le Hope					568500	182000	
4034	MEX6894			Mucking - gravel pit/s					568720	180920	
4035	MKE1440			Nursted/Nurstead, general area - "broken implements of Palaeolithic type" found by W Whitaker (Evans - 1872: 533 & 1897: 611)					564200	168200	
4036	MKE1525			Broadness - handaxe (crude/roughout) and flake dredged from Thames bed					560500	176800	
4037	MKE1716			Palaeolithic handaxes from Bevan's Wash-pit, opposite New Barn farmhouse [Treadwell's]					561020	173520	
4038	MKE1727			Palaeolithic handaxe from near New Barn Farm House [Treadwell's]					561100	173800	
4040	MKE2606			Palaeolithic handaxes found on foreshore between Cliffe Creek and Lower Hope Point, Cliffe					571000	178000	
4041	MKE39905			Cuxton, Ranscombe					571100	167700	
4050	MWX20789			Meopham, general area - "broken implements of Palaeolithic type" found by W Whitaker (Evans - 1872: 533 & 1897: 611)					564500	166100	
4066	1473565			HEAVY ANTI AIRCRAFT BATTERY THAMES AND MEDWAY TN14				Historic England Archive			
4067	1473579			HEAVY ANTI AIRCRAFT BATTERY THAMES AND MEDWAY TN23				Historic England Archive			
4068	621811			A scatter of Neolithic flint and a Medieval pit containing pottery found at Rookery Hill				Historic England Archive			
4070	1415987			HEAVY ANTI AIRCRAFT BATTERY TS17				Historic England Archive			
4071	413532			Ro coin.				Historic England Archive			
4073	1575833			Cropmarks of fragments of ditch and pits of uncertain date visible on aerial photographs.				Historic England Archive			
4074	1417722			HEAVY ANTI AIRCRAFT BATTERY THAMES AND MEDWAY TS17				Historic England Archive			
4079	414141			RB cremation vessels.				Historic England Archive			
4080	411424			Rectilinear cropmark seen on air photograph.				Historic England Archive			
4081	621869			Iron Age and Romano-British pits and ditches, and a Saxon cemetery were found during excavations at Ardale School, North Stifford in 1980. At least 9 inhumations and a single cremation were found. A Group 6 shield boss, spearheads, knives, buckles, keys				Historic England Archive			
4083	1474339			TILBURY HEAVY ANTI AIRCRAFT BATTERY				Historic England Archive			
4084	1473926			OCKENDON HEAVY ANTI AIRCRAFT BATTERY				Historic England Archive			
4085	411425			A Roman urn in a wooden box was found circa 1950 in a wooden box at the Ham River Gravel Pit at S Ockendon.				Historic England Archive			
4086	413589			BA spearhead.				Historic England Archive			
4093	411435			Cropmarks seen on air photograph. It may be the site of the moated Bumpstead manor, described in 1768 as 'entirely demolished'.				Historic England Archive			
4094	413537			A miscellaneous collection of Roman finds including cinerary urns has been made at Grays over a number of years.				Historic England Archive			
4101	414132			Bronze dagger and sword.				Historic England Archive			
4102	414152			Perf. hammer stones (3).				Historic England Archive			

Project ID	Source Reference	ECHR_No (for Essex Records)	Pref. Ref.	Name	OA Monument Category	Monument Type	OA Period	Source	Easting	Northing	LTC Cropmark Site Number
4107	411616			Possible windmill mound of uncertain date recorded, close to the Roman road at Brook Street.				Historic England Archive			
4115	413541			BA palstave (2).				Historic England Archive			
4116	414171			Three Neolithic axes, two of which were polished, the other chipped and part polished, were found while laying a water main at Stifford near Grays in March 1908.				Historic England Archive			
4119	1047847			RUSSET GALLY				Historic England Archive			
4127	1143777			A Palaeolithic handaxe and Retouched flake were found at Stifford in an area of Corbet Tey Gravel geology.				Historic England Archive			
4128	413538			Ro lamps.				Historic England Archive			
4131	414089			Implements of Chellean form were found on Saffron Garden Farm.				Historic England Archive			
4133	411627			HOSPITAL OF ST JOHN THE BAPTIST				Historic England Archive			
4134	414131			A quartzite pebble macehead with hour-glass perforation of probable Mesolithic date, and a Neolithic polished flint axe were found in the Mar Dyke at Stifford circa 1867. Both are in the Meeson collection in the Geological Survey Museum. Accession Number				Historic England Archive			
4137	414093			Belgic pottery.				Historic England Archive			
4141	414170			A Mesolithic thames pick was found in the banks of the Mardyke at North Stifford.				Historic England Archive			
4145	1368345			GREAT EASTERN RAILWAY				Historic England Archive			
4146	MEX1040153			Little Thurrock		FINDSPOT	Mesolithic	Essex HER			
4147	MEX6443			Little Thurrock		FINDSPOT	Prehistoric	Essex HER			
4148	MEX6635			Stanford le Hope - only 4 fig NGR		FINDSPOT	Roman	Essex HER			
4149	MEX6668			Stanford le Hope - only 4 fig NGR		FINDSPOT	Neolithic	Essex HER			
4150	MEX1041227			Military Camp (destroyed), Horndon-on-the-Hill		MILITARY CAMP	Modern	Essex HER			
4151	ML099027			Sunnings Lans (Great Sunnings Farm), Upminster, (Bronze Age cremation Iron Age to Roman field systems)		Findspot, cremation, enclosure, field system	Late Mesolithic to Roman	GLHER			

9 Annexes

10 Abbreviations and Glossary

ADS Archaeology Data Service. Digital archaeological archive

CDM Construction Design Manual. Health and safety guidance for the construction industry

CPD Continuing Professional Development

CIfA Chartered Institute for Archaeologists

DBA Desk Based Assessment. Detailed assessment of archaeology and other aspects of the historic environment

DCO Development Consent Order

EIA Environmental Impact Assessment. Detailed study of environmental impacts as directed under the The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 following on from EU Directive EIA Directive (85/337/EEC)

ES Environmental Statement. The principal environmental report detailing environmental impacts within an EIA

GPS Global Positioning System

HER Historic Environment Record

LTC Lower Thames Crossing

MCIfA Member of the Chartered Institute for Archaeologists

MoRPHE Management of Research Projects in the Historic Environment

NMP National Mapping Programme. A study of aerial photographs and digitisation of resulting data into GIS. Originally funded by Historic England

OASIS Online Access to the Index of archaeological investigations.

The OASIS project brings together a number of strategic partners: the Archaeology Data Service, Historic England, Historic Environment Scotland, and the Royal Commission on the Ancient and Historical Monuments of Wales under the umbrella of the University of York

OCN Old County Number. Historic England's reference for material that is not readily-available online and may represent historic archaeological work that consists of paper archives or has yet to be formally reported on

PINS Planning Inspectorate

RAMS Risk Assessment Method Statement

SMC Scheduled monument consent

TDR Trusted Digital Repository

UKIC United Kingdom Institute for Conservation

WSI Written Project of Investigation. A detailed method statement for archaeological work

WSL - Western Southern Link

The Western Southern Link (WSL) is an alternative for Short List Routes 2, 3 and 4 to the south of the River Thames. The route would connect into the A2 to the east of Gravesend and would go to the west of Thong and Shorne and east of Chalk towards Church Lane and Lower Higham Road. This route could connect into any of the Routes 2, 3 and 4 north of the river utilising all the crossing options for these route options.

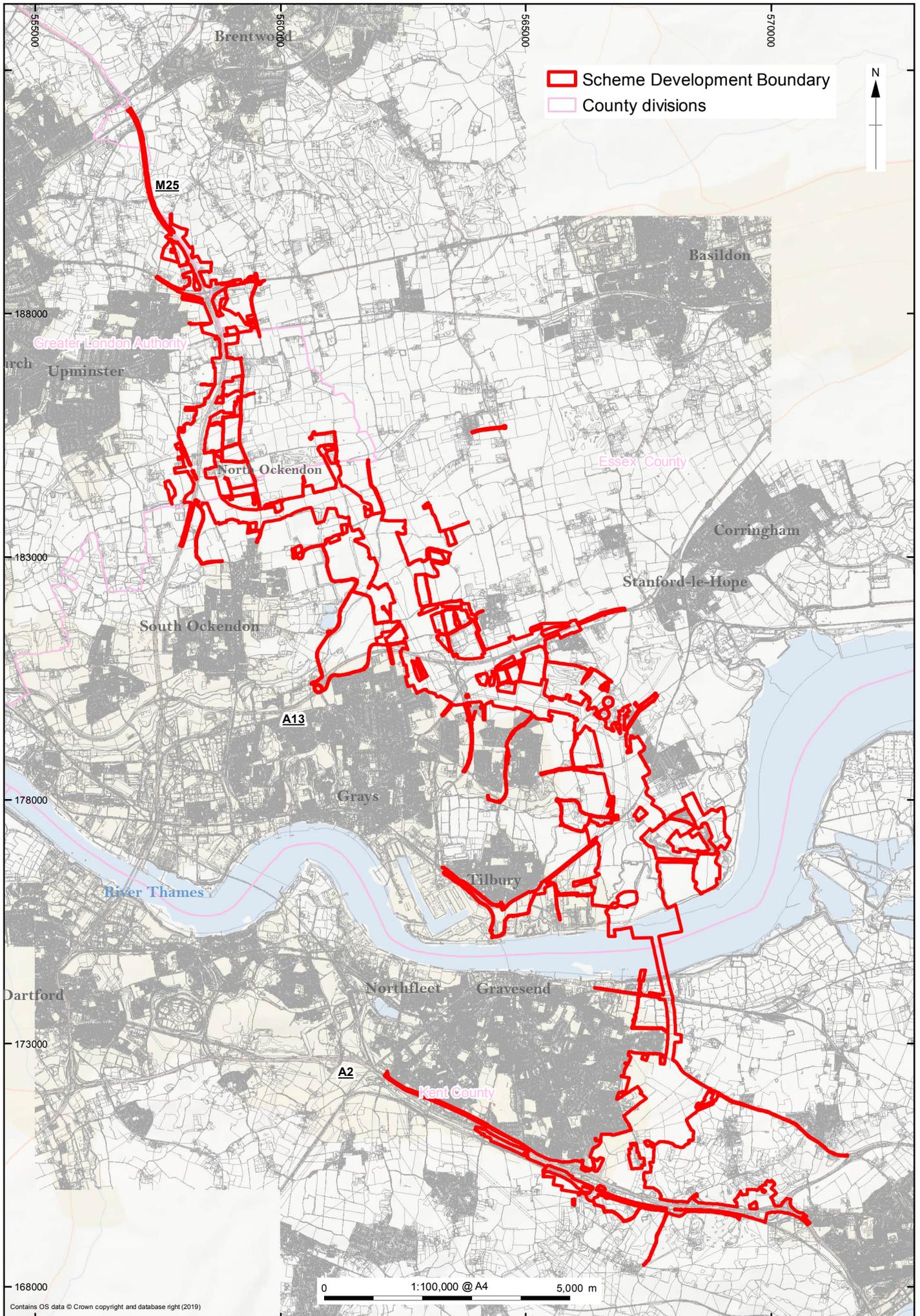


Figure 1 - Scheme location map

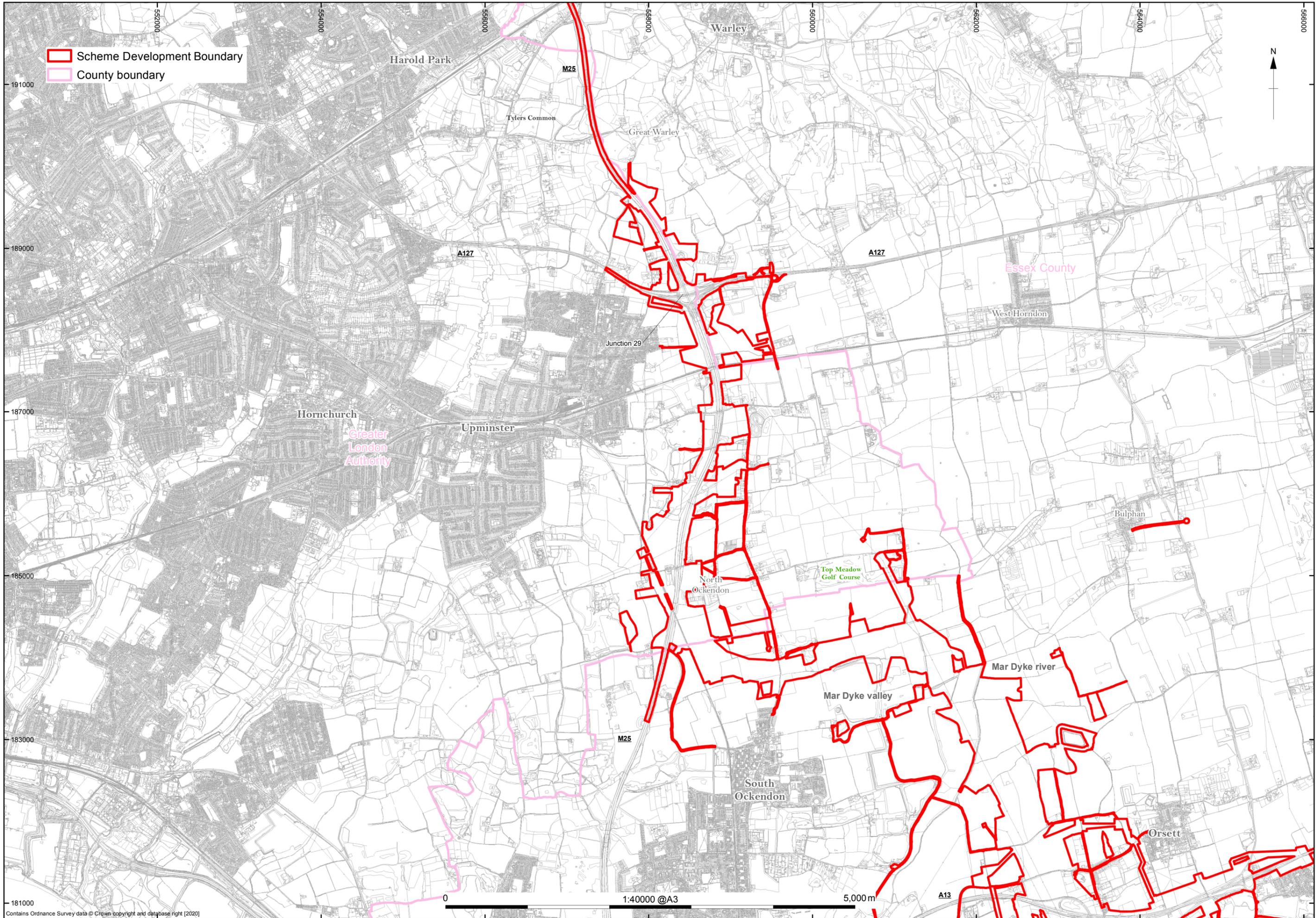


Figure 2a – Map showing the scheme route north of the Thames (north)

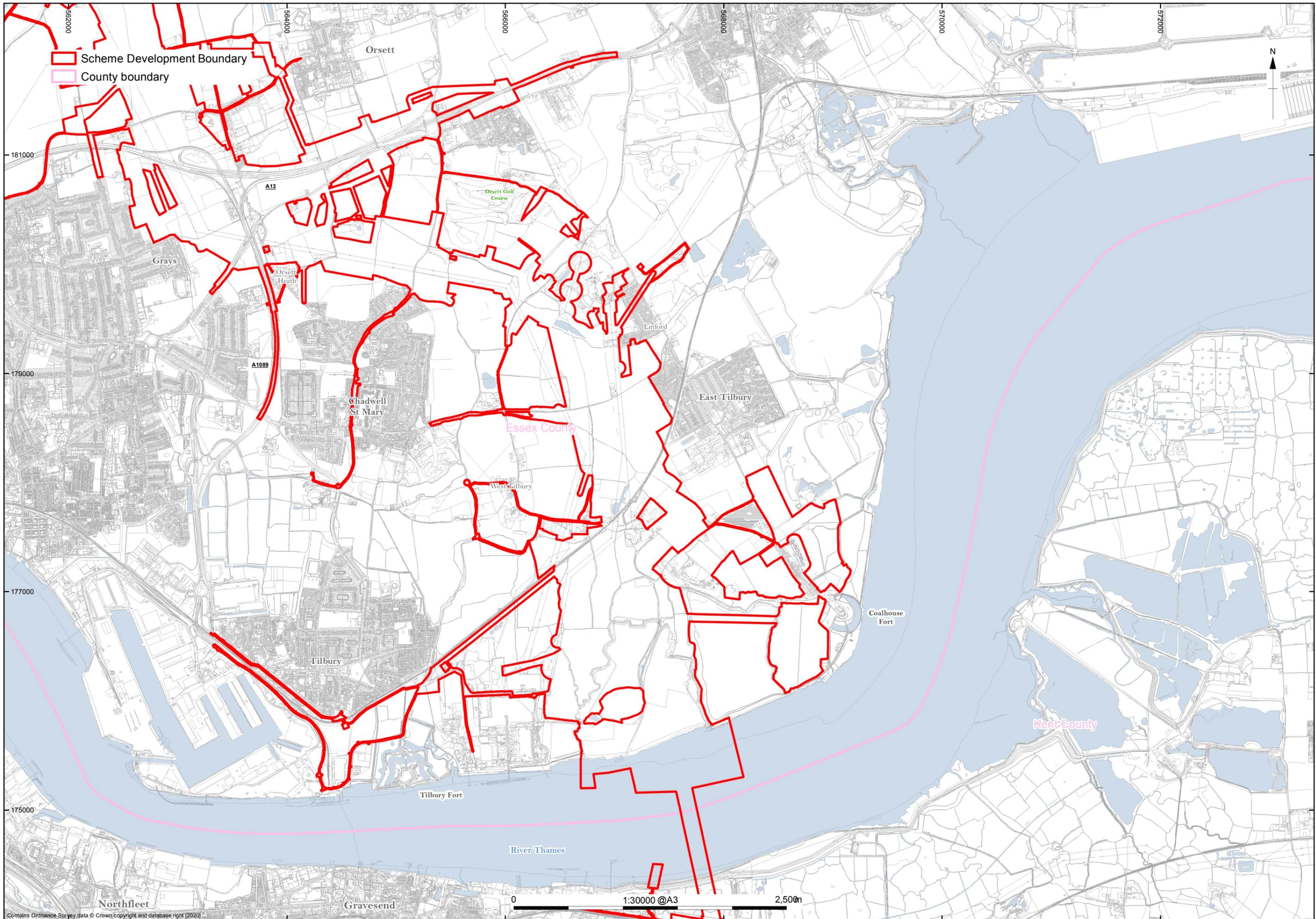


Figure 2b - Map showing the scheme route north of the Thames (south)

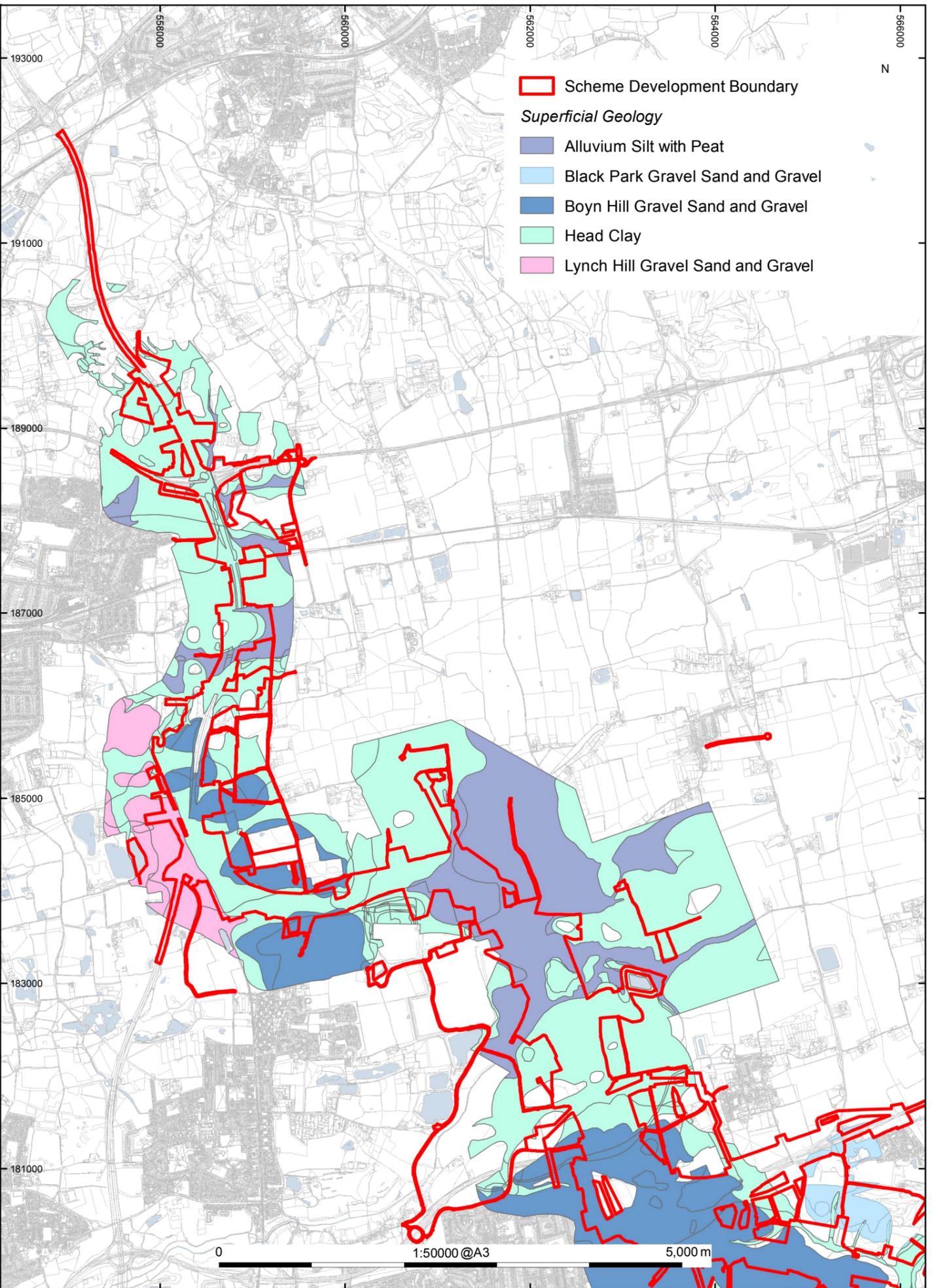
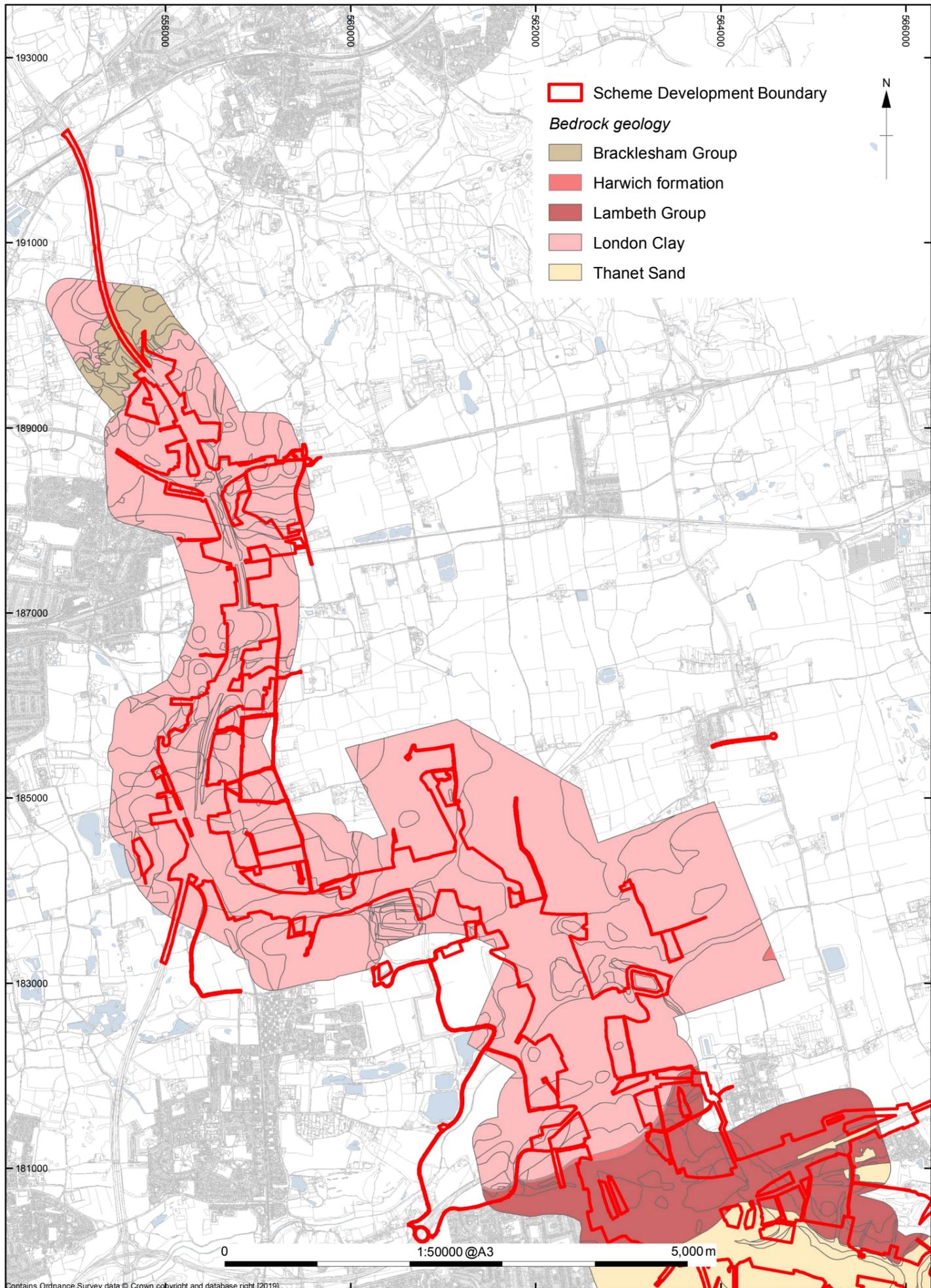


Figure 3a - Bedrock and superficial geology of the scheme corridor north of the Thames (north)

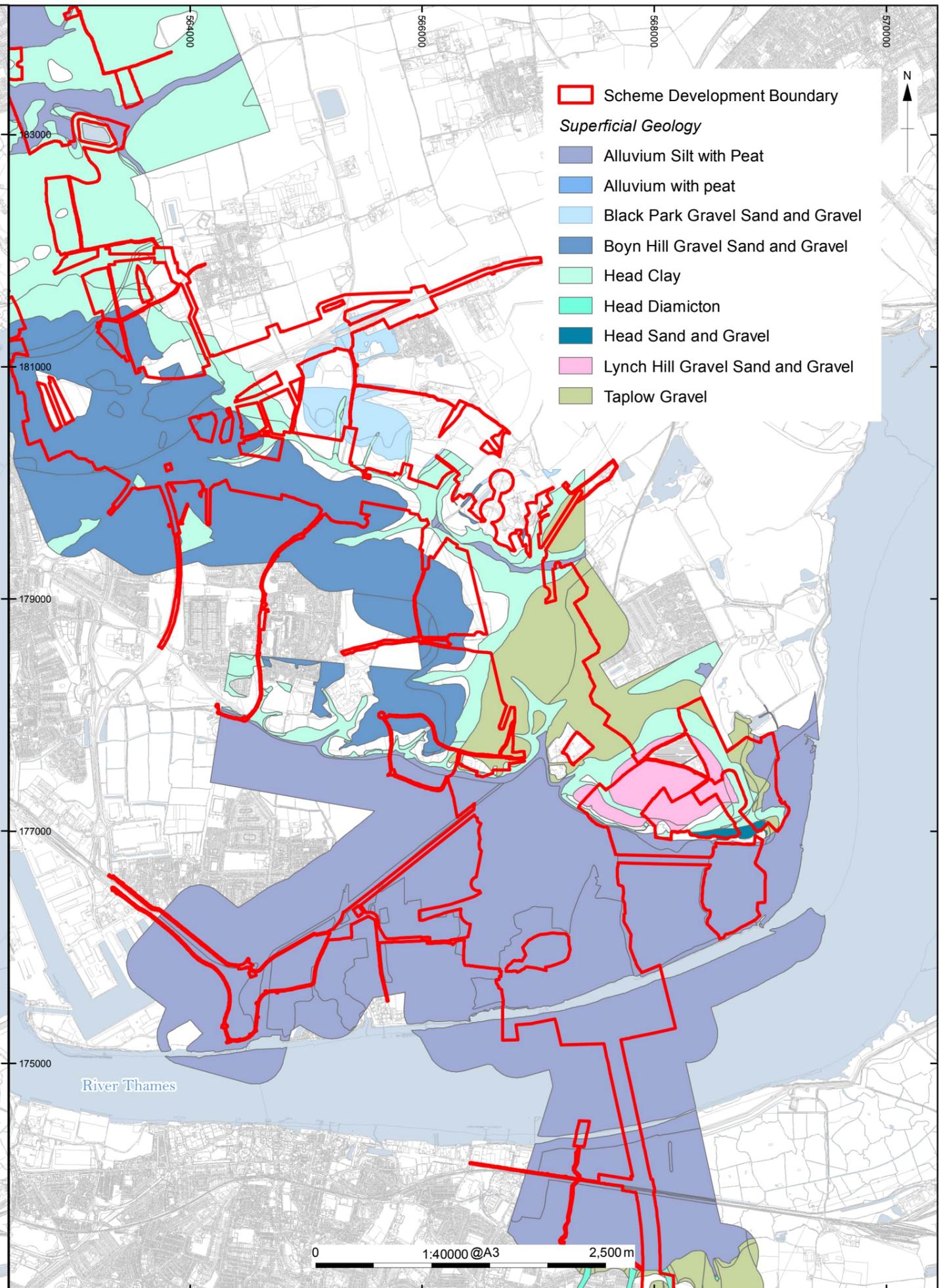
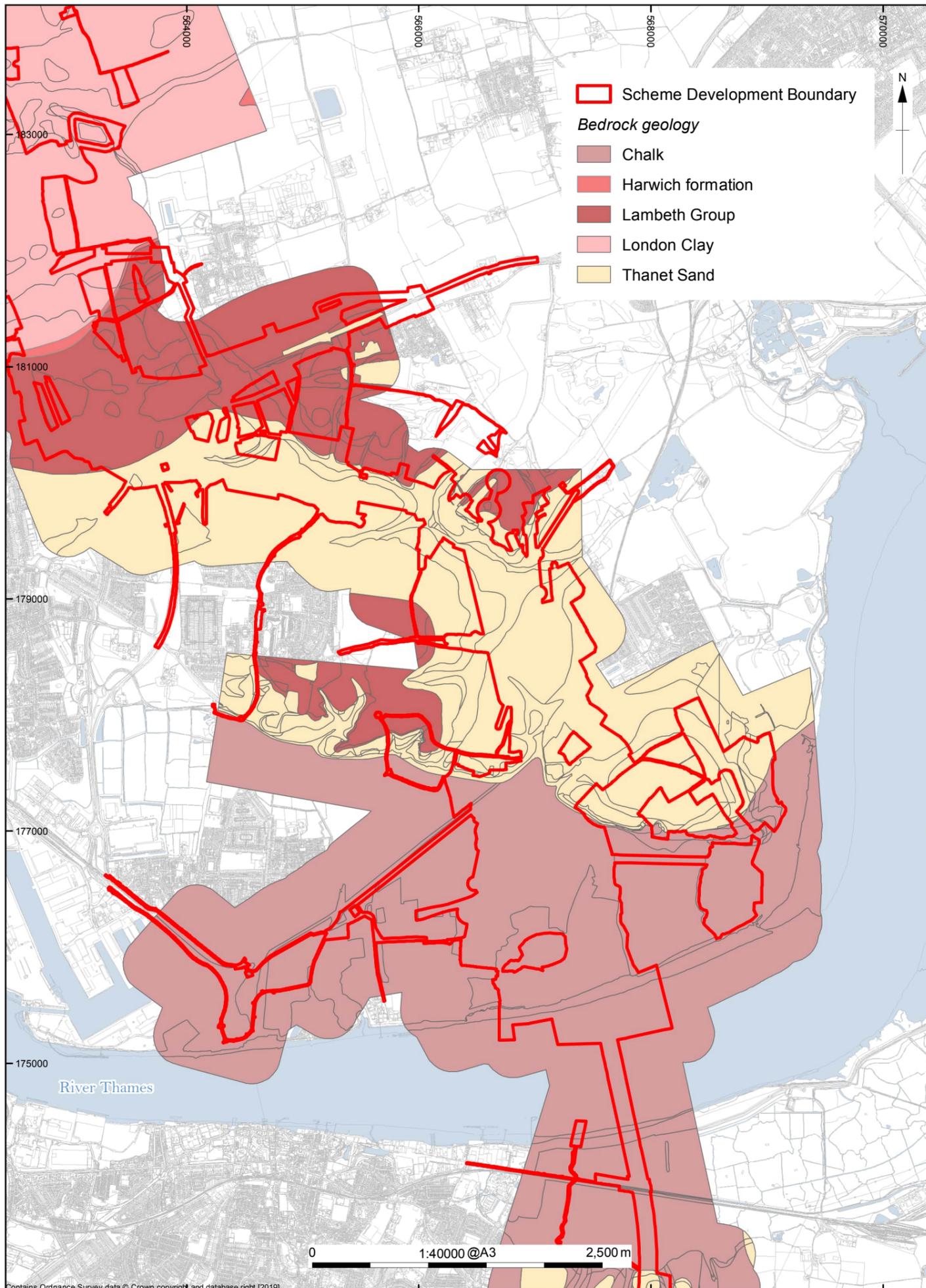


Figure 3b - Bedrock and superficial geology of the scheme corridor north of the Thames (south)

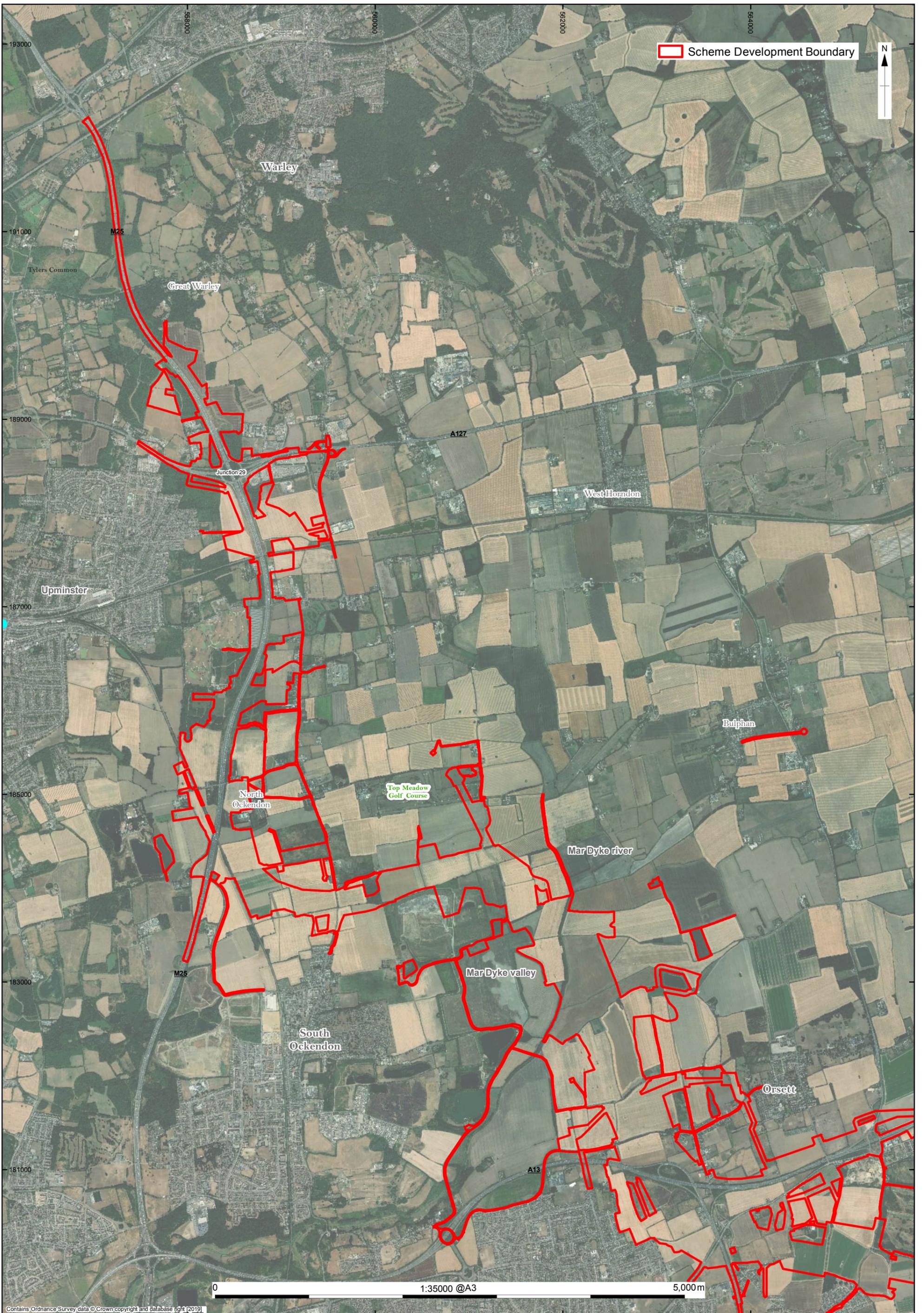
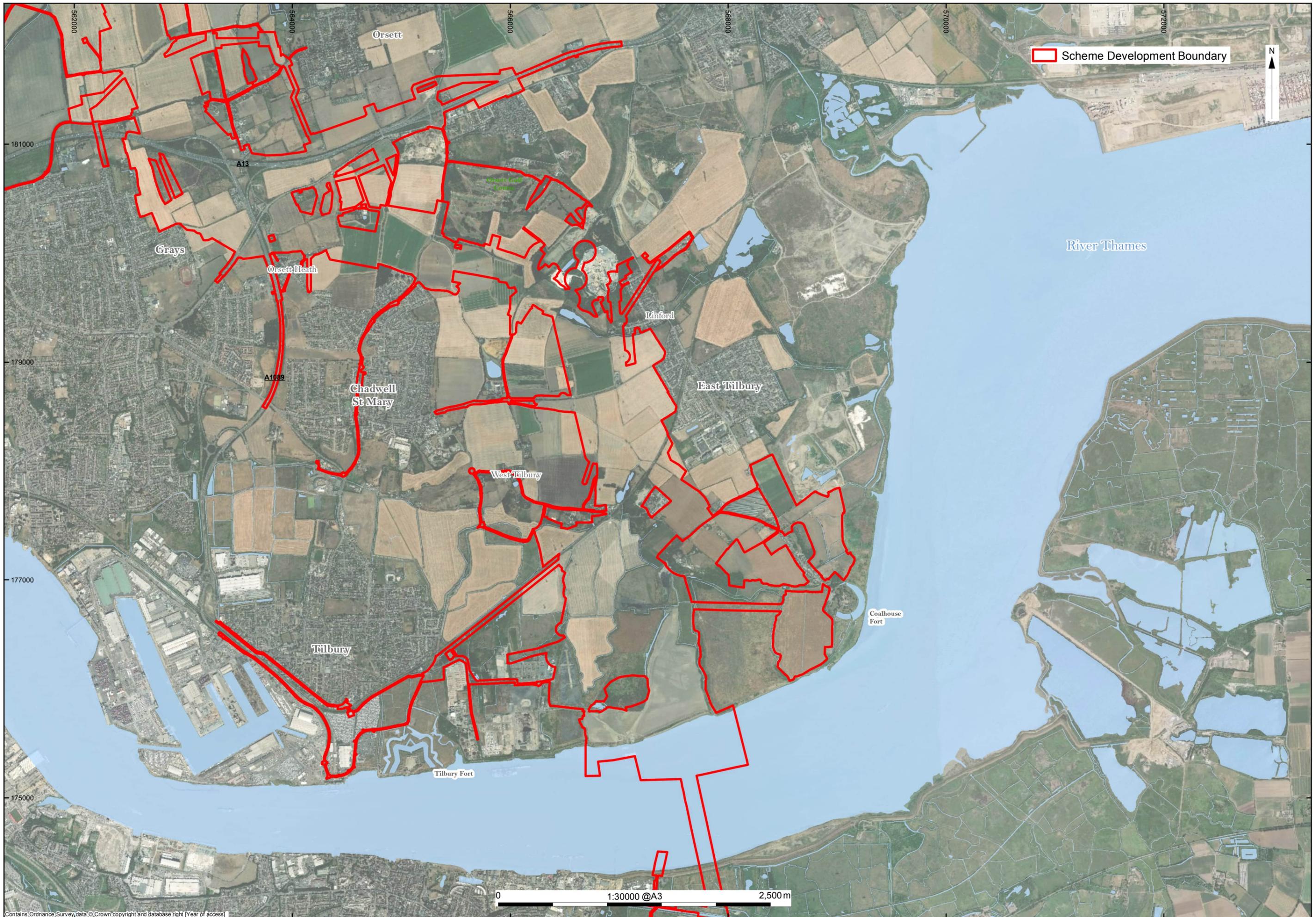


Figure 4a - Landuse of the scheme corridor north of the Thames (north)



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Figure 4b - Landuse of the scheme corridor north of the Thames (south)

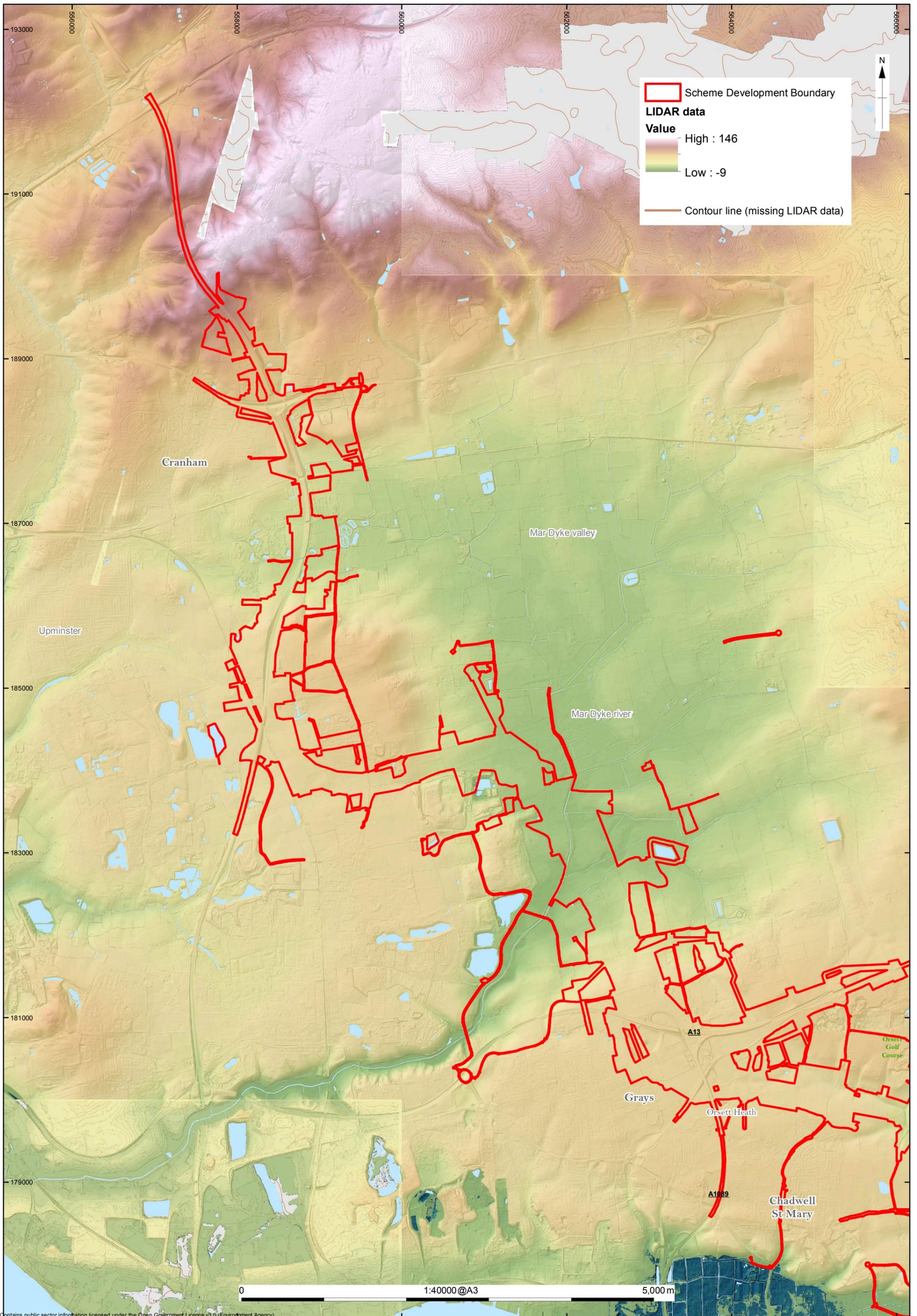


Figure 5a - Overview of the topography of the Havering-Essex scheme corridor (north)

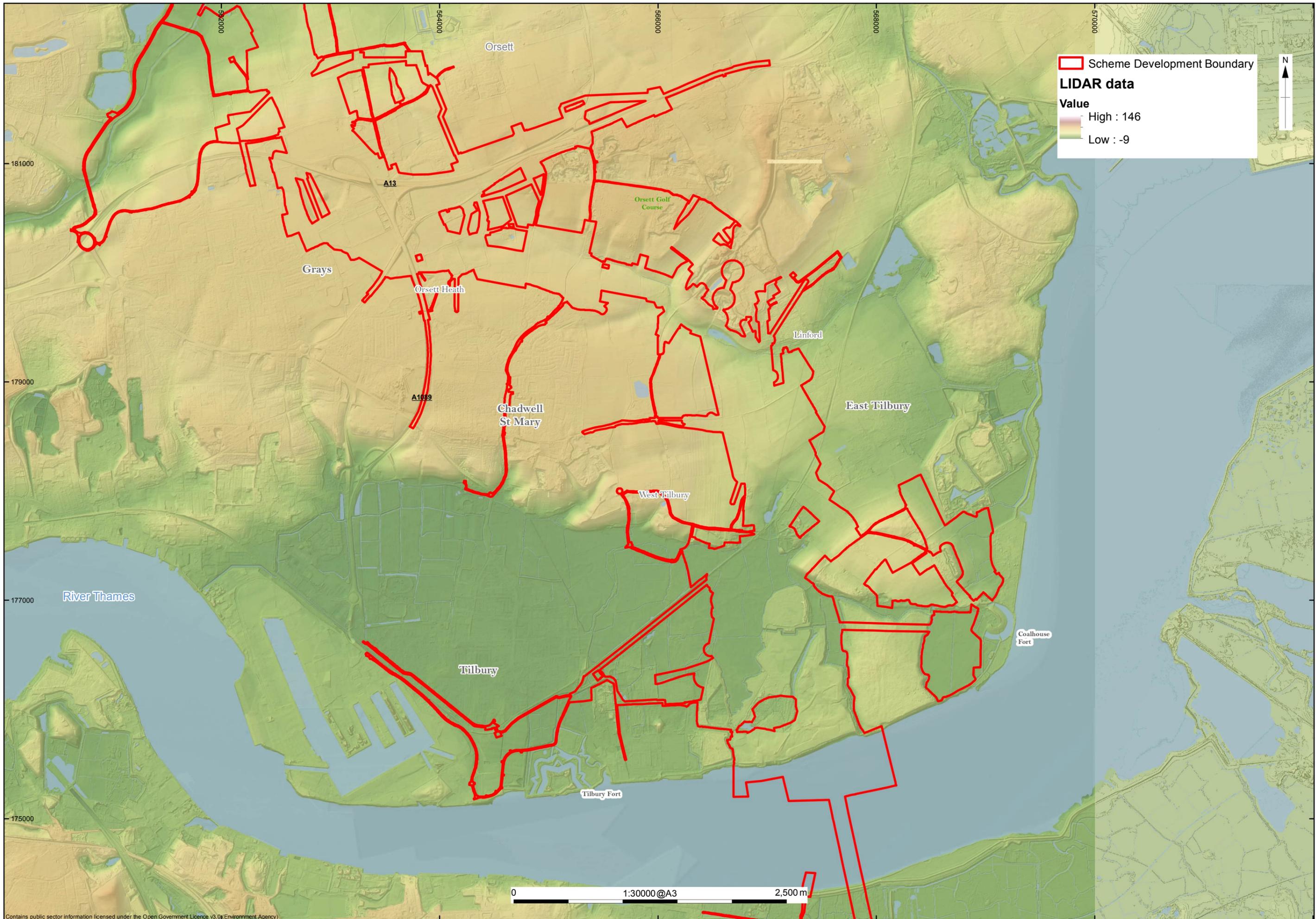


Figure 5b - Overview of the topography of the scheme corridor (south)

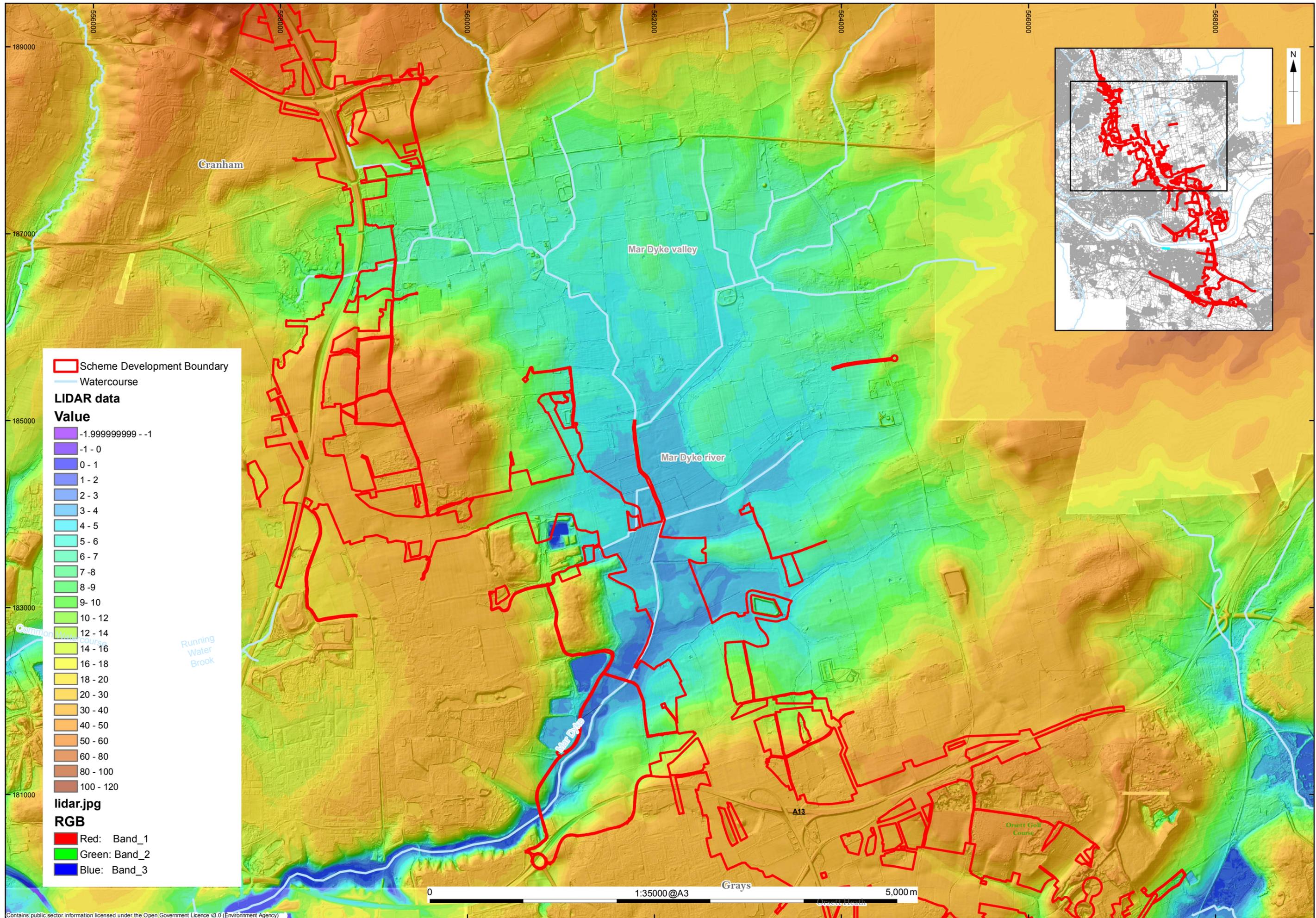


Figure 5c - Detail of the topography of the Mar Dyke Valley

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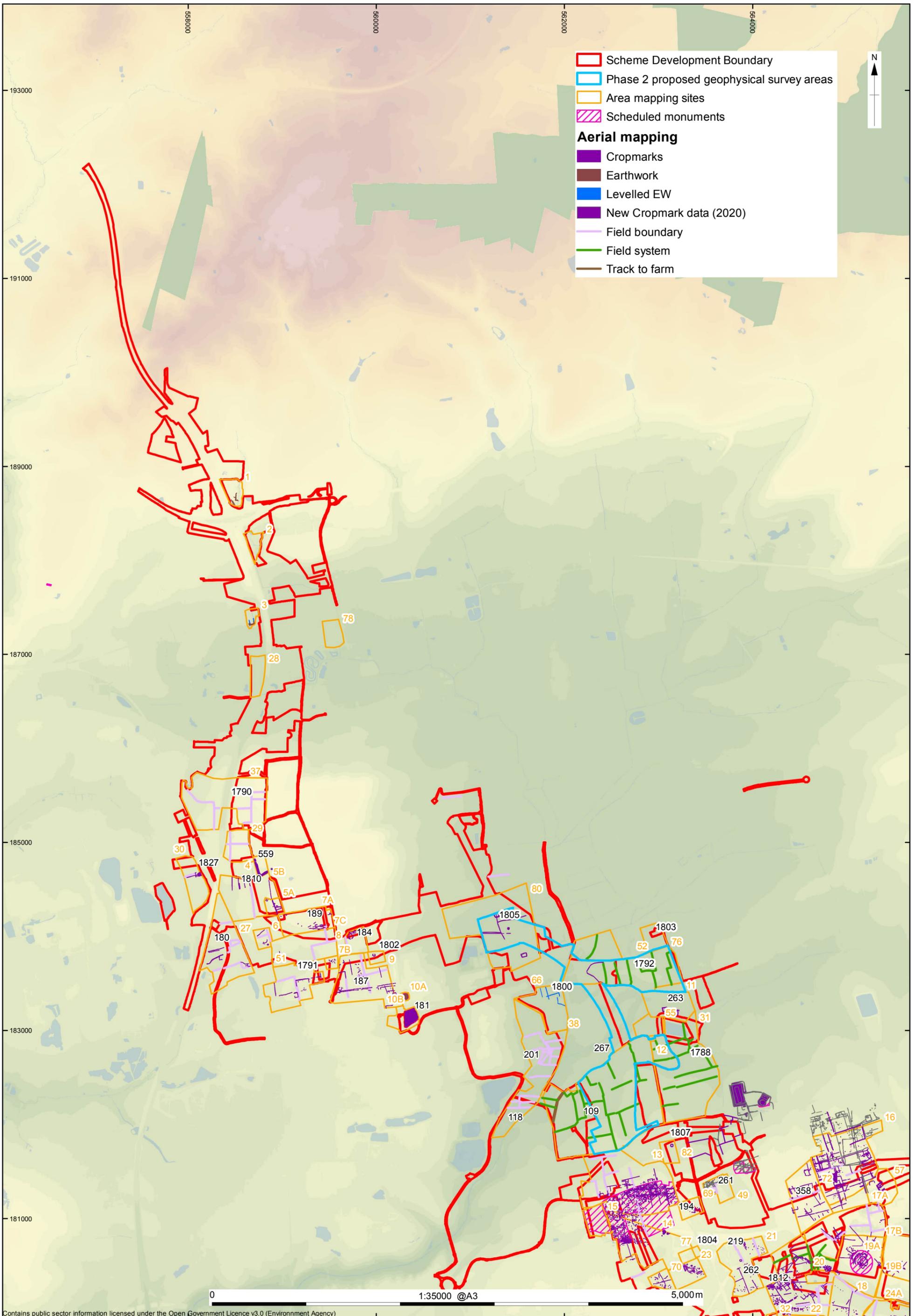


Figure 6a - Aerial mapping plot for scheme corridor – overview (northern half)

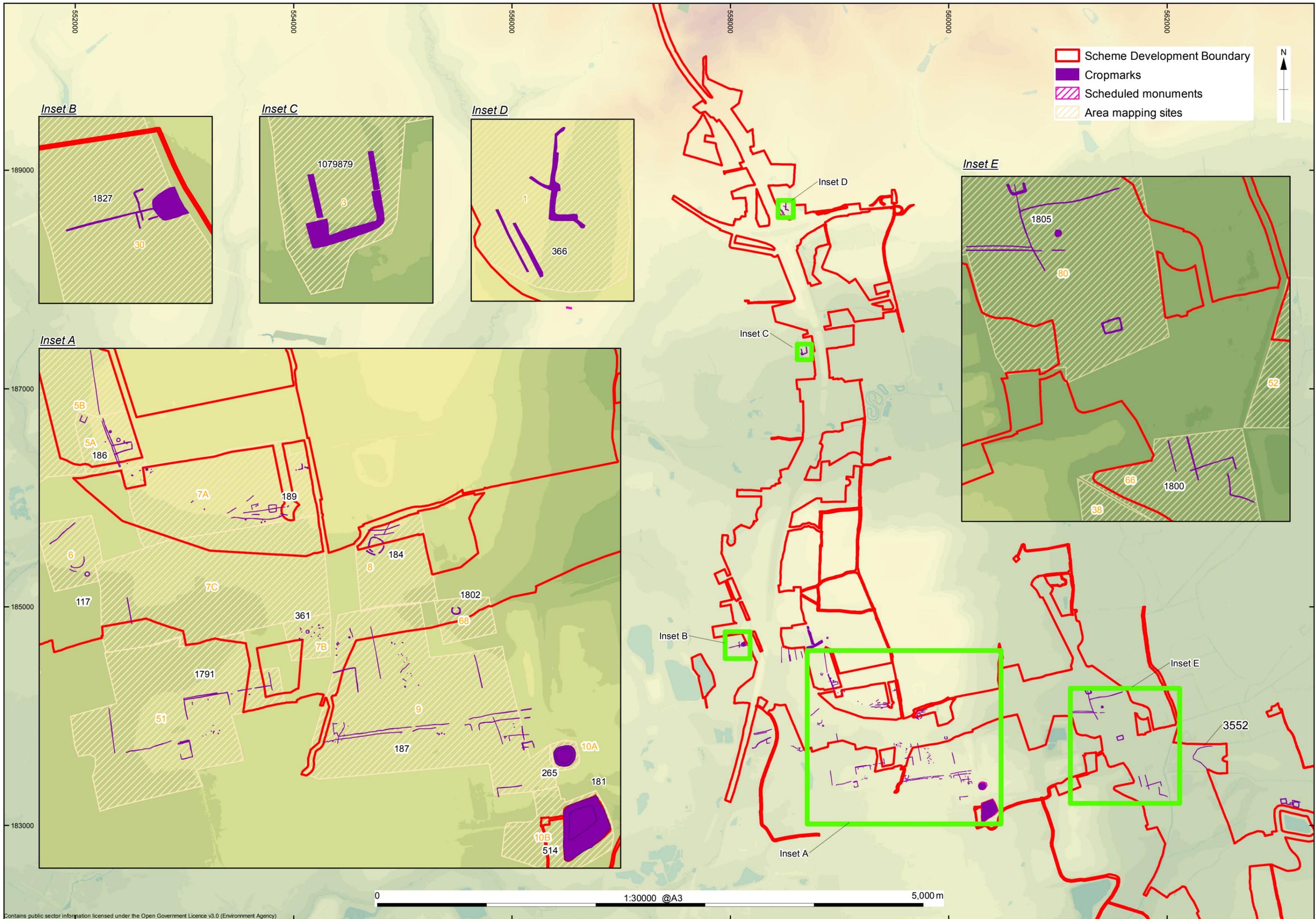


Figure 6b - Aerial mapping plot for scheme corridor – detail (north)

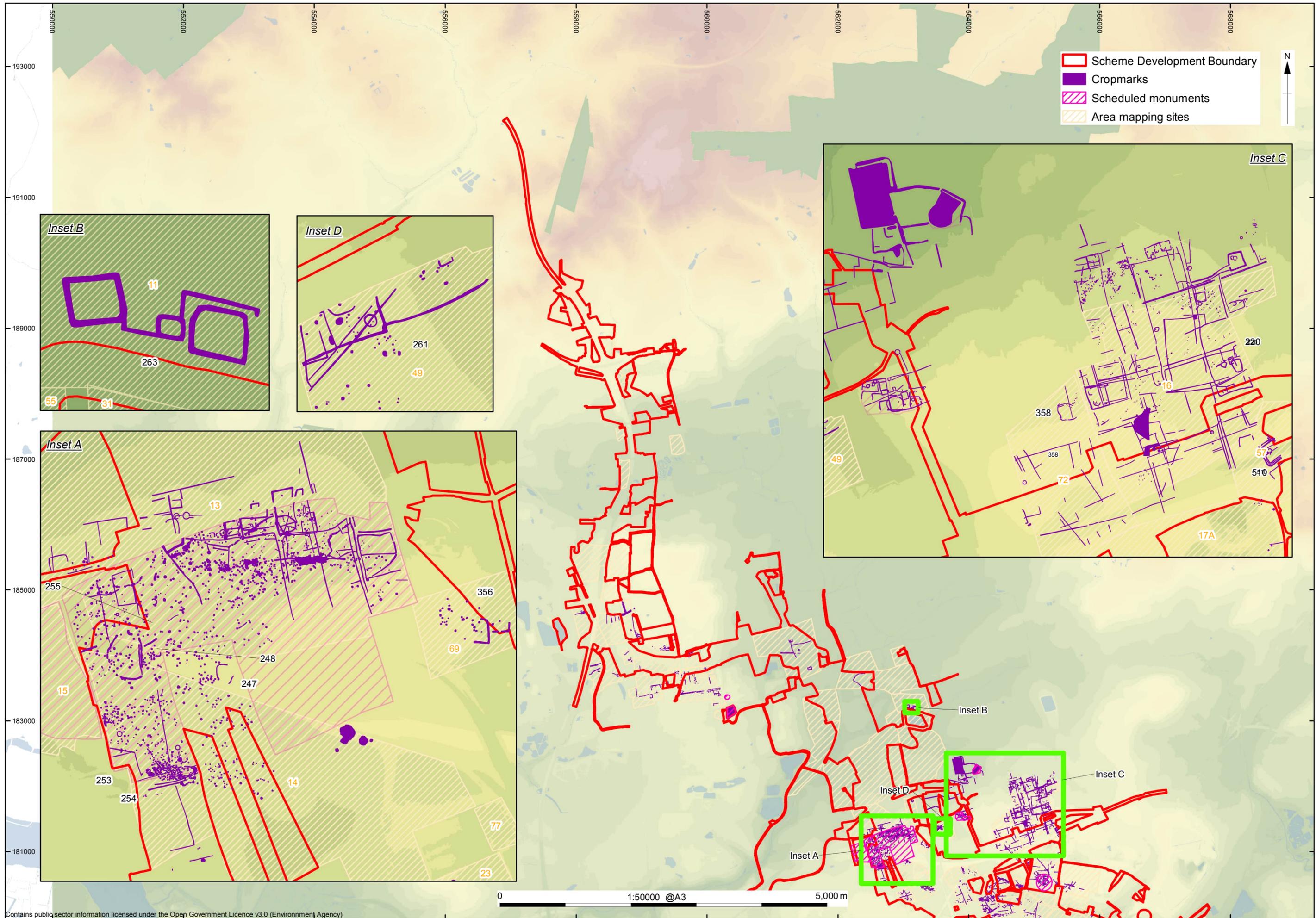


Figure 6c - Aerial mapping plot for scheme corridor – detail (central-north)

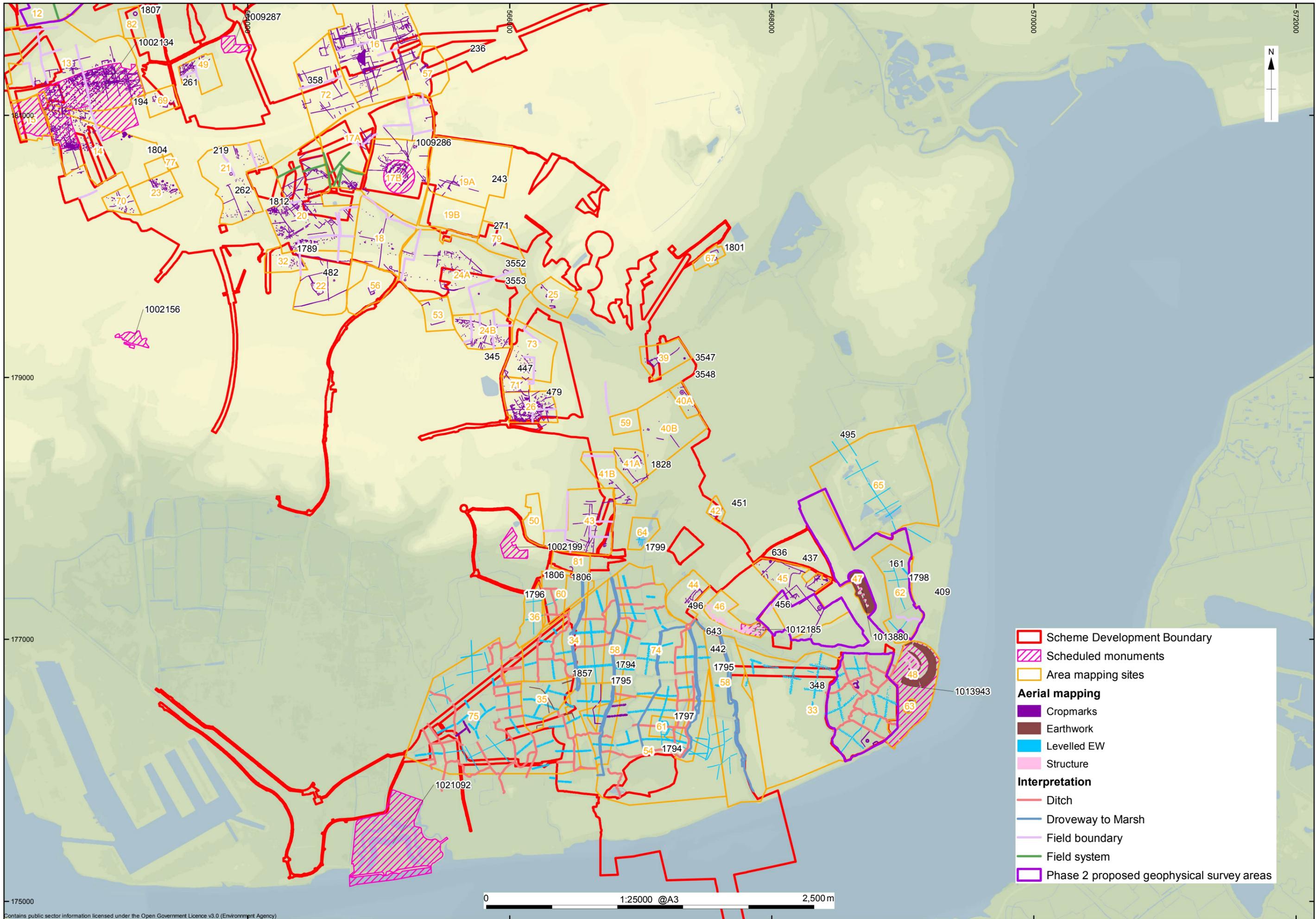


Figure 6d - Aerial mapping plot for scheme corridor - overview (southern half)

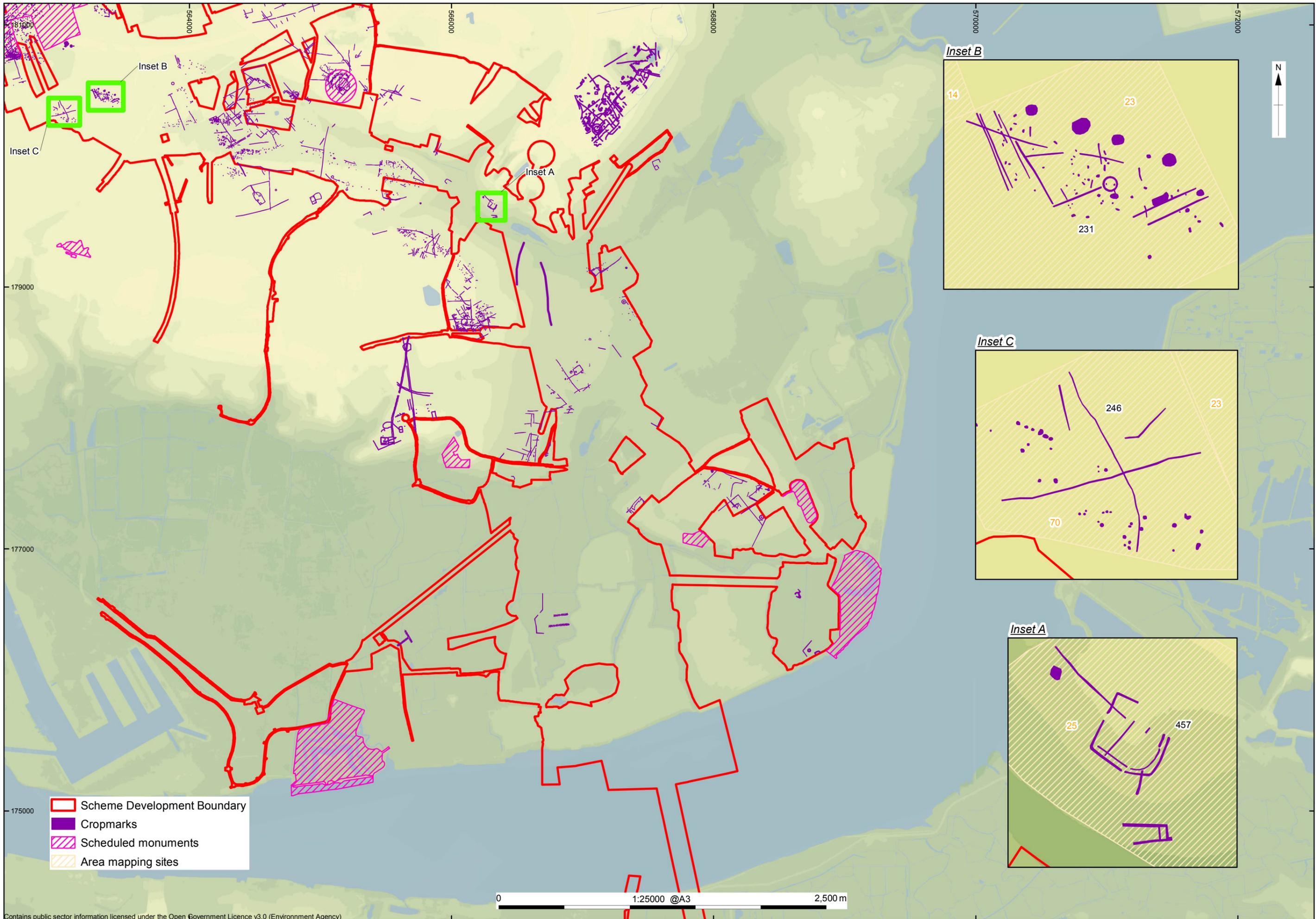


Figure 6e - Aerial mapping plot for scheme corridor - detail (central)

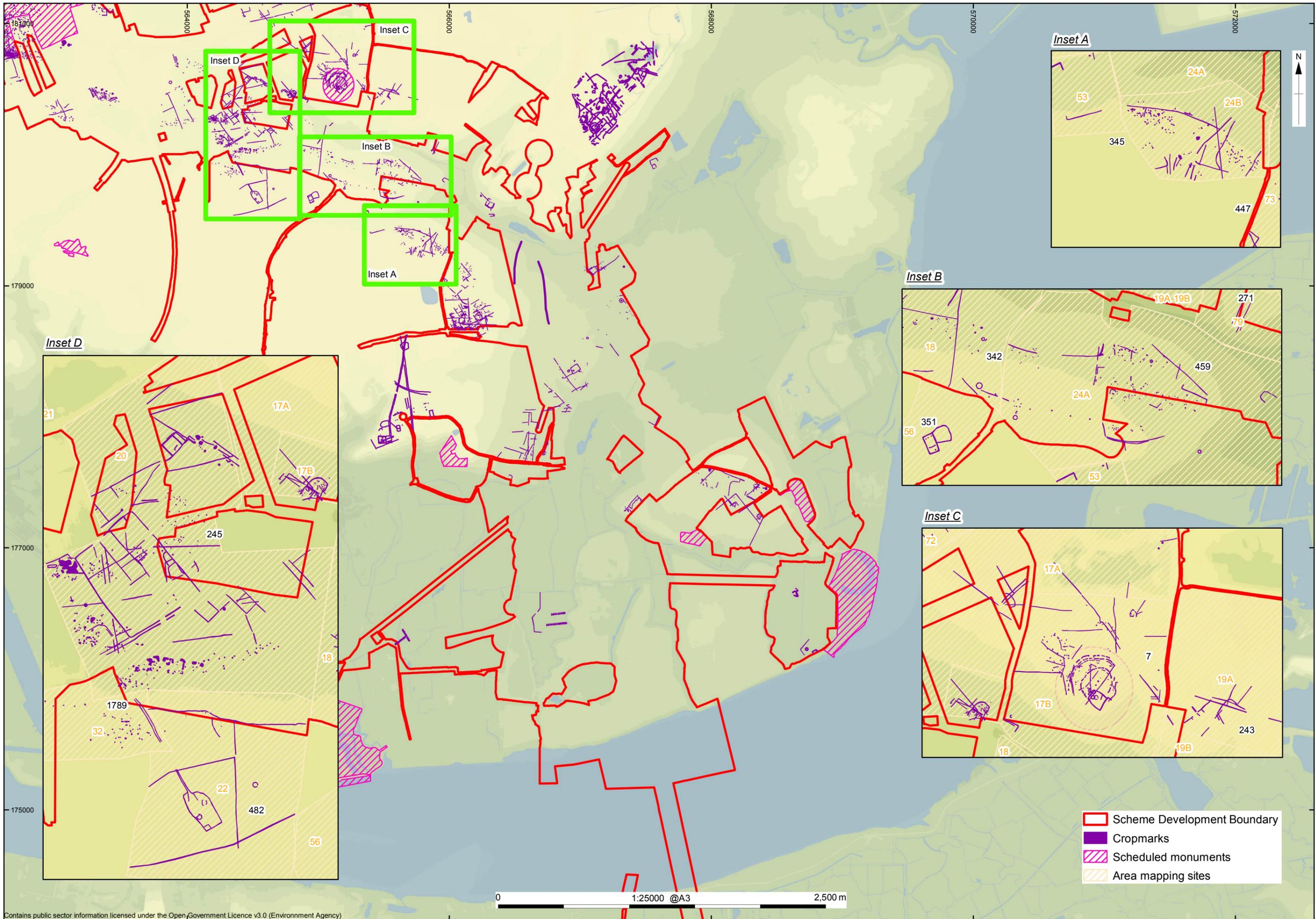


Figure 6f - Aerial mapping plot for scheme corridor – detail (central-south)

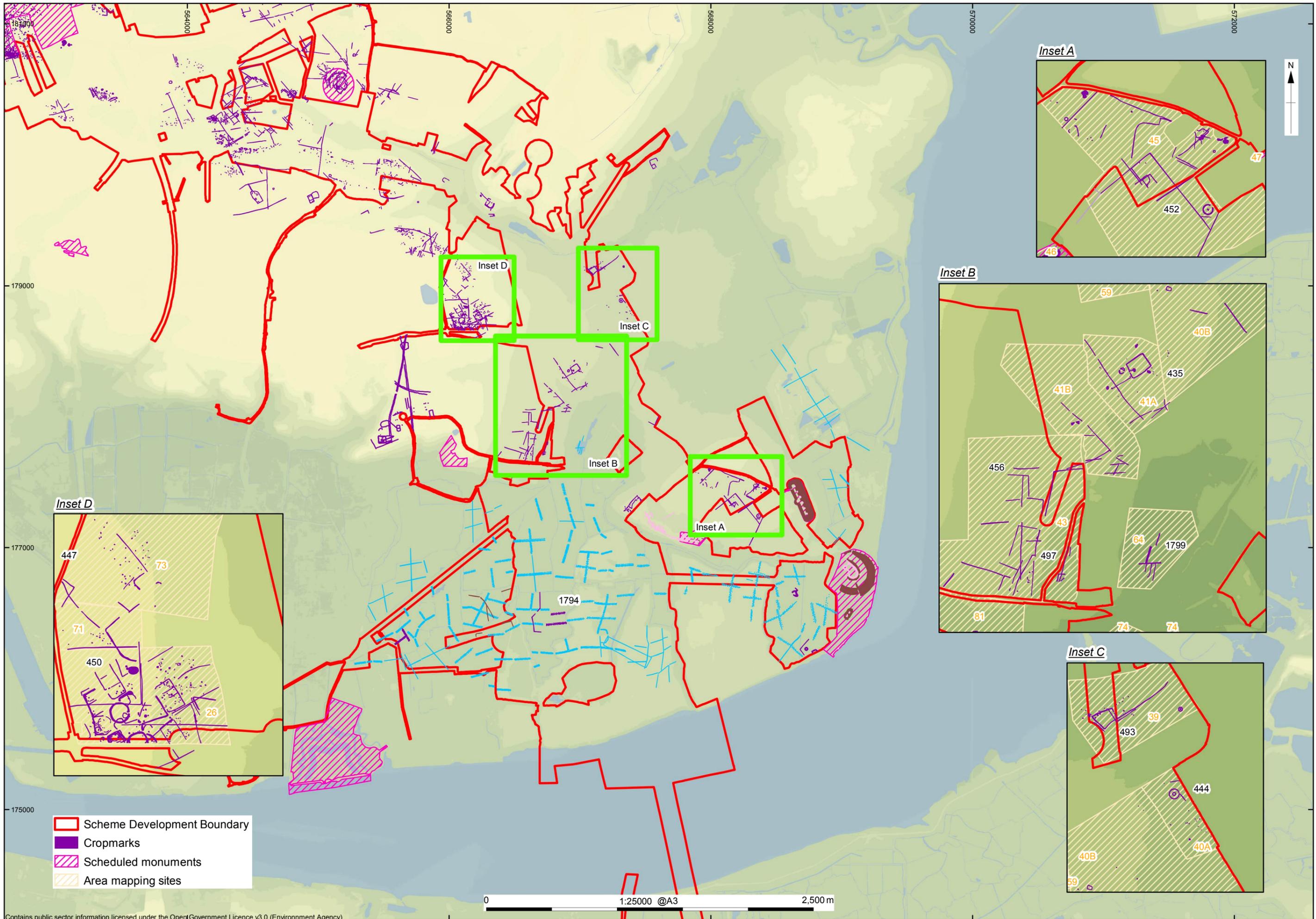


Figure 6g - Aerial mapping plot for scheme corridor – detail (south)

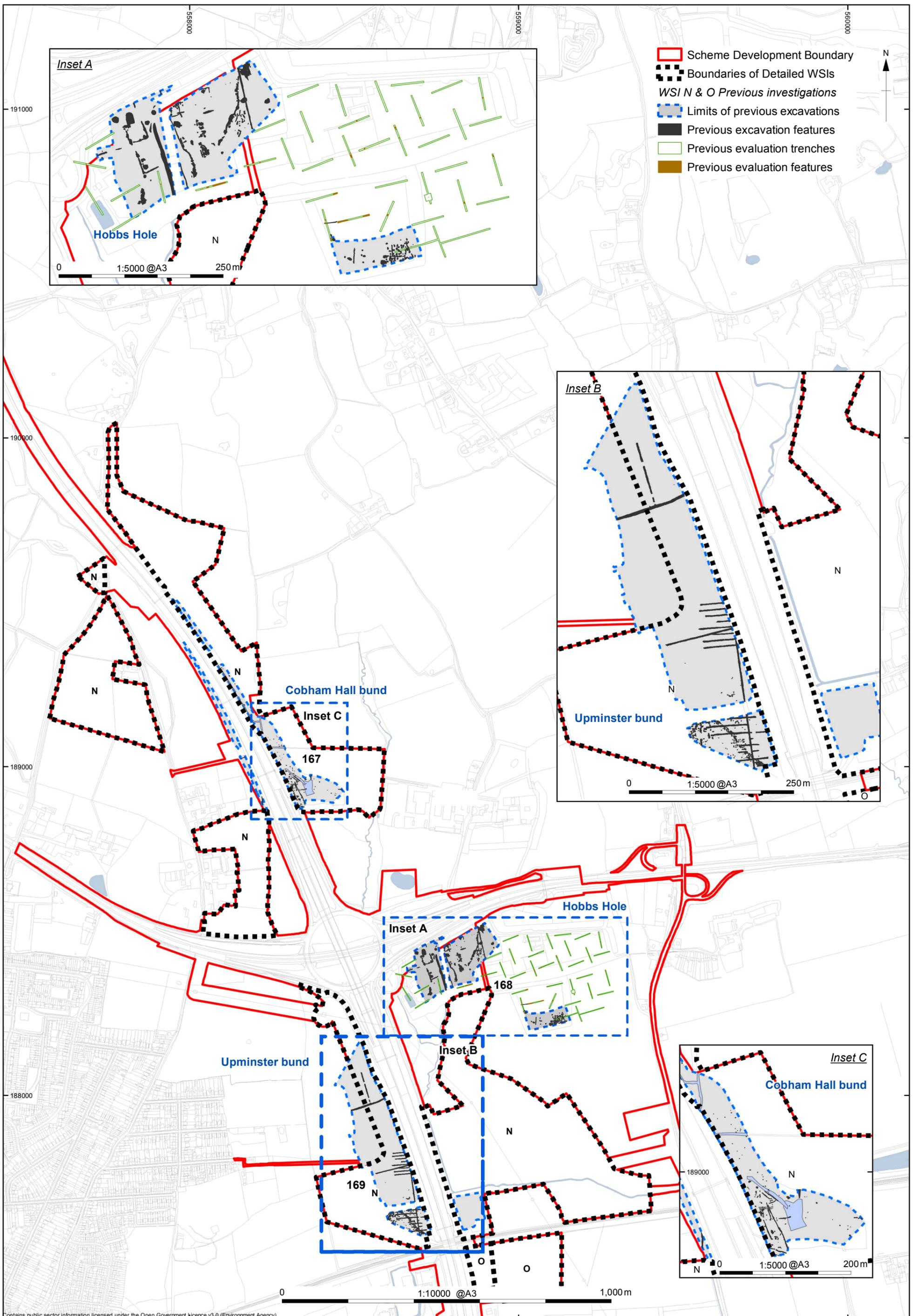


Figure 7a - Overview of previous investigations in or surrounding the scheme corridor (north)

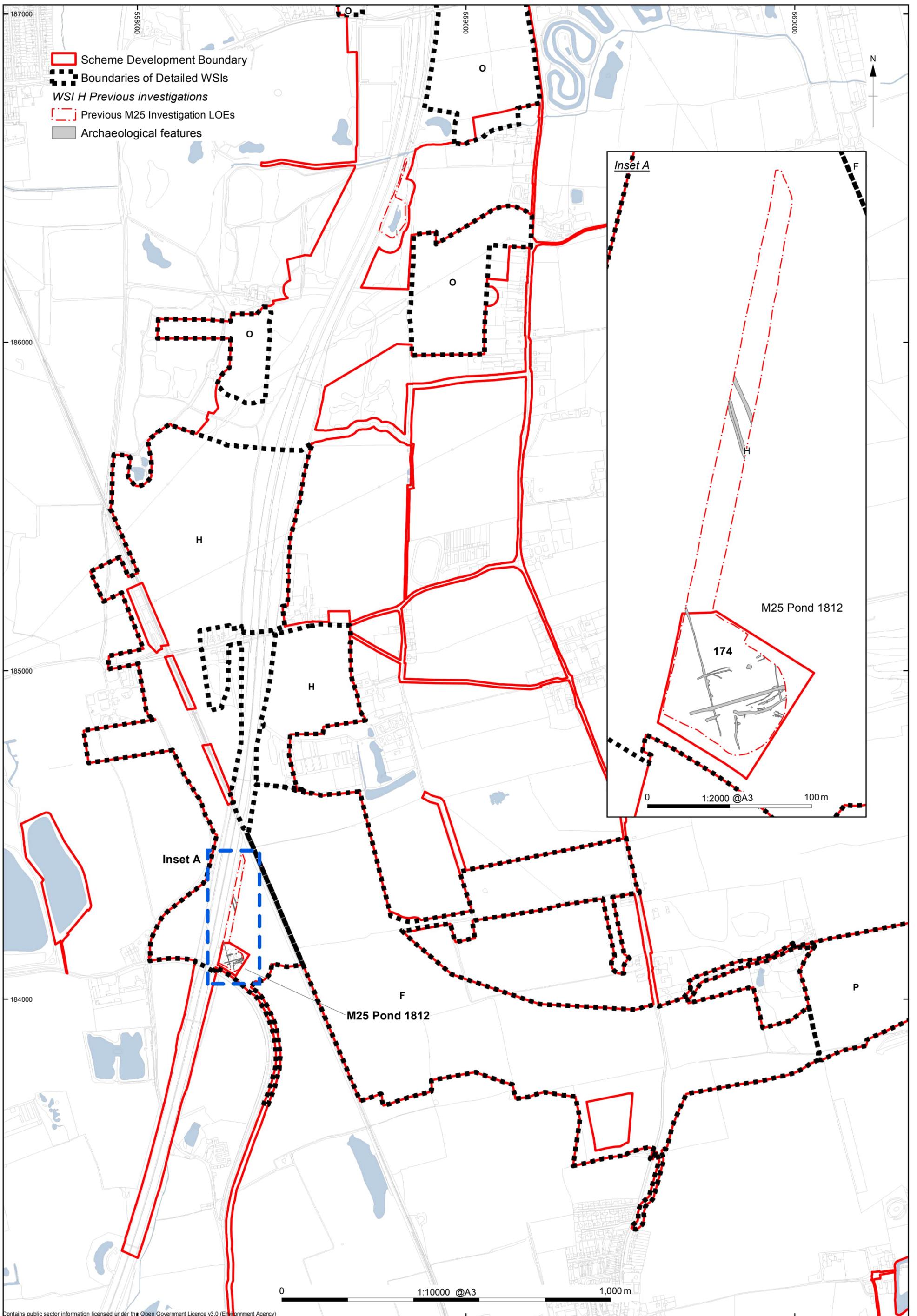


Figure 7b - Overview of previous investigations in or surrounding the scheme corridor (Central)

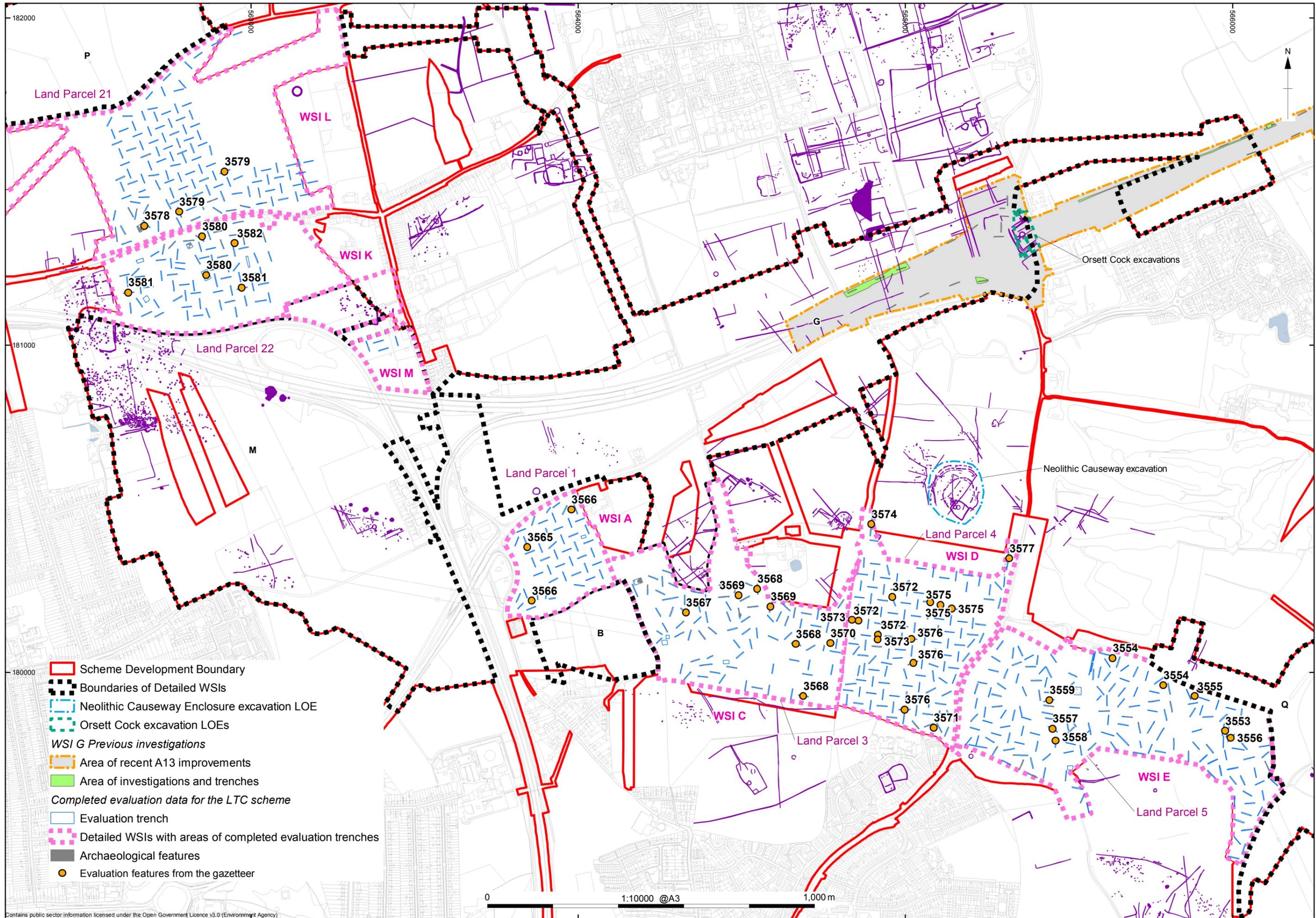


Figure 7c - Overview of previous investigations in or surrounding the scheme corridor (central)

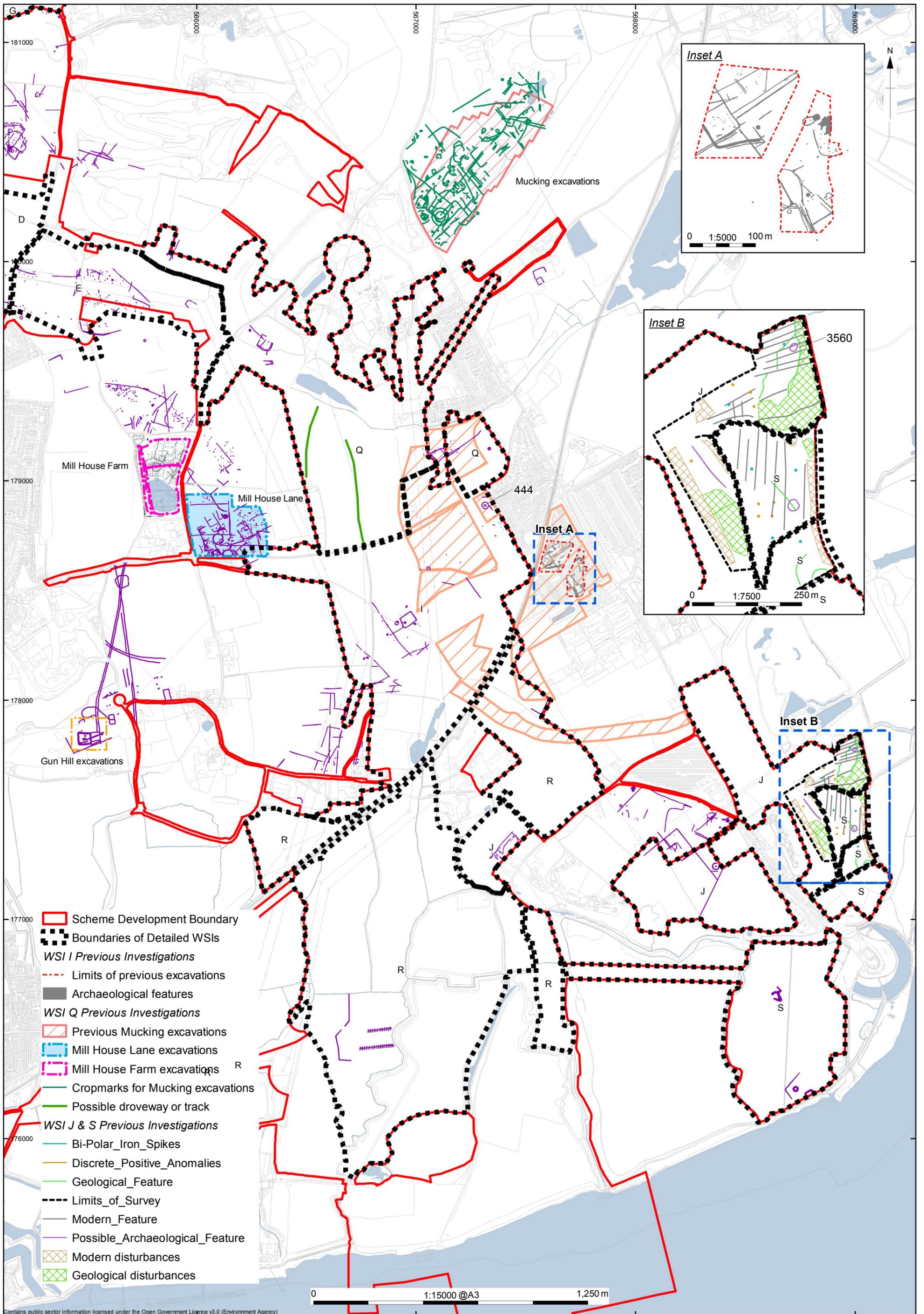


Figure 7d - Overview of previous investigations in or surrounding the scheme corridor (South)

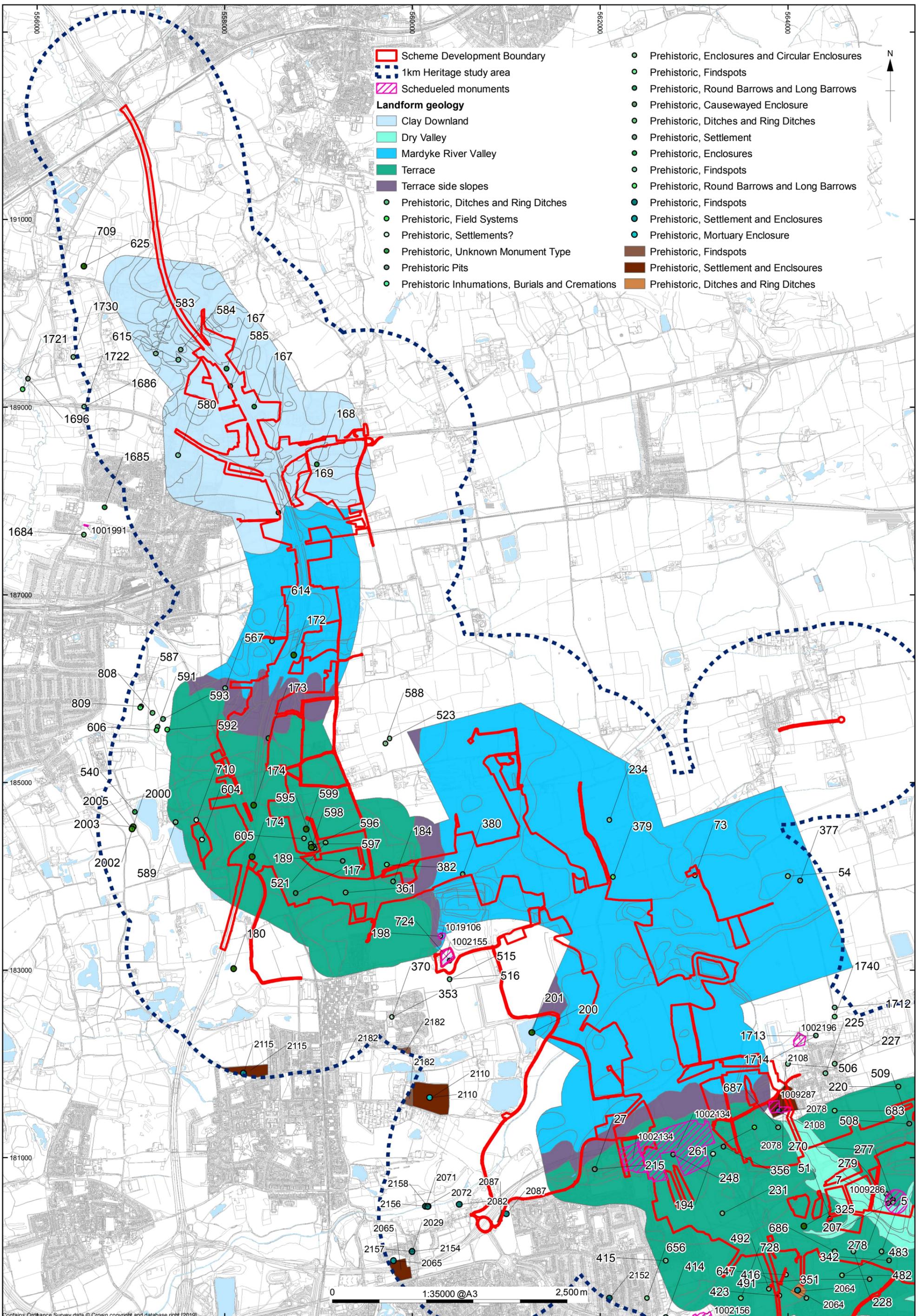
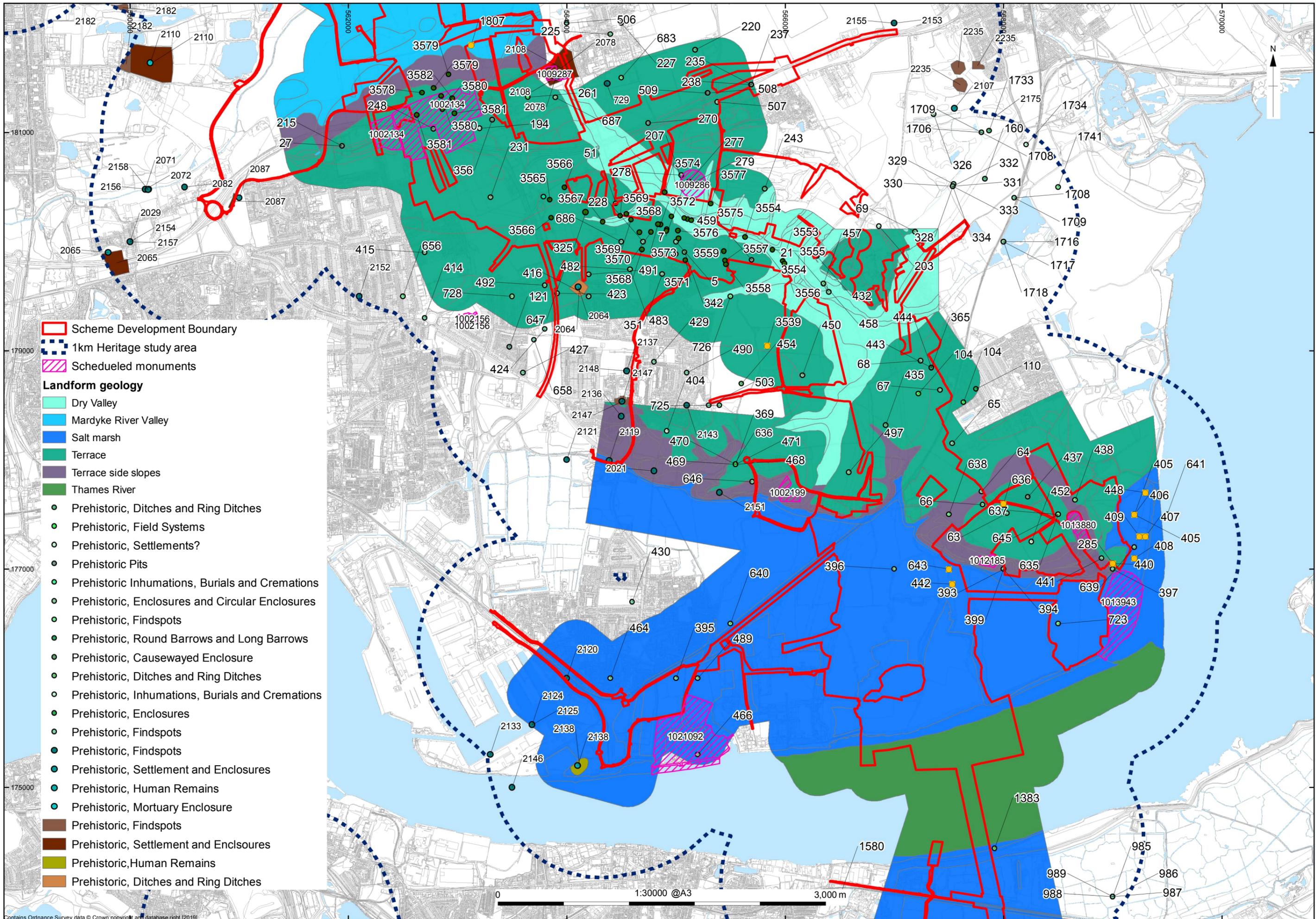


Figure 8a - HER data and other known or suspected Prehistoric archaeology (north)



- Scheme Development Boundary
- 1km Heritage study area
- Scheduled monuments
- Landform geology**
- Dry Valley
- Mardyke River Valley
- Salt marsh
- Terrace
- Terrace side slopes
- Thames River
- Prehistoric, Ditches and Ring Ditches
- Prehistoric, Field Systems
- Prehistoric, Settlements?
- Prehistoric Pits
- Prehistoric Inhumations, Burials and Cremations
- Prehistoric, Enclosures and Circular Enclosures
- Prehistoric, Findspots
- Prehistoric, Round Barrows and Long Barrows
- Prehistoric, Causewayed Enclosure
- Prehistoric, Ditches and Ring Ditches
- Prehistoric, Inhumations, Burials and Cremations
- Prehistoric, Enclosures
- Prehistoric, Findspots
- Prehistoric, Findspots
- Prehistoric, Settlement and Enclosures
- Prehistoric, Human Remains
- Prehistoric, Mortuary Enclosure
- Prehistoric, Findspots
- Prehistoric, Settlement and Enclosures
- Prehistoric, Human Remains
- Prehistoric, Ditches and Ring Ditches

Figure 8b - HER data and other known or suspected Prehistoric archaeology (south)

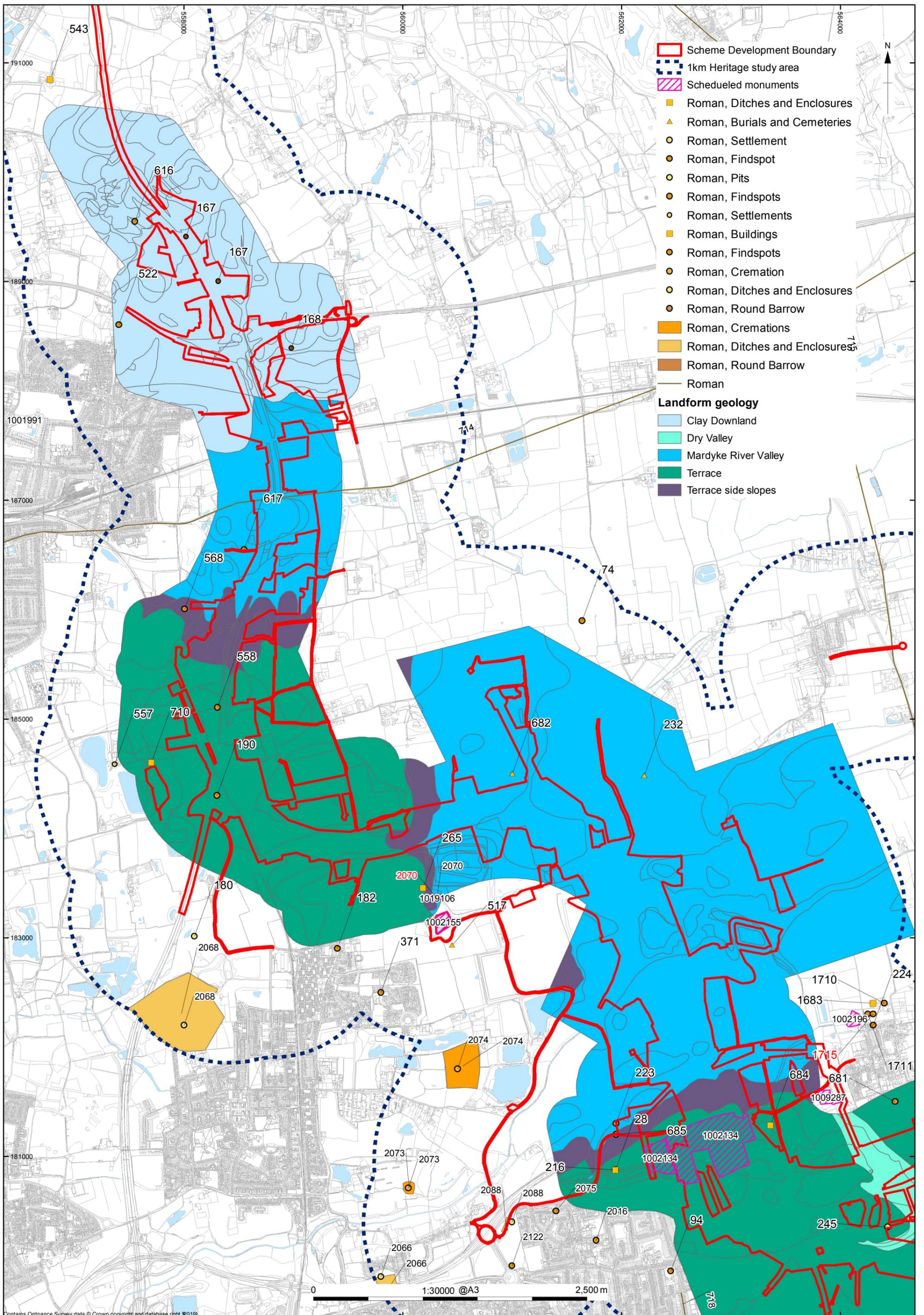


Figure 9a - HER data and other known or suspected Roman archaeology (north)

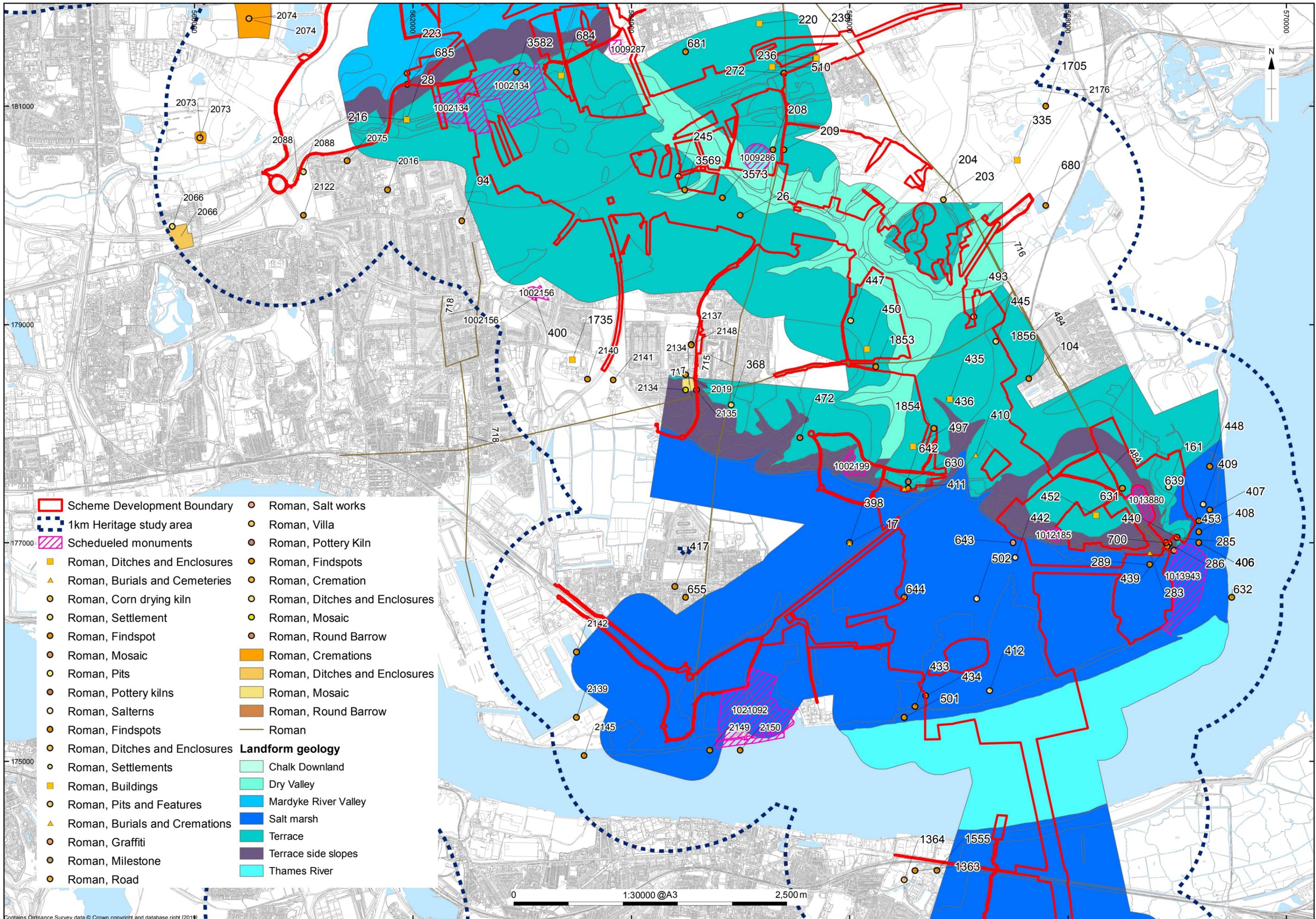


Figure 9b - HER data and other known or suspected Roman archaeology (south)

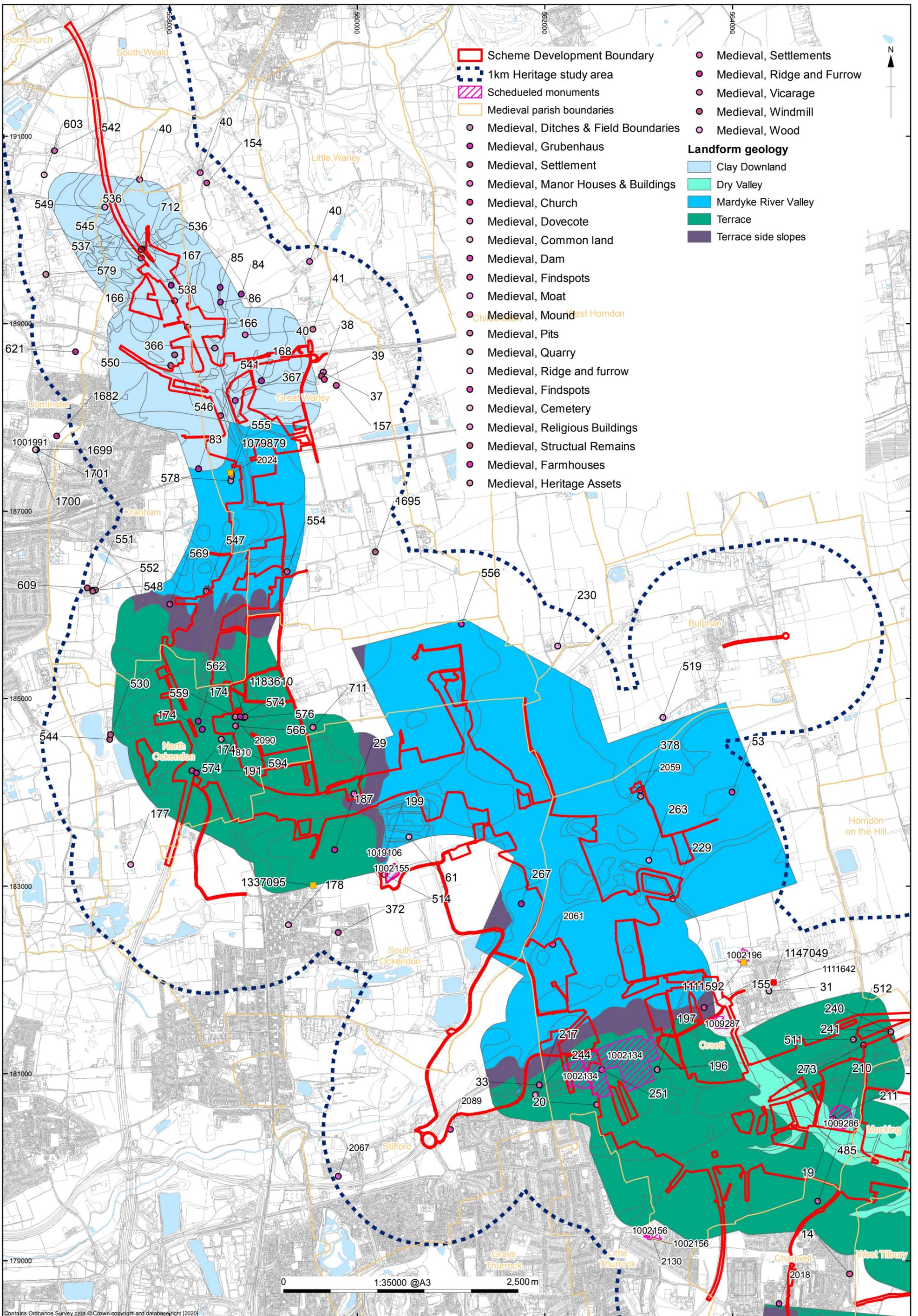


Figure 10a - HER data and other known or suspected Medieval archaeology (north)

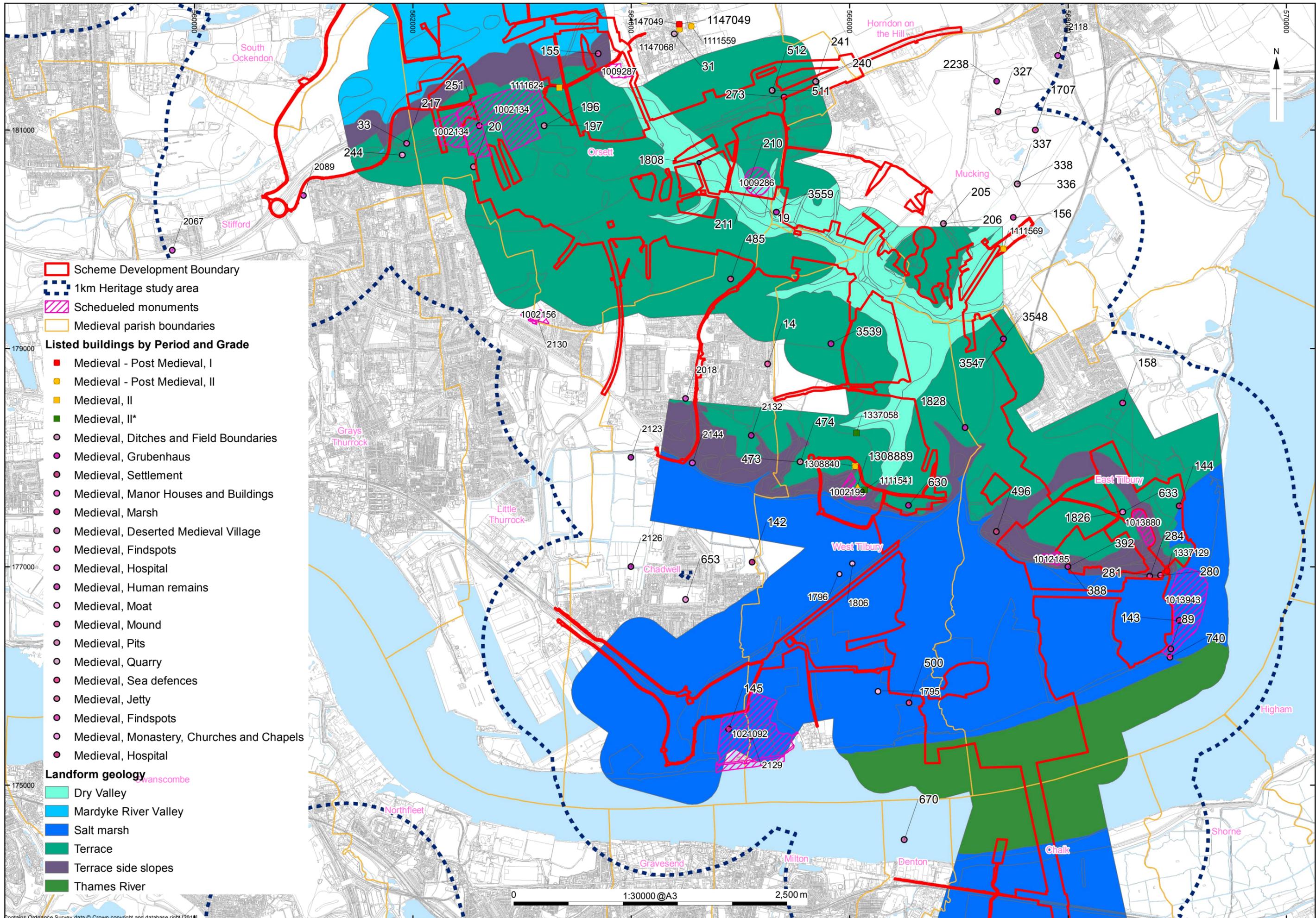


Figure 10b - HER data and other known or suspected Medieval archaeology (south)

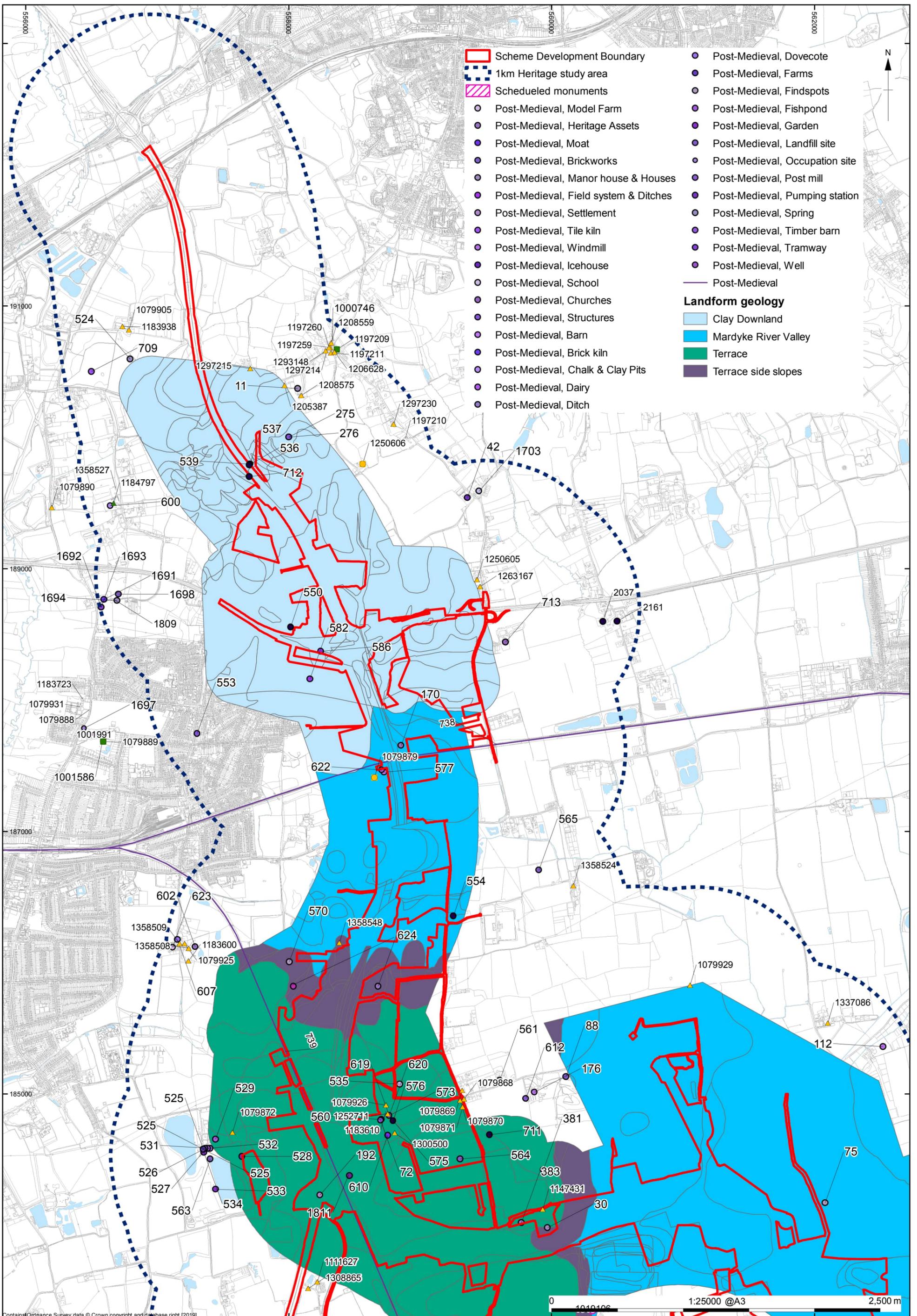


Figure 11a - HER data and other known or suspected Post-Medieval archaeology (north)

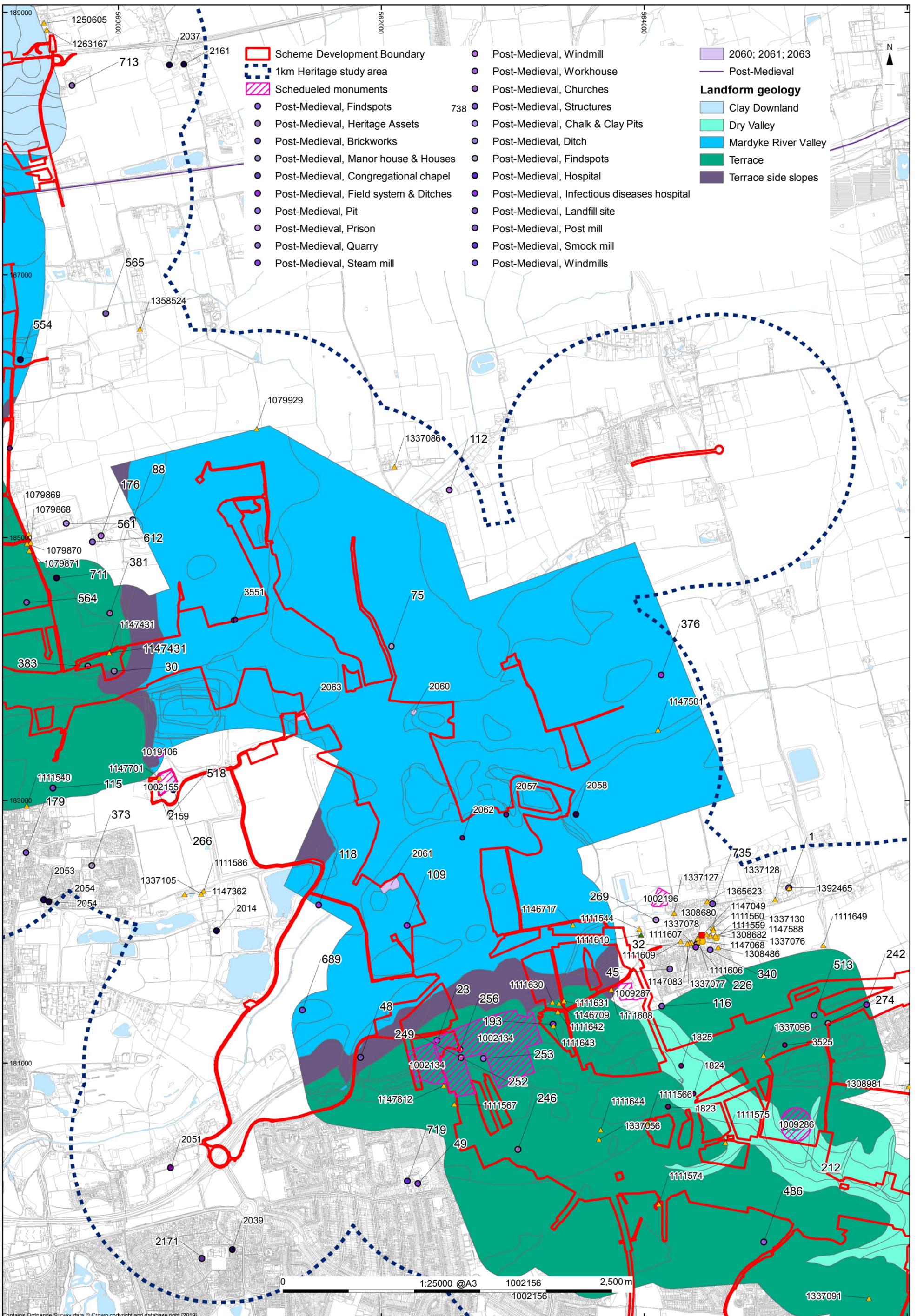


Figure 11b - HER data and other known or suspected Post-Medieval archaeology (central)

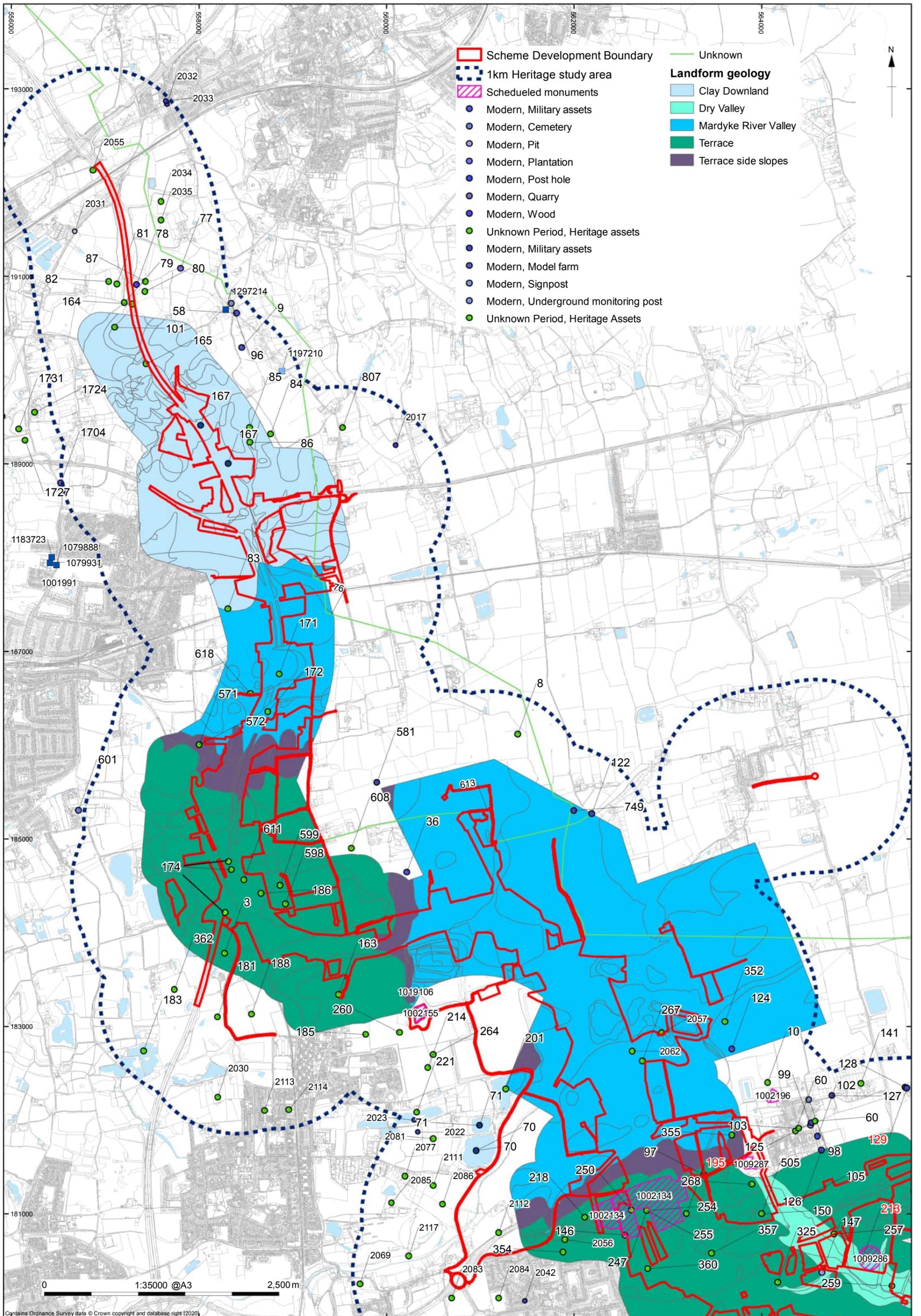


Figure 12a - HER data and other known or suspected Modern and Unknown Period archaeology (north)

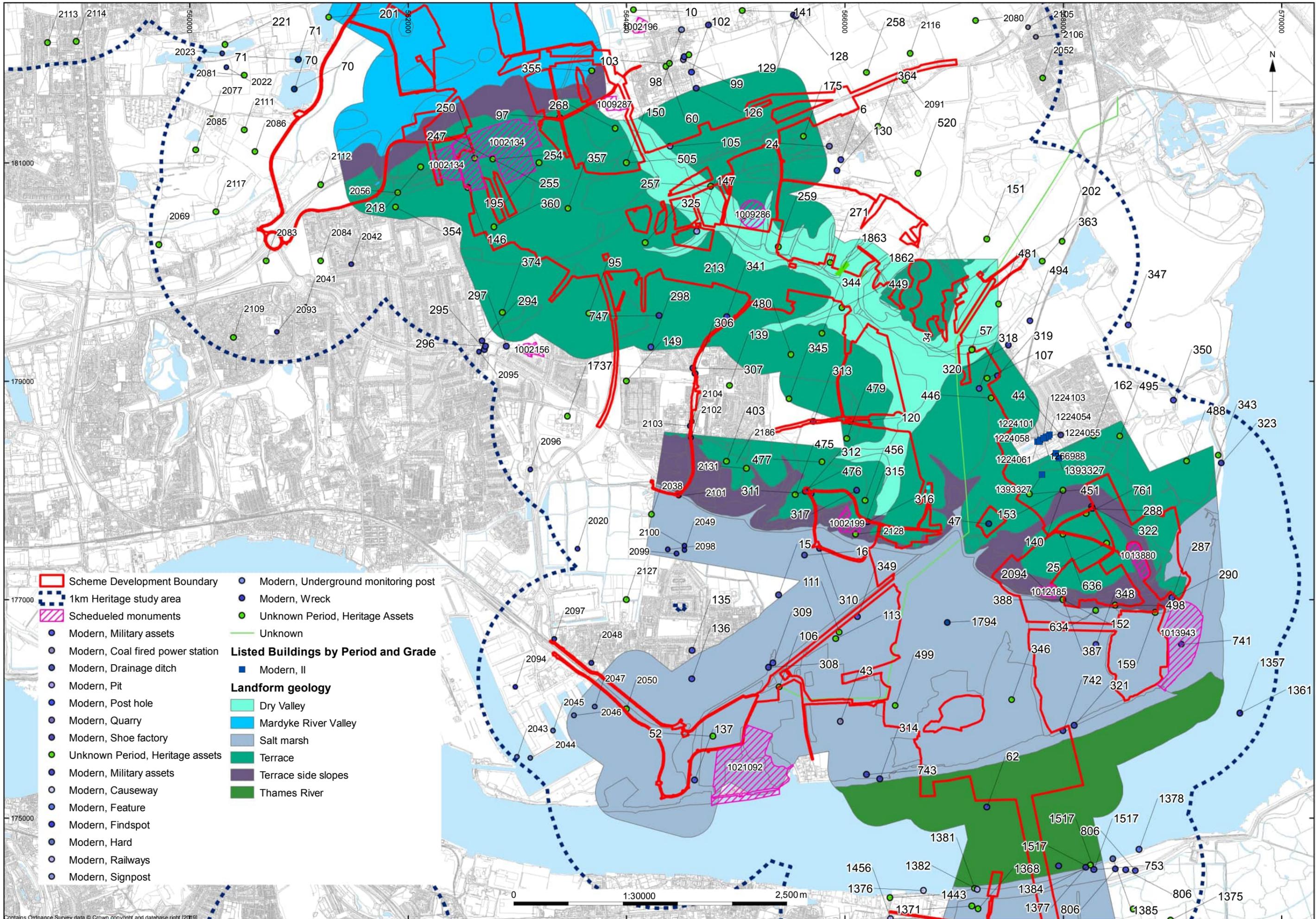


Figure 12b - HER data and other known or suspected Modern and Unknown Period archaeology (south)

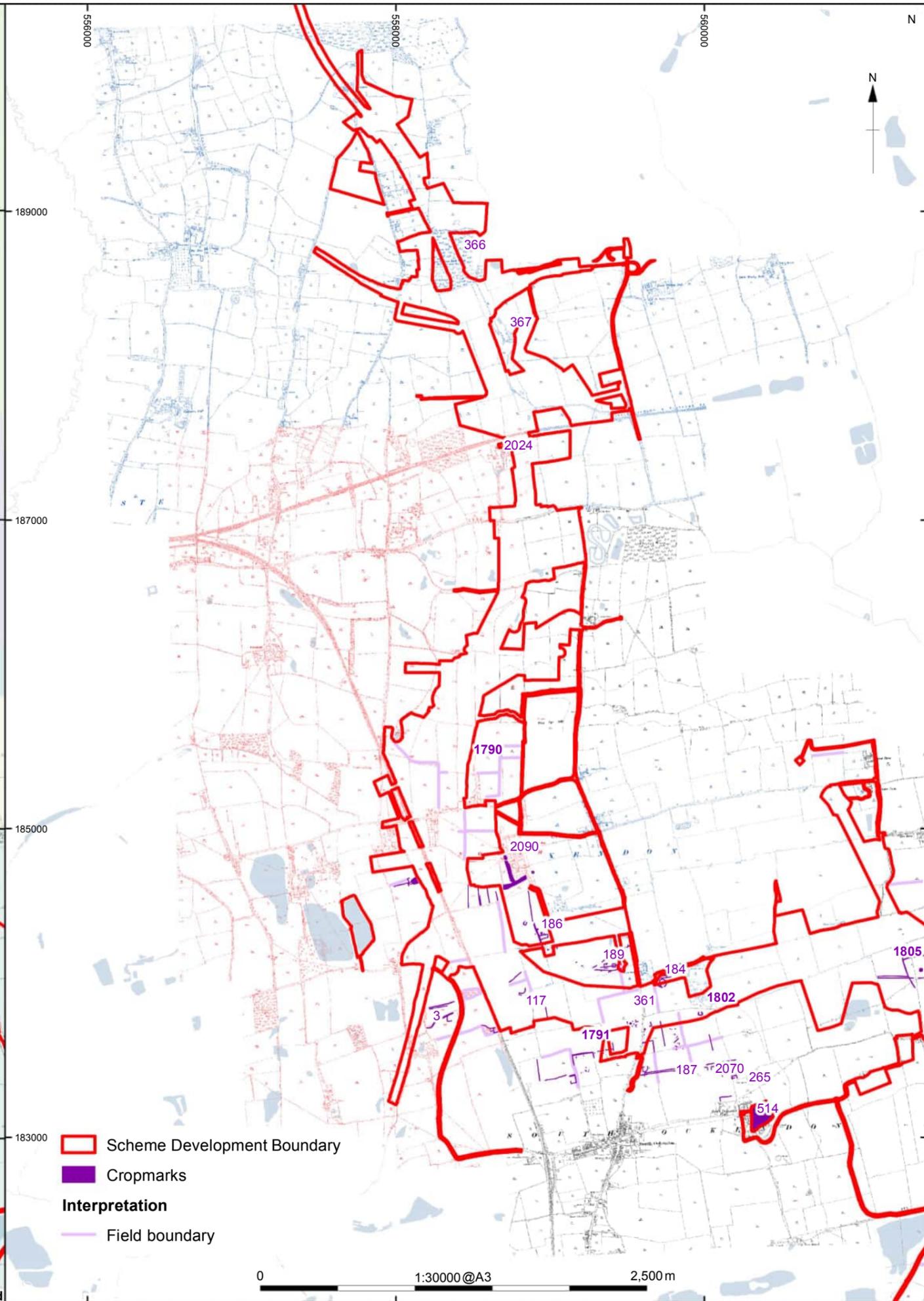
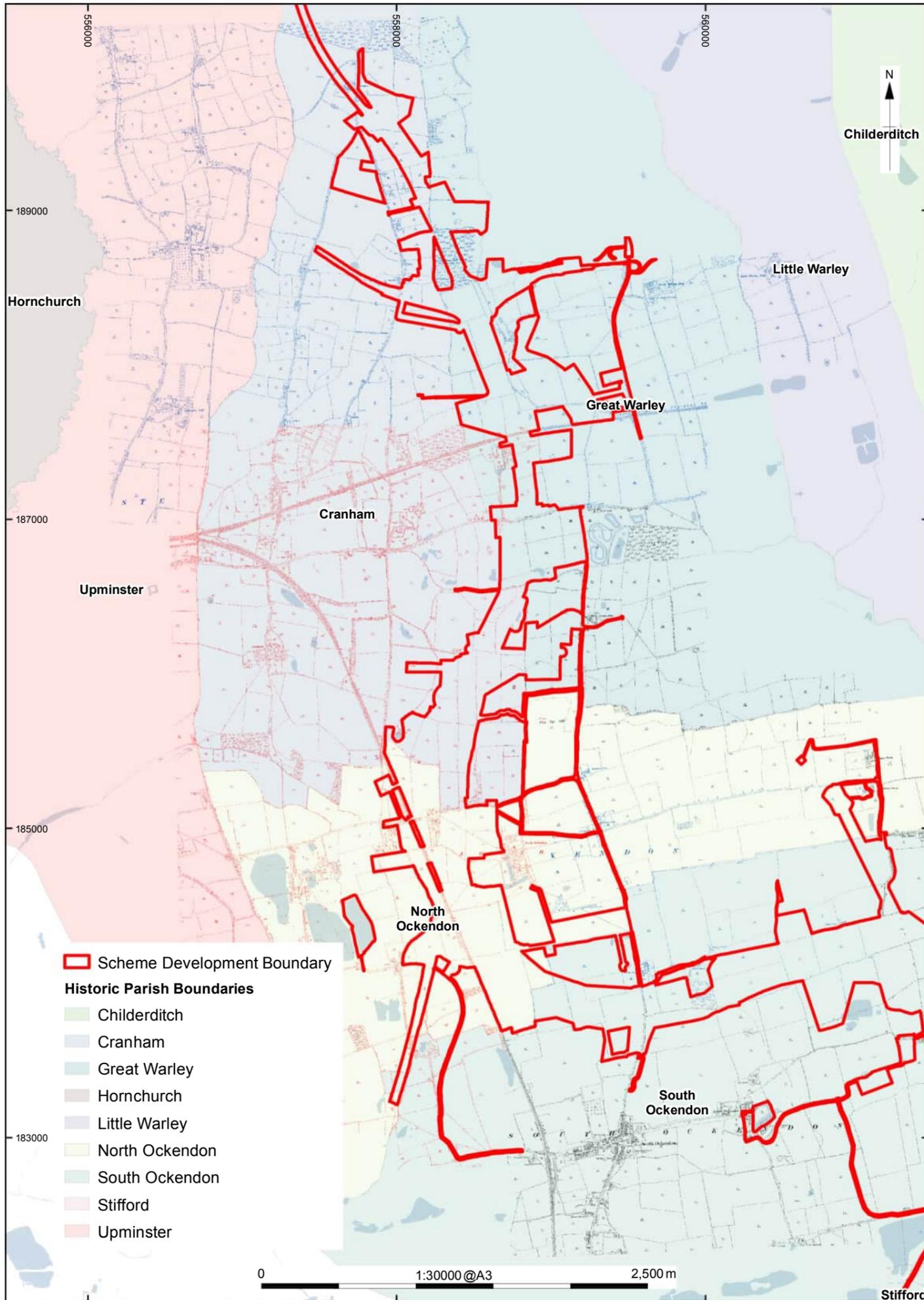


Figure 13a - OS map dated c.1897 and cropmarks in the Havering and Essex section of the Scheme (North)

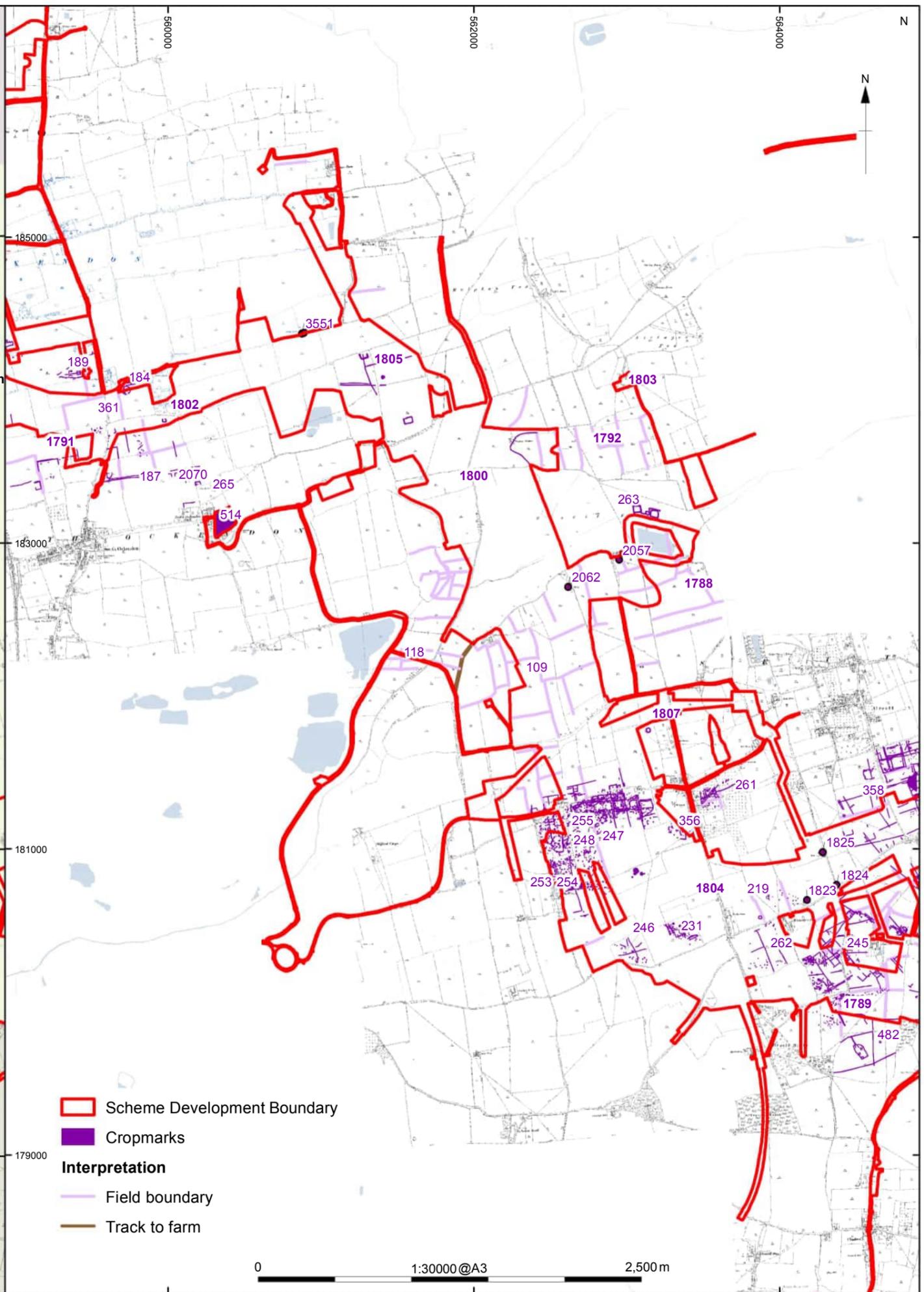
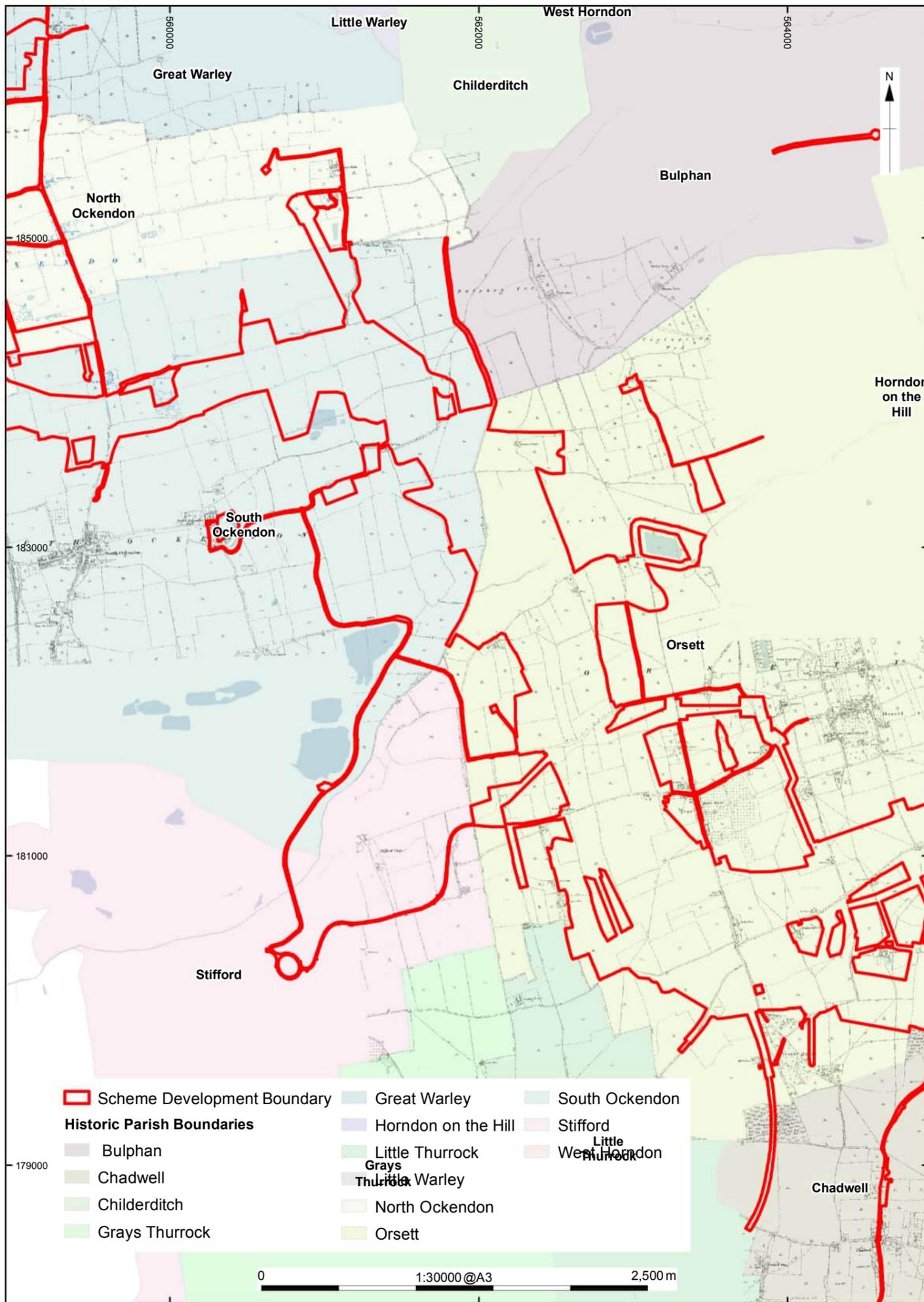


Figure 13b - OS map dated c.1897 and cropmarks in the Havering and Essex section of the Scheme (Central)

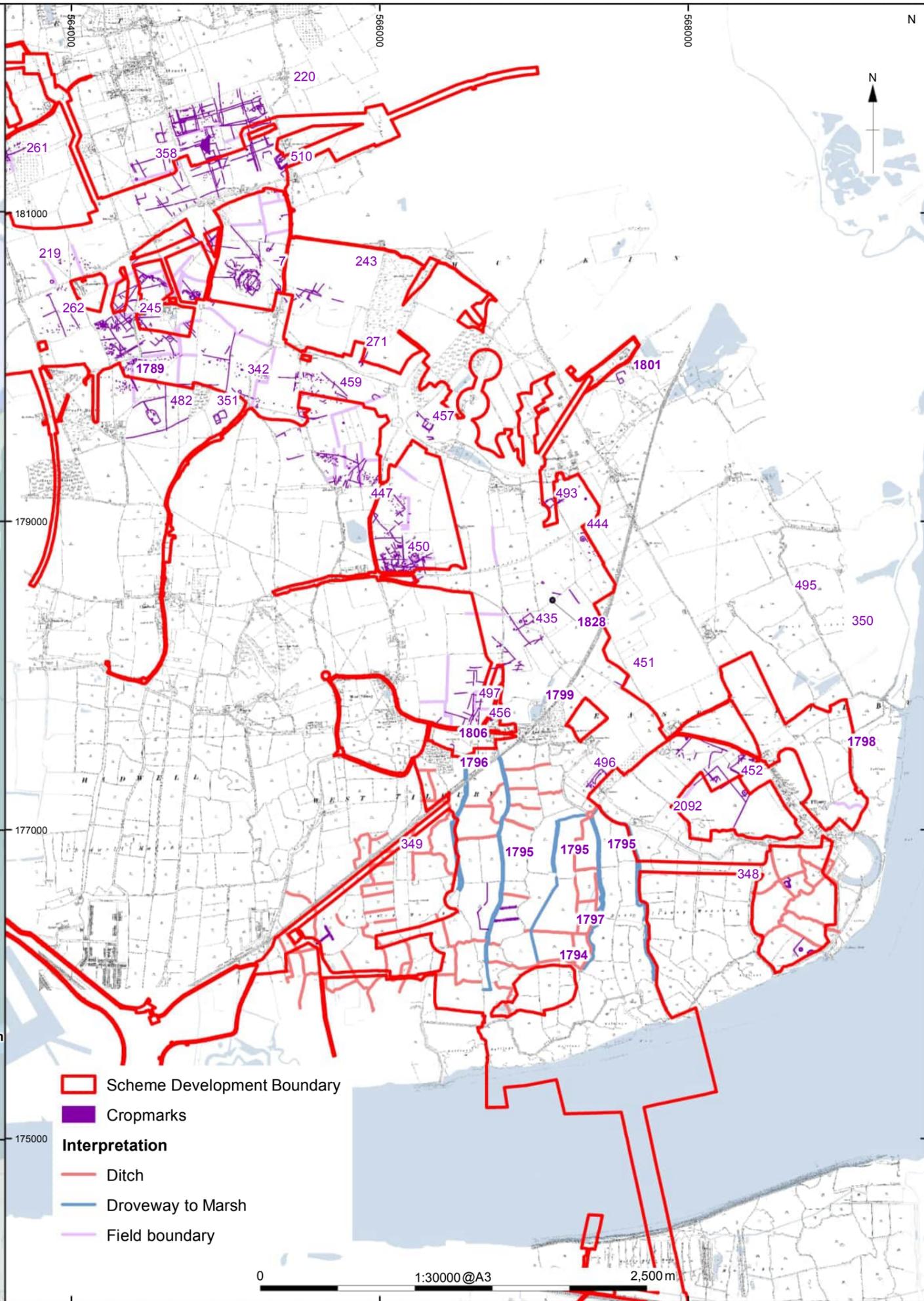
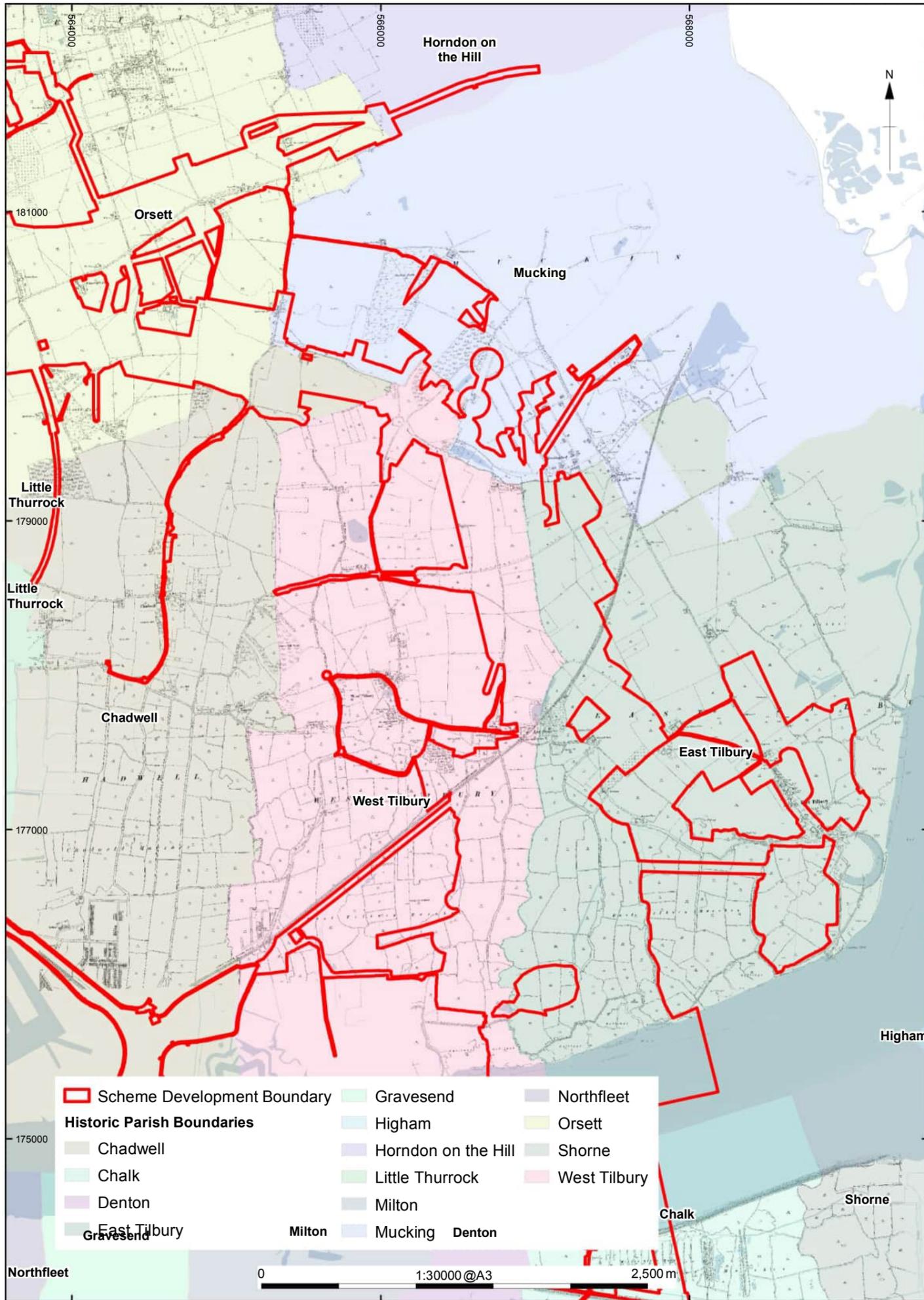


Figure 13c - OS map dated c.1897 and cropmarks in the Havering and Essex section of the Scheme (South)

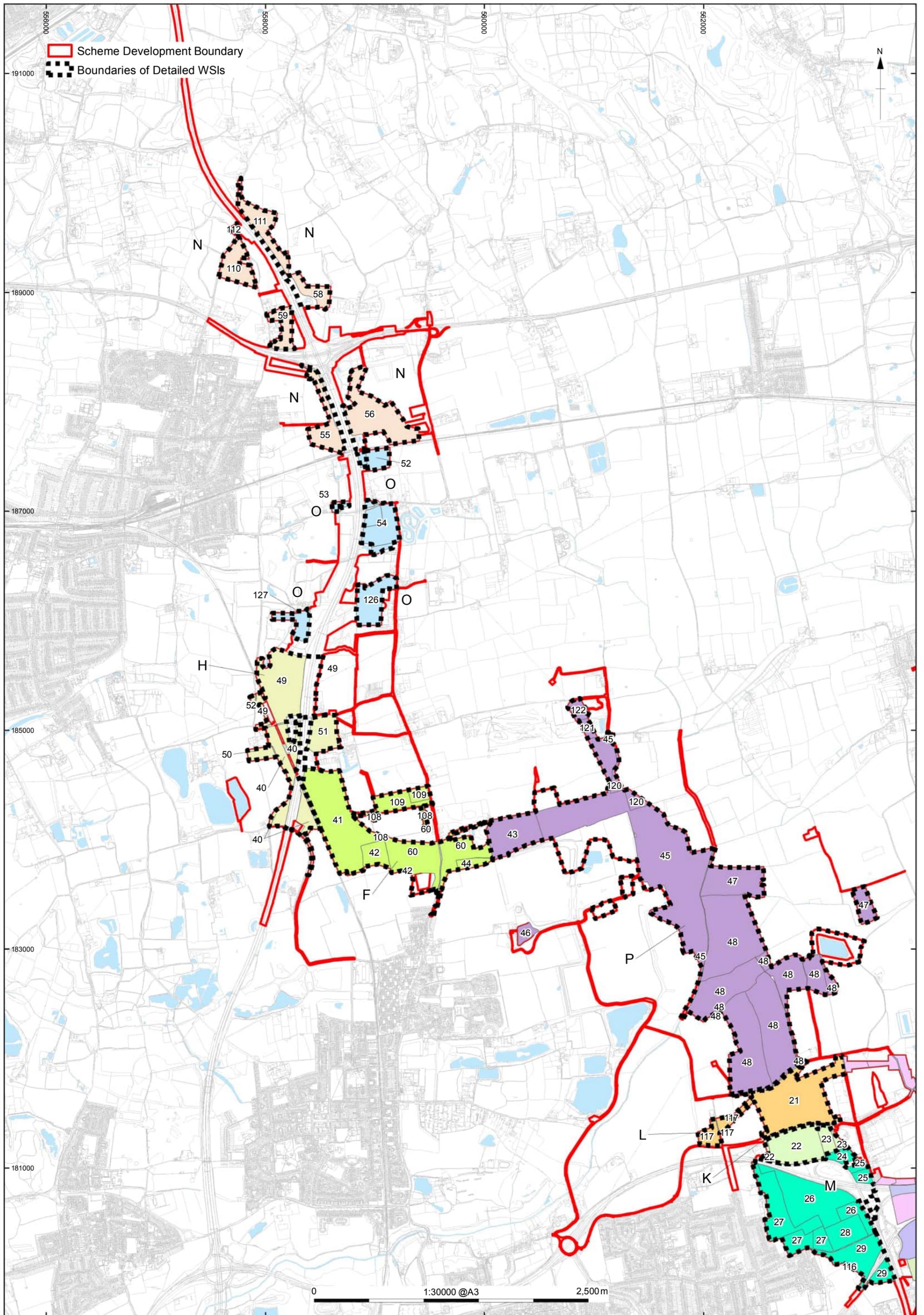


Figure 14a - Scheme corridor showing land parcels for detailed WSIs (north)

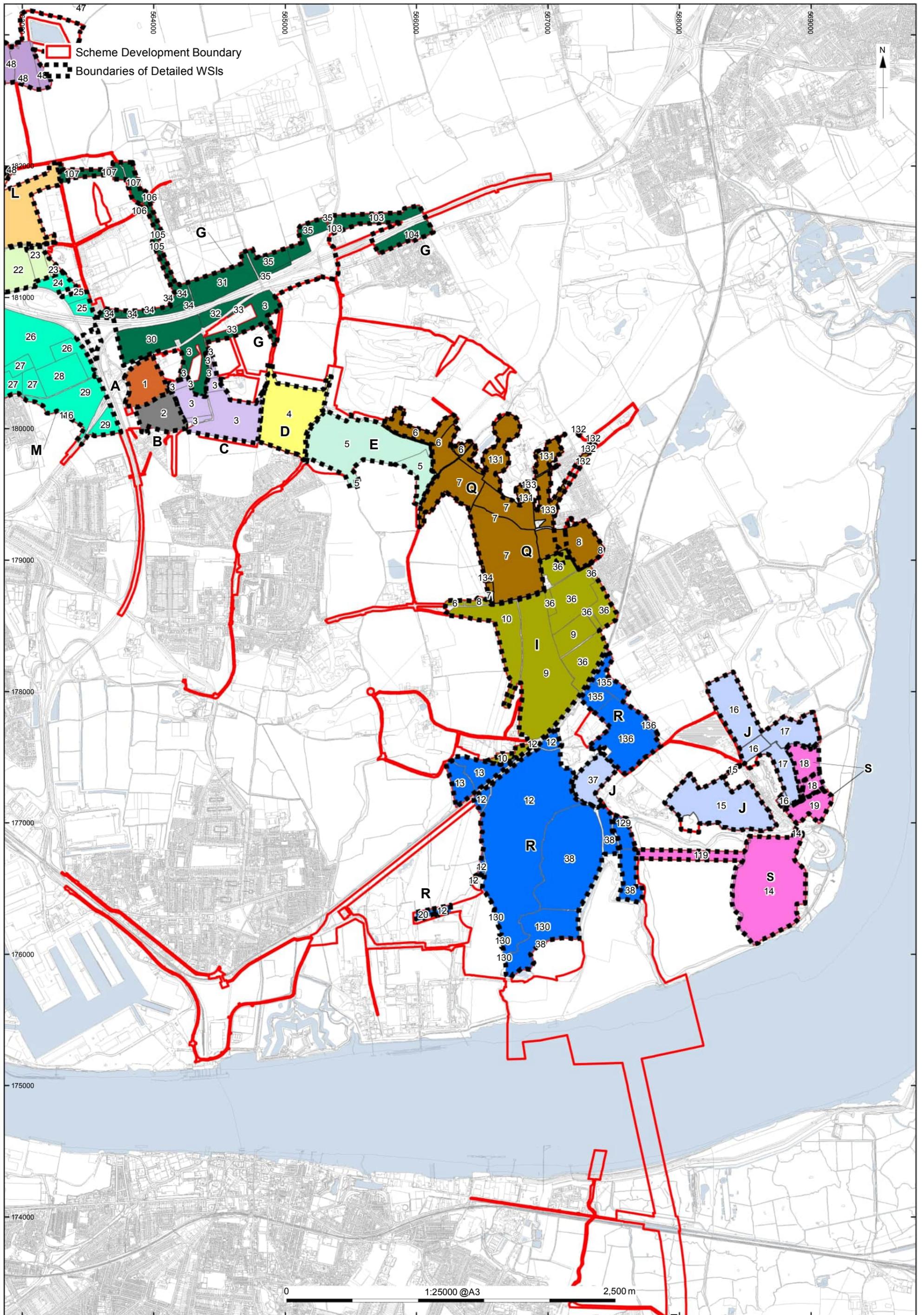


Figure 14b - Scheme corridor showing land parcels for detailed WSIs (south)

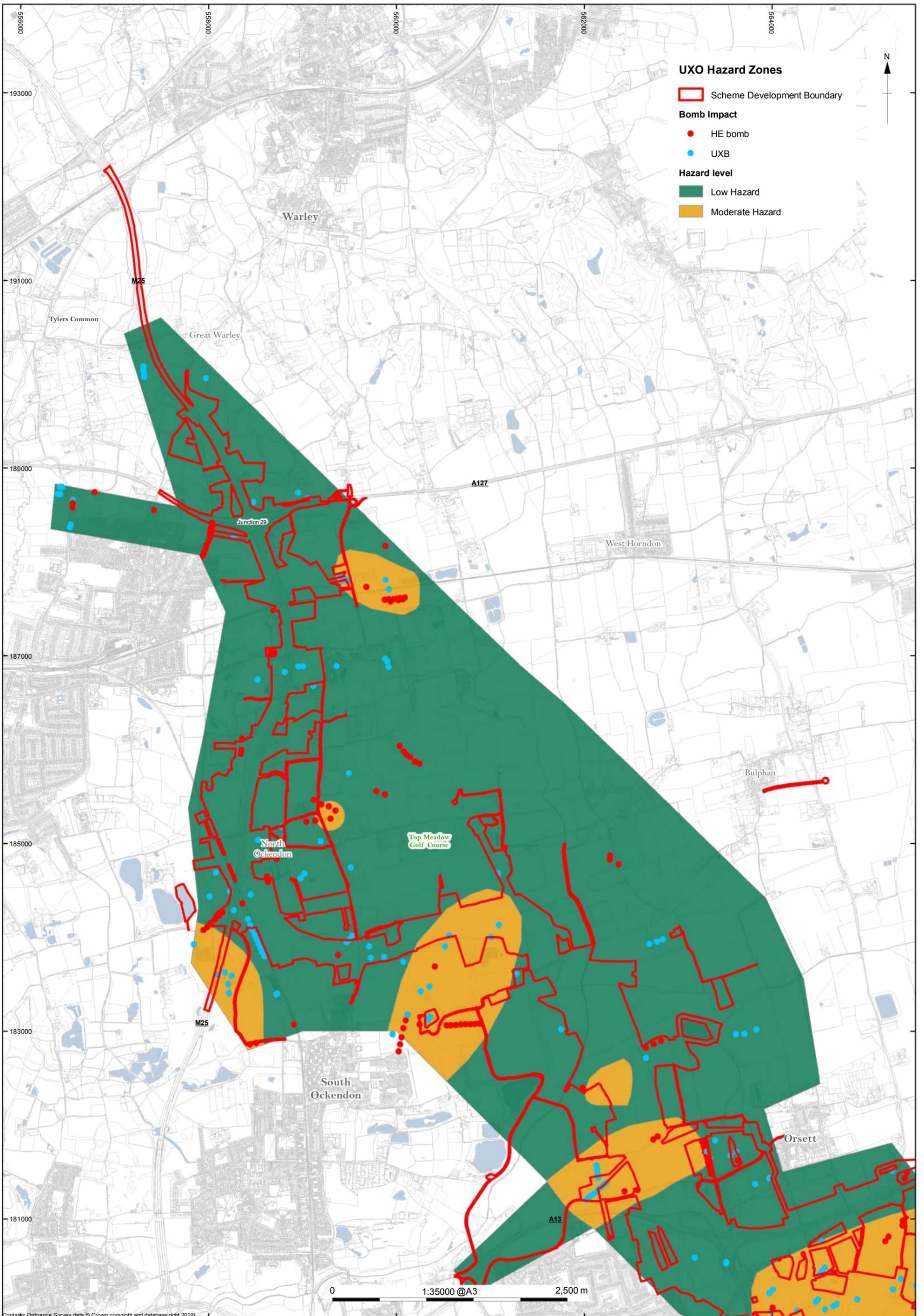


Figure 15a - Areas of UXO in the Havering-Essex section of the scheme (north)

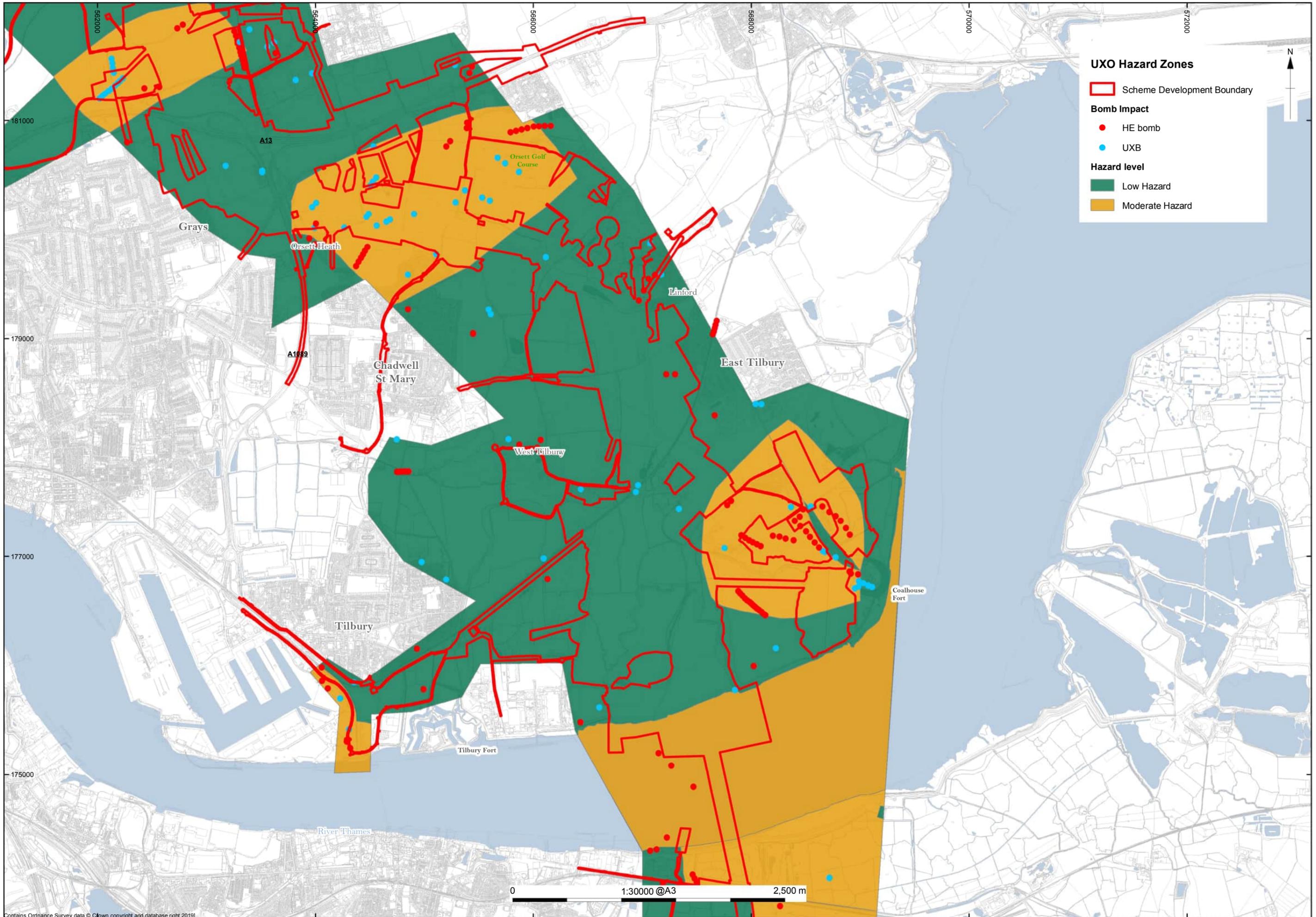


Figure 15b - Areas of UXO In the Havering-Essex section of the scheme (south)

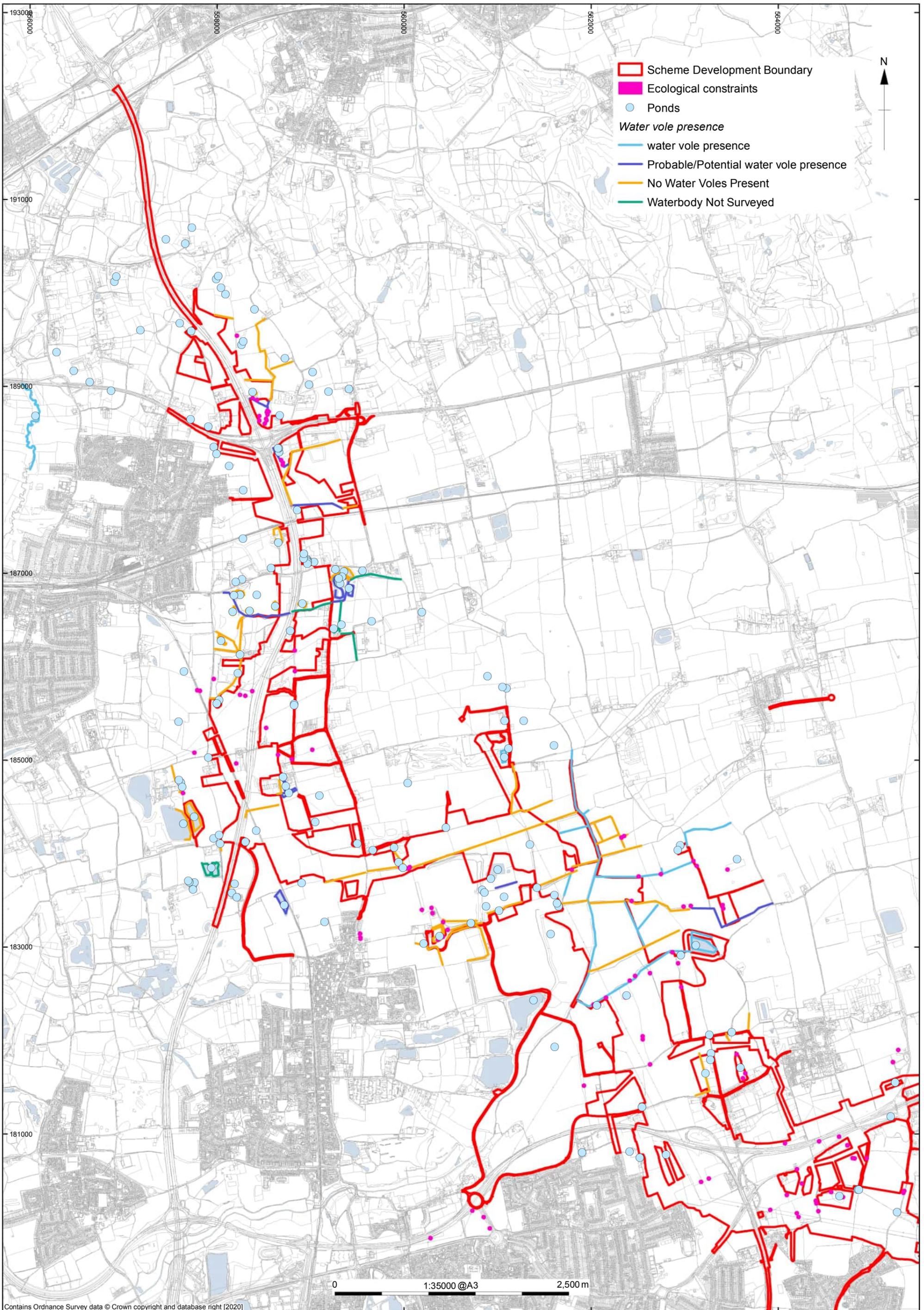


Figure 16a - Ecological constraints for the Havering-Essex part of the scheme (north)

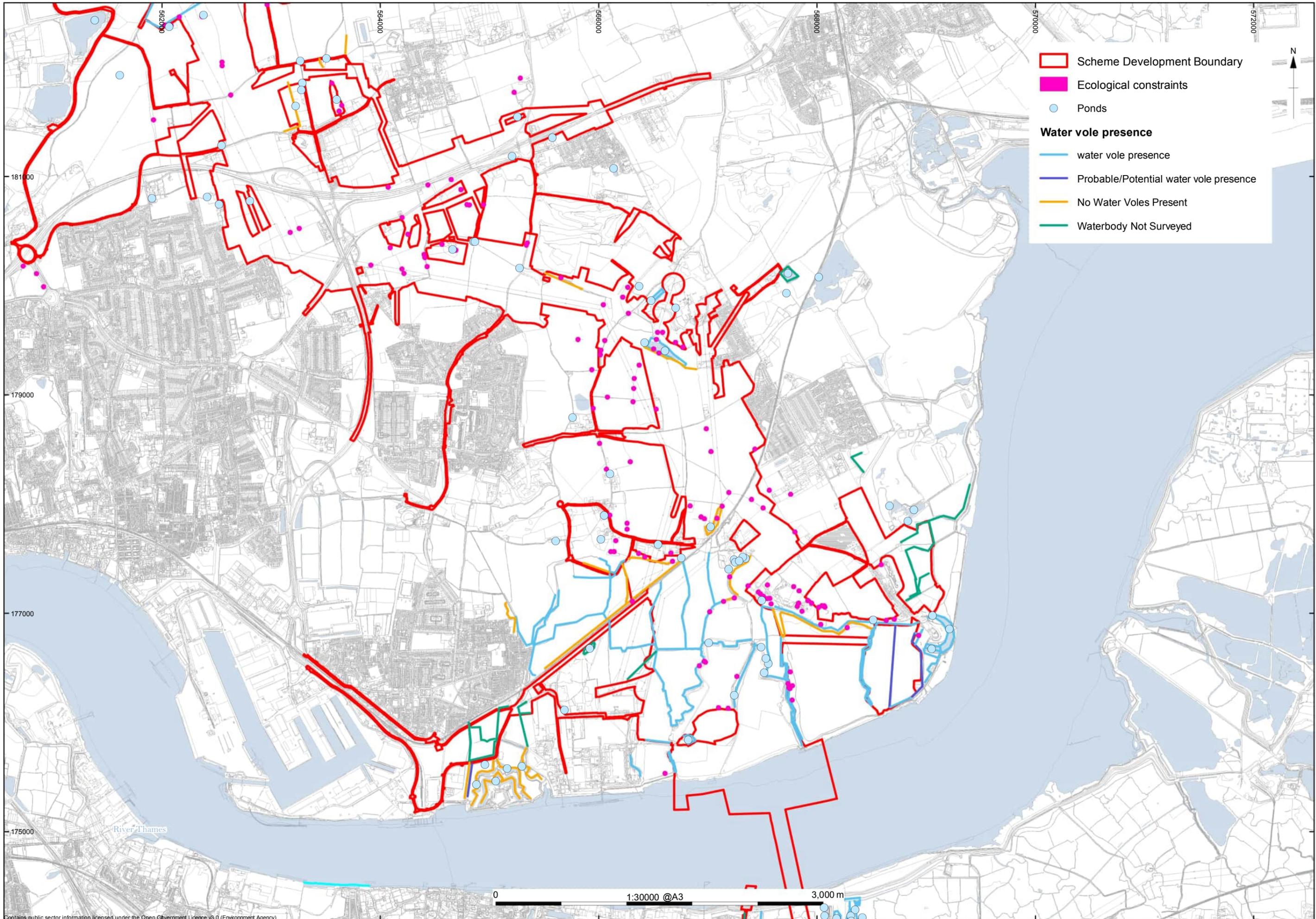
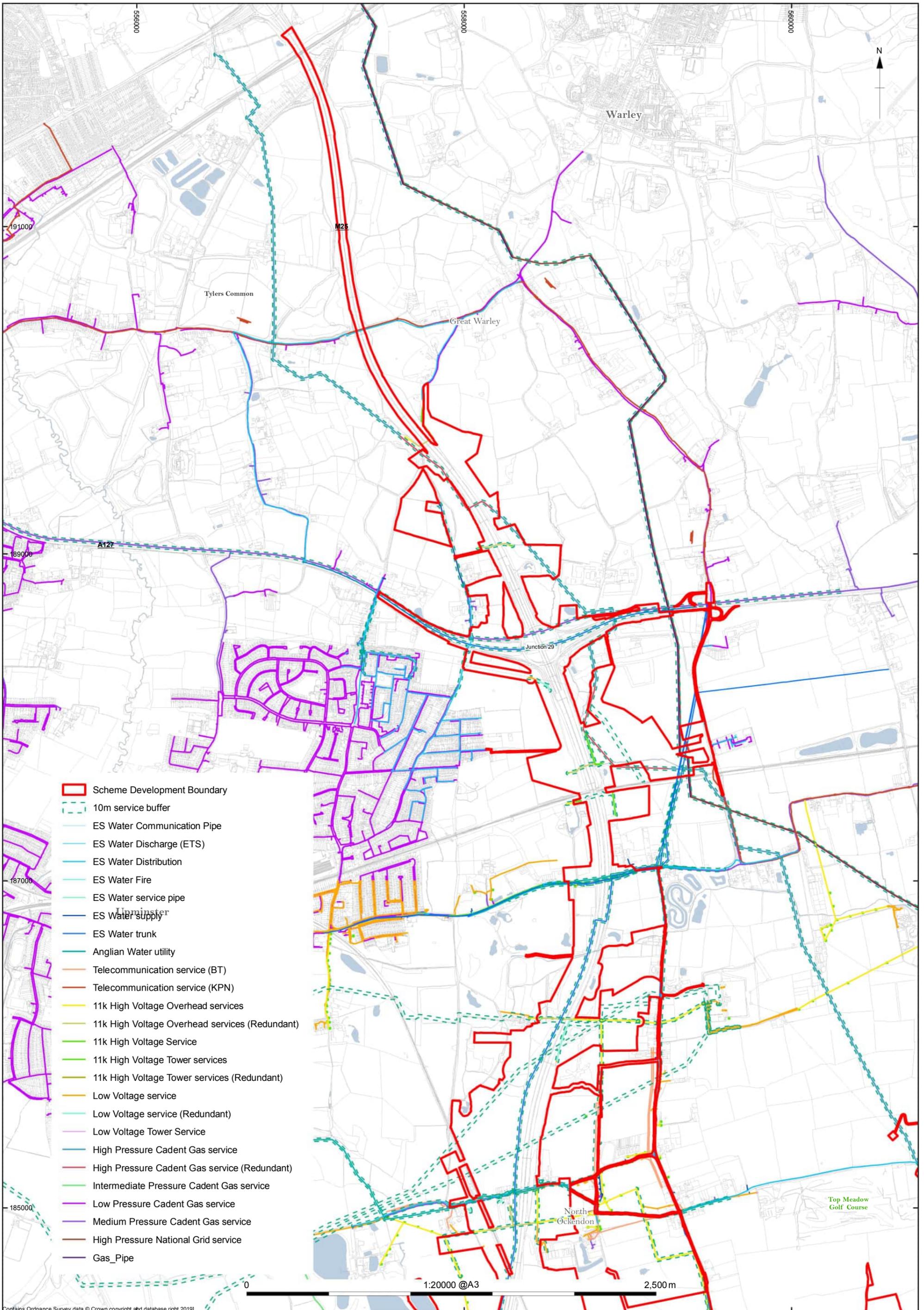


Figure 16b - Ecological constraints for the Havering-Essex part of the scheme (south)



- ▭ Scheme Development Boundary
- - - 10m service buffer
- ES Water Communication Pipe
- ES Water Discharge (ETS)
- ES Water Distribution
- ES Water Fire
- ES Water service pipe
- ES Water supply
- ES Water trunk
- Anglian Water utility
- Telecommunication service (BT)
- Telecommunication service (KPN)
- 11k High Voltage Overhead services
- 11k High Voltage Overhead services (Redundant)
- 11k High Voltage Service
- 11k High Voltage Tower services
- 11k High Voltage Tower services (Redundant)
- Low Voltage service
- Low Voltage service (Redundant)
- Low Voltage Tower Service
- High Pressure Cadent Gas service
- High Pressure Cadent Gas service (Redundant)
- Intermediate Pressure Cadent Gas service
- Low Pressure Cadent Gas service
- Medium Pressure Cadent Gas service
- High Pressure National Grid service
- Gas_Pipe

Figure 17a - Services and Utilities within the Havering-Essex section of the scheme (north)

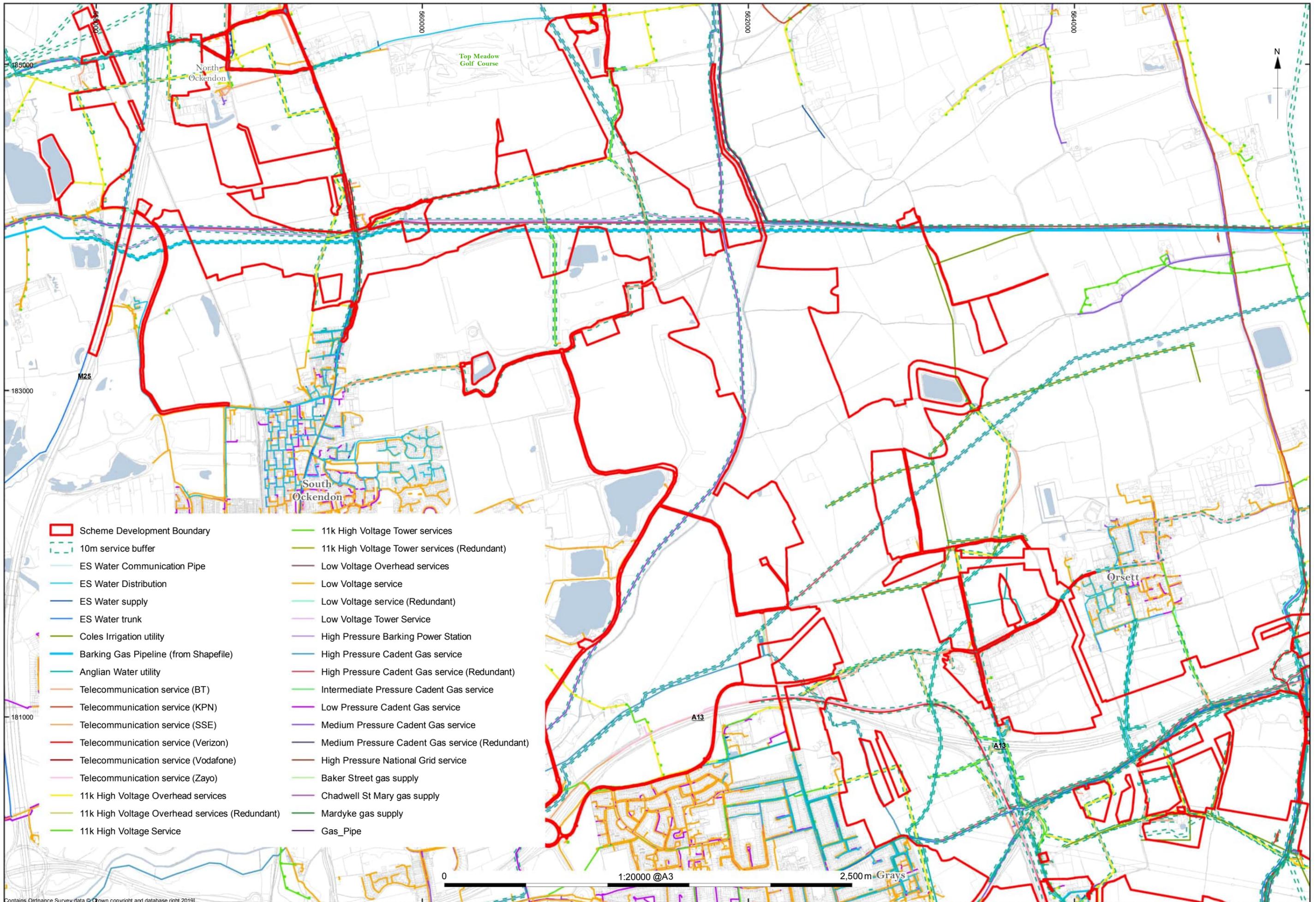


Figure 17b - Services and Utilities within the Havering-Essex section of the scheme (central)

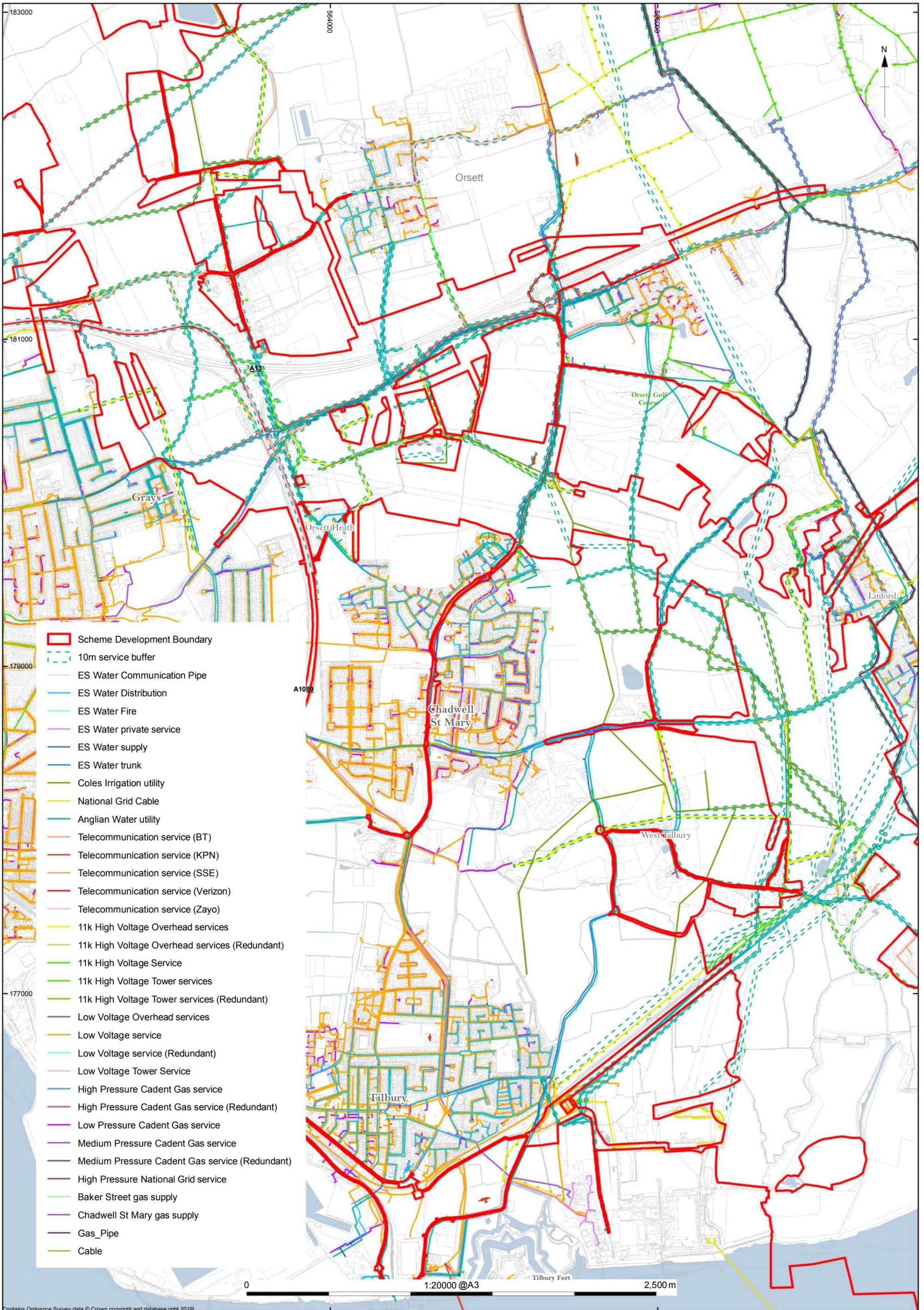


Figure 17c - Services and Utilities within the Havering-Essex section of the scheme (south)

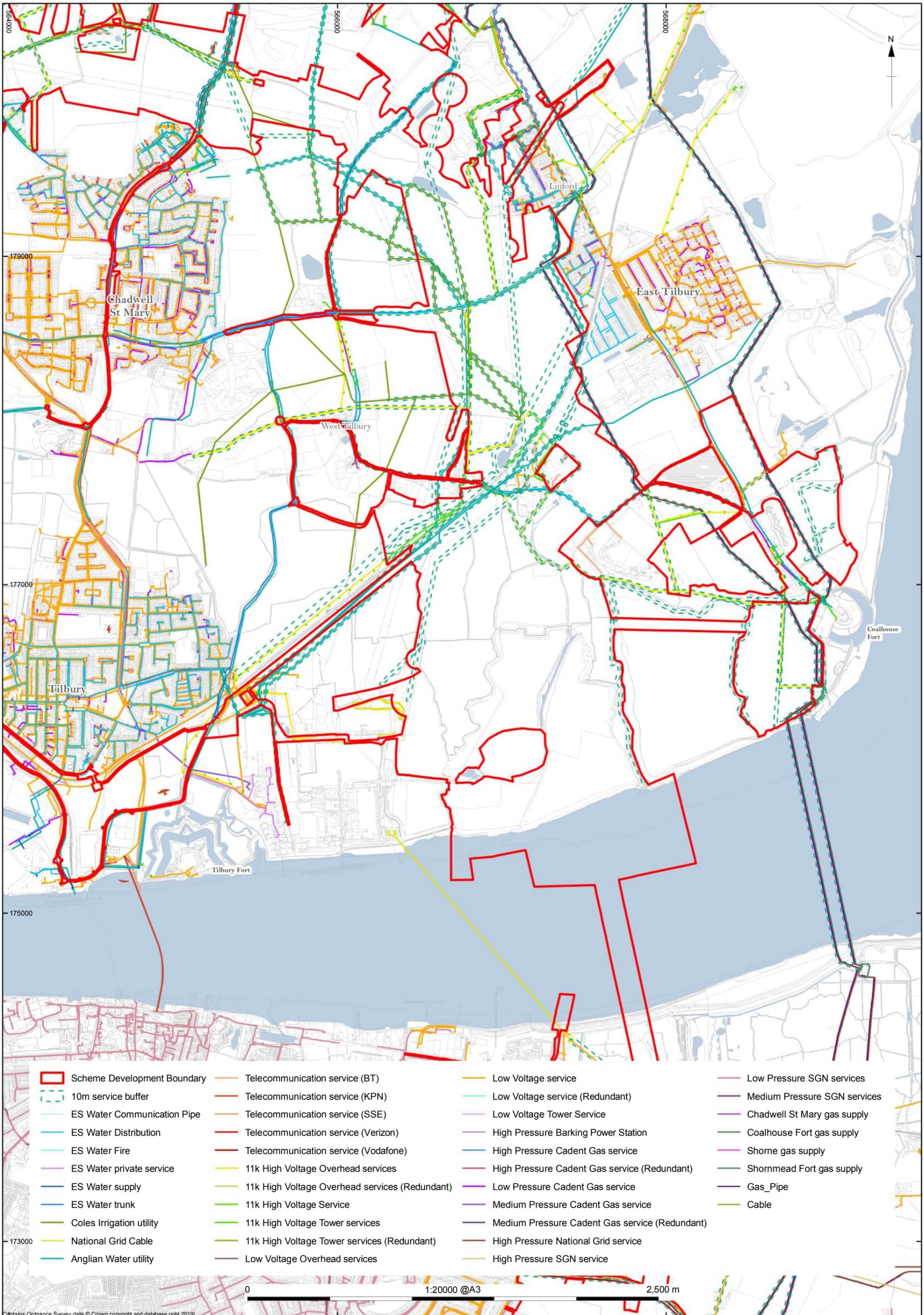


Figure 17d - Services and Utilities within the Havering-Essex part of the scheme (south)

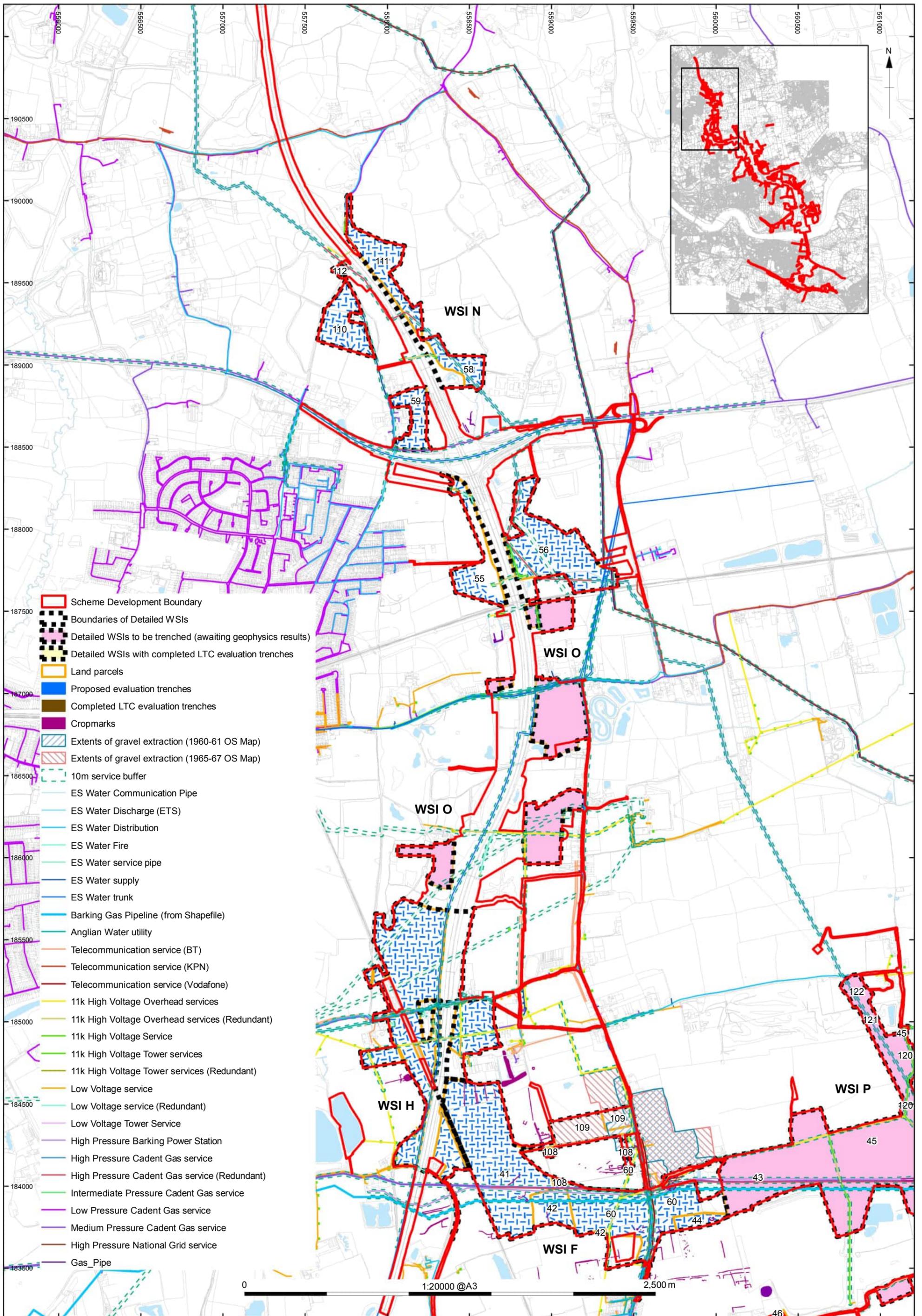


Figure 18a - Plan of trenching areas and trench layouts in Essex & Havering (north)

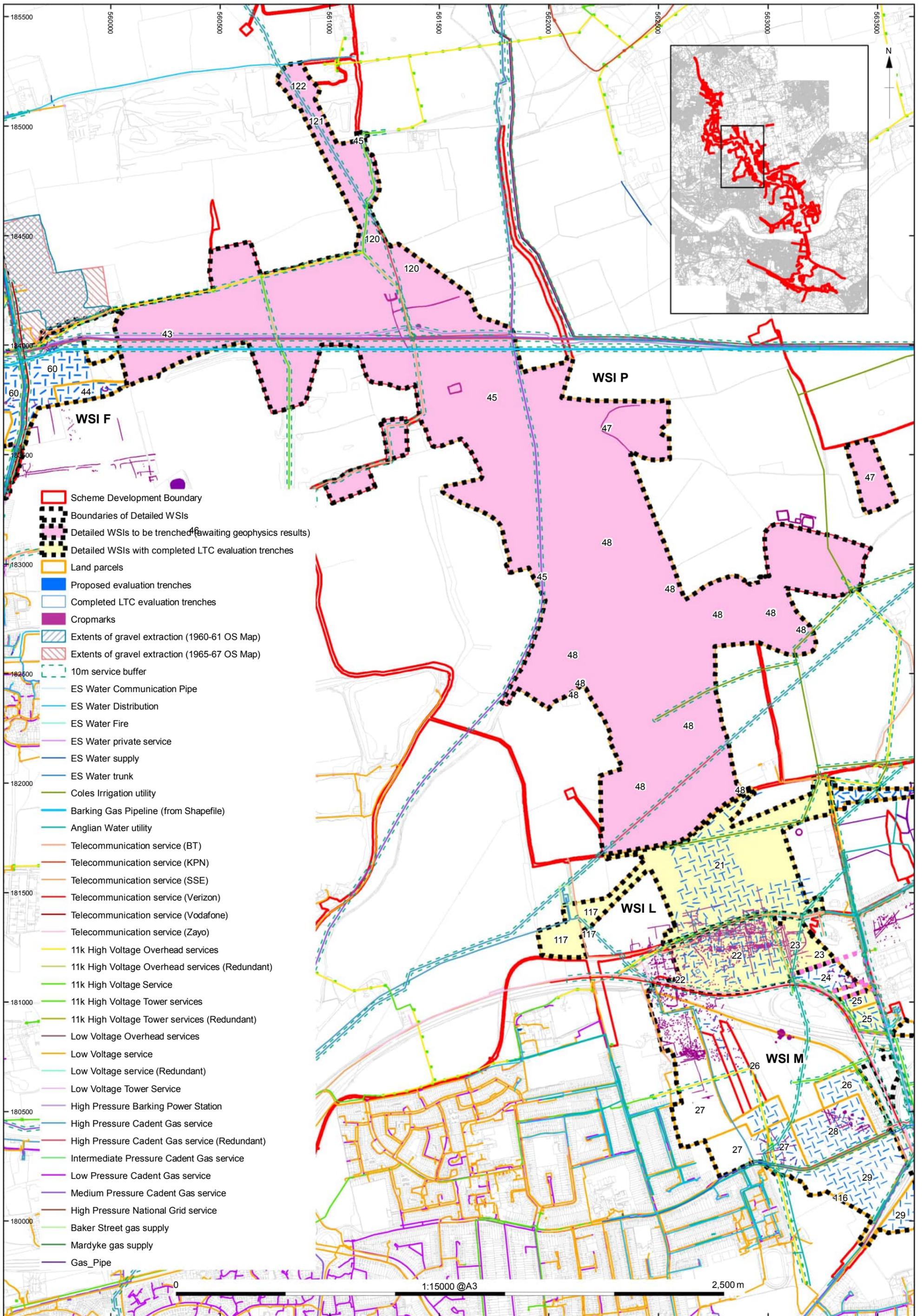


Figure 18b - Plan of trenching areas and trench layouts in Essex & Havering (central)

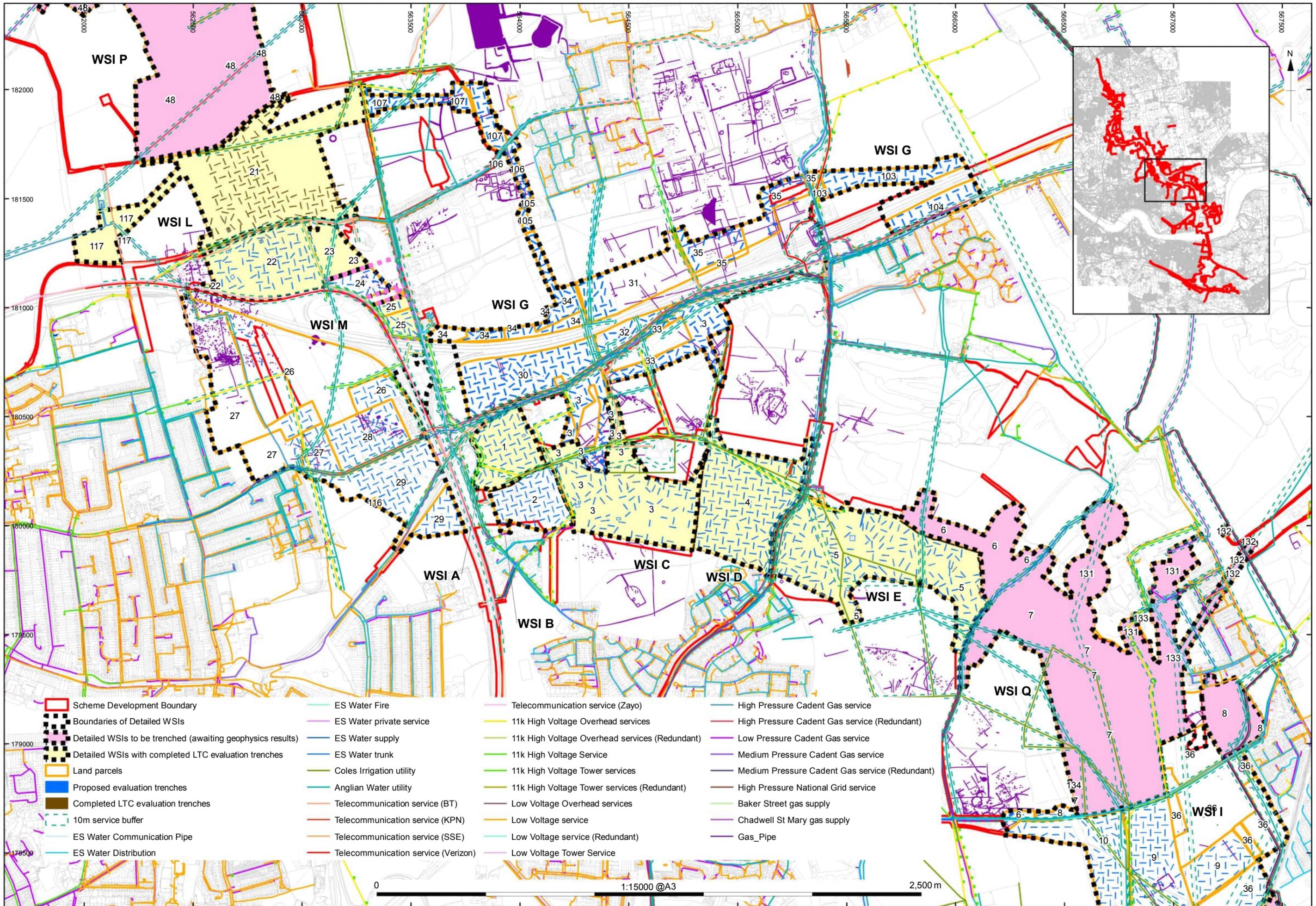


Figure 18c - Plan of trenching areas and trench layouts in Essex & Havering (central)

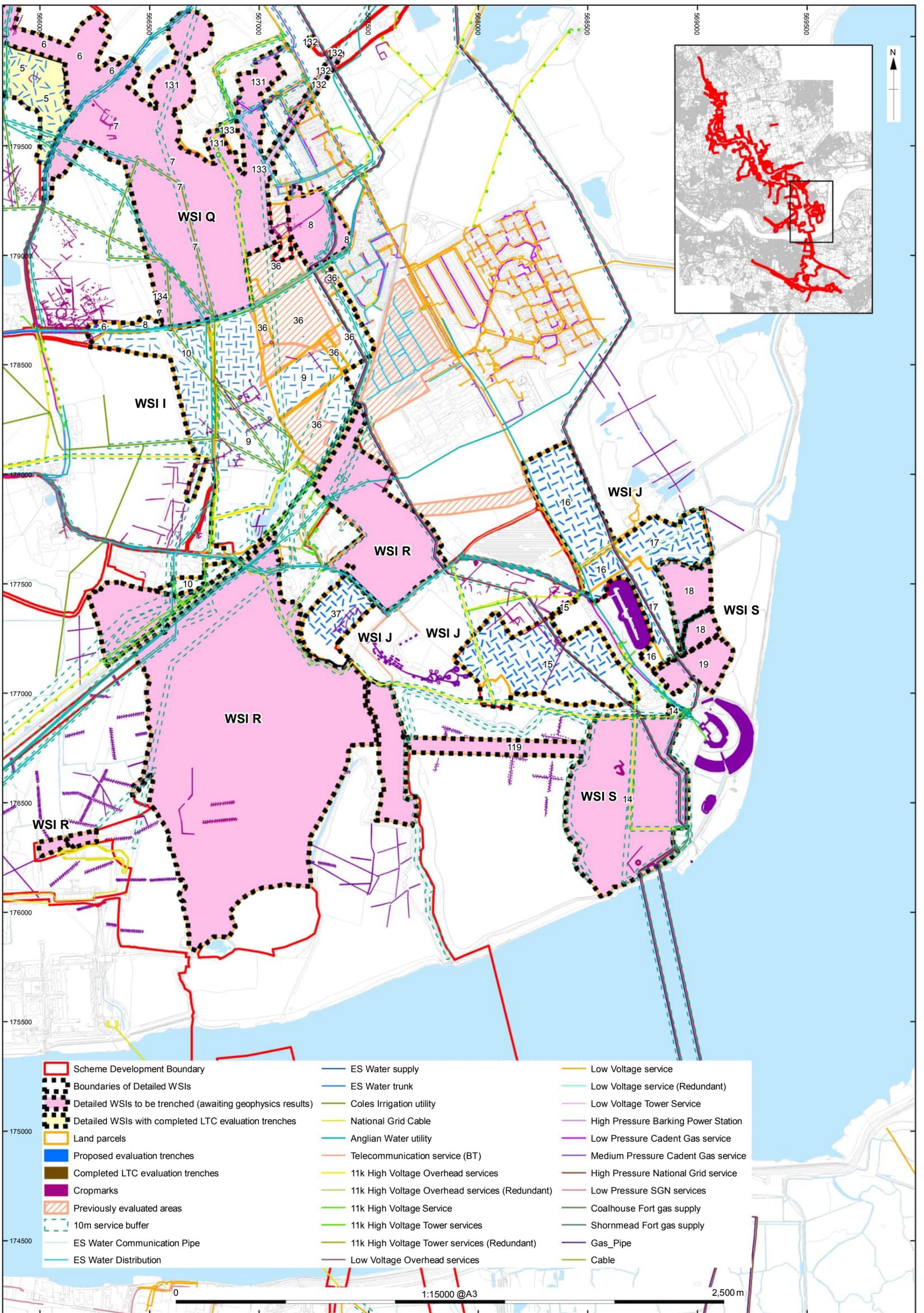


Figure 18d - Plan of trenching areas and trench layouts in Essex & Havering (south)

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