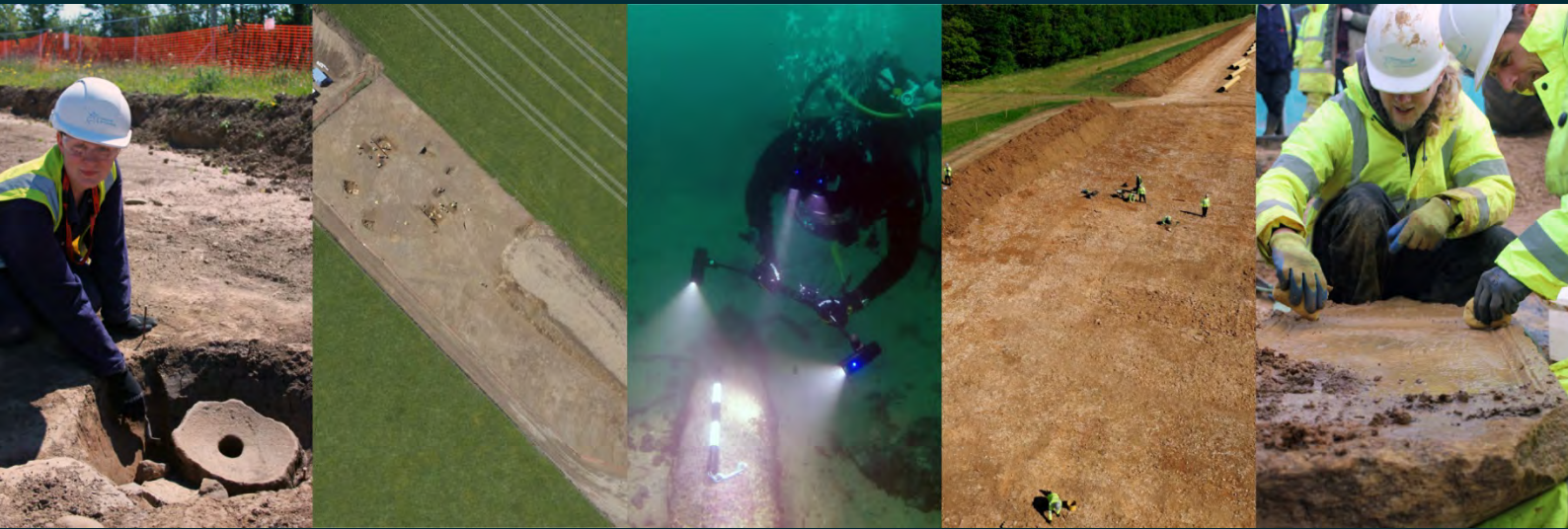


M25 Junction 28 Improvement London Borough of Havering

Archaeological Watching Brief and Test Pitting



for
Atkins

on behalf of
Highways England

CA Project: SU0020
LAARC Site Code: MJU19
CA Report: SU0020_1

December 2019



M25 Junction 28 Improvement

London Borough of Havering

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SUMMARY

Project Name:	M25 Junction 28 Improvement
Location:	M25 Junction 28, London Borough of Havering
NGR:	556814 192447
Type:	Watching Brief and Test Pitting
Date:	October and November 2019
Location of Archive:	Museum of London
Site Code:	MJU19

In October and November 2019 Cotswold Archaeology (CA) carried out an archaeological watching brief with supplementary test pitting exercise in connection with proposed improvements at Junction 28 of the M25 motorway, London Borough of Havering, and Essex, at the request of Atkins, acting on behalf of Highways England. All of the monitoring and test-pitting works were located within the London Borough of Havering.

Overall, the monitoring and test-pitting works produced largely negative results, with no activity pre-dating the modern period being observed. Sterile alluvial deposits were recorded in the area of the Weald Brook. These deposits were not seen to overlie any archaeological remains. Modern made-ground was recorded across large parts of the scheme area suggesting a significant level of modern truncation and disturbance most likely associated with the construction of the M25 motorway, the A12 trunk road, a skip-yard and recycling facility, and various major underground services that run through the site. With the exception of land on the west side of the Weald Brook and to the south of the A12, where modern disturbance and made ground deposits were less frequently encountered and shallower in depth, then the extensive levels of modern disturbance are considered to make the likelihood of archaeological features and deposits surviving very low across the much of the scheme area.



1. INTRODUCTION

- 1.1 In October and November 2019 Cotswold Archaeology (CA) carried out an archaeological watching brief with supplementary test pitting exercise in connection with proposed improvements at Junction 28 of the M25 motorway, London Borough of Havering, and Essex, at the request of Atkins, acting on behalf of Highways England. All of the monitoring and test-pitting works were located within the London Borough of Havering.
- 1.2 In December 2014, the Department for Transport (DfT) published its Road Investment Strategy (RIS) for 2015-2020, announcing £15 billion to invest in England's strategic road network between 2015 and 2020. A number of schemes have been identified to be constructed within the plan period, including the improvement to M25 Junction 28 (hereafter, the Scheme - centred at NGR: 556814 192447; see Figure 1). The Scheme was announced by Highways England in July 2017 and comprises upgrading Junction 28 located at the junction between the M25 anti-clockwise and the A12 in Essex, and includes the provision of a dedicated link for this right-turn movement and minor improvements of the existing roundabout.
- 1.3 The archaeological works were originally intended to comprise monitoring of geotechnical test-pits and windowless samples, to be undertaken in accordance with the *M25 Junction 28 Improvement, London Borough of Havering: Written Scheme of Investigation for an Archaeological Watching Brief* (CA 2019a), approved by the Greater London Archaeological Advisory Service (GLAAS), in their capacity archaeological advisors to the London Borough of Havering. However, following the excavation of a number of test-pits without archaeological supervision a supplementary programme of test-pitting was agreed with GLASS and implemented under the *M25 Junction 28 Improvement, London Borough of Havering Supplementary Written Scheme of Investigation for a Programme of Archaeological Test Pitting* (CA 2019b). The fieldwork also followed the *Standard and guidance for an archaeological watching brief* (CIfA 2014) and *Guidelines for Archaeological Projects in Greater London* (GLAAS 2015).

The site

- 1.4 The Scheme is located between Brentwood and Romford and comprises upgrading Junction 28, located at the junction between the M25 anti-clockwise and the A12 in

Essex, including the provision of a dedicated link for this right-turn movement and minor improvements of the existing roundabout. The Scheme converts the use of the existing hard shoulder over the M25 viaduct to the proposed deceleration lane and associated diverge configuration. The diverge commences to the north of the existing structure. Following the diverge nose it begins to turn into the adjacent land, north-east of the existing junction. The existing circulatory/M25 northbound merge will be realigned to pass under the proposed link. The horizontal alignment continues in a loop while the vertical profile starts to decline from the proposed structure on an embankment following the existing topography downhill towards the A12.

- 1.5 The off-line parts of Scheme area currently comprise rough pasture partially surrounded by blocks of woodland and small scale arable and pasture fields. The fields are bound by hedgerows with intermittent trees and linear woodland belts. Semi-mature woodland belts are present along the on and off slip roads of the M25 as well as along the A12 toward the urban fringe of Romford to the west. The monitored ground works and archaeological test pits were located in a variety of settings, some within the woodlands to the side of the M25 motorway, the rough pasture mentioned above, pasture located towards the A12 and rough pasture located to the south of the A12; therefore stratigraphy varies across the scheme with alluvium and made ground seen in some parts but not in others.
- 1.6 The Scheme area is located within the geological area known as the London Basin; bedrock geology is anticipated to comprise London Clay Formation of the Thames Group overlain by localised superficial deposits of Alluvium and Head throughout the Scheme area. Modern made ground is present within the Scheme area, associated with the Brook Street Landfill to the north-west of the Junction 28 roundabout, infilled ponds and alterations to the alignment of Weald Brook and Ingrebourne River. It is also likely to be associated with the construction of the A12, M25, utilities infrastructure, London and North Eastern railway line, and buildings located within the Scheme area (Highways England 2017).
- 1.7 Stratigraphy varied greatly across the area subjected to archaeological monitoring and test pitting (Fig 2). Pits such as ATK041, located in a field to the north of the R.J Skip Hire & Recycling facility (the skip-yard) in the central part of the Scheme area (Fig 3) and the rough pasture to the side of the M25 motorway had significant deposits of made ground, often exceeding 1.2m thick. Monitored pits (e.g. ATK037

and ATK040) located within the woodland (Fig 3) in the north part of the Scheme area contained a layer of subsoil, approximately 0.3m thick, overlying the natural clay geology, which interventions located slightly to the west of the woodland (ATK046 and ATK049) did not contain. Possible alluvial deposits were identified in pits ATK009, 011, 035, 054, 090, TP2, TP3, TP4 and TP5, located to the west of the Weald Brook, and to the north of a straightened section of brook running broadly east to west along the south side of the A12 and linking into the Weald Brook. Seven geotechnical (GI) test pits were monitored to the south of the A12. although dug to a maximum depth of 3m, natural geology was encountered between 0.3m and 1m below present ground level (bpgl) in these pits. The deposit sequence encountered across the Scheme area is discussed in further detail in section 5 below.

2. ARCHAEOLOGICAL BACKGROUND

- 2.1 The following section has been informed by the Option Selection stage Road Investment Strategy M25 Junction 28 Improvements Scoping Report (Atkins 2017), and the Road Investment Strategy M25 Junction 28 Improvements Environmental Assessment Report (Highway England 2017). These assessments were informed by searches of the Essex Historic Environment Record (EHER) and Greater London Historic Environment Record (GLHER) as the Scheme area falls within both administrative areas (Highways England 2017).
- 2.2 There are four Archaeological Priority Areas (APAs) within the Site itself and the study areas utilised for the above reports. To the west of the M25, APA DLO33196 reflects the potential for important prehistoric deposits to be present, which may survive beneath alluvial deposits associated with Weald Brook. A further two areas with the potential for the survival of prehistoric deposits lie east of Nag's Head Lane [DLO33197] and south of Dagnam Park [DLO33198]. The remaining APA is associated with a Roman Road [MLO106812/MEX2262] underlying the current Colchester Road/A12 [DLO33238].

Prehistoric and Roman

- 2.3 A desk-based assessment carried out by Cotswold Archaeology in 2014 on Maylands Golf Course, to the west of and partially including the Scheme area with the study area used for the assessment, again identified the potential for prehistoric and palaeoenvironmental remains to survive within alluvial deposits along the

eastern boundary of the golf course associated with the Weald Brook (Cotswold Archaeology 2014, Highways England 2017). The evidence for prehistoric activity in general is limited within the area.

- 2.4 Palaeolithic handaxes have been retrieved as findspots within the Havering Borough, however, none have been identified within the study area. The closest find spot to the site itself records the recovery of a Palaeolithic handaxe found in South Weald, c. 1.5km to the north-east of the site (AMIE ref. 1142676).
- 2.5 It is generally considered that South Weald Camp, a later prehistoric hillfort located within Weald Park approximately 2km to the north-east of the site, must have been the focus of activity during the Iron Age (Essex County Council 2006).
- 2.6 The Roman Road [MEX2262/MLO106812] from London to Colchester, the course of which survives as the modern A12 Colchester Road. Romford, located c. 5.8km to the south-west of the site, has been identified as Durolitum, a stopping place and crossing point over the River Ram, described in the 3rd century AD document, the Antonine Itinerary (Cotswold Archaeology 2014). The site of a Roman building [MLO23390] has been recorded east of Nag's Head Lane at Tyler Hill Farm.

Saxon

- 2.7 Recent investigations at Oak Farm Cemetery to the south of the site have recorded Early and Middle Saxon activity, with occupation seemingly centred on area of hilltop Head deposits (A. Single, pers. comm.). It is possible that associated activity extends further north, across the A12 towards the Scheme area itself.

Medieval & Post-medieval

- 2.8 During the early medieval period, large parts of Essex fell within an area known as the Forest of Essex, a royal forest used for hunting by the king, with a royal hunting lodge established in the Forest at Havering-atte-Bower. The royal manor status of Havering was confirmed by William the Conqueror after the Conquest (Lingham 1969). The royal manor of Havering, listed in the Domesday Survey of 1086 within Beacontree hundred, comprised in the late 11th century a large landholding with an important king's residence.
- 2.9 In c.1200, the manor of Havering, still heavily wooded, extended from the River Thames to the south and Havering-atte-Bower to the north and encompassed the

present area of Romford, Hornchurch, Harold Wood and Harold Hill, with the site situated at its north-eastern limit (McIntosh 1986 and Lingham 1969). As a consequence of the growth of the population and the royal need for additional revenue, large areas of the royal manor were cleared of forest in the 13th century, and the manor was split into twenty subordinate manors (Lingham 1969, McIntosh 1986 and Powell 1978).

- 2.10 The manor of Havering became a Liberty in 1465 and the charter confirmed exceptional privileges which had been granted previously. The Liberty survived until the end of the 19th century (McIntosh 1986 and 1991, Powell 1978).
- 2.11 Early medieval settlement [MLO12476] has been recorded east of Nag's Head Lane, north of Tylers Common. Other recorded heritage assets primarily consist of features such as those associated with South Weald historic settlement [MEX1032780], located within the historic core of South Weald Conservation Area, a medieval hospital [MEX2254] and a moat [MEX2256], both located off Brook Street, and other buildings of medieval origin [MLO15564], either sited west of Nag's Head Sewage Works or within Maylands Golf Course, including The Golden Fleece [MEX40795] on Brook Street.
- 2.12 The earliest cartographic depiction of the western part of the Scheme area and its surroundings is the c. 1618 map of the Liberty of Havering (Cotswold Archaeology 2014). The map shows that part of the Scheme area situated to the west of the Weald Brook/Ingrebourne River, which formed the eastern boundary of the Liberty. Numerous enclosed fields, created because of the woodland clearance, are depicted within the Scheme area, probably resulting from clearance of the ancient Forest of Essex (Cotswold Archaeology 2014).

Modern

- 2.13 The 1881 Ordnance Survey map shows changes in the general area of the site. The map shows that the majority of woodland copses and belts depicted within the site in the 17th century had been removed, with Cock Wood to the north representing the sole surviving remnants of the medieval forest. Although some of the field boundaries had also been removed, the majority of the boundaries shown on the map, demarcated by trees, correspond with the enclosures shown on the post-medieval mapping.

- 2.14 A civil aerodrome was constructed immediately to the west of the site during the 1930s (Cotswold Archaeology 2014), and continued to operate despite the land surrounding it being sold for a golf course until it burnt down in 1940, during a World War II bombing raid (Maylands Golf Course, which still operates).
- 2.15 The M25 motorway was officially opened in 1986; junction 28 forms the focus of the site and improvement works scheme.

3. AIMS AND OBJECTIVES

3.1 The objectives of the archaeological works were:

- to monitor the ground investigation (GI) works, and to identify, investigate and record any significant buried archaeological deposits revealed on the site during the course of the ground investigation and supplementary test-pitting;
- to model, as far as possible, the extents and depths of any underlying archaeologically/geoarchaeologically-sensitive deposits, including those associated with the Weald Brook APA DLO33196 and any evidence for a continuation of the Head deposits mapped to the south of the A12;
- to identify any affected earthworks and structures connected with the 1930s aerodrome, in order to avoid damage to surviving remains from geotechnical works;
- at the conclusion of the project, to produce an integrated archive for all of the project work and a report setting out the results of the project and the archaeological conclusions that can be drawn from the recorded data, including an assessment of geoarchaeological potential informed by the results of the monitoring works and an inspection of borehole logs.

4. METHODOLOGY

4.1 The fieldwork followed the methodology set out in the *M25 Junction 28 Improvement. London Borough of Havering: Written Scheme of Investigation for an*

Archaeological Watching Brief (CA 2019a) and *M25 Junction 28 Improvement, London Borough of Havering Supplementary Written Scheme of Investigation for a Programme of Archaeological Test Pitting* (CA 2019b) which was written as an amendment following the completion of some elements of the geotechnical trial pitting without archaeological attendance during the works. An archaeologist was present during intrusive groundworks associated with hand-dug inspection pits prior to window/windowless and borehole sampling, the remaining GI trial pits, and supplementary test-pits (Fig 2 - TP 1 to 7). A further seven trial pits, TP ATK210 – TP ATK207, were subsequently monitored on the south side of the A12, to the west of Putwell Bridge Caravan Park (Fig 2). The geotechnical trial pits and archaeological test pits measured 3m by 0.7m (Fig 4); the hand-dug inspection pits measured approximately 0.3m in diameter and were hand dug to 1.2m before being drilled (Fig 5). The supplementary archaeological test pits also measured 3m long by 0.7m wide (Fig 6).

- 4.2 Where archaeological deposits were encountered written, graphic and photographic records were compiled in accordance with CA Technical Manual 1: *Fieldwork Recording Manual*.
- 4.3 The archive and artefacts from the evaluation are currently held by CA at their office in Milton Keynes. The archive will be deposited with the LAARC. A summary of information from this project, set out within Appendix B will be entered onto the OASIS online database of archaeological projects in Britain.

5. RESULTS (FIG 2)

Overall Stratigraphy

- 5.1 The results below are principally drawn from observations made during the excavation of GI trial pits, windowless samples, hand-dug test-pits prior to drilling/boring, and the supplementary archaeological test-pits. The recorded observations were supplemented by discussions with the attending geotechnical engineer in order to ensure consistency in the identification of the exposed deposit sequence. As the GI works and archaeological test pits were spread across a large area of land used for differing functions the sequence exposed in the pits varied significantly.

- 5.2 The natural geology across the scheme comprised a silt clay, varying between mid-orange brown, mid-grey brown and mid-yellow brown in colour. In the central part of the site, in the vicinity of the skip-yard modern made-ground deposits in excess of 3.5m deep were encountered and the natural substrate was not reached. In the woodland and surrounding area to the north of the skip-yard and west of the M25 motorway, natural geology was exposed at approximately 0.5m bpgl; however, thick made-ground deposits were also noted in this area; in excess of 4.0m in pit ATK-036 (Fig 2). To the west of the woodland area, natural clay geology was exposed at c.1.2m covered by alluvium. To the east of the Maryland's Golf Course, the stratigraphy of the pits varied considerably; for example, in pit ATK-100 natural clay was exposed at 0.25m bpgl, whereas in pit ATK-055 it was not exposed until c.2.4m bpgl, overlain by alluvial deposits. To the south-east of skip-yard the natural clay was exposed at between 0.3m and 1.5m bpgl in the archaeologically monitored pits, largely sealed by made-ground with the exception of pit ATK-014 which contained a thin layer of alluvium overlying the natural substrate. Lastly, in the area to the south of the A12, natural geology was encountered at between 0.3m and 1.05m, covered by either modern made-ground or subsoil and topsoil.

Alluvium

- 5.3 Alluvial deposits associated with the Weald Brook were noted in eleven pits: ATK-014, 052, 053, 055, 056, 057, 059, TP 2, 3, 4, and 5. The minimum thickness being c.0.3m in ATK-014 located to the south-east of the skip-yard and the maximum encountered in ATK-055 measuring c.2.1m, located to the west of the Maryland's Golf Course. All of the pits containing alluvial deposits, with the exception of TP 4 and 5 and ATK-014, were located east of Maryland's Golf Course and west of the Weald Brook. Test Pits 4 and 5 and trial pit ATK-014 were located north of the Weald Brook, where a straightened section runs parallel to the A12, and the alluvium was noted as measuring between 0.6m and 1.0m thick. Alluvial deposits consisted of mid-orange gravel silt clay, significantly softer than the natural clay geology.

Made-Ground

- 5.4 Significant deposits of made-ground were encountered in seventeen of the archeologically monitored GI pits: ATK-024, 026, 027, 031, 032, 035, 036, 079, 082, 083, 084, 093, 094, 098, 100, 205 and 206, as well as in archaeological pit TP6. The majority of these pits were located in the areas north and south-east of the skip-yard, with a few in the area west of the Weald Brook, east of Maryland's Golf

Course. The minimum thickness of made-ground was encountered in pits ATK-100 and ATK-094, both situated toward the western edge of the site, measuring c.0.25m thick. This material is likely to represent infilling/ raising of ground levels along the western edge of the Weald Brook, probably in an attempt to increase the area of productive land available for arable cultivation. At its maximum, modern made-ground reached depths in excess of 3.5m thick in the area north of the skip-yard and c.4.0m in ATK-036 located near to the woodland area. This indicates that substantial “fill” operations have been undertaken in this area.

Archaeological Test Pit 1

- 5.5 Due to the location of the test pit in close proximity to a previously unidentified underground service then with agreement of GLAAS the pit was not excavated.

Archaeological Test Pits 2 and 3

- 5.6 Archaeological test pit 2 was located to the west of the Weald Brook, to the east of the Maryland's Golf Course, and measured 3.0m in length by 0.7m wide. Natural clay geology was encountered at 0.85m bpgl, covered by 0.6m of alluvium, sealed by 0.25m of mid-grey brown clay silt topsoil. No archaeological features, deposits or artefacts were identified in this pit.
- 5.7 Archaeological test pit 3 was located to the south of TP2 and was of the same dimensions. As with TP2, the natural clay geology was covered by an alluvial deposit measuring 0.6m thick, sealed by a 0.3m layer of topsoil. No archaeological features, deposits or artefacts were noted within this pit.

Archaeological Test Pits 4 and 5

- 5.8 Archaeological test pits 4 and 5, both measuring 3m long by 0.7m wide, were located to the west of the Weald Brook and south-east of the skip-yard. In TP4 the natural clay geology was encountered at 1.2m bpgl, covered by a deposit of alluvium 1.0m thick, sealed by 0.2m of mid-grey brown clay silt topsoil.
- 5.9 TP5 was located slightly to the north-east of TP4. The natural clay geology was encountered at 0.8m bpgl, covered by 0.6m of alluvium in turn sealed by a 0.2m thick topsoil.
- 5.10 No archaeological features, deposits or artefacts were recorded within either pit.

Archaeological Test Pits 6 and 7

- 5.11 Archaeological test pits 6 and 7, also measuring 3m long by 0.7m wide, were located slightly north of the skip-yard. Natural geology was encountered in TP6 at 0.6m, covered by 0.2m of modern made-ground consisting of mid-orange brown clay silt with modern brick and debris inclusions. This was overlain by 0.4m of clay silt topsoil.
- 5.12 TP7 was located slightly south-west of TP6. The natural geology was encountered at 0.2m bpgl, sealed by the same topsoil encountered in TP6. TPs 6 and 7 did not contain any archaeological features, deposits or artefacts.

Geotechnical pits in Archaeological Priority Areas

- 5.13 There are four APAs across the M25 Jct 28 Improvement Scheme in which 27 geotechnical trial and inspection pits were subject to archaeological monitoring, these were ATK-056, 077, 089, 90, 024, 026, 027, 030, 031, 032, 036, 082, 083, 084, 054, 035, 093, 094, 098, 100 and 201 – 207.
- 5.14 Only a single pit located with an APA contained alluvium. ATK-056 was located close to the eastern bank of the Weald Brook. The natural clay geology was encountered at 2.35m bpgl, covered by 2.1m of soft silt clay alluvial deposit, and then sealed by a clay silt topsoil 0.3m thick. No archaeological deposits, features or artefacts were noted within this pit.
- 5.15 A significant number of the geotechnical pits subject to archaeological monitoring contained layers of made-ground, especially those located within close proximity to the skip-yard. Pits ATK-024, 026, 027, 031 and 032 all contained substantial deposits of made ground covering the natural clay geology, the most significant being ATK-031 and ATK-032, in which the depth of made-ground exceeded 3.5m. In this area the made-ground comprised of dark yellow brown silt clay, gradually becoming darker in colour as it increased in depth.
- 5.16 Three of the geotechnical pits monitored in the area south-east of the skip-yard and east of the Weald Brook also contained deposits of made-ground. ATK-084 contained the shallowest deposit, at 0.3m thick, whereas ATK-082 and 083 contained 0.7m and 1.4m respectively. In this area made-ground consisted of a light grey brown sandy silt, with clay towards the bottom of the deposit.

- 5.17 Four of the geotechnical pits in the area west of the Weald Brook contained deposits of made-ground, although generally not as substantial as in other areas monitored. Pits ATK-035, 094, 098 and 100 contained made-ground, ATK-035, 094 and 098 contained only 0.25m of the deposit; whereas, ATK-098 identified a 2.0m thick deposit. In this area made-ground comprised of dark yellow brown silt clay with gravel inclusions, increasing in compaction as the depth increased.
- 5.18 A single geotechnical pit was subject to archaeological monitoring near to the woodland located to the north of the skip yard and west of the M25 motorway. ATK-036 contained in excess of 4.0m of made-ground. Nearby Windowless sample ATK-003, which was not subject to archaeological monitoring, also logged a significant depth of made-ground, comprising dark grey brown gravel clay with some silt inclusion towards the base of the deposit.

6. DISCUSSION

- 6.1 In total, 31 pits were archaeologically monitored, comprising six archaeological test pits and 25 geotechnical trial or inspection pits. The pits were excavated in a number of differing locations across the Scheme, as a result of which the stratigraphy across the site differed notably.
- 6.2 Six bespoke archaeological test pits were also excavated in three locations across the Scheme. Test pits 2 and 3, located on land east of Maryland's Golf Course and west of the Weald Brook, all contained alluvial deposits associated with the Brook. However, this was observed to be a sterile deposit and was not seen to cover any archaeological features.
- 6.3 Test pits 4 and 5 were located south-east of the skip-yard and to the north of a straightened section of stream running broadly east to west along the south side of the A12 and linking into the Weald Brook. They also contained deposits of alluvium associated with the watercourse that again did not appear to cover archaeological features or contain any artefacts.
- 6.4 Archaeological test pits 6 and 7 were located slightly north of the skip-yard. TP6 contained made-ground, probably associated with various landfilling operations and the development of the skip-yard. Unexpectedly TP7 did not contain made-ground;

however, neither pit contained any evidence of archaeological features or deposits, though it should be noted that the made-ground deposit in TP6 suggests that if there had been archaeological features in the area they would potentially have been heavily truncated by whatever operations preceded the infilling of the area and likely not survived.

- 6.5 The majority of the geotechnical pits monitored in the area of the Weald Brook contained alluvial deposits, varying from 0.7m to 2.1m thick. While there is the potential for these deposits to mask earlier archaeological remains no such features, or any artefactual material, were observed in any of the pits, all being devoid of archaeological remains and cultural material. However, it should be noted that this may simply be reflection of the relatively small area investigated, rather due to any genuine absence of past activity in the Scheme area. Trial pits ATK-035, 094, 098 and 100 did not contain alluvial deposits but did contain shallow deposits of made-ground, 0.25m thick, reflecting either a localised episode of dumping/ ground raising. It should be noted that no evidence for a buried turf or topsoil horizon was seen in these pits, suggesting that the area had been stripped of any such deposits prior to the importation of the modern dumped material. It is possible given the presence of alluvial deposits in some of the adjacent pits (e.g. ATK053 & ATK055) that any alluvial deposits that were originally present in these areas had also been removed along with any turf/ topsoil.
- 6.6 A small number of geotechnical pits were monitored to the east of the Weald Brook, south-east of the skip-yard. ATK-082, 083 and 084 all contained made-ground between 0.3m and 1.4m thick likely associated with the construction of the A12 trunk road, located to the south. While some trial and test-pits to the north of the A12 were noted to contain alluvial deposits (e.g. ATK014 and TP4 & TP5), the survival of these deposits appears to be variable. In pits ATK-082 and 083, also located to the north of the watercourse, the depth of made-ground coupled with the absence of any buried topsoil would suggest that were any archaeological remains previously present they are likely to have been significantly disturbed by the modern development of the A12 road.
- 6.7 Seven geotechnical pits required archaeological monitoring north of the skip-yard; the majority of those recorded contained significant made-ground deposits, exceeding 3.5 in ATK-027, 031 and 032. In ATK-027, 031 and 032 the natural geology was not exposed as the required base depth of excavation was reached

before the natural substrate was exposed. Given the significant depth of modern made-ground it seems unlikely that any archaeological deposits survive in this area. An examination of modern and historic maps of the Scheme area does not show any large features, such a quarry pits that would account for such a large and deep area of made ground. While a small pond is depicted on historic Ordnance Survey maps from the 1881 1st Edition, the pond is not of sufficient size to account for the area of made ground encountered. It is therefore conjectured that these extensive deposits were placed on the site in connection with the construction of the M25, possibly infilling an unrecorded borrow pit.

- 6.8 Six geotechnical trial pits were excavated at the land south of the A12. These pits are located within or in close proximity to the London to Colchester Roman road Archaeological Priority Area (DLO33238). Two of the six pits, ATK-205 and ATK-206 contained made-ground associated with the development of a modern trackway through the area; however, natural clay geology was exposed within the pits and the made-ground was not seen to be covering any archaeological features. The remaining four pits were located on land that did not appear to have been significantly disturbed; however, archaeological features/deposits were not revealed in any of the pits. Given the presence of Roman and Saxon activity in the near vicinity, including Saxon remains recently investigated to the immediate west in connection with the Oak Farm Cemetery development, then the absence of any archaeological remains in these pits may well again be a reflection of the relatively small area subject to investigation rather than a genuine absence of any remains within this part of the Scheme area.
- 6.9 No earthworks or structures associated with the aerodrome that previously existed to the west of the Scheme, in the area now largely occupied by the Mayland's Golf Course, were identified during the works.
- 6.10 Overall, the monitoring and test-pitting works produced largely negative results, with no activity pre-dating the modern period being observed. Sterile alluvial deposits were recorded in the area of the Weald Brook. These deposits were not demonstrated to overlie any archaeological remains. Modern made-ground was recorded across large parts of the scheme area suggesting a significant level of modern truncation and disturbance through-out the site associated with the construction of the M25 motorway, the A12, a skip-yard and recycling facility and various services that run through the site. With the exception of the land on the west

side of the Weald Brook and to the south of the A12, where modern disturbance and made ground deposits were less frequently encountered and shallower in depth, then the extensive levels of modern disturbance are considered to make the likelihood of archaeological features and deposits surviving very low across the Scheme.

7. CA PROJECT TEAM

Fieldwork was undertaken by Bethany Hardcastle and Jonathan Orellana. The report was written by Bethany Hardcastle. The illustrations were prepared by Ryan Wilson and Rosanna Price. The archive has been compiled and prepared for deposition by Hazel O'Neil. The project was managed for CA by Adrian Scruby.

8. REFERENCES

British Geological Survey. 2019. The BGS Lexicon of named rock units. <http://www.bgs.ac.uk/lexicon/home.cfm> Accessed 2 December 2019.

ClfA, 2014. Standard and guidance for an archaeological watching brief. Chartered Institute for Archaeologists.

Cotswold Archaeology. 2014. Land at Maylands Golf Course, Romford, Greater London: Heritage Desk-Based Assessment. CA report: 14046.

Cotswold Archaeology, 2019a. M25 Junction 28 Improvement, London Borough of Havering: Written Scheme of Investigation for an Archaeological Watching Brief

Cotswold Archaeology. 2019b. M25 Junction 28 Improvement, London Borough of Havering: Supplementary Written Scheme of Investigation for a Programme of Archaeological Test Pitting

Essex County Council. 2006. Historic Towns in Essex – Brentwood: Historic Towns Assessment Report. Accessed 3 December 2019.

http://archaeologydataservice.ac.uk/archives/view/essex_eus_2006/downloads.cfm?REDSQUIDARCHIVES_3_853AE3CE-83C5-43D2-AEFA431914BFB535&town=Brentwood

GLAAS, 2015. Guidelines for Archaeological Projects in Greater London. Greater London Archaeological Advisory Service (GLAAS).

Highways England, 2017. Road Investment Strategy M25 Junction 28 Improvements Environmental Assessment Report.

Lingham, B.A. 1969. The History of Harold Hill and Noak Hill (updated by Herbie and Don Tait). <http://www.friendsofdagnampark.org.uk/NEW%20HISTORY.htm> Accessed 3 December 2019.

McIntosh, M.K. 1986. *Autonomy and Community: The Royal Manor of Havering 1200-1500*. Cambridge University Press.

MoLAS, 2002. A research framework for London archaeology 2002. Museum of London Archaeology Service.

MoLAS, 2000. The archaeology of Greater London. Museum of London Archaeology Service.

MoL, 2009. General Standards for the preparation of archaeological archives deposited with the Museum of London. Museum of London (MoL).

MHCLG (Ministry of Housing, Communities and Local Government). 2018. National Planning Policy Framework.

Powell, W.R. (ed.). 1978. A History of the County of Essex, vol. 7, British History Online. <http://www.british-history.ac.uk/source.aspx?pubid=277> Accessed 3 December 2019



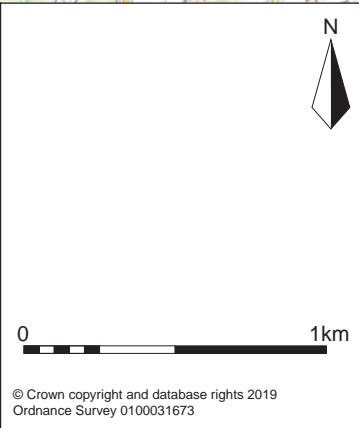
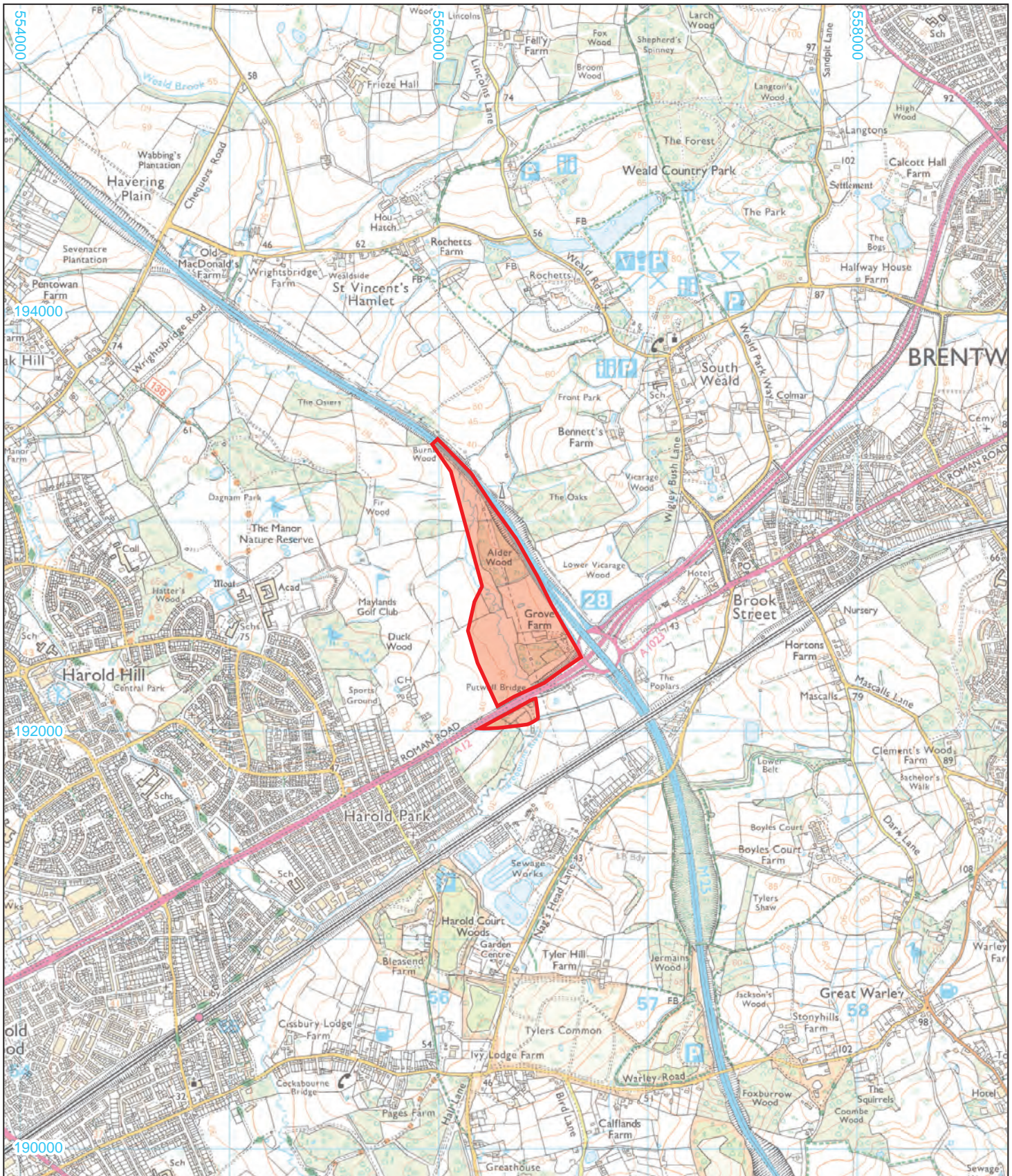
APPENDIX A: CONTEXT DESCRIPTIONS

Pit No.	Context No.	Type	Fill of	Context interpretation	Description	L (m)	W (m)	Depth /thickness (m)
TP2	200	Layer		Topsoil	Mid-grey brown clay silt	3.0	0.7	0.25
TP2	201	Layer		Alluvium	Mid-orange brown silt clay	3.0	0.7	0.6
TP2	202	Layer		Natural	Mid-orange brown compact clay	3.0	0.7	
TP3	300	Layer		Topsoil	Mid-grey brown clay silt	3.0	0.7	0.3
TP3	301	Layer		Alluvium	Mid-brown orange clay silt	3.0	0.7	0.6
TP3	302	Layer		Natural	Mid-red brown gravel clay	3.0	0.7	
TP4	400	Layer		Topsoil	Mid-grey brown clay silt	3.0	0.7	0.2
TP4	401	Layer		Alluvium	Mid-orange brown clay silt	3.0	0.7	1.0
TP4	402	Layer		Natural	Mid-orange brown silt clay with gravel inclusions	3.0	0.7	
TP5	500	Layer		Topsoil	Mid-grey brown clay silt	3.0	0.7	0.2
TP5	501	Layer		Alluvium	Mid-orange brown clay silt	3.0	0.7	0.6
TP5	502	Layer		Natural	Mid-blue orange mottled clay with occasional silt patches	3.0	0.7	
TP6	600	Layer		Topsoil	Mid-grey brown clay silt	3.0	0.7	0.4
TP6	601	Layer		Made ground	Mid-orange brown clay silt	3.0	0.7	0.2
TP6	602	Layer		Natural	Mid-orange brown compact clay with occasional chalk inclusions	3.0	0.7	
TP7	700	Layer		Topsoil	Mid-yellow brown silt clay	3.0	0.7	0.2
TP7	701	Layer		Natural	Mid-yellow brown clay with occasional gravel inclusions	3.0	0.7	
ATK-009	900	Layer		Topsoil	Mid-grey brown clay silt			0.3
ATK-009	901	Layer		Natural	Mid-yellow brown clay silt			0.5
ATK-009	902	Layer		Natural	Mid-yellow brown compact clay			
ATK-011	1100	Layer		Topsoil	Dark grey brown clay silt			0.2
ATK-011	1101	Layer		Natural	Mid-yellow brown silt clay			0.5
ATK-011	1102	Layer		Natural	Mid-yellow brown compact silt clay			
ATK-013	1300	Layer		Topsoil	Dark grey brown clay silt with high organic content			0.6
ATK-013	1301	Layer		Natural	Mid-yellow brown clay with occasional gravel and flint inclusions			
ATK-033	3300	Layer		Topsoil	Mid-grey brown silt clay			0.1
ATK-033	3301	Layer		Natural	Mid-yellow brown clay with occasional gravel inclusions			
ATK-035	3500	Layer		Topsoil	Mid-grey brown clay silt	3.0	0.7	0.25
ATK-035	3501	Layer		Natural	Mid-orange brown gravel clay	3.0	0.7	0.45
ATK-035	3502	Layer		Natural	Mid-grey brown compact clay	3.0	0.7	
ATK-037	3700	Layer		Topsoil	Dark grey brown clay silt with high organic content			0.2
ATK-037	3701	Layer		Subsoil	Mid-grey brown clay silt, frequent rooting			0.3
ATK-037	3702	Layer		Natural	Mid-brown grey compact clay			
ATK-040	4000	Layer		Topsoil	Dark grey brown clay silt with high organic content			0.1
ATK-040	4001	Layer		Subsoil	Mid-brown grey sandy silt with occasional rooting			0.4
ATK-040	4002	Layer		Natural	Mid-orange brown compact clay			
ATK-041	4100	Layer		Made ground	Mid-grey brown clay silt with frequent modern debris inclusions			1.2+
ATK-046	4600	Layer		Topsoil	Dark grey brown clay silt with high organic content			0.2

ATK-046	4601	Layer		Natural	Mid-brown grey silt clay			
ATK-048	4800	Layer		Topsoil	Dark brown grey clay silt with high organic content			0.3
ATK-048	4801	Layer		Natural	Mid-brown yellow compact clay			
ATK-049	4900	Layer		Topsoil	Mid-brown grey silt clay			0.3
ATK-049	4901	Layer		Natural	Mid-yellow brown compact clay			
ATK-054	5400	Layer		Topsoil	Mid-brown grey clay silt with high organic content			0.25
ATK-054	5401	Layer		Natural	Mid-yellow brown clay silt			0.7
ATK-054	5402	Layer		Natural	Mid-brown grey compact clay			
ATK-069	6900	Layer		Topsoil	Dark grey brown clay silt with high organic content			0.2
ATK-069	6901	Layer		Subsoil	Mid-yellow brown clay sand with frequent gravel inclusions			0.4
ATK-069	6902	Layer		Natural	Mid-yellow brown gravel clay			
ATK-077	7700	Layer		Topsoil	Mid-brown grey clay silt			1.2
ATK-077	7701	Layer		Natural	Mid-yellow brown compact clay			
ATK-079	7900	Layer		Made ground	Mid-grey brown clay silt with modern debris inclusions, including plastic			1.2
ATK-089	8900	Layer		Topsoil	Dark grey brown silt clay with high organic content			0.2
ATK-089	8901	Layer		Natural	Mid-brown grey compact clay			
ATK-090	9000	Layer		Topsoil	Mid-brown grey clay silt with high organic content			0.9
ATK-090	9001	Layer		Natural	Light yellow brown compact clay			
ATK-201	20100	Layer		Topsoil	Dark grey brown silt clay	3.0	0.7	0.5
ATK-201	20101	Layer		Subsoil	Light brown grey silt clay	3.0	0.7	0.3
ATK-201	20102	Layer		Natural	Light grey yellow gravel clay	3.0	0.7	
ATK-202	20200	Layer		Topsoil	Light grey brown silt clay	3.0	0.7	0.4
ATK-202	20201	Layer		Subsoil	Light grey brown silt clay	3.0	0.7	0.4
ATK-202	20202	Layer		Natural	Light yellow brown compact clay	3.0	0.7	
ATK-203	20300	Layer		Topsoil	Dark grey brown silt clay	3.0	0.7	0.3
ATK-203	20301	Layer		Subsoil	Light yellow brown silt clay	3.0	0.7	1.2
ATK-203	20302	Layer		Natural	Mid-grey yellow compact gravel clay	3.0	0.7	
ATK-204	20400	Layer		Topsoil	Mid-grey brown silt clay	3.0	0.7	0.2
ATK-204	20401	Layer		Subsoil	Light grey brown silt clay	3.0	0.7	0.5
ATK-204	20402	Layer		Natural	Mid-yellow brown compact clay	3.0	0.7	
ATK-205	20500	Layer		Made Ground	Mid-grey brown sandy silt with frequent modern debris and silt inclusions	3.0	0.7	0.6
ATK-205	20501	Layer		Natural	Mid-brown orange silt clay with a natural gravel band at 2.8bgl	3.0	0.7	
ATK-206	20600	Layer		Made Ground	Mid-grey brown sandy silt with frequent brick and modern debris	3.0	0.7	0.5
ATK-206	20601	Layer		Natural	Mid-brown orange silt clay	3.0	0.7	
ATK-207	20700	Layer		Topsoil	Mid-grey brown sandy silt with occasional modern brick and debris inclusions	3.0	0.7	5
ATK-207	20701	Layer		Subsoil	Mid-yellow brown clay silt with occasional gravel inclusions	3.0	0.7	0.8
ATK-207	20702	Layer		Natural	Mid-yellow brown sandy gravel	3.0	0.7	0.5
ATK-207	20703	Layer		Natural	Mid-orange brown compact clay	3.0	0.7	

APPENDIX B: OASIS REPORT FORM

PROJECT DETAILS		
Project Name	M25 Junction 28 Improvement, London Borough of Havering: Archaeological Watching Brief and Test Pitting	
Short description	<p>In October and November 2019 Cotswold Archaeology (CA) carried out an archaeological watching brief with supplementary test pitting exercise in connection with proposed improvements at Junction 28 of the M25 motorway, London Borough of Havering, and Essex, at the request of Atkins, acting on behalf of Highways England. All of the monitoring and test-pitting works were located within the London Borough of Havering.</p> <p>Overall, the monitoring and test-pitting works produced largely negative results, with no activity pre-dating the modern period being observed. Sterile alluvial deposits were recorded in the area of the Weald Brook. These deposits were not demonstrated to overlie any archaeological remains. Modern made-ground was recorded across large parts of the scheme area suggesting a significant level of modern truncation and disturbance through-out the site associated with the construction of the M25 motorway, the A12, a skip-yard and recycling facility and various services that run through the site. With the exception of the land on the west side of the Weald Brook and to the south of the A12, where modern disturbance and made ground deposits were less frequently encountered and shallower in depth, then the extensive levels of modern disturbance are considered to make the likelihood of archaeological features and deposits surviving very low across the Scheme.</p>	
Project dates	October and November 2019	
Project type	Watching brief and archaeological test pitting	
Previous work		
Future work	Unknown	
PROJECT LOCATION		
Site Location	M25, Junction 28, London Borough of Havering	
Study area (M ² /ha)		
Site co-ordinates	NGR: 556814 192447	
PROJECT CREATORS		
Name of organisation	Cotswold Archaeology	
Project Design (WSI) originator	Cotswold Archaeology	
Project Manager	Adrian Scruby	
Project Supervisor	Bethany Hardcastle and Jonathan Orellana	
MONUMENT TYPE	none	
SIGNIFICANT FINDS	none	
PROJECT ARCHIVES		
	Intended final location of archive (museum/Accession no.)	Content (e.g. pottery, animal bone etc)
Physical	Museum of London	none
Paper	Museum of London	Pit recording sheets, photo record sheets, day sheets, sketches
Digital	Museum of London	Context database, digital photographs, survey data
BIBLIOGRAPHY		
CA (Cotswold Archaeology) 2019 <i>M25 Junction 28 Improvement, London Borough of Havering: Archaeological Watching Brief and test Pitting</i> . CA typescript report SU0020_1		



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PROJECT TITLE
 M25 Junction 28 Improvements, London
 Borough of Havering

FIGURE TITLE
 Site location plan

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DRAWN BY	RW	PROJECT NO.	SU0020	FIGURE NO.
CHECKED BY	DJB	DATE	18/12/2019	
APPROVED BY	AS	SCALE@A4	1:25,000	1



- Site boundary
- Archaeological test pit
- Alluvium
- Made ground
- ⊕ Dynamic sampling and rotary core
- ⊕ Dynamic sampling and rotary core with install
- ⊕ Cable percussion borehole
- ⊕ Windowless sample with install
- ⊕ Static cone penetration test
- ⊕ Trial pit
- ⊕ Hand-held windowless sample



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PROJECT TITLE
M25 Junction 28 Improvements, London Borough of Havering

FIGURE TITLE
Plan showing the locations of archaeological test pits and GI investigation / trial pits

DRAWN BY	RW	PROJECT NO.	SU0020	FIGURE NO.
CHECKED BY	DJB	DATE	18/12/2019	2
APPROVED BY	AS	SCALE @A3	1:3000	



Site, looking south towards skip yard



Site, looking north into woodland



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PROJECT TITLE

M25 Junction 28 Improvements, London
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FIGURE TITLE

Overall site photographs

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CHECKED BY	DJB	DATE	18/12/2019	
APPROVED BY	AS	SCALE@A4	NA	3



Pit ATK035, looking south-west



Pit ATK205, looking west (1m scale)



Pit ATK009



Pit ATK069 (0.15m scale)



Pit ATK086 (0.15m scale)


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PROJECT TITLE
 M25 Junction 28 Improvements, London
 Borough of Havering

FIGURE TITLE
**Geotechnical inspection pits:
 photographs**

DRAWN BY	RW	PROJECT NO.	SU0020	FIGURE NO.
CHECKED BY	DJB	DATE	18/12/2019	5
APPROVED BY	AS	SCALE	@A3 NA	



Test Pit 4, looking south-west (1m scale)



Test Pit 6, looking north-east (1m scale)

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