1EW02 Enabling Works – Area South

Report on the results of archaeological trial trenching for the 18-inch Fulmer to Haste Hill 450NB HP Pipeline Diversion

1EW02-CSJ-EV-REP-S002-000019

Revision: P01
WP Reference: WP
MDL Reference: TBA

Revision	Date	Author	Checked by	Approved by	Revision Details
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REVISION CHANGES, AUTHORISATION & ISSUE RECORD

Version	Date	Sections revised	Brief description of the revision	Prepared by	Checked by	Approved by	Reason for Issue	HS2 Acceptance Decal Code
P01	09-05-2018 07-06-18		Original version Revised following comments from CSjv archaeological team	Jessica Bryan (MHI Senior Archaeologist) and Isca Howell (MHI Senior Archaeologist)	Caitríona Gleeson (MHI Project Manager)	Caroline Raynor (CSJV Works Package Manager)	For Acceptance	

CSjv Review and Acceptance Decal

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Contents

Plates

Figures

Tables

1 Executive summary

1.1.1 This report details the results of a programme of the archaeological trial trenching for the Fulmer to Haste Hill 450NB HP Pipeline Diversion (007). The trial trenching area was located at either side of the Harvil Road to the north of the Marylebone to Oxford/Birmingham railway line. Most of the site's extent was located to the north-east of the proposed HS2 route (Fig 1).

1.1.2 The pipeline diversion extends for approximately 1km and runs east-west between two diversion tie-ins (Grid Reference TQ 05747 87771 at the west and TQ 06107 87832 at the east) (Fig 1). The Site does not fall under a Construction Land Requirement (CLR) in the DDBA for Colne Valley East (1D037-EDP-EV-REP-S000-000004) and does not have a CR0 number. The overall available area proposed for evaluation was c.3.8ha; c. 1.9ha for the eastern section and c. 1.9ha for the western section.

1.1.3 The work was undertaken in accordance with specifications proposed and accepted in the Project Plan (1EW02-CSJ-EV-PRO-S002-000001) and LS-WSI (1EW02-CSJ-EV-PLN-S002-000002) that were prepared in advance of the works.

1.1.4 The trial trenching was required to identify the location, extent, survival and significance of any heritage assets within the site.

1.1.5 The evaluation identified areas of archaeological potential relating to Mesolithic/early Neolithic and later prehistoric activity in the vicinity of Trenches 007 and 008 at the west of the site and a further area of possible medieval activity at the east of Harvil Road in Trench 014.

2 Introduction

2.1.1 This report describes the results of archaeological trial trenching in advance of the Fulmer to Haste Hill 450NB HP Pipeline Diversion (007) (hereafter referred to as 'the Site') on behalf of the main contractor for HS2 Area South Enabling Works, Costain Skanska joint venture (CSjv).

2.1.2 Fourteen trenches were excavated across the Site and two areas of archaeological potential were identified.

2.1.3 An assessment was also undertaken of the topsoil excavated from the trenches to determine potential for the retrieval of archaeological artefacts, primarily flint tools of prehistoric date.

3 Site background

3.1 Previous works relevant to the archaeology of the site

3.1.1 Detailed desk-based assessments (DDBAs) for the Colne Valley East (1D037-EDP-EV-REP-S000-000004) and the Colne Valley West (1D037-EDP-EV-REP-C000-000028) and

Environmental Baseline assessments for CFA6 (CH-001-006, ES 3.5.2.6.4) and CFA7 (CH-001-007, ES 3.5.2.7.4) have been completed for this area.

3.1.2 A further Geoarchaeological Desk Based Assessment (HS2-HS2-PM-TEM-000-000004) for the complete HS2 route has been prepared, covering the Colne Valley as Enhanced Study Area 1 (ECA1).

3.1.3 Network Archaeology conducted archaeological investigations on the Harefield to Southall proposed Gas Pipeline and the results were presented in an 2008 report: Harefield to Southall proposed Gas Pipeline, Archaeological Controlled Strip: Ancillary Pipe Dump (HAS56/repot/v2.0).

3.2 Summary of site background

3.2.1 For a more detailed account of the site background please refer to the Project Plan (1EW02-CSJ-EV-PRO-S002-000001; see Section 3). A summary of relevant information is presented below.

Prehistoric

3.2.2 Close to the western edge of the Site, near Dews Farm, evidence of Mesolithic activity was found (CVA21). At Dews Farm Road Pit (now Harefield Lake No.2) a ring-ditch (CVA010) was recorded before being destroyed by gravel extraction (DDBA, p. 28).

3.2.3 Investigations for the Harefield to Southall gas pipeline , c 700m southeast of the Site, retrieved two redeposited flint artefacts of early and late Neolithic/Bronze Age date and a small burnt flint assemblage (Network Archaeology, 2008, p. D18).

3.2.4 Excavations at the above site also identified a group of cremations dating to the transitional middle to late Bronze Age, along with a spread of burnt flint and a small number of associated pits and postholes of presumed prehistoric date (RUI021). Sampling of the features on the Site indicated that palaeoenvironmental remains were extremely rare on the Site (Network Archaeology, 2008, p. 12).

3.2.5 The Detailed Desk Based Assessment (DDBA, p.31) notes that much of the evidence for Late Neolithic (c. 2,850-2,200 BC) and Early Bronze Age (c. 2,200-1,600 BC) activity in this region has been from the gravel terraces of the River Thames, whilst comparatively few traces of activity have been recorded from landscapes overlying the London Clays (Section 3.3).

Roman

3.2.6 A Roman Road (Viatores 165) is believed to have been established between settlements at Verulamium (St Albans) and Laleham. The exact route of this road is unknown but is suspected to run approximately along the line of Harvil Road, which bisects the site (DDBA, p.37-38). Although evidence for Romano-British settlements in the wider area cannot be fully ruled out, Roman-British occupation evidence has so far not been recovered from nearby archaeological investigations (DDBA, p.37-38).

Early to Late Medieval

3.2.7 The DDBA indicates that few Saxon finds have been made in this area. Although Harefield and Ruislip have their origins in the Late Saxon period, it is likely that the area surrounding the site was covered in dense woodland at this time (DDBA, p.39-40).

3.2.8 The excavation in 2007 (Network Archaeology 2008) identified field boundary ditches with post-medieval to modern pottery and ceramic building material (CBM). The catchment of the Site's Archaeological Character Areas (ACAs) include several Medieval Farms and moated sites (Fig 2) such as Dews Farm to the west (CVA 022), Brackenbury Farm to the east (RUI002) and Pynchester (RUI001) further south-east of the Site.

3.2.9 During the medieval period this area may have been used for various agricultural purposes, particularly following the growth in population following the 12th and 13th centuries which may have resulted in the uptake of more marginal land for arable cultivation (DDBA, p. 43). It is possible, however, that much of the evidence for medieval agriculture may have been truncated and obscured by post-medieval enclosure and modern ploughing/development (DDBA, p.42).

Post-Medieval to Modern

3.2.10 Brackenbury Farm is a Grade II listed building and comprises a 16th-century farm house with a substantial 17th-century timber framed structure known as Brackenbury House set within a moat. This is situated c. 1km southeast of the Site. A watching brief was carried out at the Farm in 2006, but no significant archaeological remains were identified (DDBA, p.44).

3.3 Geology and topography of the site

3.3.1 The Site lies in archaeological character areas 06-09 (semi-rural west of Breakspear Road) and 07-01 (east side of the Colne Valley). The geology and topography of both character areas is described as "predominantly underlain by a solid geology of London Clay of Eocene date overlain in parts by superficial deposits, including Head deposits and Terrace Gravel including the Harefield Terrace" (ES 3.5.2.6.4 and ES 3.5.2.7.4).

3.3.2 The DDBA (p15) describes the underlying bedrock geology across the landscape east of the Colne Valley as Palaeogene clays, silts and sands of the London Clay Formation and the Lambeth Group. Superficial deposits are not recorded for this area. Further to the west, the valley of the River Colne contains extensive superficial deposits of fluvial sands, gravels and fine-grained alluvium of Pleistocene and Holocene date.

3.3.3 The Geoarchaeological DBA indicates that deposit modelling of the Colne Valley (ESA1) was limited due to a small number of boreholes in this area. The deposit model created by a transect of boreholes across the area gives some guidance as to the location of the Holocene floodplain and superficial deposits across the Colne Valley; alluvial areas and the Holocene floodplain are projected further to the west of the Site, but it corroborates the potential for some superficial deposits in the Newyears Green Bourne area, in the eastern section of the Site.

3.3.4 The Site sits on a ridge of London Clay between the alluvial deposits of the River Colne to the west and the River Pinn to the east. The Site was expected to have little superficial geology apart from a spur of alluvium which extends from Harefield Lake no.2 eastwards towards Harvil road, following the course of the Newyears Green Bourne (DDBA, p. 20; see Figs 3 & 4).

3.3.5 The route of the pipeline diversion at the Site passes through six fields and crosses the Newyears Green Bourne (a tributary of the River Colne) at two points (see Figs 1-4). The ground slopes gently down to the Newyears Green Bourne at either side (north and south) of the tributary and rises at the central section of the route at either side of Harvil Road.

4 Specific aims and objectives

4.1 Needs and aims

4.1.1 The needs and aims of the project were set out in the project plan (Section 4) and are summarised below.

4.1.2 Trial trenching was required to determine the nature of the archaeological potential of the site.

4.1.3 The objective of the investigation was to gain information about the archaeological resource to support an assessment of its character, extent, knowledge value and potential to contribute to specific objectives.

4.1.4 The aims of the trial trenching were to:

- Assess the extent and nature of archaeological remains within the survey boundaries;
- characterise the nature of any archaeological remains within the survey boundaries;
- assess the significance of any archaeological remains within the survey boundaries;
- assess the change to the significance of the identified heritage assets as a result of the detailed design;
- suggest measures, if appropriate and feasible, for further archaeological investigation to mitigate identified significant impacts and
- contribute to the delivery of GWSI: HERDS Specific Objectives as specified in Section 4.2 of the Project Plan.

5 Scope and Methodology

5.1 Trial trenching scope

5.1.1 Trial trenching was undertaken on 5-19th March 2018 and carried out in accordance with specific guidance produced by HS2, as contained within a) Technical Standard Specification for historic environment investigations (HS2-HS2-EV-STD-000-000035), b) Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy (GWSI: HERDS) (HS2-HS2-EV-STR-000-000015) and c) the LS-WSI for Trial Trenching and Archaeological Recording, Cadent Gas 48" and 18" main, Colne Valley (Gas) (1EW02-CSJ-EV-PRO-S002-000001 Revision P02). The trial trenching evaluation was required to determine the presence or absence of archaeological features, structures, deposits, artefacts and ecofacts within the site.

5.1.2 Trenches were positioned to provide a representative sample of the available areas; there was no pre-existing information on potential archaeological remains on which to target trenches.

5.1.3 The initial project scope was for the excavation of 24 trenches and 76 topsoil samples (Fig. 3). The trenches were planned to provide a representative sample of 4% but, as indicated by Figs 3 and 4, this was not possible due to ecological and logistical constraints (see Table 1). Fourteen of planned 24 trenches were excavated and 42 topsoil sample assessments were carried out.

Table 1 Proposed Trench locations, constraints and action taken in the field

Trench No.	Original location and constraint	Action taken
Tr001	Located over existing gas pipe	Not excavated
Tr002	Located over existing gas pipe	Not excavated
Tr003	Located over existing gas pipe	Not excavated
Tr004	Located over sewer/water pipe	Trench moved and shortened
Tr005	Located under overhead power lines	Trench moved
Tr006	Located under overhead power lines	Trench moved
Tr010	Located adjacent to badger sett	Not excavated
Tr011	Located adjacent to badger sett	Trench moved and used to evaluate pond location associated with pipe diversion
Tr013	Located over modern embankment	Trench moved
Tr016	Located under overhead power lines	Trench moved
Tr017	Located adjacent to overhead power lines	Not excavated
Tr018	Located adjacent to overhead power lines	Not excavated
Tr020	Located inside Murphys (Central Section) work area	Trench moved and shortened to respect the site boundary
Tr021	Located inside Murphys (Central Section) work area	Not excavated

Tr022	Located inside Murphys (Central Section) work area	Not excavated
Tr023	Located inside Murphys (Central Section) work area	Not excavated
Tr024	Located inside Murphys (Central Section) work area	Not excavated

5.2 Methodology

5.2.1 The Project Plan proposed that topsoil sampling would be undertaken on the trenches to determine potential for the retrieval of artefacts, particularly flint tools of prehistoric date. It was planned that 76 top soil samples (from 0.5m² pits) would be taken (38 from each side of Harvil Road), and that the samples would be sieved and checked for any flints and other finds. At the start of the fieldwork it became apparent the topsoil was too waterlogged and had too high a clay content to sieve. A change in methodology was proposed and agreed with CSjv.

5.2.2 Each trench was divided into three, and one bucket load of topsoil was taken from each section and spread out adjacent to the trench. The sample was then subject to a fingertip search. Each sample gathered in this manner was ascribed a test pit number and this number was assigned to any finds retrieved during the process. The reduction in the overall trench number led to a reduced level of topsoil assessment than was proposed in the Project Plan.

5.2.3 Over much of the Site's extent the content of the topsoil was generated by recent site activities (e.g. dumping) and the fingertip search produced mostly modern material. Six flint objects in total, including a core and a flake, were retrieved from the topsoil and retained (see Section 8.7).

5.2.4 Following systematic CAT scanning for potential unknown underground services, the trial trenches were excavated to the level of the undisturbed geological substrate or the archaeological horizon, whichever was higher, using a mechanical excavator with toothless ditching bucket under archaeological direction.

5.2.5 The archaeological recording was undertaken in accordance with the code of practice of the Chartered Institute for Archaeologists (CIfA). Contexts were given unique numbers. All recording was completed on *pro forma* record sheets that conform to accepted archaeological standards and every stratigraphic relationship was recorded.

5.2.6 At least one representative section at 1:10 or 1:20 scale of each trench was drawn from ground level to the base of excavation.

5.2.7 An overall site plan at an appropriate scale and relative to the National Grid was compiled by GPS surveying. The site was tied accurately to the Ordnance Survey National Grid and Newlyn Datum (OD) by the subcontractor's Geomatics Team.

5.2.8 A digital photographic record was taken with metric scales as appropriate.

5.3 Publication and dissemination proposal, including archive deposition

5.3.1 A summary report was prepared for submission to the OASIS database on completion of the archaeological works at this site. All archive preparation will be undertaken in accordance with guidelines published by the CIfA on behalf of the Archaeological Archive Forum (July 2017) and the resultant archive will be deposited with a suitable repository.

5.3.2 There is no proposal at present for the result of the evaluation to be published beyond those mentioned above.

6 Health, safety and environment

Details on the Health and Safety mitigation measures employed on the Site can be found in the Risk Assessment and Method Statement document prepared in advance of the fieldwork (1EW02-CSJ-HS-MST-S002-000004).

Site access, safety and security

6.1.2 Site access, safety and security was facilitated by the Early Works contractors (Ground Control). During the site establishment works, Ground Control provided a security team, secure fencing, temporary welfare and parking facilities for the archaeological subcontractor's field team to use.

6.1.3 Hi-vis PPE, gloves and safety glasses were worn at all times during the works.

Utilities

6.1.4 The main utility in the area was the 18" gas mains which was marked out as an exclusion zone for the works by the Principal Contractor.

6.1.5 At the commencement of fieldwork, the team were notified of further services at the site and suitable buffer zones and mitigation strategies were devised (see Section 5.1.3).

6.1.6 A CAT and GENNY were used before and during the excavations to ensure that no unknown services were disturbed.

7 Assumptions and limitations

7.1.1 It was assumed, given the details in the DDBA, Project Plan and LS-WSI, that the methodology and placement of the trial trenches were considered appropriate to the scope and requirements of the site.

7.1.2 There were ecological concerns (badger setts) that were mitigated by moving two trenches (see Section 5.1.3).

7.1.3 The location of several of the planned trenches over gas pipes, sewer pipes, within the Central Section (Murphys) and under power lines limited the area available for archaeological trial trenching. Where possible, these limitations were mitigated by moving the relevant trenches (see Section 5.1.3).

8 Results and Observations

8.1 Introduction

8.1.1 A total of 14 (no.) trial trenches were excavated under archaeological direction using a toothless ditching bucket (Fig 3). Forty-two topsoil sample assessments were undertaken across the extents of the excavated trenches.

8.2 General stratigraphic report and summary of results

8.2.1 Slight variations in the soil profile (topsoil/geological substrate) were noted across the Site.

8.2.2 The geological substrate on the Site varied according to the topography and underlying geology of the trenched area. Along the central section of the site, on the highest ground, the geological substrate exposed was an orange (possibly iron-stained) grey clay.

8.2.3 As the southeast of the Site, underlying the possible alluvial deposits in Trenches 019 and 020, it was a mottled orange yellow grey clay.

8.2.4 At the west of the Site, on the River Terrace in Trench 007 and the possibly geologically superficial deposits in Trenches 008 and 009 the highest level of the geological substrate exposed was a mottled grey yellow clay, an orange silt and an orange clay with bands of gravel respectively.

8.2.5 The geological substrate was sealed by 0.10–0.20m of orange silty clay in most trenches. In Trenches 016, 019 and 020, on low-lying ground close to a stream, this deposit was between 0.25m and 0.40m deep and interpreted as an alluvial deposit. In Trenches 007 and 008 the orange silty clay may also have been alluvial in origin where it formed on an earlier floodplain of the Newyears Green Bourne.

8.2.6 The anticipated layer of alluvium deposits as mapped in Trenches 004, 005 and 006 (see Figs 3 and 4) was apparent in Trenches 005 and 006 as a shallow layer (0.3-0.5m in depth) of greyish brown/orange silty clay. No alluvium, or any form of subsoil deposit, was identified in Trench 004.

8.2.7 In the remaining trenches where orange silty clay was present it was interpreted as subsoil. In Trench 014 the subsoil sealed archaeological features.

8.2.8 An average of 0.30m of topsoil overlay the subsoil and geological substrate across the trenched area. Occasional small fragments of ceramic building material and pottery sherds were present in the topsoil and none were thought to be earlier than the post-medieval periods.

8.2.9 Archaeological features were identified in Trenches 007, 008 and 014.

8.2.10 No archaeological remains were identified in Trenches 004, 005, 006, 009, 011, 012, 013, 015, 016, 019 and 020.

8.2.11 Modern ceramic field drains were identified in Trenches 004, 007 and 016.

8.2.12 A former geotechnical test pit was identified in Trench 013.

8.3 Trenches with features of archaeological potential

Trench 007

Late Mesolithic/early Neolithic features

8.3.2 Trench 007 measured 30.00m by 1.90m and was 0.80m deep. It was aligned north-east to south-west and situated across a river terrace of the Newyears Green Bourne which sloped down to the south-west. The natural horizon was a mottled grey yellow clay. Cutting or overlying the natural horizon were several features of archaeological interest (Fig. 5, Plates 1-3).

Plate 1 Tree throw [19] in Trench 007, facing west.

8.3.3 At the north-east of the trench a large irregularly-shaped feature cut the natural horizon. This was interpreted as a tree throw (context [19]; Plate 1). This was 3m in width (north-south) and

extended beyond the edges of the trench. It was 0.10m in maximum depth and filled by orange sandy silt.

8.3.4 Twenty-two items of struck flint were retrieved from the fill including 4 flake fragments, 4 blade fragments, 1 spall, 2 shatters and 3 crested pieces (Section 8.5). This assemblage was ascribed a late Mesolithic/early Neolithic date (Section 8.5). The tree throw may relate to felling/clearance adjacent to the course of the Newyears Green Bourne in the later Mesolithic or early Neolithic period. It is not possible to establish at this stage whether the feature represents to a nearby occupation site or reflects more general activity of the vicinity of the Site. A flint assemblage of similar date was retrieved from the surface of the natural substrate in Trench 008, c. 40m to the east of Trench 007, which points to further later Mesolithic/early Neolithic activity in the immediate area.

Late Neolithic/early Bronze Age features

8.3.5 In the centre of the trench, at the break of slope between river terraces, two overlapping large spreads/deposits containing burnt flint and flakes were exposed along with six potential stakeholes. The lower deposit (context [22]; Plate 2 and Fig. 6) was a layer of small to medium charcoal pieces and burnt flint. The layer was 6.50m north-south, 0.10m in maximum thickness and extended beyond the edges of the trench.

8.3.6 Overlying context [22] was a further deposit of material (context [21]; see Plate 2 and Fig 6) which contained frequent burnt flint in a brown silty clay matrix. Within this were 28 items of worked flint including 3 flakes, 13 spalls and 11 shatters. This assemblage was dated to the late Neolithic/early Bronze Age period. The layer extended 8.60m north-south and beyond the edges of the trench and was 0.20m in maximum thickness.

8.3.7 Underlying the burnt flint layers were six circular features filled with a deposit similar in composition to context 21 and containing frequent quantities of burnt flint and charcoal [22] (context numbers fills: [23] to [28], cuts: [31] to [36], see Fig 4 and plate 3). The features were 0.20m in average depth and were between 0.10m to 0.20m in diameter. They each had straight, steep sides and a rounded base. These were interpreted as stakeholes.

8.3.8 The flint assemblage from this sequence of features and deposits included four crested pieces and four rejuvenating/trimming flakes which point to the preparation and maintenance of flint tools (see Section 9.4). The pieces were ascribed a late Neolithic/early Bronze Age date, apart from one *flanc de nucleus* which was interpreted as a residual find associated with the earlier deposition phase at the north of the trench.

8.3.9 Apart from flint, no further palaeoenvironmental or artefactual remains were retrieved from the samples processed from this sequence of deposits.

8.3.10 The archaeological remains at the south of the trench relate to a later phase of occupation on the lower level of the river terrace of the Newyears Green Bourne which possibly formed after a period of river erosion in the late Neolithic/early Bronze Age period. The sequence of features has a stronger occupation signature than the earlier phase of late Mesolithic/early Neolithic activity at the north of the trench and comprises stakeholes and burnt stone deposits.

Plate 2 West-facing section in Trench 007, showing the burnt flint horizon [22], the brown silt horizon [21], subsoil [18] and the topsoil.

8.3.11 Fire-cracked flint, similar in composition to that from Trench 007, was also noted at the subsoil/substrate interface in Trenches 008 and 012 and retrieved from the subsoil in Trench 006. The distribution of this material may reflect late Neolithic/early Bronze Age occupation in associated with exploitation of Newyears Green Bourne. Similarly-dated burnt flint was uncovered at the Harefield to Southall gas pipeline, c 700m southeast of the Site (Network Archaeology, 2008, p. D19).

8.3.12 A very high incidence of burnt flint on a site (c. 36 kg from this site) strongly implies an anthropogenic origin. The recovery of this material in proximity to a contemporary water source may indicate the practice of burning flint and stone to heat water for bathing to create a Bronze Age sauna bath (Barfield and Hodder 1987). The material uncovered may relate to a burnt mound generated by the disposal of the flint following use.

8.3.13 Burnt flint may also have been used use as a pottery temper as has been suggested at Black Patch in Sussex (Drewett 1982, 333) and at Runnymede Bridge in Surrey (Needham and Sorensen 1988). The stakeholes associated with burnt flint deposits may have been associated with stakes used in fire-screens or structures linked with the burning and usage of the flints.

Plate 3 Pre-excavation photograph of stakeholes (contexts [31] to [36]) in Trench 007, facing north

8.3.14 Context [22] was sealed by a thick layer of subsoil (context [18]) which also contained nine items of worked flint including a plunging notched blade of possible Neolithic date and three flakes. This was up to 0.30m thick, thinning to 0.10m towards the top of the slope at the north of the trench. The trench was sealed by 0.30m of topsoil.

Trench 008

Possible late Mesolithic/early Neolithic period

8.3.15 Trench 008 measured 30.00m by 1.90m and was 0.40m deep and was aligned east to west. The trench was located mid-way along a south-facing slope leading down to the Newyears Green Bourne.

8.3.16 The trench was machined to a sterile orange clay horizon as archaeological features were identified at this level. The features comprised two north-south aligned linear features and one small post hole (Fig. 7).

8.3.17 The posthole (contexts cut [15] fill [14]) was 0.30m north-south by 0.20m east-west and 0.20m deep. It was filled with an orange brown silty clay and contained three items of worked flint, comprising two spalls and a shatter (see Section 8.5).

8.3.18 Flint artefacts were recovered from with the surface of the orange clay horizon. The assemblage included 72 items of worked flint, mostly flakes, of probable Late Mesolithic/early Neolithic date (Section 8.5).

8.3.19 The post-hole and flint artefacts may relate to a broadly contemporary phase of the activity as that noted in Trench 007, c. 40m to the west, and associated with late Mesolithic/early Neolithic course of the Newyears Green Bourne.

8.3.20 The archaeological features in this trench may represent more than an isolated incident of tool manufacture/repair and imply a level of occupation in the immediate vicinity of Trenches 007 and 008.

Undated

8.3.21 The linear features (contexts cuts: [11] & [13] fills: [8] & [10]; Fig 6) were both shallow with concave bases. Each was 0.80m in width and 0.30m in maximum depth. They were both filled with orange brown sandy silt and ditch fill [10] contained an abraded sherd of possible Roman/medieval pottery.

8.3.22 The linear features possibly constitute the remains of field boundary ditches associated with a larger field system. At this stage, it is not possible to date the ditches beyond stating that they are pre-modern in date.

8.3.23 Sealing these features was a thin band (up to 0.10m thick) of subsoil, and this in turn underlay 0.30m of topsoil.

Trench 014

8.3.24 Trench 14 measured 30.00m by 1.90m and 0.40m deep. It was located at the east of Harvil Road and aligned north-west to south-east. The geological substrate was an orange grey clay. Six possible stake holes and a circular pit were exposed at the centre of the trench (see Fig. 8 and Plate 4). Each feature was filled with an orange silty clay. The possible stakeholes were all approximately 0.10m diameter and 0.10m deep and no artefacts were recovered from their fills. The pit, context [9], measured 0.73m by 0.66m and was 0.23m deep. The fill (context [8]) contained a sherd of undiagnostic Late Bronze Age/Early Iron Age pottery (in two pieces), 3 abraded fragments of medieval pottery and 3 items of flint debitage. These finds have been interpreted as residual artefacts.

8.3.25 An irregular flint scraper was retrieved form the subsoil in Trench 014 (Section 8.5).

8.3.26 The features in this trench may relate to medieval occupation of this area. These features may also represent a temporary structure erected at the west of the Harvil Road during the medieval period.

8.3.27 The remains in this trench were under 0.10m of orange silty clay subsoil and 0.30m of dark brown topsoil.

Plate 4 Possible stake holes and circular pit in Trench 014, looking north.

8.4 Trenches without archaeological features

8.4.1 Trench 004 measured 10.00m by 1.90m and was 0.40m deep. It was aligned north-west to south-east. Its location and length were modified because of sewer/water pipe. Modern topsoil (0.40m thick) was recorded over geological substrate of orange grey clay.

8.4.2 Trench 005 measured 30.00m by 1.90m and was 0.50m deep. It was aligned east to west. It was moved to avoid overhead power lines. The geological substrate was an orange grey clay, which underlay 0.20m of grey orange silty clay alluvium and 0.30m of dark brown topsoil.

8.4.3 Trench 006 measured 30.00m by 1.90m and was 0.50m deep. It was aligned south-west to north-east. It was moved to avoid overhead power lines. The geological substrate was an orange grey clay beneath 0.20m of grey orange silty clay alluvium and 0.30m of dark brown topsoil.

8.4.4 Trench 009 measured 30.00m by 1.90m and was 0.50m deep. It was aligned south-west to north-east. The geological substrate in the trench was an orange clay which contained bands of gravel. This was under 0.20m of orange silty clay subsoil and 0.30m of dark brown topsoil..

8.4.5 Trench 011 measured 30.00m by 1.90m and was 0.50m deep. It was aligned south-west to north-east and was moved to avoid an area of badger setts. The geological substrate in the trench was an orange grey clay beneath 0.10m of orange silty clay subsoil and 0.40m of dark

brown topsoil. Burnt flints were observed on the surface of the natural substrate that may relate to the activity seen in Trench 007 (see Sections 8.3 and 8.5).

8.4.6 Trench 012 measured 30.00m by 1.90m and was 0.50m deep. It was aligned north-west to south-east. The geological substrate in this trench was an orange grey clay beneath 0.20m of orange silty clay subsoil and 0.30m of dark brown topsoil. Burnt flints were observed on the surface of the natural substrate that may also relate to activity seen in Trench 007 (see Sections 8.3 and 8.5).

8.4.7 Trench 013 measured 30.00m by 1.90m and was 0.40m deep. This trench was moved to avoid a modern bank. The geological substrate in this trench was an orange grey clay beneath 0.10m of orange silty clay subsoil and 0.30m of dark brown topsoil.

8.4.8 Trench 015 measured 30.00m by 1.90m and was 0.40m deep. It was aligned north-west to south-east. The geological substrate was an orange grey clay sealed by 0.10m of orange silty clay subsoil and 0.30m of dark brown topsoil.

8.4.9 Trench 016 measured 30.00m by 1.90m and was 70m deep. It was aligned south-west to north-east. It was moved to avoid overhead power lines. The geological substrate was an orange grey clay sealed by 0.40m of banded alluvium and 0. 20m of dark brown topsoil.

8.4.10 Trench 019 measured 30.00m by 1.90m and was 0.70m deep. It was aligned north-west to south-east. The geological substrate was a mottled orange yellow grey clay sealed by 0.35m of orange silty clay alluvium and 0.25m of dark brown topsoil.

8.4.11 Trench 020 measured 15.00m by 1.90m and was 1.00m in depth. It was aligned north-west to south-east. Its location and length was modified as the trench fell inside Murphys (Central Section) work area. The geological substrate was a mottled orange yellow grey clay sealed by 0.60m of orange silty clay alluvium and.0.30m of dark brown topsoil.

8.5 Finds report

Flint

8.5.2 A total of 208 pieces of struck flint from 22 separate contexts was available for assessment. Of these, 72 pieces were recovered by hand in the field and the remaining 136 were retrieved from a rapid scan of wet sieved samples off-site. The material is summarised in Appendix 4.

8.5.3 A total of just over 36kg of unworked burnt flint was present in 13 separate contexts. Over 94% of this total was recovered from bulk samples retrieved from just two contexts. The material is summarised in Appendix 5.

8.5.4 Associated datable evidence was sparse but included rare sherds of prehistoric and later pottery from several contexts.

The struck flint

8.5.5 Most of the struck flint was recovered from the fills of cut features and supervening horizontal layers located in Trenches 007 and 008, with other individual flints retrieved from contexts within Trenches 6, 12 and 14, and Test Pits 001 and 016.

8.5.6 Individual contexts within Trench 007 include subsoil context [18], shallow tree-throw [19], burnt flint layers [21] (upper; sample <2>) and [22] (lower; sample <3>), the latter sealing a series of stake holes [23]-[28] (samples <6>-<11>). Other contexts include pits [8] (sample <1>) and [14] (sample <12>) from Trenches 008 and 014, respectively, and ditches [10] and [12] (samples <5> and <4>) in Trench 008.

Raw material and condition

8.5.7 The raw material mostly comprises thermally fractured river cobbles with smooth thin cortex, principally of mottled grey-brown flint, which were presumably retrieved from local surface deposits. Several pieces of orange-brown flint may have been sourced locally (see Lewis with Rackham 2011, 42-3), and were presumably the result of preferential selection (see Elsden 1997, 4-5).

8.5.8 Most of the assemblage is in reasonably fresh condition, although one or two pieces have been re-corticated to varying degrees, while others are iron-stained on their high points. Several worked pieces have been burnt, while burnt unworked flint is also present in some quantity.

Technology

8.5.9 Virtually all the lithic material comprises debitage in the form of unmodified flakes, parallel-sided blades and bladelets, spalls and irregular nodular shatter. Most of the flake and blade blanks are <40mm in size, although one or two of the blades from Trench 7 are >60mm in length. A plunging blade from Trench 008, context [18], measures c 80mm in length.

8.5.10 A single pebble-worked-as-core from Test Pit 001 apart, there are no formal cores present in the assemblage. However, four crested pieces and four rejuvenating/trimming flakes (including a *flanc de nucléus*, L 50mm x 70mm, from the upper burnt layer [21] in Trench 7), point to their preparation and maintenance. Three of the four crested pieces were recovered from tree-throw context [19] in Trench 007. All are of blade-like proportions, and all are uni-directionally crested. The largest crested piece measures 70mm in length.

8.5.11 There are no formally retouched tools within the assemblage, but improvised pieces include a single plunging notched flake from context [18] in Trench 007, a blade fragment with marginal retouch from the top of the natural substrate in Trench 008, and an irregular secondary flake with abrupt scraper-like retouch at its distal end (L 36mm x 30mm) from subsoil context [1] in Trench 014. The *flanc de nucléus* also has scraper-like secondary retouch along part of one edge.

Context

8.5.12 Several contexts produced reasonable quantities of struck material. These include shallow tree-throw context [19] from Trench 007 which contained three of the four crested pieces along with

ten broken/incomplete blades/bladelets. The surface of the natural, context [29] in Trench 8, produced several parallel-sided blades c 60mm in length. (A plunging blade c 80mm in length was amongst material recovered from the context [18] in the same trench.)

8.5.13 Moreover, further lithic material, principally spalls and irregular nodular shatter was retrieved from the burnt flint layer in Trench 007, contexts [21] sample <2> and [22] sample <3>.

The burnt unworked flint

8.5.14 Quantities of burnt unworked flint were recovered principally from Trench 007, with smaller amounts from Trenches 006, 008, and 012. The material was heated to a brittle white colour and there is no reason to suppose that its firing is anything other than anthropogenic in origin or deliberate in intent.

8.5.15 The material from Trench 007 was present in the bulk samples taken from a layer of burnt flint, and from a series of six small stake holes that were sealed beneath it. No attempt has been made to count the clasts contained within the bulk samples. However, there is considerable variation in clast size from contexts [21] and [22], ranging from small cobbles to comminuted/crushed fragments. As might be expected, the clasts present in the various stake holes are at the smaller end of this size range.

Significance of the lithic assemblage: dating and affinities

8.5.16 Though small and therefore difficult to characterise, the present assemblage is likely to incorporate elements of Mesolithic/early Neolithic date, as well as others probably attributable to the Neolithic/Bronze Age. The early material encompasses the various blades and core preparation and maintenance pieces from tree-throw context [19] in Trench 7 and on top of the natural, context [29], in Trench 008. The later prehistoric material includes the various squat flakes and fragments of nodular shatter recovered from the burnt flint layer(s) contexts [21] and [22] in Trench 007 – though the former context also incorporates the *flanc de nucléus*, which probably belongs with the earlier material.

8.5.17 It is difficult to be precise about the nature of the human activity represented by these lithic residues, however, although the possible tree-throw and spread of burnt flint is similar to depositional signatures recorded elsewhere, e.g. at Terminal 5, Heathrow (Framework Archaeology 2010). The tree throw could indicate a clearance episode while the spread of burnt flint may form part of a burnt mound or cooking place, though further field work would be required to confirm these suggestions.

8.5.18 Lithic assemblages have been widely reported from the Colne valley, and these include a series of stratified late glacial/Early Mesolithic sites in the Denham/Uxbridge area (Lewis with Rackham 2011; Halsey 2006; Ellis et al 2005) and at Horton and Staines further south (Barclay et al 2017; Jones 2013). Later Mesolithic assemblages have been noted further up the main valley and in the valleys of feeder streams (eg Stainton 1989). Large assemblages of Neolithic and Bronze Age material have been recorded from Terminal 5 and elsewhere (Framework Archaeology 2010; Powell et al 2015).

8.5.19 As noted above, the present mixed assemblage is likely to incorporate elements of Mesolithic/early Neolithic date, as well as others attributable to the Neolithic/Bronze Age. The nearest comparable material is that collected from Harefield Moor, at Dews Pit and Dews Farm (Lacaille 1961, 117-123 and 114, fig 3).

Potential for further work

8.5.20 The small size and mixed nature of the lithic assemblage, together with the absence of diagnostic tool types, makes the dating and significance of the material difficult to assess, though elements characteristic of Mesolithic/early Neolithic and later prehistoric technology appear to be present.

8.5.21 No further work on the existing material is justified or proposed at present, although the crested pieces and the *flanc de nucléus* are worth noting.

8.5.22 Future field work, particularly in the areas around Trenches 007 and 008, might be expected to recover significantly larger diagnostic groups of lithic material worthy of more detailed analysis.

Ceramics

8.5.23 Associated dateable evidence was sparse but included a single sherd of undiagnostic Late Bronze Age/Early Iron Age pottery (in two pieces) and three scraps of possible Medieval pottery from context [8], sample <1> in Trench 014. An abraded scrap of possible Roman/Medieval pottery was recovered from context [10], sample <5> in Trench 008.

8.6 Environmental evidence

8.6.1 12 bulk samples were collected on site. The results from the wet-sieving and flotation of the samples produced such little quantities of identifiable palaeoenvironmental material that further assessment was deemed unnecessary.

8.6.2 The charcoal-rich samples from contexts [21] and [22] have been retained for charcoal retrieval if this is required at a later date.

8.7 Contribution to Specific Objectives

8.7.1 The archaeological features uncovered during the works have been analysed considering the specific objectives as outlined in the GWSI:HERDS and presented in the following table:

Table 2 Contribution to Specific Objectives

KC5: Identifying settlement location and developing models for settlement patterns for the Mesolithic, Neolithic and Early Bronze Age.	The evaluation has highlighted the potential for later Mesolithic/early and late Neolithic/early Bronze Age occupation activity/settlement in Trench 007 and nearby Trench 008. Further archaeological investigations targeted on these areas would provide more contextual information for the features and artefacts uncovered during the excavation.

KC11: Does the high density of prehistoric settlement evidence in the Colne Valley reflect a genuine focus of activity or does it reflect a bias in the archaeological record?	The trial trench evaluation clarified that there is prehistoric activity in the area, and that this survives intact under various depths of subsoil and alluvium.
KC14: Enhance existing understanding of the Late Upper Palaeolithic- Early Mesolithic transition through investigation of sites in the Colne Valley and other locations along the route.	As the archaeological material from the site is later than this period, the evaluation did not provide any information relevant to KC14.
KC15: Can we identify regional patterns in the in the form and location of Late Bronze Age and Iron Age settlements across the route, and are there associated differences in landscape organisation and enclosure?	Residual sherds of Late Bronze Age/Early Iron Age pottery were retrieved from Trench 014. Further archaeological investigations at the site may provide more contextual information for the artefacts uncovered however the overall results of the evaluation were not indicative of settlement patterns for this period.
KC17: What evidence is there for regionality in the mortuary rites of the Late Bronze Age and Iron Age, and how does that alter over time?	No artefact or features that could be associated with the mortuary practices of this period were identified during the evaluation.
KC19: The Romano-British period saw the beginning of a more established infrastructure network. Can we investigate the development of these routes, trackways and roads and the influence they had on landscape change?	The only evidence for this objective were two abraded sherds of possible Roman pottery. Therefore, the Site probably has little to contribute to this objective.
KC24: To what extent are the patterns of settlement, landholding and enclosure in West London and the Colne Valley in the Iron Age and Romano-British period determined by those established in the Bronze Age?	The evaluation did not provide any information relevant to KC24.
KC34: Undertake research and investigation into medieval manorial complexes. What was their origin, development and impact on the landscape?	The identification of possible medieval field boundary ditches in Trench 008 and the features in Trench 014 provide potential evidence for field management and use during the medieval and post medieval periods.

8.8 Recommendations and research aims for further investigation

8.8.1 The evaluation has identified heritage assets in Trenches 007, 008 and 014 which can be assessed using the specific research objectives as defined in the GWSI:HERDS (HS2-HS2-EV-STR-000_000015, Section 3.2) and indicated in Table 2, above. The research objectives define the research aims that will guide further work at the site.

8.8.2 Further archaeological investigations targeted on the area of Trenches 007 and 008 in the form of a limited open area excavation could provide evidence relating to research objectives KC5, KC11 and KC34. The results will contribute to existing knowledge of the nature of prehistoric and medieval settlement in this area.

9 Conclusion

9.1.1 The archaeological features and artefacts recovered from the excavation indicate the potential for Mesolithic/early Neolithic and later prehistoric activity in the area. This may have been episodic in nature and was related to different stages of activity focused around the watercourse and floodplain of the Newyears Green Bourne which runs broadly east west across two sections of the Site.

9.1.2 The earliest phase of activity at the site related to tree felling at the north of the Newyears Green Bourne during the late Mesolithic/early Neolithic period. The nature of the flint assemblage retrieved from Trenches 007 and 008 suggested that the activity in this area was more extensive than a single incident of tree felling and tool manufacture/repair.

9.1.3 Further evidence of prehistoric occupation of the site was represented by two layers of burnt flint along with series of stakeholes in Trench 007. The features were situated lower on the river terrace than the earlier material in Trench 007 and were dated the late Neolithic and early Bronze Age periods. The burnt flint may have been used to heat water channelled or drawn from the Newyears Green Bourne and used for bathing or cooking purposes.

9.1.4 Medieval occupation at the site is suggested by a pair of shallow ditches in Trench 007 and a pit and stakeholes in Trench 014. The ditches in Trench 008 may be part of a medieval field system.

9.1.5 Further archaeological excavations centred around Trenches 007 and 008 may provide evidence of prehistoric and medieval settlement at the site and further inform the research objectives of the archaeological aspect of HS2 for the Colne Valley area.

10 References and Glossary terms

10.1 Glossary of terms

The following terms have been used in this report:

Contractor – the organisation undertaking the evaluation on behalf of the Employer.

Detailed Desk Based Assessment (DDBA) – analytical document that builds on the information gathered previously in the Environmental Statement to address particular issues, questions or uncertainties within a given area. It may be developed to provide a more detailed understanding of the resource in an area to inform design development or construction programming.

Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy (GWSI: HERDS) – the framework for delivering all historic environment investigations undertaken as part of the HS2 Phase 1 programme.

Location – a specific HS2 worksite or group of worksites that are being addressed as a combined historic environment investigation programme of assessment, evaluation

and investigation.

Project Plans – specification document for each specific package of activity (e.g. a survey, desk-based assessment, excavation, recoding project). The plans would respond to the Specific Objectives set out in the GWSI: HERDS and be delivered within an agreed budget.

Works – the specific historic environment assessment, evaluation or investigation works at each location.

10.2 References

Title	Reference
LS-WSI for Trial Trenching and Archaeological Recording, Cadent Gas 48" and 18" main, Colne Valley (Gas)	1EW02-CSJ-EV-PRO-S002-000001
Project Plan for Trial Trenching of 18-inch pipe – spur, 450NB Pipeline Diversion (007) Fulmer to Haste Hill	1EW02-CSJ-EV-PLN-S002-000002
Archaeological trial trenching for the 18-inch Fulmer to Haste Hill 450NB HP Pipeline Diversion Risk Assessment & Method Statement	1EW02-CSJ-HS-MST-S002-000004
Community Engagement Project Plan	1EW02-CSJ-EV-PLN-S000-000024
Colne Valley East Detailed Desk Based Assessment	1D037-EDP-EV-REP-S000-000004
Colne Valley West Detailed Desk Based Assessment	1D037-EDP-EV-REP-S000-000028
HS2 Phase One Environmental Statement and Supplementary Environmental Statements	CH-001-006, ES 3.5.2.6.4 CH-002-006, ES 3.5.2.6.5 CH-003-006, ES 3.5.2.6.6 CH-004-006, ES 3.5.2.6.7
HS2 Geoarchaeological Desk Based Assessment	HS2-HS2-PM-TEM-000-000004
Cultural Heritage GIS Specification	HS2-HS2-GI-SPE-000-000004
Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy	HS2-HS2-EV-STR-000-000015
Technical Standard - Specification for historic environment investigations	HS2-HS2-EV-STD-000-000035
HS2 Technical Standard: Specification for Project Plans and Location Specific Written Scheme of Investigations	HS2-HS2-EV-STD-000-000036
Technical Standard: Historic Environment Physical Archive Procedure	HS2-HS2-EV-STD-000-000039
Technical Standard: Historic Environment Digital Data Management and Archiving Procedure	HS2-HS2-EV-STD-000-000040

Procedure for the unexpected discovery of archaeological remains of national importance	HS2-HS2-EV-PRO-000-0000099
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Framework Archaeology, 2010 Landscape Evolution in the Middle Thames Valley. Heathrow Terminal 5 Excavations Volume 2, Framework Archaeology Monograph No 3	-
Halsey, C, 2006 The former Sanderson site, Oxford Road, Denham UB9: An archaeological post-excavation assessment and updated project design, unpublished MOLA report	-
Jones, P, 2013 Upper Palaeolithic Sites in the Lower Courses of the Rivers Colne and Wey. Excavations at Church Lammas and Wey Manor Farm, SpoilHeap Publications Monograph 5	-
Lacaille, A D, 1961 Mesolithic facies in Middlesex and London, Trans London Middlesex Archaeology Society 20 (3), 101-50	-
Lewis, J S C with Rackham, J, 2011 Three Ways Wharf, Uxbridge. A Late glacial and Early Holocene hunter-gatherer site in the Colne valley, MOLA Monograph 51	-
Needham, S.P. and Sorensen, M.L. 1988 Runnymede Refuse Tip: a Consideration of Midden Deposits and Their Formation, in Barrett, J.C. and Kinnes, I.A. (eds), The Archaeology of Context in the Neolithic and Bronze Age: Recent Trends. Departmentof Archaeology and Prehistory, University of Sheffield, 113-26.	-
Powell, A B, Barclay, A J, Mepham, L and Stevens, C J, 2015 Imperial College Sports Ground and RMC Land, Harlington.	-

The development of prehistoric and later communities in the Colne Valley and on the Heathrow Terrace, Wessex Archaeology Monograph 33	
Stainton, B, 1989 Excavation of an Early Prehistoric Site at Stratford's Yard, Chesham, Rec Bucks 31, 49-74	-

Table 3: List of abbreviations

Abbreviation	Definition
CSjv	Costain Skanska Joint Venture
dWPI	Draft Work Package Instruction
HS2	High Speed 2 Ltd
PM	The Employer's Project Manager
VfM	Value for Money
WI	Works Information
WP	Work Package
WPC	Work Package Price
WPI	Work Package Instruction
WPM	Work Package Manager
WPP	Work Package Plan
WPQ	Work Package Quotation
WPS	Work Packaging Strategy

11 Roles and Responsibilities

11.1.1 The following critical roles will ensure the effective delivery of the plan.

Table 4: Roles and responsibilities

Role	Summary of responsibilities with respect to the Package Management Plan
Commercial Manager	Responsible for the commercial approach delivered as part of the WP.
Commercial Director	Appointment of the commercial team roles to a WP.
Construction Manager	Co-ordination of works in the delivery stage across the Programme and thus ensuring the WP compliments this.
Function Manager	Responsible for ensuring the technical requirements of the WI and functional plans for which they are responsible are met by the WPP and covered by the WPC.
Procurement Manager	To develop a procurement strategy and engage with the supply chain in order to procure sub-contracted elements of the works.
Programme Manager	Appointment of the WPM and coordination of the approach to delivery.
Proposals Manager	Facilitates the development of a consistent approach across all packages in development and co-ordinates the associated assurance programme.

Sector Manager	Responsible for the coordination of packages with in a sector, the alignment of the works to the overall sector programme of works and that the master activity schedule is delivered.
Work Package Manager	The development, through managing the resources and support required from the wider contract team, of the WPP and WPC, and then the delivery and close-out of the WP against the specific milestones agreed and budget set by the WPI.
JV Board members	To review the overall delivery plans and to approve the submission of packages as required by the Delegated Authority Matrix.

12 Fieldwork sign off sheet

Historic Environment Fieldwork Sign-off Sheet			
Work Package Reference	Wp007		
Historic Environment Investigation Type	Evaluation		
Contractor	MOLA Headland Infrastructure		
Fieldwork conducted by (site director)		Dates	5th – 19th march 2018
Summary results Of a proposed 24 trenches, 14 were excavated of which 7 were modified. Mesolithic/early Neolithic worked flint was found in Trenches 007 and 008. Also in Trench 007 later prehistoric flint work was recovered from overlying spreads containing frequent quantities of burnt flint. Other dateable evidence was sparse.			
Document References Project Plan for Trial Trenching of 18 inch pipe – spur, 450NB Pipeline Diversion (007) Fulmer to Haste Hill. 1EW02-CSJ-EV-PLN-S002-000002 Cultural Heritage GIS Specification HS2-HS2-GI-SPE-000-000004			
Compiled by	Name	Date	Signature
	Isca Howell	7th May 2018	
Checked by	Name	Date	Signature

	Caitriona Gleeson	9th May 2018	
Approved by	Name	Date	Signature

Appendix 1 Contextual summary by trench

The following tables present all contexts recorded during the trial trenching in trench order. Please note that topsoil, subsoil and natural deposits were not given a context in all trial trenches.

Trench Number	004	**Orientation:**			NW-SE
Length	10m	**Width**			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.4m BGL	**Minimum depth to geological deposit/level of archaeological significance**			0.4m BGL
Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**
	Geological substrate: orange grey clay				-

Trench Number	005	**Orientation:**			W-E
Length	30m	**Width**			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.50m BGL	**Minimum depth to geological deposit/level of archaeological significance**			0.50m BGL
Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**
(37)	Alluvium: Greyish brown/orange silty clay silty clay	-	-	-	0.30-0.50m
(38)	Geological substrate: orange clay	-	-	-	

Trench Number	006	**Orientation:**			NE-SW
Length	30m	**Width**			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.50m BGL	**Minimum depth to geological deposit/level of archaeological significance**			0.50m BGL
Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**
(37)	Alluvium: Greyish brown/orange silty clay silty clay	-	-	-	0.30-0.50m
(38)	Geological substrate: orange clay	-	-	-	

Trench Number	007	**Orientation:**			NE-SW
Length	30m	**Width**			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.55m BGL	**Minimum depth to geological deposit/level of archaeological significance**			0.80m BGL
Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**

(18)	Subsoil: Greyish brown/orange silty clay				0.30m
(19)	Fill of tree throw: orange sandy silt				
[20]	Cut of tree throw: Irregular in plan				
(21)	Flint layer: Brown silty clay matrix		8.60m		0.15m
(22)	Burnt layer: Charcoal with frequent burnt flint				0.10m
(23)	Fill of possible stakehole [31]	0.18m			0.25m
(24)	Fill of possible stakehole [32]	0.24m			0.10m
(25)	Fill of possible stakehole [33]	0.17m			0.14m
(26)	Fill of possible stakehole [34]	0.20m			0.16m
(27)	Fill of possible stakehole [35]	0.10m			0.20m
(28)	Fill of possible stakehole [36]	0.14m			0.14m
(29)	Natural: mottled grey yellow clay				
[31]	Cut of possible stakehole	0.18m			0.25m
[32]	Cut of possible stakehole	0.24m			0.10m
[33]	Cut of possible stakehole	0.17m			0.14m
[34]	Cut of possible stakehole	0.20m			0.16m
[35]	Cut of possible stakehole	0.10m			0.20m
[36]	Cut of possible stakehole	0.14m			0.14m

Trench Number	008	**Orientation:**	E-S
Length	30m	**Width**	1.9m
Minimum depth to geological deposit/level of archaeological significance	0.40m BGL	**Minimum depth to geological deposit/level of archaeological significance**	0.40m BGL

Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**
(10)	Fill of ditch [11]; Orange brown silty clay			0.84m	0.17m
[11]	Cut of Ditch			0.84m	0.17m
(12)	Fill of Ditch [13]: Orange brown silty clay			0.82m	0.23m
[13]	Cut of ditch			0.82m	0.23m
(14)	Fill of pit [15]: Orange brown silty clay	0.25m			0.20m
[15]	Cut of pit	0.25m			0.20m
(16)	Parent of Ditch [11]				
(17)	Parent of Ditch [13]				
(18)	Subsoil: Greyish brown/orange silty clay				
(29)	Natural: mottled grey yellow clay				

Trench Number	013	**Orientation:**	NW-SE
Length	30m	**Width**	1.9m

Minimum depth to geological deposit/level of archaeological significance	0.60m BGL	**Minimum depth to geological deposit/level of archaeological significance**			0.40m BGL
Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**
	Subsoil: Orange silty clay				0.10m

Trench Number	014	**Orientation:**			NW-SE
Length	30m	**Width**			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.40m BGL	**Minimum depth to geological deposit/level of archaeological significance**			0.40m BGL
Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**
(1)	Subsoil: Orange silty clay				0.20m
[2]	Possible stakehole: Orange silty clay fill	0.09m			0.12m
[3]	Possible stakehole: Orange silty clay fill	0.10m			0.09m
[4]	Possible stakehole: Orange silty clay fill	0.06m			0.11m
[5]	Possible stakehole: Orange silty clay fill	0.04m			0.09
[6]	Possible stakehole: Orange silty clay fill	0.08m			0.10m
[7]	Possible stakehole: Orange silty clay fill	0.07m			0.04m
(8)	Fill of pit [9]: Orange silty clay fill	0.73m			0.27m
[9]	Cut of pit	0.73m			0.27m

Trench Number	015	**Orientation:**			SW-NE
Length	30m	**Width**			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.40m BGL	**Minimum depth to geological deposit/level of archaeological significance**			0.40m BGL
Context No.	**Description (Layer, Cut, Fill)**	**Dimensions (as appropriate)**			
		Diameter	**Length**	**Width**	**Depth**
	Subsoil: Orange silty clay				0.10m

Trench Number	016	Orientation:			NNE-SSW
Length	30m	Width			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.60m BGL	Minimum depth to geological deposit/level of archaeological significance			0.70m BGL
Context No.	Description (Layer, Cut, Fill)	Dimensions (as appropriate)			
		Diameter	Length	Width	Depth
(30)	Subsoil: banded alluvial deposit				0.40m

Trench Number	019	Orientation:			NW-SE
Length	30m	Width			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.6m BGL	Minimum depth to geological deposit/level of archaeological significance			0.7m BGL
Context No.	Description (Layer, Cut, Fill)	Dimensions (as appropriate)			
		Diameter	Length	Width	Depth
	Subsoil: Orange silty clay alluvium				0.35

Trench Number	020	Orientation:			NW-SE
Length	15m	Width			1.9m
Minimum depth to geological deposit/level of archaeological significance	0.9m BGL	Minimum depth to geological deposit/level of archaeological significance			1.0m BGL
Context No.	Description (Layer, Cut, Fill)	Dimensions (as appropriate)			
		Diameter	Length	Width	Depth
	Subsoil: Orange silty clay alluvium				0.6m

Appendix 2 Context Register

Context	Description
1	Subsoil in TR 14
2	Stake hole features
3	Stake hole features
4	Stake hole features
5	Stake hole features
6	Stake hole features
7	Stake hole features
8	Fill of pit [9]
9	Cut of pit

10	Fill of ditch [11]
11	Cut of ditch
12	Fill of pit [13]
13	Cut of ditch
14	Fill of pit [15]
15	Cut of pit
16	Parent of [11]
17	Parent of [13]
18	Subsoil in TR 7 and 8
19	Fill of tree throw
20	Cut of tree throw
21	Brown flint
22	Burnt layer
23	Fill of burnt flint patch [31]
24	Fill of burnt flint [32]
25	Fill of burnt flint [33]
26	Fill of burnt flint [34]
27	Fill of burnt flint [35]
28	Fill of burnt flint [36]
29	Natural
30	Colluvial layer
31	Cut of stake hole
32	Cut of stake hole
34	Cut of stake hole
35	Cut of stake hole
36	Cut of stake hole
37	Subsoil
38	Natural

Appendix 3 Sample Register

Sample No	Trench No	Context No	Description
1	14	(8)	Contents of possible Iron Age pit
2	7	(21)	Sample of brown clay containing large amounts of burnt flint
3	7	(22)	Burnt flint layer
4	7	(12)	Fill of ditch [13] in TR8
5	7	(10)	Fill of ditch [11] in TR8
6	7	(23)	Fill of burnt flint within stake hole [31] in TR 7

7	7	(24)	Fill of burnt flint within stake hole [32] in TR 7
8	7	(25)	Fill of burnt flint within stake hole [33] in TR 7
9	7	(26)	Fill of burnt flint within stake hole [34] in TR 7
10	7	(27)	Fill of burnt flint within stake hole [35] in TR 7
11	7	(28)	Fill of burnt flint within stake hole [35] in TR 7
12	8	(14)	Fill of pit

Appendix 4 Struck flint from all contexts

Cxt	Cxt type	Flake	Blade	Fl/Bl	Spall	Shatter	Core	Rejuv/	Other	Total
TP1	-						1			1
TP16	-	1							1 misc. ret on irreg. flake frag	2
Tr 6 [37]	Subsoil	1	1							2
T7 [18]	subsoil	1		(1)					1 notched piece on plunging flake	3
T7 [19]	Tree throw	2 (4)	3 (7)		1	2			3 crested pieces	22
T7 [21]	Upper burnt		1 (1)		1	1				4
T7 [21] <2>	Upper burnt	(3)			13	11		1		28
T7 [22] <3>	Lower burnt	(9)	(2)		13	30				54
T7 [23] <6>	Stake				5	3				8
T7 [24] <7>	Stake				1	1				2
T7 [25] <8>	Stake	1			2					3
T7 [26] <9>	Stake				5	6				11
T7 [27] <10>	Stake				3					3
T7 [28] <11>	Stake	(1)			2					3
T8[18]	subsoil	2	1	(1)		2				6
T8 [29]	Top of natural	7 (7)	2 (1)	(1)		2			1 blade frag with marg. ret	21
T8 [10]	Ditch	1 (1)			1			1		4
T8 [10]<5>	Ditch	1			5	5				11
T8 [12] <4>	Ditch				3	1				4
T8[14]<12>	Pit	2			3				1 crest piece	6
Tr 12		(1)				2				3

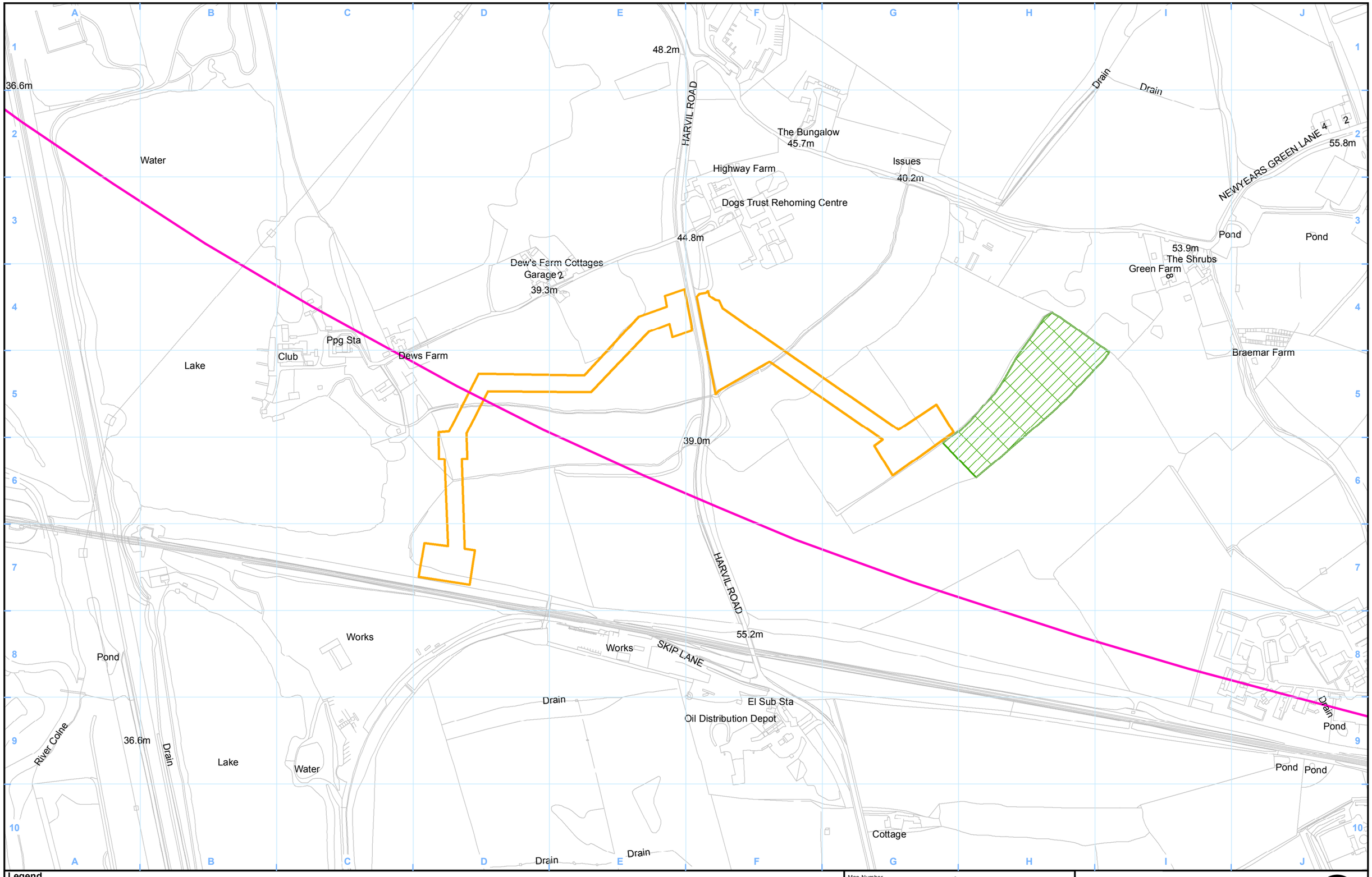
Cxt	Cxt type	Flake	Blade	Fl/Bl	Spall	Shatter	Core	Rejuv/	Other	Total
T14 [1]	Subsoil							1	1 irreg. scraper on sec flake	2
T14 [8]	Pit					1				1
T14 [8] <1>	Pit				2					2
T16 [30]	subsoil							1		1
Totals		**19**	**8**	**(3)**	**60**	**68**	**1**	**4**	**8**	**208**

Appendix 5 Burnt unworked flint from all contexts

(* = indicative quantities only)

Trench No	[Context]/<Sample>	Context type	Nos clasts	Weight (g)
6	[37]	Subsoil	1	10
7	[19]	Tree throw	3	26
7	[21] <2>	Upper burnt flint	***	8100
7	[22] <3>	Lower burnt flint	*****	25800
7	[23] <6>	Stake hole	*	332
7	[24] <7>	Stake hole	*	203
7	[25] <8>	Stake hole	*	500
7	[26] <9>	Stake hole	*	600
7	[27] <10>	Stake hole	*	60
7	[28] <11>	Stake hole	*	212
8	[29]	Top of natural	1	11
12	[+}	-	4	118
29	[+]	-	2	47

Figures



Legend

- Site outline
- HS2
- Ancient woodland

Map Number: tbc

Map Name: FIG. 1 SITE LOCATION

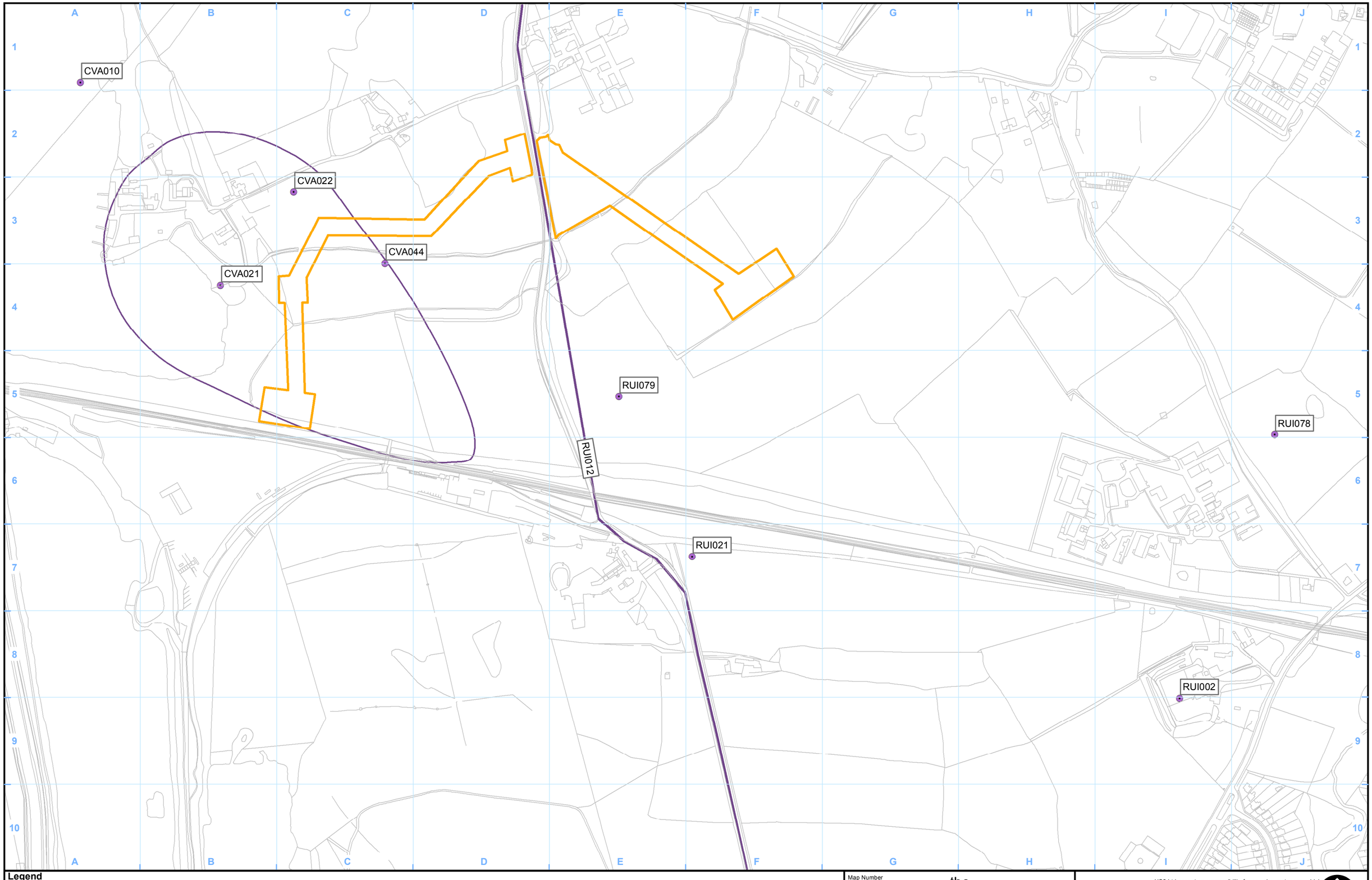
Registered in England. Registration number 06791686.
Registered office: Eland House, Bressenden Place, London SW1E 5DU.

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 1EW02-CSJ-EV-REP-S002-000019

Date: 03/05/18



Legend

- Site outline
- Undesignated heritage asset
- Undesignated heritage asset
- Undesignated heritage asset

Map Number: tbc

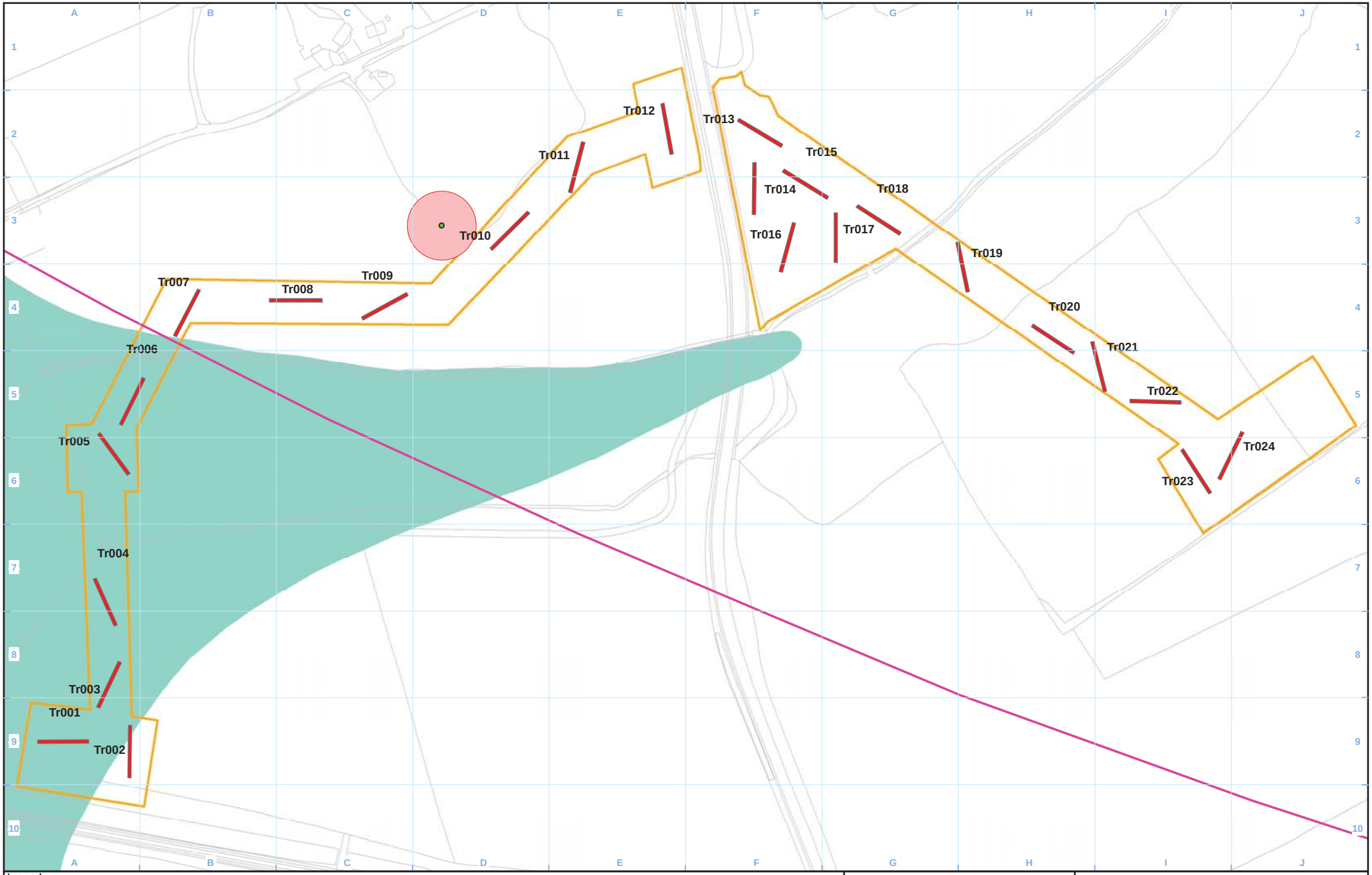
Map Name: FIG. 2 HERITAGE ASSETS

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: -tbc

Date: 04/06/18



Legend

- Site outline
- HS2
- badger sett
- exclusion zone around badger sett
- 18th Trial Trenches
- Alluvium from BGS DiGMapGB 10k

Map Number: tbc

Map Name: FIG. 3 ORIGINAL TRENCH LOCATION

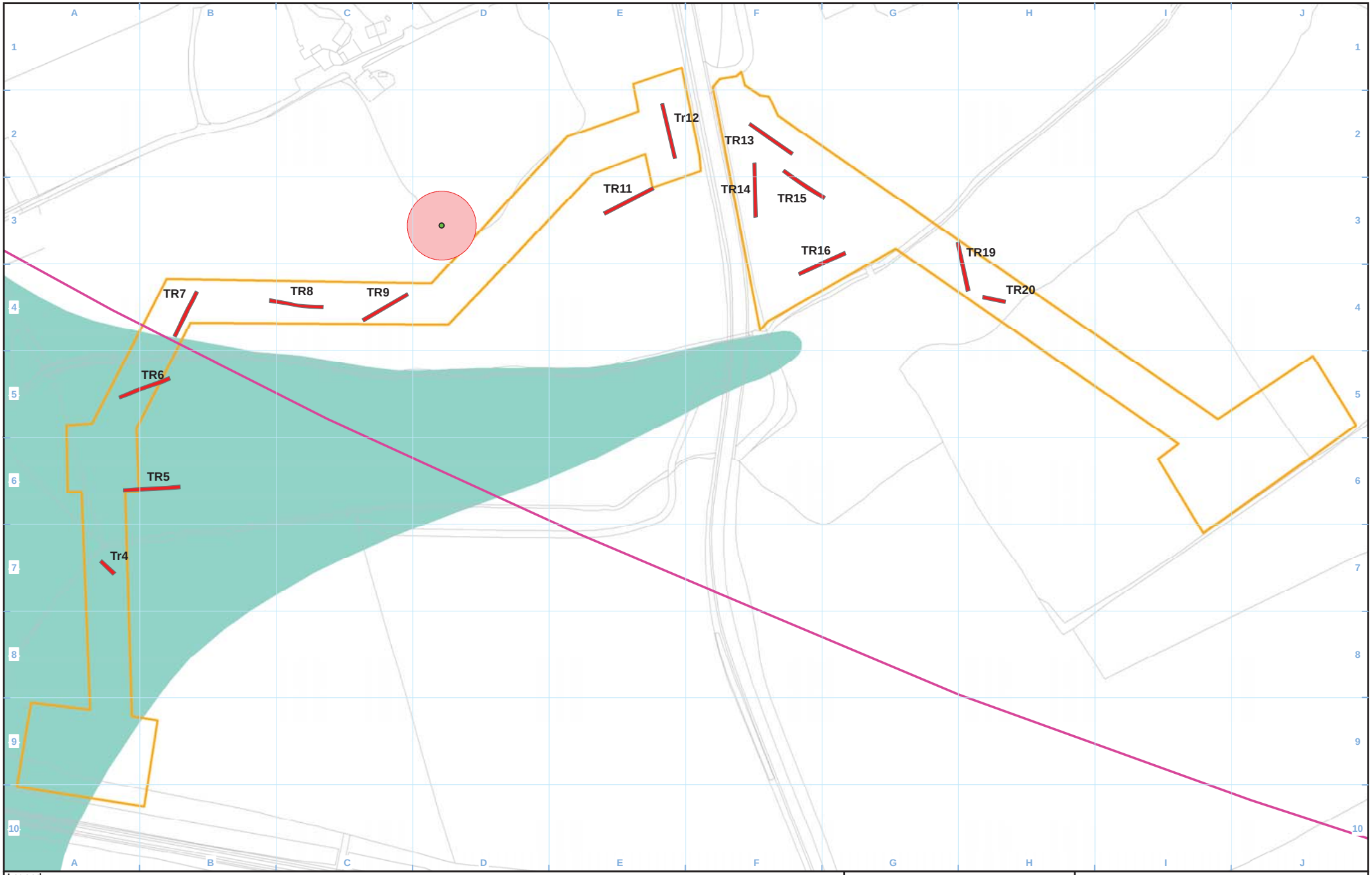
Registered in England. Registration number 06791686. Registered office: Eland House, Bressenden Place, London SW1E 5DU.

Scale at A3: 1:2,000

0 20 40 60 80 Metres

Doc Number: -tbc

Date: 24/05/18



Legend

- Site outline
- HS2
- badger sett
- exclusion zone around badger sett
- 18th Trial Trenches
- Alluvium from BGS DiGMapGB 10k

Map Number: tbc

Map Name: FIG. 4 ACTUAL TRENCH LOCATION

Scale at A3: 1:2,000

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Doc Number: -tbc

Date: 24/05/18

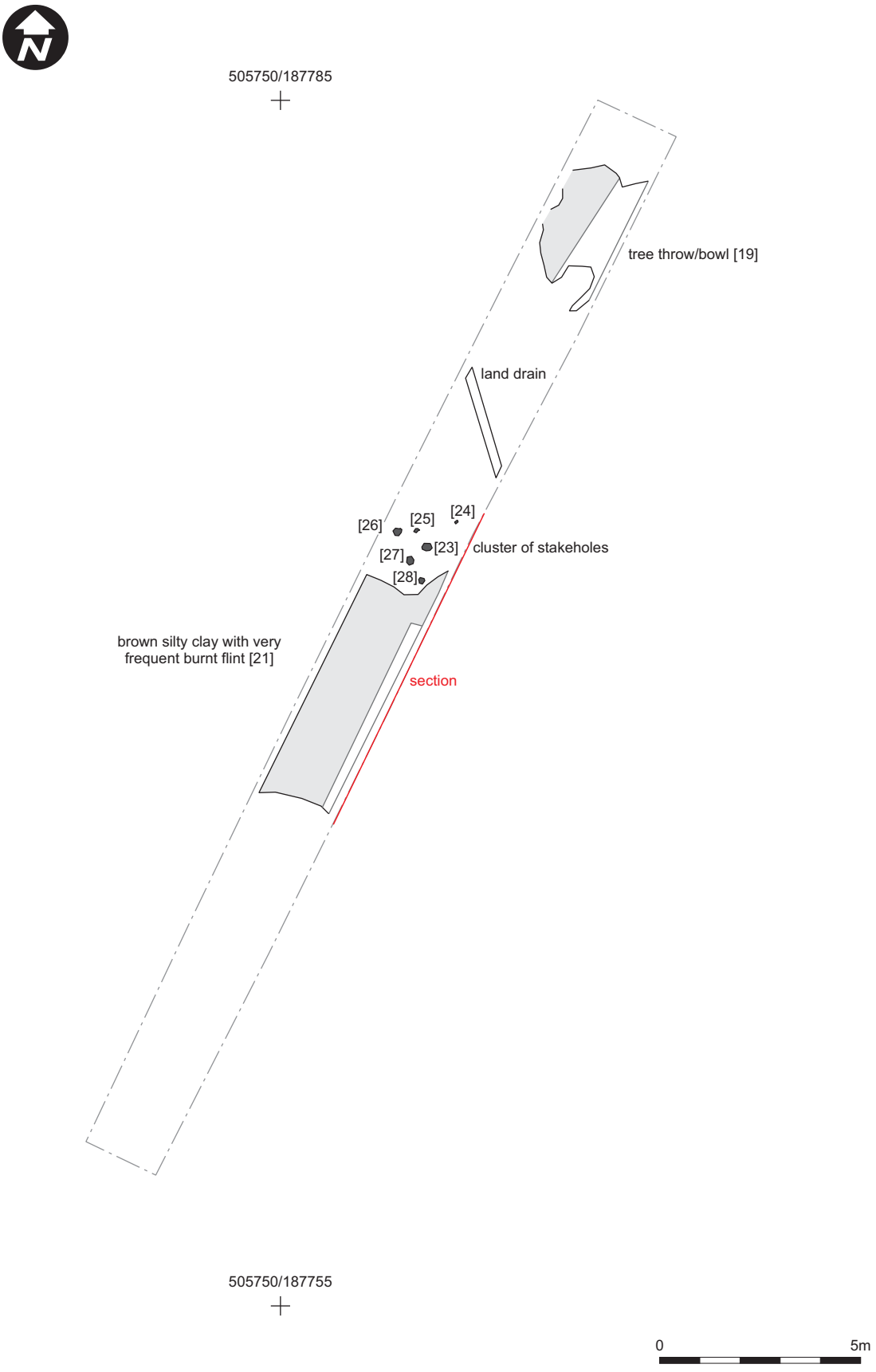

Fig 5 Plan of features in Trench 007

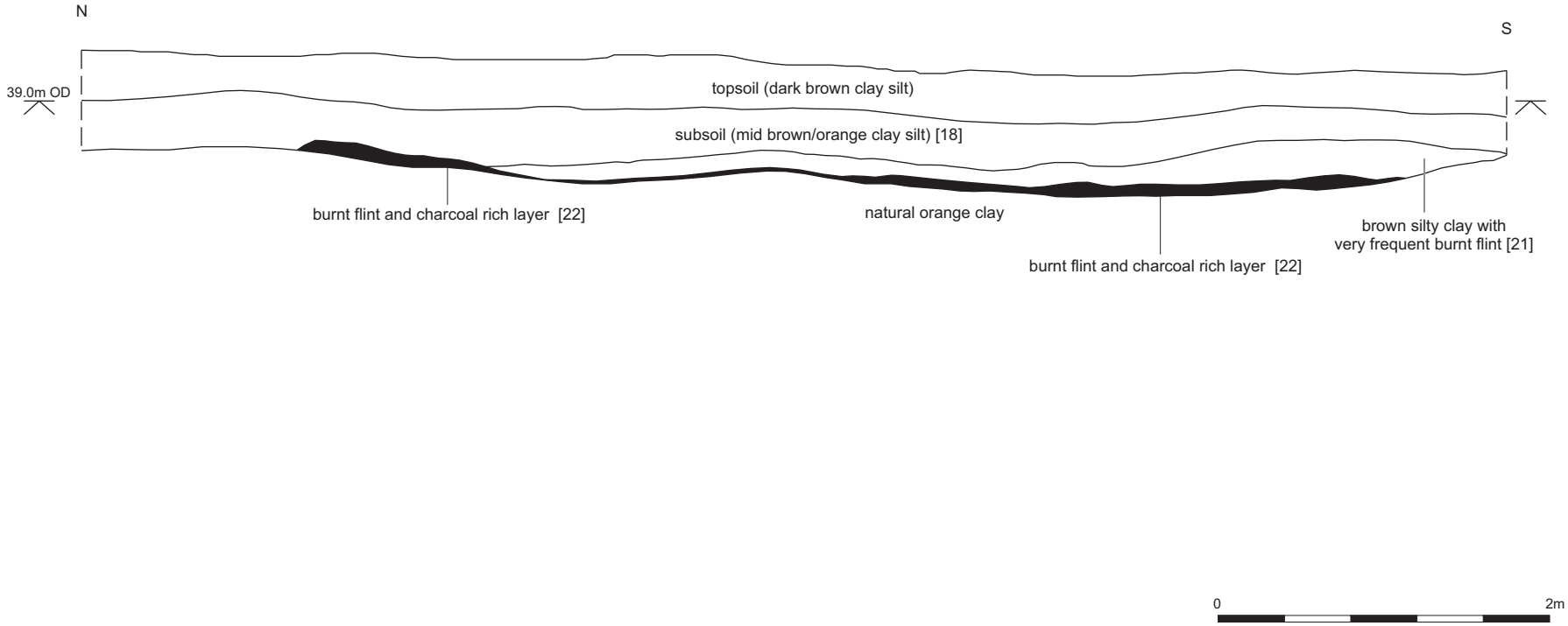

Fig 6 North-west facing section of Trench 007

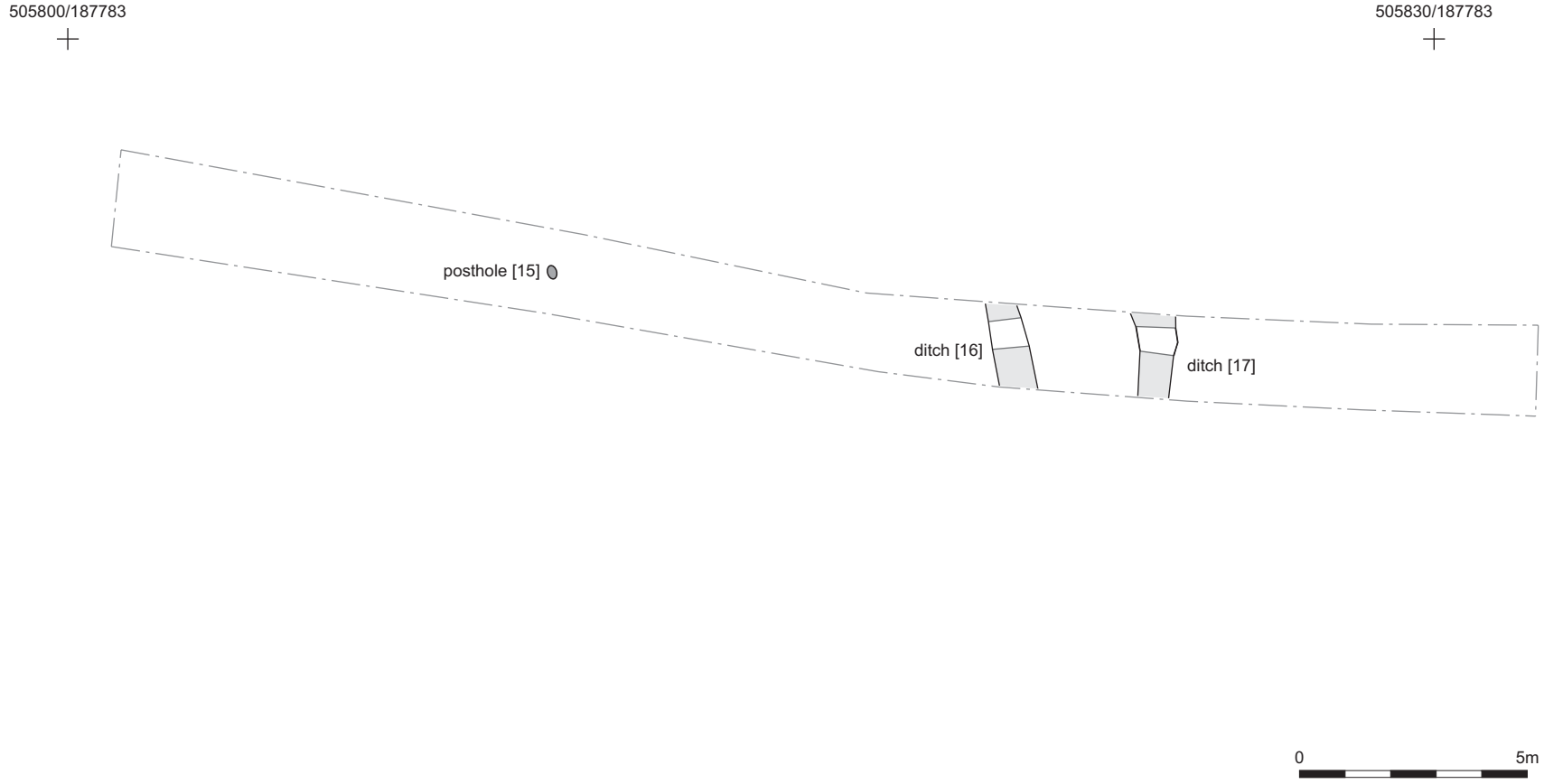

Fig 7 Plan of features in Trench 008

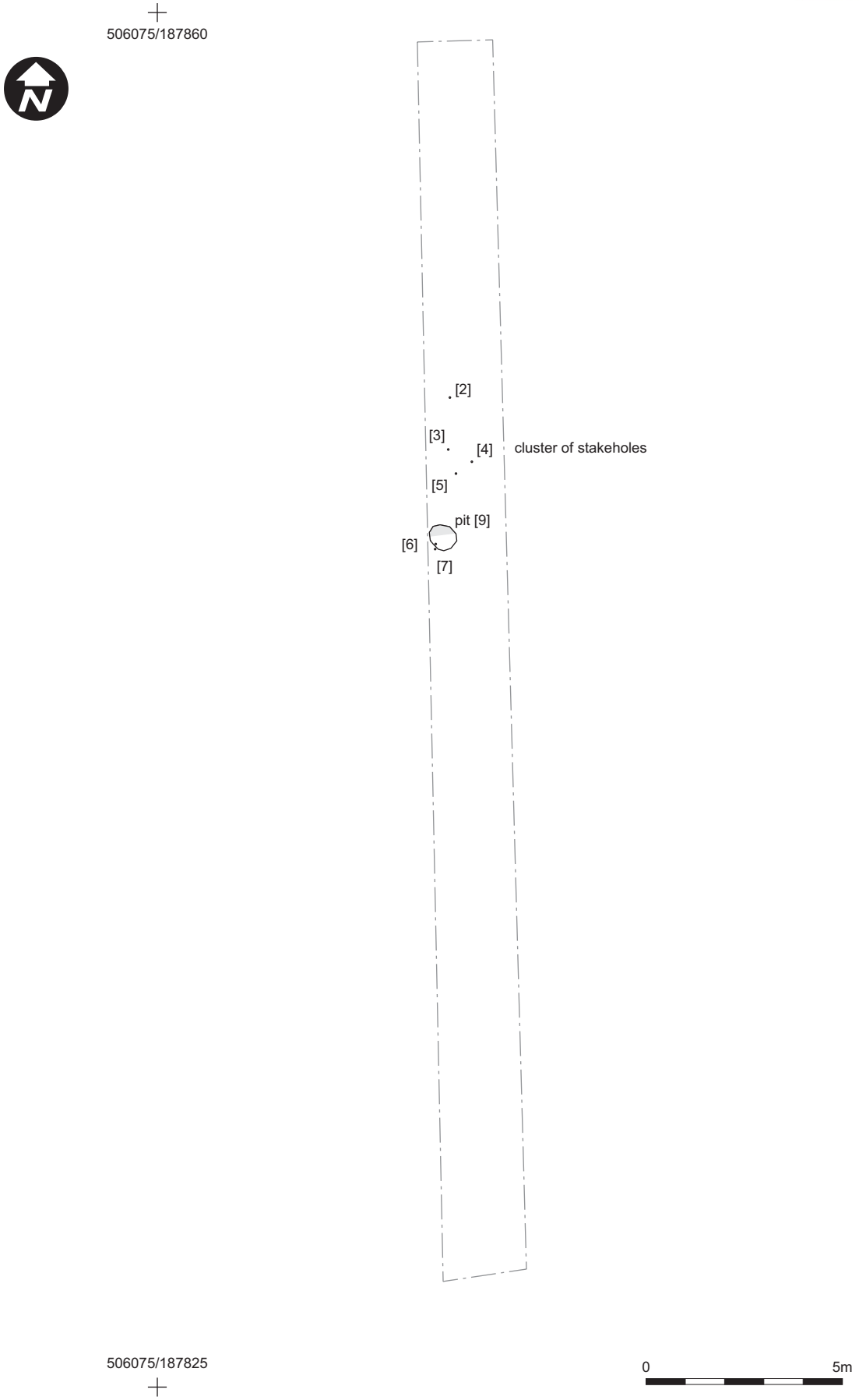

Fig 8 Plan of features in Trench 014