HS2 Phase 1 - Central Section, Archaeological Works, M25 Access Slip Roads (1C17MSRTT) Interim Report

Document no.: 1EW03-FUS-EV-REP-CS02_CL04-000642

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1 Summary of works

1.1 Works Description

1.1.1 COPA were commissioned by Fusion to undertake an archaeological test pit and trial trench evaluation at the Colne Valley South Embankment (M25 access slip roads). The project plan (Document No. 1D037-EDP-EV-REP-040-000018) established the scope, aims, contribution to the Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy (GWSI: HERDS) objectives, techniques, deliverable and reporting mechanism for the trial trench investigation. The fieldwork was undertaken between 18 April and 25 May 2017 (Fields 1 and 2) and between 3 to 19 July 2017 (for Field 3).

1.1.2 The test pit and trial trench investigation, comprising 109 machine-excavated trenches 30m long, each with three test pits hand sieved within their footprints prior to trench excavation, were undertaken on land located either side of the M25, to the east of Chalfont St. Peter; hereafter referred to as the 'Site'. The Site comprises three land parcels measuring c. 5.1ha to the west of the M25 and 9.7ha to the east. The land is required for the construction of slip-roads and bell-mouths which will allow access to the Chiltern Tunnel South Portal main construction compound and construction site located to the south. This report is an interim statement of the results of the test pit and trial trench evaluation.

1.1.3 The Site is located in the vicinity of crop mark evidence for ditches and pits relating to prehistoric and/or Romano-British activity as well as the route of a possible Roman road, and lies within the wider archaeological landscape of the Colne Valley. As such it has potential for the survival of archaeological remains of Mesolithic to Roman date. Test-pitting and trial trenching were therefore required to identify the location, extent, survival and significance of any heritage assets at the Site.

1.2 Work Rationale

1.2.1 The results of the test pit and trial trench evaluation will inform the archaeological resource assessment for the Site and whether any archaeological remains present have the potential to contribute to the aims, objectives and knowledge gain defined in the GWSI: HERDS.

1.3 Geology and Topography

1.3.1 The Site is located within arable farmland on the western side of the Colne Valley. The solid geology of the Site comprises chalk of the Seaford and Newhaven Formation. The chalk forms a ridge which extends eastwards from the Chilterns south-eastwards between the confluence of the River Misbourne with the River Colne.

1.3.2 On the east side of the M25 the British Geological Survey (BGS) holds no records of superficial deposits across the majority of Field 2. The exception being the southwest corner of Field 2, adjacent to the Shire Lane/Chalfont Lane overbridge, where Gerrards Cross gravels are recorded. The soils overlying the natural geology are free draining lime-rich loam.

1.3.3 To the west of the M25 the BGS records variable superficial deposits overlying the chalk across Field 1. Beaconsfield gravels are recorded extending into the northwest corner of the field, while superficial deposits are absent from the central part of the field adjacent to the M25 cutting. Gerrards Cross gravels are recorded at the southern end of the Field 1 extending into the footprint of the western Bell Mouth. Free draining slightly acidic loamy soils are recorded to the west of the M25. During the current fieldwork the natural geology was characterised as chalk or Clay-with-Flints or Beaconsfield/Gerrards Cross gravels, with the gravels being particularly evident in the southern and northern extents of both Fields 1 and 2. Within the dry valleys up to 1.3m of colluvial deposits were recorded overlying natural chalk with Clay-with-Flints infilling solution hollows and channels within the chalk.

1.3.4 The topography of the Site is gently undulating with the principal trend being a relatively gentle slope eastwards into the Colne Valley from a height of c.85m above Ordnance Datum (aOD) on the west side of the M25 within Field 1, to c.60m aOD at the eastern extent of Field 3. Two undulating, east-west aligned dry valleys cross the centre and north of Fields 1 and 2 and a north/south dry valley cut across Field 3 and joined the southern dry valley mentioned earlier (Fig. 1).

2 Working Methodology

2.1 Works Documents

2.1.1 The Location Specific Written Scheme of Investigation (LSWSI) (Document No. 1EW03-FUS-EV-SPE-CS02_CL04-000054) for the test pit and trial trench evaluation had been prepared in accordance with the standards and guidance provided by the GWSI: HERDS, the Technical Standards for Specification for historic environment project plans and location specific written schemes of investigation (Document No. HS2-HS2-EVSTD-000-000036) and Specification for Historic Environment Investigations (Document No. HS2-HS2-EV-STD-000-000035) and relevant CIfA Standards.

2.1.2 An earlier Cultural Heritage Baseline Report (CH-001-008) for The Chalfonts and Amersham (CFA 8) has already been undertaken. The results of the baseline report stated in the summary are reiterated below (CH-001-008, Technical Appendices, Vol. 5, 23).

2.1.3 The area is defined predominantly by pre-18th century enclosure with extensive areas of common, pasture and woodland (both ancient and replanted), and the urban centres of The Chalfonts and Amersham. Some smaller enclosures may be medieval assarts and it is possible that some narrow coaxial field systems may have prehistoric origins.

2.1.4 To date there have been some results from the historical analysis of aerial photography, potential results, however, are predominantly masked by woodland, urban areas and areas of drift deposits. Very few formal intrusive investigations have been undertaken though quite extensive areas have been subject to field walking and occasional metal detector surveys demonstrating character and potential.

2.1.5 Palaeolithic through to Mesolithic potential is recognised from areas with colluvial (head) deposits and on the Clay-with-Flints strata though this is likely to be represented by stray finds. Later prehistoric to Roman remains generally lie within the valley systems.

2.2 Works Variations

2.2.1 Some of the evaluation trenches were moved because the planned trench location had been derived from survey drawings which suggested that the polylines demarcating the M25 corridor were representing the top of the road cutting batter slopes, not the base as was discovered at the beginning of the fieldwork. Hence many trenches in Field 1 were moved to the west to ensure a safe working distance for plant movements from the edge of the M25 road cutting.

2.2.2 In agreement with Fusion's Historic Environment Manager some trenches in Fields 1 and 2 were split into two segments. This was due to Health and Safety issues accommodating the safe and effective access/egress of Principal Contractor's (Jackson Civil Engineering - JCE) plant and equipment into the south of both fields, whilst COPA were still undertaking the archaeological evaluation.

2.2.3 Because of the need to retain the farm track running along the west edge of Field 2, as a safe access route for JCE plant and equipment, in conjunction with the narrow nature of the land-take area to the immediate west of the overhead power lines, many trenches in the north of Field 2 had a predominantly north/south alignment. Because of the 'bunching' of the trench array, Trench 53 was not undertaken. All these changes were undertaken after agreement with Fusion's Historic Environment Manager. In the very south of Field 2, trenches 56, 58, 64 were shortened and re-orientated to fit within the available area following the fencing of Field 2. Tr 81 was moved southwards to avoid cutting across plant/vehicle access corridor across Field 3.

3 Results

3.1 Archaeology

3.1.1 The results will be presented in the order of the fieldwork, with the results of the test pits and hand-sieving being summarised first (Fig.1), then the results of the evaluation trenches (Figs. 2-5). The finds totals are detailed in Table 1 below. By far the greatest quantity of significant finds from the test pit survey comprised worked and burnt flint.

3.1.2 The majority (90.3%) of the flint debitage comprised flakes (852), but a small number of blades and bladelets (18) was also represented. Half of the debitage had been broken – this high proportion is to be expected in an assemblage which derived largely from topsoil. Seven flakes had been burnt. The presence of blades/bladelets provides some evidence of Mesolithic/Early Neolithic activity, although they comprise only 2.8% of the debitage. Dating flakes with confidence is not generally possible, particularly in an unstratified assemblage where material from more than one period may be present.

3.1.3 Many of the test pits produced a mixture of thick and thin flakes, which might suggest that multiple periods were represented. A tendency to greater flake thickness is a feature of Late Neolithic and Bronze Age flintworking. Overall, just over four times as many thin flakes were recorded as thick flakes. The higher proportion of thinner flakes may reflect relatively earlier dating for some of the assemblage. However, a greater blades/bladelets component would be expected if the lithics assemblage were primarily Mesolithic or Early Neolithic in date. Only four 'truncations', a diagnostic Mesolithic tool type, were recorded from test pits (TPs) 5a and 8a and the topsoils of Trench (TR) 96 in Field 1, and TR 55 in Field 2. A Mesolithic bladelet core was recorded from TP4a (Field 1). At present, most of the cores (18) and scrapers (10) recovered would suggest a Late Neolithic or Bronze Age date for on-site activities.

3.1.4 The distribution plot (Fig.1) shows the concentrations of worked flint from the test pits overall. The plot clearly shows a greater concentration of worked flint on the higher ground of Field 1, further away from the Colne valley. The densest concentrations also seem to correspond with TPs either on the sides or the margins of the dry valleys in all three fields (Fields 1 – 3). The concentrations at TPs 12a-12c and TP42b are associated with the northern dry valley, TPs 29b and 38c for the southern dry valley of Fields 1-2, and TP 75c for Field 3. The concentration of 22 pieces from TP 75c including a core, an Early Neolithic leaf-shaped arrowhead tip fragment, two blades and 18 small flakes, would suggest Neolithic/Bronze Age activity in the immediate vicinity, on the high ground bordering the east side of the dry valley in Field 3. However, the ploughsoil at this location was only 0.25m thick and directly overlaid the natural gravel geology. The concentration was also very localised, with no lithics concentrations in nearby interventions. The evidence would suggest heavy ploughing impacts

on a very localised area of Neolithic/Bronze Age activity that is now represented by only ploughsoil-derived finds.

3.1.5 The ploughsoil distribution clearly shows that the general spread of lithic material is on the higher ground, to the sides of the dry valleys, although some of the densest concentrations have come from TPs within the northern and southern dry valleys of Fields 1-2. These results would strongly suggest that the material represents mostly Neolithic/Bronze Age, but also Mesolithic activity, on the higher ground away from the dry valleys. The dry valleys would have probably been used as corridors of movement between the higher hinterlands and the River Colne. The presence of material within the dry valleys is probably due to artefact displacement over millennia of ploughing. The overall results correspond with recorded Neolithic activity from Horn Hill represented by flint scatters, flint axe heads and barbed-and-tanged arrowheads (CH-002-008; ID CHA008)

3.1.6 The test pit sieving also recovered a moderate assemblage of post-medieval and modern material of no significance, including glass, cbm, pottery, clay pipe, metal objects and slag.

Table 1 – Quantification of Finds

Material type	Count	Weight (g)
Animal Bone	8	35
Burnt Flint	52	529
CBM	100	3221
Charcoal	1	3
Clay pipe	6	12
Copper alloy	1	1
Fired clay	3	7
Worked Flint	943	5757
Glass	32	170
Industrial waste	1	56
Iron	18	231
Lead alloy	2	135
Pottery	82	461
Stone	2	130
Grand Total	1251	10748

3.1.7 Only a small number of archaeological features pre-dating the post-medieval and modern periods were recorded during the trial trench evaluation (Figs 2-5). The only significant results were obtained from TRs 12, 92 and possibly 107.

3.1.8 In TR12 a small pit (1215) contained 10 pieces of worked flint, including a dual platform core of probably Neolithic/Bronze Age date. These results correspond with the test pit lithic concentration from TPs 12a-c, right at the edge of the colluvial fill of the northern dry valley. These corresponding test pit and trenching results, indicate the ploughsoil lithic concentration at this location is to some degree probably indicative of the truncation of sub-surface features containing this material, possibly also of Neolithic/Bronze Age date.

3.1.9 A small pit in Tr 60 (6008) contained a moderate assemblage (20/95g) of Early Iron Age pottery and charcoal within its single fill 6009. The pottery derives from a single vessel from a sandy fabric with fingertip decoration visible on the exterior.

3.1.10 In TR 92, a north/south aligned, possible field boundary ditch (9208), contained a small assemblage of Late Iron Age/Early Roman pottery (24/72g) of 1st century BC – 1st century AD date. A tree-throw (9214) from TR92 also contained a sherd of Late Iron Age/Early Roman pottery. Although undated, a substantial east/west aligned ditch (10714) in TR107 to the immediate south, may be associated with ditch 9208. Residual Late Iron Age/Early Roman pottery was also recovered from 'hollow' 210 in TR2 and post-medieval ditch 2408 in TR24.

3.1.11 A small number of undated features were recorded during the evaluation including postholes in TRs 35 and 51, small pits in TRs 27 and 66, ditches in TRs 12 (x2) and 98, a furrow in Tr 84.

3.1.12 A number of large quarry pits of post-medieval and modern date were recorded where the natural geology was characterised by gravels on the higher ground in the south and north of both Fields 1 and 2, and within Field 3. These were recorded in TRs 2, 3, 5, 6, 8, 13, 34, 48, 55, 62, 72, 81, and 91.

3.2 Construction Impact - Discussion

3.2.1 The results of the test pit and trial trench evaluation have recorded a moderately significant spread of worked flint, including a very small number of diagnostically Mesolithic artefacts. However, the majority of the predominantly ploughsoil-derived lithic assemblage would suggest transient and episodic activity on the higher ground of all three fields but predominantly Field 1, in the Mesolithic period, but predominantly from the Neolithic/Bronze Age periods. The two east/west orientated dry valleys, and the north/south dry valley in Field 3, all run down eastwards across all three fields towards the Colne valley. These would have made ideal corridors of movement in the prehistoric landscape for both people and animals. Hence the relative concentrations of ploughsoil-derived lithic material both within and at the margins of the dry valleys is unsurprising. However, the corresponding concentration of ploughsoil lithic material from the test pit survey, with a sub-surface feature (pit 1215) in TR12 (Field 1) containing only Neolithic/Bronze Age flint debitage, might suggest the presence of other contemporary or later features, containing similarly-dated material, in the vicinity. The relative concentration of 22 worked flint artefacts from TP 75c, located on the eastern edge of

the dry valley in Field 3, could indicate the presence of more significant Neolithic/Bronze Age activity in the immediate vicinity, if preserved below the colluvial deposit infilling the dry valley. However, no features or deposits of Neolithic/Bronze Age date were recorded below the Field 3 dry valley colluvium.

3.2.2 In the south of Field 1, a Late Iron Age/Early Roman ditch (TR92) possibly associated with a substantial but undated ditch in TR107 (both in Field 1) was recorded. A number of undated features were recorded which include two postholes (TRs 35, 51), a furrow (Tr 84) two pits (TRs 27, 66) and two ditches (TR21) which plausibly may be part of settlement/farming activity contemporary with the probable field boundary of Late Iron Age/Early Roman (LIA/ERB) ditch from TR92. However, the lack of Late Iron Age and Romano-British material from the test pit survey would strongly suggest that the LIA/ERB activity material from contemporary activity associated with the field boundary ditch in TR92, is not present on the Site.

3.2.3 The higher ground in all fields, corresponding with outcrops of natural gravels, contained a number of mostly post-medieval or modern quarry pits (where dated), or undated pits of probably similar date. The post-medieval gravel quarrying evidence from the Cultural Heritage Baseline Report for CFA8 (CH-001-008) has clearly been borne out from the current fieldwork, with a number of large post-medieval and modern pits being recorded on the higher ground, gravel geology, in the northern and southern extents of both Fields 1 and 2.

3.2.4 Construction impact is not clearly understood by COPA as design drawings and profiles have not been provided or viewed for the interim report. However, it is likely that earthworks and landscaping related to the construction of slip roads and ancillary works intended here will comprise cut and fill operations which have commensurate degrees of impact upon the remains present varying from total removal to possible burial below infill.

4 Appendices

Appendix 1 Figures

Hornhill Road

Roberts Lane

West Hyde Lane

M25

Field 1

Field 2

Field 3

field boundary

Chalfont Lane

Legend

Site boundary

Overhead cables

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Site location plan

Internal

Scale at A3: 1:4000

0 200m

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Doc Number: Figure 1

Date: 23/08/17

Hornhill Road

Field 1

Field 2

M25

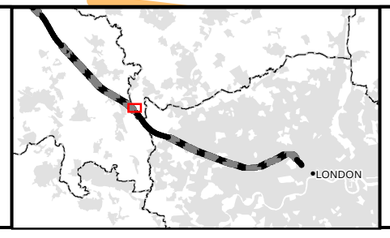
West Hyde Lane

Field 3

Chalfont Lane

Legend

- Site boundary
- Landscape earthworks
- Existing watercourse
- Tunnel external extent
- Construction Traffic Route
- Electricity towers OH/HV (modified)
- Overhead cables
- Tunnel portal
- Main construction compound
- Embankment



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Engineering design plan

Internal

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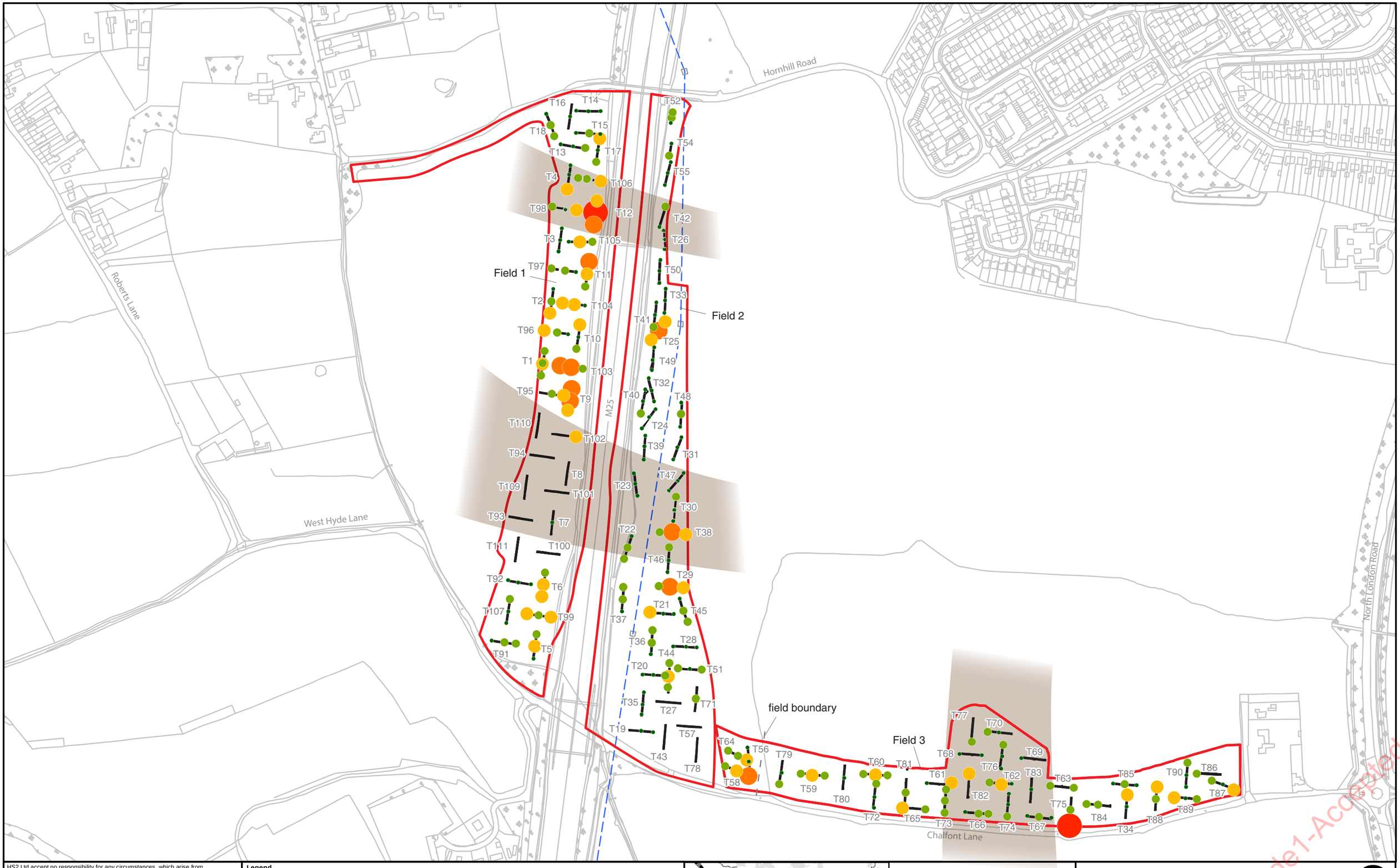
Date: 23/08/17

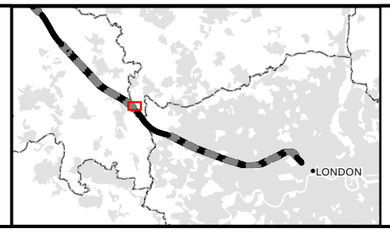


Legend

Worked Flint Distribution:

- 1
- 2-4
- 5-7
- 8-13
- 14-22

- Site boundary
- Archaeological trench
- Dry valley
- Overhead cables



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Flint Distribution Plot from Test Pit survey

Internal

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Doc Number: Figure 3

Date: 28/07/17

502000
502100
502200
192300
192200
Hornhill Road
M25
T14
T16
T18
T15
T13
quarry pit 1308
T17
T4
T106
T12
ditch 9816
pit 1215
ditch 1213
ditch 1211
T98
quarry pit 307
T3
T105
T97
T11
T52
T54
quarry pit 5512
T55
quarry pit 5510
T42
ditch 4215
2613
2611
ditch/furrow 2609
T26
T50
HORNHILL ROAD
Field 1
Field 2
Field 3
West Hyde Lane
Dry valley
LONDON
Code 1 Accepted

Legend

- Site boundary
- Archaeological trench / test pit
- Field drain
- Treethrow
- Overhead cables
- Modern feature
- Post-medieval feature
- Iron Age / Roman
- Neolithic / Bronze Age
- Undated archaeology

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M25 Access/Slip Roads

Evaluation Trench Locations and Results 1/6

Internal

Scale at A3: 1:1000

0 50m

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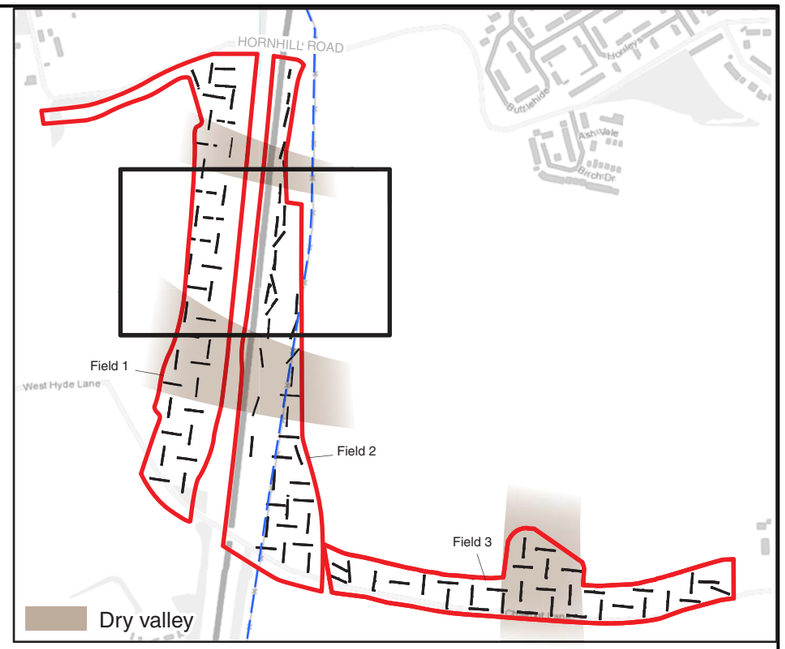
Doc Number: Figure 4

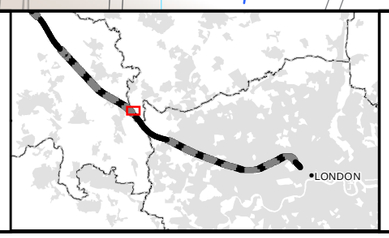
Date: 15/06/17

502000
502100
502200
192100
192000
191900
T3
T97
T11
T2
T104
hollow 210
quarry pit 208
T96
T10
T1
T103
T95
T9
T110
T102
T94
M25
T26
T50
T33
T41
T25
T49
T32
T40
T48
ditch 2410
quarry pit 4808
ditch 2408
T24
pit 3109
? Prehistoric
T31
T39



Legend

- Site boundary
- Archaeological trench / test pit
- Field drain
- Treethrow
- Overhead cable
- Modern feature
- Post-medieval feature
- Iron Age / Roman
- Neolithic / Bronze Age
- Undated archaeology



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Evaluation Trench Locations and Results 2/6

Internal

Scale at A3: 1:1000

0 50m

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Doc Number: Figure 5

Date: 15/06/17

502000
502100
502200
191800
191700
T110
T102
T94
T8
pit 811
borrow pit 808
T109
T101
T93
T7
T111
T100
T6
T92
9214
ditch 9208
quarry pit 606
T107
ditch 10714
10710
T99
9908
T24
T48
T39
T31
T23
T47
T30
T38
T22
T46
M25
T29
T37
T45
ditch 2108
T21
ditch 2110
T36
HORNHILL ROAD
HORNHILL ROAD
Field 1
Field 2
Field 3
West Hyde Lane
Dry valley

Legend

- Site boundary
- Archaeological trench / test pit
- Field drain
- Treethrow
- Overhead cable
- Modern feature
- Post-medieval feature
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Evaluation Trench Locations and Results 3/6

Internal

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0 50m

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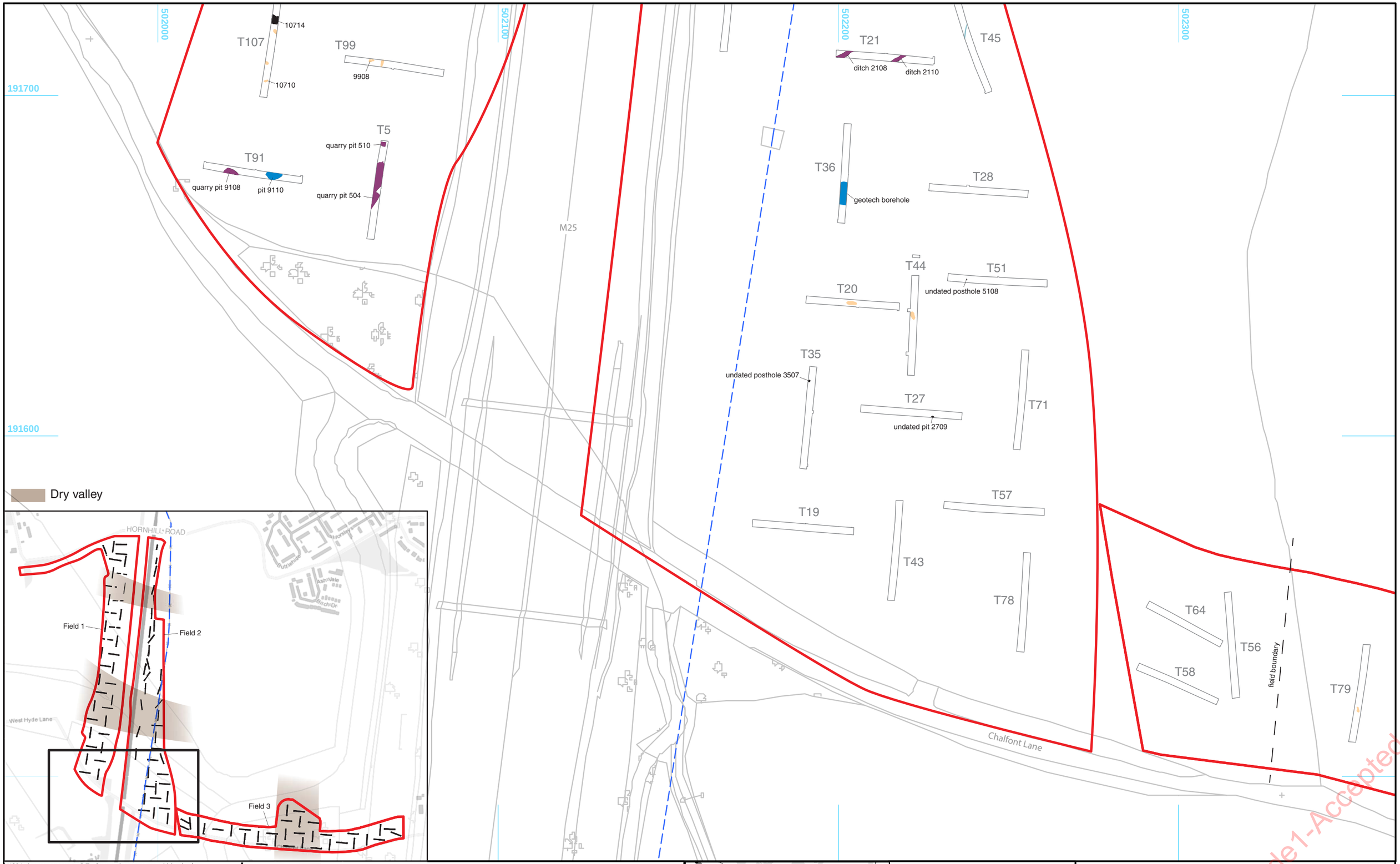
Doc Number: Figure 6

Date: 15/06/17



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Legend

- Site boundary
- Archaeological trench / test pit
- Field drain
- Treethrow
- Overhead cable
- Modern feature
- Post-medieval feature
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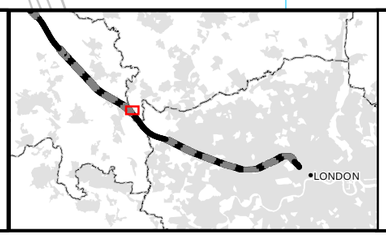

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Evaluation Trench Locations and Results 4/6

Internal

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0 50m

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Date: 28/07/17

502300 502400 502500 502600

191600 191500

T64 T56 T58 T79 T59 T80 T60 T72 T81 T65 T61 T73 T77 T70 T68 T76 T69 T82 T62 T83 T63 T74 T66 T67

field boundary

treethrow 6010

pit 6008

quarry pit 7209

quarry pit 8109

quarry pit 8112

quarry pit 6208

pit 6608

Chalfont Lane

HORNHILL ROAD

West Hyde Lane

Field 1 Field 2 Field 3

Dry valley

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Legend

- Site boundary
- Archaeological trench / test pit
- Field drain
- Treethrow
- Overhead cable
- Modern feature
- Post-medieval feature
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- Neolithic / Bronze Age
- Undated archaeology

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Enabling Works Evaluation
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Evaluation Trench Locations and Results 5/6

Internal

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0 50m

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Date: 28/07/17

502600 502700 502800 502900

191600 191500

T61 T62 T63 T67 T68 T69 T70 T73 T74 T75 T76 T77 T82 T83 T84 T85 T86 T87 T88 T89 T90

quarry pit 6208

furrow 8407

T34

quary pit 3407

Chalfont Lane

Field 1 Field 2 Field 3

West Hyde Lane

Dry valley

Code1-Accepted

Legend

- Site boundary
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Evaluation Trench Locations and Results 6/6

Internal

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0 50m

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