

Stockley Airport Junction Phase 2



Archaeological Watching Brief Report



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OXFORD ARCHAEOLOGY
Archaeological Watching Brief at Stockley Airport Junction,
London Borough of Hillingdon

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Figure 1: Site location

Figure 2: Watching brief area: Phase 2 works

Plate 1: Made ground layers in section.

Plate 2: Made ground, 'undisturbed' layers and gravels in section from original ground level.

Plate 3: Quarrying/Channel in area of Pad69/70.

Plate 4: End of quarrying/terminus of channel seen in Pad 69/70.

Plate 5: Channel visible in Pad 66

Plate 6: Maximum depth of gravel (4.6m) in Pad 30B.

Summary

In June 2012, Oxford Archaeology (OA) carried out an archaeological watching brief at the Stockley Airport Junction section of the Crossrail scheme, situated on land beside Unit 306, Stockley Close, West Drayton. The work comprised a targeted watching brief during general ground reduction and support excavations for the Heathrow Express line. No archaeological remains were observed during the work. Natural geology consisted of Langley Silts (brickearth) and underlying gravel.

1 INTRODUCTION

1.1 Scope of work

1.1.1 In June 2012, Oxford Archaeology (OA) conducted a watching brief at the Stockley Airport Junction section of Crossrail scheme, centred on National Grid Reference TQ 077 795 (Fig. 1). The area of the watching brief was situated between a spur of the Grand Union Canal and the Heathrow Express line behind Unit 306, Stockley Close, West Drayton, London (Fig. 2). The work comprised the archaeological supervision of soil removal by mechanical excavator and excavations for support structures for the Heathrow Express wall.

1.1.2 The watching brief was carried out in accordance with a Site Specific Written Scheme of Investigation (SSWSI) designed by Crossrail for the entire Early Works programme of the Stockley Airport Junction Section (Crossrail, 2011). The work was undertaken on behalf of Thomson Habitats and the Principal Contractor, Carillion plc. The client for this section of the Crossrail project is Network Rail.

1.2 Project Background

1.1.3 The background to the Crossrail project has been described in detail in the SSWSI and is briefly summarised below.

1.1.4 Crossrail is a major new cross-London rail link designed to serve London and the south-east. It includes the construction of a twin bore tunnel on an east-west alignment under central London and upgrading of some existing rail facilities. The route is divided into four sections: central, western, north-eastern and south-eastern, all containing additional sub-sites. Stockley Airport Junction is within the western section.

1.1.5 The construction of the Stockley Airport Junction will provide a grade separated junction to facilitate Crossrail and Heathrow Express services without causing disruption to the existing main line services. The work includes a new embankment, flyover, viaduct and ramps. The foundations for the new viaduct, ramp and flyover structures may impact upon cultural heritage assets and the mitigation for this work is archaeological watching brief, as specified in SSWSI.

1.2 Topography and geology

1.2.1 The site lies at the western edge of an industrial estate, accessed via Stockley Close. The site encompasses c 400m², consisting of a large area of land and water adjacent to the east side of Unit 306. It includes a c 20-25m long section of Broad's Dock, immediately north of the point where the canal bends to a north-east to south-west alignment.

- 1.2.2 The ground level across the site, and on both sides of the canal, is fairly uniform between 31-33m above Ordnance Datum (OD), the water level of the canal lying at 29.4m (OD). The eastern bank displays an irregular topography, which may reflect both quarrying and land-filling activities through past brickearth and gravel extraction, as well as the construction of the vertically raised embankment of the Heathrow Express Railway situated c 15m to the east of the site.
- 1.2.3 The geology of the area is Lynch Hill Thames Gravels overlain by the Langley Silt Complex (brickearth). Both were extensively quarried in the wider area (Crossrail, 2011). The underlying solid geology is London Clay.

1.3 Archaeological background

- 1.3.1 The archaeological background of the site has been described in detail in the SSWSI and is briefly summarised below (Crossrail, 2011).
- 1.3.2 There is evidence for Palaeolithic activity in the surrounding area, mainly discovered during quarrying of the Lynch Hill gravels. No Bronze Age, Iron Age or Roman activity has been identified in the immediate area, although large agricultural field systems have been identified on the Taplow terraces to the south of the Crossrail route, and settlement activity has been identified c 1km to the north at Stockley Park.
- 1.3.3 Saxon settlements have been investigated to the south of the site around Sipson and Harmondsworth. The layout of lanes, villages and hamlets seems to have been in place by the late Saxon period. However, no archaeological evidence from this period has been identified in the immediate vicinity of the site.
- 1.3.4 The locations of the deserted medieval hamlet of Dawley and of Dawley Manor House, although now lost, are assumed to lie to the east of the site.
- 1.3.5 During the post-medieval period the landscape around the site remained predominantly rural. In the late 18th century the Grand Union Canal with its associated bridges was constructed, followed by the Great Western Railway in the mid 19th century.
- 1.3.6 Brick manufacture developed in the area during the 19th century. A spur from the Grand Union Canal called Broad's Dock, which was used to transport clay, has survived within the site boundary. The area around the site was subject to development from the early 20th century with suburban expansion and industrial buildings and workers housing. Both clay and gravel extraction continued into the 20th century - A number of the associated pits were subsequently used as landfill sites, and were further redeveloped in the late 20th/ early 21st century as golf courses, fishing lakes and a business park.

1.4 Previous investigations

- 1.4.1 In January 2012 Oxford Archaeology conducted a watching brief on the proposed crossing point of Broad's Dock, consisting of the archaeological supervision of topsoil removal during vegetation clearance and de-silting of the canal (OA 2012). Borehole investigation across the site recorded varied levels of made ground from 0.50 - 1.80m thick overlying a 0.20 - 0.60m layer of clay that covered the gravel.

2. RESEARCH AIMS AND OBJECTIVES

2.1.1 The overall aim of the investigation was to establish the character, nature, date, extent and state of preservation of any surviving archaeological remains that would be impacted upon by the development and contribute towards the research themes outlined in the SSWSI.

2.2 General Aims

2.2.1 The general aims of the project, taken from the *Research Framework for London Archaeology* and specified in the SSWSI were to:

- Identify, investigate and record any significant archaeological remains revealed by the groundworks, where such remains cannot be avoided by the ground investigations, paying particular regard to the potential for early prehistoric levels not previously noted in the area.
- Establish a chronology for the archaeological remains in the area.
- Contribute to an understanding of the potential impact of the development.

2.3 Site-Specific Aims

2.3.1 The site-specific research aims relevant to the investigations at Stockley Airport Junction were stated in the SSWSI and are reproduced below:

- What is the development of the local landscape from prehistory to the medieval period? Are any Palaeolithic remains present? If so, at what level(s) and at what date did they form? Is there any evidence for redeposited land surfaces?
- What evidence exists in the landscape for the development of the Roman and Saxon landscape?
- What information exists about the development of the agricultural and industrial landscape in the post-medieval period?

2.3.2 Regional Research Aims

- The regional research themes considered to have possible relevance to archaeological remains uncovered at the site are:
- Upper Palaeolithic and Mesolithic – aspects of continuity and change in the nature of subsistence strategies pursued by human groups: how did they change and develop through time, and why?
- Roman – Understanding how the relationship between hinterland and *territorium* of *Londinium* operated.
- Saxon – Identifying rural land use and the extent of agricultural exploitation.

- Medieval – Understanding the social and economic implications of patterns of consumption across the city and region, and using the archaeological record to trace individual lives.
- Post-medieval – Understanding how the proximity of the metropolis, the largest urban conurbation in Britain, affected the lives of people living and working in the immediate surrounding area.

3. INVESTIGATION METHODS

3.1 Watching Brief method

- 3.1.1 A watching brief is a programme of archaeological monitoring (observation, investigation and recording) which is carried out by a suitably qualified archaeologist during site investigations (e.g. geotechnical test pits, boreholes and utilities trial trenches) and construction works. The purpose of the watching brief is to identify the potential of any archaeological remains uncovered in the course of the works and record them appropriately (as far as reasonably practicable).
- 3.1.2 OA carried out the watching brief during the groundworks phase of the junction project. The second stage of watching brief work described in this report comprised monitored by an Archaeologist as required by the Principal Contractor between the 1st June and 15th June 2012. The scope of attendance included any activities undertaken by the Principal Contractor that involved the removal of modern material, made ground, subsoils and superficial geological deposits, such as brickearth and gravel. All works were carried out by a 360° mechanical excavator fitted with a long reach boom and a toothed bucket.
- 3.1.3 The following observations were recorded on a daily basis by the attending Archaeologist:
- Personnel employed on site;
 - A description of the construction works observed;
 - Any relevant works sub-contractor and personnel undertaking and supervising the construction activity
 - Depths and extents of excavation works observed;
 - A measure of confidence that any archaeological remains would have been observed;
 - Location and description of any archaeological remains;
 - Location and description of any modern remains.

3.2 Recording

- 3.2.1 The recording included the production of a written record of individual context descriptions on appropriate *pro forma*, a drawn record, finds retrieval and photography, where appropriate.

- 3.2.2 The drawn record incorporated plans and section drawings of appropriate features, structures and individual contexts (at an appropriate scale).
- 3.2.3 The photographic record consisted of 35 mm monochrome and colour, as well as digital formats.
- 3.2.4 All structures and deposits were recorded according to current best practice and accepted professional standards (see OA Fieldwork manual, 1992) and as outlined in the SSWSI.

4. RESULTS

4.1 Limitations

- 4.1.1 The excavation method and depth meant that close observation was not always possible, which limited the potential for archaeology to be identified.

4.2 Extent of observation

- 4.2.1 The area of soil reduction and removal was toward the northern end of the site (Fig.2) and comprised an area of c 1460m². The reduction was initially through made ground of modern date which is most likely to have been laid during construction of the Heathrow Express line, to the east and/or the Grand Union Canal, to the west. The soil appears to have been brought in and the ground level raised by 2.5 - 4.0m (east to west), to level the ground surface (Plates 1 and 2). No archaeological remains were revealed during the ground reduction.
- 4.2.2 Archaeological attendance was full time during excavation through areas and levels with intact alluvial deposits, where some potential existed for archaeological discoveries. The main focus of the watching brief in this phase of works was the excavations carried out by Eco-Foundations adjacent to the Heathrow Express wall, in the form of foundations dug for support pads. These were typically c 5m x 5m in the south-western area, and c 5 x 8m, in the north-east, with depths varying according to the level at which the terrace gravels were encountered (Fig.2). The surface of the terrace gravels became deeper to the south-west (Appendix 1), towards the canal, typically encountered at 3.0m - 3.5m below ground level in the north-eastern pads and dipping to a maximum of 4.6m to the south-west in Pad 30 (Fig.2). Several potential channels or quarry pits were observed within or cutting the gravels. The terrace gravels were overlain by brickearth and alluvial silts of variable thickness.

4.3 Observations on the sedimentary sequence

- 4.3.1 While no significant archaeology was encountered, exposures of intact Pleistocene and Holocene alluvial sediments were observed. This section reviews the extent and depths of these. It was rarely possible to obtain accurate measurements or detailed descriptions due the depths of excavations and safety constraints on access.

- 4.3.2 In the north-eastern area of the site the gravels were 3.0m - 3.5m below ground level except in Pads 69 and 68 where excavation came directly through made ground and disturbed silts to London clays, with gravels in evidence only as a thin layer to the north and south in Pad 69 and to the west in Pad 68. This area was interpreted as a possible channel diversion leading to the canal in which the pressure of the water had stripped the gravel from the clay. However, it could also be a gravel quarry pit of fairly modern date, as during the process of general ground reduction to the west, an apparent edge was discovered to the feature approximately 8m from the canal side (Plates 3 and 4). A second channel or quarry pit was also observed in Pad 67. This feature was clearly visible in section and had a steep, concave profile. No details were visible in plan and the southern extent was not established, but it is presumed to have been present in Pad 66 (Plate 5). Due to the increasing depth of the gravels in this area London Clay was not reached.
- 4.3.3 In Pad 35 the edge of the possible diverted river channel was identified. The surface of the gravel increased in depth from 0.7m to 2m from the surface working platform and the channel was infilled with silty clay containing organic material. In this area a 0.3m thick undisturbed sandy deposit was observed above the gravel.
- 4.3.4 Pads 29 – 34 were all in the areas of the diverted river channel and in-filled pond. In several of these pads (29, 31, 32, 35 and 67) dark organic silts were observed overlying the gravels to a thickness of 0.5 - 1.0m. In Pads 33 and 32 orange alluvial clays were present to a thickness of up to 0.5m above the gravel and were in turn overlain by dark organic silts. Between Pads 30 - 32B these silts and clays seem to have been stripped out by increased water-flow, apparently caused by the installation of a gabion wall in the modern period to narrow the channel.
- 4.3.5 The maximum depth of the gravels was recorded in Pad 30, which was within the in-filled pond area, where excavations reached a depth of 4.6m below the working platform (Plate 6).

4.4 Artefactual / Finds Results

- 4.4.1 No finds were recovered during the watching brief.

5. CONCLUSIONS AND RECOMMENDATIONS

- 5.1.1 The watching brief did not identify any archaeological remains or deposits of significance. No archaeological information on the prehistoric and later environments of the floodplain could be recovered, and there was there no information for occupation activity of any period. The made ground deposits are likely to be of 19th or 20th century date. The underlying clay, silt and gravel deposits represent alluvium deposited by the river Thames and its tributaries in the Pleistocene and Holocene. While these deposits clearly had the potential to contain archaeological remains, none were found in practise. It should be borne in mind that the nature of the deep excavations and limitations on access to them, meant that close observation was not always possible.
- 5.1.2 No further phases of watching brief work are currently anticipated in the Stockley Junction section. No specialist analysis or reporting is required. This fieldwork report will be submitted to the Greater London Sites and Monuments Record.

5.2 Archive Deposition

- 5.2.1 The complete project archive includes paper context records and indices, black and white and colour photographs, digital plans and photographs. These will be prepared following the guidelines set out in Environmental Standards for the permanent storage of excavated material from archaeological sites (UKIC 1984, Conservation Guidelines 3) and Guidelines for the preparation of excavation archives for long-term storage (Walker 1990). The designated receiving museum is the London Archaeological Archive and Research Centre, a Department of the Museum of London.

APPENDIX 1: OBSERVATIONS WITHIN SUPPORT PAD EXCAVATIONS

Pad no.	Depth of terrace gravel (metres below working platform unless stated otherwise)	Other deposit depths recorded/ estimated (m)	Comments
29A	2.2	Dark silts: 1	Gabion wall on western edge
29B			Not excavated
30A	2.2		
30B	4.6	none	Gabion wall on eastern edge.
31A			Not observed
31B	2.2	Dark clays: 1 Orange clay/ brickearth: 0.3	Beyond extent of gabion wall
32A			Not observed
32B	2.2	Orange clay/ brickearth: 1.2	
33A	2.5	Dark silts: 1.0 -1.5	
33B	2.2 - 1.8	Brickearth: 0.5	
34A			Not observed
34B	2.5		
35A	0.7 -2.5	Grey silt: up to 1.7	Edge of river channel observed. 0.3m thick sandy deposit present above gravel.
35B	1.7		
north-western strip	3.5(south-west) - 0.7(north-east)	Grey silts: 1m reducing in thickness as gravel rises to north-east.	
63	1.7		
64	1.7		
65			Not observed
66	1.4		
67	0.7 (north) – 1.2(south)	Disturbed silts: Up to 1.2	Possible channel/quarry area.
68	1.3		Possible channel/quarry area. Gravels very thin to north and thicker to south. London clay partially revealed at 1.3m
69	Gravel not encountered	London clay: 1.3	Possible channel/ quarry area.
70	4m from ground level		Pads dug 1.5m into gravel.
71	4m from ground level		Pads dug 1.5m into gravel.
72	4m from ground level		Pads dug 1.5m into gravel.

APPENDIX 2: BIBLIOGRAPHY AND REFERENCES

Crossrail 2011, Stockley Airport Junction. Cultural Heritage Site Specific Written Scheme of Investigation. Document No: WSK1B-HEN-REP-JED-000004 Revision B03

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Wilkinson, D (ed) 1992 OA Fieldwork manual, Oxford Archaeological Unit

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APPENDIX 3 SUMMARY OF SITE DETAILS

Client name: Thomson Habitats

Site name: Stockley Airport Junction

Site code: STJUNCWB

Grid reference: TQ 077 795

Type of investigation: Watching brief

Date and duration of project: 1-15 June 2012

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES and will be deposited in due course with the London Archaeological Archive and Research Centre, a Department of the Museum of London.

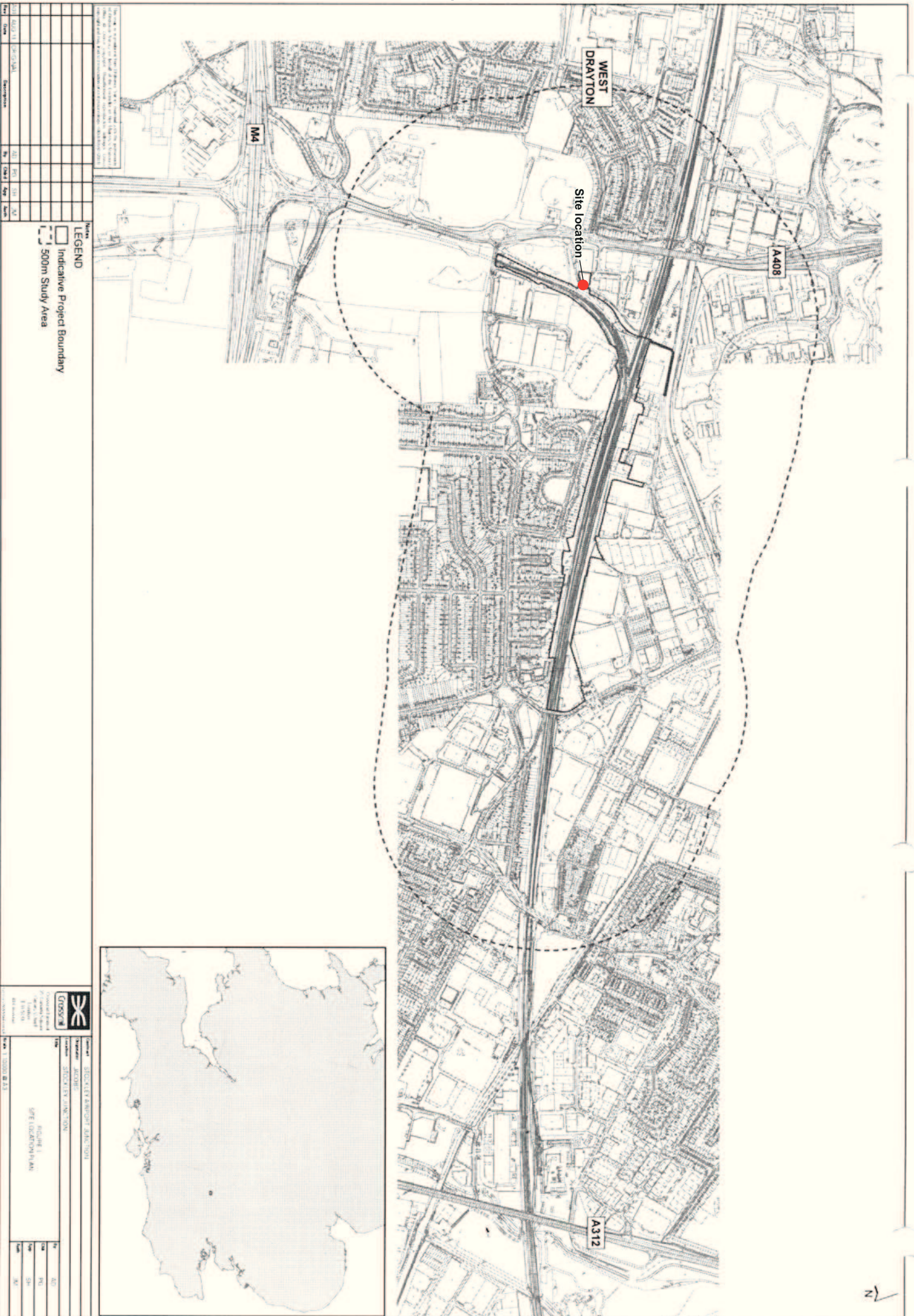
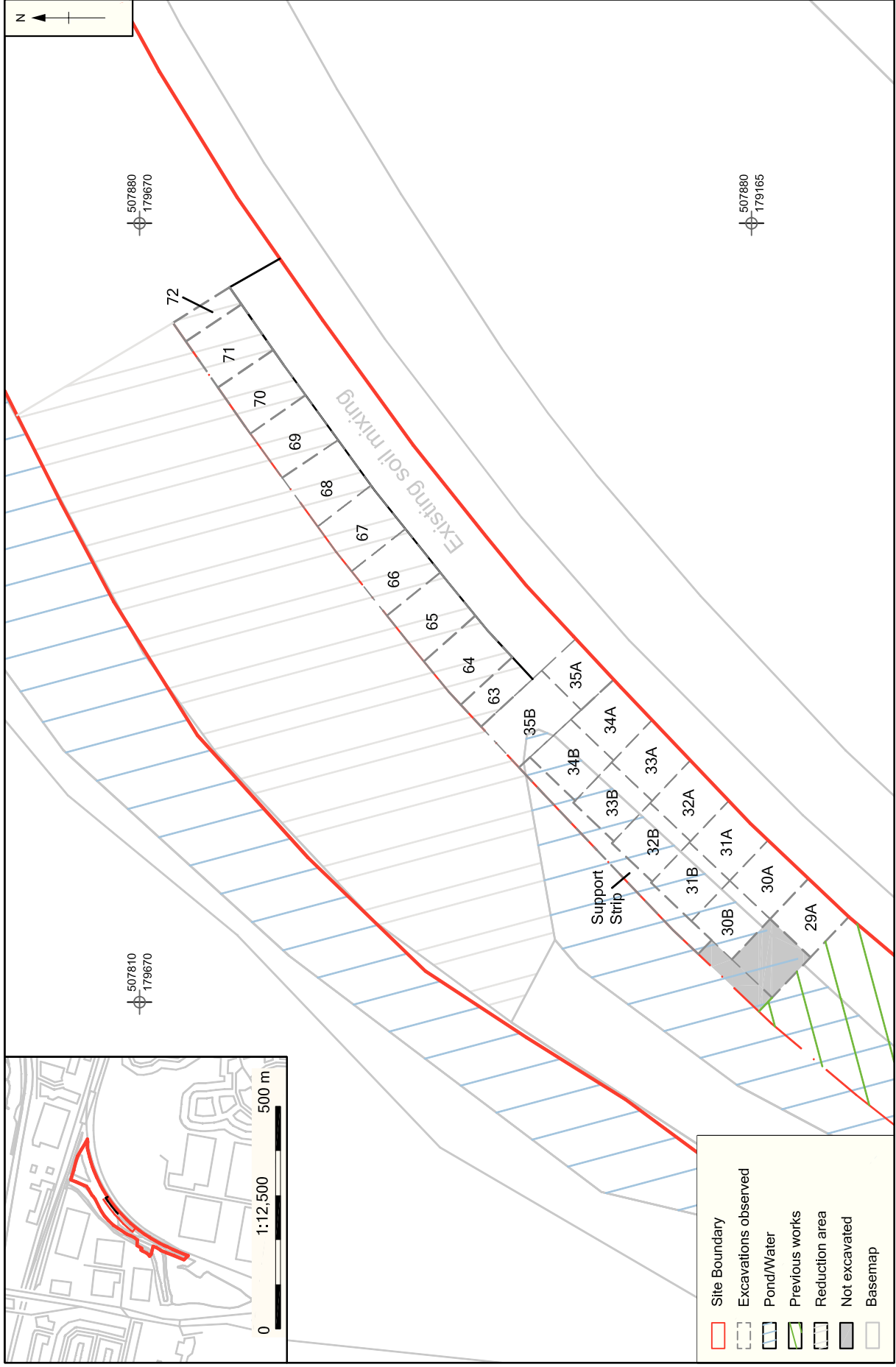


Figure 1: Site location



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Figure 2: Watching brief area, phase 2 works.

0 20 m
1:500 at A4

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Plate 1: Made ground layers in section



Plate 2: Made ground, 'undisturbed' layers and gravels in section from original ground level



Plate 3: Quarrying/Channel in area of Pad 69/70



Plate 4: End of Quarrying/terminus of channel seen in Pad 69/70



Plate 5: Channel visible in Pad 66



Plate : Maximum depth of gravel (4.6m) in Pad 30B



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