

M1 Junctions 10 to 13 HSR Improvements

Archaeological Monitoring of Geotechnical Trial Pits

Report No: D123845/AR/CON/02

June 2010

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Version No	Current Status	Date	Prepared By	Reviewed By	Approved By
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Status Code	Description
D	Draft
P	Preliminary
A	Submitted for Review
F	Final

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SCHEDULE OF REVISIONS

Revisions Issued Since Publication

Report Version Number	Revision Date	Paragraphs amended
Version 1	08-06-2010	First Issue

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Executive Summary

Objective

The purpose of the watching brief was to identify, investigate, record and report any subsurface archaeological remains revealed during geotechnical trial pits works between chainage 5700 – 6200. This was to identify and record the character, nature, depth and extent of features or deposits relating to the possible moated site at Leagrave.

Approach to the Study

Scott Wilson undertook the monitoring on the 7th April 2010. Three trial pits were excavated and monitored using a JCB 360 mechanical excavator under archaeological supervision. Pro-forma recording sheets were used to record the depth of the trial pits and the depth and nature of all the deposits encountered.

Key Findings

The results of the geotechnical monitoring revealed embankment material directly above natural chalk. Therefore, it is highly unlikely that any deposits of archaeological potential remain.

Risks

The proposed hard shoulder running will present no risk to the archaeological resource along chainage 5700 - 6200.

Mitigation

No mitigation is proposed.

Limitations

There are no known limitations to this technical report.

Further Studies Required

No further archaeological studies are required.

1 INTRODUCTION

Project Background

- 1.1.1 The Highways Agency ('the Employer') has awarded the contract for the M1 Junction 10 to 13 HSR Improvements (the Scheme) to the Costain Carillion Joint Venture (CCJV, 'the Contractor'), who has appointed Scott Wilson Ltd as their designer ('the Designer's Archaeologist').
- 1.1.2 This report describes the results of archaeological monitoring of geotechnical trial pits along chainage 5700 – 6200 required to identify, investigate, record and report any subsurface archaeological remains revealed during construction activities in order to fulfil the cultural heritage mitigation requirements of the Scheme.
- 1.1.3 This report has been prepared in accordance with the guidance presented in DMRB Volume 10 Section 6 Part 1 (HA, 2001), The Management of Archaeological Projects (English Heritage, 1991) and the standards set in the Standard and Guidance for Archaeological Assessment and Watching Briefs prepared by the Institute for Archaeologists (IfA, 2008).
- 1.1.4 This report follows the methods set out within the Written Scheme of Investigation (WSI) for the archaeological mitigation strategy comprising preservation by record along the route of the M1 Junction 10 to 13 Hard Shoulder Running Improvements (Report No: D123845/AR/CON/01).

2 ARCHAEOLOGICAL BACKGROUND

Site Specific Archaeological Background

- 2.1.1 The Stage 3 Baseline Assessment for the previous M1 Widening J10–13 Scheme identified two hundred and ninety three known archaeological records, monuments and findspots and four Scheduled Ancient Monuments within a 1km corridor either side of the motorway. Within the same study area thirty eight listed buildings, six locally important buildings, three conservation areas and one area of special character (designated in South Bedfordshire Local Plan) were recorded. There were in addition, a further forty seven historic landscape assets.
- 2.1.2 A comprehensive description of all identified assets is provided in the previously published M1 Widening J10–13 Environmental Statement (Highways Agency, 2007). A summary of the archaeological remains at the watching brief location is presented below:

CH 5700 – CH 6200

- 2.1.3 A 1795 Estate Map (BLARS R1/53) records the site of a rectangular feature which may equate to the water filled moat at Leagrave. The 1842 Tithe Map (BLARS MAT30/1) also shows the moat adjacent to the River Lea. This possible medieval moated site now lies under the existing M1 motorway embankment.

- 2.1.4 A walkover survey undertaken for the M1 Widening J10–13 Environmental Statement (Highways Agency, 2007) did not identify any visible remains of the moat. It is likely that it was either cut by the M1 or now lies under the existing M1 motorway embankment.

3 PROJECT OBJECTIVES

General Objectives

- 3.1.1 The general aims of the archaeological works were:

- to identify the presence/ absence, nature, depth and extent of any subsurface archaeological remains revealed by the HSR improvements;
- to identify the presence/ absence and extent of any modern ground disturbance, revealed by the HSR improvements;
- to investigate and record the condition or state of preservation of any archaeological deposits or features encountered;
- to identify and recover the range, quality and quantity of artefactual and environmental evidence present;

Specific Objectives

- 3.1.2 The specific objectives of the watching brief were:

- to identify and record the character, nature, depth and extent of features or deposits relating to the possible moated site at Leagrave (CH+5700 to +6200); and
- to relate any discovered remains to known archaeological assets in the vicinity and place them within their local, regional and national context.

4 METHODOLOGY

- 4.1.1 All work was carried out in accordance with the Standards and Guidance for Archaeological Field Evaluation produced by the Institute for Archaeologists (IfA, 2008). The work also adhered to all current and relevant best practice standards and guidelines. These are listed in the bibliography.
- 4.1.2 The location of the geotechnical trial pits was determined by Costain Carillion. A JCB 360 excavator with a toothed and toothless bucket was used to excavate each trial pit to a target depth of between 1.5m – 2.0m below ground level (bgl).
- 4.1.3 *Pro-forma* recording sheets were used to record the depth and nature of all deposits during monitoring and record their overall depth and photographs were also taken of each pit. All recording was undertaken under relevant health and safety guidelines and under instructions from the geotechnical contractor.

- 4.1.4 Excavation of the trial pits was to cease if archaeological deposits were identified. Archaeological deposits within the trial pits were not to be excavated or disturbed. A written, drawn and photographic record of the uppermost remains was made and any non-modern artefacts from the spoil were retained.

5 RESULTS

- 5.1.1 A total of three trial pits were monitored. The table below provides a summary of the results of the monitoring exercise.

Table 1 – Results of Geotechnical Trial Pits

Trial Pit No	Composition Below Ground Level	Depth of Trial Pit
14	0.0 - 0.2m Dark brown grey soil 0.2 – 0.3m Light grey brown degraded chalk (embankment) 0.3 – 0.5m White chalk (embankment) 0.5 – 1.1m Light grey brown degraded chalk (embankment) 1.1 – 2.0m White chalk (natural)	2.0m
15	0.0 – 0.2m Dark brown grey soil 0.2 – 0.3m Mid brown grey chalky loam (embankment) 0.3 – 0.5m Mottled grey white chalk (embankment) 0.5 – 0.6m Dark grey brown degraded chalk (embankment) 0.6 – 0.9m Light grey brown degraded chalk (embankment) 0.9 – 1.5m White chalk (embankment)	1.5m
16	0.0 – 0.2m Dark brown grey topsoil 0.2 – 0.4m Mid brown grey chalky loam (embankment) 0.4 – 1.5m White chalk (natural)	1.5m

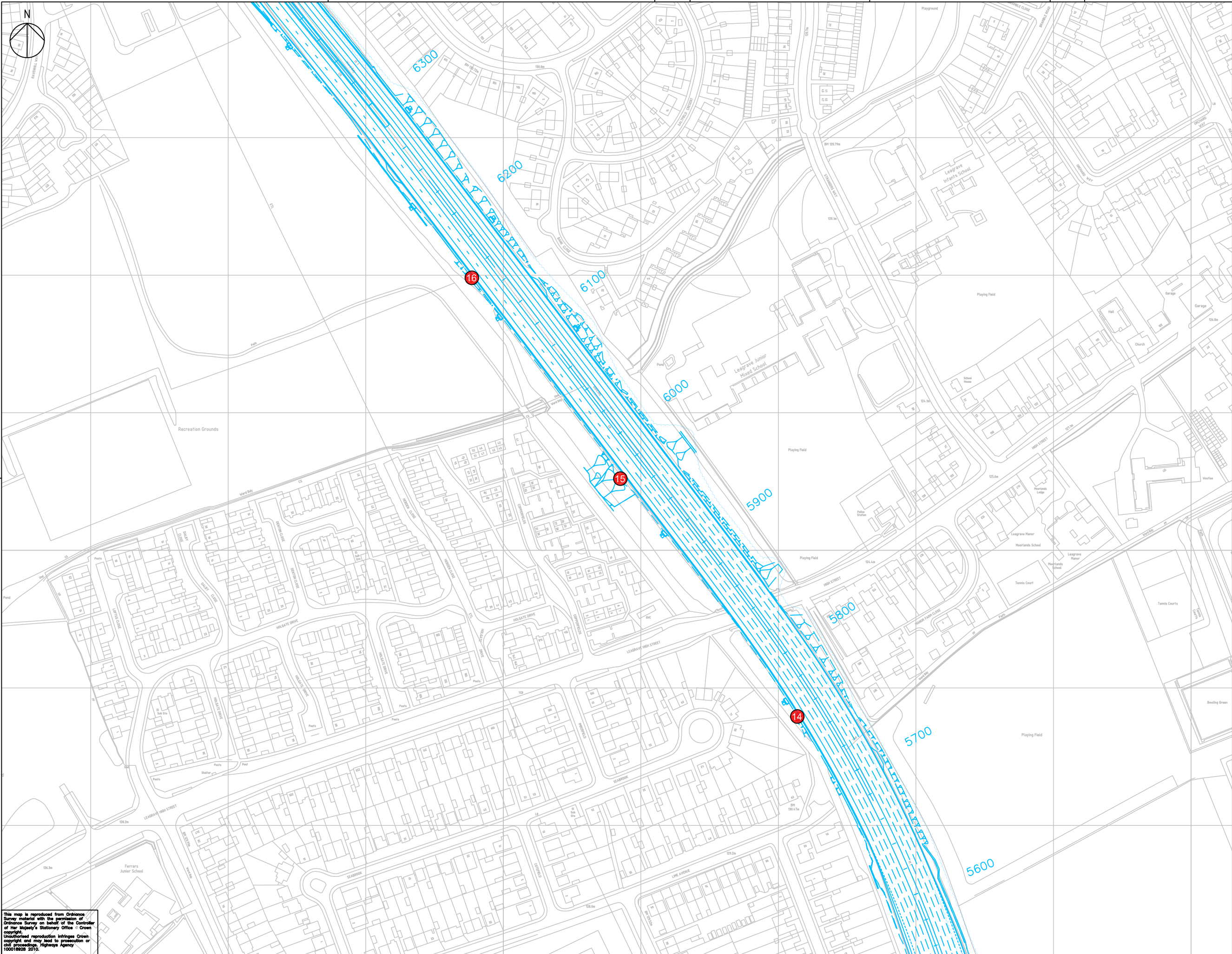
- 5.1.2 None of the trial pits contained any archaeological deposits, features or artefacts.
- 5.1.3 Natural geology was reached in one trial pit, Trial Pit No. 16, at a depth of 0.4 – 1.5m. This comprised white chalk below 0.4m - 1.5m.
- 5.1.4 Trial pits 14 and 15 only impacted upon embankment material consisting of re-deposited degraded chalk material. This reached a maximum depth of *circa* 2.0m.
- 5.1.5 Detailed descriptions of the deposit encountered is presented in Appendix 1.

6 CONCLUSIONS AND RECOMMENDATIONS

- 6.1.1 The results of the geotechnical investigations show that the embankment has been subject to extensive levelling prior to its construction and no archaeological deposits or soil horizons were observed during the monitoring. It is therefore recommended that no further archaeological works be undertaken in this area.

Figures

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NOTES

-  Scheme
-  Test pit numbers

Revision Details	By	Check	Date	Suffix
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DRAWING STATUS			
Code	Description	Current Status	Appd. Date
P	Preliminary		
A	Submitted for Review		
F	Final	X	AR 04/06/10

Job Title
**M1 J10 TO 13
HSR IMPROVEMENTS**

Drawing Title
**LOCATION OF
GEOTECHNICAL
TEST PITS**

Scale at A1 1:1,250			
Drawn AC	Approved AR		
Stage 1 check NF	Stage 2 check AR	Originated CH ROADS	Date 04/06/10



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F/D123845/AR/CON/0125.1

Appendix 1 Record Sheets

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Geotechnical Investigation Record Sheet

Record Sheet 1/3


Site code	Identifier (pit/borehole no)	Date of works
M1 Junction 10-13	TP14	7 th April 2010

Ground cover	Scrub and grass		
Topography	Located on west batter of M1 embankment at Junction 11		
Geology	Chalk		
Dimensions	0.8m x 1.0m	Level (m AOD)	
Chainage:	5,750	Total depth	2.0m

Stratigraphic description

Depth m BGL	Composition	Test Pit Section and Location				
0.0 – 0.2	Dark brown grey topsoil	 				
0.2 – 0.3	Light grey brown degraded chalk (embankment)					
0.3 – 0.5	White chalk (embankment)					
0.5 – 1.1	Light grey brown degraded chalk (embankment)					
1.1 – 2.0	White chalk (natural)					
Notes	The trial pit was excavated on a low section of the M1 embankment on the west side of Junction 11. The trial pit penetrated through the embankment material to the natural chalk below. No buried soils were revealed below the embankment.					
	Located on plan	Photographed	Drawn	Artefacts	Archaeology present	
Yes		√				
No	√		√	√	√	



Depth m BGL		Composition			Test Pit Section and Location	
0.0 – 0.2		Dark brown grey topsoil				
0.2 – 0.3		Mid brown grey chalky loam (embankment)				
0.3 – 0.5		Mottled grey white chalk (embankment)				
0.5 – 0.6		Dark grey brown degraded chalk (embankment)				
0.6 – 0.9		Light grey brown degraded chalk (embankment)				
0.9 – 1.5		White chalk (embankment)				
		</				

Geotechnical Investigation Record Sheet

Record Sheet 2/3

Site code	Identifier (pit/borehole no)	Date of works
M1 Junction 10-13	TP16	7 th April 2010

Ground cover	Scrub and grass		
Topography	Located on west batter of M1 embankment at Junction north of Junction 11		
Geology	Chalk		
Dimensions	0.8m x 1.0m	Level (m AOD)	
Chainage:	6,150	Total depth	1.5m

Stratigraphic description

Depth m BGL	Composition				
0.0 – 0.2	Dark brown grey topsoil				
0.2 – 0.4	Mid brown grey chalky loam (embankment)				
0.4 – 1.5	White chalk (natural)				

