

1EW03 - Enabling Works Central AWHd Survey Report for Archaeological Monitoring at Three Bears Cottage, Grim's Ditch, South Heath Cutting, Buckinghamshire

Site Code: 1C22TBCAM

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1 Summary of Archaeological Works

- 1.1.1 This report details the survey methodology for setting out and surveying Construction Integrated Recording (CIR) undertaken for Archaeological Monitoring for a new fence installation during July 2021 at Three Bears Cottage, Grim's Ditch, South Heath Cutting, Buckinghamshire (henceforth the 'Site'), centred on NGR: 489117, 203468 (Figure 1). The work was undertaken in June 2021 and the site code allocated for this work was 1C22TBCAM.
- 1.1.2 The Site comprised a single Land Parcel C21059 measuring 0.037ha and encompassed a residential property, Three Bears Cottage, this was immediately adjacent to Grim's Ditch, a linear bank earthwork which is a Scheduled Monument and protected by law. The monument is believed to be prehistoric in origin, possibly dating to the Iron Age, and part of a monumental boundary ditch system.
- 1.1.3 The Site required the installation of new fencing to replace part of the landowners existing fence along the perimeter of the Site and install a gate to secure the trackway along the north side of the Site. It was anticipated that the works would partly intrude into the Scheduled Monument protection area for the Grim's Ditch Monument. Due to the sensitivity of the Monument, it was agreed with stakeholders and HS2 that Archaeological Monitoring of the works would provide an appropriate mitigation response.
- 1.1.4 The work was implemented under Change Control, *AWHd – Fieldwork Change Control Form for Archaeological Monitoring at Three Bears Cottage, Grim's Ditch, South Heath Cutting, Buckinghamshire FCCFA033* (1EW03-FUS-EV-FRM-CS03_CL05-000020) and followed the scope, methodologies, and deliverables for Archaeological Monitoring provided in *AWH - Project Plan for Archaeological monitoring and Construction Integrated Recording – Route Wide* (1EW03-FUS-EV-REP-C000-009812). The monitoring sought to address specific GWSI: HERDS objectives applicable to the Site provided in *AWHe C10021 Project Plan for Topographic Survey and Trial Trench Evaluation at Grim's Ditch Scheduled Monument* (1EW03-FUS-EV-REP-CS03_CL05-009409).
- 1.1.5 The Archaeological Monitoring was undertaken on 12 fence posts installed to the eastern edge of the Site. All of the monitored fence post holes were excavated to a depth that penetrated into the underlying geological substrate. Despite the potential for the CIR works, no archaeological deposits were identified, and no finds were recovered.

2 Survey Methodology

2.1 Setting Out

- 2.1.1 Setting out is necessary for intrusive archaeological investigations including Archaeological Monitoring investigation.
- 2.1.2 The purpose is to position the targeted areas, in this case the location of the new fence posts, prior to excavation and any uncovered archaeological deposits excavated within Archaeological Monitoring area on a location plan. The location, size and objectives are set out in the Change

Control (Document no: 1EW03-FUS-EV-FRM-CS03_CLo5-000020) in agreement with the GWSI:HERDS. Each area was assigned a unique ID in accordance with the HS2 Ltd Asset Information Management System (AIMS).

- 2.1.3 All spatial setting out and recording was in accordance with The Ordnance Survey National Grid and Ordnance Survey Newlyn Datum (ODN) as defined by the OS Active Global National Satellite System (GNSS) network and use of a Virtual reference system.

2.2 Surveying

- 2.2.1 Two Permanent Ground Markers (PGM) were established for the duration of the project shown in Figure 2, as per technical standards. The locations were established using the Trimble Access software on Trimble Tablet, TSC3 or TSC7 controllers and R10 or R8s GNSS antennae, calibrated on 23rd July 2021. The survey used reference stations provided by Ordnance Survey. The OS Net base stations used for the survey are in Table 1 below.

Table 1 List of OS Net base stations

Base Station	Easting	Northing	Height aOD (m)
GB_Amersham	198584.7029	499706.5497	87.673572
GB_PrincesRisbo	202913.2382	481016.7351	145.659487
GB_Oxford	214164.3519	449130.1886	72.159934
GB_Huntington	273442.1645	523389.8789	25.981803

- 2.2.2 Both of the PGM's (Table 2) were reoccupied during each survey to check the accuracy of the equipment. The survey equipment was purchased or hired from Korec who certified the accuracy of the equipment and performed regular maintenance.

Table 2 List of PGM co-ordinates

Station	Easting	Northing	Height aOD (m)
STN01	489140.27	203481.33	190.172
STN02	489142.15	203457.24	189.152

- 2.2.3 All staff using the equipment were appropriately trained and the survey was undertaken in accordance with the sub-contractor's standards for surveying.
- 2.2.4 All excavation areas and interventions were located to a horizontal accuracy of +/-500mm in relation to the detail illustrated in the contract drawing(s). The corner points of area at modern ground surface level were surveyed with Real Time Kinematic (RTK) Global Navigation Satellite System (GNSS) equipment or other suitable automated equipment referenced from the PGM's.
- 2.2.5 Surface heights and levels across the area were recorded using RTK GNSS and related to PGMs. Ordnance Survey Bench Marks (OSBM) were not used. Levelling accuracy was within 10 mm/k: where 'k' is the total distance levelled in kilometres.

- 2.2.6 INFRA ensured that excavation limits, and that any significant archaeology detail would be surveyed 'as dug' in relation to the project grid before leaving the site. Ground level height data were recorded for each intervention.

2.3 Site Location Plan: Archaeological Contexts

- 2.3.1 A 'site location plan', indicating site north was prepared at 1:1250. The location of the site plans is identified using OSGB co-ordinates, as required by technical standards.
- 2.3.2 Section drawings are located on the relevant plan and OSGB co-ordinates recorded using a GNSS system.
- 2.3.3 A record was made 'in plan' of all monitored interventions made in the investigation. These plans were normally based on digital survey data (digital planning methods were agreed in advance with the HS2 Ltd) supplemented where appropriate by hand drawn records on polyester based drawing film (at a scale of 1:10 or 1:20 unless otherwise agreed with HS2 Ltd). All hand drawn information was digitised (or preferably generated from the digital data in the first instance). Final deliverables will be supplied in an Esri format and adhere to standards set out in the HS2 Ltd Cultural Heritage GIS Standard (HS2-HS2-GI-SPE-000-000004).

3 Standards and Guidance

3.1 Overview

- 3.1.1 HS2 Ltd has developed a robust suite of technical standards which supports existing archaeological guidance to ensure that works are delivered in a consistent and cohesive manner that reflects the Secretary of State's commitments to the historic environment.
- 3.1.2 To implement the GWSI:HERDS, the sub-contractor complied with and used for the development of historic environment works; the strategies, technical standards and guidance notes set out below in section 3.2.

3.2 References

- 3.2.1 All relevant HS2 standards, guidance and procedures in relation to the production of documents and digital materials were followed. This list is not exhaustive:
- HS2 Cultural Heritage GIS Specification (HS2-HS2-GI-SPE-000-000004)
 - The BIM documents set out in High Speed Two Phase One Project Requirements Specification (PRS) (HS2-HS2-SA-SPE-000-000008) (section 2.1.4 Information Management).
- 3.2.2 The following documents provided background information:
- Historic Environment Physical Archiving Strategy (HS2-HS2-EV-STR-000-000018)
 - Historic Environment Digital Data Management and Archiving Strategy (HS2-HS2-EV-STR-000-000019)

- Information Paper E8: Archaeology. (LWM-HS2-HY-PPR-000-000042)
- Project Plan for Station 53C, Portway Farm (doc. ref. 1EW03-FUS-EV-REP-CS05-007829))
- Location Specific Written Scheme of Investigation for Station 53C, Portway Farm (Document Ref: 1EW03-FUS-EV-REP- CS06_CLog-000001)
- GWSI:HERDS (HS2-HS2-EV-STR-000-000015)

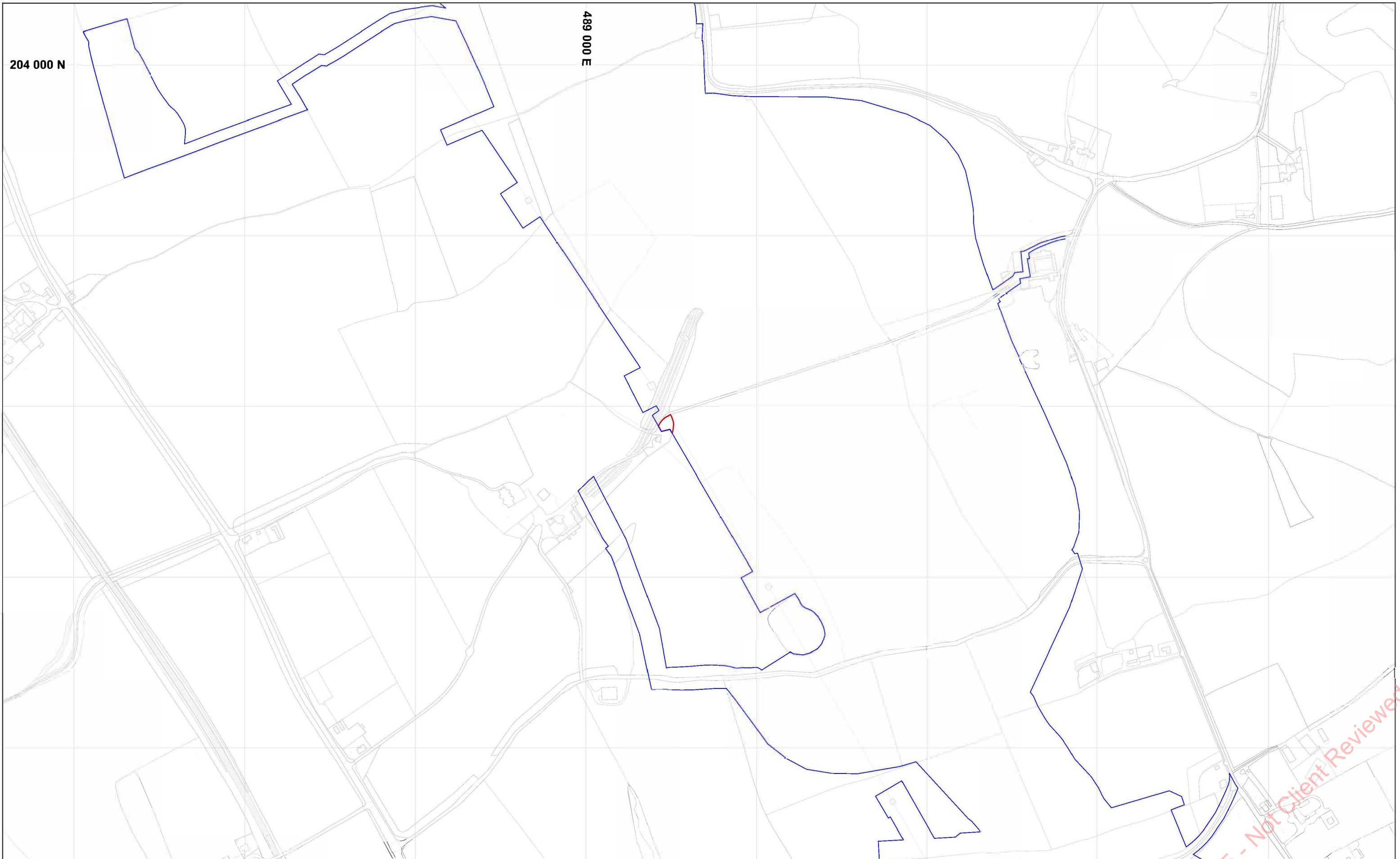
4 Archive deposition

- 4.1.1 Following completion of the archaeological evaluation, the subcontractor will provide the contractor with the required data, metadata and digital material as specified in the Historic Environment Digital Data Management and Archiving Procedure (C262-ARP-EV-SPE-000-000003) and the Historic Environment Digital Data Management and Archiving Strategy (HS2 Ltd, 2015a).
- 4.1.2 The security and stability of the digital archive will be ensured from fieldwork through to deposition.
- 4.1.3 The survey data will be edited to ensure that the archive deposited into the public domain is fit for purpose both as a record of the archaeology removed by excavation and to enhance understanding about the site from which it came.
- 4.1.4 The report will be uploaded to the OASIS database as required by HS2.
- 4.1.5 File-level metadata requirements for spreadsheets and databases are specified in the ADS *Guidelines for Depositors* (2014) Spreadsheets, Databases and Statistics Guidelines. These guidelines include a metadata template that can be downloaded in XLS, ODS and CSV formats.

5 Glossary of terms

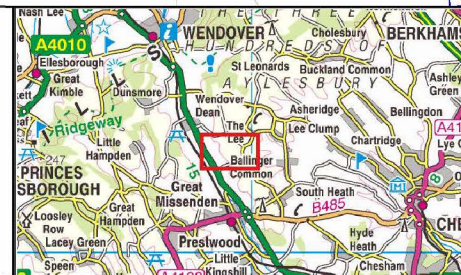
5.1.1 The following terms have been used in this report:

- **Archaeological contractor** – INFRA, the organisation undertaking the specific historic environment works for the *Contractor*.
- **Archaeological recording** - A form of archaeological investigation involving the excavation of an identified area to determine the character and date of any discovered archaeology
- **Contractor** – Fusion; the organisation undertaking the Enabling Works for Area Central on behalf of the Employer.
- **Employer** – HS2 Ltd, the organisation responsible for delivery of HS2 Phase One Scheme and all terms and conditions, policies, procedures, and payments
- **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.
- **Location Specific Written Scheme of Investigation (LSWSI)** - specification document assembling one or more Project Plans within an area of land defined primarily for construction programme purposes. The LS-WSIs will be agreed with the Project Manager and would provide a costed and programmed approach to delivering outcomes.
- **Project Plan** – 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.



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- Legend**
- Site extent
 - Consolidated Construction Boundary

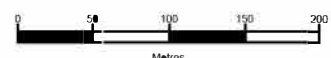


High Speed Two
Three Bears Cottage
Figure 1. Site location
C21059

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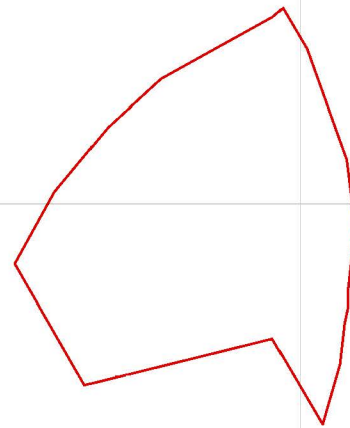
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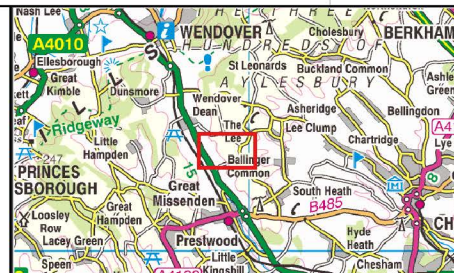
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Legend

-  Site extent
-  Location of control point



High Speed Two
Three Bears Cottage
Figure 2. Location of control points
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