HS2 Phase One Central Section, Archaeological Works, St John's Covert, 1C17SJBH Survey Report

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1 Works Summary

1.1 Introduction

1.1.1 COPA were commissioned by Fusion to undertake deposit modelling with boreholes at HS2 2017 Construction Land Requirement at CR01410 (Project Plan for Deposit Modelling at CR01410 (Colne Valley South Embankment), Buckinghamshire (Document No. 1D037-EDP-EV-REP-C000-000009), henceforth known as the 'Site'. In total the Site covers an area of *c.* 0.9 ha, extending to the east and west of the River Colne, *c.* 0.5km east of Denham. The Site is centred on NGR TQ 05133 86581.

1.2 Works Carried out

1.2.1 The fieldwork focused on eight sample locations (BH001-BH008) arrayed in a single east-west transect across the Site, locations BH001-BH005 being situated west of the River Colne and BH006-BH008 to the east (Figure 1 Survey Plan). Each location was investigated using a window sampler, powered by a Cobra TT petrol driven breaker.

1.2.2 The aims and objectives of these archaeological works are set out in the Project Plan (Doc No. 1D037-EDP-EV-REP-C000-000009).

1.2.3 This survey report specifically sets out the survey methodology and locates the works as outlined in the LSWSI (Document No. 1EW03-FUS-EV-REP-CS01_CL01-000637).

1.2.4 Each of the eight boreholes was located at the pre-determined position identified in the Project Plan Doc No. 1D037-EDP-EV-REP-C000-000009) and this is shown in Figure 1.

2 Survey Methodology

2.1 Set out and Survey

2.1.1 Setting out for eight boreholes was undertaken with coordinate data supplied by the Employer using Leica GS08 Real Time Kinematic (RTK) Global Navigation Satellite System (GNSS) set in network RTK mode, accessing corrections data from Leica Smartnet.

2.1.2 Survey work was conducted by trained and competent COPA staff using Leica GS08 RTK GNSS equipment. All features were surveyed in accordance with *Fieldwork Manual 2: Survey Manual* (CA 2017), compliant with Historic England Metric Survey Specifications. Survey data was related to the Ordnance Survey National Grid (OSGB36/15), with heights given above Ordnance Datum Newlyn (ODN).

2.1.3 Prior to commencement, all equipment was checked and pre-survey information was downloaded onto survey equipment from COPA's File Transfer Protocol (FTP) server. Field recording software for RTK GNSS equipment (Leica SmartWorx) was verified as up-to-date prior to commencement.

2.2 Standards and Guidance

2.2.1 Survey work of trench limits and archaeological features was conducted by trained and competent COPA staff using Leica GS08 RTK GNSS equipment. All boreholes were surveyed in accordance with Fieldwork Manual 2: Survey Manual (CA 2017), compliant with Historic England Metric Survey Specifications. Survey data was related to the Ordnance Survey National Grid (OSGB36/15), with heights given above Ordnance Datum Newlyn (ODN). Surveying of boreholes was conducted by trained and competent COPA staff using Leica GS08 RTK GNSS equipment. Survey control was set out in accordance with Methodology for GNSS total station survey (HS2-HS2-EV-STD-000-000035_P01-P01-1), which set out standards for the installation of highly accurate control stations; providing quality control checks to ensure consistent RTK GNSS measurements during fieldwork. All features were surveyed in accordance with Fieldwork Manual 2: Survey Manual (CA 2017), compliant with Historic England Metric Survey Specifications (HE, 2015). Survey data was related to the Ordnance Survey National Grid (OSGB36/15), with heights given above Ordnance Datum Newlyn (ODN).

2.2.2 All spatial data was recorded by Leica RTK GNSS on an appropriate memory card and transferred to the office using FTP. Non-spatial information was recorded in a field notebook. Survey data was processed daily in Leica GeoOffice, and exported in ESRI Shapefile format before being collated and stored in ESRI File Geodatabase (.gdb) format. The File Geodatabase provided scaled digital data of all required elements of the project and located them within the Ordnance Survey grid with heights given above Ordnance Datum Newlyn (ODN).

2.2.2 All drawings are composed of closed polygons, polylines or points in accordance with the requirements of GIS construction and COPA Geomatics protocols. In all instances, GIS work has followed, and will follow the guidelines set out in the Employer's GIS Standards (HS2-HS2-GI-SPE-000-000004).

2.2.3 The GIS drawing (Figure 1) contains an information layout which includes all the relevant details appertaining to that drawing. Information (metadata) on all other digital files will be created and stored as appropriate. At the end of the survey all raw measurements are made available as hard copy for archiving purposes.

2.2.4 All digital data was backed up on COPA's servers.

2.3 Archive Deposition

2.3.1 The digital data will be temporarily stored on the server at COPA Oxford, which is backed up on a daily basis. In due course, the data will be passed on to HS2 for long-term archival deposition.

For long term storage of the digital data, CDs/DVDs will be used. Each disk will be fully indexed and accompanied by the relevant metadata as provenance.

3 Appendix 1

Figures