Hs2 Phase One Central Section, Archaeological Works, North of Field Cottage Southam Cutting, 1C18NFCAR Survey Report

Document no.: 1EW03-FUS-EV-REP-CS07_CL24-007725

Revision	Author	Checked by	Approved by	Date Approved	Issued for/ Revision details
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1 Works Summary

1.1 Introduction

1.1.1 COPA were commissioned by Fusion to undertake an archaeological evaluation at High Speed 2 2017 Construction Land Requirement LS122. The Archaeological Recording addressed one area of land located c. 500m south-west of Southam, Warwickshire, hereafter referred to as the 'Site' (see Figure 1: Survey Control Plan). The Site comprised one area of land, in use as an arable field, which encompasses an area of c. 0.69ha. The Site was centred at NGR 440904 260876. The Site was required for the proposed ecological mitigation works including the construction of mitigation ponds, hibernacula and reptile basking banks, as well as woodland planting to the north of the Site and grassland planting over much of the Site.

1.2 Works Carried out

1.2.1 The archaeological fieldwork comprised of two large trenches (Trenches 9 and 10) in the areas of the two proposed mitigation ponds.

1.2.2 This survey report specifically sets out the survey methodology and the location of these works as outlined in the Location Specific Written Scheme of Investigation (LSWSI) (1EW03-FUS-EV-REP-C000-002691).

1.2.4 The scope, aims and objectives of the archaeological works are set out in the Project Plan for Trial Trench Investigations at Project Plan for Trial Trench Investigations at Windmill Hill (LS093/94) and Southam (LS122). (1EW03-FUS-EV-REP-CS07_CL24-002689). The scheme was subject to a works variation which meant the size of the trenches was increased. Originally two 30m x 2m trenches were designed for the area of the two proposed ponds with a further contingency of up to 600m^2 strip map and sample excavation to encompass the proposed pond and swale locations. The scheme was altered so that the majority of the areas of the both ecological mitigation ponds could be sampled. In addition, Trench 9 was located to target a feature identified on the geophysical survey. This meant that Trench 9 was increased in size to 13.5m by 7.7m and Trench 10 was increased to 16.5m by 10m. The trenches were stripped, mapped and features identified were sampled.

2 Survey Methodology

2.1 Set out and Survey

2.1.1 Two Permanent Ground Markers (PGM) were installed across the site and located with RTK GNSS equipment. Coordinate values for each PGM were calculated in Leica GeoOffice from the average of two 180 epoch occupations taken an hour apart. PGMs were surveyed at the

start and finish of each survey job, giving an estimate of the absolute accuracy of each day's survey, in accordance with the LSWSI. Setting out for the two trenches 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 of trench limits and archaeological features 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). Surveying of trench limits and archaeological features 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), 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).

2.1.3 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.

2.1.4 Trench limits were recorded at the top and base of excavation. The limits of archaeological features were surveyed immediately following the excavation of each trench in order to provide a plan of all archaeological features prior to hand-excavation. Following hand-excavation, the limits of each feature were re-surveyed, along with the limits of each hand-excavated intervention and the feature base. Sections were hand-drawn, and located using RTK GNSS equipment with drawing points surveyed at each end of the section line.

2.2 Standards and Guidance

2.2.1 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). These files were backed up with originals being stored on COPA's server in Kemble, near Cirencester.

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, 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.

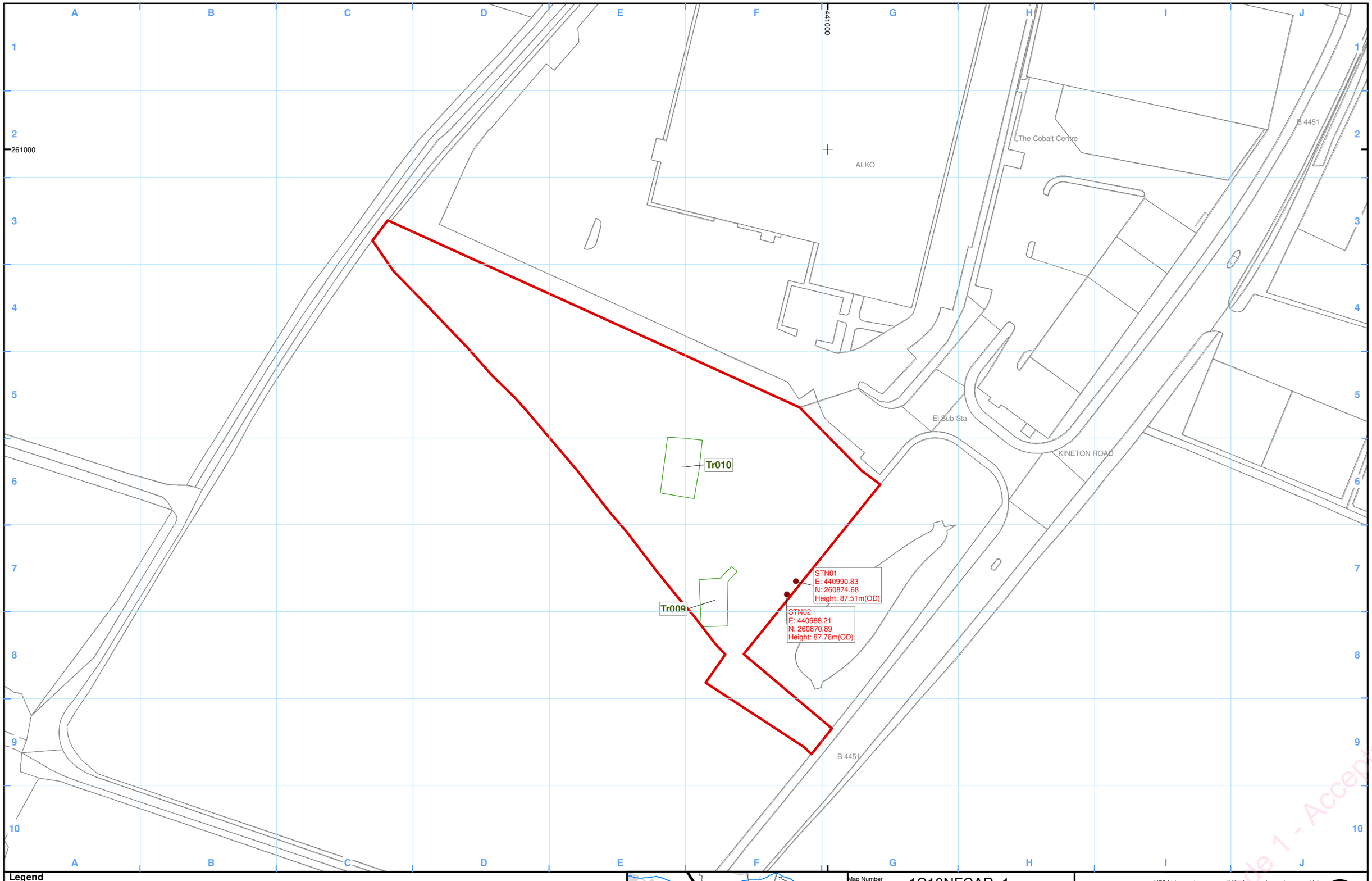
2.2.4 All digital data was backed up on COPA's servers.

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.

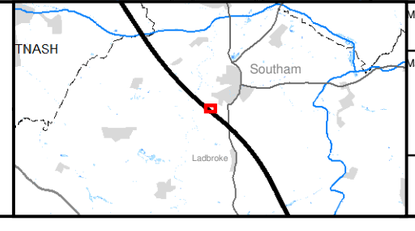
3 Appendix 1

Figures



Legend

- Site Extent
- Evaluation trench
- Control Point



Map Number: 1C18NFCAR_1

Map Name:

Southam Cutting
SURVEY CONTROL PLAN

Community Forum Area (CFA16):
Ladbroke & Southam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway,
Birmingham B4 6GA.

Scale at A3: 1:1,000

0 10 20 30 40
Metres

Doc Number: Figure 1
This figure forms part of report 1EW03-FUS-EV-REP-CS07_CL24-007725

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