AWHh Location Specific Written Scheme of Investigation for Trial Trench Evaluation at Three Bridge Mill, Twyford, Buckinghamshire (AC250/28)

Document no.: 1EW03-FUS-EV-REP-CS06_CL09-007819

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Contents

List of figures

List of tables

1 Executive Summary

1.1.1 This Location Specific Written Scheme of Investigation (LSWSI) sets out the methodology, deliverables, programme, health, safety and environmental requirements, resources and interfaces necessary to deliver an archaeological trial trench evaluation at Three Bridge Mill, Twyford, Buckinghamshire (hereafter referred to as 'the Site'; Figure 1).

1.1.2 It has been prepared by COPA (the Designer), on behalf of Fusion, the Central Section Enabling Works *Contractor* (the *Contractor*) in accordance with the standards and guidance provided by the GWSI: HERDS, the Technical Standards for Specification for Historic Environment Project Plans and Location Specific Written Schemes of Investigation (Document No. HS2-HS2-EV-STD-000-000036) and Specification for Historic Environment Investigations (Document No. HS2-HS2-EV-STD-000-000035) and relevant Historic England and CIfA Standards. The works detailed will be carried out by COPA under the management of Fusion.

1.1.3 The location for the archaeological trial trench evaluation has been selected to address construction programme risk to land required for the proposed development.

1.1.4 The investigation will comprise the excavation of 25 trenches and encompasses two parcels of land: C25077 and C25082 (NGR 467013, 226479) measuring c. 7.74ha in total.

1.1.5 The results of the investigation will inform the detailed design of a programme of further archaeological investigations.

2 Site Location, Extent and Condition

2.1.1 This LSWSI details archaeological trial trench evaluation at Three Bridge Mill, Twyford, Buckinghamshire (hereafter referred to as 'the Site'; Figure 1). The archaeological trial trench evaluation encompasses two parcels of land: C25077 and C25082 (NGR 467013, 226479) measuring c. 7.74ha.

2.1.2 The Site is located in the county of Buckinghamshire and within the parish of Twyford. The western area lies c. 100m from the eastern edge of Twyford. The Site forms part of four arable and pastoral fields located to the north of Portway Road.

2.1.3 The Site is situated within Community Forum Area 13 (CFA) Calvert, Steeple Claydon, Twyford and Chetwode in Archaeological Character Sub-zone (ASZ) 13-17 to the south of Three Bridge Mills, Twyford, Buckinghamshire (Figure 1). Historically ASZ 13-17 has small regular fields indicative of planned enclosures. At least 15 linear features were identified in both parts of the site by a geophysical survey undertaken in 2018 (Document No. 1EW03-FUS-EV-REP-CS06_CL09-007287) and contained within the Project Plan. The western part of the site (C25077) contains evidence for one or more enclosures with circular, rectangular and linear features. The eastern part of the site (C25082) contains approximately 12 linear features

(some parallel). The area of woodland around Chetwode was largely deforested by the end of the early medieval period allowing for the creation of a ridge and furrow archaeological landscape. Agricultural land use continued into the post-medieval period with the medieval open fields divided into smaller more regular fields. The ASZ also includes the site of a medieval mill. There is the potential for both redeposited Palaeolithic remains in the gravels and palaeoenvironmental remains to be 'sealed in' by alluvium. The redisposition of Palaeolithic remains would likely have been redeposited through riverine action eroding terrace gravels of Padbury Brook and reworking of the deposits.

3 Overview of Project Plan

3.1.1 This LSWSI has been prepared to provide the necessary specification and site-specific information to enable the delivery of the trial trench investigations defined in the relevant Project Plan from which the following section is summarised:

- Project Plan for Trial Trench Evaluation for Three Bridge Mill, Twyford (AC250/28) Document no.: 1EW03-FUS-EV-REP _CS06_CL09-007794

3.1.2 A copy of the Project Plan is appended as Appendix 1 of this LSWSI. The Site code is 1C19TBMTT.

3.1.3 Section 2 of the Project Plan sets out the response to the impact on any present archaeological deposits or remains at Three Bridge Mill from the impact of the rail alignment formation and associated earthworks. The archaeological potential of the site is detailed within section 3 of the Project Plan, and above, through background research and geophysical survey (1EW03-FUS-EV-REP-CS06_CL09-007287) and thereafter proposes further investigation through trial trench evaluation. The Site has the potential for Palaeolithic, prehistoric, Roman, medieval and post-medieval remains, primarily in the form of ditches identified by the geophysical survey.

3.1.4 The trial trench evaluation trenches have been positioned to target anomalies identified in the geophysical survey and placed to target apparently 'blank' areas. The Project Plan provides the mechanism for further works, change control, should archaeological remains be revealed which warrant further investigation. The schedule of trial trenches in Section 4 (below) and the scheme of works drawing with this LSWSI (Figure 2) now supersedes that of the Project Plan. The other aspects of the Project Plan such as the scope, aims and general procedures remain the same.

3.1.5 The Project Plan establishes the scope, aims, objectives, methodology (although the scheme design is now superseded by this document) and deliverables for the archaeological trial trench evaluation in accordance with the commitments made in Environmental Minimum Requirements (EMRs) for HS2 Phase One, and the objectives set out in the GWSI: HERDS and HS2 Technical Standards (see section 11 of this LSWSI). It also establishes the requirements for information management, quality assurance and the results of engagement with the

archaeological advisor to the local planning authority. The aims and objectives of the fieldwork, specific aims, research objectives and the potential knowledge outcomes for the Site are detailed within the Project Plan, are listed below; section 3.2.

3.1.6 Section 4 of the Project Plan identifies the contribution the results of the archaeological trial trench evaluation can make to a number of specific research objectives set out in the GWSI: HERDS. The archaeological trial trench evaluation will provide the most suitable method for the identification of archaeological evidence to inform the research objectives which largely focus on the medieval settlement and associated activity in the 11th to mid-14th century.

3.1.7 Sections 5 of the Project Plan details the scope and methodology of the archaeological trial trench evaluation detailing the objectives for each individual trench summarised in section 5 below. The 25 trenches equates to an overall 3.6% sample of the site with trenches 1-9 in land parcel C25077 and trenches 16-25 inland parcel C25082; with contingency for a further 0.5% sample of the site. Trenches 3, 4, 5, 6, 9, 10, 11, 13, 14, 16, 17 and 25 are targeted on geophysical anomalies. Potential alluvial deposits will be machine investigated in trenches 1, 7 and 8.

3.1.8 Section 6 of the Project Plan details the timetable and digital deliverables COPA will produce following the fieldwork which is further detailed in section 5 below. Upon completion of the fieldwork COPA will produce an interim report, trial trenching report, survey report and archaeological summary report.

3.1.9 The Construction Logistics Plan (1EW03-FUS-CL-PLN-CS06_CL09-01572) includes detailed access arrangements for the Site.

3.2 Aims and Objectives

Aims of the Fieldwork

3.2.1 The archaeological trial trench evaluation is required to determine, as far as reasonably possible, the nature of the archaeological resource within the site. Evidence collated from previous investigations (Environmental Statement 2013 Remote Sensing, Geophysical Survey, Documentary research and an Archaeological Evaluation report) detailed within section 3 of the Project Plan suggests there is a potential for the site to contain archaeological remains of prehistoric, Saxon, medieval and post-medieval date. A possible enclosure with associated linear features was identified within western area of the site. The date of these features is unknown, but they may be Saxon or medieval in date as a number of medieval earthworks and an 11th century enclosure have been identified nearby. Alternatively, they may be prehistoric in date as this area is situated on a gravel terrace above the floodplain. These features appear to be overlain by the later ridge and furrow. Further linear features have also been identified within the eastern area. The date of these features is unknown. The western area has a higher potential for archaeological features to survive well as this area appears to

have been used for pasture in the 20th-21st century, whereas the eastern area of the site appears to have been heavily ploughed.

3.2.2 Archaeological trial trench evaluation will provide the most appropriate methodology to confirm the presence/absence and significance of archaeological remains from this broad range of periods.

3.2.3 The aims of the archaeological trial trench evaluation are:

- to confirm the presence/absence, extent and depth of any surviving archaeological remains within the site;
- to determine the nature, date, condition, state of preservation, complexity and significance of any archaeological remains;
- to determine the likely range, quality and quantity of artefactual and environmental evidence present;
- suggest measures, if appropriate and feasible, for further archaeological investigation to mitigate identified significant impacts;
- contribute to the delivery of GWSI: HERDS Specific Objectives as specified in Section 4.2 of the Project Plan.

3.2.4 The reasons for the individual selection of the investigation area are provided in Appendix 1.

Objectives of the Fieldwork

3.2.5 The objective of the investigation is to identify the extent and character of any surviving archaeological remains within the site and to inform an archaeological resource assessment of its knowledge value and ability to contribute to Specific Objectives. The outcomes of the investigation will be used to inform the requirement and strategy of further archaeological investigation. Where present the investigation will define the character, extent, quality, preservation and significance of the archaeology in order to determine its potential to contribute to Specific Objectives set out in the GWSI: HERDS.

4 Programme

4.1.1 The investigations will be completed in 3-4 weeks from 6th January 2020 to the 29th January 2020. COPA have developed the detailed programme and sequencing of the works (included and detailed within the Construction Logistics Plan (1EW03-FUS-CL-PLN-CS06_CL09-01572)).

4.1.2 Where archaeological remains of significance are identified, and further investigation is required this will only be carried out following approval by the *Contractor*. Further investigation may take place in the form of additional archaeological trial trench evaluation, or another appropriate mitigation strategy, that may be implemented prior to, or concurrent with, the works required as part of enabling works construction.

4.1.3 Pre-fieldwork activities will commence on the 6th January 2020 with the setup of the site welfare facilities. A full schedule of the activities is listed within Appendix B of the Construction Logistics Plan. The archaeological trial trench evaluation will commence on the 13th January 2020 in both land parcel C25077 (trenches 1-9) and C25082 (trenches 10-25) concurrently, with the former expected to take one week and the latter two weeks to complete. Section 5 below, detailed the methodologies for archaeological trial trench evaluation with table 1 detailing the specific objective for each trial trench. Demobilisation of the site welfare facility will begin on the 27th January.

4.1.4 COPA will produce the deliverables, as listed and detailed in the Project Plan (1EW03-FUS-EV-REP _CS06_CL09-007794) and section 5, below, upon completion of the fieldwork; 30th January 2020. The interim statement will be produced within 5 working days, the fieldwork report within 30 working days, the summary report and digital archiving will be delivered within 40 working days.

5 *Archaeological Contractor*'s Topic Specific Method Statement

5.1 Plant and equipment

5.1.1 The trial trenching will be undertaken in accordance with specific guidance produced by HS2, namely the Technical Standard Specification for historic environment investigations (HS2HS2-EV-STD-000-000035) and the GWSI: HERDS (HS2-HS2-EV-STR-000-000015).

5.1.2 The 25 trenches to be excavated have been positioned to target anomalies identified in the geophysical survey and placed to target apparently 'blank' areas. This represents an approximate 3.6% sample of the Site by area.

5.1.3 If necessary, an additional contingency of up to 0.5% sample of the Site, equating to 300m², will be excavated to further investigate and characterise significant or unexpected remains should they be encountered during the archaeological trial trench evaluation. Any contingency trenching will only be carried out following approval by the *Contractor*.

5.1.4 All trial trenches listed in Table 1 have been assigned a unique ID in accordance with the *Employer's* Asset Information Management System (AIMS). The trenches have been positioned to avoid the identified constraints but targeted on known areas of highest impact from the development proposals, including the insertion of new services/utilities, and where applicable, they are targeted on anomalies identified by the geophysical survey. The remaining trenches were placed to provide appropriate coverage of the archaeological trial trench evaluation.

Table 1 – Schedule of trial trenches

AIM ID.	Tr. No.	Length	Tr. Width	Max Trench Depth	Objectives/Comments
	001	40	1.8	To bedrock geology	Trench located in an area of alluvium and a sondage will be excavated within the trench to test for palaeoenvironmental and archaeological remains
	002	50	1.8	To natural geology	Random trench location
	003	50	1.8	To natural geology	Targeted on geophysical anomaly (curvilinear and linear features)
	004	50	1.8	To natural geology	Targeted on geophysical anomaly (linear feature)
	005	40	1.8	To natural geology	Targeted on possible rectilinear enclosure (linear feature) trench shortened due to constraints (footpath)
	006	50	1.8	To natural geology	Targeted on geophysical anomaly (linear and circular feature)
	007	50	1.8	To natural geology	Trench located in an area of alluvium and a sondage will be excavated within the trench to test for palaeoenvironmental and archaeological remains
	008	30	1.8	To natural geology	Trench located in an area of alluvium and a sondage will be excavated within the trench to test for palaeoenvironmental and archaeological remains
	009	50	1.8	To natural geology	T shaped and targeted on geophysical anomalies (linear features and several large cut features)
	010	50	1.8	To natural geology	Targeted on geophysical anomalies
	011	50	1.8	To natural geology	Targeted on geophysical anomalies
	012	50	1.8	To natural geology	Random trench location
	013	50	1.8	To natural geology	Targeted on geophysical anomalies
	014	50	1.8	To natural geology	Targeted on geophysical anomaly
	015	50	1.8	To natural geology	Random trench location
	016	50	1.8	To natural geology	Targeted on geophysical anomaly
	017	50	1.8	To natural geology	Targeted on geophysical

					anomalies
	018	50	1.8	To natural geology	Targeted on possible area of HS2 haul road
	019	50	1.8	To natural geology	Targeted on possible area of HS2 haul road
	020	50	1.8	To natural geology	Random trench location
	021	50	1.8	To natural geology	Random trench location
	022	50	1.8	To natural geology	Random trench location
	023	50	1.8	To natural geology	Random trench location
	024	50	1.8	To natural geology	Random trench location
	025	50	1.8	To natural geology	Targeted on geophysical anomalies

5.2 Work package, phasing and delivery

5.2.1 The scope and method for the archaeological trial trench evaluations are set out in Section 5 of the relevant Project Plan (Doc no. 1EW03-FUS-EV-REP CS06_CL09-007794). This section of the LSWSI develops that methodology to provide a clear site specific methodology and information to enable COPA to successfully deliver the programme of archaeological trial trench evaluation.

5.2.2 All archaeological works will be carried out in accordance with the relevant Project Plan, this LSWSI and any further instructions from the *Contractor*. This design takes account of the guidance and specifications set out in the HS2 Phase One EMRs, CoCP, GWSI: HERDS and Technical Standards principally the Technical Standard Specification for historic environment investigations (HS2-HS2-EV-STD-000-000035). The design also follows guidance provided by the Chartered Institute for Archaeologists (CIfA) Code of Conduct (CIfA 2014a) and the Standard and Guidance for Archaeological Field Evaluation (CIfA 2014b).

5.2.3 Prior to the archaeological trial trench evaluation at Three Bridge Mill, a site meeting and walkover will be held between the *Contractor* and COPA to confirm that each of the indicative trench locations remain accessible and clear of obstruction. Access routes, safe working areas and any constraints to the trial trenching works will also be identified.

5.2.4 COPA shall ensure that the archaeological investigations are undertaken in an organised, efficient and professional manner. COPA shall therefore have full regard for the safety of all personnel on site, including measures to ensure the safety of all, including any effects the archaeological trial trench evaluation may have on the daily operations of the landowner, other *Contractor*s engaged in the construction of HS2 Phase One and members of the general public.

5.2.5 The on-site archaeological recording and recovery techniques will be in line with the methods set out in the Project Plan, this LSWSI and current industry best practice and should be fully understood by all.

5.2.6 All paper and digital records made during the course of the archaeological trial trench evaluation, and the treatment of artefacts and environmental remains, will be reviewed continuously. Record checking and collation will be completed at regular intervals, as appropriate, and before an area is considered complete, abandoned, backfilled or the site closed. Errors or omissions in recording discovered during post-excavation cannot be recovered. COPA must make suitable allowance for this task.

5.3 Change control

5.3.1 During the course of the archaeological trial trench evaluation, unexpected, complex or undated archaeological remains may be encountered. In order to inform the decision-making process, and to minimise delays to the enabling works construction programme, it may be necessary to implement a contingency or vary the methodology or extent of the archaeological investigation.

5.3.2 The GWSI: HERDS establishes the need to manage unexpected discoveries and regularly review ongoing fieldwork events (HS2-HS2-EV-STR-000-000015).

5.3.3 In order to promote rapid decision making and to minimise delays a clearly defined change control process will be followed. This change control process will enable:

- rapid decision making during historic environment investigations;
- the implementation of contingencies;
- the variation of methodologies being used on site;
- the localised extension of investigation areas: and
- the rapid implementation of mitigation measures.

5.3.4 The change control process will be recorded using the proforma Historic Environment Fieldwork Change Control Acceptance Sheet at Appendix 3 of this LSWSI and will comprise the following steps:

1. COPA will:
   - prepare an interim summary of the investigation results noting key features or
   - elements of the archaeological remains or structure;
   - provide a proposal for the variation to the works or methodologies; and
   - suggest any new or existing HERDS objectives to which the variation may provide opportunities for knowledge gain;
2. The interim summary will be submitted to the *Contractor*'s Historic Environment Manager who will disseminate the results and arrange a meeting on site with the

Employer's Historic Environment Manager and local authority (stakeholder) archaeologist;

3. At the site meeting all parties will:
   - review the nature, extent and significance of the archaeological remains;
   - review and agree the proposed variation to the works; and
   - signify their endorsement or approval of the variation by signing the Historic Environment Fieldwork Change Control Acceptance Form.
   - at the end of the site meeting the *Contractor*'s Historic Environment Manager will instruct COPA to implement the variation to the works.
4. Following the site meeting the *Contractor* will submit a copy of the completed the Historic Environment Fieldwork Change Control Acceptance Form to the *Employer* via eB.
5. Where the rapid implementation of mitigation measures is required the *Contractor* will, prior to completion of the ongoing archaeological investigation:
   - prepare a new Project Plan detailing the aims, HERDS objectives and specification of the archaeological mitigation and submit it to the *Employer* for acceptance;
   - Request a new site code from the *Employer*; and
   - Update and resubmit the existing LSWSI to include the archaeological mitigation works.

5.4 COPA's information management plan

5.4.1 GIS deliverables will be provided in accordance with the *Employer*'s Cultural Heritage GIS Specification (HS2-HS2-GI-SPE-000-000004). CAD files will be GIS compatible and follow standards set out in the same Specification. Figures may be produced using CAD but final deliverables must be supplied in GIS format.

5.4.2 Mapping and spatial data deliverables will conform to the *Employer*'s GIS Standards as set out in HS2-HS2-GI-STD-000-000002 and other associated referenced documents.

5.4.3 The *Employer*'s standard template for reports (HS2-HS2-PM-TEM-000-000004) will be used.

5.5 Fieldwork methods

5.5.1 No machine excavation will be undertaken without a current and valid Permit to Dig issued by the *Contractor*. All trench locations must be CAT scanned by a suitably qualified NVQ Level 2 operative using a Radiodetection CAT3+ and Genny in both Avoidance mode and in Genny mode to detect the presence of buried services and utilities prior to machine excavation.

5.5.2 All trial trenches will be excavated by a mechanical excavator fitted with a toothless ditching bucket as set out Section 5.2 of the Project Plan and as defined in section 3.14 of the HS2 Technical Standard for Historic Environment Investigations (Document No. HS2-HS2-EV-STD-000- 000035). All machine excavation will comply with the *Employer*'s Technical Standard – Route wide soil resources plan (Document No. HS2-HS2-EV-STD-000-000008)

5.5.3 In addition to the methodology set out in the Project Plan COPA will ensure that:

- The mechanical excavator is of an appropriate size and specification to excavate each trench cleanly;
- That plant is only operated by trained, certified and competent drivers who have completed a safety critical induction;
- That mechanical excavation is only undertaken under the constant supervision of a sufficiently experienced and competent archaeologist and certified banksman;
- That all operatives are briefed daily on the risks of working with the mechanical excavator and proposed plant movements for each day; and
- That operatives do not enter or work within the swinging arm radius of the plant. When approaching the mechanical excavator operatives must only do so from a direction where both the driver and banksman can clearly see the operative (i.e. not from the rear or blind side) and must alert the banksman to their presence. If necessary, the banksman will signal to the driver who will ground the machine bucket.

5.5.4 All trenches will be excavated in spits onto the first archaeological horizon or the surface of the natural geology, whichever is encountered first. Spoil will be banked at a safe working distance of at least 1m from the trench edge, with topsoil banked separately from subsoil and made ground.

5.5.5 If during the machine excavation of a trial trench a significant artefact scatter is encountered, excavation will cease at that horizon until the extent, date, character and significance of the artefacts has been established.

5.5.6 Where it is clear that modern foundations have truncated certain archaeological levels, they should be removed to assess lower archaeological levels. COPA shall take all reasonable care to ensure that any damage to archaeological deposits is limited as for as practicable. If significant damage is likely to occur the work shall be suspended and the *Employer* informed so that a technical solution can be agreed.

5.5.7 Machining shall be carried out under the constant supervision of COPA to excavate the ground in spits. COPA shall use their professional judgement to determine the appropriate depth of each spit. Any variations to the excavation methodology shall be at the discretion of COPA and recorded in writing for inclusion in the final report. Each spit shall be examined carefully to assist the recovery of any archaeologically significant artefacts.

5.5.8 It is the responsibility of COPA to ensure that the finished surface is machined to a suitably 'clean' state in order to identify, define and investigate any exposed archaeological deposits. If the surface is not sufficiently clean, hand cleaning of the surface will be required. Machine excavation will comply with the *Employer*'s Technical Standard - Route wide soil resources plan (HS2-HS2-EV-STD-000-000008).

5.5.9 Metal detectors will be used by experienced staff to scan for metallic finds during the excavation of key archaeological features or deposits.

5.5.10 COPA shall ensure that water is discharged and excavated material from archaeological excavations are stored in accordance with the *Contractor*'s environmental protection requirements (as set out in the package Works Information and their Environmental Management Plan) and any relevant consents for the worksite. The *Contractor* shall monitor discharge rates and, if necessary, conductivity of discharge waters to ensure compliance.

5.5.11 In areas of deep stratigraphy each intervention shall be excavated to the base of the stratigraphic sequence and shall be appropriately shored and kept free of water to allow 'person entry' to the excavations i.e. to allow COPA to undertake investigation and recording to fulfil the aims of the work. COPA will ensure that all works undertaken in deep stratigraphy will comply with the *Employer*'s Technical Standard – Temporary Works (HS2-HS2-CV-STD-000-000005).

5.5.12 Should any material be excavated that is deemed to be contaminated or potentially contaminated it shall be investigated, controlled (e.g. placed separately from clean material) and removed from the site in accordance with the *Contractor*'s environmental protection requirements (as set out in their Environmental Management Plan).

5.6 Fieldwork recording

5.6.1 Digital and paper field-based recording shall be undertaken by the *Archaeological Contractor* to the general requirements as described in the GWSI: HERDS (section 7.3). A sufficient sample of the archaeological features and deposits revealed must be sampled/or fully excavated to allow the resolution of the aims and objectives of the work. Structures, features, or finds which might reasonably be considered to merit preservation in-situ shall not be unduly damaged.

5.6.2 Where areas of extensive archaeological stratification are encountered, the horizontal and vertical extent of archaeological stratification shall be assessed by the *Archaeological Contractor* through implementation of an appropriate strategy including, either the excavation of features cut into horizontal stratification, limited test pitting or auguring. The aim shall be to recover suitable stratigraphic, finds and environmental samples from the full, intended depth of the trench, as far as is practicable. The exact methodology may need to be determined by the *Contractor* during the excavation of individual trenches and agreed with the *Employer*.

5.6.3 In order to protect any waterlogged remains during the works, the *Archaeological Contractor* may identify a requirement for trial excavations to be allowed to refill with water overnight. In such cases, the *Archaeological Contractor* shall ensure that the trench is fenced off with fixed pedestrian barriers and signage is put in place. Any trenches filled with water will pumped as directed by Fusion and a permit to pump will be put in place.

5.6.4 Archaeological recording is to include, as a minimum:

- At least one representative section at (1:10 or 1:20 scale) of each evaluation trench, from ground level to the base of the excavation;
- the written record of individual context descriptions on appropriate pro-forma;
- plans at appropriate scales (1:10, 1:20 or 1:50);
- single context planning should be used only if appropriate;
- photographs and other appropriate drawn and written records; and ·
- other sections, including the half-sections of individual layers or features shall be drawn as appropriate to 1:10 or 1:20.

5.6.5 A 'site location plan', indicating site north shall be prepared at 1:1250. Individual 'trench plans' at 1:200 (or 1:100) shall be prepared which show the location of archaeology investigated in relation to the investigation area. The location of site plans will be identified using OSGB coordinates.

5.6.6 Section drawings shall be located on the relevant plan and OSGB co-ordinates recorded. The locations of the PGM bench markers used and any site TBM shall also be indicated.

5.6.7 A record of the full extent in plan of all archaeological deposits as revealed in the investigation shall be made. These plans will normally be based on digital survey data (digital planning methods shall be agreed in advance with the *Employer*) 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 the *Employer*.). All hand drawn information shall be digitised (or preferably generated digitally in the first instance), and final deliverables will be supplied in an Esri format and adhere to standards set out in the Cultural Heritage GIS Standard (HS2-HS2-GI-SPE-000-000004). Single context planning shall be used where complex stratigraphy is encountered.

5.6.8 Recording of structural evidence revealed below ground level will vary according to the level of special interest of the structure and its relationship to archaeological remains. Structures of little or no significance shall be noted on a site plan. Detailed drawings of important features revealed in investigations may be required in accordance with the aims and objectives of the investigation as defined in the Project Plan.

5.6.9 The photographic record will be in digital format, resulting in high resolution TIFF (uncompressed) images. Photographs will illustrate both the detail and context of the principal archaeological features discovered. In addition, the *Archaeological Contractor* shall take appropriate record photographs to illustrate work in progress. All photographic records will include information detailing: site name and number/code, date, context, scale and orientation.

5.6.10 The trenches shall be pumped dry (by COPA) and any necessary protection measures for archaeological remains (in addition to those for below ground infrastructure, services or utilities) shall be completed prior to backfilling. Generally, all backfill material shall consist of non-toxic, uncontaminated, non-putrescible, natural and inert material. Backfilling will be undertaken in reverse order to excavation, the material being put back in layers and made adequately compacted. Should testing (dynamic compaction test or other) this would be undertaken in accordance with a specification provided by the *Contractor*. Surface conditions shall be reinstated to the required standard.

5.6.11 The *Contractor* shall ensure, in liaison with the *Employer* that adequate protection is provided for any archaeological remains. Any specific archaeological requirements relating to backfilling including use of materials to mark excavated depth, such as geotextiles, shall be specified by the *Contractor* in the LSWSI.

5.7 Hand Excavation

5.7.1 All investigation of archaeological levels will usually be by hand, with cleaning, examination and recording both in plan and section.

5.7.2 Section 5 of the Project Plan provides full details of the percentages of excavation required by feature type. Within significant archaeological levels the minimum number and proportion of features required to meet the aims of the excavation will be hand excavated. Pits and postholes will usually be subject to a 50% sample by volume, at sufficient frequency to characterise the archaeological activity across the site. Linear features will be sectioned as appropriate. More complex features such as those associated with funerary activity will usually be subject to 100% hand excavation.

5.7.3 The stratigraphy of a representative sample of the evaluation trial trenches will be recorded even where no archaeological deposits have been identified. Any excavation, both by machine and by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits, which appear to be worthy of preservation in situ.

5.8 Setting out and survey

5.8.1 All spatial setting out and recording shall be in accordance with The Ordnance Survey National Grid and Ordnance Survey Newlyn Datum (ODN) as defined by the OS Active GNSS network and use of a Virtual reference system. A minimum of three Permanent Ground

Markers (PGM) shall be created using this system for each trench or group of geographically related trenches.

5.8.2 Trial trenches shall be located to a horizontal accuracy of +/-500mm. The corner points of each trench location shall be set out with Real Time Kinematic (RTK) Global Navigation Satellite System (GNSS) equipment or other suitable automated equipment referenced from the PGMs.

5.8.3 Surface heights shall be recorded using RTK GNSS and related to PGMs. Ordnance Survey Bench Marks (OSBM) are not to be used. Levelling accuracy shall be within 10 mmÖk: where 'k' is the total distance levelled in kilometres.

5.8.4 COPA shall ensure that all test pit, trial trench or excavation limits, and significant archaeology detail are surveyed 'as dug' in relation to the project grid before leaving the site. Ground level height data shall be recorded for each trench. Survey methodology and a detailed survey record shall be provided to HS2 Ltd within the survey report.

5.9 Environmental sampling

5.9.1 In line with the *Employer*'s Technical Standard Specification for Historic Environment Investigations (HS2-HS2-EV0STD-000-000035) an initial sampling strategy is set out below for the Site. This strategy is based on the existing information about the Site, gathered from nonintrusive surveys and the HERDS objectives outlined in Table 1 of the Project Plan.

5.9.2 This sample strategy, along with the HERDS objectives outlined in Table 1 of the Project Plan, identify the key elements that should, where present, be sampled during the Archaeological trial trench evaluation. However, the strategy will need to be reviewed throughout the on-site work and, where unexpected features or deposits are identified, revised accordingly to take these into account.

5.9.3 The purpose of sampling at the archaeological trial trench evaluation stage is to identify the range of environmental materials present on site, their preservation, significance and distribution.

5.9.4 Three Bridge Mill site has potential for features associated with later prehistoric/Roman/ early medieval activity as well as with medieval and post-medieval archaeological remains, which could include enclosures, land boundaries, and ridge and furrow earthworks as identified in Section 3.2 of the Project Plan.

5.9.5 Sampling will therefore target the following, where present, as a minimum:

- Archaeological features (pits, postholes, gullies and enclosure and boundary ditches) associated with potential settlement activity of prehistoric and Roman date;
- Floor surfaces and occupation deposits where they survive and have not be truncated; and

- Deposits representing the main phases of activity on site (to assess whether there are changes in rates of deposition or material survival over time).

5.9.6 Sampling will not only just target charcoal rich or wet deposits, but will be undertaken on those features outlined above, taking into account advice from the *Contractor*'s environmental archaeologist. This will ensure that samples are recovered from a representative range of contexts, which adequately characterise past activities on site and allow an assessment to be made of the extent to which they help address palaeoenvironmental and palaeoeconomic questions.

5.9.7 Where unexpected deposits or features are identified during the archaeological trial trench evaluation which are not covered in the initial sampling strategy above, the need for sampling will be assessed in terms of the specific objectives (both those in Table 1 of the Project Plan as well as the remaining HERDS objectives), the sampling strategy will be updated and the features will be sampled accordingly.

5.9.8 All samples will be taken to address a specific question. The purpose of the sample, and the question it has been taken to address will be recorded on COPA's sample record sheet.

5.9.9 Samples will be take using ten litre plastic buckets (with lids and handles), or strong polythene bags (double bagged) secured at the neck, for the recovery of bulk 'disturbed' environmental samples. Labelling will follow guidance set out in the Technical Standard Specification for Historic Environment Investigations (HS2-HS2-EV-STD-000-000035).

5.9.10 For non-waterlogged deposits bulk samples will normally be taken in the range of 40-60 litres. Where contexts have a volume of less than that stated above, then 100% of the context will be sampled. Each bulk sample will only contain sediment derived from a single context. Where waterlogged deposits are encountered, sample sizes will usually be in the range of 10-20 litres, which is suitable for the recovery of macrofossils from these contexts. Samples shall be protected at all times from temperatures below 5°C and above 25°C and from wetting and drying out due to weather exposure.

5.9.11 Where house floors or other buried land-surfaces are encountered and these are sampled, appropriately sized monolith or kubiena boxes will be used for the recovery of 'undisturbed' monolith samples for soil micromorphology and to sub-sample for microfossils (e.g. polled and spores, diatoms, ostracods). Where longer sequences are sampled, contiguous column samples will be collected for the retrieval of macrofossils (e.g. molluscs, plant remains an insects). Further guidance on specialist samples is provided in the Technical Standard Specification for Historic Environment Investigations (HS2-HS2-EV-STD-000-000035, Sections 4.21.22-26).

5.9.12 Processing of all bulk soil samples collected for biological assessment should be completed within two weeks of collection. Processing samples at the time of fieldwork will allow the sampling strategy to be updated and refined where necessary. The preservation state, density

and significance of material retrieved shall be assessed by COPA's recognised specialist. Special consideration shall be given to any evidence for recent change in preservation conditions that may have been caused by alterations in the site environment.

5.10 Human remains

5.10.1 Where human remains are identified, all subsequent work must be undertaken in accordance with the *Employer*'s Human remains and monuments procedure (HS2-HS2-EV-PRO-0000 000008) and Technical Standard Specification for historic environment investigations (HS2 HS2-EV-STD-000-000035 section 4.18 Methodology for archaeological excavation of human burials).

5.10.2 At this Site, there is an unknown potential for the presence of human remains. Should human remains be discovered, COPA shall notify the *Contractor*'s Historic Environment Manager immediately, who will notify the *Employer*, so that the procedures set out in the *Employer*' Human remains and monuments procedure (HS2-HS2-EV-PRO-0000-000008) can be implemented. This notification may be initially made personally or by telephone but shall be confirmed in writing (including email) within 24 hours of discovery.

5.10.3 In the event that human remains are identified, COPA will cease all works at that location until further instruction is provided by the *Employer* and communicate by the *Contractor*'s Historic Environment Manager. COPA shall undertake an initial in situ observation and assessment of the remains and shall advise the *Contractor*'s Historic Environment Manager of the course of action required. The *Contractor*' Historic Environment Manager will then notify the *Employer*.

5.11 Deliverables

5.11.1 All post-excavation archaeological reporting will be completed by COPA in accordance with the Section 4 of the Technical Standard for Historic Environment Investigations (Document No. HS2-HS2-EV-STD-000-000035) and relevant CIfA standards and guidance.

5.11.2 The deliverables for this archaeological trial trench evaluation will be:

- A weekly written progress report throughout the duration of the programme of archaeological works including annotated trench plan (submitted by midday each Monday);
- An Interim Report summarising the results of the completed archaeological trial trench evaluation within 5 working days of completion on site;
- A Trial Trenching (Fieldwork) Report within 6 weeks of completion of fieldwork;
- An HER Summary Report within 8 weeks of the completion of fieldwork; and
- Digital Archival Material including OASIS/Historic Environment Record summary sheets within 8 weeks of the completion of fieldwork.

5.12 Interim report

5.12.1 Unless otherwise agreed, COPA shall submit an interim statement to the *Contractor* within seven days of completion of a fieldwork event.

5.12.2 The interim statement will provide the *Contractor* and *Employer* with the information necessary to inform design decisions relating to:

a. the next stage of archaeological works (if required); and

b. engineering design.

5.12.3 The interim statement shall be brief, and the information contained commensurate with the timescale for production. The report shall be written in a manner which will avoid duplicating effort at a later date and shall draw on the data gathered during the initial assessment undertaken during fieldwork.

5.12.4 A site plan indicating all the extent of fieldwork investigations shall be provided.

5.12.5 For archaeological interventions a plan indicating 'as-dug' investigations shall be provided. For archaeological excavation key stratigraphic profiles and topographic templates of any major stratigraphic units shall be provided.

5.12.6 The interim statement including illustrations shall be submitted as an MS Word and PDF file to the *Contractor*. CAD files will be GIS compatible and follow standards set out in the Cultural Heritage GIS Standard (HS2-HS2-GI-STD-000-000010).

5.12.7 The interim statement shall be submitted in a HS2 Ltd template as a digital document in MS Word file format and PDF file in accordance with the *Employer*'s BIM requirements.

5.12.8 The interim statement shall include an approved report title sheet and QA page.

5.13 Archaeological Trial Trenching Report

5.13.1 The contents of the archaeological trial trenching report are defined at Section 6 of the Project Plan. As set out in the Section 4 of the Technical Standard for Historic Environment Investigations (Document No. HS2-HS2-EV-STD-000-000035) the archaeological trenching report will include each component of the works (e.g. stratigraphic/structural, artefactual and environmental/economic) which shall be supported by a statement setting out:

- a quantification of the resource (tabulated and cross referenced as appropriate);
- provisional dating and evidence for residuality and intrusiveness;
- the range of material, including sampling and/or taphonomic biases; and
- the condition of the material, including preservation bias.

5.13.2 The assessment of results and statement of potential shall include COPA's conclusions based on the recorded data, e.g. the monument/site class represented, site/feature function and

relevant parallels. The statement shall primarily comment on the potential of the data to address the Specific Objectives set out in the GWSI: HERDS. As appropriate, comment shall be made on the site as a whole and the individual components (e.g. artefactual, palaeo-environmental, economic).

5.13.3 In reporting the results of the works, the accuracy of the original expectations and the appropriateness of the methods adopted shall be assessed by COPA in order to illustrate what level of confidence can be placed on the information. The *Contractor*'s Historic Environment Manager will use that information as the basis for developing any further archaeological investigation strategy and/or further analysis and publication.

5.13.4 When submitted at evaluation stage, the report shall set out an outline recommendation for further archaeological investigation to meet the Specific Objectives of the GWSI: HERDS, if required. This may include further investigation and recording of the remains and/or archaeological monitoring. Preservation in situ will only be considered where it can be integrated into the engineering design.

5.13.5 The fieldwork report will be produced with the following structure:

- Executive Summary
- Introduction
- Summary of project's background (including the Specific Objectives addressed)
- Assumptions and limitations
- Description and illustration of the site location
- Previous work(s) relevant to the archaeology of the site (e.g. previous surveys)
- Geology and topography of the site
- Specific Objectives and Aims
- Scope and Methodology, to include:
  - Date(s) of fieldwork;
  - Number and dimensions of trial trenches;
- Results and observations

5.13.6 Stratigraphic report

- Finds report
- Environmental evidence report
- Interpretation of results against original expectations and Specific Objectives

  - Review of evaluation strategy [where appropriate]

- Recommendations and research aims for further investigation
- Conclusions
  - Statement of potential of archaeology
  - Assessment of achievement (or not) of survey objectives.
- Evaluation of methodology employed and results obtained (i.e. a confidence rating)
- Publication and dissemination proposals, including archive deposition
- References to all primary and secondary sources consulted.
- Appendices to include illustrations, contextual summary by trench, finds reports, environmental reports, site matrices [where appropriate] and full definitions of the interpretation terms used in the report.

5.13.7 The trial trenching report will contain figures accompanied by supporting text. All figures within the report shall be on the same paper size, where appropriate. All categories of anomaly identified will be labelled with the appropriate assigned number code on the figures, which will be referred to in the text document.

5.13.8 The following figures will be included in trial trenching reports:

- General plan (mandatory)
- Engineering design (mandatory)
- Site location
- Survey extent and trial trench locations
- Survey results to include plans and sections of archaeological features, deposits and sequences
- Selected photographs of representative and/or significant features and finds

5.14 Post-excavation assessment

5.14.1 The procedures for assessment of potential for analysis (post-excavation assessment); analysis and publication proposals are set out in the HS2 Generic WSI: HERDS (Document No. HS2-HS2-EV-STR-000-000015).

5.14.2 COPA will provide a recommendation for post-excavation assessment of the site archive to the *Contractor* for approval by the *Employer*, where such an assessment is considered

necessary and where this would contribute to Specific Objectives as set out in Section 4 of the Project Plan.

5.14.3 Where COPA is instructed, they shall undertake a post-excavation assessment of the site archive and submit a report of their findings to the *Contractor* and *Employer* in accordance with the Employer's Document Management Procedure (HS2-HS2-IM-PRO-000-000008).

5.14.4 COPA shall produce separate project plans for post-excavation works beyond the assessment stage. The sequence and process set out below shall be followed by COPA.

5.14.5 The main stages of the post-excavation programme to be undertaken by COPA are as follows:

1. processing (collating and ordering the site archive including site records (to be digital unless otherwise specified) and planning documentation (including project plan(s) and LSWSIs));
2. Factual fieldwork report;
3. Formal review point with the Employer; [note: possible break point at this stage]
4. Post-excavation assessment and updated project plan;
5. Initial updating of resource assessment and specific objectives;
6. Formal review point with the Employer; [note: possible break point at this stage]
7. Development of project plan for post-excavation works and acceptance from Employer;
8. analysis;
9. reporting;
10. further updating of resource assessment and specific objectives;
11. dissemination; and
12. archive deposition.

5.14.6 The detailed scope of any post-excavation activity, including processing, factual reports and assessment, will depend on the nature, extent and objectives addressed by the investigations. It is critical however that the processing, factual reporting and assessment works (i.e. steps 1, 2 and 4 in the list above) commence alongside investigatory works, particularly for larger excavations – rapid sharing of knowledge is required to inform works along the route and post-excavation works cannot be delayed for weeks, months or even years after works finish on site.

5.14.7 Further information relating to the above list is set out below.

5.14.8 Following processing (1), the results of fieldwork will be set out in factual fieldwork reports (2) produced by COPA. These will be subject to a formal review point (3) with the Employer to assess the need for the formal post-excavation assessment phase.

5.14.9 The post-excavation assessment phase will be undertaken by COPA and a post-excavation assessment report will be produced (4); this will include a draft updated project plan and recommended changes to the resource assessment and specific objectives (5).

5.14.10 The post-excavation assessment is a critical stage as it will inform the scope of any detailed analysis. The assessment will consider the quality and character of the data, and reviewing the value and potential of the archive against the specific objectives. Should COPA *and* consider that further post-excavation works are warranted to meet specific objectives, the post-excavation assessment will set out requirements for analysis, reporting, dissemination and archiving in an updated project plan for a detailed post-excavation programme. Work will be prioritised and focused on clearly defined objectives and final outputs will reflect the value of the data to address the specific objectives in question.

5.14.11 Following the completion of the post-excavation assessment phase a further formal review point will be conducted (6) and the *Contractor and Employer* will determine if the work package has been completed satisfactorily. The *Contractor and Employer* will also identify at this stage whether to proceed with post-excavation work for that project plan, whether to group and combine post-excavation works for a number of different investigations to better meet specific objectives; or whether to undertake no further post-excavation works in relation to that investigation. These decisions will be documented as part of the formal review point process.

5.14.12 Should a need for detailed post-excavation works be identified by the *Contractor and Employer*, COPA will be instructed to prepare a detailed project plan setting out the works for acceptance form the *Contractor* and *Employer* (7), the project plan will encompass all remaining stages of post-excavation work. Its scope, nature and content will be largely dependent on the complexity and character of the investigation. It should be noted that the project plan may be required to bring together post-excavation works for any number of investigations into a single cohesive process.

5.15 Digital deliverables

5.15.1 Following completion of the archaeological trial trench evaluation COPA will provide the *Contractor* with the required data, metadata and digital material as specified in the Historic Environment Digital Data Management and Archiving Procedure (HS2-HS2-EVSTD-000-000040).

5.16 Resourcing

5.16.1 The following staff will be involved in the project:

NAME	COMPANY	ROLE	Phone	Email Address
Sub-Contractor 's Contacts				
John Dillon	COPA	Project Director	01264 347634 07545 644179	john.dillon@copajv.org

NAME	COMPANY	ROLE	Phone	Email Address
Richard Brown	COPA	Senior Project Manager	[redacted]	[redacted]
Stuart Joyce	COPA	Project Manager	[redacted]	[redacted]
Julian Newman	COPA	Assistant Project Manager	[redacted]	[redacted]
Chris Ellis	COPA	Senior Archaeologist	[redacted]	[redacted]
Bethany Hardcastle	COPA	Supervising Archaeologist	[redacted]	[redacted]
Matthieu Ferron	COPA	Archaeologist	[redacted]	[redacted]
Callum Ruse	COPA	Archaeologist	[redacted]	[redacted]
Abbey Breen	COPA	Archaeologist	[redacted]	[redacted]
Robert Falvey	COPA	Archaeologist	[redacted]	[redacted]
Tommaso Rossi	COPA	Archaeologist	[redacted]	[redacted]
Fusion Contacts				
Nadher Hassan	Fusion	Project Engineer	[redacted]	[redacted]
Sean Levy	Fusion	General Foreman	[redacted]	[redacted]
Sandra Elvira	Fusion	Works Manager	[redacted]	[redacted]
Jay Carver	Fusion	Lead Archaeologist	[redacted]	[redacted]
Dan Hounsell	Fusion	C2 HERDS Manager	[redacted]	[redacted]
Catherine Stevens	Fusion	Land Access Coordinator	[redacted]	[redacted]
Conor Paul	Fusion	Environmental Advisor	[redacted]	[redacted]
Dave Hopper	Fusion	H&S Advisor	[redacted]	[redacted]
James Segar	Fusion	C2 Lead ecologist	[redacted]	[redacted]
Robin Davies	Fusion	Security Manager	[redacted]	[redacted]

NAME	COMPANY	ROLE	Phone	Email Address
Other Contacts				
Helpdesk	HS2		08081 434 434	HS2enquiries@hs2.org.uk

5.16.2 The works shall be managed, directed and staffed by appropriately qualified and experienced personnel. COPA's Key Person shall possess at least ten years' relevant experience.

5.16.3 The excavation, sampling and recording of the works shall be project managed by a Fieldwork Director who is a Member of the Chartered Institute for Archaeologists (MCIfA). Supervisory staff shall have an appropriate level of demonstrable experience commensurate with their specific role i.e. an appropriate level of membership of the CIFA, IHBC or an equivalent demonstrable professional standing.

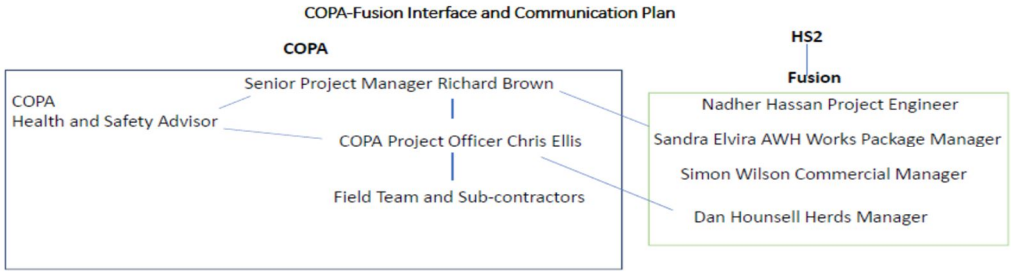
5.16.4 COPA's project team shall include an environmental archaeologist suitably qualified in archaeological science and geo-archaeological sediment description methods, and on site sample processing and assessment techniques.

5.16.5 COPA's project team shall be staffed by technician grades with minimum six months' experience in appropriate aspects of excavation and recording.

5.16.6 Specialist staff employed on any aspect of the works, including post-excavation assessment or analysis of any kind including the writing of reports, shall be suitably qualified and shall be supervised by personnel with a minimum of ten years of relevant experience in their field (this may be inclusive of post-graduate studies).

5.16.7 Specialist staff shall be available, at 24 hours' notice, for the duration of the works to provide advice on any specialist tasks to be undertaken.

6 *Archaeological Contractor*'s Interface and Communication Plan



6.1.1 All parties will follow the *Employer's* protocols for summary- and inter-project communication. to ensure the compatibility of the investigations with the following:

- Detailed design; issues related to MWCC or others;
- Programme sequence for handover parts of the sites to other *Contractors*;
- Health and safety arrangements and site sharing;
- Temporary works and logistical arrangements carried out by COPA or others.

7 Health, Safety and Environment Management

7.1.1 Safety is a core HS2 Ltd value, and is expressed as caring for your workforce, our passengers and the public by creating an environment where no one gets hurt.

7.1.2 The HS2 Health and Safety Strategy (Document: HS2-HS2-HS-STR-000-000002) describes HS2's approach, vision, mission, and values with respect to health and safety.

7.1.3 All archaeological works will be undertaken in accordance with the *Employer*'s Health and Safety Policy (Document No. HS2-HS2-HS-POL-000-000001), the policies and guidance set out in the Enabling Works, Works Information (WI0900) and the *Contractor*'s Health and Safety Policy and Construction Phase Health and Safety Plan.

7.2 Risk Assessment and Method Statement

7.2.1 Prior to the start of each archaeological trail trench evaluation a draft Health and Safety Plan and Risk Assessment and Method Statement (RAMS) for the works will be prepared and submitted to Fusion for review and approval.

7.2.2 The Method Statement will clearly identify the methods and processes that will be implemented to fulfil the aims, objectives and requirements of the Project Plan and this LSWSI. The Method Statement will be prepared in liaison with Fusion, taking account of the Fusions Urgent Works Package 1 Environmental Management Plan and other relevant site information provided by them and requirements for the works set out in the Works.

7.2.3 Information (e.g. relating to health and safety, security, engineering design requirements and attendances).

7.2.4 The Method Statement shall include, as appropriate:

a. A resource plan and programme and CV's;

b. The IT capability and proposed IT plan (including specific survey methods for on-site recording of stratigraphic profiles and sub-surface topographic modelling;

c. The approach to Archaeological Science;

d. The methods for survey and setting out works;

e. The methods to address the specific event types required (trial trench, area excavation etc);

f. The safe method of working whilst excavating trenches or pits including any temporary works required;

g. The method for disposing of water from trenches and test pits in waterlogged ground;

h. Site management plan to include details of the method for preparing safe access route to the working areas, the proposed site accommodation, services and welfare;

i. The retention and disposal policies for samples and artefacts recovered during the work;

j. The method for excavating and recording inhumations and cremations in compliance with the HS2 Human Remains and Monuments Procedure (Document No. HS2-HS2-EVPRO- 000-000008);

k. The method for preparation of the required reports, archive and all associated deliverables;

l. The procedures for assessment of potential for analysis (post-excavation assessment); analysis and publication proposals;

m. The method for preparation of the digital dataset, digital drawings, and digital report deliverables in line with the *Employer*'s Technical Standards;

n. The methods and approach for undertaking the site based works and off site processes to completion.

o. The Health and Safety Plan and Site-Specific Risk Assessment (including unexploded ordnance);

p. The Quality Assurance Plan;

q. The procedures for on- and off- site security and emergency response plan (including environmental incidents);

r. The method for complying with project generic and site specific environmental and consent requirements; and

s. The requirements and specification for services and facilities and attendances required to be supplied by Fusion.

7.2.5 The Risk Assessment and Method Statement is prepared in liaison with Fusion to ensure the health and safety requirements of both stakeholders are fulfilled.

7.2.6 The Risk Assessment and Method Statement will be submitted to Fusion for comment and approval.

7.2.7 No ground intervention or other survey shall be made without approval of the Health and Safety Plan, Risk Assessment and Method Statement by Fusion.

7.3 Site Inductions

7.3.1 Prior to the start of the archaeological works site operatives will complete an Area Central Enabling Works induction provided by Fusion and undertake a mandatory drugs and alcohol test.

7.4 PPE

7.4.1 Mandatory PPE to be worm by all members of the fieldwork team personnel will comprise:

- Full orange High Visibility jacket/vest and trousers;
- Hard Hat;
- Gloves;
- Light Eye Protection;
- Lace-up boots with ankle support, steel insoles and toe caps (rigger boots are not permitted).

7.4.2 For further information please refer to the Works Package Information for the Enabling Works Contract.

7.5 Site Specific Constraints

Watercourses

7.5.1 A watercourse runs along the western edge of the Site, the west edge of land parcel, C25077. A buffer of 8m will be established from this watercourse in which no excavation or spoil storage will be undertaken. The buffer has been taken into account in trench design and will be visibly demarcated on site.

Agriculture

7.5.2 The Site is predominantly located within mixed arable and pastoral farmland. COPA will follow the methodology for mechanical excavation and backfilling set out above to maintain the agricultural quality of the land. COPA will also ensure that the fields are in a suitable condition for the investigations (i.e. no livestock, mature crops) prior to commencement.

Services and Utilities

7.5.3 Fusion has completed a review of known services and utilities present within the Site using combined utilities drawings and information. This data includes an up to date PAS 128 underground utility detection, verification and location survey of the site which was carried out by Fusion.

7.5.4 The full services and utilities service check carried out by Fusion identified both buried and overhead services in the western area within or directly adjacent to the site. The buffer zone for all of the services will be 10m (Figure 2). The overhead height clearance for the overhead cable is 6.6 m at its lowest point. Arrangements for these services are detailed in the Construction Logistics Plan. These comprise GS6 compliant crossing in the western area for overhead cables and a 10 m buffer.

7.5.5 In addition to the services identified by the recent surveys CAT scanning will be carried out at each trench location prior to the start of the works and during the excavation of the trenches. This will be undertaken by a suitably qualified NVQ Level 2 operative using a Radiodetection CAT3+ and Genny in both Avoidance mode and in Genny mode to detect the presence of buried services and utilities prior to machine excavation.

Overhead Services

7.5.6 Overhead Medium Voltage Powerlines (OVMPL) are located in the western area on a north-east/south-west axis through the centre of the Site with buffer zones for further Overheads located in the western and eastern Site limits. A buffer of 10m was applied for the overhead service lines when designing the trench layout and it will need to be visibly demarcated on site with a physical barrier and fenced crossing point with goal posts. A GS6 compliant crossings

will be implemented by COPA when manoeuvring machinery in the vicinity of the overhead cables.

7.5.7 The height of the overhead cable has been measured to be 6.6 metres at its lowest point. Passing clearance has been approved by Fusion Utility team as 3 metres. Goal Posts will be set to a height of 3.6 metres. No work is allowed underneath overhead cables at any time. The machine driver driving underneath cable must be qualified and competent. The height restrictor must be in place when crossing.

Buried Services and Utilities

7.5.8 No buried services have been identified within the Site; however the 8m buffer zones associated with buried telecom and water services are located in the south-eastern limits of the western area. This is illustrated on Figure 2 and discussed in the Construction Logistics Plan.

Mechanical Plant

7.5.9 Site plant and equipment operated by COPA must be physically inspected, along with the required documentation, before being offloaded upon delivery to, and before being used on Site.

7.5.10 Records of daily/weekly plant inspections, including fault reporting, will be maintained on Site by COPA and will be available for inspection by the *Contractor*.

7.5.11 Details of plant and equipment operators shall be maintained by COPA and evidence of periodic checks from plant hirers that the plant has been adequately maintained shall be obtained. Copies of all plant operators' certification will be provided to the *Contractor* prior to the start of the archaeological trial trench evaluation.

Construction Traffic

7.5.12 The archaeological works will be undertaken in advance of Enabling Works and Main Works construction activity. With the exception of plant provided by COPA, it is not anticipated that there will be any other construction traffic operating within the three Sites during the trial trench investigation.

Unexploded Ordnance (UXO)

7.5.13 A review of UXO Risk assessment data held on HS2's gViewer GIS system has been undertaken by the *Designer*. This has been verified by the *Contractor*. This has identified the site specific UXO risk for both Sites as being Low Hazard.

7.5.14 In the unlikely discovery of any UXO's COPA's site supervisor will follow the *Contractor*'s emergency procedure (1EW03-FUS-HS-PLN-C000-000001):

- Evacuate the area ensuring the completion of a roll call.
- Verify the location of the UXO and ensure it is quarantined.

- Contact the *Contractor*'s Project Manager to report issue and await instruction. The *Contractor*'s Silver or Gold Command will contact the appropriate emergency services and contact any 3rd parties who have an interest in the site e.g. the *Employer*'s Project Manager
- The *Contractor*'s Silver or Gold Command will contact UXO Specialists.

7.5.15 The emergency procedure will be described in COPA's Risk Assessment and Method Statement.

Public Rights of Way

7.5.16 Public rights of ways are located in both of the land parcels. Two public footpaths are located centrally to the western area running across the centre of the site aligned east/west and north-west/south-east extending for 105m and 130m across the area respectively. The northern footpath continues into the eastern area extending east/west for 35m. A pedestrian fence (crowd barrier fencing) 1m either side of the public right of way will be installed prior to the works on Site. The pedestrian walkway will allow the safe passage of members of the public across this part of the site and no vehicles should operate in close proximity to the pedestrian fence. Crossing points will allow safe access across the PRoW for machines and vehicles.

Temporary Works

7.5.17 It is anticipated that all trial trenches excavated within the Sites will be shallow and that they will not require temporary works. If during the excavation of the trial trenches a need for temporary works is identified works will cease at that location, the trench temporarily backfilled and the *Contractor*'s Historic Environment Manager informed. The *Contractor* will assess the requirement for temporary works and will be responsible for their design, installation and maintenance.

7.5.18 Temporary works will be co-ordinated by the *Contractor*'s Temporary Works Co-ordinator (TWC) who will be responsible for ensuring that the planning, erection, use, maintenance and dismantling of temporary works is undertaken in line with the *Contractor*'s temporary works process and as agreed with the relevant Temporary Works Manager (TWM). A temporary works schedule produced at tender stage will be reviewed and updated at regular intervals.

7.5.19 All temporary works will be designed and installed in accordance with the *Employer*'s Technical Standard for Temporary Works (Document No. HS2-HS2-CV-STD-000-000005), the *Contractor*'s IMS and Construction Phase Health and Safety Plan.

Interaction with the general public

7.5.20 If approached by members of the public or local residents about any aspect of the archaeological trial trench evaluation COPA shall maintain a cautious and polite response. All enquiries regarding the HS2 Phase One, COPA should advise members of the public to HS2 Helpline 020 7944 4908, who will direct the query appropriately.

Ecology

7.5.21 If during the course of the works COPA becomes aware of evidence for protected species such as, inter alia, reptiles or Great Crested Newts are revealed, works shall be suspended in that location and area fenced to clearly demarcate the ecological constraint. COPA will immediately inform the *Contractor*, who will notify the *Employer*.

7.5.22 The *Contractor* will assess the requirements for ecological mitigation and advise COPA on the appropriate measures to changes to their working method that should be adopted. All archaeological works will be undertaken in accordance with the *Contractor*'s Urgent Works Package 1 Environmental Management Plan.

7.5.23 A review of ecological constraints was completed as part of the Project Plan and the following constraints identified:

- Otters. The stream to the west of the western area contains one confirmed otter holt (Figure 7). A30m buffer from this holt has been included in the scheme design.
- Bats. Several trees have been noted as suitable for nesting bats within the site including two within the eastern area. The *Archaeological Contractor* should seek advice from an ecologist on the potential of bats on the site and whether certain trees can be removed if needed for access.
- Wild Boar. During the site visit a sign along the former railway track warns against wild boar. Advice should be sought on how to mitigate the risk from these animals as they can be dangerous to people especially when guarding young.
- Great Crested Newt populations (AMP 039) have been recorded in the area of the site (C25077). An ecologist will need to be present during the trial trenching works to conduct a fingertip search. In order to protect GCN against being trapped in the trenches, access ramps should be excavated at the ends of the nearby trenches and each trench will be checked for newts daily prior to starting work. In the event that GCN are encountered, appropriate procedures, defined within the Great Crested Newt Unexpected Finds Method Statement (doc. No. 1EW03-FUS-EV-MST-C000-000014) will be followed, with any work carried out by accredited agents (under the licence issued to HS2 by Natural England).
- Barn owl. There is one possible location for barn owls in the south-west corner of the western area. The *Archaeological Contractor* should seek advice from an ecologist on the potential of barn owls and any mitigation procedures that may be required.
- Badgers. Although there are no badger setts on the site itself there are four setts mid-way between the two areas of the site. This suggests that both areas of the site are likely to form part of a wider badger territory. In order to protect badgers against falling into

trenches, fencing will need to be erected and ramps left overnight within each trench. Each trench will also need to be checked for badgers daily prior to starting work.

7.6 Plant noise

7.6.1 COPA shall only use plant that meets industry standards for noise and pollutant emissions and shall limit the operation of plant to the core working hours.

7.7 Site safety and security

7.7.1 Following site set-up the archaeological trial trench evaluation will be conducted in accordance with the information provided in the relevant Project Plans and this LSWSI and the safe methods of work described in COPA's Risk Assessment and Method Statement.

7.7.2 All staff involved in the fieldwork should be CSCS qualified to a minimum standard as an 'Operative'. Staff CVs will include CSCS qualifications.

7.7.3 All site personnel will be provided with COPA's Risk Assessment and will familiarise themselves with the following:

- Site emergency and evacuation procedures;
- The Site's health and safety coordinator;
- The first aiders; and
- The location of the nearest hospital and doctor's surgery.

7.7.4 COPA shall take precautions to ensure that all plant and materials are securely stored within the limits of each of the Sites. Particular care should be taken to lock welfare and site accommodation when not occupied and for plant to be fitted with lockable screens and fuel caps.

7.7.5 Plant will be stored overnight adjacent to the welfare units and within a locked Heras fenced compound. The *Archaeological Contractor* will provide manned 24hour security and will install CCTV cameras within the site compound.

Accident and incident reporting

7.7.6 Accident and incident reporting will follow the guidance and procedures set out in the *Employer*'s Works Information and the *Contractor*'s Standard for Accident and Incident Investigation and Reporting (Document No. SH2 STD1) and Incident & Emergency Preparedness Plan (Document No. 1EW03-FUS-HS-PLN-C000-000001).

7.7.7 COPA's Risk Assessment and Method Statement will include a clear procedure for responding to an incident and list of emergency contacts including the *Contractor*'s Duty Manager and SHEQ Manager.

7.7.8 All accidents and incidents must be recorded in the site accident book and entered onto the *Contractor*'s SHEQ Tracker within 24 hours as well as the HS2 AssessNet incident reporting database. All incidents MUST be reported to the *Contractor*'s Duty manager and SHEQ department immediately in person or by telephone.

7.7.9 Accidents and incidents defined by the *Employer* as level 1 or 2 are also to be immediately reported to the *Employer*s helpdesk on 0207 944 6570 which is available 365 days of the year, and open 24 hours.

7.7.10 Records of accidents or incidents reportable under the Reporting of Incidents Diseases and Dangerous Occurrences Regulations (RIDDOR) are confidential and must be stored securely on site.

7.7.11 Should the public or a utility be involved in an accident or incident, ensure that public liability claim forms are completed if necessary. All near misses and learning events MUST also be reported to the *Contractor*'s SHEQ department

Core Working Hours

7.7.12 COPA shall adhere to the core working hours below unless otherwise agreed with the *Contractor* and *Employer*'s Project Manager and the relevant Third Party through a Consent.

7.7.13 The core working hours are from 08:00 to 16:00 on weekdays (excluding public holidays) and from 08:00 to 13:00 on Saturdays.

7.7.14 COPA may utilise a period of up to one hour before and up to one hour after core working hours for start-up and close down of activities. Start-up and close down activities shall not include operation of plant or machinery likely to cause a disturbance and shall not be considered an extension of core working hours.

7.8 Welfare and First Aid

7.8.1 COPA will provide adequate welfare and first aid in-line with the *Contractor*'s Integrated Management System (IMS) standards and guidance. The welfare and first aid provision must be detailed in COPA's Method Statement and Risk Assessment.

7.8.2 COPA will ensure that appropriate numbers of first aid trained personnel and first aid kits are available at:

- All site locations
- In vehicles where this has been identified as necessary or good practice
- In strategic locations within office setups.

7.8.3 Posters will be displayed in COPA's welfare/site accommodation stating the location of first aid boxes, first aiders, appointed persons and action to be taken in case of an incident.

7.9 Neighbouring properties and businesses.

7.9.1 COPA shall conduct the works in professional and considerate manner and with the minimum disturbance to the adjacent residents.

7.9.2 The guidance for good housekeeping set out at Section 6 of the Enabling Works Information WI0200 General Constraints (Document No. 1E001-HS2-PR-ITT-000-000098); including locating site accommodation/welfare facilities to avoid overlooking residential property and the management of staff congregating outside of the Site prior to commencing or leaving work, will be followed.

8 Site Monitoring and Engagement

8.1.1 Prior to commencing the works, COPA shall agree a programme of weekly-written progress reports and periodic progress meetings with the *Contractor's* Historic Environment Manager and shall be represented at such meetings to the satisfaction of the *Contractor*. COPA shall provide information describing progress on-site to date and feedback from any initial assessment.

8.1.2 Where required, the *Contractor's* Historic Environment Manager shall arrange site visits with specialist stakeholders and expert bodies to provide advice on-site where this is considered beneficial and agreed with the *Employer*. This will be undertaken within the *Employer's* communication protocols set out in the *Employer's* Community Relations Strategy.

8.1.3 Periodic updates on the progress of the Area Central Enabling Works archaeology programme shall be submitted to the *Employer* and Local Authority Archaeologist by the *Contractor's* Historic Environment Manager. COPA shall provide information to the *Contractor's* Historic Environment Manager as requested to inform this reporting.

8.1.4 The *Contractor's* Historic Environment Manager shall arrange and convene monitoring site visits with the *Employer* to assess the quality and progress of the archaeological works and their adherence to HS2 technical standards and procedures.

8.1.5 The *Employer* may invite the Local Authority Archaeologist to attend these meetings, as appropriate. The *Employer* will be responsible for informing Historic England and the local authority historic environment specialists on the progress of fieldwork activities and findings.

8.1.6 In addition to monitoring visits, the *Employer* may plan and host media events or documentary recording, particularly in the event of a significant archaeological discovery. If requested to do so, COPA shall provide the HS2 media team with escorted access to the Site. Any request for media access will be confirmed in advance, in writing, by the *Contractor's* Historic Environment Manager.

8.1.7 There shall be no unauthorised access to the works in any other circumstances. Any visits to the works shall be in accordance with the *Contractor's* health and safety, site access and security requirements.

9 Quality Assurance

9.1.1 This section will be completed by COPA and will include quality assurance process describing how the project will be delivered to an excellent standard and will detail the check and approve process. The Quality Assurance Plan, Record keeping and reporting required and PMU reporting schedule, Environmental records and reporting.

9.1.2 All archaeological works will be delivered in accordance with the *Contractor*'s AWH Quality Plan (ref. 1EW03-FUS-QY-PLN-C000-001658) and the standards and guidance set out in the following documents:

- High Speed Rail (London–West Midlands) Environmental Minimum Requirements.
- High Speed Rail (London–West Midlands) Environmental Minimum Requirements Annex 3: Heritage Memorandum (Document No. CS755 02/17).
- High Speed Rail (London–West Midlands) Environmental Minimum Requirements Annex 1: Code of Construction Practice (Document No. CS755 02/17).
- HS2 Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy (Document No. HS2-HS2-EV-STR-000-000015).
- HS2 Technical Standard: Specification for Historic Environment Investigations. (Document No. HS2-HS2-EV-STD-000-000035).
- HS2 Technical Standard: Historic Environment Physical Archive Procedure (Document No. HS2-HS2-EV-STD-000-000039).
- HS2 Technical Standard: Historic Environment Digital Data Management and Archiving Procedure (Document No. HS2-HS2-EV-STD-000-000040).
- HS2 Cultural Heritage GIS Specification (Document No. HS2-HS2-GI-SPE-000-000004).
- Chartered Institute for Archaeologists (CIfA), 2014a. Code of Conduct.
- CIfA, 2014b. Standard and Guidance for Archaeological Field Evaluation.
- Historic England, 2015. Management of Research Projects in the Historic Environment (and associated guides and project planning notes).
- Historic England, 2015. Geoarchaeology: Using earth sciences to understand the archaeological record.
- English Heritage, 2011. Environmental Archaeology: A guide to the Theory and Practice of Methods, from Sampling and Recovery to post-excavation (second edition).

9.1.3 COPA undertaking the archaeological trial trench evaluation is expected to have Chartered Institute for Archaeologists (CIfA) accreditation as a Registered Organisation (RO) and their supervisory staff to have an appropriate and relevant level of demonstrable experience for the specific task in question, i.e. full members of the CIfA, or an equivalent demonstrable professional standing.

9.1.4 All members of COPA's site team are expected to be suitably qualified, experienced and competent professionals. All site operatives will hold a current and valid CSCS qualification to at least 'Operative' level.

9.1.5 The interim and final trial trench evaluation reports will be prepared and conducted by suitably qualified, experienced and competent professionals. The resultant reports will be issued in draft to the *Contractor*, whose Historic Environment Manager will check and review each report prior to issue to the *Employer* for acceptance. Final reports, following comments, will be checked and reviewed again prior to issue.

10 Resourcing requirements

10.1 General Requirements

10.1.1 COPA shall provide project personnel of experience as described below. The personnel shall be approved by the *Contractor*. Approval may be withdrawn by the *Employer* at their discretion and in accordance with the contract conditions.

10.1.2 COPA shall submit CVs of all proposed personnel including any specialists, but excluding site technician grades, to the *Contractor* for approval if this has not already been done as part of the pre-qualification process.

10.1.3 The works shall be managed, directed and staffed by appropriately qualified and experienced personnel. COPA's Key Person shall possess at least ten years' relevant experience.

10.1.4 The trial trenching and recording of the works shall be project managed by a Fieldwork Director who is a Member of the Chartered Institute for Archaeologists (MCIfA). Supervisory staff shall have an appropriate level of demonstrable experience commensurate with their specific role, i.e. an appropriate level of membership of the CIFA, IHBC or an equivalent demonstrable professional standing.

10.1.5 COPA's project team shall be staffed by technician grades with a minimum of six months' experience in appropriate aspects of archaeological excavation and recording.

10.1.6 Specialist staff employed on any aspect of the works, including post-excavation assessment or analysis of any kind including the writing of reports, shall be suitably qualified and shall be supervised by personnel with a minimum of ten years' relevant experience in their field (this may be inclusive of post-graduate studies).

10.1.7 Specialist staff shall be available, at 24 hours' notice, for the duration of the works to provide advice on any specialist tasks to be undertaken.

11 *Archaeological Contractor*'s Site Management Plan

11.1.1 Code 1 CLP to be attached.

12 *Archaeological Contractor*'s Safe Method of Working

12.1.1 Code 1 RAMS to be attached.

13 Appendices

Appendix 1 – Project Plan

Document No	Document Title	Site codes	Status
1EW03-FUS-EV-REP CS06_CL09-007794	AWH Project Plan for Trial Trench Evaluation at Three Bridge Mill, Twyford, Buckinghamshire (AC250\28)	1C19TBMTT	Code1

Appendix 2: Glossary of terms

13.1.1 The following terms have been used in this report:

- ***Archaeological Contractor*** – the organisation undertaking the historic environment fieldwork and reporting on behalf of the *Employer*.
- ***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** – 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 combine historic environment investigation programme of assessment, evaluation and investigation.
- **Location Specific WSIs (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 Plans** – 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 HERDS and be delivered within an agreed budget.
- **Works** – the specific historic environment assessment, evaluation or investigation works at each location.

Appendix 3: References

Title	Reference
Chartered Institute for Archaeologists (CIfA), 2014a. Code of Conduct	Chartered Institute for Archaeologists (CIfA), 2014a
Standard and Guidance for Archaeological field evaluation	Chartered Institute for Archaeologists (CIfA), 2014b
Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials	Chartered Institute for Archaeologists (CIfA), 2014c
Project Plan for Trial Trench Evaluation at Three Bridge MIll Twyford (AC250)	1EW03-FUS-EV-REP-CS06_CL09-007794
Geophysical Magnetometer Survey at Three Bridge Mill, Calvert Cutting and Twyford Embankment, and Twyford Padbury Brook, Twyford Cutting and Twyford Embankment, Buckinghamshire (AC250/10)	1EW03-FUS-EV-REP-CS06_CL09-007287
English Heritage, 2006. Management of Research Projects in the Historic Environment (and associated guides and project planning notes)	
High Speed Rail (London-West Midlands) Environmental Minimum Requirements Annex 3: Heritage Memorandum	CS755 02/17
High Speed Rail (London-West Midlands) Environmental Minimum Requirements Annex 1: Code of Construction Practice	CS755 02/17
HS2 Phase One Environmental Statement and Supplementary Environmental Statements	ES 3.5.2.12.4 ES 3.5.2.12.5 ES 3.5.2.12.6 ES 3.5.2.12.7
HS2 Technical Standard: Cultural Heritage GIS Specification	HS2-HS2-GI-SPE-000-000004
HS2 Technical Standard: Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy	HS2-HS2-EV-STR-000-000015
HS2 Technical Standard: Specification for historic environment investigations	HS2-HS2-EV-STD-000-000035
HS2 Technical Standard: Specification for Project Plans and Location Specific Written Scheme of Investigations	HS2-HS2-EV-STD-000-000036
HS2 Technical Standard: Historic Environment Digital Data Management and Archiving Procedure	HS2-HS2-EV-STD-000-000040
HS2 Enabling Works Information WI0200 General Constraints	1E001-HS2-PR-ITT-000-000098

Fusion Standard for Accident and Incident Investigation and Reporting	SH2 STD1
Fusion Construction Phase Health and Safety Plan	
Fusion Incident & Emergency Preparedness Plan	1EW03-FUS-HS-PLN-C000-000001
Fusion AWH Quality Plan	1EW03-FUS-QY-PLN-C000-001658

Appendix 4 – Fieldwork sign off sheet

Historic Environment Fieldwork Sign-off Sheet			
Work Package Reference			
Historic Environment Investigation Type			
Contractor			
Fieldwork Conducted by (Site Director)		Dates	
Summary of Results			
Document References			
1.			
2.			
3.			
4.			

Compiled by	Name	Date	Signature
Checked by	Name	Date	Signature
Approved by	Name	Date	Signature

Appendix 5 – *Archaeological Contractor's* Input into the LSWSI

13.1.3 Location Specific Written Scheme of Investigation has been set out by the *Designer* in the accompanying Project Plan (Doc. ref. TBC). The LSWSI shall be completed by COPA for approval, along with the Risk Assessment Method Statement (RAMS), prior to commencing the works.

13.1.4 The sections of the LSWSI that will require completion by COPA include:

- Programme: detailed programme (including schedule of dates and a detailed Gantt chart baseline programme);
- *Archaeological Contractor's* Topic Specific Method Statement: this section has been laid out by the Designer, but COPA is required to complete this to provide methods and approach for the undertaking of the site based works and off site processes to completion;
- *Archaeological Contractor's* Interface and Communication Plan: COPA will describe and outline the interface and consultation to be undertaken and the results of the constraint review and deign exercise;
- Health, Safety and Environment Management and RAMS (provided as a separate document;
- Site Monitoring and Engagement: details of *Archaeological Contractor's* arrangements for enabling the monitoring and engagement requirements by HS2, Fusion and other stakeholders and community engagement plan;
- Quality Assurance;
- Resourcing requirements and budget;
- *Archaeological Contractor's* Site Management Plan;
- *Archaeological Contractor's* Safe Method of Working; and
- Figures (as relevant).

14 Figures

14.1.1 Figure 1 showing site location has been prepared. COPA shall prepare all additional figures, as necessary, in accordance with the relevant HS2 Ltd BIM, GIS and CAD standards.

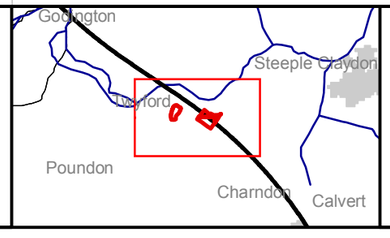
Table 2 - Figures

Figure title	Description
Figure 1 Site location	Plan showing the extent of the individual locations of the land parcels detailed in the Project Plan
Figure 2 Scheme design	Plan showing the trench design of AC250/8

13-19
13-18
13-16
13-17
13-15
13-14
13-13
C25077
C25082

Legend

- Route
- Site
- Access Point
- CXXX Fusion Site GIS ID No.
- Consolidated Construction Boundary
- Local Authority Boundary
- Archaeological Character Sub Zones
- Watercourse
- Waterbody
- Public Right of Way
- Tracking route for 360 excavator



High Speed Two

FIG. 1
Twyford Three Bridge Mill:
Site location

Community Forum Area (CFA13)
Calvert, Steeple Claydon,
Twyford & Chetwode
Internal

HS2

Scale at A3: 1:5,000

0 50 100 150 200
Meters

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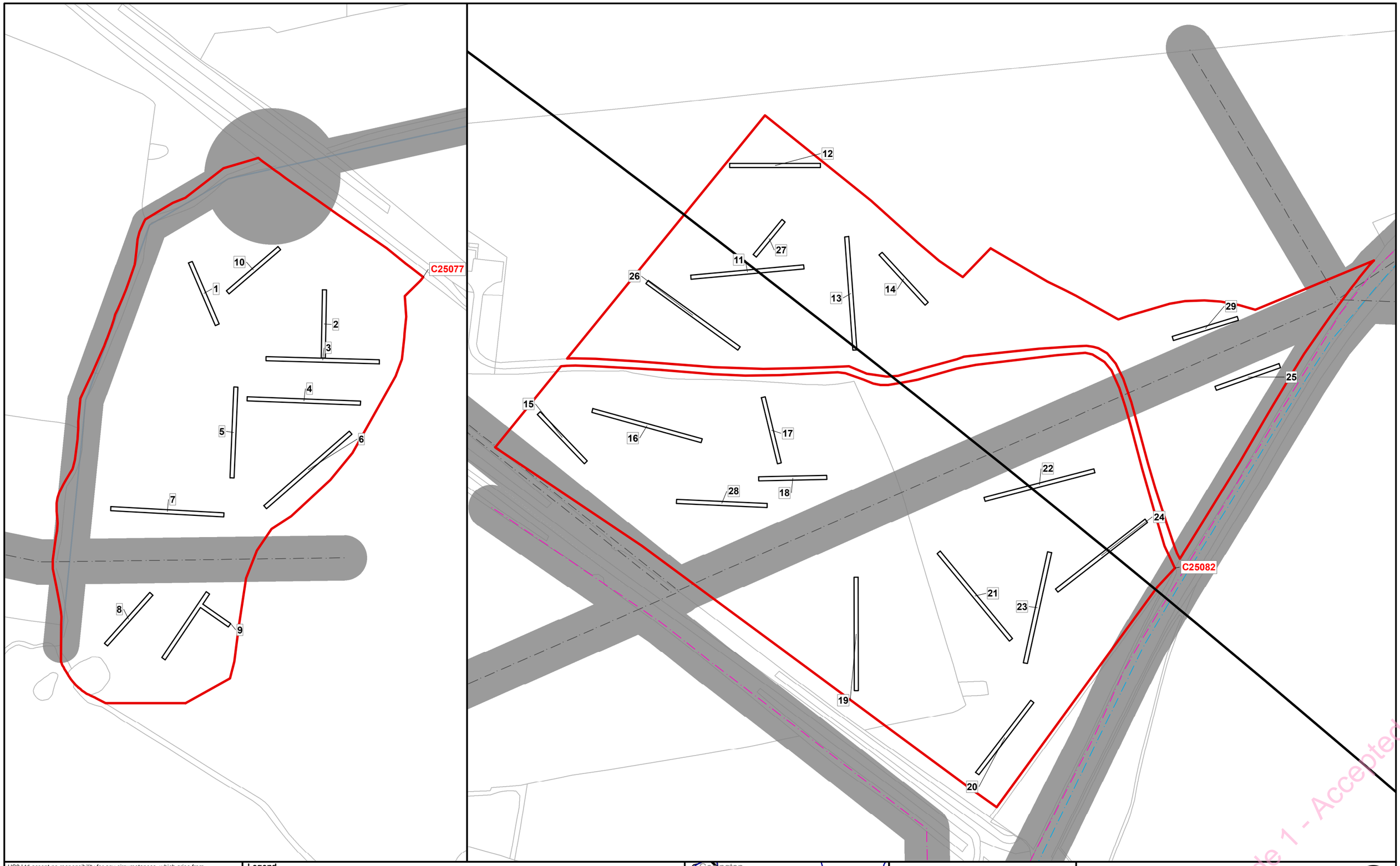
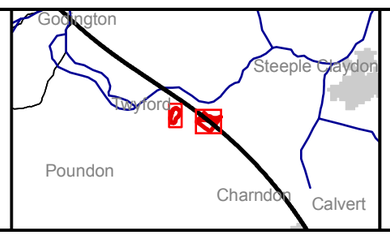
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Doc Number: 1EW03-FUS-GI-MAP-CS06_CL09-000038 **Date:** 08/11/19



Legend

- Route
- Site
- CXXX Fusion Site GIS ID No.
- Watercourse
- Constraint
- Proposed trench location
- OV cable
- MV Overhead line
- Telecom
- Water pipe



High Speed Two

FIG. 2
Twyford Three Bridge Mill:
Service location plan

Community Forum Area (CFA13)
Calvert, Steeple Claydon,
Twyford & Chetwode
Internal

HS2

Scale at A3: 1:1,500

0 15 30 45 60
Meters

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Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Doc Number: 1EW03-FUS-GI-MAP-CS06_CL09-000038 **Date:** 13/11/19