

M5 Junction 10 Improvements Scheme

Environmental Management Plan Annex B.8 Archaeological Management Plan TR010063 – APP 9.8

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Environmental Management Plan Annex B.8 - Archaeological Management Plan

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B.8. Archaeological Management Plan

B.8.1. Introduction

Purpose

- B.8.1.1. This document forms Annex B.8 of the Environmental Management Plan (1st iteration EMP) (Application document TR010063/APP/7.3). Annex B.8 is an Archaeological Management Plan (AMP) (1st iteration) for the M5 Junction 10 Improvements Scheme (the Scheme). This AMP (1st Iteration) will be updated by the appointed Principal Contractor (PC) into an AMP (2nd iteration), as required by Requirement 3 of the DCO, prior to commencement of works.
- B.8.1.2. The purpose of this AMP (1st iteration) is to provide a baseline of archaeological work to date and to outline a process for the further identification and evaluation of archaeological remains that may be impacted by the Scheme. It will provide the outline specification for an Archaeological Project Design (formerly Written Schemes of Investigation [WSI]) that will discharge the archaeological requirements of the Development Consent Order (DCO) and mitigate or off-set the impacts of the Scheme on the historic environment. The AMP will form a record of the required treatment of heritage assets through the course of the detailed design and construction of the Scheme.

Structure of the archaeological management plan

- B.8.1.3. The AMP provides a summary of the archaeological work undertaken on the Scheme to date, and the management of archaeology to be subsequently developed through its design and construction life. The operation of the Scheme has been scoped out of the AMP, as detailed in Chapter 11 of the ES (Cultural Heritage) (Application document TR010063/APP/6.9). The AMP consists of the following:
- A summary of the archaeological and historic baseline and potential for as-yet unknown buried archaeological remains.
 - A scope of work outlining the general aims of the phased approach to the identification, evaluation and mitigation of impacts to heritage assets impacted by the Scheme.
- B.8.1.4. The general aims and methodologies to be used in the development of Archaeological Project Designs.

Project team roles and responsibilities

- **The Client** – Gloucestershire County Council.
 - **Archaeological Consultant** – The nominated consultancy employed by the Client to provide consultancy advice for the Scheme.
 - **Principal Contractor (PC)** – The construction contractor appointed by the Client to conduct the detailed design and construction of the Scheme.
 - **Archaeological Subcontractor** – the nominated archaeological company employed by the Contractor to carry out archaeological investigations for the works which is required to be a Chartered Institute for Archaeologists (CIfA) registered organisation (RO).
- B.8.1.5. Stakeholders – the statutory advisors to the Secretary of State (SoS). For the purposes of this AMP, these include Historic England and the local planning authority's (LPA) archaeological advisor. A Statement of Common Ground (SoCG) with Historic England has been prepared for the DCO application (Application document TR010063/APP/8.6)

and sets out consultation undertaken to date on the Scheme and will continue to be updated throughout the Examination process.

B.8.2. Aims and objectives of the AMP

- B.8.2.1. This AMP has been produced to identify the heritage deliverables and archaeological works, grouped into various Archaeological Work Phases, and sets out how these work phases are progressed within each construction Development Stage. The AMP has been developed to act as an overarching Archaeological Project Design to guide the archaeological mitigation required for the Scheme. This is expected to include the identification of archaeological remains, evaluation of their significance, and the preservation of that significance through recording. The identification and evaluation of archaeological remains impacted by the Scheme was undertaken during the environmental impact assessment process and is reported in Chapter 11: Cultural Heritage of the ES (Application document TR010063/APP/ 6.9). Due to a variety of conditions, including a developing design process, land access, and safety concerns, only part of the Scheme was subjected to these activities as a proportionate approach to ensuring the consideration of the historic environment during the development of the Scheme.
- B.8.2.2. The new Link Road has been subject to geophysical survey and evaluation trenching. Outside of the alignment of the Link Road that have been surveyed, archaeological interventions (geophysical surveys, evaluation trenching, and archaeological mitigation) have yet to be agreed with the local planning authority archaeologist. Surveys and evaluation trenching within the motorway boundaries was considered a safety risk disproportionate to the potential for significant archaeological remains and has therefore not been undertaken or planned. Section B8.5 below outlines the general aims and methodologies for the archaeological interventions that will be undertaken for the various construction stages. The Archaeological Subcontractor will work closely with the Client and PC to ensure the final design has been subject to archaeological review and mitigation where necessary.

B.8.3. Archaeological background and potential

- B.8.3.1. The archaeological background and potential of the study area is set out in Chapter 11: Cultural Heritage of the ES (TR010063/APP/6.9). A summary of the archaeological background and potential is set out below. Designated heritage assets are referred to by their National Heritage List for England (NHLE) reference number, and non-designated assets by their Gloucestershire Historic Environment Record number (GHER).
- B.8.3.2. The following sources were consulted to establish a baseline for the historic environment:
- National Heritage List for England (NHLE).
 - Gloucestershire Historic Environment Record (GHER).
 - Know Your Place: West of England digital mapping.
 - Portable Antiquities Scheme (PAS).
 - Gloucestershire Historic Landscape Characterisation (HLC) data.
- B.8.3.3. In addition to the desk-based searches to identify and evaluate the heritage baseline, a geophysical survey of the land proposed for the Link Road was conducted and the findings incorporated herein. To characterise and assess the below-ground archaeological remains identified during the desk-based studies and geophysical surveys, a programme of trial trenching was conducted along the length of the proposed Link Road. The results are presented in Appendix 11.3 and 11.4 of the ES (TR010063/APP/ 6.15) and incorporated into this AMP. Site visits were undertaken to evaluate the settings of the known designated heritage assets where access with the landowner could be agreed.

- B.8.3.4. A gazetteer of heritage assets, with their locations shown against the Scheme, is provided in Appendix 11.1 - Gazetteer and 11.2 – Figures of the ES (Application document TR010063/APP/ 6.15).

Designated heritage assets

- B.8.3.5. A total of 31 designated heritage assets are recorded within the study area defined in the ES. These include one scheduled monument (Moat House Moated Site [1016835]), one Grade I listed building (the Church of St Mary Magdalene, Boddington [1172312]) and 29 Grade II listed buildings. As can be seen in the figures included in Appendix 11.2 of the ES (TR010063/APP/6.15), these are scattered across the study area. Some, such as those associated with churches, form tight groups that sit within a closed setting such as a churchyard and maintain a designed setting that protects the significance of the assets. Others, such as The Gloucester Old Spot (1340058) are significant in part due to their location that relied on historic foot and coach traffic to survive. Many of the listed buildings within the study area are located on the edges of that study area, where the distance from the Scheme, alongside existing vegetation and landscaping, provides sufficient buffer from potential significant impacts. The location of designated assets is provided in the Historic Environment Sites and Features Plan – Designated Receptors (Application document TR010063 /APP/2.12).
- B.8.3.6. Three groups of designated assets are assessed as having the potential to be significantly affected by the Scheme:
- The Scheduled Monument (1016835) and four Grade II listed buildings (1091874, 1154528, 1303797, and 1340069) located at Moat House, c. 100 m south of the A4019 at Moat Lane.
 - Two Grade II listed buildings (1091875 and 1303770) c. 160 m north of the A4019 near the Uckington & Elmstone Hardwicke Village Hall.
 - Two Grade II listed buildings (1088722 and 1305182), c 200 m west of the new Link Road between the B4634 and the A4019 and associated with archaeological remains of Withybridge Mill (GHER 6474). An additional Grade II listed building, 1172272, is located nearby, but not associated with Withybridge Mill.

Non-designated heritage assets

- B.8.3.7. The underlying geology of the area includes Cheltenham Sand and Gravels, which is known to correlate with prehistoric and Romano-British settlement patterns. Geophysical surveys conducted for this Scheme in 2020 by Magnitude Surveys identified a number of archaeological anomalies, with an extensive area of remains shown within the boundaries of GHER 8637. Initial interpretations suggested these are the remains of a late prehistoric or Romano-British settlement.
- B.8.3.8. Evaluation trenching along the route of the Link Road confirmed the nature of these anomalies and identified additional non-designated heritage assets in the form of archaeological remains related to late prehistoric and Romano-British settlement (see Appendix 11.4 of the ES (TR010063/APP/6.15)).
- B.8.3.9. The study area includes a variety of other known archaeological remains relating to prehistoric and historic use of the region. Cropmarks recorded in the study area are suggestive of prehistoric settlement, and excavations at All Saints Academy, near the eastern end of the Scheme, show confirmed activity dating to the middle Bronze Age. Unsurprisingly for the area around Cheltenham, Romano-British archaeological remains are found throughout the study area, including settlements and field systems. An area of cropmarks thought to relate to a later prehistoric or Romano-British field system (GHER 8637) is recorded in the field south of the A4019, within the boundaries of the Link Road to the B4634.

- B.8.3.10. Early medieval remains have been identified through archaeological excavations near All Saints Academy. Cropmarks and earthworks of possible shrunken medieval settlements attest to later medieval settlement, along with the scheduled monument at Moat House, and other moated sites (not scheduled), in the study area. Structures and archaeological remains associated with medieval and post-medieval mills are recorded along the River Chelt. Post-medieval turnpikes and associated structures, as well as other built heritage assets, are seen throughout the study area. More recent heritage seen in sites relate to World War II defences of the area.
- B.8.3.11. Of particular interest is the drainage design and construction stages near the non-designated archaeological remains recorded near the Fire Station, GHER29641. Despite HER29641 being described by the HER as 'Ditches, pits and post holes probably representing a Roman field system, Uckington', the same location is associated with event HER37941, the archaeological excavation in advance of the construction of a new fire station in Uckington. The excavation provided evidence for activity on the site during the Iron Age, Roman, Saxon and post-medieval periods. Though the number of Iron Age features is low, the presence of a ring ditch suggests there was some occupation on the site in this period. The presence of well-preserved waterlogged wood, including three wooden structures, within a number of large pits provisionally dating to both the Roman and Saxon periods, is significant. The wood assemblage is a very rare survival within the UK, particularly in a rural context.

Historic landscape

- B.8.3.12. The Gloucestershire Historic Landscape Characterisation (HLC) reports were consulted to further understand the nature and significance of the surrounding landscape. HLC attributes are not heritage assets; values are not assigned, and impacts are not specified. This is because the historic landscape is the result of the entire history of any parcel of land and therefore reflects all periods and uses up until the present day.
- B.8.3.13. HLC information can be used to identify contributions of setting to the significance of heritage assets, as well as assisting in the development of sympathetic development within the historic landscape. HLC data for the study area shows it to be predominantly enclosed fieldscapes. Most of the enclosed fieldscapes within the study area are the result of parliamentary type enclosures, with some being later reorganisations and enclosures created in the 20th century. Overall, the historic landscape character of the study area represents an active modern farming landscape, with traces of earlier boundaries dating from post-medieval periods. The exception is the area immediately surrounding the Moat House Scheduled Monument (101683) which retains the medieval moat that makes up the Scheduled Monument along with other landscape features likely associated with the medieval development and use of the site.

Previous Investigations and Mitigation

- B.8.3.14. In order to characterize and evaluate the buried archaeological assets impacted by the Scheme, a programme of geophysical survey and trial trenching was conducted along the length of the new Link Road. The work was restricted to the new Link Road due to concerns over safety and access of working within the existing highway boundary and because it was determined that the Link Road was where the greatest uncertainty regarding potential significant impacts was held.
- B.8.3.15. A magnetometry survey was conducted by Magnitude Surveys in autumn 2020. The survey identified numerous archaeological anomalies that were consistent with the HER interpretation of cropmarks at GHER 8637. The results of the geophysical survey are included in Appendix 11.3 of the ES (Application document TR010063/APP/6.15).
- B.8.3.16. The results of the geophysical survey suggested complex archaeological remains but did not provide a clear understanding of their sensitivity (value). To evaluate this and determine whether or not the remains were of schedulable quality, evaluation trenching was undertaken in the summer of 2021. The trenching revealed complex archaeological features relating from the middle Iron Age to middle Romano-British (3rd century AD)

periods and indicative of a long period of use with good preservation, including waterlogged deposits. See Appendix 11.4 of the ES (Application document TR010063/APP/6.15).

B.8.4. Research Potential

- B.8.4.1. The South West Archaeological Research Framework (SWARF1) provides the overarching research strategy for archaeology in Gloucestershire. The SWARF will be used to guide research aims and objectives across the Scheme. This AMP provides an overview of the anticipated research potential for the known heritage across the Scheme. However, the research aims and objectives may change as evaluation and mitigation works present new information. Individual site-specific Archaeological Project Designs will be developed taking into consideration the research potential outlined in this AMP as well as any new research potential identified by ongoing archaeological work.
- B.8.4.2. The SWARF identifies eight strategic themes:
- Theme A: Settlement Sites and Landscapes.
 - Theme B: Artefacts and the Built Environment.
 - Theme C: Environment and Dating.
 - Theme D: Social Identity and Change.
 - Theme E: Economies and Subsistence.
 - Theme F: Widening Access and Interpretation.
 - Theme G: Funding and Resources.
 - Theme H: Methodologies.
- B.8.4.3. The late Iron Age/ Romano-British site at GHER8637 is likely to be able to contribute to many of these themes relating to non-villa Roman settlements. Theme A specifically calls out the need for improved understanding between geophysical survey results and cropmark enclosures during this period. In addition, the location of GHER8637 between Cheltenham and Gloucester may be able to contribute to further research on technologies and links to trade during the period (Theme B). Other themes may be identified during the recovery and analysis of additional material from this site and be able to add to the knowledge of the period.
- B.8.4.4. Themes F, G, and H are expected to be able to be addressed by most archaeological sites uncovered through the duration of the Scheme and the implementation of this AMP. Site specific Archaeological Project Designs should incorporate robust public involvement strategies that improve access to archaeology and the interpretation of the historic environment. The Archaeological Project Designs are further expected to include provisions for innovative methodologies as well as potential for future research and opportunities for additional funding to facilitate this research.
- B.8.4.5. The SWARF includes resource assessments for each time period, with recommendations for addressing the research agendas for the region. These should inform the Archaeological Project Designs through the course of the archaeological investigations and be updated as information on the nature and dates of the archaeological remains are identified.

¹ [South West England Archaeological Research Framework - South West England Research Framework \(researchframeworks.org\)](https://researchframeworks.org) (accessed 6 March 2024)

B.8.5. General Aims and Methodology for Heritage & Archaeological Work Methodology

Aims

- B.8.5.1. The overarching aim of the archaeological works is to compensate for the loss of known and unknown archaeological remains associated with the Scheme. This will be achieved by:
- Satisfying the archaeological requirements of the DCO.
 - Addressing the recommendations and mitigation commitments identified within the ES and in this AMP.
 - De-risking the enabling and construction phases of the Scheme to avoid programme delays due to the possible discovery of previously unknown archaeological remains or deposits.
 - Implementing a programme of archaeological mitigation in advance of and during the construction of the Scheme to allow for any archaeological evidence to be properly investigated and recorded, building knowledge and understanding of the past and bringing it to the public.
- B.8.5.2. Generating an archive, which will allow future research of any archaeological evidence identified within the Scheme to be undertaken and further contribute to the understanding of the historic environment.

Geophysical survey

- B.8.5.3. The type, extent and location of each geophysical survey where requested will be detailed in individual Archaeological Project Designs. All geophysical fieldwork, processing and post-fieldwork analysis will be carried out in compliance with all ClfA standards and guidance, including Standards and Guidance for Archaeological Geophysical Survey (2020)².
- B.8.5.4. The results of all geophysical surveys will be assessed and interpreted by the Archaeological Subcontractor to attempt to understand the potential for buried remains within the targeted areas, in advance of development works.
- B.8.5.5. The specific aims are to:
- Locate potential sub-surface archaeological remains within the Site and characterise where possible.
 - Produce a comprehensive report and archive.

Evaluation trenching

- B.8.5.6. A programme of trench evaluation will be implemented, based on the findings of any geophysical surveys undertaken, targeting the anomalies identified and apparent 'blank' areas to prove the validity of the geophysical results.
- B.8.5.7. All archaeology trial trenching will be carried out by the Archaeological Subcontractor in accordance with the ClfA Universal Guidance for Archaeological Field Evaluation (2023)³.
- B.8.5.8. Trench plans will be set out prior to the commencement of the evaluation and included within the Archaeological Project Design for comment and approval by the Archaeological Consultant and Local Planning Authority's Archaeological Advisor. The locations of the

² [ClfAS&GGeophysics_3.pdf \(archaeologists.net\)](#) (accessed 6 March 2024)

³ <https://www.archaeologists.net/sites/default/files/Universal%20guidance%20for%20archaeological%20field%20evaluation.pdf> (accessed 6 March 2024)

trenches should take into consideration any known constraints as well as target any locations of impact detailed in the individual Site Archaeological Project Design.

- B.8.5.9. Trenches will be opened using a mechanical excavator equipped with a toothless bucket. Trenching will be carried out under constant supervision of an experienced archaeologist. Plant of an appropriate size will be used and will be equipped with a 1.8-2m wide grading bucket as standard.
- B.8.5.10. Undifferentiated topsoil or overburden of recent origin will be removed in successive level spits down to the first significant archaeological horizon, or the natural geology, whichever is encountered first. Topsoil and subsoil will be stored separately, adjacent to the trench and at an appropriately safe distance. The removed soil will be visually scanned and subject to metal detecting.
- B.8.5.11. Trenches will be excavated only to a safe working depth, although they can be stepped if deemed necessary. The trenches will be fenced from access, if required.
- B.8.5.12. Trenches will be graded at one end to allow for the safe ingress and egress of wildlife. Should wildlife be identified by the Archaeological Subcontractor, works will cease in that area and an ecologist will be informed so that it is dealt with appropriately.

Excavation

- B.8.5.13. Archaeological excavation includes a number of methodologies, all designed to recover archaeological remains and creating their preservation by record through accurate recording, scientific analysis, and professional interpretation and reporting. These excavation methodologies include Strip, Map, and Sample (SMS) or Construction Integrated Recording (CIR); other approaches may be used in consultation with the Client and Stakeholders.
- B.8.5.14. A programme of SMS will be scoped to target certain locations in advance of the construction programme where significant archaeological or geoarchaeological remains or deposits have been identified and recorded within the previous phases of archaeological work. This level of work will be required at the known archaeological site at GHER8637. In addition, SMS would be required where evaluation trenching identifies significant archaeological deposits that require mitigation recording to preserve by record the significance of the archaeological remains.
- B.8.5.15. A form of SMS, conducted in conjunction with soil-stripping and earthworks activities at the beginning of the construction period, called Construction Integrated Recording (CIR) may be undertaken in areas with medium to low potential for buried archaeological remains and / or where safety measures make a phased approach to archaeology impractical, unsafe, or disproportionate to the anticipated research potential of the archaeology. This approach is considered appropriate for works located adjacent to the current motorway and highways, where a certain level of disturbance has already occurred.

B.8.6. General Fieldwork Methodologies

Archaeological Project Design

- B.8.6.1. The Archaeological Subcontractor will produce a dynamic overarching Archaeological Project Design, as required by ClfA guidance. The Archaeological Project Design will cover the methodologies for all archaeological interventions identified in this AMP. The Archaeological Project Design is expected to be an iterative document, subject to updating as and when required. Reference will be made to the SWARF so if significant remains are identified they may be placed into context. The Archaeological Subcontractor should ensure that the overall Archaeological Project Design includes:

- Interim reports where required and requested.
- Weekly updates.
- Interpretive reports.
- Post-excavation analysis, scope of which to be agreed with the relevant stakeholders.
- Deposition of the report, as well as physical and digital archaeological archive.
- Company Health and Safety Policy.
- Public Liability.
- Personnel Liability.
- Professional Indemnity.
- Risk assessment and Method Statement of the work being undertaken for the project.

B.8.6.2. A named individual(s) responsible for the project and contact details.

- Demonstration of public outreach approach for adding social value to the archaeological work.
- Demonstration of a low carbon footprint for any Site (and office) work undertaken by the Archaeological Subcontractor.
- Details of any external specialists and third parties anticipated to be used in the commission.

B.8.6.3. The Archaeological Project Design should set out a programme for the archaeological works through a phased approach. Site-specific Archaeological Project Designs should be developed to address each phase if an overarching approach is not feasible, with updates made to the Archaeological Project Design as the site-specific schemes are identified and developed. Stage Gates whereby design and construction activities can be “signed off” are to be developed in conjunction with the Archaeological Consultant, the LPA Archaeological advisor, the PC, and the Client.

Land Access

B.8.6.4. Land access may be required from landowners or tenants. Access will be arranged by the PC and / or the Client, with the arrangement of a date giving suitable notice. Specific land access arrangements will be detailed within the individual Site specifications and Archaeological Project Design.

Fieldwork

B.8.6.5. All fieldwork, processing and post-fieldwork analysis will be carried out in compliance with the relevant ClfA standards and guidance, including Universal Guidance for Archaeological Excavation (2023)⁴, Universal Guidance for Archaeological Monitoring and Recording (2023)⁵, Universal Guidance for Archaeological Field Evaluation (2023)⁶, the National Planning Policy Framework (NPPF) (updated December 2023)⁷, relevant guidance from Historic England, and the European Archaeological Council, and all other

⁴<https://www.archaeologists.net/sites/default/files/Universal%20guidance%20for%20archaeological%20excavation.pdf> (accessed 6 March 2024)

⁵<https://www.archaeologists.net/sites/default/files/Universal%20guidance%20for%20archaeological%20monitoring%20%26%20recording.pdf> (accessed 6 March 2024)

⁶<https://www.archaeologists.net/sites/default/files/Universal%20guidance%20for%20archaeological%20field%20evaluation.pdf> (accessed 6 March 2024)

⁷ [National Planning Policy Framework \(publishing.service.gov.uk\)](https://www.gov.uk/government/publications/national-planning-policy-framework), (accessed 6 March 2024)

relevant national, regional and local policy and guidelines.

- B.8.6.6. All works will be monitored by the Archaeological Consultant and the LPA Archaeological advisor. Any excavation areas under archaeological supervision or control will be opened using a mechanical excavator equipped with a 1.8m-2m wide toothless grading bucket as standard and will be carried out under constant supervision by an experienced archaeologist. Plant of an appropriate size will be used. Unnecessary damage caused by any dumper trucks required will be managed and mitigated against in consultation with the Archaeological Consultant, the Archaeological Subcontractor, the PC and the LPA Archaeological advisor.
- B.8.6.7. All soil management must follow the relevant requirements of the Soil Handling Management Plan (SHMP) (Application document TR010063/APP/9.2). Undifferentiated topsoil or overburden of recent origin will be removed in successive level spits down to the first significant archaeological horizon, or the natural geology, whichever is encountered first.
- B.8.6.8. Topsoil, subsoil and any other materials encountered will be stored separately and at an appropriately safe distance, with the location agreed between the PC, the Archaeological Consultant, and the Ecological Consultant. Double handling of soil should be avoided wherever possible. All soil movements should take into account the carbon footprint of the methodologies used.
- B.8.6.9. All work will take into account ecological constraints and Precautionary Methods of Working (PMW), following the requirements of the Landscape and Ecology Management Plan (LEMP) (Application document TR010063/APP/9.5).
- B.8.6.10. Where reasonably practicable the soil removed during stripping will be visually scanned and subject to metal detecting. A metal detector will be made available for the works to aid in the recovery of metal artefacts. The detector will not be set to discriminate against iron. Any metal detection will be undertaken by an experienced operator.
- B.8.6.11. Any SMS or stripped area as well as evaluation trenches will be excavated to a safe working depth (as determined by soil composition and ground conditions) as well as stepped and fenced where necessary for safety and segregation. An appropriate number of safe pedestrian accesses will be created to enter into the SMS area and one end of each evaluation trench, which will be graded to allow for the safe ingress and egress of wildlife. Should wildlife be identified by the Archaeological Subcontractor, works will cease in that area and an Ecological Consultant or attending Ecological Clerk of Works (ECoW) will be informed so that it is dealt with appropriately.
- B.8.6.12. Where structures, finds, features and layers of archaeological interest are exposed, the Archaeological Subcontractor will observe, clean, assess, excavate by hand, as well as sample and record as appropriate unless otherwise agreed with the Archaeological Consultant and LPA Archaeological advisor. They will be excavated sufficiently to identify and characterise, where possible, the nature, quantity and significance of the features and deposits as well as establishing date and depths.
- B.8.6.13. The following samples are offered as a guide to develop Archaeological Project Designs. The final decision on sampling should be agreed with the LPA Archaeological advisor and any relevant stakeholders to ensure a research-led proportionate approach to the recovery and recording of archaeological remains.
- Linear features (inclusive of solid or bonded structural remains and building slots): a minimum sample of 10% of their length, with a minimum individual slot length of 1m.
 - The termini of any linear features: 100% excavated.
 - Discrete features such as pits and postholes: a minimum of 50% and fully sampled if dating and character cannot be ascertained from the 50% sample.
 - Complex features (such as hearths): 100% excavated.

- B.8.6.14. Should remains or deposits be uncovered where the current methodology is insufficient to support appropriate treatment, works will cease and new arrangements will be agreed with the Client, the Archaeological Consultant and Contractor, and the LPA Archaeological advisor.

Recording

- B.8.6.15. All excavated contexts shall be fully recorded by detailed written context records giving details of location, composition, shape, dimensions, relationships, finds, samples, cross references to other elements of the record and other relevant contexts.
- B.8.6.16. Written and photographic records will be maintained at all archaeological ground investigation locations, even where archaeological features have not been encountered, in order to document the scope of the works, their location and the presence / absence of archaeological remains.
- B.8.6.17. The record of archaeological investigations will include, at minimum:
- The site/trench codes as defined by the Archaeological Subcontractor.
 - The location of the works area.
 - The date(s) of the works.
 - Personnel involved in the works.
 - A description of the archaeological and/or construction works.
 - Scope of excavation works and depths, if applicable.
 - Degree of visibility and capacity to observe archaeological features, noting any areas where obstructions occurred and reasons for this.
 - Location and description of any archaeological remains.
 - Location and description of any modern remains.
 - Areas and depths where archaeological remains were left in situ.
- B.8.6.18. In order to achieve this, on-site recording of archaeological features, where not precluded by Health and Safety considerations, will consist of:
- Hand cleaning of archaeological features, sections and surfaces sufficient to establish the stratigraphic sequence exposed.
- B.8.6.19. Examination of excavated material in order to retrieve artefacts to assist in the analysis of their spatial distribution.
- Sample excavation of exposed features (see relevant methodology sections for minimum sample requirements).
 - Completion of pro-forma record sheets or digital equivalent.
- B.8.6.20. Plans and sections of all exposed archaeological features and horizons (including boundaries of natural) at an appropriate scale. A scale of 1:100 and / or 1:200 will be utilised to initially map the entire exposure and will be linked to detail plans at 1:20 of excavated features and sections at 1:10, if necessary. All features will be accurately tied into the Ordnance Survey National Grid and Ordnance Datum. A born-digital approach is preferred.
- A scaled photographic record of representative exposed sections and surfaces, along with sufficient photographs to establish the setting and scale of the groundworks.
 - A record of the datum levels of archaeological deposits.
- B.8.6.21. Records will be produced using either pro-forma context or trench record sheets. A born digital approach is preferred for the production of record sheets, plans, sections, and

drawings. All non-digital written records should be completed with black or permanent ink and all drawings will be completed using a 'hard' pencil (recommended 4H or 6H). All documents will include the unique site code.

- B.8.6.22. A record of the full sequence of all archaeological deposits as revealed in the investigation works will be made. Plans and sections of features will be drawn at an appropriate scale of 1:10 or 1:20, with sections preferably drawn at 1:10.
- B.8.6.23. A full photographic record will be maintained including working shots to represent the general context of the archaeological investigations. Photography will be taken in line with current industry best practice and the requirements of the LPA Archaeological Advisor. In addition to records of archaeological features, a number of general site photographs will also be taken to give an overview of the site including photographs of areas prior to and upon completion of fieldwork. Particular attention should be paid to obtaining shots suitable for displays, exhibitions, and other publicity. The principal features and finds will both be recorded in detail and in a general context. This will consist of SLR digital photography (using a minimum of a 16-megapixel camera) capturing RAW and JPEG data. An appropriate scale should be included in detailed images wherever possible. Georeferenced photogrammetry recording will be utilised where able and in line with the industry standards and best practice.
- B.8.6.24. Registers of all contexts, drawings, photographs, finds, and samples will be maintained in a standardised format. The extent of any excavation either archaeologically undertaken, controlled or monitored through a Watching Brief (WB) as well as any archaeological features or deposits encountered will be located using a GNSS GPS and tied into the National OS Grid. Where complex features or groups of features are encountered, these will be recorded at a scale of 1:20 on planning sheets, based on a 5m grid system. The grid will be used for planning features and all other horizontal control on site. Unless otherwise appropriate, all planning should be undertaken utilising GNSS GPS to provide Environmental Systems Research Institute (ESRI) compatible shapefiles. Areas of ground disturbance will be accurately located on a site plan.

Finds and Environmental Sampling

- B.8.6.25. All artefacts from excavated contexts will be retained, except those from features or deposits of obviously modern date which is not applicable to the archaeological background of the project. In such circumstances, sufficient artefacts will be retained in order to provide date and/or function of the feature or deposit.
- B.8.6.26. Exposed finds will be lifted if appropriate at the end of each working day. Where removal cannot be undertaken on the same working day as the discovery, suitable security measures will be taken to protect the artefacts from theft or damage.
- B.8.6.27. On completion of the fieldwork a methodology for processing, sampling, and the analysis of all artefacts and ecofacts recovered during the works will be determined, commensurate to the complexity and character of the data recorded. This will enable an informed decision to be made on the need for any further archaeological mitigation.
- B.8.6.28. Finds and samples will be treated in accordance with the relevant guidance given in the ClfA's Guidance for the collection, documentation, conservation and research of archaeological materials (ClfA 2020)⁸ and the Museums and Galleries Commissions Standards in the Museum Care of Archaeological Collections (1992)⁹. All pottery and other finds will be marked with the site code and context number and, where possible, with the Museum Accession number. On completion of the archaeological post-excavation programme, it is anticipated that any artefacts will be deposited with the relevant museum, subject to the relevant landowner permissions being obtained.

⁸ https://www.archaeologists.net/sites/default/files/ClfAS%26GFinds_2.pdf (accessed 6 March 2024)

⁹ <https://collectionstrust.org.uk/wp-content/uploads/2016/11/Standards-in-the-museum-care-of-archaeological-collections.pdf> (accessed 6 March 2024)

- B.8.6.29. Sampling will follow the English Heritage (Historic England) guidelines Environmental Archaeology: a guide to theory and practice of methods, from sampling and recovery to post excavation (EH 2011, 2nd edition¹⁰). Bulk environmental soil samples for the recovery of plant macro fossils, wood charcoal, small animal bones and other small artefacts will be taken as appropriate from well-sealed and dateable contexts or features. The samples will be of an appropriate size, for example for charred material typically from 20–40 litres, reduced to between 10–20 litres from waterlogged deposits and 40 litres or 100% if less is available for other deposits where necessary. Samples will not be taken from the intersection of features. In areas where complex or sensitive environmental samples are anticipated (such as slope bases and the valley floors), a geoarchaeologist should be available to develop a bespoke sampling strategy appropriate for the deposits.
- B.8.6.30. If waterlogged deposits are encountered, an appropriate environmental sampling strategy will be devised and agreed with the Client, Archaeological Subcontractor, LPA Archaeological advisor, and the Historic England Science Advisor (if necessary). These samples will then be processed by standard waterlogged flotation/wet sieving methods.
- B.8.6.31. Where appropriate, monolith and / or contiguous column samples will be taken for the recovery of molluscs and to consider sub-sampling for pollen and / or diatom assessment, and for consideration of soil micromorphological and soil chemical analyses. Appropriate specialist advice will be sought where needed.

Treasure

- B.8.6.32. In the event of the discovery of artefacts covered or potentially covered by the Treasure Act 1996, these will be removed to a safe place (assumed to be the Archaeological Subcontractor's office) and reported to the Archaeological Consultant, and the LPA Archaeological advisor. The local Coroner will be informed within 14 days according to the procedures relating to the Treasure Act of 1996.

Human Remains

- B.8.6.33. Any discovered human remains should be treated with due decency and respect. The remains should be left in situ, covered and protected, with the Archaeological Consultant, and the LPA Archaeological advisor informed immediately, who will then inform the Client. Human remains will be treated in accordance with Article 38 of the DCO (Application document TR010063/APP/3.1). The Archaeological Subcontractor will be responsible for gaining all necessary licenses following confirmation from the Archaeological Consultant and LPA Archaeological advisor. All excavation of human remains and associated post-excavation processes will be undertaken in accordance with the Updated Guidelines to the Standards for Recording Human Remains (ClfA 2017)¹¹.

Setting out and access

For evaluations and excavation areas:

- B.8.6.34. For any works where the Archaeological Subcontractor is responsible for setting out, such as evaluation trenches and SMS areas, they shall be accurately set out, surveyed as excavated and tied in with the Ordnance Survey National Grid and Ordnance datum. Any control points used to locate trial trenches relative to base mapping and/or absolute position on the Earth's surface must be located to survey-grade accuracy ($\pm 0.01\text{m}$).
- B.8.6.35. The Archaeological Subcontractor will be permitted to alter the parameters of the survey and the location of trenches on the ground to avoid any identified hazards following approval from the Archaeological Consultant and LPA's Archaeological advisor. Trench or SMS plans should take into account all known services and position the trenches to

¹⁰ [Environmental Archaeology | Historic England](#), (accessed 6 March 2024)

¹¹ https://www.archaeologists.net/sites/default/files/7_Human%20remains.pdf (accessed 6 March 2024)

avoid such hazards, however, this does not infer additional unrecorded services are not present or that known services have been accurately located by the utility companies. The Archaeological Subcontractor will be responsible for ensuring that the SMS or trench locations are clear of services and have been scanned using appropriate cable avoidance equipment and techniques. The PC will be responsible for hazard avoidance for all other works.

- B.8.6.36. The Archaeological Subcontractor will be responsible for ensuring that all open areas of hand or machine excavation associated with the archaeological works are safe and secure, using fencing, signage and other precautionary measures as appropriate and in line with the PCs standards or methods. This should be clearly stated in the RAMS. The PC will be responsible for the safety and security of all other works.
- B.8.6.37. Access routes will be submitted and agreed with the LPA Archaeological Advisor and the PC prior to the commencement of site works.

For monitoring, or where specified for other works:

- B.8.6.38. The PC will be responsible for accurately setting out the works. The PC will be responsible for ensuring that all intrusive works are clear of services and have been scanned using appropriate cable avoidance equipment and techniques. The PC will be responsible for ensuring all open trenches and areas of excavation are safe and secure, using fencing, signage, and other precautionary measures as appropriate.
- B.8.6.39. The PC will be responsible for inducting any attending archaeologist and informing them of all relevant general and site-specific safe working practices.

Reinstatement

- B.8.6.40. The Archaeological Subcontractor shall ensure that all of their associated equipment and materials are removed from each land plot immediately following the completion of any works set out in in this specification.
- B.8.6.41. A digital photographic record will be taken of the site before the survey, excavating trenches and after reinstatement is completed.

For evaluations and SMS areas:

- B.8.6.42. On instruction from the Archaeological Consultant and LPA Archaeological Advisor, in conjunction with the PC, all archaeological SMS areas or evaluation trenches shall be backfilled upon completion of archaeological recording. Priority should be given to backfilling blank and recorded trenches as soon as possible to minimise disturbance. It may be possible, in agreement with PC, that areas are opened immediately prior to construction and can therefore be left open. After the completion of any archaeological excavation, if backfilling is required, the materials shall be replaced in reverse order of removal. The Archaeological Subcontractor shall grade the soil to a smooth, even profile, free from localised mounds and depressions.

For archaeological monitoring:

- B.8.6.43. The PC will be responsible for reinstatement.

Health and Safety

- B.8.6.44. Health and Safety considerations will be of paramount importance in conducting all fieldwork. Safe working practices will override archaeological considerations at all times.
- B.8.6.45. All work will be carried out in accordance with the Health and Safety at Work etc. Act 1974, The Management of Health and Safety Regulations 1992, and all other relevant Health and Safety legislation, regulations and codes of practice in force at the time for the fieldwork. The Archaeological Subcontractor will also adhere to the PC's working rules

(including any Construction Phase Plan if it is in place by the time the survey is carried out).

- B.8.6.46. A full Risk Assessment and Method Statement (RAMS) for the archaeological fieldwork will be prepared two weeks prior to the commencement of fieldwork by the Archaeological Subcontractor and submitted to the Archaeological Consultant and LPA Archaeological Advisor and PC for comment and acceptance. This will be updated on Site when required.
- B.8.6.47. Appropriate personal protective equipment (PPE) will be worn by all archaeologists and monitoring visitors while on site and in line with Health & Safety requirements. Any specific PPE will be confirmed following appointment.
- B.8.6.48. Care will be taken throughout the course of the work to minimise the disruption to the landowner caused by any equipment used.

B.8.7. Post-excavation

- B.8.7.1. A programme of post-excavation assessment, reporting, publication, and archiving will be required.

Report preparation

- B.8.7.2. Interim reports and digital data should be prepared and submitted for review where requested by the Archaeological Consultant and LPA Archaeological Advisor. For investigations which will be undertaken over a period of a number of weeks, or where applicable, weekly updates should also be provided to the Archaeological Consultant and PC. The Archaeological Project Design should include a programme of interim reporting and measures to be taken to sign off on completed work.
- B.8.7.3. The level of the final report(s) should reflect the significance of the findings. Likewise draft copies should be submitted for review by the relevant stakeholders within the time frames specified in the individual Site specifications. The report(s) will be prepared in accordance with relevant ClfA standards and guidance. Emphasis will be given to placing the results into the context of the archaeology of the area and include a statement on the archaeological significance of the results. In addition to general reporting standards, all processed data from the fieldwork will be presented within the report at an appropriate scale, including georeferenced images.
- B.8.7.4. The report(s) will contain as a minimum:
 - Non-technical summary
 - Project background
 - Aims and objectives
 - Archaeological and geoarchaeological context
 - Methodology
 - Results and interpretation, including statement of significance
 - Conclusions in relation to the project objectives, and discussion in relation to the wider local, regional, or other archaeological and geoarchaeological contexts and research frameworks
 - Recommendations
 - References
 - Appendices
 - Illustrations

B.8.8. Public Outreach and Social Value

- B.8.8.1. All Archaeological Project Designs should include proportionate approaches to public involvement and outreach for archaeological works. These should take into account the Client and PC's Key Performance Indicators (KPI) for outreach and social value aims for the Scheme. Public engagement should follow the requirements of the Community Engagement Plan (Application document TR010063/APP/9.10). The aims and objectives of the public outreach activities should be developed in consultation with the Archaeological Consultant, the Archaeological Subcontractor, the Client, the LPA's Archaeological Advisor and relevant stakeholders. Activities will add social value to the Scheme through the sharing of information regarding the historic environment of the area and aiding in the creation of a sense of place and community history, in line with the requirements of the DCO and guidance from the ClfA.

B.8.9. OASIS

- B.8.9.1. An OASIS (Online Access to the Index of Archaeological Investigations) online record will be initiated with key fields completed on Details, Locations and Creators sections and a PDF version of the final report submitted online to the OASIS database.

Archive preparation and deposition

- B.8.9.2. The relevant museum shall be contacted in advance of the fieldwork to arrange deposition of the site archive as well as obtain (if available) an accession number and clarify archiving requirements and costs. Some parts of the digital archive and copies of the reporting will also be lodged with the relevant HER.
- B.8.9.3. Adequate resources shall be provided during fieldwork to ensure that all records are checked and internally consistent. Archive consolidation shall be completed immediately after the conclusion of fieldwork, to ensure that the site record has been checked, cross-referenced and indexed as necessary and that finds have been cleaned, conserved, marked and packaged as appropriate.
- B.8.9.4. The archives (both museum and digital) will be prepared and deposited in accordance with Standards and guidance for the creation, compilation, transfer and deposition of archaeological archives (ClfA 2014, updated June 2020)¹², A Standard and Guide to Best Practice for Archaeological Archiving in Europe (Europae Archaeologia Consilium 2019)¹³, Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation (Archaeological Archives Forum 2007)¹⁴ and Digital Image Capture and File Storage: Guidelines for Best Practice (Historic England 2015)¹⁵.
- B.8.9.5. The Site Archive shall contain all the data collected during the investigation, including all primary written documents, plans, sections and photographs. It shall be quantified, ordered, indexed and internally consistent.
- B.8.9.6. All processing, recording, cleaning, storage and conservation of samples shall be in accordance with the ClfA Standards and guidance for the collection, documentation, conservation and research of archaeological materials (2020)¹⁶.

¹² https://www.archaeologists.net/sites/default/files/CIFAS%26GArchives_4.pdf (accessed 6 March 2024)

¹³ https://archaeologydataservice.ac.uk/arches/attach/The%20Standard%20and%20Guide%20to%20Best%20Practice%20in%20Archaeological%20Archiving%20in%20Europe/ARCHES_V1_GB.pdf (accessed 6 March 2024)

¹⁴ https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-799-1/dissemination/pdf/AArchives_v2.pdf (accessed 6 March 2024)

¹⁵ <https://historicengland.org.uk/images-books/publications/digital-image-capture-and-file-storage/heag059-digital-images/> (accessed 6 March 2024)

¹⁶ https://www.archaeologists.net/sites/default/files/ClfAS%26G Finds_2.pdf (accessed 6 March 2024)

B.8.9.7. The digital archive, comprising all born-digital data and digital copies made of the primary site records and images, will be deposited with the Archaeology Data Service (ADS) no later than six months after the completion of the fieldwork. The archive will be compiled in accordance with the standards and requirements of the ADS as per their given guidance, the ADS Guidelines for Depositors.

B.8.10. Monitoring, Regular Reporting and Sign-off

B.8.10.1. Liaison between the Archaeological Consultant, Archaeological Subcontractor, PC, LPA Archaeological Advisor and relevant Stakeholders will be handled by the Archaeological Consultant. They will arrange for monitoring visits and handle the communication of issues such as the discovery of significant archaeological remains.

B.8.10.2. The LPA Archaeological advisor and, where appropriate, Historic England, will review and approve as aligned to and limited by the DCO requirements all documents relating to the works, including the Archaeological Project Designs, interim reports, post-excavation assessment and final reports.

B.8.10.3. The programme of heritage mitigation will be monitored throughout by Archaeological Consultant, Archaeological Subcontractor, LPA Archaeological Advisor and relevant Stakeholders. Monitoring visits will be used to track ongoing process and also to sign off on areas which are complete and can be handed over to the PC.

B.8.11. Management measures

Register of Environmental Actions and Commitments

B.8.11.1. The following are the Register of Environmental Actions and Commitments (REAC) (Application document TR010063/APP/7.4 as they relate to the AMP).

Table B 8-1 Archaeological Management Plan REAC

REAC	Commitment Text	Implementation mechanism
CH1	Identify archaeological remains that may be encountered during construction and achieve preservation by record.	EMP (1st iteration) (Application document TR010063/APP/7.3) Annex B8 – Archaeological management plan
CH3	Implementation of the AMP.	EMP (2 nd iteration) Annex B8 – Archaeological management plan

B.8.11.2. The commitments of CH1 will be achieved through the phased approaches outlined in this AMP, implemented under CH3. The Archaeological Project Design developed for the Scheme will provide site-specific investigation requirements and identify the methodologies for confirming completion of the REAC commitments. Due to the nature of archaeological analysis and reporting, it is anticipated that construction activities will be allowed to proceed following the removal of archaeological remains as agreed in the Archaeological Project Design, with the full completion of the REAC to be at a later date set in the Archaeological Project Design to allow for a complete analysis and appropriate reporting of the archaeological findings.

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