

# **A303 Stonehenge**

## **Amesbury to Berwick Down**

### **Overarching Written Scheme of Investigation for Archaeological Evaluation**

February 2018



# Table of contents

| <b>Chapter</b>  | <b>Pages</b> |
|---|--------------|
| <b>1 Introduction</b>                                 | <b>1</b>     |
| 1.1 Scheme Background                                 | 1            |
| 1.3 Heritage Monitoring and Advisory Group            | 1            |
| 1.4 Purpose and Scope of the Overarching WSI (OWSI)   | 2            |
| <b>2 Archaeological Evaluation Strategy</b>           | <b>3</b>     |
| 2.1 Previous and Proposed Archaeological Evaluations  | 3            |
| <b>3 Evaluation Aims and Objectives</b>               | <b>5</b>     |
| 3.1 Overall Aims of the Evaluation Programme          | 5            |
| 3.2 General Aims of Individual Methods and Techniques | 5            |
| <b>4 Archaeological Evaluation Methodology</b>        | <b>7</b>     |
| 4.1 Environmental Considerations                      | 7            |
| 4.2 Ploughzone Artefact Sampling                      | 8            |
| 4.3 Geophysical Survey                                | 10           |
| 4.4 Trial Trench Evaluation                           | 12           |
| <b>5 Monitoring and Progress Reporting</b>            | <b>19</b>    |
| 5.1 Monitoring  | 19           |
| 5.2 Progress Reports                                  | 20           |
| <b>6 Fieldwork reports</b>                            | <b>20</b>    |
| 6.1 Interim statements                                | 20           |
| 6.2 Fieldwork reports                                 | 20           |
| 6.3 Publication                                       | 23           |
| <b>7 Archive preparation and deposition</b>           | <b>23</b>    |
| 7.1 Archive preparation                               | 23           |
| 7.2 Archive storage and deposition                    | 24           |
| <b>8 Programme and resources</b>                      | <b>25</b>    |
| 8.1 Programme   | 25           |
| 8.2 Resources   | 25           |
| <b>9 Confidentiality and publicity</b>                | <b>26</b>    |
| 9.1 Confidentiality                                   | 26           |
| 9.2 Publicity   | 26           |
| <b>10 Copyright</b>                                   | <b>26</b>    |
| <b>11 Insurance and health and safety</b>             | <b>26</b>    |
| <b>12 Adherence to OWSI</b>                           | <b>28</b>    |
| <b>Abbreviations</b>                                  | <b>29</b>    |
| <b>Glossary</b>                                       | <b>30</b>    |
| <b>References</b>                                     | <b>31</b>    |
| <b>Appendix A Standards and guidance</b>              | <b>36</b>    |

# 1 Introduction

## 1.1 Scheme Background

- 1.1.1 Highways England ('the Employer') has appointed AECOM mace WSP Joint Venture ('AmW') as its Designer (the 'Technical Partner') to develop the A303 Stonehenge Project ('the Scheme') through detailed design and Environmental Impact Assessment (EIA), to the submission of an application for a Development Consent Order (DCO). A Preferred Route for the Scheme was announced on the 11th September 2017.
- 1.1.2 A programme of archaeological field evaluation is required to inform the preparation of the cultural heritage chapter of the EIA and Environmental Statement, to inform a Heritage Impact Assessment (HIA) in relation to the impact of the Scheme on the Outstanding Universal Value (OUV) of the WHS, and to aid the development of appropriate archaeological mitigation strategies. This will build on an extensive programme of previous surveys undertaken to inform the selection of the Preferred Route. These have included desk-based assessments, geophysical surveys and targeted trial trenching.
- 1.1.3 An Archaeological Evaluation Strategy Report (HE551506-AMW-EHR-SW\_GN\_000\_Z-MS-0001) [1] has been prepared by the Technical Partner on behalf of the Employer and sets out the general and specific principles which will guide the strategy for archaeological field-based investigations. This Overarching Written Scheme of Investigation (OWSI) has been produced to accompany the Archaeological Evaluation Strategy Report (AESR) and details the methods and techniques to be employed during the archaeological evaluation, as agreed and approved by HMAG and WCAS.

## 1.2 The Preferred Route

- 1.2.1 The Preferred Route for the Scheme was announced on 11 September 2017, consisting of:
- A new junction between the A303 and A345 accommodating free-flowing A303 and A345 traffic movements.
  - A twin-bore tunnel at least 1.8 miles (2.9 kilometres) long.
  - A new junction to the west of and outside the World Heritage Site (WHS) accommodating free-flowing A303 and A360 traffic movements, as well as a link to Winterbourne Stoke.
  - A bypass to the north of Winterbourne Stoke.

## 1.3 Heritage Monitoring and Advisory Group

- 1.3.1 A Heritage Monitoring and Advisory Group (HMAG) have been convened to advise Highways England, setting the requirements for evaluation, assessment and mitigation within the WHS. The group also advises and sets the scope and methodology of the historic environment assessments and associated fieldwork within the WHS required to support the DCO application. HMAG comprises representatives of Historic England and Wiltshire Council Archaeology Service (WCAS) as statutory consultees and the National Trust and English Heritage Trust as major landowners and heritage managers

in the WHS. HMAG is augmented by a Scientific Committee of additional specialists and experts. For sections of the Scheme within the WHS HMAG advises, agrees, monitors and approves all archaeological fieldwork; outside of the WHS WCAS acts as lead curator on behalf of the Local Planning Authority. For proposals affecting scheduled monuments, Historic England acts as lead curator.

## 1.4 Purpose and Scope of the Overarching WSI (OWSI)

- 1.4.1 The purpose of this OWSI is to describe the methods and techniques that will be employed during the programme of Archaeological Field Evaluations. Any archaeological mitigation work required in advance of construction will be the subject of a separate Archaeological Mitigation Strategy Report, which will be written by the Technical Partner and be approved by HMAG and WCAS.
- 1.4.2 In format and content this document conforms with current good practice and takes account of guidance outlined in:
- The National Policy Statement for National Networks [2];
  - The National Planning Policy Framework (NPPF) [3] and National Planning Practice Guidance [4];
  - The Design Manual for Roads and Bridges (DMRB Volume 10, Trunk Roads and Archaeological Mitigation [5] and Volume 11, Cultural Heritage Assessment [6]);
  - Historic England's Management of Research Projects in the Historic Environment (MoRPHE) [7];
  - The Chartered Institute for Archaeologists' *Standard and guidance for an archaeological field evaluation* [8];
  - Historic England's Geoaerchaeology: Using Earth Sciences to Understand the Archaeological Record [9].
- 1.4.3 The archaeological field evaluation programme outlined in the AESR [1] will be carried out in accordance with the general and detailed Statement of Principles defined in the AESR and with full consideration of the Research Framework for the Stonehenge, Avebury and Associated Sites WHS (2016) [10] and, where appropriate, the South West Archaeological Research Framework [11].
- 1.4.4 The scope of archaeological evaluation fieldwork in specific areas will be defined in individual Site Specific Written Schemes of Investigation (SSWSIs) to be prepared by the Technical Partner. This OWSI and all individual SSWSIs will be approved by WCAS (for areas outside the WHS) and HMAG (for areas within the WHS) prior to fieldwork commencing.
- 1.4.5 All works undertaken on land owned by the National Trust will be carried out under a National Trust Archaeological Research Agreement.

## 2 Archaeological Evaluation Strategy

### 2.1 Previous and Proposed Archaeological Evaluations

- 2.1.1 The results of previous archaeological studies and non-intrusive and intrusive fieldwork surveys have been assessed in the AESR by the Technical Partner in order to define the requirements and methodologies for further archaeological investigation. The relevant results of the previous archaeological surveys and studies will be summarised and presented in each separate Site Specific WSI.
- 2.1.2 The AESR [1] summarises completed archaeological evaluation fieldwork and identifies areas where additional evaluation fieldwork is proposed to augment and enhance existing data to ensure a consistent and robust evidence base across the Scheme.

#### Proposed Evaluation Methods

- 2.1.3 The proposed evaluation methods and the areas in which these would be applied are identified in the AESR. The proposed methods take account of advice from the Scientific Committee.
- 2.1.4 The evaluation strategy is based on a three-stage fieldwork approach combining non-intrusive and intrusive methods, together with the post-excavation assessment reporting and publication of the results. The strategy encompasses the following stages of works/method:

##### *Ploughzone artefact sampling*

- Surface artefact collection
- Artefact sampling by topsoil sieving

##### *Geophysical survey*

- Gradiometer survey
- Ground penetrating radar (GPR) survey
- Earth resistance survey

##### *Trial trench evaluation*

- Archaeological excavation and recording in relation to the trial trenches
- Environmental sampling and assessment
- Geoarchaeological sampling and assessment

- 2.1.5 The programme will consider land within the Provisional DCO Boundary for the Scheme ('the Red-line Boundary', or RLB). Land access for all fieldwork will be arranged by agreement with landowners wherever possible, or by the use of suitable statutory powers. It is recognised that in some circumstances access problems may

limit implementation of some stages of the evaluation programme proposed in the AESR.

- 2.1.6 Evaluation in all areas will be preceded by a site inspection walkover survey to confirm the appropriateness and likely effectiveness of the proposed fieldwork stages, taking into account ground conditions and site restrictions. The walkovers will be conducted by the archaeological contractor and the Technical Partner. A photographic record will be kept of ground conditions that may affect the proposed evaluation technique. Decisions will be made by the Technical Partner following consultation and agreement with HMAG within the WHS and WCAS outside the WHS.
- 2.1.7 Ploughzone artefact sampling and trial trenching will focus on areas within the RLB that will be directly impacted by construction. In the first instance areas will be evaluated that are required for construction of the main line and junctions. Evaluation of other parts of the RLB will be considered separately as the Scheme requirements are confirmed, as part of an iterative design process. With regards to geophysical surveys, these will be undertaken to the limit of the RLB in all areas that have not been previously surveyed or do not conform to current geophysical survey standards [14].
- 2.1.8 Potential compound and landscape mitigation areas are included within the RLB on a provisional basis only and not all would be used. Evaluation of these areas will be undertaken at a later stage when prospective land uses have been confirmed, prior to conclusion of the EIA process/submission of the DCO application.
- 2.1.9 Table 1 below summarises the form of previous and proposed surveys for each Scheme section. These areas are shown on Figures 19-23 of the AESR.

**Table 1 Previous and Proposed Archaeological Evaluations**

| Scheme section          | Previous surveys            |            |                 | Proposed surveys                         |   |                   |                  |
|-------------------------|-----------------------------|------------|-----------------|--|---|-------------------|------------------|
|                         | Surface artefact collection | Geophysics | Trial trenching | Surface artefact collection <sup>1</sup> | Ploughzone Artefact Sampling (test pitting) | Geophysics        | Trial trenching  |
| Winterbourne Stoke West | Partial                     | Partial    | Partial         | Where possible                           | None  | New survey to RLB | Augment existing |

<sup>1</sup> Where surface artefact collection is not feasible, a further phase of artefact sampling by topsoil sieving will be incorporated into the trial trench programme, in order to mitigate against information loss due to disturbance of artefact scatters in the topsoil by machine trenching

|                                    | Previous surveys  |               |         | Proposed surveys |                 |                   |                    |
|------------------------------------|---|---------------|---------|------------------|-----------------|-------------------|--------------------|
| Winterbourne Stoke East            | Partial   | Partial       | Partial | Where possible   | None            | New survey to RLB | Augment existing   |
| Western tunnel approaches & portal | None  | Comprehensive | Partial | Where possible   | Within WHS only | None              | Augment existing   |
| Eastern tunnel approaches & portal | Partial   | Partial       | Partial | Where possible   | Within WHS only | Extend to RLB     | Augment existing   |
| Rollestone Corner                  | None  | None          | None    | Where possible   | None            | To RLB            | Junction area only |
| Other areas in RLB                 | Evaluation of potential compound areas and landscape mitigation areas will be undertaken at a later stage when prospective land uses have been confirmed, prior to conclusion of the EIA process/submission of the DCO application. |               |         |                  |                 |                   |                    |

### 3 Evaluation Aims and Objectives

#### 3.1 Overall Aims of the Evaluation Programme

3.1.1 The general aims for the evaluation programme are defined as follows:

- To inform the EIA and Environmental Statement, and to inform the HIA in relation to the impact of the Scheme on the OUV of the WHS;
- To determine the presence/absence of archaeological remains and determine their significance and date;
- To define the extent and character of archaeological features uncovered within each fieldwork site; and
- Produce an interpretive report on the findings of the fieldwork to inform the development of an archaeological mitigation strategy for the Scheme.

3.1.2 The archaeological fieldwork strategy for each SSWSI will be developed in relation to the emerging design and in consultation with HMAG and WCAS. Specific objectives and a consideration of relevant research themes will be set out in the SSWSIs.

#### 3.2 General Aims of Individual Methods and Techniques

3.2.1 The general aims of the archaeological investigation methods and techniques considered in this OWSI are presented below; specific aims and objectives of each

stage of the proposed evaluation fieldwork will be set out in the individual SSWSIs, taking into account relevant research frameworks, including the Stonehenge and Avebury Archaeological Research Framework (SAARF).

### **Ploughzone artefact sampling – fieldwalking**

3.2.2 The general aims of the proposed surface artefact collection (fieldwalking) are:

- To confirm the presence or absence of artefactual material within the ploughsoil and their relative concentrations.
- To determine the range, date and quantity of artefactual evidence present.
- To establish the extent, character, date (where possible) and significance of artefact scatters and the contribution they make to the OUV of the WHS.
- To produce an interpretive report on the findings of the fieldwork and to inform the development of an archaeological mitigation strategy for the Scheme.

### **Ploughzone artefact sampling – dry sieving**

3.2.3 The general aims of the proposed dry sieving (gridded test pitting and/or sampling of excavated spoil) are:

- To confirm the presence or absence of artefactual material within the ploughsoil and ploughsoil/subsoil interface and their relative concentrations.
- To determine the range, date and quantity of artefactual evidence present.
- To establish the extent, character, date (where possible) and significance of artefact scatters and the contribution they make to the OUV of the WHS.
- To produce an interpretive report on the findings of the fieldwork and to inform the development of an archaeological mitigation strategy for the Scheme.

### **Geophysical surveys**

3.2.4 The general aims of the proposed geophysical surveys (magnetometer, ground penetrating radar and/or resistivity) are:

- To provide information about the nature and interpretation of any anomalies identified.
- To determine the presence, absence and extent of buried archaeological features.
- To contribute to the next stage of the iterative archaeological evaluation strategy and assist in defining suitable targets for the archaeological trial trenching.
- To establish the extent and character of potential archaeological anomalies and provide a provisional interpretation of the results in their local, regional, national or international context.
- To produce an interpretive report on the findings of the fieldwork and to inform the development of an archaeological mitigation strategy for the Scheme.



## **Trial trench investigation**

3.2.5 The general aims of the proposed trial trench investigations are:

- To confirm the presence or absence of surviving archaeological remains.
- To determine the location, nature, extent, date, condition, state of preservation, significance and complexity of any archaeological remains.
- To determine the likely range, quality and quantity of artefactual and environmental evidence present.
- To establish the extent and character of archaeological remains and provide an interpretation of the results in their local, regional, national or international context.
- To produce an interpretive report on the findings of the fieldwork and to inform the development of an archaeological mitigation strategy for the Scheme.

## **Geoarchaeological investigation**

3.2.6 The general aims of geoarchaeological investigation are:

- To assess the presence/absence of archaeological remains associated with buried sediments and archaeological horizons.
- To determine the location, nature, extent, date, condition, state of preservation, significance and complexity of geoarchaeological and palaeoenvironmental sequences.
- To collect palaeoenvironmental and/or geoarchaeological samples for off-site assessment/analysis.
- Provide an assessment of the formation processes behind the deposit sequences and their development through time;
- Provide information about the palaeo-environment and the palaeo-topography and place the results into their wider context;
- To establish the extent and character of palaeo-environmental or geoarchaeological remains and provide an interpretation of the results in their local, regional, national or international context.
- To produce an interpretive report on the findings of the fieldwork and to inform the development of an archaeological mitigation strategy for the Scheme.

# **4 Archaeological Evaluation Methodology**

## **4.1 Environmental Considerations**

4.1.1 Prior to any fieldwork commencing, the Technical Partner will confirm the location and extent of any ecological issues to be taken into account in designing and implementing

individual SSWSIs. As a minimum, the following protocol will be adopted for all activities associated with the removal of topsoil material, as relevant:

- A 3 m stand-off from any hedgerows will be maintained.
- The stand-off for trees will comprise the extent of the tree canopy plus 3 m (including trees within hedgerows).
- A 10 m stand-off from watercourses will be maintained.
- Stand-off areas in respect of protected species, for example those required for badger setts, will be adhered to as identified by the Technical Partner's Biodiversity consultant.

4.1.2 These environmental considerations override the proposed locations of the archaeological works, and must be taken into account during their design.

4.1.3 All archaeological works will be carried out in accordance with this OWSI and any further detailed SSWSIs issued by the Technical Partner and approved by HMAG/WCAS. The methodologies for archaeological evaluation presented below take account of guidance provided by the Chartered Institute for Archaeologists' (CIfA) Code of Conduct [12], Standard and Guidance for Archaeological Field Evaluation [13]; Standard and Guidance for Geophysical Survey [14]; and other current and relevant good practice and standards and guidance (refer to Appendix B).

## 4.2 Ploughzone Artefact Sampling

4.2.1 In the past the principal strategy for plough zone artefact sampling has comprised surface artefact collection through gridded fieldwalking on standard 25 m transects. This has included the extensive fieldwalking undertaken in the World Heritage Site (WHS) as part of the Stonehenge Environs Project in the 1980s, smaller areas that were fieldwalked for the 2004 Published Scheme, and fieldwalking in advance of reversion from arable to grassland.

4.2.2 Surface artefact collection via fieldwalking is proposed for areas that have not been sampled previously. In addition, ploughzone artefact collection will only be carried out where ground conditions are suitable, i.e. ploughed, rolled and weathered, with minimal crop growth such that more than 50% of the field surface is visible.

4.2.3 The ability to undertake surface artefact collection is contingent on timing and results can be affected by variables of ground, weather and light conditions. The evaluation programme and land access agreements are likely to militate against special preparation of land for fieldwalking during the cultivation cycle.

4.2.4 Within the WHS, artefact sampling by topsoil sieving will be undertaken to complement the surface artefact collection programme.

4.2.5 In the first instance, a walkover of the sites by the Archaeological Contractor, Technical Partner and HMAG to inspect ground conditions will be undertaken and a method and programme will be agreed.

- 4.2.6 The final scope of survey will be determined by ground conditions and by land access approvals. The agreed methodology will be set out in the SSWSI and the Archaeological Contractor's Risk Assessment and Method Statement (RAMS) along with a schedule of sites to be surveyed.

### **Surface artefact collection – Fieldwalking**

- 4.2.7 Following advice from the Scientific Committee, a scalable strategy will be adopted based around total collection of all artefactual material visible on the surface within 5 m x 5 m square units (25 m<sup>2</sup>).
- 4.2.8 Collection units will initially be spaced at 20 m intervals, giving a 6.25% sample of the total area. Where judgements are later made in the field to reduce the collection interval, informed by particular concentrations or distinctive assemblages of material, additional collection 25 m<sup>2</sup> units will be introduced to reduce the interval to every 10 m giving a 25% sample, or further still as appropriate and agreed with HMAG/WCAS.
- 4.2.9 The collection units will be laid out using backpack GPS and marked with flags. A total collection policy will be employed. The collection units will be walked by members of the fieldwalking team. All artefacts visible on the surface within each collection unit will be collected.
- 4.2.10 All artefactual material of pre-modern date will be retained, except non-worked burnt flint, which will be retained, counted and weighed before disposal. Mass-produced materials such as pressed tin-plate, plastics, and 'universal' building materials such as modern brick and roof slate, will not be kept, but their presence will be recorded in writing, noting their frequency of occurrence.
- 4.2.11 Find-spots, stone scatters, areas of soil discolouration/change in types, and other surface features thought to be of archaeological origin will be recorded to +/- 50mm in three dimensions. Details of ground conditions and survey protocol will be recorded on standard *pro forma*.
- 4.2.12 Upon completion of each day's fieldwalking, all finds will be washed, marked and logged on a Microsoft Access Database, together with locations on the National Grid and spot height values.

### **Surface artefact collection – Sampling and dry sieving**

- 4.2.13 Ploughsoil artefact sampling by topsoil sieving will be based on excavation of 1 m x 1 m (1 m<sup>2</sup>) hand-dug test-pits spaced at 10 m intervals (i.e. with a 9 m gap between the edges of each), providing a 1% sample of the overall area. The same grid will be used as the surface collection phase. Each pit will be dug by hand to the base of the topsoil, and all soil sieved on site through a 10 mm mesh, with a sub-fraction of the soil (c. 30 litres) sieved through a 5 mm mesh to recover smaller artefacts such as microliths and finer flint debitage. Any archaeological features visible/ encountered at the base of the topsoil will be recorded in plan, as a minimum.
- 4.2.14 A further phase of artefact sampling by topsoil sieving will be incorporated into the trial trench programme to mitigate against information loss due to disturbance of artefact scatters in the topsoil by machine trenching. A 150 litre sample of machined spoil will be sieved on site through a 10 mm mesh every 5 m along each trial trench.

## 4.3 Geophysical Survey

### Standards and Guidance

- 4.3.1 All geophysical survey will comply with guidelines outlined by Historic England [16], Europae Archaeologia Consilium [15], Archaeology Data Service [16] and by the Chartered Institute for Archaeologists [17].

### Survey specification

- 4.3.2 The navigation display on cart-based systems provides real-time positioning enabling full site coverage without the need to set up individual grid nodes across the survey areas. However, in order to ensure survey accuracy, the boundaries of the survey extent will be established using a GPS.
- 4.3.3 Stakeout data will be prepared in British National Grid coordinates prior to survey using AutoCAD, and survey data will be georeferenced accordingly. Individual survey nodes will be established at regular intervals for the hand-held gradiometer and ground penetrating radar (GPR) surveys, and as site boundaries for the cart-based surveys using a Leica Viva RTK GNSS instrument, which is precise to approximately 0.02 m and therefore exceeds Historic England recommendations [16].
- 4.3.4 The surveyed areas will be tied into the National Grid using GPS survey equipment to enable the surveyed area to be independently relocated by a third party. A selection of grid points will be re-occupied after the data has been acquired and checked to confirm the accuracy of the stake out location and that no disturbance has occurred.
- 4.3.5 Digital mapping and archaeological information gathered during previous work will be used to support the interpretation of the geophysical data.
- 4.3.6 An interpretation of the geophysical anomalies will also be presented identifying likely and possible archaeological features along with linear trends and areas of increased magnetic response.
- 4.3.7 All figures will be reproduced from Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationery Office (Crown copyright).

### Gradiometer survey specification

- 4.3.8 The detailed gradiometer survey will be conducted using Bartington Grad-01-1000L gradiometers at 1 m intervals mounted on either a non-magnetic cart or on a hand-held frame with an effective sensitivity of 0.03 nT.
- 4.3.9 Data will be collected at 0.25 m intervals along transects spaced 1m apart, in accordance with Historic England guidelines [16]. Data will be collected in the zigzag method.
- 4.3.10 Data from the survey will be subject to minimal data correction processes. These would typically comprise a zero mean traverse function ( $\pm 5$  nT thresholds) to correct for variations in the calibration between the Bartington sensors used, and a de-step function to account for variations in traverse position due to varying ground cover and topography. These two steps are generally applied to all survey areas, with no further filtering or interpolation.

- 4.3.11 The data will be processed using commercially available and in-house software which allows greyscale and trace plots to be produced. Minimal processing will be applied to the data and typically includes bounded zero mean traverse and destagger functions.
- 4.3.12 Any sites identified as a result of the gradiometer surveys that are deemed to contain significant archaeological potential will be investigated further by targeted resistance survey, GPR and/or trial trenching, depending on the suitability of ground conditions, in agreement with HMAG/WCAS.

### **Ground Penetrating Radar**

- 4.3.13 Ground Penetrating Radar (GPR) survey may be employed in areas where previous gradiometer survey suggests an area of significant archaeological potential, which requires further detailed investigation, in agreement with HMAG/WCAS. The extent of such areas will be agreed with WCAS and HMAG.
- 4.3.14 The GPR survey will be conducted using a Malå RAMAC XV11 monitor and control unit with a shielded antenna. This is mounted on a rough terrain cart which is fitted with an odometer to measure horizontal distance along the ground surface.
- 4.3.15 The central frequency of the antenna(e) depends on the types of target being investigated. Lower frequency antennae are able to acquire data from deeper below the surface at reduced resolution, whereas higher frequencies allow imaging of smaller near-surface targets, at the expense of deep penetration. To allow for a range of ground conditions and target depths, two or more antennae of different frequency may be deployed, though not necessarily across the entirety of the Site.
- 4.3.16 A field test of the antenna frequency will be undertaken at the outset of the survey using a 500 and 250 MHz antenna in accordance with Historic England [16] and Europae Archaeologiae Consilium [15] guidelines. The antenna frequency likely to provide the most information regarding the nature of archaeological remains within each area will be used predominantly. Transects will be collected in the zigzag method where practically possible.
- 4.3.17 Data from the GPR survey will be subject to standard processing, typically including gain and wobble correction and navigational verification. Further processing such as migration, Hilbert transformation, band-pass and low-pass filtering may be undertaken where appropriate. Topographic data will be used to correct for the angular offsets caused by the variation in aspect of the terrain along the profile.

### **Resistance survey**

- 4.3.18 Resistivity data will be collected at 0.5m intervals along transects spaced 1m apart, using a Geoscan Research RM15 instrument or similar, in accordance with Historic England guidelines [16]. Data will be collected using a parallel twin probe configuration in the zigzag fashion.
- 4.3.19 Data from the earth resistance survey will be subject to minimal data correction processes. These would typically comprise a de-spike filter to remove erroneous data caused by poor contact resistance, and an edge-match function to remove offsets caused by successive remote probe movements necessary with the twin probe configuration. These two steps will generally be applied to all survey areas; further

processing, including interpolation and high-pass filtering, may also be undertaken and presented in addition to the minimally processed data.

## 4.4 Trial Trench Evaluation

### General requirements

- 4.4.1 Trench numbers and positions will be designed in individual SSWSIs in accordance with the Statement of Principles to address the aims, objectives and research questions of the evaluation in each fieldwork area. Where appropriate, trenches will be proposed to augment previous trial trench results.
- 4.4.2 All trial trenches will be excavated at the locations identified in the relevant SSWSI. Trenches will be positioned to an accuracy of  $\pm 100\text{mm}$  of the specified trench location using survey-grade GPS or equivalent metric-survey equipment. Minor adjustments to the layout may be made by the Archaeological Contractor on site to take account of any site constraints, e.g. obstructions, utilities or ecological considerations, in agreement with the Technical Partner and HMAG/WCAS.
- 4.4.3 Each trench location will be scanned using a Cable Avoidance Tool (CAT scanner) prior to and during the excavation (mechanical excavation and hand excavation) to ensure that no live services are present.
- 4.4.4 Access to the fields where the works are required will be arranged by the Technical Partner's and Employer's Stakeholder Engagement and Lands Teams. The Technical Partner and Archaeological Contractor will ensure that the Landowner is fully informed of scope and programme, is introduced to site supervisory personnel, and that they are invited to view the work in progress. The Technical Partner will arrange this with the Employer's Stakeholder Engagement and Lands Team in the first instance.
- 4.4.5 The Archaeological Contractor shall take photographs at the following stages:
- Pre-entry onto the site of each exploratory hole (trial trench), and photographs of the access route agreed between the Technical Partner's and Employer's Stakeholder Engagement and Land's Teams and the Landowner;
  - Pre-entry where accommodation /welfare is located, including parking and storage;
  - Damaged drains, water pipes etc., photographs of works carried out to repair the damage;
  - Completion of each exploratory hole, pre-excavation and post-excavation shots of archaeological features, general site working shots to provide a visual overview and photographs of the reinstated exploratory hole;
  - Post-entry onto the site, photographs of the egress route agreed, including any reinstatement carried out; and
  - Photographs suitable for displays, exhibitions and other publicity.
- 4.4.6 The Technical Partner will provide a template Site Condition Form, which will be completed and submitted on completion of all fieldwork.

- 4.4.7 The Archaeological Contractor shall make appropriate provision for the protection of vulnerable areas, including but not limited to scheduled areas, through the use of track matting or other appropriate means, in agreement with the Technical Partner and Historic England/HMAG.
- 4.4.8 The Archaeological Contractor shall make appropriate provision for the protection of exposed archaeological deposits in the event of poor weather.

#### **Mechanical excavation**

- 4.4.9 Each trench will be opened under direct archaeological supervision using an appropriate mechanical excavator fitted with a toothless ditching bucket. Where necessary, concrete or tarmacadam surfacing will be broken out and stored separately from other arisings.
- 4.4.10 All trenches will be excavated to the dimensions specified in the relevant SSWSI. Where necessary trenches will be stepped to ensure stability and safety of the excavation and that safe access/egress and working conditions are maintained.
- 4.4.11 The arisings from the archaeological works will be stored adjacent to each trench (within a safe working distance) and will be separated according to material, (i.e. topsoil separated from subsoil).
- 4.4.12 As described in 4.3.13 above, a 150 litre sample of machined spoil will be sieved through a 10mm mesh every 5m along each trial trench (six sample points per 25m-long trench).
- 4.4.13 The excavation will proceed under direct archaeological supervision, in level spits up to a maximum of 50mm, until either the top of the first archaeological horizon or undisturbed natural deposits are encountered. Particular attention will be paid to achieving a clean and well-defined horizon with the machine, hand cleaning will be undertaken, where this is necessary and appropriate following machining, and the trench inspected for archaeological remains. Under no circumstances should the machine be used to cut arbitrary trenches down to natural deposits. The surface achieved through machine excavation will be inspected for archaeological remains. The mechanical excavator will not traverse any stripped areas.
- 4.4.14 If important concentrations of artefacts suggestive of significant activity are uncovered during machining, these should be left *in situ* in the first instance, and investigated using hand tools only.
- 4.4.15 Machined surfaces will be cleaned by hand sufficiently to allow the acceptable definition of the archaeological remains. Following cleaning, all archaeological remains will be planned, to enable the selection of features and deposits for sample excavation by the Archaeological Contractor.
- 4.4.16 The trenches will be clearly demarcated and secured with appropriate barrier fencing (such as high visibility plastic barrier mesh fencing or Heras fencing), supplied by the Archaeological Contractor, to ensure that persons or plant cannot inadvertently traverse across the area of investigation whilst archaeological works are in progress. The fencing will be regularly inspected and maintained by the Archaeological Contractor until works in each area have been completed.

- 4.4.17 All trial trenches will be inspected by the Archaeological Contractor’s geoarchaeologist to identify the potential presence of colluvial material. Where safe and practicable, trial trenches (or parts thereof) where colluvial sequences may be exposed will be left open to allow buried soils and stasis horizons time to weather out and to provide opportunity for sampling accordingly.
- 4.4.18 Trenches will not be backfilled without the approval of the Technical Partner and WCAS/HMAG. In exceptional circumstances, such as for health and safety purposes or ground stability reasons, some backfilling would be permitted. The trenches will only be backfilled by machine under appropriate conditions and with direct archaeological supervision. Arisings will be returned strictly in the correct sequence and will not be compacted. Particular care will be taken in the packing and backfilling of structural or fragile remains such that they can be reopened and integrated at mitigation stage. Good practice advice on the reburial of archaeological sites is outlined in Historic England guidance Preserving Archaeological Remains [18].
- 4.4.19 Following machine stripping of each trench, a metal detector survey will be undertaken on the stripped surface by an experienced operator, who will be an employee of the Archaeological Contractor. Spoil heaps will also be scanned by the experienced operator.

#### Hand excavation

- 4.4.20 Any archaeological deposits/features exposed will be hand-excavated in an archaeologically controlled and stratigraphic manner in order to meet the aims and objectives of the investigation.
- 4.4.21 Deposits/features will be investigated in each trench to their full depth in order to understand the complete stratigraphic sequence down to naturally occurring deposits. No archaeological deposits should be entirely removed unless this is unavoidable. Excavation must be undertaken with a view to avoiding damage to any features or deposits which appear to be worthy of preservation *in situ*. All archaeological work will be undertaken within the parameters of working within the WHS and the Statement of Principles (set out in the AESR) in consultation with the Technical Partner and HMAG.
- 4.4.22 Table 2 below sets out the sampling strategies that will be employed for hand excavation. The suitability and application of these strategies will be reviewed on site with WCAS and HMAG during monitoring visits in order to agree any need for variation to achieve the objectives of the investigation.

**Table 2: Hand excavation sampling strategies**

| Feature type    | Sample amount  |
|-----------------|--|
| Linear features | A minimum sample of 20% along the length, each section not less than 1m long, where the depositional sequence is consistent along the length. Multi-phase linear features with complex variations of fill type will be sampled sufficiently in order to understand the phasing and sequence of deposition. Where possible one section will be located and recorded adjacent to a trench edge. If appropriate all intersections will be investigated to determine the relationships between features. All termini will be investigated. |



| Feature type                    | Sample amount  |
|---------------------------------|--|
| Discrete features               | Pits, post-holes and other isolated features will normally be half-sectioned. A minimum requirement to meet the project objectives will be agreed in consultation with the Technical Partner. If large pits or deposits (over 1.5m diameter) are encountered then the sample excavated should be sufficient to define the extent and maximum depth of the feature and to achieve the objectives of the evaluation, but should not be less than 25%.                        |
| Structures (including kilns)    | Each structure will be sampled sufficiently to define the extent, form, stratigraphic complexity and depth of the component features and its associated deposits to achieve the objectives of the evaluation. All intersections will be investigated to determine the relationship(s) between the component features. The remains of all upstanding walls will be hand cleaned sufficient to understand their dimensions, extent, composition, sequence and relationships. |
| Flint scatters                  | Artefact scatters, in particular where associated with buried land surfaces, will require hand cleaning and three dimensional plotting prior to recovery.  |
| Positive features               | Topographical survey will be undertaken by both contour and hachure survey, in order to map the earthworks. The survey will be undertaken utilising survey-grade GPS. The distance interval at which each reading will be taken will be determined in the field, however, they will be taken at sufficient intervals to ensure that the earthworks are recorded in detail.   |
| Timber structures and artefacts | These will require specialist recording and conservation until they are assessed fully.  |

### Archaeological recording

- 4.4.23 A unique site code will be assigned for the project by the Archaeological Contractor.
- 4.4.24 All exposed archaeological deposits will be recorded using an appropriate *pro forma* recording system.
- 4.4.25 The perimeter of each trench and all archaeological remains within the trenches will be recorded in plan using metric survey-grade equipment (or its equivalent). The data will be overlaid at a scale of 1:500 onto the Ordnance Survey National Grid (using digital map data). The trench location will be tied in to the Ordnance Survey National Grid and Ordnance Datum (Newlyn).
- 4.4.26 A full written, drawn and photographic record will be made of each trench, even where no archaeological features are identified. Hand drawn plans and sections/elevations of features/ structures will be produced at an appropriate scale (normally 1:50 for plans and 1:10 or 1:20 for sections/elevations). One long section of each trench will be drawn at a scale of not less than 1:50 but only after the features within the trench have been excavated. All plans and sections will include spot heights relative to Ordnance Datum in metres, correct to two decimal places.
- 4.4.27 Photography (digital, colour transparency and monochrome negative photographs) will be taken using a minimum format of 35mm or 10 megapixels resolution. In addition to records of archaeological features, a number of general site photographs will also be taken to give an overview of the site. Particular attention should be paid to obtaining shots suitable for displays, exhibitions and other publicity.

### **Artefact recovery**

- 4.4.28 All artefacts will be collected, stored and processed in accordance with standard methodologies and national guidelines (refer to Appendix B, Standards and Guidance). Except for modern artefacts all finds will be collected and retained (see 7.1.5 for discard policy).
- 4.4.29 Each 'significant find' will be recorded three dimensionally. Similarly, if artefact scatters are encountered these should be also recorded three dimensionally. Bulk finds will be collected and recorded by context.
- 4.4.30 All recovered artefacts will be stabilised, conserved and stored in accordance with the current national conservation guidelines and standards (refer to Appendix B, Standards and Guidance). If necessary, an accredited conservator will visit the site to undertake 'first aid' conservation treatment. If waterlogged organic materials are encountered and appropriate cold storage facilities are not available onsite, the project manager will arrange the removal of the finds to nearby suitable facilities.
- 4.4.31 Artefacts will be stored in appropriate materials and conditions, and monitored to minimise further deterioration.

### **Geoarchaeology and the palaeo-environment**

- 4.4.32 A programme of sample recovery and analysis ('the programme') will be outlined in each SSWSI and developed on site to investigate past environmental conditions and soil sediment development that may be relevant to the research of archaeological remains recovered nearby. The scope and methods of the programme will follow the guidance outlined in:
- Guidance for the collection, documentation, conservation and research of archaeological materials [19];
  - Environmental Archaeology; A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition) [20]; and
  - Geoarchaeology: Using earth sciences to understand the archaeological record [9] .
- 4.4.33 The programme will encompass the following aspects:
- Bulk environmental soil sampling for the recovery of plant macro fossils, wood charcoal, small animal bones and other small artefacts.
  - Monolith and/or contiguous column samples 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.
  - Identification, recording, sampling and mapping of colluvial sequences.
- 4.4.34 Environmental sampling will be targeted to answer the questions laid out in the SSWSIs and relevant research agendas. The identification of deposits for sampling, the aims and methods of sampling techniques to be employed and the assessment process will be set out in the relevant SSWSIs. The development and implementation of the programme will be overseen in the field and off site by the Archaeological Contractor's environmental archaeology specialist.

- 4.4.35 Any samples taken must come from securely stratified deposits using the methodologies outlined by Historic England in the Centre for Archaeology Guidelines No.1, *Environmental Archaeology* [21] and *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation* [20].
- 4.4.36 All samples taken must come from appropriately cleaned surfaces, be collected with clean tools and be placed in clean containers. They will be adequately recorded and labelled and a register of all samples will be kept. Once the samples have been obtained they should be stored appropriately in a secure location prior to being sent to the appropriate specialist. Provision will be made for the ongoing processing and initial assessment of sampled material in order to provide timely feedback regarding the quality of preservation and significance of specific deposits during the evaluation and to inform the ongoing strategy.
- 4.4.37 A provisional sampling strategy is outlined in Table 3 below.

**Table 3: Provisional environmental sampling strategy for trench evaluation**

| Potential data                  | Method      | Context type                   | Sample size (litres)     | Feature sample |
|---------------------------------|-------------|--------------------------------|--------------------------|----------------|
| Charred plant remains (CPR)     | Bulk        | Structural/occupation features | 40                       | 100%           |
|                                 |             | Pit (prehistoric)              | 40                       | 50%            |
|                                 |             | Pit (Roman)                    | 40                       | 50%            |
|                                 |             | Pit (medieval)                 | 40+                      | 50%            |
|                                 |             | Pit (post-med)                 | 40                       | 50%            |
|                                 |             | Gully/ditch (settlement)       | 40                       | 10%            |
|                                 |             | Gully/ditch (outfield)         | 40                       | 5-10%          |
| Waterlogged and organic remains | Bulk        | All contexts                   | 10-20                    | N/A            |
| Small bones                     | Bulk        | All contexts                   | 40                       | 50%            |
| Molluscs                        | Incremental | Deposit sequence               | As advised by specialist | N/A            |
| Pollen                          | Incremental | Deposit sequence               | As advised by specialist | N/A            |

- 4.4.38 If large deposits of animal bone are encountered the advice of the project zooarchaeological specialist, will be sought regarding recording and sampling. Animal bone groups (articulated animal remains) will be assigned a number and documented using a suitable animal bone group sheet following Historic England guidance [22, pp. 13-14]. Assessment of biological remains will follow standard assessment procedures as laid out in Historic England guidance [20] [21] [22] [23].
- 4.4.39 Where appropriate, samples may be taken and sieved to aid in artefact recovery. For both inhumations and cremation related deposits, the burial deposit will be sampled and processed following specialist guidelines. In the case of samples from cremation related deposits the flots will be retained on a 0.5 mm mesh, with residues fractionated into 4 mm, 2 mm and 1 mm. In the case of samples from inhumation deposits, the samples will be artefact sieved through 9.5 mm and 1 mm mesh sizes. The coarse

fractions (9.5 mm) will be sorted with any finds recovered given to the appropriate specialist together with the finer residues.

### **Colluvial deposits**

- 4.4.40 Following advice from the Scientific Committee, the following approach to the investigation of colluvial deposits will be adopted.
- 4.4.41 The presence of colluvium will be mapped and its extent and depth modelled through the trial trenching programme. This will include review of previous trial trench reports. Where appropriate, auger transects will also be employed to examine locations where the presence of colluvium may be anticipated, such as dry valleys. Auger transect locations will be identified in the relevant SSWSIs and the Archaeological Contractor's RAMS, with inputs from the Archaeological Contractor's geoarchaeologist.
- 4.4.42 The geoarchaeological, palaeo-environmental and archaeological significance of colluvial deposits will be assessed with reference to the potential for buried soils, buried archaeology and land snail preservation, through the collection and assessment of appropriate samples during trial trenching and auger survey. This will enable identification of locations where more detailed study would be beneficial, whether through further fieldwork or post-excavation analysis of recovered samples.
- 4.4.43 Trial trenches will be inspected by the Archaeological Contractor's geoarchaeologist to identify the potential presence of colluvial material. Where safe and practicable, trial trenches (or parts thereof) where colluvial sequences may be exposed will be left open to allow buried soils and stasis horizons time to weather out. Colluvial sequences will be recorded and sampled by the geoarchaeologist. All samples will be processed and assessed as part of the evaluation programme.
- 4.4.44 Small portions of the colluvium exposed in trial trenches will be hand excavated under the supervision of the Archaeological Contractor's geoarchaeologist and the two dimensional location of every artefact recorded to 1cm to construct a distribution of finds and datable artefacts. Excavated soil will be sieved to 10 mm at 0.2 m vertical intervals for finds recovery. Column samples for land snails and samples of key deposits for soil micromorphology and soil chemistry will be taken.

### **Scientific dating**

- 4.4.45 Provision will be made for the recovery of material suitable for scientific dating. An appropriate dating specialist with a background in chronological modelling will be consulted on this in advance of and throughout the fieldwork, and will be available to advise on the ongoing strategy.
- 4.4.46 Dating of colluvial sequences by optically stimulated luminescence (OSL) will be considered in the relevant SSWSIs. If molluscs are present, uranium-series dating will be considered.

### **Finds processing**

- 4.4.47 Initial processing of finds (and if appropriate other samples) will be carried out concurrent with the fieldwork. Finds will be retained according to the requirements set out in the Collection and Discard Policy in the SSWSI. All finds will be washed, marked, bagged and logged on a MS Access or GIS database (or equivalent), together with

their locations. Significant finds will be recorded on the Ordnance Survey National Grid (eastings, northings) and Ordnance Datum height to two decimal places.

- 4.4.48 The finds assemblage will be treated, labelled and stored in accordance with the appropriate Historic England guidance documents, local authority guidelines (if appropriate) and the Institute of Conservation guidelines [24] and British Standards Institution/ European Committee for Standardisation (CEN) standards relevant to the Conservation of Cultural Heritage (Appendix B). The Archaeological Contractor will ensure that the processing of the assemblage is in accordance with the requirements of the recipient Museum.
- 4.4.49 Each category of find or each material type will be examined by a suitably qualified archaeologist or specialist and the results incorporated into the fieldwork report.

### Human remains

- 4.4.50 A Burials Licence will be sought from the Ministry of Justice by the Archaeological Contractor in advance of the fieldwork.
- 4.4.51 If human remains are discovered during the course of the trial trench evaluation the remains shall provisionally, in accordance with good practice, be covered and protected and left *in situ*. Following consultation with HMAG/WCAS/Historic England removal of the remains may be deemed appropriate where they are judged to be at risk of damage if reburied/left *in situ*. The removal of human remains will only take place in accordance with a Ministry of Justice licence and under the appropriate Environmental Health regulations and the Burial Act 1857. In the event of the discovery of human remains the Archaeological Contractor will notify the Technical Partner and HMAG immediately and arrange to contact H.M. Coroner.

### Treasure

- 4.4.52 Any artefacts that fall within the scope of the Treasure Act (1996) and Treasure (Designation) Order 2002 shall be reported to the Technical Partner, HMAG/WCAS and to H.M. Coroner immediately. The Portable Antiquities Scheme (PAS) regional Finds Liaison Officer (FLO) will also be notified. The Archaeological Contractor shall ensure that the Treasure Regulations are enforced and that all the relevant parties are kept informed. In addition, the Archaeological Contractor shall maintain a list of finds that have been collected that fall under the Treasure Act and related legislation, and this list shall be included in the evaluation report.
- 4.4.53 Finds that are classified as 'treasure' shall be removed to a safe place. Where removal cannot be effected on the same working day as the discovery, suitable security measures must be taken to protect the finds from damage or unauthorised removal.

## 5 Monitoring and Progress Reporting

### 5.1 Monitoring

- 5.1.1 Wiltshire Council Archaeology Service and, for proposals affecting scheduled monuments, Historic England, have a statutory duty to monitor fieldwork. All fieldwork will be subject to regular monitoring visits by the Technical Partner, HMAG (within the WHS) and WCAS (outside the WHS). The Technical Partner and HMAG will have unrestricted access to the records or any other information. HMAG and WCAS will

inspect the field work as required and attend all site meetings which will be arranged by the Technical Partner. The work will be inspected to ensure that it is being carried out to the required standards and that it will achieve the stated objectives in line with the approved SSWSI.

- 5.1.2 Any fieldwork on National Trust land will be conducted in accordance with the terms of a National Trust Archaeological Research Agreement. The National Trust archaeologist will have unrestricted access to monitor the work.

### **Scientific Committee**

- 5.1.3 The Scientific Committee will be invited to site monitoring visits at appropriate points in the programme and when arrangements can be made in advance. Invitations for the Scientific Committee to attend will be issued (to all Scientific Committee members) by Highways England. The dates of site monitoring visits will be set in accordance with the availability of HMAG who need to monitor and sign off the work. All site meetings will be arranged by the Technical Partner.

## **5.2 Progress Reports**

- 5.2.1 Weekly written progress reports (via e-mail each Friday to be received no later than 12.00 hrs) will be provided to the Technical Partner and HMAG by the Archaeological Contractor during the fieldwork. In addition, the Archaeological Contractor will inform the Technical Partner on the progress of the fieldwork verbally upon request.
- 5.2.2 The Archaeological Contractor will only accept instruction from the Technical Partner. All instructions will be in writing.

# **6 Fieldwork reports**

## **6.1 Interim statements**

- 6.1.1 An interim statement will be produced upon completion of each evaluation event.
- 6.1.2 Within 48 hours of completion of each stage of the Evaluation fieldwork, a draft interim statement will be submitted to the Technical Partner for review and for distribution by the Technical Partner to HMAG and WCAS. The interim statement will include:
- A brief summary of the results;
  - A plan of each area where fieldwork has been undertaken at an appropriate scale, showing mapped anomalies / features; and
  - A quantification of the primary site archive including contexts, finds and samples.

## **6.2 Fieldwork reports**

- 6.2.1 On completion of each stage of the evaluation fieldwork the processing of geophysical survey data, finds, samples and the assessment of all artefacts and ecofacts recovered will be completed.
- 6.2.2 Digital mapping, geophysical survey data, aerial photographic data and other existing information gathered during previous archaeological investigations will be assessed against the information recovered from the evaluation fieldwork.

- 6.2.3 A report will be produced on the fieldwork results from each evaluation event between 3 and 6 weeks following the on-site works, dependent upon the fieldwork methodology and the delivery of specialist reports. Reports will be prepared in accordance with the guidance given in the ClfA's Standard and guidance for archaeological field evaluation [13]. Reports will be issued to HMAG/WCAS for comment and sign-off in a timely manner.
- 6.2.4 Fieldwork reports will include the following:
- A signed QA sheet detailing; title, author, version, date, checked by, approved by.
  - A non-technical summary.
  - Site location drawing.
  - Archaeological and historical background (including an assessment of the results of previous phases of fieldwork).
  - Methodology.
  - Aims and objectives.
  - The results of the evaluation fieldwork (to include where relevant a full description, assessment of condition, quality and significance of any remains).
  - Where human remains are encountered the report will include a statement that addresses the future retention of the material, including if appropriate, options for reburial.
  - Appendix containing specialist artefact, dating and environmental sampling reports.
  - Appendix illustrating specific finds and general working shots or portraits of specific features or structures as appropriate.
  - A list of all finds that fall within the scope of the Treasure Act and associated legislation.
  - A stratigraphic matrix for each trench (as appropriate).
  - Assessment /conclusion and a statement of potential with recommendations for further work and analysis identifying specific research questions.
  - A statement of the significance of the results in their local, regional and national context cross-referenced to relevant research agendas.
  - Where relevant, a statement of the contribution of any archaeological remains (including all material categories recovered from the site) to contribute to the OUV of the WHS.
  - Current and proposed arrangements for long-term conservation and archive storage (including details of the recipient museum).

- General and detailed plans showing the location of each trench accurately positioned on an Ordnance Survey base map (at an appropriate and recognised scale).
- Plans and sections of all archaeological features (at an appropriate and recognised scale), including a long section of each trench.
- A section and plan of 'negative' trenches, i.e. those containing no archaeological remains, does not need to be produced providing there is a summary of the stratigraphic profile and depth of deposits included in the Fieldwork Report, unless it necessary to illustrate areas and sections through colluvium.
- Colour photographic plates illustrating the site setting, work in progress and archaeological discoveries.
- A cross-referenced index of the project archive.

- 6.2.5 The fieldwork reports will specifically comment on the level of preservation and will comment on the character of the overlying deposits and on the potential for extrapolating the results into adjacent areas. A digital pdf copy (complete with illustrations and plates) of the completed draft report will be submitted to the Technical Partner for comment within 3 to 6 weeks of the completion of the fieldwork (with 'hold points' inserted within the report where the Archaeological Contractor is waiting for particular results, such as scientific dating). The Technical Partner will pass on the draft report to the Employer and HMAG/WCAS for comment.
- 6.2.6 In finalising the report the comments of the Technical Partner, the Employer and HMAG/WCAS will be taken into account. Once approved, reports will be provided to members of the Scientific Committee for information.
- 6.2.7 Eight bound copies, one unbound master-copy and a digital version (Word and PDF) of the finalised report will be submitted to the Technical Partner within two weeks of receipt of comments on the 'final draft' report.
- 6.2.8 A project CD shall be submitted containing image files in JPEG or TIFF format, digital text files shall be submitted in Microsoft Word format, illustrations in AutoCAD format or ArcView shapefile format. A fully collated version of the report shall be included in PDF format.
- 6.2.9 The Technical Partner will submit hard copies and a digital copy of the final Fieldwork Report to HMAG and the Employer. The information will be deposited with the Wiltshire and Swindon Historic Environment Record (WSHER) where it can be freely copied for the purposes of archaeological research or development control within the planning process. Where the fieldwork takes place on National Trust land the information will also be deposited with the National Trust.
- 6.2.10 Details of the archaeological work will be submitted online to the OASIS (Online Access to the Index of Archaeological Investigations) database. Subject to any contractual requirements on confidentiality, copies of the OASIS record will be integrated into the relevant local and national records and published through the Archaeology Data Service ArchSearch catalogue.



- 6.2.11 The OASIS entry will be updated and re-submitted not later than three months after the completion of the fieldwork report. When completing the form the Archaeological Contractor must make reference to the relevant research agenda.

### **6.3 Publication**

- 6.3.1 The results of the archaeological evaluation will be published in a format commensurate with their significance within 3 years of completing the works, or as part of the wider publication of archaeological mitigation works within the same time frame (3 years). Proposals for appropriate publication will be considered in each SSWSI and/or as part of a subsequent WSI setting out a programme of post-excavation and dissemination of the results of the overall evaluation fieldwork programme as a whole.
- 6.3.2 All proposals for the preparation of publications will be agreed in advance with the Technical Partner and approved by the HMAG/WCAS and the Employer. The Scientific Committee will be asked to advise on the form of the final publication.

## **7 Archive preparation and deposition**

### **7.1 Archive preparation**

- 7.1.1 Archaeological material recovered from fieldwork is irreplaceable and data recorded in the course of fieldwork should be copied and held securely in a separate location in line with current good practice, until it can be deposited in a recipient repository. The finds and records generated by the fieldwork will be removed from site at the end of each working day and will be kept secure at all stages of the project. The Archaeological Contractor will be responsible for the care of the site archive (records and finds) in their possession and should ensure that adequate resources are in place prior to the start of the fieldwork, including the materials necessary for appropriate storage and access to an archaeological conservator.
- 7.1.2 The site records and assemblages (list of fieldwork interventions, notebooks /diaries, context records, feature records, structure records, site geometry (drawings), photographs and films, finds records and associated data files) will constitute the primary Site Archive. This is the key archive of the fieldwork project and the raw data upon which all subsequent assessment and analysis and future interpretation will be based. The archive will therefore not be altered or compromised.
- 7.1.3 The site archive shall be quantified, ordered, indexed and made internally consistent, and in line with current good practice [25, 26, 27]. All finds and coarse-sieved and flotation samples will have been processed and stored under appropriate conditions. The archive will also contain a site matrix, a summary of key findings and descriptions of artefactual and environmental assemblages. Arrangements will be made for the proper cataloguing and storage of the archive during the project life-cycle (it may be appropriate to liaise with an archive specialist). The content of an outline structure for a fieldwork archive is presented in Management of Research Projects in the Historic Environment (MoRPHE) Project Planning Note 3: Archaeological Excavation, Appendix 1, Product P1 and Product P3 [28].
- 7.1.4 The archive will be produced to current national standards (see Appendix B Standards and guidance). All records and materials produced will be marked with the

site/accession code and will be quantified, ordered, indexed and internally consistent. The archive will be produced to national standards [25, 26, 27].

### **Discard policy**

- 7.1.5 The Archaeological Contractor shall follow the guidelines set out in Selection, Retention and Dispersal of Archaeological Collections [29], which allows for the discard of selected artefact and ecofact categories which are not considered to warrant any future analysis. Any discard of artefacts will be fully documented in the project archive and set out in the Archaeological Contractor's RAMS which will be agreed with the Technical Partner and HMAG/WCAS.

### **Security Copy**

- 7.1.6 In line with current good practice, on completion of the project a security copy of the written records will be prepared, in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

## **7.2 Archive storage and deposition**

- 7.2.1 The Archaeological Contractor will, prior to the start of fieldwork, liaise with an appropriate storage facility to obtain agreement-in-principle to accept the material, documentary, digital and photographic archive for long-term storage. The Archaeological Contractor will identify at the initial project set-up stage any specific requirements or policies of the recipient repository in respect of the archive (for example, the discard policy for retained finds), and for adhering to those requirements. The Archaeological Contractor shall immediately inform the Technical Partner of the requirements or policies of the recipient repository, for approval by HMAG/WCAS.
- 7.2.2 Any charges levied by the repository for the long-term storage of the archive will be met by the Archaeological Contractor.
- 7.2.3 The receiving museum for south Wiltshire is the Salisbury and South Wiltshire Museum. However, this museum has confirmed it is not currently accepting archives from archaeological investigations. In the absence of a recipient museum, the archive will be retained by the Archaeological Contractor, until a suitable repository is agreed between the Archaeological Contractor, the Technical Partner, the Employer and HMAG/WCAS.
- 7.2.4 Deposition of any finds with the receiving museum will only be carried out with the full agreement of the Landowner.
- 7.2.5 It is possible that the archive will be combined with the records from later phases of investigation. At the end of the investigation(s), the deposition of the archive will form the final stage of the project.
- 7.2.6 The Archaeological Contractor shall provide the Technical Partner with copies of communications with the recipient museum and written confirmation of the deposition of the archive. The Technical Partner will deal with the transfer of ownership and copyright issues and will inform HMAG/WCAS once the archive has been transferred to the recipient repository.

## 8 Programme and resources

### 8.1 Programme

- 8.1.1 The trial trench evaluation will be undertaken in accordance with a programme that is agreed between the Technical Partner, the Employer and the Archaeological Contractor. HMAG/WCAS will be notified of the programme for fieldwork in a timely manner such that monitoring arrangements can be put in place.
- 8.1.2 Following agreements between the Landowner and the Technical Partner's and Employer's Stakeholder Engagement and Lands Teams, the Archaeological Contractor will mobilise. The works will be subject to clearance from other environmental disciplines, such as ecological constraints, prior to works beginning on site.
- 8.1.3 The evaluation programme and key contacts, including relevant land access liaison officers, will be confirmed by the Technical Partner to the Archaeological Contractor prior to works commencing. Changes/variation to the programme will only be accepted after they have been agreed in writing with the Technical Partner. The Archaeological Contractor shall give immediate warning to the Technical Partner should any agreed programme date not be achievable.
- 8.1.4 The Archaeological Contractor shall provide early warnings for any delays to the works' timetable or programme issues. The early warnings will be sent to the Technical Partner.

### 8.2 Resources

- 8.2.1 All archaeological personnel involved in the project shall be suitably qualified and experienced professionals. All staff will be fully briefed and aware of the work required under this specification and will understand the objectives of the investigation and methodologies to be employed.
- 8.2.2 The fieldwork will be directed and supervised by an appropriately experienced senior archaeologist employed by the Archaeological Contractor who will be a corporate member of the Chartered Institute for Archaeologists.
- 8.2.3 Communication and dissemination of relevant site information are essential in all fieldwork projects. The SSWSI will be available to all site staff and a copy will be held on site for this purpose. Initial processing of artefactual and ecofactual material will be carried out concurrent with fieldwork. The project team will include relevant specialists to advise on collection and sampling techniques and to ensure compliance with the SSWSI. Updated methodologies devised on site will be agreed with the Technical Partner and HMAG. Regular progress meetings for site staff will be held as appropriate and relevant; information will be passed on to all contributors to ensure that all team members are kept informed of emerging site strategies and site narratives.
- 8.2.4 The appointed Project Manager and named specialists will be involved in all phases of the investigation through to its completion. Names and CVs of supervisory staff and specialists will be included in the relevant SSWSIs and Archaeological Contractor's RAMS.

## 9 Confidentiality and publicity

### 9.1 Confidentiality

9.1.1 The archaeological works may attract the interest of the public and the press. All communication regarding this project is to be directed through the Technical Partner and the Employer. The Archaeological Contractor will refer all inquiries to the Technical Partner and the Employer without making any unauthorised statements or comments.

### 9.2 Publicity

9.2.1 The Archaeological Contractor will not disseminate information or images associated with the project for publicity or information purposes without the prior written consent of the Technical Partner and the Employer.

9.2.2 Landowner communications will be managed by the Technical Partner. The Archaeological Contractor shall permit access to the evaluation site by the landowner where it is safe to do so.

## 10 Copyright

10.1.1 The Archaeological Contractor shall assign copyright in all reports, documentation and images produced as part of this project to the Employer. The Archaeological Contractor shall retain the right to be identified as the author or originator of the material.

10.1.2 This applies to all aspects of the project. It is the responsibility of the Archaeological Contractor to obtain such rights from subcontracted specialists.

10.1.3 The Archaeological Contractor may apply in writing to use or disseminate any of the project archive or documentation (including images). Such permission will not be unreasonably withheld. The results of the archaeological works shall be submitted to the HMAG by the Technical Partner, and will ultimately be made available for public access.

## 11 Insurance and health and safety

11.1.1 The Archaeological Contractor will provide the Technical Partner with details of their public liability and professional indemnity insurance cover.

11.1.2 The works will not fall within the definition of Construction Work as defined under the Construction Design and Management (CDM) Regulations 2015. The Archaeological Contractor, however, will prepare the necessary Health and Safety Plan, Risk Assessment and Method Statements, provide suitable welfare facilities and undertake H&S Site inductions for all staff that work on the project.

11.1.3 The Archaeological Contractor will have their own Health and Safety policy as required under the Health and Safety at Work etc Act 1974. A copy of the Archaeological Contractor's latest Health and Safety policy will be submitted to the Technical Partner, who will forward it on to the Employer.

11.1.4 The Archaeological Contractor shall prepare Risk Assessment(s), Method Statement (s) (RAMS), and a project specific Health and Safety Plan and submit these to the

Technical Partner for approval prior to starting on site. The Archaeological Contractor will not be permitted to start on site until the Employer has received confirmation that the Plan is acceptable for the proposed works. If amendments are required to these reports during the works the Technical Partner and the Employer must be provided with the revised document at the earliest opportunity.

- 11.1.5 The site supervisor will be qualified to a minimum Site Supervisor Safety Training Scheme (SSSTS) level. All other staff involved in the fieldwork will be Construction Skills Certification Scheme (CSCS) qualified. For the majority, this will comprise holding an “Academically Qualified Person” (AQP) card, though CSCS-qualified “Professionally Qualified Person” (PQP) card holders, “Labourer” green card holders, and those holding currently valid CRO “Archaeological Operative” cards may be deployed to the scheme. CVs will include details of SSSTS, CSCS and all other relevant qualifications and accreditations, with expiry dates.
- 11.1.6 The Technical Partner will provide the Archaeological Contractor with the results of recently conducted service and utility searches; however, the Archaeological Contractor shall be responsible for identifying any buried or overhead services and taking the necessary precautions to avoid damage to such services, prior to and during the fieldwork. The Archaeological Contractor will ensure that any individual scanning for buried services is both competent and appropriately trained. The Archaeological Contractor shall at all times maintain a safe working distance from the overhead and buried services / utilities. In addition, the Archaeological Contractor shall be responsible for any requirements with regard to work in the vicinity of watercourses and live carriageways. The Archaeological Contractor's Risk Assessment(s) and project Health and Safety Plan shall make reference to relevant guidance and good practice (for example: Health and Safety Executive SEGS6 - Avoidance of Danger from Overhead Lines; HS(G)47 - Avoiding Danger from Underground Services; Energy Networks Association The Safe Use of Mechanical Plant in the Vicinity of Electricity Overhead Lines; PAS 128 – Specification for underground utility detection, verification and location).
- 11.1.7 The Archaeological Contractor's supervisor will maintain a record of site attendance and complete a daily briefing, including a review of health & safety requirements, at the start of work for each day that there is a team in the field.
- 11.1.8 All site personnel will wear personal protective equipment (PPE) as defined by the Archaeological Contractor's risk assessment undertaken in accordance with mandatory requirements. Any visitors to the investigations will require a site induction in accordance with the Archaeological Contractor's Health and Safety requirements, and will have read the appropriate Archaeological Contractor's Risk Assessment and Method Statement (RAMS). The Archaeological Contractor will ensure that any visitors to the investigations are equipped with suitable PPE prior to entry to the site. All equipment that is used in the course of the fieldwork must be 'fit for purpose' and be maintained in a sound working condition that complies with all relevant Health and Safety regulations and recommendations.
- 11.1.9 The Archaeological Contractor will assure the provision and maintenance of adequate, suitable and sufficient welfare and sanitary facilities at appropriate locations for the duration of the works. The locations for the temporary site welfare facilities will be agreed with the Technical Partner's and Employer's Stakeholder Engagement and

Land's Teams and the Landowner prior to the start of the works, and arrangements for temporary parking shall also be agreed should they be required.

- 11.1.10 Health and Safety considerations will be of paramount importance and will override archaeological considerations at all times. This includes all stages of the archaeological works, including site-based and office based activities. All anticipated activities should be included in the Archaeological Contractor's RAMS and suitable mitigation measures to reduce the risk of injury be put in place. The Archaeological Contractor's RAMS will be kept under continuous review throughout the works and updated as necessary.

## **12 Adherence to OWSI**

- 12.1.1 The Archaeological Contractor will undertake the works according to this OWSI and any subsequent written variations and in accordance with the relevant SSWSI. No variation from or changes to the OWSI and/or SSWSI will occur except by prior agreement with the Technical Partner, the Employer and HMAG/WCAS.

## Abbreviations

|        |  |
|--------|--|
| AESR   | Archaeological Evaluation Strategy Report  |
| AmW    | AECOM Mace WSP Joint Venture   |
| CAT    | Cable Avoidance Tool   |
| CEN    | European Committee for Standardisation   |
| CIfA   | Chartered Institute for Archaeologists   |
| CPR    | Charred plant remains  |
| DCO    | Development Consent Order  |
| DMRB   | Design Manual for Roads and Bridges  |
| EIA    | Environmental Impact Assessment  |
| GNSS   | Global Navigation Satellite System, satellite navigation systems that provide autonomous geo-spatial positioning with global coverage. |
| GPR    | Ground penetrating radar   |
| HEA    | Historic Environment Assessment  |
| HMAG   | Heritage Monitoring and Advisory Group   |
| ICOMOS | International Council on Monuments and Sites   |
| ISO    | International Organization for Standardization   |
| MHz    | Megahertz  |
| MoRPHE | Management of Research Projects in the Historic Environment  |
| NPPF   | National Planning Policy Framework   |
| NPSNN  | National Policy Statement for National Networks  |
| nT     | Negative magnetic field strength (magnetic flux density)   |
| OASIS  | Online Access to the Index of Archaeological Investigations  |
| OSL    | Optically stimulated luminescence  |
| OUV    | Outstanding Universal Value  |
| OWSI   | Overarching Written Scheme of Investigation  |
| PDF    | Portable Document Format   |
| RLB    | Red-line Boundary, the Provisional DCO Boundary for the Scheme   |
| SSWSI  | Site Specific Written Schemes of Investigation   |
| UNESCO | United Nations Educational, Scientific and Cultural Organization   |
| WCAS   | Wiltshire Council Archaeology Service  |
| WHS    | World Heritage Site  |
| WSHER  | Wiltshire and Swindon Historic Environment Record  |

## Glossary

|   |   |
|---|---|
| <b>Archaeological archive</b>                     | An archaeological archive comprises all records and materials recovered during an archaeological project and identified for long-term preservation, including artefacts, ecofacts and other environmental remains, waste products, scientific samples and also written and visual documentation in paper, film and digital form.  |
| <b>Archaeological geophysical survey</b>          | A non-intrusive archaeological prospecting technique, used to identify sub-surface features.  |
| <b>Archaeological field evaluation</b>            | The definition of archaeological field evaluation is a limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land, inter-tidal zone or underwater. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their significance in a local, regional, national or international context as appropriate. |
| <b>Archaeological surface artefact collection</b> | The systematic recovery and recording of artefacts found within an area of ground. The land may have been ploughed prior to survey and the artefacts collected from the ground surface (fieldwalking). Often used at the reconnaissance stage to contribute toward the determination of the archaeological potential of an area or to map the extent of a known or suspected site.  |
| <b>Geoarchaeology</b>                             | Geoarchaeology is the application of earth science principles and techniques to the understanding of the archaeological record.   |
| <b>Historic England</b>                           | Publicly funded body that champions and protects England's historic places, including Stonehenge and Avebury; also known as the Historic Buildings and Monuments Commission for England.  |
| <b>Mitigation strategy</b>                        | A structured programme of work intended to reduce the impact of a project, agreed with Highways England following the evaluation phase. Mitigation may involve, amongst others, avoiding or screening important heritage assets or their preservation <i>in situ</i> or further investigative and recording works if as a result of a project the heritage assets would be diminished.  |
| <b>National Trust</b>                             | Charity that cares for historic houses, gardens, ancient monuments, countryside and other sites across England, Wales and Northern Ireland, including parts of the Stonehenge landscape.  |
| <b>OASIS Record</b>                               | The online archaeological event recording system and for uploading grey literature into its associated Library of Unpublished Fieldwork Reports. Local Authority Historic Environment Records request that OASIS record are completed and updated at key stages of a project.   |
| <b>Outstanding Universal Value</b>                | Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of humanity. To be deemed of Outstanding Universal Value, a property must also meet the conditions of integrity and/or authenticity and must have an adequate protection and management system to ensure its safeguarding.   |
| <b>World Heritage Site</b>                        | A site inscribed by UNESCO because of its Outstanding Universal Value under the terms of the UNESCO World Heritage Convention.  |



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