Written Scheme of Archaeological Investigation (WSI)

DOCUMENT NO. 80061155-SBG-XX-XX-RP-I-00019

HARP – TEMPORARY COMPOUNDS (RIVER HODDER BRIDGE)

STRABAG UK LIMITED

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TABLE OF CONTENTS

1. INTRODUCTION

1.1. PROJECT OVERVIEW

The Haweswater Aqueduct Resilience Programme (HARP) is a regionally significant infrastructure programme which benefits from policy support and planning permission, and for which there is an established urgent need. The programme is the first Direct Procurement for Customers (DPC) programme, led by United Utilities (UU), who are responsible for providing water and wastewater services in the Northwest of England. UU has appointed Cascade Infrastructure Ltd (Cascade) to fund, design, construct and maintain the HARP programme of works, and Cascade have in turn appointed STRABAG UK (SUK) to carry out the design and construction.

To deliver the design and enabling works, SUK acts as the delivery partner, responsible for planning, managing, and executing each phase of works.

The third of the six tunnel sections, known as the Proposed Bowland Section, is within the more central area of the HARP programme of works and involves replacing 16.7 km of the existing Haweswater Aqueduct . The route of the Proposed Bowland Section runs north to south, from an upland area of semi-improved pasture at Lower Houses Compound, near Wray, passing at depth below the Bowland Fells before emerging in the Ribble Valley to the west of Newton-in-Bowland.

Construction of the tunnel section will start from the south, at the Newton-in-Bowland Compound located north of the River Hodder. The compound is serviced from the south by a temporary haul road and bridge that diverts construction traffic from the B6478 to avoid Newton-in-Bowland.

1.2. PURPOSE

This Written Scheme of Investigation (WSI) describes archaeological investigation in advance of civil engineering works to be undertaken as part of HARP Phase 1- Enabling and Site Establishment works for the Hodder Crossing Compound, Bridge and Haul Road (hereafter, referred to as “the Site”).

1.3. SCOPE

The extent and scope of archaeological investigations at the Site has been informed by the earthworks and environmental management designs described in:

- SUK HARP 80061155-ZT-XX-XX-RP-C00002 River Hodder Compound & Access Road Earthworks Design Technical Report.
- SUK River Hodder Compound Earthwork - Siteplan Stage 4 TBM Tunneling: Drawing number 80061155-ZT-XX-XX-DR-C-00008 P01
- United Utilities Water Limited Haweswater Aqueduct Resilience Programme Environmental Masterplan: Drawing number LCC_RVBC-BO-FIG-020-001

1.4. PLANNED WORKS

This WSI archaeological investigation scope focuses solely on specific potential impacts that apply at the Site (as detailed in Figure 1). This comprises the removal of topsoil and subsoil to expose and record archaeological deposits that may be damaged during Phase 1 enabling and site establishment works as detailed in Table 1.1.

The proposed archaeological investigation works themselves form 'Phase 0' of the Phasing Plan, which has recently been submitted to the Council for determination.

Table 1.1. Activities Associated with Phases 1 of construction works

Construction Phase	Works
Phase 1 - Enabling and Site Establishment Works Anticipated start of works Q4 2026	▪ Off-site highways works ▪ Establish temporary site access(es) ▪ Construction of temporary site access haul road ▪ Export / Import of fill material, compaction and asphalt works ▪ Installation of temporary bridge crossing over the River Hodder ▪ Construction of temporary drainage to manage surface water ▪ Erection of temporary fencing (e.g., heras, livestock fencing, hoarding) ▪ Installation of temporary security related infrastructure (barriers, ANPR systems, CCTV etc) ▪ Construction of temporary internal site roads ▪ Installation of site welfare offices and utility connections ▪ Establish site workshops ▪ Establish temporary site drainage systems for water management ▪ Installation of tree/vegetation protection measures ▪ Public Rights of Way Diversions

1.5. PLANNING REQUIREMENT

This WSI has been prepared to discharge planning condition 5 of the approved scheme 3/2021/0660:

Condition 5

No development shall take place within each Phase until the applicant, or their agent or successors in title, has secured the implementation of a programme of archaeological work for that Phase. This must be carried out in accordance with a written scheme of investigation, which shall first have been submitted to and agreed in writing by the Local Planning Authority. This work should be carried out by an appropriately qualified and experienced professional archaeological contractor to the standards and guidance set out by the Chartered Institute for Archaeologists (www.archaeologists.net). The development shall be carried out in accordance with these agreed details.

Reason: To ensure and safeguard the recording and inspection of matters of archaeological/ historical importance associated with the Site.

1.6. ENGAGEMENT

A programme of archaeological geophysical survey and evaluation trenching has been completed at the Newton-in Bowland Compound and the Lower Houses Compound. The Historic Environment Team Planning Officer for Lancashire has confirmed no further archaeological works are necessary in these compound areas.

UU and the Historic Environment Team Planning Officer for Lancashire have further refined the archaeological mitigation item requirements at the Site (as referenced in the Environmental Statement (ES) Volume 4, Chapter 10 Cultural Heritage) as follows:

- No requirement to undertake:
  - geophysical survey (Mitigation Item CH-RC1)
  - archaeological trial trenching (Mitigation Item CH-RC2)
  - geoarchaeological and palaeo-environmental assessment (Mitigation Item CH-RC6)

Construction/working areas will be examined through:

  - strip, map and sample (Mitigation Item CH-RC4)
  - detailed archaeological excavation (Mitigation Item CH-RC3)
  - archaeological recording during construction (‘watching brief’) (Mitigation Item CH-RC5)

Further discussion between SUK and the Historic Environment Team Planning Officer for Lancashire occurred on 6 March 2026. It was agreed that a preliminary phase of trial trenching

will precede the earthworks programme. This is to further refine the strategy for archaeological mitigation at the Site, by informing decisions to target strip, map and sample investigation in order to optimise programme opportunities and prioritise resources.

Detailed archaeological excavation, if required, will target discrete areas defined during strip, map and sample in consultation with the Historic Environment Team Planning Officer for Lancashire.

Archaeological recording during construction (‘watching brief’) will provide an alternative arrangement for:

- areas of low archaeological risk subject to logistical/environmental constraints
- locations where specific archaeological objectives can be safely and efficiently achieved by means of integration with earthwork operations
- removal of stored topsoil at stockpile areas to ensure disturbance of in situ topsoil/subsoil is avoided.

Technical details set out in this WSI, have been prepared in consultation with the Historic Environment Team Planning Officer for Lancashire.

2. HISTORICAL BACKGROUND AND ARCHAEOLOGICAL POTENTIAL

2.1. LOCATION, TOPOGRAPHY AND GEOLOGY

Newton-in-Bowland is a village in the Ribble Valley area of Lancashire, located within the Forest of Bowland, a National Landscape (formerly Area of Outstanding Natural Beauty). Geographically, it is situated on the River Hodder, with the B6478 road running through it .

The Site spans the River Hodder, which also represents the natural low point of the terrain. The section between Hallgate Hill and the river is more gently sloping, while the western side, beyond the river, is considerably steeper.

The bedrock comprises Carboniferous sedimentary rocks of the Hodder Mudstone Formation, overlain with Quaternary river terrace gravels along the valley sides and alluvium, comprising clay, silt, sand and gravel, along the valley bottom.

2.2. ARCHAEOLOGICAL BASELINE

The limited archaeological records available for the location of the River Hodder Crossing indicate a general low potential for archaeological discoveries, primarily features related to the rural setting of the historic village.

Summary Historic Environment Records (HER) used in the environmental impact assessment (Environmental Statement Volume 4 Appendix 10.2: Cultural Heritage Gazetteer) are detailed in Table 3.1 and shown in Figure 2.

Table 3.1 Historic Environment Records

The Asset Number: 3031 Asset Name: Causeway- Easington Description: Site of a causeway; the Newton to Easington Ford. Documented by Mary Higham in 1987.
Asset Number: 3032 Asset Name: Off Hallgate Hill, adj. River Hodder, Newton Description: The photo shows a possible trackway, running from SD 70215033 to SD 70315009.
Asset Number:3036 Asset Name: Newton Bridge, Newton Description: Site of flax pool. At Newton field names did not suggest the existence of a retting pond system, and it was no obvious until September 1987. What was then revealed

was that the ditches formed part of a system of watercourses that could either flow straight into the Hodder or be diverted into a series of retting ponds. Their former exit was blocked by the embankment of a modern road from Newton to Waddington. This had been built right across the middle of one of a series of large pools. The system at Newton seems to have gone out of use before 1591, Saxton's map of that date clearly showing the precursor of the modern road going through the middle of the retting pond complex.

Asset Number 3037

Asset Name: Newton

Description: The rectilinear feature (possibly the remains of a copse) appears to be cut by a stream or old field boundary.

3. PROJECT AIMS & OBJECTIVES

3.1. GENERAL

The primary aim of the archaeological investigation at the River Hodder Crossing is to:

- ascertain the presence or absence of archaeological remains
- understand their potential significance.

The general objectives of the archaeological investigation are:

- identify, investigate and record any archaeological remains
- describe nature, preservation, condition and extent of archaeological deposits and features
- establish a sequence and chronology for any phases of archaeology
- analyse, conserve and store any artefacts or ecofacts recovered
- disseminate the results through reporting

3.2. RESEARCH

A project specific archaeological research objective is to investigate and record evidence for 16th/17th century water management systems associated with the processing of plant fibres for use in the historic textile industry at Newton-in-Bowland.

This research objective contributes to The North West England Regional Research Framework, specifically the following research agenda item

Ind04: How well do we understand the survival and significance of historic water management features for industrial purposes including power and textile processing?

4. INVESTIGATION AND RECORDING METHODOLOGY

4.1. GENERAL

Prior to archaeological fieldworks, the Lancashire County Council Museum Service (LCMS) Archaeological Project Notification pro-forma will be issued (Lancashire County Council Museum Service Guidelines for the Deposition of Archaeological Archives 2020-2021 Appendix 4).

Standard methodologies for Excavation and Recording; Geomatics and Survey; Environmental evidence; Artefactual evidence; and Burials are described in Appendices A, B, C, D and E respectively.

These methodologies will be applied as appropriate to the procedure and sequence of archaeological works outlined below.

4.2. PROCEDURE AND SEQUENCE

Each plot of land defined within the limit for development will be subject to archaeological investigation in accordance with the methodology set out in this WSI. (Fig 1). Each stage of archaeological investigation is designed to coordinate with the development operations, so that both are conducted concurrently.

4.2.1. SITE PREPARATION

Various H&S and environmental management control measures apply to the archaeological investigation:

The location of any potential constraints (services, ground contamination hotspots, amenities, protected watercourses, etc) will be identified and recorded:

- Each plot of land will be scanned using a Cable Avoidance Tool (CAT) and Signal Generator (Genny), operated by a suitably qualified and experienced person.,
- Photographs will be taken showing the condition of the Site and location of constraints will be mapped before commencement.

Vegetation clearance, topsoil stripping activities (including archaeological investigation) and dewatering durations will be managed to reduce soil disturbance and mitigate environmental risk of suspended solids in groundwater.

Controls measures limiting construction activities within archaeological investigation areas will apply.

Restrictions will be defined and agreed with the relevant SUK H&S, environmental and construction management coordinators. Adjustments/refinements to the archaeological investigation methodology will be made to manage environmental and other risks to assets during work.

4.2.2. *PRELIMINARY ARCHAEOLOGICAL TRIAL TRENCHING*

Areas identified for earthmoving will initially be investigated by means of machine excavation of trial trenches to expose and examine a 4% sample of the affected area.

Current trenching assumptions are based on a minimum and maximum range as follows:

- Entire red line boundary area
    - 13.7 hectares @ 4% sample = 5,480m2 – 137 trenches (2x20m)
- Limited discrete impact areas
    - 4.1664 hectares – 4% sample = 1666m^2 – 42 trenches (2x20m).

Work in progress will refine the design, so that earthmoving is limited to discrete impact area that requires trench numbers towards the minimum given above. Also trench layout will reflect topographical and logistical constraints, so the basic unit of 2x20m will be adapted accordingly.

SUK archaeological sub-contractor and earthworks teams will coordinate to ensure optimised strategy for trial trenching is developed in parallel with the design refinement.

A trench layout plan will be prepared by the SUK's appointed archaeological sub-contractor for the Historic Environment Team Planning Officer for Lancashire review and comment.

Trial trenches will be set out using a GPS accurate to 0.02m.

Each archaeological trial trench will be excavated using a mechanical excavator fitted with a toothless ditching bucket, under direct supervision by a suitably experienced and qualified archaeologist at all times.

Machine excavation will proceed by systematically removing topsoil and subsoil in even spits until significant archaeological remains, natural geology or a 1.2m safe working depth limits is reached, whichever occurs first. Spoil will be systematically checked, both by eye and metal detector, and any finds will be retained.

Topsoil and subsoil will be excavated in stratigraphic order and will be stored separately at bunded storage areas located at a safe working distance from the archaeological area.

Once machine excavated to the required depth, the exposed surface will be examined and recorded. Hand cleaning of potential archaeological features/deposits will be undertaken to determine the character and extent. Care will be taken to avoid disturbing in situ deposits during this process.

A report summarising the trial trench investigation results will be provided within 1 month of completion of this preliminary phase of archaeological trial trenching. This report will outline a strategy for undertaking any additional archaeological fieldwork at the Site

4.2.3. STRIP

Following a review of the trial trench information the scope of archaeological strip investigations will be finalised in consultation with the Historic Environment Team Planning Officer for Lancashire

The limits of each phased archaeological investigation area will be set-out using a GPS accurate to 0.02m.

Each archaeological area will be excavated using a mechanical excavator fitted with a toothless ditching bucket, under direct supervision by a suitably experienced and qualified archaeologist at all times.

Machine excavation will proceed by systematically removing topsoil and subsoil across the entire investigation area in even spits until significant archaeological remains, natural geology or a 1.2m safe working depth limits is reached, whichever occurs first. Spoil will be systematically checked, both by eye and metal detector, and any finds will be retained.

Topsoil and subsoil will be excavated in stratigraphic order and will be stored separately at bunded storage areas located at a safe working distance from the archaeological area.

Once machine excavated to the required depth, the exposed surface will be examined and recorded. Hand cleaning of potential archaeological features/deposits will be undertaken in order to fully define extent. Care will be taken to avoid disturbing in situ deposits during this process.

4.2.4. MAP

On completion of the hand cleaning of machine stripped areas, pre-excavation survey plans will be prepared using Global Positioning System (GPS) planning technology in combination with Total Station surveying. This pre-excavation survey plan will be available in AutoCAD or PDF format and will be printed at a suitable scale (1:20 or 1:50) for onsite use. Where it is deemed necessary (for example detailed structural features) archaeological remains will be hand planned at a scale of 1:20 from the grid and then digitised to be included on the overall plan.

4.2.5. SAMPLE

A site inspection by the Historic Environment Team Planning Officer for Lancashire (and the Historic England Regional Scientific Advisor if appropriate) will be arranged to review the result of machine stripping and to agree further investigation and recording; including strategies for stratigraphic sequencing of key phases of activity; the recovery of finds or environmental material for processing and assessment or further targeted detailed excavation.

All archaeological data will be recorded stratigraphically, using a standardised system of written and pictorial records, including:

- pro forma context/recording sheets.
- photographic record

- accurate large-scale plans and sections at appropriate scales (1:50; 1:20 and 1:10)

UU and their representative will be informed if any significant archaeological features, particularly human remains, are identified. All earthworks will stop at that level whilst the remains are assessed and recorded in accordance with relevant legal and planning requirements. Initially, human remains will be partially exposed to determine whether there are articulated skeletal remains present. Otherwise skeletal remains will not be disturbed and left in situ pending notifications to relevant authorities and review of further requirements with the Historic Environment Team Planning Officer for Lancashire.

4.2.6. ARCHAEOLOGICAL RECORDING DURING CONSTRUCTION (WATCHING BRIEF)

Localised areas may require archaeological recording during construction (watching brief). These activities shall be designed and implemented to avoid adverse impact on the construction programme, wherever this is practicable.

Excavation will be undertaken using a mechanical excavator with toothless ditching bucket, except where the nature of the ground is such that an alternative bucket or means of breaking out prior to excavation is required.

Machine excavation will be monitored under direct supervision by a suitably experienced and qualified archaeologist at all times. The method of excavation should enable the attending archaeologist to identify, define and investigate any exposed archaeological deposits:

Machine operators are to co-ordinate with the attending archaeologists to allow close inspection of exposed deposits

If archaeological deposits are encountered, the Historic Environment Team Planning Officer for Lancashire will review the requirement for further investigation and recording, including strategies for stratigraphic sequencing of key phases of activity and the recovery of finds or environmental material for processing and assessment.

5. REPORTING AND ARCHIVE METHODOLOGY

The results of the archaeological investigation will inform discussions with the Historic Environment Team Planning Officer for Lancashire regarding the scope of post-excavation works and the corresponding sequencing and timescale for discharge of the archaeological planning condition.

Release of the planning condition is dependent upon the successful completion of the archaeological aims and objectives. It requires the production of an archaeological report detailing the results of the investigation and an interpretation of their significance.

5.1. GENERAL

Standard methodologies for Reporting and Documentary Archive are described in Appendices F and G, respectively.

These methodologies will be applied as appropriate to the procedure and sequence of works outlined below.

5.2. POST-EXCAVATION PROGRAMME

An interim report summarising the investigation result will be provided within 1 month of completion of each phase of archaeological investigation.

Once interim reports for all phases have been compiled, the scope of post-excavation assessment, analysis, research publication and archive requirements will be determined. An outline programme for completion of post-excavation works will be agreed in consultation with the Historic Environment Team Planning Officer for Lancashire.

On completion of the post-excavation programme a final report will be produced. A copy of the report in Adobe Acrobat (.pdf) format will be issued to the Historic Environment Team Planning Officer for Lancashire as evidence that the works described in this WSI are complete or reasonable provisions are in place that accord with the requirements of Condition 5.

The report will include:

- a non-technical summary;
- introduction;
- background to the project;
- archaeological and historical background;
- methodology;
- results;
- discussion and conclusion;
- specialist assessment of any artefacts or ecofacts recovered;

- supporting illustrations, including figures and plates;
- supporting data;
- location of archive;
- bibliography
- The report will also include the following reference information:
- title page;
- full site name;
- site code
- OS National Grid reference;
- author;
- organisation/sub-contractor name;
- dates of the fieldwork;
- names of fieldwork staff;
- date report written; and
- commissioning body.

5.3. SPECIALIST INPUT

Specialist technical support that will be engaged as required.

5.4. ARCHIVE

An interim site archive will be prepared following the standard approach to documentary archiving outlined in Appendix G|.

Subject to the post-excavation assessment further provision will be made for archive deposition in accordance with Lancashire County Council Museum Service Guidelines for the Deposition of Archaeological Archives 2020-2021.

An Online Access to Index of Archaeological Investigations (OASIS) record will be established at the beginning of the project and finalised upon completion of the project.

Copies of the final report will also be supplied to the Historic England Archive (HEA), and a digital copy will be supplied to the Archaeological Data Service (ADS).

6. HEALTH AND SAFETY

6.1. ROLES AND RESPONSIBILITIES

The appointed archaeological sub-contractor will adhere to safe systems for on-site work at all times. All archaeological personnel are to maintain a safe distance from machine excavators and ensure the operator is aware and has visibility of personnel engaged in machine supervision and other archaeological on-site tasks.

All sub-contractor teams carrying out the construction works, including the archaeologist and plant operator, will ensure their respective RAMS are aligned and fully incorporate on-site safety protocols and management systems.

6.2. RISK ASSESSMENT AND METHOD STATEMENT (RAMS)

The archaeological sub-contractor's risk assessment will be prepared and approved by competent persons.

The risk assessment will be in accordance with the general health and safety requirements outlined in Appendix H and with SUK's Health, Safety and Wellbeing (HSW) management systems

All archaeological personnel involved in the work will require a safety briefing. A copy of the risk assessment will be available at the Site.

7. DEFINITIONS AND ABBREVIATIONS

Table 7.1

Abbreviation	Definition
ADS	Archaeological Data Service
CAD	Computer-Aided Design
CAP	Competitively Appointed Provider
GPS	Global Positioning System
HARP	Haweswater Aqueduct Resilience Programme
H&S	Health & Safety
HER	Historic Environment Records
HET	Historic Environment Team Planning Officer for Lancashire
LCMS	Lancashire County Council Museum Service
OASIS	Online Access to Index of Archaeological Investigations
PGM	Permanent Ground Marker
REDM	Reflectorless Electronic Distance Measurement
SUK	Strabag UK Limited
TST	Total Station Theodolite
UU	United Utilities
WSI	Written Scheme of Investigation

8. REFERENCES

British Geological Survey (BGS), 2021 Geology of Britain Viewer [Online], available at http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Chartered Institute for Archaeologists (CIfA), 2025 Code of Conduct, Reading

CIfA, 2023a Standard and guidance for field evaluation, Reading

CIfA, 2020b Standard and guidance for the creation, compilation, transfer and deposition of archaeological archive, Reading

Cranfield Soil and Agrifood Institute, 2021 National Soil Resources Institute's Soilscapes of Britain Map [Online], available at: http://www.landis.org.uk/soilscapes, Cranfield University

Historic England, 2015 Management of research projects in the historic environment (reissue), London

Lancashire County Council Museum Service Guidelines for the Deposition of Archaeological Archives 2020-2021

Jacobs UK Ltd, 2021, Haweswater Aqueduct Resilience Scheme - Environmental Statement (ES) Vol 6 Chapter 10 Cultural Heritage

9. FIGURES

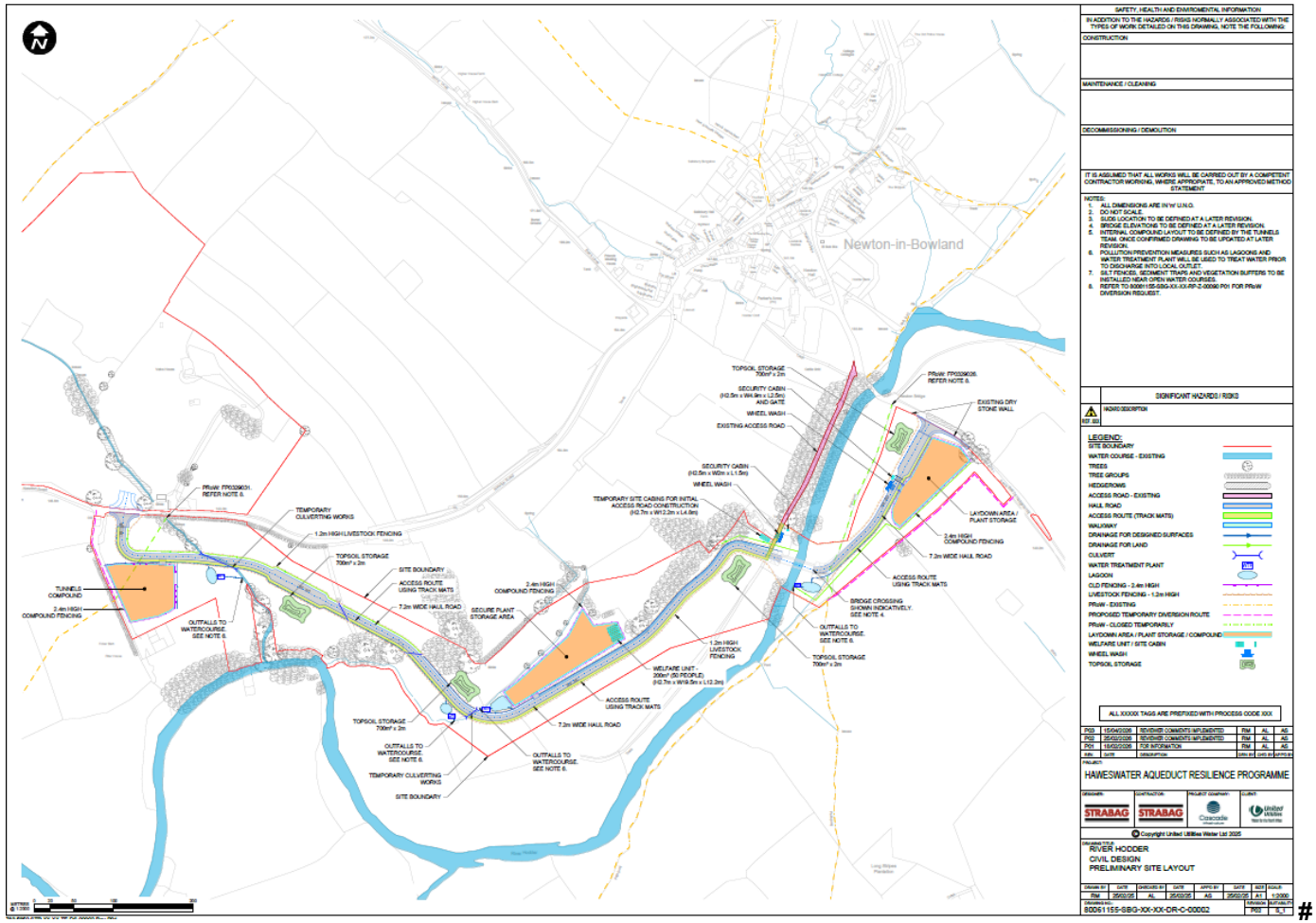

Figure 1 Phase 1 - Enabling and Site Establishment Works associated with the River Hodder Crossing

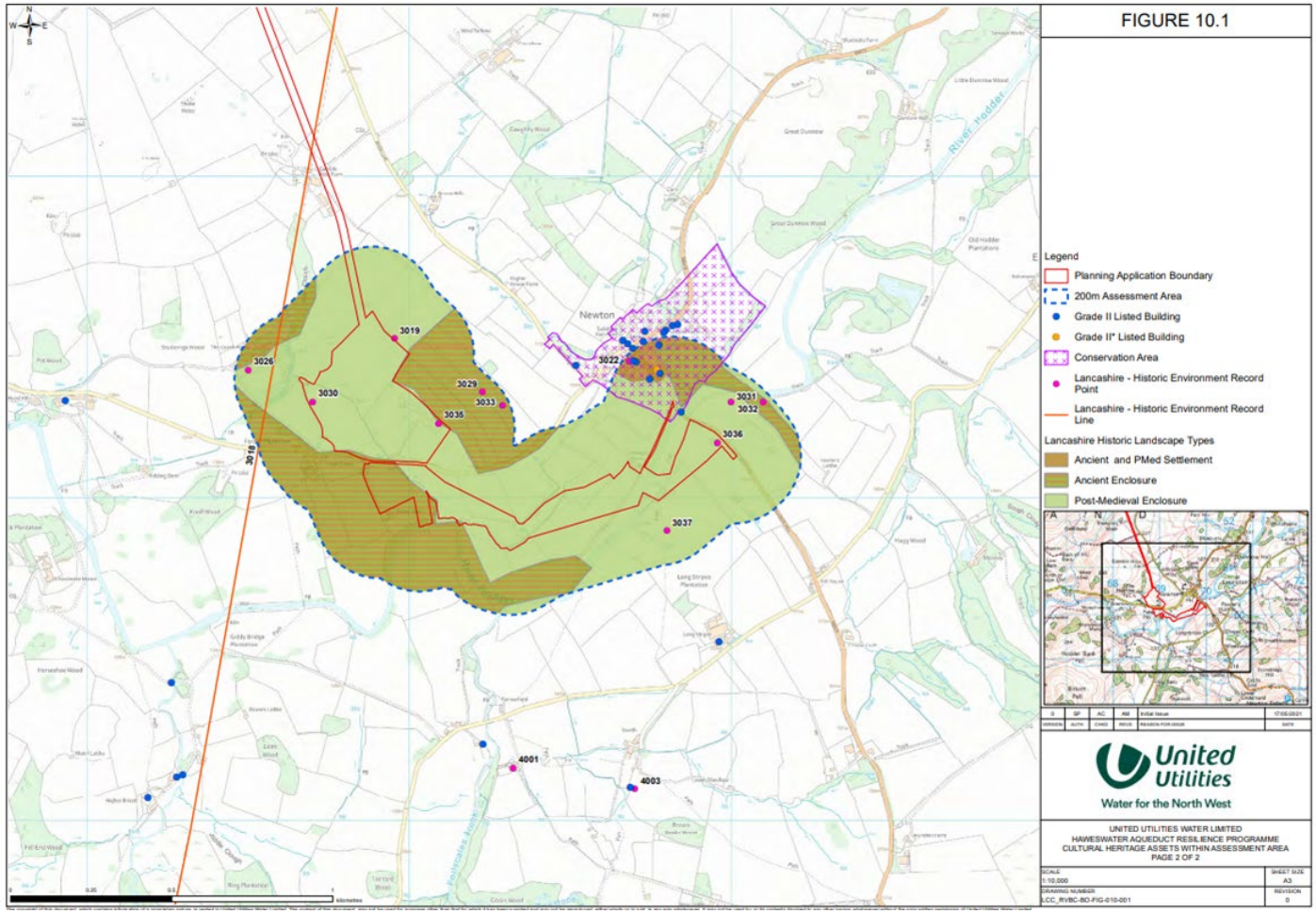

Figure 2 Baseline archaeological data associated with the River Hodder Crossing

10. APPENDIX A GENERAL EXCAVATION AND RECORDING METHODOLOGY

10.1. A.1 STANDARD METHODOLOGY – SUMMARY

10.1.1. MECHANICAL EXCAVATION

A.1.1 An appropriate mechanical excavator will be used for machine excavation. This will normally be a JCB or 360° tracked excavator with a 1.5 m to 2 m wide toothless ditching bucket. For work with restricted access or working room a mini excavator may be used.

A.1.2 All mechanical excavation will be undertaken under direct archaeological supervision.

A.1.3 All undifferentiated topsoil or overburden of recent origin will be removed down to the first significant archaeological horizon, in successive, level spits.

A.1.4 Following mechanical excavation, all areas that require examination or recording will be cleaned using appropriate hand tools.

A.1.5 Spoil heaps will be monitored in order to recover artefacts to assist in the analysis of the spatial distribution of artefacts. Modern artefacts will be noted but not retained.

A.1.6 . The investigation area will not normally be backfilled.

10.1.2. HAND EXCAVATION

A.1.7 All investigation of archaeological levels will usually be by hand, with cleaning, examination and recording both in plan and section.

A.1.8 Within significant archaeological levels the minimum number and proportion of features required to meet the aims of the excavation will be hand excavated. Pits and postholes will usually be subject to a 50% sample by volume. Linear features will be sectioned as appropriate. More complex features such as those associated with funerary activity will usually be subject to 100% hand excavation.

A.1.9 In the case of evaluations, it is not necessarily the intention that all trial trenches will be fully excavated to natural stratigraphy, but the depth of archaeological deposits across the Site will be assessed. The stratigraphy of a representative sample of the evaluation trenches will be recorded even where no archaeological deposits have been identified. Any excavation, both by machine and by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits, which appear to be worthy of preservation in situ.

10.1.3. RECORDING

A.1.10 Written descriptions will be recorded on proforma sheets comprising factual data and interpretative elements.

A.1.11 Where stratified deposits are encountered a Harris matrix will be compiled during the course of the excavation.

A.1.12 Plans will normally be drawn at 1:100, but on urban or deeply stratified sites a scale of 1:50 or 1:20 will be used. Detailed plans will be at an appropriate scale. Burials will be drawn at scale 1:10 or recorded using geo-referenced digital photography.

A.1.13 The site grid will be accurately tied into the National Grid and located on the 1:2500 or 1:1250 map of the area.

A.1.14 A register of plans will be kept.

A.1.15 Long sections of showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20.

A.1.16 A register of sections will be kept.

A.1.17 Generally, all sections will be tied to Ordnance Datum.

A.1.18 A full photographic record, illustrating in both detail and general context the principal features and finds discovered will be maintained. The photographic record will also include working shots to illustrate more generally the nature of the archaeological work.

A.1.19 Photographs will be recorded on Photographic Record Sheets.

10.2. A.2 RELEVANT INDUSTRY STANDARDS AND GUIDELINES

A.2.1 Relevant Chartered Institute for Archaeologists (CIfA) Standard and Guidance notes will be adhered to at all times:

Standard and guidance for archaeological field evaluation, 2023

Universal guidance for archaeological field evaluation, 2023

Standard and guidance for archaeological excavation, 2023

Universal guidance for archaeological excavation, 2023

Standard for archaeological monitoring and recording, 2023

Universal guidance for archaeological monitoring and recording, 2023

11. APPENDIX B GEOMATICS AND SURVEY

11.1. B.1 STANDARD METHODOLOGY - SUMMARY

B.1.1 The aim of methodology is to provide comprehensive survey cover of all investigation areas. Additionally, it is designed to provide coverage for any areas, beyond the original scope of the project, which arise as a result of further work. It provides digital plans of all required elements of the project and locates them within an overall grid.

B.1.2 It also maintains all necessary survey data and ensures that the relevant information is copied into the primary record, in order to ensure the integrity of the project archive. Furthermore, it ensures that all core data is securely stored and backed up. It establishes accurate project reference systems utilising a series of control stations and permanent base lines.

B.1.3 The survey will be conducted using a combination of Total Station Theodolite (TST) survey utilising Reflectorless Electronic Distance Measurement (REDM) where appropriate, hand-measured elements and GPS (Global Positioning System), or photogrammetry.

B.1.4 Before the main work commences, a network of control stations will be laid out encompassing the area. Control stations will be tied in to known points or existing features using rigorous metric observation. The control network will be set in using a TST to complete a traverse or using techniques as appropriate to ensure sufficient accuracy. A GPS, or other appropriate method, will be used to orientate the control network to National Grid or other recognised coordinate system.

B.1.5 All control stations will be checked by closed traverse and/or GPS, as appropriate. The accuracy of these control stations will be accessed on a regular basis and reestablished accordingly. All stations will be recorded on Survey Control Station sheets.

B.1.6 Each control station will be marked with a PGM (Permanent Ground Marker). Witness diagrams will include the full 3-D co-ordinates generated, a sketch diagram and measurements to at least three fixed details, written description of the mark and a photograph of the control point in its environs.

B.1.7 Prior to entry into the field all equipment will be checked, and all pre-survey information will be logged onto the field computer and uploaded onto survey equipment as appropriate. The software in the field computer will be verified and all cabling between the GPS and/or TST and computer will be checked. Prior to conducting the survey, the Site will be reconnoitred for locations for a viable control network and check the line of sight and any possible hindrance to survey. Daily record sheets will be kept recording daily tasks and conditions.

B.1.8 All spatial data will be periodically downloaded onto a field computer, and backed up onto CD, or DVD. It will be cleaned, validated and inspected.

B.1.9 All survey data will be documented on daily survey record sheets. Information entered on these sheets includes key set up information (Instrument height etc.) as well as daily variables

and errors/comments. All survey data will be digitally recorded in a raw format and translated during the download process this shall allow for any errors to be cross referenced with the daily survey record and corrected accordingly.

B.1.10 A site plan will initially be created by a rapid survey of relevant archaeological features by mapping their extent using a combination of TST and GPS. This will form the basis for deciding excavation strategy and will be updated as the excavation clarifies the extent of, and relationships between, archaeological features.

B.1.11 Excavated archaeological interventions and areas of complex stratigraphy will be hand drawn. At least two Drawing Points (DPs) will be set in as a baseline and measurements taken off this by tape and offset. The hand drawn plans will be referenced to the digitally captured pre-site plan by measuring in the DPs with a TST or GPS. These hand drawn elements will then be scanned in, geo-referenced using the DPs as reference points and digitised following digitising protocols. For further details on hand planning procedure please refer to Appendix A General Excavation and Recording Methodology.

B.1.12 Where appropriate photogrammetry or rectified photography may be used to record standing structures or burials. This will be carried out in line with standard procedures for photogrammetry or rectified photography.

B.1.13 Survey data recorded in the field will be downloaded using appropriate downloading software, and saved as an AutoCAD Map DWG file, or an ESRI Shapefile. These files will be regularly updated and backed up with originals being stored on a secure server.

B.1.14 All drawings will be composed of closed polygons, polylines or points in accordance with the requirements of GIS construction and geomatics protocols. Once created, additional GIS/CAD work will normally be carried out at an office or on-site remote locations when appropriate. The aim of the GIS/CAD work is to produce workable draft plans, which can be produced as stand-alone products, or can be readily converted to GIS format. Any hand-drawn plans will be scanned and digitised on site in the first instance. Subsequent plans will be added to the main drawing as it develops.

B.1.15 All plan scans will be numbered according to their plan site number. Digital plans will be given a standard new plan number taken out from the site plan index.

B.1.16 All digital data will be backed up incrementally on CD or DVD and copied onto the secure project server. Each CAD drawing will contain an information layout which will include all the relevant details appertaining to that drawing. Information (metadata) on all other digital files will be created and stored as appropriate. At the end of the survey all raw measurements will be made available as hard copy for archiving purposes.

11.2. B.2 Relevant industry standards and guidelines

B.2.1 Historic England, 2017 Understanding the Archaeology of Landscapes A Guide to Good

Recording Practice

B.2.2 Historic England, 2015 Metric Survey Specifications for Cultural Heritage (3rd edn)

B.2.3 Historic England, 2016 Understanding Historic Buildings: A Guide to Good Recording Practice

B.2.4 Historic England, 2017 Photogrammetric Applications for Cultural Heritage: Guidance for Good Practice

12. APPENDIX C ENVIRONMENTAL EVIDENCE

12.1. C.1 STANDARD METHODOLOGY – SUMMARY

C.1.1 Different environmental and geoarchaeological sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation. Where possible an environmental specialist(s) will visit the Site to advise on sampling strategies. Sampling methods will follow guidelines produced by Historic England. A register of samples will be kept. Specialists will be consulted where non-standard sampling is required (e.g. TL, OSL or archaeomagnetic dating) and if appropriate will be invited to visit the Site and take the samples.

C.1.2 Geoarchaeological sampling methods are site specific, and methodologies will be designed in consultation with the geoarchaeological manager.

C.1.3 Bulk soil samples, where possible of 40 litres or 100% of a deposit if less is available, will be taken from potentially datable features and layers for flotation for charred plant remains and for the recovery of small bones and artefacts. Larger soil samples (up to 100L) may be taken for the complete recovery of animal bones, marine shell and small artefacts from appropriate contexts. Smaller bulk samples (general biological samples) of 10-20 litres will be taken from any waterlogged deposits present for the recovery of macroscopic plant remains and insects. Series of incremental 2L samples may be taken through buried soils and deep feature fills for the recovery of snails and/or waterlogged plant remains, depending on the nature of the stratigraphy and of the soils and sediments. Columns will be taken from buried soils, peats and waterlogged feature fills for pollen and/or phytoliths, diatoms, ostracods and foraminifera if appropriate. Soil samples will be taken for soil investigations (particle size, organic matter, bulk chemistry, soil micromorphology etc.) and possibly for metallurgical analysis in consultation with the appropriate specialists.

C.1.4 Bulk samples from dry deposits will be processed by standard water flotation using a modified Siraf-style machine and meshes of 0.25mm (flot) and 0.5 or 1mm depending on sediment type and like modes of preservation (residue). Heavy residues will be wet sieved, air dried and sorted. Samples taken exclusively for the recovery of bones, marine shell or artefacts will be wet sieved to 2mm. Waterlogged samples (1L subsample) and snail samples (2L) will be processed by hand flotation with flots and residues collected to 0.25mm (waterlogged plants) and 0.5mm (snails) respectively; these flots and residues will be sorted by the specialist. Samples specifically taken for insects, pollen, other microflora and microfauna, metallurgy and soil analysis will be submitted as whole earth to the appropriate specialists or processed following their instructions.

12.2. C.2 RELEVANT INDUSTRY STANDARDS AND GUIDELINES

C.2.1 Historic England, 2010 Waterlogged Wood: Guidelines on the recording, sampling, conservation and curation of waterlogged wood.

C.2.2 Historic England, 2011 Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post excavation, (2nd ed)

C.2.3 Historic England, 2004 Dendrochronology: Guidelines on Producing and Interpreting Dendrochronological Dates (revision due 2020).

C.2.4 University of Bradford, 2019 Archaeomagnetism: Magnetic Moments in the Past https://www.brad.ac.uk/archaeomagnetism/

C.2.5 Historic England, 2008 Luminescence Dating. Guidelines on Using Luminescence Dating in Archaeology (revision due 2020).

C.2.6 Historic England, 2008 Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains (currently being revised).

C.2.7 Historic England, 2015 Archaeometallurgy. Guidelines for Best Practice.

C.2.8 Historic England, 2015 Geoarchaeology. Using Earth Sciences to Understand the Archaeological Record.

C.2.9 Historic England, 2017 Organic Residue Analysis and Archaeology.

C.2.10 Baker, P and Worley, F, 2019 Animal Bones and Archaeology: Recovery to Archive. Historic England

13. APPENDIX D ARTEFACTUAL EVIDENCE

13.1. D.1 STANDARD METHODOLOGY - SUMMARY

D.1.1 arrangements concerning the finds will be discussed with a Finds Manager before fieldwork begins. Information will be provided by the project manager about the nature of the Site, the expected size and make-up of the finds assemblage and any site specific finds retrieval strategies. On-site requirements will be discussed and a conservator appointed who can be called on to make site visits if required. Special requirements regarding particular categories of material will be raised at this early stage for instance the likelihood of recovering assemblages of waterlogged material, large timbers, quantities of structural stone or ceramic building material. Specialists may be required to visit sites to discuss retrieval strategies.

D.1.2 The project manager will supply the Finds Manager with contact details of the landowner of the Site so that consent to deposit any finds resulting from the investigation can be sought.

D.1.3 The on-site retrieval, lifting and short-term packaging of bulk and small finds will follow the detailed guidelines set out in the First Aid for Finds and the UKIC conservation guidelines No.2.

D.1.4 All finds recovered from Site will be transported to secure office for processing; local sites will return finds at the end of each day, away based sites at the end of each week. Special arrangements can be discussed for certain sites with the Finds Manager before the start of a project. Larger long running sites may in some instances set up on-site processing units to deal with the material from a particular site.

D.1.5 All finds qualifying as Treasure will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act (1996), and the Treasure (Designation) Order 2002. Where removal cannot be affected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

D.1.6 Each box of finds will be accompanied by a finds context checklist itemising the finds within each box. The number of bags of finds from each context and individual small find from each context will be recorded. A member of the processing team will check the list when it arrives in the department.

D.1.7 The processing programme is reviewed on a weekly basis, and priorities are worked out after discussions with the Fieldwork Manager and the Post-excavation Manager. Project managers will keep the Finds Manager informed of any pressing deadlines that they are aware of. All finds from evaluations are dealt with as a matter of priority.

D.1.8 All bulk finds are washed (where appropriate), marked, bagged and boxed by the processing team according to the guidelines set out in First-aid for finds and the UKIC guidelines No.2. They must also consider the requirements of the receiving museum. Primary data recording count and weight of fragments by material from each context is recorded on the site database.

D.1.9 Unstable and sensitive objects are recorded onto the database and then packaged and stored in controlled environments according to their individual requirements. The advice of a conservator will be sought for sensitive objects in need of urgent conservation. All metalwork will be x-rayed prior to assessment (and to meet the requirements of most receiving museums).

D.1.10 Finds recovered from the environmental sample processing will be incorporated into the main assemblage and added to the database.

D.1.11 On completion of the processing and data entry a finds file for each archaeological investigation will be produced, a summary of which is available for the project manager. The assemblage is allocated a unique number for storage purposes. Bulk finds are stored on a roller racking system, metals in a secure controlled storage and organic finds are refrigerated where possible.

D.1.12 The movement of finds in and out of the storage areas is strictly monitored and recorded. Carbon copy transit forms exist to record this information. Finds will not be removed from storage without the prior knowledge of the Finds Team Leader.

D.1.13 Finds information summarised in the finds compendium is used to assess the finds requirements for the post excavation stages of the project.

D.1.14 On completion of the post excavation stage of the project the team prepares the finds assemblage for deposition with the receiving museum. Discussions will be held with the museum, the excavator and the Finds Manager to finalise any selection, retention or discard policy. Most museums issue strict guidelines for the preparation of archives for deposition with their individual labelling, packaging and recording requirements.

13.2. D.2 RELEVANT INDUSTRY STANDARDS AND GUIDELINES

D.2.1 CIfA, 2014 (updated 2020) Standard and guidance for the collection, documentation, conservation and research of archaeological materials

D.2.2 Society of Museum Archaeologists, 1993 Selection, retention and dispersal of Archaeological Collections. Download available via http://www.socmusarch.org.uk/publica.htm)

D.2.3 UKIC, 1983 Packaging and Storage of Freshly-Excavated Artefacts from Archaeological Sites. Conservation Guidelines No.2. Archaeology Section, United Kingdom Institute for Conservation.

D.2.4 UKIC, 1988 Excavated Artefacts and Conservation: UK sites Revised Edition. Conservation Guidelines No.1. Archaeology Section, United Kingdom Institute for Conservation.

D.2.5 Watkinson, D E & Neal, V, 1998 First Aid for Finds (3rd edition). RESCUE & UKIC

14. APPENDIX E HUMAN REMAINS

14.1. E.1 STANDARD METHODOLOGY - SUMMARY

E.1.1 Human remains will not be excavated without a relevant licence/faculty and, where applicable (for example, a post medieval cemetery), a risk assessment from the local environmental officer.

E.1.2 All human remains will be treated with due care and regard to the sensitivities involved and will be screened from the public throughout the course of the works.

E.1.3 Excavation will be undertaken in accordance with CIfA (Roberts and McKinley 1993), Historic England (2018), the Advisory Panel on the Archaeology of Burials in England (APABE, 2015, 2017) and British Association of Biological Anthropology and Osteoarchaeology Code of Practice (2019) and Code of Ethics (2019). For crypts and post-medieval burials, the recommendations set out by the CIfA (Cox 2001) and by the Association of Diocesan and Cathedral Archaeologists and APABE (2010) are also relevant.

E.1.4 In accordance with recommendations set out in the Historic England and Church of England (2005) and updated by the Advisory Panel on the Archaeology of Burials in England (2017), skeletons will not be excavated beyond the limits of the trench, unless they are deemed osteologically or archaeologically important.

E.1.5 Where any soft tissue survives and/or materials (for example, inner coffins, mattresses and other paddings) soaked in body liquor, no excavation or handling of the remains will take place until an appropriate risk assessment has been undertaken. Relevant protocols (i.e. Cox 2001) for their excavation, recording and removal will be adhered to.

E.1.6 Appropriate PPE (e.g. chemical suit, latex gloves) will be worn by all staff when working with lead coffins.

E.1.7 Graves and their contents will be hand excavated in plan. Each component (for example, skeleton, grave cut, coffin (or remains of), grave fill) will be assigned a unique context number from a running sequence. A group number will also be assigned to all of these, and small finds numbers to features such as coffin nails, hobnails and other grave goods (as appropriate).

E.1.8 Soil samples will be normally taken during the excavation of inhumations, usually from the region of the skull, chest, right hand, left hand, abdomen and pelvis, right foot and left foot. Infants (circa. less than 5 years) will normally be recovered as bulk samples. Soil samples will also be taken from graves that appear to contain no human bone.

E.1.9 Burials (including the skeleton, cremation, coffin fittings, coffin, urn, grave goods/other) will be recorded by photographic and written record using specialised pro forma context sheets, although these records may only include schematic representations of the location and position of the skeletons, depending on the nature and circumstances of the burial.

E.1.10 Where digital imaging is used it will be done in accordance with the British Association of Biological Anthropology and Osteoarchaeology Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (2019).

E.1.11 Where necessary, hand drawn plans (usually at 1:10, sometimes 1:5) will be made, especially of contexts where required details cannot be adequately seen using photography (for example, urned cremations; undisturbed hob nails).

E.1.12 Levels will be taken. For inhumations this will be on the skull, pelvis and feet as a minimum.

E.1.13 Human remains that are exhumed will be bagged and labelled according to skeletal region and carefully packed into suitable containers (for example, acid free cardboard boxes) and transported to a suitable storage location. Any associated coffins and coffin fittings will be contained with the human remains wherever possible.

E.1.14 Unurned cremations will not usually be half sectioned but excavated in spits and/or quadrants (i.e. large deposits or spreads) or recovered as a bulk sample.

E.1.15 Wherever possible, urned cremations will be carefully bandaged, recovered whole and will be excavated in spits in the laboratory, as per the recommendations of McKinley (2004, 2017).

E.1.16 Unless deemed osteologically or archaeologically important disarticulated bone/charnel will be collected and reserved for re-burial if immediate re-internment as close to its original position is not practicable. In some instances, a rapid scan of this material may be undertaken by a qualified osteologist, if deemed relevant.

E.1.17 If undisturbed, pyre sites will normally be excavated in quadrants, at the very least in 0.5 m blocks of 0.5 m spits.

E.1.18 Pyre debris dumps will be half sectioned or quadranted and will be subject to 100% sampling.

E.1.19 Wooden and lead coffins and any associated fittings, including fixing nails will be recorded on a pro forma coffin recording sheet. All surviving coffin fittings will be recorded by reference to Reeve and Adams (1993). Where individual types cannot be paralleled, they will be drawn and/ or photographed and assigned a style number. Biographical details obtained from legible departum plate inscriptions will be recorded and further documentary research will be made.

E.1.20 Funerary structures, such as brick shaft graves and/or vaults will be recorded by photogrammetry or hand-drawn at a scale of 1:10 or 1:20, as appropriate. Location, dimensions and method of construction will be noted, and the structure added to the overall trench plan.

E.1.21 Memorials, including headstones, revealed within the areas of development will be recorded irrespective of whether they are believed to be in situ.

E.1.22 Where required, memorials will be accorded an individual context number and will also be included as part of the grave group, if the association with a burial is clear.

E.1.23 Memorials will be recorded on pro-forma context sheets, based on and following the guidelines set out by Mytum (2002), and will include details of:

Shape

Dimensions

Type of stone used

Condition, completeness and fragmentation of stones, no longer in original

positions

Iconography (an illustration may best describe these features)

Inscription (verbatum record of inscription; font of the lettering)

Stylistic type

14.2. 1.3. E.2 RELEVANT INDUSTRY STANDARDS AND GUIDELINES

E.2.1 Advisory Panel on the Archaeology of Burials in England, 2013 Science and the Dead. A guideline for the destructive sampling of archaeological human remains for scientific analysis. English Heritage Publishing.

E.2.2 Advisory Panel on the Archaeology of Burials in England, 2017 Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England

E.2.3 Advisory Panel on the Archaeology of Burials in England, 2015 Large Burial Grounds. Guidance on sampling in archaeological fieldwork projects

E.2.4 Association of Diocesan and Cathedral Archaeologists and APABE, 2010 Archaeology and Burial Vaults. A guidance note for churches. Guidance Note 2

E.2.5 British Association of Biological Anthropology and Osteoarchaeology. 2019a Code of Practice (http://www.babao.org.uk/index/ethics-and-standards)

E.2.6 British Association of Biological Anthropology and Osteoarchaeology. 2019b Code of Ethics (http://www.babao.org.uk/index/ethics-and-standards)

E.2.7 British Association of Biological Anthropology and Osteoarchaeology, 2019c Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (http://www.babao.org.uk/index/ethics-and-standards)

E.2.8 Cox, M, 2001 Crypt archaeology. An approach. CIfA Paper No. 3

E.2.9 English Heritage, 2002 Human Bones from Archaeological Sites. Guidelines for producing assessment documents and analytical reports

E.2.10 Historic England, 2018 The Role of the Human Osteologist in an Archaeological Fieldwork Project. Swindon, Historic England

E.2.11 McKinley, J, and Roberts, C, 1993 Excavation and post-excavation treatment of cremated and inhumed human remains, CIfA Technical Paper No. 13

E.2.12 McKinley, J, 2004 Compiling a skeletal inventory: cremated human bone. In Brickley, M, and McKinley, J (eds) Guidelines to the Standards for Recording Human Remains, CIfA Technical Paper No. 7. 9-13

E.2.13 McKinley, J, 2017 Compiling a skeletal inventory: cremated human bone. In Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 14-19

E.2.14 Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 2017

E.2.15 Mytum, H, 2000 Recording and Analysing Graveyards. CBA Handbook No. 15

E.2.16 Reeve, J, and Adams, M, 1993 The Spitalfields Project. Volume I – The Archaeology Across the Styx. CBA Research Report No. 85

E.2.17 The Human Tissue Act 2004

15. APPENDIX F REPORTING

15.1. F.1 STANDARD METHODOLOGY - SUMMARY

F.1.1 For Watching Briefs and Evaluations, the style and format of the report will include as a minimum the following:

A location plan of trenches and/or other fieldwork in relation to the

proposed development.

Plans and sections of features located at an appropriate scale.

A section drawing showing depth of deposits including present ground level

with Ordnance Datum, vertical and horizontal scale.

A summary statement of the results.

A table summarising the features, classes and numbers of artefacts

contained within, spot dating of significant finds and an interpretation.

A reconsideration of the methodology used, and a confidence rating for the

results.

An interpretation of the archaeological findings both within the Site and within their wider landscape/townscape setting.

F.1.2 For Excavations, a Post-Excavation Assessment and Project Design will generally be prepared, as prescribed by Historic England Management of Research Projects in the Historic Environment (MoRPHE) 2015, Section 2.3. This will include a Project Description containing:

A summary description and background of the project.

A summary of the quantities and assessment of potential for analysis of the

information recovered for each category of site, finds, dating and

environmental data. Detailed assessment reports will be contained within

appendices.

An explicit statement of the scope of the project design and how the project

relates to any other projects or work preceding, concurrent with or following

on from it.

A statement of the research aims of the fieldwork and an illustrated

summary of results to date indicating to what extent the aims were fulfilled.

A list of the project aims as revised in the light of the results of fieldwork and

the current post-excavation assessment process.

F.1.3 A section on Resources and Programming will also be produced, containing:

A list of the personnel involved indicating their qualifications for the tasks undertaken, along with an explanation of how the project team will communicate, both internally and externally.

A list of the methods that will be used to achieve the revised research aims.

A list of all the tasks involved in using the stated methods to achieve the aims and produce a report and research archive in the stated format, indicating the personnel and time in days involved in each task. Allowance should be made for general project-related tasks such as monitoring, management and project meetings, editorial and revision time.

A cascade or Gantt chart indicating tasks in the sequence and relationships required to complete the project. Due allowance will be made for leave and public holidays. Time will also be allowed for the report to be read by a named academic referee as agreed with the Historic Environment Team Planning Officer for Lancashire

A report synopsis indicating publisher and report format, broken down into chapters, section headings and subheadings, with approximate word lengths and numbers and titles of illustrations per chapter. The structure of the report synopsis should explicitly reflect the research aims of the project.

F.1.4 The Project Design will be submitted to the Historic Environment Team Planning Officer for Lancashire for agreement.

F.1.5 Under certain circumstances (e.g. with very small mitigations), and as agreed with the Historic Environment Team Planning Officer for Lancashire, a formal Assessment and Project Design may not be required and either the project will continue straight to full analysis, or a simple Project Proposal (MoRPHE 2015 Section 2.1) will be produced prior to full analysis. This proposal may include:

A summary of the background to the project

Research aims and objectives

Methods statement outlining how the aims and objectives will be achieved

An outline of the stages, products and tasks

Proposed project team

Estimated overall timetable and budget if appropriate.

F.1.6 Once the post-excavation Project Design or Project Proposal has been accepted, the

Historic Environment Team Planning Officer for Lancashire will monitor the progress of the post-excavation project at agreed points. Any significant variation in the project design will be agreed with the Historic Environment Team Planning Officer for Lancashire.

F.1.7 The results of the project will be published in an appropriate archaeological journal or monograph. The appropriate level of publication will be dependent on the significance of the fieldwork results and will be agreed with the Historic Environment Team Planning Officer for Lancashire. Where the Historic Environment Team is of the opinion that wider dissemination of the results is necessary it is assumed that the Lancashire & Cheshire Antiquarian Society will publish the results of archaeological works in their annual Transactions.

F1.8 An OASIS (Online Access to the Index of Archaeological Investigations) form will be completed for each project as per Historic England guidelines.

15.2. F.2 Relevant industry standards and guidelines

F.2.1 National standards in post-excavation procedure are outlined in Historic England's Management of Research Projects in the Historic Environment (MoRPHE; HE 2015). Furthermore, all post-excavation projects consider the appropriate regional research frameworks as well as national research agendas such as the Framework for Historic Environment Activities & Programmes in Historic England (SHAPE; EH 2008).

16. APPENDIX G DOCUMENTARY ARCHIVING

16.1. G.1 STANDARD METHODOLOGY – SUMMARY

G.1.1 The documentary archive constitutes all the written, drawn, photographic and digital records relating to the set-up, fieldwork and post-excavation phases of the project. This documentary archive, together with the artefactual and environmental ecofact archive collectively forms the record of the Site. The report is part of the documentary archive, and the archive must provide the evidence that supports the conclusions of the report, but the archive may also include data which exceeds the limitations of research parameters set down for the report and which could be of significant value to future researchers.

G.1.2 At the outset of the project manager will contact the Lancashire County Museum Service (LCMS) to notify them of the imminent start of a new fieldwork project in their collecting area. LCMS Guidelines for the Deposition of Archaeological Archives 2020-2021will be observed and Site codes, which integrate with the receiving repository, will be agreed for labelling of archives and finds.G.1.4 The Fieldwork Manager will supervise the management of the archive.

G.1.5 The hard copy site archive will be security copied by scanning to PdFA and a copy of this will be housed on a secure server. A full digital copy of the archive, including scanned hard copy and born digital data, will be deposited with and made publicly available on-line through the ADS. A further copy will be maintained on a secure server and if requested a copy on disk will also be sent to the LCMS with the hard copy. This will act as a safeguard against the accidental loss and the long-term degeneration of paper records and photographs.

G.1.6 Born digital data will only be printed to hard copy for the LCMS where practical. Archive elements that need maintaining in digital form will be sent to ADS in accordance with Arches Standard and ADS guidelines. A copy will be sent to the LCMS by CD and back-up copies will be stored on a secure digital network. In most cases a digital copy of the report will be included in the OASIS project library hosted by ADS.

G.1.7 Prior to deposition the Archive team will contact the museum regarding the size and content of the archive and discuss any retention and dispersal policies which may be applicable in line with local and SMA Guidelines ' Selection, Retention & Dispersal of Archaeological Collections' 1993.

G.1.8 The Site archive will be deposited with the LMCS at the earliest opportunity unless further archaeological work on the Site is expected. The documentary archive will include correspondence detailing landowner consent to deposit the artefacts and any copyright licences in accordance with the receiving museum guidelines. Deposition charges will be required as part of the project costs. The fee is set by the receiving body and may be subject to change during the lifespan of the project.

16.2. G.2 RELEVANT INDUSTRY STANDARDS AND GUIDELINES

G.2.1 At the end of the project the Site archive will be ordered, catalogued, labelled and conserved and stored according to the following national guidelines:

G.2.2 EAC, 2014 A Standard and Guide to Best Practice for Archaeological Archiving in Europe (EAC Guidelines 1)

G.2.3 CIfA, 2014 (Updated 2020) Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives

G.2.4 Brown, D, 2011 Archaeological Archives A Guide to Best Practice in Creation, Compilation, Transfer and Curation. AAF

G.2.5 UKIC, 1990 Guidelines for the preparation of excavation archives for long-term storage

G.2.6 SMA, 2020 Standards and Guidance in the Care of Archaeological Collections

G.2.7 Lancashire County Council Museum Service Guidelines for the Deposition of Archaeological Archives 2020-2021.

G.2.8 The Site archive will be prepared to at least the minimum acceptable standard defined in Management of Archaeological Projects 2, Historic England 1991.

17. APPENDIX H HEALTH AND SAFETY

17.1. H.1 STANDARD METHODOLOGY - SUMMARY

H.1.1 All work will be undertaken in accordance with the archaeological contractor's current Health and Safety Policy ,Site Safety Procedures, a site-specific Risk Assessment and, if required, Safety Plan or Method Statement. Copies of the site-specific documents will be submitted to the client or their representative for approvals prior to mobilisation, and all relevant H&S documentation will be available on site at all times. The Health and Safety documentation will be read in conjunction with the project WSI.

H.2 Relevant industry standards and guidelines

H.2.1 All work will be carried out according to the requirements of all relevant legislation

and guidance, including, but not exclusively:

H.2.2 The Health and Safety at Work Act (1974).

H2.3 Management of Health and Safety at Work Regulations (1999).

H.2.4 Manual Handling Operations Regulations 1992 (as amended).

H.2.5 The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (2013).

H.2.6 The Construction (Design and Management) Regulations (2015).