A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010041

6.8 Environmental Statement – Appendix 8.3 West Linkhall Intrusive Survey Information

Part B

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

June 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

The A1 in Northumberland: Morpeth to Ellingham

Development Consent Order 20[xx]

Environmental Statement - Appendix

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Highways England

A1 ALNWICK TO ELLINGHAM ROAD IMPROVEMENTS SCHEME

Written Scheme of Investigation for an Archaeological Trial Trench Evaluation: West Linkhall

HE551459-WSP-EGN-A2E-RP-LE-2130
JUNE 2019

PUBLIC

Highways England

A1 ALNWICK TO ELLINGHAM ROAD IMPROVEMENTS SCHEME

Written Scheme of Investigation for an Archaeological Trial Trench Evaluation: West Linkhall

PUBLIC

PROJECT NO. 70044137
OUR REF. NO. HE551459-WSP-EGN-A2E-RP-LE-2130

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APPENDICES

1 INTRODUCTION

1.1 SCHEME BACKGROUND

1.1.1. WSP has been commissioned by Highways England to produce a Written Scheme of Investigation (WSI) for an archaeological trial trench evaluation as part of the part of the Development Consent Order (DCO) application for the A1 in Northumberland Alnwick to Ellingham (**Appendix B; Figure 1**). The evaluation is required on land to the east of the A1 at South Charlton, Northumberland ('the Site', National Grid Reference (NGR) 4174449, 621364; **Appendix B**, **Figure 2**), immediately to the west of the Camp at West Linkhall Scheduled Monument (List Entry Number 1006500). The evaluation is required in accordance to the National Policy Statement for National Networks (NPS NN; **Ref. 1**).

1.1.2. The Scheme is located within the county of Northumberland and forms part of Highways England's strategic road network. The Scheme is roughly located along the A1 between Denwick and North Charlton and is approximately 8 km in length. Throughout the length of the Scheme, the existing A1 would form the new northbound carriageway and a new southbound carriageway would be built to the east of the existing A1.

1.1.3. The Scheme would run immediately adjacent to the boundaries of the Camp at West Linkhall Scheduled Monument (List Entry Number 1006500). A geophysical survey undertaken in 2018 (**Ref. 2**) as part of the DCO application has identified potential buried archaeological remains within the Scheme which could represent remains associated with the Scheduled Monument. Paragraph 5.124 of National Planning Policy for National Networks states that "[non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments, should be considered subject to the policies for designated heritage assets." The aim of the evaluation is to establish if the geophysical anomalies do represent buried archaeological features and are equivalent to those in the Scheduled Monument.

1.1.4. The WSI sets out the scope and methodology for the archaeological evaluation, including the fieldwork method, approach to sampling, progress reporting, post-excavation reporting, archiving and dissemination. The aim of the evaluation is to clarify the presence, nature, date, extent and significance of any archaeological remains that might be present in the areas of proposed impact. It has been produced in consultation with Northumberland County Council Assistant County Archaeologist (NCC) and Historic England.

1.1.5. The results of the evaluation will inform any necessary mitigation strategies to be undertaken either in advance of or during the construction phase. Any archaeological mitigation work that may be necessary would require a separate WSI outlining the scope and method for that work and would need to be approved by NCC.

1.2 CONSULTATION

1.2.1. The draft WSI was submitted for comments to Karen Derham at NCC in July 2019. Comments received have been addressed in this document.

2 HISTORIC ENVIRONMENT BASELINE SUMMARY

2.1 SITE LOCATION

2.1.1. The Site is approximately 1.6 hectares in size and is located 8.5km north of Alnwick, to the north-east of the A1 between North Charlton and South Charlton (centred at approximately NGR) 4174449, 621364; **Appendix B**, **Figure 2**). West Linkhall is located opposite the Site to the south-west of the A1. The Scheduled Monument 'Camp at West Linkhall' (NLE 1006500) abuts the Site along its north-western boundary.

2.2 TOPOGRAPHY

2.2.1. The topography undulates sharply throughout the Site and height above Ordnance Datum (aOD) varies from 91m aOD to the north, 90m aOD to the south, and 88m aOD in the central portion of the Site.

Plate 1 - View south across the Site

2.3 GEOLOGY

2.3.1. The solid geology underlying the Site comprises limestone, sandstone, siltstone and mudstone of the Alston Formation, formed during the Carboniferous Period. The solid geology is overlaid by glaciofluvial deposits of sand and gravel, laid down during the Devensian Stage of the Quaternary Period (BGS, accessed 30-05-2019). The local soils are described as loamy, freely draining and slightly acidic (Landis Soilscapes, accessed 30-05-2019).

Current land use

2.3.2. The site currently serves as pasture.

2.4 ARCHAEOLOGICAL BASELINE

INTRODUCTION

2.4.1. The archaeological potential of the Scheme, within which the Site lies, has been considered in the Historic Environment Desk-Based Assessment (HEDBA) currently in preparation (**Ref. 3**). The assessment employed a 1km study area for designated heritage assets and one of 500m for non-designated heritage assets. The following section provides an overview of the assessment, presented by period.

PREHISTORIC

2.4.2. No evidence of Palaeolithic or Mesolithic activity was identified within the 500m study area around the Scheme. Potential Neolithic activity is represented by the site of a Scheduled Monument bowl barrow (NHLE 1018499) 580m to the north of the Site, although this funerary monument type was still in use during the Bronze Age. Two worked flints of either Neolithic or Bronze Age provenance were found at Charlton Mires 625m to the south-east of Site.

2.4.3. Bronze Age activity is attested to by the site of two stone cists 790m to the north-west of Site. The features were excavated prior to 1824 revealing an inhumation burial associated with a bronze, flat riveted knife/dagger.

2.4.4. Ellsnook round barrow, typical of the Bronze Age, is located 2.6km to the south of Site. The Scheduled Monument (NHLE 1006465) was excavated in 1921 and a funerary beaker vessel was recovered. The site of another possible barrow is located 575m to the south-west of site but there is no record of the earthwork being excavated.

2.4.5. A Bronze Age perforated polished stone axe-hammer was found further to the north-west, 2km from Site.

2.4.6. The Iron Age is represented by defended settlement sites. The Camp at West Linkhall (NLE 1006500) is located immediately to the east of site has never been intrusively investigated but it is considered to be of Iron Age date. A second possible camp is located 400m to the north, alongside Shipperton Burn (HER 5043). The Camp Plantation is located almost 2km to the north-west of Site. The Scheduled Monument (NHLE 1017955) comprises roughly triangular earthworks incorporating a raised natural feature. Heiferlaw defended settlement (NHLE 1014080) is located 3.5km to the south of Site. The settlement is defined by ramparts and contains internal divisions and traces of hut circles. Buckland Camp (NHLE 1014074) is located 2.25km to the south of Site and comprises a 75m diameter, roughly circular earthwork on the southern slope of Honey Hill.

ROMANO-BRITISH

2.4.7. There is no evidence of Romano-British activity within the 1km study area around the Proposed Scheme.

EARLY MEDIEVAL

2.4.8. Evidence of Early Medieval activity within the Proposed Scheme 1km study area is limited to place names. The settlement of Rock lies 1.1km to the south-east of Site and its name is likely to be derived from the Old French words *roche* and *roke*, meaning 'outcrops of limestone'. The place name of *Ealnwic* (now Alnwick) is of Saxon origin derived from its situation near the River Alne 8km to the south of Site.

LATE MEDIEVAL

2.4.9. Evidence of Late Medieval activity identified by the HEDBA comprises the site of Alnwick Abbey (NHLE 1006598) 8km to the south of Site; the site of North Charlton shrunken Medieval village 930m to the north of Site; the Grade I Listed (NHLE 1034282) and Scheduled (NHLE 1014061) Heiferlaw Tower House 3.6km to the south of Site and Charlton Burn Limekiln (HER 5056) 1.8km to the north of Site.

POST-MEDIEVAL

2.4.10. Post-Medieval activity is represented by the Grade II Listed Malcolm's Cross (NHLE 1153333) dedicated to Malcolm III, King of Scotland (1058-1093), erected in 1774. The gradual industrialisation of the region is represented in the HEDBA study area by the Grade II listed assets of Barn and Engine House (NHLE 1041755) and Smithy (NHLE 1303729) at Broxfield Farm and limekilns to the north-west of Peppermoor (NHLE 1153931) and at Kiln plantation to the west of Rock (NHLE 1154647). The HER identified a mill at North Charlton (HER 25114) and several wells (HER 5037, 22425, 22429, 22431, 22433 and 22435).

INDUSTRIAL

2.4.11. The origins of the Grade I Registered Park and Garden of Alnwick Castle (NHLE 1001041), 4.3km to the south-west of Site, are in the Post-Medieval period but the main phases of development and modelling took place in the Industrial Period as successive Dukes added to the asset.

MODERN

2.4.12. Assets of the Modern era comprise World War commemoration monuments including the Grade II listed Denwick War Memorial (NHLE 1433767) and the South Charlton War Memorial (NHLE 1439802). Military activity during the Second World War is represented by pill boxes (HER 19936, HER 19874, HER 447) and a Scheduled Zero Station (NHLE 1014080), located within the Heiferlaw defended settlement. The underground station comprises three separate chambers with vertical access shaft and a cylindrical escape tunnel.

GEOPHYSICAL SURVEY

2.4.13. A geophysical survey of the Scheme was undertaken between November 2018 and February 2019 (**Ref. 2**). The survey of the Site, adjacent to West Linkhall, identified magnetic anomalies thought to be associated with the earthworks of the camp (**Appendix B, Figure 2**). Areas of ridge and furrow ploughing were also identified. These anomalies are the focus of the fieldwork proposed in this WSI.

3 AIMS AND OBJECTIVES

3.1.1. The aim of the evaluation is to clarify the presence, nature, date and extent of any archaeological remains that might be present within the Site. Specifically, to identify if there are non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to the Scheduled Monument located immediately to the east, and should therefore be considered subject to the policies for designated heritage assets, in line with paragraph 5.124 of NPP NN (**Ref. 1**). This is for the purposes of informing the DCO application and an appropriate mitigation strategy for any significant archaeological remains.

3.1.2. The objective of trial trench evaluation as defined by the Chartered Institute for Archaeologists (CIfA) is to 'determine, as far as is reasonably possible, the nature of the archaeological resource within a specified area using appropriate methods and practices' (CIfA, 2014a). The results of the evaluation will inform an appropriate mitigation strategy for any archaeological remains, if required.

3.1.3. This is further explained as '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…. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate.'

3.1.4. In respect of the archaeological research objectives specific to the Site and based on the archaeological potential as identified by the geophysical survey (**Ref. 2**) and the HEDBA (**Ref. 3**), the aims of the evaluation are based on those drawn from the North-East Regional Research Framework for the Historic Environment (NERFF, **Ref. 4**), and are summarised as follows:

- Confirm the extent, nature and date of the features identified as geophysical anomalies
- Identify and record any other archaeological remains revealed by the trenches
- Establish if there is any evidence for Iron Age settlement activity which would support the assumed date of the Scheduled Camp immediately to the east
- Establish if there is any evidence for the Scheduled Monument to date from a different period, i.e Romano-British
- Confirm if the linear earthworks are the remains of ridge and furrow and establish a date for them and to review what information they can provide about the medieval and post-medieval rural landscape and settlement pattern
- Establish if there are any pre-medieval buried archaeological remains sealed beneath the linear, potentially ridge and furrow, earthworks
- Confirm how much the present day topography is associated with the construction of the modern route of the A1.

4 METHODOLOGY

4.1 GENERAL REQUIREMENTS

4.1.1. The archaeological evaluation will be carried out by a suitably qualified archaeological contractor, as defined by the Chartered Institute for Archaeologists' (CIfA) Code of Conduct and in the CIfA Standard and Guidance for an Archaeological Field Evaluation (**Ref. 5**). They would be required to prepare a detailed method statement (see below) which would set out how the evaluation would be undertaken. The archaeological contractor will supply a suitably qualified and experienced team of archaeologists to carry out the investigation. The archaeological contractor will have demonstrable experience of working on similar projects and with comparable archaeological remains.

4.1.2. The evaluation would be monitored by WSP, NCC and Historic England.

4.1.3. All work undertaken will conform to Historic England's Management of Research Projects in the Historic Environment (**Ref. 6**), the CIfA Code of Conduct, the CIfA Standard and Guidance for an Archaeological Field Evaluation (**Ref. 5**) and other relevant CIfA Standards and Guidance documents (**Refs 7, 8** and **9**).

DETAILED METHOD STATEMENT

4.1.4. The archaeological contractor will prepare a detailed Method Statement for the archaeological evaluation in response to this WSI. The Method Statement will set out how the trial trenching will be delivered. It will include detail of the archaeological contractor's staff, programme, contingencies and specialists. The contractor's Method Statement should conform to the outline in MoRPHE Project Planning Note 3: Archaeological Excavation (**Ref. 6**) and would contain information on the following:

- The size and qualification of the work force including names and experience of key personnel.
- Details of staffing levels and the number of person days to be spent on each specific task.
- Details of specialists, including qualifications, who are likely to have input into the Scheme. Whether they are in-house or contracted in.
- Details of the recording system for fieldwork and post-excavation analysis.
- A timetable covering the whole project from setting up on site through report writing to deposition of the archive, including suitable allowance for bad weather or other unforeseen circumstances, the latter must be clearly indicated.

4.1.5. It is recommended that the archaeological contractor undertakes a walkover survey as part of the preparation of the Method Statement in order to review the suitability of the proposed trench locations (**Appendix 2**, **Figure 2**), review any on-site constraints and to determine appropriate plant, access points and location of temporary welfare sites.

4.1.6. The archaeological contractor would be required to request up-to-date details of any buried utilities within the Scheme and to review all records of ecological constraints available.

EXCAVATION CONSTRAINTS

4.1.7. The archaeological contractor will need to mark out the boundary of the adjacent Scheduled Monument clearly and ensure there are no intrusive ground works within the Scheduled Monument. The archaeological contractor will ensure there is no machinery movement which would damage the Scheduled Monument.

4.1.8. The archaeological contractor will be responsible for locating any drainage pipes, service pipes, cables etc., which may cross the area of excavation, and for taking the necessary measures to avoid disturbing such services. It will be the responsibility of the archaeological contractor to address the requirements of any other constraints, which may include Tree Preservation Orders, public rights of way, contaminated land, areas of ecological interest and the habitats of protected species.

Confirmation of Adherence to Specification

4.1.9. Prior to the commencement of any work, the archaeological contractor must confirm adherence to this WSI in writing to WSP and NCC, or state (with reasons) any proposals to vary the WSI. Should the contractor wish to vary the specification, then written confirmation of the agreement with WSP and the NCC to any variations is required prior to work commencing. Unauthorised variations are made at the sole risk of the contractor.

Documentary Research

4.1.10. As part of the Scheme, a Historic Environment Desk-Based Assessment (HEDBA) of the site is being prepared (**Ref. 3**). The HEDBA will be made available to the archaeological contractor in order to provide an overview of the archaeological/historical background of the site and its environs. In addition to providing a knowledge base for the work in hand, the results of this assessment may be incorporated into the contractor's report where they are considered to contribute to that report, but any extraneous material should be omitted.

4.2 FIELDWORK METHODOLOGY

4.2.1. The archaeological evaluation will involve the mechanical excavation of 12 trenches (**Appendix B**, Figure 2), measuring 30m length and 1.8 m in width, providing a 4% sample of the Site. A proposed trench location plan is provided in **Appendix B** Figure 2, based on the results of the geophysical survey. The trenches have been positioned to avoid any obvious obstructions, but all locations will need to be reviewed as part of the preparation of the Method Statement and, where necessary, repositioned.

4.2.2. The trenching will be undertaken using a suitable mechanical excavator fitted with a toothless 1.8 m (minimum) ditching bucket operating under archaeological supervision. Excavated material will be stored at least 1 m from the edge of the area of excavation. Topsoil and subsoil deposits will be stored separately and scanned for artefacts.

4.2.3. Some trenches are targeted on potential archaeological features identified as anomalies in the geophysical survey, whilst others are located in 'blank' areas where no anomalies were identified, to confirm that no remains are indeed present.

4.2.4. Mechanical excavation will cease at either the surface of the natural geology or at the first archaeological horizon. Any features of potential archaeological origin will be examined through hand excavation. The archaeological contractor will ensure that sufficient time is allowed to thoroughly investigate and record all archaeological deposits encountered.

4.2.5. The trenches will be located and marked out by the archaeological fieldwork contractor surveyor and tied to the National Grid.

4.2.6. Based on the predicted depth of deposits, it is assumed that the trenches will be no more than 1.2 m deep. This is sufficiently deep to reach the underlying geology and any archaeological features cut into it. Shoring or stepping the sides is not, therefore, required.

4.2.7. A contingency requirement is in place should there be issues which can be resolved by the expansion of existing trenches or the provision of additional trenching. Up to 60 linear metres of additional trenching (1.8m in width) should be sufficient with the understanding that unless small-scale expansion of the trench, the contingency will only be implemented with the agreement of WSP and NCC Conservation Team.

4.2.8. In the event that any archaeological deposits or features of high significance or sensitivity are encountered during the works, the excavations must be halted and no further ground disturbance may occur at that location until the Applicant (or their nominated representative) and the NCC have been contacted.

4.3 HAND EXCAVATION

4.3.1. All excavations will be recorded according to the normal principles of stratigraphic excavation. The stratigraphy of each trench is to be recorded, from the modern ground surface down to natural deposits, even if no archaeological deposits have been identified.

4.3.2. All archaeological deposits, features and finds will be recorded according to accepted professional standards (see references section) and in line with the archaeological contractor's established recording systems. The recording system employed will be approved by the NCC prior to the works commencing.

4.3.3. Hand excavation of identified remains will consist of a minimum of:

- Linear boundary features not associated with settlement will be sufficiently sampled to allow for informed interpretation of their date and function. Each section should be at least 1 m wide and, where possible, sections will be located and recorded adjacent to the trench edge. All intersections will be investigated to determine the relationship(s) between the component features.
- All termini will be investigated. Care will be taken to note the stratigraphic position of any dateable artefacts recovered. If, after hand excavation, no dateable finds are recovered from large or extensive features then up to 100% will be excavated.
- Other linear and discrete features: all stake-holes, post-holes, pits, ring ditches, kilns, and other structural/funerary/industrial features will be 50% excavated. All intersections will

be investigated to determine the relationship(s) between the component features. Where possible, sections will be located and recorded adjacent to the trench edge.

- Built structures: walls, floors etc. will be excavated sufficient to establish their form, phasing and construction techniques. All intersections will be investigated to determine the relationship(s) between the component features.
- Excavation must not compromise the integrity of the archaeological record. Investigation should be undertaken in such a way as to allow for the protection of the deposits through the application of mitigation procedures or through the opportunity for better excavation under the conditions pertaining to full investigation of a larger area.

4.3.4. Section drawings (at a minimum scale of 1:20) must include heights aOD. Plans (at a minimum scale of 1:50) must include aOD spot heights for all principal strata and any features. All site drawings will be completed on plastic drafting film.

4.3.5. The actual areas of excavation and all archaeological (and possibly archaeological) features should be accurately located on a trench plan and recorded by photographs, scale drawings and written descriptions sufficient to permit the preparation of a detailed archive and report on the material. The trench location, as excavated, will be accurately surveyed using industry standard GPS equipment with sub one-centimetre accuracy, tied into the O.S. National Grid and located on an up-to-date 1:1250 O.S. map base.

4.3.6. A site diary, comprising a description and discussion of the archaeology, is to be maintained on a daily basis.

4.3.7. A ‘Harris Matrix’ stratification diagram will be used to record all stratigraphic relationships on the site. Spot dating should be incorporated where applicable.

4.3.8. The trial trenches will not be backfilled before they have been inspected by NCC or the agreement of that Officer has otherwise been obtained for the backfilling of specific trenches.

Photography

4.3.9. A full and detailed photographic record of individual contexts will be maintained and similarly general views from standard view points of the overall site at all stages of the excavation will be generated. Photography will be undertaken using high-resolution digital cameras (no less than 10 megapixels). Photograph records will be maintained on index pro-forma sheets.

4.3.10. Images may be captured in RAW format, but archiving should follow the guidance given by Historic England (**Ref. 10**) in Digital Image Capture and File Storage: Guidelines for Best Practice. Digital images will be archived in both a JPEG and TIFF formats. The latter as uncompressed 8-bits per channel TIFF version 6 file of not less than 25 Mbs (See section 2.3 of the Historic England guidance). The contractor must include metadata embedded in the TIFF file. The metadata must include the following: the commonly used name for the site being photographed, the relevant centred OS grid coordinates for the site to at least six

figures, the relevant township name, the date of photograph, the subject of the photograph, the direction of shot and the name of the organisation taking the photograph.

4.4 ARTEFACTS AND ENVIRONMENTAL SAMPLES

Artefacts

4.4.1. All recovery, retention and treatment of finds and samples will be carried out mindful of the overall purpose of the exercise, i.e. to evaluate for further decision making. To this end, all artefactual and ecofactual material will be reviewed for its capability to inform the evaluation report.

4.4.2. Identified archaeological finds and artefacts will be carefully recovered by hand and bagged or boxed according to the type of artefact (i.e. pottery, ceramic building material, bone, worked flint, metal) archaeological context from which they came, with a label indicating the site code, find type and context reference number). Particularly notable artefacts will be recorded as a 'registered' or 'small' find and recorded three dimensionally with Ordnance Datum levels. This will include in situ prehistoric worked flint.

4.4.3. Initial conservation and storage will be in a proper manner and to standards set out in First Aid for Finds (**Ref. 11**) and the CIfA 'Standard and Guidance for the collection, documentation, conservation and research of archaeological materials' (**Ref. 8**). If necessary, an appropriately qualified and experienced archaeological conservator will be appointed to advise and assist in the lifting of fragile finds of significance and or value and to arrange for the X-raying and investigative conservation of objects as may be necessary.

4.4.4. Certain classes of bulk material, i.e. post-medieval pottery and building material may be discarded if there is a considerable quantity (more than a single standard archive box of c. 0.016 m^2), after recording with a representative sample, unless associated with industrial activity which requires post-excavation analysis of the full sample.

4.4.5. All pottery, bone and worked flint will be washed and then marked in accordance with the project archive repository guidelines. Most building material and burnt flint (not including significant diagnostic material) will be identified, counted, weighed and discarded. Samples will be retained as appropriate. The finds identification and specialist work will be undertaken by the relevant finds specialists agreed with NCC to assess the date range of the assemblage. With particular reference to pottery, use relevant county or region-specific type series for identification and dating, where available. This evidence will be used to characterise the site, and to establish the potential for all categories of finds should further archaeological work be necessary. Records of artefact assemblages will clearly state how they were recovered, sub-sampled and processed. Consideration will be given for donation of appropriate artefacts to type series reference collections.

Treasure

4.4.6. Any artefacts that fall under the statutory definition of Treasure (as defined by the Treasure Act of 1996 and its revision of 2002) will be reported immediately to WSP, the NCC, the

relevant Coroner's Office, the Finds Liaison Officer and the landowner. A Treasure receipt must be completed, and a report submitted to the Coroner's Office and the FLO within 14 days of understanding the find is Treasure. Failure to report within 14 days is a criminal offence.

Human Remains

4.4.7. If human remains are encountered WSP, NCC and the local Coroner will be informed immediately. Human remains should be left in situ and only removed if absolutely necessary. Where excavation of human remains is unavoidable, it will be undertaken following the provisions of the Coroners Unit in the Ministry of Justice and relative professional guidelines. It is essential that the post-excavation assessment of excavated human remains contains an analysis of the material and a statement for the final deposition of the assemblage. The qualified statement must address future research potential, where applicable, and the options for reburial.

Environmental Samples

4.4.8. If archaeological deposits, which may have environmental potential are identified, a programme of environmental sampling will be initiated. A range of samples will be undertaken from dated and undated deposits and features. The sampling strategy will follow the Historic England environmental sampling guidelines outlined in Environmental Archaeology, A guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-Excavation (**Ref. 12**).

4.4.9. Secure and phased deposits, especially those related to settlement activity and/or structures will be considered for sampling for the recovery of charred plant remains, charcoal and mineralised remains. Any cremation-related deposits will be sampled appropriately for the recovery of cremated human bone and charred remains. If any evidence of in situ metal working is found, suitable samples for the recovery of slag and hammer scale will be taken.

4.4.10. Where sealed waterlogged deposits are encountered, samples for the recovery of waterlogged remains, insects, molluscs and pollen, as well as any charred remains, will be considered. The taking of sequences of samples for the recovery of molluscs and/or waterlogged remains will be considered through any suitable deposits such as deep enclosure ditches, barrow ditches, palaeo-channels, or buried soils. Monolith samples will also be taken from this kind of deposit as appropriate to allow soil and sediment description/interpretation as well as sub-sampling for pollen and other micro/macrofossils such as diatoms, foraminifera and ostracods.

4.4.11. For remains suspected to be of Neolithic to Romano-British, the use of multiple radiocarbon dates should be applied and where possible samples should be taken from contexts with stratigraphic relationships to allow the use of Bayesian calibration of dates, in accordance with the NERFF (**Ref. 4,** p.136). The need for any more specialist samples, such as OSL,

archaeomagnetic dating and dendrochronology will be evaluated and will be taken under the direction of the relevant specialist.

4.4.12. The strategy for environmental sampling must be outlined in the archaeological contractor's method statement and will be subject to variation as appears necessary during the evaluation. Variations to the strategy will be made following consultation with NCC, WSP and the Historic England Regional Science Advisor (Don O'Meara 01912691250 07824529245) or the project's palaeoenvironmentalist.

Metal Detecting

4.4.13. Spoil heaps are to be scanned for ferrous and non-ferrous metal artefacts using a metal detector capable of making this discrimination, operated by an experienced metal detector user (if necessary, operating under the supervision of the contracting archaeologist). Modern artefacts are to be noted but not retained (19th-century material and earlier should be retained.) Artefacts recovered by metal detecting should be clearly identified in the final report.

If a non-professional archaeologist is to be used to carry out the metal-detecting, a formal agreement of their position as a sub-contractor working under direction must be agreed in advance of their use on site. This formal agreement will apply whether they are paid or not.

5 REPORTING

5.1 GENERAL REQUIREMENTS

5.1.1. A report on the fieldwork and archive will be completed and made available within six weeks of the completion of fieldwork. The report will describe the methods employed and its conclusions will include a clear statement of the archaeological value of the results, and their significance. The report will conform to the standards set out in the CIfA Standard and Guidance for Archaeological Field Evaluation (**Ref. 5**) and must contain sufficient detail to enable the results to be interpreted without recourse to the site archive. It will include tabulations of contexts and finds by context. It will also include a non-technical summary of the project and its results.

5.1.2. The findings of the fieldwork will be related to the relevant known archaeological and historical information held by the Northumberland HER and will be related to the relevant sections of the regional research strategy and agenda as set out in the NERFF (**Ref. 4**)

5.1.3. Reporting on ceramic artefacts and pottery should follow the guidance given in 'A Standard for Pottery Studies in Archaeology' (**Ref. 13**) and endorsed by the Prehistoric Ceramics Research Group; the Study Group for Roman Pottery & the Medieval Pottery Research Group and the relevant sections of the NERFF (**Ref. 4**).

5.1.4. In the first instance, the archaeological contractor will submit a digital copy of the draft report in .docx format to WSP for review and comment.

5.1.5. Following any amendment required by WSP, the draft report will be submitted by the archaeological contractor to NCC for approval. The report will be submitted in a timely manner to allow the DCO application to be determined in an informed manner. If specialist reports are outstanding, then a catalogue of finds with spot dates may be submitted with the report.

5.1.6. A fully indexed field archive shall be compiled consisting of all primary written documents, plans, sections, photographic negatives and a complete set of labelled photographic prints.

5.1.7. The full report, once accepted by NCC, will be supplied on the understanding that it will be added to the Northumberland HER and will become a public document after an appropriate period of time (generally six months). It will also form an Appendix to the ES as part of the DCO application.

5.2 REPORT CONTENT

5.2.1. The report will include, as a minimum:

- A summary sheet providing the following information:
  - Site name and grid reference
  - Site activity (i.e. type of investigation)
  - Date and duration of project

- Contractor Site code
- Area of site
- Summary of results
- Monuments identified
- Location and reference of archive

¡ And the following main sections, as appropriate to results:

- Summary
- Site location
- Archaeological and historical background
- Methodology
- Description of results (including stratigraphic description, if necessary)
- Interpretation of the results in the appropriate context
- Summary of the archaeological potential of the Scheme and its immediate surrounding area
- Consideration of the significance of the findings on a local, regional and national basis
- Critical review of the effectiveness of the methodology
- References
- Appropriate photographs in colour
- Location Plan (no smaller than 1:10 000)
- Site layout plans on an OS base, with north point and scale with the location of trial pits/trenches
- Plans and sections of significant archaeological remains, as necessary, including Cardinal Points, Ordnance Datum, vertical and horizontal scales
- Site matrices where appropriate
- Specialist descriptions of artefacts and ecofacts as required
- Summary of the contents of the project archive and its location (including summary catalogues of finds)
- Photographic Register
- Copy of the OASIS record form.

5.3 PUBLICATION AND DISSEMINATION

5.3.1. In order to fulfil the DCO application, the results of the investigation will need to be published and disseminated at a level that is appropriate to the significance of the remains recorded.

5.3.2. Copies of the report should be deposited with the Northumberland Historic Environment Record (HER), on the understanding that it will be made available as a public document after an appropriate period (not exceeding 6 months from the completion of fieldwork); a further hard copy to be sent to the client. Electronic (PDF) copies of the report will also be provided alongside the hard copies.

5.3.3. A summary account of the work should be submitted to the editor of the local archaeological journal Archaeology Round-up and any relevant period journals (e.g. Medieval Archaeology, Proceedings of the Prehistoric Society) no later than March 31st of the year following completion of fieldwork.

5.3.4. Further publication may range from a 'grey literature' archaeological report, to a short journal article in local and period-based archaeological journals as appropriate (as above), to a full monograph (in the event that the evaluation resulted in further excavation). The level of dissemination would be determined in consultation with NCC.

5.3.5. In all cases a short summary of the results of the work will be submitted to the HER, and National Record for the Historic Environment (NHRE), as maintained by Historic England, via a standard OASIS archaeological report form. The archaeological contractor must, therefore, complete the online OASIS form at http://ads.ahds.ac.uk/project/oasis/

6 ARCHIVE

6.1 GENERAL REQUIREMENTS

6.1.1. All recovered artefacts are the property of the Landowner. WSP will provide the relevant contact details of the Landowner(s) to the archaeological contractor in order to commence the transfer title of artefacts so that the archive, including all artefacts, can be deposited with the Great North Museum in Newcastle.

6.1.2. The site archive will be assembled in accordance with Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation (**Ref. 14**) and the guidelines from the Great North Museum. It will also adhere to the recommendations in MoRPHE (**Ref. 6**), Guidelines for the Preparation of Excavation Archives for Long-Term Storage (**Ref. 15**), Standards in the Museum Care of Archaeological Collections (**Ref. 16**); and relevant CIfA Standards and Guidance (**Refs 7** and **8**).

6.1.3. The site archive will contain all the data collected during the fieldwork, including records and finds, and all reports. The archaeological contractor will ensure that the archive is quantified, ordered, indexed and internally consistent, and adequate resources will be provided to ensure that all records are checked. Archive consolidation will be undertaken immediately following the conclusion of fieldwork.

6.1.4. The archaeological contractor will ensure that the project is recorded on the OASIS database. All parts of the OASIS online form http://ads.ahds.ac.uk/project/oasis/ will be completed and a copy will be included in the final report and also with the site archive. A digital copy of the approved report will be uploaded to the OASIS website.

Archive Deposition

6.1.5. The museum for archiving is the Great North Museum in Newcastle, while the digital archive will be deposited with the Archaeology Data Service. An integrated project archive (including both artefacts/ecofacts and project documentation) should be prepared upon completion of the project. Provision should be made for the payment of a ‘deposit grant’ at the time of archive transfer towards the costs of archive curation in perpetuity. The rates and requirements currently employed by the nominated depositing museum for its archive store should be used for guidance.

7 OPERATIONAL FACTORS

7.1 PROJECT TIMETABLE AND MONITORING ARRANGEMENTS

7.1.1. WSP will liaise with the archaeological contractor regarding access and the health and safety requirements in force on the site. Information will be provided to NCC and Historic England as relevant. A programme of works, monitoring, recording and access will be agreed by the archaeological contractor, WSP, NCC and Historic England before the project commences.

7.1.2. WSP will be kept informed of progress by the archaeological contractor to allow for any monitoring visits by NCC and Historic England to be conducted during the course of the fieldwork.

Monitoring

7.1.3. WSP will monitor and assure all elements of the archaeological fieldwork and will ensure that the work is carried out in accordance with this WSI, professional standards and the requirements of NCC. Any variance in the scope of work shall be made by WSP in consultation with NCC and Historic England.

7.1.4. Any key decisions (such as excavation strategy or work scope changes) that are made on site shall be noted during the monitoring visits and communicated by WSP on behalf of Highways England to relevant parties. Visits by NCC and Historic England will be arranged so that they are satisfied that the works are being conducted to proper professional standards. Access is also to be afforded at any reasonable time to Historic England's Archaeological Science Advisor.

7.2 HEALTH AND SAFETY

7.2.1. All relevant health and safety regulations and codes of practice will be respected. WSP will provide the archaeological contractor with all known site constraints, such as areas of contamination, utilities and access limitations. The archaeological contractor will provide a Health and Safety Statement prior to the commencement of the archaeological investigation. All site procedures will be carried out in accordance with the guidance set out in the Health and Safety Manual compiled by the Federation of Archaeological Employers and Managers (FAME) and in accordance with current legislation which includes:

- The Health and Safety at Work Act (1974)
- Management of Health and Safety at Work Regulations (1999)
- The Construction (Design and Management) Regulations (2015)
- The Control of Asbestos Regulations (2006)
- Construction (Health, Safety and Welfare) Regulations (1996)
- The Health and Safety (Miscellaneous Amendments) Regulations (2002)
- The Control of Substances Hazardous to Health Regulations (2002)
- The Health and Safety (First-Aid) Regulations (1981)

- The Regulatory Reform (Fire Safety) Order (2005)
- The Provision and Use of Work Equipment Regulations (1998)
- Lifting Operations and Lifting Equipment Regulations (1998)

7.2.2. Prior to the start of the archaeological investigation, risk and method statements will be produced and submitted to WSP and Highways England. All staff involved or associated with the investigation will be provided with copies of the documents prior to the beginning of the works and they will be required to read them before commencing construction works.

7.2.3. The archaeological contractor will be responsible for the safeguarding of its staff, as far as reasonably practicable, and others who may be affected by the works on site.

7.2.4. WSP must be notified immediately of the nature and extent of any unexpected site hazards and the appropriate health and safety precautions required.

7.2.5. Personal Protective Equipment (PPE) will be worn by all staff as appropriate.

7.3 INSURANCE

7.3.1. Full details of the insurance and copies of certificates covering the archaeological contractor shall be supplied upon request.

7.4 POST-EXCAVATION DELIVERABLES

7.4.1. WSP will technically assure the deliverables conform to the format and scope agreed with NCC, and that the reporting is accurate and clear and with sound conclusions, and that it has been produced to professional standards and the requirements of NCC. This will be the case whether the agreed deliverables take the form of an archaeological report for the HER, journal article or monograph.

7.4.2. WSP will liaise with the archaeological fieldwork contractor to ensure that the work is carried out to an agreed delivery programme.

7.5 COPYRIGHT

7.5.1. Copyright will remain with the archaeological fieldwork contractor under the *Copyright, Designs and Patents Act 1988* with all rights reserved. An exclusive licence will be provided to the client, or their appointed representative, for use of all project records and reports in all matters directly relating to the project. The archaeological fieldwork contractor retains the right to be identified as the author of all project documentation and reports.

Appendix A

REFERENCES

PUBLISHED AND DOCUMENTARY SOURCES

Ref. 1. Department for Transport, 2014, National Policy Statement for National Networks,

Ref. 2. SUMO, 2018, Geophysical Survey Report: A1 in Northumberland Alnwick to Ellingham.

Ref. 3. WSP, forthcoming, Historic Environmental Desk-Based Assessment: A1 in Northumberland Alnwick to Ellingham

Ref. 4 Petts, D, and Gerrard, C. 2006. *Shared Visions: The North-East Regional Research Framework for the Historic Environment*, Durham County Council

Ref. 5. Chartered Institute for Archaeologists, 2014, *Standard and Guidance for an Archaeological Evaluation*

Ref. 6. Historic England, 2015, *Management of Research Projects in the Historic Environment (MoRPHE)*

Ref. 7. Chartered Institute for Archaeologists, 2014, *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*

Ref. 8. Chartered Institute for Archaeologists, 2014, *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*

Ref. 9. Chartered Institute for Archaeologists, 2014, *Standards and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment*

Ref. 10 Historic England, 2015, *Digital Image Capture and File Storage: Guidelines for Best Practice*

Ref. 11. Leigh D, Watkinson and Neal V 1998, *First Aid for Finds: Practical Guide for Archaeologists*

Ref. 12. Historic England, 2011, *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*

Ref. 13. Prehistoric Ceramics Research Group Study Group for Roman Pottery Medieval Pottery Research Group, 2016, *A Standard for Pottery Studies in Archaeology*

Ref. 14. Archaeological Archive Forum, 2011, *Archaeological Archives: a guide to best practice in creation, compilation transfer and curation*

Ref. 15 United Kingdom Institute for Conservation, 1990, *Guidance for Archaeological Conservation Practice*

Ref. 16 Museums and Galleries Commission, 1992, *Standards in the Museum Care of Archaeological Collections*.

Appendix B

FIGURES

Date Modified:

Drawn By:

File:

Key

- Application Boundary
- Scheduled Monument
- Site Location

Brownieside
Tynely Moor
152
Tynely Moor
Foresters Cottages
Charlton Burn
Fallodon Hall
Fallodon Cottages
Doxford Farm
Middlemoor Farmhouse
Garden Cottage
West Lodge
Coldharbour
B6347
Christon Bank Farm
Doxford Newhouses
Shipperton Burn
Edington Dean
West Lodge
Kittycarter Burn
Embleton Burn
East Linkhall
Newton Retreat
B1340
West Linkhall
A1
Patterson Cottage
B6347
Gallow Moor
Whinnyhill House
Charlton Mires
Drythropple
Rock Moor Farm
Crag Hill
South Charlton
Rock Midstead
Gallowmoor
The Old House
B6341
Rock Lodge
Rock
South Charlton Farm
Jingling Burn
The Whinny
B6341
Wisplaw
B1340
Gull Ha
A1
Green Seat House
Stamford Burn
Humbleheugh
Heiferlaw Bank
Rennington
Church Road
Rennington West Farm
The Farmhouse
Hinding Dean
Holywell Cottage
Heckley Fence
Renningtonmoor
Millway Loaning
Hocketwell
B6346
White House
White House Woods
Broxfield
Chester Cottages
Hinding Lane
Friars Well Farm
Locking Dean
Heckley House
Moorhouse
Hulne Park
Hulne Abbey
Blackbog Burn
B6341
Heckley High House
Silvermoor
B6346
Smiley Lane
Loaning Head
River Aln
Smiley Lane Cottage
Broom House
A1
B1340
Brizlee Tower
177
Brizlee Hill
Park Farm
Denwick Burn
Denwick
Abbeylands

416000 417000 418000 419000 420000 421000 422000

623000 622000 621000 620000 619000 618000 617000 616000 615000

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0 125250 500 750 1,000 Meters

wsp

TITLE:

A1 in Northumberland
Alnwick to Ellingham
West Linkhall

FIGURE No:

DRAFT FOR COMMENT
Figure 1
Application Boundary

Date Modified:

Drawn By:

File:

Key

- Application Boundary
- Trial Trenches
- Site Location
- Scheduled Monument
- Magnetic Disturbance
- Possible Archaeology
- Utility
- Linear Trend

621500.000000
621400.000000
621300.000000
621200.000000

417400.000000
417500.000000

0 5 10 20 30 40 Meters

wsp

TITLE:

A1 in Northumberland
Alnwick to Ellingham
West Linkhall

FIGURE No:

DRAFT FOR COMMENT
Figure 2
Proposed Trench Location Plan

Three White Rose Office Park
Millshaw Park Lane
Leeds
LS11 0DL

A1 ALNWICK TO ELLINGHAM IMPROVEMENTS SCHEME: WEST LINKHALL (Area 4)

EVALUATION REPORT

SEPTEMBER 2019

PRE-CONSTRUCT ARCHAEOLOGY

A1 Alnwick to Ellingham Improvements Scheme: West Linkhall, Northumberland

Site Code: WLN 19

Commissioning Client:

WSP
Three White Rose Office Park
Milshaw Park Lane
Leeds
LS11 0DL

Tel: 0113 395 6200

On behalf of:

Highways Agency

Contractor:

Pre-Construct Archaeology Limited

Durham Office
The Rope Works
Broadwood View
Chester-le-Street
County Durham

DH3 3AF

Tel: 0191 377 1111

DOCUMENT VERIFICATION

ARCHAEOLOGICAL INVESTIGATIONS AT WEST LINKHALL, NORTHUMBERLAND

EVALUATION REPORT

Pre-Construct Archaeology Limited Quality Control	
Project Number	K6241
Site Code	WLN19
Report Number	RN 13848

Task	*Name*	*Date*
Text prepared by:	Scott Vance	September 2019
Text checked by:	Aaron Goode	September 2019
Graphics prepared by:	Ray Murphy	September 2019
Graphics checked by:	Mark Roughley	September 2019
Manager sign-off:	Aaron Goode	September 2019

Revision No.	*Date*	*Checked by*	*Approved by*

Pre-Construct Archaeology Limited
Durham Office
The Rope Works
Broadwood View
Chester-le-Street
County Durham
DH3 3AF

CONTENTS

1. NON-TECHNICAL SUMMARY

1.1 Pre-Construct Archaeology were commissioned by WSP, on behalf of Highways England, to undertake an archaeological evaluation of land along the proposed improvement scheme for the A1, Alnwick to Ellingham, Northumberland. The proposed scheme involves the duelling of a *c.* 8km stretch of the A1 between Denwick and North Charlton. The existing carriageway will form the new north bound carriageway and a new southern carriageway would be built to the east. Several areas have been identified along the route as being of potential archaeological interest.

1.2 The site at West Linkhall (Area 4) comprises an irregular rectilinear shaped area covering *c.* 1.6 hectares immediately adjacent to the east of the southbound carriageway of the A1 between North Charlton and South Charlton at National Grid Reference NU 17429 21404 (Figure 1). The site occupies the western side of a large pastoral field. The Scheduled Monument of West Linkhall (HE entry 100650; HER N5044) is situated immediately to the east of Area 4. This monument comprises the earthworks of a four-sided camp surrounded by ramparts with an entrance on the northwest side. It is assumed to be of Iron Age or Roman date. Medieval earthwork remains are also located in the vicinity, including cultivation terraces and ridge and furrow.

1.3 A geophysical survey of the West Linkhall site revealed potential buried archaeological remains which could be associated with the Scheduled Monument (Figure 2). A Written Scheme of Investigation was prepared by WSP (2019) prior to work commencing at the site. The evaluation consisted of twelve 30m long trenches (Trenches 5-16) that were targeted to provide coverage across the extent of the site and to investigate the geophysical anomalies.

1.4 Three phases of activity were encountered within the trial trenches investigated at the site: Phase 1: superficial geology; Phase 2: subsoil and colluvial deposits and Phase 3: Modern topsoil and made ground. No features or deposits of archaeological significance were observed during the evaluation.

2. INTRODUCTION

2.1 Project Background

2.1.1 This report details the results of an archaeological evaluation undertaken at West Linkhall, Northumberland in September 2019 (Figure 1 & 2). The archaeological investigation was commissioned by WSP on behalf of Highways England and was undertaken by Pre-Construct Archaeology Limited (PCA).

2.1.2 The site runs immediately adjacent to the boundaries of the Camp at West Linkhall Scheduled Monument (List Entry 1006500). A geophysical survey undertaken in 2018 (SUMO 2018) as part of the Development Consent Order (DCO) application identified potential buried archaeological remains within the area of the Scheme which could be associated with the Scheduled Monument. Paragraph 5.124 of National Planning Policy for National Networks (Department for Transport 2014) states that "non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments, should be considered subject to the policies for designated heritage assets". The aim of the evaluation was to establish if the geophysical anomalies do represent buried archaeological features and are equivalent to those in the Scheduled Monument.

2.1.3 The scope of works for the archaeological evaluation was set out in the WSI produced by WSP (2019). The aim of the evaluation was to clarify the presence, nature, date, extent and significance of any archaeological remains that might be present in the areas of proposed impact. The WSI was produced in consultation with Northumberland County Council Assistant County Archaeologist (NCC) and Historic England. Twelve trenches (Trenches 5 to 16) were mechanically excavated during this phase of archaeological work.

2.1.4 The Online Access to the Index of Archaeological Investigation (OASIS) reference number of the project is preconst1-365929.

2.2 Site Location and Description

2.2.1 The Site (centred at NGR NU 17429 21404) covers approximately 1.6 hectares and is located 8.5km north of Alnwick, to the northeast of the A1 between North Charlton and South Charlton (Figure 1). West Linkhall is located opposite the Site to the southwest of the A1. The Scheduled Monument 'Camp at West Linkhall' (List Entry 1006500) abuts the Site along its north-western boundary.

2.3 Geology and Topography

2.3.1 The solid geology underlying the Site comprises limestone, sandstone, siltstone and mudstone of the Alston Formation, formed during the Carboniferous Period. The solid geology is overlaid by glaciofluvial deposits of sand and gravel, laid down during the Devensian Stage of the Quaternary Period (*British Geological Survey* website).

2.3.2 The topography undulates sharply throughout the site and height above Ordnance Datum (AOD) varies from 92.25m AOD at the northern end of the site, 83.38m AOD in the central section and 88.61m AOD at the southern extent of the site.

2.4 Planning Background

2.4.1 The archaeological investigation was required, as part of the planning process (pre-determination), to inform the Local Planning Authority (LPA), Northumberland County Council of the character, date, extent and degree of survival of archaeological remains at the site.

2.4.2 A geophysical survey undertaken in 2018 (SUMO 2018) as part of the Development Consent Order (DCO) application identified potential buried archaeological remains within the Scheme which could represent remains within the Scheme which could be associated with the Scheduled Monument. Paragraph 5.124 of National Planning Policy for National Networks (Department for Transport 2014) states that “non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments, should be considered subject to the policies for designated heritage assets”. The aim of the evaluation was to establish if the geophysical anomalies do represent buried archaeological features and are equivalent to those in the Scheduled Monument.

2.4.3 A Written Scheme of Investigation (WSI) was produced by WSP (2019) prior to works commencing at the site.

2.5 Archaeological and Historical Background

Information in this section is largely extracted from the WSP DBA (forthcoming) and the WSI (WSP 2019). The research and writing of those responsible is acknowledged. The assessment employed a 1km study area for designated heritage assets and one of 500m for non-designated heritage assets. The following section provides an overview of the assessment, presented by period.

Prehistoric

2.5.1 No evidence of Palaeolithic or Mesolithic activity was identified within the 500m study area around the Scheme. Potential Neolithic activity is represented by the site of a Scheduled Monument bowl barrow (NHLE 1018499) 580m to the north of the Site, although this funerary monument type was still in use during the Bronze Age. Two worked flints of either Neolithic or Bronze Age provenance were found at Charlton Mires 625m to the south-east of the proposed development.

2.5.2 Bronze Age activity is attested to by the site of two stone cists 790m to the north-west of West Linkhall. The features were excavated prior to 1824 revealing an inhumation burial associated with a bronze, flat riveted knife/dagger.

2.5.3 Ellsnook round barrow, typical of the Bronze Age, is located 2.6km to the south of site. The Scheduled Monument (NHLE 1006465) was excavated in 1921 and a funerary beaker vessel was recovered. The site of another possible barrow is located 575m to the southwest of site but there is no record of the earthwork being excavated.

2.5.4 A Bronze Age perforated polished stone axe-hammer was found further to the northwest, 2km from Site.

2.5.5 The Iron Age is represented by defended settlement sites. The Camp at West Linkhall (NLE 1006500), located immediately to the east of the site, has never been intrusively investigated but it is considered to be of Iron Age date. A second possible camp is located 400m to the north, alongside Shipperton Burn (HER 5043). The Camp Plantation is located almost 2km to the northwest of site. The Scheduled Monument (NHLE 1017955) comprises roughly triangular earthworks incorporating a raised natural feature. Heiferlaw defended settlement (NHLE 1014080) is located 3.5km to the south of the site. The settlement is defined by ramparts and contains internal divisions and traces of hut circles. Buckland Camp (NHLE 1014074) is located 2.25km to the south of site and comprises a 75m diameter, roughly circular earthwork on the southern slope of Honey Hill.

Romano-British

2.5.6 There is no evidence of Romano-British activity within the 1km study area around the Proposed Scheme.

Early Medieval

2.5.7 Evidence of Early Medieval activity within the Proposed Scheme 1km study area is limited to place names. The settlement of Rock lies 1.1km to the southeast of site and its name is

likely to be derived from the Old French words *roche* and *roke*, meaning 'outcrops of limestone'. The place name of *Ealnwic* (now Alnwick) is of Saxon origin derived from its situation near the River Alne 8km to the south of Site.

Late Medieval

2.5.8 Evidence of Late Medieval activity identified by the HEDBA comprises the site of Alnwick Abbey (NHLE 1006598) 8km to the south; the site of North Charlton shrunken Medieval village 930m to the north; the Grade I Listed (NHLE 1034282) and Scheduled (NHLE 1014061) Heiferlaw Tower House 3.6km to the south and Charlton Burn Limekiln (HER 5056) 1.8km to the north of site.

Post-medieval

2.5.9 Post-Medieval activity is represented by the Grade II Listed Malcolm's Cross (NHLE 1153333) dedicated to Malcolm III, King of Scotland (1058-1093), erected in 1774. The gradual industrialisation of the region is represented in the HEDBA study area by the Grade II listed assets of Barn and Engine House (NHLE 1041755) and Smithy (NHLE 1303729) at Broxfield Farm and limekilns to the north-west of Peppermoor (NHLE 1153931) and at Kiln plantation to the west of Rock (NHLE 1154647). The HER identified a mill at North Charlton (HER 25114) and several wells (HER 5037, 22425, 22429, 22431, 22433 and 22435).

Industrial

2.5.10 The origins of the Grade I Registered Park and Garden of Alnwick Castle (NHLE 1001041), 4.3km to the south-west, are in the Post-Medieval period but the main phases of development and modelling took place in the Industrial Period as successive Dukes added to the asset.

Modern

2.5.11 Assets of the Modern era comprise World War commemoration monuments including the Grade II listed Denwick War Memorial (NHLE 1433767) and the South Charlton War Memorial (NHLE 1439802). Military activity during the Second World War is represented by pill boxes (HER 19936, HER 19874, HER 447) and a Scheduled Zero Station (NHLE 1014080), located within the Heiferlaw defended settlement. The underground station comprises three separate chambers with vertical access shaft and a cylindrical escape tunnel.

Geophysical Survey

2.5.12 A geophysical survey of the Scheme was undertaken between November 2018 and February 2019 (SUMO 2018). The survey of the site, adjacent to West Linkhall, identified magnetic anomalies thought to be associated with the earthworks of the camp. Areas of ridge and furrow ploughing were also identified. These anomalies were the focus of the archaeological evaluation.

3. PROJECT AIMS AND RESEARCH OBJECTIVES

3.1 Project Aims

3.1.1 The aim of the evaluation was to clarify the presence, nature, date and extent of any archaeological remains that might be present within the site. Specifically, to identify if there were non-designated heritage assets of archaeological interest that were of equivalent significance to the Scheduled Monument located immediately to the east, and should therefore be considered subject to the policies for designated heritage assets, in line with paragraph 5.124 of NPP NN (Department of Transport 2014). This was to inform the DCO application and an appropriate mitigation strategy for any significant archaeological remains.

3.1.2 The objective of trial trench evaluation as defined by the Chartered Institute for Archaeologists (CIfA) is to 'determine, as far as is reasonably possible, the nature of the archaeological resource within a specified area using appropriate methods and practices' (CIfA 2014a). The results of the evaluation will inform an appropriate mitigation strategy for any archaeological remains, if required.

3.2 Research Objectives

3.2.1 The project was undertaken with reference to the research framework set out in *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF) (Petts and Gerrard 2006), which highlights the importance of research as a vital element of development-led archaeological work. By setting out key research priorities for all periods of the past, NERRF allows archaeological projects to be related to wider regional and national priorities for the study of archaeology and the historic environment. The WSI set out the research aims of the works and are summarised as follows:

- Confirm the extent, nature and date of the features identified as geophysical anomalies;
- Identify and record any other archaeological remains revealed by the trenches;
- Establish if there is any evidence for Iron Age settlement activity which would support the assumed date of the Scheduled Camp immediately to the east;
- Establish if there is any evidence for the Scheduled Monument to date from a different period, i.e. Romano-British;
- Confirm if the linear earthworks are the remains of ridge and furrow and establish a date for them and to review what information they can provide about the medieval and post-medieval rural landscape and settlement pattern;
- Establish if there are any pre-medieval buried archaeological remains sealed beneath the linear, potentially ridge and furrow, earthworks;

- Confirm how much the present-day topography is associated with the construction of the modern route of the A1.

3.2.2 An appropriate level of reporting on the work was required, including, if necessary, full analysis and publication of any notable archaeological findings upon completion of the evaluation. Thus, the results of the work constitute the preservation by record of any archaeological remains encountered and subsequently removed during the course of works.

4. ARCHAEOLOGICAL METHODOLOGY

4.1 Fieldwork

4.1.1 The fieldwork was undertaken in compliance with the codes and practice of the Chartered Institute for Archaeologists and the relevant CIfA standard and guidance document (CIfA 2014 a & b). PCA is a CIFA 'Registered Organisation'. All fieldwork and post-excavation was carried out in accordance with the Yorkshire, the Humber & The North East: Regional Statement of Good Practice (SYAS 2011).

4.1.2 The project was managed in line with principles set out in Historic England's *'Management of Research Projects in the Historic Environment'* (MoRPHE) published in 2006.

4.1.3 All archaeological staff involved in the project were suitably qualified and experienced for their project roles. The project was overseen for PCA by Aaron Goode, Project Manager at PCA's Durham Office. All relevant Health and Safety legislation, regulations and codes of practice were respected. PCA's Health and Safety (H&S) Policy is the starting point for managing H&S at all locations where PCA carries out its operations.

4.1.4 The scope of the work for the archaeological evaluation was set out in a detailed Written Scheme of Investigation compiled by WSP (2019).

4.1.5 The trenches have been targeted over geophysical anomalies and to provide coverage across the extent of the site. This maximised the potential of the site and would provide the most productive archaeological information whilst addressing the research Aims and Objectives.

4.1.6 The trial trenching evaluation was carried out between the 27th August and 2nd September 2019 over five days and consisted of twelve 30m trenches (Figure 2). Trenches 8, 10, 11 and 16 were moved slightly to avoid either entranceways or unsuitable ground to trench.

4.1.7 Trench 13 was shortened to *c.* 8m to avoid standing water and Trench 16 was shortened to avoid the access track. The remaining trenches were set-out using a Leica Viva Smart Rover Global Navigation Satellite System (GNSS), with pre-programmed co-ordinate data determined by an office-based CAD operative.

4.1.8 Ground level in the trenches was reduced using a 180˚ back-acting, mechanical excavator (JCB) utilising a toothless ditching bucket. Successive spits of no more than 100mm depth were removed until either the top of the first archaeological horizon or the top of superficial geological deposits was reached. No geological material was observed within Trench 16 due to the extent of made ground. All ground reduction was carried out under archaeological supervision.

4.1.9 The table below summarises the dimensions and findings of the 12 excavated trenches:

Trench	Length	Width	Maximum Depth	Superficial Geology	Archaeology
5	30m	1.8m	0.44m	Yes	No
6	30m	1.8m	0.50m	Yes	No
7	30m	1.8m	0.56m	Yes	No
8	30m	1.8m	0.60m	Yes	No
9	30m	1.8m	0.48m	Yes	No
10	30m	1.8m	0.46m at NW end 1m at SE end	Yes	No
11	30m	1.8m	0.88m at northern end 1.20m at southern end	Yes	No
12	30m	1.8m	0.84m	Yes	No
13	8m	1.8m	1.04m	Yes	No
14	30m	1.8m	0.62m	Yes	No
15	30m	1.8m	0.84m	Yes	No
16	16m	1.8m	1.30m	No	No

Trench summary

4.1.10 The investigation of archaeological levels was by hand, with cleaning, examination and recording both in plan and in section, where appropriate. Investigations within the trenches followed the normal principles of stratigraphic excavation and were conducted in accordance with the methodology set out in the field manual of PCA (PCA 2009) and the Museum of London Site Manual (Museum of London 1994).

4.1.11 Deposits and cut features were individually recorded on the *pro-forma* 'Trench Recording Sheet' and 'Context Recording Sheet'. All site records were marked with the unique-number WLN19 (site code).

4.1.12 The height of all principal strata and features was calculated in metres above Ordnance Datum (m AOD). A detailed photographic record of the evaluation was prepared using SLR digital photography. All detailed photographs included a legible graduated metric scale. The photographic record illustrated both in detail and general context archaeological exposures and specific features in all trenches.

4.2 Post-excavation

4.2.1 The stratigraphic data for the project comprises written and photographic records. A total of 34 archaeological contexts were defined within the 12 trenches (Appendix 2). Post-excavation work involved checking and collating site records, grouping contexts and phasing the stratigraphic data. A written summary of the archaeological sequence was then compiled, as described in Section 5.

4.2.2 During the evaluation, no artefactual material was retained from the deposits encountered, as no archaeological deposits or features were noted.

4.2.3 The complete Site Archive, in this case comprising only the written, drawn and photographic records (including all material generated electronically during post-excavation) will be packaged for long term curation. In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document (Brown 2007) will be adhered to, in particular a well-established United Kingdom Institute for Conservation (UKIC) document (Walker, UKIC 1990) and the most recent CIfA publication relating to arching (CIfA 2014c).

4.2.4 At the time of writing the Site Archive was housed at the Durham Office of PCA, The Rope Works, Broadwood View, Chester-le-Street, County Durham, DH3 3AF. When complete, the site Archive will be deposited at the Great North Museum, Newcastle-upon-Tyne, under the site code WLN19.

5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

During the archaeological investigation, separate stratigraphic entities were assigned unique and individual context numbers, which are indicated in the following text as, for example [123]. The context numbers have been assigned per trench therefore contexts from Trench 1 are in the 100s and contexts from Trench 2 in the 200s etc. The archaeological sequence is described by placing stratigraphic sequences within broad phases, assigned on a site-wide basis in this case. An attempt has been made to add interpretation to the data and correlate these phases with recognised historical and geological periods. The figures can be found in Appendix 1 with the context index and stratigraphic matrix located in Appendix 2 and 3 respectively. A selection of plates can be found within Appendix 4. Trench 5 is shown within Plate 1, Trench 6 within Plate 2 and so on.

5.1 Phase 1: Superficial Geology

5.1.1 Phase 1 represents superficial geological deposits that were observed within all trenches with the exception of Trench 16. At the northern end of the site, within Trenches 5 and 6, the geological material was comprised of dark reddish-brown clayey sand with frequent large inclusions of sandstone boulders. Within Trenches 7 to 15 the superficial geology comprised mid reddish-brown sandy clay with fewer stone inclusions. No geological material was observed within Trench 16 due to the depth of modern made ground deposits. The table below summarises the depth below ground level and metres above Ordnance Datum (AOD) height of geological deposits within the trenches:

Trench No.	Context	Depth (below ground level)	m AOD	
			Highest	*Lowest*
5	[501]	0.44m	92.14m (northeast)	90.92m (southwest)
6	[602]	0.50m	91.86m (northeast)	91.25m (southwest)
7	[702]	0.56m	91.27m (northwest)	91.07m (southeast)
8	[802]	0.60m	91.66m (northwest)	91.43m (southeast)
9	[903]	0.48m	90.34m (northwest)	89.08m (southeast)
10	[1003]	0.46m at northwest end 1m at southeast end	91.42m (west)	86.09m (east)
11	[1102]	0.88m at northern end 1.20m at southern end	84.62m (north)	82.99m (south)
12	[1202]	0.84m	83.25m (southwest)	82.92m (northeast)
13	[1302]	1.04m	83.15m (southwest)	82.91m (northeast)
14	[1402]	0.62m	83.90m (southwest)	83.26m (northeast)
15	[1502]	0.84m	85.95m (southwest)	85.19m (northeast)

Summary of superficial geology depths and levels

5.2 Phase 2: Subsoil & Colluvium

5.2.1 Phase 2 represents undated subsoil and colluvial deposits noted across the site. The subsoil was uncovered within Trenches 6, 7 and 8 that comprised mid reddish-brown clayey sand. The table below summarises the thickness and Ordnance Datum height:

Trench No.	Context	Thickness	m AOD	
			Highest	*Lowest*
6	[601]	0.16m	92.02m (northeast)	91.41m (southwest)
7	[701]	0.26m	91.53m (northwest)	91.33m (southeast)
8	[801]	0.22m	91.88m (northwest)	91.65m (southeast)

Summary of subsoil thickness and levels

5.2.2 A large depression was noted within the central part of the site (in the location of Trenches 9 to 15). The ground dropped down sharply from all sides towards Trench 13. Whether this feature was geological, or evidence of previous quarrying activity is uncertain, however, a colluvial deposit comprised of dark reddish-brown clayey sand was noted within Trenches 9, 10, 11, 12, 13, 14, and 15. No datable material was recovered from the colluvial deposits. The table below summarises the thickness and Ordnance Datum height of all colluvial deposits:

Trench No.	Context	Thickness	m AOD	
			Highest	*Lowest*
9	[902]	0.12m	90.46m (northwest)	89.20m (southeast)
10	[1002]	0.54m	91.42m (west)	86.09m (east)
11	[1101]	0.42m at northern end 0.74m at southern end	85.04m (north)	83.73m (south)
12	[1201]	0.44m	83.69m (southwest)	83.36m (northeast)
13	[1301]	0.58m	83.73m (southwest)	83.49m (northeast)
14	[1401]	0.20m	84.10m (southwest)	83.46m (northeast)
15	[1501]	0.44m	86.39m (southwest)	85.63m (northeast)

Summary of colluvium thickness and levels

5.3 Phase 3: Modern Topsoil & Made Ground

5.3.1 Phase 3 represents modern made ground and topsoil. Made ground was only encountered within Trench 16 that comprised loose rubble [1601] at least 0.92m thick, encountered at a maximum height of 89.61m AOD. The base of the deposit was not encountered even though a 1.3m deep sondage was excavated at the north-eastern end of the Trench. Due to the trench sides collapsing and health and safety constraints, the full thickness of this deposit could not be ascertained. The deposit was perhaps laid down to form a ramp leading to the A1 carriageway to the west.

5.3.2 Topsoil was encountered within all trench locations and comprised dark reddish-brown silty sand. The table below summarises the thickness and metres above Ordnance Datum height for topsoil within all 12 trenches:

Trench No.	Context	Thickness	m AOD	
			Highest	*Lowest*
5	[500]	0.44m	92.58m (northeast)	90.98m (southwest)
6	[600]	0.34m	92.36m (northeast)	91.73m (southwest)
7	[700]	0.30m	91.68m (northwest)	91.66m (southeast)
8	[800]	0.38m	92.26m (northwest)	92.03m (southeast)
9	[900]	0.36m	90.97m (northwest)	89.40m (southeast)
10	[1000]	0.46m	92.04m (west)	86.55m (east)
11	[1100]	0.46m	85.50m (north)	84.03m (south)
12	[1200]	0.40m	84.18m (southwest)	84.14m (northeast)
13	[1300]	0.46m	83.14m (southwest)	83.91m (northeast)
14	[1400]	0.42m	85.57m (southwest)	84.45m (northeast)
15	[1500]	0.40m	86.74m (southwest)	86.43m (northeast)
16	[1600]	0.38m	89.99m (southwest)	88.71m (northeast)

Summary of topsoil thickness and levels

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 The archaeological investigations comprised the excavation of 12 trenches during the A1 Alnwick to Ellingham Road Improvements West Linkhall scheme (Area 4), Northumberland. Geological deposits, as well modern made ground and topsoil were encountered. This activity was assigned to two phases of activity:

- Phase 1: Superficial geological deposits comprising glaciofluvial deposits of clayey sand were encountered within Trenches 5 to 15;
- Phase 2: Undated deposits of subsoil and colluvium;
- Phase 3: Modern made ground and topsoil.

6.1.2 The topography of the development area would suggest that quarrying had occurred within the central section of the site (within the location of Trenches 9 to 15) due to the bowl-shaped depression (Plate 14). However, the colluvium deposits within all of these trenches would have taken time to develop so it could potentially be a glacial feature. The geophysical anomalies identified by geophysical survey (SUMO 2018) either related to concentrations of stone or an area of ponding within the lowest point of the site.

6.1.3 No features of archaeological significance were recorded within any of the evaluation trenches investigated.

6.2 Recommendations

6.2.1 No further work is required on the information recovered during the evaluation, with the Site Archive (including this report), forming the permanent record of the strata encountered. A watching brief may be requested during the stripping of the site due to the close proximity to the Scheduled Monument of West Linkhall Camp. This is to be agreed between WSP and NCC.

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7.2 Online Sources

The **British Geological Survey** website: www.bgs.ac.uk. This was consulted for information regarding the geology of the study area.

8. ACKNOWLEDGEMENTS AND CREDITS

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PCA Credits

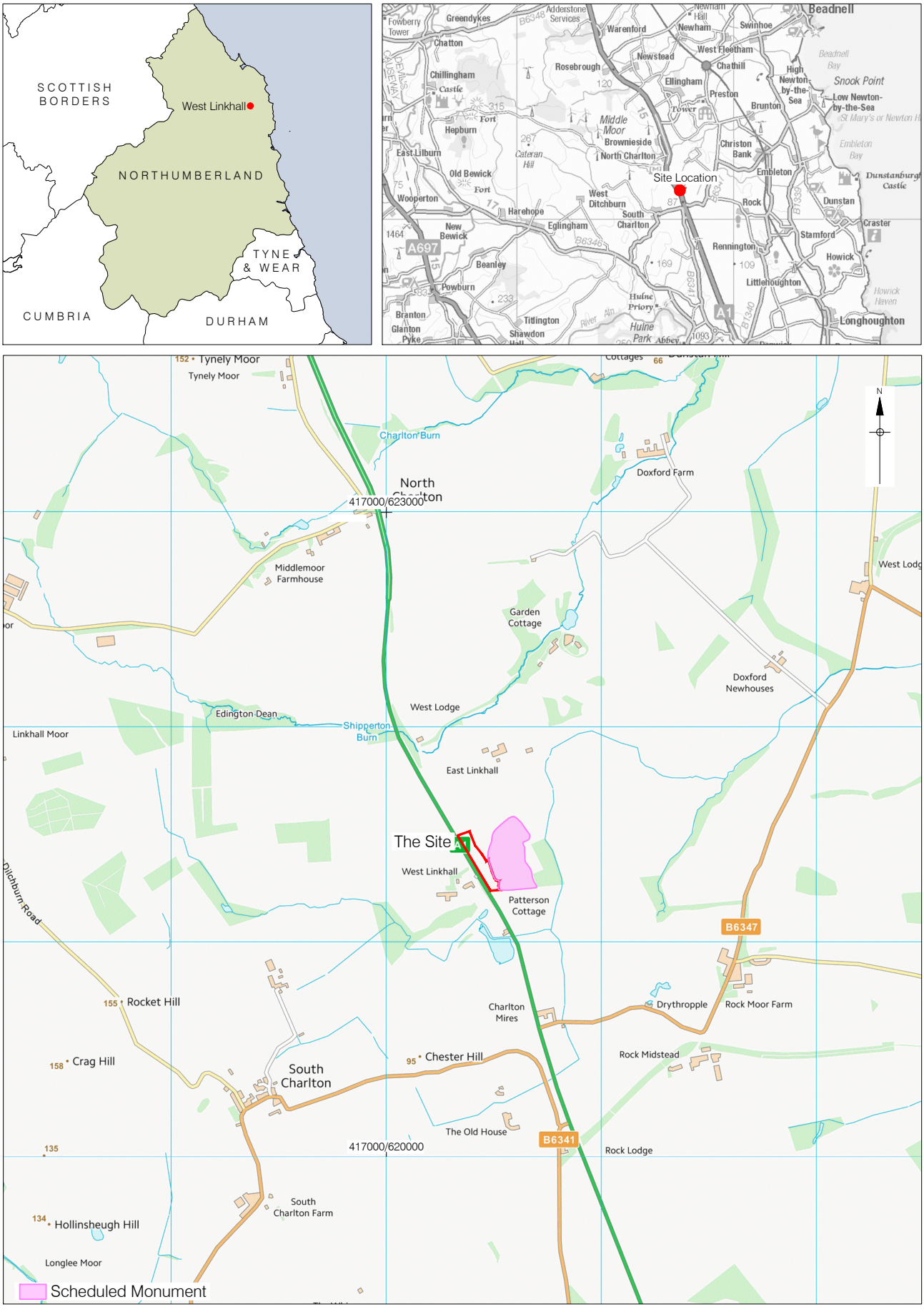
Fieldwork: Aaron Goode (Project Manager) and Scott Vance (Supervisor)

Report: Scott Vance

Project Manager: Aaron Goode

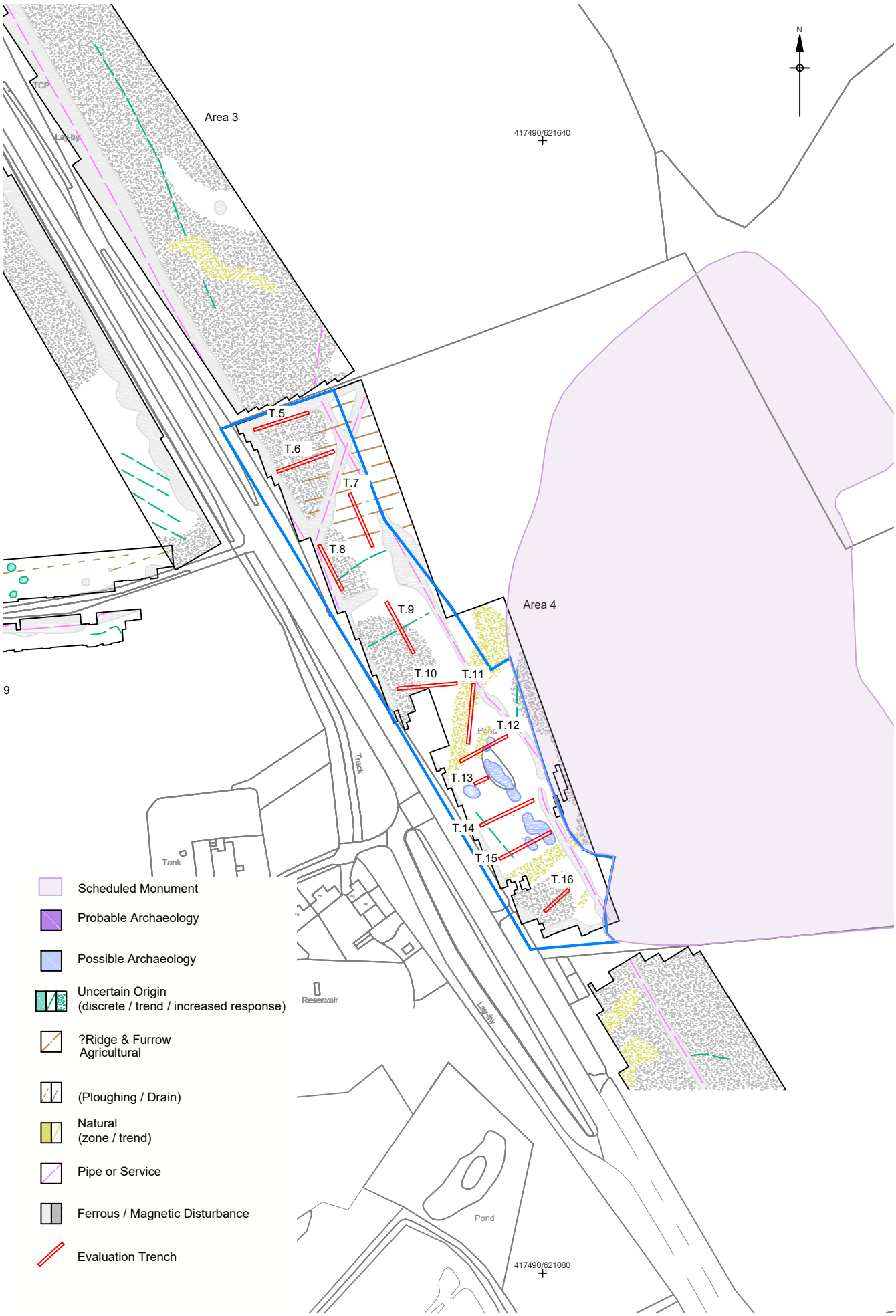
CAD: Ray Murphy

APPENDIX 1: FIGURES



10/09/19 RM

Figure 1
Site Location
1:2,000,000, 1:250,000, 1:25,000 at A4



Base Mapping supplied by client

10/09/19 RM

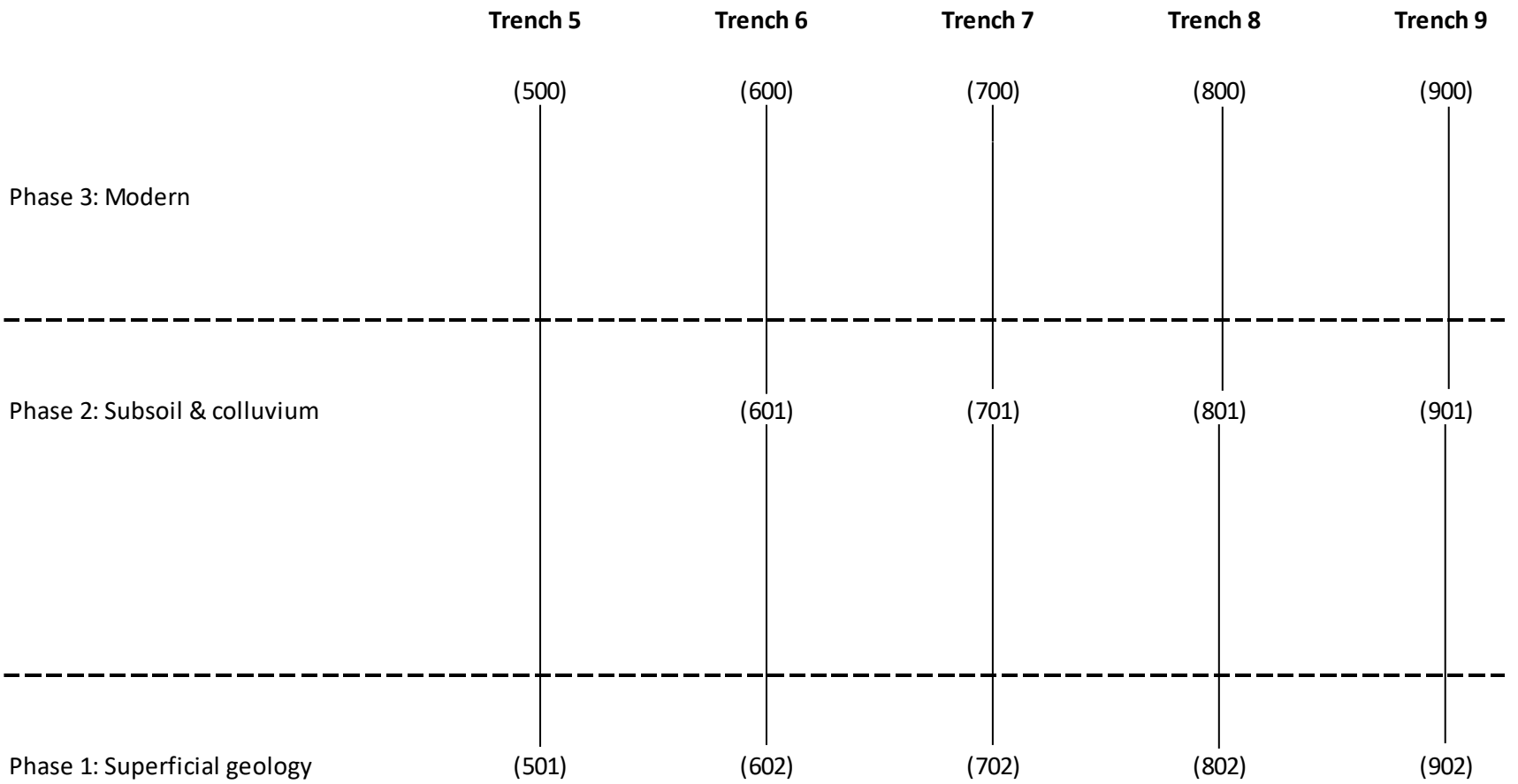
Figure 2
Evaluation Trenches overlain on Geophyical Survey (Area 4)
1:2,500 at A4

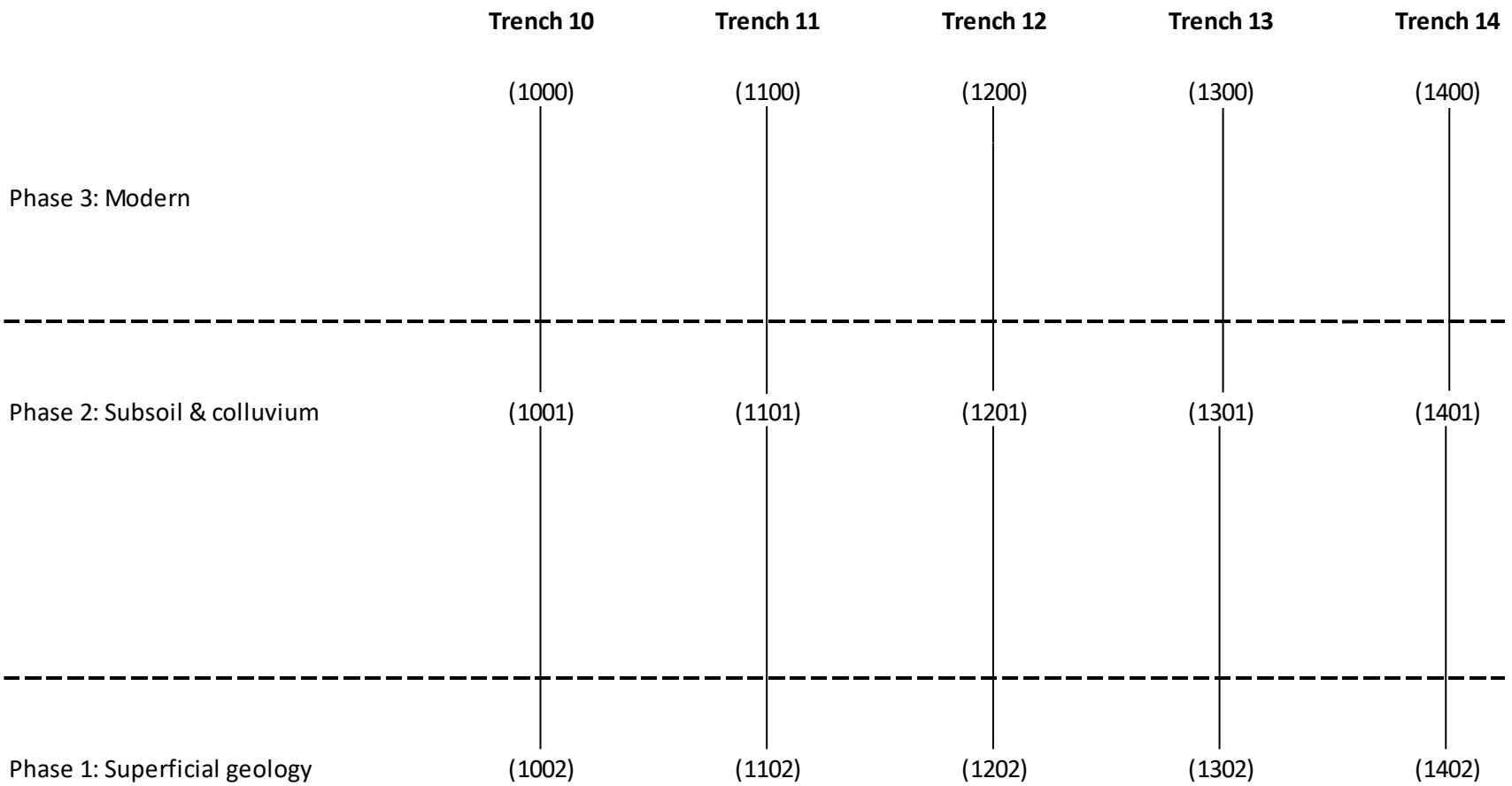
APPENDIX 2: CONTEXT INDEX

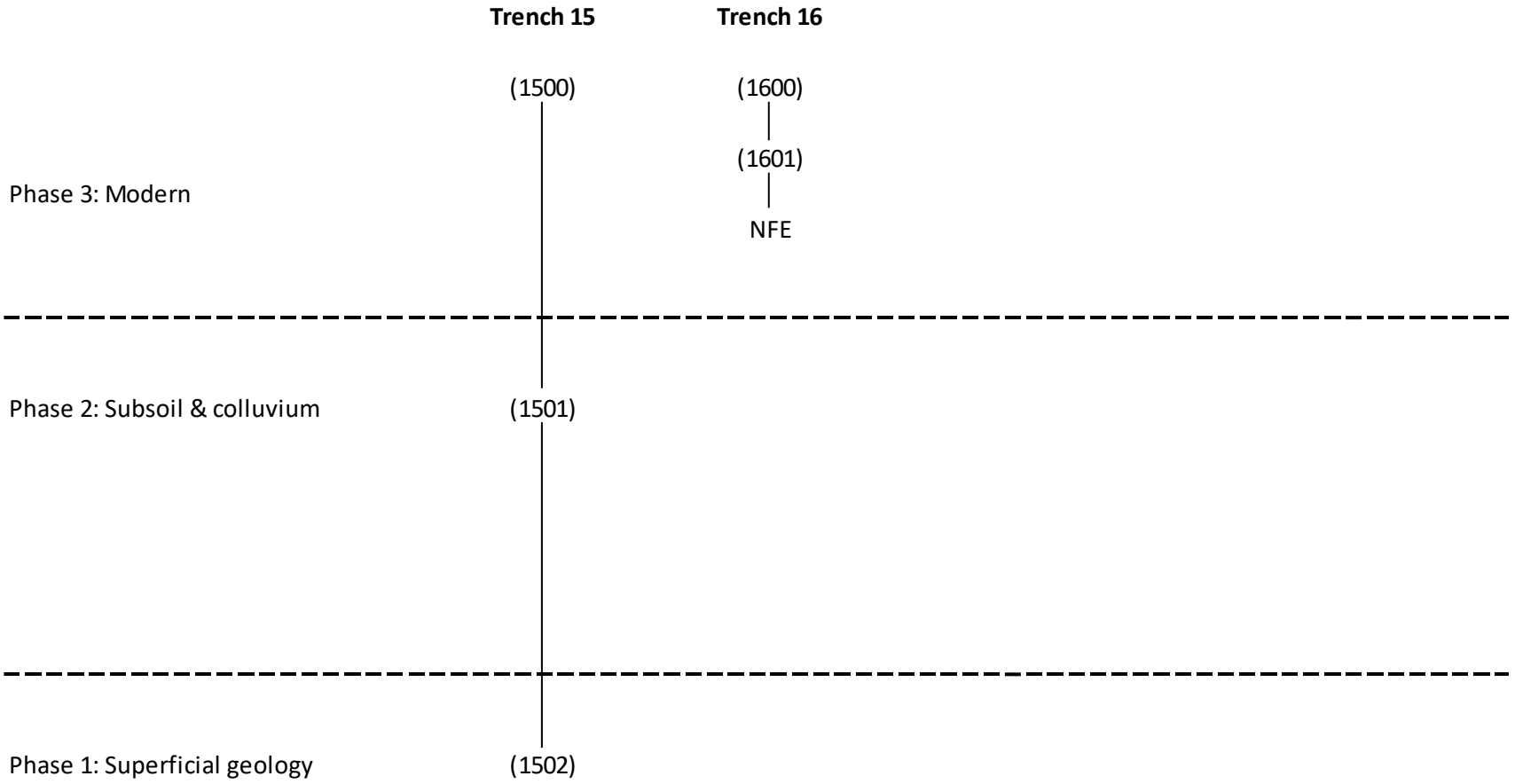
Context	*Phase*	*Type 1*	*Type 2*	*Fill of*	*Interpretation*
Trench 5					
500	3	Deposit	Layer		Topsoil
501	1	Deposit	Layer		Superficial geology
Trench 6					
600	3	Deposit	Layer		Topsoil
601	2	Deposit	Layer		Subsoil
602	1	Deposit	Layer		Superficial geology
Trench 7					
700	3	Deposit	Layer		Topsoil
701	2	Deposit	Layer		Subsoil
702	1	Deposit	Layer		Superficial geology
Trench 8					
800	3	Deposit	Layer		Topsoil
801	2	Deposit	Layer		Subsoil
802	1	Deposit	Layer		Superficial geology
Trench 9					
901	3	Deposit	Layer		Topsoil
902	2	Deposit	Layer		Colluvium
903	1	Deposit	Layer		Superficial geology
Trench 10					
1001	3	Deposit	Layer		Topsoil
1002	2	Deposit	Layer		Colluvium
1003	1	Deposit	Layer		Superficial geology
Trench 11					
1100	3	Deposit	Layer		Topsoil
1101	2	Deposit	Layer		Colluvium
1102	1	Deposit	Layer		Superficial geology
Trench 12					
1200	3	Deposit	Layer		Topsoil
1201	2	Deposit	Layer		Colluvium
1202	1	Deposit	Layer		Superficial geology
Trench 13					
1300	3	Deposit	Layer		Topsoil
1301	2	Deposit	Layer		Colluvium
1302	1	Deposit	Layer		Superficial geology
Trench 14					
1400	3	Deposit	Layer		Topsoil
1401	2	Deposit	Layer		Colluvium
1402	1	Deposit	Layer		Superficial geology
Trench 15					
1500	3	Deposit	Layer		Topsoil
1501	2	Deposit	Layer		Colluvium
1502	1	Deposit	Layer		Superficial geology
Trench 16					
1600	3	Deposit	Layer		Topsoil

1601	3	Deposit	Layer		Made ground

APPENDIX 3: STRATIGRAPHIC MATRIX




Trench 10
Trench 11
Trench 12
Trench 13
Trench 14
(1000)
(1100)
(1200)
(1300)
(1400)
Phase 3: Modern
Phase 2: Subsoil & colluvium
(1001)
(1101)
(1201)
(1301)
(1401)
Phase 1: Superficial geology
(1002)
(1102)
(1202)
(1302)
(1402)


Trench 15
Trench 16
(1500)
(1600)
(1601)
NFE
Phase 3: Modern
Phase 2: Subsoil & colluvium
(1501)
Phase 1: Superficial geology
(1502)

APPENDIX 4: PHOTOGRAPHIC PLATES

Plate 1: Trench 5: view west-southwest, scale: 1m

Plate 2: Trench 6: view west-southwest, scale: 1m

Plate 3: Trench 7: view south-south-east, scale: 1m

Plate 4: Trench 8: view southeast, scale: 1m

Plate 5: Trench 9: view south-southeast, scale: 1m

Plate 6: Trench 10: view west-southwest, scale: 1m

Plate 7: Trench 11: view north-northeast, scale: 1m

Plate 8: Trench 12: view east-northeast, scale: 1m

Plate 9: Trench 13: view west-southwest, scale: 1m

Plate 10: Trench 14: view east-northeast, scale: 1m

Plate 11: Trench 15: view west-southwest, scale: 1m

Plate 12: Trench 16: view west-southwest, scale: 1m

Plate 13: Trench 16: view northwest, scale: 1m

Plate 14: Topography of the central section of the site

P C A

PCA CAMBRIDGE
THE GRANARY, RECTORY FARM
BREWERY ROAD, PAMPISFORD
CAMBRIDGESHIRE CB22 3EN
t: 01223 845 522
e: cambridge@pre-construct.com

PCA DURHAM
THE ROPE WORKS, BROADWOOD VIEW
CHESTER-LE-STREET
DURHAM DH3 3AF
t: 0191 377 1111
e: durham@pre-construct.com

PCA LONDON
UNIT 54, BROCKLEY CROSS BUSINESS CENTRE
96 ENDWELL ROAD, BROCKLEY
LONDON SE4 2PD
t: 020 7732 3925
e: london@pre-construct.com

PCA NEWARK
OFFICE 8, ROEWOOD COURTYARD
WINKBURN, NEWARK
NOTTINGHAMSHIRE NG22 8PG
t: 01636 370 410
e: newark@pre-construct.com

PCA NORWICH
QUARRY WORKS, DEREHAM ROAD
HONINGHAM
NORWICH NR9 5AP
T: 01603 863 108
e: norwich@pre-construct.com

PCA WARWICK
UNIT 9, THE MILL, MILL LANE
LITTLE SHREWLEY, WARWICK
WARWICKSHIRE CV35 7HN
t: 01926 485 490
e: warwick@pre-construct.com

PCA WINCHESTER
5 RED DEER COURT, ELM ROAD
WINCHESTER
HAMPSHIRE SO22 5LX
t: 01962 849 549
e: winchester@pre-construct.com

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