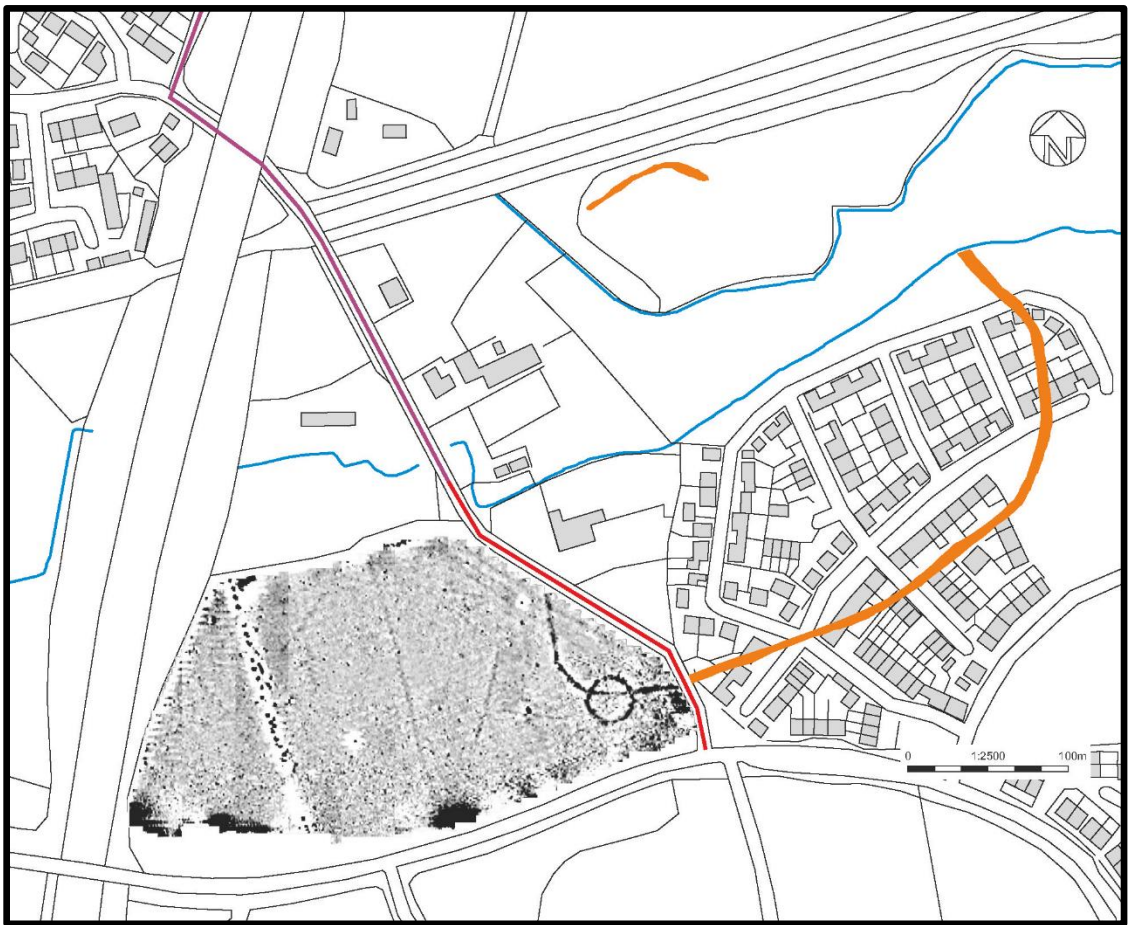
OAKFORD ARCHAEOLOGY

# Archaeological monitoring and recording during the construction of a new heating distribution network. Langaton Lane, Pinhoe, Devon




*on behalf of*
**the client**

**Report No. 22-12**

**Project No. 1787**

**March 2022**

# OAKFORD ARCHAEOLOGY

Archaeological Groundworks and Historic Buildings

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Summary

*A programme of archaeological monitoring and recording was carried out by Oakford Archaeology between June 2021 and February 2022 during the construction of a new heating distribution network along Langaton Lane, Pinhoe, Devon (SX 9700 9431 to SX 9730 9394). A geophysical survey identified a ring ditch in the eastern part of the site, together with a substantial ditched enclosure and several boundary ditches. An archaeological excavation to the east of Langaton Lane in 2015-6 uncovered significant remains including a Neolithic pit alignment, an Early Bronze Age barrow, a continuation of the later prehistoric enclosure and an early medieval cemetery.*

*Excavation at the southern end of the trench revealed the truncated remains of the prehistoric enclosure ditch, although the complete excavation of the feature within the trench produced no artefactual evidence. No evidence was found within the working corridor of the pipe trench for the northern arm of the enclosure ditch, and this is likely to have been completely truncated by the insertion of the current road.*

*Although limited the results should be considered within the wider context of recently excavated sites on the eastern edge of Exeter.*

# 1. INTRODUCTION

A programme of intermittent and continuous archaeological monitoring and recording was carried out by Oakford Archaeology (OA) between June 2021 and February 2022 during the construction of a new heating distribution network along Langaton Lane, Pinhoe, Devon (SX 9700 9431 to SX 9730 9394). The work was required by East Devon District Council, as advised by the Devon County Historic Environment Team (DCHET).

## 1.1 **The route**

The trenching (Fig. 2) measures approximately 0.5km and forms part of a larger heating distribution network across the area that will connect the new housing developments on the northeastern edge of Pinhoe. From the junction with Tithebarn Way (SX 9730 9394) the trenching follows Langaton Lane in a north-westerly direction, underneath the M5 Motorway, and up a small lane (SX 9700 9431) immediately north of the motorway tunnel. The ground falls gently along the stretch north of Tithebarn Way from 23m AOD down to 17m AOD by the Pinn Brook, before rising gently along the northern stretch by the Motorway tunnel to approximately 22m AOD.

## 1.2 **Geology**

The geology of the area varies along the pipeline and consists of Monkerton Sandstone Formation, sedimentary bedrock formed approximately 252 to 299 million years ago in the Permian Period, at the southern end, crossing through to Dawlish Sandstone Formation, sedimentary bedrock formed approximately 252 to 299 million years ago in the Permian Period, by the Pin Brook, with the northern end dominated by Whipton Sandstone Formation, sedimentary bedrock formed approximately 252 to 299 million years ago in the Permian Period. Throughout these deposits give rise to Head deposits, sand with clay and gravel, superficial deposits formed up to 3 million years ago in the Quaternary Period. [1]

## 1.2 **Archaeological and historical background**

The proposed work lies in an area of high archaeological potential within the ancient parish of Pinhoe, in an area where extensive evidence for prehistoric, Romano-British and later activity has been previously identified. Investigations in the Tithe Barn Green, Pinn Brook Enclosure, and Pinn Brook Farm areas have identified features, deposits and finds relating to prehistoric and later settlement, agricultural and funerary activity. Features recorded include a burnt mound, ring ditches, post-rings, enclosures, a cemetery, trackways and linear ditches associated with early field systems in the area. In addition, surface artefact collection in the fields has recorded a high concentration of prehistoric worked flint, which date from the Mesolithic through to the late Bronze Age period.

At the southern end of the side, straddling Langaton Lane, is a large ovoid enclosure which was first identified through aerial photography in 1984. [2] The northern extent was confirmed during a geophysical survey and subsequent excavations for the Cranbrook Water Main, [3] while the southern and southeastern parts were investigated and subsequently excavated by Cotswold Archaeology between 2015-6. [4] In addition to the ditched enclosure the work recorded significant prehistoric remains, including a Neolithic pit alignment and an early Bronze Age barrow. Following a hiatus in occupation the enclosure was re-occupied in the

[1] www.bgs.ac.uk.
[2] Hegarty *et al*. 2014-15.
[3] Hughes and Rainbird 2016.
[4] Garland 2019.

mid-late 6th century with extensive evidence for crop-processing, while the cemetery within the enclosure, containing 97 graves, is most likely early medieval or medieval in date. A geophysical survey (magnetometer) of the large field on the western side of the road has identified a series of anomalies including the western end of the enclosure discussed above, a complete ring-ditch and several linear boundaries pre-dating the post-medieval field system.

A geophysical survey (magnetometer) has previously been undertaken across the whole of the field on the west side of Langaton Lane by Sumo Survey on behalf of CgMs. A series of anomalies were identified including the western end of the enclosure discussed above, a complete ring-ditch and several linear boundaries pre-dating the post-medieval field system. The greyscale plot of the survey is shown on Fig. 2.

## 2. AIMS

The aim of the project is to investigate and record any buried archaeological deposits exposed during groundworks associated with the development, and to report on the results of the project, as appropriate.

## 3. METHODOLOGY

The work was undertaken in accordance with a brief received from the DCHET and confirmed in an e-mail dated 07-05-2021, and in accordance with a Written Scheme of Investigation prepared by OA (2021), submitted to and approved by the DCHET. This document is included as Appendix 1.

In those areas subject to continuous monitoring machine excavation was undertaken under archaeological control using a 360º mechanical excavator fitted with toothless grading bucket. Topsoil and underlying deposits were removed to the level of either natural subsoil, or the top of archaeological deposits (whichever was higher). Areas of archaeological survival were then cleaned by hand, investigated and recorded.

The standard OA recording system was employed; stratigraphic information was recorded on *pro-forma* context record sheets and individual trench recording forms, plans and sections for each trench were drawn at a scale of 1:10, 1:20 or 1:50 as appropriate and a detailed black and white print and colour (digital) photographic record was made. Registers were maintained for photographs, drawings and context sheets on *pro forma* sheets.

## 4. RESULTS (Fig. 3, Pls. 1-9)

The trench route is approximately 0.5km long and a number of monitoring visits were made during or immediately after the excavation of the trench corridor north of the Pinhoe Target Shooting Club and included the checking of all spoil heaps for recovery of artefacts. The trench was *c*.1.2m wide and excavated to a maximum depth of 1.5m depending on the local topography. The work exposed a consistent deposit sequence along the length of the pipes, and this can be broadly summarised as follows.

The mid red silty sand natural subsoil (102) was exposed at a depth of 0.3m below current ground level and was overlain by a 0.1m thick deposit of mid grey aggregate (101).

Interpreted as a hardcore sub-base this was in turn sealed underneath 0.2m thick layer of tarmac (100). At the southern end of the trench the work uncovered the remains of the prehistoric enclosure. The ditch (103) was 2.3m wide and bisected the trench on an approximately NE-SW alignment. Surviving to a depth of 1.5m (21.14mAOD) below the level of the current road, it had sharply breaking sides and a broad flat base. base. No finds were recovered from its fills (104 and 105) and these consisted of relatively homogeneous sandy loam based deposits suggesting weathering of the natural sides and bank.

Inspection of the excavations in the area of the northern arm of the prehistoric enclosure ditch suggests that the current road has significantly impacted on the survival of any archaeological features and deposits. The field on the western side of Langaton Lane, in which the ditch is known to survive, is 2.5m higher than the current level of the road. The removal of the road surface and underlying hardcore, extending to a depth of 0.3m, showed no evidence for any archaeological features cutting through the natural subsoil, and it is likely that works associated with the construction of Langaton Lane have completely truncated any archaeological deposits within this part of the road corridor.

## 5. CONCLUSIONS

Monitoring of groundworks undertaken as part of the construction of a new heating distribution network has shown that the southern arm of the prehistoric enclosure ditch survives, albeit heavily truncated, within the working corridor of the heating network route. No finds were recovered from its fills and the feature remains poorly dated.

To the north the absence of any archaeological features or deposits is due to the heavy truncation related to the cutting of the lane below the surrounding landscape.

## 6. PROJECT ARCHIVE

Due to the limited nature of the findings a project archive will not be produced. A summary of the investigations has been submitted to the on-line archaeological database OASIS (Online AccesS to the Index of archaeological InterventionS - oakforda1-423712).

## ACKNOWLEDGMENTS

This project was commissioned on behalf of Eon Energy and administered by Gavin Green (E.ON Community Energy) and John O’Boyle (CPC Civils Ltd). Special thanks to Steve Reed and Marina Neophytou (both DCHET) who provided advice and support throughout the project. The fieldwork was carried out by Jon Martin and Marc Steinmetzer (both Oakford Archaeology); the illustrations for the report were prepared by Marc Steinmetzer.

## BIBLIOGRAPHY

Garland, N. 2019 *Prehistoric settlement and burial, early medieval crop processing and a*

*possible early medieval cemetery along the Clyst Valley: Investigations south of the Pin Brook, Broadclyst, near Exeter, 2015-2016*. Proc. Devon Archaeol. Soc. 77, pp. 103-145.

Hegarty, C., Knight, S. and Sims, R., 2014-2015, East and Mid Devon River Catchments National Mapping Programme Project

Hughes, S. and Rainbird, P. 2016 *The new Cranbrook Water Main, East Devon – Post-excavation assessment report on the results with proposals for further analysis, publication and deposition of the archive*. Unpublished AC Archaeology typescript report ACD295/2/0).

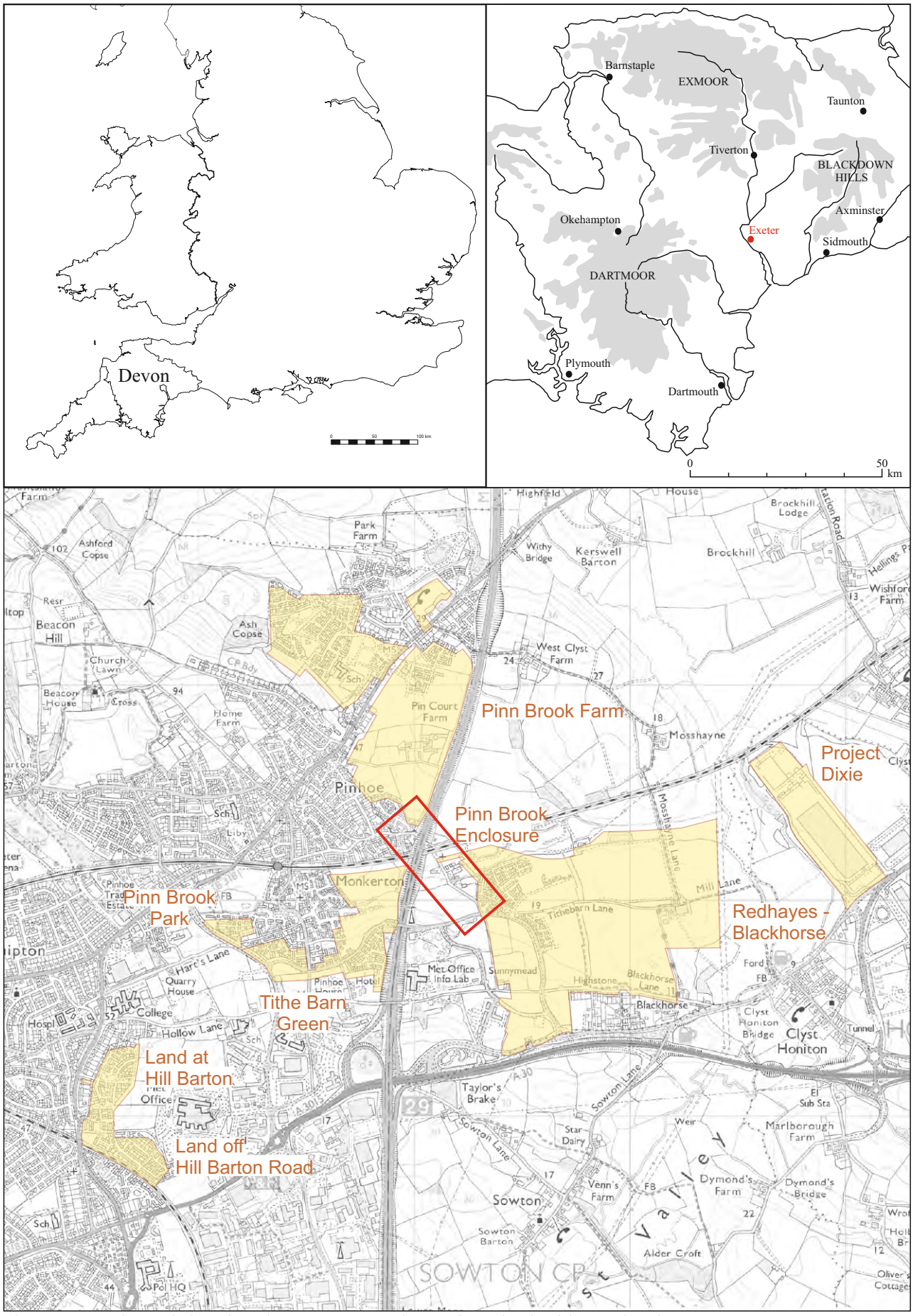


Fig. 1 Location of site showing recent nearby archaeological investigations.

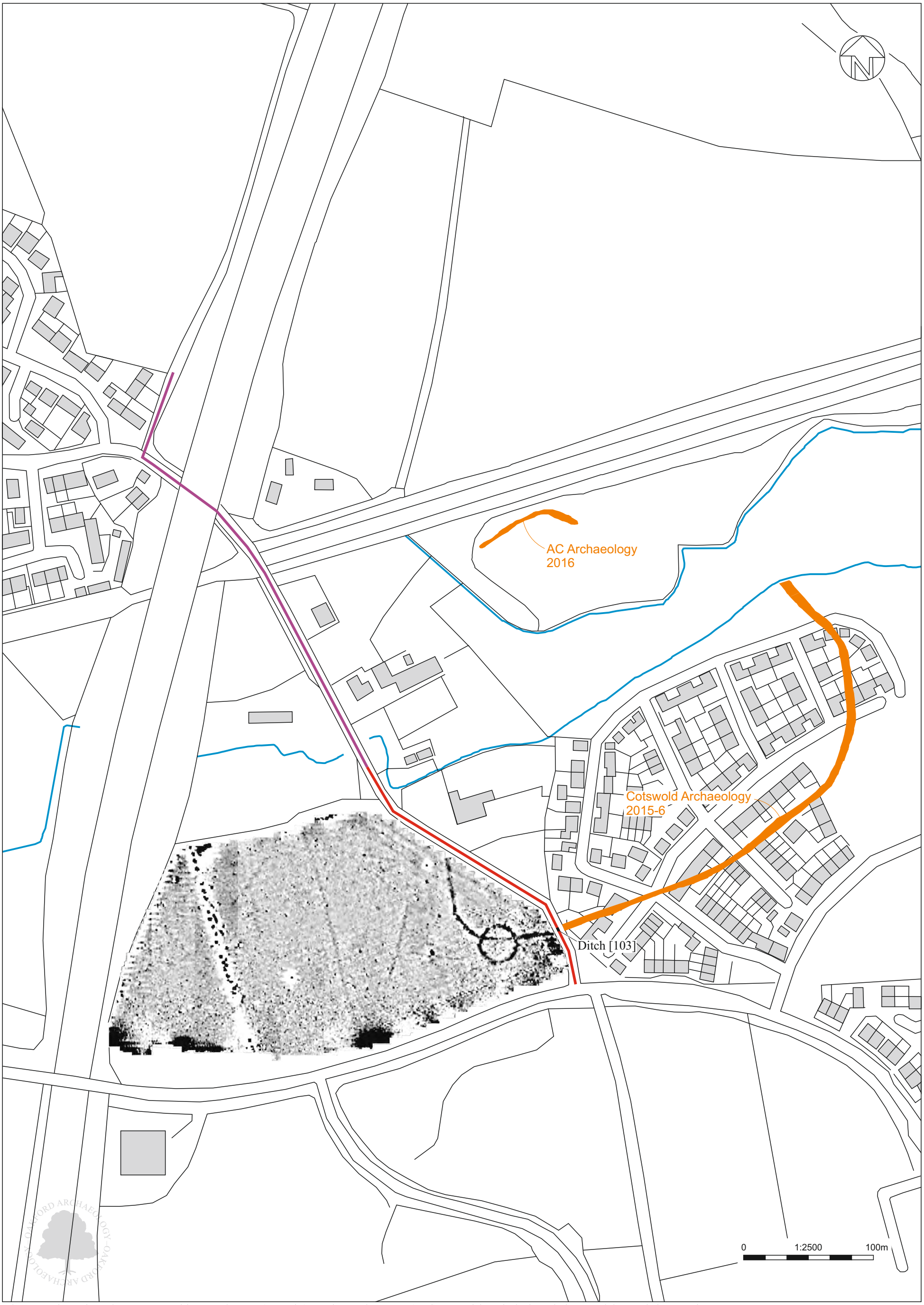


Fig. 2 Plan showing areas of intermittent (purple) and continuous (red) watching brief and the position of the enclosure.

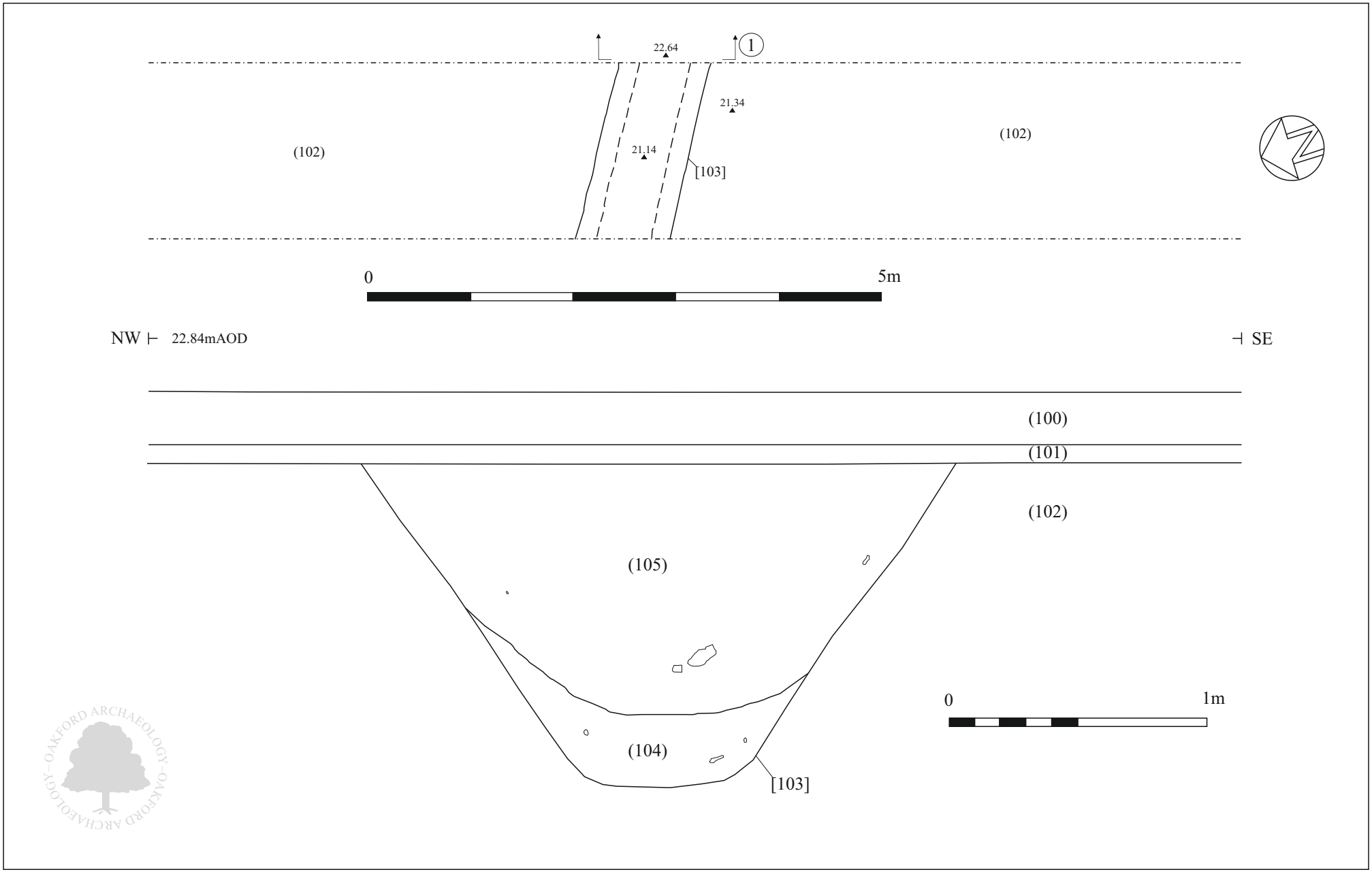


Fig. 3 Plan and section through prehistoric enclosure.

Pl. 1 General view of trenching route at north end of Langaton Lane. Looking northwest.

Pl. 2 General view of trenching route within M5 Motorway tunnel. Looking northwest.

Pl. 3 General view of trenching route leading to Pin Brook. Looking northwest.

Pl. 4 General view of trenching route leading to Pinhoe Target Shooting Club. Looking northwest.

Pl. 5 General view of prehistoric enclosure ditch [103]. 2m scale. Looking northeast.

Pl. 6 Section through prehistoric enclosure ditch [103]. 2m scale. Looking northeast.

Pl. 7 Section through basal section of prehistoric enclosure ditch [103]. 0.5m scale. Looking east.

Pl. 8 General view of basal section of prehistoric enclosure ditch [103]. 0.5m scale. Looking east.

Pl. 9 General view of trenching route at south end of Langaton Lane looking towards Tithebarn Way. Looking south.

# Appendix 1
# Method statement

## 1. BACKGROUND

1.1 This document has been produced by Oakford Archaeology (OA) for the client and sets out the methodology to be used during monitoring and recording during works associated with the construction of a new heating distribution network along Langaton Lane, Pinhoe, Devon (SX 9700 9431 to SX 9730 9394). This document represents the 'Written Scheme of Investigation' required by East Devon District Council, as advised by the Devon County Historic Environment Team (DCHET).

1.2 The development lies in an area of high archaeological potential within the ancient parish of Pinhoe, in an area where extensive evidence for prehistoric, Romano-British and later activity has been previously identified. Investigations in the Tithe Barn Green, Pinn Brook Enclosure, and Pinn Brook Farm areas have identified features, deposits and finds relating to prehistoric and later settlement, agricultural and funerary activity. Features recorded include a burnt mound, ring ditches, post-rings, enclosures, a cemetery, trackways and linear ditches associated with early field systems in the area. In addition, surface artefact collection in the fields has recorded a high concentration of prehistoric worked flint, which date from the Mesolithic through to the late Bronze Age period.

1.3 At the southern end of the side, straddling Langaton Lane, is a large ovoid enclosure which was first identified through aerial photography in 1984. [1] The northern extent was confirmed during a geophysical survey and subsequent excavations for the Cranbrook Water Main, [2] while the southern and southeastern parts were investigated and subsequently excavated by Cotswold Archaeology between 2015-6. [3] In addition to the ditched enclosure the work recorded significant prehistoric remains, including a Neolithic pit alignment and an early Bronze Age barrow. Following a hiatus in occupation the enclosure was re-occupied in the mid-late 6th century with extensive evidence for crop-processing, while the cemetery within the enclosure, containing 97 graves, is most likely early medieval or medieval in date. A geophysical survey (magnetometer) of the large field on the western side of the road has identified a series of anomalies including the western end of the enclosure discussed above, a complete ring-ditch and several linear boundaries pre-dating the post-medieval field system.

Groundworks associated with the development therefore have the potential to expose and destroy archaeological and artefactual deposits associated with prehistoric, Romano-British and later medieval activity in the area.

## 2. AIMS

2.1 The aim of the project is to investigate and record any buried archaeological deposits exposed during groundworks associated with the development, and to report on the results of the project, as appropriate.

[1] Hegarty *et al*. 2014-15.
[2] Hughes and Rainbird 2016.
[3] Garland 2019.

## 3. METHOD

The DCHET has confirmed in an e-mail dated 07-05-2021 that a continuous watching brief be undertaken during the trenching along Langaton Lane where the trenching crosses the enclosing ditch of the Pinn Brook enclosure, and intermittent monitoring.

3.1 Liaison will be established with the client and their contractor prior to the works commencing, in order to obtain details of the works programme and to advise on OA requirements. If a good working relationship is established at the outset any delays caused by archaeological recording can be kept to a minimum. However, localised delays to site operations may be caused and time should be allowed within the main contractor's programme for the adequate investigation and recording of archaeological material.

3.2 The attached plan (Fig. 1) shows the areas subject to intermittent monitoring and recording visits (purple) and those areas subject to continuous monitoring and recording (red). For the former intermittent site visits will be undertaken at regular intervals in order to record the deposit sequence underneath the modern road and its make-up and any potential archaeological deposits and/or features after the removal of the shoring and the partial backfilling of the trench. A detailed methodology and timetable for these visits will be agreed with the client and the contractors at a site meeting prior to works commencing.

3.3 In those areas subject to continuous monitoring all machining will be carried out under direct archaeological control, using a mechanical excavator equipped with a toothless grading bucket. Machining will proceed in spits and will cease if archaeological deposits are exposed in order to allow those deposits to be investigated, excavated and recorded. This may cause localised delays to the groundworks programme, although every effort will be made to keep any such delays to a minimum. If no such deposits are present then, once natural subsoil has been confirmed, or formation/invert level reached, across the whole of the development area, archaeological monitoring will be terminated. Similarly, if it can be demonstrated that there has been significant modern truncation, then archaeological monitoring will be terminated in these areas.

3.4 If archaeological features are present, then hand-excavation will normally comprise:

- The full excavation of all features, whether small discrete features or larger discrete features within the line of the trenching;
- Spoil will also be examined for the recovery of artefacts.

Additional excavation may be required for the taking of palaeo-environmental samples and the recovery of artefacts.

***General project methods***

3.5 Environmental deposits will be assessed on site by a suitably qualified archaeologist, with advice as necessary from Allen Environmental Archaeology or the Historic England Regional Science Advisor, to determine the possible yield (if any) of environmental or microfaunal evidence, and its potential for radiocarbon dating. If deposits potential survives, these would be processed by Allen Environmental Archaeology (AEA) using the HE Guidelines for Environmental Archaeology (HE

C*f*A Guidelines 2002/1) and Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (Historic England, second edition, August 2011), and outside specialists (AEA) organised to undertake further assessment and analysis as appropriate.

3.6 Initial cleaning, conservation, packaging and any stabilisation or longer-term conservation measures will be undertaken in accordance with relevant professional guidance (specifically 'First Aid for Finds' Watkinson, D and Neal V, (London: Rescue/UKICAS 2001) and CI*f*A 2014 'Standard and guidance for the collection, documentation, conservation and research of archaeological materials') and on advice provided by A Hopper-Bishop, Specialist Services Officer, RAM Museum, Exeter.

3.7 Should artefacts be exposed that fall within the scope of Treasure Act 1996 and The Treasure (Designation) Order 2002, then these will be removed to a safe place and reported to the local coroner, DCHET, the Devon Finds Liaison Officer, and HE, according to the procedures relating to the legislation. The location of treasure items will be recorded with an EDM (as per 4.1 below), and, where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

3.8 Should any articulated human remains be exposed; these will initially be left *in situ*. If removal at either this or a later stage in the archaeological works is deemed necessary, these will then be fully excavated and removed from the site subject to the compliance with the relevant Ministry of Justice Licence, which will be obtained by OA on behalf of the client. Any remains will be excavated in accordance with the CI*f*A 'Guidelines to the Standards for Recording Human Remains' (Megan Brickley and Jacqueline I McKinley, 2004) and the CI*f*A Standards for Recording Human Remains (Piers D Mitchell and Megan Brickley, CI*f*A 2017). Where appropriate bulk samples will be collected.

3.9 The project will be organised so that specialist consultants who might be required to conserve artefacts or report on other aspects of the investigations can be called upon (see below). The client will be fully briefed and consulted if there is a requirement to submit material for specialist research.

3.10 Health and Safety requirements will be observed at all times by archaeological staff working on site, particularly when machinery is operating nearby. Personal protective equipment (safety boots, helmets and high visibility vests) will be worn by staff when plant is operating on site. A risk assessment will be prepared prior to work commencing.

3.11 The DCHET require two weeks' notice from the archaeological consultant, unless a shorter period is agreed. The DCHET will be informed of the start of the project and will monitor progress throughout on behalf of the planning authority. A date of completion of all archaeological site work will be confirmed with the DCHET, and the timescale of the completion of items under section 5 will run from that date.

## 4. ARCHAEOLOGICAL RECORDING

4.1 The standard OA recording system will be employed, consisting of:

- standardised single context record sheets; survey drawings, plans and sections at scales 1:10,1:20, 1:50 as appropriate;
- colour digital photography;
- survey and location of finds, deposits or archaeological features, using EDM surveying equipment and software where appropriate;
- labelling and bagging of finds on site from all excavated levels, post-1800 unstratified pottery may be discarded on site with a small sample retained for dating evidence as required.

## 5. REPORTING AND ARCHIVING

5.1 The reporting requirements will be confirmed with the DCHET on completion of the site work. If little or no significant archaeology is exposed then reporting will consist of a completed DCC HER entry, including a plan showing location of groundworks and of any significant features found. The text entry and plan will be produced in an appropriate electronic format suitable for easy incorporation into the HER and sent to the DCHET within 3 months of the date of completion of all archaeological fieldwork.

5.2 Should significant deposits be exposed the results of all phases of archaeological work will be presented within one summary report within six months of the date of completion of all archaeological fieldwork. Any summary report will contain the following elements as appropriate:

- location plan and overall site plans showing the positions of the excavations and the distribution of archaeological features;
- a written description of the exposed features and deposits and a discussion and interpretation of their character and significance in the context of the known history of the site;
- plans and sections at appropriate scales showing the exact location and character of significant archaeological deposits and features;
- a selection of photographs illustrating the principal features and deposits found;
- specialist assessments and reports as appropriate.

5.3 A .pdf version of the report will be produced and distributed to the Client and DCHET on completion of sitework. A copy of the .pdf version will also be deposited with the Archaeology Data Service (ADS).

5.4 An ordered and integrated site archive will be prepared with reference to *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (2015) upon completion of the project.

The archive will consist of two elements, the artefactual and digital - the latter comprising all born-digital (data images, survey data, digital correspondence, site data collected digitally etc.) and digital copies of the primary site records and images, compiled in accordance with the ADS Guidelines for Depositors (2020).

The digital archive will be deposited with the Archaeology Data Service (ADS) within 6 months of the completion of site work, while the artefactual element will be

deposited with the Royal Albert Memorial Museum (*ref. number pending*). The hardcopy of the archive will be offered to the Royal Albert Memorial Museum and if not required will be disposed of by OA.

OA will notify DCHET upon the deposition of the digital archive with the ADS, and the deposition of the material (finds) archive with the Royal Albert Memorial Museum.

5.5 A .pdf copy of the updated summary report will be submitted, together with the site details, to the national OASIS (Online AccesS to the Index of Archaeological investigationS) database within three months of the completion of site work (oakforda1-423712).

5.6 A short report summarising the results of the project will be prepared for inclusion within the "round up" section of an appropriate national journal, if merited, within 12 months of the completion of site work.

5.7 Should particularly significant remains, finds and/or deposits be encountered, then these, owing to their importance, are likely to merit wider publication in line with government planning guidance. If such remains are encountered, the publication requirements – including any further analysis that may be necessary – will be confirmed with DCHET, in consultation with the Client. OA, on behalf of the Client, will then implement publication in accordance with a timescale agreed with the Client and DCHET. This will be within 12 months of the completion of all phases of archaeological site work unless otherwise agreed in writing.

## 6. CONFLICT WITH OTHER CONDITIONS AND STATUTORILY PROTECTED SPECIES

6.1 If topsoil stripping or groundworks are being undertaken under the direct control and supervision of the archaeological contractor then it is the archaeological contractor's responsibility - in consultation with the applicant or agent - to ensure that the required archaeological works do not conflict with any other conditions that have been imposed upon the consent granted and should also consider any biodiversity issues as covered by the NERC Act 2006. In particular, such conflicts may arise where archaeological investigations/excavations have the potential to have an impact upon protected species and/or natural habitats e.g. SSSIs, National Nature Reserves, Special Protection Areas, Special Areas of Conservation, Ramsar sites, County Wildlife Sites etc.

## 7. COPYRIGHT

7.1 OA shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved, excepting that it hereby provides an exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project as described in this document.

## 8. PROJECT ORGANISATION

8.1 The project will be undertaken by suitably qualified and experienced archaeologists, in accordance with the Code of Conduct and relevant standards and guidance of the Chartered Institute for Archaeologists (*Standards and Guidance for an Archaeological Watching Brief,* 2014, revised 2020, the *Standards and Guidance for Archaeological Excavation*, 2014). The project will be managed by Marc Steinmetzer. Oakford Archaeology is managed by a Member of the Chartered Institute for Archaeologists.

***Health & Safety***

8.2 All monitoring works within this scheme will be carried out in accordance with current *Safe Working Practices (The Health and Safety at Work Act 1974*).

## ADDITIONAL INFORMATION

*Specialists contributors and advisors*
The expertise of the following specialists can be called upon if required:

*Bone artefact analysis: Ian Riddler;*
*Bird remains: Matilda Holmes;*
*Dating techniques: Scottish Universities Environmental Research Centre;*
*Charcoal identification: Dana Challinor;*
*Diatom analysis: Nigel Cameron (UCL);*
*Environmental data: AEA;*
*Faunal remains: Lorraine Higbee (Wessex);*
*Finds conservation: Alison Hopper-Bishop (Exeter Museums);*
*Fish remains: Hannah Russ, Sheila Hamilton-Dyer;*
*Human remains: Charlotte Coles, Mandy Kingdom;*
*Lithic analysis: Linda Hurcombe (Exeter University);*
*Medieval and post-medieval finds: John Allan;*
*Metallurgy: Gill Juleff (Exeter University);*
*Numismatics: Norman Shiel (Exeter);*
*Petrology/geology: Roger Taylor (RAM Museum), Imogen Morris;*
*Plant remains: Lisa Gray;*
*Prehistoric pottery: Henrietta Quinnell (Exeter);*
*Roman finds: Paul Bidwell & associates (Arbeia Roman Fort, South Shields);*
*Others: Wessex Archaeology Specialist Services Team*

**MFR Steinmetzer**
**10 June 2021**
**WSI/OA1787/01**