

An Archaeological Watching Brief at Housesteads Museum and Farm, Northumberland



South-west facing view of Housesteads Museum.

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Archaeological Research
Services Ltd

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Executive Summary

Project Name: An Archaeological Watching Brief at Housesteads Museum and Farm, Northumberland

Site Code: HO15

Planning Authority: Northumberland County Council

Geology: Alston formation limestone, sandstone, siltstone and mudstone

NGR: NY 78866 68651

Date of Fieldwork: December 2015 and February 2016

Date of Report: February 2016

In December 2015 Archaeological Research Services Ltd was commissioned by the National Trust to conduct an archaeological watching brief at Housesteads Museum and Farm, Bardon Mill, Hexham, Northumberland. The watching brief monitored the installation of a borehole inspection chamber and excavation of a short length of trench between the inspection chamber and existing farm building. This was required to connect water supplied from the borehole, excavated prior to groundworks described within this report and without the requirement of archaeological supervision, to existing pipework. A further excavation against the north wall of the western extension of the museum building to expose current pipework was also monitored. The watching brief was undertaken to identify, characterise and record any archaeological deposits or features.

Housesteads Museum and Farm are located on land approximately 400m to the south-west of Housesteads Roman Fort which is a Scheduled Monument and lies within a UNESCO World Heritage Site. The watching brief was carried out under Scheduled Monument Consent (Ref 15/02109/FUL).

Previous archaeological work associated with repairs to the domestic water supply comprised a watching brief which monitored groundworks relating to the excavation of eight exploratory trenches along the presumed route of an existing water pipe, together with the excavation of a longer length of trench along the route of the existing water pipe. This previous watching brief did not identify any archaeological features, however, a small assemblage of Roman pottery sherds was recovered from a grey silt deposit found below subsoil during these previous works. These sherds have been assessed and dated to the second century AD. This is consistent with the known occupation of the fort and vicus.

The trench and inspection chamber footings were excavated against the south wall of the western extent of the stable/office complex and revealed a north west – south east sandstone block constructed wall. Also exposed was a former flagstone surface. The orientation, form and location of the wall and floor was indicative of sub-surface foundations allied to an earlier phase of construction within the farm buildings complex.

1. INTRODUCTION

1.1. In December 2015 Archaeological Research Services Ltd (ARS Ltd) was commissioned by the National Trust to undertake an archaeological watching brief on works associated with the installation of a borehole, inspection chamber and additional pipework connections to the existing water supply for the museum and holiday cottages at Housesteads farm, taking place on land to the south-west of Housesteads Roman Fort in Northumberland. Housesteads Roman Fort and its surroundings form part of a Scheduled Ancient Monument (NHLE: 1018585) and are also classified as a UNESCO World Heritage Site, 'Frontiers of the Roman Empire (Hadrians Wall).

2. LOCATION AND GEOLOGY

2.1 The watching brief area was located against the south wall of the western extent of the stable/office buildings and against the north wall of the western extension of the museum building and was centred on NGR: NY 78866 68651 (Figure 1 and 2).

2.2 The solid geology of the area consists of Alston formation limestone, sandstone, siltstone and mudstone. Overlying this are superficial deposits of till (BGS 2016).

3. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

Prehistoric

3.1 The earliest feature within the landscape surrounding the Roman fort is a bowl barrow located to the south of the watching brief area. This is potentially Neolithic, Bronze Age or Roman in date. The barrow, constructed of earth, measures up to 28m in diameter and stands over 3m high.

Romano-British

3.2 Housesteads Roman fort includes extensive evidence for Roman activity. There are a substantial number of sites and findspots of Roman date within the area surrounding the study site due to the close proximity of the site to the fort. These include a lime kiln, a Mithraeum, a temple to the god Mars, cultivation terraces and quarries, as well as finds of Roman pottery, statues and inscribed tombstones. It is also possible that the bowl barrow mentioned above dates to the Roman period.

3.3 Housesteads is thought to have had three cemeteries although none of their precise locations are known. One is believed to be situated to the west of the fort while another is thought to be situated to either side of Chapel Hill where human remains and a number of tombstones have been discovered.

3.4 The vicus, or civilian settlement, at Housesteads is thought to extend for approximately 200m south of the fort but it at least covers an area the same size as the fort itself. Over 20 buildings of the vicus have been excavated although only six now survive. Excavations have dated the settlement to the 3rd and 4th centuries AD.

3.5 It is beyond the scope of this report to replicate a full history of Roman occupation of Housesteads and the Hadrianic Frontier. For more detail see *Housesteads: A Fort and Garrison on Hadrian's Wall* (Crow 2004).

Medieval

3.6 There are a small number of medieval sites known in the vicinity of Housesteads. These include cultivation terraces, ridge and furrow and a possible farmstead. These remains indicate that the fort and its hinterland was used extensively for agricultural purposes after the fort had been abandoned.

Post-medieval - Modern

3.7 The majority of post-medieval sites in the wider landscape around Housesteads relate to agriculture and industry. A soil heap situated to the south-east of the fort represents the site of a 19th century drift mine while four small coal pits lie between the Mithraeum and the military road. A quarry also lies close to the military road. These quarries may have also been used during the Roman period when stone was needed for the wall, fort and vicus.

3.8 The Military Road was constructed in 1746, along the line of Hadrian's Wall, following a Jacobite rebellion when the road between Newcastle and Carlisle was in such a bad condition that it prevented General George Wade from moving his troops to stop Bonnie Prince Charlie's march from Scotland. The construction of the road was considered an urgent matter as the existing route was not sufficient enough to transfer troops. Some parts of the road are built on the foundations of Hadrian's Wall and much of the stone used to construct the road was salvaged from the wall itself (Woodside and Crow 1999).

3.9 A cultural heritage desk-based assessment (Cockburn and Scott 2012a) and archaeological evaluation (Cockburn and Scott 2012b) were undertaken by ARS Ltd in relation to a previous redevelopment of the car park and visitor centre at Housesteads Roman Fort. This evaluation did not encounter any remains of archaeological significance, although it was noted that the evaluation areas had been subject to previous landscaping activities associated with the construction of the existing car park and visitor centre and the construction of the Military Road.

3.10 An Archaeological watching brief was undertaken in January 2015 in relation to the temporary repairs of existing water supply and monitored the excavation of eight exploratory trenches along the presumed route of an existing water pipe, together with the excavation of a longer length of trench along the route of the existing water pipe (Eadie 2016). The watching brief did not identify any archaeological features, however, a small assemblage of Roman pottery sherds was recovered from a sandy silt deposit at a depth of 0.76m below the surface. These sherds have been dated to the second

century AD. This is consistent with the known occupation of the fort and vicus (Scott 2015).

4. AIMS AND OBJECTIVES

4.1 The aims of the archaeological watching brief were to record any archaeological features and deposits identified within the excavation areas and to ensure that all groundworks were kept to a necessary minimum.

5. METHODOLOGY

5.1 The watching brief monitored the excavation of a trench approximately 2.45m in length, 0.34m in width and 0.68m in depth as well the installation of a borehole inspection chamber measuring 0.80m x 1m in area and 0.18m in depth. The trench was situated against the south wall of the western extent of the stable/office complex and extended on a broadly north west – south east alignment before meeting the inspection chamber. A further exploratory test pit was excavated against the north wall of the western extension of the museum building (Figure 2).

5.2 All ground works were excavated by hand in level spits until impact depth was reached or sensitive archaeological material was identified. The exposed archaeological horizon was then carefully examined and any potential archaeological features or deposits were cleaned by hand and investigated. All excavation was carried out under careful archaeological supervision. The watching brief followed the method set out in the Impact Assessment and Work Design (see Appendix IV).

6. RESULTS

Water Pipe Trench and Inspection Chamber

6.1. The water pipe trench and inspection chamber footings were excavated against the south wall of the western extent of the stable/office complex. The uppermost deposit consisted of a gravel surface (003) and covered an orange/brown sand bedding deposit (004) and a brown clay silt deposit (002) which had a depth of 0.48m to the base of the trench (Figure 5). The natural substrate was not observed within the trench. Deposit (002) was interpreted as a mix of previously cultivated soils and colluvial material accumulating from the slope upon which the Roman fort sits. Below (004) and within the southern end of the trench, a former flagstone surface F005 was identified which in turn overlays a sandstone constructed wall F001 aligned south west – north east (figure 3 and 5). Flagstone surface F005 was one course in height (0.13m) and was seen within the whole of the inspection chamber footings, approximately 0.8m x 1m in area. Wall F001 survives to at least three course in height (0.38m) and two courses in width (0.48m) (Figure 4). Deposit (002) appears to be abutting the flagstones F005 and wall F001 with no obvious construction cut for either. The wall and flagstone surface were interpreted as a previous phase of construction associated with the current farm building and yard.

Test Pit against Museum Wall

6.2 A further inspection hole was excavated against the northern elevation of the museum building to expose existing pipework (Figure 7). The test pit revealed a 0.06m thick concrete surface (006) sealing a 0.08m sandstone crush (007), a levelling deposit for concrete (006). Levelling deposit (007) sealed a dark-grey brown re-deposited natural clay-silt which presumably has been deposited as the result backfilling during the initial construction of the museum. Deposit (008) has an exposed depth of 0.28m and is truncated by F009, a foul pipe within cut [010]. F009 is subsequently truncated by a F011, a water pipe within cut [012] and is sealed by levelling deposit (007) (Figure 6).

6.3 No archaeological features were encountered during the archaeological watching brief.

7. DISCUSSION

7.1 The form, orientation and location of flagstone surface F005 and wall F001 were indicative of sub-surface foundations allied to an earlier phase of construction within the farm buildings complex. Flagstone surface F005 had been exposed previously, and was presumably still in use, until the current gravel surface (003) and its bedding material (004) were placed directly upon it. The watching brief has successfully characterised the nature of the deposits within the development area and no finds or features of archaeological significance were identified. Given the relative shallow depth and limited intrusion of the current works, there is a possibility that archaeological remains survive within the immediate vicinity of the farm complex or museum building.

8. PUBLICITY, CONFIDENTIALITY AND COPYRIGHT

8.1 Any publicity will be handled by the client.

8.2 Archaeological Research Services Ltd will retain the copyright of all documentary and photographic material under the Copyright, Designs and Patent Act (1988).

9. STATEMENT OF INDEMNITY

9.1 All statements and opinions contained within this report arising from the works undertaken are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the author/s of the report for any errors of fact or opinion resulting from data supplied by any third party, or for loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in any such report(s), howsoever such facts and opinions may have been derived.

10. ACKNOWLEDGEMENTS

10.1 Archaeological Research Services Ltd would like to thank all those involved with this work, in particular Andrew Poad of Hadrian's Wall & Tyne Valley Group and Mark Newman of The National Trust.

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Appendix I
Context Register

Context	Description
001	Sandstone wall
002	Mid brown clay silt
003	Gravel, current ground surface
004	Orange/brown bedding material for (003)
005	Flagstone surface
006	Concrete Surface
007	Sandstone crush
008	Re-deposited clay-silt natural
009	Foul pipe
010	Cut for 009
011	Water Pipe
012	Cut for 011

Appendix II

Photograph Register

Shot	Description - Digital
1	W-Pre-excavation shot
2	NW-Pre-excavation shot
3	S-facing Elevation of stable/office wall
4	W-Pre-excavation shot (Scale - 1 x 2m)
5	NE-facing section of trench (Scale - 1 x 1m)
6	NE-facing section of trench (Scale - 1 x 1m)
7	SE-facing section of trench (Scale - 1 x 2m)
8	S-facing section of trench (Scale - 1 x 2m)
9	S-facing section of trench (Scale - 1 x 2m)
10	E-Remains of wall (001) and flagstones (005) (Scale - 1 x 0.25m)
11	E- Remains of wall (001) and flagstones (005) (Scale - 1 x 0.25m)
12	S- Remains of wall (001) and flagstones (005) (Scale - 1 x 0.25m)
13	S- Remains of wall (001) and flagstones (005) (Scale - 1 x 0.25m)
14	S- Remains of wall (001) and flagstones (005) (Scale - 1 x 0.25m)
15	W- Remains of wall (001) and flagstones (005) (Scale - 1 x 1m)
16	S- Remains of wall (001) and flagstones (005)(Scale - 1 x 1m)

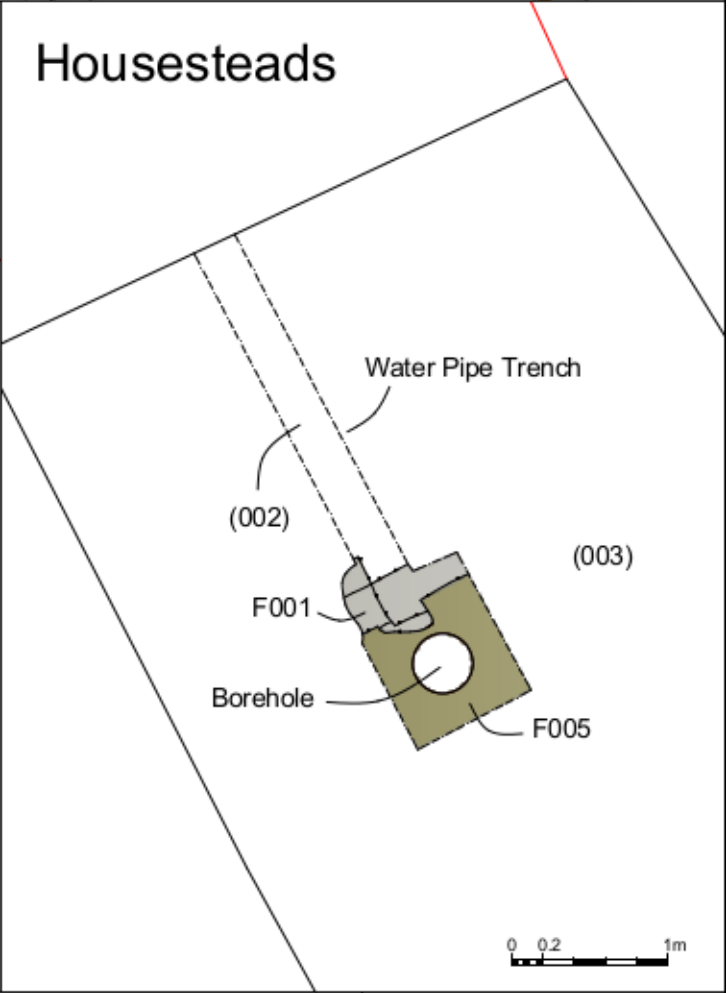
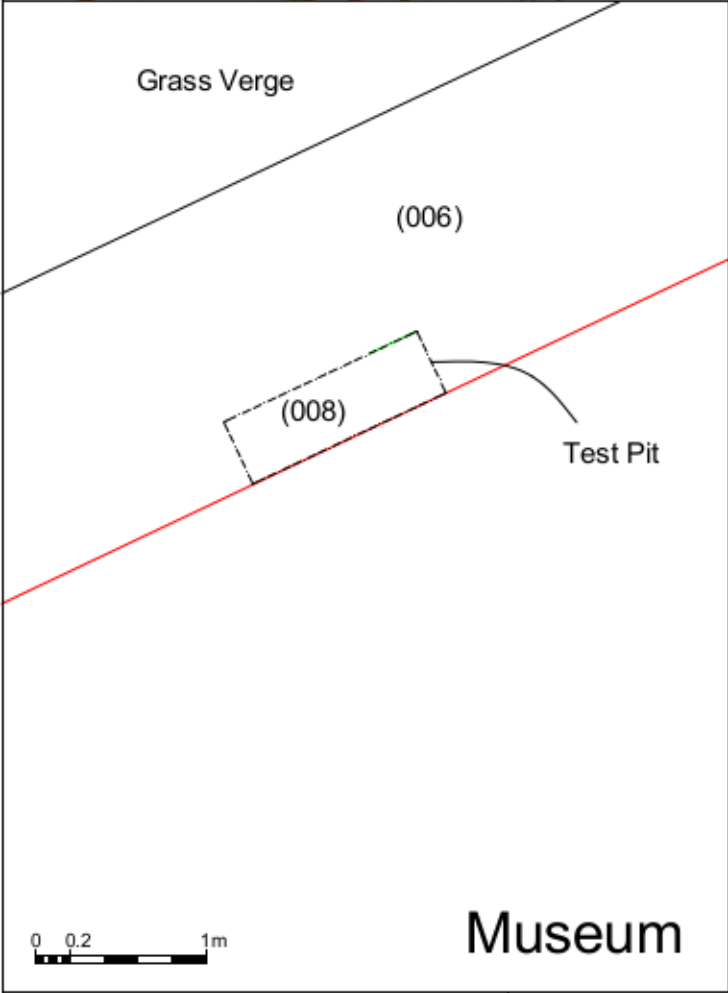
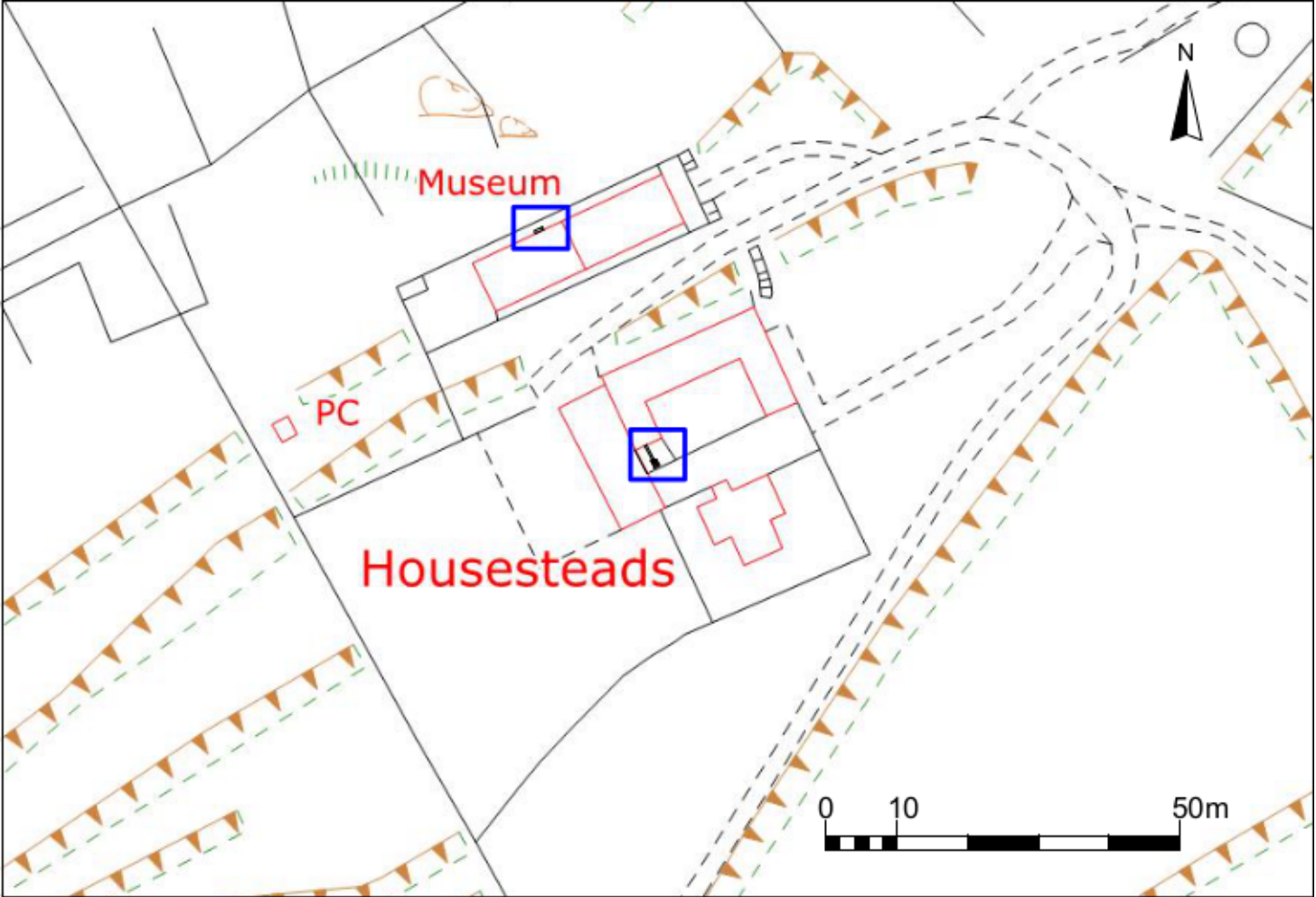
Shot	Description - Film
1	S- Remains of wall (001) and flagstones (005)(Scale - 1 x 0.25m)
2	E- Remains of wall (001) and flagstones (005)(Scale - 1 x 0.25m)
3	E- Remains of wall (001) and flagstones (005)(Scale - 1 x 1m)

Appendix III

Figures



Figure 1: Site location (Ordnance Survey data copyright OS, reproduced by permission, Licence no. 100045420)



Title: Figure 2. Location plan of Water Pipe Trench and Test Pit
 Scale: 1:1000 and 1:50 @A4
 Drawn by: MN

Key:

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Figure 3. Plan view of sandstone wall F001 and flagstone surface F005 (scale 1 x 0.25m).



Figure 4. View facing south east of sandstone wall F001 (scale 1 x 0.25m).



Figure 5. View facing south of sandstone wall F001 and flagstone surface F005 (scale 1 x 1m).



Figure 6. View facing north-west of test pit (scale 1 x 1m).



Figure 7. View facing south-west of Test Pit (scale 1 x 1m).

Water Supply to Housesteads Farm, Northumberland

Written Scheme of Investigation for Archaeological Watching Brief



**Archaeological Research
Services Ltd**

1. Introduction

- 1.1. This scheme of works relates to leak identification works and leak repair works to an existing water supply to the museum and holiday cottage at Housesteads Farm, Northumberland, a part of the wider Scheduled Monument 'Housesteads fort, section of Wall and vallum between the field boundary west of milecastle 36 and the field boundary west of turret 37a in wall miles 36 and 37 (NHLE: 1018585)' and World Heritage Site 'Frontiers of the Roman Empire (Hadrian's Wall)'. The proposals involve the use of leak detection equipment to investigate possible leaks at the metal junctions of sections of existing pipework and the repair of any leaks thus identified. a series of minor alterations to the existing building and an addition to the current car park. Although the excavations will largely take place within previously disturbed contexts, the archaeological sensitivity of the site dictates that the proposed works have the potential to impact on significant remains associated with the SAM.
- 1.2. The National Trust produced an Impact Assessment and Project Design for the proposed repair works (see Appendix 1) and Scheduled Monument Consent has been obtained (Ref: S00097700). Archaeological Research Services Ltd (ARS Ltd) has been approached by The National Trust to undertake a watching brief on all excavation works associated with the proposed works.
- 1.3. This document is a written scheme of investigation (WSI) confirming the nature of the archaeological works to be undertaken by ARS Ltd at the Housesteads Roam Fort approval by Mike Collins, English Heritage.

2. Archaeological Background:

- 2.1 Housesteads Roman fort and vicus is a Scheduled Ancient Monument and part of a World Heritage Site, and it includes extensive evidence for Roman activity. There are a substantial number of sites and findspots of Roman date within the area surrounding the study site due to the close proximity of the site to the fort. These include a lime kiln, a Mithraeum, a temple to the god Mars, cultivation terraces and quarries, as well as finds of Roman pottery, statues and inscribed tombstones. It is also possible that the bowl barrow mentioned above dates to the Roman period.
- 2.2 Housesteads is thought to have had three cemeteries although none of their precise locations are known. One is believed to be situated to the west of the fort while another is thought to be situated to either side of Chapel Hill where human remains and a number of tombstones have been discovered. These discoveries would indicate that the cemetery extended quite far south, possibly as far as the development site.

- 2.3 The vicus, or civilian settlement, at Housesteads is thought to extend for approximately 200m south of the fort but it at least covers an area the same size as the fort itself. Over 20 buildings of the vicus have been excavated although only six now remain. Excavations have dated the settlement to the 3rd and 4th centuries AD.
- 2.4 It is beyond the scope of this WSI to replicate a full history of Roman occupation of Housesteads and the Hadrianic Frontier. For more detail see Housesteads: A Fort and Garrison on Hadrian's Wall (Crow 2004).
- 2.5 The existing water supply that forms the focus of this investigation was installed most likely in the late 1970s, however, there is no record of archaeological works being undertaken during its installation.

3. Objectives

- 3.1. The purpose of the work is to gain information about the archaeological resource, including its presence or absence, character, extent, date, integrity, state of preservation and quality, in order to facilitate the repair works with minimal impact upon the surviving archaeological remains. The watching brief will also formulate an appropriate mitigation strategy to ensure appropriate recording, preservation or management of the archaeological resource. In particular:
 - i) the presence or absence of archaeological features their quality, depth and preservation.
 - ii) an assessment of their significance and importance in line with NPPF (CLG 2012)
 - iii) the likely impact of the works upon any such features
 - iv) the appropriate mitigation of the development's impact upon those remains
- 3.2. The research aims for any further work required following the watching brief will be developed in an additional WSI.
- 3.3. If significant archaeological remains are identified during the watching brief that require further examination, a site meeting will be arranged with the National Trust, Mike Collins of English Heritage and ARS Ltd in order to agree the requirement and timetable for further works.
- 3.4. Any changes to the agreed WSI will be discussed with, and agreed with Mike Collins, English Heritage, Inspector of Ancient Monuments: Hadrian's Wall, before implementation.

4. Fieldwork Methodology

- 4.1. The proposal involves the insertion of testing equipment into the existing pipe at its southernmost extent until the first joint is encountered. This will be located using a CAT scanner and then as small a hole as possible (up to 0.5m square) will be dug by hand in order to expose the joint and check for leaks. If none is found work will continue to the next joint and so on. If a fault is found the joint will be replaced. If a failed section of pipe is found, the leak will be exposed and a replacement section of pipe installed.
- 4.2. All excavations will proceed by hand carefully following the line of the existing pipe; its rough location is shown in Figure 1. Excavations for repair and replacement will not penetrate intact Roman archaeological material.

- 4.3. All archaeological fieldwork, recording of archaeological features and deposits and post-excavation analysis will be carried out to acceptable standards as set out in the Chartered Institute for Archaeologists' *Code of Practice* (2000) and *Standard and Guidance for Archaeological Watching Briefs* (2008).
- 4.4. *Watching brief Methodology*
- 4.5. The trenches will be hand dug under the direct and continuous management and direction of a suitably qualified member of staff from ARS Ltd. Any archaeological deposits encountered will be investigated by hand by a suitably qualified member of staff from ARS Ltd. All operatives will be fully apprised of the archaeological potential of the area. The trench will be dug to the first archaeological horizon in successive level spits or to a level where it is possible to assess the presence or absence of archaeological features.
- 4.6. All those involved in the ground works will be informed that the land is designated as a Scheduled Monument under the Ancient Monuments and Archaeological Areas Act 1979 (as amended). They will also be informed of the extent of the Scheduled Monument and the implications of the designation which mean that Scheduled Monument Consent must be obtained from the Secretary of State prior to works being undertaken.
- 4.7. Following the excavation, recording and monitoring all trenches will be backfilled using excavated material.
- 4.8. The trenches will be cleaned by hand sufficiently to allow the identification and planning of archaeological features. Where archaeological features appear to be absent, sufficient work will be done to demonstrate this. Each trench will be planned at an appropriate scale; 1:20 where complex deposits are present or 1:50 in areas of lesser complexity (to be omitted if the trench is completely blank). One representative long section of each trench will be produced, at an appropriate scale, if necessary. Sections and profiles of each feature sampled will be drawn at 1:10 or 1:20, depending on the size of the feature. Spot levels relative to ordnance datum in metres will be taken as appropriate.
- 4.9. Identified archaeological features will be sufficiently sampled by manual excavation to allow their date, nature and degree of survival to be ascertained. All features thus investigated will be recorded in plan and section and all finds recovered retained for analysis.
- 4.10. If brick structures are encountered, the record should include details of brick dimensions and type (handmade/machine-made, plain/frogged), mortar (colour, composition, hardness) and the extent of structures (number of courses, thickness in skins).
- 4.11. All identified archaeological features will be accurately fixed using an EDM/Total Station, surveying in either the planning baselines or the features themselves.
- 4.12. The site archive will include plans and sections at an appropriate scale, a photographic record, and full stratigraphic records on recording forms/context sheets. Each context will be recorded on pro-forma records which will include the following: character and contextual relationships; detailed description (dimensions and shape; soil components, colour, texture and consistency); associated finds; interpretation and phasing as well as cross-references to the drawn, photographic and finds registers. Each context will be recorded on an individual record.
- 4.13. A photographic record will be maintained including photographs of all significant features and

overall photographs of each area or trench. All images will be taken in black and white print, and digital format, and will contain a graduated photographic scale. The main photographic archive will comprise 35mm b/w print film, supplemented by digital SLR (minimum 12 megapixels).

- 4.14. All stratified finds will be collected by context or, where appropriate, individually recorded in 3 dimensions. Unstratified finds, which are likely to be of singular importance in this context, will be collected where they contribute significantly to the project objectives or are of particular intrinsic interest. All pottery of Nineteenth century or earlier will be retained, whether stratified or un-stratified. Finds will be submitted for specialist assessment as to their potential and significance for further analysis and study to the following organisations/persons (depending on their availability)
- Prehistoric Pottery – Clive Waddington, ARS Ltd
 - Worked lithic materials – Clive Waddington, ARS Ltd
 - Roman ceramics – Ruth Leary
 - Post-roman and medieval ceramics – Chris Cumberpatch
 - Animal and Human Bone – Milena Grzybowska, ARS Ltd
 - Metal and other artefacts – Mike Wood
 - Environmental Analysis – Elise McLellan, ARS Ltd
- 4.15. Deposits that have the potential for providing environmental or dating evidence will be assessed while the work is in progress. Every archaeological context with potential for organic remains will be sampled. A bulk sample of at least 40 litres will be taken from each feature unless the context contains less than this. Initially only 10 litres from each context will be assessed so that those deposits that are worth further analysis can be identified and those that are not discarded. Pit features will be initially sampled and flotated through graduated sieves. If the context has the potential to contain organic residues then further sampling will take place as appropriate. So, for example, a medieval pit with evidence for cereal production will be 100% sampled, given the rarity of such features. The sampling of contexts such as linear ditch fills will target the primary ditch silts as these have the potential to inform on the contemporary farming landscape at the time the ditch was initially cut and in use, but given the taphonomic problems associated with secondary ditch fills and their potential for intrusive and residual material, these will not be assessed in the same level of detail. However, samples will be taken where, for example, they may inform about the re-use or change in use of a feature.
- 4.16. The field method will include putting 100% of all samples through a 10mm mesh and then collecting the residue (this will remove the larger pebbles in the gravel as well as maximise finds recovery of lithics and pottery). However, where there is a possibility of human or animal remains being present, including cremated human remains, the whole sample will be flotated. Of the remaining material 10 litres (or all of the material if it is less) will then be flotated and the flots and residues collected. These will be collected in graduated brass sieves with the smallest having a minimum mesh size of 300 microns.
- 4.17. Once the deposits have been assessed those that show good potential for further results will be flotated in full. This strategy will ensure that all deposits with potential for containing palaeoenvironmental residues (such as botanical macrofossils, animal bone and invertebrates) are assessed while at the same time ensuring that excessive time is not wasted on sterile deposits that will add nothing to furthering understanding. Furthermore, it will mean that any further work can be targeted specifically to those deposits that have demonstrable

- potential.
- 4.18. Samples for Pollen Analysis will be taken from any archaeological contexts that are suitable for providing an accurate indication of past environmental conditions and/or land use in the vicinity of the site. However, due to the taphonomic issues surrounding pollen samples a decision on whether to take samples will be taken on a feature by feature basis. For example, primary ditch silts, buried land surfaces and intact floor surface deposits would be considered suitable contexts to sample whilst secondary ditch deposits affected by bioturbation or root action that will have mixed pollen from different horizons would not. Secondary ditch fills will be sampled where there is the chance that they could inform about the re-use or change in use of a feature. If waterlogged deposits are identified, for example in deep cut features, separate samples for analysis will be taken for invertebrates, vegetative plant remains *etc.*
 - 4.19. Samples will be assessed by a suitable specialist with provision for further analysis as required. Specialist advice on the collection of industrial residues will be sought and their strategies implemented. The advice of the English Heritage Scientific Adviser will be followed in relation to the collection of palaeoenvironmental evidence.
 - 4.20. All retained finds and palaeoenvironmental samples will be treated in accordance with the English Heritage guidance document *A Strategy for care and investigation of find (1995)* and the UKIC's document *Guidelines for the preparation of excavation archives for long term storage.*
 - 4.21. Provision will be made for additional specialist advice, e.g. for finds analysis and conservation.
 - 4.22. Finds of "treasure" will be reported to the Coroner in accordance with the Treasure Act procedures.
 - 4.23. If grave cuts are discovered on site, then they will be sampled through hand excavation to determine the presence/absence, depth and preservation of the uppermost burials, with every effort made to maintain the burials in-situ. If excavation of human remains is deemed essential through consultation with NNPA and NT, a license will be obtained from the Ministry of Justice and work will be carried out under appropriate environmental health regulations and, if appropriate, in compliance with the Disused Burial Grounds (Amendments) Act 1981.
 - 4.24. Disarticulated human bone will be quantified and characterised prior to reinterment on site.
 - 4.25. The record of the extent and vulnerability of features will be sufficiently detailed to facilitate discussions regarding the need for preservation beneath any future potential development, or any other mitigation measures including further excavation or recording.
 - 4.26. A risk assessment will be undertaken before commencement of the work and health and safety regulations will be adhered to at all times.
 - 4.26. Equipment and machinery shall not be used or operated in the scheduled area on conditions or in a manner likely to result in ground disturbance other than that which is expressly authorised under the Scheduled Monument Consent.

5. Monitoring Arrangements

- 5.1. The watching brief programme will be ultimately dictated by the nature of the client's work, but is anticipated to take approximately 1-2 days. Should complex archaeological features be

discovered, requiring detailed recording, a contingency may be required. The allocation of this contingency will be agreed with the client and English Heritage. Consultation between the client, English Heritage and ARS Ltd will be required at the end of the archaeological watching brief to ensure that all the below ground archaeology has been adequately recorded.

- 5.2. ARS Ltd will liaise with Mike Collins of English Heritage at regular intervals throughout the course of the work and will provide reasonable notice of the commencement of site works:

Mike Collins
Inspector of Ancient Monuments: Hadrian's Wall
English Heritage North East Region
Bessie Surtees House
41-44 Sandhill
Newcastle upon Tyne
NE1 3JF
Direct Dial: 0191 2691212

6. Report

- 6.1 Following completion of the evaluation ARS Ltd will produce a report which will include:

- Non-technical summary
- Introductory statement
- Aims and purpose of the project
- Methodology
- A location plan showing all excavated areas and any archaeological features with respect to nearby fixed structures and roads
- Illustrations of all archaeological features with appropriately scaled hachured plans and sections.
- An objective summary statement of results
- Conclusions
- Supporting data – tabulated or in appendices
- Index to archive and details of archive location
- References
- Statement of intent regarding publication
- Confirmation of archive transfer arrangements
- A copy of the approved WSI
- A copy of the OASIS number

- 6.2 Within the report:

- All plans will be clearly related to the national grid.
- All levels will be quoted relative to ordnance datum.

- 6.3 If significant archaeological remains are identified the report will include

- Detailed description and plans (at 1:50 scale) of any areas which provided significant archaeological information, all feature plans and sections (at 1:10 or 1:20 scale), select artefact illustrations, photographs and an overall site plan showing all recorded

archaeological features.

- Finds quantification and assessment.
- Assessment of any palaeo-environmental samples taken.
- A summary of the extent, depth and state of preservation of archaeological deposits across the site.

6.4 Copies of the final report will be deposited with Mike Collins of English Heritage, the Northumberland National Park Authority HER and the Northumberland County Council HER, within 3 months of the completion of the works, unless otherwise agreed.

7 Archive Deposition

7.1 A digital, paper and artefactual archive, which will consist of all primary written documents, plans, sections, photographs and electronic data will be submitted to the a suitable repository museum, in a format agreed in discussion with Northumberland National Park Authority.

7.2 All artefacts and associated material will be cleaned, recorded, properly stored and deposited in the archive (see above).

7.3 If they are forthcoming as a result of the work, a full set of annotated, illustrative pictures of the site, excavation, features, layers and selected artefacts will be supplied to the HER and deposited with the archive as digital images on a CD ROM.

7.4 English Heritage will be notified on completion of fieldwork, with a timetable for reporting and archive deposition.

7.5 Written confirmation of the archive transfer arrangements, including a date (confirmed or projected) for the transfer, will be included as part of the final report.

7.6 An OASIS online record <http://ads.ahds.ac.uk/project/oasis/> will be initiated and the watching brief data will be added to this record. Key fields will be completed on Details, Location and Creators forms. All parts of the OASIS online form will be completed for submission to the HER. This will include an uploaded .pdf version of the entire report (a paper copy will also be included within the archive).

7.7 English Heritage will be notified of the final deposition of the archive.

7.8 Publication of the results, in summary form, will be included in *Archaeology in Northumberland* and, depending on the results, in *Archaeologia Aeliana* or a relevant specialist journal.

8 Changes to Methodology or Work Programme

8.1 Changes to the approved methodology or programme of works will only be made with the prior written approval of the clients and English Heritage.

9 Publication

9.1 In the event of significant remains being encountered and excavated, there will be the need

for a more formal publication than in the summary form. In this instance a suitable programme and timetable for publication and dissemination will be discussed and agreed upon by all stakeholders.

10 References

Department for Communities and Local Government (CLG). 2012. *National Planning Policy Framework*. London, The Stationery Office.

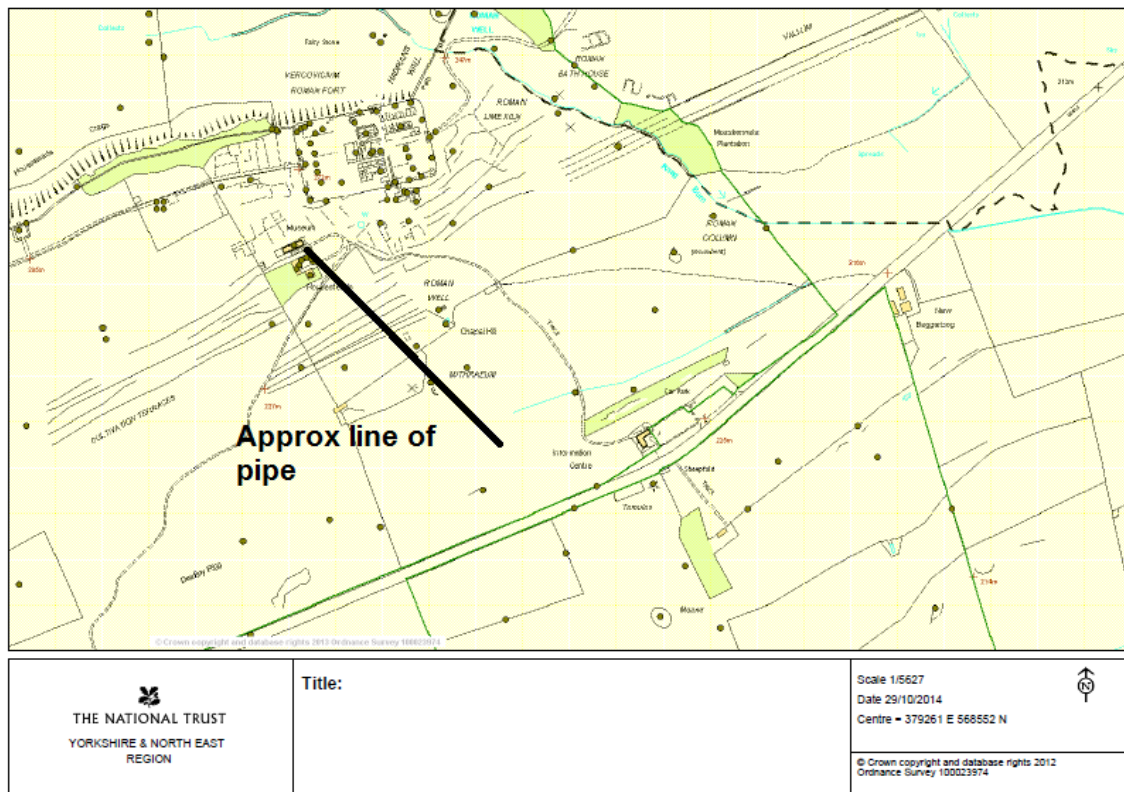
English Heritage, 1995. *A strategy for the care and investigation of finds*, English Heritage.

Chartered Institute for Archaeologists. revised 2010a. *Code of Conduct*. Reading, Institute for Archaeologists

Chartered Institute for Archaeologists (IfA). 2008. *Standard and Guidance for an Archaeological Watching Briefs*. Reading, Institute for Archaeologists.

Museum of London Archaeological Services (MoLAS). 2002. *Site Manual*. London, Museum of London.

Figure 1: Site Location Plan



Appendix 1

National Trust Archaeology Yorkshire & the North-East Region

Application for Scheduled Ancient Monument Consent, repair of water supply to Housesteads Farm.

Impact Assessment and Works Design

Mark Newman 10th November 2014

Introduction

Housesteads Roman Fort is one of the premier components of Hadrian's Wall, part of the Roman Frontiers World Heritage Site. The fort itself sits on a high Winn Sill ridge, and is approached either from either side along the Wall National Trail, or from the south via the site visitor centre and a linking footpath. This footpath winds through the hinterland of the fort, populated with the remains of an associated civilian settlement, or *vicus*, and a range of supposed military, industrial and ceremonial zones. The latter include at least three cemeteries. The intimate geography of these zones is only incompletely understood.

The wall corridor is designated as a Scheduled Monument, as well as being inscribed as a World Heritage Site. The Scheduling extends up to the walls of the visitor centre, and indeed beneath the building.

The planned works are intended to take place on the slopes to the south of the fort, including crossing the "temple zone" to the south-east.

Archaeological Background

There is a long history of archaeological investigation of the Housesteads hinterland. However, in terms of the specific sites under consideration, detailed investigation is more limited, beyond surface features recording conducted mainly by English Heritage. There is also reported cause to suspect that remains of the *vicus* may survive (or have survived) close to the farm beyond the scope of the surface visible earthworks.

It is believed that the present plastic water pipe was installed in the later 1970s. This conveys water from a hydram (repairs to the inflow of which are believed to have been conducted in 1976) up to Housesteads Farm and the museum buildings beyond it, over a course of around 300m. There is no record of any archaeological observations having been made at the time the

existing pipe was laid. Nor, unfortunately, was there any record made of its course. The trench as reinstated well and is no evident on the surface today. There is a historic breach across earthworks running more aligned with the contours of the site, which would have made a good choice, but there is no direct evidence to record that this was done.

Reasons for this application

The domestic water supply to the museum complex and what is now a highly popular holiday cottage recently failed. Temporary repairs have restored an emergency supply via a surface pipe, but this will soon be vulnerable to freezing. This makes it imperative to restore the underground supply. The supply is believed to have failed due to a leak or leaks. Expert advice is that these are most likely to have occurred at the metal junctions between sections of plastic pipe, occurring at roughly 50m intervals.

It is possible, and is proposed, to use a testing device to locate the junctions and/or leaks. This can be inserted into the pipe from its exposed southern end and can a) pressure test sections of pipe and b) run an electrical charge into the metal joint to make it detectable using a CAT services detector.

This application seeks

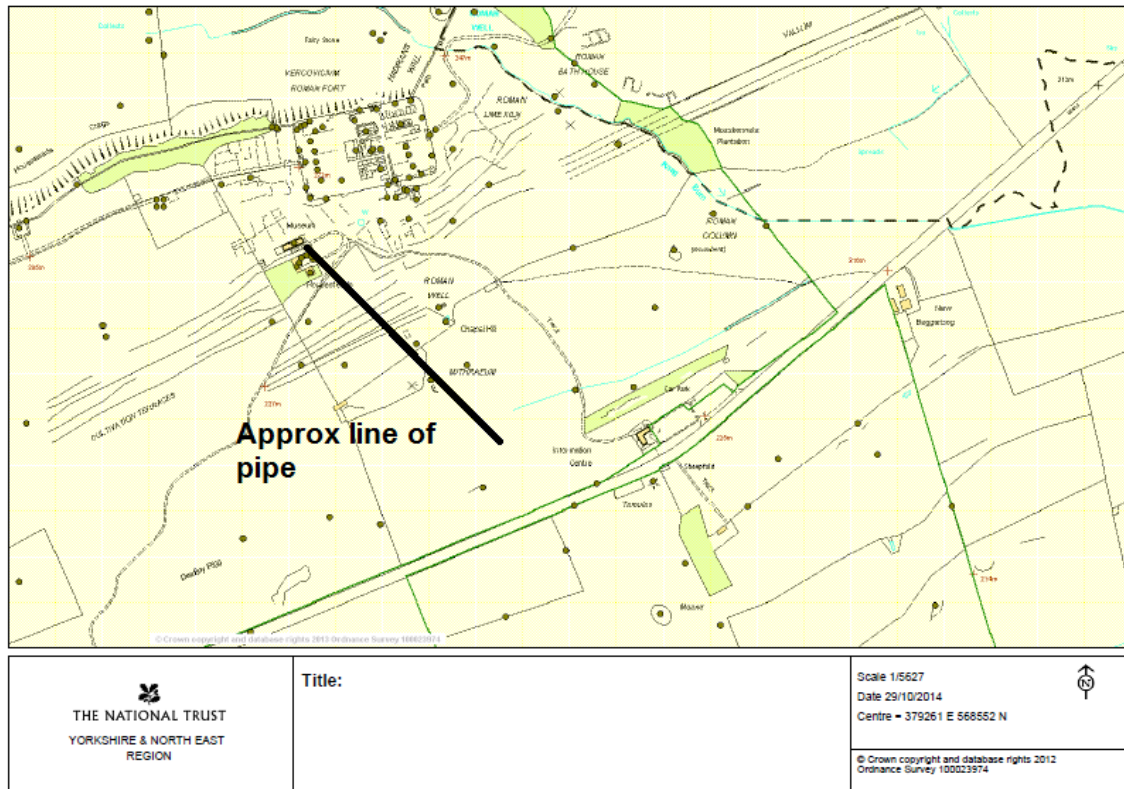
- a) Consent to carry out the leak detection and repair works (as detailed below)
- b) Consent to operate the CAT detector within the Scheduled Area (by separate grant of a Section 42 licence if deemed necessary)
- c) That consent be granted, subject to the agreement of the English Heritage Inspector for the site, for carrying out similar works to this water supply by the same techniques in future.

There remains a question as to whether this water main provides an appropriate and satisfactory water supply for current needs, or whether alternative sources need to be explored. This application for consent does not seek to address those issues, which will need considerable further planning and consultation, but the immediate needs to maintain a domestic water supply critical to the operation of the site.

Working Method

The main runs for approximate 300m roughly in the vicinity of the route shown on the map below. The testing equipment would be inserted into the exposed southern end of the pipe until the first joint is located. This will be located using a CAT scanner and then as small a hole as possible (up to 50cm square) will be excavated to expose the joint and check for leaks. If none is found work will progress to the next joint and so on. If fault is found the joint will be replaced.

If a failed section of pipe is located, the leak will be exposed and a replacement section of pipe installed. Excavation will again be by hand, carefully following the existing pipe.



Impacts

The impacts of these proposals are considered against the areas of heritage value discussed in the EH conservation principles (2008)

Evidential

Naturally, given the nature of the site, there is considerable potential for Evidential value in the areas affected. That said, none is currently directly proven, and the pipe route will have been disturbed at least once previously when the pipe was installed. The current work will only affect this previously disturbed ground. The route does, though, unavoidably cross a number of significant surface earthworks and other areas of considerable archaeological potential

The amount of ground disturbance anticipated is limited, and has been designed to be so.

Historical – Illustrative/Associative

The Historical values of the site are high. There is an obvious association, by proximity and location, to the operation of Hadrian's Wall as a military system and the life of its associated vicus. That said, there has been enormous landscape change here since the Roman period, not least since the acquisition of the site by John Clayton. Indeed the landscape today owes more to his nineteenth century interventions than any other period.

The proposed works should not leave any long term evidence in the landscape, therefore, are not thought to impact on the Historical values of the site.

Aesthetic

There is, effectively, a designed aesthetic present on the site, represented by John Clayton's organisation of the landscape, including the construction of Housesteads Farm. However, these works will not impinge on this apart from maintaining the financial resource that supports their maintenance.

There should be no fortuitous aesthetic impact as the works involved will be temporary.

Communal values

There are no known commemorative values or other such significances associated with the site by the local (or wider) community, except perhaps for some low level perception of religious significance to the "temple zone". This should be no more than temporarily and very slightly affected by the planned works.

Archaeological Mitigation

The archaeological impact and therefore mitigation that can be offered for this proposal is limited. It is proposed that the excavation works be conducted under archaeological supervision and the results recorded. This Impact assessment will form the core of a project brief for commissioning archaeological contractors, and a resulting project design will be subject to the approval of the English Heritage Inspector for the site. Records can then be attached to the National Trust's HBSMR, the Northumberland National Park HER and EH records.

OASIS DATA COLLECTION FORM: England

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OASIS ID: archaeol5-236316

Project details

Project name	An Archaeological Watching Brief on land to the south-west of Housesteads Roman Fort, Northumberland
Short description of the project	In December 2015 and January 2016, Archaeological Research Services Ltd was commissioned by the National Trust to conduct an archaeological watching brief during repair work to a domestic water supply on land adjacent to Housesteads farm and museum which is the south-west of Housesteads Roman Fort in Northumberland. Housesteads Roman Fort is a Scheduled Ancient Monument and lies within a UNESCO World Heritage Site. The watching brief was carried out under Scheduled Monument Consent.
Previous/future work	Yes / Not known
Any associated project reference codes	archaeol5-205171 - OASIS form ID
Type of project	Field evaluation
Site status	National Trust land
Current Land use	Other 8 - Land dedicated to the display of a monument
Monument type	VICUS Roman
Methods & techniques	"Targeted Trenches"
Development type	Estate management (i.e. maintenance of existing structures and landscape by capital works and on-going maintenance)
Prompt	Scheduled Monument Consent
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	NORTHUMBERLAND TYNEDALE HEXHAM Housesteads Roman Fort
Study area	5 Square metres
Site coordinates	NY 7877 6866 55.011944444444 -2.331944444444 55 00 43 N 002 19 55 W Point

Lat/Long Datum Unknown

Project creators

Name of Organisation Archaeological Research Services Ltd

Project brief originator Archaeological Research Services Ltd

Project design originator National Trust

Project director/manager Robin Holgate

Project supervisor Michael Nicholson

Type of sponsor/funding body National Trust

Entered by Michael Nicholson (michael@archaeologicalresearchservices.com)

Entered on 5 January 2016

OASIS:

Please e-mail [Historic England](#) for OASIS help and advice

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