Wessex Archaeology

Binchester Roman Fort
County Durham

Archaeological Evaluation and Assessment of Results

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Binchester Roman Fort, County Durham

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Summary

Wessex Archaeology was commissioned by Videotext Communications Ltd to carry out archaeological recording and post-excavation analysis on an archaeological evaluation by Channel 4's 'Time Team' at Binchester Roman Fort, County Durham, centred on NGR 421000 531300. The fieldwork comprised geophysical survey and three machine-excavated evaluation trenches.

Binchester fort is one of a number of military complexes built as part of Governor Agricola's push into Scotland in the late 1st century AD, and later consolidated to support the defences at Hadrian's Wall. The fort was built to guard the point where *Dere Street* crossed the River Wear and was first constructed in timber around AD80, to be replaced by a larger stone fort in the early 2nd century AD. Today only the excavated buildings and the earthwork remains of the north-eastern ramparts survive above ground. Archaeological excavation has shown what happened to the fort after it was abandoned by the Romans around AD410.

The project aims were to carry out a limited programme of non-intrusive investigations and intrusive evaluation over three days. Part of the site under investigation is a Scheduled Monument (Number: DU 23) of national importance. The remainder has the potential to contain deposits of local, regional and national importance with the ability to answer regional and national research questions about the various periods already known to be represented on this site.

The gradiometer results of the geophysical survey complement the earlier geophysical survey carried out by Geoquest and provide further information on the layout of the *vicus* (including evidence for a large associated boundary ditch). Earlier fort ditches were also mapped along with the course of *Dere Street* to the west of the fort and a further Roman road heading north-east out of the fort. Perhaps one of the most interesting finds was a series of mausolea; these appeared in the magnetic results but more clearly in the ground penetrating radar data, which identified entranceways and internal features. Possible industrial activity was noted outside the north-eastern entrance of the fort. The results clearly demonstrate the potential that geophysics, and in particular ground penetrating radar, have for providing detailed information about the fort and environs at Binchester.

Three machine trenches were excavated; one within the Scheduled Monument to examine the *vicus* (civilian settlement) and antiquarian excavations; one to examine large rectilinear features identified by geophysical survey and aerial photography, thought to represent the defences of an early timber fort; and one to examine the mausolea identified by geophysical survey.

It appears, from the single trench excavated in the Scheduled area, that the antiquarian excavations in the *vicus* area comprised linear trenches that followed the lines of the masonry walls. Comparison of the antiquarian records of the masonry remains with those exposed during this project indicates that, in all probability, the masonry

remains exposed by the antiquarian excavations were subsequently removed for use elsewhere. Although this has clearly severely damaged, or even completely removed, the walls, it is also clear that internal and external features and deposits will survive between the antiquarian trenches. As no excavation of *in situ* Romano-British deposits was undertaken and the vast majority of the finds recovered from this trench were from the backfill of an antiquarian trench and the topsoil; the date of the construction, occupation and abandonment of the building is unknown, although a 2nd to 4th century AD date is likely.

The time constraints of the evaluation did not allow a detailed excavation of all the complex sequence of cuts and deposits in the north of the trench examining the possible early defences; however, it appears that these deposits represent several phases of excavation and backfilling of a series of large ditches. It is possible that these represent a series of fort defences that may have been deliberately slighted, suggesting that the fort was not in constant use during the late 1st and early 2nd centuries AD. Although partially obscured by later ridge and furrow ploughing, the central area of the trench appeared largely devoid of Romano-British features and deposits, possibly indicating the location of the ramparts. A metalled surface in the south-west of the trench probably represents an internal circuit path or road, immediately behind the ramparts, and a short length of possible beam slot, to the south-west of the metalled surface, an internal timber structure. It is therefore possible that these features and deposits represent a series of temporary forts.

The third trench was excavated to examine possible masonry features identified by geophysical survey. These proved to be a row of three masonry structures, probably mausolea, two enclosed within a boundary or 'precinct' wall. The association of these three structures with the remains of an inhumation burial, in the south-eastern structure, and disarticulated human remains, in the central structure, indicate a funerary function and their form suggests that they are mausolea. Apart from the excavation of the remains of one inhumation burial within the eastern mausoleum and a small sondage to examine the deposits around the central mausoleum, excavation was limited to exposing and cleaning the remains, which were then preserved *in situ*.

In summary, the Time Team evaluation has demonstrated the extent, character and condition of the Romano-British remains and has shown that substantial and important stratified remains survive below ground.

Binchester Roman Fort, County Durham

Archaeological Evaluation and Assessment of Results

Acknowledgements

The evaluation was commissioned and funded by Videotext Communications Ltd. Wessex Archaeology is grateful to David Mason of Durham County Council Archaeological Department for his help and advice. Thanks are also due to the Church Commissioners who own the land and permitted the evaluation, Smiths Gore who manage the land and to Mr Gordon Sedgewick the tenant farmer for their assistance and interest.

Surveying was undertaken by Henry Chapman of the University of Birmingham, and the geophysical survey was undertaken by John Gater, Jimmy Adcock and Emma Wood of GSB Prospection. The excavation was undertaken by Phil Harding (of Wessex Archaeology), Kerry Ely, Brigid Gallagher, Matt Williams, Naomi Sewpaul, Tracey Smith, and Ian Powlesland of Time Team and local diggers Damien Ronan, Gary Brogan, Paul Owens, Philip Abramson, Tori Wilkinson and Jon Welsh who were assisted by local metal detectorists. On-site identification and excavation of human remains was undertaken by Jacqueline McKinley, the recording, finds co-ordination and processing was undertaken by Vaughan Birbeck and Laura Catlin and the environmental samples were processed by Darren Baker, all of Wessex Archaeology.

The archive was collated and all post-excavation assessment and analysis undertaken by Wessex Archaeology, including management (Lorraine Mepham), finds (Lorraine Mepham, Rachel Seager Smith, Dr Nicholas Cooke and Jessica Grimm), environmental analysis (Dr Chris J. Stevens), human bone analysis (Jacqueline McKinley), report (Vaughan Birbeck), and illustrations (Kenneth Lymer).

Binchester Roman Fort, County Durham

Archaeological Evaluation and Assessment of Results

1 INTRODUCTION

1.1 Project Background

1.1.1 Wessex Archaeology was commissioned by Videotext Communications Ltd to carry out archaeological recording and post-excavation analysis on an archaeological evaluation by Channel 4's 'Time Team' at Binchester Roman Fort, County Durham, centred on NGR 421000 531300 (**Figure 1**). The fieldwork, comprising three machine-excavated evaluation trenches, was undertaken between 11th and 13th April 2007 by Time Team and local archaeologists. The site lies at a height of approximately 95m aOD and the underlying geology is undifferentiated boulder clay and glacial drift (Wolsingham Sheet 26, GSGB).

1.1.2 The area under investigation consists of land to the north and east of Binchester Roman Fort (*Vinovia*), a Scheduled Monument (Number: DU 23). The site is approximately 1 mile (1.6km) north of Bishop Auckland and 2.5 miles (4km) south of Willington. The land is part of Bishop Auckland Estates belonging to the Church Commissioners and part of the site is in use as a sheep farm. Displayed archaeological remains on site are leased to Durham County Council from Church Commissioners.

1.1.3 The site was selected for archaeological evaluation and filming as a result of an invitation from the Durham County Council Principal Archaeologist David Mason. Mr. Mason identified Binchester as a site where a number of research questions could be addressed through a small scale, carefully targeted evaluation.

1.2 Archaeological and Historical Background

1.2.1 Binchester fort is one of a number of military complexes built as part of Governor Agricola's push into Scotland in the late 1st century AD, and later consolidated to support the defences at Hadrian's Wall (Wilmott 1995). The fort is situated on a hill-top overlooking the place where *Dere Street* crosses the River Wear on the route from York to Corbridge. It is a central point for road communications on the north-eastern flank of the frontier zone, as it is also where the route from Bowes to Chester-le-Street and South Shields crosses *Dere Street* (Grew *et al.* 1981, 327).

1.2.2 The fort was built to guard the roads and river crossing and was first constructed in timber around AD80, to be replaced by a larger stone fort in the early 2nd century AD. The fort was defended by a substantial masonry wall with four gateways flanked by guard towers within a huge V-shaped ditch. Inside would have been the headquarters building, the commandant's house,

the hospital, granaries, workshops, barracks and stables. The Roman fort became a focus of local activity and a large civilian settlement or *vicus* soon grew around it (Hooppell 1891). This settlement provided for the needs of the troops and became a market centre for the surrounding area. By AD500 much of the fort had been demolished and at some time during the Middle Ages a large area overlooking the River Wear was destroyed by a landslide. Today only the excavated buildings and the earthwork remains of the north-eastern ramparts survive above ground. Archaeological excavation has shown what happened to the fort after it was abandoned by the Romans around AD410. At first the buildings were used by the local population and we know that the commandant's bathhouse was used as a butcher's slaughter house (Ferris and Jones 1979). Around AD 550, pagan Anglo Saxons were burying their dead in the ruins of the fort (Webster and Cherry 1979, 236) and some 100 years later many of the buildings were deliberately demolished and the stone taken to build the church at Escomb (Conyers Surtees 1922). During the later Saxon period a small village grew up here which survived until the end of the Middle Ages (Ferris and Jones 1979). The nursing home which currently occupies part of the site, itself an important 17th century building, is on the site of the medieval Binchester manor house owned by Sir Christopher Wren's family.

1.2.3 It is unknown whether the *vicus* at Binchester is typical of fort *vici* on the northern frontier simply because so little is known about the nature, growth and development of such settlements (Hanson 2002). Recently, however, understanding of *vici* has been vastly improved by an extensive series of geophysical surveys on fort vicinities carried out in North Wales (Hopewell 2006) and along Hadrian's Wall (Biggins & Taylor 2006). As Biggins and Taylor have shown in the 13 forts and *vici* they have surveyed along the northern frontier, the traditional view of the *vicus* settlement must be considerably rethought:

"There is a stereotypical image of a vicus. We think of it as a place where artisans, petty traders, prostitutes, and soldiers' families lived: a civilian community economically, and to some degree socially and culturally, dependent on the several hundred soldiers garrisoned in the nearby fort. So all vici should look more or less the same, typically a ribbon development along one or more of the main roads leading out of the fort, where modest structures often doubled as dwellings and workplaces. We are now learning that it was rarely that simple." (Biggins & Taylor 2006)

1.2.4 Indeed, no two *vici* are really the same. Maryport, both a fort and a port, had a medieval-style township. Birdoswald had two *vici* – one which developed organically, and one on the other side of the fort which shows evidence of planning. Castlesteads' civilian settlement resembles a small and unstructured village surrounded by field boundaries of Iron Age farms, possibly modified during the Roman occupation.

1.2.5 Previous investigations within the *vicus* at Binchester were carried out by R.E. Hooppell in the late 19th century. His excavations, which focused on the settlement to the south-east of the fort, uncovered what is presumed to be the main bath house of the fort, situated outside the fortifications and used by members of the garrison and *vicus* residents. Hooppell describes it as:

"A group of buildings situated outside the ramparts were originally baths with the chief feature being a circular caldarium with an internal diameter of c.20ft, heated by a hypocaust. The caldarium is 10ft below the ground surface. Two doorways connected the caldarium with rooms on the north and east, the latter apparently the tepidarium. The building was at one time destroyed and was later restored, probably as a meeting-place. Later this building was destroyed and a rectangular building erected. It lies several feet above the floor of the old circular caldarium." (Hooppell 1891 p.19-21)

1.2.6 In addition to settlement along the line of *Dere Street*, to the south-east of the fort, geophysical survey has suggested the line of another road approaching the fort from the north-east and a possible earlier, larger fort underlying, and extending to the north-east of, the masonry remains.

1.3 Previous Archaeological Background

1.3.1 Since the 19th century, Binchester Fort has been the focus of a large amount of archaeological activity. The following is a summary of previous work undertaken in and around the fort:

- **1878-1880** – Excavations undertaken by J Proud (Proud 1887)
- **1891** – Excavations undertaken by R.E. Hooppell in area of vicus (Hooppell 1891)
- **1937** – Excavation under the auspices of the Durham Excavation Committee, directed by K. A. Steer of Durham University as part of PhD thesis (Steer 1938)
- **1955** – Excavation under the auspices of the Durham Colleges Archaeology Society, directed by B. Dobson and M. Jarrett (Dobson & Jarrett, 1958)
- **1964-1969** – Excavation directed by B Dobson for the University of Durham (Dobson 1970)
- **1969-1972** – Excavations under the auspices of the Bishop Auckland Archaeological Research Group, directed by J.S. Rainbird and W.C. Fawcett (Wilson *et al.* 1973, 277-9)
- **1971** – Excavation funded by the Department of the Environment directed by Rainbird and Fawcett (Webster & Cherry 1972, 205)
- **1976** – Excavation under the auspices of Bowes Museum and Durham County Council, directed by R.F.J. Jones (Jones 1977)
- **1977** – Watching brief to observe a pipe trench excavated through the defences and interior of the fort *via praetoria* recorded evidence for an external *vicus* settlement. Directed by I.M. Ferris and R.F.J. Jones (Ferris & Jones 1978)

- **1977-1980** – Excavation under the auspices of the Bowes Museum, directed by I.M. Ferris & R.F.J. Jones. Funded by Manpower Services Commission and Wear Valley District Commission (Grew *et al.* 1981, 327)

- **1978** – Excavation under the auspices of the Bowes Museum, directed by D. Coggins (Webster and Cherry 1979, 236)

- **1983-1984** – Excavation examining possible route of Roman road, directed by C Wittering and R Walton (Wittering & Walton 1986)

- **1986-1988** – Excavations under the auspices of the Bowes Museum, Durham County Council, and University of Bradford. Directed by R.F.J. Jones and funded by Durham County Council (Frere *et al.* 1987, 317-8)

- **1994** – Watching brief monitoring re-planting of 0.6ha of the fort (Fraser 1994)

- **1996** – Watching brief during groundworks for the construction of enhanced visitor facilities (Speed 1996)

- **1997** – Geophysical survey undertaken as part of an undergraduate dissertation at Durham University (Still 1997)

- **2005** – Evaluation carried out to test the depth of non-archaeological material overlying the Roman stratigraphy within the fort (Graham 2005)

2 AIMS AND OBJECTIVES

2.1 Research Aims

2.1.1 The project aims to carry out a limited programme of non-intrusive investigations and intrusive evaluation over three days. Part of the site under investigation is a scheduled monument of national importance. The remainder has the potential to contain deposits of local, regional and national importance with the ability to answer regional and national research questions about the various periods already known to be represented on this site. The results of this work will also form an important resource for the future management of both the scheduled and non-scheduled site. The following specific research aims were proposed:

Research Aim 1:

2.1.2 Characterise Hoopell's late 19th century excavations. Hooppell's work revealed extensive, well preserved, deep deposits indicating a well-established *vicus* with substantial stone built structures. Modern archaeological techniques and recording methods applied to Hooppell's original trenches should yield information concerning the *vicus* not recorded when the area was originally investigated. This work will also allow a useful comparison between levels of preservation within and outside the area of the Scheduled Monument.

Research Aim 2:

2.1.3 Characterise the extent, form of and relationships between post Roman subsurface archaeological remains within the investigation area.

Research Aim 3:

2.1.4 Characterise the extent, form of and relationships between Roman subsurface archaeological remains within the investigation area. It was intended that a series of double ditches identified in aerial photographs would be investigated through excavation, and it was hoped that these features would allow conclusions to be drawn regarding the development of the fort and *vicus*.

3 METHODS

3.1 Survey

3.1.1. All survey work on the site was carried out using a Trimble Real Time Differential GPS survey system. All Time Team surveys, earthwork and geophysics, are compatible with each other. Surveys are related to the National Grid/Ordnance Datum by local control using the 25" digital map. Digital copies of the survey data will be lodged with the County Sites, Monuments Record.

3.2 Geophysical Survey

3.2.1 The site was investigated using a combination of resistance survey (Geoscan RM15 resistance meter), Ground Penetrating Radar (Pulse EKKO 1000 GPR unit with a 225MHz frequency antenna) and magnetic survey (Bartington Grad 601-2 fluxgate gradiometer). The results were analysed using a mixture of GSB and commercial software.

3.2.3 Ground conditions were good, as all the areas consisted of short pasture. A pylon was situated within Area 2 and has produced a magnetically disturbed halo surrounding it, which will have masked the archaeology. Ferrous anomalies in the gradiometer data are likely to be due to modern iron objects in the field and are not considered to be of archaeological interest.

3.3 Excavation and Recording

3.3.1 Three machine trenches were excavated; one within the Scheduled Monument to examine the *vicus* and the Hooppell excavations (trench 1); one to examine the large rectilinear features identified by geophysical survey and aerial photography (trench 2); and one to examine possible masonry features identified by geophysical survey (trench 3). Although trench 1 was completely excavated by hand, as it lay within the Scheduled Area, a mechanical excavator (JCB or mini-digger) fitted with a toothless bucket, was used to remove the overburden from trenches 2 and 3. All machine work was undertaken under constant archaeological supervision and ceased at the identification of significant archaeological deposits. All trenches were then cleaned by hand and archaeological deposits were excavated. All spoil arising

from the excavations was scanned with a metal-detector by experienced metal detectorists.

3.3.2 The standard Wessex Archaeology recording systems were used and all contexts and features were recorded using standard *pro-forma* record sheets. A record of the full extent in plan of all archaeological deposits encountered was made, usually at a scale of 1:20; sections were drawn as appropriate. The OD height of all principal strata and features was indicated on appropriate plans and sections. A photographic record of the investigations and individual features was also prepared. All trenches were related to the National Grid/ Ordnance Datum by local control.

4 RESULTS

4.1 Introduction

4.1.1 Details of individual excavated contexts and features, the full geophysical report (GSB 2007) and results of artefact analyses are retained in the archive. Brief context descriptions are presented in **Appendix 1**. A summary of the results is presented here.

4.2 Geophysical Survey

4.2.1 The gradiometer results complement the earlier geophysical survey carried out by Geoquest and provide further information on the layout of the *vicus* (including evidence for a large associated boundary ditch – H/O on **Figure 2**). Earlier fort ditches were also mapped along with the course of *Dere Street* to the west of the fort and a further Roman road heading north-east out of the fort (**Figure 2**). Perhaps one of the most interesting finds was a series of mausolea; these appeared in the magnetic results but more clearly in the GPR data, which identified entranceways and internal features (**Figure 3**). Possible industrial activity was noted outside of the north-eastern entrance of the fort.

4.2.2 The results clearly demonstrate the potential geophysics, and in particular GPR, has for providing detailed information about the fort and environs at Binchester.

4.3 The *Vicus* and the Hooppell Excavations

4.3.1 Trench 1 (**Figure 4**) was located approximately 60m to the south-east of the fort, above the suspected remains of part of the *vicus* excavated by Hooppell in the 19th century. This trench was excavated to address research aim 1, to characterise Hooppell's late 19th century excavations and to compare levels of preservation within and outside the area of the Scheduled Monument. Hooppell's work revealed extensive, well-preserved, deep deposits indicating a well-established *vicus* with substantial stone-built structures.

4.3.2 Following the removal of all topsoil by hand, two linear features were identified, an approximately north-west to south-east aligned gravel surface (105) that overlaid the fill of a north-east to south-west aligned linear feature (103). Excavation demonstrated that the linear feature (103) was a backfilled

antiquarian trench; this was over 5m long, 1.20m wide and over 1.20m deep with vertical sides, the trench was not fully excavated due to health and safety considerations. The backfill of the antiquarian trench (104) was removed by hand and the surviving masonry footings in its base and the stratified deposits through which it was cut were recorded in section.

4.3.3 The earliest deposit encountered comprised a very dark grey silty clay (108) with abundant sub-angular stone inclusions, in excess of 0.60m thick. Although no finds were recovered from this deposit, moderate quantities of charcoal within the deposit indicate its anthropogenic origin. Above deposit (108) were the heavily truncated remains of a masonry wall footing (107). A single large block of re-used masonry appears to be all that remains *in situ* of a substantial wall exposed by antiquarian excavations. This seems to represent a small part of the wall foundations that have been robbed elsewhere. Two square recesses cut into upper surface and south-eastern side indicate that this masonry has been re-used from an earlier structure. Partly overlying wall-footing (107) were the remains of a flagstone floor (106) comprising large, worn flagstones laid horizontally. This was over 2.5m long and 0.08m thick and only seen in north-west facing section of antiquarian trench (103). It is probable that this was internal to wall (107) and represents the Romano-British floor level at the time of its construction. Floor (106) overlay deposit (108) and was sealed below deposit (102).

4.3.4 Antiquarian trench (103) was cut through a dark grayish brown silty loam deposit (101 and 102) approximately 0.75m thick. Although unexcavated, a single coin, a *nummus* of the House of Constantine, dated to between AD330 and AD348, was recovered from this deposit. It is uncertain whether deposit (101/102) represents Romano-British activity or a post-Romano-British accumulation, but it is clear that this deposit partly seals the substantial remains of Romano-British masonry buildings and possibly associated occupation deposits.

4.3.5 It appears that the Hooppell excavations in the *vicus* area comprised linear trenches that followed the lines of the masonry walls. Comparison of the masonry remains recorded by Hooppell with those exposed in trench 1 indicates that, in all probability, the masonry remains exposed by the antiquarian excavations were subsequently removed for use elsewhere. Although this has clearly severely damaged, or even completely removed, the walls, it is also clear that internal and external features and deposits will survive between the antiquarian trenches. As no excavation of *in situ* Romano-British deposits was undertaken and the vast majority of the finds recovered from trench 1 were from the backfill of the antiquarian trench and the topsoil, the date of the construction, occupation and abandonment of the building is unknown, although a 2nd to 4th century AD date is likely. Analysis of the 17 coins recovered from this trench suggests that the earlier excavations here may have disturbed a coin hoard assembled in the mid 4th century.

4.4 The Early Fort

4.4.1 Trench 2 (**Figure 5**) was excavated to examine the large rectilinear features identified by geophysical survey (**Figure 2**) and aerial photography. These

were thought to represent the north-eastern defences of a late 1st or early 2nd century timber fort, the predecessor of the masonry fort. In the north-east end of trench 2 was a deep and extensive series of deposits; due to the short duration of the evaluation, these deposits were examined utilising two large sondages. In the south-west of the trench were the partly plough-disturbed remains of a metalled surface and possible occupation deposits to its south-west. The central part of the trench contained the remains of medieval or post-medieval ridge and furrow type feature (238), but was otherwise devoid of archaeological features or deposits.

4.4.2 The two sondages excavated in the north-eastern end of the trench recorded a complex sequence of cuts and deposits that appear to represent at least two phases, and probably more, of large intercutting ditches (203, 205 and 226). The earliest ditches in the excavated sequence, (203) and (205), appear to be broadly contemporaneous and may represent a double ditched defence; a later ditch (226) cut the fills of ditch (205). Ditches (203) and (205) were cut through earlier deposits (218, 213, 222, 223 and 225) that may have been fills of earlier defensive ditches, although this is uncertain as a lack of time prevented further investigation. All of the recognised ditches contained relatively complex sequences of fills. These largely comprised redeposited natural clay intermingled with thin deposits of charcoal rich material. Environmental samples recovered from the ditches produced very few charred plant remains although wood charcoal was recovered from all of the samples, albeit in small quantities. One sample recovered from the outer ditch (226) also produced spherical hammer-scale, suggesting that iron smelting may have taken place in the vicinity.

4.4.3 In the south-west of the trench, sealed below a 0.05m thick subsoil deposit (211) and cut by the probable remains of ridge and furrow (238), was a roughly metalled surface (229/236) comprising tightly packed sub rounded local stones set in a mid brown sandy clay; this was approximately 4m wide and aligned north-west to south-east. To the south-west of surface (229), sealed below a mid greyish brown silty sand deposit, possibly some form of occupation or demolition deposit, was a possible beam slot (219). This was aligned approximately north-west to south-east, parallel to surface (229), and was 0.35m wide and 0.23m deep with vertical sides and a flat base. Immediately to the south-west of beam slot (219) was the possible remains of a clay floor (235) that appeared to overlie deposit (230), through which the beam slot was cut. Finds recovered from the fill of the beam slot (220) and the overlying deposit (212) included samian ware (forms 27, 31, 35 and 37), greywares, orange-buff ware, buff-white ware and a Dressel 20 amphora handle, suggesting a late 1st or 2nd century AD date.

4.4.4 The time constraints of the evaluation did not allow a detailed excavation of all the complex sequence of cuts and deposits in the north-east of the trench; however, it appears that these deposits represent several phases of excavation and backfilling of these large ditches. It is possible that these represent a series of fort defences that may have been deliberately slighted, suggesting that the fort was not in constant use during the late 1st and early 2nd centuries AD. Although partially obscured by later ridge and furrow ploughing, the central

area of the trench appeared largely devoid of Romano-British features and deposits, possibly indicating the location of the ramparts. The metalled surface probably represents an internal circuit path or road, immediately behind the ramparts and the short length of possible beam slot to the south-west of the metalled surface an internal timber structure. It is therefore possible that these features and deposits represent a series of temporary forts, perhaps used for over wintering, that were then slighted to prevent enemy occupation during the campaigning season, only to be re-established in a similar position the following winter.

4.5 The Mausolea

4.5.1 Trench 3 (**Figure 6**) was excavated to examine possible masonry features identified by geophysical survey (**Figure 3**). These proved to be a row of three masonry structures, probably mausolea, two enclosed within a boundary or 'precinct' wall. Removal of the topsoil exposed a subsoil (307, 308, 311, 313 and 320) at approximately the ground level when the structures were in use, as inferred from the level of a probable threshold in the boundary or 'precinct' wall. Apart from the excavation of one inhumation burial within the south-eastern mausoleum and a small sondage to examine the deposits around the central mausoleum, excavation was limited to exposing and cleaning the remains, which were then preserved *in situ*.

4.5.2 Directly below the topsoil in trench 3 were a row of rectilinear masonry structures, aligned approximately north-west to south-east; the two structures to the north-west were surrounded by a masonry wall. The south-eastern structure (323) comprised walls (304) and (310) and footings (303). The footings of the north-east wall (303) comprised a compact layer of medium sized, rounded river cobbles, over 0.80m wide. These were sealed below a mid-dark brown sandy silt with abundant small stone inclusions that probably represent the partial robbing of this wall; all other walls recorded in trench 3 appear to have been robbed or demolished to around the inferred Romano-British ground level, or a little above. The north-east and north-west walls (304 and 310 respectively) comprised dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. These were on average 0.65m wide and survived up to two courses high, to a maximum height of 220mm, forming a structure at least 6m square, and possibly larger. Geophysical survey suggests that structure (323) is approximately 8m square (**Figure 3**).

4.5.3 Within structure (323), cut into a mid-dark reddish brown sandy silty clay deposit (308), was a sub-rectangular grave cut aligned approximately north-east to south-west. This was 2.4m long, 0.70m wide and 0.25m deep with steep sides (314) and a flat base. It contained the poorly preserved skeleton (316) of an adult male aged between 22 and 30 years, in a supine, extended position with the head towards the south-west. Large numbers of iron nails with the backfill (315) indicate that the body was originally deposited in a coffin. Two complete pots (a greyware everted rim jar with lattice decoration, and a Black Burnished ware grooved rim bowl) that were found within the grave were probably originally deposited on top of the coffin. While it is uncertain whether the remains of a pair of hobnailed boots or shoes were

within the coffin or placed on top of it, they were certainly not on the feet of the individual. The backfill of grave (314) was partly overlain by a compact deposit of small subangular stones (301) within a mid-dark brown slightly clayey sandy silt matrix, overlying, or possibly incorporating large, almost flat laid slabs. This appeared approximately central to structure (323) and may represent a surface, the base of some form of structure or it may be related to the later demolition or robbing of the structure, although as this was not excavated this is uncertain: this deposit is probably the cause of the central anomaly within (323) detected by the geophysical survey (**Figure 3**).

4.5.4 The central masonry structure (317) was composed of neatly dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. The building was approximately 3.3m long and 2.7m wide with 0.60m wide walls. Internal and external sondages showed that the dressed walls survived to 3 courses above the foundations (*c*. 0.50m) within the structure while externally the footings were only just below the inferred ground level, suggesting that this may have been a partly subterranean building. The deposit (318) within structure (317), a dark reddish brown clay loam deposit, could represent deliberate backfilling of the building following demolition, or a gradual accumulation of material derived from the topsoil. Deposit (318) was 0.12m thick and overlay a light greyish brown sand deposit (319), over 0.40m thick, from which pottery, animal and human bone was recovered. The human remains all appear to have derived from the same large robust adult male aged between 20 and 40 years. The pottery recovered from this deposit includes a single sherd of samian ware (form 31), greywares, including everted rim jars, and a sherd of Gaulish amphora. Externally the sondage demonstrated that the mid yellowish brown sandy silt subsoil (320) with common angular stone was over 0.80m thick, suggesting that this may represent some form of made-ground or terracing deposit that formed a level surface for the construction of the mausolea. Only a single sherd of greyware pottery was recovered from deposit (320), however surface/cleaning finds recovered from other areas of the same deposit (307 and 308) comprised samian ware (form ?79/80), greywares and Dressel 20 amphora fragments.

4.5.5 The north-western masonry structure (321) comprised a small masonry building, 1.90m long and 1.80m wide, composed of neatly dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments and survived to a maximum height of 0.23m. Apart from cleaning and recording no excavation of this structure was undertaken. Structures (317) and (321) were enclosed within a possible precinct or boundary wall (312). Only parts of the south-eastern and north-eastern walls of (312) were exposed within trench 3, however, geophysical survey suggests that it encloses an area approximately 14m by 11m (**Figure 3**). These comprised dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. This was on average 0.55m wide and survived to a maximum height of 100mm. In the north of the trench wall 312 was bonded to a probable threshold (322) or entrance, comprising a re-used possible tombstone or altar stone/facing and a large, flat sandstone slab. No inscription was visible on the possible tomb or altar stone and a brief examination of its underside showed that this was rough

hewn; any inscription is likely to have been on a separate inset of stone or wood on its upper side.

4.5.6 The association of these three structures with an inhumation burial, in the south-eastern structure, and disarticulated human remains, in the central structure, indicate a funerary function and their form suggests that they are mausolea. They are similar in size, form and construction to late Romano-British mausolea recorded at Poundbury, Dorset (Farwell and Molleson 1993), East London (Barber and Bowsher 2000) and Shorden Brae, Northumberland (Gillam and Daniels 1961). The example at Shorden Brae, Northumberland had a large outer enclosure surrounded by a wall, with a central rectangular building, similar to the two north-western structures at Binchester. Several burials were found both inside and outside the enclosure. The seemingly careful alignment of the three structures is very unusual; however, the alignment does reflect that of a series of possible ditches detected by the geophysical survey (**Figures 2 and 3**) immediately to the south-west. Geophysical survey also suggests the presence of a fourth similar structure to the south-east.

5 FINDS

5.1 Introduction

5.1.1 Finds were recovered from all three of the trenches excavated. The assemblage is almost entirely of Roman date, with a small amount of post-Roman material (mainly from topsoil contexts).

5.1.2 All finds have been quantified by material type within each context, and totals by material type and by trench are presented in **Table 1**. Subsequent to quantification, all finds have been at least visually scanned in order to gain an overall idea of the range of types present, their condition, and their potential date range. Spot dates have been recorded for selected material types as appropriate (pottery, ceramic building material). All finds data are currently held on an Access database.

5.1.3 This section presents an overview of the finds assemblage, on which is based an assessment of the potential of this assemblage to contribute to an understanding of the site in its local and regional context, with particular reference to the character and development of the Roman fort and associated *vicus* and other structures.

5.2 Pottery

5.2.1 The pottery assemblage is almost entirely of Roman date, with a very few medieval and post-medieval sherds. A significant proportion of the Roman assemblage derived from topsoil or other insecurely stratified contexts (49.3% of the total by number of sherds). Condition varies; most sherds have suffered at least some abrasion of edges, and Roman sherds in topsoil contexts are often more noticeably abraded (particularly the colour coated wares). Two complete vessels (one fragmentary) were recovered from the remains of an

inhumation burial in Trench 3, and a further partial vessel from a ditch fill in Trench 2.

Roman

5.2.2 **Table 2** presents a breakdown of the Roman assemblage by ware type. As far as possible these follow fabric types used for the assessment of the 1976-1991 assemblage (Ferris and Jones 1995). Some known ware types have been identified (e.g. BB1, BB2, Nene Valley wares), but much of the coarseware assemblage has been classified by fabric colour.

5.2.3 Amongst the imported wares samian is relatively well represented (10.9% of the total Roman assemblage by number of sherds). Identifiable forms include forms 18/31, 31, 27, 33, 35 and 37, suggesting a 2nd century AD focus. Apart from the five sherds from one context which make up the single example of a form 37 bowl, eight other body sherds are decorated. There is one (illegible) stamp, four sherds are burnt, and one form 33 cup carries a deeply incised graffito (only part of which survives).

5.2.4 Dressel 20 types make up most of the small group of amphorae, and there are examples here of the late, hard fabric, although none from well stratified contexts (BAT AM 2). There are also two possible examples of Gaulish amphorae (GAL AM 1).

5.2.5 Other imports are limited to one mortarium and three colour coated sherds, one roughcast and two (joining) with barbotine decoration.

5.2.6 Thirteen sherds of British mortaria were identified, including four in Nene Valley whiteware. Other sources are unidentified, but the absence of Crambeck products may be noted (possibly due to chronological factors). The Nene Valley production centre also supplied most of the colour coated finewares found on the site.

5.2.7 Amongst the coarsewares, BB1 and BB2 were identified, but the majority of the wares are broadly grouped and probably include several other sources or source areas. Vessel forms consist largely of everted rim jars, but with a relatively high proportion of bowls and dishes also. Flagons are also quite well represented, and there are a few lids. One complete grooved rim bowl and one everted rim jar (complete but in fragments) were found as grave goods within inhumation burial 314. Overall, vessel forms suggest a focus of activity in the 2nd century AD, but the date range obviously extends later, as demonstrated by the presence of dropped flange bowls, and late calcite-gritted wares, although these came almost exclusively from insecurely stratified contexts.

5.2.8 In addition, the recovery of a small fragment from a ceramic crucible, heavily fired, should be noted; this came from antiquarian backfill (104) and is therefore of uncertain date, although likely to be Roman.

Post-Roman

5.2.9 Medieval and post-medieval wares came exclusively from topsoil contexts and antiquarian backfill.

5.3 Ceramic Building Material (CBM)

5.3.1 All of the CBM is of Roman date. No complete items were recovered, and most of the fragments can only be assigned to a category of undiagnostic 'flat fragment'. There are, however, a few examples of imbrex and tegula roof tiles, bricks, and box flue tile.

5.4 Stone

5.4.1 The stone comprises one object (whetstone, undated, from Trench 1 topsoil), and ten fragments of building material. The latter includes one architectural fragment, recovered from antiquarian backfill context (104) (deposited after the removal of wall (107)). The other building material consists of small fragments of sandstone, some visibly micaceous, and including probable roof tile fragments.

5.5 Glass

5.5.1 All of the glass is of Roman date, and includes vessel (21 pieces) and window glass (three pieces), as well as one object. All pieces are small, and few are diagnostic. Colours are mainly pale blue/green or colourless, although there is one pale brown piece, but no other strong colours. There is one handle fragment, one base with moulded concentric rings, and one body fragment with applied trailed decoration; none of these are attributable to specific vessel form, although the base could derive from a cylindrical or prismatic bottle, a type commonly found in the 1st and 2nd centuries AD.

5.5.2 The object is a small circular setting, diameter 9mm, probably from a finger ring, of semi-translucent dark blue with a marvered central spot of ?translucent pale blue glass (topsoil, trench 1).

5.6 Coins

5.6.1 Twenty-one copper alloy coins were recovered. All of these are Roman coins, predominantly of the 4th century AD. In general the coins are in fair condition, although a small number show signs of corrosion. A number also show signs of pre-depositional wear.

5.6.2 Seventeen of these coins were recovered from Trench 1, the trench excavated within the scheduled area. One of these is an illegible *as*/*dupondius*, broadly datable to the 1st to 3rd centuries AD. The remainder date to the 4th century AD. These include six coins minted between AD 317 and 330, eight struck between AD 330 and 348, one minted between AD 348 and 364 and one between AD 364 and 378. Half of the 4th century coins are contemporary copies or probable contemporary copies. Copies such as this are common site finds, and were probably struck to compensate for gaps in supply of coinage to Britain and to supply sufficient small change for the provinces needs throughout the late 3rd and 4th centuries. It is unclear whether these copies were officially sanctioned or not, but they seem to have circulated in the same fashion as officially struck coins.

5.6.3 The proportion of these coins minted between AD 317 and 330 is unusually high for so small an assemblage. These comprise 'Beata Tranquillitas' and 'Victoriae Laetae Princ Perp' issues, three of which were minted in London. Although it is clear that all of the coins from this trench are likely to be residual finds, it seems likely that at least some of the coins belong to a hoard of coins assembled in the middle third of the 4th century AD, and probably dispersed by the earlier excavations on the site. It is not possible to establish how many, if any of the coins minted between AD 330 and 348 belong to this hoard. The latest coin from the trench, a *nummus* struck by Valens, suggests that activity in the area continued into the last third of the 4th century AD.

5.6.4 A single coin, an *as*/*dupondius* of Vespasian was recovered unstratified from Trench 2. This coin was both heavily worn and corroded, and could have been lost some considerable time after it was struck.

5.6.5 The remaining three coins were recovered from Trench 3. All three were recovered from topsoil and subsoil deposits, and can be regarded as unstratified. These include a heavily worn and corroded *as* of Vespasian, and two *nummi* of the House of Constantine. These can provide little information other than confirmation that the site continued in use into the 4th century AD.

5.7 Metalwork

5.7.1 As well as coins, objects of copper alloy, iron and lead were recovered. All iron and copper alloy objects have been X-radiographed, as an aid to identification, and also to act as a basic record. Many of the objects, particularly the ironwork, are heavily corroded.

Copper alloy

5.7.2 Apart from coins, the number of copper alloy objects is relatively restricted. The nine objects recovered include two brooch fragments and a spur fragment. The brooches are both trumpet-headed types, although both are incomplete; only the catchplate and part of the bow survives of one (topsoil, trench 3), and only the head and spring of the second (beam slot 219). Trumpet-headed brooches have a date range of late 1st to 2nd century AD. Both these examples are likely to belong to the standard undecorated type native to the northern military area of Britain, although not exclusively a soldiers' brooch (Bayley and Butcher 2004, 160-4, group A).

5.7.3 The spur is a rivet-spur; approximately half survives, comprising one arm ending on a circular loop with central rivet, with another rivet hole in the centre of the heel-plate, and the base of what was probably a hook above the heel-plate. Spurs are not common finds in Roman contexts, but a similar example came from Corbridge and is dated to the 3rd or 4th century AD (de Shortt 1959, fig. 3, no. 7).

5.7.3 There are also two studs (one large one from topsoil, of uncertain date). The other four objects are either too corroded for identification, or consist of undiagnostic fragments; only one came from a stratified Roman context.

Iron

5.7.4 The overwhelming majority of the ironwork comprises nails (150) and hobnails (145). Of these, 65 nails and 144 hobnails came from grave (314), where they can be considered as coffin furniture and grave goods respectively. Many of the coffin nails retain mineralised wood.

5.7.5 Of the other nails, 44 came from topsoil contexts (and one hobnail), and 21 from the backfill of the antiquarian trench (fill 104), and are thus not certainly dated, although the likelihood is that most if not all are Roman. Other identifiable objects include one possible blade fragment (antiquarian backfill), a large ring (topsoil) and a piece of coiled wire (topsoil). Eleven objects, three from stratified Roman contexts, remain unidentified; some may consist entirely of corrosion products.

Lead

5.7.6 Apart from a seal, from antiquarian backfill (104), all of the lead comprises waste fragments.

5.8 Worked Antler

5.8.1 The single item of worked antler recovered is a small part of a two-piece handle of Roman date, with part of the tang and two iron rivets *in situ*. The object is badly abraded and has adhering iron corrosion, but traces of incised decoration are still visible, as bands of lattice and diagonal lines. This object came from subsoil in Trench 2.

5.9 Human Bone

5.9.1 Human remains were recovered from two mid-late Romano-British contexts (see **Table 3**). Both deposits were found in association with the remains of stone mausolea, one representing the *in situ* remains of a coffined burial (316) and the other redeposited remains apparently disturbed by the insertion of mausoleum wall (317).

Methods

5.9.2 The degree of erosion to the bone was recorded following McKinley (2004, fig. 6). Age was assessed from the stage of tooth and skeletal development (Bass 1987; Beek 1983; Scheuer and Black 2000), and the patterns and degree of age-related changes (Moorees *et al* 1963; Buikstra and Ubelaker 1994). Sex was ascertained from the sexually dimorphic traits of the skeleton (Buikstra and Ubelaker 1994). Measurements were taken on the bone where possible (Brothwell and Zakrzewski 2004) but there was insufficient data to allow the calculation of any skeletal indices. Non-metric traits were recorded (Berry and Berry 1967; Finnegan 1978). Details are held in the project archive.

Results

5.9.3 The bone from the remains of the coffined burial (316) is heavily degraded with the loss of almost all but the tooth crowns. Such destruction is reflective of the acidic nature of the burial environment, the grave having been cut through and backfilled with the silty clay redeposited natural. In contrast, the redeposited bone from (319) is in very good condition, but slightly abraded

with old breaks. This indicates a totally different burial environment and it is even possible that this individual was originally buried above ground within a niche inside an earlier mausoleum (e.g. see Toynbee 1971).

5.9.4 The redeposited remains from (319) all appear to have derived from the same large robust adult male. Although the quantity of surviving bone from (316) is small and of very poor quality, these remains together with observation made by the writer (also the excavator) in the field also indicate an adult male. That both the individuals recovered within the current investigations were adult males is not necessarily reflective of the original occupants of the mausolea as a whole. While such places of burial may be used for members of the same family or a burial club (Toynbee 1971, 73-91), the latter potentially all being of the same sex, it is clear that the remains of most of the occupants – who are likely to have been buried in above-ground niches – have been dispersed, and those that remain are probably far from representative of the whole.

5.9.5 Some pathological lesions were observed in the redeposited remains from (319). The osteophytes are probably representative of the early stages of age-related wear-and-tear. The large destructive lesion observed in the un-numbered lumbar vertebra, which has no associated new bone formation, appears to have resulted from an infection, the most likely diagnosis being tuberculosis (Rogers and Waldron 1995, 89-91). Phthisis or pulmonary tuberculosis was recognised by Greco-Roman medical writers as a serious and common problem, particularly amongst the urban poor (Jackson 1988, 180-1). There are relatively few reported cases from Roman Britain, Roberts and Cox giving a CPR (Crude Prevalence Rate, i.e. number of individuals) of 0.2% (2003, 119).

5.10 Animal Bone

5.10.1 A total of 133 mammal bone fragments was recovered. Of these, 20 came from the topsoil, 66 from the backfill of the antiquarian trench and 41 from context (319) which also contained human bone. Grave backfill (315) produced two pieces of unidentified bone. Conjoining fragments that were demonstrably from the same bone were counted as one bone in order to minimise distortion, and therefore specimen counts (NISP) given here may differ from the absolute raw fragment counts in **Table 1**.

5.10.2 The overall condition of the bone is poor with many bones flaking and displaying cracks. The proportion of loose teeth (9%) combined with the fact that some contexts only yielded a very fragmented cattle tooth, underlines the poor preservation. No articulating bones or loose but matching epiphyses were seen. Eight bone fragments were burnt.

5.10.3 Of the 54 fragments identified to species, 44 belonged to cattle, six to sheep/goat, two horse, one pig and one dog. As it is likely that the bone assemblage includes bones from a wide date range, no conclusions can be drawn regarding species proportions.

5.10.4 Of the identifable bones, ten are ageable and six are measurable. Antiquarian backfill (104) contained the bones of subadult and mature cattle, whereas

context (319) contained the mandible of a lamb. A cattle lower third molar from the same context was abnormally worn indicating malocclusion with the maxilla.

Butchery

5.10.5 The assemblage contained two bones with butchery marks. Backfill (104) produced a cattle scapula with chop marks just below the *spina* typical of filleting. This context was dominated by cattle scapulae which represent good meat cuts.

5.11 Other Finds

5.11.1 Other finds comprise very small quantities of fired clay (some of which may in fact be abraded CBM), clay pipe (stems), burnt (unworked) flint, and metalworking slag. Apart from the post-medieval clay pipe (from topsoil contexts), none of these finds are datable, although it is presumed that most if not all are Romano-British.

5.12 Potential

5.12.1 The evaluation has produced a relatively small finds assemblage which augments the larger assemblage already recovered from the site, for which a programme of analysis and publication is currently ongoing. There are elements of interest amongst the assemblage, in particular the human remains and artefacts recovered from the single excavated inhumation burial. In general, however, this assemblage replicates the range of artefactual evidence already known from the site. A significant proportion of the assemblage, particularly the pottery and metalwork, came from topsoil or other insecurely stratified contexts.

5.12.2 Chronological evidence from the evaluation (pottery, brooches) suggests that activity on this part of the site was concentrated in the 2nd and 3rd centuries AD, with little material which could be regarded as either earlier or later than this date range. However, the coin assemblage implies the presence in the area of a disturbed coin hoard deposited in the 4th century AD.

5.12.3 The range of material culture is relatively limited; only pottery occurred in any quantity, and provides some evidence for sources of supply, although the limited amount of pottery deriving from well stratified contexts would prevent any significant analysis of changing sources through time. There is little structural evidence (stone and ceramic building material), or evidence for lifestyle (personal items, vessel glass), craft/industrial activities (slag, crucible) or economy (animal bone).

6 PALAEO-ENVIRONMENTAL EVIDENCE

6.1 Introduction

6.1.1 Six samples were taken from the excavations at Binchester. Five came from features within Trench 2; three from the fills of the inner fort ditch (205), and two from dumped deposits within the outer ditch (226). The remaining sample

came from a pottery vessel fill within grave (314). The samples were processed for the recovery of charcoal and charred plant remains.

6.1.2 Bulk samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh, residues fractionated into 5.6 mm, 2mm and 1mm fractions and dried. The coarse fractions (>5.6 mm) were sorted, weighed and discarded. Flots were scanned under a x10 – x40 stereo-binocular microscope and the presence of charred remains quantified (**Table 4**) to record the preservation and nature of the charred plant and wood charcoal remains. Preliminary identifications of dominant or important taxa are noted below, following the nomenclature of Stace (1997).

6.1.3 The flots varied in size and the general state of preservation. Generally preservation appeared better in the outer fort ditch (226) where there was less rooting presumably associated with better sealed deposits and less disturbance.

6.1.4 The flots and residues were also tested for hammer-scale and those from the outer fort ditch were noted to have amounts of spherical hammer-scale and can be associated with the smelting of iron ore.

6.2 Charred plant remains

6.2.1 Only two samples, both from the inner ditch (205), contained any cereal remains and even here there were very few. That from context (204), around pottery vessel Object Number 37, yielded a single grain of spelt wheat (*Triticum spelta*) and a single possible, tentative glume base, while that from context (206) produced a possible degraded grain of barley (*Hordeum vulgare sl*).

6.2.2 Weed seeds were present in several of the samples. Only in the inner fort ditch (205) are they likely, by association with cereal remains, to represent arable weeds and even here they may rather come from the burning of local vegetation. Single seeds of oats (*Avena* sp.) or brome grass (*Bromus* sp.), ribwort plantain (*Plantago lanceolata*), clover (*Trifolium* sp.) and chickweed (*Stellaria media*) came from ditch (205), context (204), while that from (206) produced a single seeds of spikerush (*Eleocharis palustris*).

6.2.3 The seeds associated with the outer-fort ditch (226) are much more likely to derive from the burning of the local vegetation, and included species associated equally with arable, rough ground and hedgerows, including cleavers (*Galium aparine*), docks (*Rumex* sp.) and hemp-nettle (*Galeopsis* sp.).

6.2.4 The grave fill (314) contained a single tuber of false-oat grass (*Arrhenatherum elatius* var. *bulbosum*) and a possible tuber of pignut (*Conopodium majus*). Single seeds of brome grass (*Bromus* sp.) and chickweed (*Stellaria media*) were also recovered from this fill. Several fragments of charred parenchyma (soft plant tissue) were also found within this context including possible fragments of fruit.

6.3 Wood Charcoal

6.3.1 Wood charcoal was noted from the flots of the bulk samples and is recorded in **Table 4**. Several fragments of twig wood, including thorns of hawthorn (*Crataegus monogyna*) or sloe (*Prunus spinosa*), and buds, came from ditch (205), contexts (206) and (207). These samples however contained little wood charcoal.

6.3.2 Those from the outer ditch (226), associated with spherical hammer-scale, were much richer in wood charcoal, which comprised almost entirely of narrow woody plant stems and roots. Given that these same samples contained occasional leaf-shoots, stems and flowers of heather or heath (Ericaceae), particularly within context (208), it is quite possible that the stems and roots come from a similar source. Some of the stems compare well with common heather (*Calluna vulgaris*), although it is probable that *Erica* sp. might also be represented. It might be noted that some ring-porous charcoal of possible oak (*Quercus* sp.) was also seen in these samples and that twigs of tree species may be present.

6.3.3 While other fort sites in the area have produced high numbers of charred cereal grains these were predominately associated with granaries (cf. van der Veen 1992). It might also be noted that these deposits were grain rather than glume rich indicating that grain may have been stored full-processed. As it is often charring of waste from the dehusking of cereals that provides most evidence for cereals, such storage practices may explain the general absence of information.

6.4 Potential

6.4.1 The charred plant remains have a limited potential beyond informing on the local vegetation. Together with the charcoal those from the outer fort ditch (226) have some potential to examine the use of various species within industrial activities such as iron smelting.

7 DISCUSSION

7.1.1 In the small area excavated within the Scheduled Monument, it appears that the antiquarian excavation of the *vicus* comprised a long trench along the south-western side of *Dere Street* with perpendicular trenches following masonry walls. It is clear that, in this area at least, the easily obtainable masonry remains exposed by the antiquarian trenches were subsequently removed. Although severely damaged by this, significant stratified remains, over 1m thick, survive between the 19th century trenches.

7.1.2 Although time constraints did not allow detailed excavation of the large ditch system identified by geophysical survey and aerial photography, it appears that these deposits represent several phases of excavation and backfilling of a series of large ditches, probably a series of fort defences that may have been deliberately slighted, suggesting that the fort was not in constant use during the late 1st and early 2nd centuries AD. Although partially obscured by later

ridge and furrow ploughing, the central area of trench 2 appeared largely devoid of Romano-British features and deposits, possibly indicating the location of the ramparts. A metalled surface in the south-west of the trench probably represents an internal circuit path or road, immediately behind the ramparts and a short length of possible beam slot to the south-west of the metalled surface an internal timber structure. These features and deposits probably represent a series of temporary or seasonal forts, although further excavation of the complex stratigraphic sequence and detailed environmental sampling of suitable deposits would be needed to examine this conjecture in more detail.

7.1.3 Romano-British mausolea are very rare, with only around 30 known examples, the majority of which are in the south of England. Evidence of an enclosure wall surrounding a mausoleum is limited to one other instance, at Shorden Brae, Nothumberland (Gillam and Daniels 1961) where the monument, which was approximately 10m square, was centrally placed within a walled enclosure, 41m square. The group of mausolea at Binchester are therefore of national importance, if only because of their rarity.

7.1.4 The Time Team evaluation has demonstrated the extent, character and condition of the Romano-British remains and has shown that substantial and important stratified remains survive below ground. The remains of the early timber fort, or forts, lie below and to the north-east of the later masonry fort; the *vicus*, to the south-east of the fort appears to comprise a ribbon development along the sides of *Dere Street* and there is a cemetery, represented by three mausolea, to the east of the fort and north-east of the *vicus*. Geophysical survey has demonstrated the potential geophysics, and in particular ground penetrating radar, has for providing detailed information about the fort and environs at Binchester. Geophysical survey has also provided further information on the layout of the *vicus* (including evidence for a large associated boundary ditch), mapped the earlier fort ditches along with the course of *Dere Street* to the west of the fort and a further Roman road heading north-east out of the fort.

7.1.5 The North-East Regional Research Framework for the Historic Environment (Petts and Gerrard 2006) highlights several research themes that could be addressed by further work at Binchester. These comprise:

- **Fort and *vicus*** –"*A single research project might usefully encompass both a fort and its attached vicus and so lead to a greatly improved understanding of the integration between these two site types. Of particular value would be a comparison of the chronologies of fort and vicus. Such a project could include extensive geophysical survey with carefully targeted excavation. A large-scale research-driven project such as this would require considerable resources, probably only available via academic funding bodies, such as the AHRC. An alternative is to explore the possibility of packages based on regeneration funding; much could be learned about fort/vicus relationships through relatively modest tourist-development based projects at Lanchester or Binchester, for example."*

- **Roman Cemeteries** –"*Very little is known about Roman cemeteries and burial practices in the North-East. Few sites have been excavated, with little human skeletal material recovered. Although it is likely that most civilian and military sites would have had their own burial grounds, their precise location is rarely known. There is a need for increased research into this important aspect of Roman life; extensive excavation of a cemetery would be extremely valuable."*

- **Burial** –"*The study of burial rites has been hampered by the absence of any extensive excavation on a Roman period cemetery. The little evidence that does survive (mostly epigraphic) is mainly related to military burial; nothing is known of civilian practices, particularly away from vici.*

  In addition to simply identifying sites, it is important to have large-scale cemetery excavations. Excavation of burial sites within the region has been piecemeal, and it is only by exploring rites and practices that many questions can be answered. What was the effect of change of military units on burial practices? What evidence is there for ethnic grouping in burial practice. How were graves marked before and after the use of gravestones?

  Further Roman period skeletal populations should be recovered. Many basic questions are still unanswered relating to stature, age and pathologies. There is also scope for exploiting the potential of isotopic analysis on skeletal material, which may identify the geographical origin and biographies of buried communities.

  If burial sites related to known military or civilian sites are identified, the state and extent of preservation of the burials should be evaluated and, where necessary, protection extended to cover the burial ground."

- **Environmental** –*"The environmental evidence is variable. The lack of deep deposits has led to a limited survival of insect remains, though the waterlogged deposits at Vindolanda must surely have potential. Although some plant macrofossils survive from civilian sites there are, surprisingly, few assemblages from military sites, and those that do exist belong to forts from the Wall itself, with nothing surviving from forts to the north or south. In contrast, there are several faunal assemblages from military sites, but little from civilian sites."*

- **Education** –"*New results and perceptions should feed through into onsite interpretation and popular publications, as well as into more academic outlets. Away from the Wall the public interpretation of the standing remains is more limited. Binchester Roman fort is open to the public, and Lanchester has an active local history group. It is important to harness local and regional interest in these forts because there is particular potential for community involvement in field survey (field-walking and shovel pitting) of their immediate hinterlands."*

8 RECOMMENDATIONS

8.1.1 A short article, probably between 2000-3000 words with two or three supporting illustrations, based on the results, finds, discussion and figures in this assessment report, in the *Durham Archaeological Journal* is suggested as an adequate level of publication given the results from this project. This would comprise a brief introduction detailing the circumstances of the project and the aims and objectives; a results section detailing the structural remains recorded, with finds information integrated into the text as appropriate; and a brief discussion of the results, with reference to the original project aims and objectives.

8.1.2 The results of the Time Team project can be incorporated in any ongoing programme of research at Binchester.

9 ARCHIVE

9.1.1 The archive, which includes all artefacts, written, drawn and photographic records relating directly to the investigation is undertaken, is currently held at the offices of Wessex archaeology under the site code BFD07 and Wessex Archaeology project no. 65302. The paper archive is contained in one lever arch file. In due course, the archive will be transferred to the Bowes Museum, Barnard Castle.

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Table 1: Finds totals by material type and by trench (number / weight in grammes)

Material	Tr 1	Tr 2	Tr 3	TOTAL
Pottery	176/4055	306/6768	295/7019	**672/15,044**
Romano-British	*164/3986*	*306/6768*	*190/4221*	***660/14,975***
Post-Roman	*12/69*	-	-	***12/69***
Ceramic Building Material	23/2035	5/243	89/7581	**117/9859**
Fired Clay	-	4/26	3/152	**7/178**
Clay Pipe	2/5	-	1/1	**3/6**
Stone	6/6384	-	5/135	**11/6519**
Burnt Flint	1/14	-	-	**1/14**
Glass	4/3	12/41	9/10	**25/54**
Slag	8g	112g	3g	**123g**
Metalwork (no. objects)	93	31	244	**368**
Coins	*17*	*1*	*3*	***21***
Copper Alloy	*4*	*3*	*2*	***9***
Iron	*64*	*18*	*230*	***312***
Lead	*8*	*9*	*9*	***26***
Worked Antler (no. objects)	-	1	-	**1**
Human Bone	-	-	1 indiv. 46 redep.	**1 indiv.** **46 redep.**
Animal Bone	98/719	46/11	123/676	**267/1406**

Table 2: Pottery totals by ware type

BROAD PERIOD	Ware	No. sherds	Weight (g)
	Samian	72	595
	Amphora	42	5205
ROMANO-BRITISH	Nene Valley colour coat	13	96
	Other import	3	7
	BB1	35	687
	BB2	4	1210
	Buff-white ware	36	323
	Calcareous ware	25	449
	Greyware	274	3780
	Mica-dusted ware	1	11
	Misc mortaria	10	771
	Whiteware	5	53
	Nene Valley mortaria	4	196
	Orange sandy ware	16	151
	Orange-buff ware	112	1385
	Sandy ware	2	31
	Misc colour coated wares	5	15
	Crucible	1	10
	sub-total Romano-British	*660*	*14,975*
POST-ROMAN	Medieval coarseware	2	14
	Modern wares	9	46
	Post-medieval redware	1	9
	sub-total post-Roman	*12*	*69*
	OVERALL TOTAL	**672**	**15,044**

Table 3: Summary of results from analysis of human bone

context	cut	deposit type	quantification	age/sex	pathology
316	314	coffined burial	c. 2% s.a.l.	adult *c*. 22-30 yr. male	
319	-	redeposited	c. 11%	adult *c*. 20-40 yr. male	osteophytes – left distal radius; destructive lesion (?TB) – lumbar

KEY: s. – skull; a. – axial skeleton; l. – lower limb (denotes skeletal areas represented where all four are not present)

Table 4: Assessment of the charred plant remains and charcoal

				Flot						
Feature type/no	Context	Sample	size litres	flot size ml	Grain	Chaff	Other	Seeds	Charcoal >4/2mm	Other
Trench 2		Inner Fort Ditch 205								
Around Pot obj.37	204	1	10	45 [20]	C	C	C(h)	Spelt grain; hazelnut, Plantago, Stellaria Avena, Trifolium,	5/3ml	-
Pot obj.37	206	2	10	40 [10]	C	-	C	?barley, Eleocharis hawthorn/sloe thorn	2/4ml	-
Secondary fill below obj.37	207	3	5	20 [40]	-	-	-	hawthorn/sloe thorn	1/1ml	-
Trench 2		Outer Fort Ditch 226								
Secondary fill dumped hearth debris?	210	4	10	300 [5]	-	-	A*	Seeds of Galium, Rumex and Galeopsis v. common.	50/50ml	-
Secondary fill dumped deposit	208	5	10	200 [5]	-	-	A	Galium, Rumex, Trifolium, Poaceae small Calluna/Erica,	30/30ml	-
Trench 3										
Grave 314 Pot fill obj.66	315	8	4	40 [40]	-	-	C	Bromus, Stellaria, Arrhenatherum tuber pignut? parenchyma	4/5ml	-

KEY: A*** = exceptional, A** = 100+, A* = 30- 99, A = ≥10 items, B = 9 - 5 items, C = < 5 items,

Appendix 1: Catalogue of trench descriptions

TRENCH - 1		**NGR:** 421097 531225
Dimensions – 5m x 3m		**Ground Level –** 97.05-97.14m OD
Context No.	**Description**	**Depth**
100	Mid greyish brown sandy loam topsoil with sparse small pebble inclusions.	0-0.25m
101	Dark greyish brown silty loam, possible dark earth type deposit. Overlies Romano-British building remains, cut by antiquarian trench 103. Same as 102.	0.25-0.80m
102	Dark greyish brown silty loam, possible dark earth type deposit. Overlies Romano-British building remains, cut by antiquarian trench 103. Same as 101.	0.25-0.85m
103	Antiquarian excavation trench, 5m+ long, approximately 1.2m wide and over 1.2m deep with vertical sides. Not fully excavated. Filled with 104.	0.25-1.45m+
104	Mid brownish grey sandy silty loam with common large stone inclusions. Backfill of antiquarian trench 103. Deposited following the removal of most of wall 107. Not fully excavated.	0.25-1.45m+
105	Mid greyish brown silty clay with c. 80% small, sub-angular pebble inclusions. Probable 19th century garden feature or pathway, 3m+ long, 1.2m+ wide and 0.10m thick. Overlies backfill (104) of antiquarian trench 103.	0.25-0.35m
106	Flagstone floor comprising large, worn flagstones laid horizontally. Over 2.5m long and 0.08m thick. Only seen in north facing section of antiquarian trench 103. Probably internal to wall 107. Overlies deposit 108, sealed below deposit 102.	0.85-0.93m
107	A single large block of re-used masonry appears to be all that remains in situ of a substantial wall exposed by antiquarian excavations. Appears to represent a small part of the wall foundations that have been robbed elsewhere. Two square recess cut into upper surface and eastern side indicate that this masonry has been re-used from an earlier structure.	0.90-1.25m+
108	Very dark grey silty clay with abundant sub-angular stone inclusions. Sealed below floor 106 and below deposit 101. Not bottomed. Only seen in sections of antiquarian trench 103.	0.90-1.50m+

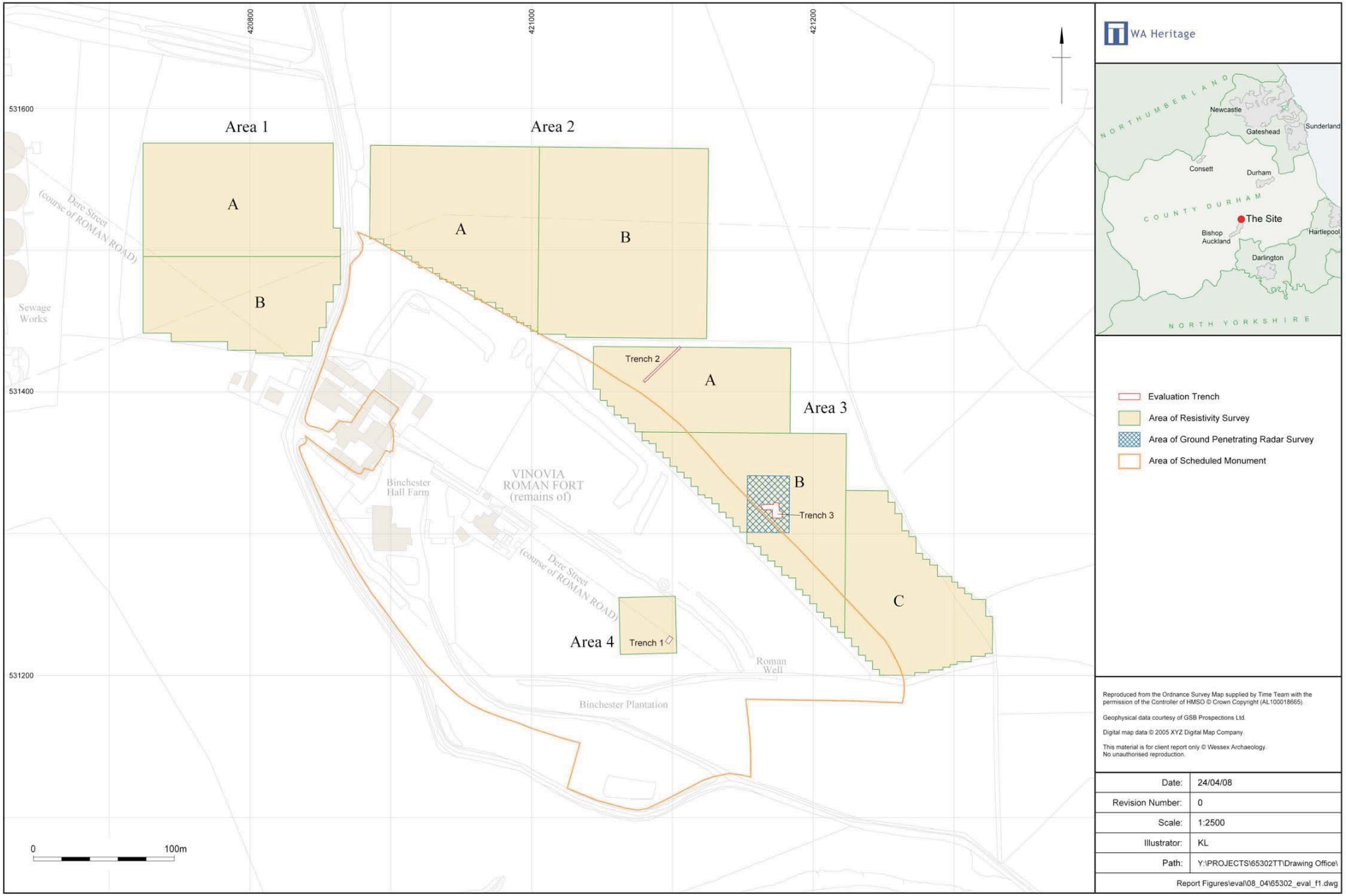
TRENCH – 2		**NGR:** 421090 531420
Dimensions – 41m x 1.5m		**Ground Level –** 90.90-92.70m OD
Context No.	**Description**	**Depth**
200	Mid greyish brown sandy loam topsoil with sparse – moderate sub rounded pebble inclusions.	0-0.26m
201	Mid greyish brown sandy silt subsoil in north end of trench. Same as 211.	0.26-0.49m
202	Pale yellowish brown silty clay, upper fill of ditch 203.	0.49-0.75m
203	Cut of ditch aligned approximately north-west to south-east, 5m wide and 0.90m deep with moderately steep sides and a flat base. Filled with 202, 214, 216 and 217, cuts earlier deposit 213. Probably re-cutting the approximate line of an earlier ditch.	0.49-1.39m
204	Mid greyish brown sandy clay fill of ditch 205. Contained a partial pot (object 37) and common charcoal and mortar flecks. Sampled for charcoal and plant macrofossils (sample 1).	0.75-1.05m
205	Large, irregular ditch cut aligned approximately north-west to south-east, 2.4m+ wide and 1.20m deep with steep, irregular sides and a flat base. Filled with 204, 206, 207, 231, 232, 233 and 234. Truncated by later ditch 226 and probably cuts earlier ditch.	0.35-1.55m

206	Mid yellowish grey sandy silt fill of pot 37 (in 204) with common charcoal inclusions. Sampled (100%) for charcoal and plant macrofossils (sample 2).	0.95-1.00m
207	Mid greyish brown silty sand fill of ditch 205 with common charcoal inclusions. Sampled for charcoal and plant macrofossils (sample 3).	1.00-1.20m
208	Mid greyish brown sandy clay fill of ditch 226. Sampled for charcoal and plant macrofossils (sample 5)	0.95-1.25m
209	Mid-light greyish brown sandy clay loam with common charcoal inclusions. Fill of ditch 226.	0.95-1.10m
210	Very dark grey-black silty clay with abundant charcoal inclusions, fill of ditch 226. Lens of burnt material within ditch 226. Sampled for charcoal and plant macrofossils (sample 4).	1.15-1.25m
211	Mid greyish brown sandy silt subsoil in south end of trench. Same as 201.	0.26-0.30m
212	Mid greyish brown silty sand deposit confined to the south of surface 229. Possible occupation deposit. Seals possible beam slot 219.	0.30-0.38m
213	Yellowish grey sandy clay with sparse charcoal inclusions. Possible re-deposited bank/rampart material or the fill of an earlier ditch. Only seen in box section. Cut by ditches 203 and 205.	0.65-0.90m
214	Mid brown silty sand with sparse charcoal inclusions. Basal fill of ditch 203.	0.75-1.39m
215	Greyish yellow slightly clayey sand. Probable natural substrata.	1.39m+
216	Pale yellowish grey sandy clay with sparse charcoal inclusions. Fill of ditch 203.	0.90-1.00m
217	Mid greyish brown sandy silt with sparse charcoal inclusions. Fill of ditch 203.	0.75-0.90m
218	Mid greyish brown silty sand with sparse charcoal inclusions. Possible re-deposited bank/rampart material or the fill of an earlier ditch. Only seen in box section. Cut by ditch 203, underlies 213.	0.90-1.35m+
219	Possible beam slot aligned approximately north-west to south-east, 0.35m wide and 0.23m deep with vertical sides and a flat base. Fill with 220 and cuts 230.	0.38-0.61m
220	Mid brown sandy silt with common charcoal inclusions, fill of beam slot 219.	0.38-0.61m
221	Dark greyish brown sandy silt with sparse charcoal inclusions, upper fill of ditch 226.	0.35-0.95m
222	Mid brown silty sand with sparse charcoal inclusions. Possible re-deposited bank/rampart material or the fill of an earlier ditch. Only seen in box section. Cut by ditch 226, overlies natural sand.	1.05-1.25m
223	Mid –light greyish brown sandy clay. Possible re-deposited bank/rampart material or the fill of an earlier ditch. Only seen in box section. Cut by ditch 226, overlies 222.	0.85-1.05m
225	Mid -dark greyish brown sandy clay. Possible re-deposited bank/rampart material or the fill of an earlier ditch. Only seen in box section Cut by ditch 226, overlies 223.	0.35-0.85m
226	Large ditch aligned approximately north-west to south-east, 2.60m wide and 1.10m deep with steep, irregular sides and a flat base. Filled with 208, 209, 210, 221, 227 and 228. Cuts fills of earlier ditch 205 and earlier deposits 222, 223 and 225.	0.36-1.46m
227	Mid yellowish brown sandy clay, basal fill of ditch 226.	1.28-1.46m
228	Pale yellowish brown silty clay fill of ditch 226.	0.80-1.05m
229	Metalled surface comprising tightly packed sub rounded local stones set in a mid brown sandy clay, approximately 4m wide aligned north-west to south-east. Not excavated.	0.35m+
230	Mid yellowish brown sandy silt deposit to south of surface 229. Cut by beam slot 219. Not excavated.	0.38m+
231	Mid brown sandy silt, upper fill of ditch 205.	0.35-0.62m

232	Mid-dark greyish brown sandy silt fill of ditch 205.	0.62-0.75m
233	Mid brownish grey silty sand, basal fill of ditch 205.	1.20-1.55m
234	Light – mid greyish brown silty sand fill of ditch 205.	0.60-0.80m
235	Light greyish yellow silty clay to south of beam slot 219. Possible clay floor. Not excavated.	0.38m+
236	Plough disturbed remains of metalled surface 229. Not excavated.	0.35m+
237	Dark greyish brown silty loam fill of furrow 238. Not excavated.	0.35m+
238	Probable remains of medieval or post-medieval ridge and furrow, *c*. 1.7m wide, aligned approximately north-south and runs obliquely across the trench. Filled with 237. Not excavated.	0.35m+

TRENCH - 3	**NGR:** 421175 531315	
Dimensions – 15m x 11.5m	**Ground Level** –91.90-92.40m OD	
Context No.	**Description**	**Depth**
300	Mid greyish brown sandy loam topsoil with common small stone inclusions. Varied between 0.25 and 0.48m in depth.	0-0.25m
301	Compact deposit of small subangular stone within a mid-dark brown slightly clayey sandy silt matrix, overlying, or possibly incorporating large, almost flat laid slabs. Approximately central to building 323, possibly a surface or the base of some sort of structure. Not excavated.	0.25m+
302	Mid-dark brown sandy silt with abundant small stone inclusions. Overlay wall footing 303 and probably represents the backfill of a wall robbing trench that removed much of the north-east wall of building 323, although no clear cut was distinguished.	0.25-0.55m
303	Compact layer of medium sized, rounded river cobbles, 0.80m+ wide, probably the foundations of the north-east wall of building 323. Underlies possible robbing deposit 302. Not excavated.	0.58m+
304	The remains of the north-eastern wall of building 323 composed of dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. Up to two courses survive, to a maximum height of 220mm. On average 650mm wide. Not excavated.	0.25-0.47m+
305	Deposit of medium and small yellow sandstone fragments in the east of building 323. Probably the debris resulting from the robbing of wall 304. Not excavated.	0.25m+
306	Mid orange brown silty sand with common small stone inclusions, sealed below deposit 302. Probably represents the lower fill of a wall robbing trench that removed much of the north-east wall of building 323, although no clear cut was distinguished.	0.55-0.58m
307	Mid-dark reddish brown sandy silty clay deposit to the north-east of building 323. Same as 311, 313 and 320. Not excavated.	0.25m+
308	Mid-dark reddish brown sandy silty clay deposit within building 323, cut by grave 314. Not excavated.	0.25m+
309	Mid yellowish brown silty sand below 303 and 306. Not excavated.	0.58m+
310	The north-western wall of building 323 composed of dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. Up to two courses survive, to a maximum height of 100mm. On average 600mm wide. Not excavated.	0.25-0.35m+
311	Mid-dark reddish brown sandy silty clay deposit between walls 310 and 312. Same as 307, 313 and 320. Not excavated.	0.25m+
312	Probable boundary wall surrounding buildings 317 and 321, only parts of the south-eastern and north-eastern walls exposed. Comprises of dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. On average 550mm wide and surviving to a maximum height of 100mm. Bonded to probable threshold 322.	0.25-0.35m+

313	Mid-dark reddish brown sandy silty clay deposit to the west of wall 312. Same as 307, 311 and 320. Not excavated.	0.25m+
314	Sub-rectangular grave cut aligned approximately west-east, 2.4m long, 0.70m wide and 0.25m deep with steep sides and a flat base. Contained skeleton 316, backfill 315 and 2 complete pots (Objects 37 and 66) that were probably originally deposited on top of the coffin.	0.25-0.50m
315	Mid-dark greyish brown silty sand backfill of grave 314. Contained many nails which probably represent the remains of a coffin.	0.25-0.50m
316	Poorly preserved skeleton in grave 314. Lying in a supine, extended position with the head to the west.	0.25-0.50m
317	Masonry walls of possible mausoleum composed of neatly dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. The building was approximately 3.3m long and 2.7m wide with 600mm wide walls surviving up to 500mm high. A sondage within the building showed that the walls survived to three courses above the foundations, suggesting that this was a partly subterranean building.	0.25-0.75m+
318	Dark reddish brown clay loam deposit within building 317. Could represent deliberate backfilling of the building following demolition, or a gradual accumulation of material derived from the topsoil. Overlies deposit 319.	0.25-0.37m
319	Light greyish brown sand deposit within building 317 with abundant animal and human bone inclusions. Not fully excavated. Sealed below 318.	0.37-0.75m+
320	Mid-dark reddish brown sandy silty clay deposit to the west of wall 312. Same as 307, 311 and 313. Examined in a sondage adjacent to building 317 but not bottomed.	0.25-1.03m+
321	Small masonry building to the west of building 317, 1.90m long and 1.80m wide, composed of neatly dressed yellow sandstone blocks bonded by pale yellowish grey clay with a core of small angular sandstone fragments. Survived to a maximum height of 230mm. Not excavated.	0.25-0.48m+
322	Possible threshold or doorway in wall 312 comprising a re-used possible tombstone or altar and a large, flat sandstone slab.	0.48m+
323	Group number for probable mausoleum comprised of walls 304 and 310 and footings 303.	0.25-0.58m+
324	Mid-dark greyish brown sandy loam deposit with common charcoal inclusions interior to building 321. Not excavated.	0.48m+



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Site and trench location plan, showing scheduled area

Figure 1

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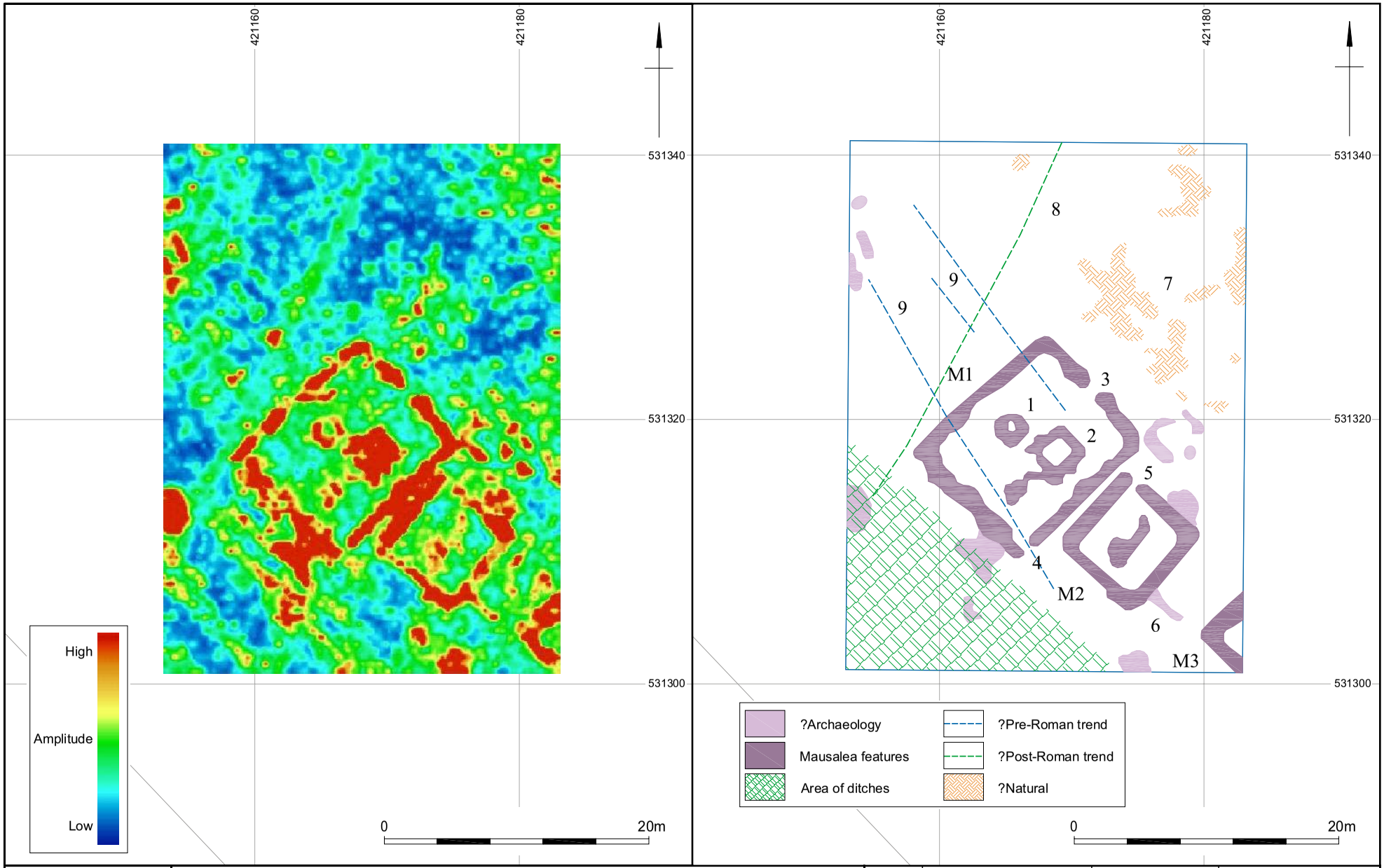
Geophysical survey results interpretation with trench location

Figure 2



Wessex Archaeology

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Ground Penetating Radar results and interpretation

Figure 3

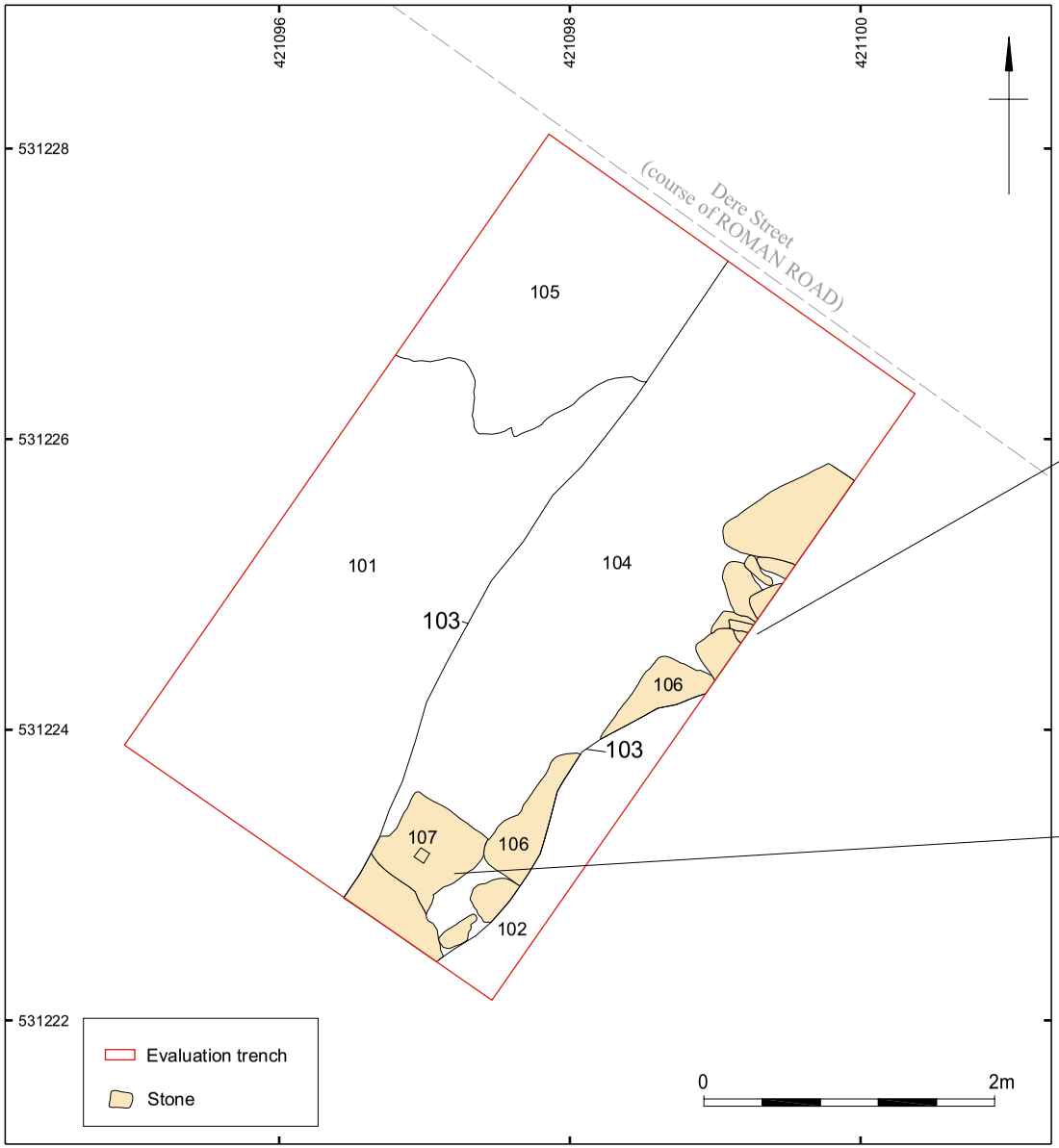

Plate 1: View from the west

Plate 2: Footing 107 and floor 106 *in situ*

Wessex Archaeology

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Trench 1

Figure 4

Plate 3: View from the north

Plate 4: View from the south

Wessex Archaeology

Evaluation trench

Stone

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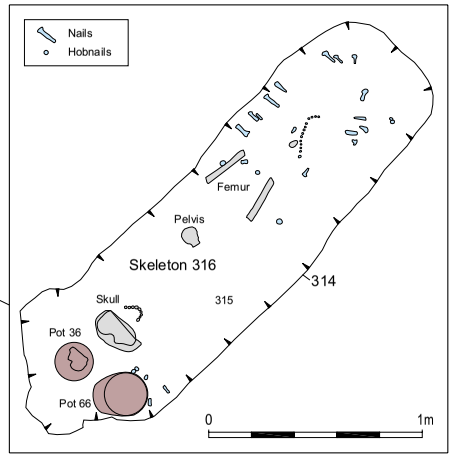
Trench 2

Figure 5

Plate 5: Threshold in enclosure wall

Plate 6: View from the north



Grave 314 plan

Plate 7: Grave 314 view from northeast

Evaluation trench
Stone
Wall

Wessex Archaeology

Date:	09/05/08	Revision Number:	0
Scale:	Trench 1:80 & Grave 1:25	Illustrator:	KL
Path:	Y:\PROJECTS\65302TT\Drawing Office\Report Figures\eval\08_04\65302_eval_f2.dwg		

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