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SUMMARY

The excavation at Ludgate Hill, Burgh-by-Sands demonstrated that Second Century A.D. and possibly later Roman settlement occurred, a continuation of the same occupation identified in 2002 at an adjacent site.

Three structural phases probably existed:

1. Rectilinear spatial organisation
2. Possible ditches forming an entry
3. Curvilinear gully and demise

Domestic occupation is uncertain due in part to a paucity of cultural artefacts. This tentatively could suggest that an agricultural function may have taken place perhaps associated with stockholding or husbandry.

Possibly, this settlement served in part, as a facility or transit station for the dispersal of livestock amongst Roman garrisons along Hadrian's Wall.

1. INTRODUCTION

1.1 Project Origins

Cumbria County Council's Historic Environment Service (CCCHES) was consulted by Carlisle City Council regarding planning permission for a small parcel of land at Ludgate Hill, Burgh-by-Sands, (figure 1).

The planning application number was 1/10/1018.

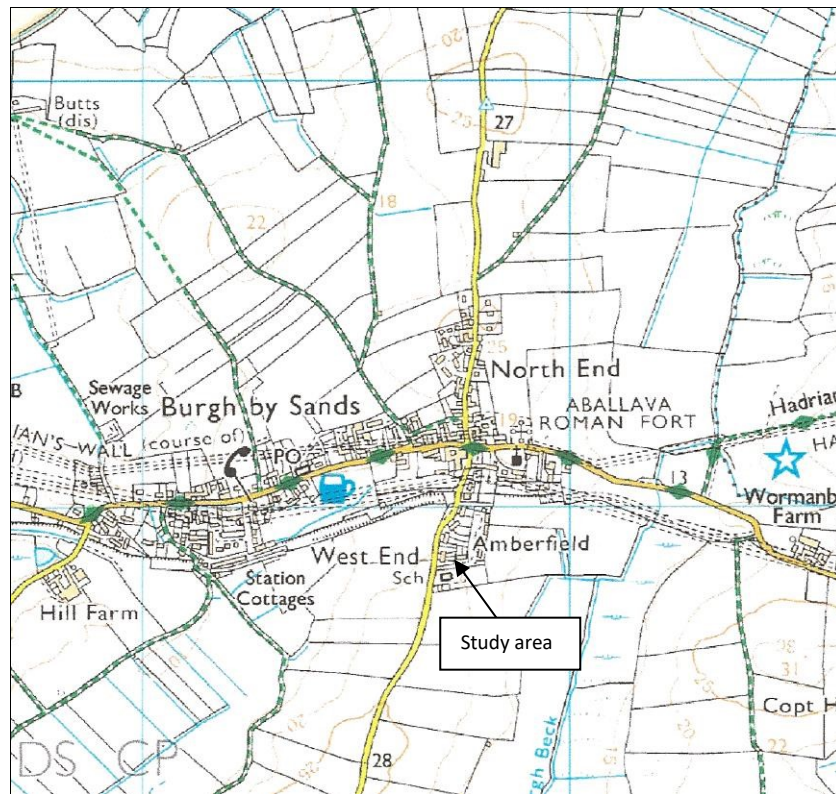


Figure 1. Site location (OS Copyright, Licence no. 100044205)

As potential and significant remains may occur, an archaeological evaluation that led to an archaeological excavation was requested by Cumbria County Council.

The condition is summarised as, "to afford reasonable opportunity for an examination to be made to determine the existence of any remains of archaeological interest within the site and for the examination and recording of such remains, in accordance with Policy LE10 of the Carlisle District Local Plan 2001-2016".

Gerry Martin Associates Ltd was commissioned by Mr Terry Ewart, the client to undertake a Programme of Archaeological Evaluation and Excavation relating to the ground works for this development.

The development of the site involved the machine removal of topsoil within the proposed footprint.

The evaluation sought to construct a model of the archaeological potential of the site from which an informed strategy can be formulated to preserve *in situ* any significant archaeological remains. Its aims were to:

- Provide a detailed account of surviving archaeological strata and structures
- Determine the depth of survival of any significant archaeological deposits
- Characterize the extent, date, form and importance of any encountered cultural activity

Regarding this particular project, the fieldwork sought to identify the presence of formal land organisation and define any commensurate associated monuments that had been encountered on neighbouring properties.

All archaeological projects are carried out in accordance with PPS 5 (2010) and the guidelines and recommendations issued by the Institute of Field Archaeologists and English Heritage. Gerry Martin, the Archaeological Project Manager has achieved the accreditation level of MIfA (Member) with the Institute of Archaeologists (IfA).

2. METHODOLOGY

2.1 Project Design

In response to a request by Cumbria County Council's Historic Environment Service (CCCHES), Gerry Martin Associates Ltd submitted a Working Scheme of Investigation (WSI) for the archaeological evaluation. The WSI document outlined the contractors' professional competence as well as general project objectives, including the methodology and the resources needed for the successful expedition of this work.

Gerry Martin Associates Ltd were commissioned to undertake the archaeological fieldwork following approval of the project design by the curatorial body.

When it became apparent that full open area excavation would be required, an updated project design was compiled detailing the appropriate response for documentation and excavation for these features; *de facto* preservation by record.

The following report has been assembled to the relevant standards and protocols of the Institute of Archaeologists (Standard and Guidance for Archaeological Field Evaluation, 2008), combined with accepted best practice and in accordance with the brief prepared by the curatorial authority.

The archaeological evaluation took place between 13th and 14th August 2013 whilst the excavation was conducted during 18th-21st August 2013.

2.2 Archive

The archive has been compiled in accordance with the project design and the guidelines set out by English Heritage (1991) and the Institute of Field Archaeologists (1994).

The archive will be deposited with an appropriate repository, Tullie House Museum, Carlisle and a copy of the report donated to the County Sites and Monuments Record, as requested by the curatorial authority.

An electronic version of the archaeological report will also be deposited with the online archaeological resource *Oasis*.

A note will be forwarded to the Cumberland and Westmorland Archaeological Transactions for publication.

3. BACKGROUND

3.1 Location, topography and geology

The study area NY 32750 58900 is located south of both the course of the vallum and Hadrian's Wall close to the historic core of Burgh-by-Sands (figure 2). The site is a brown field development encroaching onto the rear of an existing property.

The study area lies 150 metres south of the Roman fort at Burgh in an area that formed part of the Roman civilian settlement or *vicus*. Two excavation programmes in 2000 and 2002 produced extensive Roman settlement denoted by beam slots and post-pits forming timber buildings within discreet building plots.

The site had previously been used as an *ad hoc* garage and repair facility with a bed of gravel lain directly upon the ground. Part of the site was maintained as a garden and appeared to have been partly landscaped.

The study area is situated on the northern side of a knoll, known as Ludgate Hill approximately 24m OD, elevating the land above Solway marshland to the north and pasture to the south.

The local geology has produced a relatively heavy soil with a higher clay content due to the local underlying pink Boulder Clay and orange alluvial sands and gravel lain during successive glaciations between 2,000,000 and 12,000 years ago.



Figure 2. Scheduled area near Ludgate Hill, Burgh-by-Sands

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Solid geology comprises of bedded Permian and Triassic red sandstone lain between 200,000,000 and 300,000,000 years ago.

The scheduled area does not advance southwards and did not affect this development (figure 2).

4. HISTORICAL CONTEXT

4.1 Previous archaeological reconnaissance

The study area (NY 32750 58900) lies outside the Roman fort at Burgh-by-Sands (HER no. 415) and outside the corridor occupied by the line of Hadrian's Wall *vallum* (Scheduled Monument nos. 26116 & 26120) part of a World Heritage Site (Figure 2 red outline).

Understanding of Roman settlement in Burgh-by-Sands is largely the result of R.G.Collingwoods' fieldwork in 1921; fieldwork that has been largely uncontested since that date.

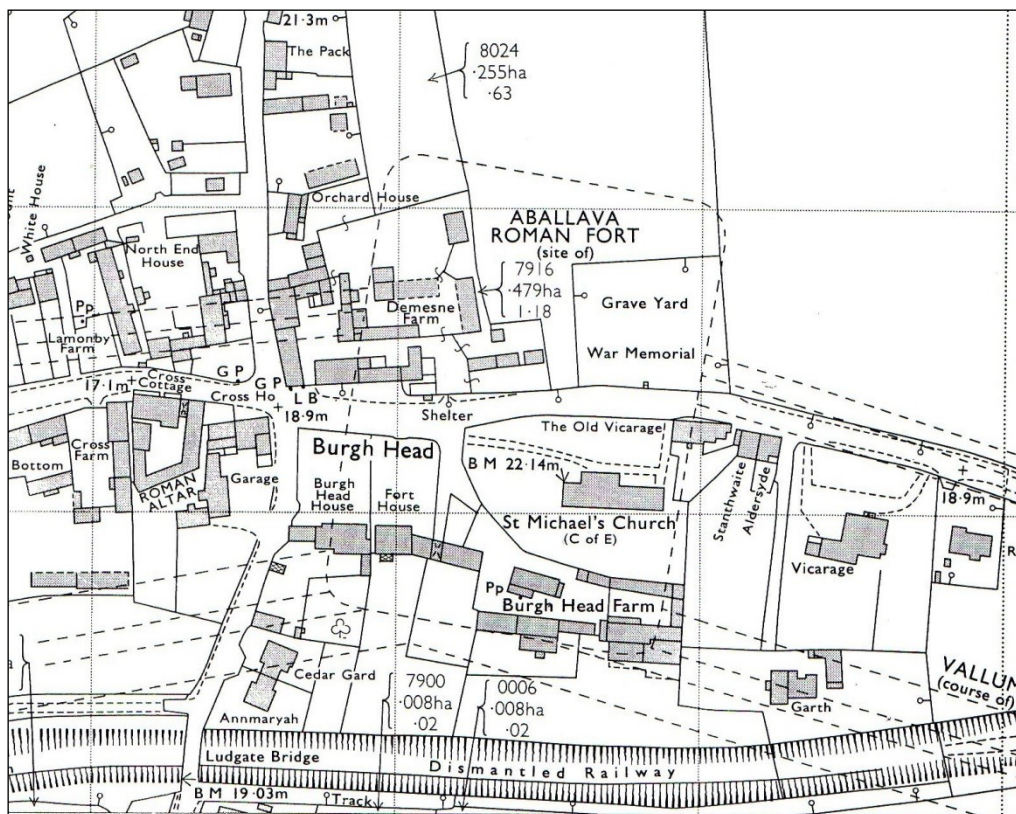


Figure 3. Detailed location of Roman fort

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The fort *Aballava* (HER 415), formed part of a significant Roman settlement dating from the Hadrianic period (Figure 2) that included a Severan *vicus* (HER 428), an area of industrial production (HER 41775) and Roman field systems (HER 41827 and 41828).

The Hadrianic fort (Fort II) measuring 150m x 120m, replaced two earlier auxiliary forts and numerous marching camps that guarded two important fording points (Peat Wath and Sand Wath) across the Solway Firth and to discourage incursions from northern raiding parties from the Novantae and the Selgovae. The fort is mentioned in the 5th Century *Notitia Dignitatum*.

The fort (figure 3) was identified in 1921 by R.G.Collingwood who undertook a minor excavation on land that is now the War memorial graveyard but formerly Monk Croft. The excavation was undertaken in three days in April by two workmen with volunteers from the Cumberland and Westmorland Antiquarian Society and four extra hands on the final day (Collingwood 1922, 5-6).

Collingwood's research design was to identify the existence of the fort and then examine the ramparts of the fort which he identified as being approximately 2.00m in width and built in stone possibly consolidated by a later inner wall. By referencing himself to the eastern rampart and known fort design he also identified the eastern gateway and its heavily denuded guard chamber. The fort was also identified as overlying the course of Hadrian's Wall a parallel with the fort at Chesters (Ibid, 7-12).

Within the scope of his works, Collingwood identified deposits that conformed to barrack blocks separated by metalled surfaces but noted that despite deep stratification in places (0.60m in the guard chamber) masonry was heavily robbed, damaging the archaeological sequence. (Ibid, 7-9).

By extension and examining a limited pottery assemblage, he suggested that the fort was extensively occupied from the mid-2nd Century to at least the late 4th Century and being approximately two hectares in size accommodated either a military cohort or a cavalry unit as was the case from the mid-3rd Century.

Finally, the disposition of primary elements within the fort was proposed: *via principalis* on the extant road, a putative granary in the churchyard and the *praetentura* in undeveloped ground (Ibid 10-12).

Close proximity to the study area has been subject to considerable archaeological scrutiny (figure 4).

In 2000 the Carlisle Archaeological Unit excavated the area directly to the east of the present study area and discovered extensive formally arranged, timber buildings formed from post-pits and beam slots (J.Reeve *pers comm*) orientated on a southerly road emanating from the fort. Unfortunately, this excavation has not been published although up to nineteen timber buildings were identified as a series of beam slots and foundation trenches (Masser and Evans 2005, 33).

In 2002 a smaller site directly south of the study area was excavated by Headland Archaeology. The fieldwork recognised extensive cutting negative features that consisted of:

- Possible timber building and construction trenches
- Well
- Pits and post-holes
- Possible ditched enclosure

The excavation confirmed the southerly extension of the extra-mural Roman settlement uncovered in 2000. Linear cutting features were interpreted as possible slots for sleeper beams forming timber buildings and construction trenches arranged in an ordered manner (Ibid, 35). This ostensibly military settlement dated from the mid-2nd Century to the late 2nd Century and was therefore short-lived (Ibid, 60-61).

In 2006, CFA Archaeology Ltd excavated further extra-mural settlement at NY 3265 5895 within a 0.28m hectare site. They encountered fourteen linear features, a well and tanning pit located to the west of the current road (CFA Archaeology 2006, 6).

Two principal cross-cutting, north-south aligned ditches existed with a series of rectilinear cells formed from beam slots or ditches approximately 0.30m in depth (Ibid, 9).

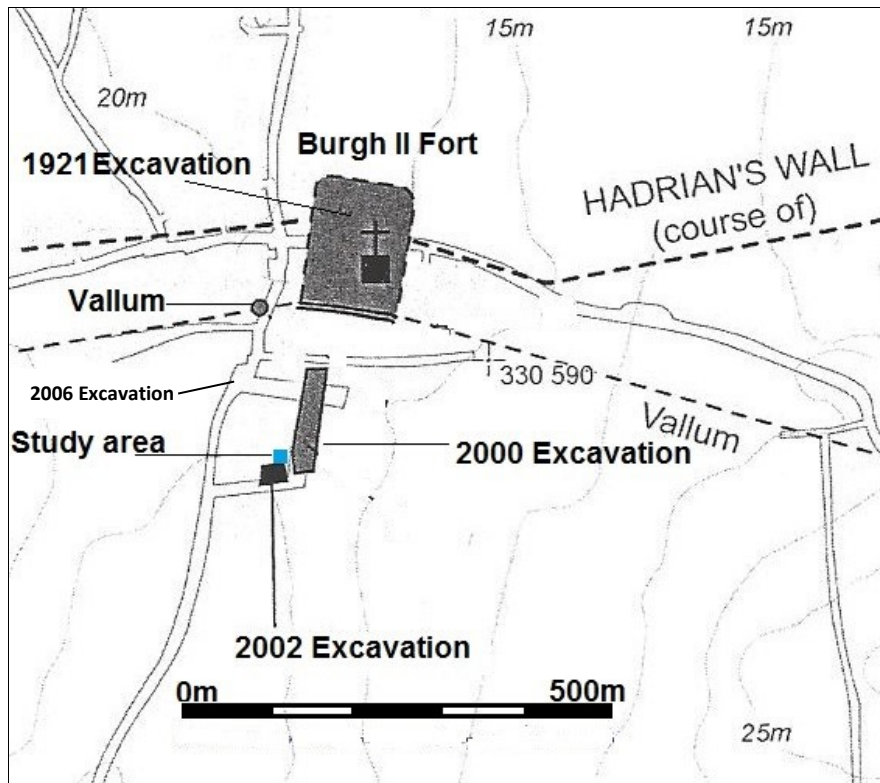


Figure 4. Location of principal archaeological interventions (after Masser & Evans)

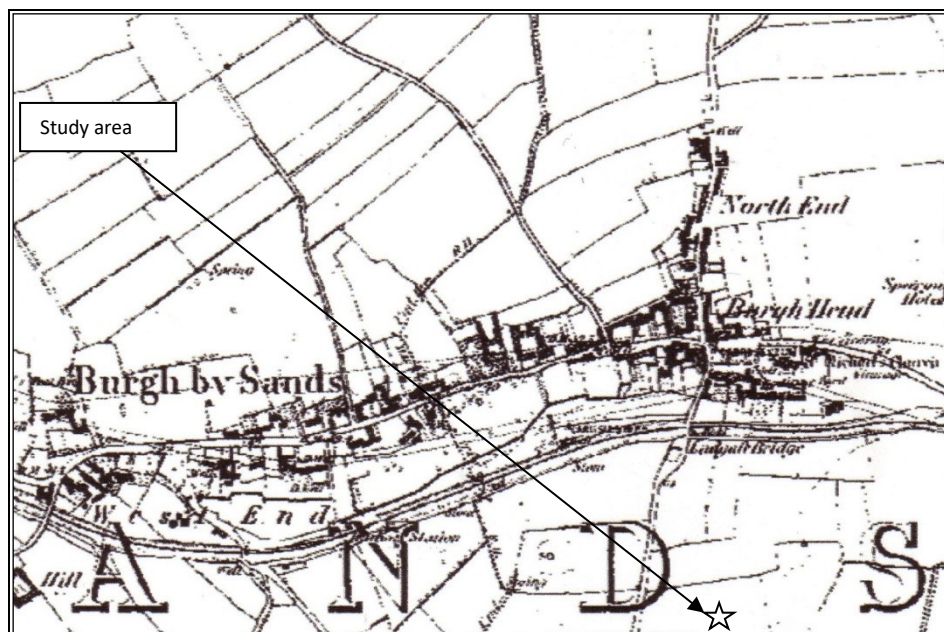


Figure 5. First edition Ordnance Survey map of 1868 illustrating the study area.

4.2 Map regression

The earliest reliable map regarding the study area was the 1840 tithe map (CRO DRC 8/181) that records the field as open grass land, probably pasture.

The Ordnance Survey First edition map of 1868 also illustrates the study area as being vacant (figure 5).

During the 1930s, ribbon development as part of a social housing programme impacted from the west, the site enclosed as a garden formerly belonging to 11-12 Amberfield, Burgh-by-Sands (T. Ewart *pers comm*).

4.3 Evaluation results

A walkover of the site on 4th August 2013 revealed the following points that were germane to the methodology to be employed for this archaeological reconnaissance.

- The development plot comprises the eastern ends of two east-west aligned properties into which a semi-detached house is planned to be constructed
- The southern part of the building footprint is significantly higher than the northern side a fall of perhaps 0.30m to 0.60m
- The ground surface on the northern part of the building footprint has probably been reduced
- Access can only be achieved from the Ludgate Hill cul-de-sac
- To remove spoil, machining will need to work from the west and north, withdrawing through the south-east entrance in the Ludgate Hill cul-de-sac
- Spoil will be removed from site in a roll-on skip
- The former owner of the southern part of the plot maintained a compound that possessed a gravel surface and from which cars were serviced; ground reduction may have occurred

The curatorial authority and the client were made aware of these limitations and it was requested by the contractor that flexibility may be required to expedite the field work efficiently.



Figure 6. Trench 1 Evaluation



Figure 7. Trench 2 Evaluation

The study area was archaeologically evaluated on 13th and 14th August 2013 by Gerry Martin Associates Ltd and comprised of two trenches measuring 9m x 2m (figure 6) and 11m x 2m (figure 7)

that formed an L-shape (figure 8) bordering the western and southern limits of the site. Covering an area measuring 40 square metres, this represented a third of the area of the building footprint (121 sq m).

The site was heavily truncated with no original ground surface surviving but traces of cutting features were clearly present.

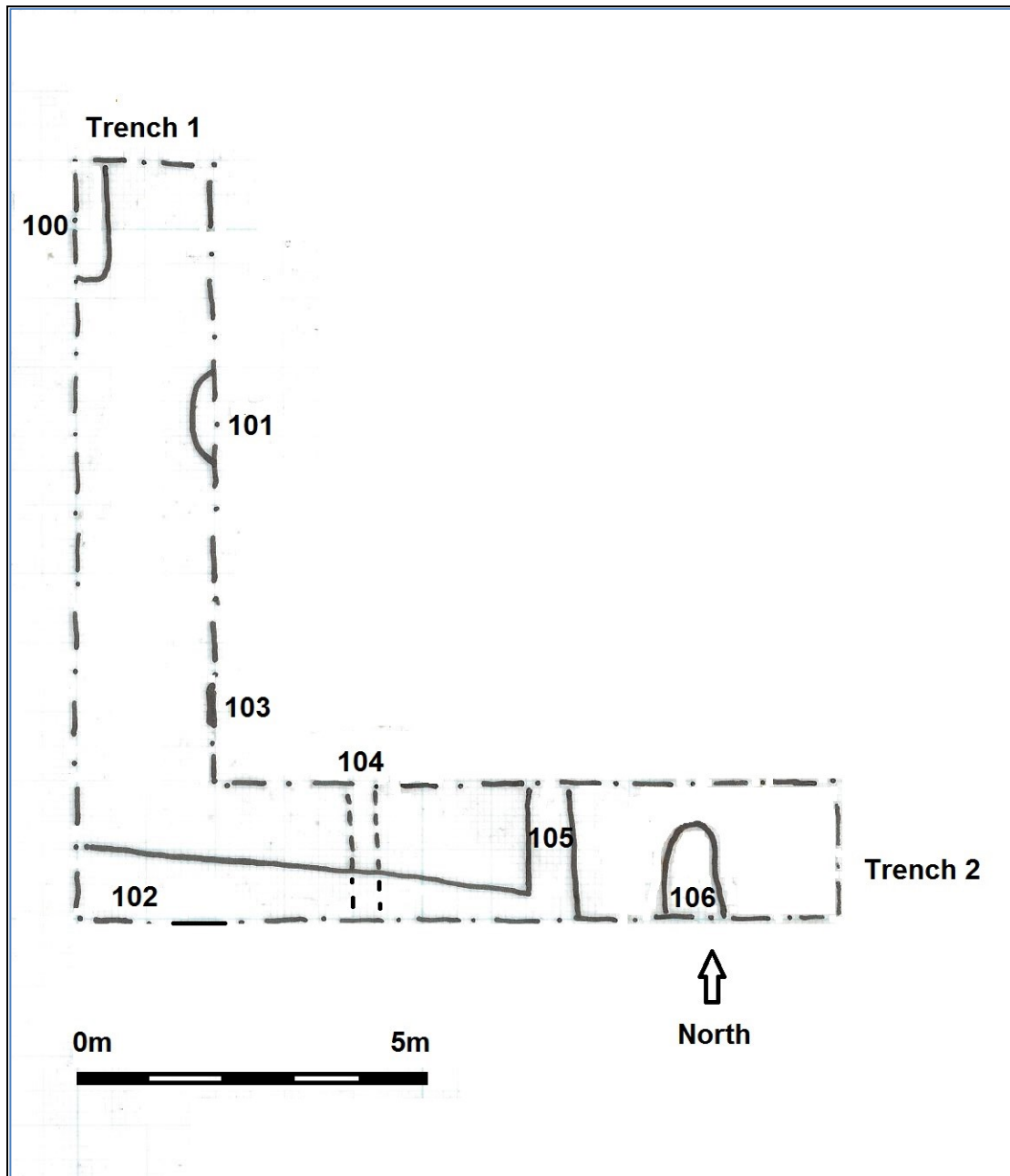


Figure 8. Evaluation Trenches 1 and 2

Within the evaluation footprint seven prominent features were partially revealed comprising of a well **101**, pit **103**, butt end of a ditch **106** and linear slots **100**, **102**, **104** and **105**, consistent with archaeological features discovered directly southwards in 2002 (Masser & Evans 2005).

Following consultation with Jeremy Parsons (CCCHES) and the client Mr Terry Ewart, it was agreed that the full construction footprint should be opened and the whole area treated as a single excavation rather than two separate entities.

The many advantages of adopting this policy were as follows:

- Avoiding “real world” difficulties such as spoil storage, site security, section collapse, machine accessibility
- Saving time, duplicating recording and consequently the cost of the fieldwork
- Clearer targeting of archaeological features during the fieldwork
- Avoiding integration of an evaluation report with the main site archive and report

The remaining part of the footprint was cleared of extraneous overburden. The site was then cleaned by hand to reveal a series of approximately twenty features that appeared to have a cultural origin and required formal archaeological investigation.

Features were then planned prior to excavation and an updated Working Scheme of Investigation compiled that addressed recording and excavation of the opened area. Upon consent by the curatorial authority excavation was undertaken during 18th-21st August 2013.

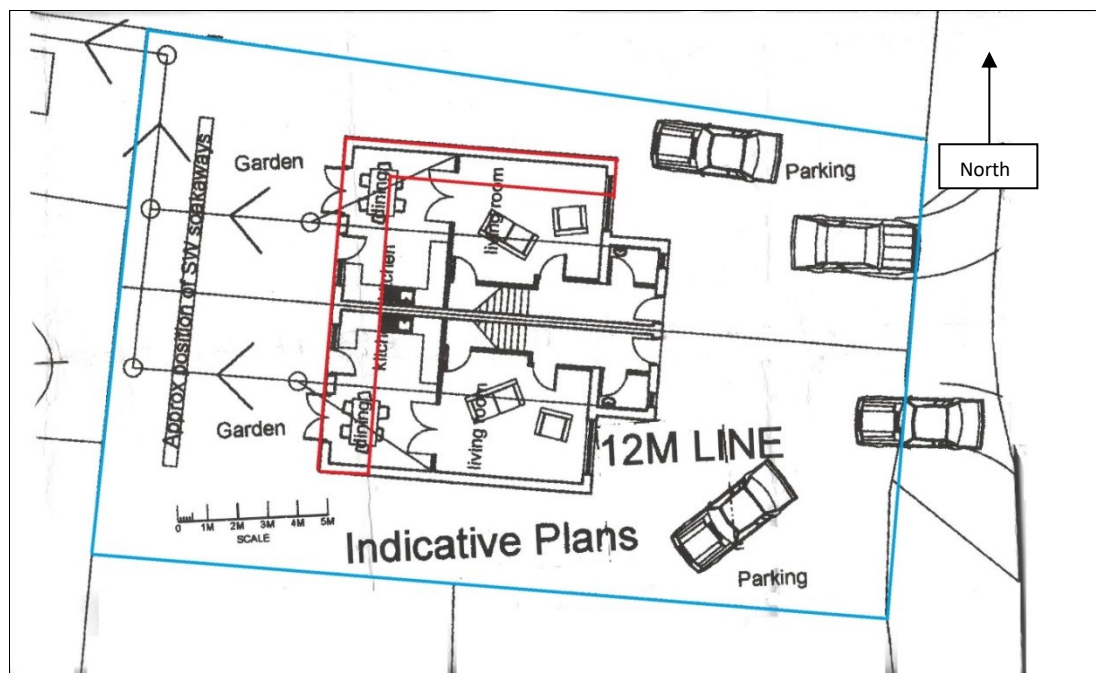


Figure 9. Ground plan illustrating the building footprint

5. RESULTS

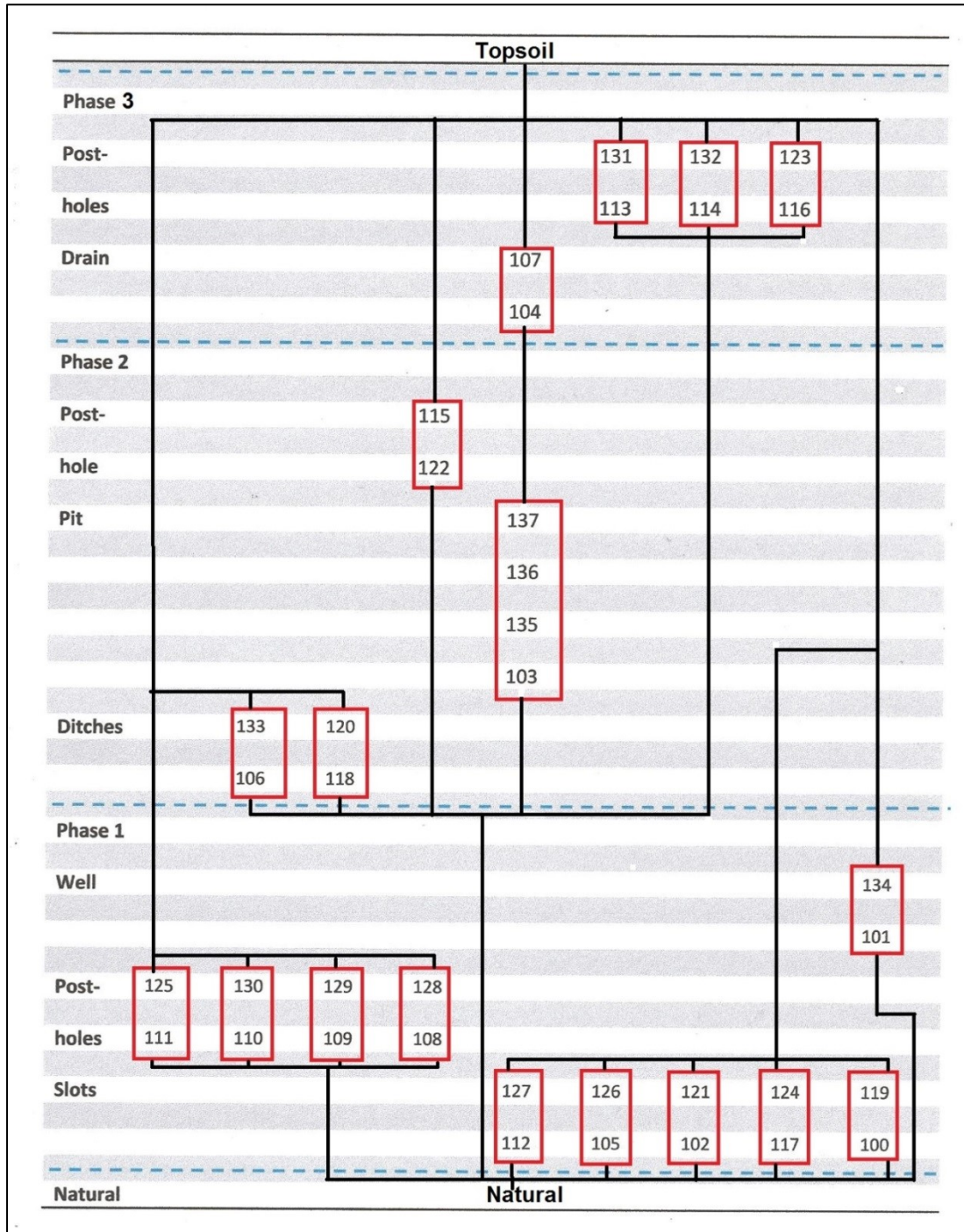
5.1 Development proposals

The development (figure 9) involves a square plan footprint measuring 11m x 11m within a plot measuring 27.50m x 17m. The construction level was reduced to a depth across the site of approximately 0.60m-1.00m below current ground level.

5.2 Methodology

The objective of the excavation was to carry out a formal programme of archaeological observations and investigations during any operations on site that may disturb or destroy archaeological informative deposits or remains.

In order to achieve these objectives, a record of all archaeological informative deposits encountered during the ground operations were made consisting of detailed context records on individual proforma sheets and field drawings, according to the protocols set out in the GMA manual.



Matrix showing Phases 1-3 activity

5.3 Results

The following provisional results were garnered during the fieldwork programme but could be subject to revision should further research be undertaken.

The site appears to consist of three major structural phases within a tight temporal period dating to the Second Century AD. These phases are listed as the following:

1. The introduction of rectilinear spatial organisation
2. Two possible ditches forming an entry
3. A curvilinear gully

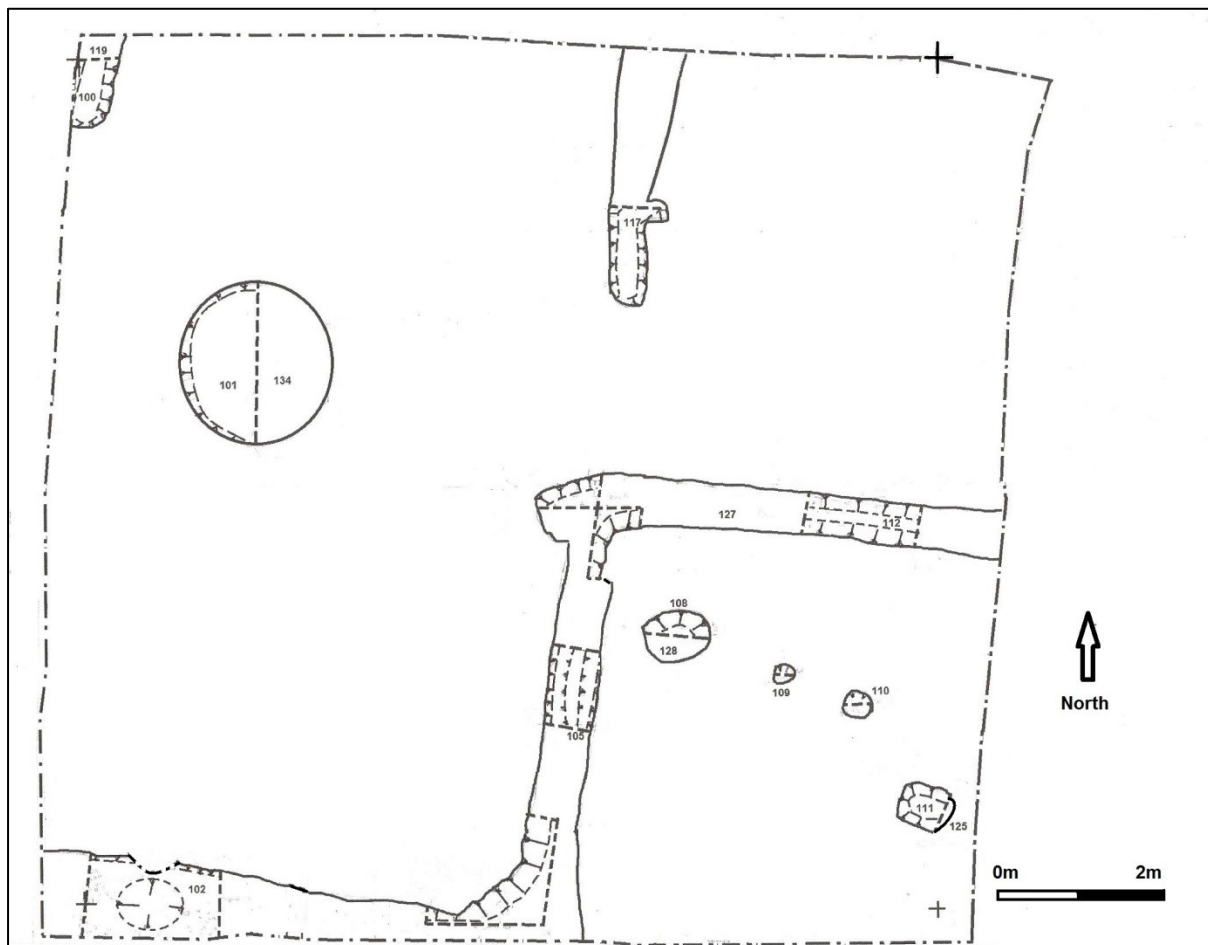


Figure 10. Phase 1 activity

1. Introduction of rectilinear spatial organisation

An east-west aligned structure (figure 10) measuring at least 11m x 5m was articulated by three linear slots:

- An east-west aligned slot **102** with gently sloping shallow sides filled by mid grey-brown silty sand **121**.
- A north-south aligned linear slot **105** containing two shallow gullies (profile heavily truncated) filled by light grey-brown silty sand **126**.

- An east-west aligned linear slot **112** bearing steep sides to an uneven base filled by mid grey-brown silty sand **127**.

The dog-legged structure possibly possessed two units if north-south aligned slot **105** continued southwards (figure 11).



Figure 11. Structure **102/105/112** prior to excavation

The eastern unit contained a possible northwest-southwest alignment formed from the following features:

- Circular plan post-hole **108** with moderately sloping sides filled by mid grey-brown silty sand **128**.
- Sub-circular plan cut **109** with sloping sides filled by mid grey-brown silty sand **129**. This feature may represent natural disturbance.
- Sub-circular plan cut **110** with sloping sides filled by mid grey-brown silty sand **130**.
- Circular plan post-hole **111** with vertical sides and flat base filled by light grey-brown silty sand **125**.

Northwest of structure **102/105/112** was a circular plan cut **101** with vertical sides. This feature was excavated to a depth of approximately 1.00m removing dark grey silt **134** that represented secondary fill.

Feature **101** (figure 12) may have served as a well, was 2.16m in depth and appeared to be located in a central space bounded by two north-south aligned butt-ended slots **100** and **117** to the north.

Slot **100** (figure 13) possessed a concave profile and was filled by mid grey-brown silty sand **119** forming a possible 5.80m wide north-south aligned track with heavily truncated slot **117** (figure 14) filled by light-mid grey-brown silty sand **124**.

A possible narrower minor access measuring 2.20m in width was formed by slot **117** and structural slot **112** east of well **101**.



Figure 12. Well **101**



Figure 13. Slot **100**



Figure 14. Truncated remains of slot **117**

2. Two possible ditches forming an entry

It would appear probable that a considerable spatial re-organisation occurred (figure 15).

Structure **102/105/112** became redundant and replaced by a considerable north-south alignment that probably formed a ditched boundary with a central entrance measuring 4.70m in width.

This alignment comprised of the following butt-ended ditches:

- North-south aligned ditch **118** (figure 17) with steep sides to a flat base filled by mixed mid brown-grey silty sand **120**.
- North-south aligned ditch **106** (figure 16) with moderately steep sides to a concave base filled by mixed mid brown-grey silty sand **133**.

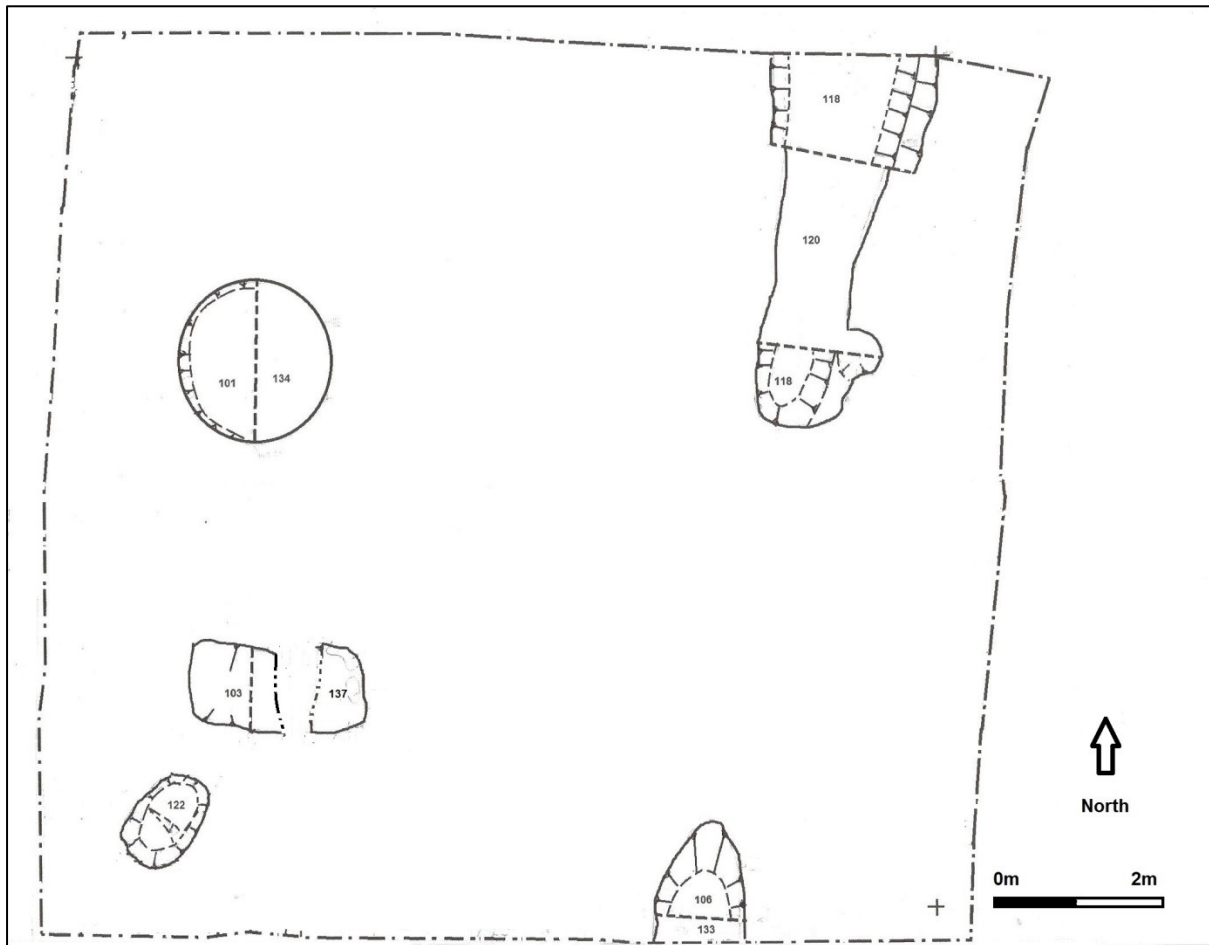


Figure 15. Phase 2 activity

Figure 16. Butt end of ditch **106**Figure 17. Ditch **118**

It remains unclear whether ground to the west of boundary **106** and **118** was an internal or external space.

Well **101** was maintained with two features possibly introduced:

- Possible oval plan post-hole **122** bearing steep sides to a flat base filled by coarse loose orange brown sand **115**.
- A rectangular plan cut **103** probably representing a pit that contained three fills: a basal fill of mid grey sandy silt **135**, sealed by pink burnt clay **136** overlain by mid to dark grey silt **137**.

Pit **103** contained sporadic burnt clay and daub **136**, the probable result of clearance rather than *in situ* burning associated with a kiln or oven.

3. A curvilinear gully

The boundary formed by ditches **106** and **118** continued in use as did well **101**.

A curvilinear drain **104** (figure 18) was introduced veering east of well **101** indicating that well **101** was still active.

Drain **104** (figure 19) was aligned north-south and possessed a curved profile with uneven base filled by mid brown-grey silty sand **107**.

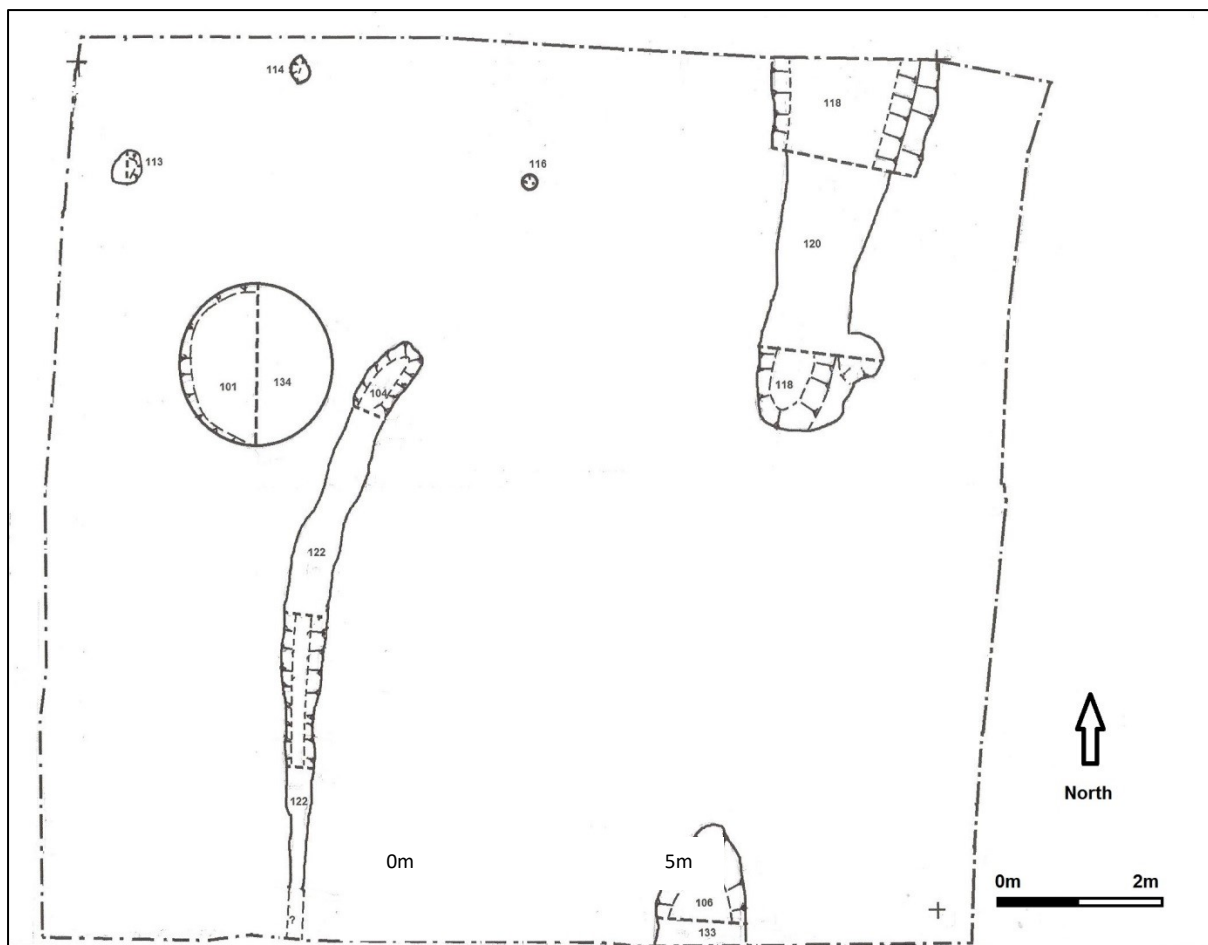


Figure 18. Phase 3 activity

A number of post-holes forming no obvious configuration may have been introduced during this stage, namely:

- Circular plan cut **113** (figure 20) with vertical sides to a flat base filled by loose, light grey silty sand **131**.
- Circular plan cut **114** with steep sides to a flat base filled by loose, mid- light grey-brown silty sand **132**.
- Circular plan cut **116** with uneven sides and base filled by loose, mid-grey silty sand **123**. This feature may represent natural disturbance.



Figure 19. Drain **104** in section



Figure 20. Post-hole **113**

5.4 Pottery

A total of 16 pottery sherds were recovered during the excavation and duly washed. Of this total, all were of Roman date.

The following report by Louise Collier (nee Hird) examined the Roman pottery assemblage.

Context	Fabric	Sherd count	Weight grams	Comments	Phase
107	BAT AM2	1	115	S.Spanish P&W Class 25	3
107	CO RE	1	4		3
119	CO RE	2	5	Sooted	1
126	DOR BB1	1	46	Later C2 Gillam GAJ 65/66	1
133	CO RE	1	7	C2?	2
133	CO OX	1	2		2
133	DOR BB1	2	12	Base fragment	2
133	SAM	1	4	C2? Dr 33	2
134	SAM	1	1	Flake	1-3
134	CO RE	1	12		1-3
134	CO RE	2	39	Base	1-3
134	CO OX	1	4	C 2?	1-3
137	BAT AM2	1	80	S.Spanish P&W Class 25	2
Totals		16	331		

Table showing pottery quantification by Louise Collier

Fabric Series

CO RE – Unidentified grey ware

CO OX – Unidentified oxidised ware
 CO OX WS – oxidised ware with white slip
 BAT AM 2 – Spanish amphora fabric – Peacock and Williams Class 25
 DOR BB1 – Dorset Black-burnished ware 1
 SAM – Samian

Summary

A total of sixteen sherds of Roman pottery were examined, weighing 331 grams (see quantification table). The assemblage was made up of two sherds of Samian (approx 12% by sherd count), two sherds of amphora (approx 12% by sherd count), three sherds of Dorset black-burnished ware (19% by sherd count) and nine sherds of coarse/fine wares (approx 57%).

The small assemblage is made up of sixteen sherds of stratified Roman pottery from a variety of contexts. All the sherds are consistent with a Second Century AD date and include fragments of Samian of Drag 33, South Spanish olive oil amphora fragments of Peacock and Williams Class 25 and a later Second Century AD Dorset BB1 dish (Gillam 1976, 65-66). There are also several fragments of locally produced oxidised and reduced wares.

The date of the assemblage fits comfortably into a mid-Second Century AD date although wider extrapolations are insecure due to the paucity of pottery present.

The 2002 excavation questioned the validity of a third century date for the Burgh II fort, assuming that the Amberfield *vicus* served the fort.

The pottery evidence from the 2002 excavation date suggested a later Hadrianic date for the *vicus* and by extension the fort.

The pottery from the 2013 intervention remains consistent with this period, a not unsurprising discovery as clearly the archaeological features observed was a northward extension of the settlement discovered during 2002.

5.5 Other finds

Other finds recovered were relatively low and no metal objects were recovered from stratified deposits.

The presence of ceramic building material (CBM) was slight and only small, worn items were present.

Context	CBM	Fe Nails	Stone	Animal bone	Burnt bone	Briquetage	Op Sig	Glass	Totals
107	6	-	-	-	-	-	-	-	6
120	2	-	-	-	-	-	-	-	2
126	1	-	-	-	-	-	-	-	1
134	2	-	-	-	-	-	-	-	2
Totals	11	-	-	-	-	-	-	-	11

Table showing other finds recovered during the watching brief

5.6 Environmental samples

Features were relatively shallow and truncated, unreliable for secure sampling for environmental finds. Moreover, the recovery of cereal grains (mainly barley) was minimal from previous fieldwork (Masser & Evans 2005, 60).

One bulk sample was taken from the upper fill **134** of well **101**. As this material represented a secondary fill and was not waterlogged it was not felt worthwhile to proceed with further examination.

5.7 Discussion

The small area investigated confirmed intensive archaeological activity probably current during the Second Century AD. The area had been heavily truncated by later gardening activity that did not provide a true impression of the depth of cutting features. Moreover, the original ground surface could not be ascertained.

Combined with a minimal pottery assemblage, understanding and dating the archaeological sequence is unclear but three broad structural phases appear to have existed; a rectilinear structure, a ditched enclosure and a later drain.

There existed few cross-cutting relationships that could provide absolute stratigraphic relationships. However, the spatial disposition of features strongly suggests structural phases existed.

The two main phases were the rectilinear buildings and spatial organisation (Phase 1) and the north-south ditch boundary (Phase 2).

The dog-legged structure articulated by slot **112** (Phase 1) passed between the gap between ditches **106** and **118** (Phase 2). Possibly, butt-end ditches **106** and **118** were closed before the dog-legged structure was constructed. However, remnant Ceramic Building material in fill **120** and its apparent slow deposition within ditch **118** suggested that this "boundary" possessed longevity. It would appear very unlikely that both sets of spatial features could exist simultaneously.

Cutting a series of similar earlier rectilinear structures discovered during the 2002 excavations, a later widespread spatial re-organisation was intimated as an east-west aligned ditch **F2** was dated to A.D. 180-200 (Masser & Evans 2005, 36).

A central feature that did possess longevity was a circular plan well **101** that possibly paralleled well **F33** discovered to the south in 2002 (Ibid, 35).

Fragments of Ceramic Building Material were found in its backfill **134** whilst a Phase 3 drain **104** veered eastwards in order to avoid contact.

As with the 2002 excavation just to the south, interpretation of this suite of features remains largely speculative (Ibid, 35).

The series of rectilinear slots and shallow ditches would appear to be either foundation trenches for sleeper beams supporting timber buildings or gullies perhaps outlining pens or enclosures.

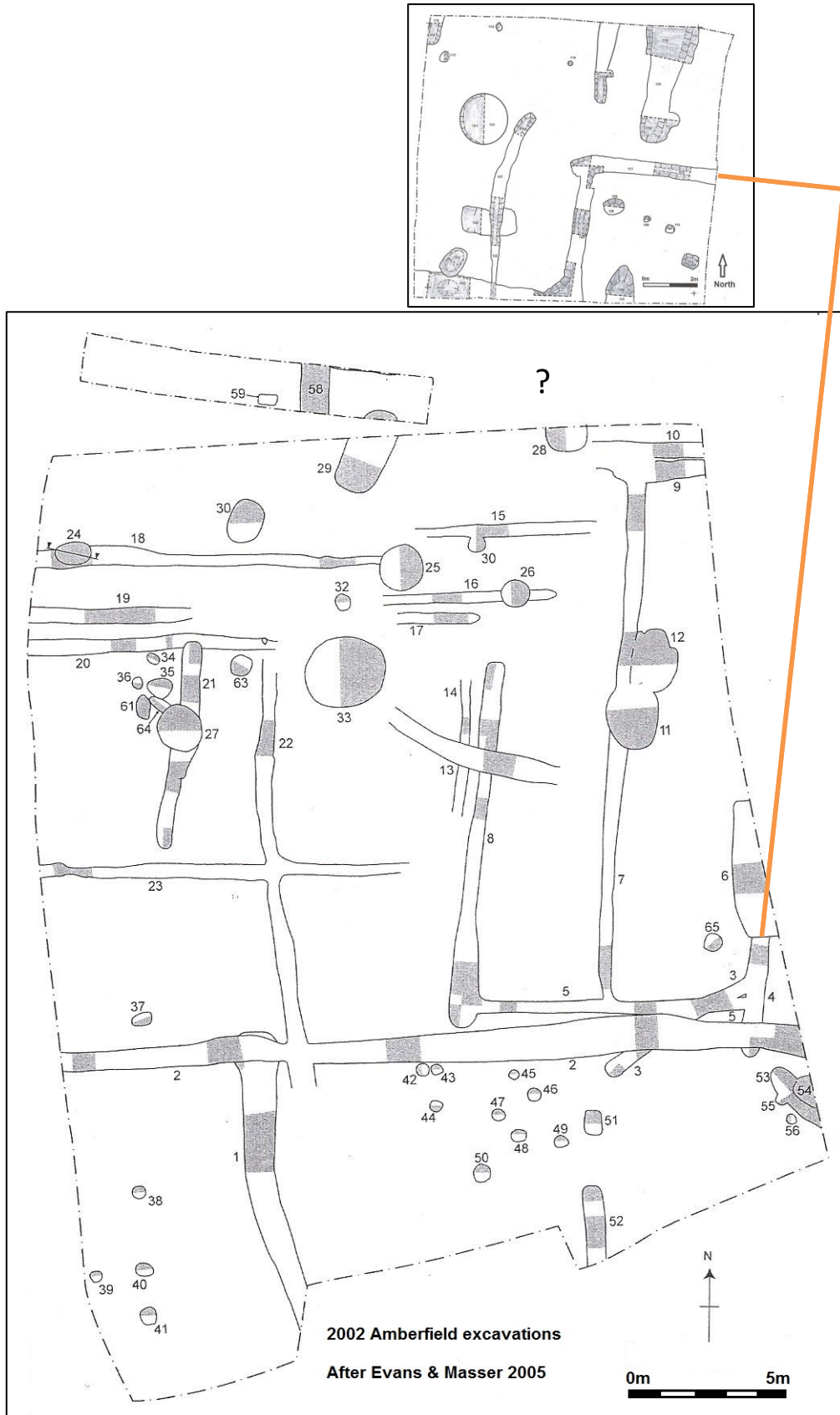


Figure 21. Plan of the 2002 excavation with possible alignment with the 2013 excavation added

The extremely modest finds assemblage does not appear compatible or expected with Roman settlement of this period. Similarly to the 2002 excavation, only small quantities of Ceramic Building Material were encountered (Ibid, 61).

The significance of this observation remains uncertain but possibly the complex of gullies and slots that this site forms could represent a facility for corralling livestock where the curation of cultural material would be low.

Extrapolating the observations at this site with those undertaken in 2002 is rather tenuous.

Gullies **100** and **117** could have outlined a north-south aligned track leading to a central well or watering hole **101**. Likewise, later ditches **106** and **118** also form an entrance that lead to well **101**.

Seemingly random post-holes may also be in keeping with *ad hoc* arrangements rather than permanent structural elements.

Possibly, the structure formed from slots **105** and **112** may align with a coherent north-south orientated, rectilinear arrangement involving slots **F8**, **F5** and **F4** (figure 21).

However, by applying this configuration the north-south ditch alignment **118** and **106** dissipates.

Comparison between the two sites suggests an increased intensity of features southwards as the land rises to form present-day Ludgate Hill.

Undoubtedly, both sites form part of a Roman vicus emanating southwards from the Roman fort of Burgh II but the character of the vicus remains nebulous.

The limited pottery assemblage from the 2013 excavation concurs with a mid-Second Century date that does not dissent for a late Hadrianic date regarding the construction for Burgh II.

In order to maintain garrisoned forts in Burgh and nearby Carlisle a formal procurement scheme must have existed. It would seem likely that livestock were either husbanded near the fort or imported from the local surroundings.

Certainly, from the Medieval period there was an established tradition of driving cattle from southern Scotland, fording the Solway at Peat Wath and Sand Wath (Martin 2009, 4) for onward sale at Carlisle or Penrith. If antecedents for this activity existed in the Iron Age, then the Roman army may have utilised this putative regional trade.

Using this model, the *vicus* at Burgh could in part be interpreted as a facility or staging point for supplying livestock to the army, possibly through a market, but more likely through direct procurement in the form of taxation, obligations or dues.

6. ACADEMIC SIGNIFICANCE

6.1 Academic significance

Poor understanding of the relationship between fort and extra-mural settlement has been acknowledged in the Hadrian's Wall Research Agenda whereby a plea for further research projects is championed (Symonds & Mason Vol II 2009, 43).

The key questions identified include the speed with which extra-mural settlement developed, whether they possessed defences and when they ceased to be occupied (Ibid 43).

This approach although very worthy is firmly committed to understanding widespread structural development within a historical narrative on sites free of modern development. However, this model will tend to lead to generality and homogeneity, whereas in reality considerable individuality and variation existed, as invariably different roles within the general defence strategy were being maintained at each military facility.

The research agenda proposed regarding Roman extra-mural settlement utilises a macro-archaeological approach, keen on physical development but lacking in understanding of social interaction and the role of individuals or small groups within formal institutions.

Moreover, the agenda does not directly focus on how fairly mundane acts such as resource procurement was achieved. Presumably to serve a large military community for nearly three hundred years, formal, sophisticated and permanent arrangements must have been in place.

Rectilinear spatial patterns whilst representing settlement could in certain key locations have been used for stockholding and dispersal of livestock.

A high degree of truncation at this site precluded examination of diatoms and pollen analysis. However, this methodology could reveal a high level of animal traffic synonymous with husbandry, droving or pastoral farming, thereby testing this hypothesis.

7. ARCHIVE

The archive has been compiled in accordance with the project design and the guidelines set out by English Heritage (1991) and the Institute of Field Archaeologists (1994, 2001 and 2007).

The archive will be deposited with Tullie House Museum, Carlisle and a copy of the report donated to the County Sites and Monuments Record, as requested by the curatorial authority.

8. ACKNOWLEDGEMENTS

I am grateful to Mr Terry Ewart, the client for his collaboration on this project.

I am also extremely grateful to Gary Crawford-Coupe for assisting with the fieldwork.

The pottery was examined by Louise Collier whose intimate knowledge of Carlisle's Roman pottery sequence cannot be bettered.

I would also like to thank Jeremy Parsons (CCCHES) for his guidance with the archaeological brief, the staff of Carlisle Library with my research into the local history of the area and the staff of Cumbria Record Office, Carlisle with the map regression and other documentary research.

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APPENDIX A

Contexts issued

Context	Type	Part of	Interpretation	Drawing	Photo	Length	Width	Depth
100	Cut		Slot	3, 6.7	16-17,49-50,88-89	1.35m	0.35m	0.17m
101	Cut		Well	3, 5.2	18-20, 65	Dia 1.85m	n/a	2.16m
102	Cut		Slot	1, 6.16 6.17	8-11,58-59,94-97	5.00m+	0.85m	0.22m
103	Cut		Pit	1, 5.1	21-22,66,103-104	2.00m	1.00m	0.24m
104	Cut		Slot	1,3,6.1, 6.2	25-26,32-39	5.80m	0.34m	0.13m
105	Cut		Post-hole	2, 6.14 6.15	27-29,56-58,101-102	5.00m	0.56m	0.06m
106	Cut		Post-hole	2, 6.18	30-31,60	1.50m	1.00m	0.16m
107	Fill	104	Slot	1	n/a	5.80m	0.34m	0.13m
108	Cut		Post-hole	2, 6.11	67	Dia 0.74m	n/a	0.15m
109	Cut		Post-hole	2, 6.10	53	Dia 0.26m	n/a	0.08m
110	Cut		Post-hole	2, 6.9	52	0.70m	0.40m	0.10m
111	Cut		Post-hole	2	51	Dia 0.40m	-	0.20m
112	Cut		Post-hole	2, 6.12 6.13	54-55	5.70m	0.50m	0.15m
113	Cut		Post-hole	3, 6.19	61	Dia 0.40m	n/a	0.45m
114	Cut		Post-hole	3, 6.20	62	Dia 0.33m	n/a	0.20m
115	Fill	122	Post-hole	1	n/a	1.20m	0.76m	0.20m
116	Cut		Pit	4, 6.3	40-41	Dia 0.18m	n/a	0.05m
117	Cut		Slot	4, 6.4	43-44	3.00m	0.50m	0.03m
118	Cut		Slot	4, 6.5 6.6	45-48,90-93	4.20m	1.28m	0.21m
119	Fill	100	Slot	3, 6.7	n/a	1.35m	0.35m	0.17m
120	Fill	118	Slot	4, 6.5 6.6	n/a	4.20m	1.28m	0.21m
121	Fill	102	Slot	1, 6.16 6.17	n/a	5.00m+	0.85m	0.22m
122	Cut		Post-hole	1	98-100	1.20m	0.76m	0.20m
123	Fill	116	Pit	4, 6.3	n/a	Dia 0.18m	n/a	0.05m
124	Fill	117	Slot	4, 6.4	n/a	3.00m	0.50m	0.03m
125	Fill	111	Post-hole	2, 6.8	n/a	Dia 0.40m	-	0.20m
126	Fill	105	Post-hole	2, 6.14 6.15	n/a	5.00m	0.56m	0.06m
127	Fill	112	Post-hole	2, 6.12 6.13	n/a	5.70m	0.50m	0.15m
128	Fill	108	Post-hole	2, 6.11	n/a	Dia 0.74m	n/a	0.15m
129	Fill	109	Post-hole	2, 6.10	n/a	Dia 0.26m	n/a	0.08m

130	Fill	110	Post-hole	2, 6.9	n/a	0.70m	0.40m	0.10m
131	Fill	113	Post-hole	3, 6.19	n/a	Dia 0.40m	n/a	0.45m
132	Fill	114	Post-hole	3, 6.20	n/a	Dia 0.33m	n/a	0.20m
133	Fill	106	Post-hole	2, 6.18	n/a	1.50m	1.00m	0.16m
134	Fill	101	Well	3, 5.2	n/a	Dia 1.85m	n/a	2.16m
135	Fill	103	Pit	5.1	n/a	2.00m	1.05m	0.05m
136	Fill	103	Pit	5.1	n/a	2.00m	1.20m	0.20m
137	Fill	103	Pit	5.1	n/a	2.00m	1.20m	0.08m