ARCHAEOLOGICAL WATCHING BRIEF ON LAND AT QINETIQ (EX-DERA SOUTH SITE), MALVERN, WORCESTERSHIRE

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With contributions by Laura Jones and Elizabeth Pearson

Illustrated by Carolyn Hunt

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Part 1 Project summary

An archaeological watching brief project was undertaken at QinetiQ (ex-DERA South Site), Malvern, Worcestershire (NGR: SO 78654494). It was undertaken on behalf of QinetiQ and Warings Contractors Ltd, who intend to redevelop the site with new buildings, access, parking facilities, a helipad and associated drainage for which a planning application has been submitted. The project aimed to observe and record all exposed archaeological deposits, and to determine their extent, state of preservation, date and type, as far as reasonably possible.

A large quantity of Roman pottery, tile, a coin and a fragment of a brooch were recovered during stripping of the overburden and a small number of intercutting (early) Roman gulley-ditches were identified toward the eastern side of the development area. In addition a comparatively large amount of residual Bronze Age/early Iron Age pottery and burnt stone was recovered in association with the Roman activity.

Unfortunately the stripping was largely only undertaken into the subsoils to the east and made-up ground to the west, so very little of the surface of the natural clay was revealed. However, coupled with the findings of an earlier evaluation, the evidence uncovered indicates that the settlement activity previously identified within the grounds of the Chase High School to the east and adjacent to the north does extend through into the present study area.

The function of the gulley-ditches and the lack of other defined features mean that the form of occupation is unclear, however the quantity of burnt stone indicates that probable industrial activity took place, while the large number of Roman tiles indicates the existence of a substantial building nearby.

Part 2 Detailed report

1. Background

1.1 Reasons for the project

An archaeological watching brief project was undertaken at QinetiQ (ex-DERA South Site), Malvern, Worcestershire (NGR: SO 7865 4494), on behalf of QinetiQ and Warings Contractors Ltd. Qinetiq intends to redevelop the site with new buildings, access, parking facilities, a helipad and associated drainage and has submitted a planning consultation. The Planning Advisory Section of Worcestershire County Council considers that a site of archaeological interest may be affected (WSM 15577; dated 4th April 2001).

The archaeological site is that of an important Romano-British settlement which incorporated industrial activity in the form of metalworking. This has been identified as a result of a number of archaeological projects on the present site, within the grounds of the Chase High School, adjacent to the east (Figs. 1 and 2; Fagan 1993; WSM 15577), and adjacent to the north. The latter revealed post-mediaeval features in addition to a Roman gulley or boundary ditch and a small quantity of residual Romano-British material (WSM 29242). The pattern of Romano-British evidence has been argued to indicate that the settlement may have taken the form of a ribbon-development along a north-south aligned road (Gifford and Partners 1998). If this were the case then the southern section of the present development area would lie along this alignment, while the other area would be to the immediate west of the focus of the occupation.

The present site was the subject of an evaluation (stage 1) undertaken by Worcestershire Archaeological Service (WAS) in summer 2000 (WSM 30058). The evaluation comprised eight trenches to the west and south of the known Romano-British settlement. They revealed evidence of peripheral activity on the western side of the site, in the form of buried soils and associated artefacts, including hearth/kiln waste, fuel ash and 3rd-4th century pottery sherds. No defined boundary of this focus of activity could be determined. To the south no further activity of this date was revealed. A single linear feature of Late Bronze Age origin was also identified, containing a well preserved pottery assemblage. The feature is interpreted to have been deliberately backfilled in the early Iron Age (Griffin *et al* 2000).

The fieldwork for this watching brief project has been assigned its own SMR reference number, WSM 30611.

1.2 Project parameters

The project conforms to the *Standard and guidance for an archaeological watching brief* (IFA 1999).

The project also conforms to a brief prepared by Worcestershire Archaeology Service Field Section (AS 2001a) and for which a project proposal (including detailed specification) was produced (AS 2001b).

1.3 Aims

The aims of the watching brief were to observe and record archaeological deposits, and to determine their extent, state of preservation, date and type, as far as reasonably

possible. The project also intended to integrate the findings within local, regional and national research frameworks.

More specifically the following aims have been identified:

- to determine how much the Romano-British settlement identified at the Chase High School and in the stage 1 evaluation extends into the area affected by the proposed development works.

- if deposits relating to the settlement are present, to further the understanding of the character and dating of the activity.

2. Methods

2.1 Documentary search

Prior to fieldwork commencing a search was made of the Sites and Monuments Record (SMR). In addition the following sources were also consulted:

Cartographic sources

- Ordnance Survey, 1884, 1st edition (Worcestershire sheet XXXIX.12).

Aerial photographs

- Two vertical photos *c* 1946 held by the Defence of Britain project, from the DERA archives (no ref; courtesy of Mick Wilkes).

Documentary sources

- Place-names (Mawer and Stenton 1927).

- County histories (VCH IV).

- Domesday (Thorn and Thorn 1983).

- Site archives (from earlier excavations, evaluations etc).

- Fagan, L 1993 *Salvage Recording at Chase High School, Malvern.*

- Griffin, S *et al* 2000 *Evaluation of land at DERA, Malvern, Worcestershire.*

2.2 Fieldwork

2.2.1 Fieldwork strategy

A detailed specification was prepared by the Service (AS 2001b).

Fieldwork was undertaken between 19th June and 26th July 2001.

The development site encompassed an area of *c* 23,550m², comprising two irregular sub-rectangular strips on either side of Northgate Way. Area A, to the east, was *c* 75m by 170m. Area B, to the west, was *c* 90m by 120m. In addition to the general site strip, which did not largely reveal the natural matrix over the majority of the site, a number of

deeper drainage trenches were also archaeologically monitored. The location of all areas monitored is indicated on Fig 2. The context and feature descriptions are given in Appendix 1.

Stripping of the overburden was undertaken with a 360 tracked mechanical excavator using a toothless bucket. Observation of the excavated areas was undertaken both during and after machine excavation, as appropriate (AS 2001b). Generally only 0.30m of material was removed over both Areas A and B. Only small areas of the surface of the natural matrix were exposed. Elsewhere the topsoil, subsoil and modern overburden deposits remained. The exposed natural surfaces were generally sufficiently clean to observe well differentiated archaeological deposits, though any less well-defined may not have been identified. Additionally a pond and a number of service trenches were monitored. Deep trenches (>1.20m) were not accessed due to health and safety considerations. Excavation of potential archaeological features was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. All deposits were recorded according to standard Service practice (CAS 1995).

Metal detecting was undertaken of the stripped area by an experienced detectorist.

2.2.2 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

2.3 Artefacts

2.3.1 Artefact recovery policy

All artefacts from the area of salvage recording were retrieved by hand and retained in accordance with the service manual (CAS 1995 as amended).

2.3.2 Method of analysis

All hand-retrieved finds were examined. A primary record was made of all finds on *pro forma* sheets. Artefacts were identified, quantified and dated. A *terminus post quem* was produced for each stratified context.

Pottery was examined under x20 magnification and recorded by fabric type and form according to the fabric reference series maintained by the service (Hurst and Rees 1992).

2.4 Environmental

2.4.1 Sampling policy

The environmental sampling policy was as defined in the County Archaeological Service Recording System (CAS 1995 as amended). Large animal bone was hand-collected during excavation and one sample of 30 litres was taken from a ditch (302) of early Romano-British date.

2.4.2 Processing and analysis

From ditch 302, 15 litres of the sample were processed by flotation followed by wet-sieving using a Siraf tank. The flot was collected on a 300µm sieve and the residue

retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residue was fully sorted by eye and the abundance of each category of environmental remains estimated. The flot was scanned using a low power EMT stereo light microscope and remains identified using modern reference collections housed at the County Archaeological Service.

2.5 The methods in retrospect

The methods adopted allow a high degree of confidence that the aims of the project have been achieved, excepting the partial exposure of the subsoil and natural.

3. Topographical and archaeological context

The underlying geology of the area consists of Mercian Mudstone (Keuper Marl) and undifferentiated head deposits. These are overlain by drift deposits of the Brokhurst 1 association, seasonally waterlogged reddish fine loamy over clayey soils (Ragg *et al* 1984, 116-8).

The site lies within an area of significant archaeological activity. There is substantial evidence for the Malvernian prehistoric, Roman and mediaeval ceramic industries in the Malvern area. A number of sites are listed on the County Sites and Monuments Record including WSM 1315, 1510, 4072, 4073, 4585, 6004, 7061, 9317 and 11392. The majority of these have been the subject of watching briefs with some limited excavations. Large quantities of locally produced pottery have been recorded at a number of sites, including burnt clay and wasters indicating that kilns must be located in the vicinity (Fagan 1993).

At the Chase High School immediately adjacent to the east (WSM 15577), salvage excavation in 1993 identified Romano-British deposits relating to a settlement associated with metalworking (Fagan 1993). Deposits included occupation layers, a substantial boundary ditch and an artefactual assemblage representing domestic debris as well as fragments of a mould determined to be related to copper working. Further work has also been carried out within the school grounds (WSM 29169, 29639 and 29922) revealing additional limited deposits and artefactual evidence for continuation of this activity to the south.

Within the Qinetiq site, to the west of the present development area, limited evidence of activity of a similar date has also been recorded during a recent evaluation (Gifford and Partners 1998).

The results of the stage 1 evaluation of the site have been discussed above (Section 1.1).

4. Description

4.1 Phase 1 Natural deposits

The natural geological matrix comprised predominantly dark red clay with frequent patches of blue-grey silty clay. It should be stressed however that the natural material was only infrequently observed as stripping was often only undertaken into the level of the subsoil.

4.2 Phase 2 Prehistoric deposits

No layers or features of prehistoric date were identified, although a large quantity of residual prehistoric pottery was recovered from Roman features and modern overburden layers.

4.3 Phase 3 Romano-British deposits

Roman features were identified only within the excavation for the lagoon on the eastern side of the study area (Appendix 1). They comprised four sub-linear gulley-ditches, two on parallel ENE/WSW alignments which were cut by another on a east-west, and a further east-west gulley of unclear relationship. They portrayed differing profiles and contained frequent residual earlier material.

No other deposits or features of Roman origin were revealed, although a large amount of residual pottery and tile was recovered from the overburden.

4.4 Phase 4 Medieval deposits

No mediaeval deposits or features were identified, although a small number of unstratified pottery sherds glazed tiles and generic 13th-18th century roof tiles were recovered.

4.5 Phase 5 Post-medieval and modern deposits

Defined post-mediaeval features comprised a single probable 18th century well in the southern half of Area B. Unfortunately it was unstable and could not be fully investigated. Modern features comprised four postholes adjacent to a furnace base to the north end of Area A and a service trench along the eastern boundary of the site. The natural matrix was not revealed in Area B as a substantial dump of redeposited clay was identified below the present ground surface.

5. Artefactual analysis

A summary of the artefacts recovered can be seen in table 1. The assemblage retrieved from the excavated area came from twelve stratified contexts and three unstratified. The group ranges from prehistoric to modern in date, with the earliest material dating to the Bronze Age. The level of preservation was generally good with low levels of abrasion for artefacts from excavated contexts. However, unstratified material was generally in poor condition and highly abraded, in particular that of Roman date was in particularly poor condition with the surfaces of pottery and tile highly abraded.

Pottery of Bronze Age, Iron Age, Roman, mediaeval, post-mediaeval and modern date was identified and grouped by fabric, see table 2. A small number of sherds were diagnostic and could be dated by form. However, the majority were undiagnostic and therefore only dateable to the general period or production span on the basis of fabric type.

Ceramic building material formed the second largest material group accounting of the assemblage. A substantial total of 79 fragments of tile could be dated to the Roman period, the remainder were fragments of flat roof tile either of a long-lived type produced between the 13th and 18th centuries or modern in date. The single fragment of brick was modern in date. In addition, a small number of fragments of modern glazed ceramic tile and a modern glazed floor tile were also identified. Other building material consisted of five pieces of moulded plaster.

A single fragment of fired clay was retrieved from context 302. This was small, undiagnostic and appeared to be burnt. A number of pieces of burnt stone were also retrieved. These may have been used in either domestic or industrial contexts.

In addition, a further small number of finds were also identified in connection with industrial processes, including nine pieces of fuel ash slag from contexts 100 and 200 and piece of coal from context 200, but these appeared to be of modern date.

Metal detecting of Area A revealed four objects: two of bronze, a silver coin and one lump of slag; all within the north-eastern corner of the site. Detecting of the rest of Area A and Area B revealed only a high density of 20th century debris so was abandoned.

Other finds were all post-mediaeval or modern and consisted of 32 pieces of ironwork, 76 pieces of glass, primarily from bottles, 12 pieces of clinker, 19 pieces of ceramic drain and 2 clay pipe stems.

5.1 Bronze Age and Iron Age pottery

A substantial amount of pottery, totalling 27 sherds could be identified as Dolerite-tempered ware (fabric 6) and therefore Bronze Age or early Iron Age in date. The sherds were retrieved from four contexts (302, 303, 309 and 312). The sherds within context 303 appeared to provide a *terminus post quem* of this date. However the feature (gulley-ditch 304) was found to be stratigraphically later than Roman ditch 310. Thus all of the Bronze Age or early Iron Age sherds were determined to be residual within (early) Roman contexts.

The assemblage included two rim sherds and in contrast to the later pottery within this assemblage, the sherds were extremely well preserved with a small number displaying faint decoration in the form of tightly bunched, incised vertical lines. There is also evidence of burnishing on a small number of sherds and it would appear that the vessels had burnished and unburnished zones similar to that seen on Durotrigian ware. A number of other sherds of this fabric have been retrieved during previous fieldwork on the DERA site with 30 being collected during the last excavation (WSM 30058; Griffin *et al.* 2000), all with equally good preservation. However, this is the first time that diagnostic sherds have been recovered and a form identified. The largest proportion of sherds in this fabric were residual within the upper fill, 302, of gulley-ditch 304, which also contained pottery of early Roman date.

Sherds of this fabric have been identified on other sites within Worcestershire, including that of a Bronze Age henge at Perdiswell, Worcester (A Woodward pers. comm.) and from a large Bronze Age site in Kemerton (R Jackson pers. comm.). However, the sherds from these assemblages were very small and poorly preserved, therefore increasing the importance of the assemblage from this site. This pottery is thought to have been produced in the south-west of England towards Devon and Cornwall and the presence of these sherds within the county points towards economic contact between the two regions.

Further large fragments of prehistoric pottery were also retrieved from the same fill (context 302). However, the fabric (97) of these could not be paralleled within the county fabric type series and therefore cannot be closely dated to a specific period.

5.2 Roman artefacts

Four contexts (102, 105, 108, 111, 301, 302, 309 and 312) could be allocated a *terminus post quem* of Roman date on the basis of the artefacts recovered. A further four contexts (102, 105, 108, and 111) contained solely Roman pot sherds but were determined to be

of modern origin during excavation. Contexts 302, 309 and 312 also contained residual material of Bronze Age and Iron Age date.

The Roman assemblage consisted primarily of pottery amounting to 165 sherds. The fabrics present were primarily of local origin with Severn Valley Wares (fabrics 12, 12.1, 12.2 and 12.3) dominating. A small number of sherds were diagnostic and could be dated on this basis from the early Roman period, primarily the 1st and 2nd centuries, onwards using existing parallels (Webster 1976). Identifiable forms included tankards and simple storage jars and formed a standard rural site assemblage. A total of 13 sherds of Severn Valley ware could be identified as having organic temper (fabric 12.2), some of which had not been completely burnt away. This particular fabric does not appear to date later than the 2nd century and is more commonly associated with 1st century assemblages and forms.

The only other fabric of this period present was black-burnished ware I in the form of a single, undiagnostic sherd which could be dated to post 120 AD, the general date from which this type of pottery is thought to first reach Worcestershire.

Four metal objects were recovered during metal detecting within the north-eastern corner of Area A (context 113). They comprised a fragment of a 2nd-3rd century bronze brooch, a silver denarius of Faustina, wife of Marcus Aurelius (161-175 AD), an indeterminate fragment of bronze, and a piece of slag.

Remaining material of definite Roman date consisted of a substantial amount of tile fragments from all areas. All were highly abraded and undiagnostic but do indicate the presence of a substantial building in the near vicinity.

Other artefacts within contexts of Roman date included iron nails (contexts 102 and 105), burnt stone (context 302) and fired clay (context 302).

5.3 Medieval artefacts

Two unstratified (context 100) sherds of mediaeval pottery were retrieved; both could be identified as oxidised glazed Malvernian ware (fabric 69). One sherd was diagnostic and could be identified as the rod handle of a jug dating to the 13-14th centuries. The other sherd was undiagnostic and could only be dated from the 13th century onwards.

Other material of this period included two glazed roofing tiles (context 300), one of which could be identified as ridge tile of Malvernian fabric.

A large volume of undiagnostic flat roof tile was also retrieved from the site. The majority of this was of a long-lived type commonly dated to between the 13th-18th centuries and therefore some of the fragments are likely to date to this period, but cannot be firmly identified as such.

5.4 Post-medieval and modern artefacts

Material of post-mediaeval and modern date was present within both stratified and unstratified layers of all three trenches. The pottery amounted to 248 sherds in total and could be dated to between the 17th and 20th centuries. The range of fabrics present was narrow and confined to those most commonly found within the region (table 2). However, the dating of this material provided a *terminus post quem* of 20th century to contexts 117, 202 and 203.

Building material of these periods consisted of 112 fragments of flat roof tile, although as mentioned above, some of this was of the long-lived medieval to post-medieval form and

cannot be firmly dated. In addition, 11 fragments of glazed modern stone ceramic tile were also identified. Just one fragment of brick was identified within the assemblage but could not be dated. A single decorated floor tile was also retrieved (context 100) and could be dated to the 20th century.

Other material considered to be of these periods included clinker, coal, slag and clay pipe, all from unstratified layers.

Material	Total	Weight (g)
Prehistoric pottery	35	2437
Roman pottery	175	1348
Medieval pottery	2	17
Post-medieval pottery	21	306
Modern pottery	227	2216
Clay pipe stem	2	4
Roman tile	85	2174
Flat roof tile	112	1225
Ridge tile	2	55
Floor tile	1	184
Modern ceramic tile	11	394
Brick	1	21
Plaster	5	193
Fired clay	5	33
Burnt stone	3	65
Iron	32	1217
Slag	9	64
Vessel glass	72	889
Window glass	4	51
Ceramic drain pipe	19	899
Clinker	12	102
Coal	1	2

Table 1: Quantification of the assemblage

5.4.1 abric	Context	Total	Weight (g)	Period
6	302	23	953	Bronze Age/early Iron Age
6	303	6	321	Bronze Age/early Iron Age
6	309	5	10	Bronze Age/early Iron Age
6	312	1	1	Bronze Age/early Iron Age
97	302	Fragments	1152	Bronze Age/early Iron Age
12	100	103	796	Roman
12	105	1	1	Roman
12	108	3	6	Roman
12	111	4	4	Roman
12	117	3	22	Roman
12	300	8	30	Roman
12	301	18	185	Roman
12	302	2	19	Roman
12	309	3	10	Roman
12	312	14	88	Roman
12.1	312	1	3	Roman
12.2	302	13	172	Roman
12.3	301	1	10	Roman

22	309	1	2	Roman
69	100	2	17	Medieval
78.1	100	13	201	Post-medieval
78.1	200	1	17	Post-medieval
84	117	2	4	Post-medieval
90	100	2	62	Post-medieval
91	100	3	22	Post-medieval
100	100	15	384	Post-medieval
100	300	1	2	Post-medieval
81.4	100	22	444	Modern
81.4	202	1	6	Modern
85	100	177	1341	Modern
85	117	1	6	Modern
85	200	9	32	Modern
85	203	1	1	Modern

Table 2: Quantification of the pottery by fabric

Fabric 6 = Dolerite-tempered ware
Fabric 97 = Miscellaneous prehistoric wares
Fabric 12 = Oxidised Severn Valley ware
Fabric 12.1 = Reduced Severn Valley ware
Fabric 12.2 = Oxidised organic tempered Severn Valley ware
Fabric 12.3 = Reduced organic tempered Severn Valley ware
Fabric 22 = Black-burnished ware 1
Fabric 69 = Oxidised glazed Malvernian ware
Fabric 78.1 = Post-medieval red wares
Fabric 84 = Creamwares
Fabric 90 = Post-medieval orange wares
Fabric 91 = Post-medieval buff wares
Fabric 100 = Miscellaneous post-medieval ware
Fabric 81.4 = Miscellaneous late stoneware
Fabric 85 = Modern stone china

6. Environmental analysis

Only three pieces (18g) of animal bone were hand-collected on site which did not merit examination.

6.1 Wet-sieved samples

The remains from ditch 302 were dominated by large pieces of fire-cracked stone (some of which showed possible signs of burning) and also small fragments of burnt bone. It was not possible to determine whether the bone was large domestic animal or human in origin as the fragments of bone were too small (less than approximately 3mm²), and signs of a discrete cremation were not evident during fieldwork. One charred emmer/spelt (*Triticum dicoccum/spelta*) wheat grain was also noted.

7. Discussion

Archaeological features were only uncovered during excavation below the level of the general site strip which generally only removed the top soil and part of the subsoil. Additionally the natural matrix on the western side of the development area was determined to be masked by a large dump of redeposited clay. Thus it is likely that features of Roman, and possibly also prehistoric, date survive over the majority of the site.

7.1 Prehistoric

No features of prehistoric date were identified during the project. However a comparatively large number of residual pottery sherds of Bronze Age or early Iron Age date were recovered from unstratified layers and (early) Roman features. This indicates that the area of prehistoric activity previously identified (Miller and Jones 2000) is larger than was originally determined.

7.2 Romano-British

The function of the Roman gulley-ditches is unclear, although their shallow profiles precludes their use as boundaries. The large quantity of burnt stone indicates that industrial activity probably took place adjacent to these features, implying that the site is on the periphery of settlement, while the large number of Roman tiles indicates the existence of a substantial building nearby.

7.3 Mediaeval

Two sherds of medieval pottery and two glazed roof tiles were identified within the overburden and some of the generic 13th-18th century roof tile might be of mediaeval date. However no features or deposits of the mediaeval period were revealed. Thus the mediaeval finds are considered to have been brought onto site accidentally during manuring of fields.

7.4 Post-medieval and modern

A possible 18th century well uncovered in Area B cannot at this stage be linked with any other activity of similar date on site. Further cartographic study might yield more information.

Unfortunately the isolated pit revealed in Service Trench 2 could not be assigned to any period as no dateable finds were recovered.

All other features on site were determined to be of modern origin, dating from the setting up of the Ministry of Defence base during WWII down to the present day

7.5 Artefacts

The retrieval of a large number of well-preserved prehistoric sherds of dolerite tempered ware (fabric 6) is highly significant. Not only do these sherds provide further evidence for early activity on the site, as previously determined in earlier fieldwork (Miller and Jones 2000), but indicate that this activity covered a wider area than initially thought. The other, unidentified fabric is also of significance and should be identified fully, possibly by thin-section analysis. The presence of these two fabrics, neither of which are known to be locally produced should also be noted as they may indicate the site to predate the production span of the local Malvernian industry which is known from the early-mid Iron Age onwards.

Once more, a large assemblage of Roman material was retrieved, although the diagnostic forms from this site indicate that its start date may pre-date those from previous areas excavated which were mainly of 3rd century date onwards. This may indicate a shift in position and focus of the site following the early Roman period.

The importance of the burnt stone retrieved from the environmental samples provides a comparable assemblage with those excavated previously both at DERA (Griffin *et al* 2000) and the Chase High School adjacent (Fagan 1993; Hurst 1997; Miller and Jones 2000). However, the assemblage from this site did not appear to provide any further evidence for industrial activity as noted previously.

Finds from this site should be viewed alongside those from assemblages excavated from nearby Chase School. The 1st-2nd century dates indicated by the Roman pottery is earlier than those indicated by diagnostic sherds from the previous excavations both at DERA (Griffin *et al* 2000) and the adjoining Chase High School site (Fagan 1993; Hurst 1997; Miller and Jones 2000) and should be investigated further.

The unidentified prehistoric pottery (fabric 97) should be examined in more detail alongside sherds known to be definitely of this fabric type. Further to this, upon positive identification, a thin-section should be taken for inclusion within the county fabric reference series.

7.6 Environmental remains

Large quantities of burnt stone were found in the ditch which are likely to have been used as pot-boilers. The stone appeared to have been either broken up by mining or fire setting, a useful by-product of which would be pot-boiler sized stones (Derek Hurst pers comm). As the only local stone is either small sized gravel or solid rock of the Malverns this may have been necessary to make use of a local supply. Similarly large quantities of burnt stone were also recovered from a Bronze Age to early Iron Age ditch (306) during evaluation in October 2000 (Griffin *et al* 2000). The bone and the charred wheat grain from ditch 302 are most likely to have been thrown onto domestic fires to dispose of kitchen waste. Emmer or spelt wheat was the mostly commonly cultivated wheat during the Iron Age period.

8. Publication summary

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, the Service intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

An archaeological Watching Brief project was undertaken on behalf of the client, QinetiQ and Warings Contractors Ltd, at QinetiQ (ex-DERA South Site), Malvern, Worcestershire (NGR: SO 7865 4494; SMR ref WSM 30611). A large quantity of Roman pottery, tile, a coin and a fragment of a brooch were recovered during stripping of the overburden and a small number of intercutting (early) Roman gulley-ditches were identified toward the eastern side of the development area. In addition a comparatively large amount of Bronze Age/early Iron Age pottery and burnt stone was recovered in association with the Roman activity.

Unfortunately the stripping was largely only undertaken into the subsoils to the east and made-up ground to the west, so very little of the surface of the natural clay was revealed. However, coupled with the findings of the earlier evaluation, the evidence uncovered indicates that the settlement activity previously identified within the grounds of the Chase High School to the east and adjacent to the north does extend through into the present study area.

The lack of defined features means that the form of occupation is unclear, however the quantity of burnt stone indicates that probable industrial activity took place, while the large number of Roman tiles indicates the existence of a substantial building nearby.

Although a large number of finds were retrieved from the overburden, the likelihood of surviving archaeological deposits is considered to be high on the western side of the site., due to the substantial depth of dumped material.

9. The archive

The archive consists of:

2	Context number catalogue sheets AS5
24	Abbreviated context records AS40
15	Fieldwork progress records AS2
2	Photographic records AS3
19	Colour transparency photographs
19	Black and white photographs
1	Sample records AS17
5	Scale drawings
2	Box of finds
1	Computer disk

The project archive is intended to be placed at:

Worcestershire County Museum

Hartlebury Castle

Hartlebury

Near Kidderminster

Worcestershire DY11 7XZ

Tel Hartlebury (01299) 250416

10. Acknowledgements

The Service would like to thank the following for their kind assistance in the successful conclusion of this project, Martin Clarke (QinetiQ), Martin Rendell, Keith Trodd & Craig Walters (Warings Contractors Ltd), Pete McGough and Paul Harrison (Raymond Brown Ltd), Malcolm Atkin (Worcestershire County Council Planning Advisory Service) and Dean Crawford (freelance metal-detectorist).

11. Personnel

The fieldwork project was led by Shona Robson-Glyde, Simon Woodiwiss, Chris Patrick and Paul Williams.

The project manager responsible for the quality of the project was Simon Woodiwiss.

Fieldwork was also undertaken by Paul Godbehere, Rodney Cottrill, finds analysis by Laura Jones, environmental analysis by Elizabeth Pearson and illustration by Carolyn Hunt.

The report was written by Tom Vaughan and edited by Simon Woodiwiss. The environmental report was written by Elizabeth Pearson, and the finds report was written by Laura Jones.

12. Bibliography

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13. Abbreviations

BC	Before Christ
AD	Anno Domini
WSM	Numbers prefixed with 'WSM' are the primary reference numbers used by the Worcestershire County Sites and Monuments Record.
WCRO	Worcestershire County Records Office.
NMR	National Monuments Record.
SMR	Sites and Monuments Record.

Appendix 1 Area and trench descriptions

Area A

Maximum dimensions: Length: *c.* 170m Width: *c.* 75m Depth: *c.* 0.30m max.

Main deposit description

Context	Classification	Description	Max. depth/Depth below ground surface (b.g.s)
100/113/300	Topsoil with modern debris	Medium reddish brown silty clay with modern debris.	*c* 0.35m deep
301	Subsoil	Grey brown silty clay	*c* 0.35 - 0.48m deep
311	Natural	Dark red clay	*c* 0.35m +

Features/Other deposits.

Generally over this area only 0.30m of material was stripped off. Thus the surface of the natural clay matrix, 311, was not visible, except in the base of deeper excavations (The Lagoon and Service Trench 1, below).

A cluster of four postholes was identified in the north-west corner of this part of the site, 103, 106, 109 and 112. Three were sub-square and another was sub-oval. They all had steep concave sides and a concave base (length 0.66m max., width 0.32m, depth 0.20m). The fills comprised grey brown silty clay with occasional pebbles, stones and charcoal (102, 105, 108 and 111). The latter also contained a small amount of modern brick and tile. Square postpipes were identified within each feature (length *c* 0.20m, width 0.20m, depth 0.12m), filled with dark brown silty clay loam, occasional small stones, charcoal and decayed turf. This group was determined to be of recent, 20th century origin, probably forming part of a compound erected in the 1940s.

A large sub-circular cut, 116, filled with burnt material, 114, was also identified in the north-west corner of this area (length 5m, width 4m, depth unknown). It was found to overlie concrete boxed air tiles, 115, and is thus interpreted to be a furnace base of similar 20th century origin.

A modern service trench, 118, with electric cables was observed on a north-east to south-west alignment toward the north-east side of the stripped area. The fill, 117, of mid brown slightly silty clay contained modern debris and residual Roman material.

No archaeological features were identified, although a number of metal items were recovered in the north-east corner during detection after the initial topsoil strip, 113. They comprised a fragment of a 2nd-3rd century bronze brooch, a mid. 2nd century denarius of Faustina, wife of Marcus Aurelius, an indeterminate fragment of bronze, and a piece of slag. Unfortunately none of these artefacts was *in-situ* or associated with features of comparable date.

Area B

Maximum dimensions: Length: *c.* 120m Width: *c.* 90m Depth: *c.* 0.30m max.

Main deposit description

Context	Classification	Description	Max. depth/Depth below ground surface (b.g.s)
200/405	Topsoil with modern debris	Medium reddish brown silty clay with modern debris.	0.05 - 0.75m deep
404	Subsoil	Grey brown silty clay	0.35 - 1.05m deep
400	Natural	Dark red clay	0.35m +

Features/Other deposits.

As in Area A, generally only 0.30m of material was stripped off this side of the site, revealing only the subsoil, 404, to the east and redeposited clays, 201 to the west. However deeper groundworks involved the excavation of a service trench across the southern end of the site, which did reveal the natural matrix (Service Trench 2, below).

A single feature, 204, was identified cut in the redeposited clay, 201, toward the western side of the area. It was found to contain modern glass within the red clay fill, 203, and was interpreted to be a tree-bole of recent origin.

Toward the southern end of this area a concrete capped, brick-lined well was revealed. Unfortunately it was deep, only loosely filled with topsoil and thus could not be approached or recorded. The brick was handmade. Thus the feature is determined to be of post-mediaeval, probable 18th century date.

The Lagoon

Site area: A

Maximum dimensions: Length: *c.* 36 m Width: 14 m Depth: 2 m

Orientation: north to south

Main deposit description

Context	Classification	Description	Max. depth/Depth below ground surface (b.g.s)
300	Topsoil with modern debris	Medium reddish brown silty clay with modern debris.	0.36m deep
301	Subsoil	Grey brown silty clay	0.36 - 0.60m deep
311	Natural	Dark red clay	0.60m +

Features/Otherdeposits.

A number of archaeological gulley/ditch features were identified in the north-east of this area after stripping of the overburden. These were recorded and sampled accordingly prior to the full excavation of the lagoon.

Two parallel sub-linear features, 308 and 310, lay on a ENE/WSW alignment. Gulley 308 lay to the south (length >4.30m, width 0.56m, depth 0.18m). It had concave sides at 45° to horizontal curving to a concave base and was filled with a mid brown clay with grey mottling, 307, with occasional fragments of Malvernian rock and charcoal flecks, interpreted to be a deliberate backfill. Ditch 310 lay 1m to the north (length >2m, width 0.98m, depth 0.18m). It portrayed shallow concave sides at 30° to horizontal curving to a concave base and was filled with a red clay with grey-blue patches and red-brown mottling, 309, with occasional charcoal flecks. Only the latter contained dated finds - a small amount of Roman pottery in addition to residual Bronze Age/early Iron Age sherds.

These two features were both cut by a curvilinear gulley, 304, aligned approximately north-south (length >5.20m, width 0.41m, depth 0.20m). The feature had a V-shaped profile with straight sides at 45° to horizontal and a sharp pointed base. The gulley terminated to the south with a simple rounded end. There were two distinct fills. The primary fill, 303, lay on the east side of the feature. It was a grey brown clay with moderate charcoal and occasional limestone fragments. The secondary fill, 302, was a grey brown clay with a large amount of charcoal, frequent Malvernian stone fragments, many of which were burnt. Pottery recovered from the fills was of Bronze Age/early Iron Age and Roman date. The burnt stone and charcoal indicates that substantial domestic or industrial activity involving burning or heating was undertaken adjacent.

A further sub-linear feature, 306, was identified to the east, aligned east-west (length >1.30m, width 0.73m, depth 0.14m). It had shallow sub-concave sides at 20-45° to horizontal, curving to a flattish base, and the single fill, 305, comprised mixed orange/brown clay with light grey mottling and occasional Malvernian rock fragments. The western end of the feature was indeterminate, although it ran towards the southern end of gulley 304. No dateable finds were retrieved.

Service Trench 1

Site area: A (south end)

Maximum dimensions: Length: *c.* 85m Width: 8m Depth: 2m

Orientation: south-east to north-west

Main deposit description

Context	Classification	Description	Max. depth/Depth below ground surface (b.g.s)
100	Topsoil with modern debris	Medium reddish brown silty clay with modern debris.	0.36m deep
301	Subsoil	Grey brown silty clay	0.36 - 0.60m deep
311	Natural	Dark red clay	0.60m +

Features/Otherdeposits.

No archaeological features or deposits were observed at any point along this service trench and no archaeological artefacts were recovered. It should be noted however that it was not possible to enter this trench due to health and safety considerations.

Service Trench 2

Site area: B (south end)

Maximum dimensions: Length: *c.* 130m Width: 8m Depth: 1.20m

Orientation: east to west

Main deposit description

Context	Classification	Description	Max. depth/Depth below ground surface (b.g.s)
405	Topsoil with modern debris	Medium reddish brown silty clay with modern debris.	0.05 - 0.75m deep
404	Subsoil	Grey brown silty clay	0.35 - 1.05m deep
400	Natural	Dark red clay	0.35m +

Features/Other deposits.

A single sub-circular feature was observed toward the eastern end of the trench, orientated roughly east-west. It portrayed slightly concave sides at 45° to horizontal curving to a shallow concave base with a deeper central scoop (length 4m, width 2.60m, depth 0.40m). It contained two fills. The primary deposit, 402, comprised a blue/grey silty clay with small angular stones and frequent charcoal fragments. The secondary fill, 403, comprised a reddish silty clay with blue/grey mottling, and occasional charcoal fragments. No finds were recovered from this feature, which unfortunately had been heavily truncated during machining. It is interpreted to be a pit, although of indeterminate date.

No other archaeological features or deposits were observed at any point along this service trench and no archaeological artefacts were recovered.

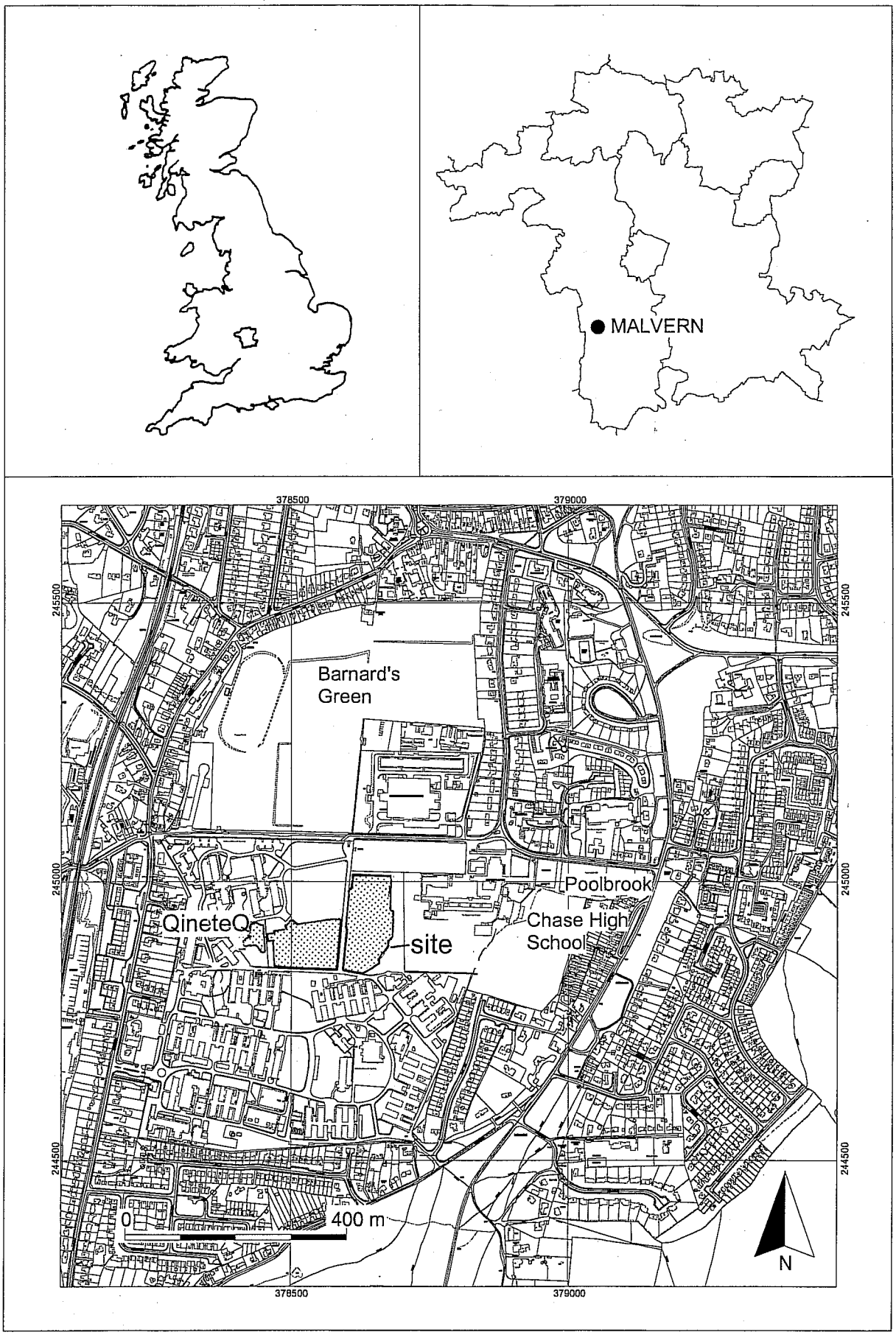

Figure 1: Location of Site

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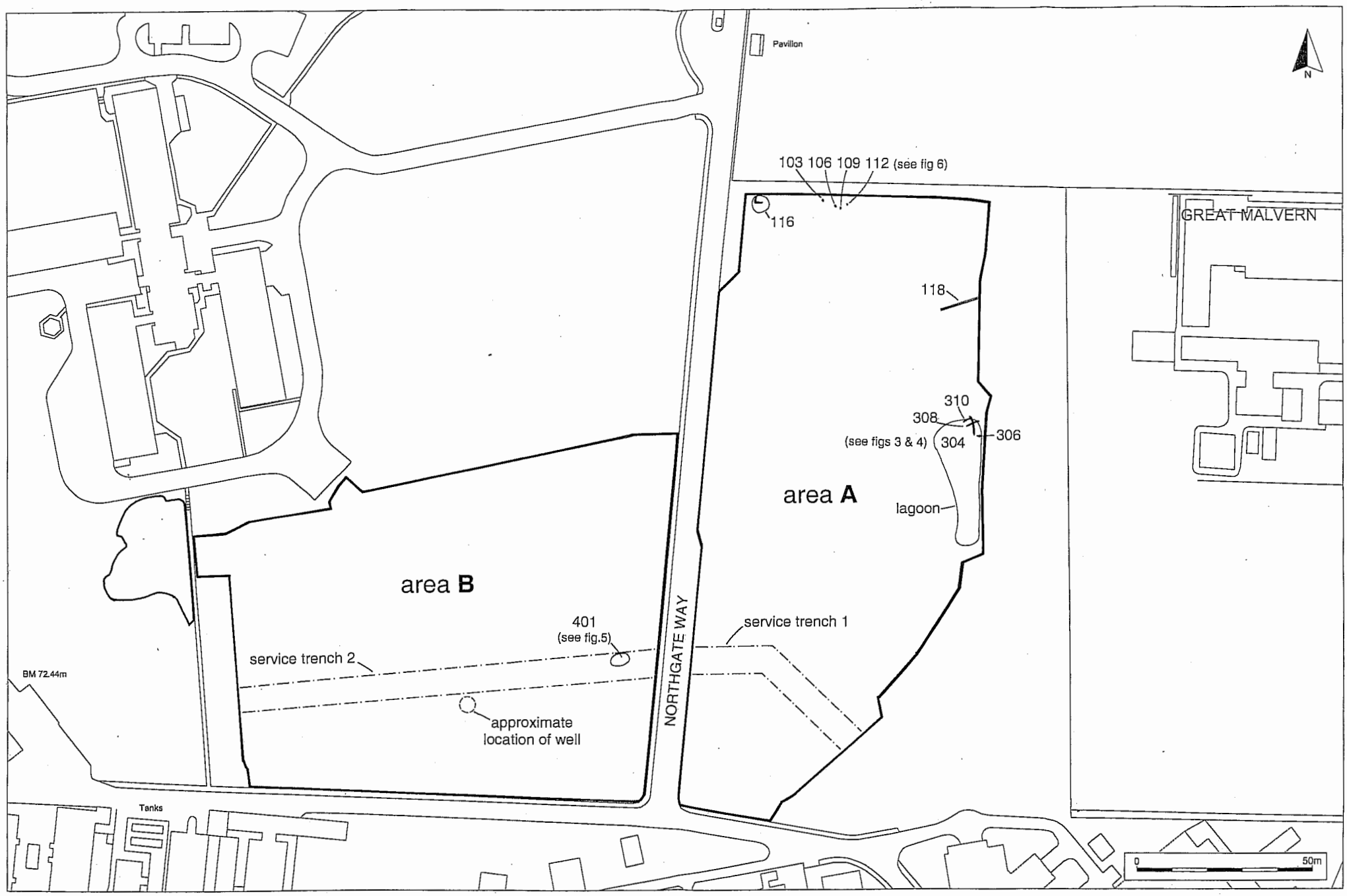

Figure 2: Plan of areas A and B and features observed.

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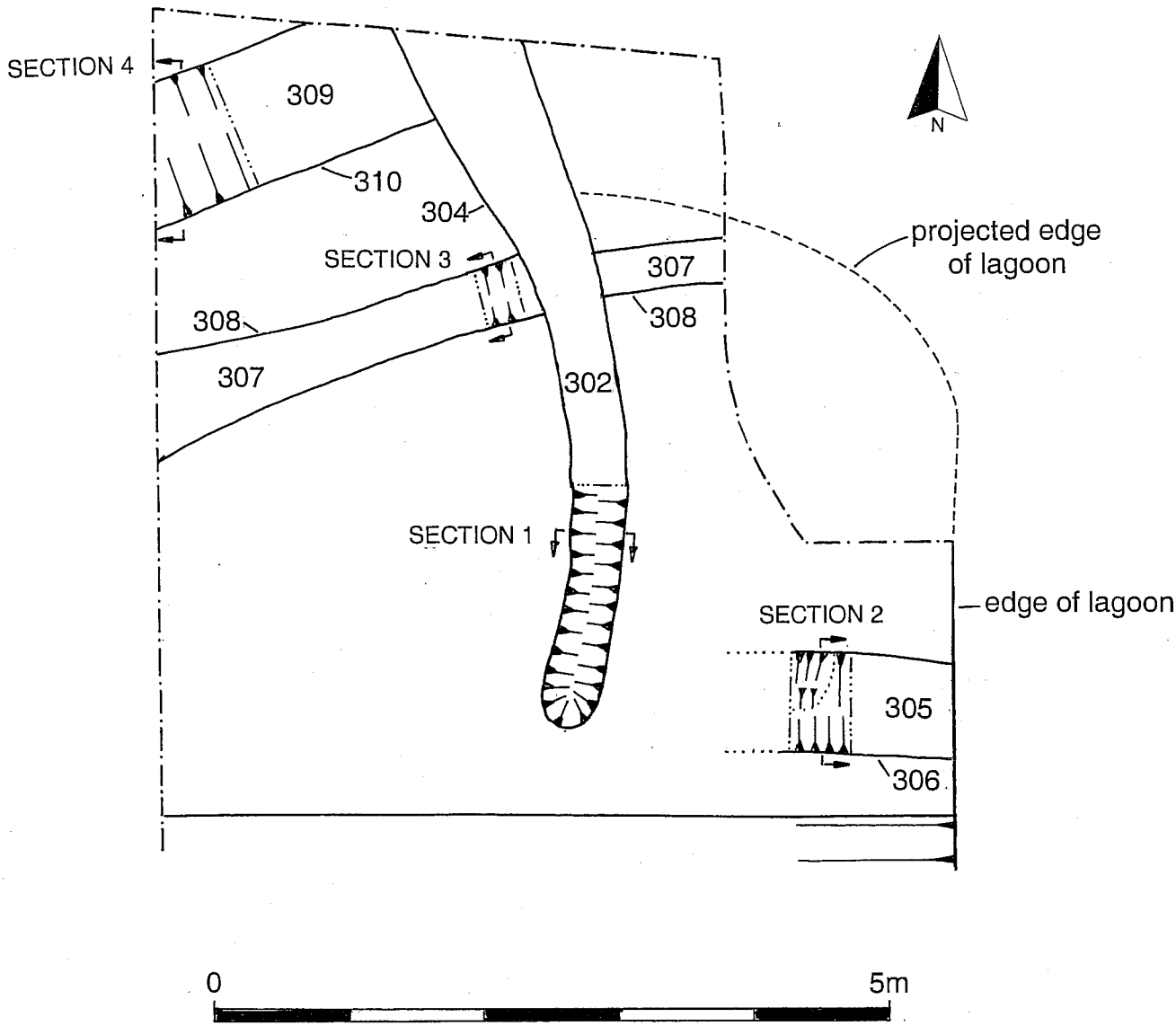

Figure 3: Plan of features 304, 306, 308 and 310.

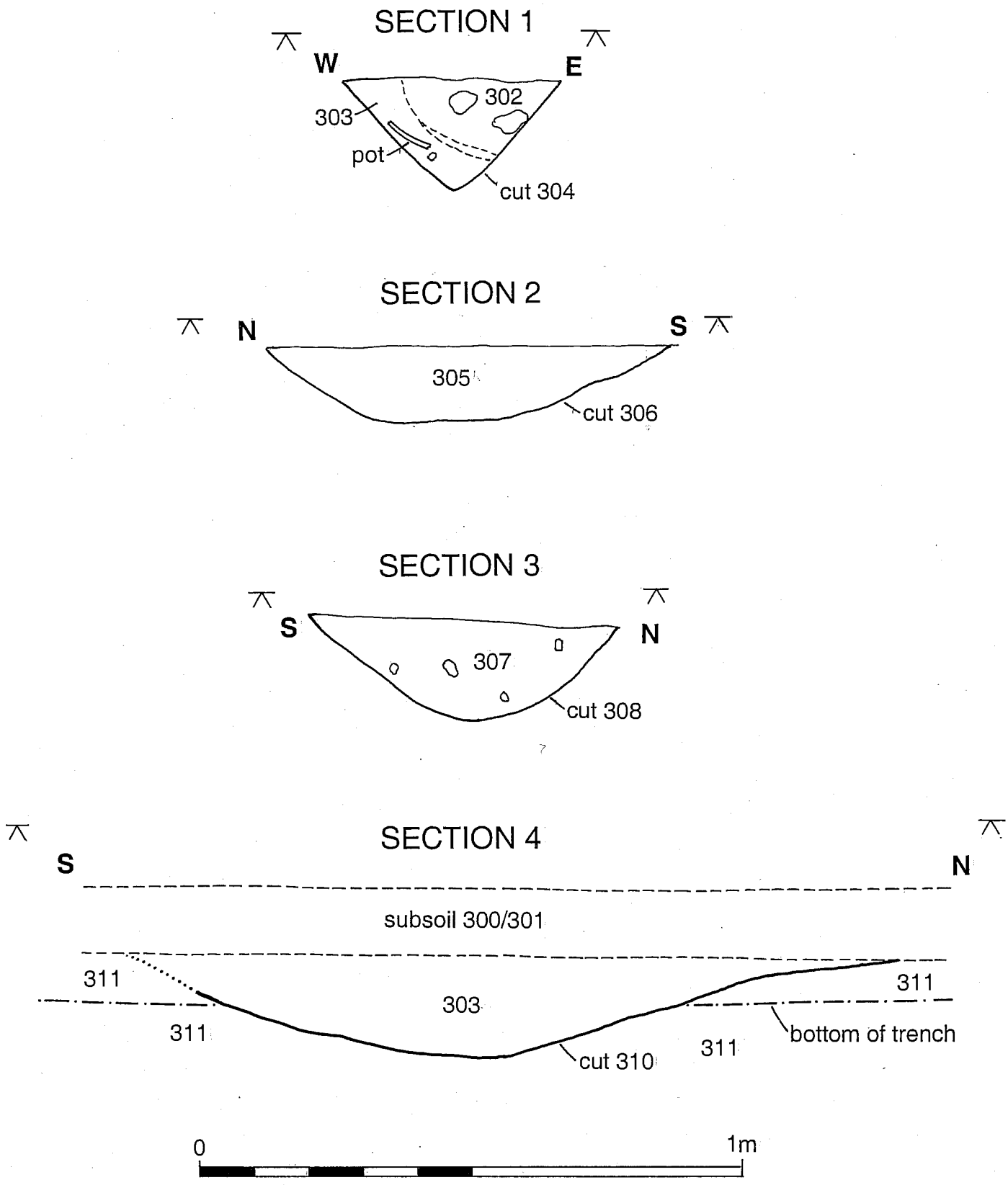

Figure 4: Features 304, 306, 308 and 310: sections.

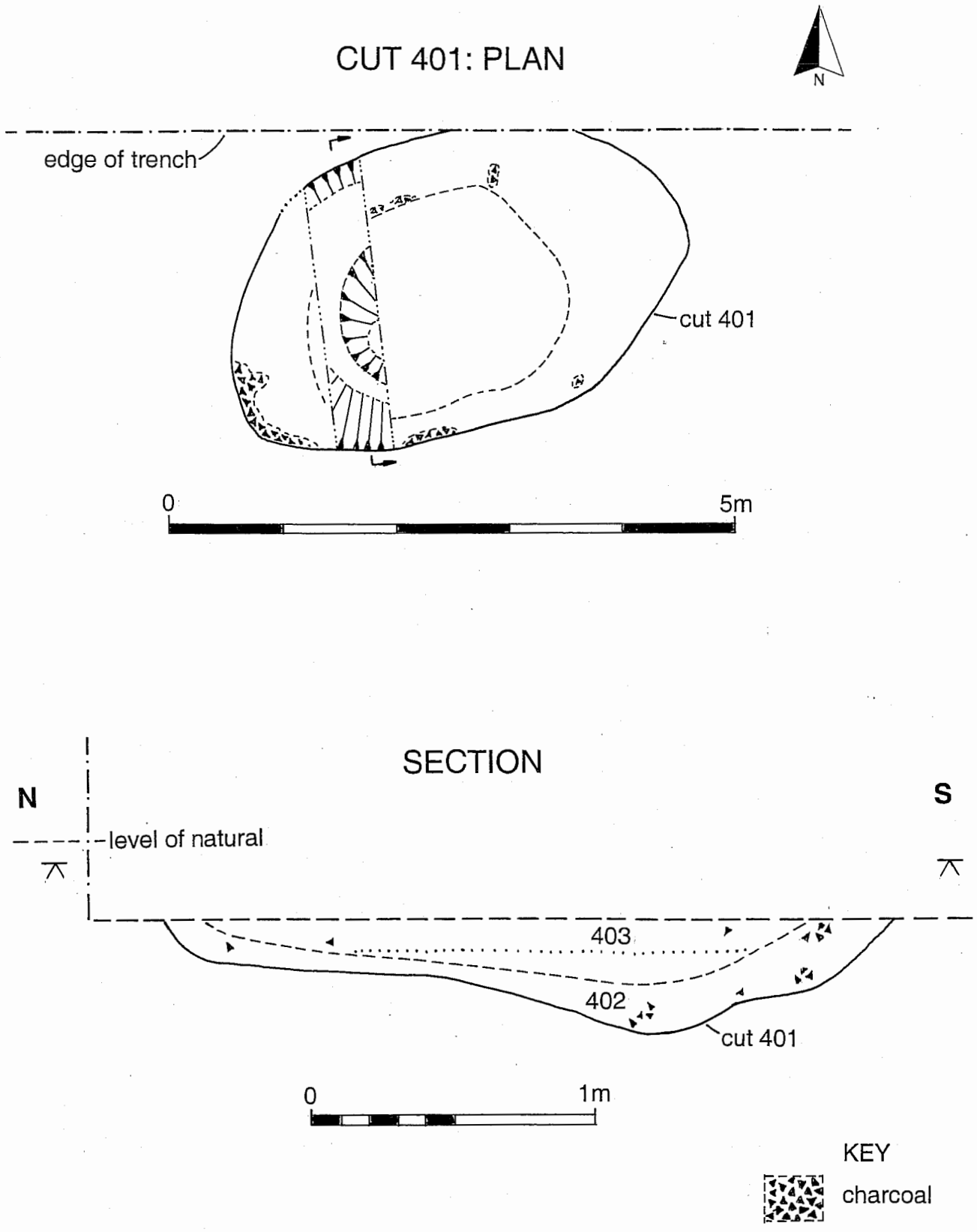

Figure 5: Plan and section of 401.

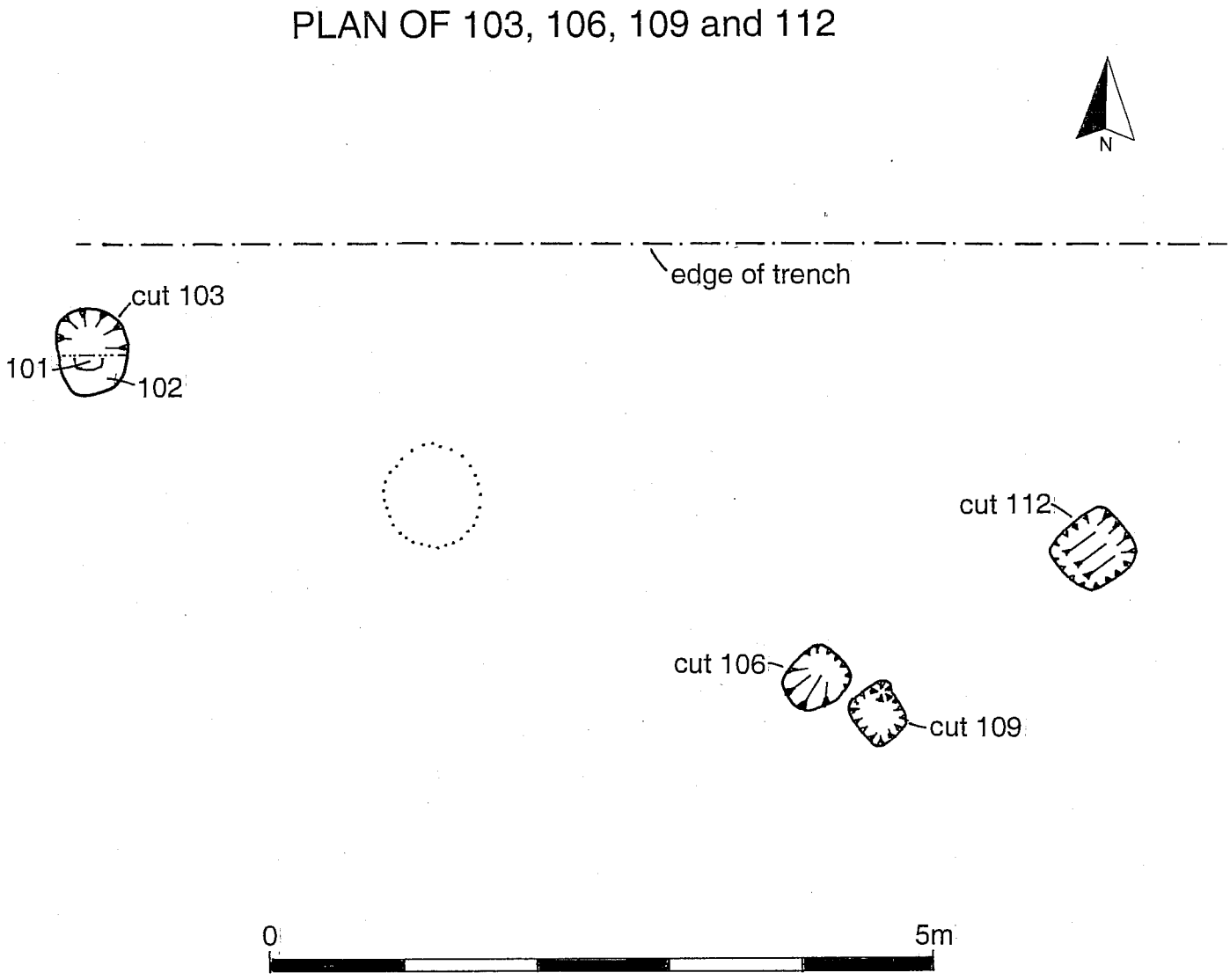

Figure 6: Plan of 103, 106, 109 and 112.