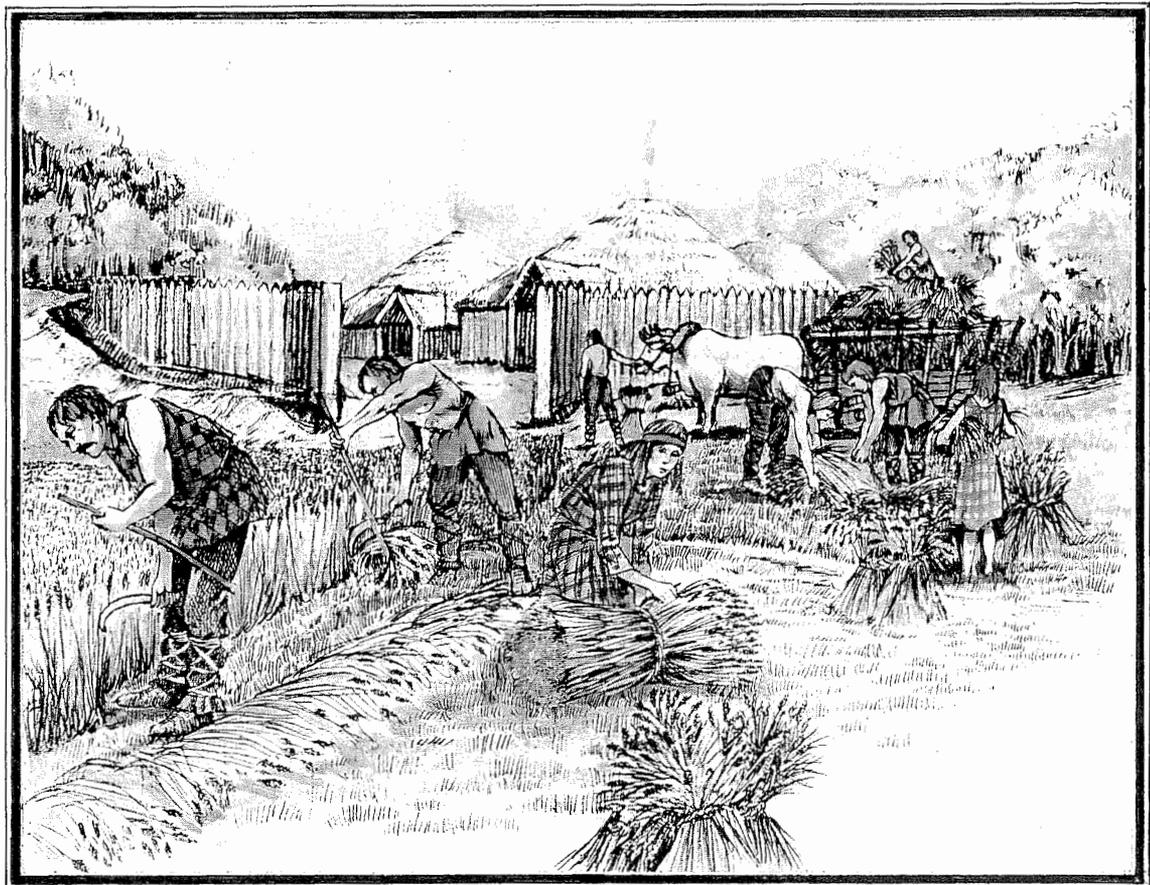


Archaeological Investigations Ltd

Stoke Lane Wychbold Worcestershire

An Archaeological Field Evaluation



July 1999

Hereford Archaeology Series 422

EXCAVATION • EVALUATION • GEOPHYSICS • BUILDING SURVEY • RESEARCH

Stoke Lane
Wychbold
Worcestershire

Archaeological Field Evaluation:

Text

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July 1999



Fig.1 Showing the location of the site

STOKE LANE, WYCHBOLD WORCESTERSHIRE

An Interim Report on an Archaeological Evaluation

1. Summary

Archaeological Investigations Ltd was commissioned by Bloor Homes Ltd to carry out an archaeological evaluation on the above site. The work was undertaken in accordance with a brief produced by Worcester Archaeological Service and the subsequent project design submitted by Archaeological Investigations Ltd.

The work comprised the evaluation of an area of c. 4.8ha. Initially the entire area was surveyed using magnetic susceptibility that was followed up by a 1.2ha detailed fluxgate gradiometer survey.

Following these surveys a series of 15 trial trenches were excavated encompassing a total of 980m². These varied in length from 60m to 10m in length and were positioned to both evaluate features identified within the geophysical survey and also to sample blank areas within the site.

The geophysical surveys produced little in the way of conclusive or easily interpreted anomalies. Most of the responses would appear to relate to the Post-medieval activity within the site and its use as parkland. The area around what was later proven to be a well, gave a large number of high responses indicating tipping or other features in its vicinity. Later studies on the geomorphology of the site would imply that the magnetic minerals have leached out of the soil profile and therefore it is unlikely that the magnetic susceptibility survey would reflect archaeological activity of a much earlier date than Post-medieval.

The archaeological trenches located a network of ditches dispersed across the whole site. Near the line of the Roman Road at the north of the site two features were located the first ran parallel to the postulated line of the road although no evidence was recovered for its date. The second was a much larger ditch, which contained Roman pottery in its lower fill.

Towards the centre of the site a north-south running ditch was sampled at four locations. Two of the sections produced pottery of prehistoric date, the majority of which would appear to be Iron Age in date.

In the centre of the site a large number of other small features were identified which included ring gullies, possible hearths and post holes indicating the presence of occupation within the bounds of the site. These are also likely to be Iron Age or native Roman in date and character. Studies of the sediments on the site revealed that a rather unusual post-depositional process was migrating stones into layers at the base of the soil profile. Some gravel tracks were however, confirmed as archaeological features.

2. Introduction

A planning application was submitted to Wychavon District Council by J S Bloor (Tamworth) Ltd (reference W/99/0135) proposing the construction of 102 two story dwellings, garaging and access roads.

The proposed development may affect an archaeological site registered on the County Sites and Monuments Record (reference WSM 17807) as a site of archaeological interest (Statutory Instruments 1988 no 1813). In line with guidance given in Planning Policy Guidance Note 16, section 30, the Planning Authority was advised that a programme of archaeological work would be required to fulfil the aims of the County Structure Plan (Hereford and Worcester County Council 1993; policy CTC5) and the district local plan, Wychavon District Local Plan, 1993, policy CB18).

Following the first phase of archaeological works, which consisted of a geophysical survey, Archaeological Investigations Ltd were commissioned to undertake the second phase of works, which consisted of a program of trial trenching.

The site is located to the east of the M5, south of Birmingham and north of Worcester. It is situated at SO 9211 6560 and currently lies under pasture (Fig. 1).

The underlying geology comprises Triassic Mercia Mudstone. Drift deposits are not shown on the site but 5th gravel terrace deposits lie to its south-east.

3. Aims

The main aim of the project was to establish the presence and significance of archaeological deposits, artefacts and ecofacts.

4. Archaeological and Historical background

Initial knowledge of the history and development of the site is limited and research was restricted to an inspection of the sites and monuments record. Approximately one kilometre to the south of the site a double ditched enclosure is known from air photography. This could be prehistoric or Roman in date. The site lies to the south of the route of a Roman road.

Wychbold is also known to have been the site of a Saxon palace although the precise location of this is not known.

Later land use would appear to be restricted to the use of the site within the estate of the nearby hall. In fact the park pale still exists within the site.

5. Method

A total of 15 trenches were excavated under archaeological supervision using a toothless bucket. The total area excavated was c.980m². The location of the trenches was determined on the basis of the geophysical survey (Fig. 2, and appendix 1).

During and after periods of rainfall the archaeological features and natural became waterlogged. On such occasions a sump had to be excavated alongside each trench to facilitate the use of a mechanical water pump. During dry conditions the excavated surface became extremely hard and required regular dowsing with water to facilitate the location and excavation of archaeological features. This variation in conditions would also obscure previously cleaned features in some cases necessitating their re-cleaning to complete recording or excavation.

The excavated trenches were tied into features shown on the Ordnance Survey 1:2500 mapping and a base line was established in each trench for the purpose of planning.

All trenches and features were tied to a temporary benchmark, which was set up on site.

A trench plan was produced at 1:50 and a long section of each trench drawn at 1:20.

All archaeological features were recorded in plan at a scale of 1:20. Sections through archaeological features were drawn at a scale of 1:10 and 1:20.

All trenches and archaeological features were photographed, using B&W negative and colour slide film, following cleaning.

A system of context records was kept and numbered independently by trench with recording was in accordance with Archaeological Investigations Ltd site manual.

Registers for context cards, photographs, drawings and samples were kept.

Three general biological samples of 30 litres were retained from three separate datable features. Each sample was floated to recover carbonised remains none were forthcoming.

The code of conduct of the Institute of Field Archaeologists was adhered to.

6. Results

The following section will describe the results of the excavation independently by trench.

6.1 Trench 1

This trench was located at the north-eastern edge of the field and orientated east/west. It measured 20m x 2m in plan and was excavated to a depth of 0.5m.

After removal of a 0.2m layer of topsoil (1001) a sub-circular pit, c.0.7m in diameter x 0.25m deep (1005) was noted at the eastern end. The fill of 1005 consisted of dark brown silty sand (1004). It cut through the 0.3m layer of sub-soil (1002) and the natural (1003). This is probably recent in date as it cuts through the upper layers of soil in the section. Towards the western end of the trench and within the sub-soil an iron service pipe (1006), running north to south was located.

No finds, features or deposits of archaeological significance were located within this trench.

6.2 Trench 2

This trench was located towards the south-eastern side of the field and orientated east/west. It measured 25m x 3m in plan and was excavated to a depth of 0.45m.

Removal of a 0.25m layer of topsoil (2001) revealed a 0.2m layer of subsoil (2002), which overlay the natural (2003).

No finds, features or deposits of archaeological significance were located within this trench.

6.3 Trench 3 (Fig. 3)

This trench was located towards the north-western side of the field and orientated north-west to south-east. It measured 25m x 2m in plan and was excavated to a depth of 0.4m.

Below the topsoil (3001) and sub-soil (3002), totalling 0.4m in depth a linear ditch (3004), orientated north to south, measuring 3.2m wide x 0.65m deep and >2m long was located at the southern end of the trench. Within 3004 a bluish grey silty sand primary fill (3005, containing Roman pottery) and greyish orange silty sand secondary fill (3007, containing Late-medieval pottery) were recorded.

6.4 Trench 4 (Fig. 4)

This trench was located towards the centre of the field and orientated north-west to south-east. It measured 60m x 2m in plan and was excavated to a depth of 0.65m.

After removal of the topsoil (4001) and subsoil (4002), totalling 0.65m in depth, a number of shallow, irregular, gravel filled, natural features were noted.

Towards the centre of the trench a ditch, orientated north-east to south-west, measuring 3.4m wide x 0.6m deep x >2.5m long (4005) was noted to be running across the trench. The fill consisted of mid greyish brown silty sand (4004) and contained pottery of an Iron Age date along with briquette (related to salt working and distribution).

6.5 Trench 5 (Fig. 5)

This trench was located towards the southern end of the field and orientated east to west. A further trench was excavated, extending southwards from the eastern edge of the first trench. The initial trench measured 20m x 2m in plan and was excavated to a maximum depth of 0.85m. The extension trench measured 7.5m x 1.2m in plan and was excavated to a maximum depth of 0.65m.

After removal of the topsoil (5001) and subsoil (5002), totalling 0.65m in depth, a poorly sorted gravel, pebble and cobble layer, c.0.15m thick, was noted to be extend across the entire length and width of the trench (5004). This layer appeared to be within a shallow cut (5005), the northern edge of which was revealed.

A number of postholes, circular in plan (5026, 5029, 5030, 5032, 5034, 5036, 5038, 5040, 5042, 5044, 5046, 5048, 5050, 5052, 5054, 5056, 5058, 5060 and 5062) varying in diameter from 0.4m to 0.9m were noted to be cutting through and below layer 5004. Those excavated had a depth of c.0.2m and some were noted to be in pairs. The fills consisted of a silty sand and varied in colour between a mid orangish brown (5035 and 5063) and a light bluish grey (5027, 5028, 5031, 5033, 5036, 5039, 5041, 5043, 5045, 5047, 5049, 5051, 5053, 5054, 5057, 5059 and 5061).

A total of seven curvilinear gullies, measuring c. 0.4m to 0.7m wide x c.0.2m deep x 2m to > 2.5m long (5006, 5014, 5016, 5018, 5020, 5022 and 5024) were also noted to be cutting through and below layer 5004. The fills of these features also consisted of a silty sand and varied in colour between a mid orangish brown (5011, 5015, 5019, 5021, and 5027) and a light bluish grey (5017 and 5023).

One of the curvilinear features (5010) also contained three circular postholes/stakeholes measuring 0.2m wide x 0.2m deep (5008, 5010 and 5012). These were evenly spaced and cut through the base of 5006. The fills consisted of a light bluish grey silty sand (5009, 5011 and 5013).

A deposit of burnt clay c.1m wide (5064) was also noted at the western end of the trench, possibly the remains of a hearth.

Within the extension trench a modern drain (50645) was noted. It was also noted that layer 5004 extended across the trench's entire length and width, below which a feature 5062 was noted.

No finds were recovered from this trench.

6.6 Trench 6 (Fig. 6)

This trench was located towards the south-eastern end of the field and orientated south-east to north-west. The trench was excavated in two parts to allow access along a right of way. The trench measured 30m x 2m in plan and was excavated to a maximum depth of 0.8m.

After the removal of the topsoil (6001) and subsoil (6002), totalling 0.5m in thickness, a 0.2m thick layer of gravel, pebble and cobbles (6004) was noted to be extending northwards for 7m from the southern edge of the trench.

Layers 6002 and 6004 both overlay natural (6003)

Towards the centre of the trench a modern drainage pipe (6005) was noted.

No finds were recovered from this trench.

6.7 Trench 7 (Fig. 7)

This trench was located towards the north-western end of the field and orientated south-east to north-west. This trench measured 20m x 2m in plan and was excavated to a maximum depth of 0.65m.

Removal of a 0.25m thick layer of topsoil (7001) revealed a 0.3m thick x 4m wide cobbled surface (7005) located towards the centre of the trench. Also a brick lined well (7017) with a diameter of 1m was noted at the southern end and a 2m wide x 0.7m deep sub circular pit (7008) at the northern end. The lower fill of 7008 consisted of redeposited natural (7010) and the upper fill consisted of dark brown silty sand (7009) and contained 19th century pottery.

Removal of a 0.4m thick layer of subsoil (7002) revealed the cut of a linear feature running northwards from the southern edge of the trench which measured greater than 1m in width and greater than 0.4m deep (7015). A modern field drain (7014) was noted in the base of the cut, which contained a fill of redeposited subsoil and natural (7004). The field drain fed into a curvilinear brick culvert, running east to west, measuring 0.4m wide x 0.2m deep (7011). A further linear cut for a service pipe was also noted to be running north-east to south-west (7013).

At the northern end of the trench, cutting the natural (7003), a linear feature, orientated north-east to south-west and 2.2m wide was noted. Excavation of this feature showed it to be two separate features, one a recut of the other. The first was greater than 0.8m wide x 0.3m deep (7007). Excavation of its mid reddish brown silty clay fill (7019) revealed a layer of cobbles along its flattish base. The recut of this

feature was 1.9m wide x 0.4m deep and stepped down to a flattish base (7021). The lower fill consisted of very compact clay and gravel (7021) and the upper fill was a mid reddish brown silty sand (7020). The 19th century pit, 7008, cut the fills of both 7007 and 7018.

6.8 Trench 8

This trench was located towards the north-western end of the field and orientated south-east to north-west. This trench measured 40m x 2m in plan and was excavated to a maximum depth of 0.45m.

Excavation of the topsoil (8001) and subsoil (8002), totalling 0.45m in thickness revealed the natural (8003) and a linear cut for a service pipe running north-east to south-west (8004).

No finds, features or deposits of archaeological significance were located within this trench.

6.9 Trench 9 (Figs 8 and 9)

This trench was located towards the centre and western end of the field and orientated east to west. This trench measured 60m x 2m in plan and was excavated to a maximum depth of 1m.

Excavation of the topsoil (9001) and subsoil (9002), with a total maximum depth of 0.7m, revealed the presence of a c.15m wide linear hollow running south-east to north-west. Within this hollow the first layer encountered after removal of the topsoil and subsoil was a 0.1m thick dark brown silty loam (9005). This overlay a 0.1m thick layer of greyish brown silty sand (9006). Below 9006 was a c.13m wide x 0.1m thick surface layer of greyish brown silty sand with frequent gravel, pebble and cobble inclusions (9007) which overlay a layer of greyish brown silty sand, 0.05m thick (9004) which in turn overlay the natural (9003).

At the western end of the trench a further surface, 9028, was located below 9002.

Removal of layer 9004 also revealed three features cutting into the natural. Two of these were postholes, sub circular in plan, 'U' shape in profile and measured c. 0.4m in diameter x c. 0.12m deep (9023 and 9027). The fills consisted of a mid greyish brown silty sand (9024 and 9022). The third feature noted extended from the north-west edge of the trench and was sub circular in plan and 'U' shape in profile and measured 1.5m wide x > 0.2m deep (9025). Within the base of this cut was a concentration of 'bog iron' (9015) within and below a greyish brown silty sand matrix (9026).

Eastwards of the linear hollow removal of 9001 and 9002 revealed a 0.7m wide x 0.25m deep and > 3m long linear 'U' shaped ditch cutting the natural and orientated east to west (9009) and was filled by a mid orangish brown silty sand (9010).

To the west of this was a 0.4m wide x 0.25m deep sub circular 'U' shape posthole (9011). This feature was filled by a mid bluish grey silty sand with frequent pebble inclusions.

Further westwards three intercutting features were noted. These consisted of a 1m wide x 0.15m deep and > 2m long linear 'U' shape ditch orientated south-east to north-west (9013) filled by a mid greyish brown silty sand (9014). A >0.5m wide x 0.3m deep and > 0.8m long linear 'U' shape gully orientated east to west (9017) filled by a mid greyish brown silty sand (9016). Finally a sub-circular 'U' shape feature, probably the butt end of a ditch, measuring 0.8m wide x > 0.7m long x 0.3m deep (9019) extended from the northern edge. The fill of this feature consisted of an orangish brown silty sand (9018) and was cut by 9016.

Westwards and close to the linear hollow was a linear 'U' shape feature, 0.5m wide x > 2.5m long x 0.15m deep and orientated north to south (9020). At its southern end it extend to 1.3m wide and a light bluish grey silty sand (9021) filled it.

The only finds recovered from this trench were shards of abraded Roman pottery from within layer 9002.

6.10 Trench 10 (Figs 10 and 11)

This trench was located towards the western end of the field and orientated south-east to north-west. This trench measured 30m x 2m in plan and was excavated to a maximum depth of 0.8m.

Directly below the 0.25m thick layer of topsoil (10001) two linear cobbled surfaces, 0.2m thick (10018 and 10019) were located. Surface 10019 measured 2.5m wide and ran north-east to south-west across the trench. Surface 10018 measured 4.8m wide and also ran north-east to south-west across the trench. Patches of burning (10013, 10015 and 10016) were also noted on the top of the latter of these surfaces and pottery of 19th-century date was also recovered.

A modern drain (10023) running east to west was also noted.

Below the subsoil (10002), with a maximum thickness of 0.45m, a c. 0.2m thick layer of gravel, pebbles and cobbles (10020) was noted. This layer extended across the entire length and width of the southern half of the trench.

Removal of 10020 revealed that four linear features, (10004, 10006, 10008 and 10010) cut the natural (10003). Features 10004, 10006 and 10010 were orientated north-east to south-west and 1008 was orientated north to south. Excavation of these features 10004, 10006 and 10010 showed that they were 1.3m, 1m and 1.7m wide respectively and all were c. 0.25m deep and filled with greyish orange silty clay (10005, 10007, 10011). Feature 10008 had a depth of c. 0.45m and was 1m wide and filled with a bluish grey silty clay (10009). A circular feature (10021), was noted to be cutting the base of 10008. It had a diameter of 0.3m and was c.0.3m deep and filled with a bluish grey silty clay (10022). No finds were recovered from any of these features.

6.11 Trench 11

This trench was located towards the southern end of the field and orientated south-east to north-west. The trench was excavated in two parts to allow access along a right of way. The trench measured 22m x 2m in plan and was excavated to a maximum depth of 0.5m.

Excavation of the topsoil (11001) and subsoil (11002), totalling 0.5m in depth, revealed a sub circular feature, measuring 0.6m in diameter and 0.23m deep (11004) cutting the natural (11003). The fill of 11004 consisted of a mid yellowish brown silty sand (11005).

No finds were recovered from this trench.

6.12 Trench 12 (Figs 12 and 13)

This trench was located towards the western end of the field and orientated east to west. The trench measured 30m x 2m in plan and was excavated to a maximum depth of 0.5m.

Removal of the topsoil (12001) and subsoil (12002), totalling 0.5m in thickness, revealed a layer of gravel, pebbles and cobbles (12008), orientated north-west to south-east, at the western end of the trench. This layer was 0.1m thick, 3.5m wide and extended beyond the width of the trench.

At the eastern end of the trench and within a depression noted on the surface a linear feature (12004) was noted to be cutting the natural (12003). Feature 12004 was orientated north-west to south-east and measured 2.2m wide x 0.7m deep and extended beyond the width of the trench. Three fills were noted within this feature. The primary fill consisted of a 0.24m thick greyish orange silty sandy clay (12006). The secondary fill consisted of a 0.3m thick greyish brown sandy silt with charcoal flecks (12005). The upper fill consisted of a 0.38m thick yellowish brown silty sandy clay (12007). Finds from within the fills of this feature consisted of burnt cobbles and brick (modern?).

6.13 Trench 13 (Fig. 14)

This trench was located towards the southern end of the field and orientated south-east to north-west. The trench was excavated in two parts to allow access along a right of way. The trench measured 20m x 2m in plan and was excavated to a maximum depth of 0.5m.

After the excavation of the topsoil (13001) and subsoil (13002), totalling 0.5m in thickness, a sub circular feature (13007), 1m wide x 0.4m deep, was noted to be cutting the natural (13003). Excavation showed the existence of a 0.2m wide post pipe (13009) within a yellowish grey sandy clay fill (13012). Fill 13012 overlay a very compact deposit of abundant rounded pebbles within a clay matrix

(13006/13011) which extend horizontally southwards from 13012 for 1.8m. A further two patches of a similar deposit was also noted along the base of the trench (13004 and 13005).

Towards the western half of the trench a layer of gravel, pebbles and cobbles 13013 was noted below the subsoil 13002. This layer, 13013, had a maximum thickness of 0.2m and extended for greater than 2.3m beyond the western edge of the trench.

No finds were recovered from this trench.

6.14 Trench 14 (Fig. 15)

This trench was located towards the centre of the field and orientated south-east to north-west. The trench measured 10m x 2m in plan and was excavated to a maximum depth of 0.6m.

After removal of the topsoil (14001) and subsoil (14002), totalling 0.6m in depth, a linear feature (14004), 1.1m wide x 0.4m deep, was noted to be cutting the natural (14003). Feature 14004 ran from beyond the south-western edge of the trench and butted out against the north-eastern edge. The primary fill of this feature consisted of a 0.22m thick deposit of greyish brown silty sandy clay (14005). The secondary fill consisted of a greyish brown silty sand with charcoal flecks (14006). Iron Age pottery was recovered from fill 14006.

A sub circular feature (14007), 0.55m wide x 0.45m deep, was noted to be cutting the eastern side of feature 14004. The fill consisted of light greyish clay (14009) and no finds were recovered.

Towards the western end of the trench a further feature was noted to be extending from the south facing section cutting the natural, 14003. It appeared to be sub circular in plan and measured 1m wide x 0.15m deep (14008). Its fill consisted of a greyish brown sandy silt (14012) and no finds were recovered

6.15 Trench 15 (Fig. 16)

This trench was located towards the centre of the field and orientated south-east to north-west. The trench measured 10m x 2m in plan and was excavated to a maximum depth of 0.5m.

Excavation of the topsoil (15001) and subsoil (15002), totalling 0.5m in depth, revealed the presence of a 4m wide linear feature cutting the natural (15003) and orientated north-east to south-west. This feature was excavated by machine under archaeological supervision. The feature cut into the natural to a depth of 1.25m with three recuts being noted and a further, shallower cut was noted to be the latest in this sequence.

The first cut was 1.1m deep and possibly '□' shape in profile (15020). Two fills were noted within fill 15020. The lowest was mixed deposit of mid reddish brown and

light bluish grey silty clay (15019). Above this was a fill of mid reddish brown silty clay (15018).

The first recut was 1.25m deep and 'V' shape in profile (15017). Its lower fill consisted of mixed deposit of mid reddish brown and light bluish grey silty clay (15016). Overlaying this was a fill of mid reddish brown silty clay (15015). Above this was a mixed fill of a light/mid orangish/blue grey silty clay with frequent small sub rounded pebbles (15014).

The second recut was 1.1m deep and 'V' shape in profile (15013). The lower fill consisted of a mid reddish brown silty clay with moderate small sub rounded pebbles (15012). Fill 15012 was below a fill of a mixed deposit consisting of mid reddish brown and light bluish grey silty clay (15011). Above fill 15011 was a fill of mid reddish brown silty clay (15010).

The third recut was 0.9m deep and 'V' shape in profile (15009). The lower fill consisted of a light bluish grey silty clay (15008). Above this was a fill of mid reddish brown silty clay (15007), which was below a fill of mid yellowish brown silty sand (15006).

The final cut was 0.3m deep x 1.2m wide and '□' shape in profile (15005). It was filled by a mid yellowish brown silty sand with moderate sub rounded pebbles (15004).

No finds were recovered from any of the fills within this trench.

7. Discussion

The following section will discuss the results of the evaluation excavation by trench. Features located within trenches will be discussed in relation to other features located across the site. This will be followed by an overall discussion of the site.

7.1 Trench 1

The only feature recorded within this trench were a pit of Post-medieval date, 1005, and an iron service pipe 1006. It is therefore likely that the area around this trench is not archaeologically significant.

7.2 Trench 2

As there was no archaeological features within this trench it can be suggested that the area around this trench is unlikely to have been disturbed by human activity.

7.3 Trench 3

The overall dimensions of the ditch, 3004, located within this trench suggest that it may have functioned primarily as a boundary ditch. Although its extent north-eastwards and south-westwards could not be determined the fact that it was not present within Trench 8 or 12 suggests that it may butt out or return in another direction, rather than extending into the western area of the site. An alternative possibility is that a faint trace on the gradiometer survey (Plots 2 and 5) follows the line of this feature.

The fact that the Roman pottery recovered from the fills was abraded might suggest that it is likely to have been transported from elsewhere. However, further analysis of site conditions could demonstrate that the pottery has eroded in situ through chemical processes. The ditch is likely to have lain open as an earthwork after its initial filling as medieval pottery came from its upper fill.

7.4 Trench 4

The ditch, 4005, within this trench is likely to be Iron Age in date suggested by the pottery recovered. Its extension north-eastwards is likely to be represented within Trench 15 by cut 15005, as the dimensions and fills of both ditches were similar. No ditch was located within Trench 1, it is therefore probable that it extends to the north of this trench. Its extent south-westwards is suggested by the features within Trench 14. Within Trench 14 two features were noted, 14004 and 14008. Feature 14008 is likely to represent the butt end of a ditch and is probably the terminal of the Iron Age ditch extending through Trench 4 and 15. Feature 14004 represents the butt end of a ditch, Iron Age in date as suggested by the pottery recovered, therefore both ditches are likely to be contemporary and associated.

7.5 Trench 5

The gravel, pebble and cobble layer, 5004, within this trench has been identified as a natural deposit (Jordan 1999, Appendix). Its deposition by a process of deflation may suggest why some of the features within this trench appeared above and below this layer.

Although no definable structures were identified the concentration of postholes and gullies within this trench suggests that this trench was excavated within an area of settlement. This suggestion may be further enforced by the presence of the deposit of burnt clay, 5064, which may be representative of a hearth.

Due to the proximity of a now passive brine run and as the nature of the ground across the site, which results in poor drainage during periods of rainfall, a substantial concentration of ground water would have been present. This fact may suggest why a settlement would be located within or across the extent of layer 5004. The presence of layer 5004 may have been the influencing factor in the location of the settlement as the nature of this layer may have assisted in the drainage of groundwater, making it a

more suitable area for occupation. However, the possibility that the layer formed afterwards can not be discounted.

The gullies may represent a further need for drainage within the settlement was required. It is unlikely that they were excavated during one episode, as noted by the fact that 5014 cut 5016. This may therefore reflect the continual need for drainage measures.

No discernible patterning of the postholes could be identified, although the presence of postholes in pairs may suggest that they represent structures, possibly dwellings of a considerable size. Such pairing of postholes are generally noted as defining the entrance way of Iron Age round houses, which is likely to be the type of dwelling that would be within the settlement, suggested by the overall context of the site. It is also likely that more than one phase of construction of structures occurred. This is apparent from the fact that the pair of probably associated postholes, 5030 and 5032, cut through the earlier gullies, 5016 and 5018. The contrast between two distinct types of fills within individual features may also be a reflection of different phasing within the site.

7.6 Trench 6

The only feature recorded within this trench was a possibly surface, 6004, at the south eastern end of the trench

7.7 Trench 7

Most of the features within this trench were of Post-medieval date and may be associated with the period during which the site was a parkland belonging to the nearby Wychbold Hall.

The one early feature may be that represented by cuts 7007 and 7018. The initial cut may be representative of a palisade ditch, suggested by the cobbles at the base of the feature which may represent post-padding. This ditch appears to have been later recut by 7018. Ditch 7018 may also represent a palisade ditch suggested by the slot cut along the base of the ditch and the hard compacted clay and gravel fill, 7021, which may have been used as post packing.

The extent of this feature, other than the fact that it runs eastwards and westwards could not be determined. This being so its orientation may be significant considering the proximity of the Roman Road (currently the A38) which also has a east to west alignment.

7.8 Trench 8

The only feature recorded within this trench the cut for a service pipe 8004. It is therefore likely that the area around this trench does not contain significant archaeology.

7.9 Trench 9

Within this trench a number of ditches and postholes were identified, and one ditch, 9014, may be the same as that noted within Trench 14004 and is therefore likely to be of an Iron Age date. The shape of feature 9020 may also imply that its functional purpose was structural.

Within the hollow a surface was encountered which may be of Iron Age date considering its depth, the fact that it was overlain by a paleo-soil, and its comparative position in relation to other features of this date within the site. This surface may be the same as that located within Trench 10, 10020, therefore extending southwards and north-westwards. This being so the surface in Trench 10 may be associated with a further possible surface, 9028 (located at the western end of the Trench 9) and with the possible surface located within Trench 12, 12008, suggesting that it extends further north-westwards.

7.10 Trench 10

The two post medieval surfaces, 1018 and 1019, located below 10001 may be associated with the post medieval parkland belonging to Wychbold Hall.

The possible surface, 10020, below 10002 has been discussed above, although its extent south was not determined other than beyond the south of this trench.

Three of the ditches, 1004, 1006 and 1010 located in the base of this trench may represent drainage ditches. Although undated the fact that they were not defined until the removal of layer 10020 suggests that they are of considerable antiquity, possibly Iron Age when considered within the context of the site (i.e. the upper fills are affected by a similar amount of leaching to other features of this date).

Ditch 1008 differed from the other three in that a posthole identified within its base suggests it to have been a palisade ditch. The dimensions of this ditch suggest that this would have not been defensive and is likely to represent a boundary.

The above three ditches could not be associated with any of the other ditches located in any of the other trenches, therefore their full extent eastwards and westwards could not be determined.

7.11 Trench 11

The only feature recorded within this trench was a posthole 11004. It is therefore likely that the area around this trench is undisturbed by human activity.

7.12 Trench 12

Within this trench a possible surface 12008 was located. This has been discussed above, although it should be noted that its extent north-westwards could not be determined beyond this trench.

The feature identified by the linear geophysical anomaly appears to have been represented by ditch 12004. This is likely to be recent in date as suggested by the finds of brick.

7.13 Trench 13

The posthole, 13007, at the southern end of this trench may represent the insertion of a palisade trench with a surface extending from its southern side. The further patches of gravel, 13004, may be defining its extent across the width of the trench. The dimensions of this feature suggest that if it was a palisade it would have been positioned to mark a boundary, rather than be defensive in nature. No datable evidence was recovered for this feature although its position below the subsoil and context within the site suggests that it may be of Iron Age date.

A further possible surface, 13013, was also located at the northern end of the trench and may be of contemporary.

7.14 Trench 14

The Iron Age ditches, 14008 and 14004, within this trench have been discussed above when determining the association of other ditches excavated within Trenches 4, 9 and 15.

7.15 Trench 15

Within this trench the latest ditch, 15005, is probably Iron Age in date and its association with other ditches is discussed above.

The dimensions of the cut, 15020, and re-cuts, 15017, 15013, and 15019, of the earlier ditches suggest that this was a substantial feature and may suggest that it was an enclosure ditch. The fact that ditch 15005 is the latest feature in this sequence of re-cutting implies that the earliest cuts are possibly pre Iron Age in date. The extent of this ditch could not be determined beyond the width of the trench, although it should be noted that it was not located within and therefore did not extend as far as Trench 4.

7.16 The Overall Site

It would appear that the greatest concentration of archaeological features is located towards the centre and southern half of the site. Such features are probably Iron Age in date.

The features within the northern half of the site may be reflecting boundaries or Post-medieval activity around a possible brine well.

The ditches extending through trench 15, 4, 14 and 9 may be representative of an enclosure possibly following the boundary of an earlier enclosure as suggested by the larger ditch in Trench 15.

Southwards of this enclosure ditch there is likely to be evidence of settlement and evidence of briquette from an Iron Age context is of some interest although not enough to demonstrate salt working on the site itself.

Sedimentary assessment of the deposits on the site was carried out to try and determine the nature of gravel layers uncovered during the excavations and initially interpreted as stratified layers within the occupation sequence. Whilst a number of the better constrained gravel deposits are probable early trackways an extent of gravel to the east of the site appears to be formed by a natural process termed deflation. This is where stones percolate through the soil profile and settle on top an impermeable layer. It therefore appears that the gravel in trench 5 is natural in origin.

A further profile of interest was identified in trench 9 where a buried ancient top soil was identified above a gravel surface. Features beneath the gravel here contained bog ore (although this could have occurred naturally in situ). In the later sub-soil sealing the ancient top soil horizon Roman pottery was recovered.

8. Conclusion

The evaluation has identified features of significant archaeological importance within the site. There would appear to be an extensive network of Iron Age and later features covering the area proposed for development.

Environmental preservation is poor and the only artefacts to survive are ceramic finds and burnt stones.

The geophysical survey may be able to locate hearths although leaching of magnetic minerals from the soil has probably removed any magnetic contrast, which would enable these to be located.

A study of the soils has indicated that some of the gravel surfaces may be natural in origin although there are at least two on the west side of the site which are probably track-ways.

The trenches towards the centre of the site contain evidence for structures demonstrating that the site was probably occupied in the prehistoric period. Finds from other ditches imply drainage and possibly enclosure during the Iron Age and Roman periods.

Excavation conditions on site were difficult with both wet and dry weather presenting their own problems. The leaching of soil could in some cases make the edges of features difficult to determine.

9. Bibliography

WAS *Brief for an archaeological Evaluation at Stoke Lane, Wychbold, Worcestershire.*

10. Archive

Context records for each trench
Drawings on film
35mm photographic record
Pottery
Finds of burnt stone and iron
No sample residues
Site notes
This report

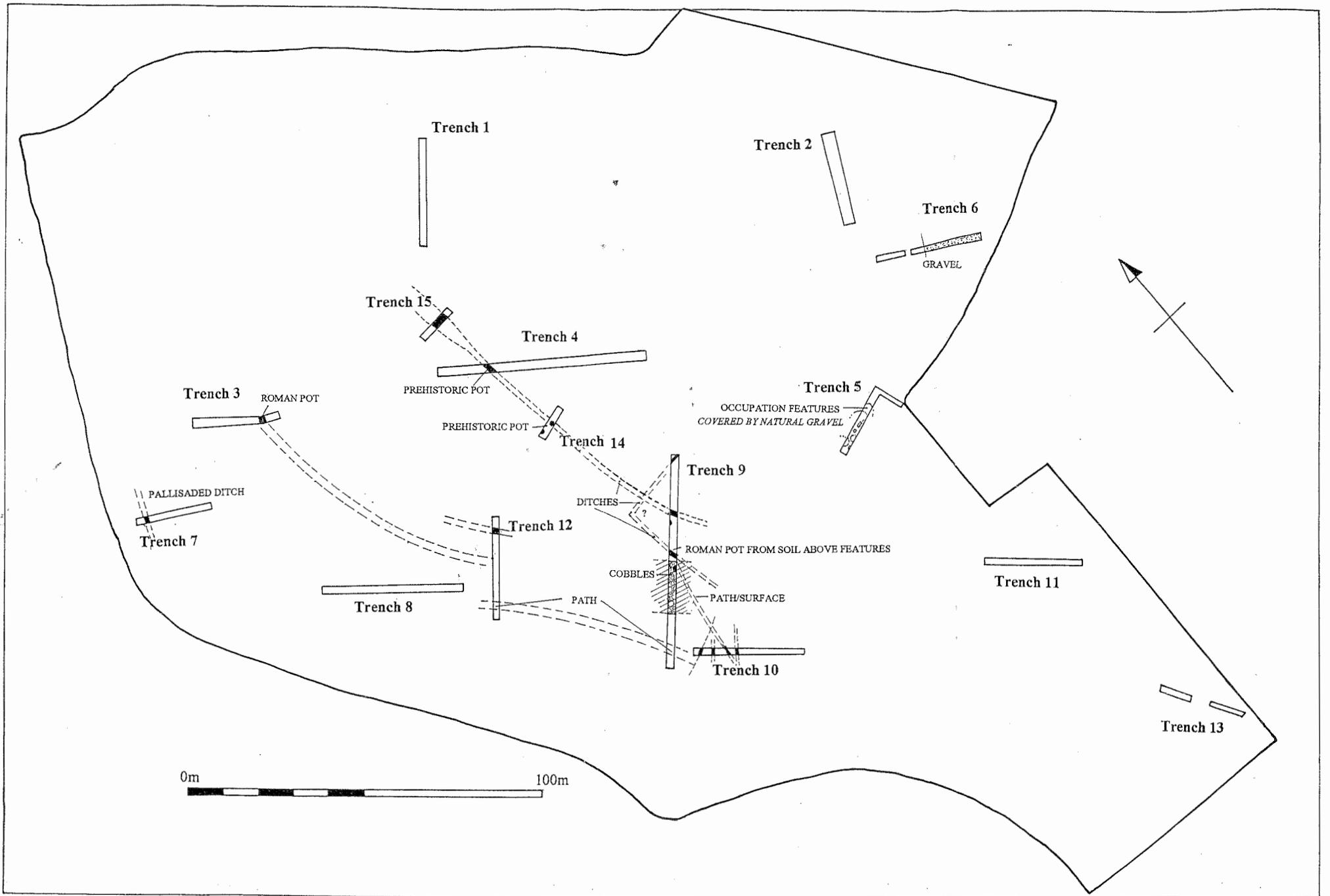


Fig.2 Trench location plan

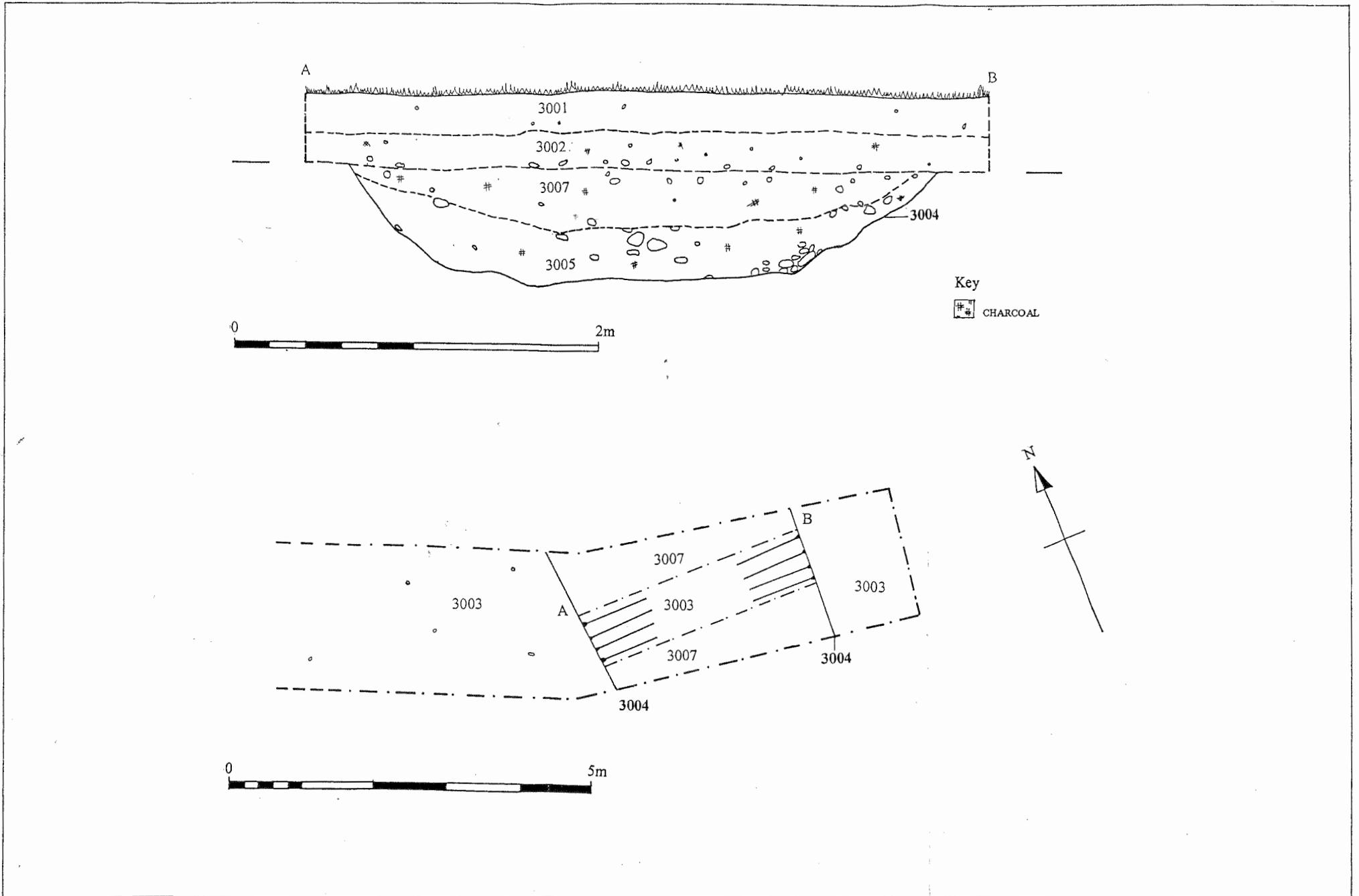


Fig.3 Plan of trench 3 and South West facing section

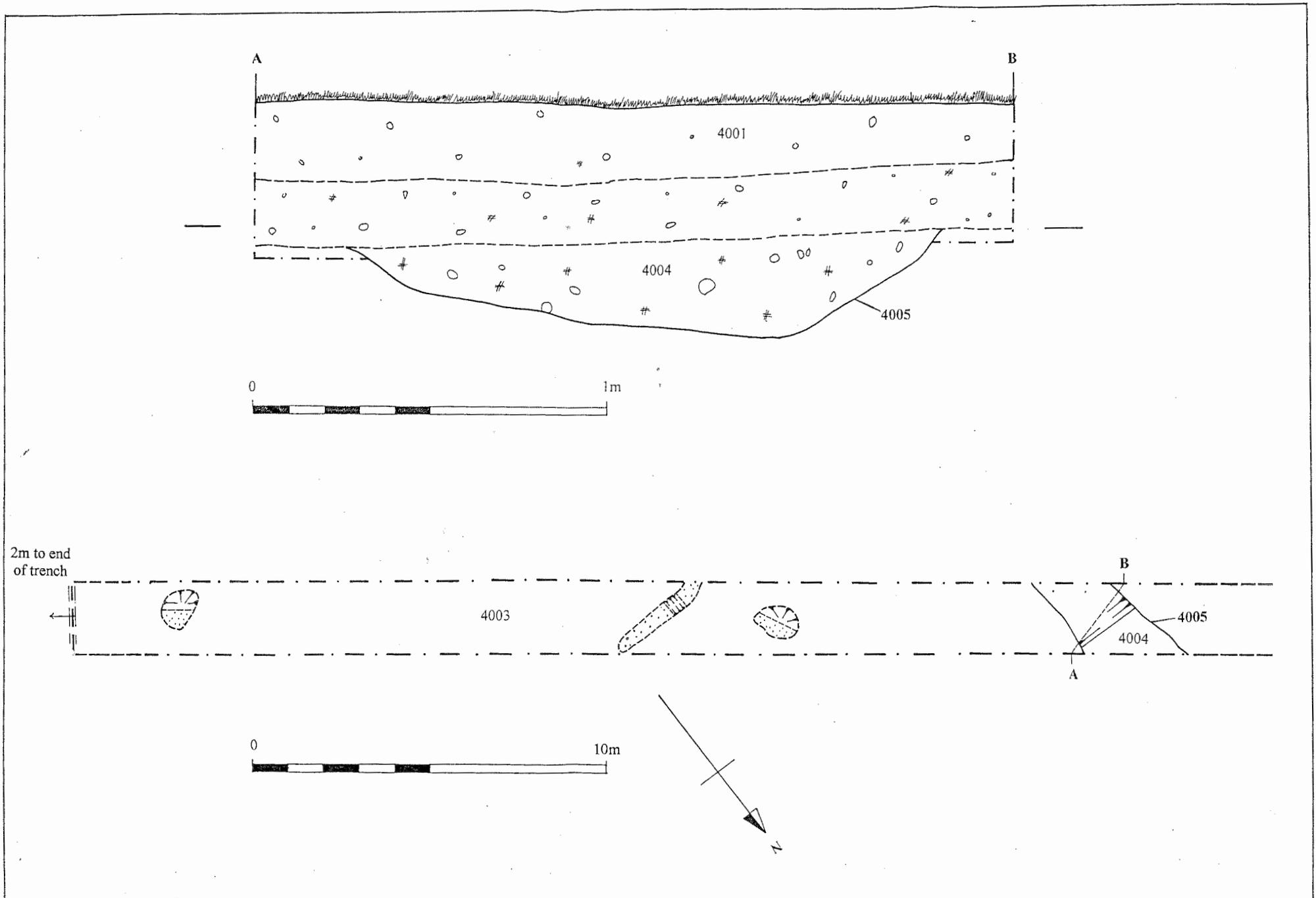


Fig.4 Plan of trench 4 and North facing section 4005

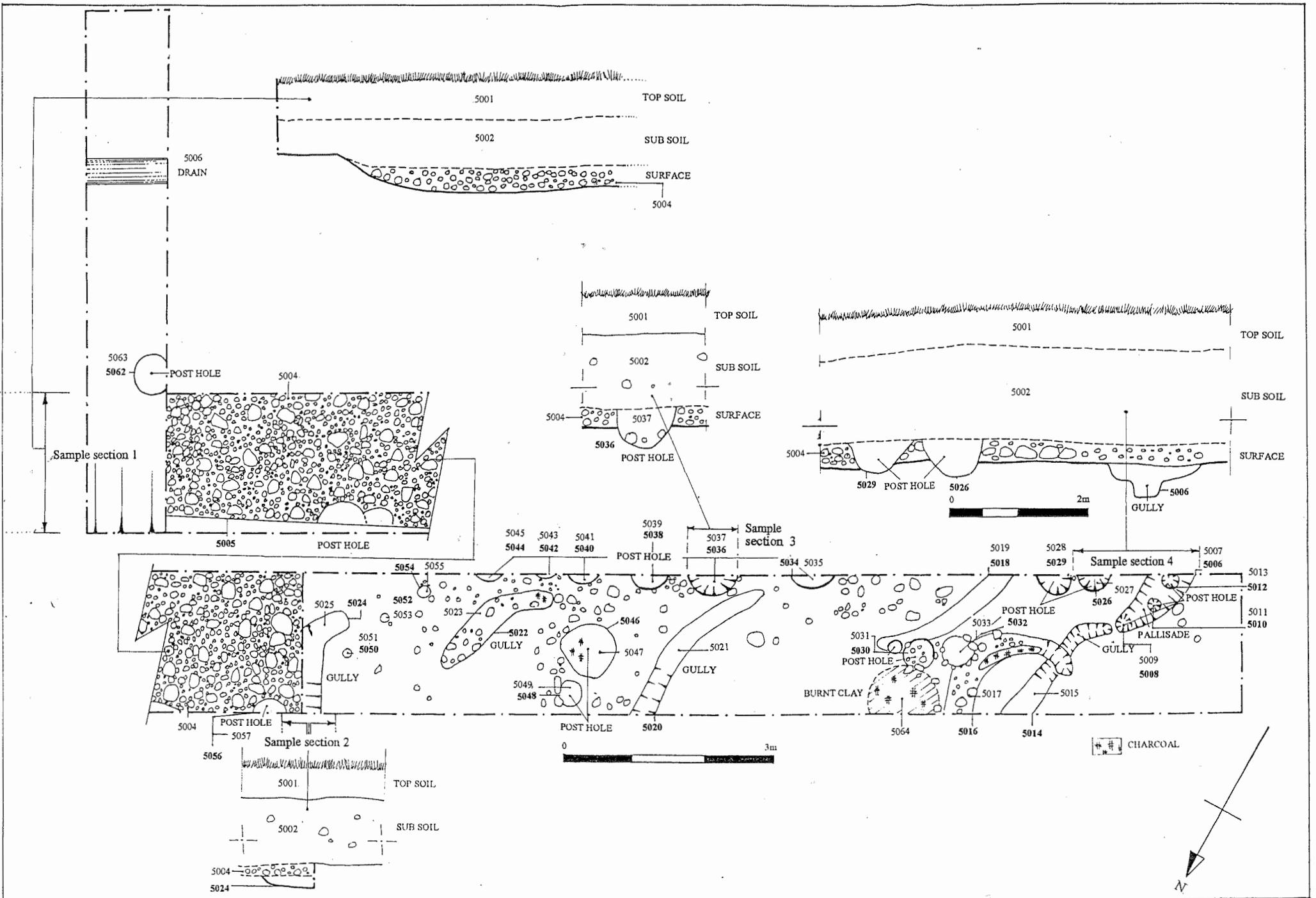


Fig 5 Plan of trench 5 and sample sections

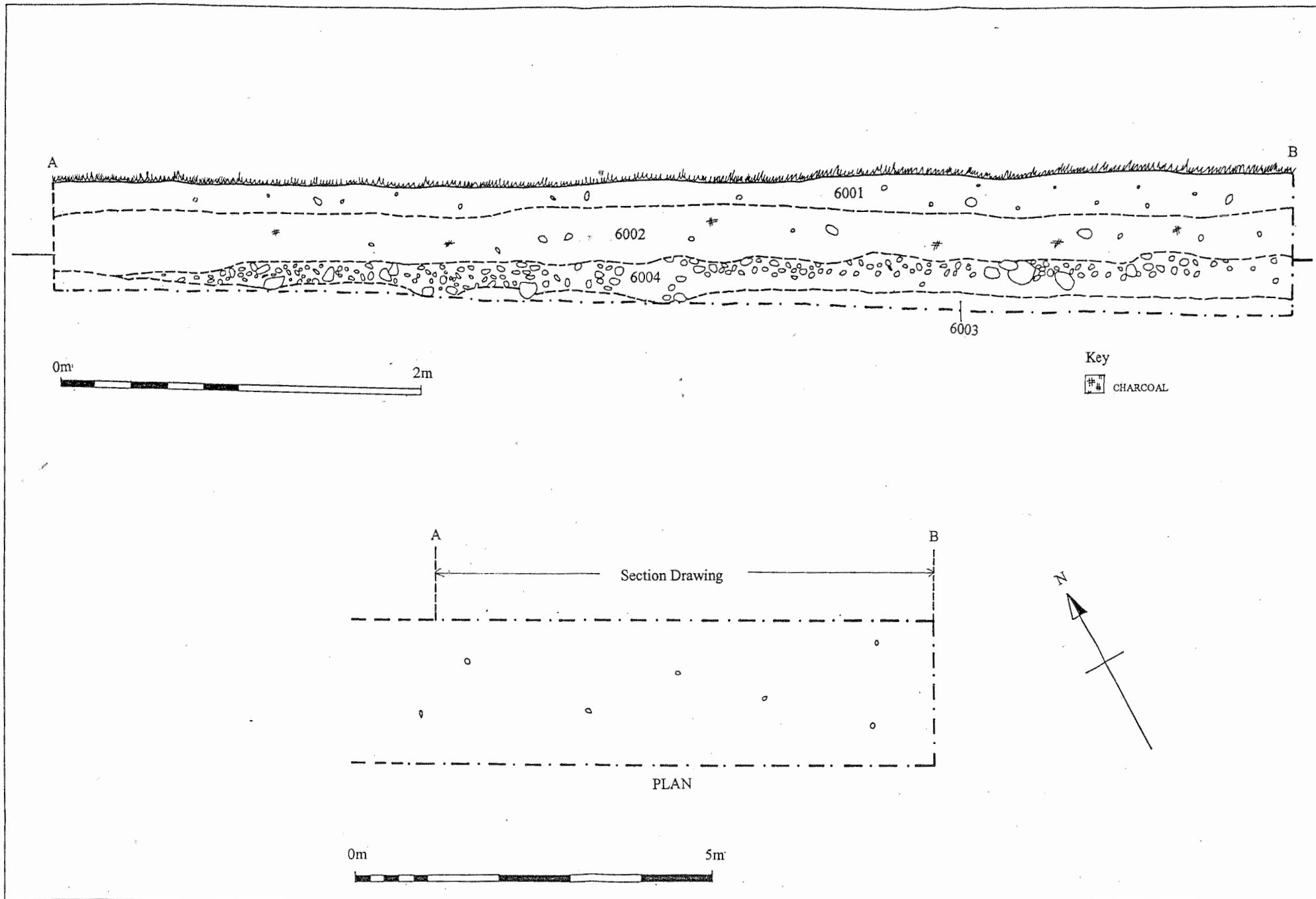


Fig. 6 Plan of trench 6 and section drawing

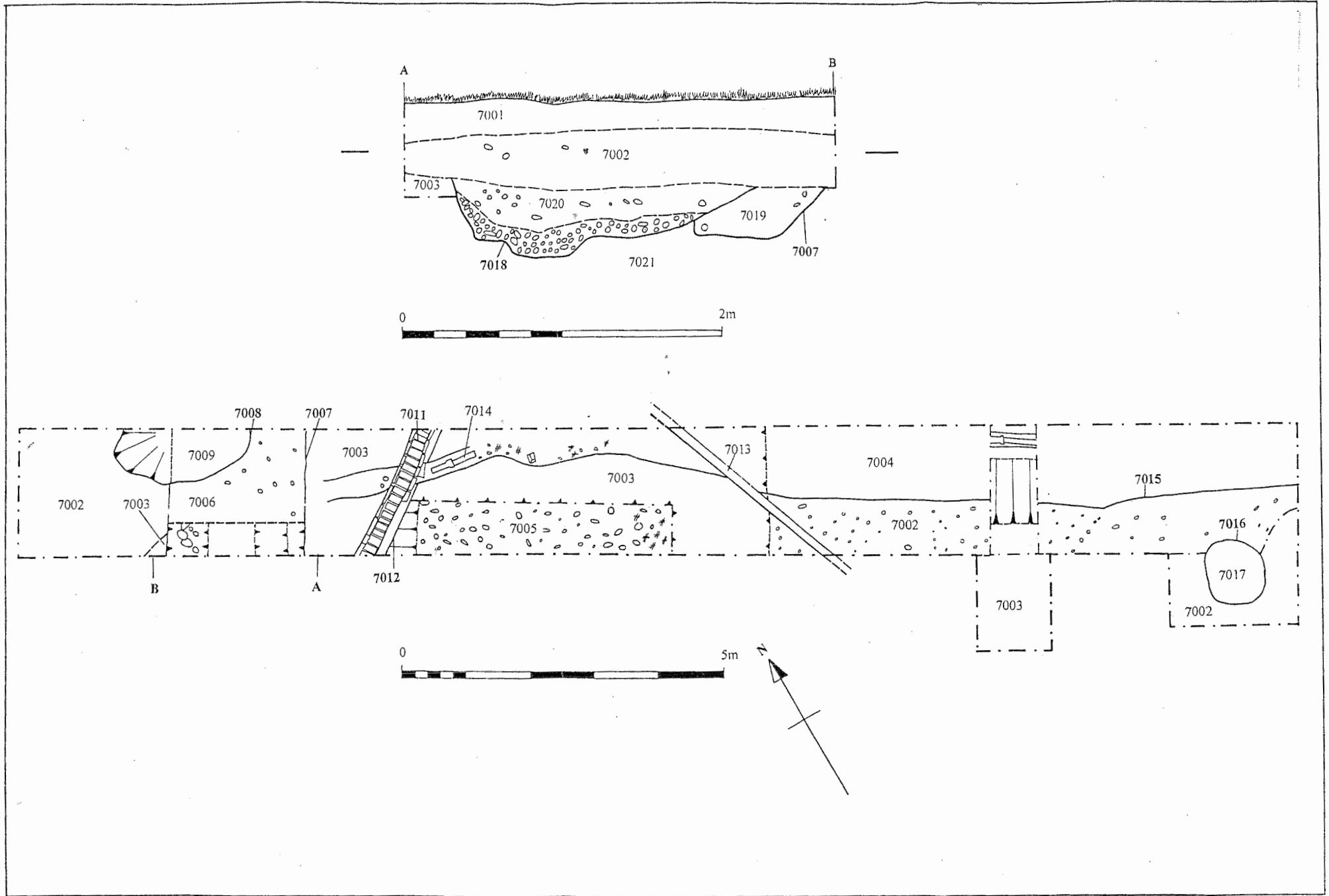


Fig.7 Plan of trench 7 and North east facing section

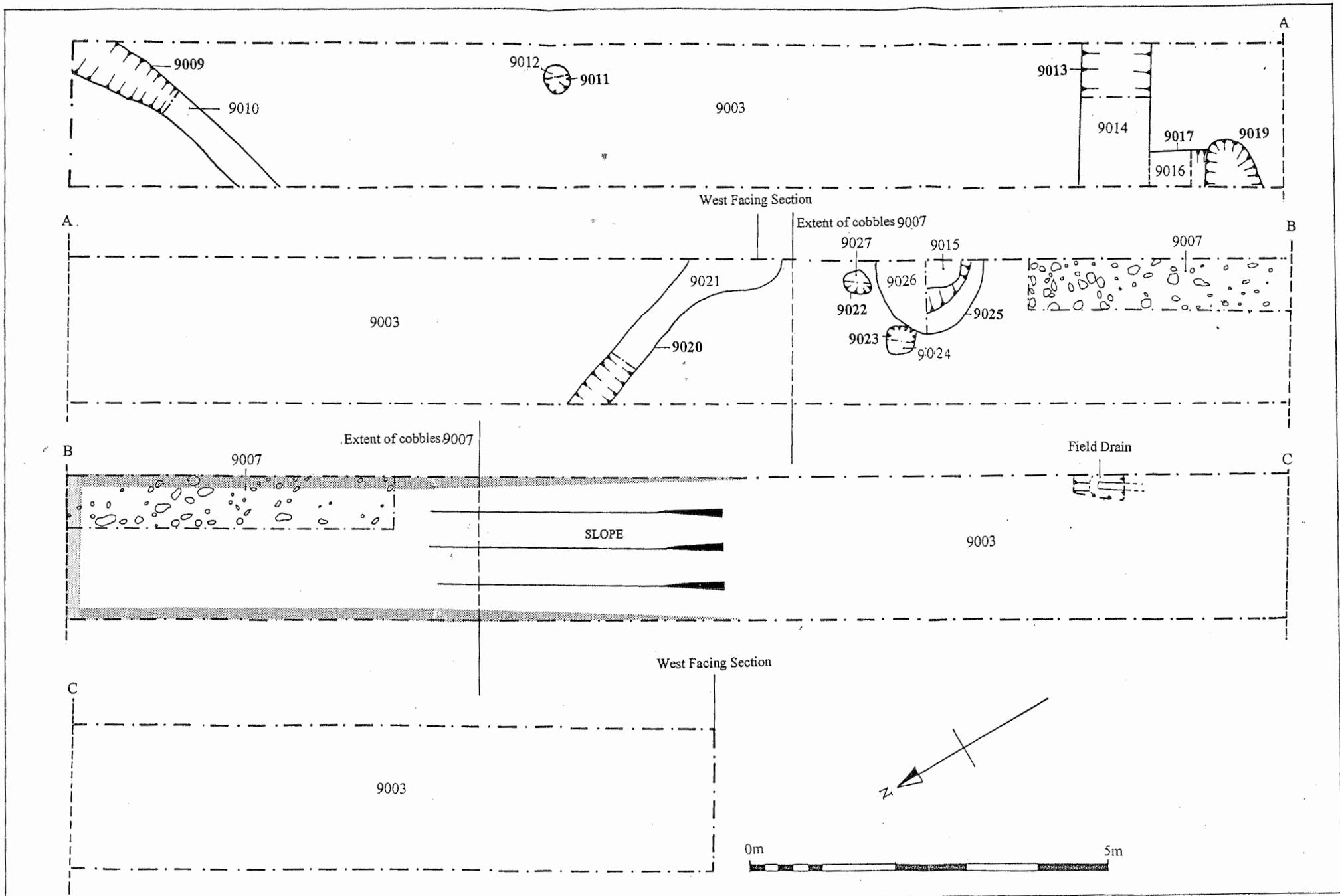


Fig. 8 Plan of trench 9

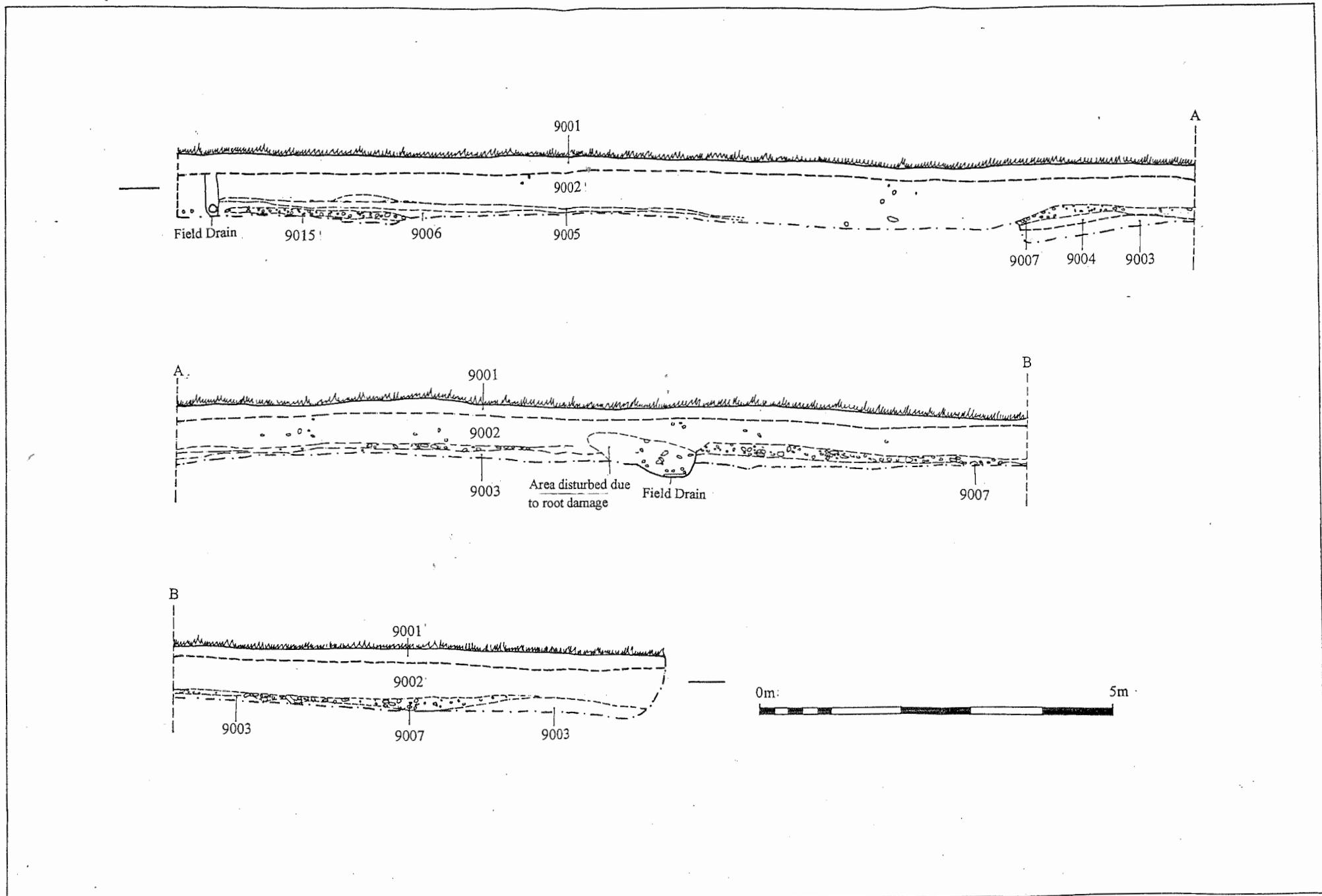


Fig. 9 north west facing section of trench 9

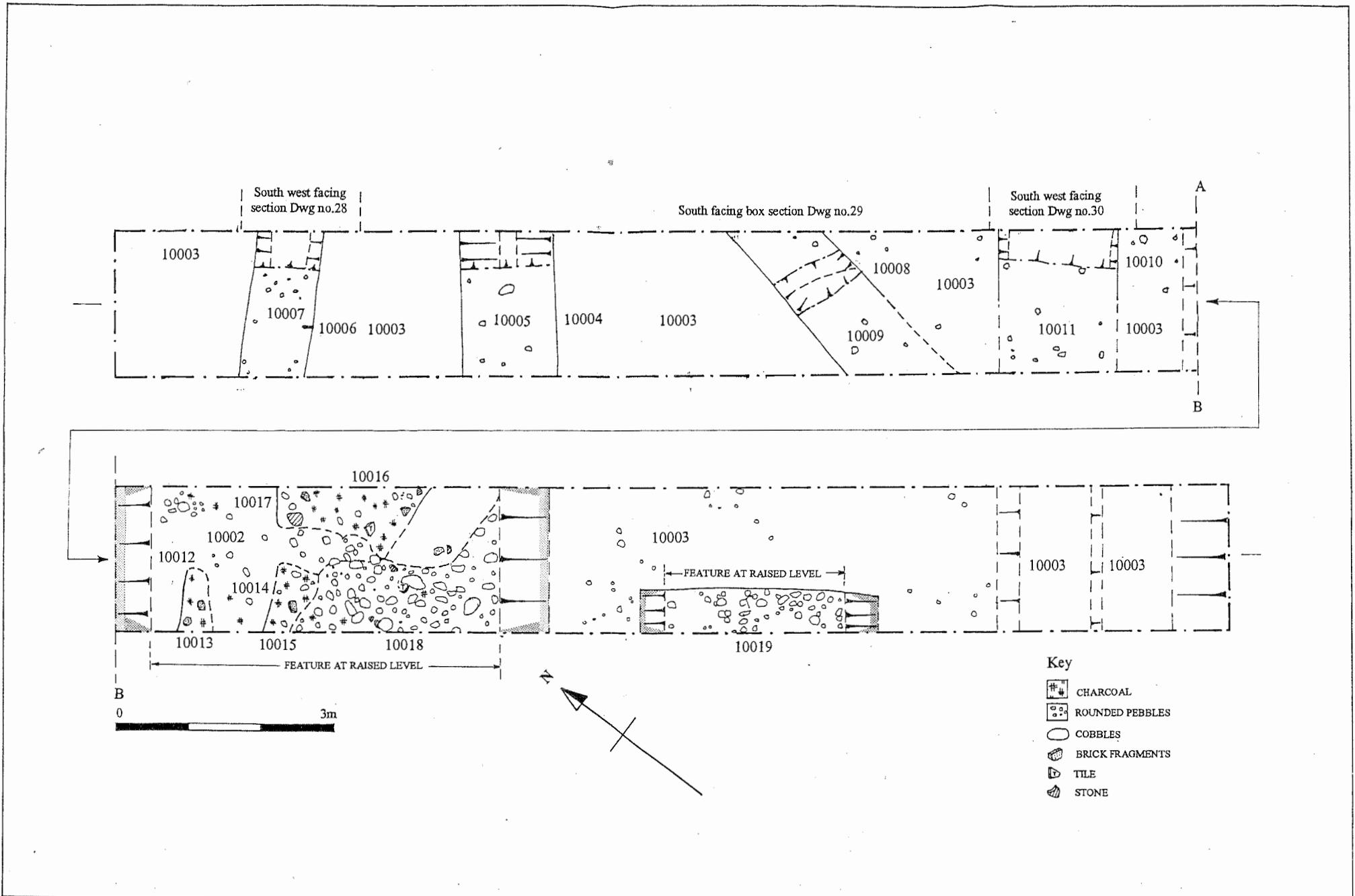
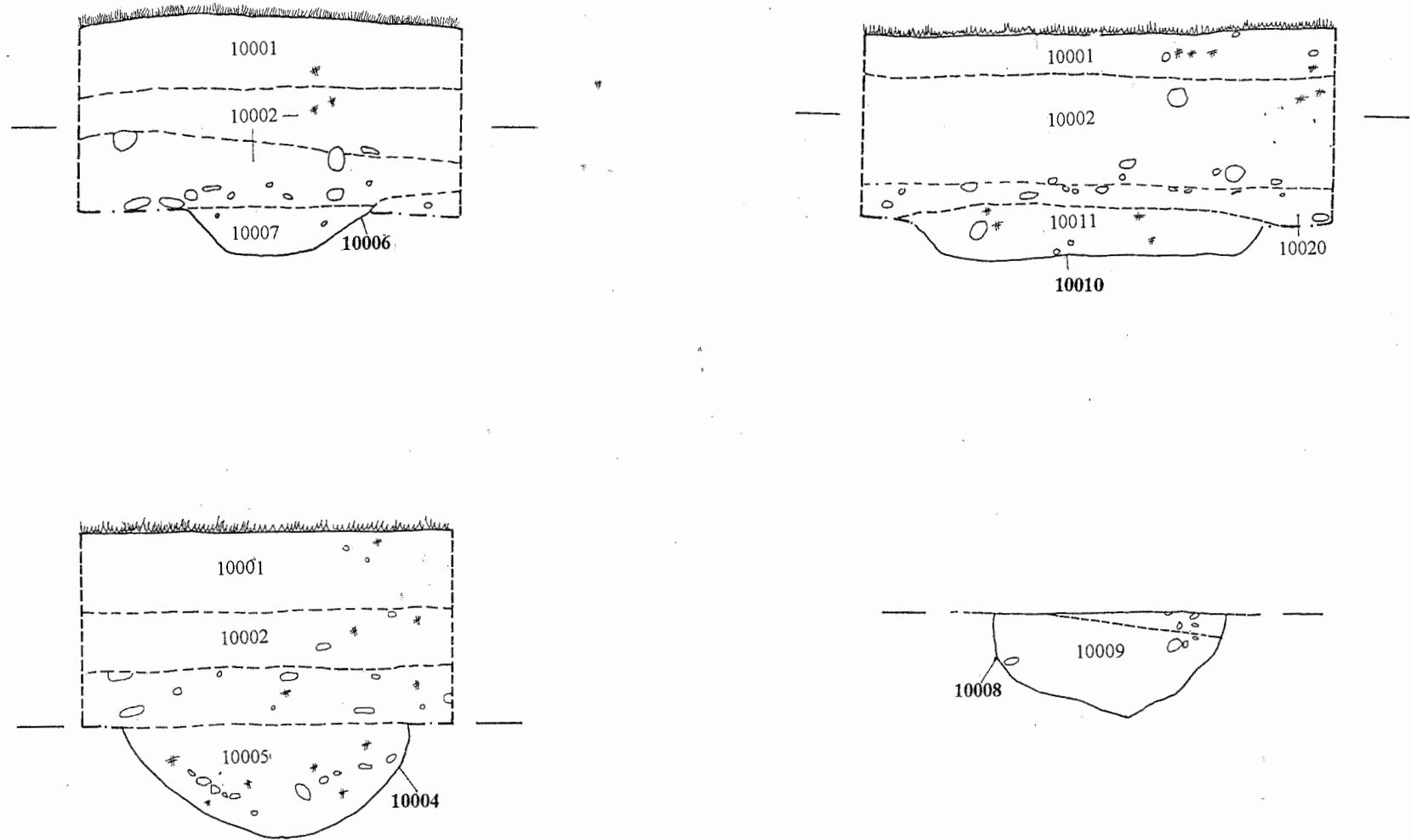


Fig.10 Plan of trench 10



Key
 [Asterisk in a square box] CHARCOAL



Fig.11 The ditches in trench 10

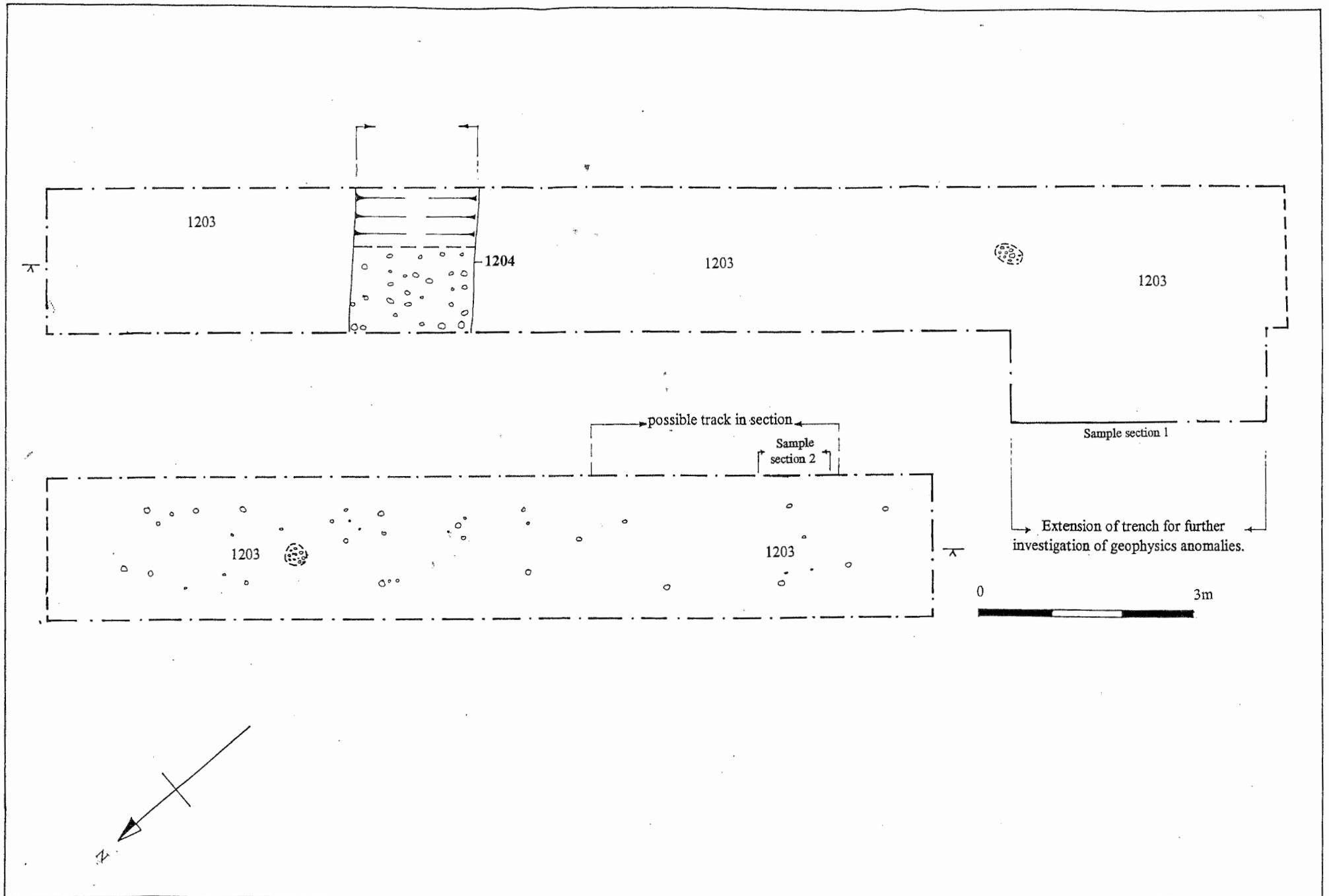


Fig.12 Plan of trench 12

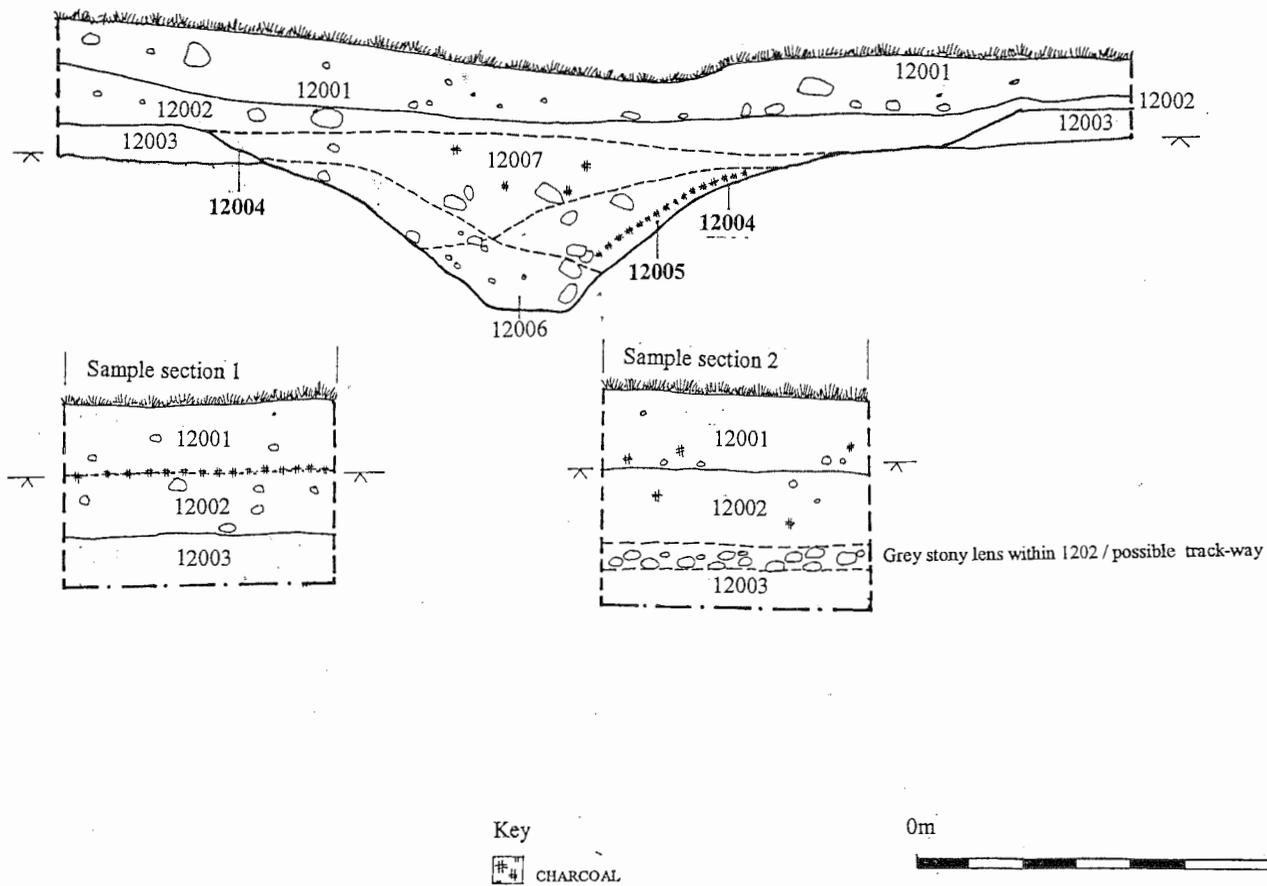


Fig. 13 North West facing section of trench 12 and sample sections

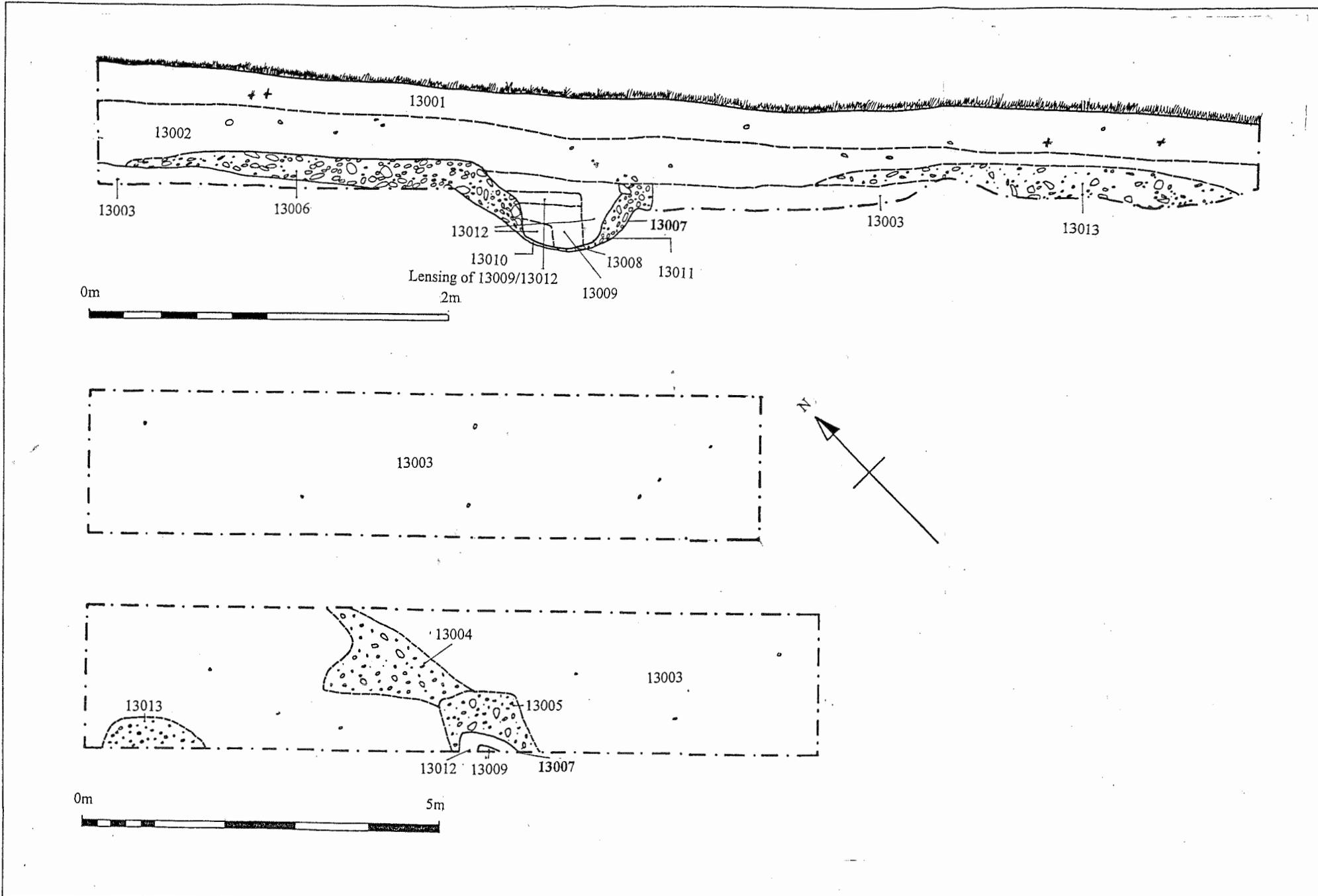


Fig.14 Plan of trench 13 and North East facing section

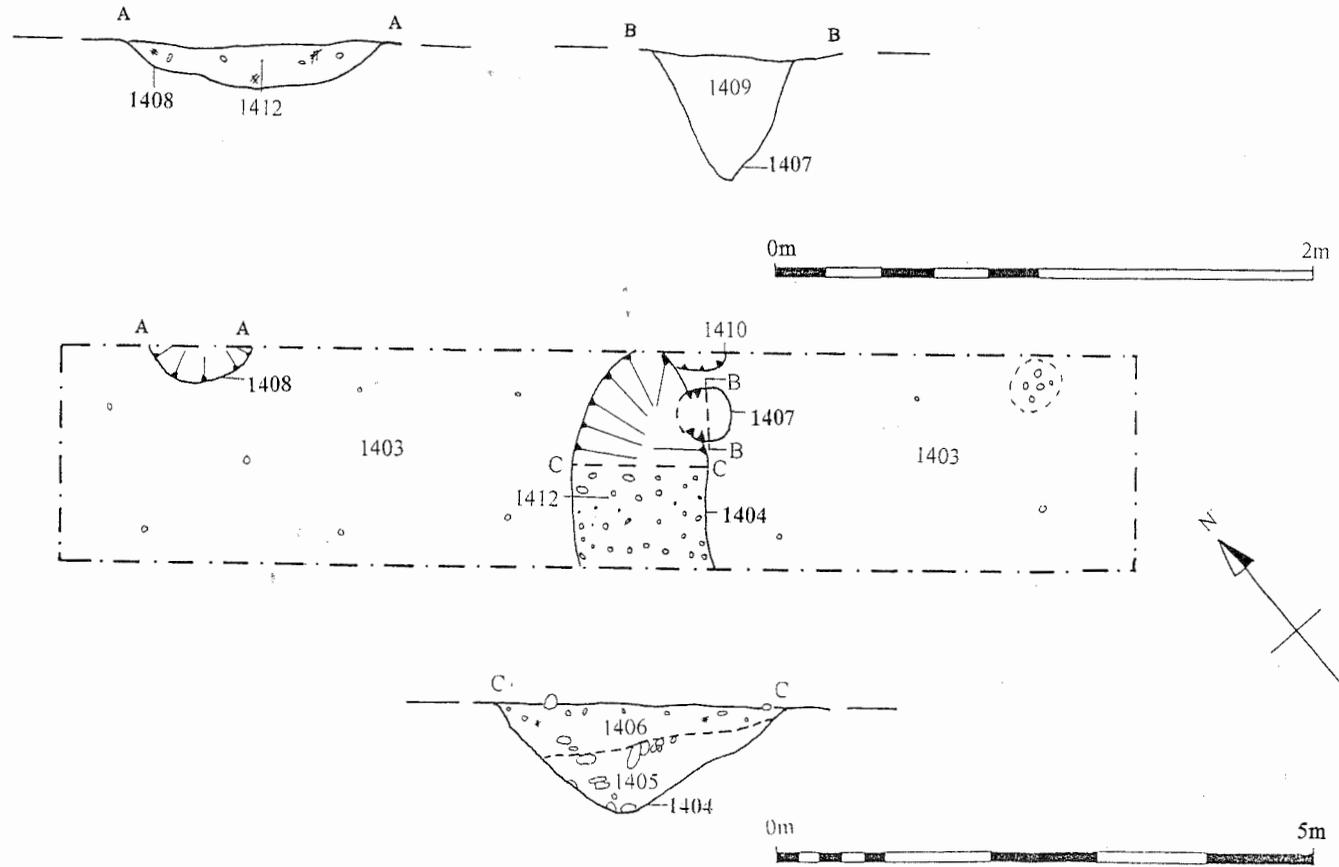


Fig. 15 Plan of trench 14 and sections of 1408, 1407 1404

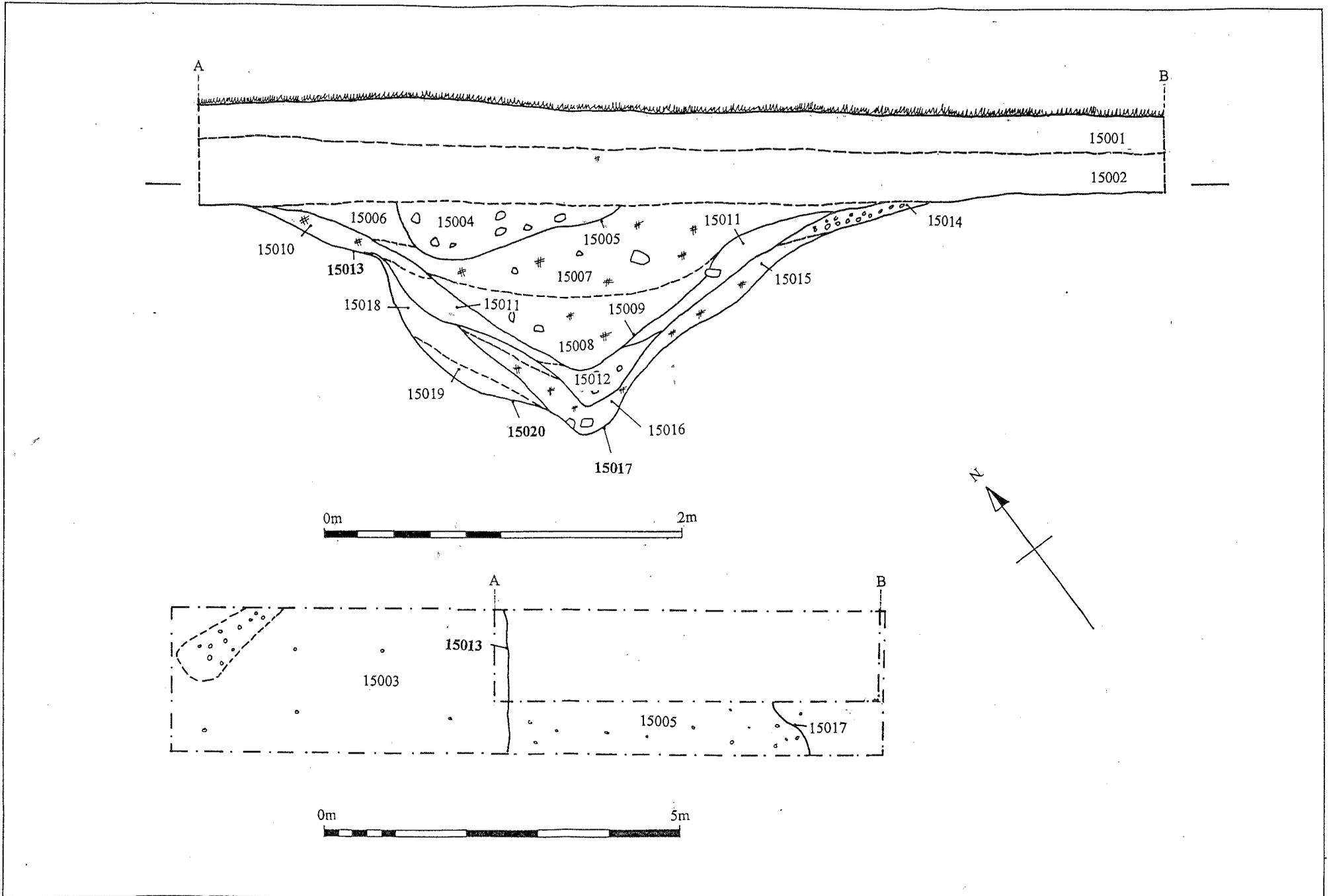


Fig.16 plan of trench 15 and South East facing section

Appendix 1

LAND OFF STOKE LANE, WYCHBOLD, WORCESTERSHIRE

Report on Archaeogeophysical Survey
1999

Sites and Monuments Record
Monument No <u>WSM 17807</u>
Activity No <u>WSM 30040.</u> <u>WR 8414</u>

Report by:

A. Bartlett

Consultant in Archaeogeophysics

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for:

Archaeological Investigations Ltd
Hereford House
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on behalf of:

J.S. Bloor Ltd

Land off Stoke Lane, Wychbold, Worcestershire

Archaeogeophysical Survey 1999

Introduction

This survey was carried out as the initial stage of an archaeological evaluation of a proposed development site at Wychbold. The evaluation is being undertaken by Archaeological Investigations Ltd of Hereford on behalf of J.S. Bloor (Tamworth) Ltd in accordance with a brief issued by the Planning Advisory Section of the Worcestershire County Archaeology Service (Archaeology Planning Reference WSM 17807). Fieldwork for the survey took place on 2-3 June 1999.

Site Description

The field lies to the south east of the A38 at NGR SO 92116560, and covers some 5 hectares. Potential archaeological findings which could be encountered at this location, as noted in the project brief, include a 9th C Saxon Palace which is known to have existed at Wychbold from documentary evidence, although the site is lost. There could also possibly be Roman settlement remains near the A38, which follows the line of a Roman road. The site is uncultivated parkland adjacent to Wychbold Hall, and could therefore be largely free of recent disturbances.

Ground investigations carried out in 1996 [1] indicated that the subsoil is a glacial till composed of silty clay with traces of gravel. This was seen in trial pits to depths of between 2 and 2.8m, beneath which were silty clays and weathered mudstones of the Triassic Mercia Mudstone Group. It was also noted in the ground investigation report that parts of the site are underlain by active and passive brine runs.

Survey Procedure

The fieldwork procedure was based on the specification given in the project brief. This required an initial overall scan of the site followed by detailed surveying of any features of potential archaeological interest. Magnetometer scanning, in which variations in the instrument response are noted as the magnetometer is carried along transects approximately 10m apart, will indicate the location of the more clearly detectable magnetic disturbances within a site, but is of limited effectiveness on soils which are only weakly magnetic, as is often the case on clay. Scanning is therefore often combined with magnetic susceptibility surveying, which provides a complimentary technique for initial site reconnaissance.

A magnetic susceptibility survey detects areas in which burnt material and other debris associated with past settlement or industrial activities has become dispersed in the topsoil, and so can be used to provide a broad indication of occupied or disturbed areas. Variations in susceptibility readings retain their significance as indicators of potential archaeological activity even when their absolute values are low, and so this technique remains a useful option even on weakly magnetic soils.

Susceptibility readings were taken in this case at 10m intervals using a Bartington MS2 meter with field detector coil. Three alternative representations of the readings are shown on plan 4, and areas of above average response are also outlined on the combined summary plan (plan 5). Areas in which the response from the magnetometer scan appeared to vary slightly from the general background are indicated on this plan by green shading.

Detailed magnetometer surveys were then carried out in seven trial blocks covering a total of 1.5 ha. The blocks were positioned to take in a selection of scanned features and susceptibility anomalies, and are located as shown on plans 1 and 5.

Plots of the magnetometer data are presented as x-y graphical traces and grey scale plots at 1:1000 scale on plans 1-3. The plots represent readings collected at 0.25m intervals along lines 1m apart using Geoscan fluxgate magnetometers. The x-y plot (plan 1) represents the initial data after preliminary correction for irregularities in line spacing caused by variations in the instrument zero setting. Additional 2D low pass filtering has been applied to the grey scale plot (plan 2) to reduce background noise levels and emphasise the broader features which may be archaeologically significant. Plan 3 represents the readings after an additional filtering operation in which the mean of surrounding values is subtracted from each reading in turn. This reduces large scale interference and allows smaller anomalies to be seen in the vicinity of pipes and fences.

The magnetometer and susceptibility surveys were each located by reference to a site grid measured to the field boundaries. The positions of the 100m grid pegs, which were left in place for use in subsequent trenching, are indicated by red crosses on the plans.

Results

Magnetometer Scan

This indicated an area of distinct magnetic activity to the north west of the site centred around the very strong anomaly at a (as labelled on plan 5). The anomaly at a is clearly a sub-surface metal object, and was found during trenching to be a metal-lined borehole. The surrounding disturbances (within the area indicated approximately in green on plan 5) can be seen also in the magnetometer plots, and were shown by trenching to be remains of a post-medieval structure. The scan otherwise in general (except near pipes and fences) produced only weak magnetic disturbances which are difficult to demarcate precisely. The areas as marked in green on plan 5 indicate clusters of small anomalies, some of which could be caused by iron fragments or other

recent debris in the topsoil, although features or debris of earlier periods could also contribute to the response, particularly if burnt material is present.

Magnetic Susceptibility Survey

The plots (plan 4) show a number of distinct anomalies and areas of raised values against a low background (mean volume susceptibility reading = 3.8×10^{-5} SI). Areas of high readings can be seen (particularly in the contour plot 4iii) to lie towards the west and north west of the site in the vicinity of the magnetic disturbances noted above, and elsewhere around the edges of the field. It can be seen on plan 5 that there is some correspondence between the scanning and susceptibility findings, which both show activity towards the perimeter of the field, with a less disturbed central area. The detailed magnetometer survey areas were located as far as possible to allow further examination of both the scanning and susceptibility findings.

Recorded Magnetometer Survey

The strongest magnetic disturbances are in area 1 around the borehole at a. Preliminary findings from the trenching suggest that some of the surrounding disturbances may be archaeologically significant, although of post-medieval date, as was noted above in connection with the scan.

Two linear anomalies are visible in area 1 in the grey scale plots, and are marked by red broken lines at b and c on plan 5. Initial reports from the trenching are that these represent ditches or pit alignments of possibly Iron Age date.

Other findings from the recorded survey include a number of pipes which had previously been noted in the scan, and various small anomalies. Some localised anomalies can be seen on plan 1 to be represented by narrow spikes, and are probably caused by iron objects in the topsoil. Features of this kind have contributed to the disturbances seen in the scan at a number of locations including areas 2, 3, 4 and 6. The anomalies indicated on plans 1 and 5 by red outlines are weaker with more rounded profiles. They could represent pits or other localised archaeological features, or possibly deposits of burnt material at depth. There is a particularly distinct cluster of such features in an area of raised susceptibility readings at d near the pond in area 7. Archaeological features were found here during trenching.

Other possible pit-like anomalies are marked elsewhere, but are not all clearly distinguishable from the general background noise. The presence of such features in areas 1, 3 and 7 shows some correspondence with the distribution of enhanced susceptibility values, although the anomalies as outlined may not all be individually significant. A more extensive magnetometer survey would be needed to test whether there is an overall similarity throughout the site in the distribution of such pit-like features and the susceptibility findings, and whether the results together reflect the distribution of underlying archaeological features which have been identified by trenching.

Conclusions

Both the magnetometer and susceptibility surveys have responded strongly to the less deeply buried and more recent archaeological features which have been identified in the neighbourhood of the well (a) in the north west corner of the site. The magnetometer survey has also detected at least some features associated with the more deeply buried and earlier archaeological activity which has been identified by trenching. These include possible ditches at b and c in area 1, and magnetic anomalies at d in area 7.

Initial findings from the trenching include extensive traces of Iron Age activity, some of which lies beneath a gravel surface at about 1m depth, and perhaps represents remains of a salt working settlement. Only very substantial archaeological features at this depth are likely to be detectable in a magnetometer survey, although variations in the noise level of the plots and the distribution of small scale disturbances can suggest the presence of underlying features. Such factors are difficult to take fully into account in this case both because of the weakly magnetic soil, and the limited coverage of the recorded survey. The waterlogged condition of the topsoil would also weaken the magnetic response.

It may however be possible to determine from the final excavation results whether the distribution of high readings in the susceptibility survey reflects the presence of underlying archaeological features, and particularly the distribution of burnt material associated with ancient salt drying activities.

Surveyed by:

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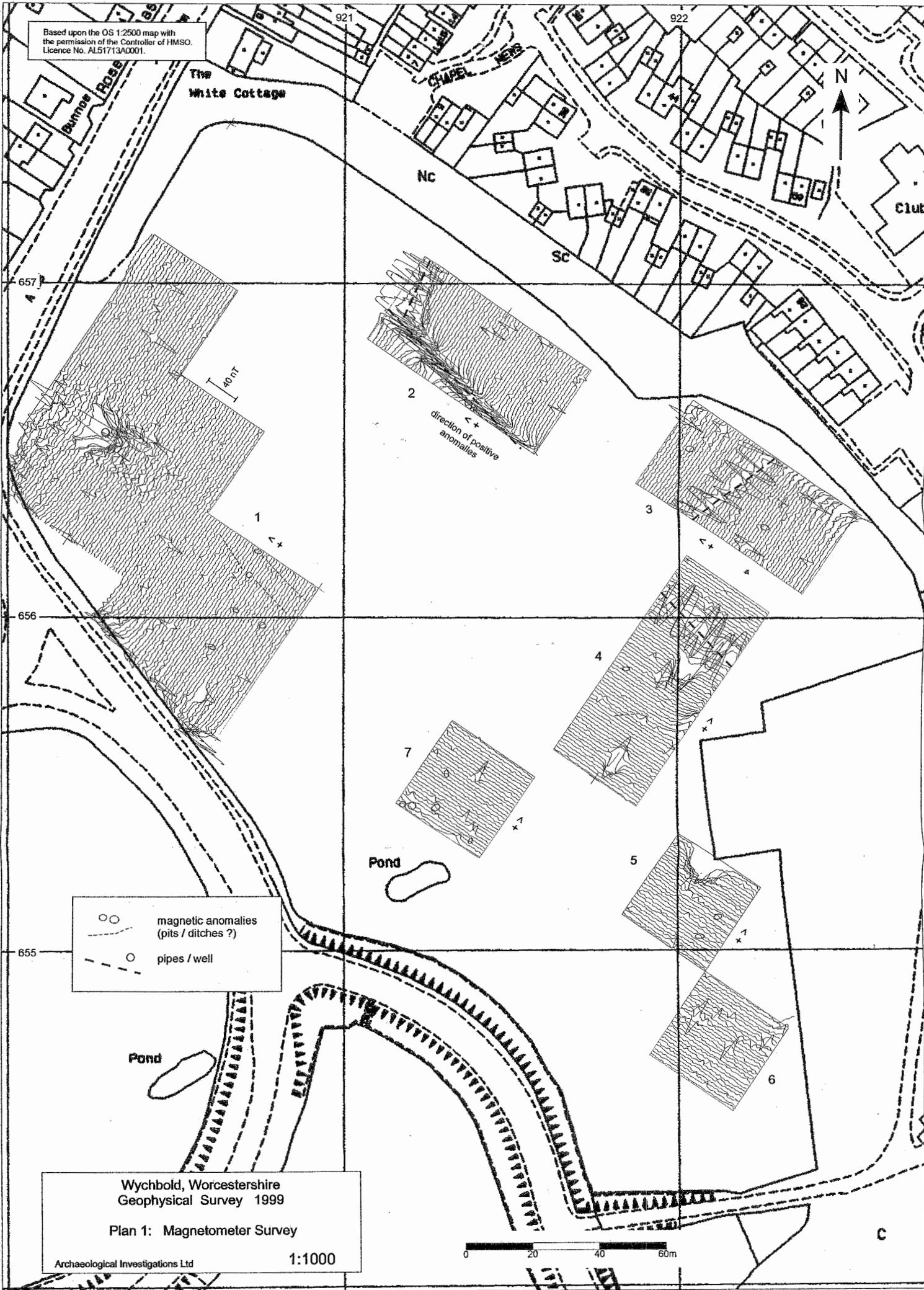
B.Y. Turton and T. Pearce assisted with this project.

Date of report: 25 June 1999

Reference

[1] Report on a Preliminary Ground Investigation for a proposed Housing Development at Wychbold. Murray Rix Geotechnical Engineers, 5A Regent Court, Hinckley, Leicestershire. December 1996.

Based upon the OS 1:2500 map with the permission of the Controller of HMSO. Licence No. AL51713A0001.



The White Cottage

Nc

Sc

Club

1

2

3

4

7

Pond

5

6

magnetic anomalies (pits / ditches ?)

pipes / well

Wychbold, Worcestershire
Geophysical Survey 1999

Plan 1: Magnetometer Survey

Archaeological Investigations Ltd

1:1000

0 20 40 60m

C

921

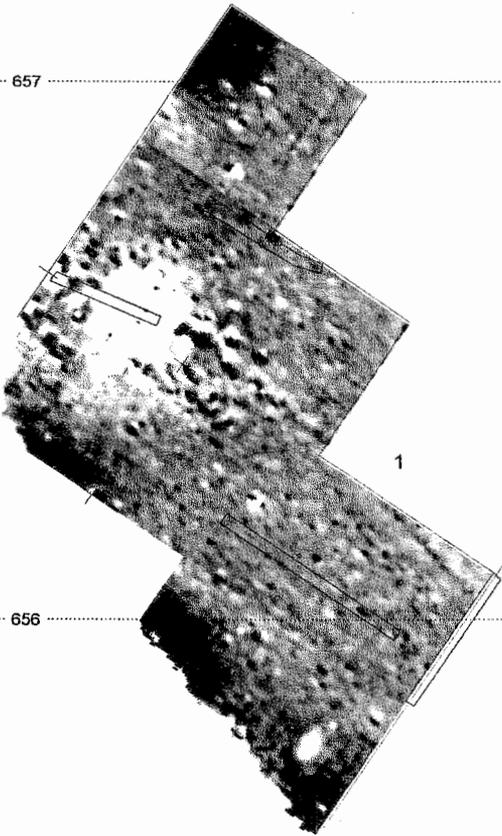
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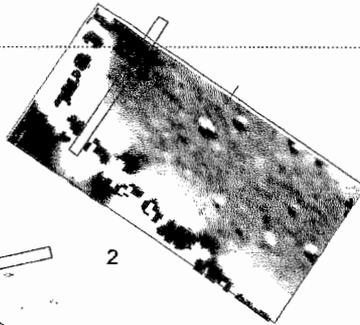
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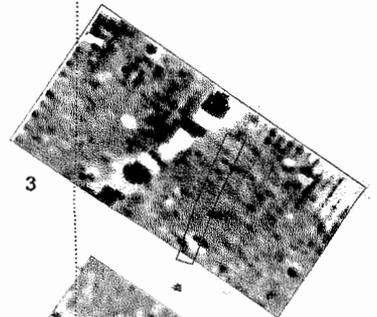
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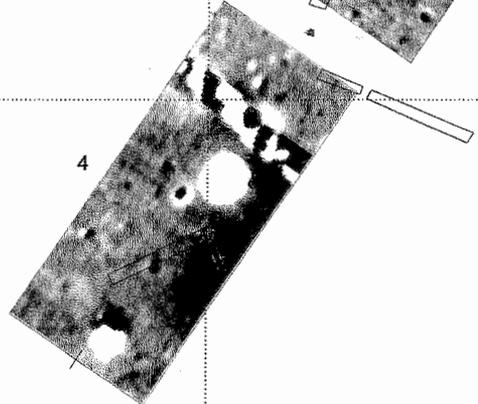
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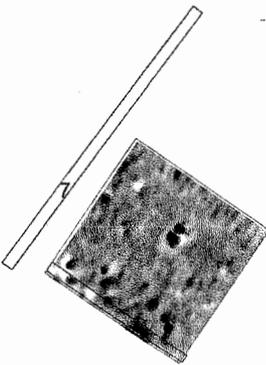
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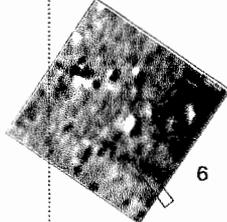
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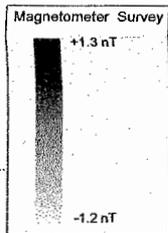
4



5



6



Wychbold, Worcestershire
Geophysical Survey 1999
Plan 2: Magnetometer Survey
overlaid with excavation trenches
(numbers indicate survey blocks)

Archaeological Investigations Ltd

1:1000

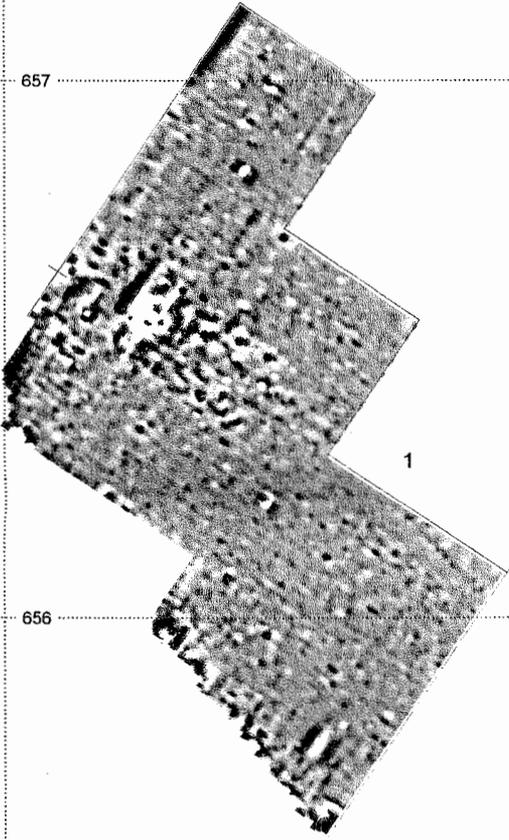


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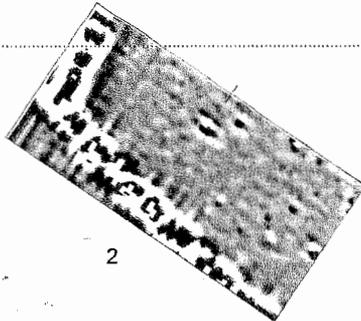
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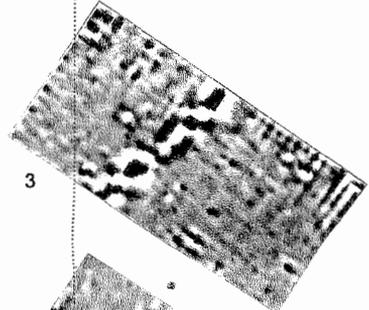
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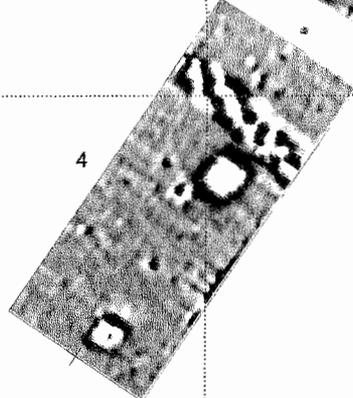


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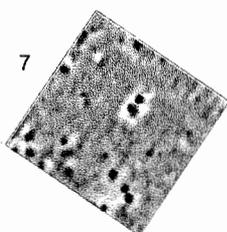


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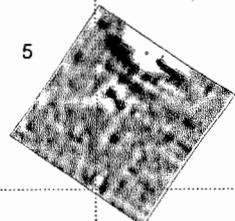


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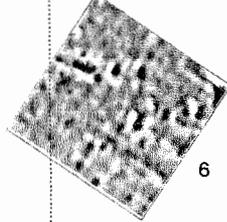


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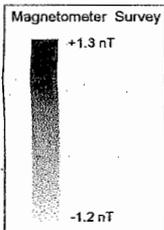
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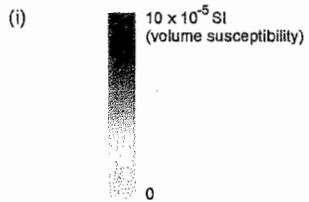
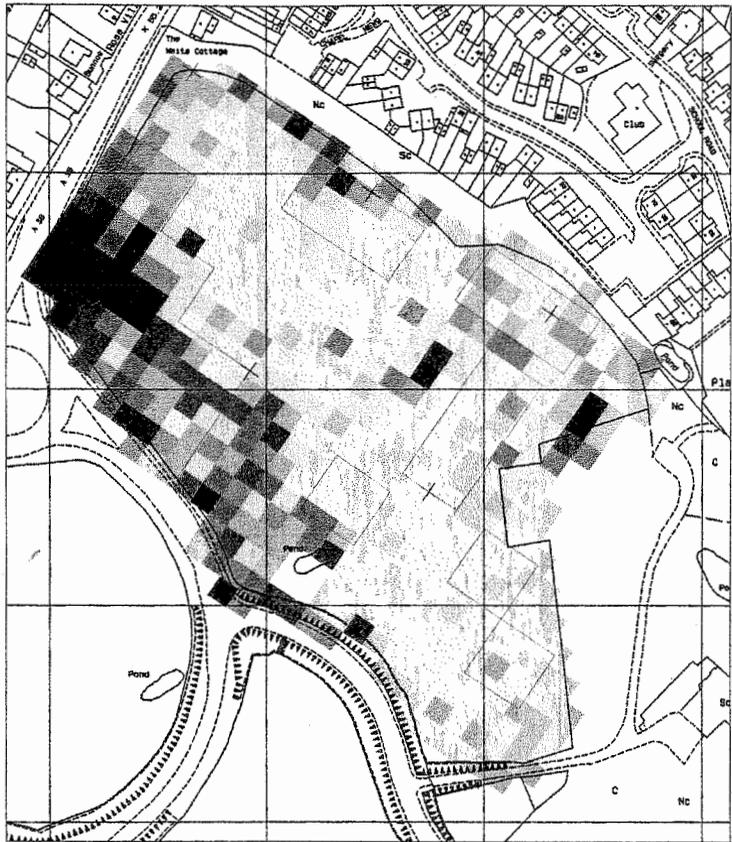
Wychbold, Worcestershire
Geophysical Survey 1999

Plan 3: Magnetometer Survey: filtered data

Archaeological Investigations Ltd

1:1000

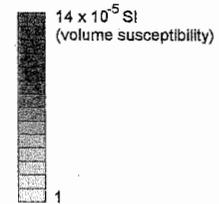
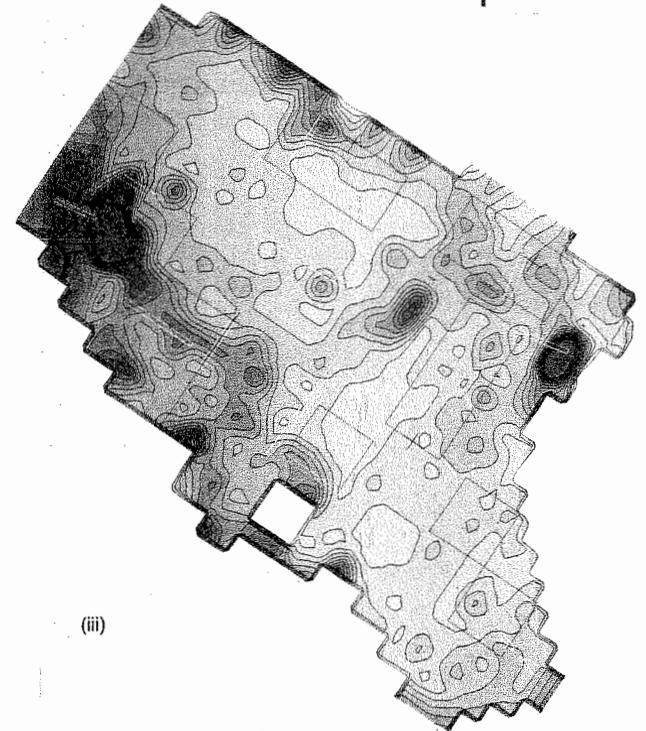
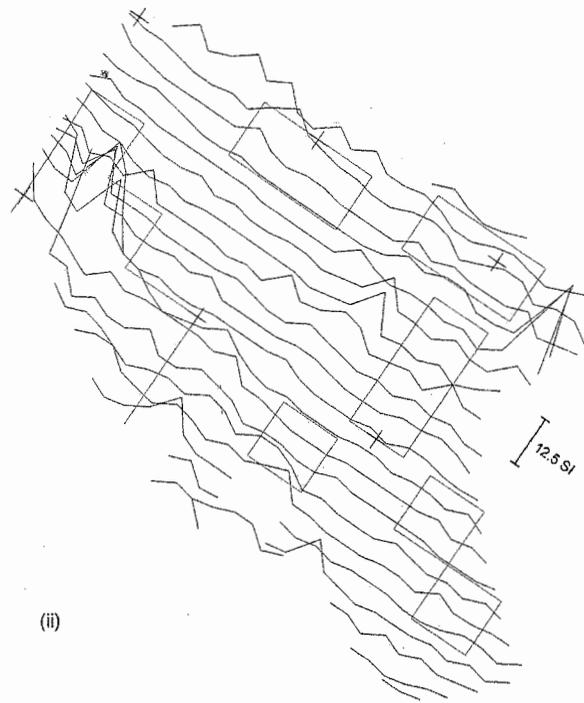




Archaeological trenches



magnetometer survey



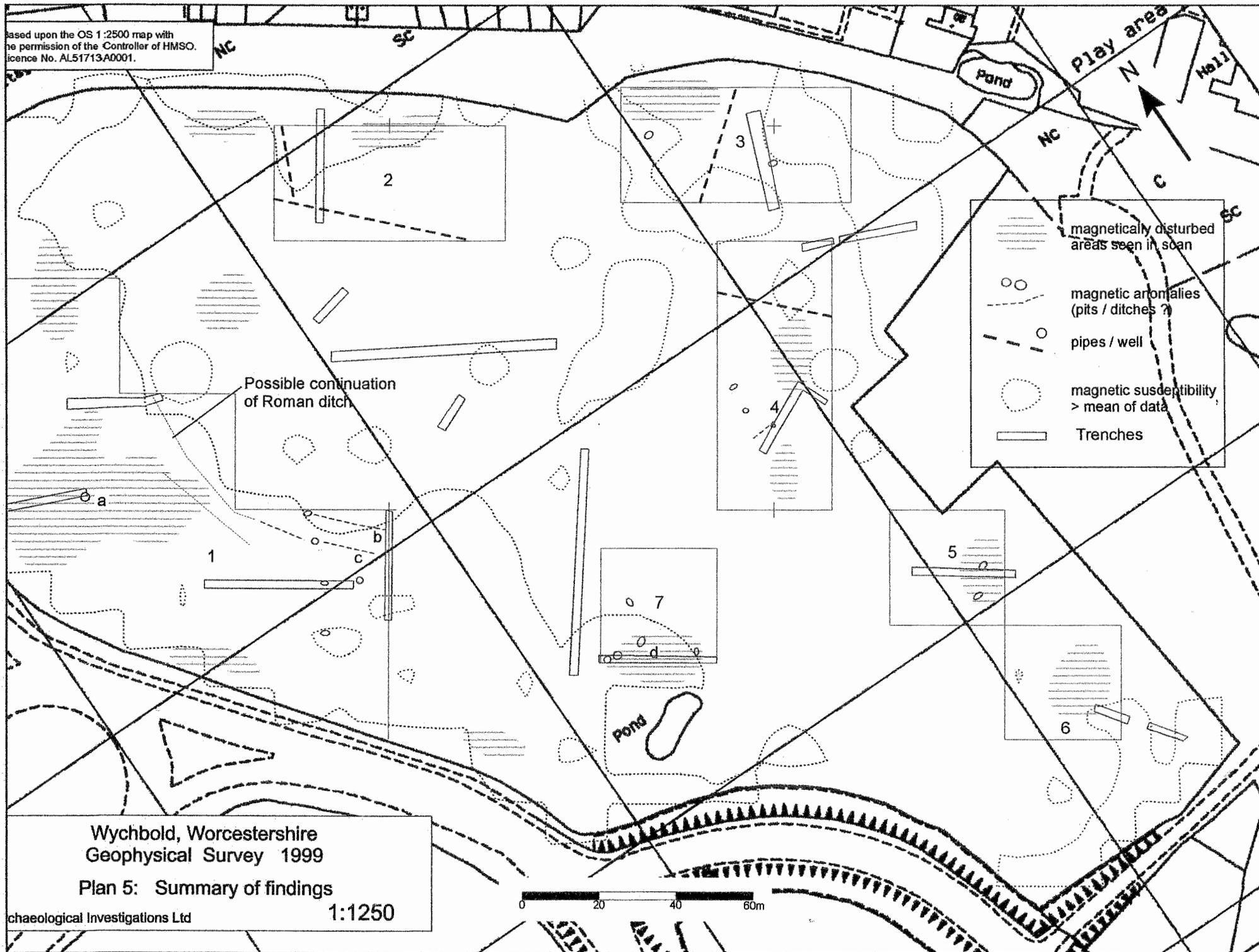
Wychbold, Worcestershire
Geophysical Survey 1999

Plan 4: Magnetic Susceptibility Survey

Archaeological Investigations Ltd

1:2500

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Wychbold, Worcestershire
Geophysical Survey 1999

Plan 5: Summary of findings

Archaeological Investigations Ltd

1:1250

Appendix 2

Evaluation at Stoke Lane, Wychbold (WSM 17807)

Assessment of artefactual evidence

Derek Hurst, Worcestershire County Archaeological Service

Date: 1st July 1999

1 Aims

The brief required an assessment of the quantity, range and potential of artefactual material from the evaluation.

The aims of the finds assessment were:

- a) to identify, sort, spot date, and quantify all artefactual material
- b) to describe the range of artefacts present
- c) to preliminarily assess the significance of the artefacts
- d) to make recommendations about the future analysis, reporting, and other appropriate requirements of artefacts.

This assessment report covers the ceramic and stone finds only.

2 Methods

Artefactual recovery policy

No information available.

Artefactual analysis

The finds were identified, quantified, and dated to period. A *terminus post quem* date was produced for each stratified context. The date was used for determining the broad date of phases defined in the site stratigraphic sequence. All this information was recorded on *pro forma* sheets (context finds record sheets AS8).

Samples were taken for biological analysis, comprising the collection of carbonised remains. No artefactual material from these samples was available for analysis.

Pottery fabrics are referenced to a fabric reference series maintained by the Archaeological Service (Hurst and Rees 1992, 200-9). The artefacts are discussed under their respective periods.

3 Results of analysis (for quantification see Table 1)

Vertical stratigraphy was generally not well developed, as usual for a rural site. Some parts of the site where features were recorded produced no finds (eg Trench 5).

Condition of the pottery was extremely poor in the case of some contexts, and this especially applied to Roman contexts.

Ceramics

?Early prehistoric

One vessel represented by several conjoining sherds (from 1405) was of particular interest.

Identification was hampered by the condition of the sherds, the surfaces of which were clearly heavily abraded. The form could be compared to several examples of bowls from the large late Bronze assemblage recovered from Kemerton quarry in south Worcestershire, though the Wychbold vessel seems to be rather smaller in size; none of the Kemerton sandy fabrics included the large inclusions in the Wychbold vessel (R Jackson pers comm). The organic tempering was reminiscent of some sub-Roman/Anglo-Saxon pottery in the region, but the fabric did not match the organically tempered ware from Droitwich (Lentowicz 1997, 75) which is only a short distance to the south of Wychbold. Both in fabric and form this vessel, therefore, presented difficulties for identification.

Iron Age

There was a single vessel of Iron Age date (from 4004). This was a Malvernian fabric (Peacock 1968, 415, Group A; fabric 5). There was also a single sherd of Droitwich salt container (briquetage; from 4004) of organically tempered type (fabric 2).

Roman

This was mainly Severn Valley ware (fabric 12), a local type that typically predominates in collections of Roman pottery in the area (Timby 1990, 243). It was dated to the mid 1st to 4th century AD. There was also a single sherd of samian ware (from 3007). The condition of all this material was extremely poor.

Post-medieval

The post-medieval sherds were all of 18th century date, and were mainly from subsoil, except in the case of Trench 7, where it was associated with structural remains. Ceramic building material was associated with contexts 9004 and 1204.

Stone

There was a single fire-cracked pebble (from context 1405), and this is likely to have been used as a pot-boiler.

4 Discussion

The possible early prehistoric pottery is potentially an extremely significant find, as such material is very rare in this region. For instance, only a small amount of early

prehistoric sherds have been noted in nearby Droitwich (eg Hurst 134, fig 83), where they were not associated with any definite contemporary features.

The Iron Age pottery and briquetage are both typical finds for this period in this area. The distribution of Droitwich briquetage is, however, not well attested to the north-east of Droitwich, and Wychbold extends the distribution plot in this direction (see Morris 1985, fig 6). Though a wide range of Iron Age fabrics is known from nearby Droitwich, Malvernian ware has been the commonest type represented (Hurst 1992, 133).

The Roman and post-medieval wares were all typical types of pottery for this locality.

The condition of the pottery was very poor in the case of the Roman sherds. The reason for this was not certain. No bone was collected during the evaluation (A Boucher pers comm), and this may also be as a result of burial conditions on the site. However, it was also noted that some of the ceramics (Iron Age, and post-medieval sherds) were in good condition.

5 Significance

The assemblage included possible early prehistoric ware and pottery of Iron Age date, the latter including Droitwich salt container, which has rarely been found, especially on lowland sites, in the region. The possible early prehistoric vessel from Trench 14 is likely to be a new type of ware not previously found in the region. Accordingly the ceramic assemblage, though small, contains material of considerable significance.

6 Recommendations

In the event of further excavation sufficiently large samples of features should be excavated to provide some possibility of retrieving a more representative sample of artefacts from the site. It is likely that some petrological analysis would be required as part of this project, and radiocarbon dating should be allowed for, in the event that the early prehistoric date is confirmed. Special provision will also need to be made for sensitive processing of any further pottery from this site (ie extended time will be required for gentle cleaning of sherds).

The contrasting condition of sherds of different periods is of wider significance, as it could have profound implications for the discovery of archaeological remains, for instance by fieldwalking. A better understanding of burial conditions on the site, and their consequences for the material remains of the past as represented at Wychbold, could also be relevant to the future management of this site. This site would be a good subject for inclusion in any project investigating the effect of burial conditions in the region on artefacts.

7 The archive

- 12 Context finds records (AS8)
- 1 Box of artefacts

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Table 1

Stoke Lane, Wychbold

Quantification of the artefacts (hand retrieved material only)

Pottery (sherd count)

Iron Age	17
Roman	20
Post-medieval	15
Undated	12

Building materials

Tile	11
Brick	3

Appendix 3

Excavations at Wychbold An evaluation of the Soils

30 June 1999

Summary

Soils were examined in a number of excavation trenches near Wychbold Hall. The trenches revealed archaeological pits and ditches cut into a till derived mostly from the local Keuper marl. This was overlain by natural and archaeological gravel spreads at 50-90cm depth in a typical surface-water gley soil in which clay had been washed down from the surface and become redeposited below.

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Aims of the study

This brief evaluation was intended to answer a number of specific questions concerning the soils of the site:

- 1 Are the extensive gravel surfaces revealed by excavation natural or man-made?
- 2 Are the horizontal colour changes visible in the soil profile due to buried soils?
- 3 What is the potential for environmental preservation? Why are sample flots sterile?

Background

The site lies in open pasture to the east of the M5 motorway and to the south-west of the village of Wychbold at Ordnance Survey NGR SO 921 656.

The underlying geology is mapped as Triassic Mercia Mudstones (BGS 1976) and as undifferentiated Keuper Marl on earlier geological mapping. Fragments of the 5th terrace gravels lie immediately to the east and of the 3rd terrace gravels about 500m to the north-west.

Between one and three metres of till, derived mainly from the mudstones, has been proved to overlie the solid geology (engineers report supplied to Terra Nova Ltd) and drainage through "brine runs" in underlying salt deposits has caused local subsidence which continues today.

The site is mapped (SSEW 1986) as lying on Typical Stagnogley Soils of the Rufford Association. These are slowly permeable, seasonally waterlogged reddish coarse loamy over clayey soils associated with deep sandy soils which are affected by groundwater. Some of these soils have a bleached subsurface horizon. Such soils form principally through two processes - the clay which was originally mixed throughout the upper till at the end of the last glaciation has percolated downwards leaving a band of coarser material above and a clay enriched band below (a process called lessivation). The poor permeability of the soils restricts the drainage of water which ponds in the upper part of the profile in winter and causes seasonal waterlogging. The gradual rise and fall of this perched water table through the year leads to a cycle of oxidation and reduction which affects different depths in the soil in different ways and to different degrees. The principal effect is the appearance of brown iron-stained mottles in the upper part of the profile and the gradual segregation of iron and manganese oxyhydroxides (also known as hydrated sesquioxides) to form concretions at depth.

These process can have a significant effect on archaeological remains because they gradually remove the uppermost stratigraphy and obscure that below with sesquioxide staining.

This study

The site was visited on 29 June 1999 and six excavated trenches were examined to a maximum depth of 1.6 metres. Sections were cleaned with some difficulty because the soil had become extremely hard as it had dried.

The lowest unit, the top of which was between 0.7 and 1.4 metres from the ground surface, was weathered till. Two cores through the till, to a final depth of 2.3 metres, showed slight clay depletion at the surface and significant enrichment at depth. There were some areas of till which appeared to have been significantly sandier than normal and in which there was slightly better drainage. These variations in till will probably affect the preservation of the archaeology above. Fine, stratigraphy-defining clay will probably have percolated down more easily in areas of sandy till and thus it is here that the upper stratigraphy may have been most completely destroyed.

The till appeared "marbled" in plan excavation because fissures, caused mainly by drying, had allowed water to percolate downwards causing local reduction and clay loss. This caused the fissure sides to appear lighter, grey-brown and much sandier than the till in which they formed and this left a striking visual pattern. The same process of waterlogging and redox gradients had caused sesquioxides to accumulate into hard concretions in the centres of the red till blocks, between the fissures.

Overlying the weathered till surface, in many parts of the site, was a thin band of well-rounded small and medium river gravels consisting entirely of hard, resistant rocks. A few soil profiles showed similar gravels scattered throughout the soil profile but stones were rare in most of the overlying soils. The gravels were mostly oriented horizontally but showed no signs of compaction and were not found to contain artefacts.

Above the gravel or in its absence, the red till surface was a fine mineral soil which varied from silty clay to sandy clay loam. The profile had a number of variations but usually consisted of a slightly mottled, moist 20cm band of slight clay enrichment with dull, reduced grey-brown colours. This was overlain by a 30cm slightly drier and coarser mid grey-brown band which was overlain by an organic Ap/h - a topsoil where former cultivation structures had been gradually reworked under long-ley pasture. This mineral soil appears to derive from the till which has been altered from clay-rich, red, oxidised colours to coarser grey-brown silty soil by long-term surface waterlogging and downward clay movement. Worms and other soil organisms have also had a significant effect on the whole soil profile - although less on the compact red till beneath - since dark organic soil could be seen to have descended worm pores and become incorporated into the horizons beneath. The soil structure and, where present, any archaeological stratigraphy had been extensively altered and mixed by the fauna and by rooting, leaching and waterlogging so that the strata now had the structure of the soil that had formed within it rather than the structure with which it was formed. For this reason fine stratification is unlikely to have survived over most of the site.

The deepest gravel deposit, in trench 9, was overlain by a thin band of darker clay loam soil. This appeared to represent the surface of a former organic soil developed in a poorly drained depression. Large masses of sesquioxide concretion beneath confirmed that there had been long-term waterlogging here although the soil structures and palaeoenvironmental evidence which might indicate this directly had been destroyed by later soil formation. The gravel here was slightly thicker better sorted and more randomly arranged than elsewhere suggesting that the deposit may have been laid down or added to by human activity.

The majority of the gravels appear most likely to be natural in origin. Gravel is unlikely to be restricted entirely to the nearby terraces - terrace gravel edges may be much less abrupt than mapping would suggest. Some may have been moved by subsequent erosion and some may have been incorporated in to the till when it was deposited. The gravel strata showed no sign of having been deposited by the fluvio-glacial braided rivers which left the terraces. It was not associated with other, sorted mineral deposits and it retained no sedimentary stratigraphy.

This does not imply an archaeological origin, however, and evidence of associated archaeological activity was found in very few areas of the gravel. There were no associated artefacts and no sign that the surfaces had been laid and then compacted by traffic except for areas in trenches 9 and 10 which might be interpreted as trackways.

It was notable that most gravel spreads lay at precisely the same point in the developed soil profile, at a variety of depths, above the compact till but below the reworked mineral soil. The absence of gravel in much of the soil above suggests that the gravel may have dropped gradually through the soil due to the displacement of fine matter by soil fauna. This may have occurred when the upper soil was thinner since there is some evidence that erosion, perhaps due to ploughing, has added fine mineral matter to the soil surface and levelled up the lower areas of the site. This, and possible human activity, had also buried a number of soil profiles which were particularly clearly visible in the southernmost sections of trenches 9 and 10.

More convincing evidence for a natural or archaeological origin for the gravels had been destroyed by the considerable soil development since the site was abandoned but further excavation in plan is likely to provide clarification.

The site is crossed by a broad, elongated depression which contains slightly moister and deeper soils than are normally developed on the till. The extraction of brine and the natural solution of the salt beneath the site is likely to have produced subsidence which may have migrated gradually across the area as brine runs became active and declined. This subsidence may have been accompanied by gradual changes in drainage lines across the site and thus on soil moisture. These changes may have increased the effect of the annual waterlogging cycle and further damaged the archaeological stratigraphy.

It is unlikely that well-preserved environmental evidence will survive in any archaeological stratigraphy because of the destructive effects of wetting-drying cycles and the extensive reworking by soil fauna.

Conclusions

The soils of this site have developed considerably in the past two thousand years and any archaeological remains are likely to have suffered considerable damage. Fine stratigraphy is unlikely to survive intact. Most of the gravel spreads are best explained as the result of natural processes although direct evidence of their origin has not survived. Only where the spreads are part of an obvious structure or stratigraphic sequence are they likely to be of archaeological origin. A number of horizontal colour changes in the deeper soil profiles are due to buried soil profiles which have lost almost all of their original structure and remain as higher organic matter concentrations. These indicate that some erosion and redeposition has been active in moving fine soil into depressions although human activity may also have been involved for which other evidence does not survive. Environmental evidence is unlikely to be well preserved because the soils has been so extensively altered and reworked.

David Jordan MSc 30 June 1999

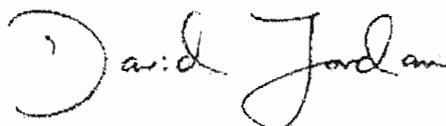




Plate 1:
South-east facing section of ditch 12004 in trench 12



Plate 2:
South facing section of feature 15003 in trench 15