



January 1997

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**VALE ROYAL**  
**Golf Course and Housing Developments**

**Cheshire**

**Archaeological Evaluation Report**

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Commissioned by:

**DHC Ltd**

# Vale Royal Golf Course and Housing Developments

## Cheshire

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### Archaeological Evaluation Report

Checked by Project Manager. ..... Date
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January 1997

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## EXECUTIVE SUMMARY

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This report details the results of an archaeological evaluation, by trial trenching, at Vale Royal Abbey, Cheshire (centred NGR SJ 634698) by the Lancaster University Archaeological Unit (LUAU), which was undertaken in two stages in 1996. Vale Royal Abbey was established at the present site by Edward I in 1276, and after the Dissolution of the monasteries passed into private hands. It was used as a residence until 1947 and was then used as offices. It has been scheduled as a monument of national importance (Cheshire 76).

An application by DHC (Bradford) Ltd for planning permission to construct 50 houses and an 18 hole golf course was submitted to the Vale Royal Borough Council, and, on the advice of the Cheshire County Council Archaeologist, a programme of phased archaeological investigations was initiated. The first assessment phase of the programme involved a documentary study and identification survey (LUAU 1995a); the second phase of the programme involved magnetometer and resistivity surveys of the study areas by Geophysical Surveys of Bradford (1996). These earlier phases served as the basis from which to inform the targeting of an evaluation phase (Phase 3) by trial trenching. These trenches were positioned in order to investigate areas of greatest proposed disturbance, areas of archaeological potential, highlighted by the assessment, and control areas where no archaeological resource had previously been identified. As an adjunct to the evaluation, a watching brief was undertaken during the excavation of a borrow pit for the proposed golf course. The results of the evaluation (Phase 3) programme and watching brief are presented within this report.

Between 27th August and 3rd September 1996 a total of 44 trenches was excavated within the study area. The evaluation broadly established that the more significant archaeological deposits were indeed within the environs of the abbey, as suggested by the assessment. Trench A4, to the north of the scheduled area of the abbey, revealed a very large cut feature, interpreted as a former cellar or undercroft, which contained fine fifteenth century floor tiles. A robbed wall identified in Trench 15, which was immediately to the west of the abbey, was possibly formerly part of the claustral range. A ditch was revealed within Trench 19 which was of a considerable width (4.2m) and depth (*c* 1m); it is in the proximity of the abbey and was possibly the boundary of the inner monastic precinct.

Other trenches revealed structures and features which related to the water management system which was an important element of the monastery. Trenches 4 and 18 recorded the line of a now filled water course which was shown up by the geophysical survey as a north-east oriented feature, and extended approximately towards the abbey complex. The excavation of Trench 2 revealed a possible settling tank on the line of the water course.

The proposed golf course has been designed to accommodate the identified and anticipated archaeological resource within the study area and therefore will have a reduced impact on the identified archaeological deposits within the study area. The housing development, however, will be more intrusive and could adversely affect the water management features identified by Trenches 2, 4 and 18. The identified archaeological resource at the western end of the study area is of limited archaeological significance and the impact of the housing development, in this area, is therefore reduced.

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## 1. INTRODUCTION

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### 1.1 PROJECT BACKGROUND

- 1.1.1 Dr J. Lewis of Liverpool University, consultant archaeologist acting on behalf of DHC (Bradford) Ltd, commissioned (Project Brief: *Appendix 3*) an investigation to establish the nature, extent and potential of archaeological remains at Vale Royal Abbey, Cheshire (centred NGR SJ 634698). The work was required as a condition of planning consent, in advance of development, which included an 18-hole golf course and the construction of up to 50 new houses.
- 1.1.2 A project design submitted by Lancaster University Archaeological Unit (LUAU), for the first three phases of work (*Appendix 4*) was accepted by the developers. A report presenting the results of documentary and cartographic research, landscape survey and identification survey (Phase 1) has been submitted (LUAU 1995a). A further report detailing the results of the second phase of work, a geophysical survey, was produced by Geophysical Surveys of Bradford, on behalf of LUAU. The present report details the results of Phase 3 (trial trenching of a c2% sample of the study area), undertaken between August and September 1996.
- 1.1.3 The site of the former abbey is scheduled as an ancient monument of national importance (Cheshire 76). The scheduled area (Fig 2) is centred on the site of the abbey church and is to the north and east of the Great House. The proposed golf course development will involve landscaping around the scheduled area but not within it.

### 1.2 TOPOGRAPHY AND GEOLOGY

- 1.2.1 The Vale Royal area is underlain by Triassic mudstones and sandstones (Hebblethwaite 1987, 23), including 'Keuper Marl', Dolomitic Conglomerate and Rhaetic. The overlying drift is boulder clay and glacial sands and the topsoil generally sandy loams with clay patches (Furness 1978, end map).
- 1.2.2 Vale Royal Abbey lies at around c32m AOD, within an undulating landscape, close to the River Weaver; it is on the first river terrace which rises, as a low cliff, c3-4m above the river. The area is crossed by numerous brooks and streams which feed into the Weaver catchment. The study area is bounded to the east by the River Weaver, to the north by copses, which mark the locations of the former fish ponds of the abbey, and to the west by a minor road running from Hartfordbeach, through Whitegate to Winsford. The southern boundary is formed by the access road from Whitegate to the former abbey, although the trees fringing the western end of this road lay beyond the area under investigation. The study area covers approximately 62ha.
- 1.2.3 At the time of this work the eastern part of the study area was under grass, whilst the two most western fields had recently been ploughed for arable.

### 1.3 HISTORICAL BACKGROUND

- 1.3.1 There is little evidence for prehistoric activity in this area, although a Bronze Age palstave has been found in the vicinity. Recent work, however, has suggested that the rivers and river valleys of Cheshire, with their light sandy soils, formed natural routes and locations for settlement in the pre-Roman period (Leah *et al.* in press). No evidence for Roman activity has yet been found near this site.
- 1.3.2 The manor of *Kenwardeslie* (Conewardsley, Conersley or Coningry), described as waste in Domesday (LUAU 1995a), was granted to the fledgling abbey by Edward I in 1276. This lay in part within the area under investigation. At the time of gift the manor was valued at 30s a year, and had sufficient arable land for two plough teams.
- 1.3.3 The Cistercian Abbey of St Mary the Virgin, St Nicholas and St Nicasius was founded by Edward I in 1270, in fulfilment of a vow made in 1263-4, at Darnhall in Delamere (Kettle 1980, 156-164). The original site chosen proved unsuitable and in 1276 Edward I granted the manor of Coneswardsley to the abbot of Darnhall, renaming the locality in which the new abbey was to be constructed as Vale Royal, in recognition of its favoured status.
- 1.3.4 It seems that Edward intended the abbey to be on a grand scale, with a community of 100 monks, and ambitious plans to raise one of the largest Cistercian churches in Europe; it would certainly have been the largest Cistercian foundation in Britain (Platt 1978, 68-70, Kettle 1980, 156-164). Edward and his queen laid the foundation stones of the altar in 1277 and the abbot and monks moved into temporary buildings on the site in 1281. By 1283 construction was sufficiently well advanced for the site to be consecrated and the abbey precinct boundaries marked by a great ditch (Brownbill 1914, 12).
- 1.3.5 Building was slow, however, as the generous finance promised by Edward failed to materialise. He did, however, endow the monastery with a block of land which included the manors of Damhill, Over and Weaverham, the granges of Coneswardsley, Bradford, Hefferston, Marton, Earnslow and Knights, and Onston Mill in addition to lands and rents in areas including Middlewich and Northwich. Despite this the ambitious building plans proved too costly for the monastery's uncertain finances and it was not until 1330 that the abbot and his monks (30, not the 100 originally planned) moved from the 'unsightly and ruinous' temporary buildings erected 50 years before, into the abbey proper (Kettle 1980).
- 1.3.6 The church itself was still incomplete when, in 1354, Edward the Black Prince financed an elaborate re-build. Again finance proved unreliable and the still unfinished nave was badly damaged in 1360, blown down by a storm. A much reduced church was finally completed in the 1390s.
- 1.3.7 The abbey's relationship with its tenants and neighbours was often stormy, litigious and on occasion violent (at least two abbots were murdered). Both the finances and fabric of the abbey suffered greatly as a result and, in an inquisition of 1395-6, the then abbot, Stephen, was found to have sold or destroyed much of the abbey's property over the previous ten years (Kettle 1980). By 1439 the abbey was 'so wasted by misrule' (*op cit*) that it was taken under royal protection.



- 1.3.8 The abbey never fulfilled its first grandiose ambitions; it never had more than 30 monks and, by 1379 this number had been reduced to 18, including the abbot. At its dissolution in 1538 there were only 15 monks. Building and alteration continued throughout the life of the abbey, the lay-brothers range was re-built in the early sixteenth century, as was the south cloister.
- 1.3.9 The Cistercian Order is well known for its dealings in the wool trade, and by 1275 the abbey was controlling considerable flocks, dealing with and selling to alien merchants as far away as Lucca in Italy (*op cit*). The monastic properties produced sufficient corn for their own sustenance, and at the Dissolution it was noted that a great number of cattle were 'in the monks own hands' (Harris and Thacker 1987). It would be surprising if some, at least, of the livestock was not kept close to the abbey.
- 1.3.10 Vale Royal Abbey was dissolved, after much negotiation, in 1538. It was first leased and then, in 1544, sold to Thomas Holcroft, who swiftly 'plucked down' the church and built a house on the site of part of the monastic buildings (the south and west claustral ranges). His house, though much altered, remains standing today. In 1616 the property passed to the Cholmondeley family, who made further alterations to the house (LUAU 1995b, 17). Ownership remained with the Cholmondeley family until 1947, when the house and land was acquired by Imperial Chemical Industries. Since 1961 the house has been vacant, but was bought by DHC (Bradford) Ltd for conversion to flats and a golf club-house; the associated land is intended for a golf course and a housing development.
- 1.3.11 A series of excavations was undertaken on the site of the abbey in 1911, 1912, and 1958 (McNeil and Turner 1987).

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## 2. METHODOLOGY

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### 2.1 PROJECT DESIGN

2.1.1 The LUAU project design was submitted in response to a project brief (*Appendix 3*) produced by the Consultant Archaeologist. The project design was subsequently updated in September 1995 (*Appendix 4*) which changed the proportions of geophysical survey to evaluation trenching. The proposals for the evaluation programme (Phase 3) was subject to further variation in August 1996 by agreement with the Client, the Archaeological Consultant, and the Principal Archaeologist of Cheshire County Council (Letter: I Hudson 8th Aug. 1996). This required that trenching be undertaken in two stages, where by the implementation of the second stage was subject to the results of Stage 1. Stage 1 of the evaluation involved the excavation of 18 trenches within the housing development and 30 within the area of golf course. These were to be concentrated in areas which will be negatively affected by the development and where there is an archaeological potential. Other trenches were to be located in areas of archaeological potential but no proposed impact and also in areas of negative impact but no known archaeology.

2.1.2 In the event only 44 of the 48 proposed trenches could be excavated because borrow pits had already been excavated and greens laid in localised areas prior to the evaluation. Following the excavation of the Stage 1 trenches it was agreed, by Cheshire County Council's Principal Archaeologist, the Client, and the Consultant Archaeologist, that another three be excavated in the western area of the housing development and a watching brief be undertaken during the removal of topsoil of a borrow pit, at the western end of the golf course area. The results of both stages of excavation and the watching brief are presented within the present report.

### 2.2 HEALTH AND SAFETY

2.2.1 Both Lancaster University and LUAU maintain Safety Policies, the latter based on the SCAUM (Standing Conference of Unit Managers) *Health and Safety Manual* (1991). In keeping with current Health and Safety at Work Regulations, prior to commencing on-site work, a risk assessment for each activity was completed. Details of the location of services were provided by Ian Hudson (DHC Ltd), and it is LUAU standard practice to scan the proposed location of all archaeological interventions for underground cables, using a U-scan CAT cable detector.

### 2.3 FIELD EVALUATION

2.3.1 The main field evaluation comprised a programme of trial trenching in the park of Vale Royal; it was carried out between 27th August and 3rd September 1996. It was undertaken in advance of groundworks for a proposed golf course and housing development. Further trial trenching was carried out on 1st October 1996, and a subsequent watching brief, was undertaken during the borrow pit excavation for the proposed golf course on 3rd October 1996.

2.3.2 A total area of c0.26ha was examined by 44 trenches (Fig 2). The trenches varied between 20.0m and 40.0m in length, and were all around 1.8m wide. Some

trenches were positioned to target areas of high potential identified during earlier phases of the project, whilst others were located to investigate area of proposed impact by the Golf Course Development, and to provide background information in areas where there was no direct evidence of archaeological features. The proposed housing development will have a greater impact on any archaeological resource, by comparison with the Golf Course and consequently was evaluated by a greater density of trial trenches (Fig 2).

- 2.3.3 The broad locations of the trenches were set-out using a Global Positioning System (GPS). A 360° mechanical excavator, fitted with a toothless bucket, was used to remove topsoil and, where necessary, further overburden, under close archaeological supervision. Excavation was undertaken to the depth of natural subsoils in all trenches. Topsoil and subsoil were stored separately for subsequent back-filling. Trenches were reinstated upon completion of the field evaluation.
- 2.3.4 All excavation was carried out stratigraphically, whether by machine or by hand, and recorded in the appropriate manner. In line with current guidelines (ACAO 1993, 9), no significant archaeological deposits were entirely removed or underwent particularly intrusive inspection. Dating evidence was retrieved in the least destructive way, without compromising the integrity of any archaeological record. Archaeological deposits were left undisturbed wherever possible, in order to minimise the chance of compromising the results of any further work, undertaken as a result of the recommendations from this evaluation.
- 2.3.5 Trenches were numbered 1 to 43 (August/September) and A1 to A4 (October). Context numbers were allocated in a running sequence from 001 during the August and September works, and from 101 during the October works, in order to avoid confusion.
- 2.3.6 The precise positions of the trenches were recorded using the GPS following the excavation and these were subsequently superimposed with a digital map of the study area using a Computer Aided Draughting (CAD) system, from which the final trench plot was produced (Fig 2).
- 2.3.7 The excavation record comprised the compilation of context records and description of individual trenches, accurate scale drawings, and a photographic record, in line with current English Heritage Central Archaeology Service procedures. *Pro forma* Trench Sheets were generated for each trench, which recorded the orientation, length, and depth of machining, and described the nature of the topsoil, subsoil (where applicable), and geological deposits. Where potential features were observed they were manually sampled, and a full textual, drawn, and photographic record was maintained. Any finds recovered were bagged and recorded by either the trench number or, where appropriate, by the number of the context from which they were recovered (*Appendix 2*).
- 2.3.8 A strategy of total collection was pursued with regard to finds, in order to maximise the understanding and interpretation of the sequence of deposition within each trench. Finds from each context noted were collected and stored separately.

## 2.4 WATCHING BRIEF

- 2.4.1 A watching brief was maintained by LUAU personnel during the excavation of a borrow pit at the western end of the study area (SJ 9286 6973). The topsoil was removed in shallow spits by tracked excavator to facilitate the identification of archaeological features and LUAU staff were allowed to stop the excavation, in order to examine any exposed features. After stripping of topsoil the upper surface of the natural subsoils was inspected for features, and the spoil checked for artefacts.
- 2.4.2 The stratigraphy and archaeological features were recorded using *pro forma* context sheets. Accurate scale drawings (plans at 1:20 and sections at both 1:10 and 1:20) were made where appropriate, and photographs (black and white prints and colour transparencies) were taken as necessary. On-site assessment of the deposits suggested it was not necessary to take environmental samples. Any finds were handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.

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### 3. EVALUATION RESULTS

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3.1 Described below are all trenches which revealed archaeological features; those which were archaeologically sterile are briefly described in *Appendix 1*. The locations of all the trenches are shown in Figure 2, and selected trench sections are reproduced as Figures 3 and 4. Finds were examined by LUAU in-house specialists, and are reported as *Section 4*.

#### 3.2 TRENCH 1

3.2.1 Trench 1 (30.6m long, 2.4m wide) was excavated by machine to a maximum depth of 0.70m. A narrow section (0.50m) across the width of the trench was subsequently cleaned and excavated by hand, revealing a cut feature (40), orientated north-east / south-west; it was extended over the length and width of the trench, and sloped down to the west. Feature 40 sloped very gently down to a maximum depth of 0.40m below the level of machining. Its fill (5), which could be observed in plan for a length of c17m, was a dark grey sandy clay. A rough line of stones was observed along the western edge of fill 5 and was visible at the level of machining in the northern end of the trench and at a depth of 0.20m in the hand excavated section. Cut 40 and fill 5 were sealed by a layer of pale brown sand (4), which was probably redeposited natural, and lay over most of the trench. Post-medieval pottery was recovered from fill 5, and fragments of brick or tile were recovered during machining.

#### 3.3 TRENCH 2 (FIG 3)

3.3.1 Trench 2 (38.1m long, 2.4m wide) was excavated by machine to a maximum depth of 0.75m. Most of the trench was archaeologically sterile, but two possible robbed-out wall foundations were observed near the middle of the trench (Fig 3, Trench 2 plan). The possible wall foundations (41 and 42) lay at 90° to each other; both were c0.40m wide, and both robber trenches were filled with numerous small stone fragments. The robbed walls were both sealed by layer 3, an 8.0m wide deposit which was orientated east-north-east/west-south-west. The layer was 0.15m deep and comprised, in the main, stone fragments, mixed with small amounts of brick and tile, post-medieval glass and pottery, and many fragments of bone.

#### 3.4 TRENCH 3

3.4.1 Trench 3 (32.0m long, 2.4m wide) was excavated by machine to a minimum depth of 0.36m and a maximum depth of 0.75m. Two relatively modern ceramic field drains crossed the line of the trench, and a shallow ditch (1) was encountered at the western end.

3.4.2 The shallow ditch (1) crossed the western end of the trench from north-west to south-east. It was 0.55m wide, and its lowest point extended to 0.66m below the top of the trench. The sides sloped at an angle of c45° down to a rounded base.

There were two fills; the lowest (2) was very dark grey or black, with a peat-like texture. Above it, shown in section in the side of the trench, was a 0.10m thick layer of fine sandy clay loam (62) which appeared to be the upper fill of ditch 1.

### 3.5 TRENCH 4 (FIG 4)

3.5.1 Trench 4 (31.4m long, 2.4m wide) was excavated by machine to a maximum depth of c0.75m. Redeposited sand (57 and 58) and a layer of peat (56), which had an average thickness of c0.15m, lay over most of the trench. All three were removed mechanically. These deposits were recorded in section from the west-facing side of the trench.

3.5.2 At the north end of the trench was a wide (c2.0m) channel (59) which extended to 1.20m below the level of topsoil. The sides sloped only very gradually to a rounded base. The primary fill (52) was a thick (0.75m) layer of black peat which spread to the north, beyond the confines of both channel 59 and the trench. Above it was layer 53, a dark greyish brown sand, which also continued beyond the trench.

3.5.3 Layer 53, fill 52 (channel 59), layers 57 and 58 were all cut by a second, later channel (60), which was more clearly defined than channel 59. The edges of the channel were lined by a c0.10m thick band of peat (54) and the remainder was filled by pale brown and brown sand (55).

3.5.5 It seems likely that peat layer 56 and the primary fill (52) of channel 59 were broadly contemporary, representing the remains of a natural or artificial water course which had pooled, creating an area of boggy ground. It was eventually superseded or drained by channel (60).

### 3.6 TRENCH 5

3.6.1 Trench 5 (30.30m long, 1.50m wide) was excavated by machine to an average depth of 0.50m. Over most of the trench natural deposits were established at a depth of 0.50m, but at the western end there was a 8.00m wide deposit of brown sandy silt loam containing stones and some bricks. As the bricks were machine-made and therefore post-medieval in date, this was removed by machine. A substantial feature, 1.75m deep and at least 8.00m wide, was revealed which may have been deliberately back-filled with soil containing some brick.

### 3.7 TRENCH 9

3.7.1 Trench 9 (30.10m long, 1.50m wide) was excavated by machine to a maximum depth of 0.63m. A ditch (22) was observed and was orientated north-west/south-east. This was 0.93m wide and 0.28m deep with a sharp break of slope at the top,

the sides sloped at an angle of 45°, and the base was rounded. The single fill (23) was a firm grey sandy silt loam. There was redeposited sand near the edge of the cut and many fine roots throughout the fill. No finds were recovered.

- 3.7.2 A well-constructed stone-lined water conduit or leat (63), orientated north-west/south-east, was also recorded within the trench. It was constructed of very pale yellow sandstone slabs, set nearly vertically, although in cross-section the stones were shown to slope in towards each other, and the conduit so formed was capped by a third stone laid flat across them. All the stones had been dressed and the capstone was rectangular, measuring 0.48m by 0.33m by 0.11m. The conduit was half filled with a mixture of redeposited sand and peat.

### 3.8 TRENCH 10

- 3.8.1 Trench 10 (31.40m long, 1.80m wide) was excavated by machine to a maximum depth of 0.30m. Over most of the trench a 0.30m thick layer of topsoil lay directly over natural deposits of sand. Towards the eastern end, however, the trench cut through a ditch or possible negative lynchet (18), which was 1.40m wide but only 0.27m deep. The eastern side of the feature sloped shallowly, but the western side was damaged by an animal burrow. The single fill (19) was a loose dark grey fine sandy loam.

- 3.8.2 A grey, fine sandy loam palaeosol (21) extended some 3.50m eastwards from feature 18 to the end of the trench. The interface between the palaeosol (21) and the underlying geological deposits was very uneven, and as a result, it varied in thickness between 0.06m and 0.19m. Palaeosol 21 was sealed by a 0.13m thick layer of redeposited pale brown natural sand (20), which extended to the end of the trench. The interface between the two was very clearly defined. Layer 20 was sealed by topsoil.

### 3.9 TRENCH 13

- 3.9.1 Trench 13 (30.00m long, 1.80m wide) was excavated by machine to a maximum depth of 0.46m. The overburden comprised modern topsoil and subsoil containing red and black flecks, and for the most part directly overlay natural deposits of fine sand. The geological substrate was cut by a shallow ditch (16), orientated east/west, which was exposed for a length of 2.60m; it was 1.07m wide, and 0.27m deep. The top of the cut was clearly defined, and sloped gently down to a flat base. The single fill (17) was a grey brown fine sandy loam. No finds were retrieved.

### 3.10 TRENCH 15 (FIG 4)

- 3.10.1 Trench 15 (26.5m long, 2.00m wide) was excavated by machine to a maximum depth of 0.42m. In the northern half of the trench natural geological deposits were established directly below the topsoil. At the southern end a possible foundation trench (43) was noted, lying at right-angles to the line of the trench (Fig 4, Section 4).

- 3.10.2 Cut (43) was exposed over a length of 2.0m, and was orientated east/west; part of it continued to the south, beyond the edge of the trench. For most of its excavated length it lay 0.88m below the level of topsoil, but at one end rose by 0.18m. The lower fill (47) was a c0.10m thick deposit of black peat, which was sealed by fill 44, a mixed rubble comprising brick, stones, and mortar, presumably the remnant of stone robbing. Fill 44 contained fragments of clay-pipe, glass, and post-medieval pottery.
- 3.10.3 A horizontal cut (46), at the southern end of the trench, was identified by the sharp boundary between the geological deposits below and the fill above. This was observed at a depth of 0.70m below the ground surface, running for a distance of 12.60m. It was filled by sand (45) which contained lenses of peat. It was cut by the foundation Trench 43.

### 3.11 TRENCH 16

- 3.11.1 Trench 16 (28.50m long, 2.00m wide) was excavated by machine to a maximum depth of 0.70m. Ploughing, and the heavy mineralisation of the geological substrate, complicated the investigation of this trench. However, two ditches were encountered (24 and 26), which were parallel and 7.5m apart. Ditch 24 was recorded over a distance of 2.0m and was 0.50m wide and 0.21m deep. The profile was asymmetrical; the northern side was almost vertical while the southern side was gently sloped. The fill was a fine dark greyish brown to black sand (25). Ditch 26 was 1.00m wide and 0.32m deep, the sides were nearly vertical, and the base horizontal. It was filled by a yellowish brown sand (27) with lenses of clay and much dark mottling. The lack of mixing and bioturbation within this fill suggested that it was of recent origin.
- 3.11.2 Several other shallow features were examined within this trench: feature 28 was 0.40m wide and 0.07m deep. Feature 29 was 0.90m wide and 0.08m deep, and filled by black sand 30. Feature 31 was clearly a field drain. It is likely that features 28 and 29 were both caused by ploughing. Layer 33, a mixture of pale and dark brown sand, with iron-panning and reddish yellow staining, may have been the result of podsolisation.

### 3.12 TRENCH 17

- 3.12.1 Trench 17 (25.10m long, 2.00m wide) was excavated by machine to a maximum depth of 0.54m. A ditch (48) was observed running out south-eastwards from the western edge of the trench for 1.57m. It was 0.81m wide, and cut 0.14m into the underlying geological deposits. The sides sloped gently and the base was concave. The only fill was a grey fine sand (49). No finds were recovered.



### 3.13 TRENCH 18

3.13.1 The position of Trench 18 was defined to explore the eastern area of the housing development but was also targeted to examine a 'Conduit Head' which is shown on the 1616 estate mapping. Trench 18 (26.0m long, 1.70m wide) was excavated by machine to a maximum depth of 0.82m. A deep (0.33m) deposit of peat (64) extended at least 16.0m into the trench from its northern end. It was covered by a 0.20m thick layer of dark grey fine sand (65), and a mixture of redeposited sands and clays (66), containing fragments of brick and tile. The redeposited layers lay immediately below topsoil.

### 3.14 TRENCH 19 (FIG 4)

3.14.1 Trench 19 (27.80m long, 1.50m wide) was excavated by machine to a maximum depth of 0.50m. The removal of topsoil revealed grey sands, the natural geological deposits. A large ditch (35) was exposed within the trench; this was not fully examined for reasons of health and safety, and excavation was stopped at a depth of 0.70m below geological deposits.

3.14.2 Ditch 35 was exposed over a length of 1.80m. It was c4.2m wide and in excess of 0.7m deep, and ran almost north / south (Fig 4, Section 1). Its western side sloped steeply with a sharp break of slope at the top, the eastern side appeared to slope more gently, but a ceramic field drain had obscured the top of the ditch on this side. The lowest fill excavated (36) was a grey sandy silt loam containing flecks of charcoal. It was in excess of 0.73m thick, and distinctly moist. The nature of this fill and the charcoal in it suggested that there was the potential for good organic preservation within it. A layer of grey sandy silt loam (37) containing lumps of redeposited yellowish brown clay lay above fill 36. The eastern end of layer 37 was covered by a substantial (2.17m wide, 0.27m thick) lens of very pale grey sand (38), with darker patches (possibly caused by roots or worm action). This lens appeared to represent a deliberate backfill. Fill 39 sealed lens 38, and covered much of fill 37. It was a grey sandy clay loam 0.19m thick, with some mottling. This was directly sealed by topsoil.

3.14.3 The eastern ends of fills 36, 38, and 39 had all been cut by the insertion of recent field drains.

### 3.1.5 TRENCH 23

3.15.1 Trench 23 (29.77m long by 1.50m width) was located over a possible platform feature, but the excavation revealed no evidence that it was man-made; however, it did reveal a single worked flint flake. Natural geological deposits lay 0.30m below topsoil. The negative findings of the excavation suggest the possibility that the break of slope, which had suggested the platform, was possibly a geomorphological artefact, whereby gravel, outcropping at the surface, was more susceptible to erosion than the surrounding soils. However, it is not uncommon, particularly in uplands contexts, for the excavation of artificial earthworks to produce no sub-surface evidence to support their artificial origin. The platform is

one of a group of three very similar earthworks and, given the grouping, it is not possible to dismiss an artificial origin purely on the evidence of the excavation.

### 3.16 TRENCH 24

3.16.1 Trench 24 (26.30m long, 1.85m wide) was excavated by machine to a maximum depth of 0.95m. Peat layer 69, with a maximum thickness of 0.40m, overlay the natural substrate across some 9.0m of the trench and filled the bed of a natural watercourse. The natural geological deposits were pale brown sands. A 0.30m thick layer of greyish brown sandy clay (68) overlay the peat, which was possibly redeposited natural, and was overlain by a pale greyish brown sand (67) with a maximum thickness of 0.25m. This lay directly beneath topsoil.

### 3.17 TRENCH 31 (FIG 3)

3.17.1 Trench 31 (31.30m long, 1.85m wide) was excavated by machine to a maximum depth of 0.74m. Ditch 50 was observed at the southern end of this trench, and in order to investigate it more fully a short spur was excavated at right-angles to the main trench. Ditch 50 was 2.90m wide and cut 0.40m into the natural geological deposits (Fig 3); it was orientated north/south. In profile it sloped gently to a hollow base. The only fill (51) was a grey sand, which appeared to redden towards the edges of the cut. Fill 51 was sealed by layer 61 (0.15m to 0.20m thick) which comprised greyish brown sandy clay subsoil.

### 3.18 TRENCH 34

3.18.1 Trench 34 (33.70m long, 1.85m wide) was excavated by machine to a maximum depth of 0.52m. A shallow ditch (8) ran north-west / south-east across the trench; it was 1.15m wide and was cut 0.32m into the natural geological deposits. In profile it had shallowly sloping sides and a rounded base. It contained two fills, a greyish brown sand (6), and a dark brown sandy clay (7). No finds were recovered.

### 3.19 TRENCH 36

3.19.1 Trench 36 (29.70m long, 1.85m wide) was excavated by machine to a maximum depth of 0.85m. A north/south oriented shallow ditch (9) was intersected at right-angles by the trench. Ditch 9 was 1.07m wide and 0.27m deep, its sides sloped at  $c45^\circ$  and it had a rounded base. The cut appeared to originate from directly below topsoil, 0.12m above the level of machine removal. Its primary fill (10) was a grey sandy loam containing a few small stones, and some red and reddish brown redeposited natural sand. Above this, running along the centre and western side of the ditch, lay fill 11, which comprised a 0.10m depth of fine brown sand.

### 3.20 TRENCH 37

3.20.1 Trench 37 (30.50m long, 1.85m wide) was excavated by machine to a maximum depth of 0.65m. A north-west/south-east oriented shallow ditch (12) was observed over a distance of 2.32m. It was 1.28m wide, (0.33m deep) with a sharp break of slope at the top and fairly steep sides, dropping to a flat base. The single fill (13) was a pale brown, fine sandy loam or fine sandy clay loam, containing a fragment of brick. An unstratified sherd of post-medieval pottery was recovered during machining.

### 3.21 TRENCH 38

3.21.1 Trench 38 (30.40m long, 1.85m wide) was excavated by machine to a maximum depth of 0.45m. Ditch 14 was observed at the southern end of this trench, and in order to investigate it more fully a short spur was excavated at right-angles to the main trench.

3.21.2 Ditch (14) was exposed for a length of 5.50m, it was 3.10m wide and 0.30m deep; it cut some 0.55m into the substrate, and was aligned in a north-west/south-east direction. In profile the sides sloped shallowly to a rounded base. The only fill (15) was a greyish brown sandy loam, which showed dark and pale bands near the edge of the cut.

### 3.22 TRENCH 40

3.22.1 Trench 40 (9.0m long, 1.85m wide) was excavated by machine to a maximum depth of 0.19m. It was excavated within a circle of seven mature trees, growing on an elevated mound which was possibly the remains of a barrow.

3.22.2 The natural sandy substrate was c0.20m higher here than the level of the adjacent ground surface. It was covered by a patchy layer of small and medium stones and, over this lay 0.41m of mixed pale grey and reddish brown fine sand, containing abundant roots and many animal burrows. This sand was very loose and lacked cohesion; it was directly covered by the topsoil. A sherd of post-medieval pottery was retrieved from the base of the sand. There was no evidence of any structural features consistent with a barrow.

### 3.23 TRENCH 42

3.23.1 Trench 42 (20m long, 1.65m wide) was excavated to a maximum depth of 0.57m. The topsoil was 0.23m deep, and overlay 0.34m of subsoil. The geological deposits were yellowish brown clay. Within the trench was a possible posthole (0.34m diameter, 0.39m deep), was filled with brown sandy silt loam which contained dark organic banding and some small stones. There were no other associated, similar features and was possibly an isolated feature.

### 3.24 TRENCH 43

3.24.1 Trench 43 (20m long, 1.65m wide) was excavated to a maximum depth of 0.50m. Geological deposits were of degraded sandstone in the east of the trench and

reddish clay in the west. At a distance of 7.9m from the eastern limit of excavation was a shallow ditch (0.70m wide, 0.28m deep) running from north-east to south-west. It was filled with a greyish brown silty clay loam which contained flecks of ceramic material and charcoal, whilst at the base of the fill were bands of charcoal.

### 3.25 TRENCH A4 (FIG 3)

3.25.1 Trench A4 (20m long, 1.50m wide) was excavated by machine to a maximum depth of 0.50m. It was excavated immediately to the north of the Scheduled Area of the abbey. The topsoil was 0.2m thick, and a further 0.3m of overburden had to be removed in order to reveal archaeological features.

3.25.2 A cut feature (101) lay beneath topsoil. It was at least 11.9m wide, ran in an east/west direction, continuing beyond the southern limit of excavation, and was more than 1.2m deep (excavation was discontinued at this depth due to health and safety restraints) (Fig 3 Section 6). The lowest observed fill (104) comprised fragments of stone, mortar, and some charcoal. Above this was a 0.2m depth of sandy clay (105) containing fragments of stone and charcoal. Fill (106) was a sandy clay with mortar, sandstone, and occasional charcoal inclusions, and above it lay 107, also a sandy clay, which contained c50% stone fragments. Fill 108 was similar to 107, but, in addition to stone fragments it contained fragments of mortar, charcoal, and small stones. Fills 105, 106, and 107 appear to have been tipped in from the south. All of these fills contained a mixture of medieval tile, mortared sandstone fragments, and post-medieval debris.

3.25.3 A second feature (103) was revealed cut into the natural orange silty sand, 2.0m further to the north. It was aligned approximately north / south (at a slight angle to the trench), and the southern end of the feature was examined. The full width of this feature was not exposed, as it extended under the western edge of the trench. The feature had steep sides, and was more than 0.47m deep (the base of this feature lay beneath the baulk).

### 3.26 WATCHING BRIEF

3.26.1 This brief was undertaken in order to observe the excavation of a borrow pit in the south-western part of the site, close to the location of Trench 31 (*Section 3.16*). The upper levels of the topsoil had been removed prior to the watching brief, leaving a layer of dark organic material between 0.18m and 0.07m in depth (remnants of the topsoil) covering yellowish brown sand. The sand was fully exposed towards the top of the mound. During the watching brief the remaining topsoil was stripped using a tracked mechanical excavator with a 1.2m wide toothless bucket. Material was removed in a series of shallow spits (0.15m) in order to facilitate the identification of any archaeological features.

3.26.2 A pure stone-free sand was encountered directly below topsoil, comprising a layer in excess of 1.4m depth. Occasional lenses of fine gravel were encountered within the sand. These were more frequent towards the upper levels of the low hillock where the gravel directly underlay the organic topsoil, and filled a series of very shallow natural depressions in the surface of the sand.

- 3.26.3 Ditch 50/14 (seen in Trenches 31 and 38) was not encountered, suggesting either that it was absent from this area, or that it had been completely removed by topsoil stripping. No artefacts were recovered.
- 3.26.4 In addition to the above a walk-over survey of all other stripped areas was conducted. No archaeological features were identified in any of these areas, and the only artefacts observed were of nineteenth or twentieth century date.

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## 4. FINDS REPORT

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- 4.1 A total of 62 fragments of artefacts was recovered from nine of the trenches excavated (Trenches 1, 2, 14, 15, 18, 23, 37, 40 and 41), representing a range of material from tile and brick to ceramic and glass vessels. For a full catalogue see *Appendix 3*.
- 4.2 One of the two fragments of flint recovered (Trench 23, unstratified) may well be waste from the manufacture of a flint tool. The nodule of flint from Trench 14 is unworked and thus completely natural in origin.
- 4.3 Small amounts of building material were recovered from Trenches 1, 2, 14, 15, 18, 37 and 41 and indicate the use of hand-made bricks, and ceramic roof and floor tiles in the construction of nearby buildings.
- 4.4 The dressed sandstone from Trench 15 is presumably a remnant of a former structure, as indicated by stone filled robber trenches. Other material from Trench 15, especially the group of three or more wine bottles of seventeenth century date, suggest that stone was being removed from the site at about that time, and that the robber trenches were backfilled or were allowed to fill, with an accumulation of domestic rubbish.
- 4.5 A group of medieval-type floor tiles was recovered from Trench A4. Along with a fragment of dressed stone, and a small fragment of medieval window glass, they indicate a building of reasonably high status in the close vicinity. The floor tiles are of interest and both the size of the fragments, and the number recovered from a relatively small excavation, strongly suggests a glazed tile floor was in the vicinity. Two shapes of tile were noted, triangular, and square or rectangular; most were glazed yellow, some with a thin white underglaze slip producing a bright pale yellow surface. Others had a yellowish glaze but no slip, producing a more muted, brownish yellow. There was a single fragment with a thick dark green glaze. Whilst the possibility of a highly complex mosaic tile floor cannot be ruled out on this evidence, the material closely resembles the late fifteenth century tiled floor excavated at Norton Priory near Runcorn (Noake unpubl) in both colour, and in manufacturing techniques (for instance the under-cut edges of individual tiles) and in this circumstance the triangular tiles would have been used to form the edges of the area of tiling.
- 4.6 It is likely that the thinner, unglazed tiles are, in fact, roof tiles. Several bear the remnants of a relatively fine white mortar or plaster on their underside which might indicate that the roof was plastered on the inside to form a draft-proof seal (Moorhouse 1988).
- 4.7 The single fragment of window glass is without doubt of medieval date, and is probably somewhat earlier than the putative tiled floor, which would again suggest the close proximity of high status buildings. The single glass vessel fragment is most likely to date from the later part of the seventeenth century, and perhaps suggests a date for disturbance of the site. Such a date reinforces the evidence from Trench 15.

- 4.8 The artefactual assemblage has been retained for deposition, along with the paper archive, with the Cheshire Museums Service.

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## 5. DISCUSSION

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### 5.1 INTRODUCTION

5.1.1 This series of trial trenches has provided a disparate series of 'keyhole' illustrations of the nature of the surviving subsoil archaeological remains within the park at Vale Royal. Whilst in general terms the physical layout of monasteries is well known, that knowledge is, on the whole, focused upon the ecclesiastical buildings at the heart of the complex; the more out-lying structures, the field systems and the manner in which services such as a water supply were supplied to the complex are all far less well known. The trenches were intended to sample the range and survival of archaeological evidence, to examine areas which will be affected by the development, and to supply background comparisons by examining some areas where the archaeological resource is not known.

5.1.2 Although the primary focus of the project has been the monastic and subsequent occupation of the site, two of the trenches tested sites which were, potentially, of pre-monastic date. Most trenches examined aspects of the wider monastic settlement, and the post-Dissolution secular occupation of the monastic complex. Predictably some evidence of substantial structures was uncovered, in the form of robbed walls and large cut features, all of which appeared to have been drastically changed (robbed or backfilled) in the first century or so after the Dissolution, a time when many monastic properties, including Vale Royal, changed hands with surprising frequency. Most of the evidence provided by this investigation, however, is of a more insubstantial nature, representing watercourses, culverts, and field boundaries.

### 5.2 UNDATED FEATURES

5.2.1 Trench 23 was intended to explore a possible sub-circular platform-like feature. Excavation revealed no evidence of a deliberate structure, and it is possible that the platform was no more than a geomorphological artefact. However, it is not uncommon, particularly in upland areas, for definitive anthropogenically produced earthworks to produce no subsurface structure on excavation. The excavation did reveal a small piece of worked flint, the earthwork site does have a very distinctive, circular form, and it is associated with two other very similar features; consequently it is not possible to dismiss these features as natural purely on the evidence of the excavation.

5.2.2 It had been thought that the tree-grown mound investigated by Trench 40 might have represented the remains of a prehistoric barrow. There was, however, nothing to suggest that the sandy deposits had ever incorporated any of the features which might be held diagnostic of a funerary monument. No peripheral ditch, or remains of kerbing were observed, and deposits which formed the mound were all very loose and uncompacted, suggesting that the feature was of no great antiquity. Mounds and small plantations are a feature of post-medieval landscaping, and it is likely that this was just such a feature within the parkland. A single fragment of eighteenth to nineteenth century pottery retrieved from just above the level of the geological deposits, could perhaps provide a date for the



construction of this mound, but as there was substantial bioturbation of the deposits, this could perhaps be regarded as a later intrusion.

### 5.3 MONASTIC AND LATER BUILDINGS

5.3.1 Both direct and indirect evidence was recorded for several structures within the study area.

5.3.2 A large cut feature (101) was part-excavated within Trench A4, which was opened to the north of the Scheduled Area. Excavation established this cut feature to be at least 11.9m wide, and in excess of 1.2m deep. It was filled by a number of deposits of what was obviously demolition debris, mainly a mix of mortar and stone fragments, with some charcoal, and, in the later deposits, medieval tile and post-medieval debris. The size and position of this feature, close to the abbey church, strongly suggest a close relationship, and that the feature is, perhaps a backfilled cellar or undercroft. The fills included a group of fine fifteenth century tiles as well as later material, and is strongly reminiscent of clearance debris, possibly generated by the programme of demolition and rebuilding undertaken in the sixteenth and seventeenth centuries. A second large cut feature (103), only 2.0m to the north, is perhaps the remnant of a similar structure.

5.3.3 The floor and roof tiles in the fill indicate the demolition of a building of high status, presumably ecclesiastic, in the close vicinity. The abbey church lies within 100m of the trench and, as it was demolished by the first secular owner (Thomas Holcroft) soon after the Dissolution in 1538, it seems an obvious source for the debris.

5.3.4 The line of a robbed wall was noted in Trench 15, which again appeared to have been back-filled with rubble and rubbish in or about the seventeenth century. It possibly formed part of the monastic complex, and it is known that Thomas Holcroft adapted parts of the claustral range as a dwelling (LUAU 1995b, 17) and that further building works were undertaken in the same area by the Cholmondely family who acquired the abbey in 1616.

5.3.5 The robbed-out corner of a less substantial building (walls 41 and 42) was noted in Trench 2 and may represent an element of the extensive water management system for the abbey (below 5.4.3).

### 5.4 EVIDENCE FOR WATER MANAGEMENT

5.4.1 A copious supply of water was vital to the life of a monastery and extensive systems of management were developed to ensure the supply. Apart from supplying the fishponds, which provided a significant part of the monastic diet, water would have been important within the monastic buildings for day-to-day and liturgical purposes. A failed water supply was sufficient cause to relocate the entire monastery and many, for example St Giles, Cambridge or Kingswood, Avon, were forced to move when their supply proved to be either inadequate or when it dried up (Bond 1989).

- 5.4.2 Three medieval fishponds are marked on the 1616 estate map (Connersley, Dog and Thomas Pool), as are numerous springs and conduits, many of them undoubtedly the result of systematic water management by the monastery. It has been suggested that an old water course from Petty Pool (McNeil and Turner 1987, 17) marks the line of a conduit bringing water to a cistern or spring 'the conduit head' in front of the abbey, and thus forming one source of water for the monastery (LUAU 1995a, Site 46). These excavations produced ample evidence for former water courses, both natural and managed, some of them without doubt built to supply the monastic ranges.
- 5.4.3 Trench 18 was intended to investigate the 'conduit head' itself, as shown on the 1616 estate map. A substantial build-up of peat in this area provided evidence of a water source, albeit clogged and boggy. From the spring the water was channelled to the north-east (Trench 4, channel 60). Channel 60 is clearly artificial, replacing a shallower and more nebulous natural watercourse (59). Preliminary field reconnaissance (LUAU 1995a, Site 56) and geophysical survey (GSB 1996, Area E) both suggest that the channel was in fact stone-lined, and possibly capped, as a number of large dressed sandstone blocks were noted in this area, perhaps discarded by stone robbers. Geophysical survey identified a strong and clearly defined high resistance anomaly which appears to mark the line of the channel and may suggest that the stone conduit survives intact in some places.
- 5.4.4 The water course could be traced as far as Trench 2, where wall foundations 41 and 42 possibly represent the corner of a settling tank and therefore part of the water management system. Beyond Trench 2 the line of the water course is lost but path 6 (LUAU 1995a), shown on the 1616 estate map and a later map of 1872, follows the postulated line of the conduit, which may have continued to exist as a boggy watercourse in which peat formed, long after the conduit was disrupted and robbed.
- 5.4.5 The 'conduit head' lies towards the southern perimeter of the abbey precinct and is likely to have supplied clean water to the abbey complex rather than to the fishponds to the north, which appear to have been fed by a separate stream. It may not have been the sole supply for the abbey complex and certainly other conduits have been located during the course of this investigation. A well-made stone-lined channel was excavated and recorded in Trench 9 and another was noted during the assessment (LUAU 1995a, Site 57). There seems little doubt that these isolated channels were associated with the monastery, and can be paralleled at a number of sites, for instance Norton Priory (Greene 1989), Furness Abbey (Newman 1986) and Holm Cultram (Howard 1976). A medieval or early post-medieval floor tile found in the vicinity of Trench 9, during an earlier phase of evaluation (LUAU 1995a, Find spot 010), confirms medieval activity in this area.
- 5.4.6 Water power was also widely used, driving both corn and fulling mills, and for metal-working. Water in large quantities would be necessary for any tannery owned or run by the monks. It seems likely, however, that any industrial needs would be serviced by the River Weaver, or by Petty Pool Brook. Indeed, documentary evidence suggests that fulling and tanning, and the milling of corn, may have taken place near to Petty Pool Brook (LUAU 1995a, 17).

## 5.5 THE RELICT LANDSCAPE

- 5.5.1 The outer precinct of the abbey was marked by a 'great ditch', dug in 1283, setting the abbey apart from its surroundings. Along with this, the Cistercian practice of consolidating their holdings and enclosing large tracts of land for the pasture of sheep and cattle (LUAU 1995a, 16) must have had a marked effect on the landscape, at its most fundamental, in the form of new field boundaries. Several insubstantial ditches were located during these excavations. The largest of these (Trench 19, ditch 35) may have marked the boundary of the inner precinct of the abbey, but the remainder are most easily interpreted as elements of a relict field system, possibly pertaining to the surrounding monastic holdings, although as none can be dated, this must remain unresolved.
- 5.5.2 Ditch 35 lay only c50m from the Great House. It ran north / south, and approximately parallel to the long axis of the present building. At 4.2m in width and more than 1m deep, it must have been a substantial barrier. For this reason it is suggested that this ditch possibly marked the boundary of the inner precinct of the abbey. If, however, as has been suggested, building 47 (LUAU 1995a) on the 1616 estate map was a gate house, presumably leading to the claustral area, it would imply that the line of the boundary must have changed at some stage.
- 5.5.3 It is likely that ditches 50 and 14 (examined in Trenches 31 and 38 respectively) represent parts of a single ditch running north-west / south-east. The two sections differ only slightly in width and depth and such variation is easily accounted for by later plough damage. The single fill in both sections is effectively identical.
- 5.5.4 Ditches 22 (Trench 9), 16 (Trench 13), 48 (Trench 17), 8 (Trench 34), 9 (Trench 36), 12 (Trench 37) and 14 (Trench 38) are all relatively insubstantial. Their nature makes it likely that they represent field boundaries and the possible lynchet examined in Trench 10 can be added to this list. All these features lie in the southern part of the study area, mainly to the south-west. Ditch 48 (Trench 17), however, was rather closer to the abbey buildings, and may represent an agricultural use of the outer precinct. If this relict field system was contemporaneous with the abbey, it would imply that the boundary between the inner and outer precincts lay somewhere to the east of Trench 17.
- 5.5.6 Alternatively, although they do not correspond with the cluster of Conersley field names, which all fall to the west of the study area, the field system could be associated with the former village of Conersley (LUAU 1995a).

## 5.6 CONCLUSIONS

- 5.6.1 Whilst much of the evidence remains nebulous, this programme of archaeological work is beginning to illustrate the range and nature of the surviving evidence for the monastery and its environs within the Park at Vale Royal. Excavations have demonstrated that even quite insubstantial land divisions and boundaries have survived as sub-surface archaeological features, raising the potential ability to reconstruct such less well-known elements of the monastic regime as water management, and agricultural practice. On the other hand, trial trenching has

revealed the existence of substantial cut features close to the known remains of the abbey, presumably indicating the location of other monastic structures.

- 5.6.2 Such new evidence for the location of monastic buildings and the likely extent of both the claustral and secular precincts of the abbey and its holdings adds to our knowledge of the Abbey of St Mary the Virgin, St Nicholas and St Nicasius at Vale Royal, and it is slowly becoming possible to set the monastery within its contemporary landscape.

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## 6. ARCHAEOLOGICAL IMPACT

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### 6.1 GOLF COURSE DEVELOPMENT

- 6.1.1 The evaluation identified that throughout the extent of the study area, natural subsoils are close to the surface, typically between 0.25m and 0.5m below ground level. The archaeological features, for the most part, were excavated into the natural subsoils and the upper parts of the archaeological features had been truncated by plough action. The interface between the natural subsoils and the topsoil is therefore archaeologically very sensitive.
- 6.1.2 The golf course development will involve the excavation of borrow pits across the extent of the study area and the construction of upstanding earthworks for each tee, using the material from the borrow pits (Fig 5). Prior to the laying of the tees the topsoil would be stripped in accordance with MAFF regulations. The fairways will be subjected to ploughing and will not affect extant archaeological deposits, as the fields within the study area have been heavily ploughed. The excavation of the borrow pits will destroy any extant archaeological deposits. The excavation of topsoil for the construction of the tees, however, will not necessarily destroy archaeological deposits as they may be preserved if the topsoil strip does not excavate to the depth of natural sub-soils. The effect of the golf course development will therefore cause only localised, albeit in some areas intensive, disturbance to the underlying deposits.
- 6.1.3 The evaluation has established that the area of greatest archaeological sensitivity is around the Great House, where monastic structural remains have been found, including possible monastic structural remains and an inner precinct wall. Any sub-surface disturbance in this area, to the east of the ha-ha, has the potential to disturb archaeological remains; the natural deposits are about 0.4m below the ground surface in this area and there is the potential that topsoil stripping, for the construction of tees, will affect archaeological deposits. The three borrow pits to the north of the abbey have been evaluated by trenching and watching brief prior to excavation, and did not reveal significant archaeological deposits.
- 6.1.4 The evaluation of the field to the west of the ha-ha revealed structures and features that possibly related to the abbey's water management system and are therefore archaeologically sensitive, albeit of less importance than those in the field to the east of the ha-ha. Earth-moving operations for the golf course construction therefore have the potential to disturb archaeological deposits in this area. The evaluation of the easternmost borrow pit (Trench 3) revealed a possibly significant archaeological resource, possibly relating to the water system, but those borrow pits to the west of it were found to be archaeologically sterile.
- 6.1.5 The westernmost field of the study area produced relatively little evidence of archaeological activity and consequently any earth-moving operations in the area have a reduced likelihood of disturbing archaeological deposits. The easternmost borrow pit was evaluated by Trench 31, and revealed a possible field boundary. The area was subsequently examined by watching brief, during the topsoil strip, which revealed no new archaeological features.

## 6.2 HOUSING DEVELOPMENT

- 6.2.1 The housing development will involve the laying of foundations for 50 houses, the construction of a road through the area and also extensive landscaping associated with the house construction (Fig 5). The development would therefore cause extensive disturbance to any extant archaeological deposits within the housing development area, not just within the footprint of each individual house.
- 6.2.2 The evaluation of the westernmost area of proposed housing has identified an archaeological resource of only limited importance; many of the trenches were archaeologically sterile and the remainder, for the most part, identified field boundaries.
- 6.2.3 The easternmost area of proposed housing is smaller in size, and on either side of the ha-ha; it is closer to the abbey and the trenching revealed evidence of the possible monastic water management system (Trenches 1 and 4). The proximity to the former monastic complex, coupled with the identified archaeological remains, would indicate that the development in this area has the potential to affect a significant archaeological resource, particularly in the area of Trench 16, which is to the east of the ha-ha.

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## APPENDIX 1 ARCHAEOLOGICALLY STERILE TRENCHES

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**Trench 6:** Dimensions 32.20m by 2.00m.  
Natural geological deposits lay 0.38m below topsoil.

**Trench 7:** Dimensions 34.20m by 1.85m.  
Natural geological deposits lay 0.40m below topsoil.

**Trench 8:** Dimensions 33.60m by 1.50m.  
Natural geological deposits lay 0.40m below topsoil.

**Trench 11:** Dimensions 29.40m by 1.85m.  
Natural geological deposits lay 0.43m below topsoil.

**Trench 12:** Dimensions 27.50m by 1.50m.  
Natural geological deposits lay 0.50m below topsoil.

**Trench 14:** Dimensions 32.10m by 1.80m.  
Natural geological deposits lay 0.70m below topsoil.

**Trenches 20 - 21:** Not excavated, due to previous soil strip

**Trench 25:** Dimensions 25.00m by 1.85m.  
Natural geological deposits lay 0.30m below topsoil.

**Trench 26:** Dimensions 31.50m by 1.85m.  
Natural geological deposits lay 0.35m below topsoil.

**Trench 27:** Dimensions 30.00m by 1.85m.  
Natural geological deposits lay 0.50m below topsoil.

**Trench 28:** Dimensions 30.20m by 1.85m.  
Natural geological deposits lay 0.25m below topsoil.

**Trench 29:** Dimensions 29.00m by 1.85m.  
Natural geological deposits lay 0.55m below topsoil.

**Trench 30:** Dimensions 31.00m by 1.85m.  
Natural geological deposits lay 0.30m below topsoil.

**Trench 32:** Dimensions 34.00m by 1.85m.  
Natural geological deposits lay 0.90m below topsoil.

**Trench 33:** Dimensions 34.00m by 1.85m.  
Natural geological deposits lay 0.45m below topsoil.

**Trench 35:** Dimensions 31.30m by 1.85m.  
Natural geological deposits lay 0.45m below topsoil.

**Trench 39:** Dimensions 32.25m by 1.85m.  
Natural geological deposits lay 0.34m below topsoil.

**Trench 41:** Dimensions 32.00m by 1.85m.  
Natural geological deposits lay between 0.25m and 0.60m below topsoil.

**Trench A1:** Dimensions 12.60m by 1.50m.  
Natural geological deposits lay 0.30m below topsoil.

**Trench A2:** Dimensions 20.00m by 1.50m.  
Natural geological deposits lay 0.40m below topsoil.

**Trench A3:** Dimensions 19.50m by 1.50m.  
Natural geological deposits lay 0.40m below topsoil.

## APPENDIX 2. FINDS CATALOGUE

Trench	Context	Artefacts
Trench 1		2 small fragments of brick or tile 1 large fragment hand made brick
Trench 1	005	1 fragment black glazed vessel, possibly from the Jackfield kilns, eighteenth or early nineteenth century
Trench 2	003	c50 fragments animal bone, poor condition and shattered 2 fragments of tile 1 fragment ceramic ?roof tile 2 fragments black glazed vessel, eighteenth/nineteenth century 2 fragments dark olive green wine/beer bottle, early eighteenth century form
Trench 14		1 fragment hand-made brick 1 fragment ?floor tile 1 nodule unworked but heavily rolled black flint
Trench 15		1 large fragment mortar 1 oyster shell 1 fragment melted glass or glassy slag 1 fragment clay pipe stem 1 fragment of mottled brown glazed vessel, possibly later seventeenth century 1 fragment hard-fired black glazed vessel, probably late seventeenth or early eighteenth century 5 fragments (necks) of pale green and dark olive green wine or beer bottles, early forms, later seventeenth century 1 fragment dressed red sandstone
Trench 18		1 fragment hand-made brick 2 fragments unglazed or very badly worn floor tile
Trench 23		1 fragment of flint, possibly struck waste flake
Trench 37		1 fragment black glazed vessel, probably eighteenth century
Trench 37	013	1 large fragment hand-made brick
Trench 40		1 fragment black glazed vessel, eighteenth/nineteenth century
Trench A4	101 (upper part of layer)	1 large fragment hand-made brick 11 fragments of thin, unglazed tile; most retain mortar, probably roof tile, ?medieval 3 fragments triangular floor tiles (one almost complete), yellow glaze with copper green speckle, medieval 2 fragments rectangular or square floor tile, yellow glaze, medieval 1 fragment floor tile, dark green glaze, medieval

Trench A4	101 (lower part of layer)	1 large fragment hand-made brick 1 fragment dressed red sandstone 3 fragments of medieval-type roof tile, unglazed 1 fragment ?industrial residue (light vesicular substance) 1 large fragment (base) of a thick-walled rectangular mould-blown bottle, seventeenth/eighteenth century 1 small fragment very thick, devitrified window glass, now badly damaged but, on excavation, retaining one grozed edge, medieval 1 triangular floor tile, apparently unglazed, but glaze splashed on the edges, medieval 1 fragment floor tile, worn but originally yellow, medieval
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APPENDIX 3  
PROJECT BRIEF

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APPENDIX 4  
PROJECT DESIGN

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Lancaster  
University  
Archaeological  
Unit

September 1995

**VALE ROYAL ABBEY, CHESHIRE  
GOLF COURSE DEVELOPMENT**

**PHASES 2 AND 3 OF ARCHAEOLOGICAL INVESTIGATIONS IN  
ADVANCE OF A GOLF COURSE DEVELOPMENT**  
(revised 5th September 1995)

**Proposals**

*The following project design is offered in response to a brief submitted by The University of Liverpool, dated 12 January 1995, for a phased programme of archaeological works in the vicinity of the Great House at Vale Royal Abbey, Cheshire.*

## 1. INTRODUCTION

The consultant archaeologist (Dr J. Lewis of The University of Liverpool) on behalf of the site developer GDP Design, has requested an archaeological investigation to establish the nature and potential of archaeological remains in the development application area and thence to provide mitigation measures. The application area includes the Great House at Vale Royal Abbey, Cheshire, part of the grounds of which are a scheduled monument.

The brief requests four phases of work (5.4). The first phase of work a documentary and surface survey has been undertaken for both the golf course and housing developments areas by LUAU as defined within the project design of January 1995. At the request of the consultant archaeologist (21st August 1995) the costs and project design for Phases 2 and 3 of the programme have been divided between the golf course and housing developments.

Phase 4, which will include excavation works, is not only dependent on the results of the other three phases but also upon a detailed programme of works being agreed with the consultant archaeologist (5.4.4). At present the purpose, scope, size and duration of such works is unknown, thus no cost can be given for Phase 4.

Phase 2 consists of geophysical survey and it is proposed to explore up to 6% of the golf course area by geophysics and 26% of the housing development area. Phase 3 comprises trial trenching, and as a result of discussions with the County Archaeologist and the project archaeological consultant, it is proposed that 0.6% of the golf course area, and 3.6% of the housing development area is explored by this exploratory technique and has been costed accordingly.

All work will be undertaken in line with the Code of Practice as issued by the Institute of Field Archaeologists and as defined in their guidelines for the relevant work activities.

Set out below are the details of how we will implement this phased programme of work to meet your particular needs for recording under the anticipated requirements of a Section 106 agreement, whilst working within your site development programme as closely as we are able. The exact working arrangements will need to be confirmed following detailed discussions with you, your clients and ourselves if we are to be awarded the contract for this project.

Lancaster University Archaeological Unit (LUAU) has considerable experience of the archaeological survey evaluation and excavation of sites and monuments of all periods, having undertaken a great number of varying sized projects during the past 15 years. LUAU has particular experience in the recording and analysis of historic landscapes. Relevant projects include the survey of the grounds of Rufford Old Hall and survey, evaluation and excavation at Furness Abbey, Cumbria and Whalley Abbey, Lancashire as well as numerous evaluations related to environmental impact assessments, such as that carried out for the A66 Stainmore Improvement. Projects have been undertaken to fulfil the differing requirements of clients and planning authorities, and to very rigorous timetables. LUAU has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency.

## 2. OBJECTIVES

The following programme has been designed, in accordance with the brief from the consultant archaeologist (letter dated 12 January 1995), on behalf of the developer, Golf Design Partnership. This is to provide a phased investigation of a 62 hectare development area which includes the Great House, Vale Royal Abbey, of which 47 hectares will be incorporated within a golf course and housing development. The required stages to achieve this are where necessary referenced to the appropriate section of the brief and are as follows:

### 2.1 Preliminary preparation and liaison

To organise the appropriate resources with which to undertake the work and agree a suitable working programme with the clients' agents and others involved with the site re-development.

### 2.2 Geophysical survey (Phase 2)

Magnetometry or resistivity surveying will be undertaken in two phases. The first is a quick scan over the whole area to identify any areas of magnetic anomaly. The second stage is to undertake a detailed

magnetometer survey of selected areas on the basis of the scan survey and the Phase 1 survey. It is anticipated that this latter detailed survey will explore up to 6% of the study area.

### **2.3 Trial trenching (Phase 3)**

The trial trenching will be targeted to explore areas most affected by the proposed golf course landscaping proposals and also areas of potential identified by Phase 1 & 2 of the evaluation. The trenches should cover an area equivalent to about 0.7% of the Golf Course development area. The trenches will be excavated in order to recover information relating to the nature, extent, period and condition of any buried archaeological remains.

### **2.4 Reports (Phases 2-3)**

Written interim reports will be submitted to the consultant archaeologist within two weeks of completion of each phase of the project (14.1- 3).

## **3. METHODS STATEMENT**

Phase 2 will be undertaken by Geophysical Surveys (Bradford) Ltd. Phase 3 will be undertaken by staff of LUAU.

### **3.1 Geophysical survey**

Geophysical Surveys (Bradford) Ltd are the leading exponents of archaeological geophysics. They have proposed that the majority of the study area is quickly explored by magnetometer scanning (50 hectares) which identifies the existence of magnetometer anomalies. Specific areas can then be targeted by detailed magnetometer survey comprising up to 4 hectares of farmland. Resistivity survey is more expensive and is less effective at identifying negative features, such as ditches or post holes. It is therefore proposed that only 0.75 hectares of resistance survey is employed.

### **3.2 Trial trenching**

**Golf Course Area:** Approximately 0.33 hectares of trench will be opened. The trenches will vary from 20 metres to 40 metres in length, all being 1.8 metres in width. These will be targeted to allow for examination of areas subject to proposed landscaping and also areas of defined potential. This will enable an assessment of both areas most affected by the development and also evaluate the character and significance of the archaeology across the area by targeting areas with established potential. Some trenches should be located away from the primary areas of potential, in order to act as controls. As a result of discussions with the County Archaeologist and the Archaeological Consultant, it is proposed that 50% of the trenches will be in areas to be impacted by the golf course development. 30% of the trenches will be in areas of archaeological potential as defined by Phases 1 & 2 and 20% of the trenches will be in areas that have not produced evidence of archaeological activity.

**Housing Development Area:** Approximately 0.27 hectares of trench will be opened. The trenches will vary from 10 metres to 20 metres in length, all being 1.8 metres in width. These will be targeted to allow for examination of areas subject to proposed landscaping and also areas of defined potential. This will enable an assessment of both areas most affected by the development and also evaluate the character and significance of the archaeology across the area by targeting areas with established potential. Some trenches should be located away from the primary areas of potential, in order to act as controls. It is proposed that 70% of the trenches will be in areas to be impacted by the housing development and 30% of the trenches will be in areas of archaeological potential as defined by Phases 1 & 2.

All topsoil and non-archaeologically significant layers will be removed by mechanical excavator. Archaeologically significant layers will be manually excavated and then only to a degree necessary to establish date, nature, condition and depth of deposit. All recovered artefacts will be stored appropriately and in accordance with UKIC guidelines. Where appropriate samples will be taken for palaeoenvironmental analysis. Sampling and post-excavation processing of ecofacts will be undertaken in accordance with standard EAU guidelines.

Following trial trenching all recovered artefacts will be visually scanned only in order to provide an indication of date. Palaeoenvironmental remains and any recovered animal or human skeletal material will



also be scanned to provide an indication of their diversity, potential and significance. No other analysis of such remains will be carried out at this stage.

### **3.3 Mitigation measures**

As the precise nature of any mitigation strategy cannot be established until after the completion, a costed methods statement for this work will be provided following the submission and acceptance of the Phase 3 interim report.

### **3.4 Report**

Written interim reports will be submitted to the consultant archaeologist within two weeks of completion of each phase of the project (14.1- 3). At the end of Phase 2 a technical report will be produced on the results of the geophysical survey and in combination with the results of Phase 1 proposals will be advanced for those areas requiring further evaluation. On completion of Phase 3 an evaluation report will be submitted detailing those sites requiring mitigation measures, and proposals for the necessary measures will be made. The final report will be submitted on completion of Phase 4 and is not costed within the present project design.

### **3.5 Monitoring**

Each phase of works will have a detailed timetable agreed in advance of the start of the phase. LUAU would attend all meetings with interested parties as required by the archaeological consultant.

## **4. ARCHIVE**

The final archive (the resultant information from the investigations) is an important source of future historical research. As set out in the brief, a copy of the full archive will be deposited in a suitable registered museum together with a copy of the full report of the survey.

### **4.1 Archive**

The final report will be submitted on completion of Phase 4 and will incorporate the results of Phases 1-4. It will include a catalogue of the documentary information used and that can be considered as a reference source for the this project.

New drawings will be produced on dimensionally stable drafting film on standard 'A' size sheets and in metric format and each sheet will be fully titled. Line thicknesses will be chosen to allow for ease of duplication and/or reduction. Particular attention will be paid to achieving drawings of the highest quality and accuracy.

All artefacts and ecofacts will have been stabilised and temporarily curated in accordance with UKIC and MGC guidelines. Except in the case of Treasure Trove, all artefacts remain the property of the landowner. It is recommended that all artefacts are donated or loaned for deposition to an appropriate museum.

### **4.2 Project archive deposition**

Upon completion of the project and following delivery of the report and other documents to the client's agents we would normally deposit a full copy of the archive in an independent safe storage place. In this instance the brief indicates that the paper archive and the artefacts should be deposited together in a Registered Museum.

### **4.3 Artefact deposition**

Following completion of the archaeological programme all artefacts recovered from the site should be stored in a safe and secure place where they can be maintained properly and also be available for future research purposes. In this context the specification requires the deposition of the of finds and similar material with a Registered Museum which will be advised by the curator. Costs have been allowed for the storage of this material up to the time of delivery to the selected museum, but not for preparing finds for display, etc.

## **5. WORK TIMETABLE**

If we were to be awarded the contract for this work we would wish to have early discussions with the client's agents and any contractors involved to determine the best working pattern on site and to fit in with any other works that may be happening. This would enable us to achieve the optimum working pattern to avoid delays from the outset and then attempt to maintain this through the work period. By regularly reviewing the

working plan with the main contractor for the conversion and restoration works, during the watching brief, it should be possible to adjust our surveying to suit the contract and achieve the best delivery of results.

### **5.1 Stages**

It is envisaged that Phase 2 - 3 will fall into the following distinct stages.

- i) Project preparation
- ii) Liaison with consultants
- iii) Commissioning of the geophysical subcontractors
- iv) Geophysical survey
- v) Integration of geophysical results with Phase 1 interim report to provide Phase 2 interim report and definition of areas of potential for evaluation
- vi) Liaison with consultant
- vii) Finalise specification and timetable for trial trenching
- viii) Trial trenching
- ix) Phase 3 interim report, including proposals for mitigation measures
- x) Liaison with consultant

### **5.2 Outline Programme**

We confirm that LUAU would be able to make staff available to commence within 2 - 3 weeks following receipt of an acceptance of our tender. This would then continue until completion of the relevant phase of the works, but would be subject to public and LUAU staff holidays.

The geophysical survey can cover about a hectare per day and will take about a week overall. Following completion of the quick scan LUAU will assess the potential for further geophysical survey and in conjunction with the archaeological consultant will establish locations and extents of detailed magnetometer and resistivity survey.

A report on the results of the survey would be completed within two weeks of the completion of the survey. Following liaison with the archaeological consultant, and agreement being reached on the number and location of trial trenches, the trial trenching will begin within two weeks of LUAU being instructed to start such works. Trial trenching, on the scale envisaged within this project design, will be completed within 10 days. An interim report on the results of the trenching will be submitted within two weeks of the completion of fieldwork.

### **5.3 Monitoring**

Prior to each phase on site we would provide the consultant archaeologist with a detailed timetable. The timetable would ensure the completion of the job in the most efficient manner.

During the period of the contract we would liaise closely with the consultant archaeologist and other contractors to ensure compliance with our timetable. If, due to circumstances beyond our control, there are changes to working arrangement we would seek approval from the consultants set out in the brief (I 1.4) to alter and adapt this programme to achieve the best completion route.

During the working of the contract a representative of LUAU's staff, usually the project manager, will attend regular contract progress meetings as appropriate. Reports will be submitted at these meetings to show our progress together with any other relevant matters. Access will be allowed to all authorised persons (I 1.7) to areas of the site under our sole control whilst we are working there.

## **6. ACCESS AND ATTENDANCES**

We understand that at the start of the archaeological contract there may not be any other contractor on site, but that site facilities may be made available. Therefore we have only included for the items of cost we would require on this site as set out below.

### **6.1 Site Accommodation**

We have assumed that this will be supplied to us as assistance in kind from the developer at no cost to this contract. This should include site accommodation, toilets, power, safety measures and other arrangements to enable us to undertake the work properly.

## 6.2 Access

We have assumed that access arrangements will be made for all areas of the development, area and that tenants will have been notified of our activities and timetable. It is expected that farm animals will be excluded from the investigation area during all periods of our work.

## 6.3 Plant

Within the following costing it has been assumed that LUAU would subcontract for plant hire during Phase 3. However, if the client wished to provide suitable plant that element of costs could be removed.

## 6.4 Health & Safety

LUAU maintains a Health & Safety at Work policy that actively promotes safe working. A copy of the policy can be provided if we were to be awarded the contract for this project. Risk assessments are done in advance of all projects. Copies will be available on request.

Whilst working on site we would liaise with and follow the directions of the site safety officer appointed by the main contractor or developer.

## 7. COSTS

### 7.1 General

The total cost quoted on the accompanying sheet, is a fixed price, inclusive of all management, secretarial, overheads, and disbursement costs (travel and expenses), to undertake the programme of work as defined in this project design. However as made clear above it is dependent on a number of assumptions, thus any variation from this programme of work at Golf Design Partnership will require recosting. The overall costs have been divided between the Golf Course and Housing Developments. If both programmes of work are undertaken simultaneously then the overall costs would be broadly equivalent to those previously submitted in the revised project design (7th June). However, if the work for each development is undertaken separately there will be a 10% increase in the overall costs because of additional call out costs for the sub-contractors, the plant hire and the additional management time. One of the prime cost increases for the work will be the generation of separate reports for each development and this is reflected in the increase for the works undertaken separately. However, this additional cost has been waived if the two elements of the programme are undertaken simultaneously.

The management costs for Phases 1 - 3 have been incorporated into the overall costings; thus the management cost for the first phase of work will be split between both developments. There has, however, been a slight increase in management costs to cover this re-submission of the project design.

### 7.2 Staffing

All aspects of staff and sub-contract staffing have been included within this submission. Those employed as part of the overall project would be suitably qualified and experienced for the role in which they would be used. It is anticipated that we would sub-contract the geophysical survey work to Geophysical Surveys (Bradford) Ltd, but this would be done under LUAU supervision. LUAU's principal staff will be as follows:

**Richard Newman BA PhD MIFA**, LUAU Director

**James Quartermaine BA(Hons) Surv Dip MIFA**, Project Manager (to whom all correspondence should be addressed)

**Nick Hair BA** Project Supervisor (Phase 3 only)

### 7.3 Inclusions

Items included within the quotation are:

Costings for Phases 2 - 3 and the costs of a watching brief

Management cost for Phases 1-3

Safety equipment

Plant hire

### 7.4 Exclusions

Items excluded from the quotation include

Costing for Phase 4  
VAT on all quoted costs  
Site accommodation and facilities  
Site access arrangements  
Safety and other inspection and certification of any existing site scaffolding or shoring  
Variations due to additional work or changes in the contract working  
Additional security arrangements to the site during, our working period  
Weekend and out of hours working

#### **7.5 Confidentiality**

This tender submission is for the use of DHC Ltd in connection with this project only and we request that it be treated as a confidential document and not be disclosed to others without our prior agreement.

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## ILLUSTRATIONS

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- Figure 1 Vale Royal Location Plan
- Figure 2 Site Plan and Trench Configuration
- Figure 3 Plan of Trench 2, Sections of Trenches 3 and A4
- Figure 4 Sections of Trenches 4, 15 and 19
- Figure 5 Archaeological Implication Map

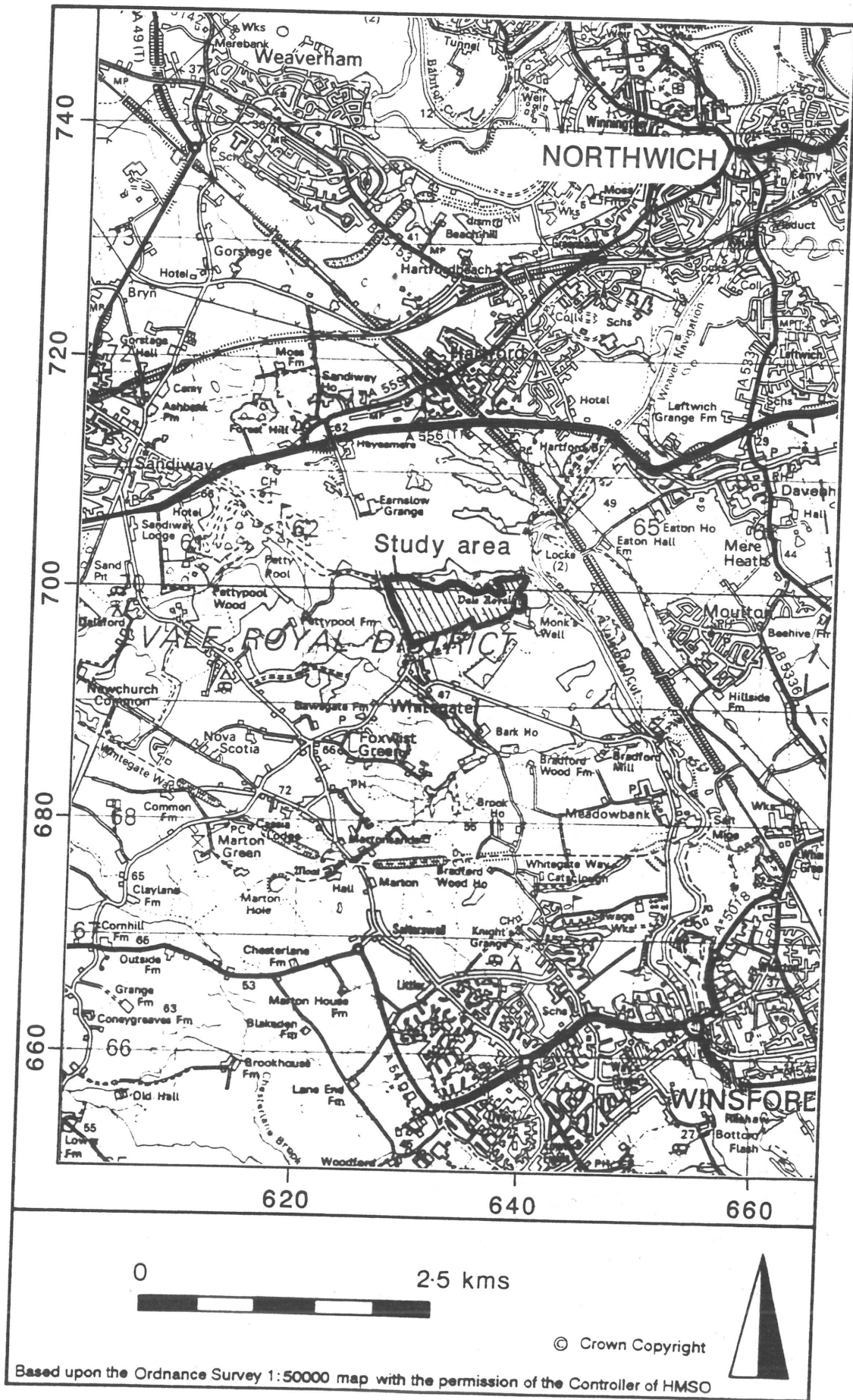


Figure 1 Vale Royal location plan

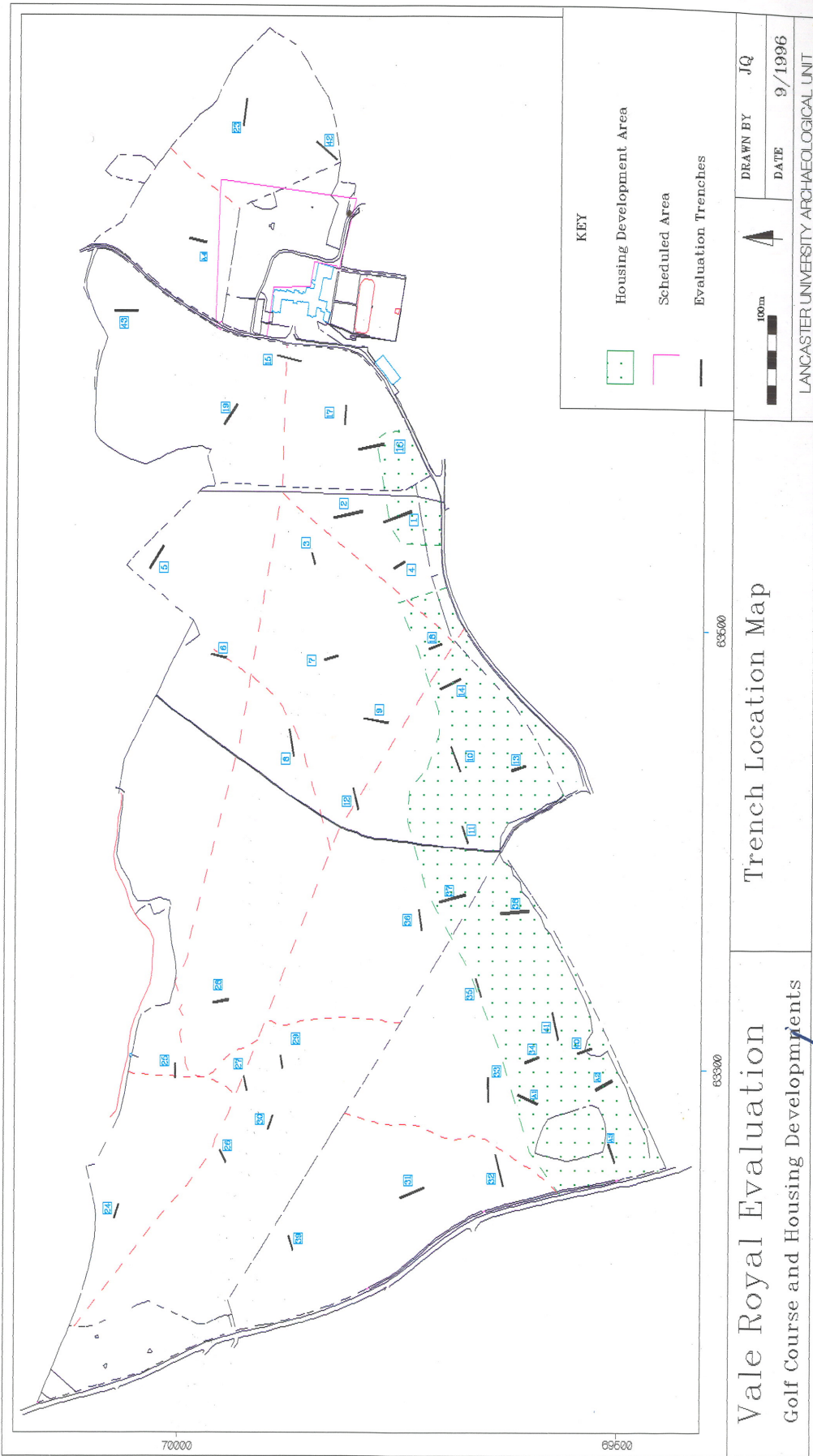
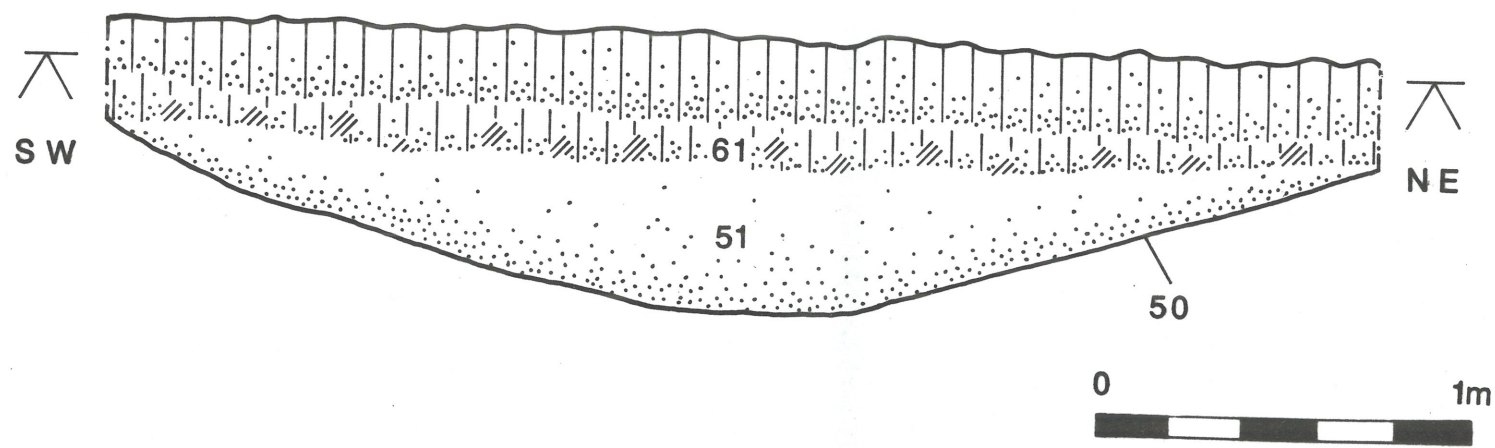









Figure 2 Trench Location Map

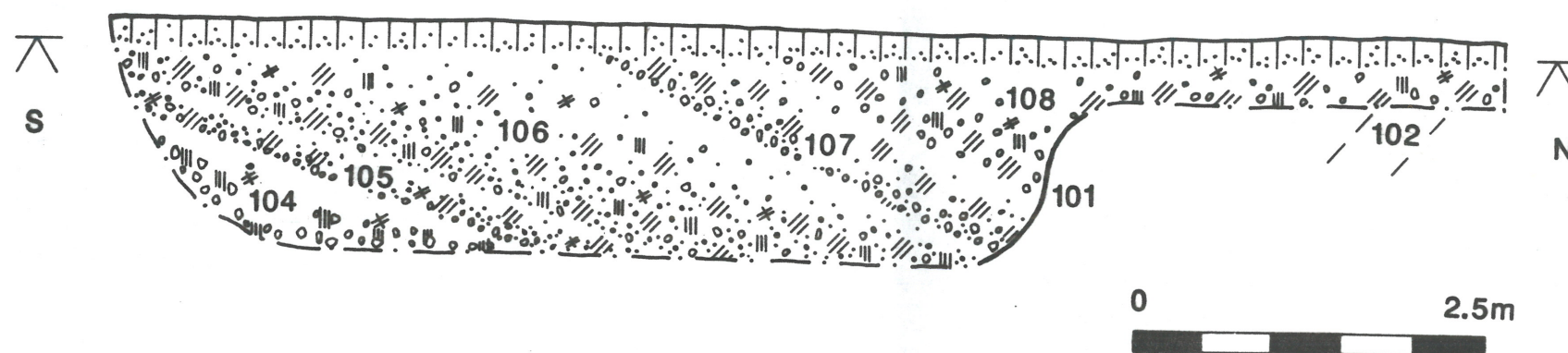


TRENCH 31



-  clay
-  charcoal
-  sand
-  grit
-  loam
-  mortar
-  stone

TRENCH A4



TRENCH 2 Plan

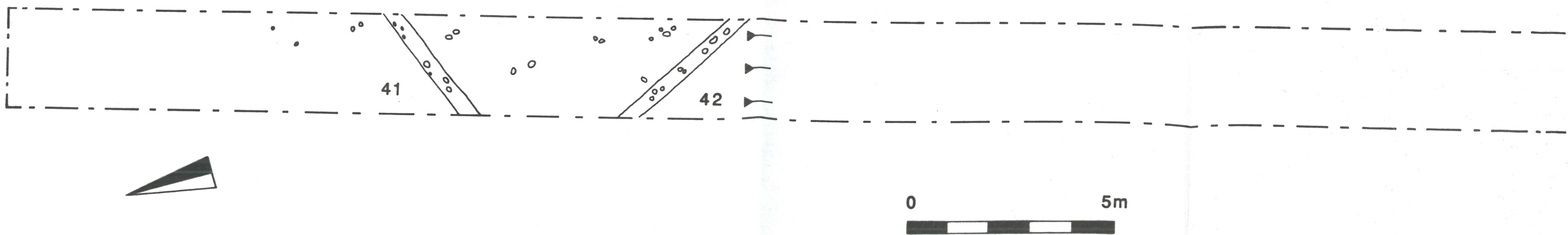
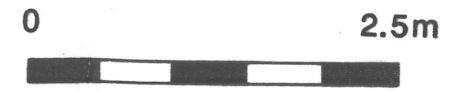
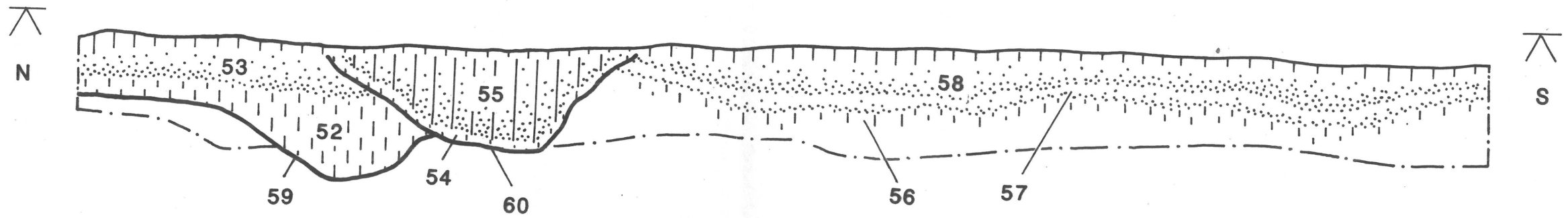


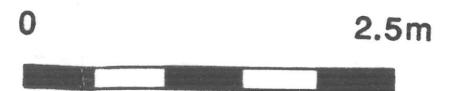
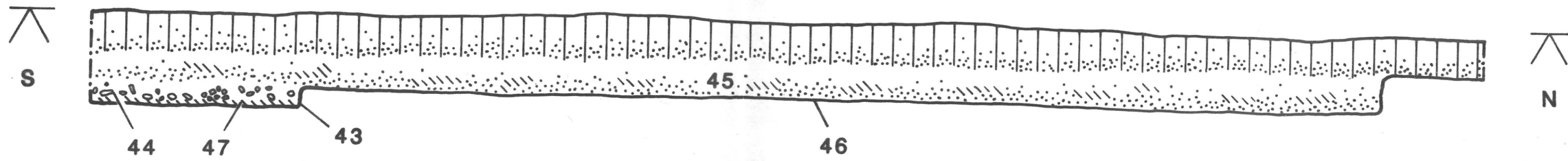
Figure 3 Plan of Trench 2, sections of Trenches 3 and A4



### TRENCH 4



### TRENCH 15



### TRENCH 19

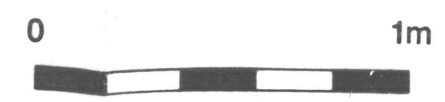
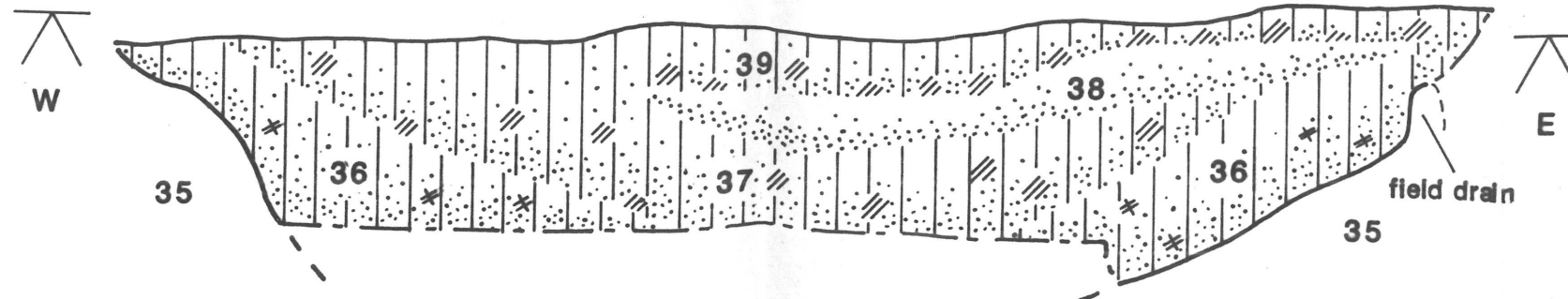
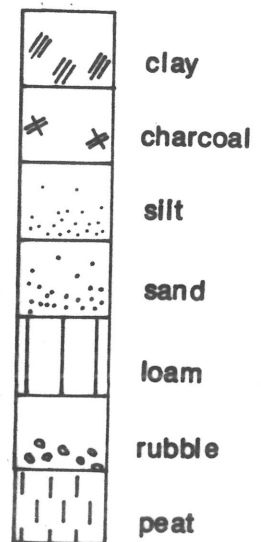


Figure 4 Sections of Trenches 4, 15 and 19

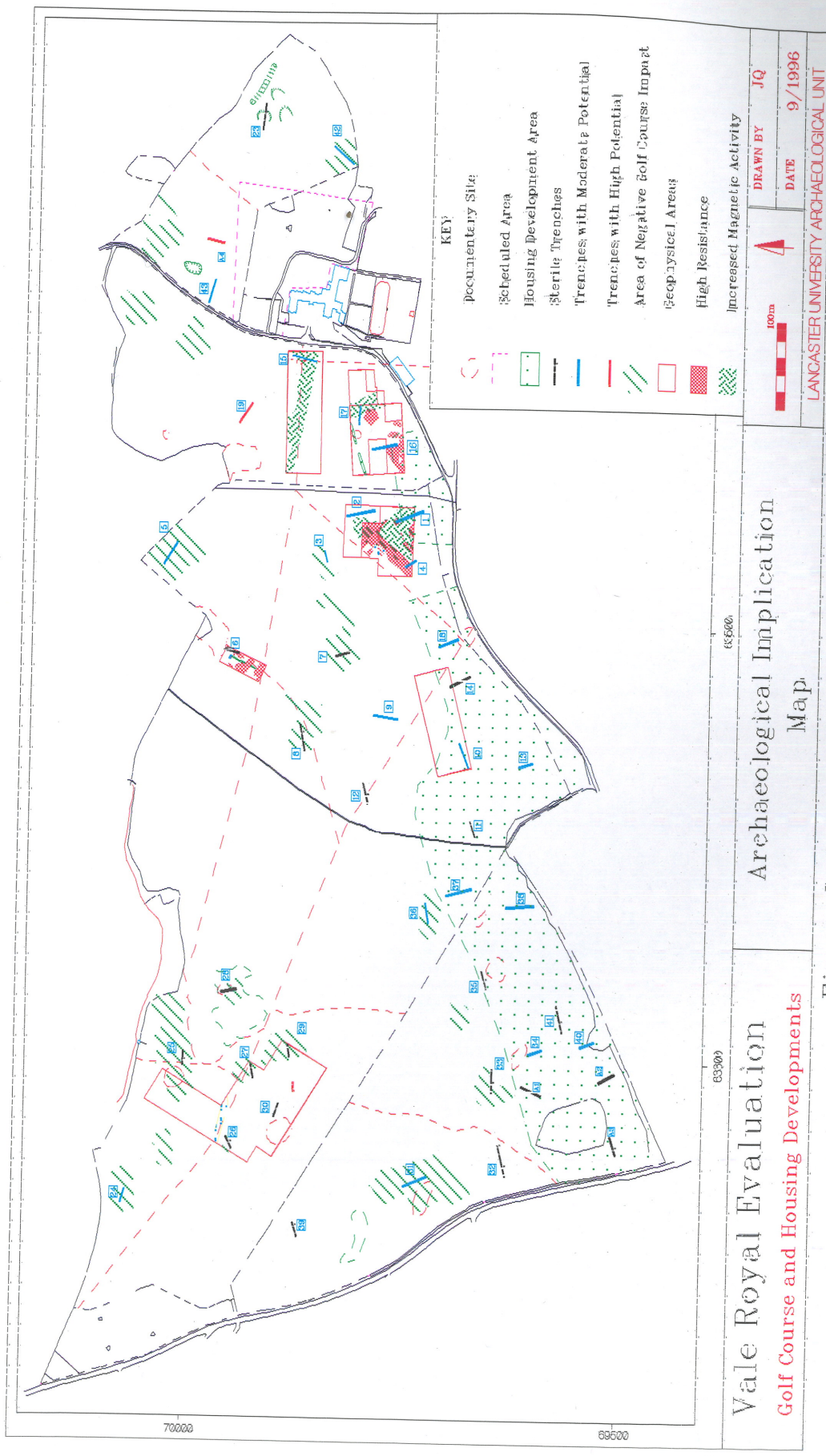


Figure 3 Archaeological Implication Map