Chapter 2: Field Survey

INTRODUCTION

Prior to the 1983–5 excavation a programme of field survey was undertaken. This included a comprehensive geophysical survey, fieldwalking and topographical survey. Aerial photographic coverage was also examined.

CONTOUR SURVEY
by Philippa Bradley

Contours were plotted at 0.2 m intervals across the site. The survey revealed that the area was relatively level (*c.* 60 m OD) and that no earthworks survived. The area is known to have been extensively ploughed since the medieval period (Ch. 6). It had also clearly suffered erosion in recent decades, since remnant mounds were recorded as recently as the 1940s and 1970s during the excavation of barrows 2 and 4. In the 1940s the mound of barrow 2 was up to 0.4 m high (Atkinson 1952–3, fig. 10) and the mound of barrow 4 up to 0.6 m high (Williams 1948, fig. 3). By 1976, however, the mound of barrow 2 was only 0.2 m high (Parrington 1977, fig. 5), some 0.2 m having been lost to the plough in the intervening 30 years. It is unclear whether or not preservation was slightly better here than in the 1983–5 area.

GEOPHYSICAL SURVEY
by Alister Bartlett

A magnetometer survey was carried out by the Ancient Monuments Laboratory of the Department of the Environment (now English Heritage) at the time of the excavations by the OAU in June 1983. This survey covered the larger southern area as outlined on Figure 1.2, alongside the excavation which was already underway to the E. The smaller area to the N of Wick Hall Drive was surveyed in advance of further excavations in January 1985.

The immediate object of the survey was to assist in the planning of the excavation by confirming the presence of cropmark features, and locating them precisely on the ground. Conditions at the site proved to be highly favourable for an investigation of this kind, and the results are of interest as an illustration of the magnetic survey findings obtainable from a variety of archaeological and other subsurface features at a complex multi-period site.

The original record of the greater part of the survey was made using an analogue pen recorder connected to a Fluxgate gradiometer (supplied by Philpot Electronics). The instrument signal was plotted along transects representing traverse lines 1 m apart on the ground, and the plots later assembled to give a plan similar to Figure 2.1. The traverses are located on a 30 m site grid, which was aligned on the OS national grid as indicated. Part of the 1985 survey was recorded using a prototype digital system in which the readings were transferred to an early (Epson HX20) portable computer, and subsequently plotted. The complete survey has since been digitised from the analogue record so that it could be redrawn after processing, and also presented as a half tone plot (Fig. 2.2). The processing applied to the survey includes adjustments to the traverse line spacing to correct for variations in the zero setting of the magnetometer, and smoothing to reduce the background noise level.

The site has a highly magnetic topsoil (with a mean magnetic susceptibility of 78×10^{-5} SI, as measured using a Bartington field coil), due to high natural magnetic susceptibility almost certainly combined with the enhancing effects of human activity. This produced strong magnetic anomalies from silted features cut into the sand and gravel subsoil of the Pleistocene river terrace. The ditches of the barrows 12 and 13 were particularly clearly detected by the survey, as was the double ditched oval barrow at the NW corner of the plots. Ring ditch 801, and the segmented ring ditch nearby are also immediately recognizable in the survey, and so is 'pond barrow' 4583.

A number of other features associated with or superimposed upon these larger earthworks were also detected, and can be readily identified by comparing the half tone survey plot with plans of the excavation. These include the central burial in barrow 12, as well as adjoining feature 611. The Saxon sunken-featured building within barrow 12 (SFB 26) was also detected, as were those superimposed on ring ditch 801 (SFBs 14 and 17–18), and others throughout the survey, where virtually all the excavated features of this kind can be seen to correspond to distinct magnetic anomalies.

Most of the features detected in the survey are identifiable as cropmarks, and this correspondence extends also to some of the natural periglacial disturbances which are visible on the cropmark plan, and which can be recognized as linear magnetic anomalies in the survey. The larger southern section of the survey additionally shows a regular NW–SE linear pattern, which is probably evidence of cultivation.

The two main categories of excavated features which are not well represented in the survey are small pits and graves. Postholes are usually too small to be resolved in a survey of this kind, and none of the excavated Saxon post-built structures were detected. Some of the pits to the SW of the oval barrow were located (eg in the vicinity of feature 907), but there are other small magnetic anomalies nearby which do not appear to correspond to identifiable features. The concentric circles of pits representing the Victorian tree plantation at the SE corner of the survey have, however, and rather unusually, been detected clearly by the magnetometer. It is very rare for graves, whether they contain cremation or inhumation burials, to be detected in a magnetometer survey, and here the survey provides no clear sign of the Roman cemetery. Cremations are

Figure 2.2 The magnetometer survey: half tone plot

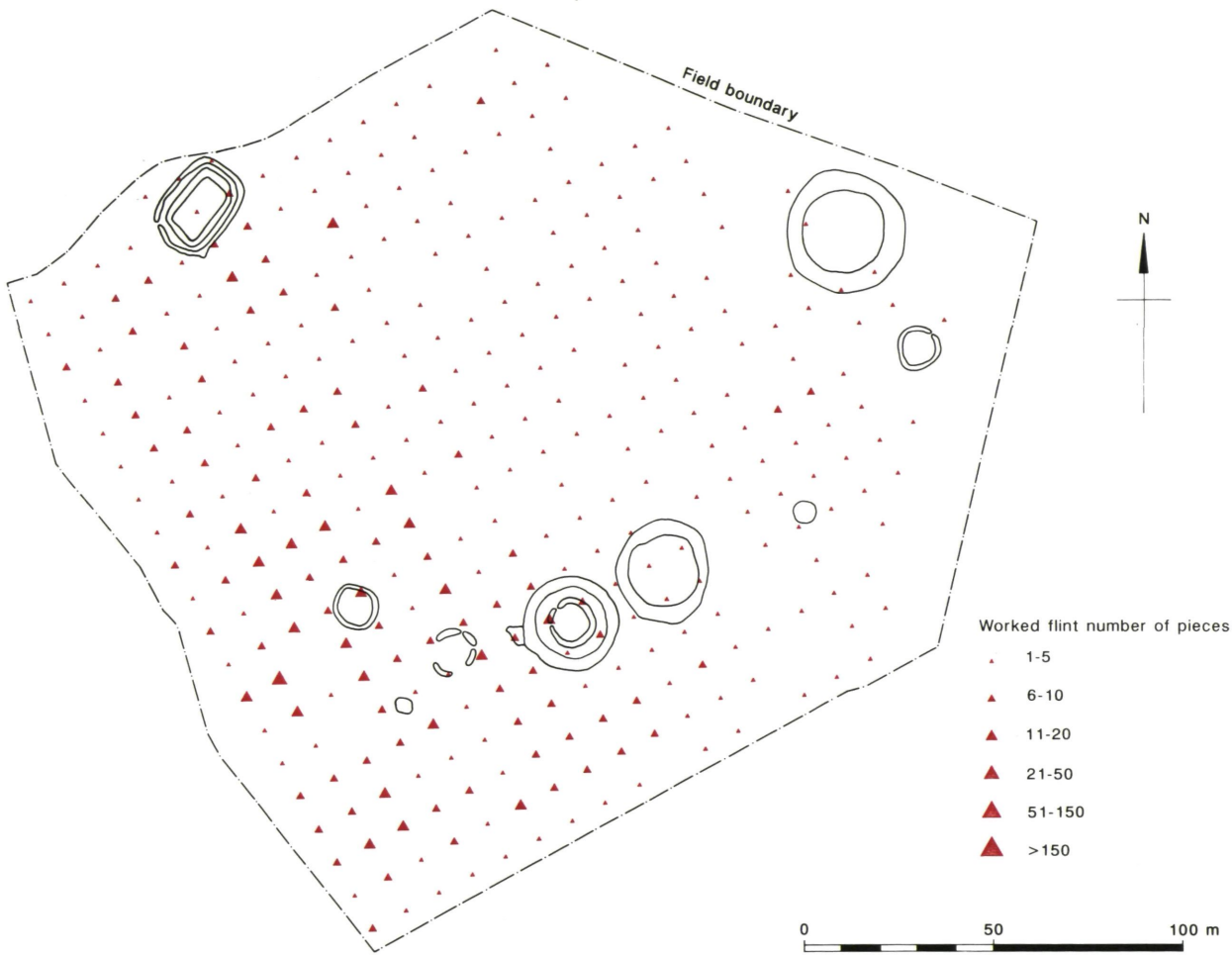

Figure 2.3 Fieldwalking: plot of all struck flint collected

too small, and inhumations, since they are backfilled with the material excavated from them, produce too little physical alteration of the ground for the magnetometer to respond. Burial pits of earlier date, which are larger than the Roman graves, do, however, seem to have been detected in the oval barrow, where overall size is increased by intersection with SFB 9, and at the centre of barrow 12 as mentioned.

The area N of Wick Hall Drive was less productive, both in the excavation and the survey. The overall appearance of the survey plots is rather more disturbed than to the S, but there are few identifiable features other than linear mortuary structure 5352, and again a cultivation pattern. The linear pattern here follows a NE–SW alignment, and is more closely spaced than in the southern area. The strong magnetic disturbance towards the SE of this section of the survey corresponds to a wooded area shown on the OS map and is likely to be of modern origin. There is also interference from modern fences at other corners of the 1985 survey. The 1983 survey is largely free of noticeable modern disturbances, except for three strong negative magnetic anomalies towards the NE corner, which must represent substantial buried metal objects.

Some other limited geophysical tests were carried out at Barrow Hills at the time of the 1983 magnetometer survey. These included resistivity traverses across barrows 12 and 13 and trials with a magnetic susceptibility meter. The resistivity readings responded clearly to the earthworks, giving strong negative responses to the barrow ditches, but there was no need, given the success of the magnetometer survey, to plan these features fully by this method. Enhanced soil magnetic susceptibility values indicate modification of the naturally occurring iron oxides in the soil by past human activities, especially burning, and can provide a durable record of the presence of former settlements and other archaeological disturbances. Susceptibility readings were recorded during the 1983 survey from test areas including part of the oval barrow and the segmented ring ditch. The readings over the latter were higher, although activities from later periods than the earthworks could well have contributed to the effect. At the time of the survey, magnetic susceptibility was at an experimental stage as a survey technique. The systematic ground coverage of modern surveys is much more successful in producing significant results.

Magnetometer surveys will usually provide some indication of archaeological features, especially when they are associated with former occupation, even at sites where the geologically determined magnetic properties of the soil are much less favourable for such investigations than here. The Barrow Hills survey does,

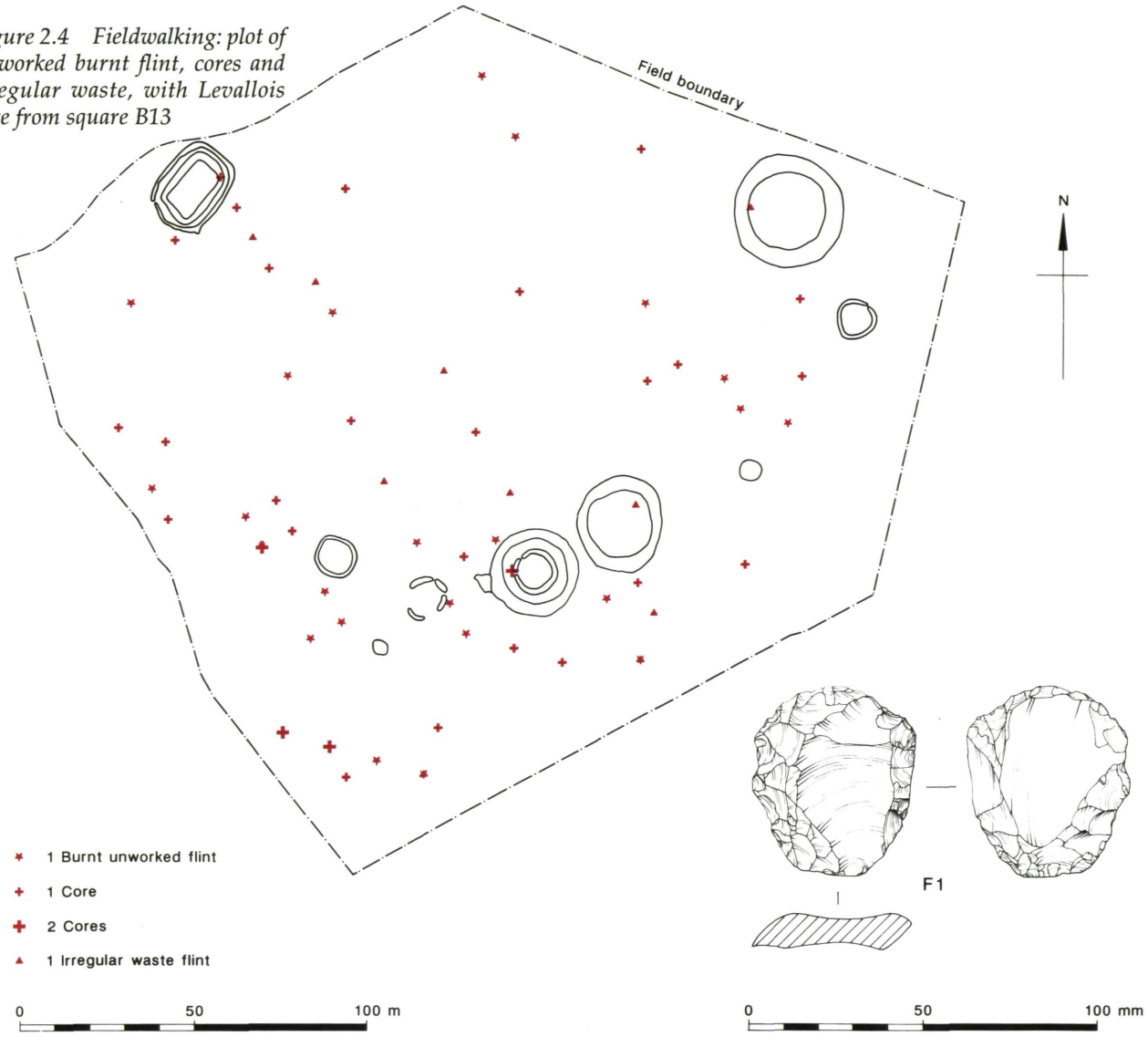

Figure 2.4 Fieldwalking: plot of unworked burnt flint, cores and irregular waste, with Levallois core from square B13

however, remain unusual for the quality and detail of the magnetic response, and it provides examples of the results obtainable by magnetic surveying from a range of archaeological features when conditions are suitable.

FIELDWALKING SURVEY
by Roger Thomas

Prior to its development for housing, Dry Piece (Fig. 1.2) had been in regular arable cultivation for many years. When the field was ploughed in the late summer of 1981 it seemed likely that this would be the last opportunity to fieldwalk it. Significant quantities of worked flint and some other material had previously been collected from the field through non-systematic fieldwalking. It therefore seemed important to carry out a gridded fieldwalking survey in advance of excavation.The survey was organised by Roger Thomas and carried out under his direction by members of the AAAHS at weekends between 2 September and 4 October 1981 (Thomas and Wallis 1982). The site had been ploughed about two weeks before the start of the survey. On the night before the survey began, heavy rain had fallen for about eight hours, so that the surface of the field was in an ideal condition for the recovery of artefacts. Weather conditions during the work varied from dull and overcast to bright sunshine; the light was generally fairly favourable to the recovery of artefacts.

Method

A 10 metre grid was established over the field, aligned on its SE boundary and lettered A to H and J to Y from SW to NE and numbered 0 to 20 from SE to NW. A single walker was allocated to each square and each square was searched for 10 minutes. All material was collected, except for post-medieval tile fragments which were abundant on the surface of the field. A small quantity of flint was recovered from a less systematic collection by Jeff Wallis.

Results
by Philippa Bradley

The majority of the finds were worked flint. The small quantity of other material recovered was mainly

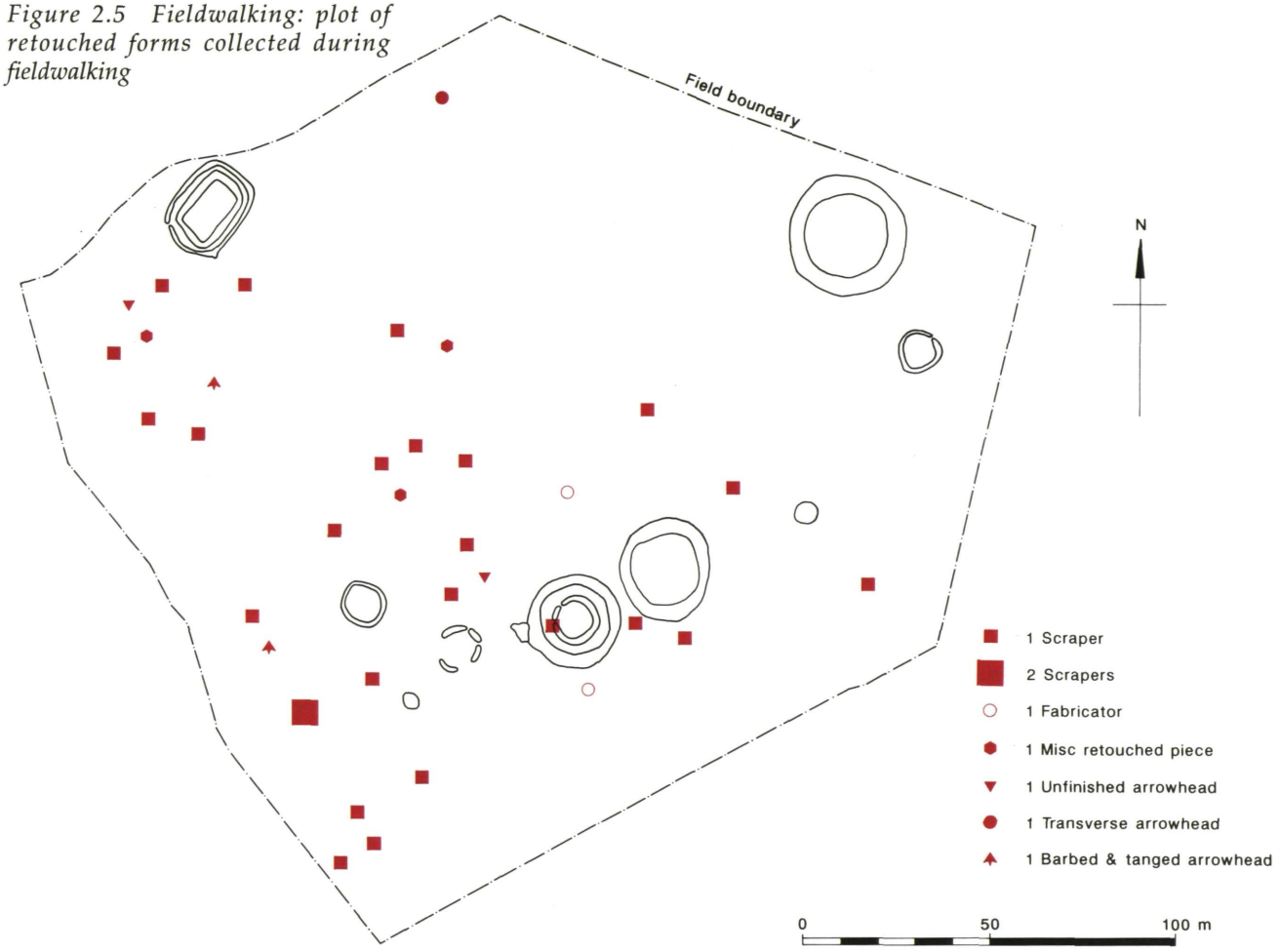

Figure 2.5 Fieldwalking: plot of retouched forms collected during fieldwalking

post-medieval in date, although some Roman, Saxon and medieval sherds were found; further details may be found in the archive. A fragment of lava quern is probably related to Roman or Saxon activity in the area.

1806 pieces of flint and 31 burnt unworked flints were recovered (Table 2.1). Of the total, 343 pieces were recovered from random collection in the area. Flint from the systematic field survey is plotted in Figures 2.3–2.5). The general distribution correlates with the excavated prehistoric features (Fig. 1.10) and the frequency in them of struck flint (Fig. 7.4). A concentration of material to the W gradually thins to the E (Fig. 2.3). Cores, unretouched flakes and burnt unworked flint are more common in the W (Fig. 2.4), with scrapers and miscellaneous retouched pieces also concentrated in this area (Fig. 2.5).

An earlier Neolithic element of blades, blade-like flakes and blade cores was thinly distributed and no particular concentrations were noted. Later Neolithic material is indicted by four chisel and three oblique arrowheads. A Levallois core from B13 (Fig. 2.4, F1) may relate to their manufacture. One chisel arrowhead and another unfinished example were found in the vicinity of the segmented ring ditch and ring ditch 801, a known area of late Neolithic activity. Two barbed and tanged arrowheads and two fabricators indicate a Bronze Age date for some of the material. Some unretouched flakes, irregularly flaked cores and scrapers would also seem to be of this date. There appeared to be no focus for this material.

Illustrated Flint

F1. B13 Fieldwalking. Levallois core. Flakes have been removed from both faces.

Table 2.1. Struck flint collected during fieldwalking (including 343 pieces from random collection)

	Irregular waste	Cores	Core rejuvenation flakes	Flakes and blades	Chips	Hammer-stones	Retouched	Totals	Burnt worked	Broken
Number	54	70	8	1579	10	2	83	1806	89	979
Percent	3.0	3.9	0.4	87.4	0.6	0.1	4.6		5	54

Key to sections

- Topsoil
- Loam
- Silt
- Sand
- Gravel
- Conglomerate
- Charcoal
- Ash
- Bone
- Antler
- Pottery
- Frost wedge

Key to plans

- Limit/edge of excavation
- Section line
- Redeposited gravel
- Conglomerate
- Charcoal
- Ash
- Bone
- Pottery
- Frost wedge

Key to finds

Metalwork

- Sample point

Flint

- Bulb present
- Serrated edge
- Polished

Treethrow hole 5353

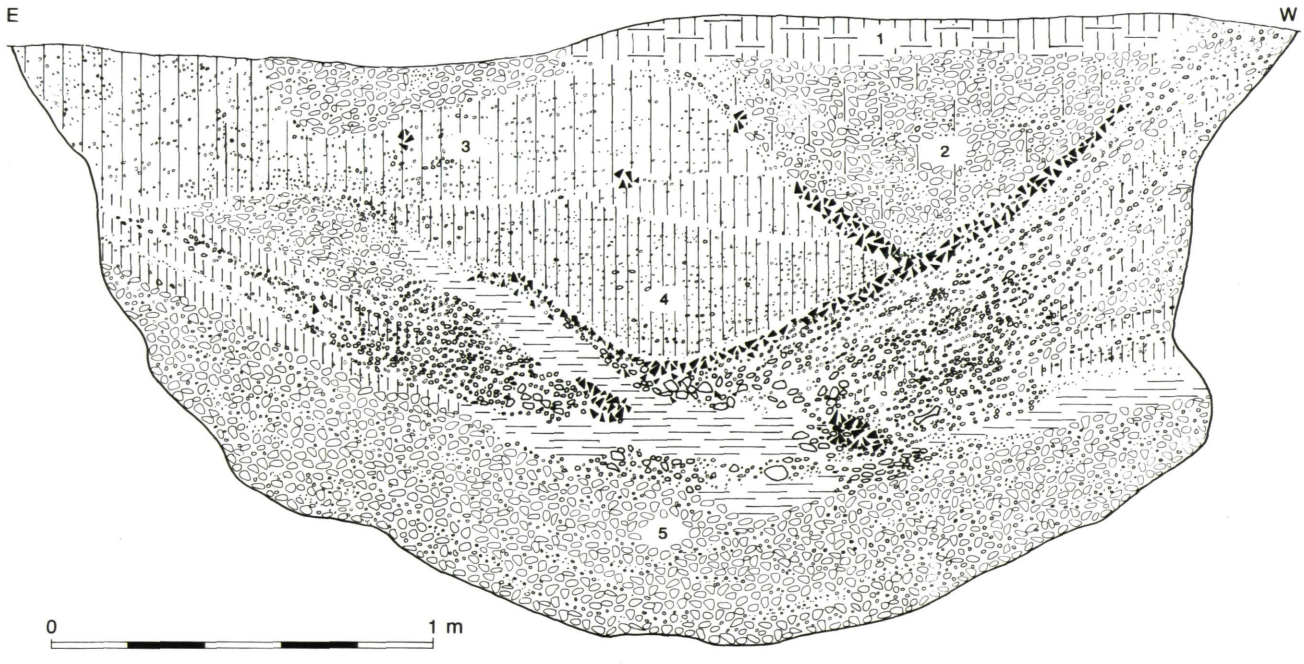

Figure 3.1 Keys to conventions used in subsequent figures; section of treethrow hole 5353