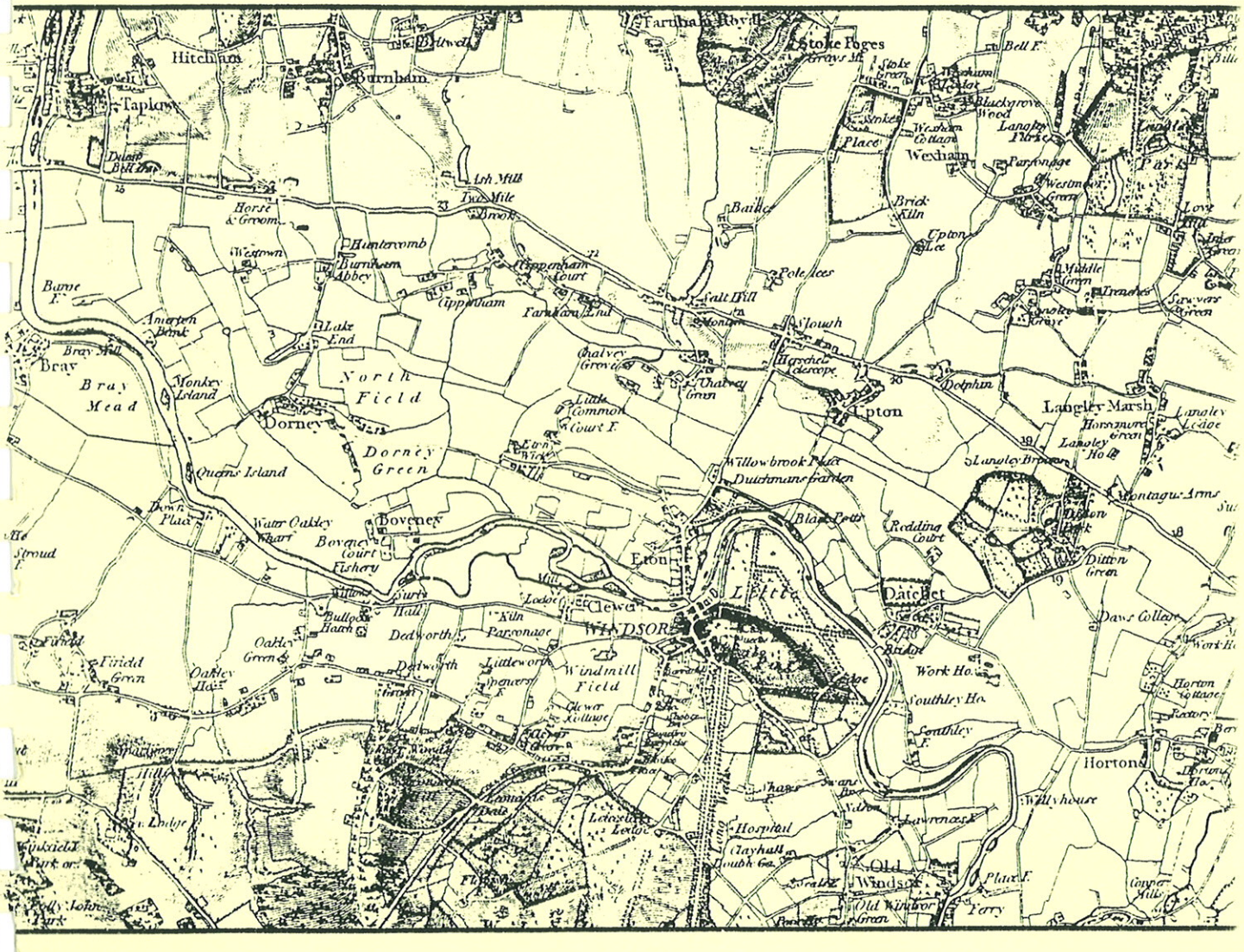
The Eton College Rowing Lake Dorney, South Buckinghamshire

Archaeological Evaluation 1994



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1 Introduction

1.1 The site comprises c. 150 hectares of gravel terrace crossed by palaeochannels on the N bank of the river Thames. Planning permission was granted to Eton College in February 1994 for the construction of a Rowing Lake and return lane, together with gravel extraction of much of the immediately surrounding area and landscaping of the remainder.

1.2 Archaeological interest was first drawn to the site by cropmarks showing on aerial photographs on the higher areas of gravel (Figure 1: Sites D, F west, F east, Site X, Site G and Site I). Fieldwalking for Thames Water and Buckinghamshire County Council was carried out in order to date these, and the results were published in `An archaeological study of the Dorney area' (Carstairs 1986). This suggested activity of Mesolithic, Neolithic, Bronze Age, Iron Age, Roman and Medieval date.

1.3 Limited evaluation by trenching was then carried out by the Oxford Archaeological Unit for Eton College in 1987 and 1990. Site D is probably a Neolithic causewayed enclosure, but Sites F west and F east, Site X and Site I were shown to be of Bronze Age date, while Site G proved to be Early Roman. Further Bronze Age features were found around Site G, some Roman ditches crossed Site F west, and Mesolithic flints were recovered from Site I.

1.4 This evaluation had established the date and character of the cropmarks, ie the visible archaeology, but was limited in scale and concentrated on the line of the Rowing Lake itself. The planning permission includes gravel extraction and landscaping in parts of the site outside the line of the Rowing Lake, particularly to the S and the NE. These areas had not been evaluated, and to inform the archaeological excavation programme a further phase of more detailed evaluation was agreed with Buckinghamshire County Council in August 1994. Fieldwork was carried out between 2nd September and Friday 11th November.

2 Extent and scope of the 1994 evaluation

2.1 Aims

2.1.1 The aims of the evaluation as laid out in the Written Scheme of Investigations were:

a) to investigate the blank areas (those without cropmarks), that will be affected by the proposed construction design.

b) to investigate Later Bronze Age activity around the earlier barrow cemetery on Site I at the SE end of the site.

c) to excavate lines of trenches across the palaeochannels in order to obtain profiles of the deposits, particularly waterlogged deposits, and to clarify the date of any such deposits in relation to the archaeology on the adjacent gravel terrace areas.

d) to examine the spread of artefactual material and of features into the lower-lying palaeochannel areas, in order to clarify the extent and intensity of activity within them.

e) to undertake soil sampling to establish the soil formation processes occurring in the silted channels, and in particular the presence or absence of alluvium, and to establish the potential of the channel soils for environmental analyses including pollen.

f) to clarify the extent of Bronze Age and Neolithic activity at the NW end of the site beyond the cropmark complex, that is between Site F west and Site D.

2.2 Proposed Methodology

2.2.1 A total of 134 trenches covering the whole site was proposed. On the gravel terrace areas machine-dug trenches were to be a standard 30 m in length and 1.6 m wide, in the palaeochannels these were to be 10 m in length, with provision for stepping the trenches to investigate deposits more than 1.2 m down.

2.2.2 On the evidence of the previous evaluation trenches only limited trenching in the palaeochannel areas was proposed, with the expectation that little of archaeological interest would be found. In particular, it was believed that Bronze Age finds would be concentrated at the edges of the palaeochannels, around the known areas of occupation on the gravel terrace.

2.2.3 50% of all discrete archaeological deposits containing artefacts were to be excavated by hand, and more extensive layers were to be sampled by hand excavation.

2.3 Actual Methodology

2.3.1 The evaluation began at the NW end of the site. When trenches were dug at the SE end of Site F west buried *in situ* horizons were found both on the edge of the gravel terrace and within the adjacent palaeochannel (Channel R) including clusters of struck flint, hearths and spreads of charcoal and animal bone (Figure 1). Bronze Age finds were common throughout the palaoechannel. Visits by environmental specialists confirmed that several superimposed buried land surfaces were preserved within the palaeochannel, and indicated that the quality of the waterlogged deposits beneath these was high, better than previously encountered on the site. These appeared also to include worked pieces of wood.

2.3.2 The strategy when machining trenches within the palaeochannel was to strip sterile layers individually by machine until a horizon containing features or

finds was encountered. The archaeological horizon would then be left for recording and hand excavation. Due to the unexpectedly common occurrence of artefacts in most trenches at a shallow depth, it was not possible to continue machining to the full depth of the stratigraphy, and so a machine-dug sondage was dug at one end to greater depth.

2.3.3 Since however there were several successive archaeological horizons within the palaeochannel, it was often not possible to establish the full depth of the stratigraphy with the machine, and hand-digging and recording was needed before machine excavation to a greater depth could proceed.

2.3.4 During machining it proved difficult to distinguish deposits containing only derived artefactual material from genuine buried occupation horizons, unless hearths or other features were present. Hand excavation of some layers proved time-consuming for little return. In other cases *in situ* flint clusters were found during machine-stripping unaccompanied by other artefactual material or evidence of occupation, so that it was not possible to anticipate these and recover them by hand-excavation.

2.3.5 In addition, considerable variability in the soil sequence was observed between the machine-dug trenches, and it was clear that the evaluation sample would not be adequate satisfactorily to explain the infilling of the channels.

2.3.6 It became clear that the original strategy was not cost-effective, and this was therefore modified as follows:

a) Many of the trenches were extended to 30 m in length, in order to increase the evaluation sample.

b) Excavation was carried out layer by layer by machine to a depth of 1.2 m throughout the length of the trench, except where *in situ* deposits such as flint clusters, hearths or charcoal spreads accompanied by artefacts were found. These were left for hand-excavation, but parts of the same horizons without such deposits were machined out to greater depth.

c) Finds from the machine-excavated layers were bagged on the spot, and given context numbers (and approximate co-ordinates where appropriate). *In situ* deposits continued to be excavated by hand and recorded in detail.

d) Both ends of most trenches were opened out, and deeper sondages dug by machine to the bottom of the palaeochannel, except where the nature of the channel fills made it unsafe to do so (e.g in soft sand deposits).

e) Sections of the full deposit sequence were drawn at both ends of the trenches, as well as of other significant variations in the soil sequence. Considerable variation was found in some cases within a single trench.

f) The environmental sampling programme was extended to include complete

sequences of mollusc samples, column samples for pollen and soil micromorphology as well as sequences of waterlogged deposits. Soil samples for flint microdebitage, for radiocarbon dating and for thermoluminescence were also taken.

These modifications were not needed in Channel N, but were also applied to the trenches on the NE of the site in Channels P, T and V (Figures 1, 7 and 8).

g) The presence of Mesolithic occupation on the gravel terrace edge resulted in the decision to investigate tree-holes and other post-glacial hollows on the terrace more fully than might otherwise have been the case. To compensate for this, a smaller percentage of clearly defined archaeological features i.e. pits and ditches was hand-excavated.

h) The programme of topsoil sieving for the gravel terrace areas was not carried out.

2.3.7 Despite these modifications the archaeology necessitated considerably more time for investigation and recording. As a result it was not possible to carry out the full evaluation specified in the Written Scheme of Investigations in one season, since the rising water table made work impossible throughout the winter. A total of 67 trenches has been excavated, comprising 62 of the original 134 and five additional trenches. These cover the NW half of the site and part of the NE corner (Figure 1).

3 The Archaeological Contexts

3.1 Format and presentation

3.1.1 This evaluation was not undertaken in order to inform a planning decision, but as the first stage of the construction programme within an agreed budget. In these circumstances, given that there will be an opportunity to examine many of the deposits again during the life of the project, the trenches are not described individually in exhaustive detail.

3.1.2 The basic data for all the archaeological contexts is presented in Table 6 in Appendix 1. This gives abbreviated descriptions and interpretations of the soils, lists finds and indicates where soil samples have been taken.

3.1.3 The palaeochannels have been divided into several parts (Figure 1): one narrow channel (hereafter channel N) divides Sites F west and F east, while another channel runs along the N side of Site F east (hereafter channel P). A much broader channel (hereafter channel R) lies between Site F west and Site X, and there is also a narrow channel (hereafter channel T) cutting between Site F east and Site G. A further channel (hereafter channel V) runs around the N and E sides of Site G down to Site I. The low-lying area E of Site X and S of Site G is called channel W.

3.1.4 The trenches are described and selectively illustrated in groups relating to their topographic position on the site. These groupings are:

Trenches 141-5 at the NW end of the site	(Figure 2)
Trenches 147-150, 152-7, 160-5 & 172, Site F west	(Figure 3)
Trenches 165, 166, 173 and 180, edge of Channel R	(Figure 4)
Trenches 158-9, 167-9, 171-179, 180-1, Channel R	(Figure 5)
Trenches 57-73, in and around Channel N	(Figure 6)
Trenches 182-4, in and adjacent to Channel P	(Figure 7)
Trenches 127-130, Channel T and Channel V	(Figure 8)

3.1.5 The principal characteristics of each group of trenches are described, and cross-referred to the finds reports where appropriate.

3.1.6 Reports upon the struck flint, pottery, animal bone and environmental material are presented. Within the timescale set for producing this report it was not possible to carry out a full assessment of the environmental potential of the deposits. The samples taken for charred plant remains have been floated and reported upon, and samples from 10 waterlogged deposits have been chosen to illuminate the basic stratigraphic sequence in the several channels that were trenched. The observations from this limited assessment have been supplemented by comments written after site visits by both Dr Mark Robinson and Dr Richard MacPhail. A programme of more extensive environmental assessment will be carried out during 1995.

3.2 Trench descriptions

3.2.1 Trenches 141-145. (Figure 2).

3.2.1.1 These five trenches were laid out at the NW end of the site, in a gap between previous evaluation trenches K, N and 27 and trenches M, P and 28-33. They were positioned to investigate how far Bronze Age activity spread NW from the visible cropmark boundary of Site F west towards Site D.

3.2.1.2 All of the trenches were 30 m long and 1.6 m wide, except for 142. This was over-machined, and so was extended to double width in order to examine the revealed features in plan. Ploughsoils were removed by machine down to either the first archaeological horizon or to natural.

3.2.1.3 In all of these trenches there were two ploughsoils (layers 1 and 2) with a combined depth of 0.4 -0.5 m. The lower ploughsoil contained a single sherd of Late Iron Age or Early Roman pottery. In trench 145 the lower ploughsoil directly overlay natural gravel; in the other trenches it truncated one or more layers of silty sand sealing the gravel (variously 141/10, 142/3, 143/3 and 4/, 144/3). These survived between 0.1 m and 0.3 m deep.

3.2.1.4 Trench 141 contained several archaeological features below the lower ploughsoil and cutting the natural. These comprised two large pits 141/7 and 141/17, two or three parallel gullies /9, /19 and /12 on a NE-SW alignment and a shallow pit or posthole /14 (Figure 2). Only pit /14 was bottomed. All of these contained clayey fills with charcoal, burnt flints and struck flint of Bronze Age character, and fill /15 of pit /17 also contained Middle/Late Bronze Age pottery (section 3.3.1). Pit /7 cut gullies /9 and /19.

3.2.1.5 Trench 142 contained several elongated oval soilmarks visible in the surface of silty sand 142/3, all of which were on an approximately NW-SE alignment. 142/9 and 142/11 had sandy silt fills, and 142/8, the fill of 142/9, contained burnt flints. 142/13 had a more clayey fill, but also contained burnt flint; this last feature continued beyond the trench, and could represent the terminus of a ditch.

3.2.1.6 A further soilmark, 142/7, contained several silt fills but was without finds. It abutted a deposit of gravel overlying layer /3 on its SW side, which is likely to have been pushed up from the natural at the base of the feature (Figure 2). This is a characteristic of tree-holes.

3.2.1.7 Trench 143 had two soils (layers /3 and /4) overlying the gravel below the ploughsoils. Layer /3 was a silty horizon accompanied by much manganese overlying layer/4, which was similar to the sand subsoil in the other trenches. Layer /3 is likely to be due to chemical leaching of the soil profile, leading to the accumulation of fine silt on the hard pan created by the manganese. The illustrated section (Figure 2) shows a hollow /8 in the underlying gravel which has caused a localised change in the overlying sediment /4, visible as a linear soilmark. This is not believed to be an archaeological feature.

3.2.1.8 The subsoil is similar to that seen in the adjacent previous evaluation trenches reported in Oxford Archaeological Unit Archaeological Technical Report 1990 (hereafter OAU 1990), Figure 1 Trenches 27 and 28. The gullies in Trench 141 are on the predominant alignment of the Bronze Age cropmark enclosure system, one of whose ditches is crossed by the trench; this may be represented by gullies /9 or /19. Limited evidence of activity was found in Trench 142 a little way W of the cropmark boundary, but the absence of any features in Trenches 143-5 appears to bear out the largely negative evidence of the earlier evaluation trenches (OAU 1990 Trenches 28-33, M and P) to the W.

3.2.2 Trenches 147-150, 152-7, 160-5 and 172. (Figure 3)

3.2.2.1 These trenches lay on the gravel terrace at the southern end of Site F west. They were positioned to investigate the area without cropmarks S of previous evaluation trenches 19-23 (OAU 1990 Figure 1).

3.2.2.2 All of the trenches were a standard 30 m long and 1.65 m wide.

3.2.2.3 In Trenches 164 and 172, which were only very shallow, modern topsoil (0.25 m deep) came down onto natural gravel; in all of the other trenches there were two ploughsoils. Modern topsoil ranged between 0.15 and 0.32 m deep, the lower ploughsoil between 0.15 and 0.40 m deep. The lower ploughsoil had been partially worm-sorted, and in trenches 156, 157, 152 and 154 the two elements of the ploughsoil were distinguishable as a gravel-free layer /2 overlying a gravelly layer /3. The lower ploughsoil contained two sherds of Late Iron Age or Early Roman pottery (contexts 155/2 and 158/2) and one fragment of tile (149/2).

3.2.2.4 Below the ploughsoils, which generally came down onto natural gravel, relict soils survived infilling hollows in many of the trenches. In trenches 154-7 and 161-161 more extensive soils survived. In 154-7 a mid-dark brown clay (numbered variously 154/6, 155/3, 156/13 = /6 and 157/4 = /29) survived up to 0.2 m deep. This sealed burning associated with burnt flint probably of Bronze Age date (deposits 155/5, 156/8, 157/19 and 159/21). 155/3 contained animal bone, but there were no dateable finds.

3.2.2.5 Burnt deposits were widespread: 148/10, 153/6, 154/15, 155/5, 156/7 and /8, 157/19, 160/6, /7, /10, /12 and /15. In trenches 148, 153, 156 and 157 these occurred within shallow pits or postholes, but in trenches 155 and 160 the burnt soils covered up to 10 m of the trench. These were respectively 0.10 and 0.15 m deep. In trenches 154 and 160 the burning was associated with irregular oval features (154/15, 160/5 and /9), probably representing treeholes, and all of the widespread burning is interpreted as due to clearance. Not surprisingly the burning was accompanied by burnt flint in most cases, and in Trench 160 there were associated struck flints of Bronze Age character.

3.2.2.6 Another buried soil was observed in Trenches 160 and 161. 160/17 was a brown clay between 0.15 m and 0.20 m deep, as was 161/3; 161/3 contained a single flint flake. Both soils sealed the fills of hollows in the natural gravel, and were probably parts of one deposit. 160/17 was separated by a peak of natural gravel from burnt deposit 160/15, but may have been the same layer unaffected by burning, or possibly equivalent to the soil sealing the burnt deposits seen in trenches 154-7 (see 3.2.2 4 above).

3.2.2.7 The greatest depth of soils was therefore in trenches 154-7 and 160-161, which seemed to lie within a slight hollow between the higher gravel areas to the W and E.

3.2.2.8 The `natural' flint gravel terrace deposits were very variable. Because of the size of the flint nodules some degree of soil had percolated into the uppermost deposits in all of the trenches, but the proportion of clay varied considerably from trench to trench and within individual trenches. When freshly machined the gravel was generally dirty brown and feature edges were obscured. Leaving the trenches exposed to weather for several days washed the gravel clean and made the features easier to see, but changes in atmospheric moisture content continually altered the visibility of soil differences.

3.2.2.9 A number of shallow linear soilmarks were investigated which were irregular with indistinct edges and contained no finds. These are believed to be due to variations in the natural gravels. Some of the recorded features with irregular profiles may also result from soil changes at the interface between Pleistocene gravel layers, rather than post-Pleistocene events (e.g. 149/12, /14 and /16, 152/5 and /8, 153/7). Alternatively some of these could have been tree-holes.

3.2.2.10 Two large hollows were sectioned. One in Trench 156, which ran on a NE-SW alignment, was 4 m wide and only 0.3 m deep, filled by orange-brown sandy silts of Early Holocene character without any finds. The other, 157/52 (not illustrated), lay on a NW-SE alignment, was c. 5 m wide and was not fully bottomed; the depth is estimated to have been up to 1 m. This had a complex sequence of fills and apparently cut layer 157/4 = /29 which sealed burnt deposit 157/19, suggesting that this feature was later than the Bronze Age. It may have been a very large treehole.

3.2.2.11 The surface of the gravel was also pitted by hollows and solution holes, some of which were investigated. These had clean clay fills; some of the hollows were characterised by irregular shapes or indistinct edges, e.g. 154/10, 156/11, 160/14, 161/7 and /9, 163/7, /8, /10 and /23, /16 (see Table of Contexts for details). Some of these features, particularly 154/10, may have been treeholes. A group of postholes or stakeholes may be represented by 163/11, /14 and /13, but the last of these in particular had a conical profile suggestive of a solution hole.

3.2.2.12 In the absence of finds or of charcoal it was however not always possible to distinguish between natural and man-made features, since natural features may be regular in shape, and in earlier prehistory man-made features are often irregular in shape and profile. Some regular features had manganese concentrations at the bottom and sides, e.g. 161/11, 162/6, others such as 163/3 (not illustrated) did not. These might have been shallow pits (between 0.7 m and 1.3 m across and up to 0.3 m deep) but could equally have been natural hollows.

3.2.2.13 Linear archaeological features were found in trenches 150, 154, 156 and 165. Ditch 150/5, which was 6 m wide and 0.5 m deep (Figure 3), contained post-medieval pottery, and can be matched with a field boundary shown on the 1811 first edition Ordnance Survey map. Ditches 154/20, 156/20 and 165/11 are all aligned NE-SW as is the Bronze Age cropmark enclosure system, and may represent an extension of this. The fills of 165/11 contained struck flint of Bronze Age character; the other two ditches did not contain finds. Alongside 156/20 a deposit of gravel was seen in section that may represent upcast (Figure 3 section 2). Both 156/20 and 165/11 were 0.4 m deep with sloping sides and a flattish base, but while 154/20 had a similar profile it was only 0.13 m deep. There was however some doubt as to whether this had been fully bottomed.

3.2.2.14 Trenches 147, 148, 149, 153 and 156 each contained one pit (147/7, 148/9, 149/15, 153/5 and 156/5), all with burnt flint in their fills. These are probably Bronze Age. 153/6 and 156/5 also contained fragments of animal bone. On the SE side of 147/7, which was large and may instead have been a ditch

terminal, a thin layer of silty sand overlay the natural gravel; this was probably upcast, since it is similar to the sand underlying the natural gravel revealed at the bottom of the pit. Possible upcast gravel deposits were also observed alongside features 160/5 and 161/11, but these may instead have been peaks in the natural gravel incompletely ploughed out, or alternatively gravel pushed up by treefall. Pits 148/9, 153/5 and 156/5 had burnt fills 148/10, 153/6 and 156/7 and /8 (see 3.2.2.5 above).

3.2.2.15 Trenches 147 and 148 also contained a single posthole (147/5 and 148/7), both of which also contained burnt flint. Further possible but very shallow postholes were seen in trench 157 (157/18 and 157/21), both with burnt fills (see 3.2.2.5 above). A third possible posthole or small pit 157/43, which overlay the fills of hollow 157/52, also contained sherds of hard-fired pottery (now lost) implying a Roman or later date.

3.2.2.16 An irregular linear feature 148/5 contained clay fills which appeared to be running beneath natural gravel; this was presumably redeposited within a treehole. The treehole contained both a Mesolithic struck flint and a sherd of Late Bronze Age pottery.

3.2.2.17 Trench 157 had mixed gravel and clay natural, within which narrow curving bands of clay were visible. These were sectioned in several places, and were up to 0.6 m wide and up to 0.2 m deep with a fairly regular U or V profile, but appeared to be overlain by the gravel at the edges, perhaps suggesting that they were animal burrows. One of the fills of these features, 157/45, contained seven Mesolithic struck flints (see 4.2.12 below).

3.2.2.18 Trench 165 contained pits 165/15 and 165/16 and two possible postholes 165/6 and 165/4. All but the last of these contained finds, a mixture of both Mesolithic and Bronze Age struck flint (see 4.2.7 below). 165/15 was a large pit 2 m long and 0.5 m deep just W of ditch 165/11, 165/16 an interlinked group of scoops all apparently filled at one time. This group of features were relatively isolated from the main area of Bronze Age occupation. Mesolithic struck flint outnumbered the later pieces, and was presumably connected with the knapping areas found in Trenches 166 and 180 adjacent (Section 3.3 and Figure 4).

3.2.2.19 Two large clusters of struck flints of Mesolithic date were found along the terrace edge, one in Trenches 166 and 180 (see 3.2.3 below), the other at the NW end of Trench 173 (see 3.2.4). The concentration of Mesolithic flint in Trench 165 is probably linked to the first of these. Eleven Mesolithic flints were also found in trench 157, and single examples in trenches 160, 148 and possibly 156. The observed distribution (Figure 1) again clusters in those trenches closest to the terrace edge, though it is possible that fieldwalking and topsoil sieving will reveal a more general distribution in this area.

3.2.3 Trenches 166 and 180 (Figure 4).

3.2.3.1 These trenches lay on the edge of Channel R at the S edge of the gravel terrace on which lies Site F west. Trench 166 was laid out as part of the general grid covering this area, and proved to contain a concentration of Early Mesolithic struck flint, possibly lying in situ. The limits of this concentration were known approximately both from the visible topography and from the evidence of the adjacent trenches on the W, N and S (see Fig. 5: Trenches 160, 165 and 167 respectively), but to the E there was only one short trench some 75 m away (Fig 5: Trench 171), so Trench 181 was dug adjacent to establish the limits of the Early Mesolithic activity in this direction.

3.2.3.2 Both trenches lay on a shelf of gravel 0.7 m lower than the level of gravel on the terrace to the NE (Trench 165). Where sectioned further E in trenches 173 and 181 the gravel terrace slopes down steeply into the channel (see Figure 5 below); the present ground level around Trench 166 suggests that the terrace drops quite steeply to the level of this shelf only a few metres NE of the trench. To the NW the drop may be more gradual, since the level of gravel in Trench 160 is only 0.5 m higher. The shelf slopes very gradually to the SE (a drop of c. 0.4 m over 43 m), and continues at least as far as Trench 171, which is only 0.3 m lower. To the SW the shelf must end just beyond the end of Trench 166, since the channel was at least 1.5 m deeper in Trench 167 only 30 m away.

3.2.3.3 Once identified the layers containing Mesolithic struck flints were investigated by several hand-excavated sondages in order to establish the depth and character of the deposits (see Figure 4), but the intention was to disturb these deposits as little as necessary, and in consequence not all of the stratigraphic relationships in what proved to be a complicated sequence were established. Three key sections are illustrated (Figure 4).

3.2.3.4 Summary of results. A sequence of deposits containing struck flint of very fresh appearance was revealed, associated with charcoal flecks and fragments of animal bone (section 5.1). The deposits containing the flints appeared to have been deposited at the water's edge. Sieving for microdebitage was carried out in Trench 166, and this also suggested that the deposits may have been slightly modified by fluvial or aeolian action (see 4.2.5). The material from Trench 180 was fresher (4.2.6), but no sampling for microdebitage was undertaken. The density of the flint scatter in the hand-excavated areas varies from 6 to 40 per square metre over an area of at least 40 m by 40 m. Scatters of redeposited gravel on the flint-bearing layers may indicate dug features in the vicinity. The Mesolithic deposits are sealed by layers of alluvium.

3.2.3.5 The natural gravel was overlain by a loose gravel layer 180/15, which contained no finds. This deposit may correspond to 166/7. The loose gravel was overlain by a stiff layer of silty sand, dark brown to black in colour, which contained organic wood fragments towards the SE and had occasional charcoal flecks throughout. This layer was numbered 180/14 in the SE part of the trench

and 180/6 further NW. Many Early Mesolithic struck flints of very fresh appearance were found within this layer. The surface of this layer was generally level, but was uneven, with pockets of clean sand in places, suggesting that water had flowed over it. It appeared to cover the whole of trench 180, but was not seen in Trench 166. It is however probably represented by 166/12, a very similar soil but of a grey colour, which also contained Early Mesolithic struck flints (Figure 4).

3.2.3.6 Layer 180/14=/6 was overlain by several discrete deposits along the length of the trench. Towards the NW it was covered by clay 180/13, which is probably equivalent to 166/8 and perhaps also 166/4, the main flint-bearing layers in Trench 166. 166/8 was an orange silty clay and 180/13 was distinguished by heavy orange staining. Further SE layer 180/20 was probably equivalent to 180/13. Layer 166/4, which was a grey clay, contained frequent flecks of charcoal, and sieving also showed that small animal bones are preserved. Areas of darker soil such as 166/10 were evident within 166/4, possibly indicating features, but the limits of 166/9 were difficult to define, and these soilmarks may be due to post-depositional chemical changes.

3.2.3.7 Patches of redeposited gravel were found at the surface of both 180/13=/20 and 166/4. These are probably equivalent to layer 180/11, an area of gravel occupying a hollow in the middle of this trench which also contained many Early Mesolithic flints of fresh appearance. The gravel may have been deposited by high-energy flooding, or may have been dumped from excavation of features in the vicinity. Further SE a layer of white silty sand 180/17 containing much calcium carbonate may also have been equivalent; secondary calcium carbonate was clearly visible in the top of 166/4, probably as a result of the same processes. The occurrence of this material may have been the result of evaporation.

3.2.3.8 Gravel 180/11 and 180/13 were overlain by a thin alluvial clay 180/10, which also contained some struck flint. This layer is probably the same as 180/16. It was overlain by a thin silt 180/8, localised to the hollow in the middle of this trench.

3.2.3.9 The Mesolithic layers were sealed by a very dark silty clay layer 180/5, which is equivalent to the bottom part of layer 166/3. This layer faded out halfway down trench 180, and was abutted by 180/9, which continued SE and was numbered 180/18 at the SE end of the trench. These layers were sterile. More alluvial clay sealed this horizon in trench 166 (the upper part of 166/3) and at the SE end of trench 180 (layer 180/19). 180/19 was rich in manganese and had a friable texture, suggesting a former topsoil.

3.2.3.10 Overlying this were a succession of silty clay layers, 180/4 = 166/6 followed by 180/3 = 166/5. These layers only began halfway along trench 166, deepening as they ran SW. A scatter of struck flints and animal bones and a patch of charcoal were found on the surface of 180/4, possibly indicating Neolithic or Bronze Age activity at this level. Appearing patchily in the top of 180/3 was a dark clay 180/7. This was ill-defined, and may simply indicate clay forming in hollows

in the exposed surface of 180/3 after flooding.

3.2.3.11 The alluvial sequence continued to a higher level, but the top of the alluvium was reworked by later ploughing (layer /2 in both trenches). Chalk particles in this reworked alluvium may indicate fairly catastrophic flooding on some occasions. A single sherd of Late Bronze Age pottery was found. Above this was the modern topsoil.

3.2.3.12 The deposits containing Mesolithic flints appear to be alluvial in origin, but the freshness, quantity and character of the material rules out wholesale redeposition (section 4.2 below). It seems most likely that the flints were deposited at the very edge of the channel, and were derived from activities carried out on the terrace immediately adjacent. Large numbers of Early Mesolithic flints found in Trench 165 just to the NE support this interpretation (see 4.2.7). Another cluster of Early Mesolithic flints was found on the terrace edge in Trench 173 (see 3.2.4.20 below), showing that this was a favoured location for knapping at this period (see also 3.2.2.18).

3.2.4 Channel R. Trenches 41-3, 45-7, 158-9, 167-9, 171-7, 179 and 181. (Figure 5)

3.2.4.1 These trenches were laid out to examine the SE end of Site F west and the wide channel between this and the gravel island containing Site X (Figure 1). The main axis of the trenches was NW-SE, running obliquely across the channel.

3.2.4.2 Over most of the channel the stratigraphy was deep, and the trenches were therefore stepped. Trenches were machined down to significant archaeological deposits, or failing that to 1.2 m, and deeper sondages were dug by machine at one or both ends. The aim was to reach the bottom of the channel, but in many cases a combination of the soft deposits and the high water table made this impossible. Experience showed that once the bottom fills of the channel were cut through and the gravel base of the channel exposed, the trenches rapidly flooded, and although a pump was used this was not able to cope with the inrush of water. In trenches 158-9 and 168-9 very close to the Thames no attempt was made to bottom the channel; instead small sondages were excavated by hand, generally to the top of waterlogged peat layers. For a further consideration of the methodological strategy see section 2.3 above.

3.2.4.3 The extent of the channel established from aerial photographs (OAU 1990 Figure 1) has now been replotted. Two of the trenches (173 and 181) ran down the N side of the channel. Here the slope was steep (see Figure 5). Further W the gravel shelved more gradually (see section 3.2.3.2 above); this is also evident from a comparison of the depth of the channel in trench 171 (a maximumof 1.5 m) with that in trenches 173 (more than 2.2 m) and 167 (more than 2.6 m) either side. There was however waterlogging towards the bottom of 171, and no Mesolithic artefacts were recovered from this trench, which is

therefore considered to be within the channel proper. This shelf appears to have continued even further E, since trench 177 was only 1.65 m deep at the SW end.

3.2.4.4 SW of trenches 171 and 180 the channel turns sharply NW, the edge lying between trench 160 on the terrace and trenches 167, 159 and 158, all of which had sequences of channel deposits 2 m or more deep. The depth of the deposits in these trenches shows that the terrace edge must have sloped down very sharply towards the Thames.

On the S side the very edge of the channel did not lie within any of the excavated trenches, but the rise in the gravel bottom can be charted in trenches 41, 42-3, 46 and 47, rising gradually from 1.7 m deep (trenches 42, 43 and 46) to 1.5m (trench 41 SW end) and 1.3 m (trench 47 SE end). The edge must lie between these and trench 45, which lay entirely upon the gravel island of Site X. Evaluation trench 34, dug in 1990, also lay entirely upon the gravel terrace, providing another point of reference (see Figure 1). The fact that trench 43 is deeper than 41 and 47 may indicate that the channel edge curved SE between them, mirroring the projecting shelf on the N side of the channel opposite.

3.2.4.5 In mid-channel most of the trenches were not bottomed at a depth of between 1.8 and 2.2 m, only trench 177 reaching firm gravel (at 1.65 m on the SW and 1.8 m on the NE). Trench 167 was excavated to the greatest depth; this revealed 0.8 m of peat, and gravel was only just beginning to appear at a depth of 2.65 m (Figure 5). The difficulty of excavating at depth means that a detailed profile across the channel bottom has not been obtained. Some indication may however be given by the deposits recorded in plan and section. In trenches 175 and 176 the lowest layers at the N end were sloping downwards to the NE (Figure 5), and a corresponding slope to the SW was observed in trench 174. This may indicate that the lowest part of the channel ran between these trenches (both were not bottomed at 2.2 m deep), and trench 179 which is in line was at least 2.3 m deep at the S end (Figure 5). The lowest exposed deposit in trench 169, a waterlogged peat at 2 m down, also dipped towards the NE. This orientation is not the same as that the top of the channel, but is in line with the steep drop between trench 160 and 167 etc. to the NW, skirting the gravel shelf on which sit trenches 171 and 177.

The channel profile is however more complex than this, since the bottom of Trench 177 is sloping down again to the NE, and the channel is more than 2.2 m deep at the SE end of Trench 173 (Figure 5).

3.2.4.6 The excavated sample of that part of Channel R covered by the evaluation is approximately 1% in area. At the level of the deeper deposits, however, it is less than 0.1%, and these were all test pits rather than long trenches. For the lower channel deposits the observed sections thus only represent point sequences. In addition, with the exception of some possibly worked wood in trenches 176 and 175, no artefacts have been recovered from the deeper deposits, most of which were excavated by machine. Environmental samples have been taken from the waterlogged deposits in most trenches where these occur, but only a very few of these have so far been analysed. The potential for linking these sequences is thus limited at present.

3.2.4.7 Sequences were compared to see if a uniform succession of deposits could be established across the whole channel, but as is evident even from the illustrated sections, there is in fact considerable variation in the character and sequence of these deposits from trench to trench, and sometimes within individual trenches. In a wide channel such as this the channel may have silted and have been partially recut, perhaps more than once, resulting in fills of different date at any given level. Evidence of this appears to be present in trench 46, where peat deposit 46/10 is partly truncated and overlain by a sandy bank of silt 46/7, against which further peat 46/11 developed (Figure 5).

3.2.4.8 A composite section across the channel is shown on Figure 5, which illustrates the varying depth and extent of waterlogged peat deposits. This shows that waterlogged deposits do not exist above 20 m O.D; this probably represents the upper seasonal limit of the water table. The deepest excavated sequence of peat is 0.8 m in Trench 167. Samples 16 and 13 from within layer 167/40 indicate a reedswamp of Early Mesolithic date gradually filling to become a fen (see section 5.2). In trench 158 to the NW a well-preserved peat sequence (not bottomed) was also found, but in this case containing much wood, perhaps from trees growing at the swamp edge. These deposits are broadly contemporary with the Early Mesolithic activity in trenches 166 and 180 adjacent (section 3.2.3 above).

3.2.4.9 Further peat deposits occur at a higher level in trenches 174, 42, 43 and 46 (Figure 5). In all but trench 174 there are two peat deposits separated by layers of silt. The later peat in trench 46 (sample 10 from 46/11) has been examined, and indicates that alder carr (that is, alder woodland growing on peat) had by now been established. This peat deposit lies just below a flint cluster of probable Later Mesolithic date in 46/8 (Figure 5 and section 4.2.9), and is probably of this period. In trench 43 a treehole was found immediately below the latest peat, and the peat in 177 also contained much decayed wood, possibly also indicating a woodland environment. Another treehole was found in trench 167 near to the bottom of the sequence of silts which overlay the waterlogged deposits (Figure 5).

3.2.4.10 The sequence of peat deposits indicates a gradually drying environment through the profile, suggesting that the water table was relatively stable during the Mesolithic. The intervening silt layers are therefore more likely to indicate a phase of increased alluvial deposition within the Mesolithic due to erosion further upriver, rather than a rise in the water table over time (see however section 3.2.7.4 Trench 127).

3.2.4.11 Trenches 174, 175 and 176 contained deep sand deposits beneath the peat. A collection of wood was found within the sand in trench 175 (see Figure 5), including pieces with pointed ends and long thin branches. None of the pieces were vertical, and there was no clear evidence of any structure. Some of this material may originally have been worked, though all of the wood had been water-rolled and abraded, and it may simply have been a collection of driftwood. A short length of possible plank was found during hand-excavation within layer 167/40, and another flat fragment in layer 159/18 (see Figure 5, 159 section). These latter

pieces may however have been compressed by the weight of the overlying deposits as the organic material decayed. This problem will have to await the results of examination by a specialist. More significant evidence of early activity may be provided by flecks of charcoal found in the silty sand at the bottom of trench 41 at the SW end, contemporary with the lowest deposits described above.

3.2.4.12 Once the channel ceased to be active the upper part of the channel filled by a combination of overbank alluviation and inwashing from the surrounding gravel terraces, and the general sequence is more uniform. A larger sample of these deposits was examined, and proved to contain evidence of extensive Bronze Age activity including *in situ* flint knapping clusters and burnt areas. The profile and larger-scale sections illustrated in Figure 5 show some of these deposits, and indicate the horizons at which Bronze Age activity was found.

3.2.4.13 The waterlogged deposits were overlain by a succession of silts, some very coarse-grained, and these in turn by layers of clay. Aquatic molluscs are predominant in the silts, but although they still continue to occur in the clay layers above they are outnumbered by open country terrestrial molluscs. This sequence probably represents the progression from episodic relatively high energy flooding from the Thames or reactivation of the channel while it was still a deep hollow to the deposition of finer sediments from shallow overbank alluviation. It may also indicate a change in the nature of the sediment washed into the river upstream.

3.2.4.14 The silt layers contained a very high proportion of shells and of calcium carbonate, and were white in colour. Similar deposits were noted within the Pleistocene sands and gravels of the adjacent terrace (sondage dug in Trench 173). Post-depositional chemical leaching had also affected both the silts and the overlying clays, resulting in horizontal bands of iron-panning and sometimes manganese which cut across the original deposits and obscured the depositional sequence.

3.2.4.15 Within the silts one flint knapping cluster, probably in situ, was found in layer 46/8. This was small, and contained few diagnostic pieces, but was tentatively dated to the late Mesolithic (section 4.2.9). Otherwise there were very few finds, but horizons containing charcoal flecks like those associated with the flints in trench 46 were common (layers 46/5, /6 and /8; 159/12; 177/5-/7; 174/11 and /15; 42/6-/9). None of the silts contains a high concentration of charcoal, but the charcoal is sufficiently widespread to suggest more than localised events, and may relate to clearance on the adjacent gravel terraces. These charcoal-bearing layers usually occur at the bottom of the silt sequence, and clearance may explain the occurrence of these alluvial sediments at this time. In several cases these flecks occurred throughout several successive layers, and environmentalist Mark Robinson felt that this was likely to reflect a recurring process rather than the post-depositional dispersal of charcoal through the sediments.

3.2.4.16 In trench 159 charcoal flecks occurred within the lowest silt 159/12, and again in 159/10, a more clayey silt with high manganese content, the molluscs from which are a mixture of aquatic and woodland species. This shows that clearance had not resulted in an open landscape by this stage. Dr R. MacPhail has commented that manganese tends to replace organic matter, and thus bands of manganese often indicate buried topsoils, suggesting a static period within this clearance phase (see also 3.2.4.17 below). Direct use of the channel area at the end of the silt deposition is shown by a burnt layer 174/18 (see Figure 5 profile), on top of which is another manganese band, showing the development of a topsoil.

3.2.4.17 Within the overlying clays dark bands of manganese were common. Although post-depositional processes might have caused this, the correspondence of these bands with human activity suggests that these represent genuine buried surfaces. Several successive bands were seen in trenches 159, 174, and 47; 159/8 contained charcoal flecks and animal bone, and sealed a group of possible postholes, 159/3 contained an Early Bronze Age *in situ* burnt area surrounded by pottery, and the associated molluscs indicate a cleared open environment (Figure 5; section 4.1; section 5.2 below). This sequence gives a terminus ante quem for the deposition of the clay layers in this trench, and lends support to the idea of clearance in the Neolithic. A possible correspondence to this sequence occurs in trench 174, where a probable Late Neolithic sherd was found on the surface of the middle band of manganese in trench 174, and an *in situ* flint cluster of Bronze Age character in the uppermost band (section 4.2.15). The flint may however have been of Late Bronze Age date.

3.2.4.18 This sequence does not appear to hold good for the whole channel. In trench 46 a sherd of Early Bronze Age pottery was found in the lower clay layer, 46/4, and in trench 167 a discontinuous horizon of charcoal patches (167/6) lay in middle of the clay sequence, accompanied by an *in situ* flint cluster and sherds of Late Bronze Age pottery (Figure 5; sections 4.1 and 4.2.11 below). The molluscs from sieving were predominantly marshland species.

3.2.4.19 Other significant deposits were a further flint cluster 177/8 (section 4.2.14) and an *in situ* burnt area 47/14 associated with open country molluscs on a surface with scattered amorphous charcoal spreads (Figure 5; section 5.2). In trench 169 to the SE another burnt area 169/8, this time associated with much burnt flint and indeterminate scraps of prehistoric pottery, lay at the top of the clay sequence and was truncated by ploughing.

3.2.4.20 Trenches 173 and 181 on the channel edge. In these trenches the gravel terrace was capped by a cream sand, which was also seen in the trenches alongside Channel N to the NE (section 3.2.5.6). This was overlain by 173/2=181/2, an orange-brown clayey silt which was in origin the post-Pleistocene topsoil, but the upper part of which had been reworked by ploughing. Within this layer at the NW end of trench 173 was a concentration of Early Mesolithic struck flints, with an average density of at least 35 flints per square metre, similar to the highest densities in the neighbouring cluster in trenches 166 and 180 (section 4.2.8). No Mesolithic flints were found in Trench 172 to the N (Figures 1 and 3),and only a

few bladelike flakes at the end of Trench 181 to the NE, suggesting that the limit of the activity lies between 173 and these trenches on the N side.

3.2.4.21 The channel sequence in Trench 173 does not follow the usual pattern, the deposits probably being modified by inwashing from the terrace adjacent. The lowest deposit was a clay 173/9 overlain by silty clays /8 and /7, and this was followed by a peat deposit 173/6, corresponding in level to the upper part of the peat sequence in trench 167 to the W (Figure 5). These layers were all excavated by machine, and none of them produced any finds, but a trench along the upper slope of the channel edge was excavated by hand, the primary layers in which were sands 173/12 and silts 173/17 overlain by 173/21, which contained Mesolithic struck flints. These deposits are not unlike those containing the struck flints in trench 180 (section 3.2.4 above), and the flints from these may possibly be *in situ*. Layer 173/12 was overlain by the edge of peat 173/6, showing that the peat formed after the Early Mesolithic flint-knapping had taken place.

3.2.4.22 Sand 173/12 was overlain by a clean layer of mottled silt 173/14, and this in turn by another silt /13, both of which were confined to the N edge of the deeper part of the trench. These silts formed a localised channel edge, which was abutted by a clay with charcoal flecks 173/10; this layer also overlay peat layer 173/6, and may correspond to the clearance phase seen following the peat elsewhere. A burnt flint came from layer /13 and a single sherd of Neolithic pottery from /10 (section 4.1). The succeeding layer 173/5 however (which is darkened by manganese) contains pottery and struck flint of Late Bronze Age date, as do the succeeding layers up to and including ploughsoil 173/2. There was a concentration of fresh flint flakes from 173/3, suggesting a focus of Bronze Age activity nearby.

3.2.4.23. In the adjacent trench 181 there were no features and few finds in the reworked layer /2. At the SE end a series of clays dipped into the channel, all containing frequent burnt flints, sometimes accompanied by charcoal (Figure 5 layers 181/8 and /7). These layers suggest the existence of a `burnt mound' on the edge of the channel at this point, which gradually eroded into the adjacent channel. The Late Bronze Age finds from both trenches also show that this part of the channel still represented an appreciable hollow at this date, perhaps more so than elsewhere (see Figure 5 profile). The association of `burnt mound' deposits with active channels both elsewhere on this site (OAU 1990, 29-30 and Figure 1; section 3.2.7 below) and in general may also indicate that a pond or stream still existed somewhere close by to the NE.

3.2.4.24 Over much of the channel the alluvial clays were overlain by two ploughsoils, the lower of which contained sherds of Early Roman, and in one case, Medieval pottery (158/2, 173/2 and 174/2). In some cases the lower ploughsoil had been removed by the modern ploughsoil.

3.2.4.25 Trench 45 lay entirely on the gravel island containing Site X. Unusually three ploughsoils were identified, with a total depth of 0.48 m; the lowest of these 45/3 came down onto the gravel and truncated the archaeological

features. There were no finds in the ploughsoils. Two shallow pits 45/7 and /9 were cut into the gravel, respectively 1.0 m and 0.6 m in diameter. Neither was excavated, but 45/8, the fill of 45/9, contained two burnt flints. These features were probably part of the Bronze Age occupation identified in previous evaluation trenches 12-14 and 34 (OAU 1990 Figure 1). This occupation clearly continued into the channel, as can be seen from scatters of Bronze Age finds in the upper layers of trenches 47, 46, 42 and 43, as well as the significant deposits described above.

3.2.4.26 A significant zone of Early Mesolithic activity has been identified along the northern edge. Later Mesolithic activity is much less evident, and the only *in situ* material is the small flint cluster in trench 46. Small groups of Later Mesolithic struck flints were also found in the upper clay deposits in trenches 179 and 169 (layers 179/2 and /3, 169/8). It is not clear whence these are derived, though the present distribution lies towards the S side of the channel.

3.2.5 Trenches 57-73, in and around Channel N (Figure 6)

3.2.5.1 These seventeen trenches were laid out along the line of Channel N to investigate the date and character of the channel deposits and their relationship to occupation on the gravel terraces to either side (Sites F west and F east). Trenches were also positioned to explore the large blank area on the gravel island NE of the channel between the cropmarks of the two sites.

3.2.5.2 The trenches can be considered in three groups: those within the channel proper, those on the gravel terrace to the NE and those on the gravel terrace to the W. In most of the trenches the gravel terrace is capped by a layer of silty sand; outside the channel itself gravel was only seen on the NW, in trenches 61 and 62 and intermittently in trench 63.

3.2.5.3 The gravel terrace to the NE (Site F east) slopes gradually from NW to SE (a drop of 0.7 m in total); at the NW end (Trench 63) the present ground level is nearly 1 m above that of the channel (Trench 64), and the edge of the channel is very well-defined, but further SE (Trench 65) the terrace lowers to only 0.5 m above the channel, and at the SE end (Trenches 72 and 73) there is only 0.3 m difference. The edge of the channel is thus sharply defined on the NW, but progressively less so to the SE.

3.2.5.4 On the W side of the channel the gravel terrace is lower and more level, with only a drop of 0.2 m from NW to SE, and the ground surface is only 0.3 m higher than the channel on the NW (Trench 57 to Trench 61), and only 0.15 m higher further SE (Trench 69). There is no appreciable difference in level in the area of Trench 73. At the NW end the terrace is nearly 0.5 m lower W of Channel N than to the NE (between Trenches 62 and 63), but only 0.3 m lower in Trench 69 than Trench 68, and progressively more level SE of that.

3.2.5.5 Despite the lower level of the gravel terrace on the W, the edge of Channel N was clearly identified in Trenches 61, 66 and 69. NW of Trench 61,

however, the ground levels off, and in Trenches 58 and 57 begins to drop away. This dip in the terrace corresponds to that seen in the previous evaluation trenches K and L to the NW, and probably indicates a large hollow whose continuation is evident further S in Trenches 154 and 155 (see 3.2.2.7 above). The lower level of the gravel terrace in this area means that no clear edge to the channel was identified, all of trenches 57-59 containing alluvial deposits from the channel.

3.2.5.6 In all of the trenches on the NE side of the channel (Trenches 63, 65, 67, 68, 70, 71 and 72) the modern ploughsoil (0.25-0.3 m deep) overlay a sandy silt layer 2 (deepening from 0.13 m on the NW to 0.35 m on the SE) which itself overlay the natural sand. No archaeological features were seen, but the silt layer contained struck flint of Bronze Age character and burnt flints (except for 63/2, which was sterile); layer 71/2 also contained a single Roman sherd. This may have been an earlier ploughsoil, or possibly the truncated prehistoric soil, which in Trench 65 was redeposited into the infilled channel.

3.2.5.7 On the W side of the channel Trenches 61-62, 66 and 69 lay on the flattish gravel terrace, Trenches 57-60 on the NW lay within a hollow (see 3.2.5.5 above). Since these latter trenches were subject to considerable alluviation they are dealt with after consideration of the channel (see below).

3.2.5.8 In Trenches 61-62, 66 and 69 the modern ploughsoil was 0.15-0.25 m deep, and overlay an earlier ploughsoil numbered layer /2 (/2 = /14 in Trench 66) around 0.15 m deep. There were no finds to date the lower ploughsoil, but in Trench 62 this was cut by a pit or ditch terminal 62/5 and posthole 62/3, both filled with brown silty clays. The fill of 62/3, layer 62/4, contained a single struck flint. These features are likely to be of Roman or later date.

3.2.5.9 Below the lower ploughsoil a mid-brown silt clay existed in several trenches. In Trench 61 this was largely truncated on the terrace, mainly surviving in hollows in the gravel, but it survived in the top of Channel N. Ploughing in Trench 62 came down onto gravel, and also truncated several hollows or features filled with this clay (layers /8, /11 and /12), none of which contained any finds. The last two of these were probably hollows of geological origin or tree-holes, but 62/7 (containing /8) was linear and aligned NNE-SSW like the cropmark Bronze Age ditches to the SW, so may have been a Bronze Age ditch.

3.2.5.10 In Trench 66 ploughing came down onto the silty sand /4 at the NW end of the trench, but further towards the channel this was overlain by layers /8 and /13, successive brown silty clays containing struck flint of Bronze Age character and burnt flint. Layer /13 was the uppermost layer in Channel G at this point. Charcoal patches /20 were evident in the surface of /13 where it overlay the fills of Channel N.

3.2.5.11 Layer /13 was cut by two roughly parallel linear features, 66/9 and 66/11; these were not excavated, but their fills contained Bronze Age struck flint and burnt flint. The NNE-SSW alignment of these ditches is similar to that of the

cropmarks of the Bronze Age enclosure system to the S, to which they may have belonged.

3.2.5.12 Further soilmarks were evident in the top of the silty sand at the W end of trench 66. 66/3 may been the terminal of another gully, /6 and /19 were fills of a slight hollow which included burnt flint and struck flint flakes. The feature on plan apparently separating layer 19 was an underlying frost-wedge.

3.2.5.13 The excavated part of Channel N comprises Trenches 57-9, 60, 61, 64-6, 69 and 73. The limits of channel are not easy to define at the NW end, but generally the channel was between 40 and 50 m wide. Topsoil overlay an earlier ploughsoil in all the trenches with the exception of Trench 58 and possibly Trench 73; the lower ploughsoil is numbered /5 in Trench 65 and /14 in Trench 66, otherwise /2. The combined depth of the topsoil and earlier ploughsoil is around 0.4 m. The lower ploughsoil contained struck flint and burnt flint of Bronze Age character, except at the NW end (trenches 57, 59 and 60), where there were no finds. Layer 73/3 also contained an unidentified iron object, suggesting a Roman or later date.

3.2.5.14 Below the ploughsoils the greatest depth of the channel was 0.8 m (Trench 64). Since only this one trench certainly ran across the centre of the channel it is not possible to be certain of the longitudinal profile of the channel, but the illustrated sections (Figure 6) suggest that the channel varied by as much as 0.2 m in depth, and may have been shallowing to the SE.

3.2.5.15 The sequence of fills is best illustrated in Trenches 64 and 66: waterlogged silts with gravel lenses up to 0.4 m deep, overlain by a shallow depth of alluvial gleyed clays and succeeded by a greater depth of clayey silts. A single struck flint of Bronze Age character was recovered from the uppermost waterlogged deposit in Trench 64, and flints of Bronze Age character were found in Trench 61 in layers /5 and /13 immediately overlying the waterlogged deposits in the channel proper. Further Bronze Age flints were found in the uppermost clayey silt in trenches 64-66, particularly in layer 65/2=/6 on the N side of the channel.

3.2.5.16 Samples 9 and 25 from layers 61/6 and 64/6 have been examined for plant, insect and molluscan remains, and indicate a slowly flowing stream in a cleared landscape with evidence of both pasture and disturbed or cultivated ground (see Section 5.2 below). This indicates a Neolithic or later date for the formation of the waterlogged deposits.

3.2.5.17 Large pieces of wood were found in Trench 64, but these proved to be roots growing down into layer /6, and small roots were also preserved in other trenches, suggesting that at some stage trees grew in the infilled channel. A treehole was found on the sloping edge of the channel in Trench 61 (feature 61/8, Figure 6 section 3); fills /10 and /11 contained struck flints of Bronze Age character, and were overlain by layer /5 containing further struck flint. Towards the SE end of the channel another probable treehole was identified within the

channel itself in Trench 73, whose bottom fill /3 contained charcoal and struck flint of Bronze Age character (see Figure 6). Layer /3 extended beyond the treehole throughout most of the trench, and contained further patches of charcoal which are interpreted as associated with tree-clearance. Similar charcoal patches were observed in trenches 66 and 69 in the uppermost channel fill (layers 66/20 and 69/3), associated with Bronze Age struck flint.

3.2.5.18 The W edge of the channel was clearly identified in trenches 61 and 69, but was not established by excavation in trench 66. The uppermost layer of the channel, 66/13, covered the easternmost 30 m of the trench; its western limit may mark the uppermost edge of the former channel.

3.2.5.19 Layer 66/13 contained patches of charcoal, and was clearly deposited after the active life of the stream proper. It was cut by two parallel ditches /9 and /11, which may have belonged to the Bronze Age enclosure system (see 3.2.5.11). This would suggest that the channel had largely silted up by the Later Bronze Age.

3.2.5.20 In the trenches at the NW end the limits of the channel are difficult to define, though it is clear that this was a large low-lying area. The natural deposits were a mixture of gravel and clay with outcrops of clean gravel and sand. Trench 58 exhibits a fairly standard sequence, with waterlogged deposit /9 overlain by a succession of gleyed silty clays (Figure 6); at the E end of Trench 57 the lowest deposits were instead very sandy silts (57/7-/9), but the gleyed deposits were common to all of trenches 57-9 (layers /4 and /5 and 57/6). There were no finds from these deposits. In trench 60, which was on the edge of the gravel terrace proper, these clays were absent, but the natural soil over the gravel was a dark clayey sand rather than a light silt, presumably resulting from the mixing of alluvial material from the channel.

3.2.5.21 In trench 58 the sterile clays sealed an irregular linear soilmark 58/11 on a NNE-SSW alignment. A similar feature was also seen in Trench 60, roughly in line with 58/11 (Figure 6). These were both c.2 m wide, very shallow, and there were no finds. Their alignment, which is similar to that of the Bronze Age cropmarks, may suggest that they were man-made features, but the depth of overlying deposits in Trench 58 would indicate otherwise. Both were probably treeholes.

3.2.5.22 The gleyed clays were overlain by one or more grey-brown clayey silts (57/3, 58/2, 59/3, 60/3 and /4). A sherd of Late Bronze Age pottery was found in layer 59/3 and struck flint of Bronze Age character in layers 57/3 and 60/3 and /4. These layers correspond to the uppermost fills of the channel further SE. In trenches 57-60 they sealed Bronze Age features and treeholes where these occurred (see below).

3.2.5.23 Layer 57/3 overlay two linear soilmarks, 57/12 running WNW-ESE and 57/16 running NNE-SSW. Neither feature was excavated, but their respective fills (57/13 and 57/17) contained flecks of charcoal, and their alignments

correspond to those of the cropmark Bronze Age enclosure system, to which they probably belong. 57/12 cut an irregular soilmark 57/15 (also unexcavated) which was probably a natural hollow in the surface of the gravel. In trench 59 layer /3 overlay a treehole 59/7, and a possible posthole 60/6 was sealed by layer 60/3. There were no finds from either. Layer 60/8, a brown clayey silt, filled irregular hollows in the natural; this possibly corresponded to layer 61/3.

3.2.5.24 Summary of channel development.
While it is possible that all the Bronze Age finds in the channel are derived the evidence is consistent with a shallow stream, fringed in places with trees, which was active in the Later Neolithic and Bronze Age. The Bronze Age finds from the uppermost waterlogged layers and those immediately succeeding them are interpreted as contemporary with occupation on the adjacent gravel terraces; the rarity of finds from the waterlogged deposits may indicate that the channel was already silting up before the main enclosure system was set out in the Later Bronze Age. The uppermost channel fills are more silty in character, and these are interpreted as wash deposits incorporating Bronze Age finds derived from the adjacent gravel terrace.

The sequence changes towards the SE end (in trenches 69 and 73); the greater shallowness of the channel bed means that there are no waterlogged deposits, and the diminished gradient from the terraces into the channel may explain the absence of wash deposits in Trench 69. As argued above (3.2.5.10-11 and 19) the upper channel fills in Trenches 66 and 69 on the W side of the channel are probably of Bronze Age date; those in the other trenches may have been of later date.

3.2.6 Channel P. Trenches 182-184. (Figure 7).

3.2.6.1 These three trenches were laid out to investigate the NE edge of Site F east and the adjacent channel, Channel P. No cropmarks showed this far east on the gravel terrace, and the trenches were dug to establish whether Bronze Age activity extended into this area. In addition, one of the cropmark Bronze Age enclosure ditches appeared to be visible from the air crossing Channel P. The ditch in question lay within an area already earmarked for preservation, but if Bronze Age activity were present it was hoped to clarify the relationship between the channel and the Bronze Age occupation. Air photographs also suggested that there was a large low-lying area within the gravel terrace (OAU 1990 Figure 1), and Trench 183 was positioned to run into this on the SW.

3.2.6.2 The NE edge of the former channel corresponds to the present field boundary in this area, and is marked by a drop of more than 1 m in ground level. On the SW side the ground rises gradually, reaching its highest level after some 125 m just short of the former field boundary (Figure 7); in the adjacent field to the NW there is a distinct ridge of high ground running NW-SE parallel to the channel. Thereafter the ground level begins to slope away again towards the Thames.

3.2.6.3 All three trenches were laid out approximately at right angles to the channel. Trench 183 lay entirely upon the gravel terrace, Trench 182 ran from the terrace into the edge of the channel and Trench 184 lay completely within Channel P. The deposits on the gravel terrace will be dealt with first.

3.2.6.4 Trenches 182 and 183. Modern topsoil, which averaged 0.25 m deep (range from 0.15 - 0.30 m) overlay two parallel linear soilmarks 183/5 and /6 which filled ditches 183/9 and /10 either side of the former field boundary aligned NW-SE (Figure 7). Neither ditch was excavated, but 183/5 contained struck flints and sherds of Victorian pottery.

3.2.6.5 These ditches cut layer /2, a light brown silty clay between 0.05 m and 0.20 m deep, which overlay prehistoric activity in both trenches, sealing 182/15, the fill of curving feature 182/14, and 183/4, fill of a slight hollow, both cut into clay layer 182/3=183/3. 182/14 had an irregular shape in plan, appearing to be narrow in the middle with wider and deeper sections either side; the limits of the S side were however unclear, and this may not be the full extent of the feature. Is fill contained struck flint of Bronze Age character, and further flints were found either side and extending to the NE in the top of layer /3. 183/4 was a hollow in layer /3 towards the SW end of the trench, filled with grey silty clay and with calcium carbonate at the bottom. The fill contained struck flint, and a scatter of Late Neolithic pottery and flints was found in the top of layer /3 extending from layer /4 a little way beyond the post-medieval field boundary ditches (section 4.1.4).

3.2.6.6 Machine-dug sondages were excavated at intervals along the trenches to check the stratigraphy below layer /3. These showed a succession of horizontally-bedded layers, clean sand at the bottom overlain by progressively more silty sands, some heavily stained by iron-panning and other post-depositional leaching. There were no finds from any of these deposits, which are assumed to be of Pleistocene origin.

3.2.6.7 Layer /3 itself was a mottled orange and blue-grey clay, which continued at the NE end into Channel P, overlying the channel fills. It is probably therefore an alluvial deposit overlying the post-Pleistocene topsoil, subsequently modified by human activity on its surface. The interface between layers /3 and /2 was level, and appears to represent an occupation horizon, sealed by /2, a layer of alluvium. It is alternatively possible that /2 was an earlier ploughsoil truncating the features, from which the finds have been worm-sorted onto the interface with layer /3.

3.2.6.8 Three sections through the channel were obtained, one at either end of Trench 184 and on the channel edge in 182. Over most of its length 184 was machined down to the top of waterlogged organic deposits at approximately 1 m down. Deeper sondages were dug at either end; the soil sequence in mid-channel was more than 2 m deep (Figure 7), and at the NE end of Trench 184 the channel was not bottomed due to the high water table.

3.2.6.9 At the bottom in mid-channel was a deep layer of bluish silty clay overlain by waterlogged organic deposits 184/8 and /7 with a total depth of 1.1 m at the NE end of the trench. The clay and peat probably correspond to the silt and overlying peat seen at the channel edge (layers 182/8 and/7 respectively). No finds were recovered from these deposits. Environmental samples 137 and 138 were however taken from the bottom and top of the peat sequence in Trench 184, and the earlier sample indicated conditions similar to the reedswamp of Earlier Mesolithic date in Channel R (section 3.2.4.8; section 5.2 below). Nothing identifiable was preserved in the upper sample. The peat at the edge of the channel was also dessicated, and has not been analysed. This peat lay at a higher level than that in mid-channel, probably due to greater shrinkage and compaction where the peat was thicker.

3.2.6.10 The waterlogged organic deposits were overlain by layers of clay. At the edge of the channel the lowest of these (182/6) included charcoal flecks, and was derived from 182/5 on the terrace adjacent. There was no other dating evidence. 182/5 was a clay layer similar to 182/3 further SW, and was confined to a band alongside the channel. All of 182/3-/6 on the channel edge were very similar soils, and may represent successive downwashing of one soil into the channel. Human activity was also seen in mid-channel, where a thin silty clay containing pebbles was overlain by a similar soil with charcoal flecks, layers 184/3 and /4 respectively. These silty soils appear to be confined to the middle of the channel, and again the activity is undated.

3.2.6.11 No trace of a substantial low-lying area was encountered in trench 183, the terrace deposits being level. A long sequence of waterlogged deposits is present, which can potentially be dated using radiocarbon. Late Neolithic activity was found on the adjacent terrace; this has not been conclusively linked to the channel sequence, but may be represented by the charcoal present at the top of the sequence, perhaps indicating that the channel had indeed partly gone out of use by the Bronze Age. A narrow channel may however have continued to be active NE of the evaluation trenches.

3.2.7 Channels T and V: Trenches 127-130. (Figure 8).

3.2.7.1 These trenches were laid out as part of a wider group to investigate the channels running around the NE of the site, the intersection of Channel P with Channel T and the continuation of the channel to the SE (Channel V). In the event the complicated stratigraphy encountered in Channel R meant that the evaluation in this area could not be completed before the work had to be halted because of the rising water table. Since however this area is one of the first likely to be affected by the construction programme, a sample of the trenches were dug to inform the early stages of the excavation strategy.

3.2.7.2 All four trenches lie within the channels, and were machined either to the top of the first waterlogged horizon or to 1 m depth, whichever was the less. Trenches 128 and 130 lay on the NE side of the channel, the gravel bottom

deepening from 0.6 m at the SE end of Trench 128 to 1.3 m at the SW end of Trench 130. Trenches 127 and 129 were widened at one end and deeper sondages dug, the sand and gravel bottom being reached at 1.9 m down in 127. Trench 129 was machined to a depth of 2.1 m, but was not bottomed.

3.2.7.3 Two phases of channel were seen in Trench 127, the fills of the earlier phase being at the S end. All of trenches 128-130 appear to lie within the later phase (Figure 8 plan and section).

3.2.7.4 The earlier channel had a primary deposit of clay overlain by black waterlogged silty clays with high organic content, interspersed with less organic silty clays (layers /16 to /11). The only waterlogged organic material from layers /16 and /13 (samples 66 and 65) was however roots, which were considered to have been preserved by a subsequent rise in water table (section 5.2). Layer /13 did contain aquatic molluscs of clean flowing water, confirming that the channel was active at this time. The waterlogged silts were overlain by thick deposits of coarse clean silt (layers /10 and /9) containing much calcium carbonate and occasional mollusc shells, similar to the silts overlying peat in Channel R (section 3.2.4.13 and 14). No finds were recovered from any of these deposits, and the sequence is undated.

3.2.7.5 Layers /10, /9 and possibly /5 were cut by the edge of a later channel, filled with clay layers /8-/6. The lowest of these was very sandy, the upper layers became progressively more silty. Layer /6 and /5 overlying it were stained by post-depositional bands of iron oxides and manganese respectively, probably reflecting the boundary between clay layers below and silts above. These bands obscured the layers, so that it was difficult to decide whether layer /5 overlay the fills of both channels, or was in fact two distinct layers, a more silty clay belonging to the earlier channel and a more clayey layer to the later. At the SW end of the trench a concentration of burnt flints was found on the interface between layers /3 and /4, and a few burnt flints also occurred in layer /4 just S of the later channel edge (see Figure 8, 127 section). The association of `burnt mound' deposits with water perhaps suggests that the channel edge included the S part of layer /5.

3.2.7.6 The deposits in the later channel were not entirely uniform, but the broad sequence could be recognised in all four trenches. The earliest deposits exposed were those in Trench 129: a sand containing aquatic molluscs overlain by 0.85 m of silty clays containing waterlogged organic remains (layers /14, /12, /7A and /7) interspersed with thin layers of sand (layers /13 and /11). Layers /7 and /7A were probably one deposit, but there was a gradual increase in sand content from bottom to top of this deposit, and thus has been subdivided. Environmentalist Mark Robinson noted on site that charred cereal grains were being washed out from the waterlogged deposits, but due to the high water table it was not possible to ascertain from what level these were derived. Samples have been taken throughout this sequence, but have not yet been analysed.

3.2.7.7 Layer 129/7 contained worked timbers, some set vertically, others lying flat or at an angle (Plate 1). A small area was opened up by machine down

to the layer sealing the timbers in order to examine them further, but the high water table prevented anything more than limited cleaning and planning followed by environmental sampling. The flat pieces include several branches up to 1.5 m long that have been lopped off at both ends (e.g. Figure 8 sample 180) and also sharpened stakes (samples 181 and 182); some of the verticals appear to have been split and trimmed longitudinally. Immediately adjacent to the W end of sample 181 was most of the profile of a Late Bronze Age/Early Iron Age bowl (see section 4.1.4), and this is believed to date the worked timbers. There were no other artefacts, but at the SE end of the trench layer 129/7 is overlain by a thin sand 129/10 containing flecks of charcoal.

None of the timbers was more than 0.1 m across, suggesting that this was not part of a substantial load-bearing structure, and the excavated arrangement of verticals is also irregular. A predominantly N-S alignment can however be discerned, which lies roughly at right angles to the channel edge seen in Trench 127.

3.2.7.8 The later channel fills in Trench 127 were not excavated below 127/8 except by a very small sondage at the NE end. This showed that layer /8 overlay a silty clay with waterlogged organic remains 127/20; this was approximately 0.5 m deep and occurred at the same level as 129/7 and /7A combined, with which it can probably be equated. The similarity between the sequence in Trenches 127 and 129 thereafter remains close, as the illustrated sections show (Figure 8), though an exact correspondence between silty clay layers 127/8, /7, /6, /5 and 129/6, /9, /8 and /5 is not suggested. Clays were followed by silts common to both trenches (layers /4 and /3), and these were overlain by ploughsoils.

3.2.7.9 The sequence in trenches 128 and 130, which lie close to the edge of the channel and are shallower, is slightly different, but 130/6 is similar to 129/7, and also contains one worked timber lying flat (Figure 8). This is in line with the predominant alignment of timbers in trench 129, and may be a continuation. 130/5 which overlies 130/6 is also very similar to 129/7, and contains a scatter of struck flint of Bronze Age character and burnt flints. Layer 128/6 is also very similar to 129/7, and flint pebbles within 128/6 also suggest human activity at this level. These are all therefore considered to represent one broadly contemporary Late Bronze Age horizon. Below this level in both trenches was a thin primary silt (layer /7) overlying the channel bottom (gravel 128/8 = 130/8). In Trench 128 this was a grey silty clay containing animal bone fragments, possibly equivalent to 129/7A, in Trench 130 it was a dark silty sand, perhaps matching 129/11.

3.2.7.10 Above the Late Bronze Age horizon was a succession of clayey layers (130/4-/2 and 128/5-/2) followed by the modern ploughsoil. There were no finds from the clays or from the silts overlying them in trenches 127 and 129, but layer 130/2 contained chalk flecks and 129/2 modern bricks, the latter perhaps relating to buildings reported to have been on this part of the site during the Second World War.

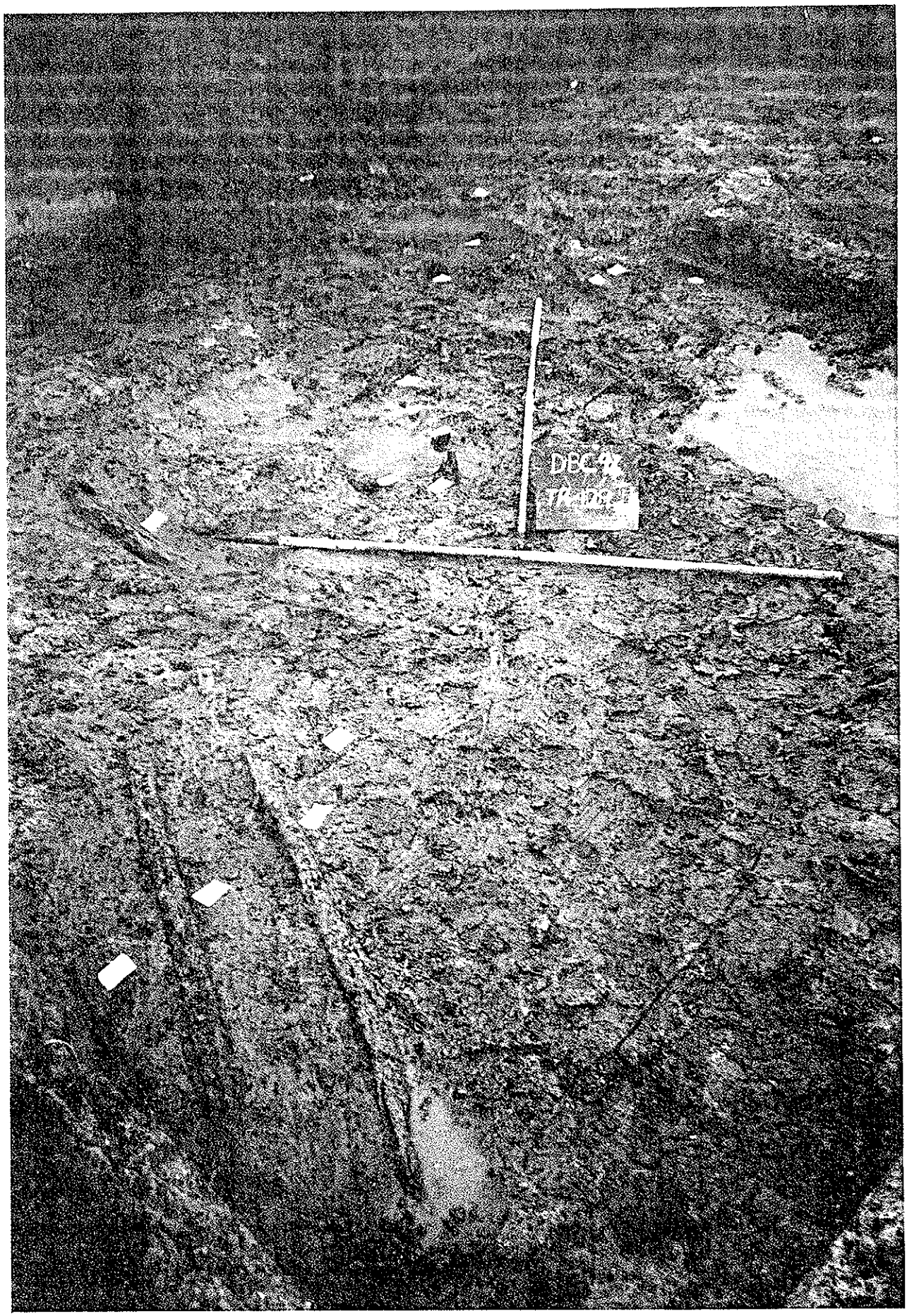

Plate 1. Late Bronze Age waterlogged timbers in trench 129 (looking north).

4 Finds reports

4.1 Pottery assessment by Alistair Barclay

4.1.1 Introduction

The evaluation produced a small quantity (approx. 156 sherds) of prehistoric and later pottery. The excavated assemblage includes material of the following date ranges Neolithic, Early Bronze Age, Middle-Late Bronze Age/Early Iron Age, Middle-Late Iron Age/early Roman, Roman and Medieval/Post-medieval. Most of the material can be placed within the early, middle-late and late phases of the Bronze Age (c2000-700 cal BC).

4.1.2 Methodology

All of the material was recorded and quantified by sherd count, fabric group, decoration and form. Crumbs and fresh breaks are counted as single sherds.

4.1.3 Fabrics

The assemblage characteristically contained few featured sherds and broad dates have been assigned through analysis of the fabrics. In the absence of featured sherds, Neolithic and later Bronze Age/Iron Age flint fabrics can be virtually indistinguishable. Neolithic fabrics tend to have a more flaky laminated texture and the flint temper is often more angular, sparse in density and illsorted in contast to later material. However, this is not always the case and some of the material below could equally be Neolithic or Later Bronze Age. Middle and late Bronze Age flint fabrics are indistinguihable (especially coarse wares), although finer walled body sherds are more likely to be late and could also be early Iron Age.

4.1.4 Results

4.1.4.1 Neolithic

Four contexts (159/4, 173/10, 174/5 & 183/3) contained body sherds manufactured from flint tempered fabrics which could be of this date. Context 183/3 (sf 2201-4, 2206-7 & 2210) a total of 31 small sherds/crumbs of a poorly made ill-sorted flint fabric with a flaky laminated texture. This material is unlikely to be Bronze Age and may in fact be ?later Neolithic.

4.1.4.2 *Early Bronze Age*

Four contexts (46/4, 159/3-4, 159/6 & 173/2) contained material of this date. Nearly all of this material occurs in characteristic grog tempered fabric. Two sherds from 46/3 and 173/2 could be Beaker although they are undecorated. Most of the 18 sherds from 159/3-4 come from a single vessel and include bevelled rim fragments with impressed twisted cord decoration. The rim, decoration and grog fabric are characteristic of Collared or Biconical Urn.

4.1.4.3 *Later Bronze Age-early Iron Age*
Fourteen contexts (43/4, 43/27, 46/4, 59/3, 68/2, 129/7, 141/15, 148/6, 158/2 167/6, 167/14, 168/3, 173/5, 180/2) produced a total of 64 sherds which can be assigned to this date range. This material is manufactured in a range of flint or flint and sand fabrics. The assemblage does not include any featured sherds of middle Bronze Age date, although some of the body sherds could be of this date. The earliest vessel is represented by a rim from a hooked rim jar (context 141/15); a rim fragment from context 158/2 is also of hooked form and could be of a similar date. This form appears in late Deverel-Rimbury and post-Deverel Rimbury assemblages and has a broad date range c.1200-800 cal BC. Context 129/7 contains a large fragment from a fine ware bipartite bowl. There are areas of smoothing or burnishing on the outer surface of the bowl, the horizontal lines appear to be the product of manufacture rather than a deliberate attempt at decoration. The bipartite vessel form is characteristic of late Bronze Age assemblages.

4.1.4.4 *Indeterminate later prehistoric*
Eight contexts (43/4, 46/3, 47/2, 59/3, 71/2, 72/2, 163/6, 169/8) contained material of this date range. This material consists mainly of featureless body sherds in flint with shell, sandy, shell with grog, shell and indeterminate fabrics, that are in all probability late prehistoric.

4.1.4.5 *Late Iron Age-early Roman*
Six contexts (43/US, 46/US, 60/1, 141/2, 155/2, 158/2) contained material of this date range (identification P Booth). The sherds from 43/US and 155/2 (a rim) were both manufactured from grog tempered fabrics. The rim form can be paralleled at the site of Binfield (Booth in Roberts forthcoming).

4.1.4.6 *Roman*
Three contexts (46/3, 71/2 & 173/2) contained material of this date range. 46/3 produced a sherd of Roman fine ware and the other two contexts produced grey ware.

4.1.4.7 *Medieval and Post-medieval*
Seven contexts (62/1, 69/US, 150/4, 152/3, 154/1, 174/2) contained material of this date range.

4.1.5 Discussion

4.1.5.1 Most of the assemblage (84 sherds) is of Bronze Age date. Three trenches 159, 141, 129 contained the most diagnostic material of early, middle-late and late Bronze Age date, respectively. A small number of featureless body sherds, particularly those from trench 183, could be Neolithic; several sherds of Later Neolithic Peterborough Ware were recovered from the Phase 1 evaluation (OAU Archaeological Assessment 1988, 5 and Figure 6). Other than these the material from 159 is the earliest diagnostic ceramic from this evaluation. The Collared Urn sherds from this context were found as an artefact scatter associated with a hearth. This type of material is rarely found in domestic contexts (although

domestic sites are rare anyway) as it is more usually found associated with funerary deposits. Longworth lists seven vessels from Buckinghamshire all of which derive from funerary contexts (1984, 153-4).

4.1.5.2 The hooked rim jar fragment from context 141/15 is of mid-late Bronze Age date (c1200-800 cal BC). Similar vessels occur with Deverel-Rimbury material at Pingewood, Berks (Bowden 1983-5) and in the primary phases of the contemporary settlements at Rams Hill and Wallingford, Oxon (Barrett 1980; OAU assessment). At Gravesend a C14 determination of 1225-989 cal BC (two sigma uncal. 2880±65 BP OxA-4719) was obtained from burnt residues on a hooked rim jar (Barclay in Mudd forthcoming).

4.1.5.3 The plain fine ware bowl from context 129/7 is likely to be later in date than the hooked rim jar. The bipartite form can be paralleled at a number of Bronze Age sites in the Thames Valley, in particular amongst the 1978 excavated material at Runnymede Bridge (Needham 1991).

4.1.5.4 The later activity on the site is indicated by small quantities of Iron Age, Late Iron Age/early Roman, Roman, Medieval and post-medieval sherds.

4.1.6 Bibliography

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Longworth, I. 1984 *Collared Urns of the Bronze Age in Great Britain and Ireland.* Gulbenkian Arcaheological Series. CUP

Mudd, A. in press The excavation of a later Bronze Age site at Coldharbour Road, Gravesend. *Archaeologia Cantiana*

Needham, S. 1991 *Excavation and salvage at Runnymede Bridge 1978: the late Bronze Age waterfront site.* British Museum Press in association with English Heritage

Table 1. Quantification of pottery by period.

Probable date range	Number of sherds	Contexts	Comment
Neolithic	36	159/4, 173/10, 174/5, 183/3	Mostly small sherds and crumbs. The flaky texture and use of sparse calcined flint as temper, together with ?impressed decoration indicate a probable ?later Neolithic date.
Early Bronze Age (includes Beaker)	20	46/4, 159/3-4, 159/6, 173/2	Collared Urn and Beaker sherds- characteristically grog tempered fabrics
Later Bronze Age, Late Bronze Age/early Iron Age	64	43/4, 43/27, 46/4, 59/3, 68/2, 129/7, 141/15, 148/6, 158/2, 167/6, 167/14, 168/3, 173/5, 180/2	Two vessel fragments hooked rim jar and bipartite bowl are late Bronze Age forms. Fabrics generally tempered with small dense flint some with sand. In the middle Thames this fabric can continue into the Early Iron Age.
Indeterminate later prehistoric	17	43/4, 46/3, 47/2, 59/3, 71/2, 72/2, 163/6, 169/8	Most sand or shell tempered some could be earlier
Late Iron Age/early Roman	6	43/US, 46/US, 60/1, 141/2, 155/2, 158/2	
Roman	3	46/3, 71/2, 173/2	
Medieval & Post Medieval	11	62/1, 69/US, 150/4, 152/3, 154/1, 167/6, 174/2	
Total	157		

4.2 Struck flint by Dr. R.N.E. Barton
(with comments upon the circumstances of excavation by Tim Allen)

4.2.1
The following report concerns the analysis of struck flint from the evaluation carried out by Oxford Archaeological Unit in 1994. The work was carried out in two stages. First all of the material was briefly examined to characterise the lithic assemblages in broad terms according to chronological period, and to identify any retouched tools in the collections. Two main periods were represented, Mesolithic (Plates 2 and 3) and Bronze Age. On the basis of this rapid scan, in conjunction with the evidence recovered during excavation for significant clusters of struck flint, assemblages were chosed for more detailed analysis.

4.2.2 The emphasis of this second stage was on the Mesolithic material, which had only been identified as a minor element in the earlier evaluations. Aspects considered at this stage were:
raw material and degree of patination; the freshness of the pieces and potential for use wear analysis; the degree of disturbance or redeposition, including sieving of soil samples for microdebitage; the character of the assemblages e.g. primary knapping debris, and the activities represented e.g. axe-manufacture, hide-preparation. Broad comparisons were also made between Mesolithic assemblages in neighbouring trenches to assess the degree of variability present on the site and the character of occupation overall.

4.2.3 The flint clusters and other assemblages of significant date or character are reported upon below (sections 4.2.5 to 4.2.15); the date and number of the remainder of the finds, which were small assemblages of Bronze Age character, will be found under the relevant context entry in Table 6. Details of these assemblages are held in the archive. The assemblages are described by trench number.

4.2.4 Recovery of the material in excavation.
All pieces, unless recovered from recent ploughsoils, were bagged individually. Finds within features were recovered by context, those from extensive layers (mostly in the channels) were given individual small find numbers (hereafter SF no.) and were planned individually. The deposits on which they occurred were levelled.

4.2.5 Trench 166 (Figure 4)
4.2.5.1 A scatter of struck flint was exposed by machining at the surface of layer 166/4 throughout the trench, and more material was recovered upon cleaning (SF nos 200-318). Two 3 m lengths of the trench were selected for hand-excavation (Figure 4), 0-3 m (SF nos 319-446) and 13-16 m (SF nos 447-646).

4.2.5.2 The assemblage is characterised by Mesolithic debitage and retouched tools. Amongst the cores are opposed platform examples (241, 242) and single platform examples (292, 325, 411) including one (212) which is made on a broken end of a tranchet axe (Plate 2). The retouched tool debitage includes axe thinning

flakes and three typical re-sharpening flakes (230, 475, 565). Amongst the retouched tools (see Plates 2 and 3) are a possible fabricator (240), four end-scrapers (266, 603, 589, 590), and two oblique microlith points (573, 166/4). All of these would be consistent with items occurring in an Early Mesolithic assemblage.

4.2.5.3 In addition to the Mesolithic material, it is likely there is a background presence of Bronze Age finds. These can be identified by the type of debitage (small flakes with thick butts and little preparatory abrasion) and surface appearance of the flint (black, fresh and unpatinated or non-corticated).

4.2.5.4 A detailed examination was made of artefacts SF 447-646 from 13-16 m. These appear to belong to a homogeneous Early Mesolithic assemblage. There are no demonstrably Bronze Age artefacts from this part of the trench.

4.2.5.5 The raw material can be divided into two flint types:
1) a grey-black flint sometimes with a white speckled surface patina. All the material is sharp and is very fresh-looking. The outer white cortical skin is thick and slightly pitted. Its appearance and thickness are consistent with flint collected directly from the chalk or a near-primary geological context.
2) a mottled grey-green or brown flint occasionally more heavily iron-stained giving it a honey-coloured appearance. The cortex of this flint is thinner than the grey-black flint and appears water-rolled. The condition of the cortex suggests that the flint is derived from the local river gravels. Like the grey-black flint, much of the material is in fresh condition.

4.2.5.6 The artefacts in the assemblage consist mainly of flake debitage. There are few retouched tools, including three end-scrapers and an oblique microlith point (see above). Amongst the flake debitage are definite examples of tranchet axe sharpening flakes, and axe thinning flakes. Judging from the thinness and curvature of the flakes it is likely that the final stages of axe manufacture are represented. From the numbers of bladelets (31), core tablets (6) and plunging pieces (1) it is clear that bladelet core reduction sequences are also represented, although no bladelet cores were found in this part of the trench.

4.2.5.7 Examination of the microdebitage revealed no tool waste (e.g. microburins, Krukowski microburins, miss-hits, burin spalls, scraper retouch flakes etc.). Very small flake debitage (<1 mm) and flakes in the 1-10 mm range are well-represented but not in sufficient quantities to indicate the bulk sample was from the middle of an *in situ* knapping floor. If the sample is representative of the trench as a whole, it would suggest that some winnowing or fluvial sorting of the smaller debitage had occurred. However, the fact that the larger flakes (>10 mm) are in such fresh and unabraded condition must indicate that they were not emplaced by hydrological processes, nor had they been moved to any great extent. Gentle over-bank flooding and wind deflation may therefore have dispersed the smaller debris and flint dust. Such movements would also have slightly dilated the larger flake scatters but without destroying their original spatial integrity. Under these circumstances considerable refitting ought to prove possible.

Plate 2. Early Mesolithic tools from trenches 166, 180 and 173:

4.2.5.8 Given the unaltered condition of the flint, many of the artefacts would also appear to be suitable candidates for microwear analysis (e.g. SF 514, 628). However, since the assemblage is dominated by waste flakes and there are relatively few formal tools, it is unlikely that many of the pices would have signs of use-wear.

4.2.5.9 In addition to the flint, some highly corroded and unidentifiable bone fragments were recovered from the sieve sample. Preserved in slightly better condition, but in very low numbers, were the teeth of small mammals including Apodemus sylvaticus (wood mouse), Clethrionomys glareolus (bank vole) and Microtus agrestis (field vole). A few landsnails and an even smaller number of water snails were also extracted (Cath Price, British Museum, pers comm).

Plate 3. Microliths of Early and Later Mesolithic date.
Upper rows: trenches 166, 180 and 165;
Bottom row: trenches 169 and 46.

4.2.6 Trench 180 (Figure 4)

4.2.6.1 Machining generally stopped above the flint-bearing layers, but in the middle of the trench some of these deposits (layers /5, /10 and /11) were exposed. As in Trench 166, two lengths of trench were selected for hand-excavation (Figure 4): 10-12 m (SF nos 1289-99, 1621-7, 1672-8) and 14-18 m (SF nos 1206-1221, 1227-1288, 1600-1620, 1628-1671).

4.2.6.2 This is a very homogeneous sample of Mesolithic struck flint. The retouched tools include four oblique microlith points (Plate 3), one of very large size (1285, 1299, 1600, 1622), a truncated blade (1230) and two flake end-scrapers (1634, 1635) (see Plate 2). Associated with the lithic assemblage is a tooth of adult beaver (1255). On typological grounds the industry would appear to be of Early Mesolithic age.

4.2.6.3 Both the material from 10-12 m and that from 14-18m were examined in further detail in order to provide a sample of similar size to that from Trench 166. No obvious differences could be recognised between the two groups within the trench, except that slightly more tools were recovered in area 14-18 m, and they belong to a single Early Mesolithic assemblage. Judging by the unusually pristine state of the artefacts, it is very likely that the artefacts are part of an undisturbed occupation horizon. It appears to be entirely discrete; there are no signs of intrusive Bronze Age flint material.

4.2.6.4 The same grey-black and brown flint raw material seen in Trench 166 (4.2.5) is present here. In terms of their overall condition, the artefacts have a much fresher surface appearance than have the flints from Trench 166. None of the honey coloured staining seen in the previous assemblage is present.

4.2.6.5 The artefacts consist mainly of flake debitage (82 examples), but there are also relatively large numbers of blades and bladelets (47 examples). Although there are no bladelet cores in the collection, the presence of a unidirectionally-crested blade, and a plunging blade shows that blade core reduction took place locally, on site. The retouched tools include four oblique microlith points (as stated above) in both the brown and the black flint. There is one piece of identifiable tool debitage (an unfinished notch-form) which demonstrates that tools were made at the site.

4.2.6.6 No bulk samples were examined, but given the near mint-fresh condition of the artefacts, one would expect to find further evidence of in situ knapping and tool manufacturing activities (many small flakes and chips and retouch flakes). Time did not allow for any refitting studies but from similarities in the cortex, many of the artefacts ought to conjoin. Refits might even be possible between this area and Trench 166. Of particular interest would be to see if there was any linkage between the sites, given that no obvious axe manufacturing waste was found in Trench 180.

4.2.6.7 Like the debitage, all of the tools are in unusually fresh condition and would be well-worth examining for use-wear traces or preservation of materials

on the tools' surfaces. Of special interest would be the end-scrapers (SF 1634, 1635) for microwear traces and the oblique microlith points (SF 1285, 1299, 1600, 1622) for any potential signs of mastic residues.

4.2.7 Trench 165 (Figure 3)

4.2.7.1 All of the flints were recovered from the the fills of features cut into the gravel and truncated by ploughing. These were bagged by context.

4.2.7.2 This is an interesting assemblage which includes a range of artefacts of different periods. Amongst the debitage are large blades and flakes, and core tablets (rejuvenation flakes) detached from sizable cores. The presence of typical Mesolithic retouched tools including an oblique microlith point (165/9) and two burins (165/9; 165/13) suggests these are of Early Mesolithic age, although, interestingly, several of the larger blades are heavily abraded at the proximal end. This technological feature has been observed in a number of Final Palaeolithic assemblages from S Britain.

4.2.7.3 In addition to the Mesolithic material, the tools include a truncated flake on a thick support (165/9), a notched and retouched flake (165/1) and an atypical piercer (165/9) which are in keeping with a post-Mesolithic origin. Since the assemblage also includes calcined pebbles, irregular flake cores and some small thick-butted flakes, and because of the local presence of Bronze Age material it is likely the tools are therefore of Bronze Age type, although a Neolithic attribution cannot be ruled out.

4.2.8 Trench 173 (Figure 5)

4.2.8.1 This trench ran from the gravel terrace down into Channel R. On the terrace the post-Pleistocene topsoil had been reworked by ploughing (layer 173/2). At the NW end 6 m of this was removed by machine, but further SE machine stripping stopped on the surface of layer /2. Examination of the sections at the NW end showed that struck flints were present, and nearly 400 pieces were recovered from the spoil by manual sorting (SF nos 1757-2134). Another 70 flints were found within layer /2 during cleaning after machining (SF nos 1427-1499), which were individually numbered and planned.

4.2.8.2 The struck flint is a mixed assemblage containing a range of blade and flake debitage of Mesolithic and Bronze Age types. SF nos 1757-2134 from the NW end of the trench include definite Mesolithic forms (1767 - axe fragment, 1769 - tranchet axe flake, 1802, 1907 - burins on truncation, 1797 - blade end-scraper) as well as a typical core on a flake (1800) (see Plate 2). Many of the other cores are probably Mesolithic, but of the 23 recovered many are irregular types. Amongst the material unlikely to be Mesolithic are the calcined (burnt) pebbles and some of the small flakes with thick butts, but these are certainly in the minority.

4.2.8.3 In contrast SF nos 1427-1499 from further SE are heavily dominated by small, hard hammer struck flakes. The cores (1424, 1440, 1450) are all flake

types with deep negative scars and I am confident that these are Bronze Age. There is also one large edge damaged flake (1491) which is probably also of the same age.

4.2.8.4 A second more detailed analysis of the predominantly Mesolithic material from the NW end of the trench was undertaken, both to identify the cores more clearly and to see if there were any discernible patterns in raw material type, condition or surface appearance which might help establish whether flint of one or more periods was present.

4.2.8.5 The flint raw material can be separated into three types on the basis of surface coloration and patina:
1) flint ranging from a creamy (yellowy)-white to a bluish white surface colour. Fresh breaks in the flint show the interior to be a black-grey colour very similar to the flint found in Trench 166. However, unlike the latter the cortical surfaces are characterised by two preservation states: a) a thick, white chalky cortex, and b) a smooth, thin, water-rolled cortical exterior.
2) a brown flint with a thick, white unabraded cortical exterior
3) a black flint with a slightly shiny or greasy surface. The flint looks fresh and has no surface abrasion.

4.2.8.6 The majority of artefacts examined derive from 173/2. They comprise over 200 flakes and about 70 blades and bladelets. The latter include a plunging blade and a unidirectionally crested blade. Together with three crested flakes and two core tablets, they indicate flint knapping activity. This is also confirmed by the large number of cores mentioned above. Virtually all of the artefacts in this sample are in the first two raw material types, with the overall majority belonging to the first group of creamy-white to bluish-white patinated flints. The cores are nearly all bluish-white coloured and are mostly characterised by platform abrasion. This is not a feature generally found in cores in Bronze Age assemblages.

4.2.8.7 The flake debitage includes many big flakes some of which are thin and show a distinct curvature and are probably associated with axe manufacture. There is also one tranchet axe flake (SF 1769) and a broken axe fragment (SF 1767), probably of tranchet type. No polished axe fragments were recovered. Given these observations, and the attributes of the cores, it is very likely that sample 173/2 represents a reasonably homogeneous Mesolithic flint assemblage.

4.2.8.8 The retouched tools in 173/2 (SF 1757-2134) comprise four end-scrapers (1786, 1797, 1861,1887) and three burins (1501, 1907, 1802), two of which are good examples of a burin on a concave truncation (1907) of a type known to occur in Early Mesolithic assemblages (e.g. Star Carr, Uxbridge). One of the scrapers (1797) is made on the end of a blade, and is typically Mesolithic. Most of the tools occur in the flint raw material type (1) described above. All of them are in sharp to fresh condition and would theoretically be suitable for microwear analysis. Further advice would however need to be sought, given the patinated condition of some of the artefact surfaces.

4.2.8.9 Judging by the sizable amounts of large debitage and cores recovered, refitting analysis would certainly appear feasible.

4.2.8.10 In addition to the artefacts mentioned so far, there was a very low background presence of rolled flints, flints in the shiny black colour and calcined (burnt) pebbles none of which appear to belong to the main assemblage. Most of the artefacts were unstratified or clearly derived from spoil. They are probably Bronze Age in date.

4.2.8.11 Finally, in terms of local comparisons, it is interesting to note that Trenches 166 and 173 both provided evidence of Mesolithic axe manufacturing activity.

4.2.9 Trench 46 (Figure 5)

4.2.9.1 A scatter of struck flint was found throughout the upper channel deposits (SF nos 1002 and 1008-1012), and a small cluster in layer 46/8 (SF nos 1014-1045). The cluster was excavated in two spits 0.05 m deep, and plans of the flints were made at each level.

4.2.9.2 Thick butted small flakes, a single platform core (46/3) with deep flake scars and no abrasion, a modified flake with inverse flake removals (46/3) and calcined pebbles indicate a Bronze Age date for the scattered flints. Three bladelets and a bladelet core (46/5) with a blue-grey surface patina appear to be Mesolithic types. The size of the bladelet removals on the core imply Later rather than Early Mesolithic (Plate 3) - but ideally this would need to be confirmed by more diagnostic microlith material.

4.2.9.3 Surface preservation is generally good. There are two forms: a black flint and a blue-grey patinated flint. None of the four Mesolithic artefacts are in the black unpatinated flint.

4.2.9.4 The small flint cluster (SF nos 1014-1045) was examined in more detail. The small assemblage consists mainly of undiagnostic flake debitage, but there are a few bladelets and some very small flakes possibly associated with bladelet core preparation. The surface flint colour varies from grey-black to blue-black, and many flakes also show a slightly weathered, thick chalky cortical exterior. The flints are in sharp to mint-fresh condition. The well-preserved chalky cortex is suggestive of a raw material extracted directly from the chalk or an adjacent source.

4.2.9.5 A bulk sample was wet-sieved, half to 1 mm and half of it to 500 microns. A considerable quantity of microdebitage was recovered. Thirty flakes >10 mm, and well over a hundred flakes <10 mm were identified. The colour of the flint varies from a white, to a speckled-blue to a brown surface patina. No diagnostic pieces of tool or other debitage were recognised, although butt abrasion was noted on several broken proximal ends of artefacts. The microdebitage was in sharp to mint-fresh condition, with no discernibly rolled pieces.

4.2.9.6 None of the above observations would rule out a Mesolithic age for the cluster but there are clearly not enough finds of a diagnostic type to be fully confident in this matter.

4.2.10 Trench 179.

4.2.10.1 All the struck flint was recovered from the upper clays of the channel during machining. Bladelike flakes were found with a denticulated flake (1324) and a partially backed bladelet (1325). Despite the presence of calcined pebbles and some thick-butted small flakes, this seems to be a predominantly Mesolithic assemblage. The size and type of the bladelet tool indicates a likely Later Mesolithic age. This is interesting because it suggests that Later Mesolithic material might also form a component in other local assemblages. However, no technologically diagnostic debitage of this type was identified.

4.2.10.2 In terms of the surface appearance and condition of the artefacts (in the total assemblage) there is no consistent pattern, except is so far as flakes with an unpatinated (uncorticated) surface tend to be those of small/thick type, which are identified as Bronze Age. The same observations can be made of the Bronze Age artefacts from Trench 177 and 46.

4.2.11 Trench 169.

4.2.11.1 This assemblage is dominated by presumably Bronze Age calcined pebbles and small, thick-butted flakes from a burnt area (layers 169/8 and /3 adjacent). There are also two flake cores (169/3 and 169/14) of probable Bronze Age date. However, amongst the collection are several bladelets and two microliths of Later Mesolithic type (Plate 3). These comprise a small rod (169/8) and a small scalene triangle (169/8). The tools have a bluish-white patina and a grey-brown patina, respectively and are distinctive from the black unpatinated Bronze Age finds. Some of the latter, however, carry a blue-grey surface patination not disimilar from a number of the unretouched bladelets.

4.2.11.2 Although mixed, a bulk sample of this deposit was sieved to try to gauge the proportion of Later Mesolithic artefacts represented. Relatively small amounts of microdebitage were found, most of it (c. 50 pieces), in the < 5 mm size category. However, amongst the eight artefacts >10 mm was a bladelet with a heavily abraded butt and two microliths of definite Later Mesolithic type. They comprise a narrow scalene rod and a narrow oblique point, which is burnt and broken. Mixed in with these artefacts are fragments of burnt flint not disimilar to the calcined pebbles found in the Bronze Age assemblages.

4.2.11.3 In addition to the flint, large amounts of snail shell and slug plates were extracted (3.1 g of mainly very small samples). Amongst the molluscan species represented are those which prefer marshy conditions. There were one or two possible water snails included (Cath Price, BM, pers comm). Only a few small, unidentifiable fragments of bone were recovered, as well as a tiny quantity of charcoal.

4.2.12 Trench 157 (Figure 3).

4.2.12.1 Out of seven artefacts examined, one was a large blade (940). The absence of flakes and calcined pebbles provide negative evidence of Bronze Age artefacts. The small assemblage could be of Mesolithic type.

4.2.13 Trench 167 (Figure 5)

4.2.13.1 The trench was excavated by machine down to an occupation horizon including a concentration of struck flints (layer 167/6). An area of this 2m by 1 m was excavated by hand. A scatter of further struck flint was recovered from other parts of the trench. The assemblage includes small thick-butted flakes and single platform cores (e.g. 905, 909, 167/3) with no platform abrasion and generally characterised by deep negative flake scars. Two retouched flakes (716, 722) are undiagnostic but the presence of calcined flint and the flake cores points to a Bronze Age identification.

4.2.13.2 The struck flints from the discrete cluster (SF nos 819-864) were examined in more detail. All of the artefacts surfaces' have been affected to some degree by secondary calcium carbonate deposition making the identification of raw material and other attributes difficult.

4.2.13.3 The flint raw material seems to be mainly of a grey-blue patinated flint with an irregular, pitted chalky outer cortex (although this has undoubtedly been influenced by secondary deposition). The edges of the artefacts seem to be sharp and unabraded.

4.2.13.4 The assemblage consists mainly of flake debitage, some of it fairly short and thick. There are two flake cores, one of which shows deep negative scars with no platform abrasion. In the absence of diagnostic retouched tool or debitage it is difficult to pronounce on the age of the assemblage, but it is probably post-Mesolithic.

4.2.13.5 A bulk sample from context 6 was wet sieved. Most of the fraction >4 mm consisted of calcium carbonate nodules. The sample was then soaked in a weak solution of hydrogen peroxide and sieved to 500 microns. 0.5 ml of flint microdebitage was extracted but on closer inspection most of this proved to be rolled, or natural, and noticably different in colour from the rest of the large flake debitage. One small burnt flint and a possible broken fragment of microlith (though shiny and unpatinated and quite unlike the rest of the assemblage) were also recovered. There was very little bone, but not surprisingly, given the tufaceous nature of the deposit, the mollusca are well-preserved.

4.2.14 Trench 177.

4.2.14.1 A scatter of struck flint was recovered from layer 177/2 after machining (SF nos 1502-1534) and a flint knapping cluster less than 1 m in diameter was found by machine in layer 177/4. The top of the cluster was removed by the machine, and was recovered from the machine-bucket (SF nos 1535-99), the majority of the cluster was lifted in a block of soil. Detailed excavation of the soil

block has not yet been carried out; for the purposes of this assessment the material recovered from the spoil has been used.

4.2.14.2 Comparison of the flints from the cluster (SF nos 1535-1599) and those scattered along the trench (1502-1534) revealed no major differences in technological style. Judging from the irregular flake cores and large butted flakes I would suggest a Bronze Age attribution.

4.2.15 Trench 174 (Figure 5)

4.2.15.1 A small cluster of struck flints was found during machining. Some of the flints were found in the machine spoil; the majority were recovered in a single block of soil. Detailed excavation of the soil block has not yet been carried out; for this assessment the flints from the spoil tip (SF nos 656-663) have been used. These consisted of two flake cores and some thick- butted small flakes. There is nothing to suggest these are not Bronze Age.

4.2.16 Discussion of the Mesolithic material

4.2.16.1 The Lower Thames offers some of the highest concentrations of Mesolithic material in the whole of Britain. In the stretch of the river between Windsor and London alone, large numbers of dredged bone and antler tools (including points, mattocks, decorated hafts) have been recovered and indicate the great potential for uncovering further Mesolithic evidence from the adjacent river banks and side channels.

4.2.16.2 The Early Mesolithic site assemblages at the Eton Rowing Lake site are exceptionally well-preserved, being either totally in situ or only minimally disturbed by post-depositional processes. Sites of this kind, which retain their original spatial integrity, are very unusual in the Mesolithic. Of added significance here is the fact that the flints are in unusually fresh condition and are found in association with faunal and other organic remains. This increases their value considerably because of the opportunities it offers for interpreting the dating and function of such sites, as well as for reconstructing palaeoenvironmental conditions. The Eton site is also of exceptional interest because of its proximity to good raw material sources. Places of this kind where flint was procured and axes were manufactured, may not have been rare, but there are very few well-documented examples of this kind in the Mesolithic.

4.2.16.3 Given that the sites lie close to the surface and are highly vulnerable to damage, even, for example, due to by local changes in hydrology, the best option might be to excavate them totally rather than attempt to secure their preservation.

5 Environmental assessment

5.1 Animal bones by N. Scott

5.1.1 A total of 940 bone fragments were recovered by hand-excavation. Bone preservation was very poor. Surface erosion was high and all bones were highly fragmented. The bone condition was consistent throughout the collection and prevented the examination of butchery evidence. There was a very little burnt bone from contexts 43/4 and 47/14.

5.1.2 The bones were highly fragile in the ground, and mostly broke into fragments on lifting; a cattle mandible from trench 167, for example, is represented by 93 bone fragments. All the constituent fragments have been counted to arrive at the total of 940, but the actual number of bones represented is probably less than half that number.

5.1.3 All the bone was examined, and where time allowed fragments were reunited. 226 fragments (from trenches 166, 180 and 171) are dated as from Mesolithic contexts; the rest were largely from Bronze Age contexts. All the Mesolithic fragments and 582 of the Bronze Age fragments - from trenches 43, 46, 47, 159, 167, 169 and 174, which constitute the main bone groups - are tabulated.

Table 2. Species representation of Mesolithic and selected Bronze Age ones.

	Mesolithic			Bronze Age							
Trench No.	166	180	171	43	46	47	159	167	169	174	Total
Cattle	1	4 (14)		1 (15)	5 (6)	3	3 (5)	3 (110)			20 (154)
Pig	1		1								2
Sheep/goat								2 (17)	1 (6)	1 (2)	4 (25)
Deer		2 (17)									2 (17)
Beaver		1									1
Total identified	2	7 (32)	1	1 (15)	6 (5)	3	3 (5)	5 (127)	1 (6)	1 (2)	29 (199)
Total not identified	158	13	20	20	45	72	61	69	102	49	418

Numbers of bones identified are given on the left of each column, numbers of bone fragments on the right in brackets.

5.1.4 The Mesolithic bones. 10 bones (35 fragments) were identified to species. Cattle predominate although deer, pig and beaver are also represented. A small collection of bones from trench 166 was recovered from sieving, and has been commented upon by Cath Price of the British Museum. These included the teeth of wood mouse, bank vole and field vole.

5.1.5 Bronze Age bones. From the sample groups 19 bones (159 fragments) were identified to species. Cattle predominate, but sheep/goat also occur, no other species being safely identified.

5.2 Assessment of waterlogged samples and flots by Mark Robinson

5.2.1 The waterlogged samples: Introduction

10 waterlogged samples were assessed from palaeochannel deposits from the site. A 500 g sub-sample from each sample was broken up in water and washed over onto a 0.2 mm mesh. The sieve contents were scanned in water under a binocular microscope until the character of the assemblages of macroscopic plant remains could be established. The results for waterlogged macroscopic plant remains and molluscs have been recorded for those samples in which they are present in Tables 3 and 4. Insect remains are relatively sparse but have been mentioned in the text.

Sample 16, Context 167/40	Dark brown peat with some roots. Molluscs absent. Early Mesolithic, Channel R.
Sample 13, Context 167/40	Brown somewhat laminated peat with roots. Somewhat degraded, molluscs absent. Early Mesolithic, Channel R.
Sample 10, Context 46/11	Brown organic silty clay. Molluscs absent. ? late Mesolithic, Channel R.
Sample 9, Context 61/6	Brown organic clay with some very decayed ?wood. Organic material degraded. Molluscs absent. Neolithic or Bronze Age, Channel N.
Sample 25, Context 64/6	Brown highly organic silt - degraded. Molluscs absent. Neolithic or Bronze Age, Channel N.
Sample 66, Context 127/16	Black organic silt with roots. Identifiable remains absent. ?Mesolithic or Neolithic, Channel V.
Sample 65, Context 127/13	Brown shelly silt with decayed roots. Identifiable plant remains absent. ?Mesolithic or Neolithic, Channel V.
Sample 75, Context 129/7	Buff organic laminated calcareous sandy silt and silt. Late Bronze Age, Channel T.
Sample 137, Context 184/8	Dark brown peat with many roots and a little silt. Molluscs absent. Channel P.
Sample 138, Context 184/7	Dark brown highly organic silt with many roots. Very degraded, identifiable remains absent. Channel P.

5.2.2 The earliest sample from Channel R, Sample 16, comprised a peat which accumulated under shallow water reedswamp conditions. Seeds of *Schoenoplectus lacustris* (true bulrush) are the most abundant but other large reedswamp plants such as *Rumex* cf. *hydrolapathum* (great water dock) and *Cicuta virosa* (cowbane) are also present. The beetles from this sample are species of *Donacia* which feed on reedswamp vegetation and the small water beetle *Ochthebius* sp., which can

live under stagnant conditions. It is possible that Channel R did not have any flow of water along it at this date.

5.2.3 The seeds from Sample 13, peat above Sample 16 in Channel R, suggest fen conditions, because the reedswamp element is absent. Plants such as *Mentha* cf. *aquatica* (water mint) and *Eupatorium cannabinum* (hemp agrimony) would have grown on the surface of the peat, which was perhaps seasonally exposed. Aquatic beetles were not found, only terrestrial and marsh species being recovered.

Sample 16 and 13 are entirely appropriate to the early Mesolithic date which has been suggested for these channel deposits, although the numerous leaves of *Salix* sp. (willow) and seeds of *Menyanthes* trifoliata (bog bean) which were observed in this peat on site, were not found.

5.2.4 Sample 10 comprised possible late Mesolithic sediments at a higher level in Channel R. The numerous seeds of *Alnus glutinosa* (alder) and the absence of seeds from any aquatic plants suggests that true alder carr had become established in the palaeochannel. Alder woodland would be the expected vegetation for the floodplain in the later Mesolithic.

5.2.5 The evidence from Sample 9 suggests very different conditions in Channel N. The waterlogged seeds suggest a slowly flowing stream amidst a largely cleared landscape. There are many seeds of aquatic plants, particularly *Ranunculus* S. *Batrachium* sp. (water crowfoot) but also *Oenanthe aquatica* (water dropwort) and *Potamogeton* sp. (pondweed). Rather than there being a tall reedswamp fringeing the stream, there seems to have been mud along the margin, with *Myosoton aquaticum* (water chickweed), *Polygonum lapathifolium* (pale persicaria). Although a seed of *Alnus glutinosa* (alder) was found, the remainder of the seeds are from plants of open habitats. Some disturbed, perhaps even cultivated, ground is suggested by annual weeds including *Raphanus raphanistrum* (wild radish) and *Atriplex* sp. (orache). Pasture is suggested by *Potentilla anserina* (silverweed), which is confirmed by the dung beetle *Onthophagus* sp.. Conditions of preservation in this sample are not good, and unless it is processed soon, the wealth of information in it will be lost. All the organic deposits in this channel are deteriorating and indeed decay has proceeded so far in Sample 25 that only *Mentha* cf. *aquatica* (water mint) seeds survive. The landscape conditions indicated by the samples from Channel N imply a Neolithic or more recent date for the sediments.

5.2.6 Contemporaneous organic material appears to be absent in Sample 66, silt from Channel V. However, it contains much waterlogged root material, suggesting a subsequent rise in water table. Organic material is also absent from Sample 65, another deposit in Channel V, but it contains shells of flowing water molluscs, especially *Bithynia tentaculata*, but *B. leachii*, which seems even more fastidious in its requirement of clean, well oxygenated water, occurs as well. These molluscs are also present in Sample 75, calcareous organic silt from Channel T. This deposit, which is dated to the Late Bronze Age (section 4.1.5), is perhaps a riverine equivalent to sample 9. The strong element of flowing water species includes

various beetles from the family Elmidae and the caddis *Ithytrichia* sp. as well as the molluscs. The aquatic plants include *Nuphar lutea* (yellow water lily) and tall reedswamp species such as *Schoenoplectus lacustris* (bulrush). Although Sample 75 contains more alder seeds than Sample 9, there is a similar range of annual weed seeds and grassland beetles are also present, with *Phyllopertha horticola* joining *Onthophagus* sp..

5.2.7 Channel P is undated, but the results from Sample 137 suggest similar conditions to the early Mesolithic reedswamp of *Schoenoplectus lacustris* (bulrush) growing in shallow water over peat of Sample 16. The beetles from Sample 137 are stagnant water species such as *Agabus bipustulatus* and *Hydrobius fuscipes*, suggesting there was little flow along the channel. Identifiable remains are absent from the other sample from Channel P, Sample 138.

5.2.8 The Flots:Introduction

9 flots were assessed for charred plant remains from the site. Each sample was floated onto a 0.5 mm mesh, dried and scanned under a binocular microscope. Channel remains are very sparse but have been listed in Table 5. Some flots also contain mollusc shells which give useful information, and their presence has been noted along with the sample details.

Sample 56, Context 174/8	Burning in Channel R, ? late Mesolithic or Neolithic, 14 litres. Flowing water molluscs inc. *Bithynia tentaculata*, *B. leachii* etc.
Sample 80, Context 174/8	Burning in Channel R, ? late Mesolithic or Neolithic, 2 l. Flowing water molluscs inc. *Bithynia tentaculata*.
Sample 6, Context 159/10	Occupation debris in Channel R, ? late Mesolithic or Neolithic, 16 l. Flowing water molluscs inc. *Bithynia tentaculata*, woodland molluscs inc. *Discus rotundatus* and *Clausilia bidentata*.
Sample 5, Context 159/6	Early Bronze Age hearth in Channel R, 12 l. Open country molluscs inc. *Vallonia pulchella*.
Sample 2, Context 167/6	Bronze Age occupation layer in Channel R, 7 litres. Open country molluscs inc. *V. pulchella*.
Sample 99, Context 47/14	Bronze Age hearth in Channel R, 13 litres. Amphibious mollusc *Lymnaea truncatula*, open country molluscs inc. *Vallonia* sp.. Calcareous root pseudomorphs.
Sample 18, Context 156/7	Bronze Age possible pit, 16 litres.
Sample 53, Context 148/10	Bronze Age possible pit, 15 l. Open country molluscs inc. *Vallonia sp.*

Sample 20, Context 61/13	Bronze Age burning in Channel N, 6 l.

The only contexts which yielded fruit stones (sloe) or cereal grains are post Mesolithic. The only Mesolithic or Neolithic sample to contain terrestrial molluscs has woodland species whereas the Bronze Age terrestrial molluscs are open country species.

Table 3: **Waterlogged Macroscopic Plant Remains** (seeds unless stated)

	Channel R			N		V	P
	16	13	10	9	25	75	137
Chara sp. (oospore)	-	-	-	-	-	-	+
Ranunculus cf. *repens*	-	-	-	+	-	+	-
R. S. *Batrachium* sp.	-	-	-	++	-	-	+
Nuphar lutea	-	-	-	-	-	+	-
Brassica rapa ssp. *sylvestris*	-	-	-	-	-	+	-
Raphanus raphanistrum	-	-	-	+	-	-	-
Barbarea sp.	-	-	-	-	-	+	-
Lychnis flos-cuculi	-	-	-	-	-	+	-
Myosoton aquaticum	-	-	-	+	-	-	-
Stellaria media gp.	-	-	-	-	-	+	-
Chenopodium album	-	-	-	+	-	+	-
Atriplex sp	-	-	-	+	-	+	-
Potentilla anserina	-	-	-	++	-	-	-
P. cf. *reptans*	-	-	-	+	-	-	-
Oenanthe aquatica sp.	-	-	-	+	-	+	-
Cicuta virosa	+	-	-	-	-	-	-
Daucus carota	-	-	-	-	-	+	-
Polygonum persicaria	-	-	-	+	-	+	-
P. lapthifolium	-	-	-	++	-	-	-
P. hydropiper	-	-	-	+	-	-	-
Rumex cf. *hydrolapathum*	+	-	-	-	-	-	-
R. conglomeratus	-	-	-	+	-	+	-
Urtica dioica	-	-	-	+	-	++	-
Alnus glutinosa	-	-	+++	+	-	++	-
A. glutinosa (catkin)	-	-	+	-	-	-	-
Menyanthes trifoliata	-	-	-	-	-	-	+

Scrophularia sp.	-	-	-	-	-	+	-
Veronica S. *Beccabunga* sp.	-	-	-	-	-	+	-
Verbena officinalis	-	-	-	-	-	+	-
Mentha cf. *aquatica*	+	++	-	-	++	-	-
Lycopus europaeus	+	+	+	-	-	-	-
Galeopsis sp.	-	-	-	-	-	+	-
cf. *Stachys* or *Galeopsis* sp.	+	+	-	-	-	-	-
Sambucus nigra	-	-	+	-	-	-	-
Eupatorium cannabinum	-	+	-	-	-	+	-
Senecio sp.	-	-	-		-	+	-
Carduus or *Cirsium* sp.	-	-	-	+	-	-	-
Sonchus arvensis	-	-	-	-	-	+	-
S. asper	-	-	-	+	-	+	-
Alisma sp.	-	-	-	-	-	+	-
Potamogeton sp.	-	-	-	+	-	+	-
Juncus effusus gp.	-	-	-	+	-	-	-
J. articulatus gp.	-	-	-	+	-	-	-
Eleocharis cf. *palustris*	-	-	-	+	-	-	+
Schoenoplectus lacustris	++	-	-	-	-	+	++
Carex spp.	-	-	+	++	-	+	++

+ present, ++ some, +++ many

Table 4: **Molluscs**

	Channel V	
	65	75
Valvata cristata	+	+
Bithynia tentaculata	++	+
B. leachii	+	+
Carychium sp.	+	-
Lymnaea truncatula	+	-
L. palustris	+	-
Planorbis planorbis	++	-
Gyraulus albus	-	+
Armiger crista	-	+
Ancylus fluviatilis	-	+
Vallonia pulchella	-	+
Trichia hispida gp.	-	+

Table 5: **Charred Plant Remains**

	Channel R					Channel N
	80	5	2	99	53	20
Prunus spinosa (stone)	-	-	1	-	1	-
cf. *Prunus* sp. (charcoal)	-	-	-	-	+	-
Quercus sp. (charcoal)	-	+	-	-	-	-
Cereal indet. (grain)	-	-	-	-	-	1
Charcoal indet.	+	-	+	+	-	+

6 Summary of results and discussion (Figure 1)

6.1 The trenches across the gravel terrace areas at the NW end of the site (Site F west) have generally borne out the impression given by the earlier evaluation work. Features are truncated by ploughing, and consist of a fairly sparse scatter of pits, burnt areas and occasional ditches or gullies of Middle to Late Bronze Age date (1400-800 BC). Flintwork from a single trench (Tr. 165) may indicate Neolithic activity (3,700-2,500 BC) which has not previously been identified by the evaluations.

6.2 Channel N contained degraded peat of Neolithic or later date, but all the Bronze Age finds came from silts overlying the peat, and burnt patches connected with tree-holes of similar date were found in the silts, probably indicating that the channel had ceased to be active by the time that the cropmark enclosure system was laid out. The earliest evidence of occupation alongside channel N remains the Later Neolithic sherds of Peterborough Ware found in the Phase 1 evaluation of Site F east just to the SE (OAU 1988, 5 and Figure 6). It is possible that the channel may still have been active at this date.

6.3 On the S side of channel N the gravel terrace extends further SE than was evident on the aerial photographs, and the junction of channel N with channel R has not yet been reached. Further evaluation at the junction is needed to clarify the course of channel N when it reaches channel R.

6.4 Along the NW edge of channel R concentrations of Mesolithic struck flint have been found. On the higher gravel terrace the flints have been disturbed and have been redeposited in later ploughsoils and features. Where the gravel shelves into the palaeochannel, however, *in situ* deposits appear to exist, covering an area of at least 40 m x 40 m. The flint artefacts have been dated to the Early Mesolithic, that is between 8,000 and 6,500 BC. The Mesolithic sites in this area are of very high quality, ranking with some of the best yet known from Southern England.

6.5 Palaeochannel R has a sequence of deposits up to 2.7 m deep. The lowest part of the sequence consists of as much as 0.8 m of waterlogged peat. Dr Mark Robinson believes that the peat started to form early in the Mesolithic period, and is therefore contemporary with the buried horizon on the palaeochannel edge adjacent. The Mesolithic activity can be interpreted as lakeside settlement at the edges of a reedswamp. Dr Nick Barton has commented on the high potential of the waterlogged deposits for preserved organic artefacts; in three trenches the preserved wood may possibly include worked timbers, but other than this, the limited sampling of these deposits has not produced any associated artefactual material. Large-scale examination of the deep peat sequences, particularly adjacent to the edge of the gravel terrace, must be a high priority for the forthcoming excavations.

6.6 In one trench a small flint cluster possibly of Late Mesolithic date (5,500 - 4,000 BC) was found immediately over the top of the peat, and this may indicate the date that peat ceased to form in this channel. By this time the landscape was one of alder carr. Further groups of Late Mesolithic flints have been found redeposited in the channel, showing that the site was utilised in this period, though a focus like that of the Earlier Mesolithic has

not yet been identified.

6.7 The peat is overlain by coarse silts of alluvial origin, some of which contain charcoal suggesting clearance on the adjacent gravel terrace. Above these levels alluvial silting continues, mostly comprising finer clay sediments, but the layers contain mostly terrestrial snails, suggesting that the ground was only flooded occasionally.

6.8 Throughout these clay layers are horizons of Bronze Age (2,500-800 BC) date marked either by charcoal (including two hearths), burnt spreads, pottery, animal bone or struck flints. Four flint knapping clusters have been uncovered within the 1% sample of this palaeochannel. The more significant of these horizons are associated with clay silts and bands of manganese staining, which Dr Richard MacPhail believes indicate replacement of organic material at buried land surfaces.

6.9 At the edge of the palaeochannel adjacent to the Mesolithic flint scatters a mass of burnt flints and charcoal, known as a`burnt mound' deposit, was found on a steep incline. Three of these Bronze Age deposits have now been located, all close to channels.

6.10 A general level at which Bronze Age activity occurs has been recognised throughout the channel; individually extensive occupation horizons have been recognised in trenches 167 and 47, but elsewhere activity appears to be localised. The gaps between the observed sequences are however too large to be confident of this, and area stripping may link some of these up. Several horizons are evident in some trenches, and only one in others; the reason for this is not yet known, but it may relate to the intensity of occupation activity in different parts of the channel at any given time.

6.11 The character of occupation within the former channel appears to be different from that on the adjacent terraces. There were no linear features or substantial pits and, as might be expected from its low-lying position, the use of this area is likely to have been different from that of the ditched enclosure system. The channel areas contain well-preserved deposits that have been ploughed away on the gravel terraces, and thus complement the range of information available from the cropmark areas.

6.12 In the NE corner of the site the trenches through channel P revealed a very deep peat sequence, but no associated artefacts. The sequence appears to have begun in the Early Mesolithic, like Channel R, and indicated similar reedswamp conditions. On the S edge of this channel features were found containing struck flint and pottery of probable Late Neolithic date (2,900-2,600 BC). Later Neolithic activity was also found on the SW side of Site F east (OAU Archaeological Assessment 1988, 5), perhaps indicating a focus of Neolithic activity on this gravel island.

6.13 SE of this at the junction of channels P and T two phases of palaeochannel were found. The deposits in the earlier channel V are similar to those in channel R, and may therefore, like channel P, date back to the Mesolithic. Within the later channel worked timbers of Late Bronze date (1,200-800 BC) were found. The worked wood included both vertical and horizontal timbers, indicating a structure of some sort. On the edge of the channel was another `burnt mound' deposit This channel is probably a continuation of channel T, which the previous evaluation work just W of Site G established was active

during the Bronze Age (Figure 1). Above the worked wood was a sequence of alluvial clays.

7 Conclusions

7.1 The finds recovered from the evaluation have expanded the range of periods represented on the site, although the majority belong to the major periods identified in the previous evaluations. This evaluation has recovered a little struck flint which may date from the Late Upper Palaeolithic. Analysis of the Mesolithic struck flint has confirmed that the main activity so far identified is of the Early Mesolithic (between 8000 and 6500 BC), but tools and a knapping cluster of the Later Mesolithic have also been found. Late Neolithic activity has tentatively been identified in the NE of the site and on the E edge of Site F west. The majority of the Bronze Age activity is of Middle-Late date (after 1200 BC), but Early Bronze Age pottery (2,100-1,500 BC) has also been found on the S edge of Site F west, probably representing activity around the triple ring ditch known as a cropmark on that site. The little Roman material is unremarkable in view of the Roman farmstead enclosure already known on Site G.

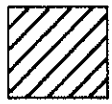
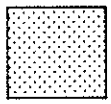
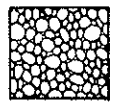
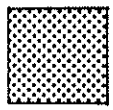
7.2 The sequence of soils in the channels, which spans the entire Holocene, contains a wealth of waterlogged organic and molluscan environmental evidence. Stratified within this are a succession of dated horizons, and the environmental sequence can thus be related to the truncated archaeology on the gravels. The site thus offers a rare opportunity to examine the changing environment in detail over a period from c. 10,000 BC to at least the end of the Roman period (400 AD), and will make a significant contribution to our knowledge of the environmental sequence in the Middle Thames generally, which is at present poorly understood.

7.3 The evaluation has established that the deep stratigraphy surviving in some of the palaeochannels includes buried land surfaces of Bronze Age date and waterlogged structures which are contemporary with the cropmarks on the higher gravel terrace. The occupied Bronze Age landscape thus covers the whole of the site. The preservation of archaeological deposits and artefacts in the palaeochannels is very good, offering information of a sort not recoverable from the truncated gravel terraces. The evaluation has not found any ditches of Bronze Age date on the buried land surfaces in the palaeochannel, in contrast to the enclosure ditches on the gravel, suggesting different activities relating to topography.

7.4 Early Mesolithic flints have been found in large numbers on the edge of palaeochannel R, indicating an extensive zone of activity. While part of this has been disturbed by later ploughing, one large area contains *in situ* material of fresh appearance. This material is accompanied by waterlogged environmental evidence in the adjacent palaeochannel, making this an extremely important site. The potential for associated artefactual material preserved within the peat is high, especially as the Windsor stretch of the Thames is the richest area in inland Britain for the recovery of Mesolithic bone artefacts from dredgings (Jacobi pers. comm.).

Eton College Rowing Lake (DBC 94)

Key to drawing conventions

Clay	
Peat	
Silt	
Gravel	
Manganese	
Burnt flint	
Charcoal	

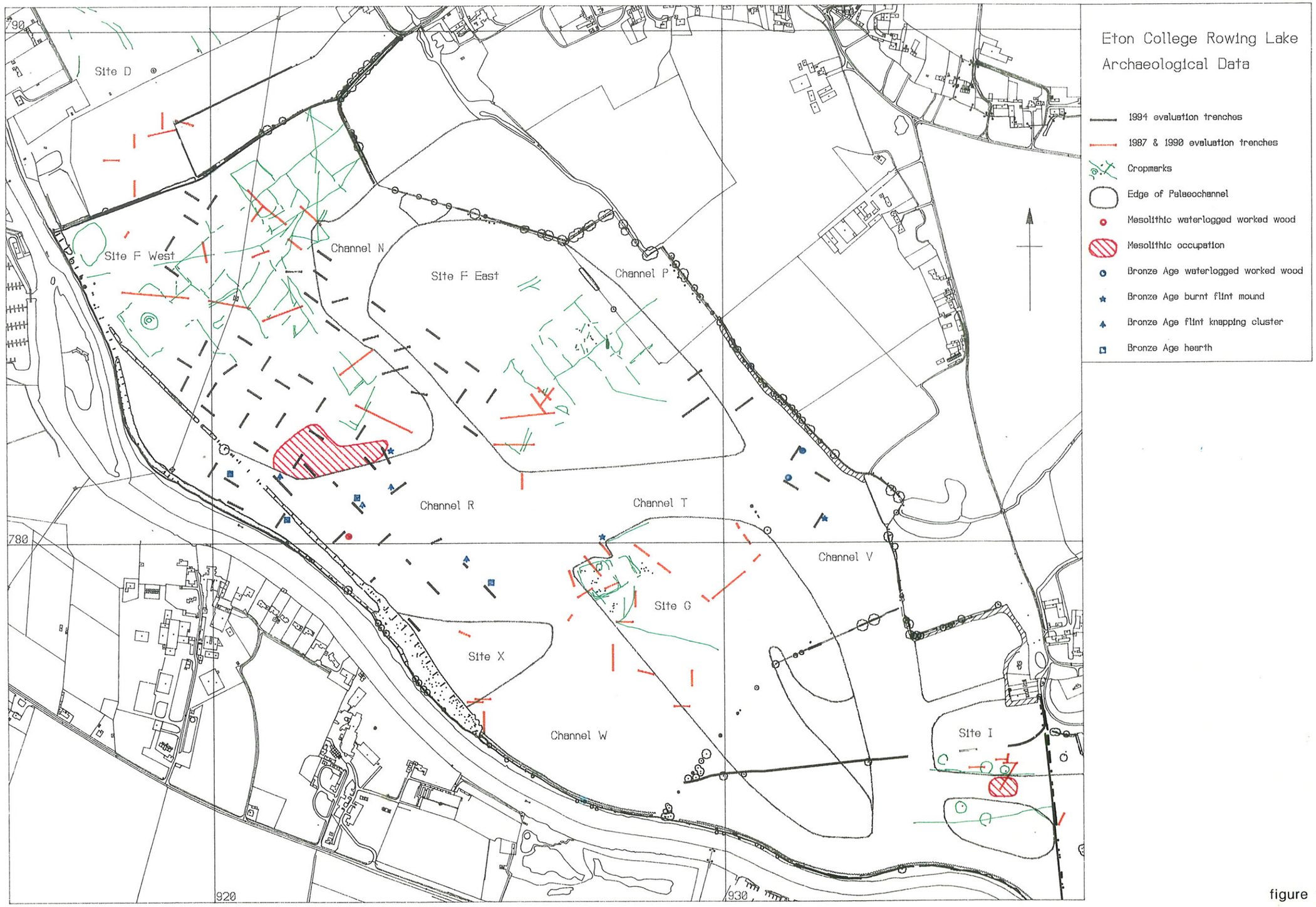
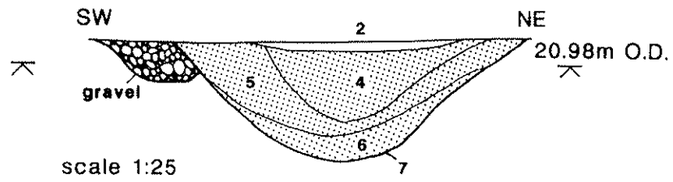

Site D
Site F West
Channel N
Site F East
Channel P
Channel R
Channel T
Channel V
Site G
Site X
Channel W
Site I
790
780
920
930
Eton College Rowing Lake
Archaeological Data
1994 evaluation trenches
1987 & 1990 evaluation trenches
Cropmarks
Edge of Palaeochannel
Mesolithic waterlogged worked wood
Mesolithic occupation
Bronze Age waterlogged worked wood
Bronze Age burnt flint mound
Bronze Age flint knapping cluster
Bronze Age hearth

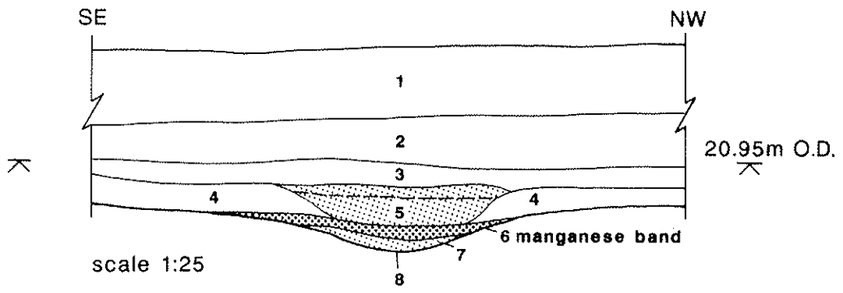
figure 1

Trench 142 section



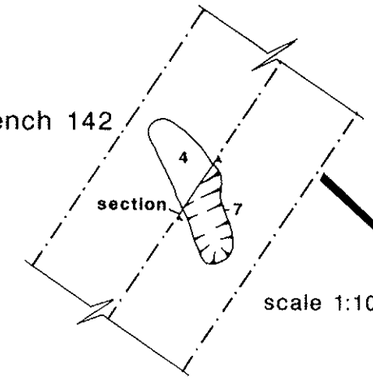
scale 1:25

Trench 143 section

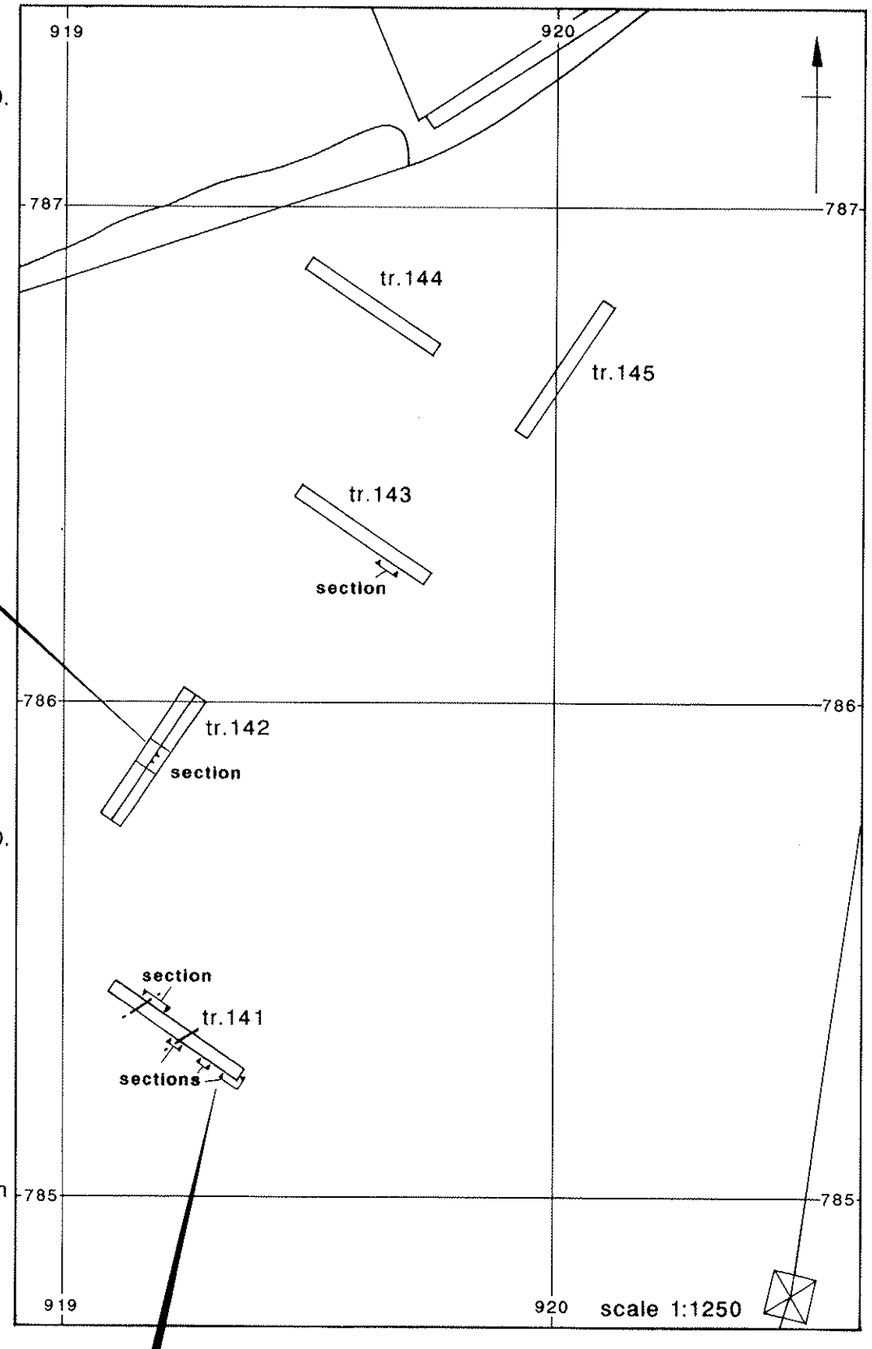


scale 1:25

detail trench 142



scale 1:100



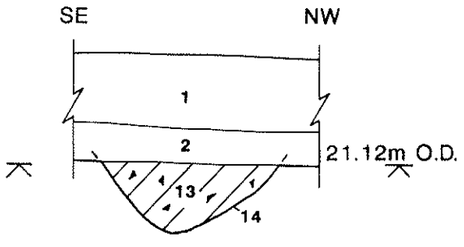
Trench 141 section 1

scale 1:25

Trench 141 section 2

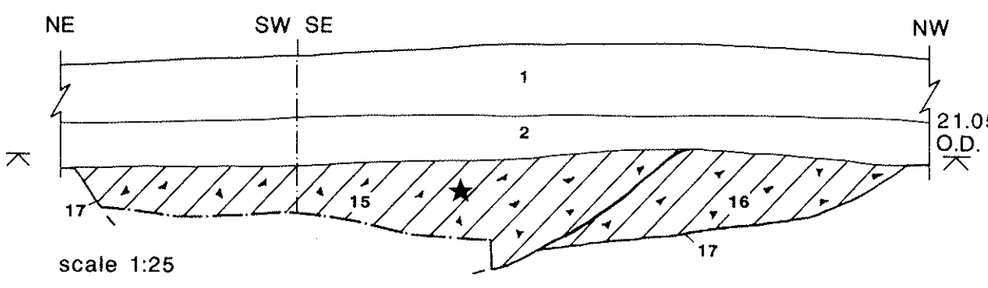
scale 1:25

Trench 141 section 3

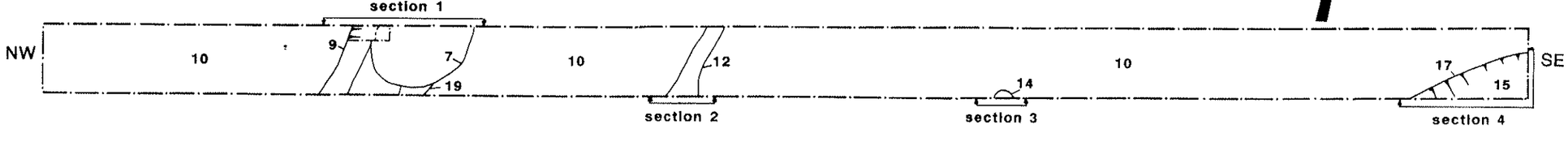


scale 1:25

Trench 141 section 4



scale 1:25



Trench 141 plan

scale 1:100

figure 2

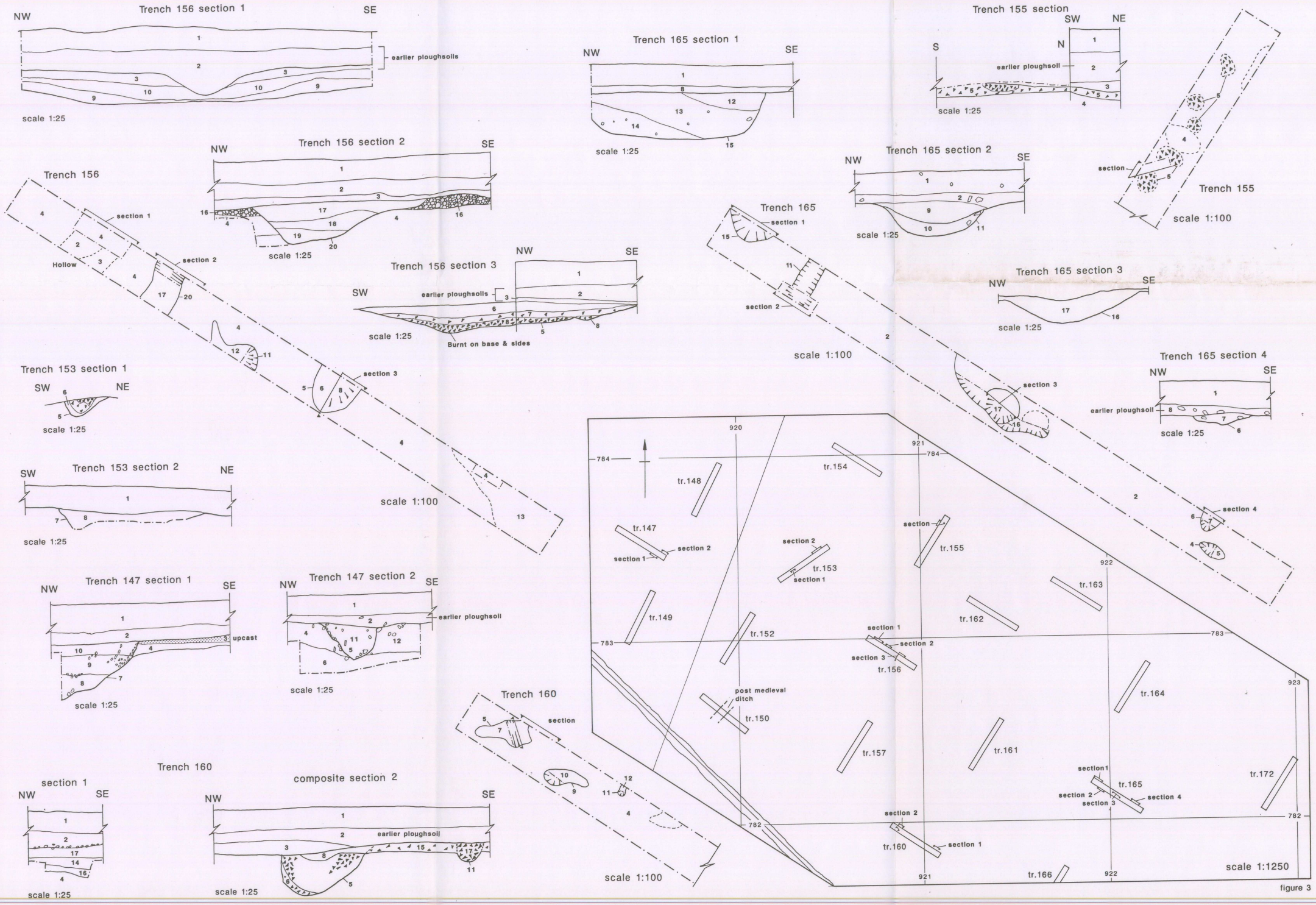
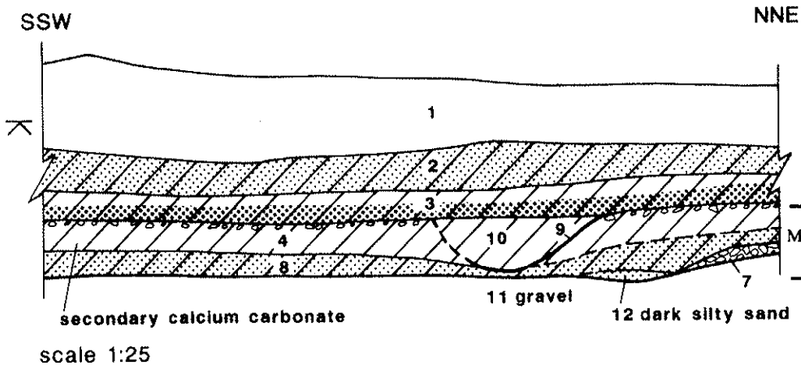

Trench 156 section 1
NW
SE
earlier ploughsoils
scale 1:25
Trench 156 section 2
NW
SE
scale 1:25
Trench 156
section 1
section 2
Hollow
Trench 156 section 3
NW
SE
SW
earlier ploughsoils
Burnt on base & sides
scale 1:25
Trench 153 section 1
SW
NE
scale 1:25
Trench 153 section 2
SW
NE
scale 1:25
scale 1:100
Trench 147 section 1
NW
SE
upcast
scale 1:25
Trench 147 section 2
NW
SE
earlier ploughsoil
scale 1:25
Trench 160
section
scale 1:100
Trench 160
section 1
NW
SE
scale 1:25
composite section 2
NW
SE
earlier ploughsoil
scale 1:25
Trench 165 section 1
NW
SE
scale 1:25
Trench 165 section 2
NW
SE
scale 1:25
Trench 165
section 1
section 2
scale 1:100
Trench 165 section 3
NW
SE
scale 1:25
Trench 155 section
SW
NE
S
N
earlier ploughsoil
scale 1:25
section
Trench 155
scale 1:100
Trench 165 section 4
NW
SE
earlier ploughsoil
scale 1:25
section 3
section 4
920
921
922
923
784
783
782
tr.148
tr.154
tr.147
section 1
section 2
tr.153
tr.155
tr.149
tr.152
tr.163
tr.162
tr.156
tr.150
post medieval ditch
tr.164
tr.157
tr.161
tr.165
tr.172
tr.160
tr.166
scale 1:1250

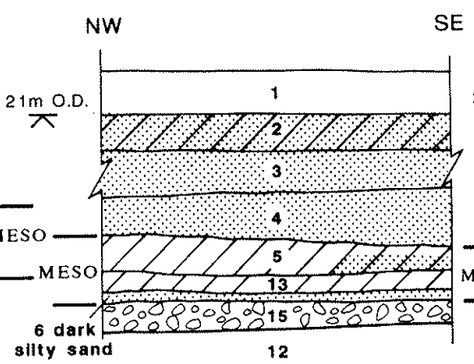
figure 3

Trench 166 section reversed

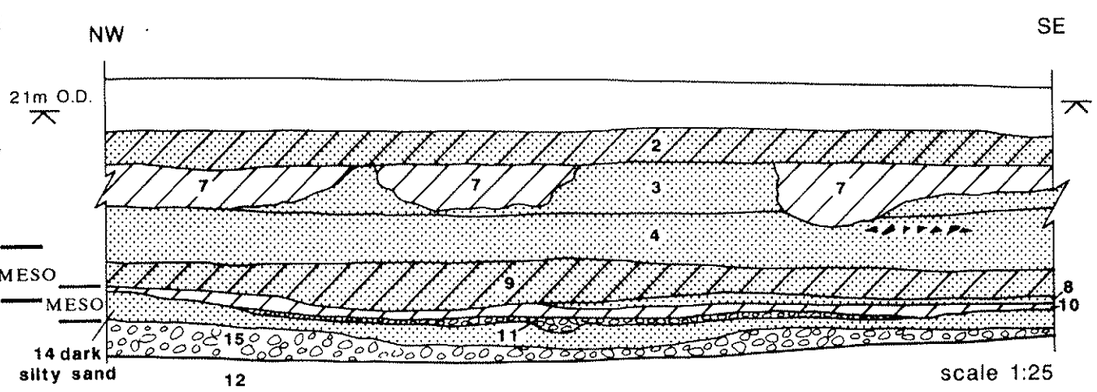


scale 1:25

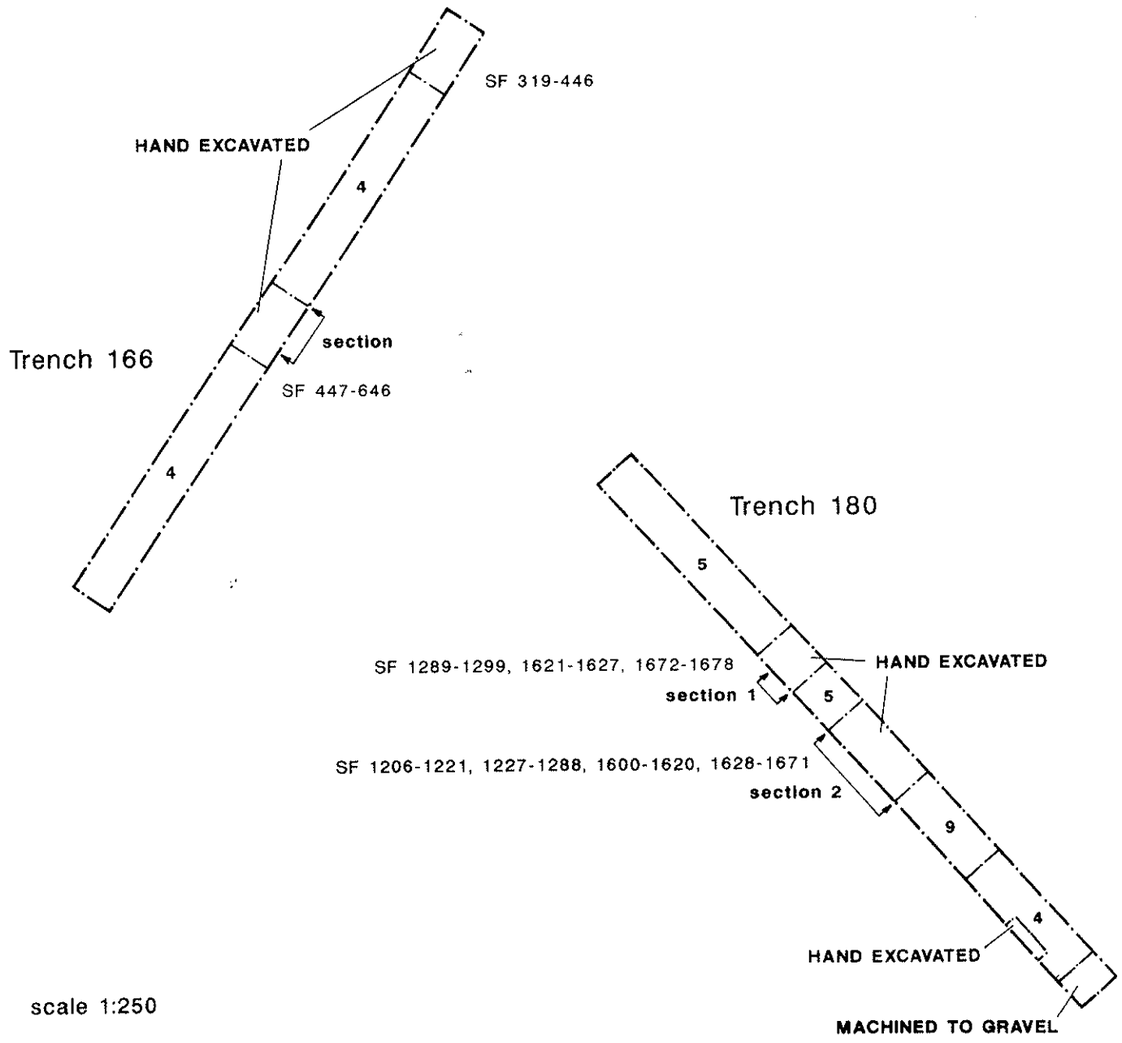
Trench 180 section 1 reversed



Trench 180 section 2 reversed



scale 1:25



scale 1:250

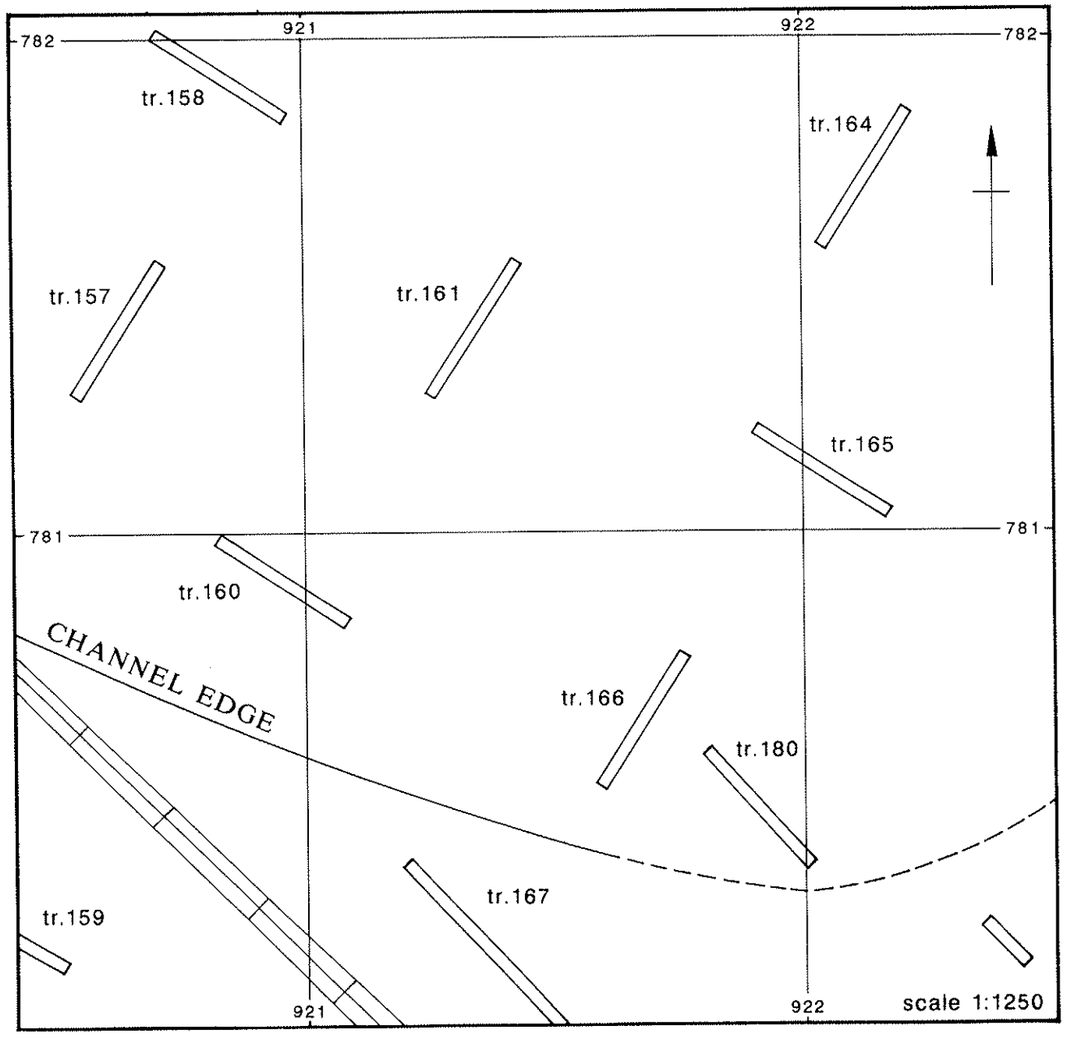


figure 4

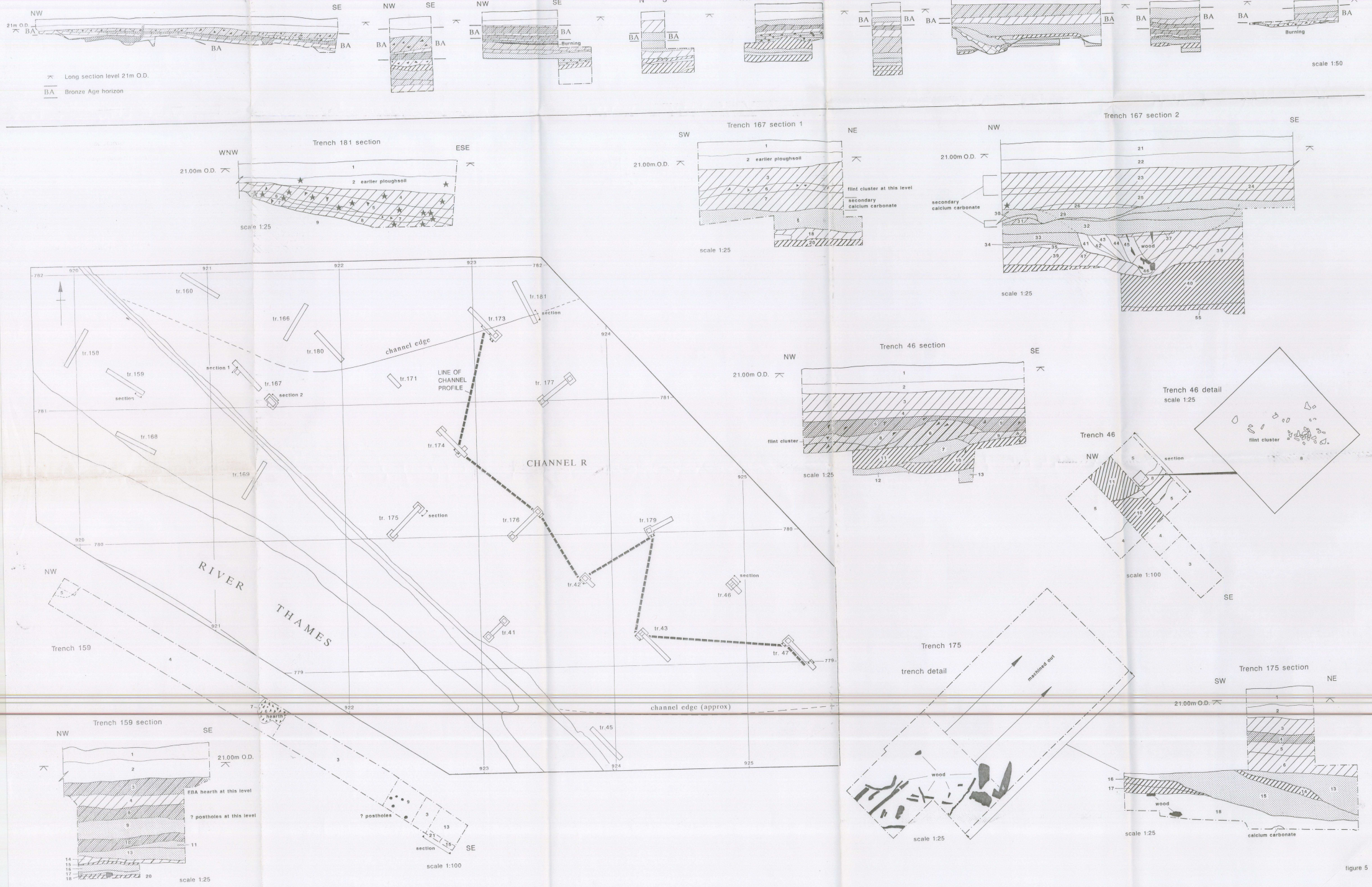

Long section level 21m O.D.
BA Bronze Age horizon
scale 1:50
Trench 181 section
WNW
ESE
21.00m O.D.
1
2 earlier ploughsoil
scale 1:25
Trench 167 section 1
SW
NE
21.00m O.D.
2 earlier ploughsoil
flint cluster at this level
secondary calcium carbonate
scale 1:25
Trench 167 section 2
NW
SE
21.00m O.D.
secondary calcium carbonate
wood
scale 1:25
tr.160
tr.166
tr.180
tr.181
section
tr.173
channel edge
tr.158
tr.159
section
section 1
tr.167
section 2
tr.171
LINE OF CHANNEL PROFILE
tr. 177
tr.168
tr.174
CHANNEL R
tr.169
tr. 175
section
tr.176
tr.179
tr.42
tr.46
section
RIVER THAMES
tr.41
tr.43
tr. 47
Trench 159
hearth
channel edge (approx)
tr.45
Trench 46 section
NW
SE
21.00m O.D.
flint cluster
scale 1:25
Trench 46 detail
scale 1:25
flint cluster
Trench 46
NW
section
SE
scale 1:100
Trench 175
trench detail
machined cut
wood
scale 1:25
Trench 175 section
SW
NE
21.00m O.D.
wood
calcium carbonate
scale 1:25
Trench 159 section
NW
SE
21.00m O.D.
EBA hearth at this level
? postholes at this level
scale 1:25
? postholes
section
SE
scale 1:100

figure 5

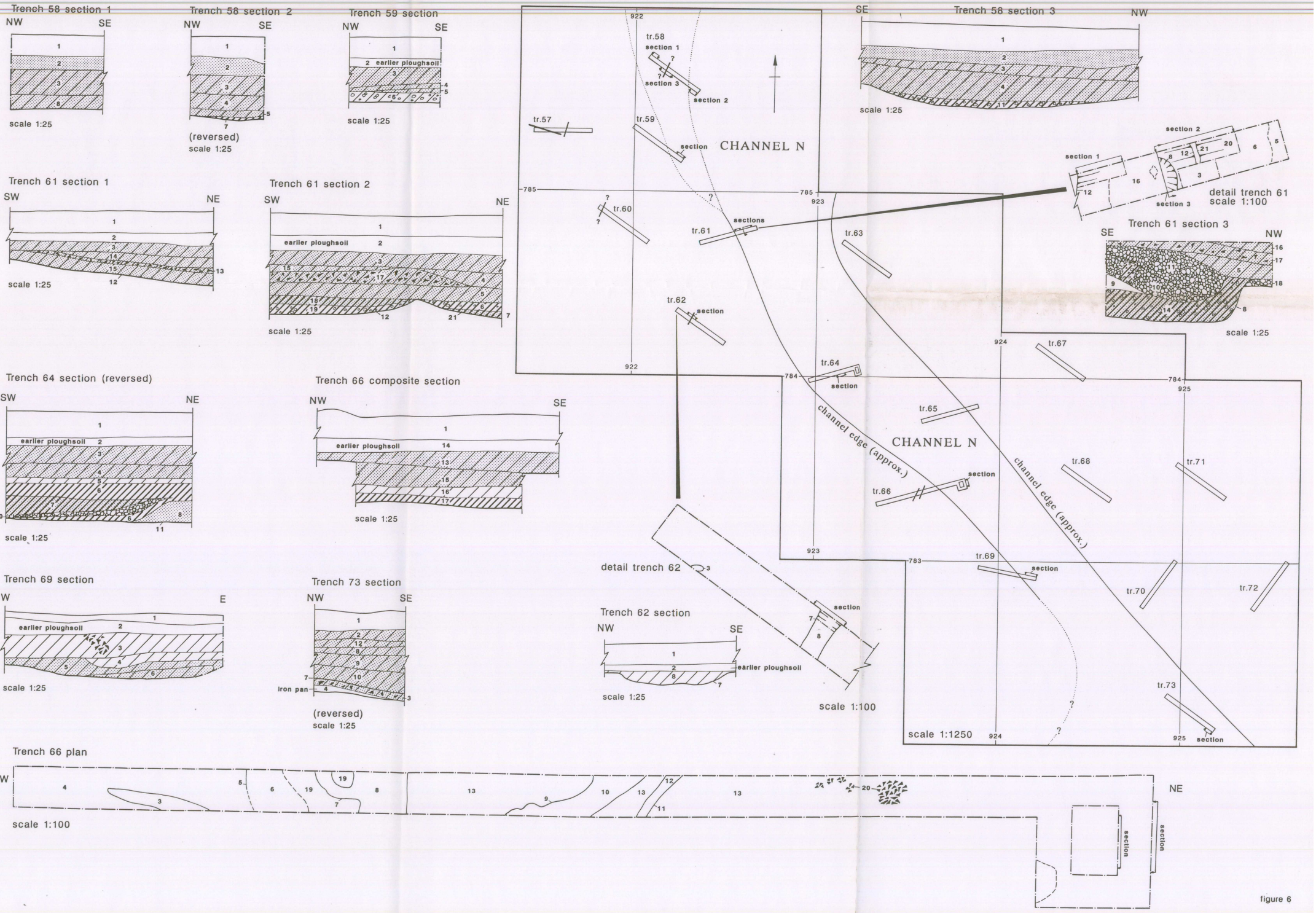
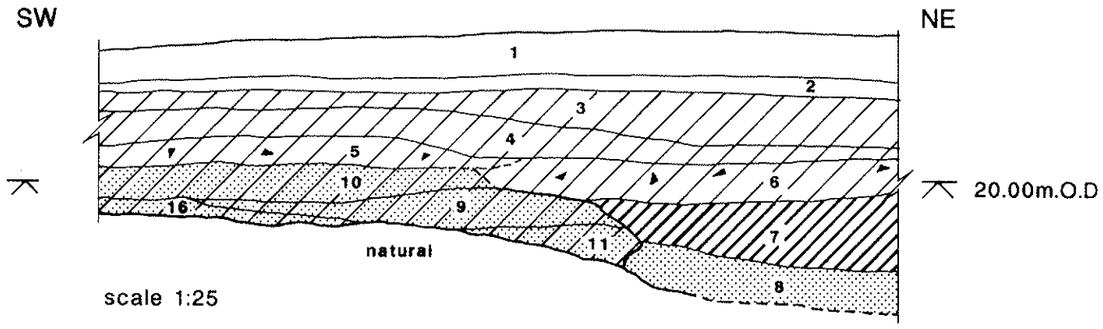
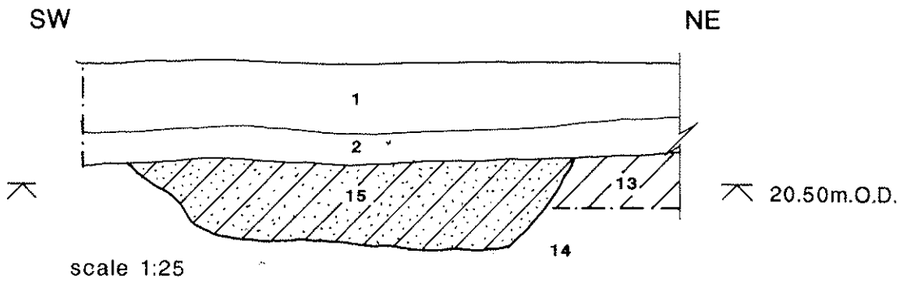

Trench 58 section 1
NW
SE
scale 1:25
Trench 58 section 2
NW
SE
(reversed)
scale 1:25
Trench 59 section
NW
SE
earlier ploughsoil
scale 1:25
Trench 58 section 3
SE
NW
scale 1:25
Trench 61 section 1
SW
NE
scale 1:25
Trench 61 section 2
SW
NE
earlier ploughsoil
scale 1:25
Trench 61 section 3
SE
NW
scale 1:25
detail trench 61
scale 1:100
Trench 64 section (reversed)
SW
NE
earlier ploughsoil
scale 1:25
Trench 66 composite section
NW
SE
earlier ploughsoil
scale 1:25
Trench 69 section
W
E
earlier ploughsoil
scale 1:25
Trench 73 section
NW
SE
iron pan
(reversed)
scale 1:25
Trench 62 section
NW
SE
earlier ploughsoil
scale 1:25
detail trench 62
scale 1:100
Trench 66 plan
SW
NE
scale 1:100
tr.57
tr.58
section 1
section 2
section 3
tr.59
section
CHANNEL N
tr.60
tr.61
sections
tr.62
section
tr.63
tr.64
section
tr.65
channel edge (approx.)
CHANNEL N
tr.66
section
tr.67
tr.68
tr.69
section
tr.70
tr.71
tr.72
tr.73
section
scale 1:1250
922
923
924
925
784
785
783

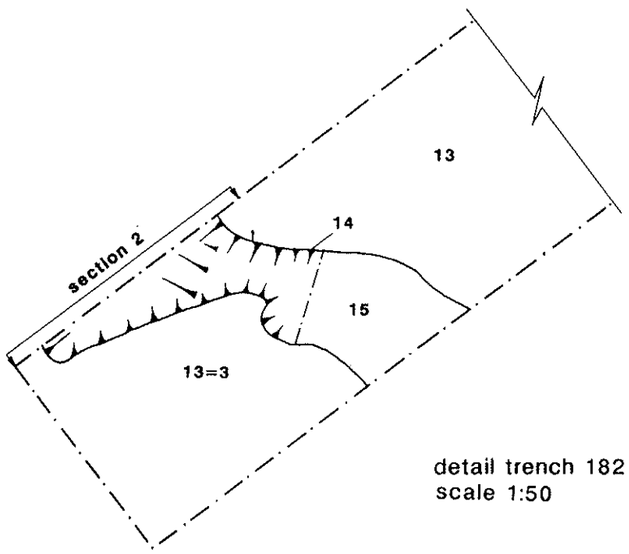
figure 6

Trench 182
section 1



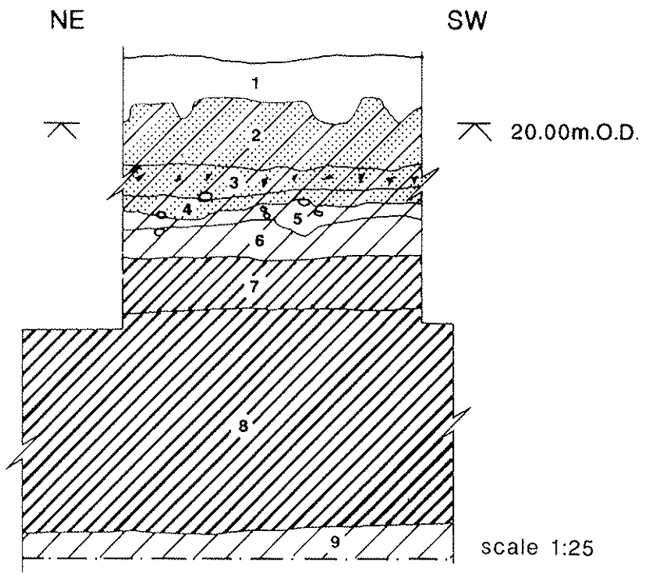
Trench 182
section 2





detail trench 182
scale 1:50

Trench 184
reversed composite section



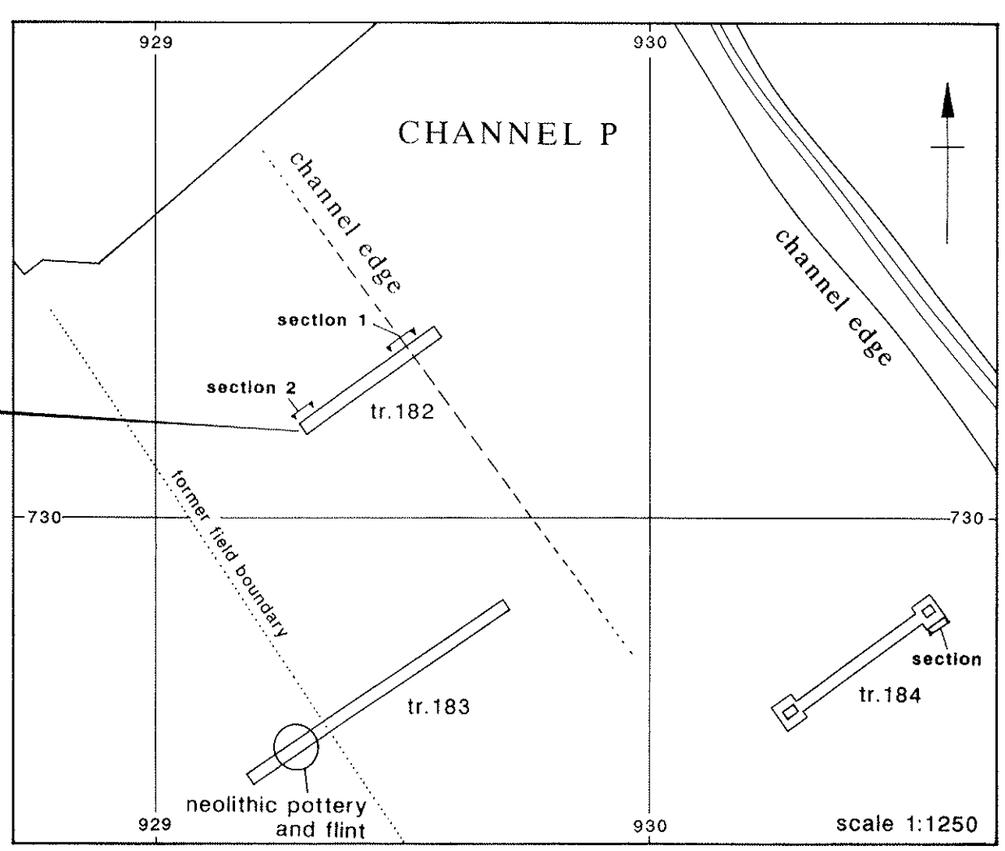
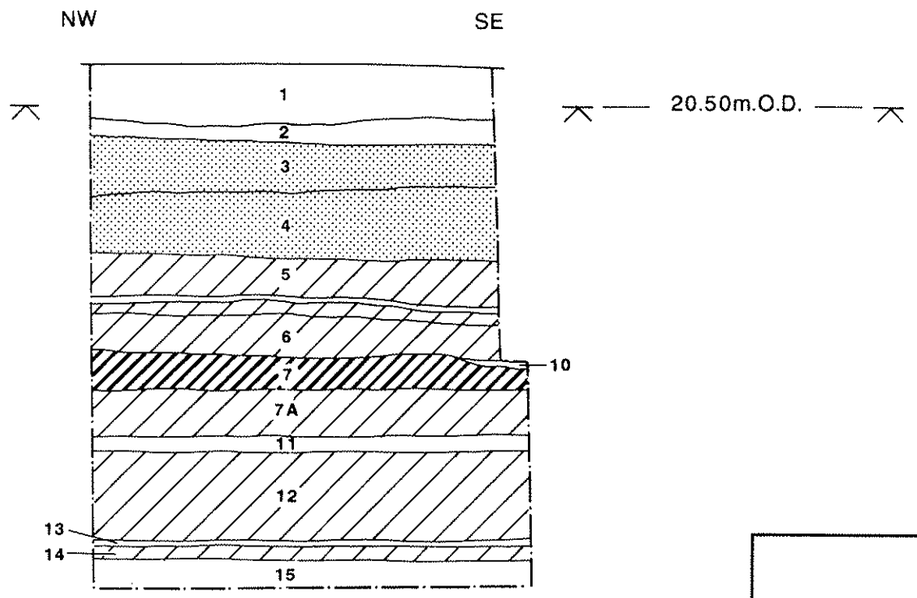
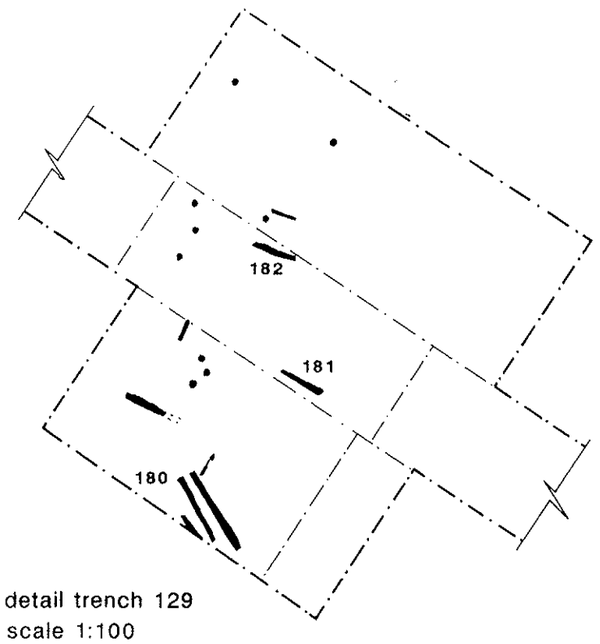


figure 7

Trench 129
composite section

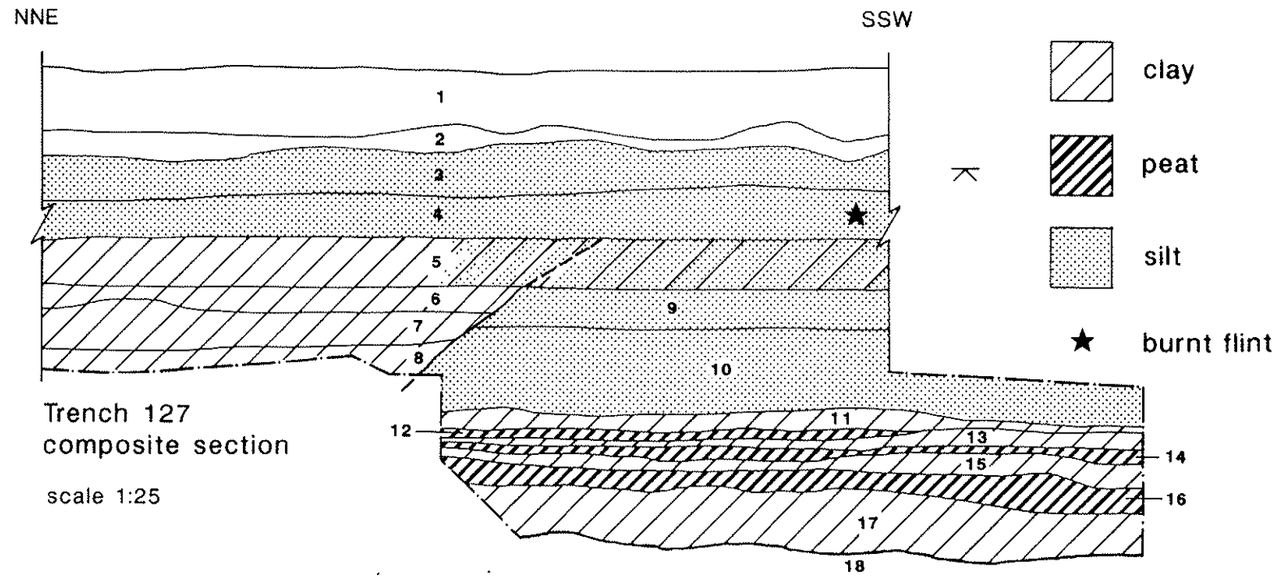


scale 1:25



detail trench 129
scale 1:100

Numbers refer to environmental samples



Trench 127
composite section

scale 1:25

clay
peat
silt
burnt flint

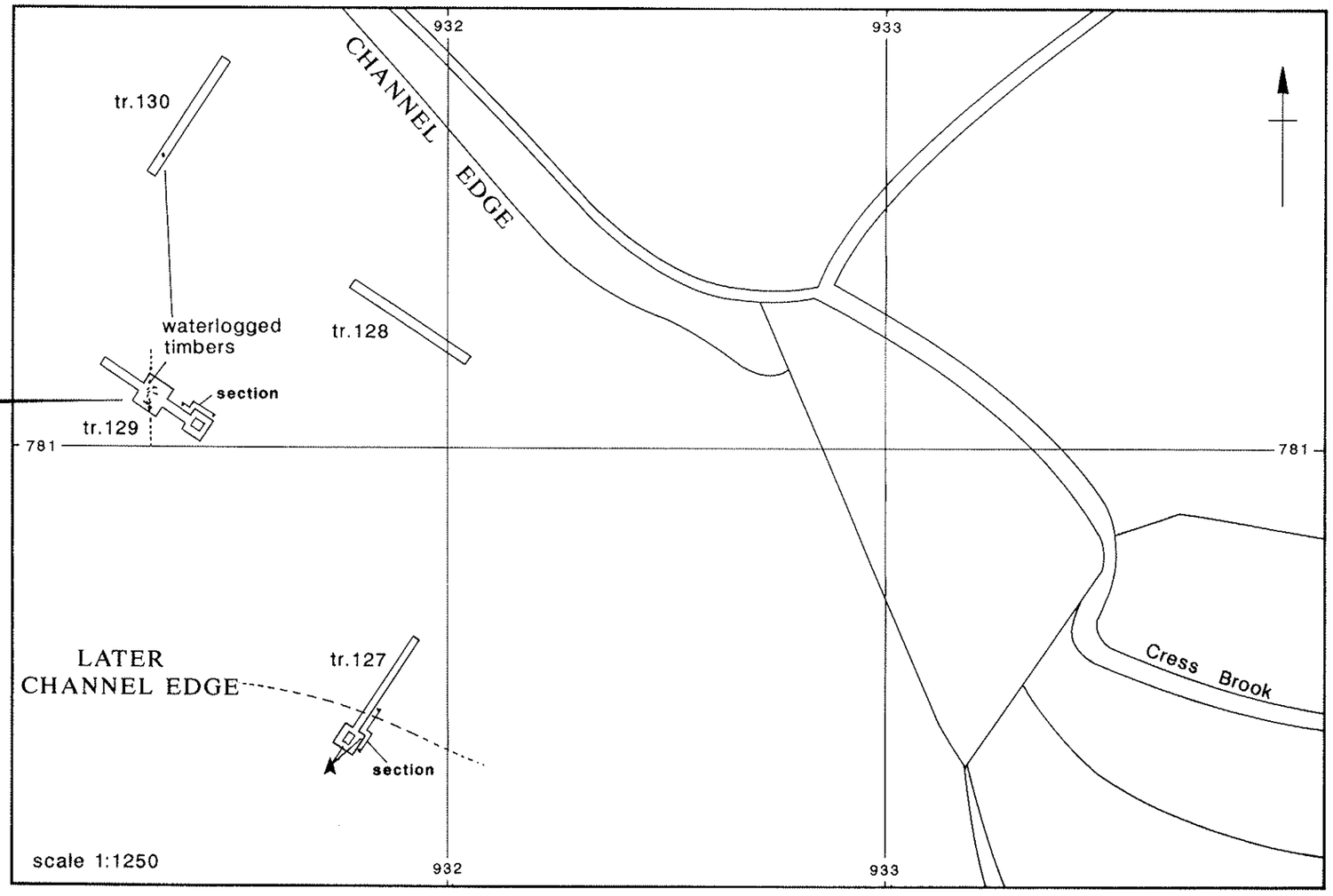


figure 8

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