LINDSEY ARCHAEOLOGICAL SERVICES

Land to the Rear of 35 Gainsborough Road, Lea, Lincolnshire

Site Code: LGR 99
LCNCC Accn No. 202.99
NGR: SK 8280 8690

Archaeological Evaluation

for

Mr J. Laming

LAS Report No. 384
January 1999

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Event LI1110

51890 - Roman

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Land to the Rear of 35 Gainsborough Road, Lea, Lincolnshire Archaeological Evaluation

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Summary

Lindsey Archaeological Services was commissioned to undertake an archaeological evaluation at the above site. Twelve test pits were excavated across the development site, avoiding trees and dense undergrowth. Two test pits at the eastern end of the site contained significant archaeological remains in the form of clay-lined structures, which were probably related to Roman pottery production. There were no archaeological remains in the remainder of the test pits except for a number of unstratified Roman pottery sherds in Test Pit 10.

The pottery recovered is very similar to that found in a 1985 excavation of a pottery kiln and production site immediately to the north. The proximity of the earlier excavation suggests that the features found here are part of the same the same industry, but localised to the eastern side of the development site.

Introduction

Lindsey Archaeological Services was commissioned by Mr J. Laming to carry out archaeological investigations to the rear of 35 Gainsborough Rd, Lea, Lincolnshire. The work was carried out in accordance with the general requirements of Lincolnshire County Council as set out in the Lincolnshire Archaeological Handbook (*Lincolnshire County Council Archaeology Section, 1988*)

Site Location and Description

Lea lies approximately 3km south of Gainsborough on the modern A156 between Newark and Gainsborough. The proposed development site comprises a strip of land approximately 70m x 40m in the garden at the rear of 35, Gainsborough Road. The land was in use as an orchard at the time of the evaluation.

Planning Background

West Lindsey District Council has requested an archaeological field evaluation prior to determination of an outline planning application for construction of a single dwelling in the western half of the plot along with an associated access road leading from Gainsborough Road (A156) to the dwelling.

Archaeological Background

Lea is located on the edge of the Trent Valley. The geology comprises wind-blown sand overlying boulder clay. A Roman kiln producing 2-3rd century greyware pottery was found during land clearance for a domestic dwelling immediately beyond the northern boundary of the current development (see Figure 1). Pits and ditches were also identified possibly associated with the pottery production. A geophysical survey carried out on 1ha of land south-west of the proposed development site revealed features of unknown date and character. Quantities of Roman pottery were found in fields to the south of Crowgarth Lane and west of the kilns, which came from a large Roman settlement and may have been associated with the kiln site. Ten Roman pottery kilns were found in 1957 at Grange Farm, Lea, some 400m east of the proposed development site.

Aims and Objectives.

In general terms the aims and objectives of the excavation were to:

- Establish the presence or absence, quality and extent of archaeological remains and their location within the development area.
- Gather sufficient information to enable an assessment of the potential and significance of any archaeological remains within the development area
- Enable an informed decision to be made regarding the future treatment of any archaeological remains and consider any appropriate mitigatory measures either in advance of and/or during development

Method

Current use as an orchard made it impossible to undertake non-intrusive archaeological investigation because of the numerous obstacles and potential ground disturbance from tree roots. Limited access and size of available open areas for investigation meant that test pits were dug rather than traditional evaluation trenches. Twelve 1m square test pits were dug using a mini-excavator where space permitted under the supervision of an experienced archaeologist. (Figure 2).

The mini-excavator was used to remove topsoil and overburden to the first identifiable archaeological horizon. The remainder of the deposits were then hand cleaned to reveal features in plan. Archaeological features encountered were recorded but not excavated.

Archaeological excavation and recording was carried out by three experienced archaeologists including a site director. A full written and photographic record was kept and a drawn record was made at scales of 1:10 and 1:20. LAS operate a standard context based recording system, developed by its staff over the past 20 years based upon CAS and MOLAS models.

Results

Test Pit 1

Located close to the eastern limit of the site Test Pit 1 was excavated through 0.24m of mid grey-brown fine sandy silt (**100**), overlying a deposit of mid orange-brown sand (**101**). This was probably a wind blown sand, which had since been reworked by biological action. Below (**101**) was a very dark brown, almost black, layer (**103**) which contained 22 sherds of late 3rd century and post-medieval pottery which indicates there was some disturbance to this deposit (see Appendix 2). (**103**) may be associated with the rakeout of a nearby kiln, deliberately spread in antiquity to level the area. A mid dark brownish grey deposit (**104**) lay below (**103**) which was very similar in composition and (**114**), visible only in the western section of the test pit, were probably part of the same process. An environmental sample taken from (**104**) produced 2 cereal grains and fragments of charcoal (see Appendix 3). Also recovered from this deposit were nine sherds of 3rd century pottery. Below this, was a sub-circular feature (**106**) lined with a layer of fired clay (**110**) between 0.10m and 0.22m wide. Within the feature was a dark brownish grey deposit (**105**) containing eleven sherds of late 3rd-4th century pottery. It was decided not to excavate this feature, due to the restricted area available, but an environmental sample taken upper level of this deposit revealed a snail shell of sp. *vallonia* a grassland loving species, together with charcoal from a twiggy material and cereal grains. The cereal grains may have come from a single event such as burning grain in the kiln (see Appendix 3).

Test Pit 2

Located 13m north west of Test Pit 1, Test Pit 2 had a similar sequence of deposit comprising 0.28m of loose brown silty sand (**115**) overlying up to 0.22m of dark grey silty sand (**116**), a similar to (**101**). Below this deposit was a dark brown-grey sandy silt (**117**) containing nineteen sherds of 3rd century pottery. An environmental sample from this deposit contained small amounts of burnt bone, charred cereal and charcoal. This sealed part of a feature which ran diagonally NE-SW through the test pit (**125**). It was up to 0.52m wide and lined in clay up to 0.50m thick (**118**). It may be part of a kiln, opening to the oven to the south-east. At the north-eastern end of the test pit (**125**) was only 0.04m deep and contained nothing but the overlying deposit (**117**). In the southwest corner it contained a grey ashy material (**126**). This feature was not excavated.

Remaining Test Pits

The remaining test pits contained no recognisable archaeological remains or finds. Their common stratigraphic sequence consisted of topsoil, subsoil and wind blown sand, the depths of which can be seen in Table 1 below. In the majority of cases the test pits were excavated to 0.10-0.20m below the first appearance of clean sand. Test Pit 7 was excavated to the maximum safe depth (1.20m) in the soft sand in order to test the possibility of preserved surfaces below the sand. None were found.

Eight sherds of 3rd century pottery was found in the subsoil in Test Pit 10 although there were no associated features. Examination of the ground immediately to the north in the adjoining property, had revealed pottery on the surface (J. Bonnor pers. comm.), suggesting that there is archaeological activity close by although there was no evidence in this or adjoining test pits.

There were two modern deposits visible in Test Pit 12 containing coal and recognisably modern glass (**123**) and (**124**). These lay between the topsoil and the subsoil, and were probably part of a small shallow pit.

Test pit No.	Depth	Depth of Fills	Fill Description	Height (O.D) taken from surface
3	1.06	0-0.25	107 Topsoil	19.26
		0.4-0.5	108 Subsoil	
		+0.75	109 Sand	
4	0.75	0-0.20	111 Topsoil	19.34
		0.55-0.65	112 Subsoil	
		+0.75	113 Sand	
5	0.90	0-0.22	137 Topsoil	18.78
		0.35-0.45	138 Subsoil	
		+0.90	139 Sand	
6	1.05	0-0.27	140 Topsoil	19.68
		0.40-0.46	141 Subsoil	
		+0.78	142 Sand	
7	0.82	0-0.30	143 Topsoil	19.7
		0.45-0.50	144 Subsoil	
		+0.82	145 Sand	
8	0.80	0-0.30	146 Topsoil	19.41
		0.25-0.43	147 Subsoil	
		+0.83	148 Sand	
9	0.79	0-0.32	133 Topsoil	20.09
		0.46-0.50	134 Subsoil	
		+0.79	135 Sand	

Test pit No.	Depth	Depth of Fills	Fill Description	Height (O.D) taken from surface
10	0.73	0-0.35	130 Topsoil	20.25
		0.42-0.50	131 Subsoil	
		0.73	132 Sand	
11	0.75	0-0.25	127 Topsoil	20.56
		0.35-0.40	128 Subsoil	
		+0.75	129 Sand	
12	0.90	0-0.40	120 Topsoil	20.78
		0.52	123 Modern layer	
		0.58	124 Modern layer	
		0.79	136 Subsoil	
		+0.90	121 Sand	

Table 1: Deposits in Test Pits 3-12

Discussion

The limited nature of the investigation precludes any detailed discussion of the archaeological remains but a number of general statements can be made. The deposits found in Test pits 1 and 2 appear to be related to Romano-British pottery manufacture. The dark kiln debris deposits (**103**), (**114**), (**104**) and (**117**), are similar to a deposit found associated with kilns at Maket Rasen. It is notable that no kiln debris material was identified overlying the kiln excavated by Field in 1983 at Lea (which was virtually intact) so it cannot be taken as a presence/absence indicator for pottery production areas.

There is a possibility that the structure revealed in Test pits 1 and2 are part of a kiln although the previous kiln from Lea about 10m to the north (Field and Palmer Brown 1991) was much more regular in shape. The small size of the test pit means that it is difficult to determine the likely size and shape of the complete structure. None of the rest of the test pits produced evidence of kiln debris or structure perhaps most significant are test pits three and four which suggest that the kiln material is confined east of these test pits.

The ten test pits which did not contain kiln material seem to show a substantial deposit of wind blown sand (to a depth of 1.20m in Test Pit 7) The 1985 excavations at Lea recorded that archaeological features were dug into this material which appears to have continued to accumulate after abandonment of the site. (Windblows still occur along the Trent valley.) The only other test pit to produce archaeology was a small quantity of unstratified pottery

recovered from Test Pit 10 which was not from a recognisable feature and may be part of a general background scatter associated with the close proximity of kilns.

The lack of any features close to an area of kiln activity may be unusual; earlier excavations at Lea revealed series of pits and ditches around the actual production focus and excavations (Field and Palmer Brown 1991). In contrast, at Market Rasen, pits and ditches associated with the pottery production were numerous although it is possible that this was at a much larger scale (Field and Williams 1998; Albone 1998).

Conclusions

Archaeological remains seem to be restricted to the eastern part of the site and are covered by up to 1m of wind-blown sand which overlies rakeout deposits. The identified archaeology is restricted to an area which, based on the proposed development plan, is designated as a driveway and turning circle. It may be possible to design a mitigation strategy which would largely preserve the existing archaeology in situ.

Acknowledgements

LAS would like to thank Mr Laming for his help on site and also Lincolnshire County Council Archaeology Section particularly J. Bonnor for help and advice on site. Work on site was carried out by the author, Jeremy Mordue and Darren Pullen.

Mark Williams
Lindsey Archaeological Services.
January 1999

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Appendix 1: Context Summary

Appendix 1: Context Summary

Context No.	Type	Test Pit	Description
100	Layer	1	Very dark grey brown sandy silt
101	Layer	1	mid orangey brown sandy silt
102	Layer	1	mid orange brown sand
103	Layer	1	Dark brownish grey silty sand
104	Layer	1	mid-dark brownish grey silty sand
106	Cut	1	Kiln?
107	Layer	3	mid-grey brown fine sandy silt
108	Layer	3	mid to light brown fine, loose silty sand
109	Layer	3	Yellow grey natural sand
110	Layer	1	Burnt red clay
111	Layer	4	mid grey-brown fine silty sand
112	Layer	4	mid red brown fine silty sand
113	Layer	4	Yellow grey natural sand
114	Fill of 106	1	mid greyish brown silty sand
115	Layer	2	Loose dark brown silty sand
116	Layer	2	Dark brown/yellow sand
117	Layer	2	Dark brown grey sandy silt
118	Deposit	2	Dark red fired clay
119	Deposit	2	Firm yellow orange sand
120	Layer	12	Very dark grey silty clayey sand
121	Layer	12	mid dark grey browny orange sand
122	Not used		
123	Layer	12	Loose black silty sand
124	Deposit?	12	Dark brown grey silty sand
125	Cut	2	Shallow linear feature
126	Fill of 125	2	Firm grey silty sand
127	Layer	11	Dark grey brown silty sand
128	Layer	11	Brown orange silty sand
129	Layer	11	Orange grey natural sand
130	Layer	10	Loose grey brown sandy silt
131	Layer	10	Light brown silty sand
132	Layer	10	Orange grey natural sand
133	Layer	9	Grey brown sandy silt
134	Layer	9	Light brown silty sand, occasional small stones
135	Layer	9	Yellow grey natural sand

136	Layer	12	mid dark brown/orange silty sand
137	Layer	5	Grey brown sandy silt
138	Layer	5	Light brown silty sand, occasional stones
139	Layer	5	Yellow/grey natural sand
140	Layer	6	Grey brown silty sand
141	Layer	6	Grey brown sandy silt
142	Layer	6	Yellow/greynatural
143	Layer	7	Grey brown silty sand
144	Layer	7	Grey brown sandy silt
145	Layer	7	Yellow grey natural sand
146	Layer	8	Grey brown silty sand
147	Layer	8	Grey brown sandy silt
148	Layer	8	Yellow grey natural sand

Appendix 2: Pottery Report

REPORT 56 ON THE POTTERY FROM GAINSBOROUGH ROAD, LEA, LGR99

for LINDSEY ARCHAEOLOGICAL SERVICES

by Margaret J. Darling, M.Phil., F.S.A., M.I.F.A.

4 November 1999

QUANTITY AND CONDITION

The pottery amounted to 74 sherds, weighing 1.503kg from 5 contexts. Some sherds were abraded. No problems are anticipated for long term storage. The pottery has been archived according to the guidelines of *The Study Group for Roman Pottery*, the archive including sherd count and weight. A copy of the archive database is attached; this will be securely curated for future research.

QUANTITIES AND DATING

The quantities and dating by context are shown in Table 1, with comments where applicable.

Table 1

Cxt	Sherds	Weight	Date	
103	22	330	L3/POST-MED	
104	9	178	M3+	JOIN WITH 105
105	11	121	L3-4	JOIN WITH 104
117	19	374	M3?	MIS-FIRED SH;SPARSE DATE EVID
123	5	366	POST-MED	
131	8	134	M3+	MIS-FIRED SH
Total	74	1503		

A single joining sherd link was noted between 104 and 105.

OVERVIEW OF FABRICS AND FORMS

The fabrics are shown in Table 2.

Table 2

Fabric	Code	Sherds	%	Weight	%
Dales ware shell-gritted	DWSH	5	6.76	141	9.38
Grey	GREY	53	71.62	808	53.76
IA tradition/Trent Valley	IAGR?	1	1.35	15	1.00
Nene Valley colour-coated	NVCC	1	1.35	16	1.06
Post-Roman	PRO	6	8.11	373	24.82
Shell-gritted	SHEL	8	10.81	150	9.98
Total		74	100	1503	100

The dales ware jars in shell-gritted fabric have sooting resulting from use for cooking, as does the lid from 104. Several of the grey ware vessels can be paralleled in the assemblages known from Lea and Newton-on-Trent kilns (Field & Palmer-Brown, 1991), and include probable lug-handled jars, simple wide-mouthed bowls and copies of dales ware jars. There is also a jar in a grog- or clay-pellet-tempered IA tradition or Trent Valley ware of the type of Field & Palmer-Brown, 1991, fig 16, nos 35-8; this again has been used for cooking, judging from sooting on the edge of the rim. At least two grey body sherds exhibit signs of having been mis-fired, as would be expected in sherds from the vicinity of a kiln.

Several sherds would be drawable for illustration, but add no new types to the repertoire already known from these kilns.

DISCUSSION

The pottery includes both domestic and manufacturing waste, indicating cooking activities in the vicinity of the kiln. Non-local vessels include a probable plain-rimmed dish in Nene Valley colour-coated ware, which is the latest identifiable vessel, dating to the later 3rd or 4th century. A grey bead-and-flange bowl appears to be in a local fabric, and could be of similar date.

Apart from post-Medieval sherds, the Roman date-range would be 2nd to later 3rd or 4th century.

The discovery of a new kiln in this potters' field should be notified to the *Study Group for Roman Pottery* to be include in the kilns database.

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Appendix 3 Environmental Report

Gainsborough Road, Lea, LGR99

Environmental Archaeology Assessment

Introduction
Evaluation excavations conducted by Lindsey Archaeological Services (LAS) uncovered parts of two Roman pottery kilns. During the excavation three small soil samples were collected from rake out deposits for environmental analysis (Table 1).

Table 1: Samples taken for environmental analysis

site	trench	sample	context	volume in l.	description
LGR99	1	1	104	6	rake out
LGR99	1	2	105	4	rake out/ashy fill
LGR99	2	3	117	7.5	rake out

Methods
The soil samples were washed and floated by the LAS and the flots and residues submitted for assessment. The processing included refloating of the residue after drying. The dry volume of the flots was measured, and the volume and weight of the residue recorded. A total of 17.5 litres of soil was processed in this way.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammerscale and prill. The residue was then discarded. The float of each sample was studied under a low power binocular microscope. The presence of environmental finds (ie snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The float was then bagged. The float and finds from the sorted residue constitute the material archive of the samples.

The individual components of the samples were then preliminarily identified and the results are summarised below in Tables 2 and 3.

Results
A few uncharred seeds were present in all the samples. These were generally seeds of elder, *Sambucus* sp. and goosefoots, *Chenpodium* sp., both groups with robust seeds and are presumed to be of recent origin having gained access to the deposits through natural soil processes.

Sample 1, context 104
This sample was taken from a rake out layer from the kiln structure in Trench 1. The small sample was not particularly rich. It yielded eleven sherds of pottery, two very small sherds of glass, a little fired earth, a few pieces of hammerscale, a gramme of burnt bone, and a few fragments of charcoal and one or two charred cereal grains. The charcoal was small and very fragmented.

Sample 2, context 105
Sample 2 was taken from context 105 below 104, and lying within the fill of the kiln structure. This sample included two sherds of pottery, several grammes of fired earth, a few flakes of

hammerscale, a piece of fuel ash slag and some tiny burnt or calcined fragments of bone. The flot included a shell of *Vallonia* sp, a genus associated with grassland, a few small fragments of charcoal, including twiggy material and a relatively large number of charred cereal grains including barley and wheat. The charred cereals comprised the bulk of the 6 ml. of flot, and represent a density of approximately 15-20 grains per litre of sediment.

Table 2: Finds from the samples

Sample	cont	vol	residue wt in g.	pot *	glass	fired clay g	ham' r scale	slag	bone in g.	
1	104	6	120	11/76	2	4	+	$	1	burnt and calcined bone
2	105	4	116	2/8		17	+	1	1	plus few chips pot
3	117	7.5	268	16/120		29	+		8	plus 40g possible pot fragments

(*- sherd no/weight in g.; + - few fragments present;++ - many fragments; $-fuel ash slag)

Sample 3, context 117

Sample 3 was taken from the rake out of the kiln in Trench 2. It produced numerous pottery sherds and fired clay, a little unburnt animal bone, including a fragment of cattle calcaneum, one or two charred cereals and comminuted charcoal, including twiggy material.

Table 3: Environmental finds from the samples

Sample	con	vol	flot vol	snail *	ch'rd grain *	chaff *	ch'rd seed *	Char coal *	comment
1	104	6	10		1			3	burnt and calcined bone
2	105	4	6	1	3		1	3	burnt and calcined bone
3	117	7.5	1		1		1	3	cattle calcaneum, poorly preserved bone

* frequency of items: 1=1-10; 2= 11-100; 3=101-250; 4=251-500; 5=>500

Discussion

Animal Bone

The preservation of animal bone would appear to be poor on the site. The bone recovered from samples 1 and 2 was charred or calcined, and although small had survived reasonably well, but the unburnt fragments from sample 3 were in poor condition. The burial environment therefore seems likely to be unsuitable for the recovery of good animal bone assemblages.

Charred remains

Much of the charred material is poorly preserved and as such cannot be identified to species but the cereals from sample 2 include grains of barley and wheat. An absence of chaff suggests that the charred cereals derive from processed and cleaned grain, possibly charred during preparation for milling or cooking. The density of the charred grain in samples 1 and 3 was fairly low, but that in sample 2 was over 15 grains per litre. This suggests the probability that the grain in context 105 derives from, perhaps, a single event, like the discard of spoilt grain or accidental charring during drying. This assemblage is not typical of a pottery kiln, although the fire of the kiln may have been used as a convenient place to burn unwanted material. Charred weed seeds are rare in the samples.

Charcoal is present in small quantities in all the samples although the fragments are small and comminuted and unlikely to be identifiable. The apparent presence of fragments of small twig and no substantial pieces of charcoal is also perhaps inconsistent with the rake out from a pottery kiln which might be expected to have been fuelled by larger pieces of wood or timber. On the basis of the remains from these samples it will be very difficult to assess the character of the fuel used in the kilns.

Other remains
Pottery and fired clay were the most abundant archaeological finds in the samples. A few flakes and spheroids of hammerscale occurred in all three of the samples, and a small piece of iron slag in one, and serve to indicate that iron smithing occurred somewhere on the site.

Conclusions
The environmental evidence indicates that these rake out deposits include a range of what might be domestic rubbish, but little evidence that can be related to the use of the structures as pottery kilns. It may be that these deposits reflect the final use of the structures after they ceased to perform their primary function. The possibility that the charred grain in sample 2 may have derived from a corn drier process should be considered but the density of charred grain is not consistent with the concentrations of charred cereal normally found in Roman corn driers (Van der Veen 1989).

Recommendations
No further work is recommended for the samples collected during this evaluation. However, should further field work be required at the site a more comprehensive sampling, with larger samples, of the fills associated with the kilns would be appropriate to establish how they were fuelled of whether they were re-used for other functions.

Acknowledgments
I should like to thank Jeremy Mordue for washing and floating the samples and Jane Cowgill for sorting the residues.

Bibliography
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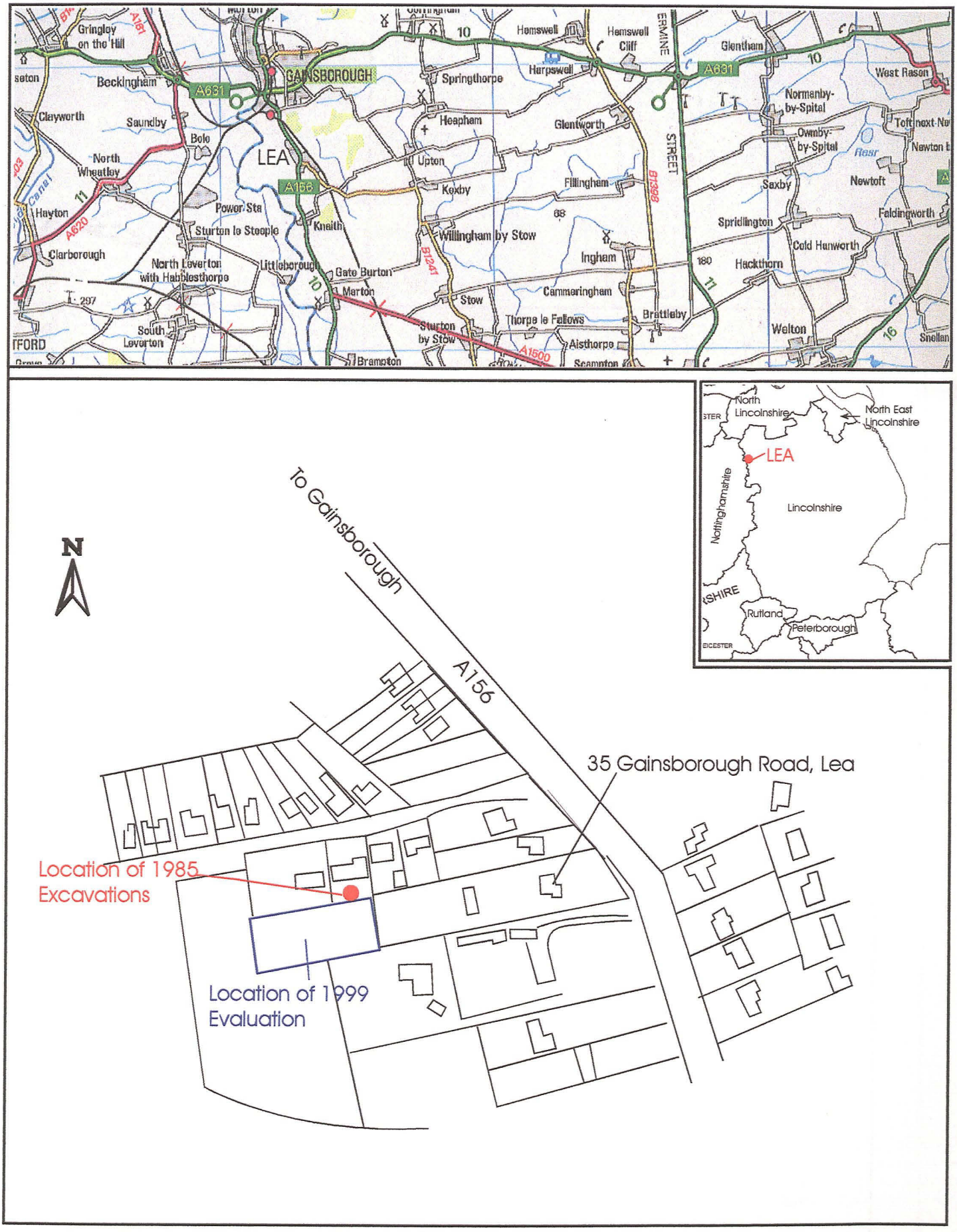


Figure 1: Gainsborough Road, Lea, site Location (Reproduced from an OS map with the permission of the controller of HMSO crown copyrite. Licence No. AL 50424A)

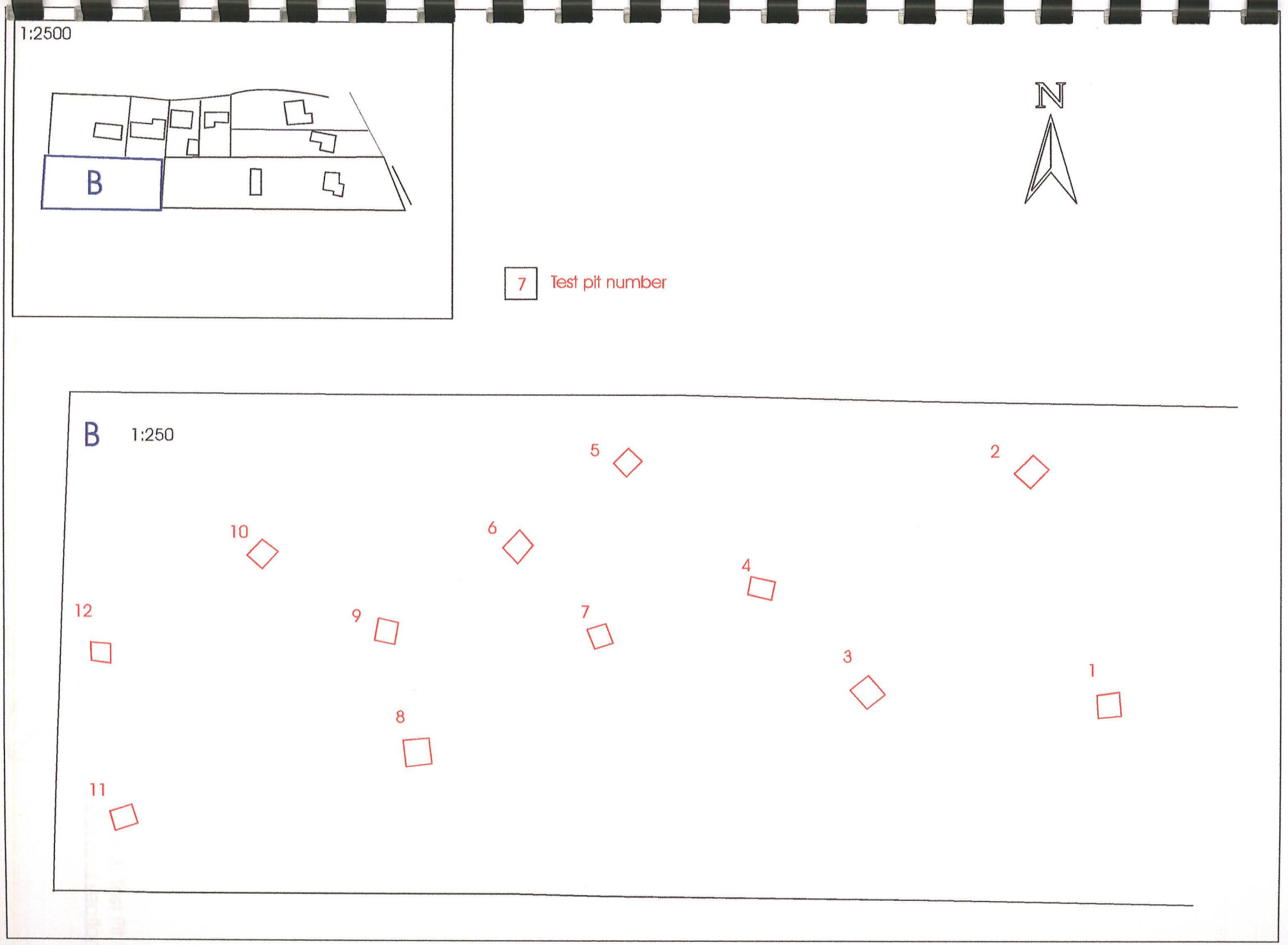
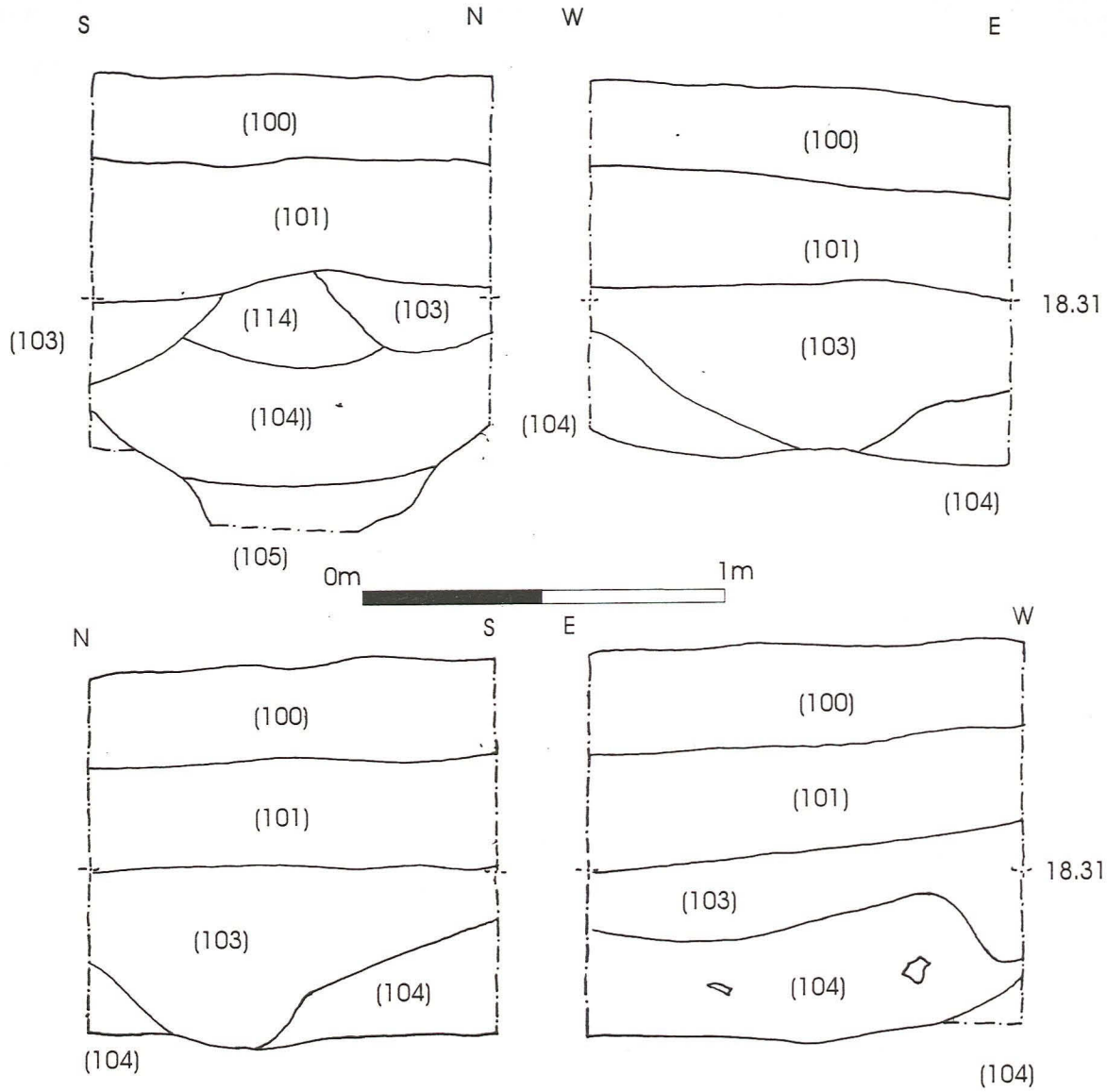


Figure 2: Gainsborough Road, Lea, test pit locations



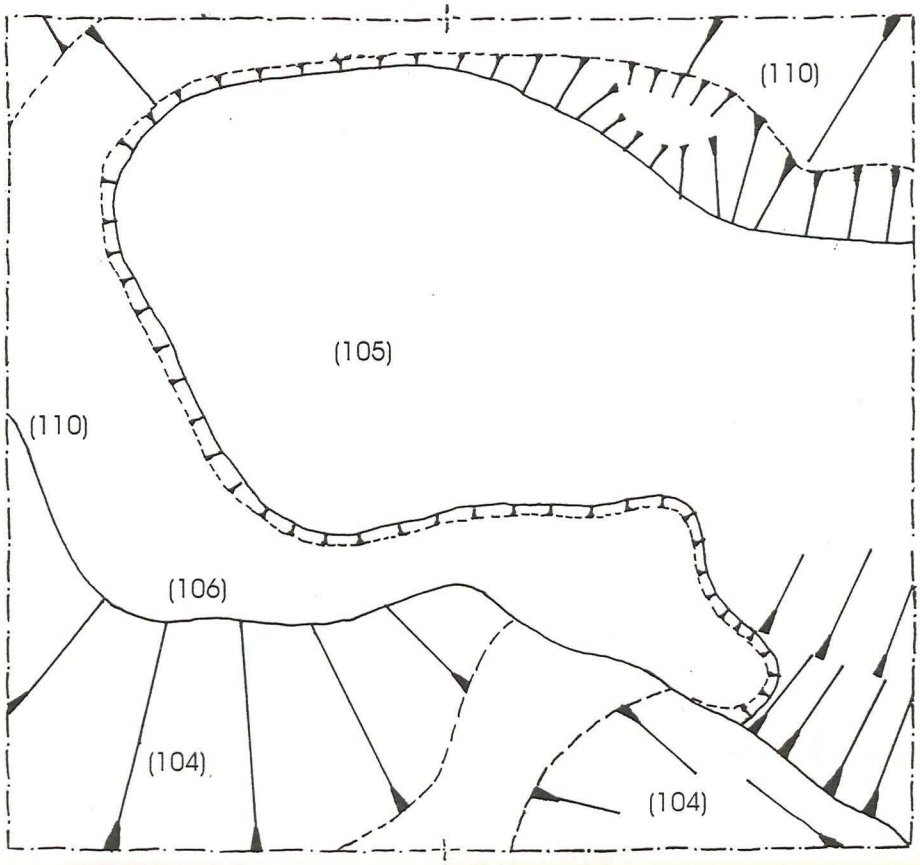


Figure 3: Test Pit 1 plan and section

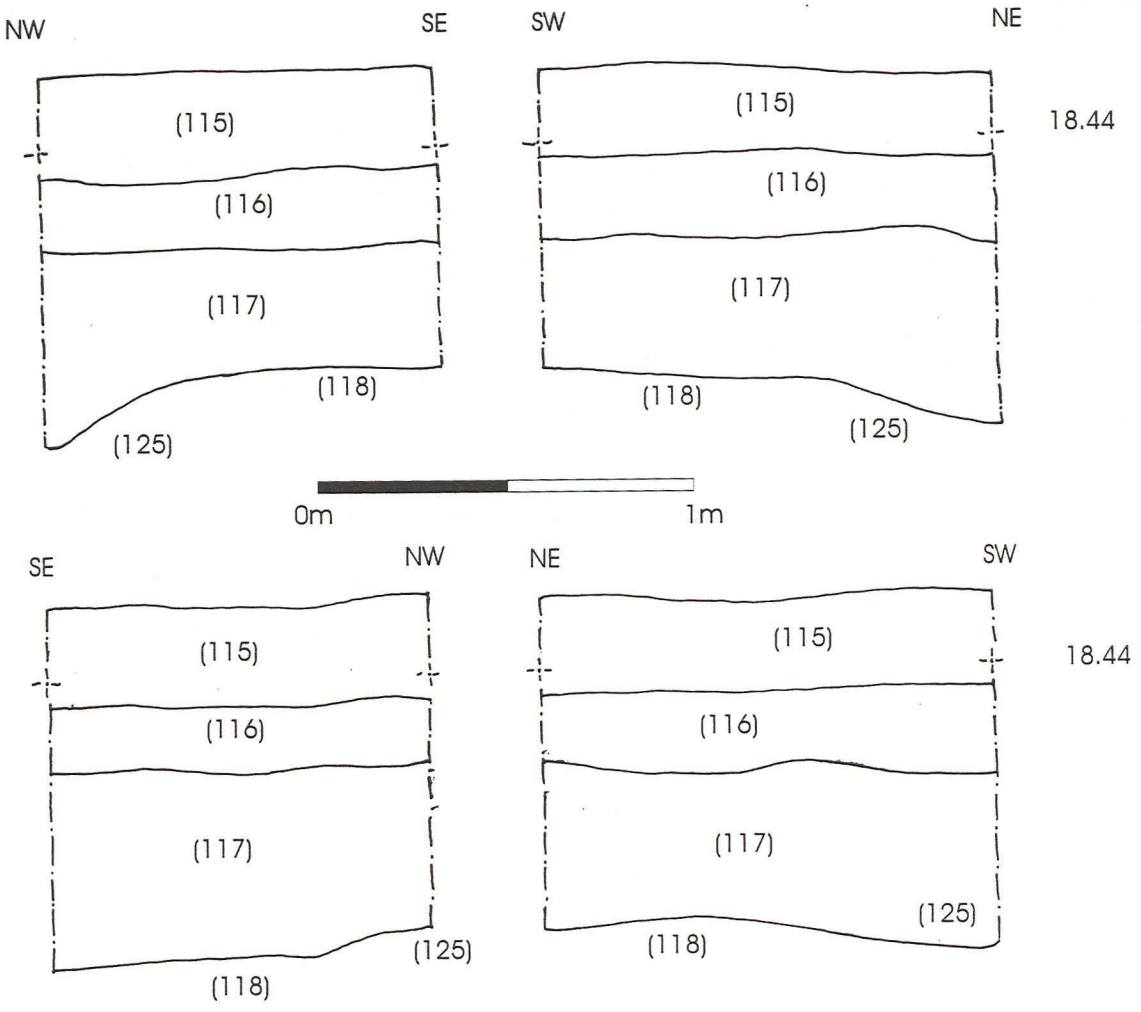


Figure 4: Test Pit 2, plan and section

Plate 1: General view, looking north, showing dense undergrowth in the central part of the development site.

Plate 2: Test pit 1, showing east facing section. Scales 1m.

Plate 3: Test pit 1, showing (106). Scales 1m.

Plate 4: Test pit 2, showing north east and south east facing sections. Scale 1m.

Plate 5: Test pit 2, showing (125). Scale 1m.

Plate 6: Test pit 3, general view facing east. Scales 1m.

Plate 7: Test pit 4, general view looking north east. Horizontal scale 1m, vertical scale 0.50m.

Plate 8: Test pit 5, general view looking north. Scale 1m.

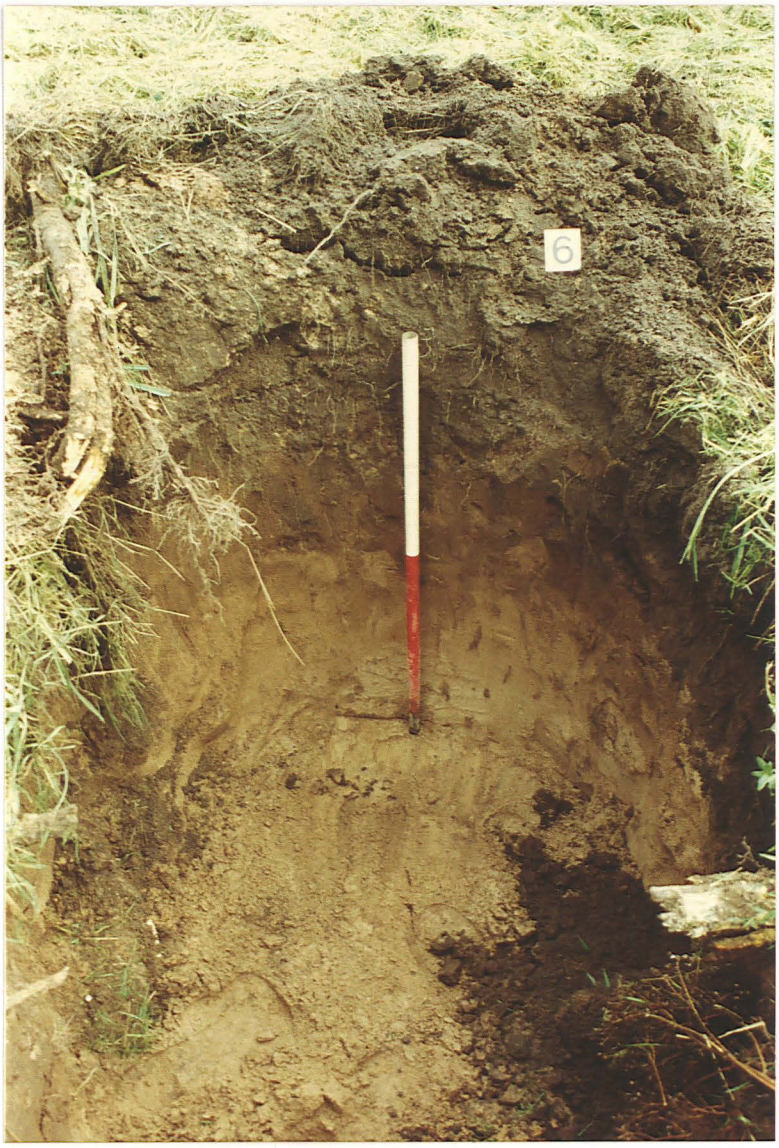


Plate 9: Test pit 6, general view looking west. Scale 1m.

Plate 10: Test pit 7, general view looking east. Scale 1m.

Plate 11: Test pit 9, general view looking north west. Horizontal scale 1m, vertical scale 0.50m.

Plate 12: Test pit 10, general view looking north east. Horizontal scale 1m, vertical scale 0.50m.

Plate 13: Test pit 11, general view looking east. Horizontal scale 1m, vertical scale 0.50m.

Plate 14: Test pit 12, general view looking south. Horizontal scale 1m, vertical scale 0.50m.