

Leybourne Mill Stream Leybourne Kent



Archaeological Investigation Report



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LEYBOURNE MILL STREAM, LEYBOURNE, KENT

EARTHWORK SURVEY AND WATCHING BRIEF REPORT

1 INTRODUCTION

1.1 Background to the Survey

- 1.1.1 Oxford Archaeology (OA) was commissioned by Kent County Council (KCC) to undertake an archaeological earthwork survey (conforming to RCHME level 3 criteria) of the water management system on a small section of the former Leybourne Mill stream in Leybourne, Kent. This survey will form part of a larger survey comprising the initial stage of evaluation of this site and will inform a strategy for a programme of evaluation trenching. Together, the survey and future trenching will aim to evaluate the archaeological potential and record earthwork features on the site in order to mitigate the effects of the construction of the proposed A228 Leybourne and West Malling Bypass, proposed to run through the site.
- 1.1.2 The survey area consists of two small areas (Areas A & B) due to be excavated to provide sanctuary for water voles during the construction process of the proposed bypass, which will run along a broadly north-south corridor around 150 m upstream and west of the present mill building standing at NGR 568715 158485. The location of Areas A & B are marked upon Figure 2 of this report. The earthwork survey was carried out on March 16th and 17th 2004.
- 1.1.3 Following completion of the earthwork survey, mechanical excavation of the vole sanctuary channels was carried out. This entailed excavation of three small channels (hitherto known as Trenches 1, 2 & 3) to the north of Areas A & B and excavation of channels (Trenches 4 & 5) within Areas A & B themselves. The location of Trenches 1-5 are marked upon Figure 2 of this report. OA carried out an Archaeological Watching Brief during the excavation of these trenches. This work was carried out between 24th and 26th March 2004.

1.2 Geological and Topographical Background

- 1.2.1 The Survey Area is set in the valley of the Leybourne Stream, which empties into the Medway to the north east. According to the British Geological Survey, the underlying geology is Folkestone Beds, mostly overlain by Alluvium or Head. Two freshwater springs are recorded within the Study Area and a tributary called the West Malling Stream also feeds into the valley from the south.
- 1.2.2 The area lies on flat ground between the sides of a steeply sloping valley. The site lies at approximately 30 m OD.

1.3 Historical and Archaeological Background

- 1.3.1 Prehistoric activity is known in the vicinity of the Survey Area, a mesolithic or neolithic scraper is recorded around 100 m west of the watermill within the Survey Area itself (Kent SMR no. TQ 65 NE 91) and around 650 m to the north-east a flint blade from a similar period is also known (SMR no. TQ 65 NE 89).

- 1.3.2 Known Roman activity in the area is represented by a mid fourth century coin of Constantius II (SMR no. TQ 65 NE 20); its precise location is unknown. Approximately 800 m south, in the grounds of St Mary's Abbey, Roman coins and a possible Roman ring were found.
- 1.3.3 The Leybourne Stream first appears in the historical record as '*lylle burnan*' in a charter of 942/946 as part of a gift of land from King Edmund to the Bishop of Rochester. By the eleventh century, Leybourne was in the possession of Bishop Odo and a mill was recorded in the parish in Domesday Book. St Mary's Abbey in West Malling, 800m to the south was founded a little later, around 1090 (SMR no. TQ 65 NE 9). Leybourne manor later passed to the Leyborne family who built a castle (SMR no. TQ 65 NE 19) around 450 m north of the watermill site in the twelfth century.
- 1.3.4 In the 1686 deeds Leybourne Mill it is described as being part of the estate of Leybourne Castle, whose owners sub-let it along with a surrounding eleven acres of meadow and pasture (Fuller 1991). In 1711 the mill was sold for £4,750 including its "*...Waters, Watercourses and Severall pieces or Parcels of Land Arable Meadow Pasture and hopground...*"[sic] which covered an area estimated to be around 12 acres (4.9ha) (ibid).
- 1.3.5 In 1788 the property was owned by Thomas Sirrup of West Malling and was described as being built of brick and stone with a tiled roof. The mill had a succession of owners over the next 100 years who worked it with varying degrees of success, indeed at times the mill appears to have been abandoned altogether.
- 1.3.6 The Tithe map of 1842 clearly shows the water management system in operation at the time. The mill pond was primarily fed by the Leybourne Stream as it flowed west to east through meadowland. The tail race and the bypass stream joined up a little to the east of the millhouse after running beneath Castle Way in separate tunnels. It is the complexity of the upstream watercourses that is most striking however.
- 1.3.7 An initial archaeological survey by Canterbury Archaeological Trust (CAT, 1992) identified a stone-revetted earth bank, which appears to have carried a raised water channel or leat from the West Malling Stream into the millrace. A system of sluices and leats appears to have been put in place in the post medieval period in order to control the flow of water past the mill wheel by either draining or filling the mill pond. It appears that this would have been achieved by channelling water away from the main Leybourne Stream into the bypass stream when necessary and by permitting more water to flow into the Leybourne Stream from the West Malling Stream at other times. A small fish pond shown on the Tithe map to the south of London Road may have been used to store water from the West Malling Stream until it was needed.
- 1.3.8 The original straight lines of the leat have since been eroded and those that constituted the course of the bypass stream, the only remaining open route for the Leybourne Stream, are considerably more circuitous than originally intended. The Canterbury Archaeology Trust survey also identified the remains of a stone bridge crossing the bypass stream, close by the earth bank, which has been replaced with a modern bridge.
- 1.3.9 Both the Leybourne and West Malling Streams themselves appear to have been partially canalised, though in the case of the latter this may be connected with the construction of eighteenth century fishponds along its course (SMR no. TQ 65 NE 54).
- 1.3.10 Leybourne Mill was eventually acquired by the Joyce family around 1897 who worked it until the 1930s. At some time in the nineteenth or twentieth century the millhouse was considerably rebuilt as a weatherboarded structure on a brick base. The mill house and the ground floor of the mill itself still survive today though the mill pond is now silted up and under cultivation.

2 EARTHWORK SURVEY

2.1 Methodology

- 2.1.1 The survey area consists of two small areas (Areas A & B) due to be excavated to provide sanctuary for water voles during the construction process of the proposed bypass, which will run along a broadly north-south corridor around 150 m upstream and west of the present mill building standing at NGR 568715 158485. The location of Areas A & B are marked upon Figure 2 of this report
- 2.1.2 The Survey area was thoroughly examined for earthworks and structural features, which could be surveyed and interpreted. The area was examined in a c. 5 m grid to ensure that all possible surface archaeological features were surveyed.
- 2.1.3 Survey stations were sited within the survey area and tied into a building to the south of the London Road, marked on the KCC (plan as station 5), and to a survey pin in the pavement adjacent to the foot entrance to the site to the north of the London Road.
- 2.1.4 All surveyable features identified during the examination of the area were surveyed in detail to level 3 standard. A transect was taken from north-south through each proposed cut sections.

2.2 Results

- 2.2.1 Five earthwork features were identified within Area A (features 1-5) and six within Area B (features 6-11). These features are depicted on figures 2 and 3. Descriptions of these features are given in tabular form below.

OA no	Description
1	Relatively broad, flat bottomed ditch c. 2 m in width
2	Irregular depression c. 2 m in width
3	Bank or ridge adjacent to broad ditch OA 1
4	Low irregular mound with adjacent irregular bank
5	Sinuous and relatively irregular ditch, c. 1.3 m in width
6	High steep slope, possibly augmented
7	Irrregular stream channel
8	Island between stream channels
9	Low irregular mound
10	Linear depression carrying small informal footpath
11	Mouth of the channel where it joins the Leybourne Stream

3 INTERPRETATION OF THE SURVEY RESULTS

- 3.1.1 Area A contains five significant earthwork features. Feature 1 is the mill leat, feeding the mill pond to the north. It appears to be an artificial channel to speed and regulate the flow of water towards the mill pond. This deliberate construction is evidenced by the straight regularity of the channel and by feature 3, which appears to be a counter bank to retain the water in the main channel. Feature 2 is an irregular sunken feature, which is probably the earthwork remains of a watering area for cattle to avoid the relatively steep

banks of the stream. Feature 4 is likely to be upcast from the (probable) modern drain at feature 5.

- 3.1.2 The Area B contains six interpretable earthwork features. The first of these features (6) is a natural but possibly augmented slope running down to the dry channel between 7 and 11. This dry channel may be the original course of the Leybourne Stream, or may simply be a run-off channel to the west of the channel. Feature 8 is an 'island' between two arms of the channel (7). Feature 9 is a low mound of probable upcast from the clearance either of this channel or the current stream channel, and it is possible that a slightly sunken feature (10) is a former channel or run-off into 7. Feature 11 is the mouth of the channel (7).

4 WATCHING BRIEF

4.1 Introduction

- 4.1.1 Following completion of the earthwork survey, mechanical excavation of the vole sanctuary channels was carried out. This entailed excavation of three small channels (hitherto known as Trenches 1, 2 & 3) to the north of Areas A & B and excavation of channels (Trenches 4 & 5) within Areas A & B themselves. The location of Trenches 1-5 are marked upon Figure 2 of this report. OA carried out an Archaeological Watching Brief during the excavation of these trenches. This work was carried out between 24th and 26th March 2004.

4.2 Methodology

- 4.2.1 All areas of ground disturbance were monitored by an archaeological supervisor, under direction of a Project Manager.
- 4.2.2 Any significant deposits or features exposed were recorded using proforma record forms, black and white and colour slide photography and plans and sections as appropriate. All on site recording was undertaken in accordance with the OA Field Manual (OAU 1992). Appropriate registers of all contexts, plans, sections and photographs were prepared as part of the site archive.

4.3 Results

Trenches 1-3

- 4.3.1 Trenches measured 3 m wide at its top to 1m wide at its base, and contained a ledge c.0.3 m in width on both sides c. 0.4 m from the base of the trench. The trenches were excavated to a depth of c. 1.25 m and c. 12 m in length.
- 4.3.2 The stratigraphy sequence included a natural colluvial deposit (101) overlain by a humic woodland soil (100). All layers contained ragstone blocks of varying sizes, and in addition the woodland soil contained modern rubbish. No archaeology was encountered within any of these trenches.

Trench 4

- 4.3.3 The trench was c. 3 m wide at its top and 1m wide at its base, and contained a ledge c.0.3 m in width sporadically and where practicable on both sides c.0.4 m from its base. The trench was 1.2 m in depth and 35 m in length and cut through a former leat.
- 4.3.4 The line of Trench 4 was slightly realigned to reduce spoil, following the line of a shallow pre-existing gully at the foot of the steep natural slope. A thin lens of alluvium was seen within a colluvial deposit containing ragstone boulders (402). This was cut by a gully possibly of mid-late 19th century date and later re-cut in the late 20th century.

This is evidenced by the lower fill (405) containing exclusively mid-late 19th century finds while the upper fill of the gully (406) contained a mixed modern humic soil.

Trench 5

- 4.3.5 The line of Trench 5 cut through one of the former leats, although was slightly realigned to reduce spoil curving steeply through survey feature 2 towards the modern ditch 5. The natural consisted of a light brown grey silty clay alluvium (502) overlain a mid orange brown silty clay alluvium (501), which in turn was sealed by a friable humic rich topsoil (500). No archaeology was encountered within this area.

5 CONCLUSION

- 5.1.1 Area A contains elements of the former artificial mill leat (1 and 3), although these were not affected by the cutting of the vole channel. The probable cattle watering area at 2 was cut and no significant archaeology encountered.
- 5.1.2 Area B contains the former channel (7) which appears to be drainage for a large quarry to the west. Feature 8 on the survey plan was found during excavation to have been most likely formed by the water channel being obstructed by large ragstone boulders forming part of the natural. The associated features 9, and 10 have been mounded over by the spoil from the excavation of this section of Trench 4. No archaeological features were noted at survey feature 11.

APPENDIX

6 APPENDIX 1

Trench	Context No.	Type	Depth (m)	Comment	Finds	Date
1 - 3						
	100	Deposit	0.3	Topsoil	-	-
	101	Natural	0.3	Natural colluvium	-	-
4						
	400	Deposit	0.32	Topsoil	Modern waste	C20th
	401	Deposit	0.4	Mixed sily/sandy clay upcast	Pottery and glass	C19th
	402	Natural	0.6	Natural colluvium	-	-
	403	Deposit	0.35	Redeposited topsoil	-	-
	404	Cut	-	Possible gully	-	-
	405	Fill	0.4	Primary fill of gully	Modern waste	C20th
	406	Fill	0.32	Secondary fill of gully	-	-
5						
	500	Deposit	0.3	Topsoil	-	-
	501	Deposit	0.3	Alluvium	-	-
	502	Natural	0.3	Alluvium	-	-

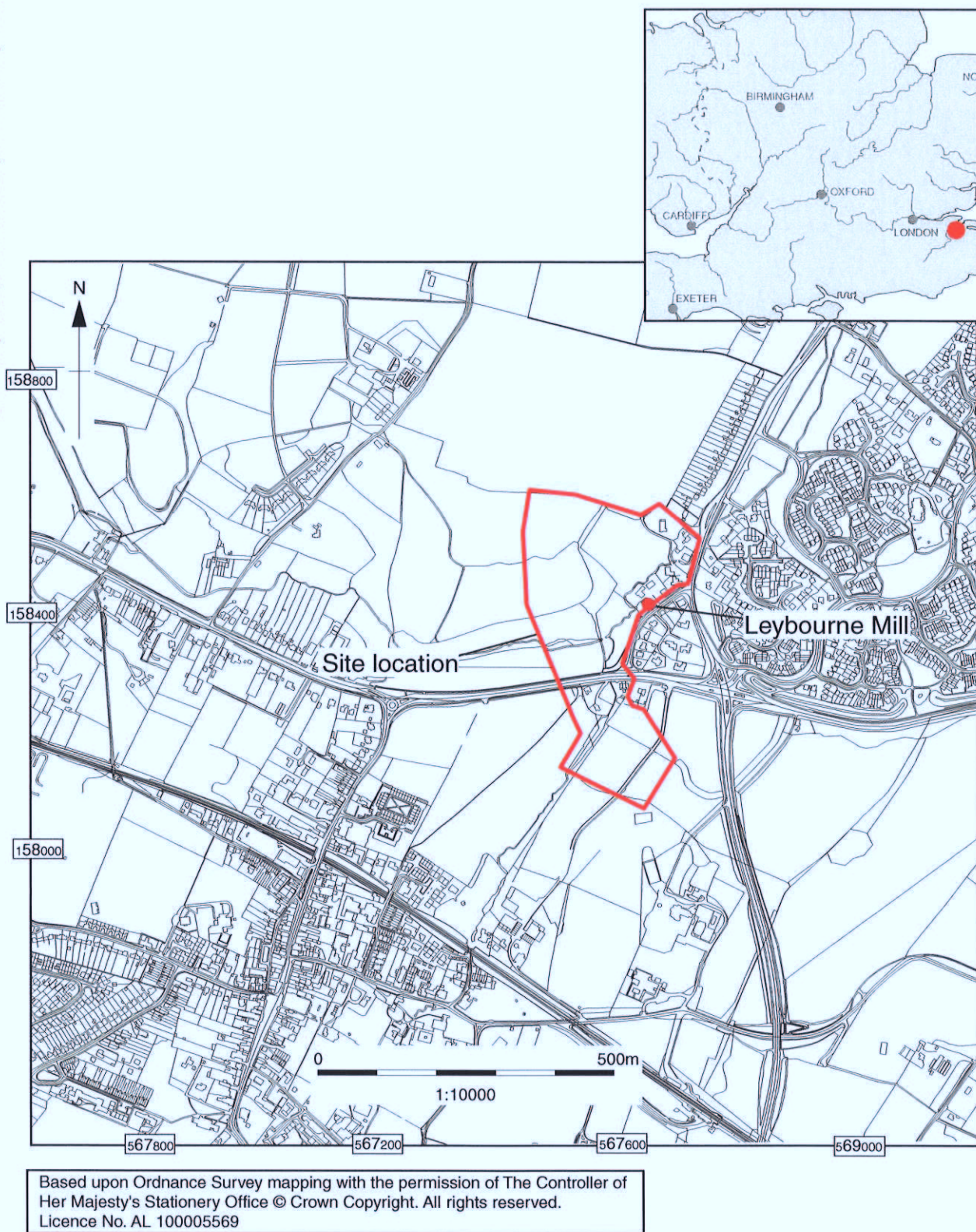
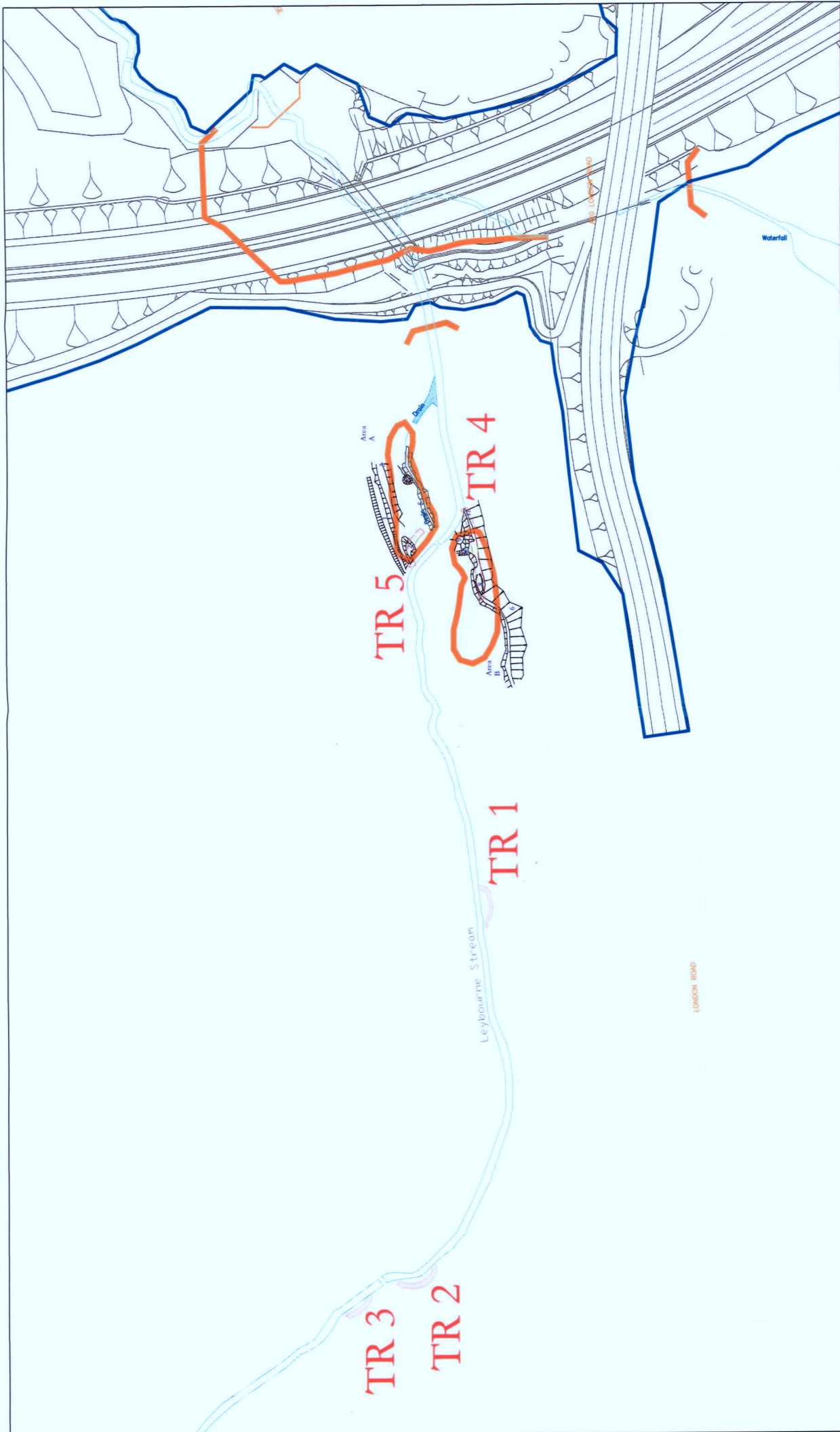



Figure 1: Site location





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LEVO 04
Leybourne Vole Tunnels

Scale at A3 1:1250
Drawing No. LEVO 04/OA/002/C
Date printed 20/03/04

Figure 2:
Topographical Survey
and Evaluation Trenches

— Banks and Ditches

— Proposed Voleproof Fence

— River

--- Evaluation Trench/Vole Channel

□ Archaeological Features

— Outline of Proposed Road

Existing Mill Leat

Proposed Vole Channel

Modern Features

0 25

N

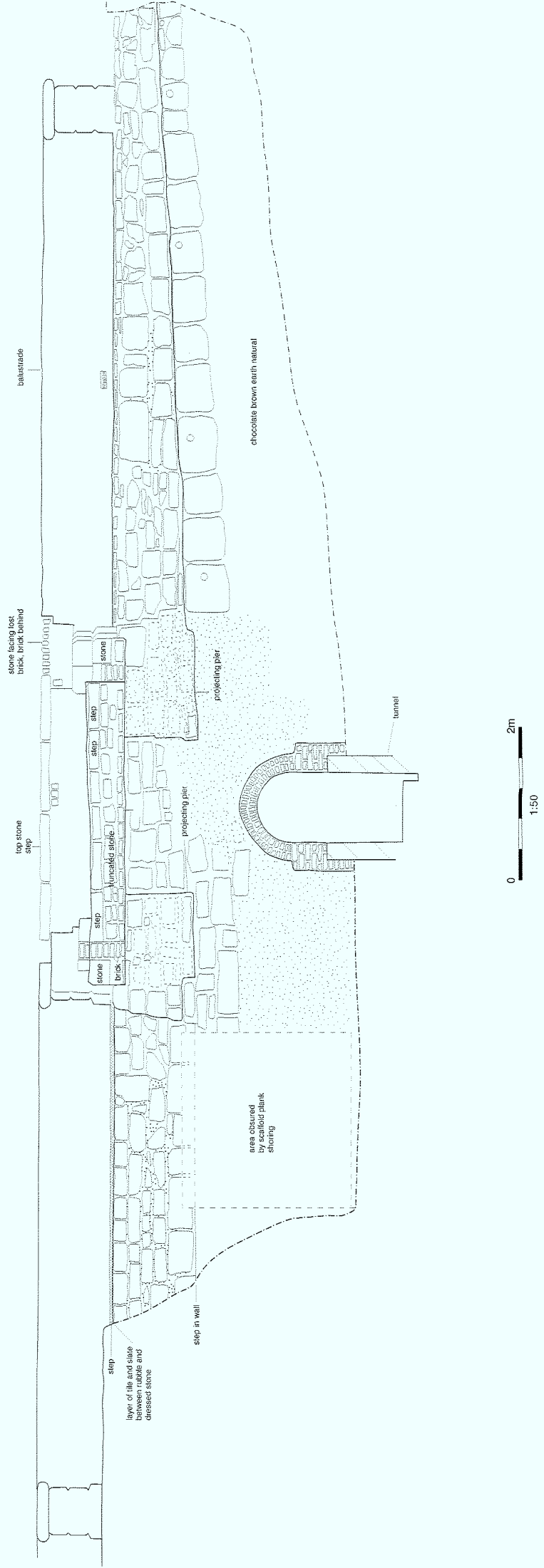
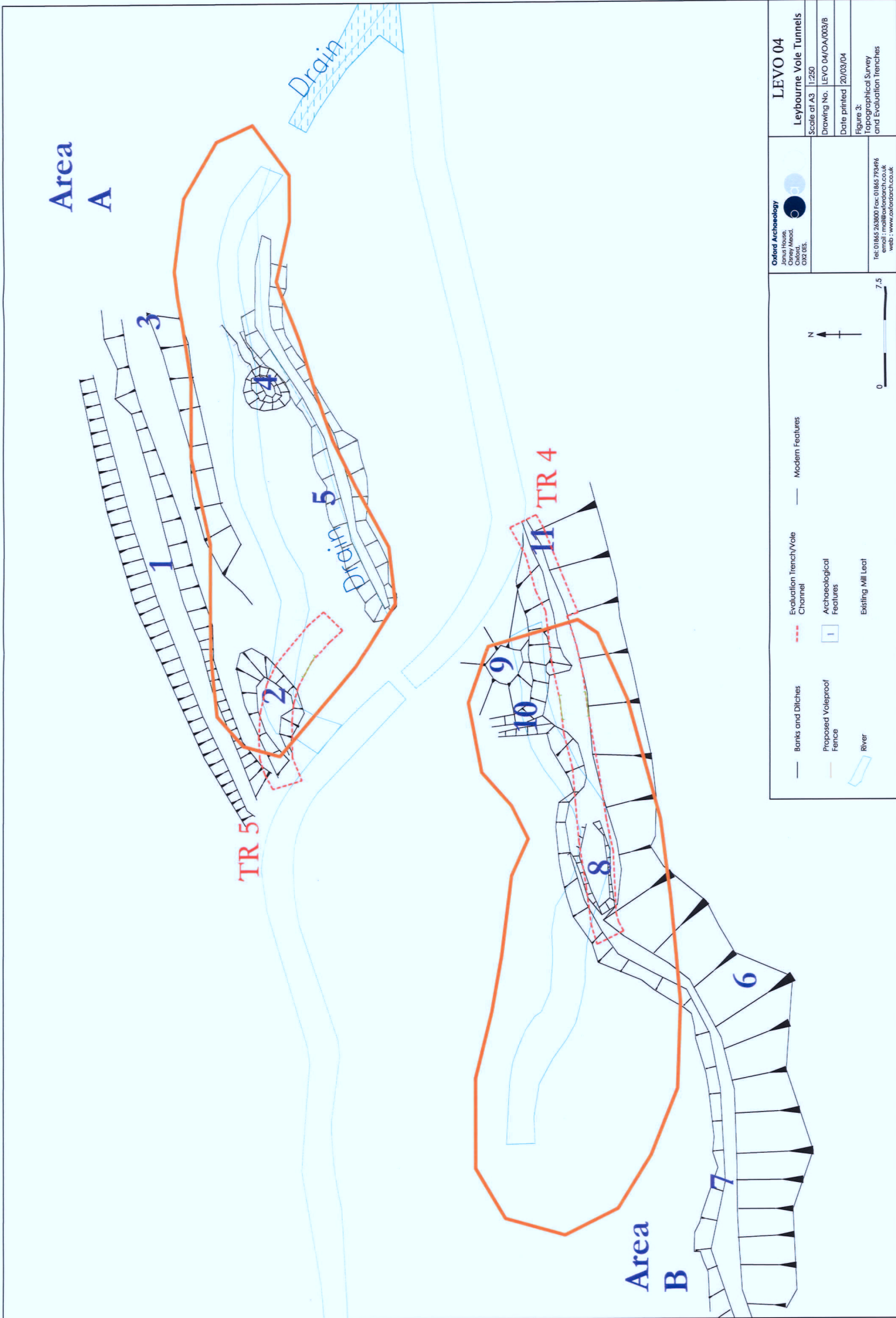


Figure 6 : Elevation of Balustrade, Steps S7 and Tunnel entrance in area of new Pumphouse excavations (Trench 20)



Oxford Archaeology Jenyns House, Oxford, OX4 2ES		LEVO 04 Leybourne Vale Tunnels	
Scale at A3 1:250		Drawing No. LEVO 04/OA/003/B	Figure 3: Topographical Survey and Evaluation Trenches
Date printed 20/03/04		CHECKED BY:	
Tel: 01865 263000 Fax: 01865 753496 www.oxfordarch.co.uk			

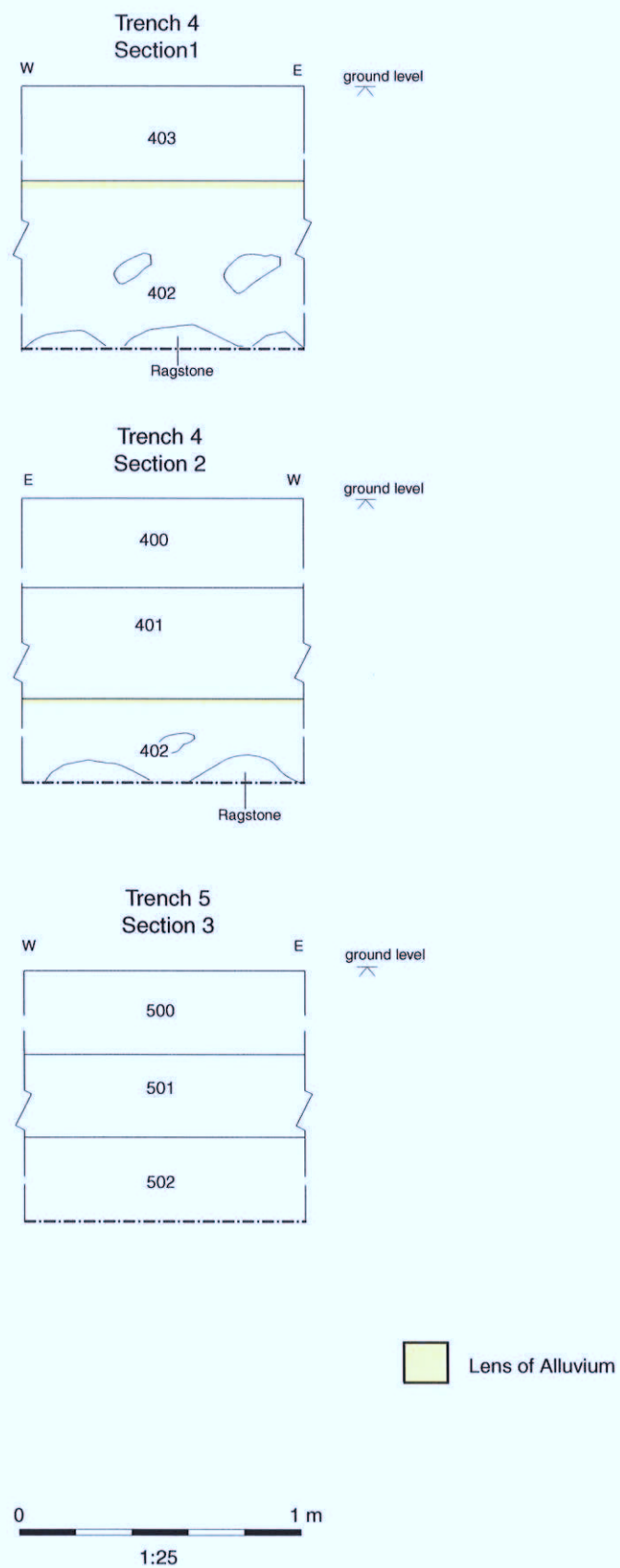


Figure 4: Trenches 4 and 5, sample sections



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