Wessex Archaeology

A303 Stonehenge
Archaeological Surveys

Till Valley Auger Transects and Test Pits

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A303 STONEHENGE
ARCHAEOLOGICAL SURVEYS

Till Valley Auger Transects and Test Pits

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SUMMARY

Wessex Archaeology was commissioned by the Highways Agency, through their design consultants, Mott MacDonald, to undertake archaeological surveys along the Preferred Route of the A303 Stonehenge Improvement in Wiltshire. The Preferred Route crosses the valley of the River Till to the north of Winterbourne Stoke. Previous investigations have shown that any archaeological remains present in the Till valley are likely to be buried within alluvium. An auger survey and targeted test pits were therefore undertaken to confirm the sediment sequence present and identify deposits of archaeological or palaeo-environmental potential. This document sets out the results of the auger survey and test-pitting.

Two auger transects were undertaken on alternative bypass alignment options. Auger transect 1, on the southern bypass alignment (NGR SU 07770 41455), revealed a shallow typical brown earth soil profile, incised by the steep-sided river channel, which cut into and exposed the underlying valley gravel. Auger transect 2, on the northern bypass alignment (NGR SU 08225 41720), some 400m to the north, revealed typical brown earth and calcareous alluvial gley soils over calcareous, largely stonefree, alluvium; a possible buried former infilled channel was identified against the chalk 'river cliff' on the eastern edge of the floodplain. Two 1m square test pits were hand dug through the deeper alluvial stratigraphy recorded by auger transect 2, in order to facilitate more detailed description and interpretation of the alluvial sequence, and to allow sampling of the sequences.

The floodplain alluvium was found to be extremely localised, and where it occurred was characterised by uniform, massive, fine-grained calcareous marl. A zone of mottling may represent incipient soil ripening preserved within the sequence. This alluviation is the product of gentle, regular events on the floodplain, and represents a typical seasonal and cyclical winter flooding regime. The sequence in the palaeochannel was very similar to that recorded on the floodplain, and probably represents flood sediment washed over the floodplain from the active river channel, rather than deposition within the former channel itself. At the base of this sequence a humic alluvial gley buried soil was identified.

Mollusc samples from the floodplain alluvium all contained relatively high numbers of shells of a restricted taxonomic range, containing species of open country and wet, moist habitats typical of an open floodplain environment. Samples from the relict palaeochannel infill displayed lower numbers overall, but were otherwise very similar to those of the floodplain alluvium, suggesting very open conditions. These results indicate postglacial sequences, probably relating to any time from the Bronze Age to recent times.

The presence of alluvium in the valley bottom is patchy, discontinuous and variable both across the valley profile and along its longitudinal corridor. Although the

sequences are shallow (generally less than 1m), their extent provides the potential to mask, bury and seal archaeological horizons, as illustrated by the buried soil recorded at the base of the relict palaeochannel. The lack of dating evidence from the sequences, and the lack of datable material within them, makes dating the sediment or any palaeo-environmental sequence difficult.

It is recommend that field evaluation by trial trenching should be undertaken to determine the survival of archaeological remains beneath the alluvium: the need for and location of any such work will be dependent on the bypass alignment selected for design development, and the design details proposed, however. The merits of further analysis of the mollusc assemblages and assessment of pollen preservation should be reviewed following the conclusion of any such evaluation.

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The auger survey was commissioned by the Highways Agency via their consultants, Mott MacDonald.

Wessex Archaeology are grateful to the landowner, Mr Robert Turner, for his co-operation in providing access to the land.

The project was managed for Wessex Archaeology by Chris Moore. The survey was directed in the field by Vaughan Birbeck and undertaken by Nick Best, Dave Webb and Jon Martin. This report was compiled by Chris Moore, Vaughan Birbeck and Michael J. Allen. The illustrations were prepared by S. E. James.

A303 STONEHENGE
ARCHAEOLOGICAL SURVEYS

Till Valley Auger Transects and Test Pits

1. INTRODUCTION

1.1. Project Background

1.1.1. Wessex Archaeology was commissioned by the Highways Agency, through their design consultants, Mott MacDonald, to undertake archaeological surveys along the Preferred Route of the A303 Stonehenge Improvement in Wiltshire.

1.1.2. An Illustrative Design for the proposed road improvement has been prepared by Mott MacDonald. This broadly follows the published Preferred Route but includes amendments where necessary to comply with highways standards and to reduce environmental impacts. The crossing point of the River Till is an area where such an amendment is being considered. Alternative northern and southern alignment options for the Winterbourne Stoke Bypass have been identified, both of which have been investigated here.

1.1.3. Previous investigations have shown that any archaeological remains present in the Till Valley are likely to be buried within alluvium. An auger survey and targeted test pits were therefore proposed to confirm the sediment sequence present and identify deposits of archaeological or palaeo-environmental potential.

1.1.4. This document sets out the project background, results and conclusions of the auger survey and test-pitting. The fieldwork was undertaken on the 15th and 16th of November 2001.

1.2. Site Description

1.2.1. The alternative alignment options for the Winterbourne Stoke Bypass cross the Till Valley to the north of Manor Farm, Winterbourne Stoke (Area H). The affected land here comprises three permanent pasture fields (scheme field nos. 44, 45, and 47) centred on NGR SU 0800 4160 and lying at between 71m and 73.5m above Ordnance Datum (aOD) in the base of the valley (**Figure 1**).

1.2.2. The Till Valley here has a very broad (*c.* 250m) wide flat meandering valley floor, in which the Till flows over a bed of medium chalk and flint gravel in a small, but well-defined, steep-sided channel. The watercourse of the River Till is protected as a Site of Special Scientific Importance (SSSI), and also forms part of the River Avon candidate Special Area of Conservation (cSAC).

2. ARCHAEOLOGICAL AND TOPOGRAPHIC BACKGROUND

2.1. The Till Valley

2.1.1. The Till Valley extends from Tilshead in the north to Stapleford where it meets the Wylye. In its mature course it is a broad, flat-bottomed valley with sweeping meanders containing a typical chalkland stream, with a now rare ecology. In its northern reaches between Shrewton and Tilshead it is a winterbourne, while south of Shrewton it is a classic shallow flat-bottomed chalk stream with a clean gravel bottom. The valley is cut through predominantly Middle and Upper Chalk, with localised Drift of clay-with-flints on the high interfluves overlooking the valley floor. The interfluves support brown, grey and humic rendzinas of the Andover 1, Upton 1 and Icknield Associations respectively, with argillic brown earths of the Charity Association locally over the Drift. The Till Valley floor, in contrast, supports typical brown calcareous earths of the Coombe 1 Association and calcareous alluvial gley soils over flinty and chalky drift and alluvium.

2.1.2. Unlike the deeply incised rivers of southern England that carve their way through the chalk escarpment (e.g. River Ouse, Arun, Adur), which have deep sediment sequences of up to 6m depth (cf. Scaife and Burrin 1983), many of the chalk valleys of the Salisbury Plain contain relatively shallow veneers of Holocene alluvium in broad, flat valley floors (Barron 1976). Nevertheless these shallow, but potentially expansive covers of alluvium have the potential to seal and bury archaeological evidence. Furthermore, the deposits themselves, and the sequences of palaeo-environmental data they contain within them, provide the potential to examine changing land-use (cf. Allen 1988; 1991) and define the nature of the river valley in prehistory. Research elsewhere, for example in the Kennet Valley, has shown that these broad chalkland river valleys are often the focus of human activity, acting as both communication routes and as centres of occupation and activity from early prehistoric (Mesolithic) until more recent times (cf. Evans *et al*. 1993). Even relatively shallow sequences in the Kennet Valley have been demonstrated to cover long time periods, and be of great antiquity (Evans *et al.* 1993).

2.2. Archaeological Appraisal

2.2.1. The *A303 Stonehenge Archaeological Appraisal* (Wessex Archaeology 2001) has reviewed the known archaeological evidence and previous investigations undertaken in Area H.

2.2.2. The only intrusive archaeological survey recorded in the Till Valley comprised auger survey and test pitting undertaken in 1992 as part of the Stage 1 surveys for the A303 Improvement. A single auger transect in Field 49, approximately 300m to the south of the Preferred Route (Samuels 1992, Vol 2, pt 6, pages 16-19; Wessex Archaeology 1992; **Figure 1**) defined limited sequences of footslope colluvium on the outer edges of the valley floor. A sherd of Anglo-Saxon pottery and a number of animal bone fragments were recovered from a small test pit in the upper part of this sequence. These footslope deposits were 0.62m deep and comprised weakly to non-calcareous typical hillwash derived from soils of the interfluves over the local Tertiary clay-with-flints on the hilltop. Shallow alluvial soils (0.25m deep) overlay valley gravels and sandy gravels in the valley floor.

2.2.3. Although the augering in Field 49 revealed no deep sequence, sedimentation within floodplains can be extremely variable. The top of the alluvium is undoubtedly modern but this may conceal isolated pockets of archaeological or palaeo-environmental deposits. The single Anglo-Saxon sherd is evidence of a human presence at that time in the type of location favoured for settlement (cf Martyr Worthy, Hants., Spong Farm, Norfolk).

2.2.4. Geophysical survey of the Preferred Route (GSB 1999) and the southern and northern alignment options (GSB 2001) noted a few pit-type and linear anomalies. However, these were only tentatively interpreted as being of archaeological origin.

2.2.5. A number of partially filled channels visible on the surface of the fields, particularity in the north of Area H, may be evidence for an earlier system of water management or water-meadows (R. Turner pers. comm.). A causeway across Field 45 from the western corners of Fields 48 and 54 may be postulated from the localised topography. Map regression analysis (Chandler 2002) reveals the changing nature of the stream during the last 200 years.

3. AIMS AND OBJECTIVES

3.1. Survey Strategy

3.1.1. Evaluation of the presence, depth and potential date of alluvial and colluvial deposits, which may mask earlier archaeological remains and contain palaeo-environmental information relating to the same archaeological periods as sites and features in the vicinity was undertaken by means of auger survey and test pitting. One auger transect was sunk on each alternative Bypass alignment and two test pits excavated by hand at selected locations to allow detailed recording and sampling of the sediments revealed. The survey here used augering as a tool to identify suitable locations for examination of the soil sequence using test pits. These allowed the full soil sequence to be observed and recorded *in situ* and also provided the opportunity for an array of samples for different environmental indices to be taken.

3.2. Aims and Objectives

3.2.1. The aims of the auger survey and test pits were to assess the presence of colluvial and alluvial deposits in the Till valley to the north of Manor Farm, Winterbourne Stoke and to recover appropriate environmental samples.

3.2.2. The objectives of the survey were:

- To determine or confirm the presence, depth and potential date of alluvial and/or colluvial deposits
- To determine the potential for buried archaeological remains to survive

- To determine the potential of alluvial deposits to provide palaeo-environmental information

4. SURVEY METHODOLOGY

4.1. Consents

4.1.1. All works were undertaken outside the SSSI/cSAC boundary and English Nature confirmed that no formal consent was therefore necessary.

4.1.2. As the works were required within a designated floodplain, the auger survey and test pitting was undertaken under land drainage consents issued by the Environment Agency.

4.1.3. The area lies outside the Stonehenge World Heritage Site.

4.2. Auger Transects

4.2.1. Two auger transects were sunk in locations to coincide with the two bypass alignment options, in order to characterise the sediment profile in the valley floor. The southern transect (Transect 1), which was approximately 110m long, was centred on SU 07770 41455, and the northern transect (Transect 2), which was approximately 150m long was centred on SU 08225 41720 (**Figure 1**).

4.2.2. Augering was conducted at approximately 20m intervals using a 40mm diameter Dutch soil auger to a maximum depth of 2m. Arisings were returned to auger holes or disposed of; no arisings were discarded near the river or other watercourses/bodies. No holes were sunk in the river itself, which is protected as a SSSI. The sedimentary sequence was logged (**Appendix 1**), the relative height and location of the auger points recorded and the profiles drawn (**Figure 1**).

4.3. Test Pits

4.3.1. The results of the auger survey were used to determine the optimum locations for the excavation of test pits to record the soil sequence in more detail. Transect 2 was preferred following augering and two 1m square test pits were excavated by hand, one at the extreme eastern end of the transect and one close to the eastern bank of the river.

4.3.2. The exposed stratigraphy in each test pit was cleaned and drawn (**Figure 2**) and described *in situ*, and an array of samples taken. The test pits were backfilled on completion using excavated material. The sequences were sampled for sub-fossil snails as a series of contiguous samples (*c.* 2kg). This was augmented by monoliths through the sequences to facilitate more detailed examination and allow subsampling for pollen as appropriate.

4.3.3. The sediment sequences were described *in situ* and augmented by further examination of the soil monoliths. Soil descriptions were made following the terminology outlined by Hodgson (1976).

5. RESULTS

5.1. Auger Transects

5.1.1. **Transect 1** was located about 200m north of that conducted in 1992 (**Figure 1**). The transect was orientated approximately north-west to south-east, perpendicular to the valley. A series of seven auger holes revealed a shallow (maximum 0.3m deep), typical brown earth soil profile, comprising a dark brown humic, almost stonefree, matrix over chalk to the east and gravel in the main valley floor. Only on the eastern edge (where the 1992 survey downstream located a colluvial footslope deposit) were deposits over the gravel any deeper (here 0.55m). This sequence was incised by the steep-sided river channel, which cut into and exposed the underlying valley gravel. Survey showed that the channel had cut less than 0.2m into this gravel surface (**Figure 1**, inset).

5.1.2. **Transect 2**, located approximately 400m to the north-east of Transect 1, was orientated west to east in a broad meander of the valley, including the lower bluff of the inside of the meander on the west side (**Figure 1**). A series of nine auger holes revealed a profile comprising typical brown earth and calcareous alluvial gley soils (0.3m deep) over calcareous, largely stonefree, alluvium (max 1.2m total depth), over gravel.

5.1.3. To the west of the current channel of the River Till (auger holes 11-8), deep typical brown earths (probably Coombe Series; cf. Jarvis *et al.* 1984, 126) to depths of up to 0.47m overlay gravel. In contrast, the floodplain to the east is at a consistently slightly higher level and thin humic brown earths and calcareous alluvial gley soils overlie calcareous alluvium here. To the east of the river the gravel rises before dipping towards the footslope of the chalk valley margin: this may represent a buried former broad and shallow infilled channel against the chalk 'river cliff' (**Figure 1**, inset). This profile is similar to that recorded in 1992 approximately 600m to the south-west (**Figure 1**, inset; Wessex Archaeology 1992, fig 5).

5.2. Test Pits

5.2.1. Two 1m square test pits were hand dug through the deeper alluvial stratigraphy recorded by auger Transect 2, in order to facilitate more detailed description and interpretation of the alluvial sequence and allow sampling of the sequences. Test Pit 1 was located immediately to the east of the present river channel (Test Pit 1, **Figure 1**) to examine the sequence recorded in auger 12 (**Appendix 1**). The sediment sequences recorded is given in **Table 1** below.

Depth (m)	Depth[1] (m)	Context	Description*
0-0.10		100	*"Topsoil" –dark greyish brown (10YR 4/2) silt loam with rare fine chalk/flint fragments and rare medium flint gravel. [Topsoil]*
0.10-0.21	0-0.11		Brown to dark brown (10YR 4/3-3/3) stonefree silty humic loam with coarse crumb to fine/medium blocky structure, with few fine fleshy roots, clear boundary. [Base of soil profile]
0.21-0.55	0.11-0.55	101	Light brownish grey to light yellowish brown (2.5YR 6/2 – 6/3) calcareous stonefree (but rare very small calcareous flecks) silt to silty clay becoming lighter in colour and denser in matrix with depth. Common fine clear yellowish red (5YR 5/6)mottles predominantly in the lower portion (from c. 0.4m), clear boundary. [calcareous overbank alluvium]
0.65-0.72	0.55-0.62	102	Zone of mottling within light yellowish brown (2.5YR 6/2) to pale yellow (2.5Y 7/3) calcareous silt marl. Many medium clear mottles of dark greyish brown (7.5YF), possibly representing a bA/B horizon [calcareous overbank alluvium with ?some soil ripening]
0.72-0.81	0.62-0.71		As above but a finer silt matrix with weak blocky – prismatic structure [calcareous overbank alluvium with ?some soil ripening]
0.81-0.95	0.71-0.85	103	Pale yellow (5Y 7/3) calcareous marl. [Calcareous overbank alluvium]
0.95+		104	*Gravel, abundant medium subangular and angular flint gravel* [Valley gravel]

[1] depth as recorded in monolith sequence; *descriptions in italics are from field records, as deposit not included in monolith

Table 1: Sediment sequence in Test Pit 1

5.2.2. Test Pit 2 was located at the eastern end of Transect 2 to examine the infill of the possible relict palaeochannel as revealed in auger 16 (5.1.3 above; **Appendix 1**). The sediment sequence recorded is given in **Table 2** below.

Depth (m)	Depth[1] (m)	Context	Description* descriptions in italics taken from archaeological field records
0-0.20		201	*Topsoil mid brown silty clay*
0.20-0.27	0-0.07		Dark greyish brown (10YR 4/2) humic silt with medium moderate crumb structure. Base 'B' horizon of alluvial gley soil. [base of topsoil]
0.27-0.47	0.07-0.27	202	Brown (10YR 5/3) stonefree silty clay loam with weak blocky structure, 0.1% fine macropores, very rare very fine chalk pieces, clear boundary. [humic calacareous overbank alluvium with soil ripening]
0.47-0.92	0.27-0.72	203	Light grey (2.5YR 7/2) massive calaceaous marl with very rare medium rounded chalk pieces, sharp boundary. [calcareous fine grained alluvium]
0.92-1.15	0.72-0.95	204	Dark greyish brown to very dark greyish brown (10YR 4/2-3/2) silty clay with moderate to strong medium prismatic structure, fine distinct red (2.5YR 4/6) mottles. [buried alluvial soil]
1.15-1.20+		205	*Mottled light fey brown silty clay with common to many medium flint gravel.* [Valley gravel]

[1] depth as recorded in monolith sequence; *descriptions in italics are from field records, as deposit not included in monolith

Table 2: Sediment sequence in Test Pit 2

5.3. Mollusc Assessment

5.3.1. A series of 18 contiguous samples was taken through the sequence exposed in each test pit (**Figure 2**) and between 1100-2000g processed by standard methods (Evans 1972) for land snails. The flots were rapidly assessed by scanning under a x10 - x30 stereo-binocular microscope and the numbers of shells and the presence of taxonomic groups were quasi-quantified (**Table 3** below).

TEST PIT	TP1	TP1	TP1	TP1	TP1	TP1	TP1	TP1	TP2	TP2	TP2	TP2	TP2	TP2	TP2	TP2	TP2	TP2
DEPTH (M)	0.9-1.0	0.8-0.9	0.7-0.8	0.6-0.7	0.5-0.6	0.4-0.5	0.3-0.4	0.2-0.3	1.1-1.2	1.0-1.1	0.9-1.0	0.8-0.9	0.7-0.8	0.6-0.7	0.5-0.6	0.4-0.5	0.3-0.4	0.2-0.3
WEIGHT (G)	2000	2000	2000	2000	2000	2000	2000	2000	1100	1300	1450	1350	1500	1450	1500	1500	1500	1600
Open country species																		
Pupilla muscorum	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Helicella itala	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	C
Vallonia spp.	C	C	C	C	-	C	C	C	C	A	C	C	C	C	B	A	A	A
Catholic species																		
Trichia hispida	A	A	C	C	B	C	A	A	C	B	B	A	A	A	A	A	A	A
Cochlicopa spp.	-	C	C	-	C	C	-	-	-	C	-	C	C	C	B	B	A	A
Shade-loving species																		
Aegopinella	-	C	-	-	-	-	-	-	-	-	-	C	-	-	C	C	C	C
Nesovitrea	-	-	-	-	-	-	-	C	-	-	-	-	-	-	C	-	C	C
Fresh and brackish water species																		
Planorbids	A	A	A	A	A	A	A	A	-	C	C	A	A	A	A	A	B	B
Lymnaea/Bithynia	A	A	A	A	A	A	A	A	C	B	B	A	A	A	A	A	A	A
Burrowing species																		
Cecilioides acicula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-
Approx **totals**	100	100	100	100	100	100	80	50	4	30	15	100	100	85	100	60	80	100

KEY: A = ≥10 items, B = 9 - 5 items, C = < 5 items, (+) = present

Table 3: Mollusc assessment from Test Pits 1 and 2

5.3.2. A sequence of eight samples from the floodplain alluvium (Test Pit 1) all contained relatively high numbers of shells in the scanned flots, thus indicating that further analysis would be statistically viable. The assemblages displayed a restricted taxonomic range, containing species of open country and wet, moist habitats typical of an open floodplain environment. Very few shade-loving species were present, and all are common in long grassy swards. The presence of the Planorbids and other freshwater species originate from the river itself.

5.3.3. A longer sequence of ten samples from the relict palaeochannel infill (Test Pit 2) displayed lower numbers overall and, excepting the buried soil (context 204), enough shells are present throughout to support further analysis. The assemblages here seem, not surprisingly, very similar to those of the floodplain alluvium. The very open conditions indicated together with the assemblage composition point to postglacial sequences, probably relating to any time from the Bronze Age to recent times. The lack of shade-loving elements tends to suggest that these sequences are probably not as old as the earlier Bronze Age or Neolithic periods.

5.3.4. No major change in the taxonomic groups can be seen, but subtle fluctuation within the main groups (e.g. *Vallonia* sp, and particularly within the Planorbids) may exist. The assemblage offers the potential to examine the precise nature of the floodplain (i.e. long or short, moist or dry, grazed or unglazed grassland). The freshwater species present may provide detailed information on the nature of the river and its flow, i.e. whether it was well- or poorly-oxygenated, fast or slow flowing, fresh or stagnant water, reedy or free of vegetation. Examination of the sequences may provide details of changes in the floodplain and the river, and of any changes in the use of both the floodplain and the river. However, such change cannot be closely defined as samples in both sequences cross context boundaries, thus mixing assemblages of differing date and potentially differing environment and land-use regimes.

6. DISCUSSION

6.1. The Floodplain Alluvium

6.1.1. The floodplain alluvium is characterised by uniform, massive, fine-grained calcareous marl, which represents the flooding of highly calcium carbonate charged water, and the deposition of fine chalky silt over the floodplain. A zone of mottling (context 102) may represent incipient soil ripening preserved within the sequence. The alluviation is clearly the product of gentle, regular events on the floodplain, with gradual accretion. Any evidence of discrete and individual depositional events (laminae or flood couplets) has been destroyed by *in situ* pedogenic activity on that surface. This probably represents a typical seasonal and cyclical winter flooding regime.

6.2. The Palaeochannel Sequence

6.2.1. The auger survey revealed the presence of a former, infilled palaeochannel situated against the chalk river cliff on the eastern edge of the floodplain. This feature is just observable in the present ground surface as a relict palaeochannel. This may be the same as a similar feature located in the 1992 auger survey on the eastern side of the valley floor and partially buried by colluvium.

6.2.2. The sequence in the palaeochannel recorded in Test Pit 2 comprises very fine-grained calcareous marl. The sequence here is very similar to that recorded on the floodplain (Test Pit 1), and again probably represents overbank, rather than channel-fill, alluvium: it is suggested that after this channel became cut off from the river, it was infilled by flood sediment washed over the floodplain from the active river channel. This depositional environment has produced a somewhat finer, well-sorted marl character than that seen in the floodplain alluvium. At the base of the sequence, however, is a truncated humic alluvial gley soil that formed on the floodplain and in the 'dry' relict channel prior to sedimentation. Apart from this buried soil, the palaeochannel sequence reflects the floodplain sequence described from Test Pit 1.

6.3. Significance of the Results and Recommendations for Further Work

6.3.1. The data recovered allows some assessment of the potential and significance of these deposits to further understanding of the landscape, the potential for buried archaeology (e.g. Allen 1991; 1992), and the potential for palaeo-environmental evidence (e.g. Scaife and Burrin 1992).

6.3.2. The presence of alluvium in the valley bottom is patchy, discontinuous and variable both across the valley profile and along its longitudinal corridor. Discontinuous alluvial packets are common (cf. Needham in Needham and Macklin 1992) and such evidence is typical of other chalkland valleys (e.g. Winterbourne and Kennet Valleys, see Allen and Powell 1996; Evans *et al.* 1993). Although the sequences are shallow (generally less than 1m), their extent provides the potential to mask, bury and seal archaeological horizons. This is illustrated by the buried soil recorded at the base of the relict palaeochannel in Test Pit 2.

6.3.3. The auger data from this and previous evaluations may allow the general mapping of the distribution of alluvial deposits and former channels in the Till Valley, within the study area. This will provide an approximation of the extent of the buried landscape. The lack of dating evidence from the sequences, and the lack of datable material within them, however, makes dating the sediment or any palaeo-environmental sequence difficult. Although the sequences may be generally referable to broad time periods, there is little potential to define this chronology well.

6.3.4. It is suggested, therefore, that further work should be undertaken to confirm the survival of archaeological deposits beneath the alluvium, where such deposits might be impacted upon by the proposed highway design. This work would take the form of trial trenching to the base of the alluvial sequence, under suitable weather conditions. The location and extent of any such work would be dependent on the bypass alignment selected for further design development, the nature of the design proposals (for example, bridge pier locations), and the results of the mapping of the alluvium suggested above.

6.3.5. The detailed description of the deposits provides a basic record of the sedimentological regime. Analysis of the buried soil from Test Pit 2 through soil micromorphology is possible, but without evidence of human activity is probably of little value. No further description or recording is proposed, therefore.

6.3.6. Although there is the potential for pollen to survive in these sediments, in view of the lack of any chronological framework no assessment of presence has been undertaken. The merits of such assessment should be reviewed following the conclusion of any further field evaluation as suggested above.

6.3.7. Further analysis of the land snail assemblages clearly has the potential to define the nature of both the local floodplain environment and land-use, as well as the nature of the river course itself. It is recommended that the merits of any such analysis should be reviewed following the conclusion of any field evaluation as suggested above.

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8. APPENDIX 1: CATALOGUE OF AUGER BORES

Transect 1

Auger No. 1	NGR SU 07831.0 41427.0	Surface Height 71.916mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.30m	Dark Brown	Silty clay loam	Topsoil
0.30m+	White	Chalk bedrock	Natural

Auger No. 2	NGR SU 07811.5 41437.2	Surface Height 71.772mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.30m	Dark Brown	Silty clay loam	Topsoil
0.30m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 3	NGR SU 07792.6 41446.7	Surface Height 71.419mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.26m	Dark Brown	Silty clay loam	Topsoil
0.26m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 4	NGR SU 07784.0 41451.0	Surface Height 71.280mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.26m	Dark Brown	Silty clay loam	Topsoil
0.26m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 5	NGR SU 07767.5 41461.0	Surface Height 71.298mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.23m	Dark Brown	Silty clay loam	Topsoil
0.23m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 6	NGR SU 07747.9 41470.2	Surface Height 71.610mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.21m	Dark Brown	Silty clay loam	Topsoil
0.21m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 7	NGR SU 07729.4 41479.8	Surface Height 72.367mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.30m	Dark Brown	Silty clay loam	Topsoil
0.30-0.55m	Very dark brown	Silty clay subsoil	Trackside bank
0.55m+	Mid-light brown	Coarse gravel	River Gravel

Transect 2

Auger No. 8	NGR SU 08202.9 41725.3	Surface Height 73.340mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.67m	Mid greyish brown	Silty clay loam	Topsoil
0.67m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 9	NGR SU 08182.5 41728.2	Surface Height 72.837mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.42m	Mid greyish brown	Silty clay loam	Topsoil
0.42m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 10	NGR SU 08165.3 41738.2	Surface Height 73.459mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.27m	Mid greyish brown	Silty clay loam	Topsoil
0.27m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 11	NGR SU 08149.4 41742.4	Surface Height 73.591mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.30m	Mid greyish brown	Silty clay loam	Topsoil
0.30m+	Mid-light brown	Coarse gravel	River Gravel

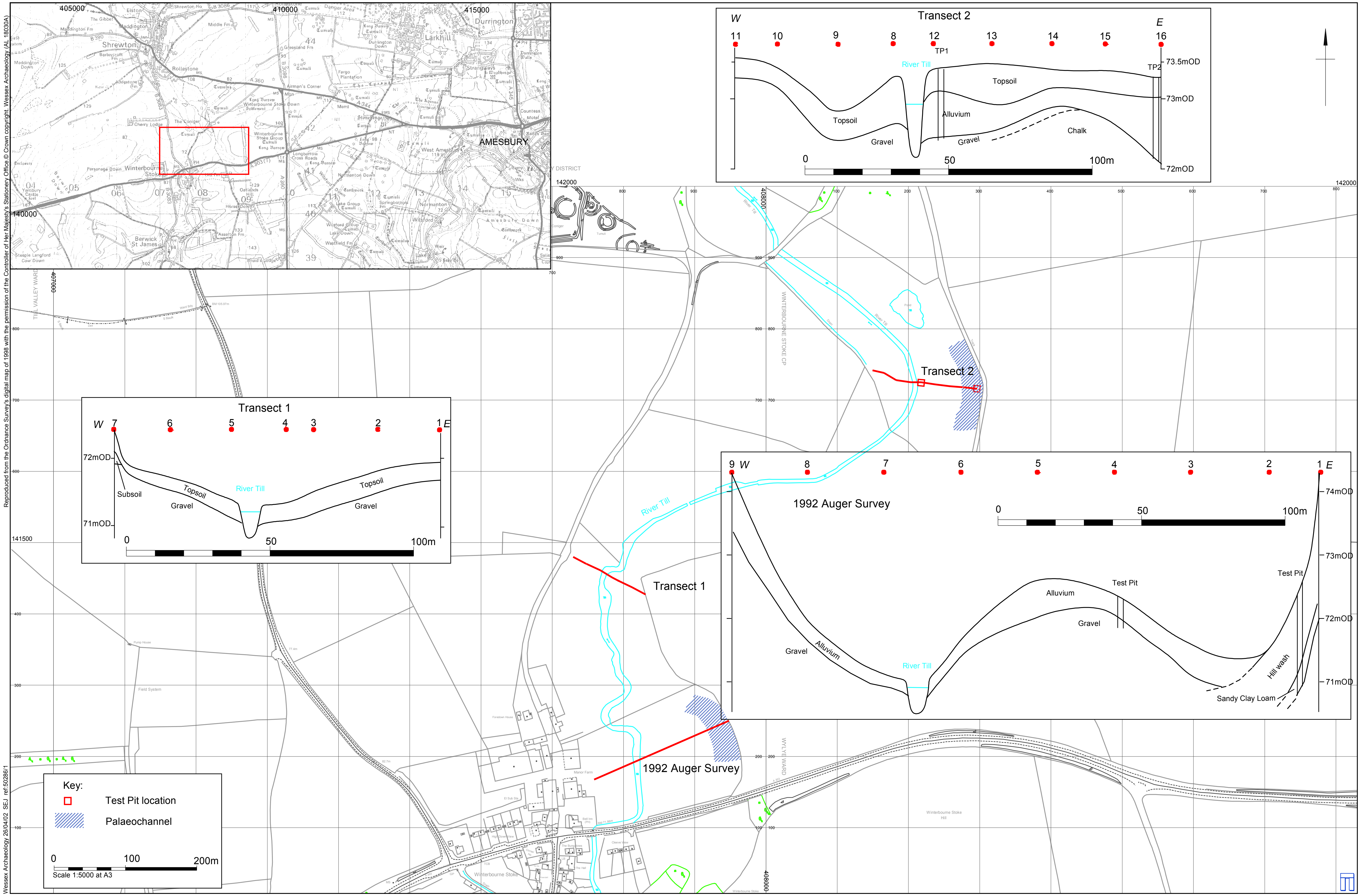
Auger No. 12	NGR SU 08216.7 41724.0	Surface Height 73.429mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.30m	Mid greyish brown	Silty clay loam	Topsoil
0.30-0.95m	Light greyish brown	Silty clay	Alluvium
0.95m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 13	NGR SU 08236.9 41722.4	Surface Height 73.519mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.60m	Mid greyish brown	Silty clay loam	Topsoil
0.60-0.95m	Light greyish brown	Silty clay	Alluvium
0.95m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 14	NGR SU 08257.1 41719.8	Surface Height 73.420mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.25m	Mid greyish brown	Silty clay loam	Topsoil
0.25-0.50m	Light greyish brown	Silty clay	Alluvium
0.50m+	Mid-light brown	Coarse gravel	River Gravel

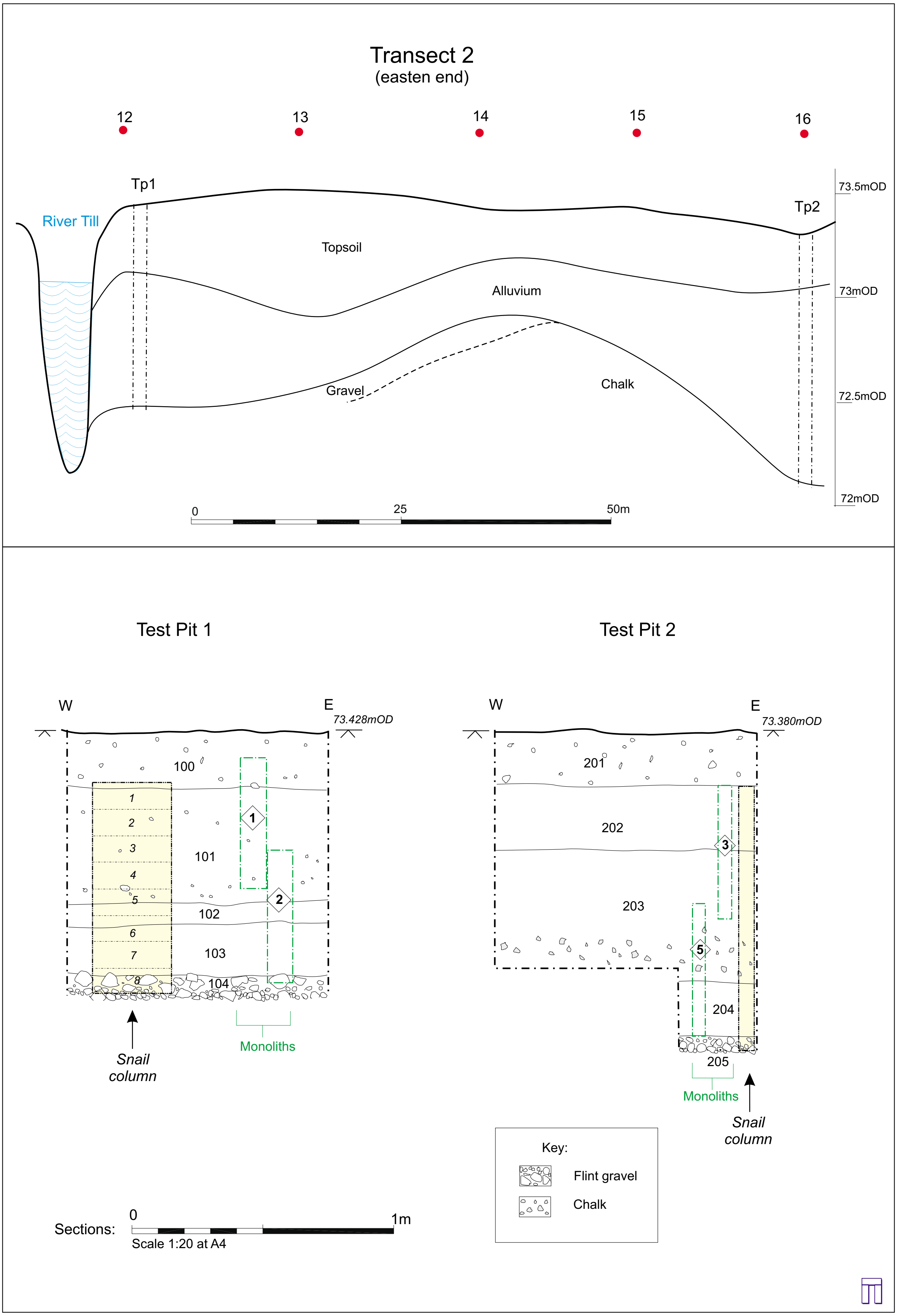
Auger No. 15	NGR SU 08275.9 41718.2	Surface Height 73.416mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.32m	Mid greyish brown	Silty clay loam	Topsoil
0.32-0.70m	Light greyish brown	Silty clay	Alluvium
0.70m+	Mid-light brown	Coarse gravel	River Gravel

Auger No. 16	NGR SU 08294.7 41716.5	Surface Height 73.301mOD	
Depth	**Colour**	**Textural Class**	**Description**
0-0.27m	Mid greyish brown	Silty clay loam	Topsoil
0.27-1.20m	Light greyish brown	Silty clay	Alluvium
1.20m+	Mid-light brown	Coarse gravel	River Gravel



Transect locations showing profiles.

Figure 1



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Transect 2: South facing sections through Test Pits 1 and 2.

Figure 2

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