REPORT ON THE EXCAVATION OF RYKNIELD STREET BETWEEN TUPTON AND WINGERWORTH

1991

Ian Wall

February 1992

(Revised May 1993)

FIGURES

INTRODUCTION

The following report details the results of a rescue survey by Creswell Heritage Trust on the line of Ryknield Street 5 km south of Chesterfield between the villages of Tupton and Wingerworth. Ryknield Street, also known as a north-south road of major military importance, linked Little Chester with Templeborough via Pentrich and Chesterfield (Hart 1981).

Two locations were investigated, a dissection of the Roman road at GR 39256651 in advance of a pipeline development to the south of Redleadmill Brook in addition to an already exposed section of the well preserved Roman agger 60 metres to the north at GR 39266658 (fig 1).

Topographically, the area is lowlying within the Rother Valley.

PIPE TRENCH (Exposure A)

A trench 15 x 5 metres was mechanically excavated to a depth of 0.8 metres over the majority of the trench area with deeper 1.0 metre wide slip trench sections excavated down the northern edge and extending over the eastern end. Deeper excavations over these latter areas were cut to determine the continuation of natural clay deposits. Towards the west the machine followed the bedrock interface extending from the base of the trench to 0.1 metres below the top of the modern plough zone.

The trench dissected the presumed alignment of the Roman road 8 metres from Redleadmill Brook 94.116 metres OD at the foot of the slope leading down to the stream. At this point there was no surface indication for the road, the location of the trench determined by an extended alignment from the prominent agger to the north. The close proximity of the road to Redleadmill Brook and its relation topographically at the base of a slope prompted the suggestion that the road profile at this point may have been disguised by an accumulation of alluvial and floodwater zone deposits.

RESULTS

Excavation in the trench to a greater depth was hindered by the level of the groundwater. This forced the survey to concentrate on the section exposures.

Three out of the four trench sections were drawn and described (fig 2):

Section 1 : north facing
Section 2 : south facing
Section 3 : west facing

The east facing section cut only to a 0.1 metre depth as a result of Unit 1 rising sharply and outcropping close to the surface, the ploughsoil at this juncture being no more than 0.1 metres in depth. More detailed sedimentological characteristics are given in appendix 1.

The observed sediments units indicate a characteristic ground - water gleyed soil profile. Lower horizon units exhibiting predominantly greyish hues as a result of reductive processes during almost permanent waterlogging. Fluctuations in this groundwater were indicated through red mottle horizons higher up the profile, oxidation also occurring within larger soil pores, structural cracks and root channels. It was therefore of no surprise to find the deeper machine excavated areas totally waterfilled approximately 0.1 metres below the remaining dry trench base.

The soil profile consisted of mainly sand clay loams, the clay component increasing down the soil profile indicative of Unit 2. Significantly the upper boundary of Unit 2 merged with Unit 1, Unit 1 displaying a clast supported deposit with a marked increase in a grit / sandstone gravel fraction.

Although Unit 1 was not observed to be continuous within the section small exploratory excavations at the context's interface, below the trench base, indicated the continuation of Unit 1. It was felt this information and the field tests on the discrete units gave sufficient justification for describing them as the same deposit. The identification of predominantly gleyed clays within the trench suggests that the trench sectioned a dip in the underlying geology, possibly a palaeo-stream channel, where deposition of clays from weathered parent material, floodwaters, and alluvial inwash has taken place.

Although no archaeological features were observed during the machining and the inception of groundwater prevented deeper investigations, there was a suggestion that sedimentary units described as Units 1 and 2 and labelled "? Road" (fig 2) possibly represented residual agger deposits devoid of the larger stone size range recorded on the exposed agger (see below). Additionally these deposits had suffered from marked erosion resulting in the accumulation of stones to the east and west i.e at the base of the agger sides. Further support is the width of the deposits in the section at 4.5 metres approximating the width of the road on the exposed agger with presumably more of the unit to be uncovered lower in the section. Additionally, these deposits were on a reasonably good alignment with those uncovered on the agger on the assumption that these latter deposits were representative of that alignment.

The amalgamation of discrete sedimentary units under the description of Units 1 and 2 based on similar sedimentary characteristics implies similar sources for those sediments. Geomorphologically, the location as described above would have acted as a keen receptacle to the inwashing of slope deposits as well as floodwater deposits from the neighbouring brook. The majority of the deposits described are suggested to be products of the latter depositional environment resulting in the high clay fraction. Under this scenario Unit 1, including the suggested road contexts, can be as easily explained as naturally occurring in-wash deposits, a result of higher energy environments depositing coarser sands, gravels and a larger clast fraction from a source material higher up the slope. Certainly these deposits did not resemble those exposed on the agger surface.

If we are to favour a geomorphological explanation for the deposits in the exposed sections what has happened to the archaeology? As described above no archaeological features were observed during the mechanical excavation of the trench. However during deeper excavations by the developers prior to pipe laying, three timber piles were uncovered, on an alignment approximating that of the road (pers. comm. Birse Driver). The central pile was removed being 0.93 metre in length, 0.18 metres diameter and set in a clay / gravel surface 2.5 metres below the modern land surface.

Two samples from the pile were submitted for radiocarbon dating at the Scottish Universities Research and Reactor Centre and provided the following dates:

Sample GU-3289 1970 +/- 50 years BP (before 1950)

Sample GU-3290 1950 +/- 50 years BP (before 1950)

Both of these dates are expressed at the one sigma level of confidence.

The evidence suggests that the timber piles are the surviving remains of a timber structure crossing Redleadmill Brook, a late Iron Age / early Roman date for the timber indicating that the structure may relate to the initial construction phase of Ryknield Street.

If the above assumption is correct the stream channel has evidently migrated to the north since Roman times, either naturally or during the canalisation of the brook. The abrupt termination of the agger on the north side of the stream, evidently cut by the stream, supporting a realignment of the channel.

The suggested lack of archaeology represented within the trench sections is therefore more understandable. The road, in the form of a metalled surface, never existing at this location.

EXPOSED AGGER (Exposure B)

An archaeological investigation on the surviving agger to the north of Redleadmill Brook was undertaken. Prior to re-routeing the pipeline, the contractors had already removed the bulk of the topsoil from the agger surface.

The primary intention of the survey was to ascertain the nature of the road surface deposits by cleaning off the overlying topsoil without disturbing any of the in-situ material. An area approximately 10 x 9 metres was trowel cleaned (fig 3) and a trench 1.8 x 0.7 metres was cut adjacent to the roads western edge in order to observe adjacent stratigraphy overlying the agger and to locate any side ditches (fig 4).

RESULTS

The results of the survey are presented (figs 3 and 4) with detailed sedimentological descriptions given in appendix 2.

Of the four sedimentary units identified on the road surface, three were regarded as important archaeologically.

Unit 1 : Sandstone blocks and gravel component

Unit 3 : Coal dust deposits

Unit 4 : Olive / Yellow Sand Clay - Clay

N.B. Unit 4 not is indicated in fig.3 as its survival was dependant on the presence of the larger stones and therefore only survived beneath these.

Unit 1 represents the main bulk of the surviving road deposits approximately 25% of this deposit being tabular / platy sandstone >0.40 metres in diameter. Filling the intersties between these larger stones and observed to be stratigraphically later the bulk of this deposit comprised a brown yellow clayey sand / gravel deposit. Unit 1 presumably representing the initial road surfacing material of a compacted angular gravel spread over and between the more supportive larger stone base. Interestingly, it was observed on the southern part of the exposed agger that these larger stones were set on discrete patches of yellow clay (Unit 4).

The upper extent of the road surface deposits reached a maximum width of 4.9 metres. With the additional 0.3 metres at the base of the camber (Section 1 fig 4) this giving an approximate total road width of 5.5 metres. It must be stressed, however, that only a general reliance can be placed on these dimensions from what was a limited investigation with the resulting inability to fully understand and separate erosion contexts from true road contexts.

Finally Unit 3, a clay silt with a high content of coal, was recorded in two broad locations (Fig 3) . Although, in certain instances, this deposit appeared to underly the large in situ road stones within Unit 1. Additionally this deposit was located on the edge of the road and predominantly coincides with a lack of large stone work. Nowhere was this context observed beneath the main matrix of Unit 1. However, traces of this deposit were identified within Unit 6 (Unit 7 Section 1 fig 4), a deposit concordant with the agger profile and may therefore be of some antiquity.

SECTION 1(fig 4)

In order to understand the recent stratigraphy adjacent to the road and locate any side ditch, a slip trench was excavated on the western edge of the camber, fig.4 describing the south facing section.

Units within the section compare favourably with the sediments from the pipe trench, indicating periodically waterlogged gleyed horizons of sandy clay loams grading to a sandy clay texture towards the base with partially decomposed sandstone and heavy manganese staining.

No side ditch was identified, only Units 6 and 7 representing contexts of any archaeological significance being the product presumably of surface erosion off the road. Also, the need for a side ditch in this location is questionable, an area that is periodically waterlogged. However, the limited extent of the investigation makes any suggestions concerning erosion units and side ditches very speculative.

DISCUSSION / SYNTHESIS

Although the nature of the investigations at Wingerworth were limited, the sediment units described in the section at exposure A are suggested to be non-archaeological not discounting of course anthropogenic effects on the hydrology of the area through canalisation of the brook.

The recovery of a timber pile, one of three on an alignment with the course of Ryknield Street, the surviving remains of a timber structure early Roman in date that crossed Redleadmill Brook, seems to support the above suggestion; the Roman road at this location not a metalled surface but presumably a bridged section. Certainly there was a contrast between the lack of stone in the ploughed field at this point and further to the south.

The road at this location is in a floodwater zone the sedimentary units in the section reflecting natural deposits that have filled either a palaeochannel or a dip in the geology. The incidence of unsorted angular gravels Unit 1, with very little shape modification, (Unit 1) possibly reflecting solifluction debris during incidences of rapid run off.

Investigations on the exposed section of agger to the north of Redleadmill Brook suggested a surviving height of in situ deposits to approximately 0.3 metres. It was evident that the road had suffered from substantial erosion, Unit 1 representing only the initial road surfacing layers. The excavation also showed more recent disturbance, plough furrows cutting deep into the surface resulting in the surviving large road stones being upended.

The sediments units described compared well with a previous excavation of Ryknield Street to the south of Mill Lane, Wingerworth 300 metres to the north, the road here described as "a layer of flat stones of average size about 5 ins.square, resting on a foundation, 12 ins. thick, of rammed gravel and yellowish clay.......topped with a surfacing of small stones and gravel" (Oakley 1955.145). Oakley also identified comparable coal dust deposits, although at Mill Lane these deposits defined side ditches where the more recent exposed sediments (Unit 3) did not.

CONCLUSION

From the limited investigations a number of points of interest have emerged. At exposure A the sedimentary characteristics suggest natural deposits. The recovery of a timber pile, early Roman in date, on the road alignment suggests a timber construction across the watercourse in which case agger deposits would not have existed.

Cleaning of the prominent agger at exposure B suggested that the bulk of surviving in-situ material were only initial road survace gravels incorporating a larger stone fraction. The road did not appear to have associated side ditches.

BIBLIOGRAPHY

Hart, C.R. **The North Derbyshire Archaeological Survey to A.D. 1500** (Chesterfield 1981, 2nd repr. Sheffield 1990)

Oakley R.H. 1955 Excavations on Ryknield Street near Chesterfield, 1953 and 1954. **Derbyshire Archaeological Journal** 75, 144-49.

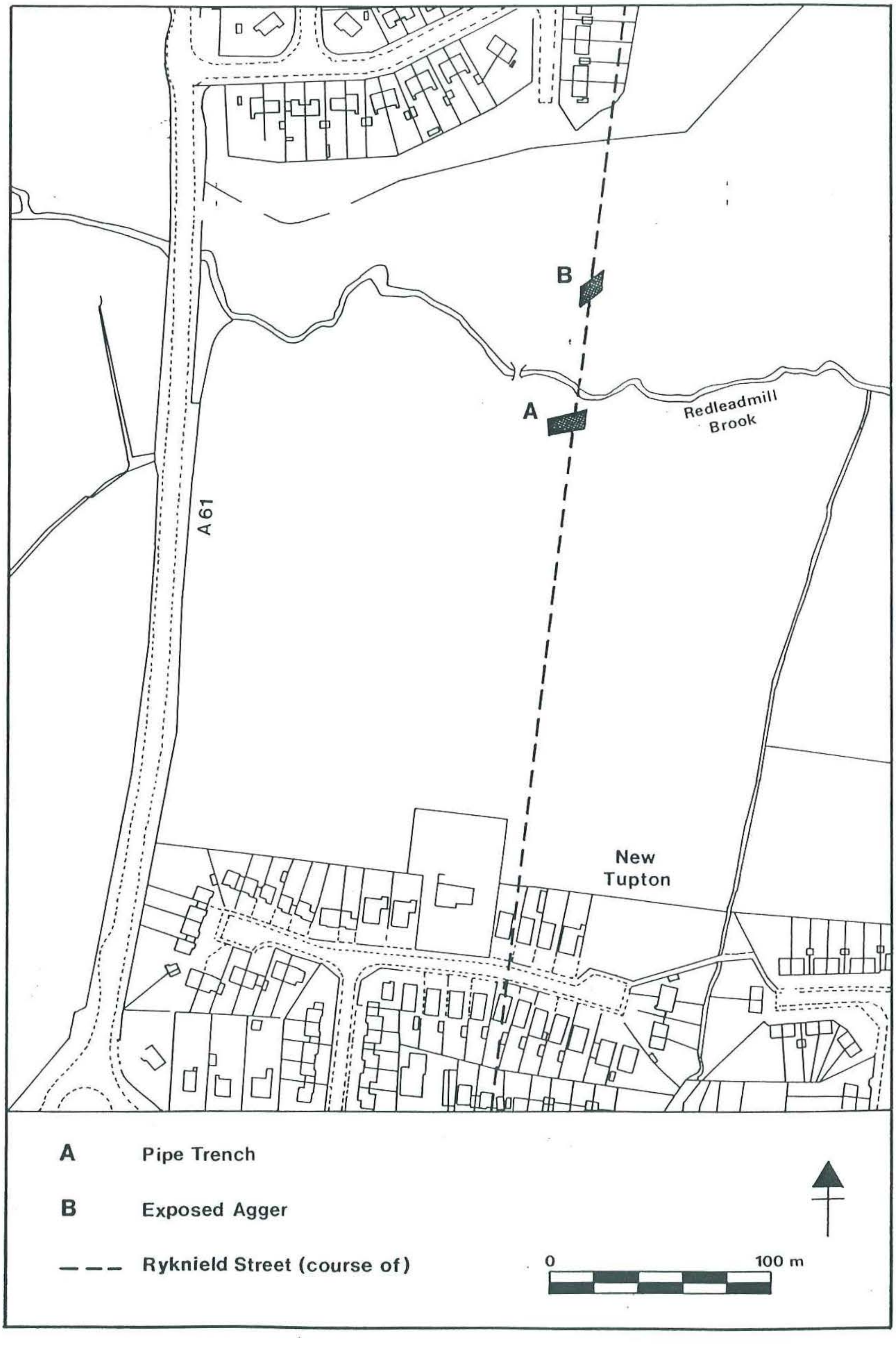
B
A
Redleadmill
Brook
A 61
New
Tupton
A Pipe Trench
B Exposed Agger
Ryknield Street (course of)
0
100 m

Fig 1.

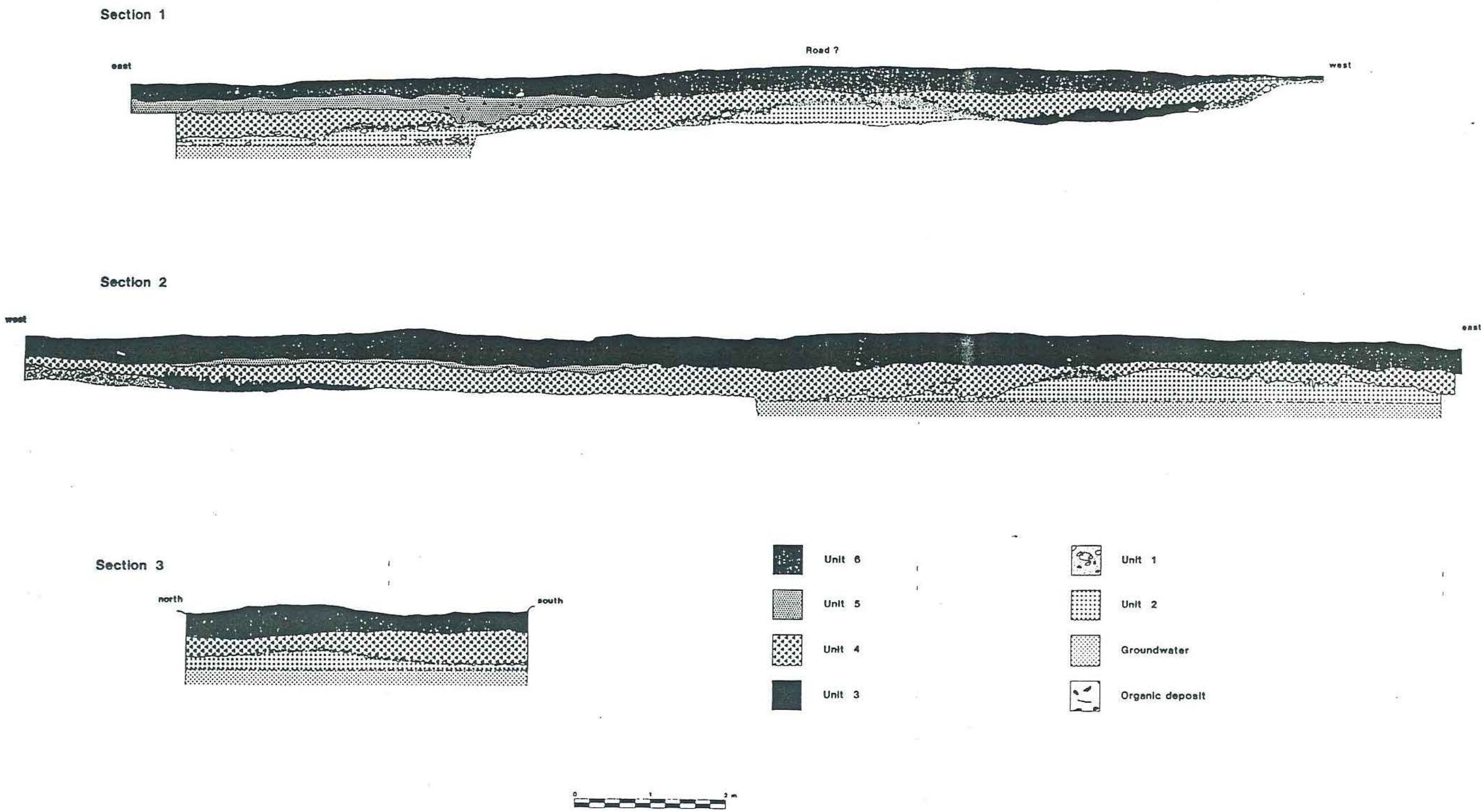
Section 1
Road ?
east
west
Section 2
west
east
Section 3
north
south
Unit 6
Unit 5
Unit 4
Unit 3
Unit 1
Unit 2
Groundwater
Organic deposit
0
1
2 m

Fig 2.

Ryknield Street : Plan of exposed agger surface

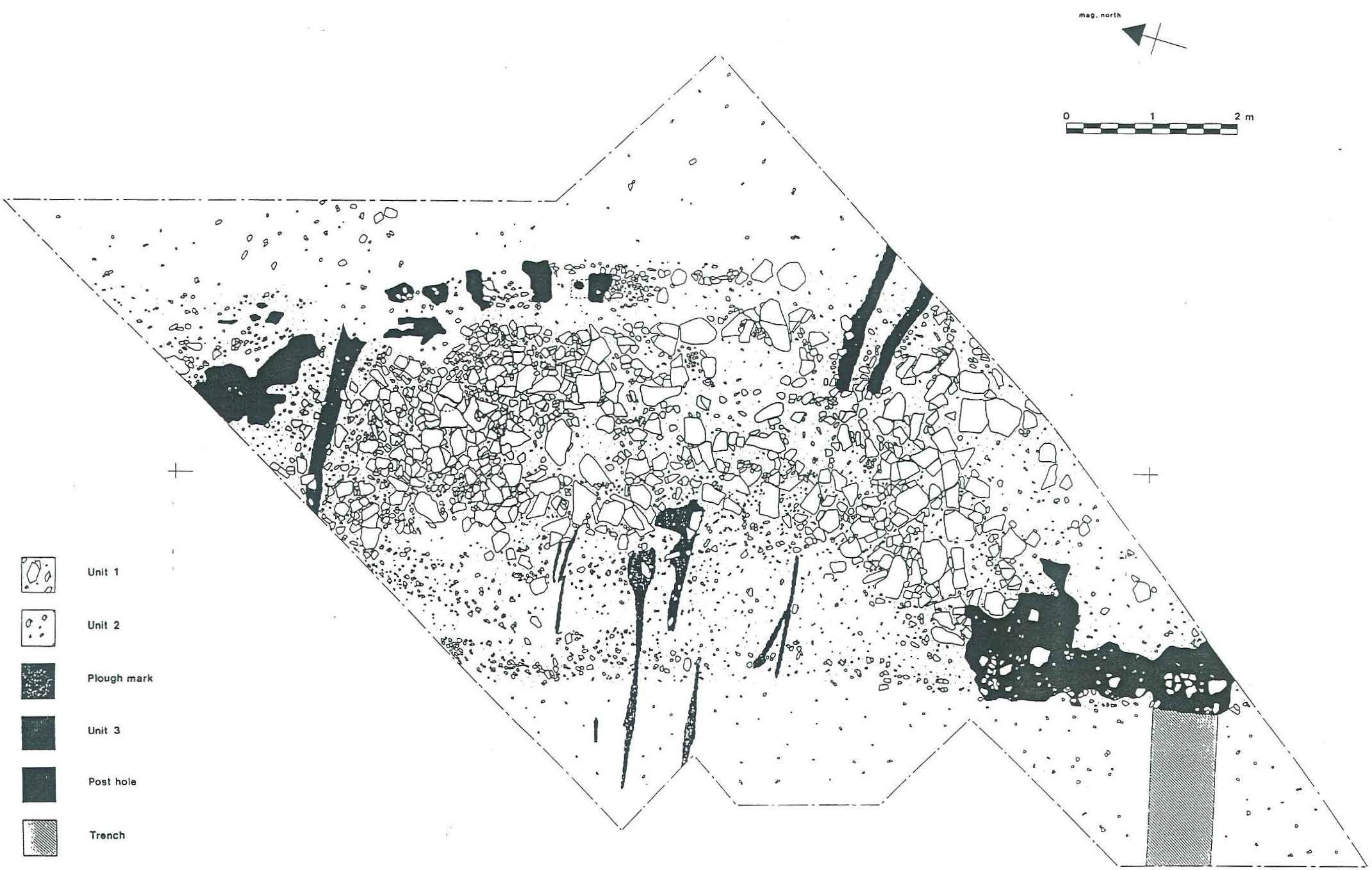

Fig 3.

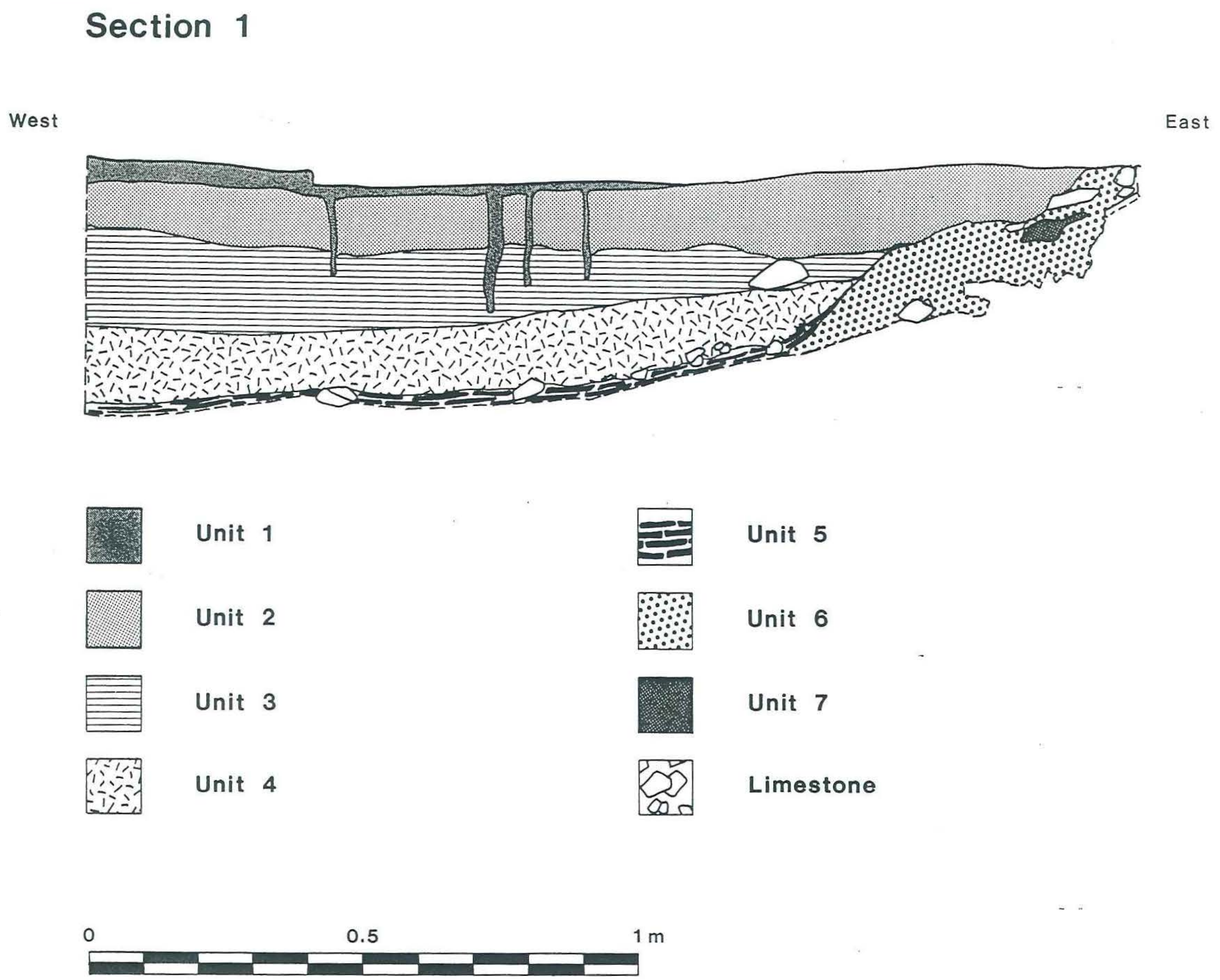
Section 1
West
East
Unit 1
Unit 2
Unit 3
Unit 4
Unit 5
Unit 6
Unit 7
Limestone
0
0.5
1 m

Fig 4.

APPENDIX 1

Sediment descriptions Sections 1, 2, and 3 (Fig 2)

UNIT 1 : Clast supported 70% ab. gravel fraction with 10% ab. sandstone >10 cm diameter. Clasts sub-angular to sub-rounded. Grit inclusions angular clasts. Partial decomposition on sandstone. Sandy clay loam matrix predominantly 2.5Y 4/4 with mottles (5YR 6/8, 4/2; 5Y 7/3; 2.5YR 4/8, 3/0). Upper boundary sharp.

UNIT 2 : Sand clay loam matrix supports angular / sub-angular grit inclusions. Reduction in grit and increase in clay content compared with Unit 1. Also supports low ab. sub-rounded partially decomposed sandstone >10cm diam. Matrix predominantly 2.5Y 5/4-5/2 supports mottles 2.5YR 4/8, 5/8; 5YR 4/2, 6/8. Upper boundary merges with Unit 1.

UNIT 3 : Sandy clay - clay matrix predominantly 5Y 5/1. Red mottles (2.5YR 5/8). Undulating upper boundary.

UNIT 4 : Sandy clay loam - clay matrix 2.5YR 4/2. 1% ab. sub-angular sandstone inclusions >3cm diameter. 1% ab. mottle 5YR 4/2. 5% ab. organic content includes charcoal and partially decomposed plant matter. Clear upper boundary.

UNIT 5 : Clay loam matrix 2.5Y 3/2. Supports 5% ab. sub-angular clasts >5cm diameter. Clear upper boundary.

UNIT 6 : Clay loam matrix 2.5Y 3/2. 50% ab. roots. Supports sub-angular clasts >15cm diameter.

APPENDIX 2

Sediment descriptions on the exposed agger.

UNIT 1 : Sandy silt loam matrix 10YR 6/6 supports gravel component 59% 0.1 - 0.3cm diameter (sub-angular to sub-rounded), 35% 0.3 - 0.5cm diameter (sub-angular to sub-rounded), 5% 0.5 - 1.5cm diameter (angular), 1% >2cm diameter (angular). Matrix fills voids between 25% ab. tabular / platy sandstone >40cm diameter.

UNIT 2 : Sandy clay loam matrix 10YR 4/6 - 3/6 with mottles 10YR 3/3. Supports 1% ab. sub-angular sandstone >2cm diameter.

UNIT 3 : Clayey silt 2.5Y 3/0 predominantly coal dust. Coal fragments > 0.4cm diameter. Also angular sandstone >3cm diameter.

UNIT 4 : Sandy clay - clay matrix 2.5Y 6/6.

Sediment descriptions Section 1 Fig 4.

UNIT 1 : Clay loam matrix 2.5Y 3/2. Supports sub-angular clasts. High organic content 50% ab. roots.

UNIT 2 : Sandy clay loam matrix suports 1% ab. sub-rounded to sub-angular clasts > 2cm diameter.Predominantly 10YR 4/6 - 3/6 with mottles 10YR 3/3. Grit content.

UNIT 3 : Sandy silt loam mixed mottle matrix 2.5Y 6/4, 5/2, 4/2 3/0; 5YR 4/6. Increased grit than Unit 2.

UNIT 4 : Sandy clay loam matrix 2.5Y 6/2, with mottles 7.5YR 6/8; 5YR 4/3, 3/0. Supports grit inclusions.

UNIT 5 : Sandy clay matrix 2.5Y 5/2 with heavy manganese staining. Supports partially decomposed angular to sub-angular sandstone.

UNIT 6 : Sandy clay loam matrix 10YR 5/3 with mottles 10YR 6/4, 3/3. Grit inclusions.

UNIT 7 : Clayey silt 2.5Y 3/0 predominantly coal dust. Coal fragments > 0.4cm diameter.

Sediment descriptions are based on field observations only % abundance estimated on exposed surfaces.