

Assessment of the sedimentary samples from No.1 Poultry [ONE94]

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## *Assessment of the sedimentary samples from No.1 Poultry [ONE94].*

### **Introduction**

The purpose of this assessment is to superficially characterise the deposits and to make further recommendations for analytical work which would assist in the interpretation of the site and contribute to the research objectives as outlined in the Project Design. Monolith samples were taken through sedimentary sequences associated with the Via Decumana, with the use and disuse of water systems - drains and channels, with the silting of the Walbrook stream and its tributaries and with buried soil profiles.

### **Methodology**

Samples were obtained by inserting a monolith tin into a cleaned section and cutting it out - to remove a sequence of sediment representative of the area of exposed section sampled. The top of each tin was levelled to Ordnance Datum [OD], located on the relevant section drawing and each sequence of monoliths allocated an environmental sample number.

Complimentary bulk and micromorphological samples were also taken, where appropriate.

The monoliths were cleaned and described. Each sedimentary unit observed was allocated a consecutive letter in ascending order from the base of the sequence upwards; and the monolith sequence units related to site context numbers.

### **Results**

In the assessment below each sample is first described, the sediments are then discussed and recommendations for further analysis are made. In most cases a separate sketch log relating the monolith units to site contexts and aiding comprehension of the sediment description and the depositional and post-depositional processes represented is also provided.

## Sample 429

### Introduction

A sequence of alternating peat / organic silt and sand deposits taken from a sondage section in Area 9 and considered during excavation to be 'naturally deposited' as they appeared too regular and uniform in composition to be dump layers.

What depositional processes are involved?

Base of sequence at 7.18m OD.

Unit	Height [cms]	Description
A	0 - 5	7.5YR5/2 brown slightly silty medium-coarse sand; infrequent angular, granule-sized clasts and silty lenses. Discontinuous iron-stained laminae at top and base. Sharp contact to unit B.
B	5 - 12	10YR2/1 black highly organic silt. Very coarse sand lense, similar to unit C in character. Infrequent charcoal clasts and SA granule sized clasts. Large potsherd towards base. Sharp contact to unit C.
C	12 - 21	10YR3/2 very dark greyish brown coarse, very slightly silty sand. Infrequent organic sandy lenses with non-humified ?twig and ?wood fragments. Moderately poorly sorted granule to pebble-sized gravel, charcoal and marine mollusc clasts. Iron-stained patches. Unit becomes stonier and darker [more organic] towards base. Diffuse contact to unit D.
D	21 - 23	10YR3/1 very dark grey sandy organic silt; small pebble-sized gravel, charcoal and non-humified plant fragment clasts. Sharp irregular contact to unit E.
E	23 - 25	10YR6/3 pale brown slightly clayey silt. Infrequent pebble-sized clasts. Grey clayey lenses. Iron-stained patches. Sharp irregular contact to unit E1.
E1	24 - 25	10YR3/1 very dark grey organic silt with plant fragments and charcoal; similar to G. Sharp irregular contact to F.
F	25 - 26	7.5YR4/4 brown iron-stained silty sand. Granule-sized gravel clasts. Oyster shell and non-humified plant fragments. Diffuse contact to unit G.
G	26 - 34	10YR3/2 very dark greyish brown organic silty sand. Frequent poorly sorted granule to pebble sized gravel, shell, charcoal and non-humified wood clasts. Diffuse contact to unit H.
H	34 - 39	10YR3/3 dark brown organic very silty sand; finer than unit G and with more organic inclusions; plant stem, wood, twig and charcoal become more abundant towards top of unit. Diffuse contact to unit I.
I	39 - 46	10YR2/2 very dark brown organic silty sand.

Moderately poorly sorted granule to pebble-sized gravel, oyster shell, bone, wood and charcoal. Infrequent clay lenses, sandy lenses and iron-stained patches. Sharp irregular contact to unit J.

- J      46 - 69    10YR3/2 very dark grey organic silty sand. Frequent small pebble sized gravel and charcoal clasts; infrequent granule-sized brick or tile clasts - more common towards base. Infrequent iron-stained concretions. Clayey silt lenses towards top and base of unit. Diffuse contact to unit K.
- K      69 - 82    10YR3/2 very dark grey coarse silty sand. Granule to small pebble-sized shell, wood, charcoal and SA gravel clasts. Clay lenses. Clasts frequently iron-stained towards base of unit. Sharp, irregular contact to unit L.
- L      82 - 92    2.5Y2.5/2 very dark brown highly organic silt. Non-humified wood clasts- slanting orientation; clay lenses increase towards base - slanting orientation. Very small rounded pebbles at base. Sharp irregular contact to unit M.
- M      92 - 95    10Y2/2 very dark brown organic silt; granule-sized gravel clasts; flecks of brick and charcoal.

Top of sequence at 8.13m OD.

#### Discussion

All deposits, except for the base [context 3911, unit A] which may be 'natural' river terrace gravel, contain some evidence of human activity [charcoal, brick flecks, oyster shell, pot]; and it is likely the sequence represents the infilling of a natural or man-made channel by surface wash, plant growth and decay, together with episodic human dumping. Particularly as timber revetted drains or channels were found at about the same height, cut into river terrace gravel in Evaluation Shaft 2.

The depositional environment associated with these sediments is uncertain - was it 'dry' and vegetated? - however there appears to be no evidence of rooting or soil-forming processes; an open ditch? an episodic water course? And was material deliberately dumped or transported and reworked by episodic water flow and slumping?

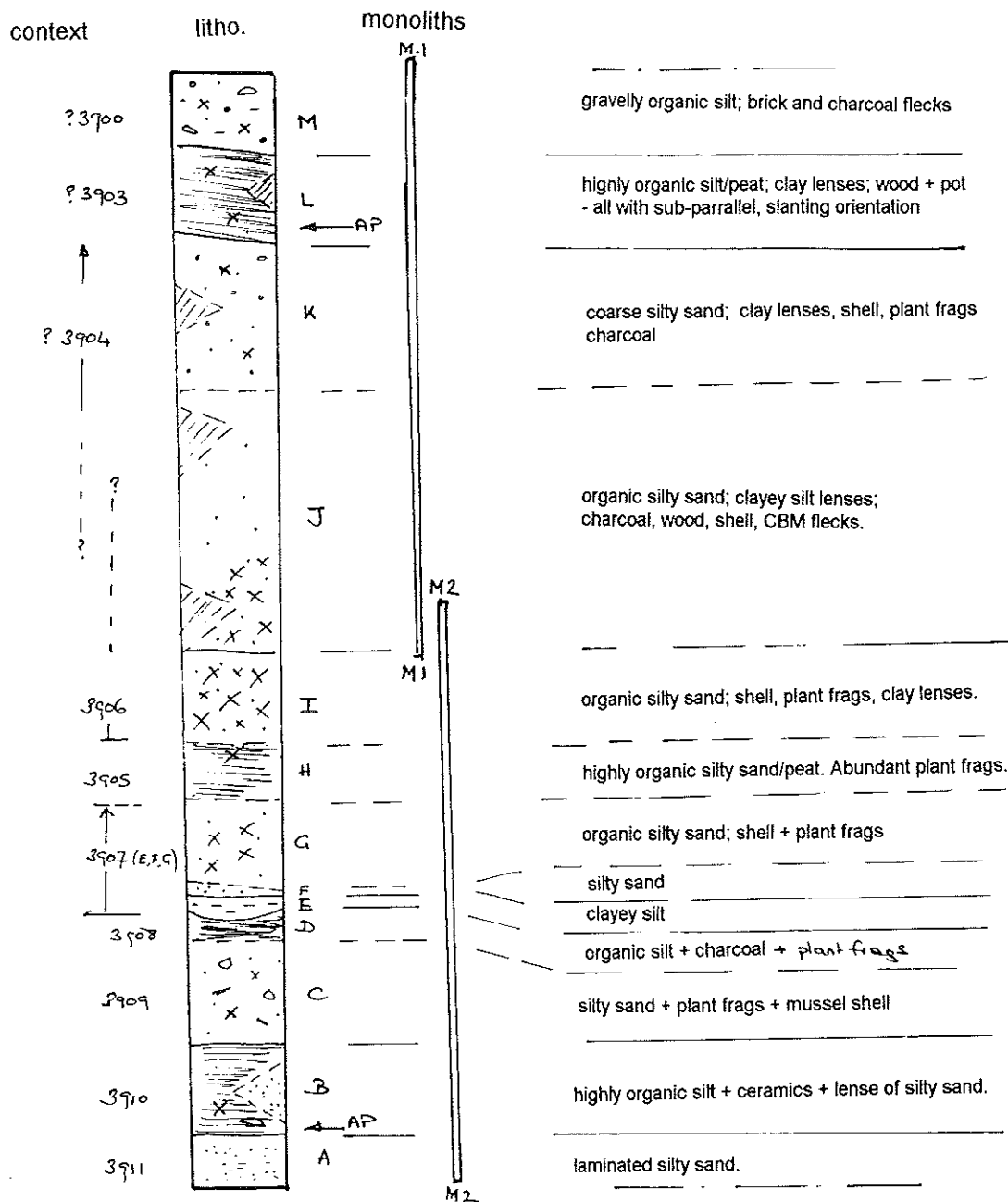
#### Recommendations for further work.

Bulk sample residues 430 [context 3899, 'representative' of the 'peaty' deposits and 431 [context 3907, 'representative' of the sandy deposits] contained little helpful evidence, such as weed seeds or molluscs; but further investigation of the flots might indicate whether and which plants were growing *in situ*.

**X-ray analysis** may be useful to determine i) whether plants were growing *in situ* [evidence of rooting / bioturbation] and ii) whether the inorganic component is laminated [possible surface wash / stream-flow deposition].

**Diatom analysis** would help to determine whether there was episodic water flow or ephemeral pools of water; and the changing nature of any water present. This would be valuable in analysis of the inter relationship between human activity, pollution and the flux of solutes and sediments entering the Walbrook.

Sample 429 : Monoliths through sondage section - possible channel infill.  
Correlation of monolith units and site contexts.



?no evidence in monos  
for 3905 above and  
below 3906.

CONTACTS:

Sharp \_\_\_\_\_  
Diffuse - - - - -

X X artifacts [eg: pot, CBM]  
X (+ oysters / mussel shell)

## Sample 741

### Introduction

Two monoliths taken through the layers, cuts and fills associated with the Via Decumana, as exposed in section 63, Area 10; in order to determine the nature of the organic deposits interstratified with the road gravels and possibly identify periods of abandonment [and soil formation].

Unit	Height [cms]	Description
A	0 - 7	10YR4/2 dark greyish brown loose [poorly consolidated] medium sand. Frequent small pebble sized gravel, wood and twig clasts. Frequent compressed organic lenses. Sharp contact to unit B.
B	7 - 12	10YR4/6 dark yellowish brown loose [poorly consolidated] coarse, gravelly, slightly silty sand; granule sized clasts SA / SR. Brick flecks; infrequent non-humified plant fragments. Iron-staining. Sharp, irregular contact to unit C.
C	12 - 17	7.5YR3/2 dark brown compressed, highly organic silt. Small [<1cm] SA pebble sized gravel clasts; charcoal flecks; sandy lenses. Iron-staining. Sharp contact to unit D.
D	17 - 22	10YR3/1 very dark grey coarse sandy organic silt. Frequent small pebble sized gravel, wood and marine mollusc clasts. Iron-staining. Sharp slanting contact to unit E.
E	22 - 28	10YR5/6 yellowish brown loose [poorly consolidated] coarse gravelly sand. Abundant R/SA small pebble sized gravel; infrequent compressed organic lenses / clasts; iron-staining. Large brick clasts obscure contact with unit F.
F	28 - 34	7.5TY 3/2 dark brown sub-horizontal, interlaminated, loose, coarse, iron-stained sand with highly organic, compact silts, compressed organics and occasionally charcoal. Diffuse contact with unit G.
G	34 - 41	Disrupted laminations and lenses of compressed organics, coarse iron-stained sand and 10YR4/6 dark yellowish brown highly organic silt; Infrequent gravel clasts [1-4cms]; charcoal [<1cm]; non-humified wood [<10cms] and twig; brick flecks and longbone fragment - aligned parallel to bedding. Sharp, wavy, disturbed contact with unit H.
H	41 - 50	Mono 2

10YR3/1 very dark grey possibly charcoally [sharp, brittle feel of burnt material] or organic gravelly sand. Poorly sorted granule to pebble sized [0.2-8cms] gravel, wood and [oyster] shell clasts.

- H(i)      34 - 40   Mono 1  
10YR2/2 very dark brown compact, highly organic silt. Sub-parallel, slanting, aligned non-humified wood [<10cm], twig and plant fragments. Very infrequent granule sized clasts. Disturbed, irregular, contact to unit H(ii).
- H(ii)      40 - 44   Mono 1  
10YR4/3 brown organic silty sand. Similar to H(iv) but more compact. Becoming less organic, less silty, more sandy and looser towards top. Poorly sorted granule to pebble sized [0.2 - 8cm] gravel, wood, pot, tile and shell.
- H(iii)     44 - 46   Mono 1  
10YR2/2 very dark brown compact, highly organic silt; similar to unit H(i); but also with grey silty clay lenses. Sharp contact to unit H(iv).
- H(iv)      46 - 48   Mono 1  
10YR4/2 dark greyish brown organic silty sand. Pebble to granule sized gravel clasts. Iron concretions. Infrequent non-humified plant fragments. Flecks of brick and charcoal. Sharp, irregular contact to unit H(v).
- H(v)      48 - 50   Mono 1  
10YR2/1 black compacted, highly organic silt; similar to unit H(i). Disrupted contact to unit I.
- I           50 - 54   2.5Y6/2 light brownish grey sandy silt. Mortar lenses. Common granule sized gravel clasts [<1cm]. Charcoal flecks. Sharp irregular contact to unit J.
- J           54 - 66   10YR2/1 black compact, slightly sandy organic silt / peat. Slanting, sub-continuous, sub-parallel charcoal / compressed organic laminae; charcoal also as clasts [<1cm]. Small pebble sized SA gravel clasts [1-2cms]. Clayey silt lenses increase towards base; sand lenses increase towards top. Infrequent non-humified plant fragments. Sharp contact to unit K.
- M           66 - 70   10YR5/6 yellowish brown, loose [unconsolidated] gravelly sand. Moderately poorly sorted, granule to pebble sized A /R clasts [0.2-3cms]. Oyster shell at base.

Top of sequence at 8.06m OD.

## Discussion

The interlaminated / interbedded nature of units F, H and particularly J [?contexts 11923, 11919 and 11921 respectively] suggest little post-depositional disturbance - no bioturbation associated with soil formation. The primary stratigraphy represented probably accumulated due to (i) surface wash - sandy lenses and laminae - possibly resulting from erosion of the surrounding road gravels; (ii) episodic flooding of the drainage ditch - finer organic silts; and (iii) possibly some domestic debris - compressed organics, shell, pot, CBM. That such debris may have been flung onto a soggy surface is suggested by the interfingering and irregular contacts between units H(i-iv).

However flood / erosion events of a greater magnitude may also be recorded; the poorly sorted unit I [?context 12376] forms a continuous bed, contains mortar lenses and charcoal and has a disrupted contact with the subjacent unit H(v); suggesting possible human activity may be responsible.

The 'gravel spread' associated with the road surface [unit G, ?context 11922] contains pot, shell and CBM besides sandy gravel and frequent compressed plant material and organic silt clasts and lenses; perhaps indicating the disturbance, patchy erosion and reworking of earlier organic sediment, accumulating at the roadside and across the previous road-surface together with the erosion of loose sand and gravel from a [fresh] road-surface down the slope towards the ditch, to be trapped by roadside vegetation.

## Recommendations

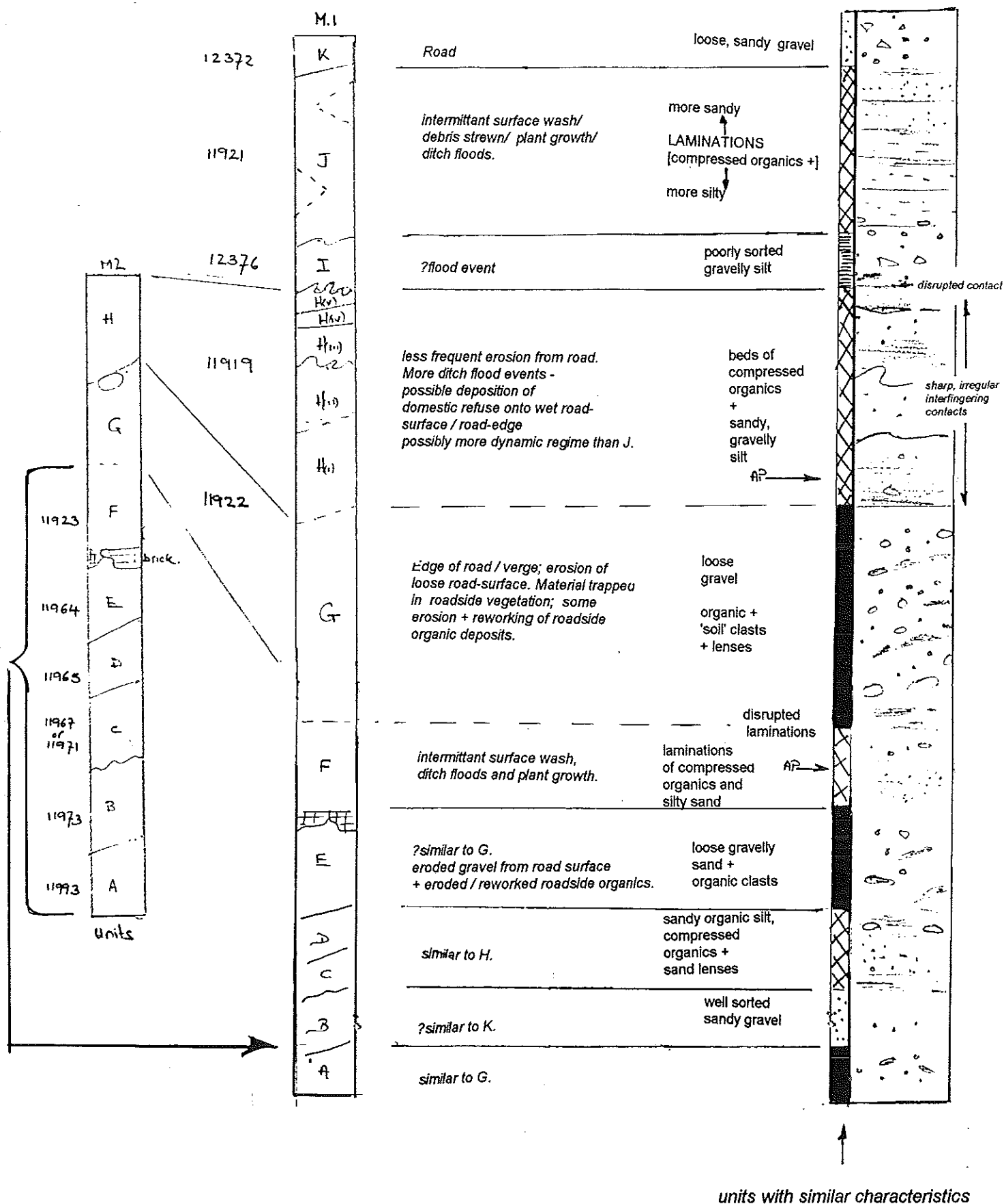
The apparant lack of bioturbation in the organic layers would suggest that **pollen** and **diatom** analysis would be worthwhile. Together they could provide useful information on the nature of the local environment and suggest whether the deposits accumulated due to human discard, ditch flooding or surface wash.

Owing to the possible value of the organic deposits in elucidating the environment during the period of road use, sub samples from units H(i) and F will be analysed as part of the **pollen assessment**.



Sample 741: section through Via Decumana

Possible correlation of monolith units and sequence of events represented.



## Sample 742

### Introduction

Naturally deposited sequence of clayey silts, sands and gravels from Area 8. Sampled to determine sedimentary processes involved.

unit	height [cms]	Description
A	0 - 18	2.5Y5/4 light olive brown gravel. Moderately well sorted pebble sized R/SR clasts [1.5-6cms] in a granular textured SA/SR matrix. Loose / unconsolidated. Traces of iron-staining. Sharp contact to unit B.
B	18 - 35	10YR 5/4 dark yellowish brown sandy gravel. Moderately well sorted SR/R pebble clasts in a coarse sand matrix. Loose [unconsolidated]. Iron-staining increases towards base. Sharp contact to unit C.
C	35 - 40	10YR5/4 yellowish brown medium to fine sands and coarse silt. Occuring in sub-continuous and sub-horizontal laminations with ripple bedforms and rip-up structures. Some laminae picked out by iron-staining. Consolidated. Graded contact to unit D.
D	40 - 43	5Y6/2 light olive grey disrupted laminations and lenses of alternately clayey and sandy silt. Occasional lenses of blue-grey clay and compressed / humified organics. Infrequent and faint iron-staining associated with coarser units. Consolidated. Sharp contact to unit E.
E	43 - 50	10YR6/6 brownish yellow sandy gravel. SR granule to pebble sized clasts in coarse sandy matrix. Iron staining increases towards base, where unit is hard and iron-concreted. Upper part of unit is loose [unconsolidated].

Top of sequence at 7.04m OD.

### Discussion

Fluvial depositional processes and post-depositional hydrological conditions are recorded in the gravel sequence which contains no visible evidence of human activity and is assumed to be river terrace gravel. It may be useful to compare characteristics of this local natural gravel with the road gravels [as in sample 741 c.0.5m above and c.3m to the NE].

### Recommendations

No further action is suggested. Although units B+C would be suitable for pollen and diatom analysis, the sample was taken well within 'natural' [possibly context 12381] and is likely to be a fluvial deposit of Late-glacial or early Holocene age [or earlier] and is not likely to provide information which can be used to interpret the prehistoric environment of the area.

## Sample 812

### Introduction

Monolith taken immediately below earliest road gravel deposits in the westernmost part of the site, Area SY.

unit	height [cms]	description
A	0 - 10	2.5Y6/3 light yellowish brown sandy clay. Diffuse contact to unit B.
B	10 - 13	10YR4/3 brown clayey very slightly sandy silt. Charcoal + CBM flecks. Pebble sized gravel. Iron stained veins. Diffuse contact to unit C.
C	13 - 22	10YR3/2 very dark greyish brown sandy silt; granule sized gravel clasts [infrequent]; charcoal flecks. Small patches of manganese with iron- stained rims. Sharp contact to unit D.
D	22 - 24	2.5Y7/4 pale yellow coarse sand. Fingers of manganese staining with iron-stained rims protrude into unit from above. Granule sized gravel clasts. Sharp irregular contact to unit E.
E	24 - 27	7.5YR4/3 brown slightly clayey sandy silt. Occasional granule sized gravel. Manganese stained patches. Sharp irregular contact to unit F.
F	27 - 32	10YR6/2 light brownish grey gravelly silty clay. Iron-stained patches. Sharp contact to unit G.
G	32 - 37	Predominantly 10YR5/4 yellowish brown mottled silty sand. Reduced patches and manganese staining. Possible slanting alignment of occasional small pebble / granule sized gravel clasts and organic lenses. Sharp slanting contact to unit H.
H	37 - 41	10YR4/2 dark greyish brown sandy silt. Similar to units C and E. Small pebble sized clasts at top. Sharp irregular contact to unit I.
I	41 - 50	2.5Y5/3 light olive brown slightly silty sandy gravel. Iron-staining at base.

Top of sequence at 8.31mOD

### Discussion

Units A-C may represent a fluvial flood-silt - as the location is in a tributary valley of the Walbrook. A soil may have formed in this unit - perhaps indicated by unit C. The large stones and clayier nature of unit B may be depositional - or relate to translocation of fine material by leaching down the profile and 'worm-sorting' [the stones].

The E/F contact is irregular and disrupted and might imply an erosional event; and the silty clay nature of unit F could suggest subsequent flooding, ponding of water, or a channel infill.

Units G and H could be anthropogenic redeposited material - the slanting clast orientation and contact [G/H] may imply dumping, underlying the road gravels.

### Recommendations

**X-ray analysis** may suggest whether primary bedding - if it existed - is still intact and/or whether bioturbation and mixing have occurred.

**Particle size and Loss on ignition** through units B and C would help to identify soil formation processes.

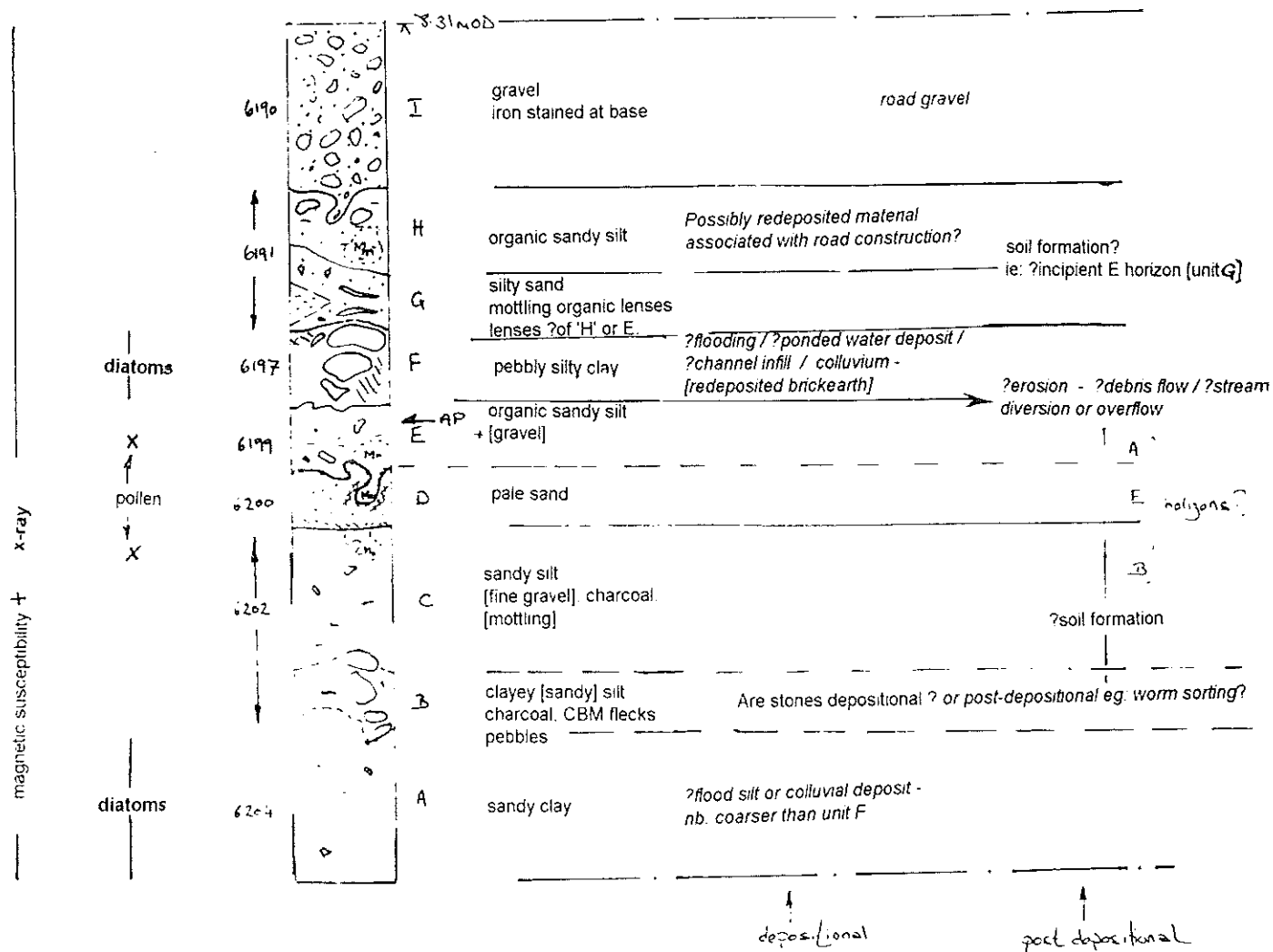
**Pollen analysis** samples taken just below the contact of units E and F might provide information on the local vegetation prior to road construction.

**Diatom analysis** subsamples taken from the possible waterlain deposits A and F may suggest the nature of their deposition [water regime, nutrient inputs eg: human activity].

Sample 812 sequence through possible paleosol  
Area SY

Correlation of contexts and monolith units

Further analysis



### **Samples 890, 895, 898 and 900. Also 906.**

Obtained from south of the road gravels in Area 10; except for 906, monoliths were stratigraphically related to one another in section.

These samples lie stratigraphically below the earliest evidence for road construction. They are within the valley of the Walbrook tributary which cuts across the SW of the site - and will have been sensitive to landscape 'disturbance' acting as a depocentre for erosion of the surrounding slopes. Potentially recording pre-road construction environments and human activity in the fluvial, colluvial, aeolian and buried landsurfaces sampled.

### **Sample 890**

#### Introduction

unit	height [cms]	description
A	0 - 11	7.5YR black slightly sandy organic silt; visible sand grains. Paler patches with varied texture and faint iron-stained perimeters [?past bioturbation]. Very infrequent small pebble sized gravel clasts [<1cm]. Charcoal patch at base of unit. Diffuse contact to unit B.
B	11 - 22	7.7YR3/2 very dark brown slightly silty coarse sand. Infrequent granule to pebble sized clasts. Haphazard, discontinuous, iron-stained laminae. Infrequent charcoal flecks and non-humified plant [?stem] fragments. Non-humified plant material more abundant at contact with unit C. Sharp contact to unit C.
C	22 - 25	7.5YR 2/1 black slightly silty coarse sand. Frequent pebble sized gravel and bone clasts. Poorly consolidated [loose]. Clay lense towards top of unit. Sharp contact to unit D.
D	25 - 28	10YR2/1 black slightly sandy organic silt. Non-humified wood fragments. Frequent charcoal. Poorly consolidated. Diffuse contact with unit E.
E	28 - 50	10YR4/2 dark greyish brown slightly silty coarse sandy gravel. Moderately poorly sorted; SA/SR granule to pebble sized clasts of gravel, stone, wood, bone and shell. Infrequent iron-concreted nodules. Lenses of yellow sand at top of unit.

Top of sequence at 8.08m OD

### Discussion

The sediments sampled in this monolith accumulated adjacent to - or immediately to the south of - the earliest road surface. The lowest units A+B [context 12805] probably represent intermittent accumulation of flood silts, together with sand from surface wash of surrounding gravel or gravelly soil and probably some aeolian dust; all trapped by vegetation which decayed *in situ*. [There is evidence of rooting / bioturbation in unit A; and the iron-stained laminae in unit B are probably also associated with decayed plant material]. The charcoal present in both units may indicate that human activity [forest clearance or agriculture?] was associated with these flooding and/or erosional events.

Road construction activity represented by unit C [context 12800] appears to have truncated or possibly flattened vegetation *in situ*; [there is abundant non-humified plant material at the top of unit B]. Although unit A/B has the characteristics of an accretionary soil, the genesis and subsequent processes involved in the formation of unit D/E are less certain.

### Recommendations

**X-ray analysis** of the monolith insert would provide information on the structure of unit D/E and the feasibility and suitable locations for pollen analysis in unit B.

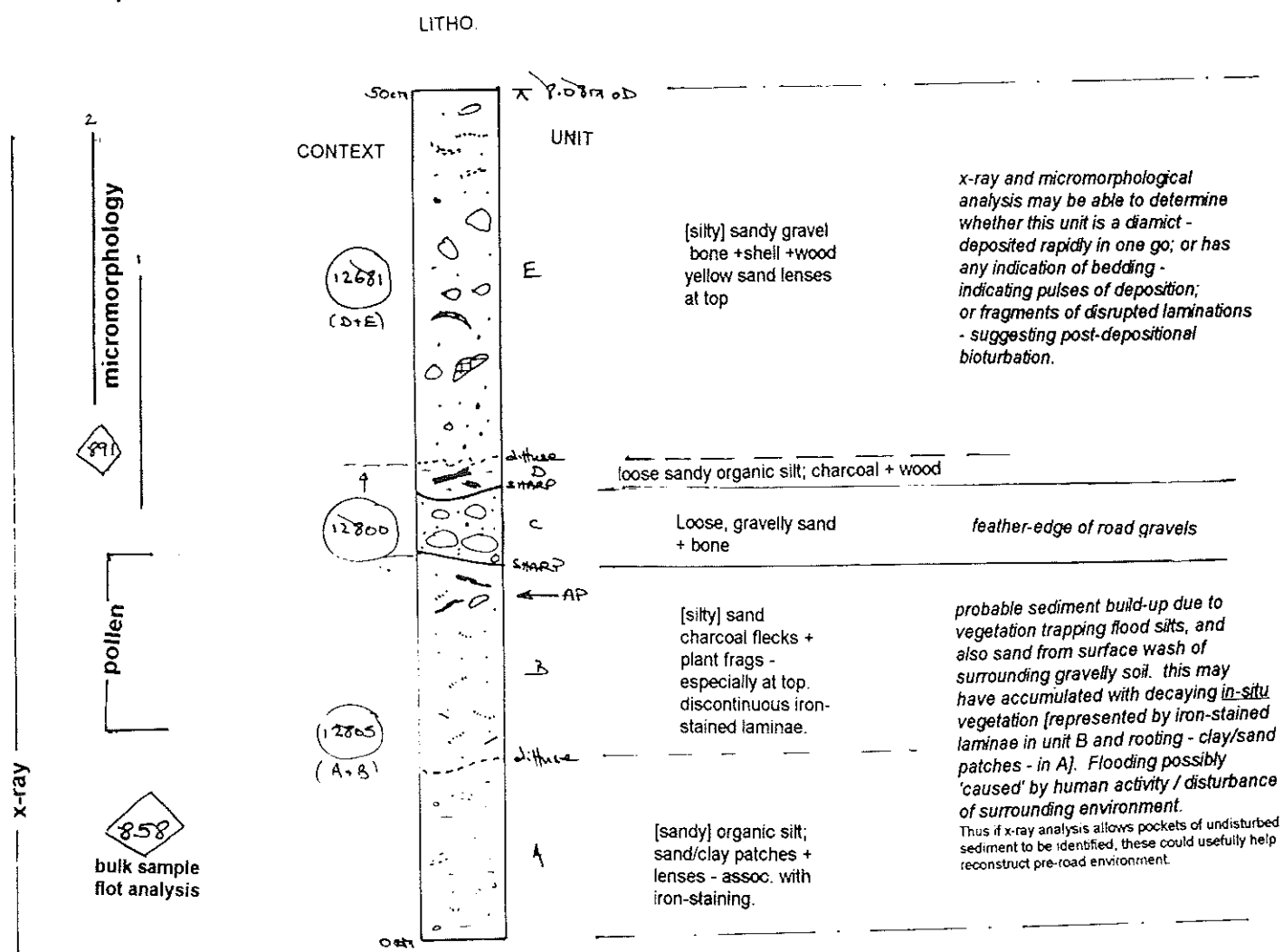
**Micromorphology** of block samples 891 [1 and 2] together with the x-ray results should enable the formation processes of unit D/E to be deciphered.

**Pollen analysis** may be useful [and possible] just below the contact of units B and C; it will potentially provide some information on the local environment at the time of initial road construction; and possibly indicate the plants growing *in situ* - ie; the nature of the micro-environment. This will best be interpreted *in tandem* with the results from

**Flot analysis of bulk sample 858.**

Sample 890: monolith to south of road

Suggested further analysis





## Sample 895

### Introduction

Sequence through very organic silt with lenses of clay and brickeath.

unit	height [cms]	description
A	0 - 11	7.5YR4/2 brown sandy silt. Pebble sized SR/SA clasts [1-6cms] become more abundant towards top of unit. Lenses of iron-stained coarse sand [7.5YR5/8- strong brown] more common towards top and black [?gleyed] lense at base. Sharp irregular contact to unit B.
B	11 - 30	7.5YR4/1 dark grey slightly sandy clayey silt. Frequent SA/SR granule to small pebble sized gravel clasts [2mm-2cm]. Unit fines upwards - sandier silt at base and clayey silt at top. Extensive black gleyed [reduced] areas; associated with lenses of manganese and non-humified plant-macros - twig, stem, hazlenutshell. Sharp irregular contact to unit C.
C	30 - 50	7.5YR2.5/1 black silty woody peat. Sub-horizontal to slanting laminae of compressed and matted plant material; interspersed with clay lenses [5Y7/1 grey] and infrequent sand lenses towards base. Visible sand grains within organic laminae at top. Fine gravel, oyster shell and non-humified twig, wood and stem macro-fossils at top of unit. Manganese stained patches and vivianite nodules towards base. Rings of iron-staining [?former roots].

Top of sequence at 7.57m OD.

### Discussion

The increased concentration of pebbles at the top of unit A, together with the sharp contact to unit B suggests a deflated surface at this level; [the finer lenses within unit A could be due to bioturbation]. It is likely the deflated deposit had been a fluvial gravel and the winnowing process may have been by wind or water.

Subsequent deposition of the predominantly silty unit B may be linked to erosion of a brickearth landsurface upslope; its gleyed nature and good plant macrofossil preservation suggesting good microfossil preservation. It could represent slumping or bank collapse of deposits immediately adjacent to a stream bed - depositing slumped silts above fluvially winnowed gravel - but context 12951 may be too extensive for this.

The plant fragments found throughout the unit would indicate either fast deposition or post depositional mixing [?agriculture] and

subsequent predominantly anaerobic conditions. As possible ard marks were identified in the top of context 12952 during excavation the likelihood of unit B [context 12951] being a ploughsoil is fairly strong.

Plant material may have been deliberately deposited above these silts as the sharp irregular contact between units B and C suggest some sinking of the upper unit, into the underlying deposit; but there is nothing to suggest rooting across the boundary. However plants were growing within / into unit C as iron-stained rings associated with roots occur throughout the unit. The sand and clay lenses may indicate bioturbation, or active water movement across the accumulating organic deposit. These lenses have been interpreted as possible turves during excavation.

#### Recommendations

**X-ray analysis** - this may clarify the mode of deposition of units A - C and indicate whether subsequent mixing has occurred; allowing decisions to be made regarding the value of microfossil and mineral magnetic analysis.

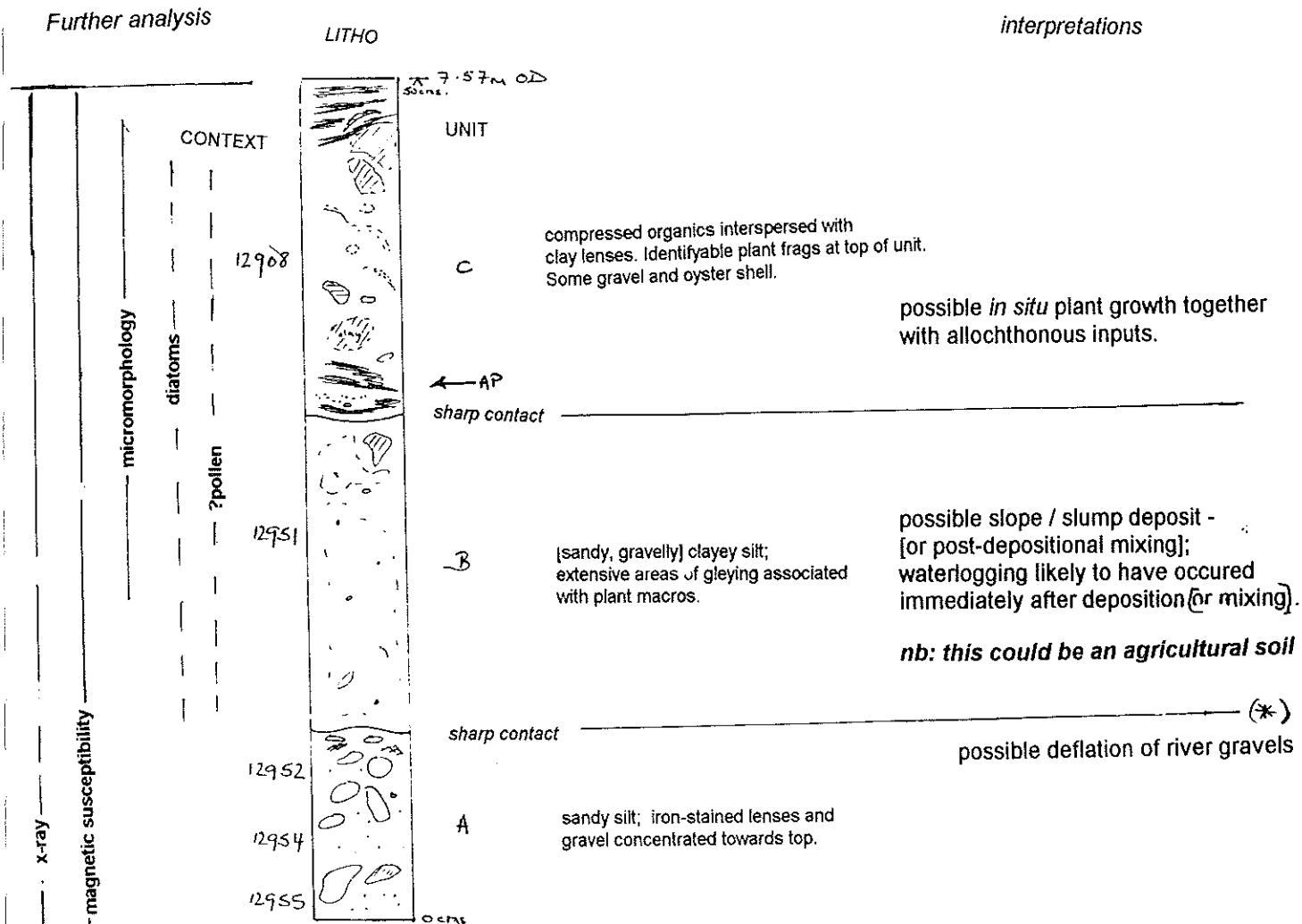
**Micromorphology** samples 896 [1 and 2] have been taken through unit C and the C / B interface. These will be important in determining the nature, mode of deposition and post-depositional processes associated with unit C and may identify grain coatings characteristic of agricultural soils in unit B.

**Magnetic susceptibility** throughout the monolith insert [loop sensor method], will - together with other further analysis help to determine the sources of sediment and erosional / depositional / weathering processes operating on the sediment sample during the timespan represented by the monolith sequence.

**Diatom analysis** it might be possible to obtain some information regarding the depositional and post-depositional [and post-abandonment of agricultural activity, if B is a ploughsoil], environment of units B and C by looking to see if diatoms are present and if their species are characteristic of ephemeral, still or moving water and nutrient-rich or poor conditions.

[**Pollen analysis** might be worthwhile in the interpretation of unit C and supplement the results of micromorphology, if subsamples are located with reference to the x-ray results; and at a very broad scale two pollen subsamples within gleyed lenses of unit B, located towards the top and bottom of the unit with respect to the x-ray results may allow a comparison of the local environment during and subsequent to sediment accumulation.]

Sample 895: sequence associated with 'turf' layer  
Correlation of contexts and monolith units.  
For more detailed 'interpretation' see text.



Possible sequence of events:

1. Deflation of [?river terrace] fluvial gravels.
2. Deposition of silty sediment [perhaps derived from brickearth upslope and linked to human activity] by slumping, debris flow or flood processes.
3. Mixing of this deposit by agriculture nb; 'ard marks' recorded in the surface of the underlying gravels [context 12952] during excavation (\*).
4. Rise in water table - perhaps linked to human activity, soil waterlogged.
5. ?Dumping of plant material, together with *in situ* [marshy?] plant growth and surface runnels in possibly episodically waterlogged conditions.

## Sample 898

### Introduction

Sequence through deposits below the earliest floor layer of a building to the south of the Via Decumana. These sediments may relate to those in samples 890 + 895 and reflect lateral facies variations across a contemporary palaeolandscape. Context 12805 occurs towards the base of both.

This sample [898] is a few metres to the south and half a metre lower than sample 890.

unit	height (cms)	description
A	0 - 3	2.5Y6/3 light yellowish brown very well sorted medium-coarse sand. Sharp contact to unit B.
B	3 - 11	10YR5/2 greyish brown silty sandy gravel. Poorly sorted granule to pebble sized clasts [2mm-8cms]. Diffuse contact to unit C.
C	11 - 37	7.5YR3/2 dark brown highly organic silt; frequent visible sand grains. Frequent clasts SA/SR mostly granule to very small pebble sized [2mm-1cm]. Occasional silty clay lenses. Well consolidated. Discrete darker patches speckled with manganese and with faint orange iron-stained perimeter. Sharp, irregular, disrupted contact to unit D.
D	37 - 56	10YR6/6 brownish yellow, darkening upwards to 10YR4/6 dark yellowish brown, poorly consolidated, coarse sand. SA/SR gravel clasts [0.5-5cms] more common towards base. Lenses and sub-continuous laminations of well consolidated 10YR4/2 dark greyish brown clayey silt and less frequently of 10YR8/2 very pale brown medium sand. Frequent iron-concreted nodules, iron-stained stones and patches, particularly at top and base of unit. Sharp contact to unit E.
E	56 - 59	2.5Y3/1 very dark grey gravelly organic silt. Frequent non-humified wood, twig and stems. Pebble sized gravel clasts [1-4cms]. Black lense at top of unit [?charcoal, ?manganese, ?organics]. Diffuse contact to unit F.
F	59 - 74	2.5Y4/2 dark greyish brown slightly gravelly [granules] sandy organic silt; infrequent small pebble sized clasts [<2cms]; occasional non-humified twig and stem. Mottled clayey silt lenses. Diffuse contact with unit G.
G	74 - 82	2.5Y5/2 greyish brown silt; fining upwards. More organic towards base but discrete lenses of compressed plant material and possible charcoal

fragments towards top. Occasional iron concretions and manganese stained patches. Sharp contact to unit H.

H        82 - 84        10YR5/6 yellowish brown unconsolidated iron-stained sandy gravel.

Top of sequence at 7.59m OD

#### Discussion

Units A and B may represent fluvial [?River terrace or local stream] gravels, subsequently deflated.

These are overlain by a gleyed silty unit [C]. This lower sequence is very similar to the lowest units in the other samples from south of the road. In sample 895, taken at a similar level about 10m to the SW of sample 898, possible deflated fluvial gravels are overlain by a poorly sorted silt containing plant fragments and tentitatively interpreted as an agricultural soil; but the site context numbers are different in each case.

The lowest units in sample 890, about 4m to the north, immediately underlying the edge of the road gravels have the same context number [12805]. However unit C actually only corresponds with the lower part of context 12805 in sample 890 - although this may be an artifact of diagenesis as both silty deposits have the characteristics of gleying.

It is likely that the differences between these silty deposits relate to the effects of micro-topography, vegetation, human activity and post-depositional groundwater fluctuations.

There are a number of points which need to be considered. Firstly, is the silty sediment at the base of these deposits the same in each case ie: deposited by the same contemporary processes? if so what were they? and what is their relationship to past activity / environments on the site. Secondly, have subsequent processes differed in each location and in what way? Is this related to human activity? and has it had any effect on subsequent human use of the local landscape?

That plant fragments survive in sample 895 and not in 890 or 898 may relate not only to the processes operating during and after deposition of the silt unit [ie : possible agricutlture]; but also to the speed and nature of the subsequent [?flood]event and deposition of the overlying unit.

Evidence from visual assessment of the monolith sediments would suggest that the magnitude of the 'flood' event may have led to a possible stream channel diversion - causing erosion of the surface of unit C, waterlogging and deposition of fluvial deposits D to G in the vicinity of sample 898. Wheras 10m to the SW, waterlogging and a possible marshy environment obtained; and, 4m to the north [sample 895] the upper part of context 12805 appears to represent vegetation trapping flood, aeolian and slope-wash sediment and decaying *insitu*; perhaps relating to its slightly higher landscape position.

#### Recommendations

**Micromorphology** - blocks for thin section analysis [sample 897] were taken through the entire sequence of this sample. Based on the questions raised in the discussion above their analysis would be extremely valuable in order to interpret the environments and

activities immediately pre-dating and contemporary with the initial construction of the Via Decumana if the following blocks were studied:

(i) sample 897 (5, 6 + 7) - these will enable the depositional and post-depositional processes associated with context 12805, the silt overlying possibly deflated river gravels - and probably also recorded in samples 890 and 895 to be identified. Its upper contact may provide information regarding the subsequent ?flood event and possible rise in groundwater levels. It would be especially instructive to compare sample 897(5) with that of 896(2) which was taken through the upper part of what may have been an 'agricultural soil' in sample 895.

(ii) Again, analysis of samples 897(1-4) would be especially useful in the correlation and characterization of contexts as well as in interpreting the changing environment prior to road / building construction. These represent the possible fluvial / marshy deposits D-G and may be compared with block 896(1) ?marshy deposits above the 'agricultural soil'.

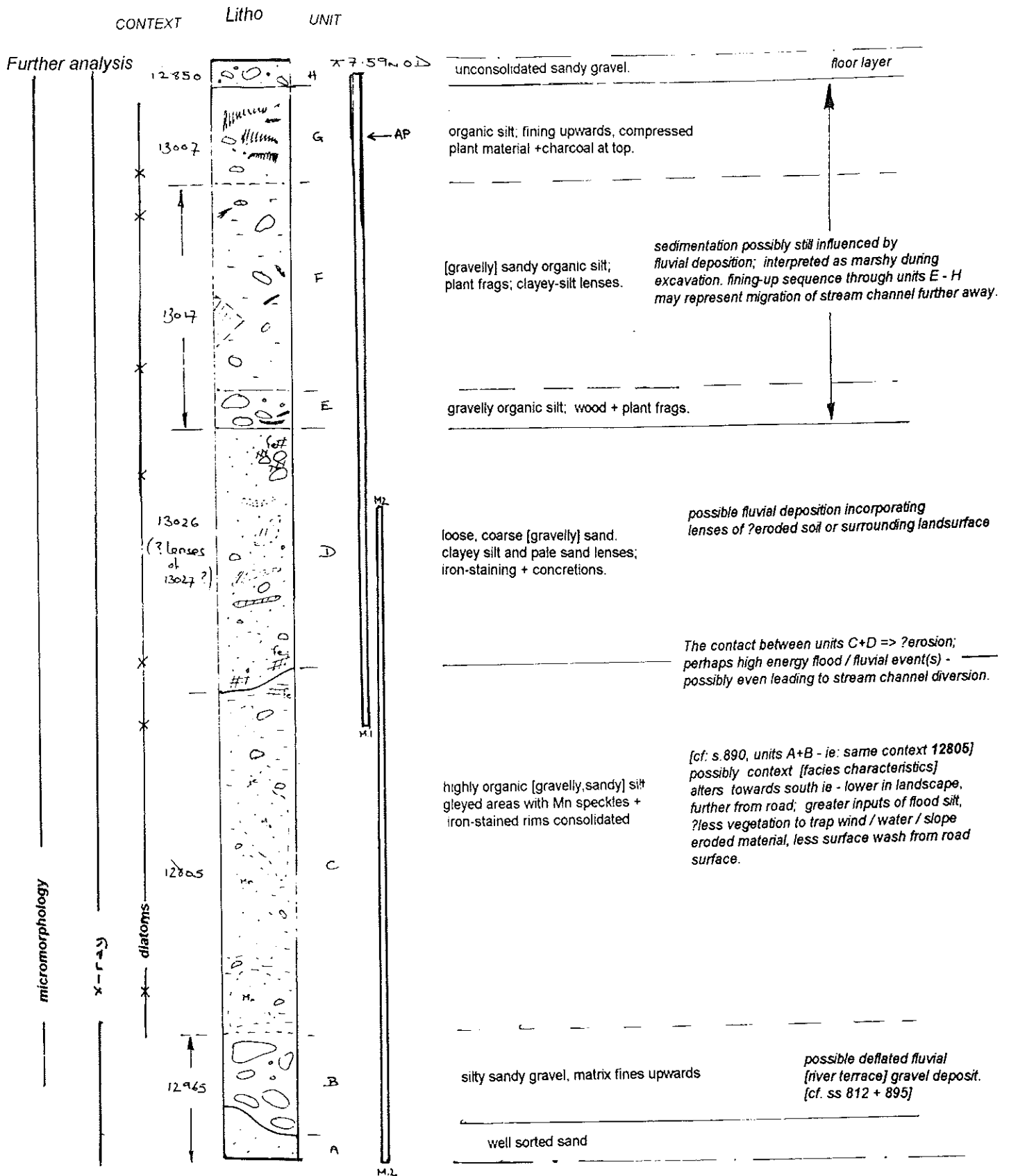
**X-ray analysis** of the monolith inserts may usefully indicate whether the units exhibit bedding or laminations; not only will this suggest depositional characteristics but it will allow comparison of unit C corresponding with the deposits from the other monoliths, mentioned above - do they all show evidence of mixing/bioturbation?.

**Diatom analysis;** diatoms should be well preserved in these monoliths and would provide data on aquatic micro-environments represented by the sediments; again allowing comparisons with other contemporary locations south of the Via Decumana. In particular they may be able to differentiate between merely damp, marshy or free-flowing conditions and suggest increases in eutrophication [perhaps caused by human activity] through the profile.

Samples taken from the top and bottom of units C, D, F and G would be recommended [8 samples].

Sample 898: deposits below earliest floor layer of building, to south of road.

### Correlation of contexts and monolith units



## Sample 900

### Introduction

Sequence taken below the level of, and immediately south of, the Via Decumana at southern edge of site.

unit	height [cms]	description
A	0 - 7	7.5YR7/1 light grey moderately compact silty sandy gravel. Organic, silty lenses. Diffuse contact with unit B.
B	7 - 14	7.5YR5/2 brown organic gravelly silty sand.
C	14 - 25	7.5YR3/2 dark brown slightly clayey, sandy organic silt. Occasional small pebble sized [2mm-2cm] SA/SR clasts. Infrequent non-humified plant macros, wood and charcoal. Sharp, irregular contact to unit D.
D	25 - 38	7.5YR4/3 brown, silty sandy gravel. Moderately poor sorting; granule to pebble sized SA/SR clasts [2mm-4cms]. Sub-continuous 10YR8/2 very pale brown sand laminae. Lenses of finer [?more organic] material. Iron concretions. Diffuse contact to unit E.
E	38 - 43	7.5YR3/2 dark brown organic sandy silt. Non-humified wood. Fine A/R gravel clasts. Diffuse contact with unit F.
F	43 - 50	10YR4/2 dark greyish brown silty sand. Gravel [granule to small pebble size], charcoal and iron-concreted [granule size] clasts.

Top of sequence at 7.67m OD.

### Discussion

Units A and B may represent River Terrace gravels, gravels associated with the Walbrook tributary to the SW, or slumped gravels from colluvial processes.

Unit C was interpreted during excavation as 'silting' or drain fill; it may have been deposited as part of a fluviially deposited 'fining-up' sequence with units A and B; and/or represent a soil forming in these fluvial deposits. [ie: high organic content and non-humified plant material, incorporated charcoal and possible downwash of organic compounds into unit B]

The C/D contact may be erosional or represent a break in deposition [associated with soil formation processes] - ie a landsurface associated with units B and C.

Units D/F may be dumped or represent colluvial slumping / debris flow deposits.



[Prior to cleaning green fungal growths found within unit D were also found associated with the wood / organics in sample 906 - unit C]

#### Recommendations

The following techniques are suggested in order to relate this monolith to the others in the area, which may all be roughly contemporary and help to reconstruct the pre-road building environment.

**X-radiography** may indicate [by the identification of bedding, laminations or rooting / burrows] depositional characteristics and post-depositional disturbance.

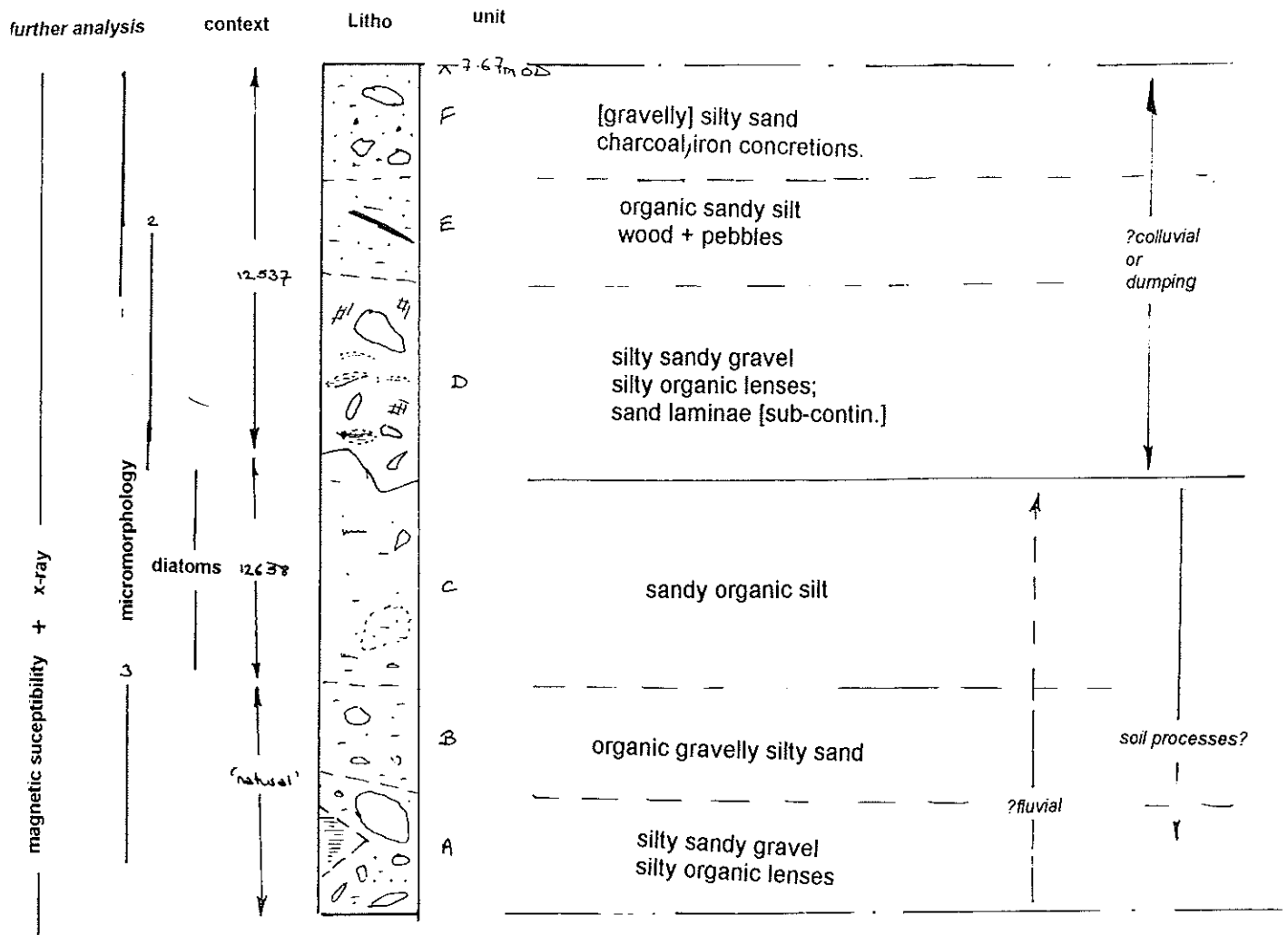
**Diatom analysis** in unit C will help to elucidate whether the deposit represents a flood silt / drainfill / surface soil.

**Magnetic susceptibility** may be useful to indicate weathering surfaces; and possibly help differentiate colluvial / dumping / fluvial depositional processes. As the material involved may have different origins and different magnetic signals.

**Micromorphology** - samples 901 (1+2) were taken through units (C), D, E, +F [context 12537]; and 901(3) through A/B. Analysis of these thin sections could be useful in the identification of the mode of deposition, [possibly source areas] and post depositional processes recorded by these units.

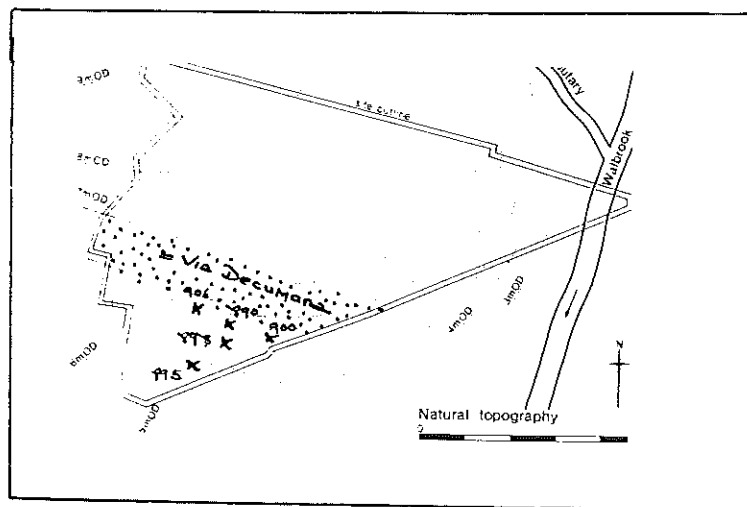
Sample 900: Immediately south of Via Decumana at southern edge of site.

Correlation of monolith units with site context numbers.



The lateral relationship of samples 890, 895, 898, 900 + 906 to one another and to the natural topography of the site.

nb. locations are approximate.



## Sample 906

### Introduction

Obtained from south of the road gravels underlying make-up layers for brickearth slab. [Not directly stratigraphically related to samples 890 et al during excavation].

unit	height [cms]	description
A	0 - 17	Mottled 10YR4/3 brown sandy silt and 10YR5/6 yellowish brown [iron-stained] sand. Lenses of gravelly sand and of organics. Frequent rounded small pebbles [1-2cms] - well sorted. Iron staining and concretions, especially towards top of unit. Sharp wavy contact to unit B.
B	17 - 27	7.5YR5/2 brown silty gravelly [-1mm diam. granules] sand; frequent SA/SR fine gravel clasts [<1cm]. Manganese stained patches throughout. Similar to unit D but coarser and more poorly sorted. Sharp contact to unit C.
C	27 - 34	7.5YR3/2 dark brown highly organic silt. Pebble sized non-humified wood clasts. Sharp irregular contact to unit D.
D	34 - 42	Mottled 10YR4/2 greyish brown silty sand and 10YR3/2 dark greyish brown sandy silt. Infrequent pebble sized clasts. Sand lenses. Patches of manganese and iron-staining. Similar to unit B, but finer and better sorted. Sharp irregular contact to unit E.
E	42 - 50	10YR4/3 brown, loose, slightly silty, very sandy gravel. Granule to small pebble sized clasts [0.5-4cms]. Iron-concretions.

Top of sequence at 8.14m OD.

### Discussion

The sample is taken to the NW of samples 890 et al and at a slightly higher elevation, just below the road. The natural landsurface would also have been higher at this location as the groundsurface probably sloped down from the road into the valley of a southern Walbrook tributary. It appears to exhibit a similar 'river gravel underlying organic sandy silt' sequence at its base as the other samples. This is overlain by compressed peaty, woody material, interstratified with organic silt [cf. sample 895]; and above this, sandy silt underlies a gravelly deposit.

Units B and D may represent flooding or debris flow / colluvial events; and unit C an intermediary period of higher groundwater levels and peat formation. This sequence could therefore potentially

record / preserve evidence of contemporary human activity [and its landscape impact] in the area.

Recommendations

Analysis of the sample taken for **micromorphology** [sample 907] through units C and D may indicate whether the peaty layer represents autochthonous peat growth or allocthonous woody plant debris; and will suggest whether the wavy irregular contacts are erosional [eg: gulleying], depositional [eg: debris flow deposits or dumping], or post-depositional [eg: due to agriculture or compaction] in origin.

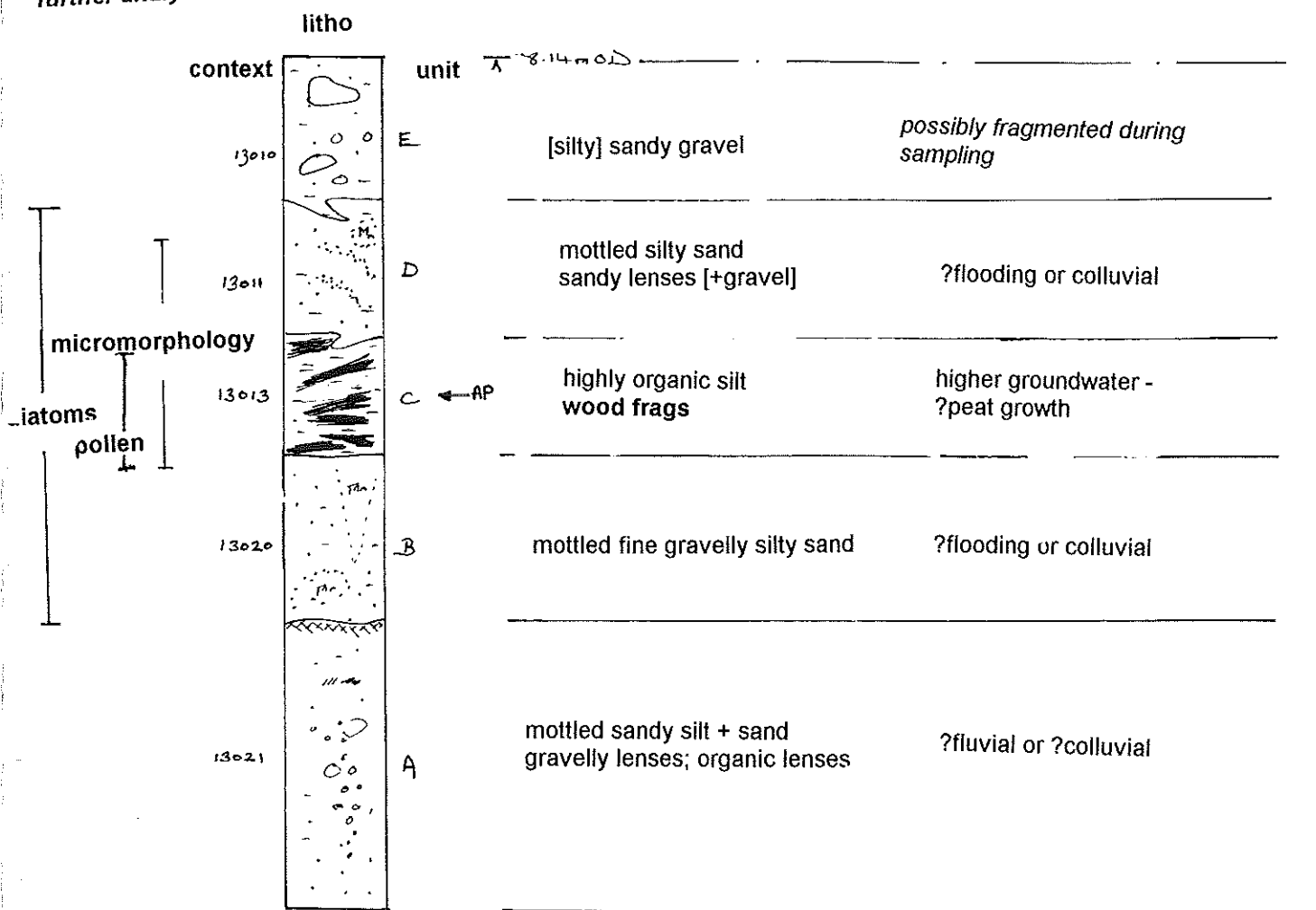
**Pollen** analysis in unit C may suggest local vegetation and indicate whether vegetation grew *in situ*.

**Diatom** analysis in units B, C and D may indicate whether fluvial processes were involved in the formation of these deposits [moving water / marshy pools].

Sample 906 : immediately below and to the south of the Via Decumana.

Correlation of monolith units and site contexts.

further analysis



## Sample 939

### Introduction

Gravel, sand and silt sequence through 'natural' - pre-archaeological stratigraphy, in Area 10. The nature and morphology of these deposits influencing subsequent occupation and land-use [eg; road construction].

unit	height [cms]	description
A	0 - 24	10YR5/4 yellowish brown coarse gravelly sand. Fines upwards ie: coarser sand grains with no silt at base, silty towards top. Loose / unconsolidated. Diffuse contact with unit B.
B	24 - 40	2.5Y6/4 pale yellowish brown silty sand. Infrequent SA/SR pebble sized clasts. Compact. Manganese flecks. Diffuse contact with unit C.
C	40 - 56	2.5Y5/3 light olive brown coarse sandy slightly silty gravel. Moderately poorly sorted pebble sized clasts. Unconsolidated [loose]. Iron-stained patches. Diffuse contact with unit D.
D	56 - 66	2.5Y5/3 light olive brown silty very sandy gravel. Well sorted SA/SR small pebble clasts [1-4cms]. Gravel coarsens but matrix fines upwards - ie: larger stones in a more clayey silty matrix at top. Slight iron-stained patches. Diffuse contact with unit E.
E	66 - 86	10YR4/2dark greyish brown silty sand. Gravel clasts become larger and more abundant towards base. Unit darkens towards base. Infrequent non-humified plant fragments throughout. Iron-concretions and staining of clasts, coarse sandy lenses and sand laminae - all more common towards top of unit. Infrequent manganese-stained patches towards base.

Top of sequence at 7.85m OD.

### Discussion

The sequence lies directly below the road gravels and probably reflects the irregular topography of the landsurface prior to human activity; the natural deposits forming a ridge at this point - probably the result of fluvial activity in this area at some time prior to occupation.

Units A-D could represent a fining-up gravel sequence - which may be deflated in unit D, either by wind or water winnowing. Subsequent flooding - perhaps linked to channel migration [see Section 80] may have deposited unit E.

It is not clear whether depositional or pedogenetic processes are responsible for several characteristics of the sediments [eg; is

downwashing of fines into unit D and plant frags in unit E due to sedimentation or soil forming processes?].

The time interval between the events recorded in unit E and occupation of the area is also unknown.

A sample for OSL [940] was taken from a sand unit underlying the sequence - which may give a *tpq* for the landscape processes represented.

## Sample 941

### Introduction

Sequence through island of non-archaeological stratigraphy - gravels, sands and silty clays, in Area 10. Deposits and topography may have influenced subsequent land-use.

unit	height [cms]	description
A	0 - 16	2.5Y5/4 light olive brown very coarse sandy gravel. Moderately well sorted. SA/SR ?sandstone clasts. Iron-staining more common towards top. Sharp contact to unit B.
B	16 - 22	10YR6/6 brownish yellow at base to 2.5Y6/3 light yellowish brown, very well sorted, fine sand. Slight fining upwards trend. Occasional sub-continuous, sub-horizontal, silty iron-stained laminae; iron-staining increases towards base. Infrequent flecks and nodules of carbonate. Unconsolidated [loose]. Diffuse contact to unit C.
C	22 - 36	5Y6/3 pale olive sandy silt and 5Y5/2 olive grey clayey silt subhorizontal and sub-continuous laminations. Increasingly sandy towards top of unit. Compact. Iron-staining decreases downwards; heavily iron-stained patch at top fingers down into lower part of unit, variously cutting across and following the laminations. Manganese flecks throughout. Sharp contact to unit D.
D	36 - 39	As unit B
E	39 - 50	10YR4/4 dark yellowish brown coarse sandy gravel. Iron-stained and compact. Top 5cms very disturbed during sampling.

Top of sequence at 7.40mOD

### Discussion

As with sample 939 this sample relates to fluvial, colluvial or aeolian processes operating in the local landscape at some time prior to occupation.

Unit C may represent flooding in a tributary valley just to the north of a natural ridge - on which the road was later constructed. This laminated clayey silt interdigitates with units B and D [slopewash or aeolian sand - which may have been eroded from the ridge to the south. These events could be related to prehistoric activity?

#### Recommendations

**OSL** - sample 942 was taken from sand adjacent to unit B. This could provide an age-estimate for the events described above - and suggest if they might correspond to periods of prehistoric activity in the area.

**Diatoms** - samples from unit C would be useful as a natural 'baseline' - especially regarding 'pollution' - for other diatom analysis of later deposits.

**[Pollen** - may be preserved in unit C and samples taken from this unit could give an indication of the local vegetation at this time.



## Sample 974

### Introduction

Sequence through deposits underlying Boudican scorched layer in Area 11.

unit	height [cms]	description
A	0 - 8	10YR4/4 dark yellowish brown compact silty sand. Occasional angular small pebble clasts [<1cm]. Organic lenses containing charcoal. Iron-stained veins. Diffuse contact with unit B.
B	8 - 29	7.5YR3/2 dark brown organic sandy silt. Occasional small pebble sized [<1cm] gravel [SA/SR] and charcoal clasts. Visible sand grains. Iron-stained veins and patches. Large pieces of wood [>7cms] towards top, associated with clayey lenses and manganese staining. Organic fragments - insect, seed, stem, twig, throughout. Sharp, irregular, slanting contact to unit C.
C	29 - 34	7.5YR3/3 very dark grey clayey silt. Pebble sized gravel clasts [2-4cms] common. Charcoal clasts [<0.5cms], flecks and fine laminae at top of unit. Manganese patches. Infrequent iron-stained veins. Sharp wavy contact to unit D.
D	34 - 44	10YR5/6 yellowish brown clayey silt. Coarsening upwards to very slightly clayey silt. Infrequent pebble sized gravel [1-6cms] and iron-concretions [2-3cms]. Very infrequent non-humified plant fragments. Smearing / staining and discontinuous, slanting laminations of manganese or charcoal at top of unit. Diffuse contact with unit E.
E	44 - 48	Black. Manganese or charcoal-stained silt. Sharp contact to unit F.
F	48 - 50	10YR5/6 silt. As unit D.

Top of sequence at 8.63mOD.

### Discussion

The sample comes from the southern boundary of the area and is taken through the northern edge of deposits which, on excavation were thought to be slumping over and/or into a ditch.

The organic patches with charcoal in unit A may represent some form of bioturbation or disturbance [eg: infilling of burrows with soil material or ?burnt roots decaying *in situ*].

High and fluctuating past water tables have resulted in iron and manganese staining throughout the profile which have to some extent

obscured the depositional and any pedogenetic characteristics of the sequence.

Unit B is a diamict with mixed poorly sorted inclusions in particular abundant organics - including wood and insect fragments. This may be the result of sediment slumping into a ditch, or being dumped.

Conversly units C and D appear to be laminated, with inputs of unit E [a black silt] appearing to wash across or be intersrsersed with the upper part of unit D.

Contacts are all sharp [which may indicate erosion, weathering or be diagenetic] - except for the A/B boundary which is diffuse and may indicate soil formation in these lower units.

Unit F was interpreted during excavation as a possible floor slab.

#### Recommendations

**X-ray analysis** would help to clarify depositional characteristics of the units.

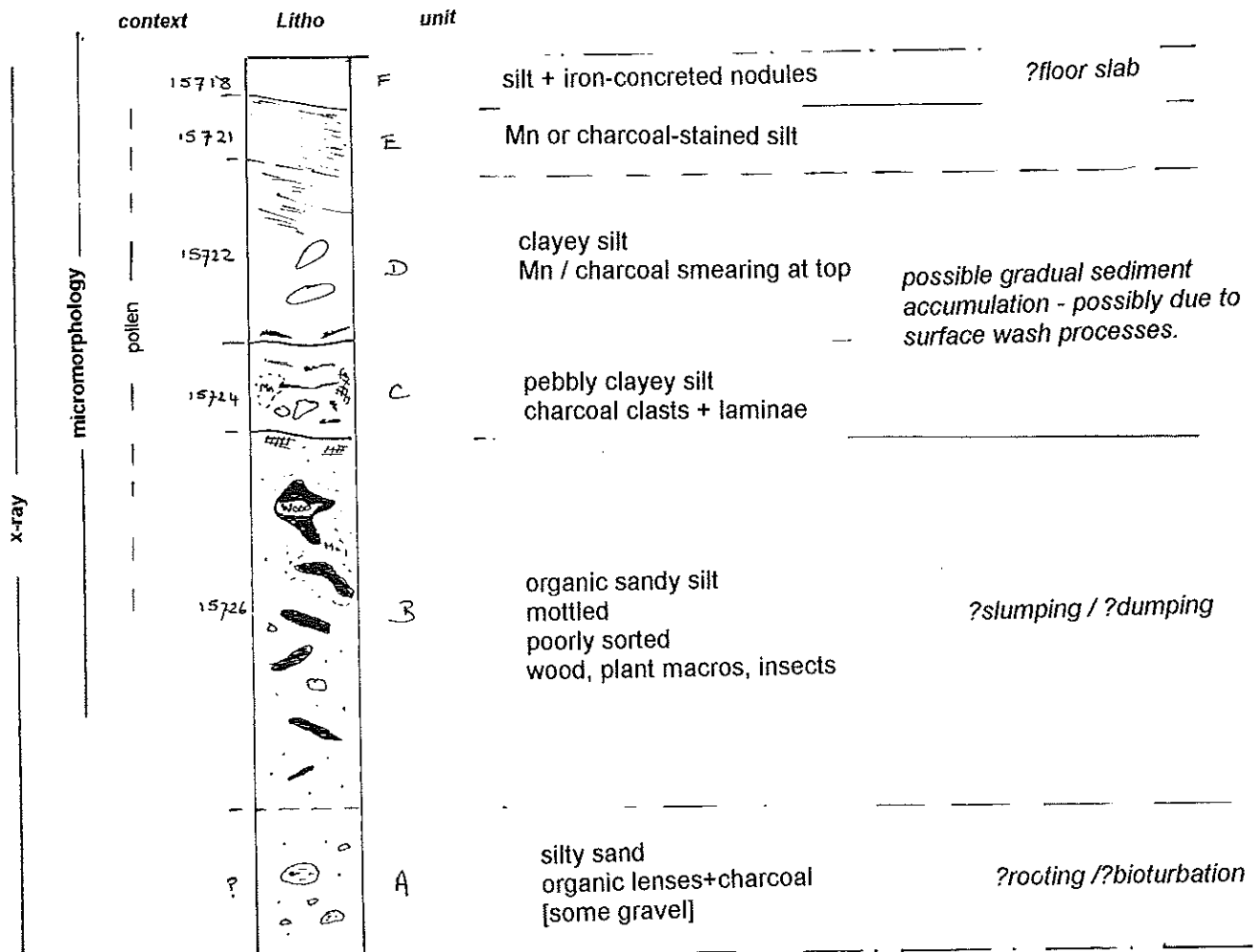
**Micromorphological samples** [973(1-5)] have been taken through the 'slumping' [and the scorched layers above]. The thin sections would provide a valuable record and means of interpretation of the pre-Boudican processes operating in this part of the site. [eg: Is there intermittant compaction / weathering between depositional events? Or was sedimentation continuous and gradual? Are events erosional? Do deposits exhibit characteristics of depositional or post-depositional slumping?]

**Pollen** could be preserved in the sediments, especially B-E. An indication of local vegetation may help in the interpretation of these deposits.

Sample 974: deposits below scorching layer in Area 11.

Correlation of monolith units with site context numbers.

Further analysis



## Sample 1036

### Introduction

Sequence through deposits, possibly representing a landsurface, adjacent to a cut for a timber structure in Area 12.

unit	height [cms]	description
A	0 - 15	2.5Y5/2 greyish brown slightly sandy, slightly clayey silt. Infrequent granule to very small pebble sized gravel [SA] clasts; Faint iron-stained speckles / motles; manganese flecks. Faint white speckles [?carbonate, ?bioturbation, ?leaching]. Sharp irregular - but in places diffuse - contact to unit B.
B	15 - 23	10YR4/3 brown highly manganese stained clayey, very slightly sandy organic silt. Insect fragments. Diffuse /graded contact to unit C.
C	23 - 29	10YR3/2 very dark greyish brown slightly clayey sandy organic silt. Slight manganese staining. Darker, more sandy and less clayey than unit B. Diffuse contact with unit D.
D	29 - 33	10YR2/1 black highly organic clayey silt. Patches of manganese staining / reduction. Darker, more clayey and less sandy than unit C; darker and stiffer than unit B. Sharp contact to unit E.
E	33 - 34	10YR3/1 very dark grey silty clay. Sharp irregular contact to unit F.
F	34 - 34.5	10YR2/1 black continuous and irregular organic band with non-humified plant fragments. Sharp contact to unit G.
G	34.5 - 36	10YR3/1 very dark grey silty clay. Lenses of soft whitish tufa-like nodules and vivianite. Sharp contact to unit H.
H	36 - 37	10YR3/2 very dark greyish brown organic silt. Similar to unit C. Sharp irregular and disrupted contact to unit I.
I	37 - 40	Interdigitating lenses of 10YR5/3 brown and 10YR3/2 very dark greyish brown organic sandy silt; slightly 'marbled' appearance. Some contain distinct, whitish / grey aligned silt pellets. Frequent non-humified twig and ?stem fragments. Sharp ?erosional contact to unit J.
J	40 - 43	10YR4/2 dark greyish brown slightly clayey

slightly sandy silt. Infrequent granule to small pebble sized gravel and charcoal clasts. Sharp irregular contact to unit K.

K	43 - 45	As unit I. Sharp contact to unit L.
L	45 - 50	Mottled 2.5Y5/2 greyish brown and 10YR5/3 brown silt. 'Veiny' marbled appearance. Infrequent granule to pebble sized gravel clasts [SA/SR]. Manganese staining. Blueish grey reduced areas visible on cleaning rapidly oxidize. Iron-staining. Charcoal.
M	49.8 - 50	Thin [1mm] layer of iron-stained chalk / ?mortar at top of monolith.

Top of sequence at 4.62m OD.

#### Discussion

Unit A is a 'natural' sandy silt; possibly of fluvial, colluvial or aeolian origin; as there are no visible bedding structures, perhaps it is loess / brickearth reworked by slope processes.

Units B to H show characteristics of a buried soil / soil formation processes; with increasing organics towards the top and signs of clay and organic translocation, rooting and bioturbation. The contorted nature of the contacts throughout the profile, together with the marbled appearance of the upper units [I - L] suggest some kind of pressure - perhaps due to accumulating sediment above or trampling activity on a waterlogged sediment surface. It is possible that this occurred during a period of flooding which also deposited sandy silts [units I to L] above the pre-existing landsurface [unit F]. Conversely, pressure due to a superimposed structure [mortar in unit M] and associated construction work would have the same affect.

Tufa-like clasts in unit G may suggest the nearby location of a spring; but nb: no molluscs were found / identified.

#### Recommendations

**Micromorphological samples** 1037(1+2) were taken through context 18309 which corresponds with the possible 'soil'. Their analysis would be valuable in establishing the nature of this deposit.

**X-ray analysis** may help to determine the depositional characteristics of unit A and suggest whether bioturbation has occurred.

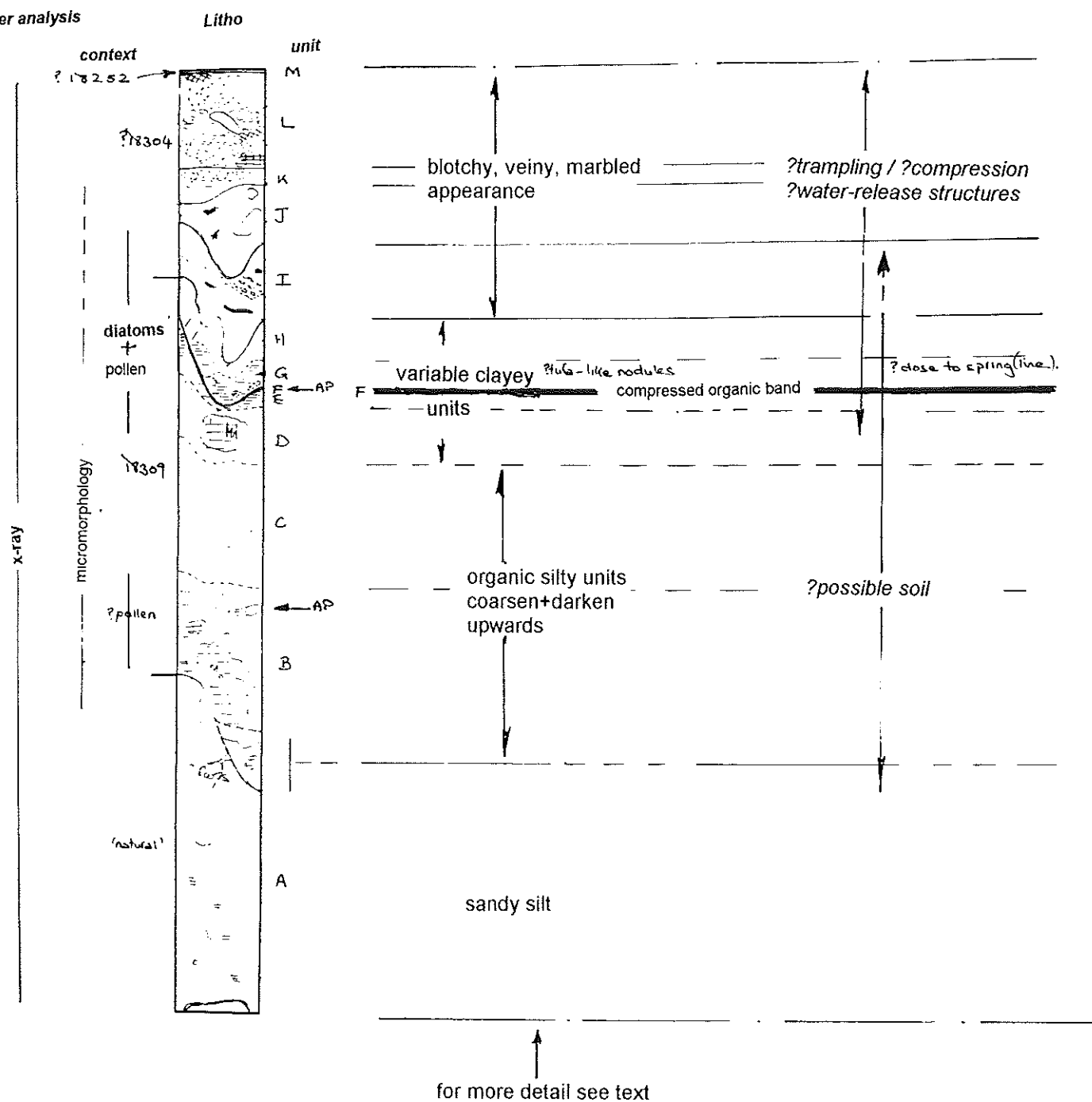
**Diatom** samples taken from units D - I may suggest hydrological characteristics of the local environment. [eg: Was a spring nearby? Were there pools of water present, and if so, were they ephemeral or permanent?]

**Pollen** samples from the same unit may also provide supporting evidence based on the nature of the local vegetation; samples from unit B may also be useful as plant macros were common in this part of the profile.

Sample 1036: Sequence through possible landsurface above natural  
in Area 12.

Correlation of monolith units and site contexts.

Further analysis



### Samples 995, 1020, 1027 and 1045.

These samples provide a continuous column through sediment from the apex, probably the deepest part, of Area 12. They were taken in an attempt to determine the interplay between anthropogenic and 'natural' processes in the area.

#### **Sample 1045**

Monolith taken from 'natural' London Clay, below samples 995, 1020 and 1027 to establish its characteristics.

unit	height [cms]	description
A	0 - 50	2.5Y4/3 olive brown [?slightly silty] clay. Very compact. Crumbly. Cracks. Visible fine sand grains. Iron-concretions, iron-stained patches and 'speckles'. No visible bedding; very fine blocky sub-laminated structure. Pale blue powdery [vivianite] coatings associated with ped boundaries and decayed organics. Very infrequent non-humified plant macros(!) - stem and leaf [?moss]; associated with iron, manganese and vivianite. Frequent shell imprints [marine bivalves].

Top of sequence at 2.25mOD

#### Discussion

Characterization of natural sediment in the area of excavation is important as reworked it will form a major component of subsequent archaeological deposits; the characteristics of the natural deposits will also contribute in determining the nature of the landscape processes operating and the likely impact of human activities.

### **Samples 1027, 1020 and 995**

[forming a continuous sequence]

unit	height [cms]	description
A	0 - 5	
B	5 - 30	Variably 10YR5/4 yellowish brown, 10YR4/2 brown, 10YR3/2 greyish brown clayey sandy silt; forming contorted lenses of variable texture and lithology - some have granule sized ?chalk. Sharp irregular contact to unit B.

- |   |          |  |
|---|----------|--|
| C | 30 - 36  | 10YR3/2 very dark greyish brown organic very sandy silt. Pebble to granule sized flint gravel [SA/A]. Occasional charcoal and non-humified plant stem fragments. Iron-staining, iron-concreted and vivianite nodules. Similar to unit E. Sharp irregular contact to unit D.  |
| D | 36 - 41  | 10YR4/3 brown clayey slightly sandy silt. Distinct fine-sand grains. Iron staining. Occasional charcoal at top of unit. Sharp irregular contact to unit E.   |
| E | 41 - 51  | 10YR3/2 very dark greyish brown organic sandy silt. Fines - becomes less sandy - upwards; otherwise as unit C. Diffuse contact with unit F.  |
| F | 51 - 64  | Interdigitating [swirling] lenses of 10YR4/2 and 10YR4/4 dark greyish brown compact slightly sandy clayey silt. Overall 'marbled' affect. Infrequent grey, clayey areas [reduced]. Infrequent iron-stained patches. Non-humified plant [twig and stem] fragments associated with vivianite. Sharp contact to unit G.                   |
| G | 64 - 69  | 10YR5/6 yellowish brown compact clayey silt. Grey reduced patches. Wavy, sub-continuous laminae picked out by iron-staining; distinct iron-stained zone at base of unit. Sharp, irregular contact to unit H.   |
| H | 69 - 78  | 10YR3/2 very dark greyish brown silty coarse sandy gravel. Poorly sorted granule to pebble sized [<6cms] clasts. Unconsolidated [loose]. Occasional charcoal and non-humified plant fragments. Frequent lenses of coarse sand, charcoal and humified organics at base. Sharp, irregular contact to unit I.                             |
| I | 78 - 86  | 10YR4/2 dark greyish brown slightly clayey slightly sandy silt; lenses of 10YR6/4 light yellowish brown clayey silt. Occasional SA/SR granule to small pebble sized gravel clasts [<2cm]. Consolidated / compact. Iron-stained patches. Sharp contact to unit J.   |
| J | 86 - 98  | 10YR3/1 very dark grey coarse sandy silt; silty organic lenses. Infrequent SA/SR granule to pebble [<4cm] size gravel, brick and tile, wood, charcoal and plant macro clasts. Distinct organic / humic or charcoal lenses throughout unit; lamina of compacted plant material with twigs at base of unit. Diffuse contact with unit K. |
| K | 98 - 102 | 10YR2/1 black organic silty sand; infrequent   |



granule sized gravel clasts. Hair / plant fibre strands.  
Diffuse contact with unit L.

- |   |           |  |
|---|-----------|--|
| L | 102 - 115 | 10YR4/3 brown sandy silt. Abundant granule to pebble sized [<3cm] gravel and brick clasts. Infrequent charcoal and wood fragments. Occasional iron-stained patches. Very similar to unit M but slightly finer and less organic. Diffuse contact to unit M.   |
| M | 115 - 135 | 10YR3/2 very dark greyish brown organic gravelly silty sand. Becoming more sandy / less silty towards base. Frequent granule to pebble sized gravel, charcoal, wood and compressed organic clasts. Infrequent iron-concreted nodules and vivianite. Diffuse contact with unit N.   |
| N | 135 - 145 | Mottled 10YR6/4 light yellowish brown and 10YR4/2 dark greyish brown silty sand. Frequent granule sized gravel clasts. Charcoal flecks. Infrequent organic lenses. Iron-stained clasts and iron-concreted nodules. ?Mortar derived deposit. Sharp wavy contact to unit O.  |
| O | 145 - 163 | 10YR6/6 brownish yellow gravelly silty medium sand. Uncompacted [loose]. Abundant SA/SR pebbles [1-4cms]. Occasional iron-stained patches / nodules; occasional manganese stained patches. Lense of sediment similar to unit N at top of unit O. Sharp irregular contact to unit P.  |
| P | 163 - 169 | Mottled 10YR5/4 yellowish brown and 10YR4/2 dark greyish brown slightly clayey, very slightly sandy, silt. Compact. White precipitation at base of unit possibly carbonate. [Blue/grey reduced areas visible on cleaning rapidly oxidize]. Vivianite clasts; manganese or charcoal flecks; some iron-stained patches. Sharp contact to unit Q. |
| Q | 169 - 174 | 2.5Y4/2 dark greyish brown organic clayey silt; discontinuous sandy laminae associated with charcoal [c.0.5mm], vivianite and iron-staining. Sharp contact to unit R.  |
| R | 174 - 182 | 10YR5/3 brown slightly clayey silt. Compact. Occasional SA/R very small pebble sized clasts [<2cm]. Subcontinuous, swirling laminations and lenses of sand and charcoally organic silt; 'marbled effect' similar to unit F. Diffuse contact with unit S.   |
| S | 182 - 186 | 10YR3/1 very dark grey clayey silt. Granule sized gravel and charcoal clasts; brick flecks. Diffuse contact with unit T.   |

- T        186 - 191    10YR3/1 very dark grey organic silty sand.  
Granule to small pebble sized gravel [SA/SR], wood  
and charcoal clasts. NB: units [possibly S], T, U  
and V could be described as all one unit, becoming  
more organic and with more abundant, more diverse  
and larger clasts towards the top.  
Diffuse contact with unit U.
- U        191 - 196    2.5YR4/3 olive brown slightly sandy silt.  
Abundant granule to small pebble sized gravel,  
glass, pot [samian] and brick clasts. Frequent  
iron-staining.  
Diffuse contact with unit V.
- V        196 - 203    2.5YR4/3 olive brown organic slightly sandy silt.  
Abundant granule to pebble sized [<3cm] gravel,  
slag, pot, hazlenut and oyster shell clasts.  
Occasional clayey lenses. Some iron-staining,  
associated with charcoal [<2cm]; vivianite  
staining.  
Diffuse contact with unit W.
- W        203 - 211    2.5Y3/2 very dark greyish brown organic sandy  
silt; occasional laminae of humified organics.  
Abundant poorly sorted, granule to pebble sized  
bone [bird long-bone and unfused cattle-sized  
vertebra], leather, mussel and hazlenut shell,  
charcoal, pot [samian] and [less frequent] gravel  
clasts.  
Sharp contact to unit X.
- X        211 - 223    Interbedded 10YR 3/2 very dark greyish brown sub-  
horizontal peat [compressed organic] laminae [2mm-  
1cm thick]; and subcontinuous laminae and lenses  
of 2.5Y6/3 light yellowish brown silt. Distinct  
sand grains. Compact. Occasional gravel  
[typically < 0.5cm], charcoal [2-3cms] fish bone  
and possible brooch fragment clasts. Brick flecks.  
Diffuse contact with unit Y.
- Y        223 - 229    10YR3/2 very dark greyish brown slightly sandy  
organic silt.  
Diffuse contact with unit Z.
- Z        229 - 232    2.5Y5/3 light olive brown organic silt.  
Infrequent granule to small pebble sized pot,  
mussel shell and gravel clasts.  
Sharp contact to unit ZA.
- AA       232 - 236    2.5Y2/5 black organic sandy silt. Oyster shell  
fragments.  
Sharp contact to unit AB.
- AB       236 - 262    Patchy 10YR3/1 very dark grey and 10YR3/2 very  
dark greyish brown gravelly organic silt; distinct  
sand grains. Poorly sorted granule to pebble sized  
[<4cms] gravel [SA/SR], wood, charcoal, bone, pot,

nutshell and plant stem.  
Fairly sharp, irregular contact with unit AC.

- |    |           |   |
|----|-----------|---|
| AC | 262 - 264 | 10YR5/2 greyish brown silt. Similar to units AE and AG.<br>Sharp irregular contact to unit AD.  |
| AD | 264 - 269 | 10YR2/1 black highly organic silt / 'peat'.<br>Compressed and well humified plant remains.<br>Pebble-sized bone and charcoal clasts.<br>Sharp slanting contact to unit AE.  |
| AE | 269 - 276 | Similar to units AC and AG but stonier. Patchy 10YR5/4 yellowish brown and 10YR5/2 greyish brown silt. Abundant gravel clasts [SA/SR]. Mortar fragments. Iron-staining of sediment and clasts. Iron-concretions. Manganese staining.<br>Sharp contact to unit AF. |
| AF | 276 - 281 | 10YR4/2 dark greyish brown silt. Infrequent gravel clasts. Sub-horizontal, slanting lenses of compressed organics, wood and charcoal. Iron-staining at base.<br>Sharp contact to unit AG.   |
| AG | 281 - 286 | Similar to units AC and AE.   |

Top of sequence at c.5.36m OD

#### Discussion

The silty deposits at the base of [and intermittantly further up] the sequence are probably flood-silt - or possibly colluvial sediments - derived from the erosion and reworking of brickearth up-slope or up-catchment. The ammount of brickearth on the interfluves will have been significantly greater during the early prehistoric period and its erosion will have made up perhaps the bulk of valley sediments encountered on the site.

The chalk granules in unit A suggest firstly that the deposit has not been [fluvially] transported far; secondly that no significant post-depositional weathering occurred; for in both cases the sediment would have become de-calcified; and thirdly that the upslope landsurface / soil from which it was derived would have been calcareous and nutrient-rich. Of significance in its agricultural potential.

Charcoal flecks occur upwards from unit B and CBM flecks and clasts from unit I.

The 'veiny, marbled' appearance of the lowest units [A-F], and again further up the profile [unit R], may be indicative of pressure applied to soft sediment - deformation / pressure release structures; perhaps due to the weight of sediment above, or to trampling of a wet sediment surface.

The association of tufa-like clasts in deposits [eg: N+P] associated / interstratified with these 'marbled' deposits may be significant. [cf: sample 1036].

The nature of the prehistoric vegetation in the local vicinity of the Walbrook may be investigated by pollen analysis of the organic deposits. In many cases these are not peaty, so reworking of the deposits / pollen is likely. However, in this case this may be useful as it may suggest changes in catchment vegetation as opposed to the plants growing *in situ*.

Combined analysis of pollen and diatoms through the profile may prove to be a powerful tool in the reconstruction of palaeoenvironments associated with prehistoric and [?early] Roman activity in the area.

The 'peaty' compressed organic and silty diamicts towards the top of the sequence would appear to be dumped [or slumped] deposits and possibly indicate more direct human inputs into the low-lying area as opposed to 'natural' silting / colluviation which may predominate lower down. Further analysis may suggest the nature and balance of these modes of deposition and allow periods of stability / weathering / plant-growth and the local environment of the middle Walbrook area in this period to be determined.

#### Recommendations

Combined **x-ray analysis** and **magnetic susceptibility** determinations [loop sensor method] on the entire monolith sequence would be especially useful in interpreting the depositional and post-depositional characteristics of the sediments and will help to identify 'landsurfaces' [and possibly input of sediment from different sources].

**Diatoms** may suggest in particular the effect of human occupation in the pollution of the water course. Sub-samples taken throughout the profile may allow valuable insights into such patterns through time.

**Pollen analysis** may potentially enable the changing vegetation to be linked to sedimentation [and therefore possibly rates of erosion] within the catchment.

Sub-samples taken for **pollen assessment** in units C,K,X and AD will suggest whether the preservation and nature of the pollen contained within these sediments has potential for further analysis.

**Loss on ignition and particle size** analysis, if a continuous sequence of samples is taken up the profile, will help to identify depositional and soil formation processes; especially if linked to x-ray and magnetic susceptibility results.

This may enable interpretations regarding phases of human activity to be linked to landscape processes operating in the Walbrook catchment.

**Micromorphology sample 994** was taken through unit AG and the context above [contexts 18067 and 18042].

Samples 995, 1020 and 1027: column from the apex, probably the deepest part, of the site.

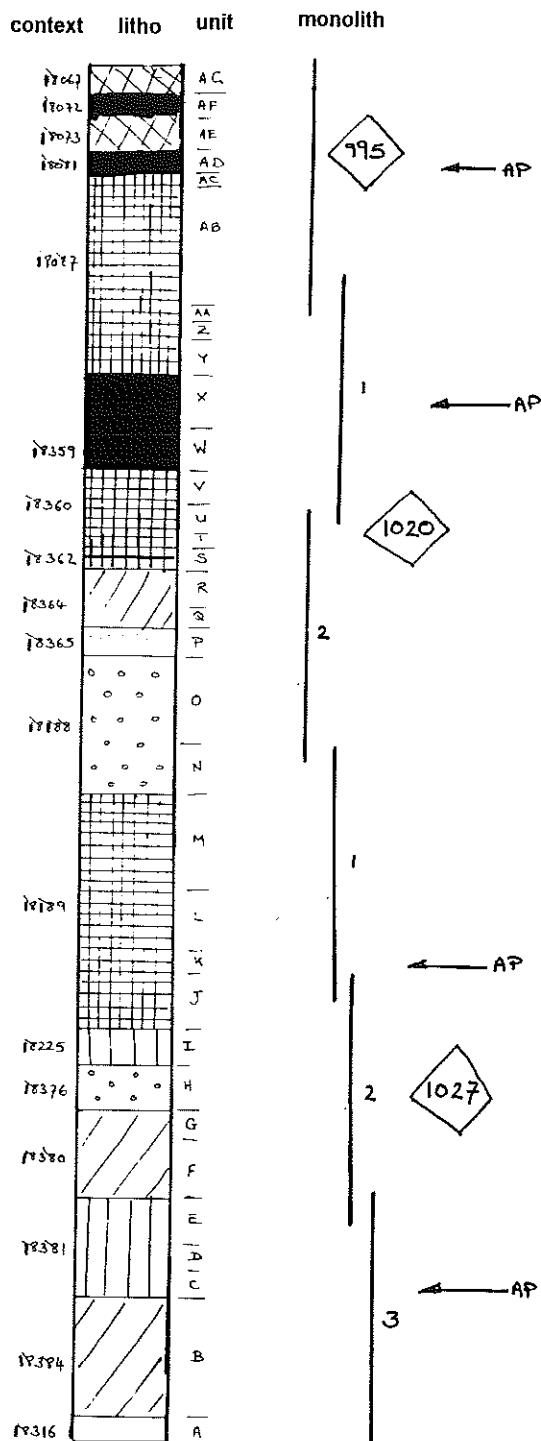
# **Correlation of monolith units and site contexts.**

The lithostratigraphic units have been allocated to one of 7 groups to aid visual comprehension.

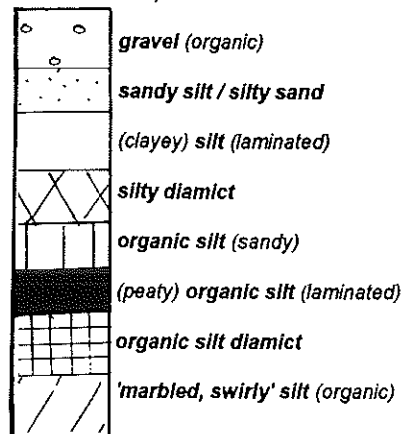
These may be characteristic of depositional and post-depositional properties and will assist in the assessment of their potential for further analysis.

More detailed unit descriptions are listed in the text

## **further analysis**



**Lithostratigraphic key:**  
(characteristics in brackets mean some units in this category also have these characteristics)



**ONE94: sub-samples for pollen assessment.**

Sub-samples from monoliths have been taken to determine the preservation and potential of pollen analysis in further palaeo-environmental work on the Poultry samples.  
The sediment units sub-sampled represent a variety of 'natural' and anthropogenic deposits distributed as widely across the site as possible.  
The units sub-sampled are denoted <-- AP on the composite stack drawings.

The units sub-sampled are as detailed below:

AREA	Sample	units
SY	812	E
9	429	B + L
10	741	F + H(i)
10	890	B
10	895	C
10	898	G
10	906	C
12	1036	B + F
12	995	AD
12	1020	K + X
12	1027	C

Total number of sub-samples to be assessed - 16.

ONE94: Location of excavation areas.

