STRATFORD MARKET DEPOT

ARCHAEOLOGICAL FIELD EVALUATION 1991-92

The Great Gate of Stratford Langthorne Abbey

OXFORD ARCHAEOLOGICAL UNIT

STRATFORD MARKET DEPOT

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A report on the field evaluation undertaken from September 1991 to January 1992 at Stratford Market Depot, West Ham, London E15.

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1 SUMMARY OF THE RESULTS (Figs 2,3)

Field evaluation at Stratford Market depot produced evidence of human activity from the Neolithic period onwards. In the northern half of the site, strong evidence was found for occupation in the Iron Age and Roman periods. The evidence consists of a ploughsoil which overlies the natural subsoil and of numerous features: ditches, gullies, pits and postholes which were cut into the subsoil. These features included a horse burial and a crouched human inhumation. The highest level at which significant archaeology was recorded was 102.56 m TD.

In the southern half of the site, east of Abbey Lane/Back Lane (Zone D), walls belonging to the medieval Stratford Langthorne Abbey were revealed in one small area at 104.11 m TD. Deposits probably relating to the destruction/robbing of these and other structures were found at the same level. Other trenches in Zone D showed the level of significant archaeology to vary from 103.7 m TD to less than 102 m TD. The evaluation work in Zone D is not yet complete.

West of Abbey Lane/Back Lane (Zone C) significant archaeology (virtually all medieval, possibly some Saxon) included some burials and occurred in four out of the twelve trenches, all on the east side of the zone, and at a maximum height of 103.36 m TD.

2 INTRODUCTION

2.1 Introduction to the evaluation

The Oxford Archaeological Unit (OAU) undertook a field evaluation at Stratford Market Depot, London E15, on behalf of the Jubilee Line Extension team (JLE) from London Underground Limited (LUL). Archaeological fieldwork began on the 16th of September 1991 and finished on the 31st of January 1991. The site is one of many which will be redeveloped as part of the Jubilee Line Extension Project; in this particular case the area is to become a railway yard with attendant workshops for train maintenance (Fig 3).

The aim of the evaluation was to assess the nature, location, extent and significance of surviving archaeological remains. Given that the design process for the depot was already well advanced the evaluation strategy employed was design-driven, in that work concentrated on those parts of the site where significant ground disturbance was anticipated (see Section 5 for detailed discussion).

Prior to the involvement of the OAU in the project, discussions had taken place between JLE, Museum of London (MOL), Passmore Edwards Museum (PEM) and English Heritage (EH). These discussions had centred on the original design for the depot which placed the workshops building at the south end of the site where the main focus of the medieval Stratford Langthorne Abbey was known to have been situated. The decision was therefore taken to flip the design so that the workshops were to the north and the Abbey site was covered by railway lines; the level of these rails in the southern area was kept as high as was practicable without artificially raising ground levels over large areas of the site.

During the course of the evaluation the decision was taken by JLE to divide the site, for archaeological purposes, into two halves from January 31st 1991. The division crosses the site just north of Trench 1. From 31/1/91 further archaeological work to the south of the line including the evaluation trenches planned but not yet excavated became the responsibility of the PEM while the area north of the line remains the responsibility of the Oxford Archaeological Unit. This report therefore covers all evaluation work over the whole site up to 31/1/91.

2.2 Introduction to the report

This report covers four months of evaluation work in the field. The quantity and complexity of the results mean that a full description of all the archaeology would not be possible within the timescale, nor appropriate for what is intended as an initial summary of the results (Section 6) and their implications (Sections 7 and 8). For the purposes of reference, each trench is summarised in Appendix 1.

The numbers allotted during fieldwork to trenches and to all contexts (ie each deposit, cut, structure etc) are used throughout the report text and figures. One hundred context numbers were allotted to each trench in the following manner: Trench 1, Nos 100-199, Trench 2, Nos 200-299 and so on, allowing the trench to be identified from the context number alone. Only two trenches required more than one hundred numbers: Trench 22 was allotted 2200-2299 and 5000-5999; Trench 32 was allotted 3200-3299 and 5100-5199.

Understanding of the report will be made clearer by reference to Figures 2 and 3 in particular, which show the trench layout and other details against the existing and proposed topography respectively. These figures also show the Zones A-E into which the site has been divided for the purposes of discussion within this report.

3 TOPOGRAPHY AND GEOLOGY

3.1 Topography

The Stratford Market Depot site lies in East London, in the Borough of Newham and the Parish of West Ham; National Grid Reference TQ 389835 (Fig 1). The area proposed for redevelopment covers 10.3 ha and forms a roughly rectangular shape bounded by Abbey Road to the south, Channelsea Road to the north, the North Woolwich railway line to the east and the Channelsea River (now piped underground) to the west.

The northern half of the site is currently occupied by the buildings of the former Stratford Wholesale Fruit and Vegetable Market and disused railway yards, while the southern half has a central north-south access road (Abbey Lane/Back Lane) with disused factory buildings (previously Saul D. Harrisons and Sons) and various retail/works buildings to the west, and scrapyards to the east. The south-east corner of the area contains the "Adam and Eve" public house and the empty Tredegar Warehouse. The topography of the site prior to any demolition work forms the background to Figure 2 (mapping supplied by JLE).

The Market Depot area is relatively low-lying, being at 3 to 3.4 m above Ordnance Datum at the southern end and rising to 4.5 to 5 m at the northern end [1].

3.2 Geology

The site lies on the Thames Gravels, which occur at between 1 and 4 m below the ground surface, and between 99.4 and 102.2 m TD. Some localised alluvium above the gravels was noted in the borehole survey carried out for JLE (eg Borehole 957A) and this probably relates to the fills of water channels and (possibly) areas of still water; the existence of such features has been demonstrated by the evaluation (Fig.3; Section 6).

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Prior to the work under discussion here the prehistoric and Roman periods in the Stratford Market depot site were represented only by flint tools, a Bronze Age jet bead and some Roman pottery. These were all residual finds recovered in the 1983 excavation by the PEM (Fig.3; ERL 1990: 74). Outlying finds include a possible Bronze Age cemetery north-east of the

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[1]From this point onwards in the text, and on all figures, levels are given relative to Tunnel Datum (TD) so as to accord with design and construction information. Tunnel Datum is 100 m below Ordnance Datum.

depot site. Direct evidence aside, it can also be noted that the site lies close to the Channelsea River (which joins the Lea and therefore gives access to the Thames) and is on the Thames gravels. Gravel sites are normally characterised by light, fertile, easily-worked soils and are therefore attractive areas for early settlement. It is also significant that the Roman road from London to Colchester passes 0.4 km north of the site's northern boundary.

In the early medieval period (broadly, AD 500-1100) the main evidence is provided by Domesday Book, compiled in 1086, when the settlement of West Ham was evidently of some size. The unusually high number of nine mills is of particular interest. Abbey Mills, part of which may still lie in the south-west corner of the site (Fig.10) was almost certainly one of the nine (VCH vi: 89-90).

The most important historical event came during the medieval period, when the Abbey of Stratford Langthorne was founded in 1134 for monks of the Savignac order, passing to the Cistercians in 1147. Nothing now remains above ground of the Abbey buildings, which are likely to have been both grand and extensive, and there is very little information as to the Abbey's late history, although it may have been briefly abandoned due to flooding in the 14th century (VCH ii: 131). In 1538 the Abbey was surrendered to the King. A document compiled at the time of the dissolution shows the Abbey's buildings and grounds being used for houses, orchards and gardens.

Most importantly for the purposes of this report, a recent attempt has been made to plot the approximate positions of some of the Abbey buildings (Watson 1989). This places the Abbey church in its traditionally believed position beneath the Adam and Eve public house and running east to the 1983 PEM excavations where the excavated foundation trenches are interpreted as being part of the east end of the church, with surrounding burials (Fig.3). Working from this position, and using a 19th century copy of earlier land leases, Watson gives suggested positions for a number of buildings and land-parcels (Ibid: Fig.4); this work is discussed further in Sections 7 and 8 in the light of the OAU evaluation and further research.

Judging from the 18th and 19th century maps, nearly all of the Abbey buildings were demolished by the 18th century, but the area is of importance for the textile industry. Calico printing may have actually begun in West Ham in 1676 (VCH vi; 76-77) and although this was not necessarily on the depot site, the area between Abbey Mill and Stratford was later (in 1747) called the Calico Grounds (ibid.). In the early 18th century calico printing gave way to silk printing; a Mr J.Tucker's West Ham Abbey print works occupied much of the south-west corner of the Market depot site, as Figure 10 shows. Subsequent maps show that there was much alteration and rebuilding of the factory buildings as chemical works, stone works and rag works successively occupied the site.

5 METHODOLOGY AND STRATEGY

5.1 Desk-top and research

An initial desk-top study of the archaeological implications of the entire Jubilee Line Extension was undertaken by MOL and PEM, coordinated by Environmental Resources Limited (ERL 1990). A detailed research document on the Abbey of Stratford Langthorne was provided by the PEM (Undated); this is an extended version of the most recent published account (Watson 1989). Since contracting to carry out the field evaluation, the OAU has carried out further background research, concentrating particularly on the medieval and post-medieval periods; this has involved examination of primary and secondary sources, including material held in the excavation archive at the PEM (see Section 4).

5.2 Evaluation strategy

The strategy for evaluation which ultimately evolved consisted of 37 trenches varying in size from 40 x 6.8 m to 3 x 3 m. The layout of the trenches is shown on Figures 2 and 3 against the existing and proposed topography respectively. Two major points must be made about the evaluation strategy: firstly, that it was design-driven, and secondly that it evolved during fieldwork rather than being entirely pre-determined. These two points are explained in detail below - the explanation should be read in conjunction with Figures 2 and 3.

In September 1991, when fieldwork began, the design of the rail yards and workshops was well advanced and detailed drawings were provided to the OAU by JLE. Because of this, it was logical to take the proposed design into account in two ways: placement of the trenches in areas where significant ground disturbance could be predicted, and restriction of the depth of trenches to the predicted depth of significant disturbance. Taking Zone A first, which corresponds to the area of the proposed workshop buildings, Figure 3 shows how all the trenches in the northern part of the site are within this Zone, while Trenches 1-9 and 24 are aligned with the building's foundations. Trenches in Zone A were excavated until either significant archaeology or the underlying natural deposits were encountered; this was because deep disturbance from piling and strip foundations was anticipated. It should also be mentioned that there was no prior archaeological knowledge of Zone A which might have contributed to trench placement decisions.

In Zones C,D and E - all of which will be occupied by railway lines -trenches were placed more according to prior archaeological and historical knowledge but areas of high ground level where more landscaping would be required were considered important (eg Trenches 14 and 15, Fig. 2). In terms of

depth, trenches in these Zones were excavated either to significant archaeology or to 2 m below ground surface, a policy adopted at the request of JLE. The 2 m depth was chosen to allow examination of all archaeology which might be threatened either by ground disturbance to a maximum of 104 m TD (the figure indicated by JLE) or by compaction from construction operations at or above 104 m TD.

Areas which are not contained within any zone on Figures 2 and 3 are those where the ground level is low enough to mean that disturbance to 104 m should not have an impact on the underlying archaeology. These areas have therefore not been evaluated but any downward change in the predicted disturbance levels would mean that this strategy should be reconsidered. Zone B, which is to be occupied by a train wash, has not been evaluated at the time of writing because construction details are not yet available.

Moving on to the evolution of strategy during fieldwork, this was to some extent necessitated because that only the northern parts of Zone A and Zone D were available for fieldwork in mid-September 1991 and the initial specification was for Trenches 1-9. As access to other area was gained, the OAU began to move into them, developing the strategy for each in turn beginning with Zone C and continuing with Tredegar warehouse in the south-west corner of Zone D. When it became clear that evaluation of almost the entire site (the exceptions were Zone E and Trenches 23, 26, 27, all to all of which there was no access) was to be carried out by the OAU, an overall strategy was then drawn up. This layout, consisting of Trenches 1-29, was discussed with John Dillon of the MOL, acting as Archaeological Project Coordinator for the JLE, with representatives of the PEM and with Dominic Perring of EH, before being finally agreed.

Finally, over such a long evaluation, it was essential that some flexibility of strategy was maintained during all fieldwork to allow information gained by from completed trenches to be taken into account. This was done firstly by agreeing some optional trench positions within the layout which could be taken up if nearby trenches produced inconclusive results. Thus, when Trench 9 proved to be in an area badly damaged by 19th century reservoirs and tanks, the optional Trench 32 was excavated; one optional (unnumbered) trench remains in Zone E where no evaluation has yet taken place. Secondly, flexibility was maintained by agreeing extra trenches to answer specific questions. Two examples of this practice are Trench 24, which was designed to show if the archaeology at the south-west end of Trench 5 intensified towards the river, and Trenches 30, 31, which were placed to further examine the extent of the archaeology first discovered in Trenches 3,5,8 and 24. Figure 3 shows that both these examples were successful in their aims, stressing the value of this kind of phased evaluation.

5.3 Evaluation methodology

A total of 32 trenches was excavated, ranging in size from 6.8 x 40 m to 3 x 3 m. The total number of planned trenches is 37 (Fig.2). In general, a minimum trench size of 10 x 4.4 m was observed to allow safe excavation to a depth of 2 m, while still exposing a reasonable sized area (4 x 8 m due to stepping-in) at that depth. The 3 x 3 m trenches were used only to answer a specific question within Tredegar Warehouse where space was very limited (Zone C, Trenches 33-37).

The statistics of the evaluation are as follows:

Zone A - Total area 27,000 sq m
- Area of trenches completed = 1705.6 sq m = 6.32%
- Area of planned trenches = 1814.6 sq m = 6.82%

Zone C - Total area 11850 sq m
- Area of trenches completed = 501.8 sq m = 4.23%
- Area of planned trenches = 501 sq m = 4.23%

Zone D - Total area 9950 sq m
- Area of trenches completed = 309 sq m = 3.1%
- Area of planned trenches = 785 sq m = 7.9%
- Add 1983 PEM excavation = 1460 sq m = 14.6%

For the majority of trenches the overburden was removed using a 360° tracked excavator fitted with a 6' toothless ditching bucket. A smaller Kubota-type version was used inside some of the warehouses where working room was restrictive.

5.4 Excavation

The methods used after machining were generally those set out in the "Archaeological specifications for sites east of the River Lea" which can be referred to in Appendix 2, with notes attached. As regards excavation techniques, only one point need be elaborated upon here: the approach used for ploughsoil in Trenches 30 and 31.

Following the excavation of Trench 24 it became clear that a soil horizon (2408), probably a ploughsoil, existed directly over the natural subsoil (2406) and therefore directly over the archaeological features (fig.5). Vague traces of the cut-lines relating to features could sometimes be seen in this ploughsoil and finds appeared to have some correlation with features below. It was therefore desirable to investigate these points further, and also to establish, if possible, a date-range for the ploughsoil. This was done in Trench 30 and 31 by dividing the equivalent horizon into one metre squares and removing the soil in 0.1 m spits, giving a three-dimensional control over the recovered finds. Results of this work are given in Section 6.

5.5 Finds

Finds recovery during fieldwork is covered in Appendix 2; "Archaeological specification for sites east of the River Lea". Following the fieldwork, the potentially datable material from selected contexts was examined at the PEM by Dr Pamela Greenwood (for prehistoric and Roman pottery) and Dr Frank Meddens (medieval and post medieval pottery). The main purpose of this exercise was to spot-date the material. Flint from the evaluation was examined by Pippa Bradley at the OAU. Comments on the other classes of material result from the author's own observations, with the exception of environmental (see below).

5.6 Environmental

Advice on the recovery of palaeo-environmental data was provided on site by Dr Tony Barham and Dr Martin Bates of the Geoarchaeological Service Facility (GSF), and by Dr James Rackham of the MOL's Greater London Environmental Archaeological Service. Sampling on site was done mainly by GSF and occasionally by AOU. A summary of the sampling policy employed appears as Appendix 3.

6 ARCHAEOLOGICAL RESULTS

6.1 Zone A

Zone A falls into two main areas for discussion, that containing Trenches 23 and 32, which is concerned mainly with Industrial Archaeology, and the area north of Trench 32 which has produced evidence of Iron Age and Roman occupation. Taking the latter area first, the lowest deposit, reached in Trenches 2,3,4,5,6 and 8, was a red-brown sandy gravel (Thames Gravel). The height of this layer varied between 98.5 and 101.9 m TD although the wide range is due to the truncation by later features. In non-truncated areas the level was between 101.5 and 101.9 m TD (eg. south-west end of Trench 2).

Above the Thames Gravel the natural subsoil consisted of an orange to grey-orange silty clay which varies in depth from 0.4 to 0.6 m, and in top level from 101.57 to 102.37 m TD. Cut into this subsoil were a large number of features: ditches, gullies, pits and postholes; these were particularly dense in Trenches 24 and 30, but also occurred in Trenches 3, 5 and 8 (Fig.3). Two features found in Trench 24 are worthy of particular note: pit 2419 contained a horse burial, while a crouched inhumation lay within pit 2440 (Fig.4). In Figure 4 it can be seen that the horse burial may be related to

the other ditches, perhaps forming a structure. The fills of the features in Trench 24 was uniformly a grey-brown silty clay, identical to the overlying layers (2408,2425; Fig. 5), and tending to produce finds covering a wide date-range. The earliest of these, flint tools, flakes and cores, date from the Neolithic (or just possibly the Mesolithic) periods to the Bronze Age. With the possible exception of the Bronze Age items these flints are residual although they do suggest earlier occupation or use of the area.

Turning to the pottery, several features, including the horse burial, produced Bronze Age/early Iron Age, middle Iron Age and 1st century AD material. While a Roman date cannot be ruled out, it is, on balance, more likely that features are middle Iron Age and that the Roman pottery, which tended to occur as small fragments, is intrusive.

Trench 30, immediately south of Trench 24, is evidently very rich in features and only a few were sampled for the purpose of the evaluation. The impression here is that while Iron Age material is present, there is a far stronger Roman element than in Trench 24. One feature, 3015, is evidently late Roman, probably 3rd century AD. It was also noticeable in Trench 30 that the fills of the features could be more clearly distinguished both one from the other, and from the overlying layers.

Other evidence of less intensive activity was found in Trenches 3, 5, 8 and 31. One ditch (in Trench 31) was clearly Roman (1st to early 2nd century AD) but other features produced Iron Age finds.

The layers directly above the subsoil, and therefore overlying the cut features was a light grey silty clay, varying to a sandy loam (eg. 2408, 2425, 3008) normally 0.3-0.4 m in depth and thought to be a ploughsoil. Some variation across the site was evident in that some trenches had only one such layer, but two could be distinguished in Trench 30. Where only one layer could be seen, the finds were a mixture of Iron Age, Roman and 19th century material; in Trench 24, however, the lower of the two ploughsoils contained sparse Iron Age and much Roman material (up to mid-3rd century AD) with no 19th century contamination.

In Trenches 30 and 31 an attempt was made to tie down the finds more precisely within these ploughsoils (Section 5). Initial analysis shows that in Trench 31, for example, a significant quantity of the ploughsoil finds (52%) were recovered from above the large ditch 3110. Vertical control over the positioning of finds was also useful in that where only one ploughsoil could be identified, as in Trench 31, 19th century material is confined to the upper part of the layer. This matter is discussed further in Section 7.

The other features of Zone A which have not yet been mentioned are the numerous ditches and wider cut features (the latter have been loosely termed channels) which were found in almost every trench. Dealing with the channels first, these are characterised by being wide, shallow and are

filled with a fine grey alluvial silt. They are frequently recut, contain very few finds and it is therefore very difficult to generalise about dating, although some at least are demonstrably early - the best example is channel 334/331 in Trench 3 which was cut by a Roman ditch 313. The fills of these features have been sampled so that further analysis can be carried out if required (see Appendix 3) - an initial interpretation is that they represent the channels of a (possibly braided) watercourse within which gentle sedimentation, perhaps from flooding, led to the build-up of silts.

The narrower ditches, all of which were cut from much higher in the sequence (eg. Fig.5, Trench 24) normally had loose fills in which brick and tile were commonly found. 18th and 19th century material was recovered from these fills. The most interesting example of these ditches was 3009, in Trench 30, which cut through the earlier of the two ploughsoils (see above); it was also possible to see that some ploughing had taken place after the ditch was cut. An initial interpretation of these ditches, quite a number of which follow the same NE/SW alignment, is that they were cut to drain and divide the land in the 18th and 19th centuries for agricultural purposes.

The remainder of the Zone A sequence consisted of a thin (0.15 m) layer of black humic silt which was identified in most trenches. A satisfactory interpretation of the layer has not yet been reached and further analysis will be required ; it pre-dates the deliberate levelling of the site from 1870 onwards in order to construct railway yards. This was achieved by laying gravel, cinders and hardcore and chalk to a depth of 1 to 1.6 m.

The second area of Zone A to be discussed is that from Trench 32 southwards, and including 32 (Fig.3). In part of this area Trench 9 showed that the 19th century reservoirs and tanks (Fig.10) had removed all other evidence. In Trench 32, however, a better sequence was recovered, clearly quite different to the rest of Zone A described above. Alluvial deposits at 101.15 m TD (possible the top of a channel) were below four successive gravel and cobble floor surfaces, themselves cut by an E/W brick-lined feature (3291) which was 1.2 m wide. A 4.4 m length of this feature was revealed by excavation, showing it to have a flagstone bottom at 101.16 m TD. The presence of another brick-lined channel was suspected, joining 3291 at right-angles, but this was not excavated. Two slabbed floor surfaces were laid after 3291, one incorporating a line of 3 slotted sandstone blocks 0.5 m apart. The sequence was completed by two further floor surfaces, mainly of gravel, covered by 1.2 m build-up to the present ground surface at 103.84 m TD. The stratigraphically lowest layers excavated produced 18th century and residual 16th century pottery; otherwise, abundant 19th century material was present. One other noteworthy point was the presence of many stained deposits, usually in shades of purple.

One trench remains to be excavated at the southern tip of Zone A. This trench is potentially important in that it crosses the line of a moat marked on the early maps (Fig.10) which is likely to have been an abbey-phase feature.

6.3 Zone C

Zone C was defined by taking the area previously occupied by the works of Saul D. Harrison. This zone is logical in terms of access, but also partially bounded by a medieval road (Abbey Lane) while to the north the boundary corresponds approximately with the limit of ground requiring evaluation according to the brief (see Section 5).

Beginning on the west side of the Zone, the lowest excavated deposits in Trench 19 were two silt layers (1928, 1929) which may have been cess deposits. No datable material was recovered either from these or the overlying silt-filled channels, except for a flint scraper, possibly Bronze Age. This find is most likely to have been residual. Above these deposits was 1.2 m of brick rubble and hardcore.

On the east side of the zone, Trench 14 (Fig 6) contained compacted surfaces of chalk and mortar (1408, 1410; Fig 6) at 103.37 m; these were below layers of broken tile with mortar and chalk (1409, 1404-6). 1.43 m of hardcore and rubble completed the sequence. Pottery dating from AD 1270-1350 was recovered from layer 1405, while 1409 contained fragments of glazed medieval tiles.

The lowest level excavated in Trench 13 was a red-brown silty clay (1313 - possibly the natural subsoil) at 102.76 m TD which contained two well-preserved skeletons (1311, 1312) aligned east-west. Dating of these burials is problematic as no datable finds were directly associated either with them, or with the layer 1313. The grave cut for only one of the skeletons, 1315, was visible and may have begun in the layer above, 1308 (Fig 7). Both medieval (13th - 14th century) and late Saxon (AD 850 - 1000) pottery fragments were found in layer 1309 which overlay 1308 and was itself overlaid by a patch of decayed greenstone. The remainder of the sequence, from 103.6 m TD upwards, consisted of garden soil (0.6 m) and brick rubble/hardcore (0.8 m).

One other trench in Zone C contained burials - seven possible grave cuts were found in Trench 21 and three produced skeletal remains. Uncertainty as to the number of graves present was caused by later pits, which had destroyed much of the evidence, and by the very poor condition of the bone. Above the pit was an east-west aligned wall built of chalk, greenstone, limestone and flint, 0.45 m wide, which was covered by hardcore going up to the present ground surface. No direct dating evidence was recovered from the graves. The pits above produced 14th and 15th century pottery

with some residual Saxon (AD 400-850) and late Saxon (AD 850-1000) material.

The remaining trenches in Zone C are characterised by a far greater depth of rubble and hardcore than those already described. Concrete floors and the stubs of brick walls were also found in many trenches, as was pottery from the second half of the 19th and 20th centuries. Perhaps the most interesting pottery recovered was a large quantity of 19th century London stoneware from Trench 18, inscribed:

J. Tucker West Ham Abbey

One exception to the general rule was Trench 12 where there was evidence for an 18th century ditch aligned north-west/south-east. The fill of this ditch contained much bone and oyster shell. Above the ditch was a sandy clay layer which contained a line of wooden stakes, possibly related to the nearby Channelsea River. 1.2 m of hardcore, brick rubble and the remains of 19th century factory buildings completed the sequence.

6.3 Zone D

The first trench excavated in Zone D, Trench 22, was also the most informative. At least two phases of medieval walling were revealed, with an abutting sequence of silts containing mortar, chalk,and greenstone (5001-5006 Fig.9). The lowest wall, 5008, ran north-south and was 0.48 m wide; the main material used in its construction was chalk. Against 5008 was a much larger wall, 5000, also aligned north-south, and built of chalk, flint, limestone and greenstone; a 4 m length survived. Wall 5000 had a return which ran eastwards into the west-facing section of the trench (Fig.8); at the corner there was an external buttress faced in greenstone blocks (Fig.9). The working of the greenstone exhibited a high quality of craftsmanship. At its highest point wall 5000 lay at 104.11 m TD, only 0.65 m below the present ground surface; fragments of similar walling were found in the nearby trenches 33 and 36 at 103.83 and 103.85 m TD respectively (Fig.8). The deposits excavated from around the wall 5000 contained much chalk and greenstone rubble and presumably related to the destruction/decay of this and other walls; the interpretation includes the layers 5001-5006 described above.

In terms of dating the excavated sequence contained sparse material from the later 14th and 15th century, most of it residual. Pottery from the 16th century onwards was abundant and there was clearly a strong phase of occupation in the 18th century (layer 2291 upwards Fig.9). The latter included a large cut (5009) filled with many distinctive red earthenware spouted pots.

A second large trench (23) was excavated within Tredegar warehouse (Fig.8). Here a deep sequence of brown sandy silts was found, containing much chalk and tile, and with it's top at 103.7 m TD. All these contexts sloped distinctly from east to west. The pottery recovered from this sequence showed an earlier bias than from Trench 22, beginning probably in the 14th and ending in the 16th century; a residual sherd of late Saxon pottery (AD 850-1000) was also found. Above these brown silts was 1.06 m of 19th century walls, floors and accompanying hardcore.

The other small trenches in this area : 34,35 and 37, showed similar deposits with their highest levels at 103.29, 103.31 and 103.58 m TD respectively. Trench 37 was particularly rich in 18th century material and produced large quantities of pottery, glass and clay pipe.

While the full evaluation picture for Zone D cannot yet be given, due to the lack of access for trenches 26 and 27, it was possible to excavate Trench 25. This was done in two sections, north and south, as the trench is crossed by the line of the road (Bakers Row - now cut off by the railway; Fig.1) and the quantity of service trench dug into the road made it unlikely that any useful information could be gained in the first 2 metres of deposits. In both the north and south halves, sequences similar to those described above for Trench 23 were found, with their uppermost levels at 103.23 m TD. The earliest pottery recovered was 14th century.

Finally in Zone D, at the northern extremity of the zone, Trench 1 presented a completely different picture. Natural gravel 118, 119 was topped by a sandy clay 115, presumably the natural subsoil; 115 was cut by a small pit and a ditch, neither of them dated, at a level of 102.01 m TD. The remainder of the sequence consisted of brick walls, concrete floors, drains and much brick rubble and hardcore.

7 COMMENT ON THE RESULTS

7.1 Reliability

In general, the reliability of the field evaluation should be considered as good. A reasonable sample of each zone was excavated (Section 5) under exceptionally good weather conditions for an autumn/winter project. Only one complete day and a few hours were lost to rain in four months, but the deposits retained moisture, and were never dry enough to obscure colour differences.

7.2 Zone A

Beginning at the lowest part of the sequence, the height of the natural gravel may repay further study if more data could be obtained about the surrounding area. The object of such work would be to show whether the archaeology is occurring on a raised area which may once have been a gravel island, or eyot. A number of eyots showing traces of early occupation have been identified elsewhere in London, close to the River Thames

The subsoil which overlay the gravel was examined in terms of its varying height above Tunnel Datum, but this did not prove to be particularly instructive. There was no clear correlation between the highest areas, and the densest areas of archaeology; if anything, the level of the subsoil rose gradually from north to south, against the flow of the Channelsea River, but this may simply be a reflection of greater truncation by ploughing.

From the archaeological features which were found there can be no doubt that there is a major archaeological site within Zone A. While it is too early a stage to be able to interpret the site in any detail, a number of points can usefully be noted. The site, judging both from the finds, and from the stratigraphy has more than one phase. A general background of early finds indicates that there was activity somewhere in the area from at least the Neolithic period, and the later Bronze age is also probably represented. The archaeological features excavated range in date from (probably) the middle Iron Age (though a few may be earlier) to the 3rd century AD. It is, however, true to say that there are some difficulties with dating, particularly in the case of Trench 24 where a wide date range of finds with single features was coupled with undifferentiated fills. On present evidence, the best explanation would seem to be that although the features were mainly middle Iron Age, there is much residual material. The Roman pottery, which in Trench 24 was often very fragmentary, is likely to have been pushed into the top of the features through ploughing (see also below).

Of particular interest are the presence of a horse and a human burial, suggesting a ritual/religious element to the site. Carrying out radiocarbon dating on the bone from both burials will be essential. The high number of archaeological features noted in Trench 30 would seem to show that the two burials are just part of a far more complex area of activity which has yet to be fully revealed. Less intensive, but still important activity is also evident from the ditches revealed in the outlying trenches (Fig 3). It is important to note that while the archaeology in these outlying trenches appears sparse, this is at least partly due to destruction by later ditches and channels.

Both ploughsoils and channels have already been discussed in Section 6 and they are also relevant to the environmental discussion below. It need only to be pointed out at this stage that the apparent recognition of a Roman ploughsoil is very important, and could potentially provide important evidence regarding Roman land-use.

Environmental

The potential of the site to contribute to the understanding of paleo-environments is clearly limited, but some lines of inquiry would be worth pursuing. These are:

1 Standard sedimentological laboratory analysis of the gravels and overlying units will provide information regarding landscape change at the regional level within the later Pleistocene.

2 Soil micromorphological analysis for the sequence above the gravels may provide information regarding soil development across the site.

3 Both the above analyses will be of greater value if more information can be gained as to the relative sequence on the site, particularly as regards the ploughsoils, channels and archaeological features.

Trench 32

The evidence of industrial activity revealed in this trench is clearly related to the West Ham Abbey Print Works (Fig 10) and, as something is known of the industry, we can speculate that the brick-lined channel was used either for washing the silk or, more probably, it conducted water to a washing tank (VCH ii: 407). further work could be expected to reveal more information along these lines, elucidating what was a completely "by hand" process. Chemical analysis of the stained deposits would also yield information as to the type of dyes used. All the above would need to be coupled with further documentary analysis of the Abbey Print works in particular, and the industry in general. Finally, it remains possible that excavation of a wider area would reveal evidence of earlier works beneath those already found.

7.3 Zone C

In terms of excavation conditions, this zone produced the only difficulties in that Trench 16 was heavily contaminated and could only be briefly noted and photographed rather than fully recorded. The poor condition of the human skeletons in Trench 21 may also be due to some localised contamination of the soil.

Of particular importance in Zone C are the presence of burials in Trenches 13 and 21, and the hints of Saxon activity provided by residual pottery.

Given the existence of the abbey it remains most likely, on balance, that the burials are medieval (see also below) but no direct evidence for their dating was recovered and the possibility that they are Saxon cannot be ignored.

From the point of view of this evaluation, the most important finding from work in Zone C is that very little remains of the Abbey in the first two metres below ground level. Where floor levels and burials were found, at least 1 m, and more commonly 1.2 m or more separated them from the current ground level. As to the interpretation of the remains which were discovered, the reconstruction of the Abbey plan by Watson (1989) would place the "Little Parish Church" in this area, and it would be tempting to see the floor levels from Trench 14 as relating to the church, with the nearby skeletons (Trenches 13, 21) belonging to its churchyard. However, apart form the danger of equating a single historical fact with a single piece of archaeological evidence (and see above), there is also good reason to question Watson's interpretation which is discussed further below.

7.4 Zone D

Although the evaluation of this area is not yet complete, there is already evidence from the trenches inside Tredegar warehouse for at least one substantial medieval building which lies only 0.65 m below the modern ground surface. The dating and character of the excavated deposits associated with this building (see Section 6), coupled with the height of wall preserved (more than 1 m) would mean that the floor levels of this Abbey building must lie further down in the sequence.

For the Zone as a whole it is clear that the height at which significant archaeology is preserved varies considerably - in Trench 25 it lay 1.2 m below ground level (compare with above). This is almost certainly because some parts of the Abbey were very heavily robbed for their building materials, while others survived better. The trenches still to be excavated are clearly necessary in order to discover if there is any pattern to this preservation.

Finally, Watson's important work not withstanding (Watson 1989) it is felt, following converstions with Julian Munby who has researched the Abbey for the OAU, that there is still reasonable doubt as to the position of the main claustral buildings of the Abbey, ie were they north or south of the Abbey church? Whereas Watson, on the basis of the land grant documents, favours the north and places other buildings accordingly, the main difficulty with this argument is that the claustral buildings would then seem to cross Bakers Row, which is surely a medieval road as it is straddled by the Abbey gatehouse. Even if the cloister can be fitted into the limited space between the north wall of the church and Bakers Row, the vast majority of abbey plans involve buildings projecting beyond the north side of the cloister, and these would again impinge onto Bakers Row. This opens up many

possibilities, only one of which is that the building found in Trench 22 could have formed part of the claustral complex if it in fact lay to the south.

8 CONCLUSION AND RECOMMENDATIONS

8.1 Evaluation of the Stratford Market Depot site has revealed significant archaeology over much of the site. Preference should be given to the preservation of archaeology in situ wherever this is practicable.

8.2 Where preservation is not practicable, arrangement should be made for mitigation of any damage by prior controlled excavation, for which a research design should be prepared.

8.3 All construction work on the site, whether or not excavation has previously taken place, should be potentially subject to a watching brief by either OAU or PEM (depending on the area of the site concerned). The exact terms of this watching brief should be agreed between all parties concerned before construction work begins.

8.4 **Zone A** (NB To clarify the following points, certain areas on Figure 3 have been defined by green lines)

In general there is evidence of substantial use of the site during the prehistoric and Roman periods and great potential exists to provide evidence about the character and development of the settlement. Abundant pottery is present, which can be used as dating evidence, but will also give information about local, regional, national and international distribution networks. Animal bone is well-preserved on the site and can be used to determine diet and agricultural practices. To these general points we can also add the extremely valuable special deposits known to exist, namely the horse burial and crouched inhumation. The potential for palaeoenvironmental studies is limited, but it should be possible to develop a basic model for topography and land-use before, during and after the occupation evidenced by the archaeology.

The main archaeological focus appears to lie in the area defined by green lines on Figure 3 containing Trenches 3, 5, 6, 8, 24, 30 and 31. Damage to archaeology from the proposed development could occur from truncation of the archaeological deposits for floors, foundations etc, by piling or by heavy machinery operating on or close to the archaeology during construction. If, within any part of this area, such damage cannot be avoided, detailed archaeological investigation of that area should take place. In practice, this is likely to mean machine-stripping to the top of the subsoil (although leaving a suitable proportion of the ploughsoil to be hand-investigated)

followed by full excavation of the features cutting the subsoil. Sampling of features may be possible in some areas, but on the evidence gained so far, full excavation is likely to be needed if the site is to be properly understood.

The area bounded by green lines on Figure 3 and containing Trenches 2 and 4 is not, on current evidence part of the main archaeological focus but disturbance should still be kept to a minimum wherever possible. If considerable damage is inevitable, then consideration should be given to prior archaeological investigation.

In the area occupied by Trenches 32 and 23, if damage is to take place, a sample of the industrial archaeology should be archaeologically excavated prior to construction work; the excavation should be coupled with detailed documentary research. Further comments on this area must await the excavation of Trench 23.
It should be stressed that within Zone A in general, much will depend on the final foundation design for the workshop buildings. Discussions should take place as soon as possible to determine the potential impact on the archaeology.

8.5 Zone C

A number of areas of significant archaeology were identified in Zone C, and the existence of burials, together with hints of some Saxon activity, is of particular note. Above this archaeology, at least three phases of industrial building have been built and demolished, creating a layer at least 1 m and more usually over 1.2 m thick.

It follows from the above that on the available evidence from Zone C the design as currently proposed, ie with no disturbance below 104 m TD, should not cause any damage to significant archaeology. Any change in the design would require this situation to be carefully reviewed.

8.5 Zone D

High quality medieval archaeology, including at least one substantial abbey building, exists in Zone D. At one point the archaeology is only 0.65 m below ground level, at 104.11 m TD.

The unexcavated trenches should be completed as soon as possible so that a fuller picture of Zone D can be built up, particularly as regards the varying height of preserved archaeology. Interpretaion of the results of further evaluation should take account of alternative hypotheses regarding the original layout of the abbey, as well as that set out by Watson (1989).

The design of the Market depot as currently proposed will potentially involve clearance down to 104 m TD. Given that archaeology exists at 104.11 m TD the potential exists for unacceptable damage, both from truncation of archaeological deposits and compaction (by heavy machinery). It is therefore recommended that:

1 Wherever practicable, the areas of lowest clearance be sited over the lowest archaeological levels. For example, the current design layout (Fig.3) shows no rails directly above Tredegar Warehouse where substantial archaeology is preserved although it is not yet clear whether drainage would need to be laid in this area.

   Where the only damage is likely to come from compaction during construction, and provided it is certain that train operation will not itself cause compaction, consideration should be given to temporary protection (cushioning) of archaeological deposits during construction work.

2 Where damage to the archaeology is inevitable, full archaeological excavation should take place prior to construction; the aim of this work would be to reduce the archaeological levels down to a point where they are protected from both truncation and compaction.

8.6 Zones B and E

In Zone B archaeological field evaluation should take place if the design proposals for the train wash indicated that it is necessary. Evaluation of Zone E should proceed as planned (Fig.3). It should be noted that a trial trench in Zone E dug for the purposes of ground survey revealed a probable abbey-phase wall.

APPENDIX 1 TRENCH SUMMARIES

ZONE A

Trench 2

A reddish brown sandy gravel (215), disturbed in places, was found at 101.73 m TD. It was overlain by a light brown sandy clay (214, 211, 218), a natural subsoil, which was typically 0.15 m in depth and covered the entire trench. This was cut by an E/W-aligned linear ditch (217), 0.8 m wide and 0.4 m deep with a U-shaped profile and filled with a dark grey sandy silt (216). A grey brown sandy silt (210) sat stratigraphically above 216 and was cut by an E/W-aligned channel (219), 3.5 m wide and 0.25 m deep. Channel cut 219 and its two recuts (204, 221), had sandy silt fills (203, 202, 220, 201, 205). A sequence of gravels and hardcore sat above these deposits, below the present ground surface.

Highest significant archaeology: 102.27 m TD.
Notable finds: ————

Trench 3

A natural gravel (318) was overlain by an orange grey silty clay (303), found at 102.25 m TD. These layers were cut by two N/S-aligned channel ditches 310 and 308, the former of which exhibits three recuts (305, 334, 311). The fills (333, 301, 332) of the recut ditches 334 and 311 are cut by a N/S orientated ditch (313), whose fills (327, 330, 326) are again recut by a NNE/SWW-aligned ditch (331). The grey brown sandy silt fills (314, 324) of this final recut, together with the grey brown silty sand fills of the channel ditch 308, are stratigraphically below a dark grey sandy silt layer (300), typically 0.40 m deep, which extends over the entire site.

Highest level of significant archaeology: 102.55 m TD.
Notable finds: Roman pottery - late first century to second century AD.(from 313, 331).

Trench 4

A gravel (434), was overlain by a series of natural sands and silts (including 426, 410, 415, 411, 412), found at 98.50 m TD. These were overlain by a yellowish brown sandy clay (406), which extended over the entire trench. A ditch (418) cut above 406, ran the linear extent of this trench and was cut by two further ditch cuts 407 and 416. Linear ditch cut (407), following a NE/SW-alignment, was 4.6 m wide and 1.3 m deep and was filled by a sequence of silts (425, 404, 424). Ditch

cut 416, typically 0.4 m deep and 7.3 m wide, was recut by ditch cut 420, 4.6 m wide and 1.2 m deep, and both contained sandy silt fills (417, 403, 422, 421, 423). A sequence of gravels and hardcore sat above these ditch fills, and below the present ground surface, 100.36 m TD.

Highest level of significant archaeology: 98.93 m TD.
Notable finds: ————

Trench 5

A greyish brown sandy gravel (547), found at 101.41 m TD, was overlain by an orange brown clayey silt (544) at the SW end of the trench, which had a maximum depth of 0.40 m and was cut by three features: 533, 540 and 542 which were seen in section at the west end. Stratigraphically above these features was a layer of greyish brown silty sand which varied in depth (typically 0.40 m deep) and was cut by 508, 521 and 519, three channel ditches; these were NW/SE, N/S and E/W-aligned respectively. A sequence of gravels and hardcore sealed the deposits described and lay below the present ground surface, 103.53 m TD.

Highest level of significant archaeology: 102.4 m TD.
Notable finds: Roman pottery (first century AD)
Flint - 3 blades. ?Mesolithic or early Neolithic.

Trench 6

A sandy gravelly clay (610), found at 100.85 m TD was overlain by an orange grey sandy clay (609 and 614, interpreted as the same), a natural subsoil, which had a maximum thickness of 0.70 m. This layer was cut by two ditches, a N/S-aligned linear ditch (608), which was recut by a subsequent linear ditch (603) following the same orientation and a potential ditch (613), seen in section at the SE extent of the trench. A sequence of gravels and hardcore sit above these features, below the present ground surface, 102.93 m TD.

Highest level of significant archaeology: 102 m TD.
Notable finds: Pottery - late Saxon (AD 850-1000), medieval (1350-1550).

Trench 8

A natural gravel (813) was overlaid by a series of gravels and coarse sands (including 815, 818, 804, 813, 825, 834, 803, 826, 827, 824) which were found at 100.59 m TD, rising to 101.57 m TD. These were overlain by a succession of orange grey sandy silts (807, 808, 809, 810, 814), remnants of natural subsoil. An E/W-aligned linear ditch (805), was seen to cut these deposits and was then sealed by a black humic silt (801) at the eastern end of the trench. A sequence of gravels

and hardcore sat above this layer, below the present ground surface.

Highest level of significant archaeology: 102.42 m TD.
Notable finds: Roman pottery.

Trench 23

Not yet excavated. No access granted to date.

Trench 24

An orange brown clayey silt (2406), a natural subsoil, found at 101.57 m TD was cut by numerous archaeological features including a horse burial pit (2419), a crouched inhumation grave (2440), six ditches (2463, 2428, 2435, 2447,2410, 2441),a pit (2430) and two postholes (2427, 2434). Their fill, a grey brown silty clay was the same as 2408 and 2425 which together cover the entire trench, and were first observed at 101.97 m TD. Ditch cut 2410 and its recut 2411, running in a NW/SE alignment, had compacted clayey fills containing brick and tile, and cut both 2408 and 2406. Stratigraphically above these was a black humic silt (2401), typically 0.20 M thick, which was overlain by a sequence of gravels and hardcore (2400) below the present tarmac ground surface, 103.17 m TD.

Highest level of significant archaeology: 101.97 m TD.
Notable finds: Pottery - early Iron Age to first century AD.
Flint - 2 cores, one possibly reworked ? axe roughout. Mesolithic or early Neolithic.
1 retouched blade. ?Mesolithic.

Trench 30

An orange brown silty clay (3017), a natural subsoil, found at 102.06 m. TD was cut by numerous archaeological features including three linear ditches (3022, 3020, 3024), a ring ditch (3015) and three postholes (3025, 3026, 3027). These were overlain by a light grey sandy silty loam (3008), which had a maximum depth of 0.3 m and extended over the entire trench. Above 3008 was a brown sandy silt (3005 and 3002, interpreted as the same), 0.1 m in depth, which was cut by two E/W-aligned ditches (3010, 3009). A black humic silt (3001), 0.1 m in depth, sealed these features at 102.71 m TD. A sequence of gravels and hardcore lay above the deposits described and below the present tarmac surface, 103.71 m TD.

Highest level of significant archaeology: 102.56 m TD.
Notable finds: Pottery - early Iron Age to third century AD.
3 late Roman coins.

Trench 31

An orange grey silty clay (3114), a natural subsoil found at 101.84 m TD, was cut by a N/S-aligned linear ditch (3110). This was overlain by a grey brown silty clay (3107 and 3108, interpreted as the same), which had a maximum depth of 0.40 m and covered the entire trench. Cutting the layers described was a large E/W-aligned ditch (3106) which was sealed by a black humic silt (3101). This layer was overlaid by a sequence of gravels and hardcore which sat below the present ground surface, 103.01 m TD.

Highest level of significant archaeology: 102.26 m TD.
Notable finds: Pottery - Iron Age to first/second century AD.

Trench 32

Alluvium deposits (5133, 5134, 3222) were identified at the bottom of a pipe trench at 101.15 m TD, the extent of excavation. These were overlain by a series of silty clays, which were below a sequence of four floor surfaces (3227, 3225, 3208, 3207), of which one (3208) appeared to be cobbled. These surfaces were cut by a N/S-aligned rectangular structure (3291) , 1.2 m in width with a visible length of 4.4 m, which exhibited a flagstone base at 101.16 m TD. Two slabbed floor surfaces (3264, 5101) were stratigraphically above 3291; the latter incorporated three grooved sandstone blocks which occurred at even spacings (0.5 m apart). A further two floor surfaces (5106, 5104) were found above this feature, below layers of hardcore, underneath the present concrete ground surface found at 103.84 m TD.

Highest level of significant archaeology: 102.40 m TD.
Notable finds: Eighteenth and nineteenth century pottery.

ZONE C

Trench 10

A light grey brown silty clay (1014), 0.45 m thick, sat above a natural gravel identified at 102.60 m TD. This was overlain by a brown sandy clay (1015), 0.5 m thick, which extended over the entire trench and was cut by 1016 filled with red brick and mortar (1013). Sequences of sandy silt layers (1006, 1018, 1020) containing a frequent amount of chalk and brick fragments were above 1013, and were cut by the drainage system (1002). Layers of hardcore (1021), at 103.71 m TD, sat below the present tarmac ground surface, 104.85 m TD.

Highest level of significant archaeology: 103.71 m TD.
Notable finds: Late Saxon (850-1000) pottery from 1014.

Trench 11

A loose reddish brown mix of clinker and cinder (1101), 1 m thick, extended to the limit of excavation (102.76 m TD). This was overlain by layers of hardcore (1100), 1.25 m thick, which sat below the present tarmac ground surface (104.70 m TD).

Highest level of significant archaeology: ————
Notable finds: ————

Trench 12

A series of grey green silty clays (1239, 1243, 1242) were found at 102.3 m TD and continued to the extent of excavation 101.6 m TD. These were overlain by a sandy gravel (1231) which was cut by a NW/SE-aligned flat bottomed ditch (1241). This was filled by a sequence of silty clays (1238, 1227, 1240, 1230, 1207, 1206) containing fragments of brick, chalk and tile. The secondary fill (1227) contained a high concentration of bone and oyster shell. The fills of 1241 were overlain by a sandy clay (1228) containing upstanding wooden stakes. This layer was directly below layers of hardcore, which continued to the level of the present concrete ground surface, found at 104.13 m TD.

Highest level of significant archaeology: 102.3 m TD.
Notable finds: Much animal bone.

Trench 13

Two E/W-aligned extended inhumation burials (1312, 1311) were found at 102.76 m TD. Their graves cut a reddish silty clay (1313) and may have cut the layer above, a reddish brown sandy silt (1308), 0.4 m thick, which extended over the entire trench. A series of silty sands (including 1303, 1316, 1309) containing fragments of chalk were stratigraphically above 1308, and below a dark greyish brown sandy silt 1304, 0.6 m thick, covering the entire trench. Layers of hardcore (1305) were above this layer and continued to the present tarmac ground surface found at 104.76 m TD.

Highest level of significant archaeology: 103.36 m TD.
Notable finds: Late Saxon (AD 850-1000) and medieval (1270-1350) pottery from 1306, 1309.
Early medieval pottery (AD 1000-1150) from 1301.

Trench 14

A dark brown orange silt (1411) containing chalk, mortar and charcoal was found at 103.29 m TD, the extent of excavation. This was stratigraphically below the remains of a compacted chalk layer (1408), a clayey sand containing frequent

quantities of mortar (1407) and a compacted chalk floor surface (1410). The latter two layers were below a layer of broken tiles (1409), which covered an area of 2.25 m by 1.15 m. A series of layers containing mortar, tile and chalk (1406,1405,1404) were above 1410, and sat below layers of hardcore (1401). These layers continued to the present floor surface, 104.80 m TD.

Highest level of significant archaeology: 103.37 m TD.
Notable finds: Medieval (1270-1350) pottery from 1405. Glazed tile.

Trench 15

An orange brown clayey sand (1515) containing chalk, mortar and brick was found at 103.16 m TD, the extent of excavation. This was overlain by a similar layer 1501 , found beneath a compact black silty sand (1509). A series of sand and rubble levelling layers (1510, 1511, 1518, 1503, 1508) overlaid 1509, and were associated with red brick walls (1507, 1506). These were below layers of hardcore (1502) which continued to the present floor surface, at 104.75 m TD.

Highest level of significant archaeology: ————
Notable finds: Bone pipe, small find number 1.

Trench 16

A brownish grey sandy silt (1605) with chalk and brick rubble was found at 103.03 m TD and overlain by a blue black silty clay (1604). A series of sandy silts containing much brick rubble lay above, beneath the present floor surface 104.58 m TD. The trench was Abandoned due to chemical contamination observed in 1604.

Highest level of significant archaeology: ————
Notable finds: ————

Trench 17

A reddish brown silty clay (1703,1704) was found at 104.18 m TD, the extent of excavation. This was overlain by a grey silty clay (1701, 1702), which sat below layers of hardcore which continued to the present ground surface, at 104.99 m TD.

Highest level of significant archaeology: ————
Notable finds: ————

Trench 18

A grey brown sandy silt (1802) containing flint, chalk, brick and tile, was uncovered at 102.98 m TD, the extent of excavation. This was overlain by a series of similar deposits (including 1805, 1803, 1818, 1817, 1806, 1804, 1807, 1809), the latter (1809) was cut by the construction trench of a red brick wall (1816). Layers of hardcore were above wall 1816, and continued to the present floor surface at 104.92 m TD.

Highest level of significant archaeology: ————
Notable finds: London stoneware (1800-1900) inscribed "J.Tucker - West Ham Abbey."

Trench 19

Two light grey clayey silts (1928, 1927), possibly cess deposits, were identified at 103.10 m TD and continued to the extent of excavation, 102.83 m TD. These were cut by a large irregular feature (1936, 1937) 4.4 m by 2.3 m and 0.4 m deep, which was filled by a sequence of clayey silts (1935, 1916, 1934). These were overlain by two layers of silty clay (1920, 1921), which were cut by two drainage channels (1926, 1906) filled with grey clayey silts (1932, 1923, 1904) . The fill of 1906 was cut by a posthole (1929), which was sealed by a general rubble spread (1918). A circular well (1912), 1.4 m in diameter cut 1918 and it's fills were overlain by layers of hardcore (1902) which continued to the present floor surface, found at 104.80 m TD.

Highest level of significant archaeology: 103.1 m TD.
Notable finds: Flint - 1 scrapper. ?Late Bronze Age (from 1932).

Trench 20

A loose yellowish brown silty sand (2008) was uncovered at 102.72 m TD, the extent of excavation. This was overlain by a similar deposit (2007), which was below a lens of chalk and tile rubble (2006). Similar deposits (2009, 2004) continue in the stratigraphic sequence, below a red brick wall (2002) and a drain (2010). These features were below layers of hardcore (2001), which continued to the present floor surface, at 104.74 m TD.

Highest significant archaeology: ————
Notable finds: ————

Trench 21

A layer of orange brown sandy silt (2119), was identified at 102.87 m TD, the extent of excavation. This was overlain by a similar deposit (2113) containing chalk, mortar and greenstone, that was cut by seven possible grave cuts (2152,

2163, 2124, 2136, 2142, 2121,2139), three of which (2124, 2152, 2121) produced fragmented human skeleton remains. An intricate network of nine pits (2140, 2129, 2120, 2147, 2148,2150, 2135, 2104, 2108) cut into the graves, and were overlain by a brown sandy silt (2112). A further series of pits cut 2112 and were below the remains of an E/W-aligned wall (2115), constructed of chalk, greenstone, limestone and flint. A length of 3.5 m of wall 2115 was uncovered which returned at its eastern end in a southerly direction. It was 0.45 m wide and appeared to have been faced. Layers of hardcore were above 2115 and continued to the present tarmac floor surface, 104.8 m TD.

Highest significant archaeology: 103.13 m TD.
Notable finds: Thirteenth and fourteenth century pottery.
Saxon (400-850) and late Saxon (850-1000) pottery (residual).

ZONE D

Trench 1

A clean yellow sandy gravel (118, 119) was observed at 101.76 m TD and was overlain by a grey brown sandy clay (115). A yellowish brown sandy clay (108) was above 115 and was cut by a NNW/SSE-aligned linear ditch (116,110) and a circular pit (113). These were overlain by a series of sandy clays (105, 106, 107), which sat below concrete, brick walls and layers of hardcore (100, 101, 102). The hardcore layers continued to the present ground surface, which sat at 104.20 m TD.

Highest level of significant archaeology: 102.01 m TD.
Notable finds: ————

Trench 22

A N/S-aligned chalk wall (5008), 0.48 m wide, was uncovered at 103.45 m TD, and was stratigraphically below a sequence of abutting silts (5001 to 5006) all containing remnants of mortar, chalk and greenstone. A N/S-aligned wall 5000, ajacent to 5008, was uncovered at 104.11 m TD., and was 1 m wide and 4 m long; it returned in an easterly direction for 2 m into the west facing section of the trench. The north face of the return, which was abutted by a compact dark brown silty clay (5020) containing a high concentration of tile, was cleanly faced in greenstone. A series of chalk rubble layers (including 5007, 2299, 5017 2298, 2297, 2296, 2291) , above 5000 and 5008, were cut by the construction trench of a N/S-aligned wall 2233. Constructed from chalk, greenstone and occasional brick, 2233 was 0.40 m wide , 10 m long and 0.6 m high, and stratigraphically above 5020. It was overlain by a further series of deposits with high concentrations of chalk and greenstone rubble (including 5015, 2292, 2288, 2272), which were overlain by a dark greyish brown silty sand (2202). A series of walls (2215, 2214, 2213 2227,

2226) were above this layer, which were overlain by hardcore. The present concrete ground surface was at a height of 104.77 m TD.

Highest level of significant archaeology: 104.11 m TD.
Notable finds: fourteenth and fifthteenth century pottery (sparse).
sixteenth to eighteenth century pottery (abundant).

Trench 23

A succession of brown sandy silts, containing a high proportion of chalk and tile (2303 to 2323), were observed at 103.7 m TD, and continued to the extent of excavation, 102.9 m TD. These were sloping NE/SW, with the highest deposit in the stratigraphic sequence (2303), visible at the SW end of the trench. A layer of dark grey sandy silt with ash and brick inclusions (2301) sat above this sequence, which was overlain by hardcore and the present concrete surface (2300), 104.77 m TD.

Highest level of significant archaeology: 103.70 m TD.
Notable finds: Saxon (850-1000) pottery (residual).
Otherwise as trench 22.

Trench 25 (north)

A series of clayey silts (including 2555, 2536, 2543, 2506) containing chalk, mortar and greenstone were found at 103.23 m TD, and continued to the extent of excavation 102.48 m TD. These were overlain by a dark brown sandy silt (2566), which was below layers of hardcore 2500. These layers continued to the present ground surface, which sat at 104.56 m TD .

Highest level of significant archaeology: 103.23 m TD.
Notable finds: Pottery fourteenth century onwards.

Trench 25 (south)

A brown sandy silt (2558), disturbed subsoil, was found at 103.26 m TD. This was overlain by the remnants of a NE/SW-aligned wall (2570), constructed of chalk, greenstone and flint. A series of clayey silts (including 2571, 2557, 2546) containing chalk, flint gravel and mortar sat above 2570 and were below a brown silty clay 2517. Layers of hardcore (2500) sat above 2517 and continued to the present ground surface, which was at 104.76 m TD.

Highest level of significant archaeology: 103.23 m TD.
Notable finds: Pottery fourteenth century onwards.

Trench 26

Not yet excavated. No access granted to date.

Trench 27

Not yet excavated. No access granted to date.

Trench 33

The remains of the return of two adjoining E/W-and N/S - orientated walls (3328), constructed from ragstone, chalk, flint and greenstone, bonded with a sandy mortar, were uncovered at 103.83 m TD. They had a maximum width of 0.5 m, although no faces were visible. They were overlain by two layers (3326, 3327) comprising ragstone, chalk, flint, greenstone and tile rubble , which were cut by a series of pits (3319, 3318, 3325, 3315, 3313). A loose light brown sandy silt (3304) sat above these, and was cut by the construction trench of a red brick wall (3302). Hardcore deposits (3301) were observed above wall 3302, below the present concrete ground surface, 104.77 m TD.

Highest significant level of archaeology: 103.83 m TD.
Notable finds: ————

Trench 34

A moderately compact sandy silt (3411) with frequent fragments of mortar, greenstone, chalk and tile was uncovered at 103.29 m TD. This was overlain by a series of deposits exhibiting similar characteristics (3412, 3407, 3408, 3406). The earliest deposit in this sequence (3406), at the western end of the trench, was cut by a feature 1.6 m in length, 0.6 m wide and 0.42 m in depth. This was filled by a dark brown sandy silt, with frequent fragments of brick, tile, chalk, greenstone and slate (3405), which spread over the entire trench. A dark brown sandy silt with flecks of charcoal and tile (3402) sat above this layer, and below layers of hardcore (3410, 3404, 3400). The present concrete ground surface was above these layers, 104.77 m TD.

Highest level of significant archaeology: 103.29 m TD.
Notable finds: ————

Trench 35

A series of chalk and mortar rubble layers (3517, 3516, 3515, 3511), were found at 103.76 m TD and continued to the limit of excavation 103.05 m TD. Layers 3515 was cut by 3514, an irregular feature, and 3511 was cut by 3513 and 3512 (an

irregular linear feature and a rectangular pit respectively). The fills of these features are below a dark brown sandy silt, typically 0.30 m thick, which was overlain by hardcore deposits (3501). These were sealed by the present concrete ground surface, 104.77 m TD.

Highest level of significant archaeology: 103.31 m TD.
Notable finds: ————

Trench 36

The remains of a N/S-aligned wall (3610) constructed from chalk, greenstone and ragstone were uncovered at 103.85 m TD. The surviving length of the wall was 1.2 m and its maximum width was 0.5 m, although its facing had not survived. It was stratigraphically below a sandy silt containing much chalk, flint and gravel (3607) which was overlain by a similar deposit (3606). A small rectangular feature (3612), with an E/W-alignment, was 0.8 m long and 0.4 m wide; it cut 3606. The fills of this feature (3611 and 3613) were then cut by a N/S-aligned linear feature (3603) at the eastern end of the trench. The fills of 3603 (3608, 3605, 3604, 3602) are stratigraphically below a layer of hardcore (3601), which sat below the present concrete ground surface.

Highest level of significant archaeology: 103.85 m TD.
Notable finds: ————

Trench 37

A moderately compact layer of chalk and mortar (3706), was uncovered at 103.58 m TD, which extended over the entire trench. This was cut by the construction trench (3707) of a red brick wall (3705), seen at the western extent of the trench. A sandy silt containing much chalk and mortar (3704) was above 3705 and covered the western half of the trench. This was overlain by a dark brown sandy silt containing flecks of chalk and charcoal (3702), which covered the entire trench and was underneath a layer of hardcore (3701). The present concrete ground surface sat at 104.77 m TD.

Highest level of significant archaeology: 103.85 m TD.
Notable finds: abundant eighteenth century material. Pottery, glass, clay pipe.

ZONE E

Trench 28

Not yet excavated. No access granted to date.

Trench 29

Not yet excavated. No access granted to date.

APPENDIX 2 JUBILEE LINE EXTENSION ARCHAEOLOGICAL EVALUATION SPECIFICATION FOR SITES EAST OF THE RIVER LEA

This specification is to be read in conjunction with the Jubilee Line Assessment Report of Desk Study, the Archaeological Agreement and the site specific Scope of Works which includes trench design and attendances. The evaluation has been designed, within the technical constraints of the site, to achieve a sample of the area of proposed groundwork.

Evaluation Techniques

1 The trenches will be opened by mechanical excavators, with removal of undifferentiated topsoil or modern overburden, down to the first significant archaeological horizon. The machine will remove level spits moving along the length of the trench creating a stepped profile where required. On reaching the first significant horizon that level will be cleaned in plan using a ditch bucket and /or hand cleaning if the deposits merit it. All machine works will be under archaeological supervision and will cease immediately significant evidence is revealed.

2 All archaeological assessment is by hand with cleaning, examination and recording both in plan and section. The objective is to define remains rather than totally remove them. Full excavation will be confined to the least significant remains (eg dumped layers) which may allow underlying stratigraphy and features to be exposed and recorded. Within significant levels partial excavation, half-sectioning, the recovery of dating evidence and the cleaning and recording of structures is preferable to full excavation.

3 Archaeological excavation may require work by pick and shovel or occasionally further use of the machine. Such techniques are only appropriate for the removal of homogeneous or low grade deposits which may give a "window" into underlying levels. They will not be used on complex stratigraphy and the deposits to be removed will have been properly recorded first.

4 Particular care will be taken not to damage any areas containing significant remains which might merit preservation in situ. Such evidence would normally include deep or complex stratification, settlement evidence and structures. Such areas will be protected and not left to weather.

5 Any human remains must also be left in situ, covered and protected. Removal will only take place under appropriate Home Office and environmental regulations.

Excavation and Recording

6 Evaluation involves selective excavation and recording of the ancient remains by hand, with individual features and layers (contexts) being recorded to scale on plan, pro-formas and by photography. A recording system compatible with that used by the Passmore Edwards Museum will be utilised. Context sheets will include all relevant Stratigraphic relationships and for complex stratigraphy a separate matrix diagram will be employed. A trench plan will be drawn up and located on the OS grid. Context plans will record the full extent of all archaeological deposits.

7 Sections containing significant deposits, including half-sections, will be drawn as appropriate. Upon completion of the evaluation trench at least one long section will be drawn, including a profile of the top of natural deposits.

8 All archaeological plans and sections will be on drawing film at a scale of 1:10 or 1:20 and will be include context numbers and OD spot heights for all principle strata and features.

9 An adequate photographic record of any significant archaeological remains will be made, in both plan and section.

Finds and Samples

10 A high priority will be given to dating remains and so all artefacts and finds will be retained. This could include pottery, tile, bone, building material, wooden artefacts, stone tools and textiles. Similarly high priority will be the recovery of specialist samples for scientific analysis, particularly samples for the absolute dating, structural materials and cultural/environmental evidence including dendrochronological, diatom, plant, seed and pollen analysis. A comprehensive sampling strategy will form part of further archaeological works if they are required, with visits from environmental specialists.

11 All finds and samples will be treated in a proper manner to prevent deterioration. They will be treated according to the Passmore Edwards Museum specifications. Arrangements will be made for conservation of organic and metal artefacts and other fragile finds. This will involve cleaning, labelling, cataloguing and secure, stable storage in appropriate containers. Arrangements for on-site conservation work will be made if any significant fragile finds are discovered that need specialist lifting or treatment.

Off-site post-excavation

12 A summary report on the results of the evaluation will be prepared. This will include recommendations for further action, identifying any areas suitable for either preservation in situ or rescue excavation in advance of construction.

13 The results of the evaluation will be kept in an easily accessible archive at the Passmore Edwards Museum. This will contain the desk study/documentary survey, the ordered records (written, drawn, photographic), the environmental and finds information. To prepare the archive the finds will be cleaned, catalogued, quantified and dated in a manner compatible with that used by the Passmore Edwards Museum. The archive will need to contain a sequence diagram, evidence for phasing, a summary by phase, an introduction, text and conclusions. Lists of context, drawings, photographs and finds will be required.

14 All original records, finds and samples will subsequently be given long-term storage and curation at the Passmore Edwards Museum.

John Dillon
JLE Archaeological project coordinator
22nd October 1991

NOTES ON THE ARCHAEOLOGICAL SPECIFICATION

No 1 The topsoil was not machined off in all cases (see Section 5).

No 3 When a machine was used on such deposits, a sample (usually 5%) was removed by hand to improve finds recovery.

No 6 Overall trench plans, and multi-feature/deposit phase plans were also prepared on site.

A series of meetings was held with PEM representatives to ensure recording system compatability. A context sheet containing elements of both PEM and OAU recording systems was prepared (copy attached).

No 8 Plans at 1:50 and 1:100 were also used

No 10 All post-medieval tile was not retained. Samples of this materials were kept.

APPENDIX 3 SUMMARY OF ENVIRONMENTAL POLICY

Site visits were made by GSF to assess and record stratigraphic profiles revealed in the trial trenches. Four trenches: 3, 4, 5 and 24 were examined in detail and samples were taken using undisturbed monolith tins, Kubiena boxes and disturbed bulk samples.

In addition to the above, OAU staff took disturbed bulk samples from contexts with apparent environmental potential and from a number of control contexts.

BIBLIOGRAPHY

ERL 1990 Jubilee Line Extension archaeological assessment: report of desk study, Environmental Resources Limited, June 1990

PEM Undated The topography of the precinct of Stratford Langthorne Abbey, Essex, manuscript held at Passmore Edwards Museum

VCH ii, vi Victoria county history of the county of Essex, Volumes ii, vi, London, 1903, 1973

Watson, M, 1989 Stratford Langthorne Abbey restored, Essex Journal, 24.2, 33-37

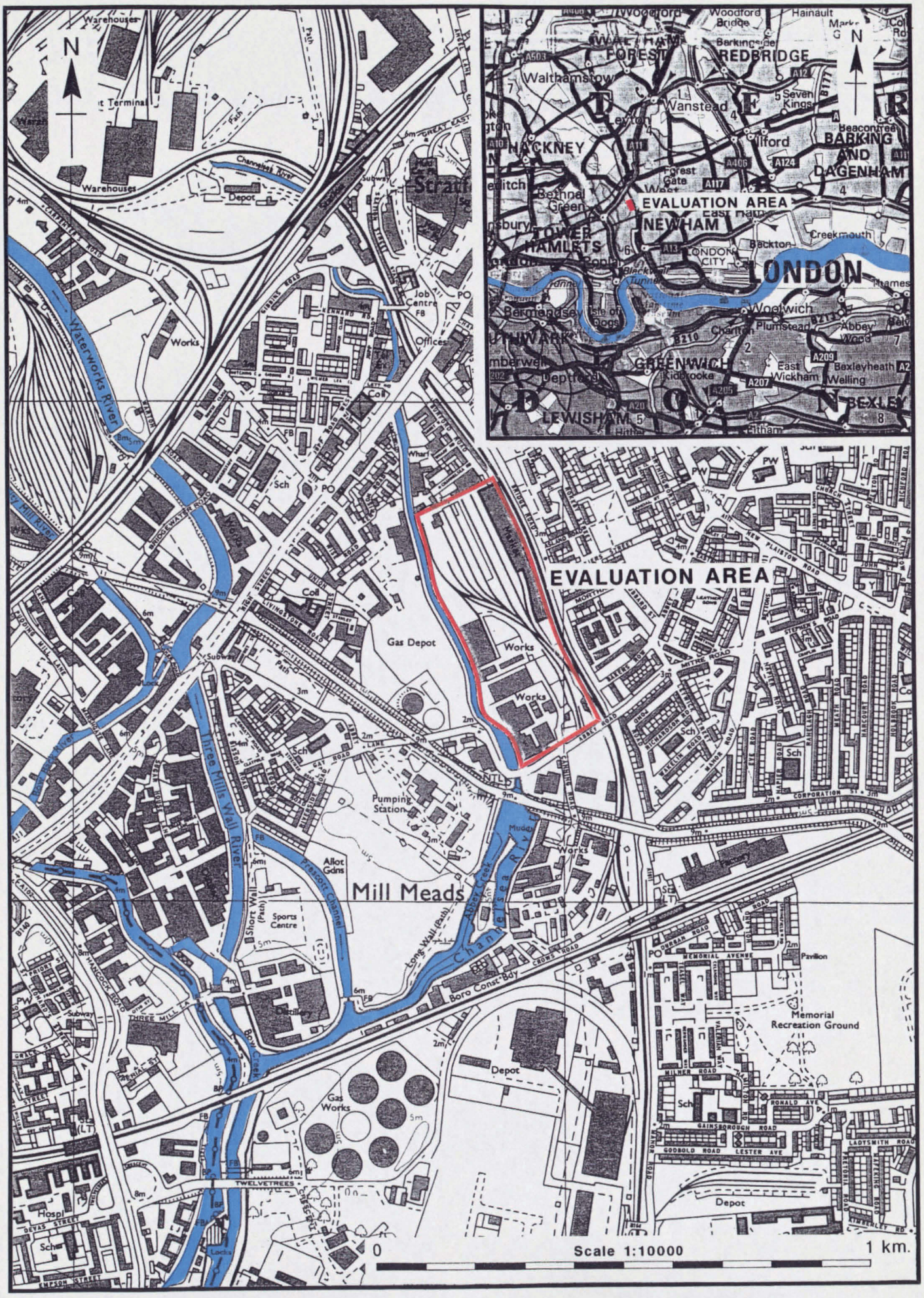


Figure 1. Location map, extent of site, watercourses

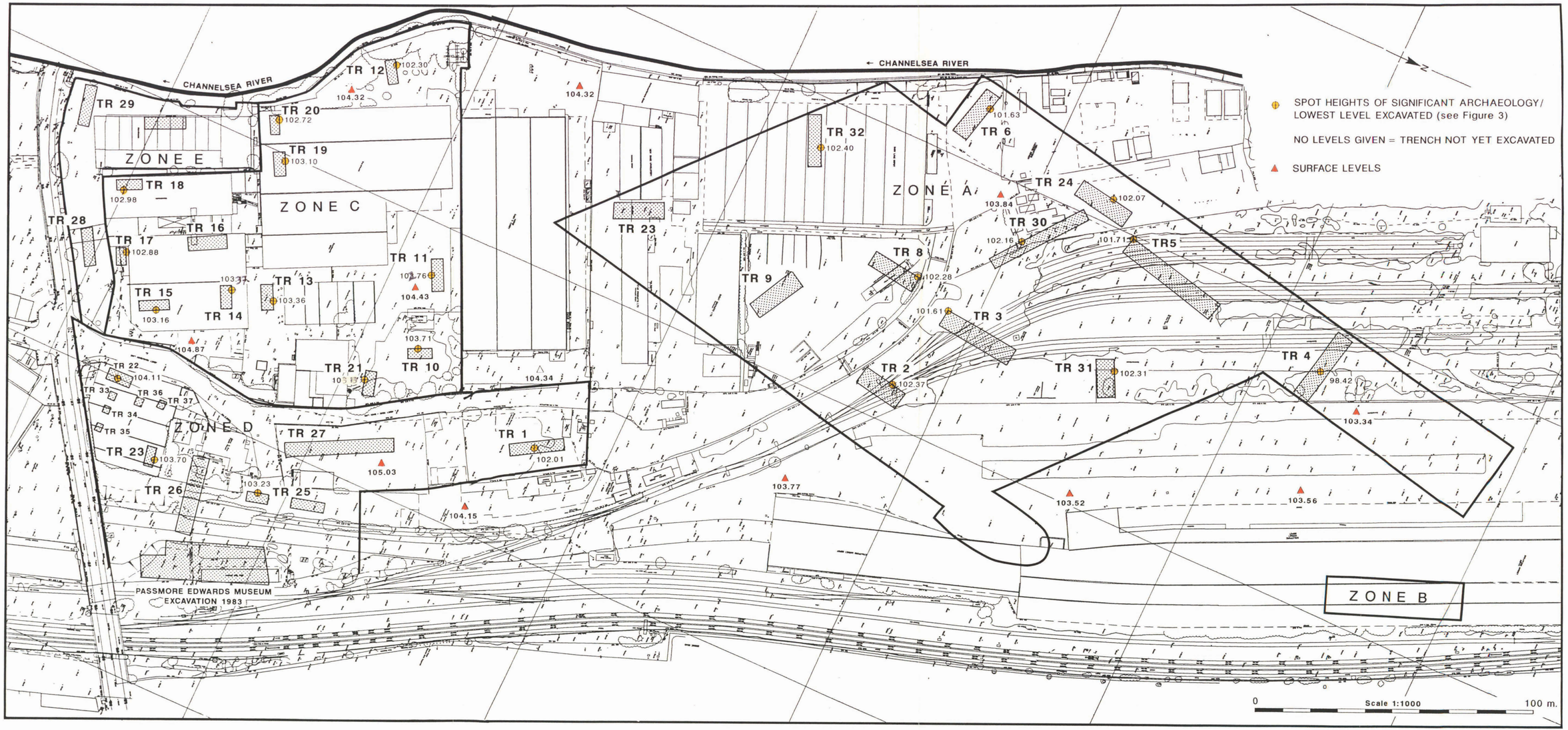


Figure 2: Trench layout and existing topography

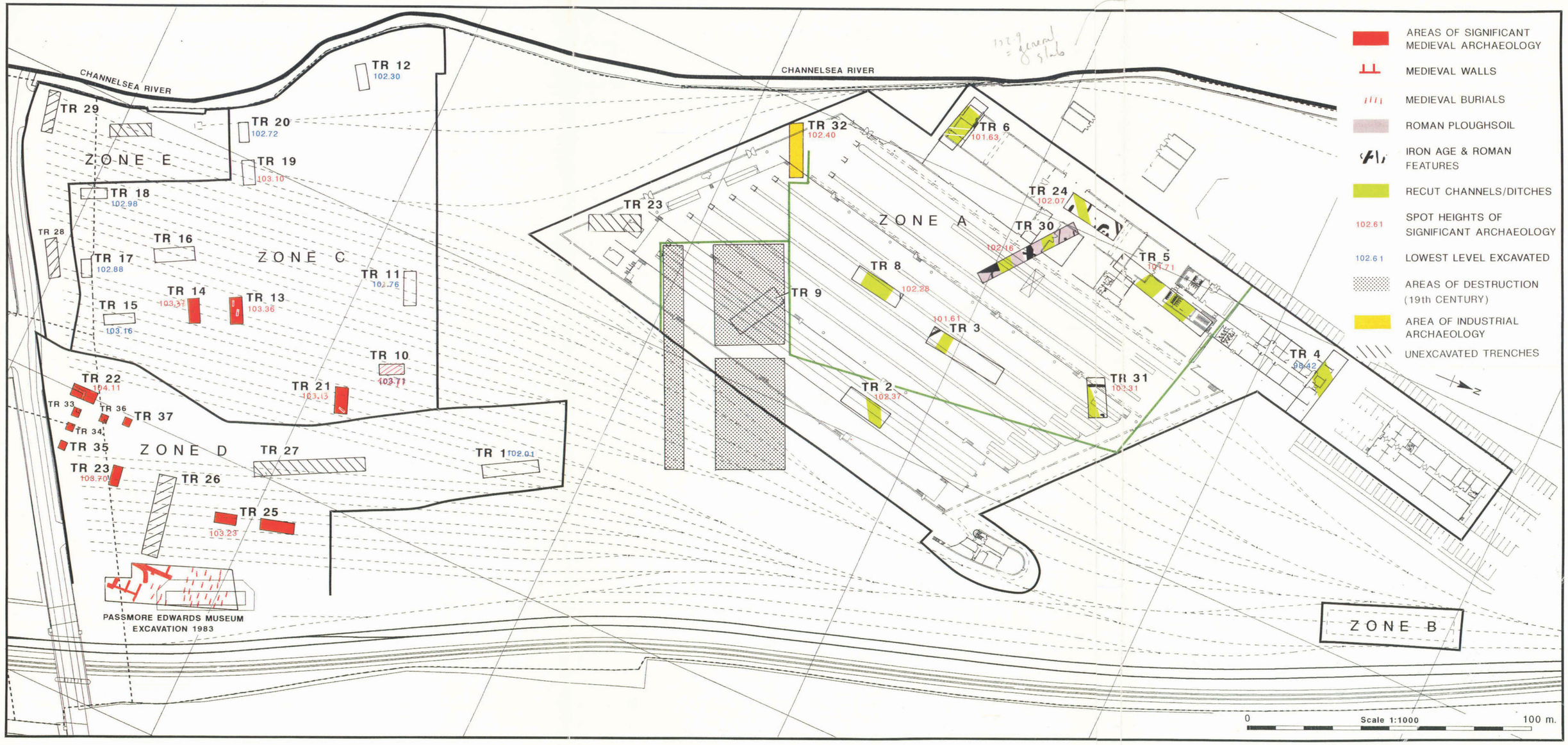
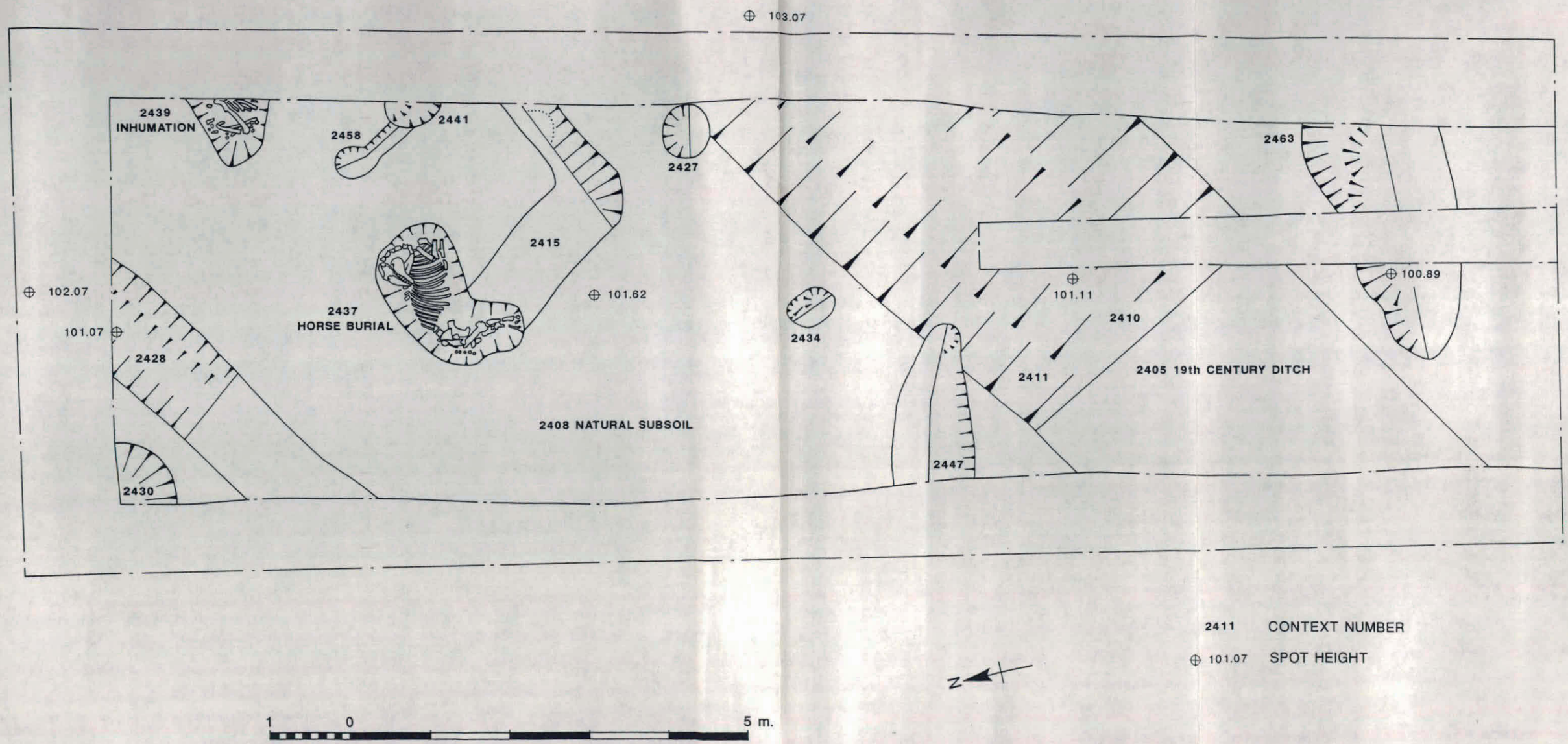


Figure 3: Design proposal and archaeology

TRENCH 24 ANCIENT AND LATER FEATURES

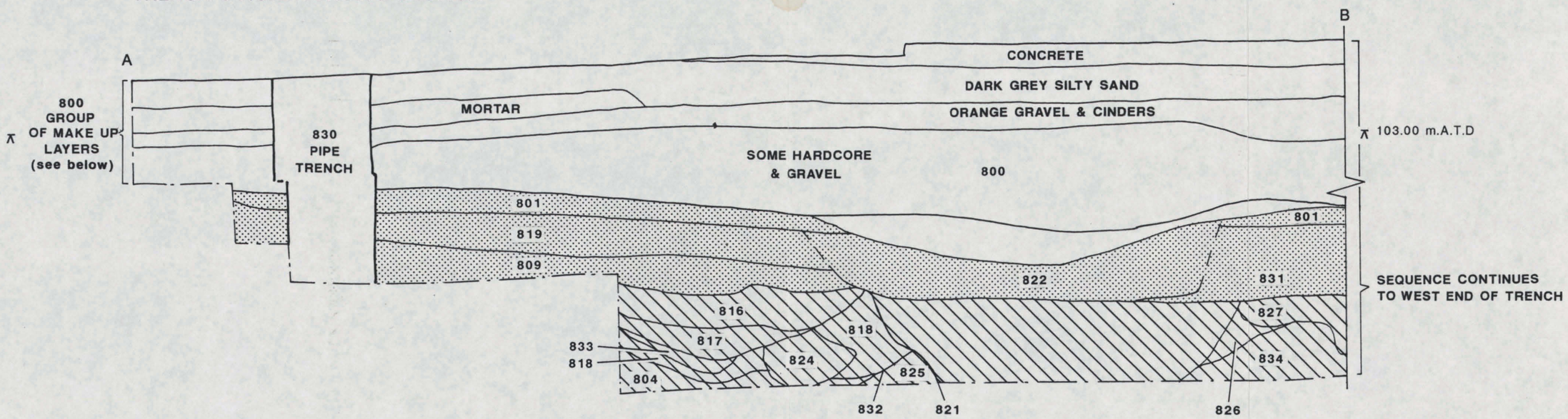


2411 CONTEXT NUMBER

⊕ 101.07 SPOT HEIGHT

Figure 4

TRENCH 8 NORTH FACING SECTION



TRENCH 24 NORTH FACING SECTION

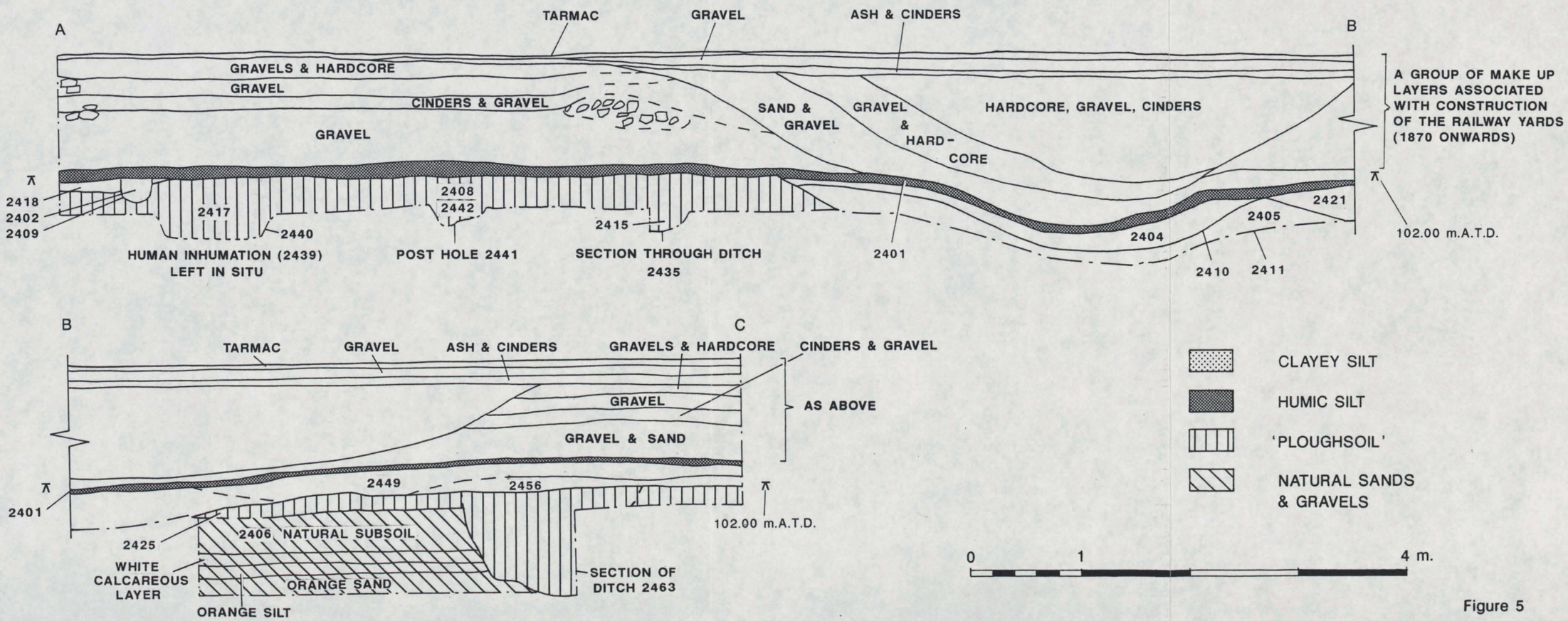


Figure 5

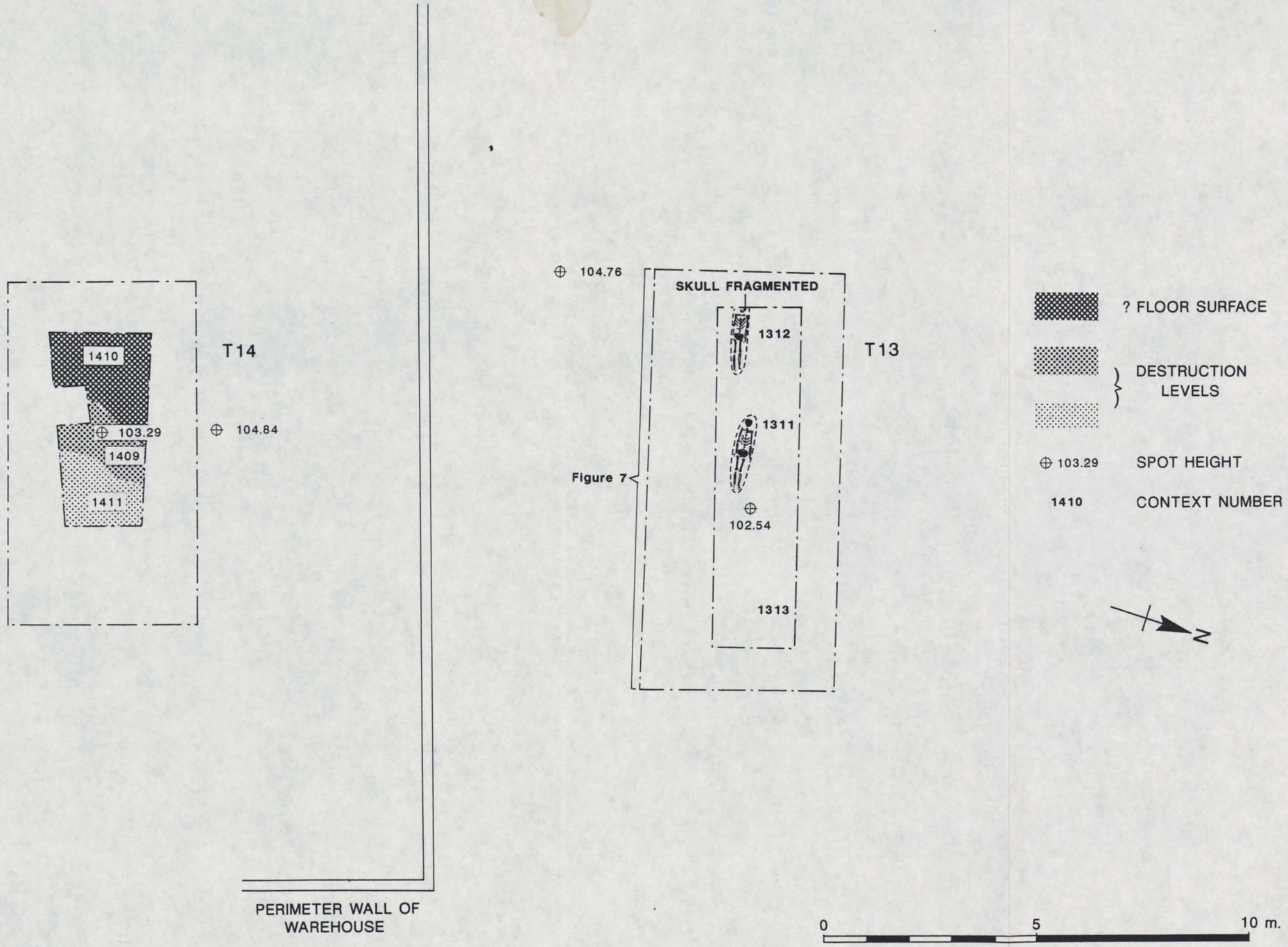
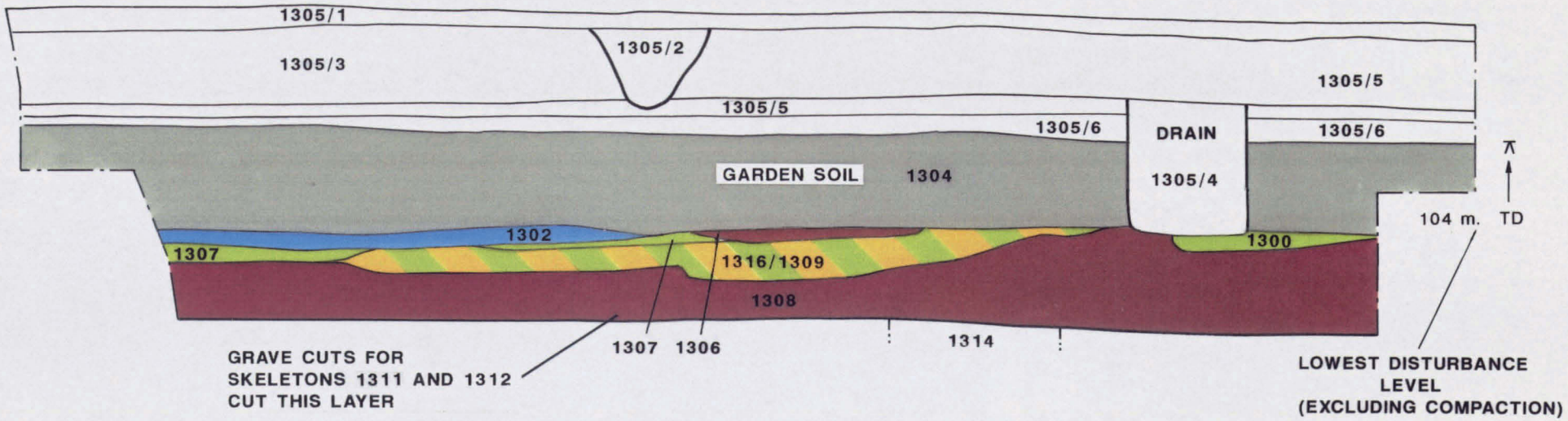


Figure 6. Trenches 13, 14, final situation

TRENCH 13 NORTH FACING SECTION



CHALK

YELLOW - BROWN SILTY SAND

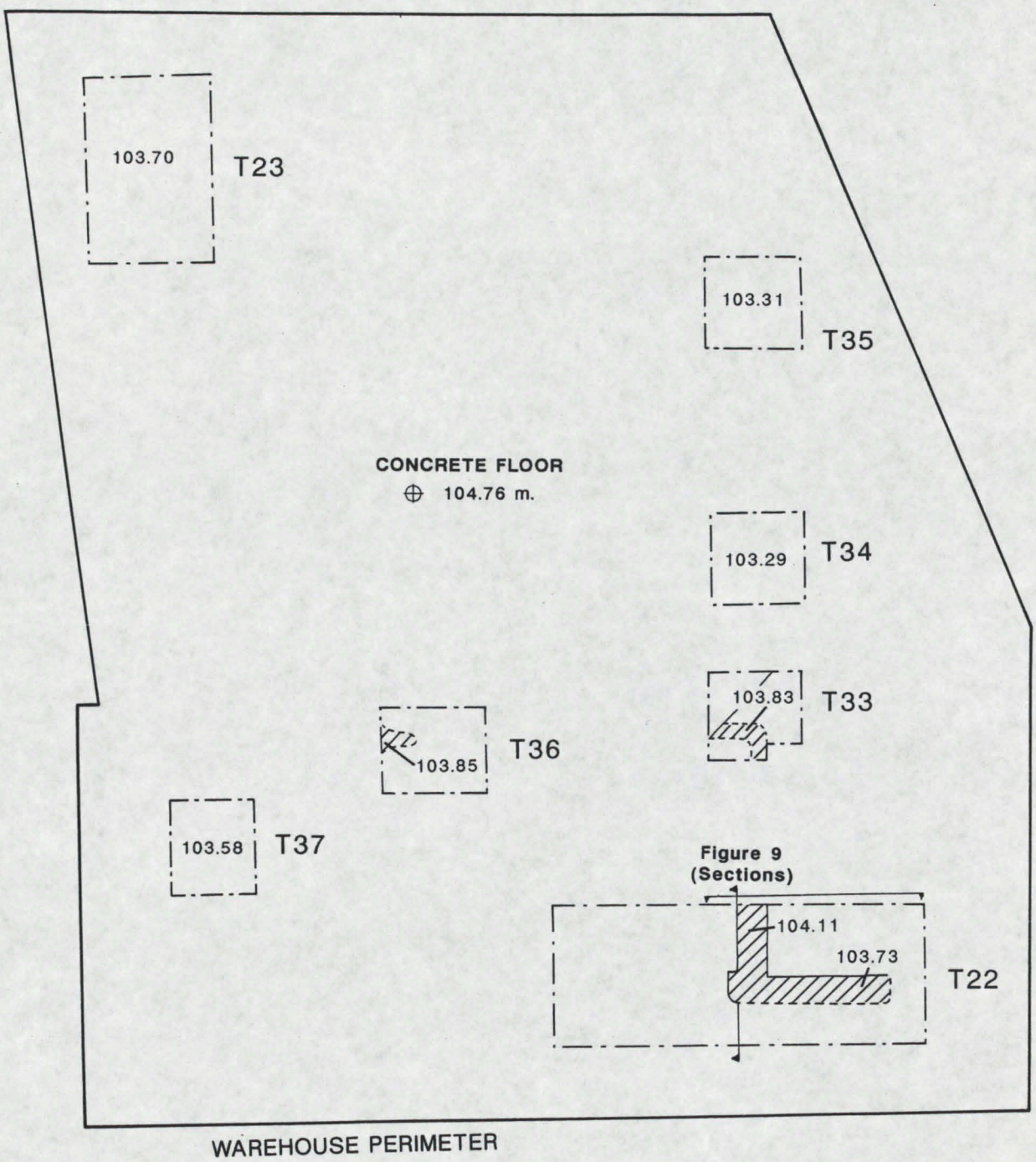
MID RED - BROWN SANDY SILT

BROKEN DOWN GREENSTONE

DARK BROWN SANDY SILT

0 1 4 m.

Figure 7



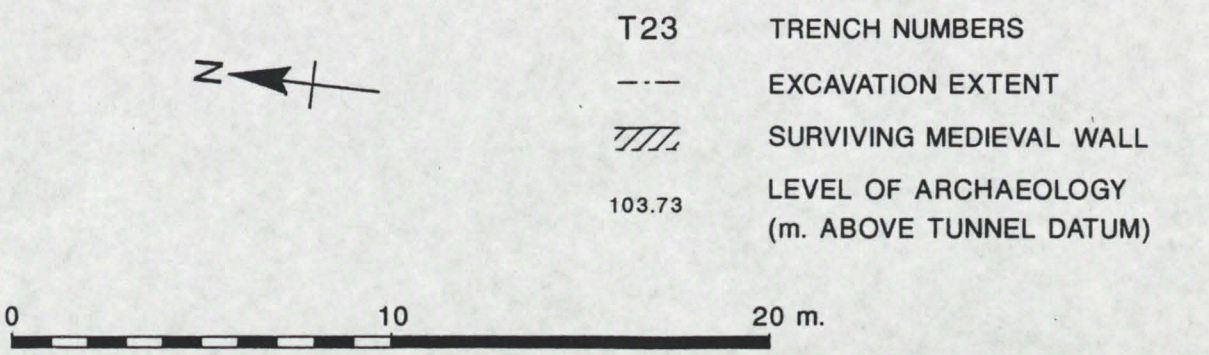
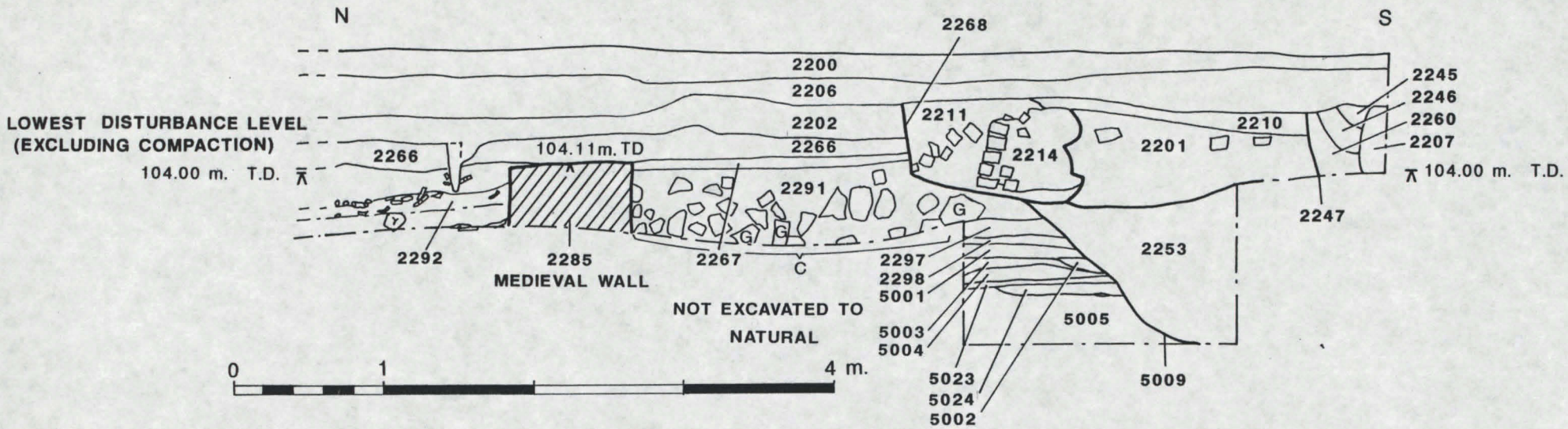


Figure 8. Archaeology within Tredegar Warehouse (Zone D)

TRENCH 22 PART OF EAST SECTION (see Figure 8)



TRENCH 22 NORTH FACING ELEVATION OF WALL 2285

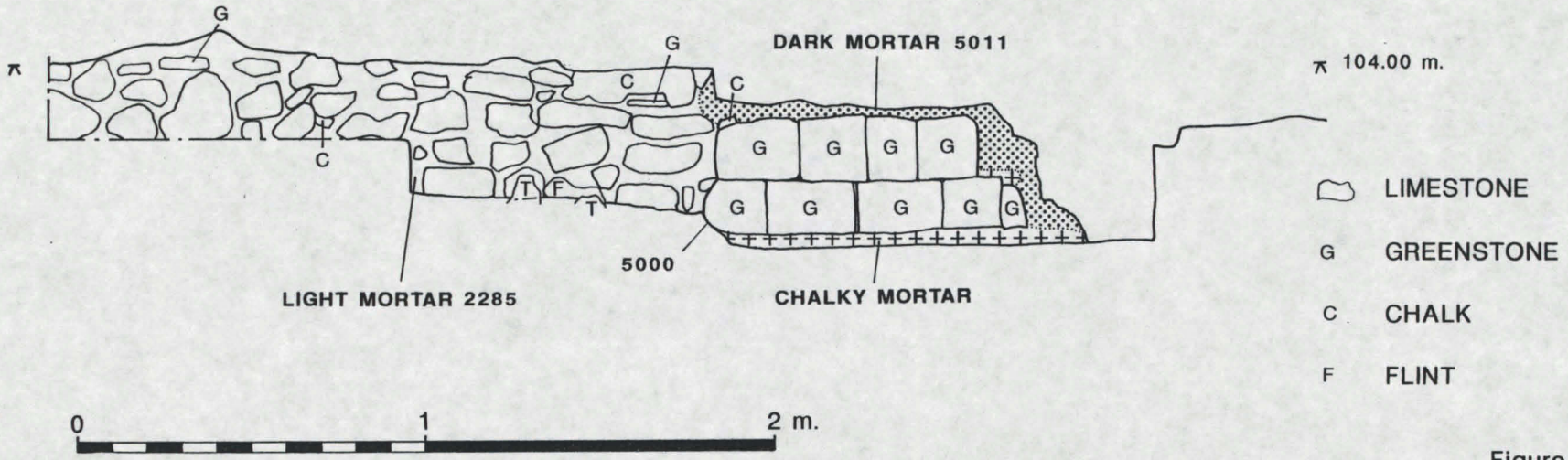


Figure 9

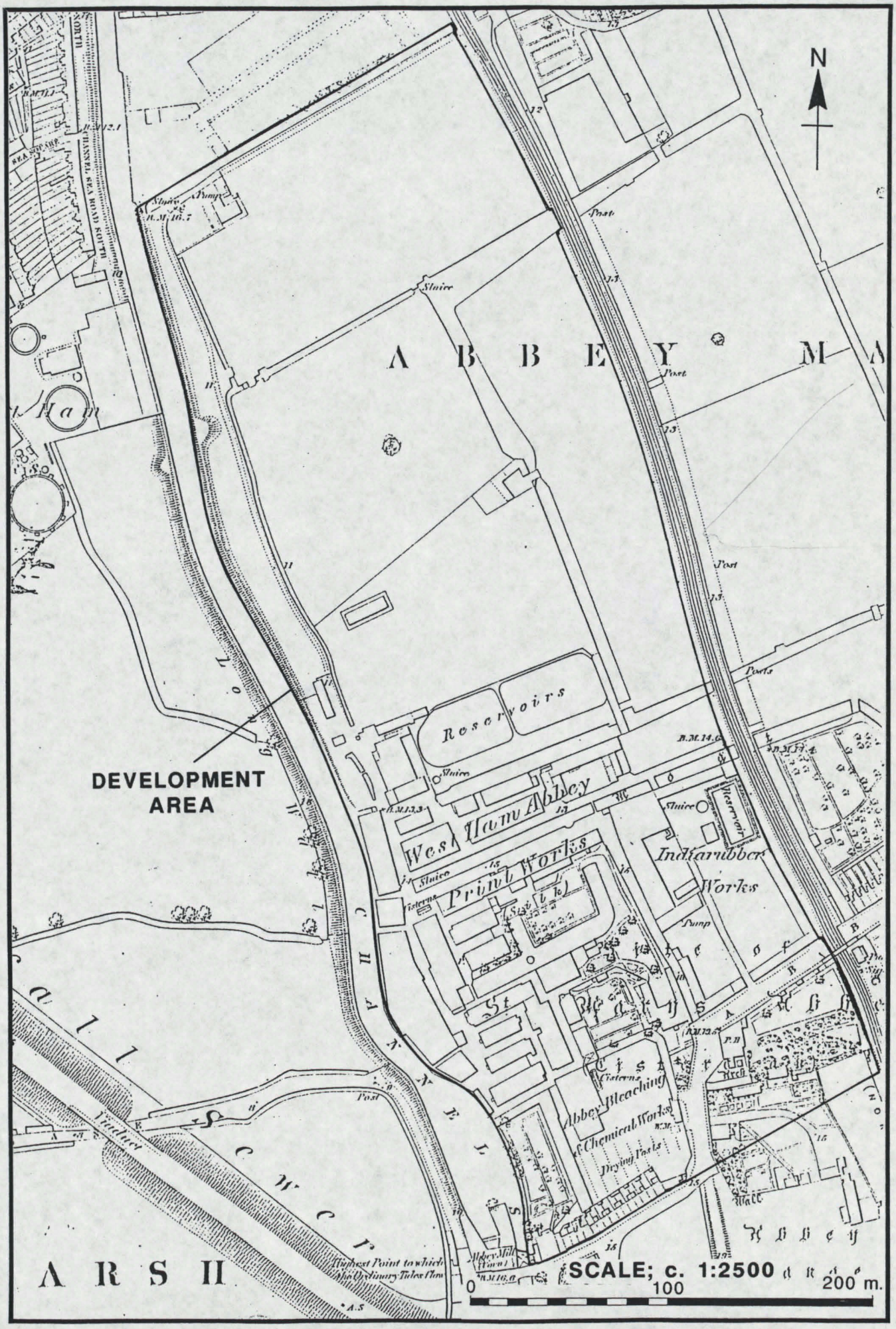


Figure 10: 1869 O.S. map

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