



**BRITISH GAS PIPELINE
Windmill Lane/Leyton Road
Stratford
London E15**

London Borough of Newham

Archaeological watching brief report

November 2009

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Site Code: WMO09

National Grid Reference: 539420 185015 to 540028 185222

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Summary (non-technical)

This report has been commissioned by McNicholas Ltd in order to record and assess the results of a watching brief carried out along the length of the new British Gas pipeline extending along Leyton Road (NGR 538705 184960) to Forest Lane (NGR 540028 185222) via Windmill Lane in Stratford, London E15.

Work on the gas pipeline trench was monitored between 8 December 2008 and 20 July 2009.

Archaeological deposits and features were recorded in representative sections along the full length of the pipeline trench.

These comprised a late 18th to mid 19th century brick drain in the vicinity of Maryland Station; a possible post medieval ditch or pit in Leyton Road and a potential disturbed alluvial deposit in the vicinity of Forest Lane and Idmiston Road junction. Natural ground along Forest Lane was present at 9.10m–9.80m OD; in the vicinity of Maryland Point the natural gravels were present at c 8.50m OD, in Windmill Lane at c 7.80m–7.20m OD sloping down to the west, and at c 6.80m OD in Leyton Road. The highest survival of archaeological deposits occurred at c 9.40m OD by Maryland Station and c 7m OD in Leyton Road.

The archaeological resource has undergone severe truncation and disturbance from the density of modern utility infrastructure and road construction. This report concludes that throughout the trench extent, no dateable deposits predating c 1750 were observed. No prehistoric or Roman features were present. The deposits are determined to have low archaeological significance.

In light of the results of the watching brief the excavation works for the pipeline are estimated to have a low impact on surviving deposits.

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1 Introduction

1.1 Site background

The site comprises the linear route of a new intermediate pressure gas main on Windmill Lane, Forest Lane and Leyton Road in the London Borough of Newham, hereafter called 'the site'.

The site is currently located within the carriageway of the roads. The site extended from Leyton Road on a north-west/south-east alignment at the western end of the site, turning north-east into Windmill Lane, then extending into Leytonstone Road and terminating at the intersection of Tower Hamlets Road and Forest Lane (Fig 1).

There are no listed buildings or scheduled ancient monuments located on the site.

Monitoring of the excavation of the trench for the pipeline – the watching brief – took place intermittently between 8 December 2008 and the 14 July 2009. No basement areas were encountered during the course of the watching brief. The site was re-instated to its original form.

The centre of the site lies at OS National Grid Reference 539420 185015, although the site itself is a linear trench running from Leyton Road (NGR 538705 184960) in the west, via Windmill Road and Forest Lane to Tower Hamlets Road (540028 185222) in the east.

Modern road level at the north end of Leyton Road lies at 6.80m OD rising to 7.90m OD at the junction with Windmill Lane. Road levels continue to rise eastwards along Windmill Lane to 9.90m OD at Maryland Point and 10.00m OD at the north end of Water Lane. Road level along Forest Lane varies from 10m at the west end to 9.80m OD at the junction with Albert Square, rising to 10.60m OD at the north-eastern end the trench at the junction of Tower Hamlets Road and Forest Lane.

The site was assessed in two archaeological desk-based assessments (Atkins 2008: MOLA 2008). These documents should be referred to for information on the natural geological, archaeological and historical background of the site, and the initial assessment of its archaeological potential.

The watching brief methodology was defined by a *Written Scheme of Investigation* (MOLA 2009).

The site code is WMO 09.

1.2 The planning and legislative framework

The legislative and planning framework for archaeological exercise was summarised in the *Archaeological desk based assessment* (MOLA 2008, Section 3).

1.3 Planning background

The relevant national and local planning policies are provided in full in the MOLA (2008) *Archaeological desk-based assessment*.

1.4 Origin and scope of the report

The London Borough of Newham granted Planning Consent for the proposed installation of the intermediate pressure gas main on 1 September 2008. According to Planning Condition 6 (Archaeology) of the Planning Consent, an appropriate level

of archaeological investigation must be carried out by an appropriately qualified archaeological contractor prior to the commencement of the proposed works.

Accordingly, the watching brief and its preceding *Written Scheme of Investigation* were commissioned by McNicholas Construction from Museum of London Archaeology Service (MOL Archaeology).

The report on the watching brief has been prepared within the terms of the relevant Standard specified by the Institute of Field Archaeologists (IFA, 2001) and guidelines prepared by English Heritage (English Heritage, 1998).

The purpose of the watching brief was to determine whether archaeological remains or features were present on the site and, if so, to record the nature and extent of the remains. A number of more site-specific research aims and objectives were established in the preceding *Written Scheme of Investigation for archaeological Watching Brief* (MOLA 2009), and are outlined in the following section.

The purpose of the present report is to analyse the results of the excavation against the original research aims, and to suggest what further work, including analysis or publication (if any), should now take place.

1.5 Aims and objectives

This statement sets out the methods used and approaches taken in dealing with the archaeological resource of the site. The detailed methodology is set in the context of the methods and approaches which are considered most appropriate for an Archaeological Watching Brief on sites in Greater London, in accordance with the advice contained in the English Heritage (GLAAS), *Archaeological Guidance Papers 1-5* (revised 1998) and English Heritage Centre for Archaeology *Guidelines* where appropriate.

The general objective of the Watching Brief is the identification and recording of any significant archaeological remains of any period revealed by the groundwork's. The following specific objectives have been derived in accordance with the conclusions of the *Archaeological desk-based assessment* (MOLA 2008):

- The Watching Brief would record any evidence for prehistoric activity.
- Record any Palaeolithic remains at the interface of the Kempton Park and Taplow terrace gravels in Leyton Road.
- Record any evidence for Roman activity.
- Record any evidence of the Roman road believed to cross the gas pipeline on Windmill Lane.

All research is undertaken within the priorities established in the Museum of London's *A research framework for London Archaeology, 2002*.

2 Topographical and historical background

The topographical and historical background has been adequately covered in the earlier archaeological desk-based assessments (Atkins 2008: MOLA 2008). These documents should be referred to for information on the natural geological, archaeological and historical background of the site, and the initial assessment of its archaeological potential. What follows is a brief summary only.

The desk-based assessments concluded that the route of the pipeline has the potential to contain prehistoric and Roman remains, including remains of a Roman road (MOLA 2008, 10). Palaeolithic remains may be found at the interface of the Kempton Park and Taplow Gravel terraces in the western part of the site. The desk-based assessments recommended that in view of the limited and localised archaeological impact of the gas pipeline, an archaeological Watching Brief would represent a suitable form of mitigation.

3 The watching brief

3.1 Methodology

All archaeological monitoring and any excavation undertaken during the watching brief was carried out in accordance with the preceding *Written Scheme of Investigation for archaeological Watching Brief* (MOLA 2009) and the *MoLAS Archaeological Site Manual* (MoLAS, 1994).

The watching brief was undertaken by a MOLA Senior Archaeologist and involved monitoring the excavation of a service trench for an intermediate pressure gas main laid within the carriageway. The location and extent of the cable trench was marked out by the principle contractors (McNicholas) who then broke out the road surface using a breaker attached to a 360-type excavator. The broken ground and underlying deposits were cleared using a narrow (500mm-width) flat-bladed bucket attached to the machine. Under the supervision of the attending Senior Archaeologist the remaining underlying deposits, prior to the complete excavation of the service trench were checked for any potential archaeological cut features and for the survival of ancient ground surfaces.

An area of suspected voids underlying the Leytonstone Road in the vicinity of Maryland Station led to long delay in the trench excavation whilst conditions were proved satisfactory for an eventual permit to dig.

Any potential archaeological features or surfaces were cleaned by hand to determine if they were positive or not by the attending Senior Archaeologist. Where these proved not to be positive, or no archaeological features were encountered a small section of the service trench was recorded as representative of the natural topography of the area of investigation. The trench was located by survey by the contractor, and locations of the areas of individual areas of investigation were located by offsetting from adjacent standing walls or kerb lines and plotted on to a hardcopy scaled printout of current OS mapping (Fig 2). This collated information was subsequently plotted digitally onto the OS grid.

The heights of observations and/or archaeological remains were recorded relative to Ordnance Datum levels. Where relevant, sections were drawn at a scale of 1:10 or 1:20; numbered contexts were allocated where appropriate

The site produced: 34 context records; 17 section drawings at a scale of 1:10; 1 trench location plan and 1 plan at 1:20 scale. A series of digital photographs recording the topography of the trenches was also produced. In addition one small box of finds was recovered from the site. The finds and records can be found under the site code WMO09 in the MOL archive.

3.2 Results of the watching brief

3.2.1 Introduction

For clarity the sections of the trench have been divided into each relevant road name.

In each instance a sample section representative of the trench deposit sequence was recorded at either 1:10 or 1:20 scale. Distinct changes to the sequence were observed and suitably recorded in section.

There follows a brief description of the archaeological deposits as recorded, broadly following excavation of the trench from its eastern terminus in Forest Lane westwards to Leyton Road.

For the location of the trench and sections see Fig 2.

3.2.2 Forest Lane

Location	Eastern end of site: Along Forest Lane from Tower Hamlets Road to Junction with Water Lane
Dimensions	715m (L) x 0.60m (W) x 1.2m–2.0m (D)
Modern ground level	10m to 10.60m OD
Base of modern fill	0.5m to 0.6m bgl
Depth of archaeological deposit seen	N/A
Level of base of deposits observed	1.30–1.80m bgl
Natural observed	1–1.40m bgl (9.80m OD–9.10m OD)

This section of trench, located in the westbound lane of Forest Lane, extended from Water Lane to the intersection of Tower Hamlets Road at the north-eastern end of Forest Lane.

See Section 4 (Fig 3), Section 6 (Fig 4) and Section 8 (Fig 5). Section 9 recorded the same sequence as Section 8 and is not illustrated. For location of sections, see Fig 2.

The lowest deposit recorded across the length of the service trench on Forest Lane, was a natural gravel deposit consisting of loose dark brown sandy gravel [12] recorded at a height of between c 9.80m OD in the east at the junction with St James Road (Fig 5) and 9.10m OD in the vicinity of the junction with Ash Road and Forest Lane. At the south-western end of the service trench the natural gravel was covered by soft brownish orange sandy clay [11] (Fig 3) recorded at a height of 9.10m OD. The sandy clay was present from the vicinity of the intersection of Water Lane extending northeast towards the intersection of Ash Road where it faded out over the underlying natural gravel [12].

At the intersection of Idmiston Road and Forest Lane the natural gravel was covered by firm mottled light brownish grey and black silty clay [14] (Fig 4) from a height of 10.1m OD and with an average thickness of 0.40m that extended towards the north-eastern end of the trench. The layer was interpreted as a possible disturbed alluvial deposit.

Firm, brown sandy clay [10] overlay the brickearth-like clay [11] at a height of 9.45m OD to an average thickness of 0.15m (Fig 3). The deposit contained moderate inclusions of small to medium sized fragments of ceramic building material and very frequent small flints. The layer is interpreted as a probable redeposited subsoil. The

subsoil extended north-east prior to the intersection with Idmiston Road, at which point the deposit became a firm, light greyish brown sandy clay with very occasional small angular flints [13] (Fig 5). This latter dumped layer [13] continued to the north-east to overlie layer [14]. Further evidence of dumping was seen at the south-western end of the trench in a 0.25m thick layer of soft, brownish orange sandy clay [09] at a height of 9.50m OD, with very frequent small to medium rounded flints and small to medium fragments of ceramic building material. The inclusions indicate a relatively late Post-Medieval date (late 18th to late 19th century). There was no evidence for any cut features, other than modern service trenches.

The deposits were sealed by concrete bedding [8] supporting the tarmac road surface recorded at a height of between 10m OD (Water Lane) to 9.70m OD in the vicinity of the junction with Maryland Park and 10.6m OD at the intersection of Tower Hamlets Road and Forest Lane at the north-eastern terminus of the trench.

3.2.3 Maryland Station to Forest Lane

Location	Central part of pipe trench, running east from westbound lane of Leytonstone Road opposite Maryland Station to junction with Forest Lane and Water Lane
Dimensions	90m (L) x 0.80m (W) x 2.0m (D)
Modern ground level	c 10m OD
Base of modern fill	0.60m bgl (9.4m OD)
Depth of archaeological deposit seen	1m
Level of base of deposits observed	1.65m bgl (8.35m OD)
Natural observed	1.50m bgl (8.50m OD)

This section of trench extended west from Forest Lane to Maryland Station.

See Section 14 (Fig 6), Section 15 (Fig 7) and Section 16 (Fig 8). For location of sections, see Fig 2.

The western end of this section of the trench revealed a firm, light brown, sandy clay approximately 0.20m thick at the trench base at c 8.50m OD, 1.50m below modern road level (Fig 6). A 0.90m-thick layer of hard, mid yellow-brown, slightly silty sand and pebbles overlay the clay. No dating evidence was visible within the deposit; its sterile appearance would be consistent either with natural terrace gravel or redeposited natural material. Fining down and sorting of the pebbles toward the contact with the underlying sandy clay indicates a natural origin.

A concrete slab, c 0.20m thick, overlay the assumed natural deposits. The slab supported 0.15m depth of granite sets, which were sealed in turn by c 0.20m depth of tarmac. This sequence continued eastward for a further 10m, at which point a sizeable utility inspection and access chamber had removed or disturbed all adjacent deposits.

Observations to the east of the inspection chamber recorded stiff, mid orange, natural sand, gravel and clay in the trench base. This layer survived to an estimated height of 8.50m OD (1.50m below current road surface, Fig 7). A series of thin, naturally-formed soils overlay the clay gravel. This comprised a 0.20m-thick layer of firm, mid orange brown, laminated sandy clay [34], sealed by a 0.15m-thick layer of hard, dark yellow sand and gravel [33]. A 0.20m thick layer of dark brown, silty sand and pea grit [32] overlay [33] from a height of c 8.95m OD. Firm, mid grey brown sandy silt with grit inclusions [31] overlay layer [32], and measured 0.20m thick. A 0.10m thick deposit of hard compacted, yellow brown, assorted pebbles, gravel and

occasional ceramic building material fragments [30] formed the final deposit of the series. The nature of the last layer [30] could be consistent with a compacted road surface or yard, of likely post medieval date, or simply a lens of up-cast gravels latterly compacted by overlying deposits and post depositional processes.

A north–south linear cut [28] truncated layer [30] across the width of the trench. The vertically-sided cut survived to a height of c 9.10m OD, and measured 0.70m deep by 0.80m wide (Fig 7). The cut contained an arched culvert or drain [26] constructed of hard, well fired red bricks and white/grey white, lime mortar. The bricks had average dimensions of 105mm by 60mm by 210mm (see 9.2). The internal drain deposits were attributed a single context [27]. This comprised a thin (30mm) deposit of soft, grey sand had accumulated over the masonry drain base, beneath a 50mm-thick layer of soft, dark grey black silt. Both deposits indicate the active life of the drain, immediately after construction and later accumulation of waste. The remaining void of the drain was filled with crushed brick and mortar rubble with lenses of gravel- indicating the disuse and blocking off of the drain. The construction cut [28] for the drain [26] was backfilled with dark grey silty sand and assorted grit and gravels. No dating evidence was retrieved from the fill, although the brick sample dates to the late 18th to early 19th century period (see 9.2).

The brick drain and its cut were sealed by a 0.30m-thick layer of loose, mid yellow brown silty sand and gravel [29] containing occasional inclusions of ceramic building material fragments coal flecks and flint pebbles. Concrete slab supporting granite sets overlay layer [29] to a combined depth of 0.35m. Tarmac, 0.25m thick capped the sequence from a height of c 10m OD. The deposits extended approximately 30m east from the intrusion and sample section.

Further east, towards the junction with Forest Lane, the natural deposits at the trench base were gradually replaced by loose, yellow sand and gravel (Fig 8). This was overlain by light, yellow brown silt sand and pea grit similar to [33], approximately 0.15m thick. This was in turn overlain by a 0.15m thick layer of firm yellow-brown sandy gravel consistent with layer [31] to the west. A substantial layer of loose, mid brown, slightly silty sand, measuring 0.50m thick lay between the sand and gravel deposits and the overlying concrete slab. This layer contained frequent inclusions of assorted gravels, occasional fragments of bone, ceramic building material coal and charcoal. Occasional lead or copper pipes ran through the deposit, indicating a modern date of deposition. It was also noted that compacted ballast gravel measuring c 0.45m thick, supported the tarmac on the north side of the trench, replacing the concrete towards the mid point of the road. The trench continued to the east along Forest Lane.

3.2.4 Maryland Point and Windmill Lane

Location	East–west trench running from junction of Maryland point, Leytonstone Road and Windmill Lane west to west end of Windmill Lane
Dimensions	370m (L) x 0.50m (W) x 1.6m (D)
Modern ground level	9.9m OD at east end to 7.9m OD at west
Base of modern fill	0.6m
Depth of archaeological deposit seen	c 1.0m
Level of base of deposits observed	1.5m–1.8m bgl
Natural observed	1.25m bgl

This section of trench extended west from Maryland Point, west of Maryland station, in the westbound lane of Leytonstone Road. This continued west, turning slightly north across Maryland Point and into Windmill Lane.

See Section 7 (Fig 9), Section 5 (Fig 10) and Section 1 (Fig 11). Section 2 recorded the same sequence as Section 1 and is not illustrated. Section 3 recorded the same sequence as Section 5 and is not illustrated. For location of sections, see Fig 2.

Observations at the east end of Windmill Lane (Fig 9) recorded the surface of friable, brown sandy clay [16] at c 8.20m OD (1.70m below present road level) at the trench base. The layer contained frequent inclusions of angular gravels. No dateable material was recovered from the layer, and this may represent a naturally formed subsoil/interface with terrace gravels. Soft, grey brown sandy clay [15] containing frequent assorted gravels, occasional fragments of clay tobacco pipe and fine ceramic building material sealed the gravel. The dumped layer was 1.20m thick, and was considered to be of 19th century date or later. Concrete [1] measuring 0.35m thick and supporting the tarmac road surface at c 9.90m OD capped the sequence.

The sequence extended west to the vicinity of 79 Windmill Lane. At this point the surface of naturally-deposited loose, orange brown, sandy gravels [4] was seen in the trench base at 1.25m below modern road level (Fig 10). The natural was overlain by a 0.25m thick layer of loose, grey brown sandy clay [7] containing frequent inclusions of gravel (over 15% of the overall deposit). This layer was initially interpreted as naturally derived subsoil, although trench limitations make the interpretation somewhat uncertain. A 0.20m thick layer of made ground [6] overlay the subsoil [7] from c 0.85m below road level. The made ground comprised loose, orange brown silty clay with frequent gravel. The compaction and fissured character of the deposit, in addition to the number of service pipes disturbing and truncating it, indicate a late date of deposition (late 19th early 20th century). A further layer of made ground [5] overlay layer [6]. This measured 0.25m thick and comprised a firm, brown, sandy clay with frequent assorted flinty gravels and moderate fragments of ceramic building material (peg tile and brick types). Concrete road slab and associated levelling ballast [1] 0.45m thick, continued at the top of the soil profile, supporting 0.15m depth of granite sets beneath 80mm of tarmac road surface.

These deposits continued approximately 90m west along Windmill Lane to the vicinity of Stratford New Town Methodist Church (recorded on Section 3, not illustrated). The surface of natural gravel remained constant at c 1.25m below current road level.

West of the Methodist Church, the deposit sequence noted above is replaced by a 0.75m thick layer of firm, brown silty clay [3] present from c 0.75m below current road level to the trench base, and containing moderate amounts of assorted gravels, occasional small fragments of ceramic building material and sparse fragments of late 19th century pottery (Fig 11). This was overlain by the road construction slab and levelling material [1]. The sequence continued approximately 55m towards 15 Windmill Lane, at which point deposit made ground layer [3] was overlain at c 0.8m below current road level by a 0.40m thick layer (see Fig 11) of loose, light grey – brown sandy clay [2] containing moderate amounts of assorted gravels, occasional small fragments of ceramic building material and sparse fragments of pottery. Both contexts [2] and [3] are indicative of either widespread consolidation and made ground deposits or possible backfills of quarry pits, of late post medieval date (see 10.4). The limitations of the trench preclude any definitive interpretation. The oil profile was capped by 0.40m depth of road levelling material, supporting 0.30m depth of concrete slab [1]. The slab supported 0.15m thickness of granite sets (an earlier road surface) which were sealed by 70mm of modern tarmac road surfacing, at c 8m OD. These deposits extended approximately 50m west to the end of the available trench. The surface of natural gravel was not reached within the western extent of the trench.

3.2.5 West end of Windmill Lane

Location	Runs east–west along westbound lane of Windmill Road, from rear of adjacent Railway Tavern Public House to junction with Leyton Road
Dimensions	35m (L) x 0.50m (W) x 1.7m (D)
Modern ground level	c 7.9m OD at west end
Base of modern fill	0.7m below modern road level
Depth of archaeological deposit seen	N/A
Level of base of deposits observed	1.8m below modern road level
Natural observed	7.2m OD (c 0.7m below road level)

This section of trench extended west along Windmill Road from the Railway Tavern to Windmill Road's junction with Leyton Road.

See Section 17 (Fig 12). For location of sections, see Fig 2.

Hard compacted, natural sands and gravels were present in the trench base and sides to c 0.70m below current road surface, at c 7.20m OD. The natural gravels were punctured by the bases of several pits/service trenches seen only in the south facing section (Fig 12). The fills of these features were characteristically 20th century in origin, containing concrete and brick fragments, metal debris and plastic objects. A modern pipe trench carrying a small diameter pipe cut the pits, immediately below the made ground supporting the present road slab.

A 1.60m deep cut was present at the east end of the trench in this area, truncating the sequence deep into the natural gravel. This conjectured rectangular feature was approximately 5m east–west and extended across the trench width. The fill was modern in character, present immediately beneath the road slab. The absence of pipes or other interpretable material within the cut precludes any description of its function.

3.2.6 Leyton Road

Location	Runs north-south along southbound lane of Leyton Road from Vicinity of Alma Street to the north to junction with Windmill Lane at south
Dimensions	160m (L) x 0.60m (W) x 1.5–2.0m (D)
Modern ground level	6.8m OD at N to 7.9m OD at S
Base of modern fill	0.5m below road level
Depth of archaeological deposit seen	c 1.0m
Level of base of deposits observed	1.5m to 2.0m below road level
Natural observed	1.1m below road level

This section of trench was aligned along Leyton Road.

See Section 10 (Fig 13), Section 11 (Fig 14), Section 12 (Fig 15) and Section 13 (Fig 16) For location of sections, see Fig 2.

Mid yellow orange natural sandy gravels survived to a height of c 1.10m below ground level, although for the majority of the trench in this area it was truncated by services and road construction to much greater depths (c 1.60m bgl). In the vicinity of the junction with the spur road leading west into the Olympic site the natural was sealed by a 0.5m thick layer of soft, sticky, mid yellow brown, clay and grit, devoid of any inclusions (Fig 16). This was overlain in turn by 20th-century dumped deposits of dark grey compacted silty sand and grit. The modern layer was subsequently truncated by later utility service trenches. Concrete bedding measuring 0.40m thick

supported 0.15m depth of granite sets. The sets were sealed by modern (present day) tarmac road.

A short distance to the south-west a linear feature cut into the natural gravels (Fig 14). The cut [23] was broadly triangular in shape, aligned north-west/south-east across the trench base and had a sharp, near vertical western edge, approximately 0.50m deep. The investigation of the feature was limited by the confines and the depth of the trench, interpretation of the feature is limited to either the base of a ditch or possibly pit of undefined extent and character. A very compacted, mid brown silty sand [22] filled the cut, and contained occasional assorted pebbles and moderate amounts of pea grit. A single fragment of eroded and weathered Kentish ragstone was retrieved from the fill, no datable material was present. The fill was overlain by a 0.10m thick layer of heavily compacted, mid brown–green, silty sand and grit [21]. Examination of the section indicates that the layer could be a later fill of [23], formed above the possible collapse in the sides of the cut (Fig 14). Layer [21] was overlain by a 0.60m thick deposit of firm, dark grey, sandy silt [20], containing moderate inclusions of grit and gravel and occasional charcoal flecks- indicative of a possible cultivation or horticultural soil. Modern levelling deposits and slab supporting 20th century road surfaces capped the sequence to a depth of c 0.70m.

Observation of the adjacent trench to the east and south did not confirm the presence of cut [23]. This was due to the trench limitations and the presence of a large water pipe running north-south along the western edge of the main trench, the associated pipe trench backfill obscuring the earlier deposit sequence and trench base.

Further south (Fig 15), a fragment of mid- brown silty sand [24], containing a fragment of post medieval pottery, dating to 1670–1900 (base of a London stoneware jar or bottle, see 10.4) survived at the trench base, behind an obscuring deposit of soft, brown, silt sand and grit [17]. This later layer contained occasional flecks of ceramic building material, pebble and daub. The deposit peeled away from the trench east wall, although was considerable in extent, measuring 0.80m thick and observed to run approximately 20m along the pipeline trench between service trenches. The deposit fell away at its north extent to expose a 0.70m thick layer of loose, yellow, coarse gravels and sand. It was not possible to determine whether deposit [17] filled a trench which cut the gravel deposit or vice versa.

The southern extent of the Leyton Road trench (Fig 13), comprised a 0.6m deep bed of banded natural gravel [19], present from 1.10m below road level (road level at c 7.20m OD). The natural gravel was sealed by an 0.10m thick layer of soft dark brown silty sand [18] containing occasional fragments of coal, charcoal and moderate amounts of fine gravels. The thin soil layer was overlain in turn by a 0.60m thick deposit of modern made ground, truncated to the north by a 1m-deep utility trench running east–west across the trench. An 0.80m thick layer of firm, dark brown silt sand and frequent gravels [17] replaced the sequence to the north of the pipe trench. The deposit continued to the north for the remainder of the trench (see above), variably supporting or cut by the fills of later utility pipes beneath modern road surfaces.

4 Potential of archaeology

4.1 Original research aims

The Watching Brief would record any evidence for prehistoric activity.
There was no evidence of prehistoric activity.

Record any Palaeolithic remains at the interface of the Kempton Park and Taplow terrace gravels in Leyton Road.

Given the depth of the trench it is unlikely that the interface between the gravel terraces, where extant, would have been visible. There was no evidence of Palaeolithic material either in situ or redeposited in later strata.

Record any evidence for Roman activity.

There was no evidence of Roman activity within the observed trenches.

Record any evidence of the Roman road believed to cross the gas pipeline on Windmill Lane.

There was no evidence for the putative Roman road.

4.2 Significance of the data

The archaeological remains are of limited local significance. There is nothing to suggest that they are of regional or national importance. The archaeological investigation has provided a good record of the surviving natural topography and the likely range of truncation occurring beneath modern roads. The post medieval deposits and features are of local significance in defining land use and settlement across this area, from c 1700 to 1900.

5 Publication and archiving

Information on the results of the watching brief will be made publicly available by means of a database in digital form, to permit inclusion of the site data in any future academic researches into the development of London.

The site archive containing original records and finds will be stored in accordance with the terms of the *Written Scheme of Investigation* (MOLA 2009) with the Museum of London within 12 months of the end of the fieldwork.

In view of the limited potential of the material (Section 4) and the limited significance of the data (Section 4.2) it is suggested that a short note on the results of the watching brief should appear in the annual round up of the *London Archaeologist*. This should be within 12 months of the end of the fieldwork.

6 Conclusions

The trenching carried out for the British Gas Pipeline site have allowed a detailed archaeological investigation to be undertaken.

The archaeological investigation has demonstrated that ancient ground surfaces predating the later post-medieval period (c 1700 onwards) do not survive at the site. Archaeological features appear to survive in the central and western sections of the site, particularly areas where thick deposits of made ground seal subsoils and natural terrace gravels. The archaeological resource has undergone severe truncation and disturbance from the density of modern utility infrastructure. Dateable deposits were confined to made ground or quarry pits in Windmill Lane; a possible ditch or pit in Leyton Road and a north–south brick drain/culvert in the vicinity of Maryland Station. These were all within the date range of 1750 to 1900 and are considered to have local significance only.

The installation of the planned infrastructure is anticipated to have a low impact on any surviving archaeological deposits in the area.

7 Acknowledgements

The authors would like to thank the following for their contributions and help in producing this report: McNicholas for their assistance and cooperation throughout the project; Neville Constantine of MOLA geomatics for providing the trench and section locations on OS mapping, and Juan Jose Fuldain of MOLA drawing office for the figure production.

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9 Appendix 1: ceramic building material

Ian M. Betts

9.1 Quantification and assessment

A total of nine fragments of building material were recovered from WMO09 (contexts [4], [10] and [26]). These comprise four pieces of roofing tile (peg and pantile) and five fragments of brick. Most of these are of probably of 18th or 19th century date. The associated pottery is of similar date.

The building material from WMO09 has been fully recorded and added to the Oracle database.

Listed below is a summary of the building material in each context:

Context	Fabric	Type	Date
[2]	2275	Pantile	1630–1850
[2]	3202	Pantile	1630–1850
[2]	3032	Brick	1666–1900
[10]	2276	Peg	1480–1800
[10]	2816	Peg	1480–1800
[10]	3032 (near 3033 & 3046)	Brick	1600–1800
[26]	3032	Brick	1700/1750–1900

Table 1 Building material summary

9.2 Discussion

The brick and pantiles from [2] are associated with pottery dated to the period 1790–1830, although the building material could be a little earlier. One of the pantiles is a little unusual in having a dark brown glaze covering the top surface.

The roofing tiles from context [10], a brown sandy clay layer, are of peg tile type, but similar dark red bricks in fabric 3032 are present.

The brick sample collected from the arched culvert or drain measures 212mm in length by 103mm in breadth by 59–61mm in thickness. There are few distinguishing features to suggest a date, although a possible very shallow frog in the base and the relatively sharp edges would suggest a mid 18th century or later date.

The brick and peg roofing tile almost certainly comes from brickyards and tile producers based somewhere in the London area. The pantile roofing could be either Dutch or English.

10 Appendix 2: pottery

Nigel Jeffries

10.1 Introduction

This assessment considers the small group of post-medieval pottery retrieved from this site, with no earlier dated pottery present. Weighing 936 grammes (average weight per vessel of 66.8 grammes), up to 18 sherds from a minimum number of 14 vessels (ENV) were recovered from just two contexts ([2] and [24]). The assemblage therefore comprises two small-sized groups (contexts yielding fewer than 30 sherds) only.

10.2 Quantification and assessment

Post medieval pottery	18 sherds. Total 0.93 kg
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Table 2 Pottery archive general summary

Site	Context	Period	Pottery Type	Shd cnt	ENV	Comments
WMO09	2	PM	CREA BOWL RND -	1	1	BASE
		PM	CREA CHP? -	1	1	
		PM	CREA JUG -	2	1	UPPER PROF
		PM	CREA PNTD DISH SER	1	1	RIM – POSSIBLY MEAT DISH
		PM	ISLE SLIP DISH BAK	1	1	
		PM	LONS BOT -	1	1	
		PM	PMFR MUG GLIE	1	1	GLOSSY GLAZE - RESIDUAL
		PM	PMR FLP GLE	1	1	
		PM	PMR FLP? UNGL	3	3	
		PM	PMR JAR ST? -	2	1	RIM AND UPPER PROF OF EXTERNAL LID SEATED JAR
		PM	SUND MOT DISH SERV	3	1	UPPER PROF
	24	PM	LONS BOTJAR	1	1	BASE

Table 3 WMO09 pottery vessels fabric and form

10.3 Methodology

The pottery from this site was recorded on paper and computer, using standard Museum of London codes for fabrics, forms and decoration. The numerical data comprises sherd count (SC), estimated number of vessels (ENV) and weight (by grammes) and was entered onto the ORACLE database.

10.4 Post-medieval pottery

Nearly all the post-medieval pottery (17 sherds) was found in context [2]. Characterised by a mixture of large-sized cross-fitting sherds with smaller fragments, the various fabrics identified combine to date this deposit between 1790 and 1830.

Among the most common sources of supply for the pottery are industrial finewares, factory made products of the 19th-century Staffordshire and north Midlands pottery industries with plain undecorated creamwares (CREA) supplying much of this material. The remaining pottery is best described as representing 'country pottery' fabrics and forms with this context yielding plain red earthenware flower pots and a storage jar, a later combed slipware (STSL) baking dish probably made in Isleworth and Sunderland mottled brown earthenware serving dish completing this group.

11 NMR OASIS archaeological report form

OASIS ID: molas1-65750

Project details

Project name British Gas pipeline, Leyton Road to Forest Lane

Short description of the project A watching brief was carried out on the excavation of a pipeline trench running 1.5km from Leyton Road to Forest Lane, via Windmill Lane in Stratford London E15. Archaeological deposits and features were recorded in various sections throughout the length of the pipeline trench. These comprised a late 18th to mid 19th century brick drain in the vicinity of Maryland Station; a possible post medieval ditch or pit in Leyton Road and a potential disturbed alluvial deposit in the vicinity of Forest Lane and Idmiston Road junction. Natural ground along Forest Lane was present at 9.1m-9.8m OD; in the vicinity of Maryland Point the natural gravels were present at c 8.5m OD, in Windmill Lane at c 7.8m-7.2m OD sloping down to the west, and at c 6.8m OD in Leyton Road. The highest survival of archaeological deposits occurred at c 9.4m OD by Maryland Station and c 7.0m OD in Leyton Road.

Project dates Start: 08-12-2008 End: 20-07-2009

Previous/future work Yes / Not known

Any associated project reference codes WMO09 - Sitecode

Type of project Recording project

Site status Local Authority Designated Archaeological Area

Current Land use Transport and Utilities 1 - Highways and road transport

Monument type PIT Post Medieval

Monument type DRAIN Post Medieval

Monument type LAYER Post Medieval

Significant Finds BRICK Post Medieval

Significant Finds TILE Post Medieval

Significant Finds POTTERY Post Medieval

Investigation type 'Field observation','Watching Brief'

Prompt Planning condition

Project location

Country England

Site location GREATER LONDON NEWHAM STRATFORD British Gas Pipeline, Leyton Road to Forest lane

Postcode E15

Study area 1.50 Kilometres

Site coordinates TQ 538705 184960 50.9447657602 0.190559334310 50 56 41 N 000 11 26 E Line

Site coordinates TQ 540028 185222 50.9449657882 0.192452415520 50 56 41 N 000 11 32 E Line

Height OD / Depth Min: 6.80m Max: 9.80m

Project creators

Name of Organisation MoL Archaeology

Project brief originator WS ATKINS

Project design originator MoL Archaeology

Project director/manager Kieron Tyler

Project supervisor Bruce Ferguson

Project supervisor Raoul Bull

Type of sponsor/funding body Utilities service contractor

Name of sponsor/funding body McNicholas ltd

Project archives

Physical Archive recipient LAARC

Physical Contents 'Ceramics'

Digital Archive recipient LAARC

Digital Contents 'Ceramics','Stratigraphic'

Digital Media available 'Survey','Text','Images raster / digital photography'

Paper Archive recipient LAARC

Paper Contents 'Stratigraphic','Survey'

Paper Media available 'Context sheet','Drawing','Map','Notebook - Excavation',' Research',' General Notes','Plan','Report','Section','Unpublished Text'

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title British Gas Pipeline, Leyton Road to Forest Lane, Startford, London E15

Author(s)/Editor(s) 'Bull, R. and Ferguson, B.'

Date 2009

Issuer or publisher Museum Of London

Place of issue or publication London

Description Spiral bound, illustrated A4 report document, colour cover

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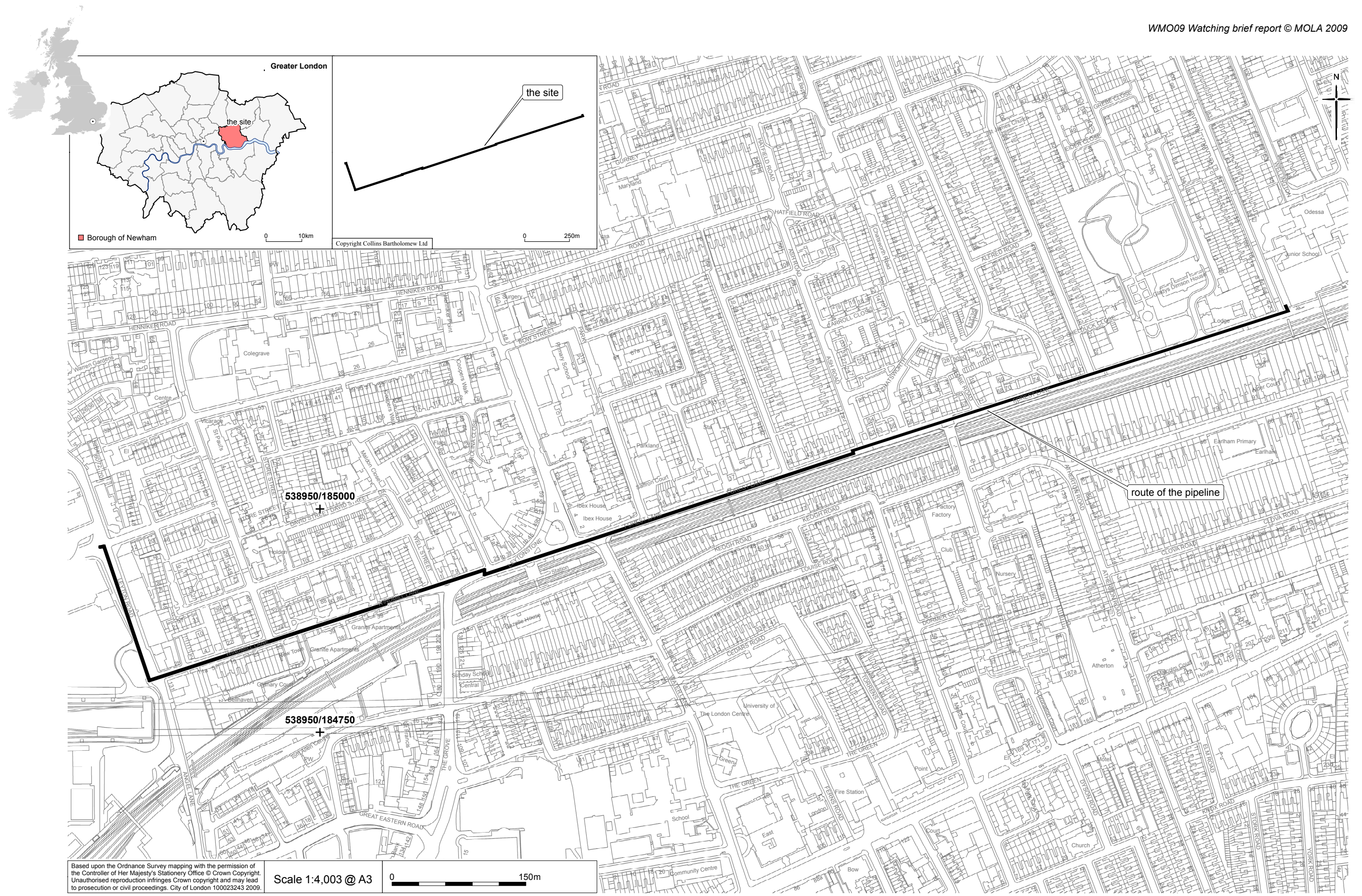


Fig 1 Site location



Fig 2 Location of the gas pipeline trenches and location of the sections

9.8 m OD
^

9.8 m OD
^

tarmac

[08]
bedding

[09]

[10]

[11]

0 1:10 1m

NEW1153WB09#03

MM009 Watching brief report © MOLA 2009

Fig 3 Forest Lane north-west facing Section 4

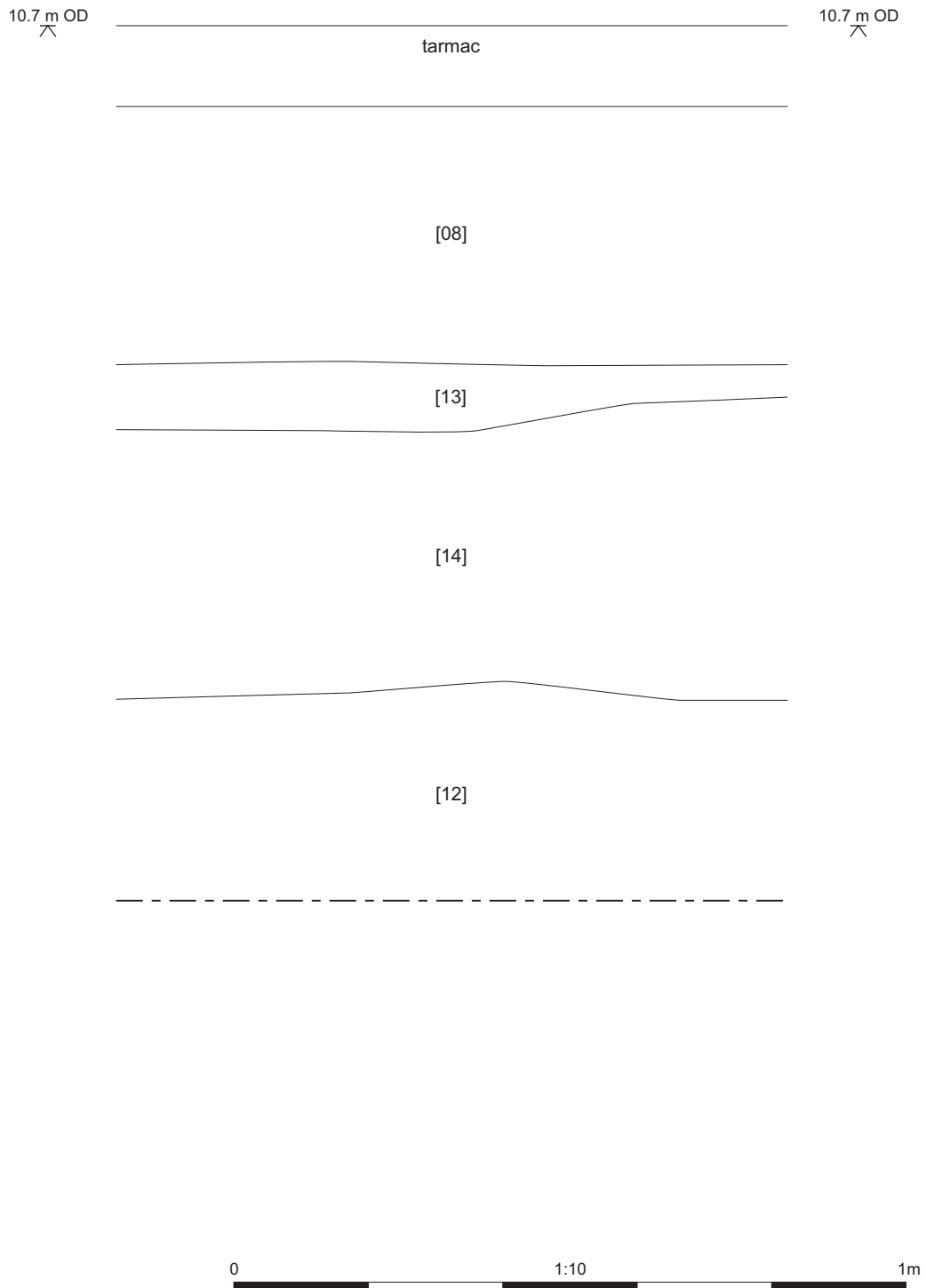


Fig 4 Forest Lane north-west facing Section 6

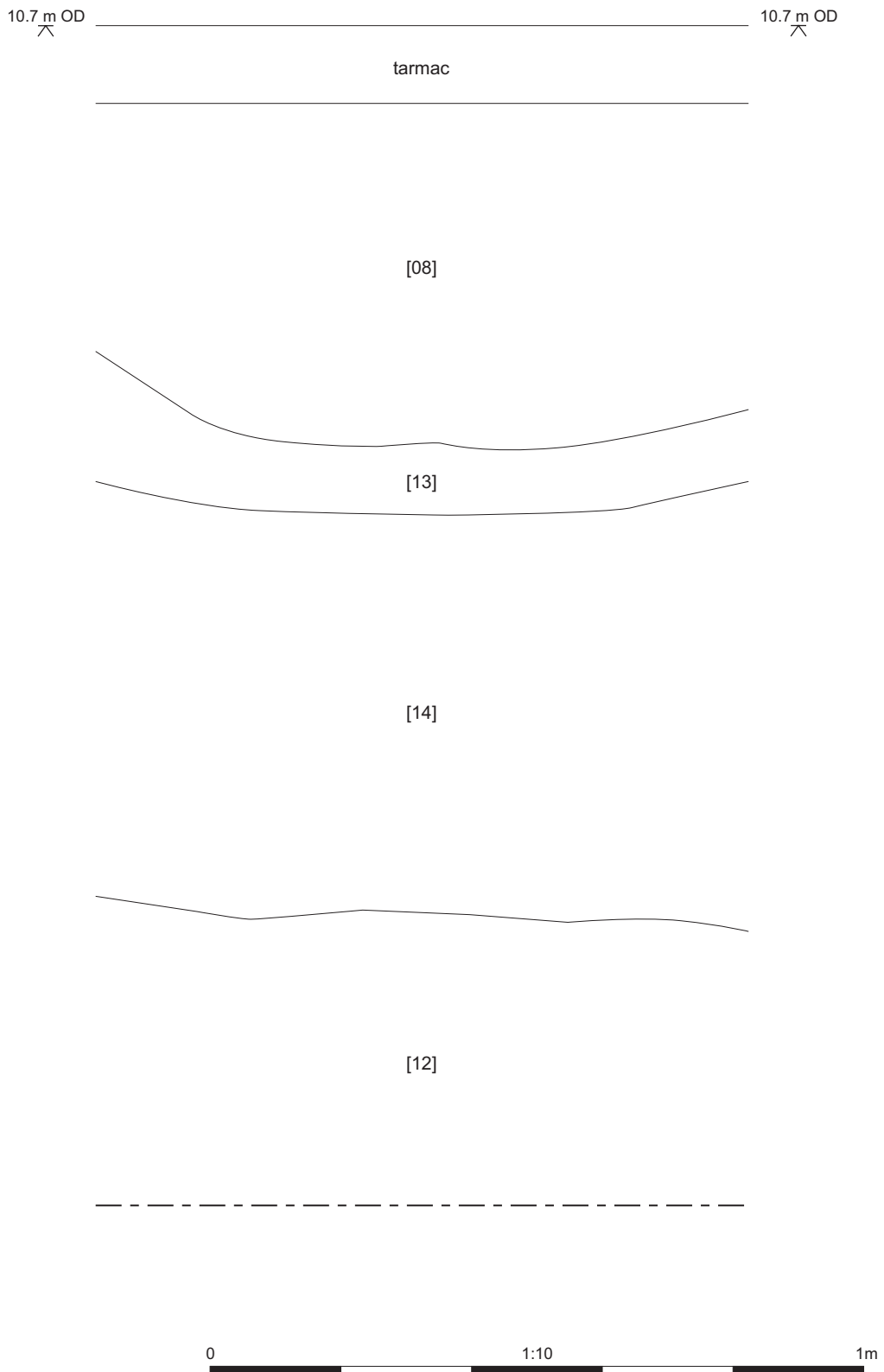


Fig 5 Forest Lane south-east facing Section 8

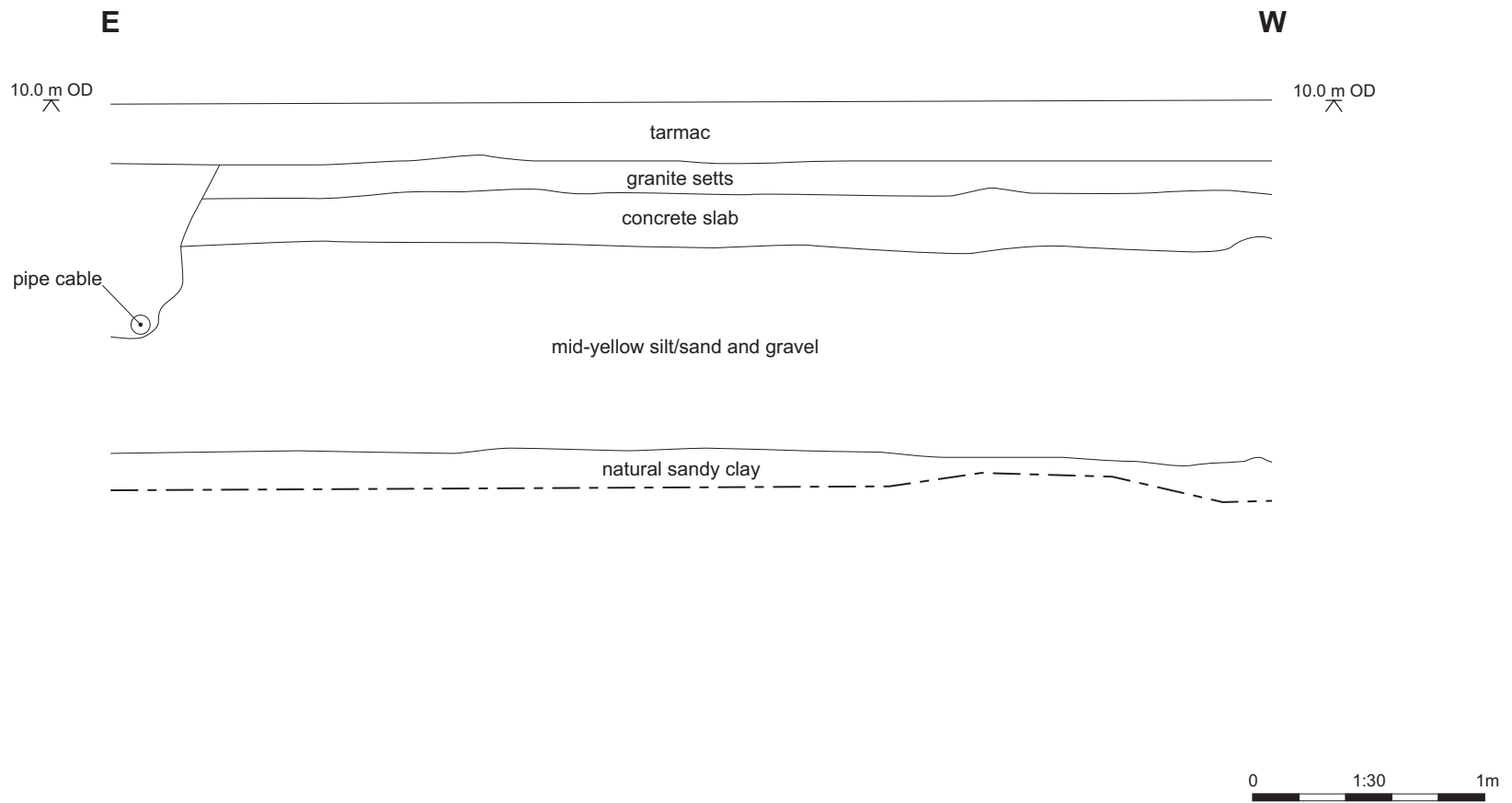


Fig 6 Leytonstone Road (Maryland station) north facing section 14

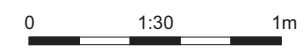
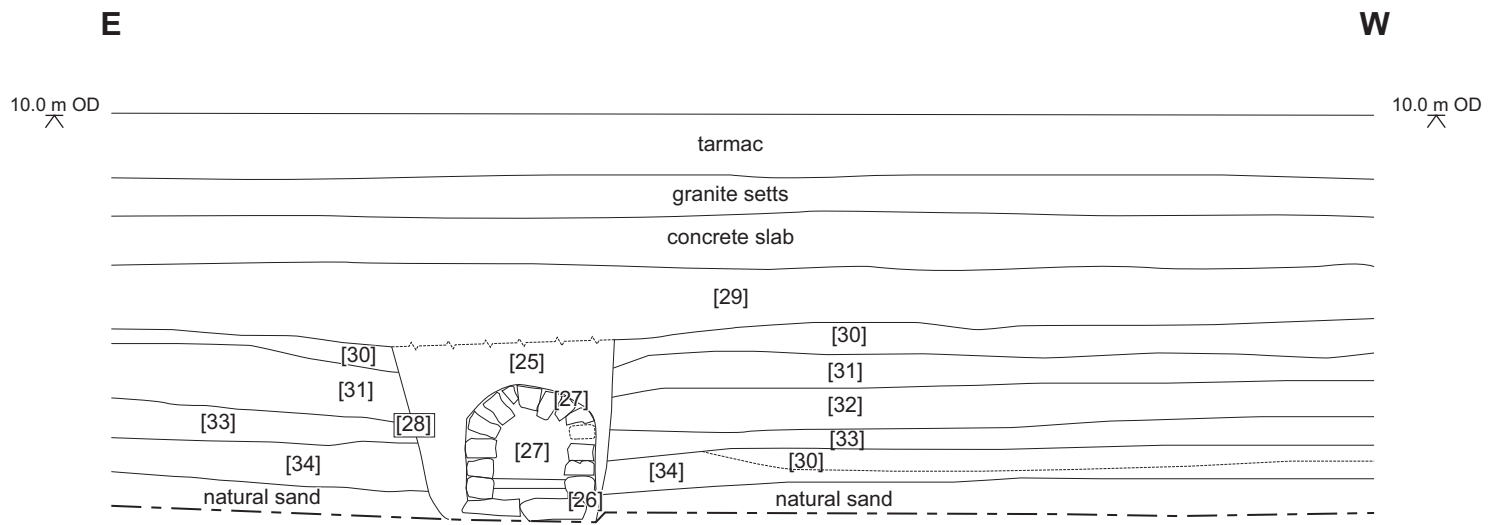


Fig 7 Leytonstone Road (Maryland station) north facing section 15

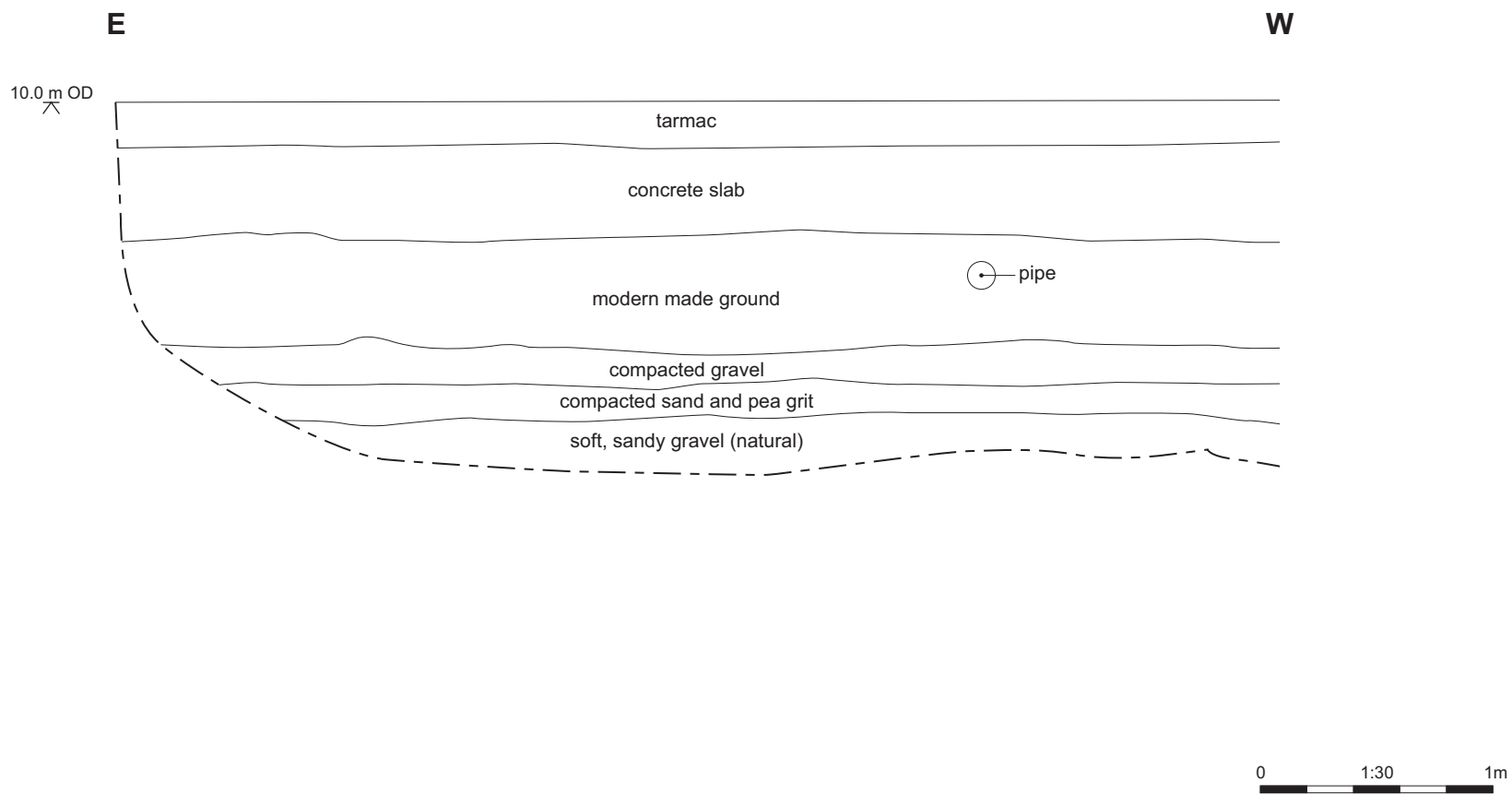


Fig 8 Leytonstone Road north facing section 16

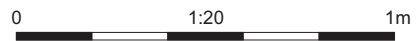
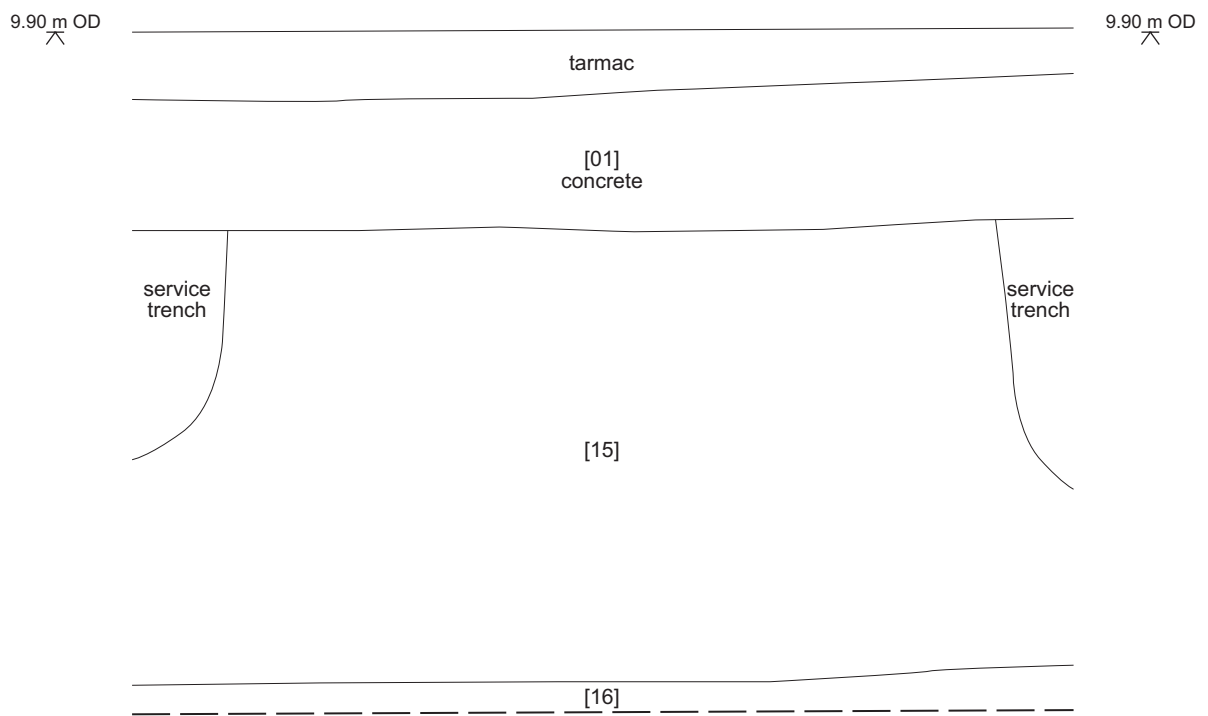


Fig 9 Windmill Lane north-east facing section 7

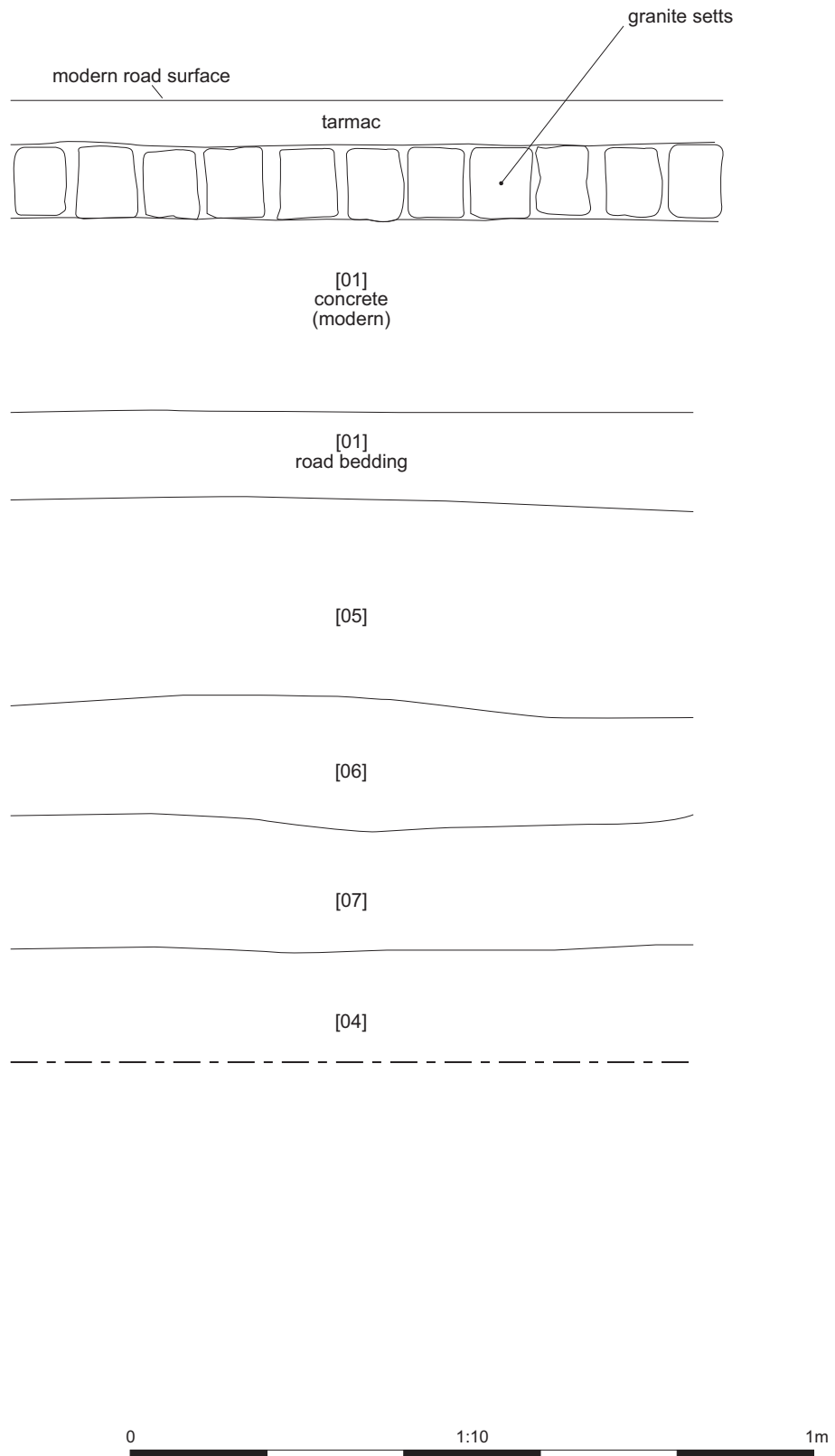


Fig 10 Windmill Lane north-east facing section 5

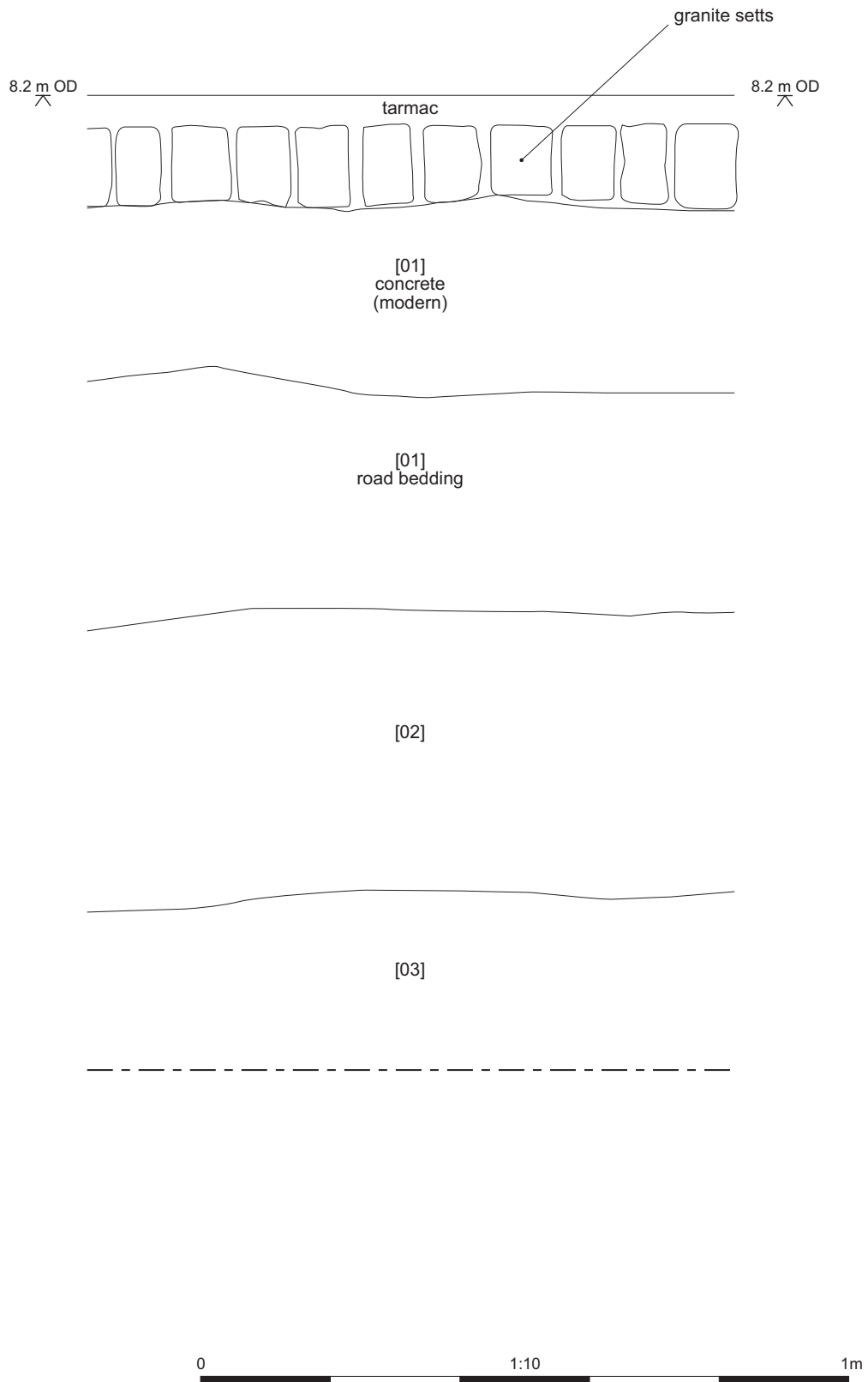


Fig 11 Windmill Lane north-east facing section 1

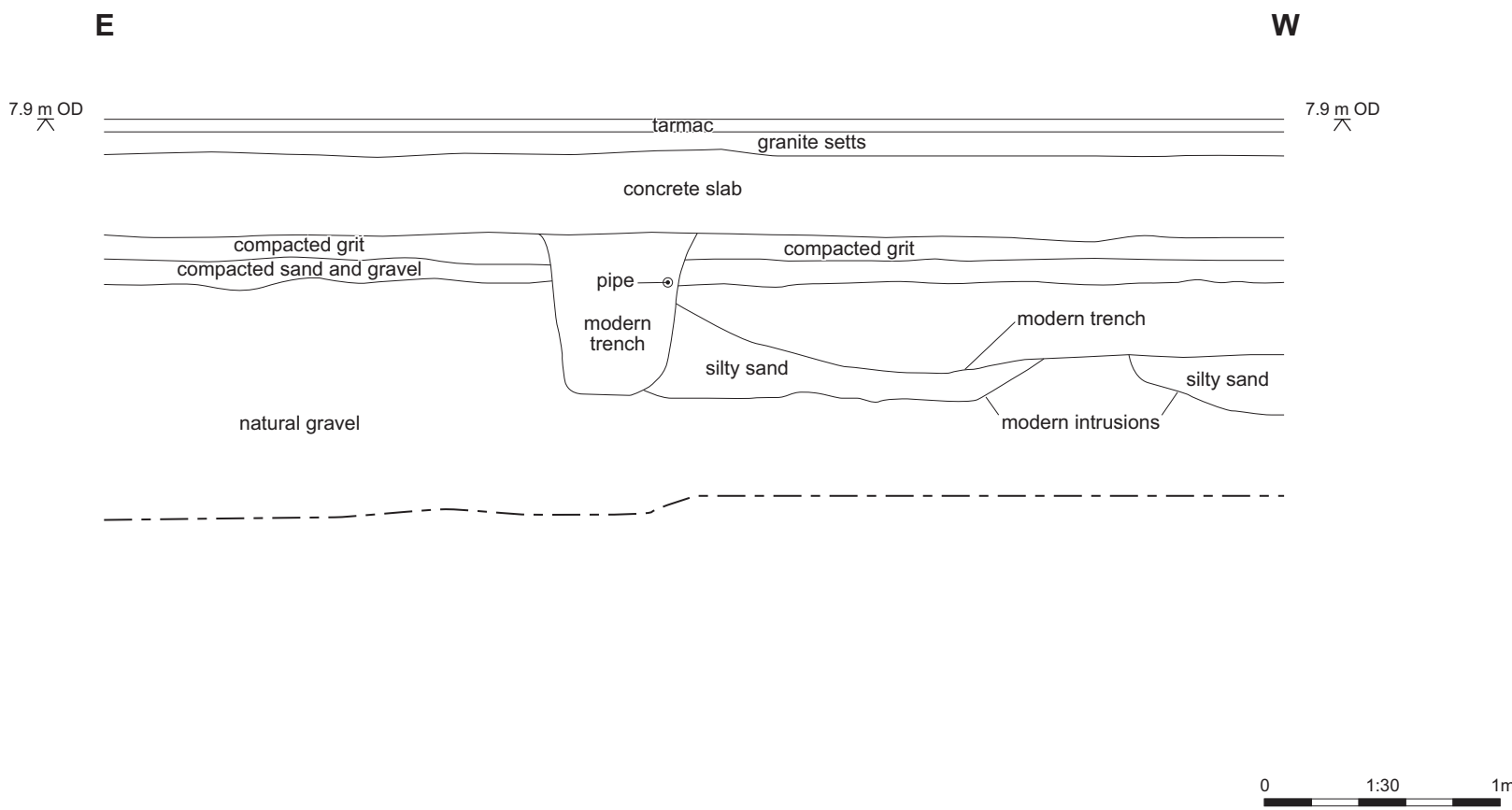


Fig 12 Windmill Lane west, south facing section 17

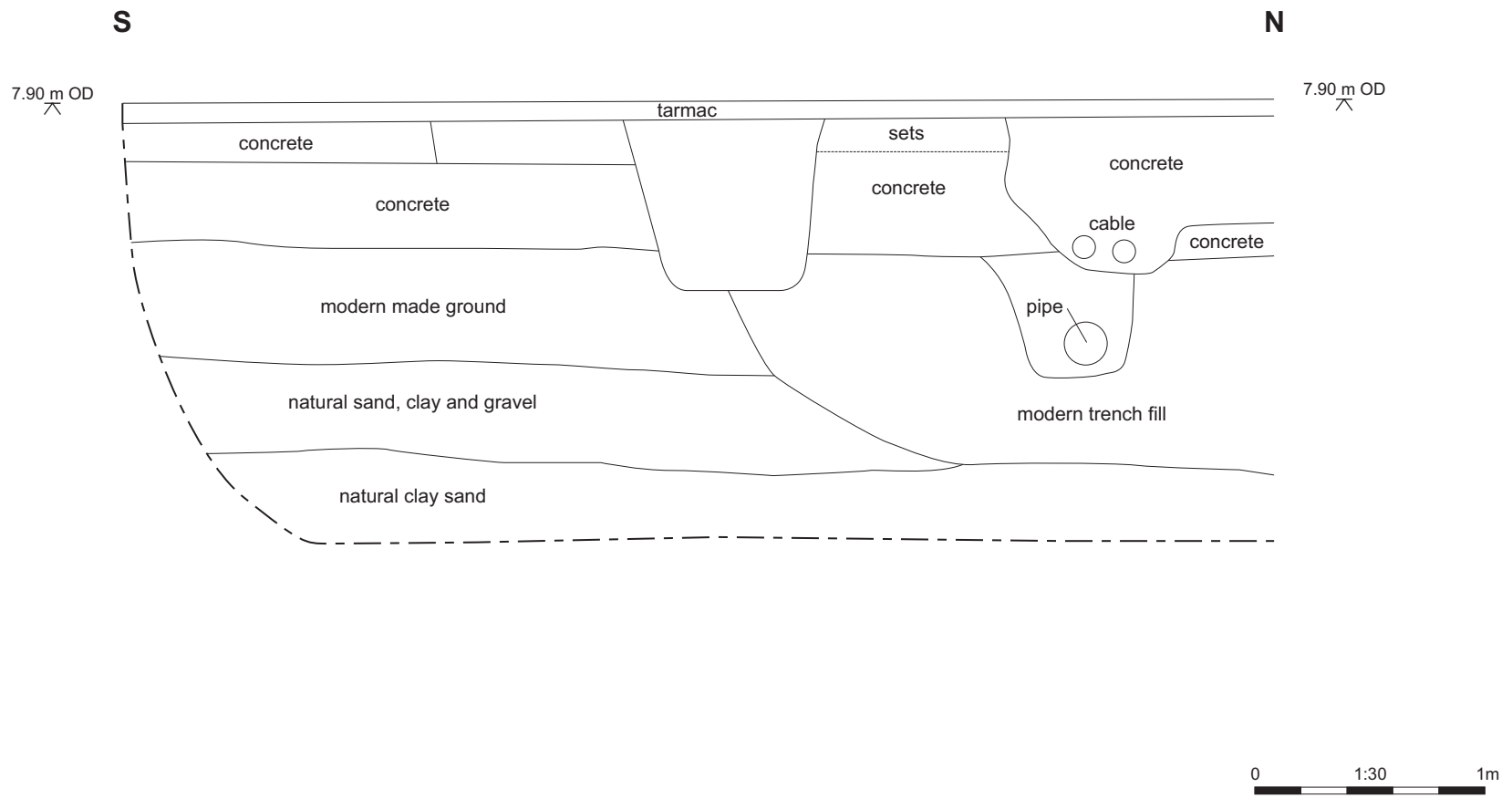


Fig 13 Leyton Road east facing section 10

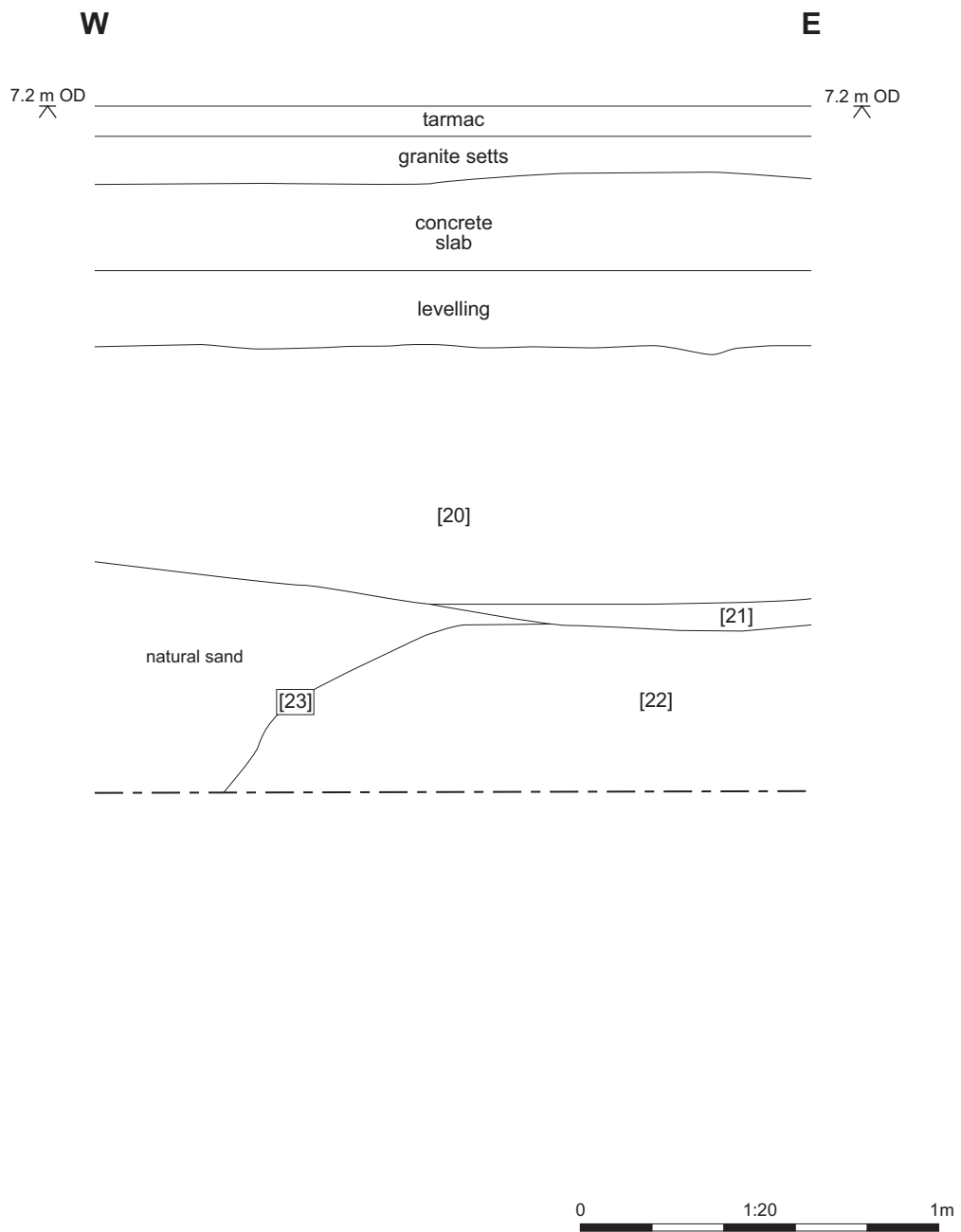


Fig 14 Leyton Road spur trench south facing section 11

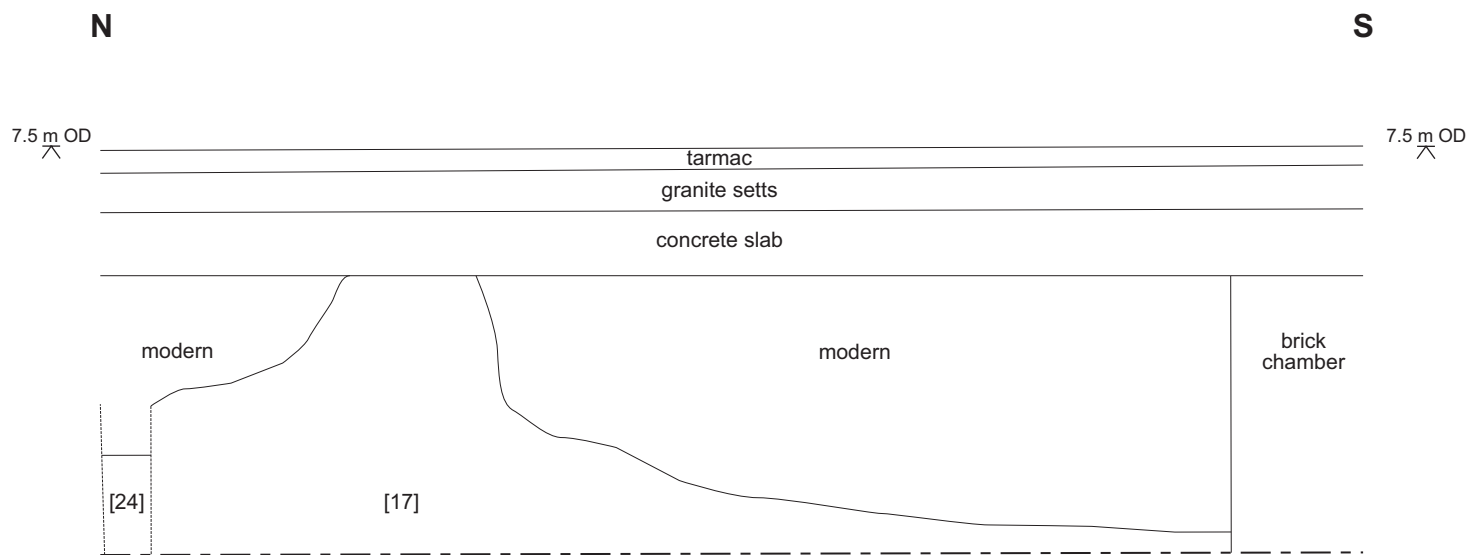


Fig 15 Leyton Road west facing section 12

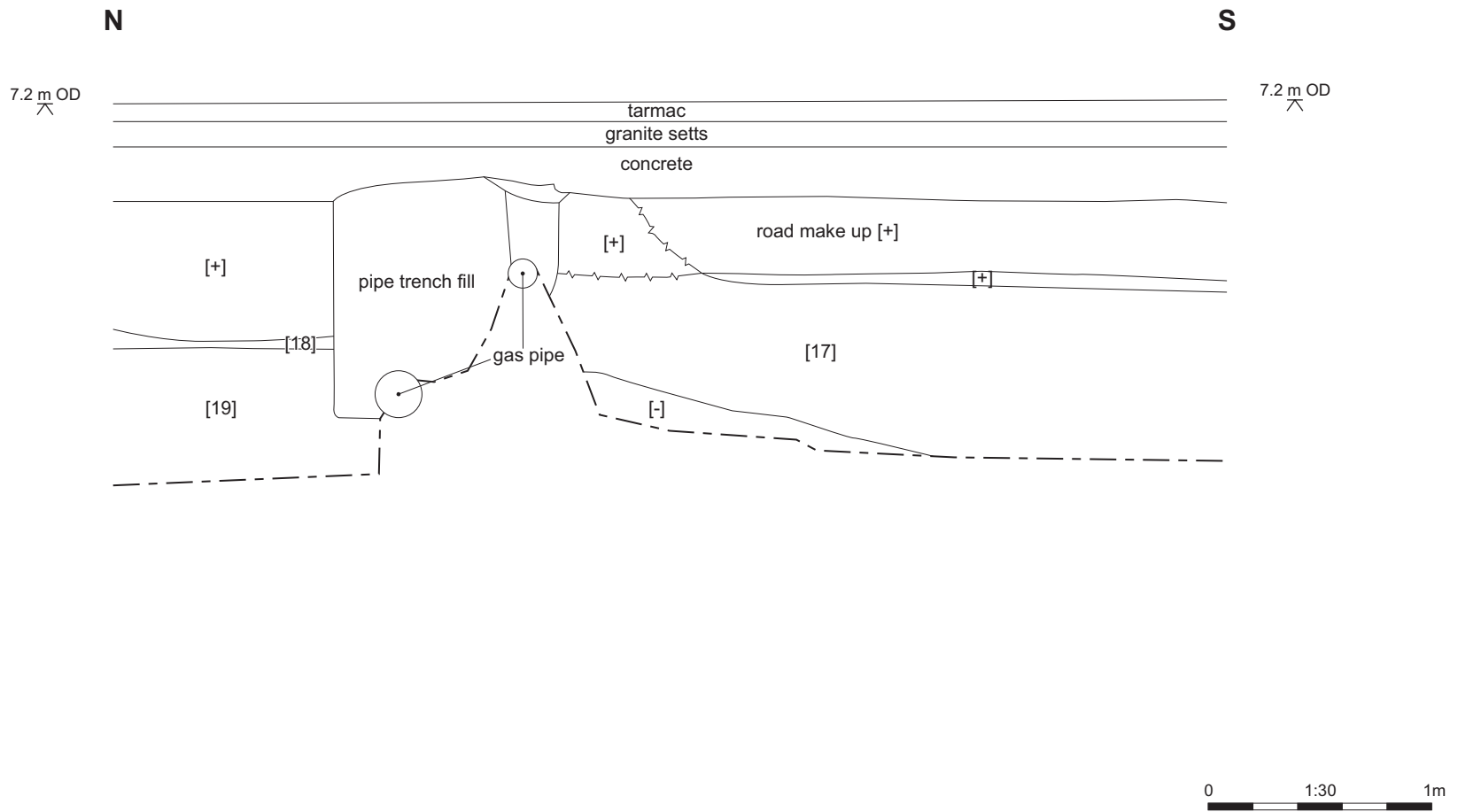


Fig 16 Leyton Road west facing section 13