



## C257 Archaeology Central Fieldwork Report

# Archaeological Targeted and General Watching Brief at Farringdon Eastern Ticket Hall Utilities Diversions (XSF10)

**Document Number: C257-MLA-X-RGN-CRG02-50117**

**Document History:**

Revision:	Date:	Prepared by:	Checked by:	Approved by:	Reason for Issue:
1.0	30-05-2012	[REDACTED] (MOLA)	[REDACTED] (MOLA)	[REDACTED] (MOLA)	For Crossrail Review.
2.0	06-07-12	[REDACTED] (MOLA)	[REDACTED] (MOLA)	[REDACTED] (MOLA)	Revised from Crossrail comments
		<i>Jon Khan</i>	<i>[Signature]</i>	<i>[Signature]</i>	

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## Non technical summary

*This report presents the results of an archaeological targeted and general watching brief carried out by the Museum of London Archaeology (MOLA) on the site of the utilities diversions for the future Farringdon Eastern Ticket Hall, London EC1, in the City of London and Islington (under Crossrail contract C257 Archaeology Central). The report was commissioned from MOLA by Crossrail Ltd. This work is being undertaken as part of a wider programme of assessment to quantify the archaeological implications of railway development proposals along the Crossrail route.*

*The work at Farringdon Eastern Ticket Hall consists of utilities diversion trenches in Charterhouse Square (Street) and Hayne Street, as well as two separate trenches to the east, immediately to the south-west of Charterhouse Square.*

*Natural geology was not exposed in the utilities trenches.*

*On Charterhouse Street, a deposit probably dumped between 1480–1600 contained butchered animal remains probably associated with Smithfield Market to the west, or less likely domestic waste. Also within this deposit were disarticulated human remains from at least three individuals, and residual medieval pottery. The human remains were probably re-deposited from the outer cemetery of Charterhouse which was used as a Black Death cemetery during the 14th-century and possibly later.*

*This feature was sealed by a series of levelling and dumped deposits within which early 16th to 17th-century pottery was recovered. The uppermost layers were truncated by a probable rubbish pit containing material of late 16th–17th-century date. The dump deposits were also cut by a heavily truncated 19th-century wall, which bore evidence of the alterations to the street layout caused by the Metropolitan Line construction in the 1870s.*

*Soil horizons (dated to the 16th–17th centuries) were recorded within two separate trenches further east in Charterhouse Street.*

*Results from the site generally reflect the, admittedly limited, records from the surrounding area, in that the earliest levelling and dump deposits were formed after the development of Charterhouse Square during the medieval period (as recorded in a borehole to the north-east in 1998). The proximity of the known Charterhouse burial ground is reflected in the human remains recovered, although the exact extent of its southern boundary is uncertain, in part due to the shallow depth of the utilities trenches. The series of levelling deposits and the pit represent relatively limited levels of human intrusion again perhaps reflecting the proximity of Charterhouse Square. Truncation caused by the construction of the Metropolitan Line in 1865 is well documented, and was also seen in the recent Crossrail evaluation (XSF10) to the south of the site, as well as Ordnance Survey maps from the latter half of the 19th century.*



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## 1 Introduction

Crossrail is a new Cross-London Rail Link project which will provide transport routes across the south-east of England and London. The route will link Maidenhead and Heathrow in the west with Shenfield in the north-east and Abbey Wood in the south-east. In central London, from Royal Oak in the west to Pudding Mill Lane and Royal Victoria Dock in the east, Crossrail will consist of a tunnelled section with seven new stations linked to the existing transport network.

The new Crossrail Farringdon station will be constructed between Farringdon Road and Lindsey Street. Two new ticket halls will be constructed: one at Farringdon Road, to the west (Western Ticket Hall, to be built by Thameslink), and one at Lindsey Street to the east (Eastern Ticket Hall, to be built by Crossrail). This report is concerned only with works which form part of the Eastern Ticket Hall.

The Crossrail mitigation response to archaeology is described in the Crossrail Generic WSI (Crossrail 2009a) and the detailed desk based assessment (DDBA; Crossrail 2008b), and can be summarised as follows:

- In the event that intact and important archaeological remains are identified at Crossrail worksites through this process, it may be preferable, where practicable, to preserve these where they are found (ie preservation *in situ*).
- However, because of the nature of major works projects such as Crossrail, experience of other similar projects suggests that preservation by record is usually the most appropriate method of dealing with archaeological finds.
- Following an extensive Environmental Impact Assessment (EIA) supporting the Crossrail Bill, and the production of site-specific DDBAs, appropriate mitigation measures were scoped and specified in detail in individual project designs (site-specific WSIs – Written Schemes of Investigation) which were prepared in accordance with the principles set out in the Generic WSI, and developed in consultation with the relevant statutory authorities.
- Archaeological information that is gained from fieldwork will be followed by analysis and publication of the results and will be transferred to an approved public receiving body.

This fieldwork report describes the results of an archaeological watching brief that was temporarily upgraded to a more intensive targeted watching brief (TWB) following the identification of human remains, to allow time to investigate record and recover important remains (see 7.2). This was carried out at the Crossrail Eastern Ticket Hall worksite by Museum of London Archaeology (MOLA) under Crossrail contract C257 Archaeology Central.

The Farringdon worksite is located to the south west of Barbican Underground station (The approximate centre of the site is at OS National Grid Reference 531940 181860

The site is situated to the south-west of Charterhouse Square (Figure 1), in the road from Hayne Street leading westwards to the junction with Lindsey street (also called Charterhouse Square), and in Hayne Street leading south to the junction with Long Lane. A separate trench was also located outside 97–99 Charterhouse Square (Figure 2). In this report the term Charterhouse Square (west) is used to refer to the stretch of road between Charterhouse Street and the square of Charterhouse Square.

All fieldwork was conducted between 30/8/11 and 11/1/12 (the targeted watching brief was undertaken between 21/9/11 and 30/9/11) and supervised by Sam Pfizenmaier (MOLA Supervisor).



All levels in this document are quoted in metres Above Tunnel Datum (m ATD). To convert Tunnel Datum to Ordnance Datum subtract 100m, ie 1m OD = 101m ATD.

Table 1 Site Details

Task	Principal Contractor	Programme
• <b>General and Targeted Watching Brief</b> on a <b>new utilities corridor</b> in Hayne Street and Charterhouse Square (west)	C240 McNicholas	30 August to 11 January 2012

The event code (sitecode) is XSF10.

## 2 Planning background

The legislative and planning framework in which all archaeological work took place was summarised in the Site Specific Written Scheme of Investigation and Addendum (Crossrail 2009b) (see section 4 below)– which should be referred to for further detail. A brief summary is included here:

The overall framework within which archaeological work will be undertaken is set out in the Environmental Minimum Requirements (EMR) for Crossrail 2008). The requirements being progressed follow the principles of Planning Policy Guidance Note 16 (PPG16)(DoE 1990), and it's replacements Planning Policy Statement 5 (PPS5)(DCLG 2010) and the National Policy Planning Framework (NPPF)(DCLG 2012), on archaeology and planning. Accordingly the nominated undertaker or any contractors will be required to implement certain control measures in relation to archaeology before construction work begins.

Schedules 9, 10 and 15 of the Crossrail Act (Crossrail Act 2008) concern matters relating to archaeology and the built heritage and allows the dis-application by Crossrail of various planning and legislative provisions including those related to listed building status, conservation areas and scheduled ancient monuments (Schedule 9). Schedule 10 allows certain rights of entry to English Heritage given that Schedule 9 effectively dis-applied their existing rights to the Cross Rail project, and Schedule 15 allows Crossrail to bypass any ecclesiastical or other existing legislation relating to burial grounds.

Notwithstanding these disapplications, it is intended that agreements setting out the detail of the works and requiring relevant consultations and approvals of detail and of mitigation arrangements will be entered into by the nominated undertaker with the relevant local planning authorities and English Heritage in relation to listed buildings and with the Department of Culture, Media and Sport (DCMS) and English Heritage in relation to Scheduled Ancient Monuments (SAMs).

## 3 Origin and scope of the report

This report has been commissioned from Museum of London Archaeology (MOLA) by Crossrail Ltd. The report has been prepared within the terms of the relevant standard specified by the Institute for Archaeologists (IFA 2001). It considers the significance of the fieldwork results (in local, regional or national terms) and makes appropriate recommendations for any further action, commensurate with the results.

This report will be made available from The London Archaeological Archive and Research Centre (LAARC) in due course.



## 4 Previous work relevant to archaeology of site

The principal previous Crossrail studies are as follows:

- *Crossrail, February 2005a Environmental Statement*
- *Crossrail, February 2005b Assessment of Archaeology Impacts, Technical Report. Part 2 of 6, Central Route Section, 1E0318-C1E00-00001, [Specialist Technical Report (STR)]*
- *Crossrail, 2008, MDC – Work Package 3, Archaeology Detailed Desk Based Assessment, Farringdon Station, Doc. No.: CR-SD-FAR-EN-SR-00001 (DDBA)*
- *Crossrail SS-WSI - Farringdon Station, Site-specific Written Scheme of Investigation, Crossrail November 2009, Doc. No. CR-SD-FAR-EN-SY-0001 Version 6.0 [WSI]*
- *An Addendum to the WSI: Package C136 – Farringdon Station, Addendum to Written Scheme of Investigation: Trial Trench Evaluation, Watching Brief & Detailed Excavation – Eastern Ticket Hall (XSF10), Doc. No. C136-SWN-T1-XAP-M123\_WS098-00001 Revision 2.0, 05.07.11 [Addendum]*
- *MOLA for Crossrail, 2012a, C257 Archaeology Central, Fieldwork Report Archaeological Evaluation, Farringdon Eastern Ticket Hall (XSF10), Doc. No.: C257-MLA-X-RGN-CRG02-50060 Revision 2.0, 28.02.12*
- *MOLA for Crossrail 2012b C257 Archaeology Central Farringdon Eastern Ticket Hall Fieldwork Report Archaeological Targeted Watching Brief RBS Trial Trench , 23–28 Charterhouse Square, Farringdon (XSF10) Doc. No.: C257-MLA-X-RGN-CRG02-50073 Revision 2.0, 08.03.12*

All fieldwork was carried out to a method statement prepared in line with the principal contractor's method statement. The above cited reports are all available from the London Archaeological Archive and research Centre (LAARC).



## 5 Geology and topography of site

The drift geology consists of Pleistocene river terrace gravels (Hackney Sands and Gravels) shaped by erosion caused by glacial meltwater following the last ice age. The archaeological potential of the terrace Gravel deposits is considered to be very low. These overlie London Clay, found across London and dating to around 50 million years before present.

Previous fieldwork undertaken for Crossrail (MOLA 2012a) identified natural strata at 6 Hayne Street at 113.90 ATD; this had been truncated by later activity. To the north truncated sandy gravels were exposed between 114.09m ATD and 114.69m ATD, sloping down from south-north (MOLA 2012b).

The topography of the West Smithfield area is dominated by the former River Fleet, the main channel approximating to the line of Farringdon Street and Farringdon Road. The Fleet is the largest of London's lost rivers (Barton 1992), now confined to a sewer beneath Farringdon Street and New Bridge Street. The steep east bank of the Fleet is still in evidence today, falling from 16.50m ATD in West Smithfield to 107.9m ATD in Farringdon Street.

Tributaries flowing from east–west were also present in the area. The site roughly corresponds with the northern channel edge of one of these tributaries, lying on the margins of the Fleet Valley. It has been suggested that the Faggesswell Brook flowed east–west somewhere between Cowcross Street and Charterhouse Street. A reconstruction map of Roman London by MOLA (*Londinium* 2011) also suggests that this may have flowed across the site.

### 5.1 Archaeological and Historical Background

*The following is a brief summary of the background to the site, see the DDBA (Crossrail 2008b) for further detail.*

The site is situated approximately 340m to the north of the line of the Roman and medieval city wall. The TWB site appears to have been outside the nearest known Roman burial ground, which lay more than 100m to the south. The evaluation (MOLA 2012a) uncovered abraded pottery in two contexts, suggesting tentative evidence for Roman activity during the 3rd century AD, however the nature of Roman activities in this extra-mural area has not yet been determined, but would appear to have been at a low intensity.

A market for horses and other livestock is first mentioned in the Smithfield area in 1173. The field was also the site of the annual Bartholomew Fair from 1123–1855 and was used for tournaments.

It is possible that part of the outer cemetery of Charterhouse (a Carthusian monastery founded in 1370, and closed in 1537) extended as far west as site (Crossrail EIA BG207, Crossrail 2005b see Figure 4 – note that the western, and especially southern, boundaries are uncertain; this shows a maximum possible extent, based on the precinct of Charterhouse). It is understood that victims of the Black Death (1349–50) were buried in mass graves in the Charterhouse Square area, but the exact extent of these mass graves is uncertain. A single undated skeleton, assumed to be from this burial ground, was excavated by MoLAS within the gardens of Charterhouse Square in 1998 (CSQ98 - Barber and Thomas 2002), approximately 50m to the west. Furthermore, recent excavations on Charterhouse Street (MOLA 2012b) to the north uncovered redeposited



human remains within a later levelling deposit. Recovered in good condition, these are also likely to have been from the outer cemetery of Charterhouse (see 16.1 below). John Stow in c 1600 stated that more 150,000 victims of the Black Death were buried here. According to Stow, initially there was a burial ground here known as 'No Man's Land' which the Bishop of London Ralph Stratford had established in 1348, which was subsequently used to bury over 50,000 victims of the Black Death. This mass burial ground was served by a mortuary chapel built in 1481, which by Stow's time had been converted into a house.

On the Agas map of c 1570, the general vicinity of the site is shown as an area of suburban housing and gardens, flanked by Smithfield livestock market to the south and the remains of Charterhouse to the north. Historic mapping generally shows that the majority of the site was probably undeveloped until the 17th century. A sequence of levelling layers to raise ground level was recorded in Charterhouse Square (CSQ98, Barber and Thomas 2002, 13), probably deposited between 1630–1700. Post-medieval remains identified on previous Crossrail work in the area (MOLA 2012a & b) has been limited to masonry structures (drains, cess pits and walls) of limited significance, and relatively shallow depth.

Construction of the Metropolitan Line railway by 1873 dramatically altered the street layout and buildings between Long Lane and Charterhouse Lane (now Charterhouse Street) with Lindsey Street and Hayne Street both being created at that time. It is likely that all of the pre-19th-century buildings on the site were demolished at that time, evidence for which has been recorded during the recent phase of evaluation trenches immediately to the south and west of the site (MOLA 2012a).

## 6 Research objectives and aims

### 6.1 Objectives of the fieldwork

The objectives of the archaeological investigations, as stated in the Addendum to the WSI (Crossrail 2010), are set out below.

The overall objectives of the investigation are to establish the nature, extent and state of preservation of any surviving archaeological remains that will be impacted upon by the development.

The task-specific aims and objectives from the Addendum to the WSI (Crossrail 2010) are:

The watching brief will refine the extent and significance of the archaeological resource and inform further mitigation measures.

Specifically, the archaeological investigations have the potential to recover:

- Remains of Roman extra-mural activity, potentially including field systems
- Burials from the Outer Cemetery of medieval Charterhouse, and other associated features
- Medieval occupation features, and possibly buildings, from the expansion of extra-mural settlement in the West Smithfield area following the establishment of the livestock market
- Post-medieval buildings and occupation features representing the creation and expansion of the extra-mural suburbs

### 6.2 Research Aims

The original aims and objectives were listed in the WSI (Crossrail 2011), and stated that 'Archaeological investigation and mitigation within the Crossrail worksites for Farringdon Station have the potential to contribute to the research themes set out below':

*Evidence for burials and/or features associated with the Charterhouse burial ground may contribute to the following research aims:*

- Understanding life expectancy, origins and belief, seen through studying health, diet and disease, and preparing models for future research;
- Considering the relationship between cemeteries and major or minor roads, in terms of symbolism, status, privacy and convenience; and
- Understanding the differences, if any, between burial practices in the city and outlying cemeteries.

*Archaeological remains associated with post-medieval extra-mural development may contribute to the following aim:*

- Contributing to our understanding of the creation of the London suburbs with direct contribution to today's aspirations for an urban regeneration.

## 7 Methodology of site-based and off-site work

All archaeological excavation and recording during the targeted watching brief was carried out in accordance with:

- Crossrail, 2009 *Archaeology Generic Written Scheme of Investigation*, Doc No. CR-PN-LWS-EN-SY-00009
- Crossrail, 2011 *WSI Addendum (Doc No. C138-MMD-T1-RST-M123\_C101-00006, v5, 2011)*
- Museum of London *Archaeological Site Manual* (MoL 1994)
- English Heritage Greater London Archaeology Advisory Service, June 1998 *Archaeological Guidance Papers 1–5*
- English Heritage Greater London Archaeology Advisory Service, May 1999 *Archaeological Guidance Papers 6*
- English Heritage Greater London Archaeology Advisory Service, 2009 *Archaeological Guidance Papers 1–5 (consultation draft)* [1. Desk-Based Assessments, 2. Written Schemes of Investigation, 3. Fieldwork, 4. Reporting, dissemination and publication, 5. Popular dissemination and communication of archaeology]

The site finds and records can be found under the site code XSF10 in the MOLA archive. They will be stored there pending a future decision over the longer-term archive deposition and public access process for the wider Crossrail scheme.

## 7.1 General watching brief Methodology

The General Watching Briefs consisted of a basic monitoring presence to observe the works carried out either by the Principal Contractor without constraint on their working methods (Crossrail 2009c).

The C240 Principal Contractor McNicholas broke out the concrete road surface and machined to an average of 0.5m below ground level. Where live services were exposed, McNicholas continued excavation by hand down to the formation level, generally between 1.0m and 1.2m beneath ground level. Monitoring included making a record of notes, measurements, drawings and photographs consistent with an observation role; eg depth, character, date and survival/truncation of deposit sequence, height of natural geology. Monitoring and recording during the general watching briefs was generally made by observation from ground level. MOLA staff only entered the trench or area of excavation by agreement with the Principal Contractor (where there was provision of proper access and where it was safe to do so). Generally the trenches (apart from a small area on the junction of Hayne Street and Charterhouse Square) were not excavated beyond 1.2m below ground level.

A written and drawn record was made in accordance with the principles set out in the Museum of London site recording manual (MoL 1994). Trench locations co-ordinates were supplied to MOLA Geomatics by the Principal Contractor.

The majority of the utilities diversions were monitored under general watching brief conditions, apart from a small area in the south west corner of Charterhouse Square (west).

## 7.2 Targeted watching briefs and sampling Methodology

McNicholas removed modern make up consisting mostly of rubble and silty gravels to a depth of 1.29m below ground level (115.81m ATD). The Targeted Watching Brief commenced upon the identification of human remains (see section 1 above) (Photo 1, Photo 2 **Error! Reference source not found.**, Photo 3). The trench was shored with a timber frame and 2 metre sheet piles. A tarpaulin was erected and attached to the surrounding hoardings, temporarily shielding the trench from the public (as required in the method statement). Once Crossrail had approved the temporary works design MOLA entered the trench to record and sample the visible archaeology.

Within the layer exposed, disarticulated human remains were identified, recorded, and recovered for further analysis, in accordance with MOJ license number 10-0178.

Due to the depth of live utilities, the formation level was subsequently lowered to 1.50m below ground level (115.60m ATD). MOLA reduced the stratigraphy to this level within the confines of the trench, and with the permission of the principal contractor excavated a small slot to 2m beneath ground level (115.10m ATD) in the centre of the trench.

A written, drawn and photographic record of all archaeological deposits encountered was made in accordance with the principles set out in the Museum of London site recording manual (MoL 1994).

Archaeological features were planned off a base line aligned E–W and off-set from structures and street furniture shown on Ordnance Survey mapping, which was then tied into the LSG survey grid.

## 8 Results and observations including stratigraphic report and quantitative report

### 8.1 Targeted Watching Brief



Photo 1, Targeted watching brief at formation level of 1.7m bGL, looking south-west.

<b>Charterhouse Square (west) (Figure 1, Figure 2)</b>	
Location	Junction of Charterhouse and Hayne Streets
Dimensions	1.9m N-S by 2.7m E-W and 1.7m deep
OS National grid coordinates	531954 181817
LSG grid coordinates	82293/36572
Modern Ground Level/top of the slab	117.10m ATD
Modern subsurface deposits	Tarmac road surfaces and related formation deposits truncate to 0.98m bGL
Level of base of archaeological deposits observed and/or base of trench	Base of sondage 115.10m ATD. Remainder of trench 115.40m ATD.
Natural observed not truncated	Not reached
Extent of modern truncation.	Modern truncation continues beyond formation level (115.40m ATD) in semi-circular area approximately 0.8m x 0.8m. in north-eastern part of the trench.



Archaeological remains	Dating Evidence, Finds, and Samples
<p>Probable rubbish dump [66] (Photo 1, Photo 2 <b>Error! Reference source not found.</b>) Firm mid-brown silty clay. Occasional Tile, oyster shell and disarticulated human remains. Frequent charcoal flecking within ashy lenses. Observed between 115.66 and 115.10m ATD. Not fully excavated and overlain by [65].</p>	<p>[66]: pot 1480–1600, residual medieval 1270–1300. [66]: butchered animal bone (including pig, sheep, goat and cow), and human bone (including skeletal elements from the skull, thorax, upper and lower limbs).</p>
<p>Levelling layer [65] Compact mid-brown silty clay. Occasional oyster shell, charcoal, CBM, mortar and chalk. Observed between 115.74 and 1115.63m ATD. Cut by [73].</p>	<p>[65]: pot 1550–1650, residual medieval 1080–1200.</p>
<p>Pit cut [73] (Photo 3), semi-circular, continuing beyond southern trench edge and fill [72] blackish brown clay silt. Occasional charcoal, oyster shell, CBM, Mortar and chalk fragments. Observed between 115.80 and 115.40m ATD. Not bottomed and overlain by [64]</p>	<p>[72]: pot 1550–1600.</p>
<p>Levelling layer [64] loose greyish-black silt (coal dust/fragments 30%). Occasional CBM and oyster shell. Observed between 115.80 and 115.74m ATD. Overlain by [63].</p>	<p>[64]: pot 1580–1700, residual medieval 1080–1200.</p>
<p>Levelling layer [63] Soft mixed grey-white mortar/CBM (60%) and silt (30%) Occasional; tile and oyster shell. Observed between 115.90 and 115.80m ATD. Overlain by [62].</p>	<p>No finds.</p>
<p>Levelling layer [62] Mid brownish-black. Occasional oyster shell, charcoal and coal fragments. Similar to [64]. Observed between 116.12 and 115.90m ATD. Truncated by [75] and Overlain by [+].</p>	<p>No finds.</p>
<p>Wall [74] (Photo 4) brick wall aligned east–west, cut [75], truncated by utilities and subsequent street alterations (see 5.1) Observed between 116.60m ATD and 115.90m ATD. Continues beyond southern trench edge.</p>	<p>[74] Bricks - late 19th century (not retained).</p>
<p>20th-century made ground between 117.10 and 116.12m ATD.</p>	<p>No Finds.</p>

### Interpretation and summary

The earliest dump deposit [66] (Photo 1, Photo 2, Figure 2), is dated to 1480–1600 by ceramics. The lenses of charcoal rich ash suggest it may be fire debris. The butchered animal remains are most likely from Smithfield Market to the west, which was founded by the late 12th century, or could be general domestic waste. The disarticulated human remains were not found in anatomical position, (ie they must be redeposited) and were from a minimum number of three individuals. They were in good condition with evidence of post-mortem damage, probably through later disturbance during the post-medieval period, and perhaps reburied together. A narrow sondage was excavated within the centre of the trench to a depth of 2m bGL (115.10m ATD), uncovering more of this deposit.

The residual medieval pottery (1270–1300) found within this context (and throughout the sequence) suggests that earlier deposits nearby may have been disturbed during the formation of this deposit.

Dump [65] (dated 1550–1650) overlay this layer and slight rooting to the top suggests that post deposition a cultivated or naturally accumulated soil developed, that was subsequently incorporated within the south-western confines of Charterhouse Gardens. Pit [73] (Photo 3) truncates this layer and was recorded in the south-eastern part of the trench, between 1.42 and 1.7m bGL. This was not fully excavated continuing beyond the formation level. Pottery dated this feature to 1550–1600. This pit was probably for rubbish disposal, although this is a tentative conclusion given the limited proportion within the confines of the trench.

Layers [64] and [62] are probably the same, with a thin band/lens of deposited demolition make-up [63] in between. Deposit [64] is dated 1580–1700, and is similar in composition to the soil horizons recorded immediately to the north and east (contexts [60] & [61] see Photo 5, Photo 6 below).

The 19th-century wall [74] (Photo 4), had been partly truncated by the Metropolitan underground construction in the 1870s. Also more recent (20th-century) utilities had truncated it to a depth of 1m below ground level on a north–south alignment.





*Photo 2 Human remains within context [66]. Looking south-west.*



*Photo 3 Pit cut [73] truncating [66]. Continuing beyond formation level (115.40m ATD), looking south.*



*Photo 4 East–west aligned 19th-century wall [74], looking east.*

## 8.2 General Watching brief



Photo 5 20th-century deposits overlying probable landfill/levelling deposit [60] dated 1670–1690 (dark layer at base of picture), facing west.

<b>South-west corner of Charterhouse Square (Figure 2, Figure 3)</b>	
Location	Charterhouse Street (west) and outside 97–99 Charterhouse Square.
Dimensions	4.2m N–S, 0.66m E–W
OS National grid coordinates	531946 181862
LSG grid coordinates	82306/36578
Modern Ground Level/top of the slab	117.27m ATD
Modern subsurface deposits	Tarmac road surfaces and related formation deposits truncate to between 0.90 and 0.95m bGL.
Level of base of archaeological deposits observed and/or base of trench	Formation level 116.12m ATD.
Natural observed not truncated	Not observed
Extent of modern truncation	20th-century made ground and utilities-related deposits truncate to 116.37m ATD.

Archaeological remains	Dating Evidence, Finds, and Samples
Probable soil horizon [60] (Figure 3, Photo 5) loose dark brown-black sandy silt. Occasional CBM, mortar, oyster shell and animal bone. Observed between 116.29 and 116.12m ATD (continues below formation level)	Pot: 1670–1690
Probable naturally accumulated soil horizon [61] (Photo 6) loose dark brown-coarse black sandy silt Occasional CBM, Observed between 116.23 and 116.06m ATD (continues below formation level).	Pot: 1550–1650
Interpretation and summary	
<p>Two naturally formed soil horizons located outside 97-99 Charterhouse Square [60] (Figure 1, Figure 3) and between the western gates of Charterhouse Square [61] (Figure 2) were similar in appearance and composition. Both contained varying quantities of charcoal, mortar and oyster shell with occasional animal bone, some of which showed evidence of burning, and ceramics dated 1670–1690 and 1550–1650 respectively. They are similar in composition with a deposit recorded in a nearby borehole in the south-west corner of Charterhouse Square Gardens (Borehole F30R, MOLA 2009). This suggests that the survival of post-medieval deposits (approximately between 0.35m–1.81m bGL , 116.92–115.46m ATD) is consistent in this area of the square.</p>	



Photo 6 Charterhouse Square (west) utilities trench Post-medieval soil horizon [61] dated 1550–1650 at 0.95m beneath ground level, looking north.



Photo 7 Hayne Street, utilities diversions between 0.8–1.1m beneath ground level, looking south.

<b>Hayne Street and Charterhouse square (west) (Figure 1)</b>	
Location	Hayne Street.
Dimensions	50m (approx.)N-S , 1.05–1.9m E-W
OS National grid coordinates	531984 181777
LSG grid coordinates	82305/36560
Modern Ground Level/top of the slab	117.16m ATD (north), 117.08m ATD (south)
Modern subsurface deposits	20th-century made ground.
Level of base of archaeological deposits observed and/or base of trench	Base of trench 116.21m ATD
Natural observed not truncated	Not observed
Extent of modern truncation	n/a
<b>Archaeological remains</b>	<b>Dating Evidence, Finds, and Samples</b>
None	-

### Interpretation and summary

No archaeology was exposed in this trench (Photo 7, Figure 1), only 20th-century services, including parts of live and redundant manholes, utilities cables and water pipes. These were observed to a maximum depth of 116.21m ATD. Fragments of a concrete slab probably associated with the foundations of 18–19 Long Lane were also evident along the eastern edge of the trench.

Within the trench situated between Charterhouse Square and Lindsey Street (Photo 8), there was also no surviving archaeology. This may have been the result of truncation caused by 23–28 Charterhouse Street buildings (constructed in the 1960s) or the earlier Metropolitan Line expansion (1870s).



*Photo 8, Modern road foundations and related deposits, looking east.*

## 9 Assessment of results against original research aims

The draft revised GLAAS guidelines (English Heritage 2009) require an Assessment of results against original expectations (these no longer mention the criteria for assessing national importance).

Likewise City of London guidance (CoL 2004) sets out advice for work carried out in London, including an assessment of results against original (assessment against the above criteria are only required evaluations).

### 9.1 Original research aims

The original research objectives were met as follows, information was recovered on:

- *Remains of Roman extra-mural activity, potentially including field systems*  
No evidence was found (probably because the utility works were too shallow to reach them).
- *Burials from the Outer Cemetery of mediaeval Charterhouse, and other associated features*  
A small quantity of redeposited, disarticulated human remains were recovered, that are most likely from the medieval Charterhouse Burial ground.
- *Medieval occupation features, and possibly buildings, from the expansion of extra-mural settlement in the West Smithfield area following the establishment of the livestock market*  
No evidence was found, although residual medieval pottery implies that medieval horizons may survive nearby (probably at greater depths).
- *Post-medieval buildings and occupation features representing the creation and expansion of the extra-mural suburbs*  
Post-medieval features including raising deposits, and later structural walls were recorded that related to the occupation and extra-mural expansion of the area. However, these are of limited potential to reconstruct post-medieval occupation and expansion.

#### ***Evidence for burials and/or features associated with the Charterhouse burial ground may contribute to the following research aims:***

- *Understanding life expectancy, origins and belief, seen through studying health, diet and disease, and preparing models for future research;*  
A small quantity of *ex situ* disarticulated human bone was recovered representing a minimum number of three individuals present. Only limited demographic, pathological



and metric data could be obtained from further osteological analysis. Although they appear likely to represent later disturbance of medieval burials from the Charterhouse burial ground, there was no evidence to indicate with certainty their origin, limiting their usefulness for further study.

- *Considering the relationship between cemeteries and major or minor roads, in terms of symbolism, status, privacy and convenience;*

No evidence was found.

- *Understanding the differences, if any, between burial practices in the city and outlying cemeteries.*

No evidence was found (as the human remains were not in situ).

***Archaeological remains associated with post-medieval extra-mural development may contribute to the following aim:***

- *Contributing to our understanding of the creation of the London suburbs with direct contribution to today's aspirations for an urban regeneration.*

The post-medieval evidence is too limited to address these concepts.



## 10 Statement of potential archaeology

The following potentials will be assessed in greater detail during post-excavation assessment (see 12).

The results from the watching brief have potential for study of the following (in particular in concert with the results of the other Crossrail sites at Farringdon (MOLA 2012a and 2012b)):

- The redeposited human remains may make a limited contribution toward study of the Outer Cemetery of Charterhouse.
- The dumping of animal bone from Smithfield Market.
- Post-medieval land raising of the area following the abandonment of the medieval cemetery.
- The disturbance to buildings following construction of the Metropolitan Line in the late 19th century.

### 10.1 Importance of Resources

*The importance of the excavated remains has been assessed using professional judgement, informed, where applicable, by the criteria for assessing the national importance of monuments (DCMS 2010, Annex 1)*

Although finding redeposited medieval human remains is not unexpected in this area, given the proximity to the known Charterhouse burial ground and its supporting documentation, only one body has been excavated previously (MoLAS 1998). However, a recent Crossrail trial pit located to the north of the site, along Charterhouse Street, has exposed another small assemblage of redeposited human remains (Crossrail/MOLA, 2012b, section 13). Thus the human remains have some rarity value, raising what might have been a minimal importance for redeposited remains to low. Also, comparison of the human remains with those from the RBS trial pit, along with negative evidence from the evaluation (Crossrail/MOLA 2012a, section 13) and the records from Charterhouse Square, has potential to provide a little further information about the burial ground.

They are therefore assessed as being of **low importance**.

## 11 Conclusions

### 11.1 Geology

Natural geology was not reached in the utilities diversions trenches. The lowest archaeology exposed (within the targeted watching brief area) was at 115.10m ATD.

The evaluation to the south uncovered truncated natural geology at 113.87m ATD (from Trench 1; Crossrail/MOLA 2012a, section 13). Other archaeological sites in the surrounding area (CAA00, CFI06, CSQ98, CIN91, LOG82, CQC07 & CLO83) also encountered river terrace deposits at depths of between 115.90m ATD and 113.50m ATD. This suggests that there is considerable potential for further surviving archaeological remains beneath the formation level of the utilities works in this area.

### 11.2 Roman remains

No remains were identified

### 11.3 Medieval remains

Residual medieval pottery (dated 1270–1300) and human remains were retrieved from within levelling layer [66] between 115.10m and 115.66m ATD. The disarticulated remains comprised a minimum number of three individuals, Photo 2, two adults and one subadult and included skeletal elements from the skull, thorax, upper and lower limbs (Table 2). All the bones displayed evidence of post mortem breakage, most likely resulting from later disturbance.

It is likely that these remains are from the outer cemetery of Charterhouse, a 14th-century Black Death burial ground whose boundaries are uncertain, and might have extended as far south as the junction of Hayne Street and Charterhouse Square. Evidence for the cemetery was found during previous fieldwork (MoLAS 1998), that identified a juvenile burial at 1.5m bGL in Charterhouse Square Gardens (Barber and Thomas 2002). It is possible therefore that the burial ground may have included the width of the roadway as well as the modern gardens in the centre, but this cannot be proved from this redeposited evidence.

### 11.4 Post-medieval remains

The majority of remains found dated to this period, and are generally consistent with low levels of human occupation, which is consistent with the general use of the area as gardens from the late 16th century to c 1658 (Faithorne and Newcourt 1658). Contexts [64], [65] and [66] are all relatively thin deposits and emphasize the limited impact of human activity in this area at the time. The butchered animal bone found within [66] is not unexpected given the proximity of Smithfield meat market (approximately 50m to the west). Only cut feature [73] suggests that there was an attempt at rubbish disposal in the area sometime during or after the latter half of the 17th-century.

The sandy silt soil horizons (dated to the 16th to 17th centuries) recorded within two separate exploratory trenches to the east and north of the main utilities diversion work, suggest that after initial land raising, dumped deposits were incorporated into Charterhouse Square Gardens. This supports borehole data (MOLA 2009) suggesting that post-medieval deposits survived between 116.92–115.46m ATD in this area.



Tentative evidence that the heavily truncated 19th-century wall (Photo 4, Figure 2), is all that remains within this narrow trench of the pre-1870s street layout. The large wall [74], aligned roughly east–west, corresponds with and shares a similar alignment to a row of buildings between Charterhouse Square and Fox and Knot Street (Greenwood's map of 1824). It appears that the southernmost of these buildings were demolished to make way for the Metropolitan underground line construction in 1873 and the resulting new street configuration.

[It should be noted that the utilities trench only represents a narrow, shallow, band of exposed archaeology in this area, and therefore any conclusions are based on partial evidence].

## **12 Publication and dissemination proposals**

The Watching Brief results will initially be disseminated via this report and the supporting site archive of finds and records (including digital data). Any publication proposals will be considered in relation to later fieldwork at the Farringdon Eastern Ticket Hall site, and also the wider context of archaeological potential and results across the Crossrail scheme.

A summary report will be published in the London Archaeologist excavation round up and also deposited with the LAARC.

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## 14 Acknowledgements

The author would like to Euan Patterson (Crossrail Utilities manager) and Andy Scholes (Crossrail) for their assistance on site, and Jay Carver and Mike Court for commissioning and managing the work for Crossrail.

The watching briefs were supervised by the author. Other MOLA staff involved included Nigel Jefferies (pottery) and Mike Henderson (human bone). The fieldwork was managed by MOLA Assistant Contracts Manager Nicholas Elsdon and Contracts Manager Elaine Eastbury.



## 15 NMR OASIS archaeological report form

OASIS ID: molas1-122297

Project name	Crossrail Targeted and General Watching Brief at Farringdon Eastern ticket Hall
Short description of the project	Combined general and targeted watching briefs were carried out at the site of Crossrail Farringdon Eastern ticket Hall by the Museum of London Archaeology (MOLA). Natural gravels were not exposed at Formation level (15.10m OD). Disarticulated human remains (probably associated with the medieval burial ground in Charterhouse Square) were recovered within a later levelling deposit dated 1480-1600. Suggesting that the burial ground may have extended further west than expected. A series of post medieval dumps and a pit, as well as garden soil horizons are consistent with the low levels of human activity in the area after the formation of Charterhouse square gardens in the 16th century.
Project dates	Start: 30-08-2011 End: 11-01-2012
Previous/future work	No / No
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Transport and Utilities 1 - Highways and road transport
Monument type	LAYER Post Medieval
Monument type	RUBBISH PIT Post Medieval
Significant Finds	POT Medieval
Significant Finds	POT Post Medieval
Significant Finds	HUMAN REMAINS Medieval
Methods & techniques	'Targeted Trenches'
Development type	Rail links/railway-related infrastructure (including Channel Tunnel)
Prompt	Crossrail Act
Position in the planning process	After full determination (eg. As a condition)
Site location	GREATER LONDON ISLINGTON ISLINGTON Farringdon eastern ticket hall
Postcode	EC1
Study area	50.00 Square metres
Site coordinates	NGR - TQ 3189 8182 LL - 51.5194444444 -0.09888888888890 (decimal) LL - 51 31 10 N 000 05 56 W (degrees) Point
Lat/Long Datum	Unknown
Name of Organisation	MOLA



Project brief originator	Crossrail
Project design originator	Crossrail
Project director/manager	Elaine Eastbury
Project supervisor	Sam Pfizenmaier
Type of sponsor/funding body	Crossrail Ltd
Name of sponsor/funding body	Crossrail
Physical Archive recipient	LAARC
Physical Contents	'Animal Bones','Ceramics','Human Bones'
Digital Archive recipient	LAARC
Digital Contents	'Animal Bones','Ceramics','Human Bones'
Paper Archive recipient	LAARC
Paper Contents	'Animal Bones','Ceramics','Human Bones'
Paper Media available	'Context sheet','Matrices','Photograph','Plan','Report','Section'
Title	C257 Archaeology Central Fieldwork Report Archaeological Targeted and General Watching Brief at Farringdon Eastern Ticket Hall Utilities Diversions(XSF10)
Author(s)/Editor(s)	Pfizenmaier, S
Date	2012
Issuer or publisher	MOLA
Place of issue or publication	London
Description	A4 Ringbound report

## 16 Appendices

### 16.1 Human Bone

*Michael Henderson*

An evaluation was conducted on the human skeletal remains recovered during archaeological investigations in September 2011 by Museum of London Archaeology (MOLA). These works were carried out as part of an archaeological targeted watching brief at the site of the utilities diversions for the future Crossrail Farringdon Eastern Ticket Hall. All disarticulated remains were examined following Museum of London Archaeology standards (Powers unpublished).

One context of human bone [66] was recovered from a utilities diversion trench. This comprised the disarticulated remains (not in anatomical position) of a minimum number of three individuals: two adults and one subadult and included skeletal elements from the skull, thorax, upper and lower limbs (Table 2). The bone was in good condition with cortical and joint surfaces surviving; however, post mortem damage through later disturbance affected most elements. Three skulls were present and observations of morphological characteristics indicated the presence of two adult females. An unfused proximal epiphyses of a right humerus (upper arm) indicated the presence of a non adult (<18 years). Pathological bone changes observed included ante mortem tooth loss (during life) and calculus (mineralised dental plaque).

In addition, six fragments of animal bone were identified. This consisted of fragments of a pig pelvis, sheep/ goat radius and metatarsal, and a cow scapula. All showed evidence of butchery marks.

Previous archaeological works within the area have revealed evidence of human burial (Barber and Thomas 2002, 12–14). The possible association with the Charterhouse burial ground suggests that the human bone from context [71] is most likely derived from the redeposition of remains through later disturbance of medieval burials within the vicinity.

*Table 2 Summary of human bone from context [66]*

Site code	Context	Body area	Elements present	Age	Sex	Pathology	MNI	Comments
XSF10	66	Lower limb	R. femur	Adult	undetermined	None	1	Missing proximal end
XSF10	66	Upper limb	R. humerus	Subadult	Subadult	None	1	Unfused Proximal epiphyses





XSF10	66	Upper limb	L. humerus	Adult	undetermined	None	1	Missing proximal end
XSF10	66	Upper limb	Humeral midshaft	Adult	undetermined	None	1	Post mortem damage
XSF10	66	Upper limb	R.scapula	Adult	undetermined	None	1	Post mortem damage
XSF10	66	Upper limb	L.ulna	Adult	undetermined	None	1	Missing distal end
XSF10	66	Upper limb	L.radius	Adult	undetermined	None	1	Missing distal end
XSF10	66	Upper limb	L.radius	Adult	undetermined	None	1	missing proximal and distal end
XSF10	66	Thorax	1st thoracic vertebrae	Adult	undetermined	None	1	None
XSF10	66	Thorax	R. rib	Adult	undetermined	None	1	None
XSF10	66	Thorax	L. ribs x 4	Adult	undetermined	None	1	None
XSF10	66	Skull	Frontals, parietals, occipital	Adult	Female	None	1	Metopic suture, wormian bones
XSF10	66	Skull	Frontals, parietals, occipital, temporals, maxilla	Adult	Female	AMTL	1	Post mortem damage Iron stains
XSF10	66	Skull	Frontal, parietals, supra occipital	Adult	Female?	None	1	Fragmented, metopic suture
XSF10	66	Skull	R. maxilla	Adult	undetermined	Calculus	1	None
						<b>TOTAL MNI</b>	<b>3</b>	

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## 16.2 Pottery



This report considers the medieval and later pottery recovered from this, the fourth phase of work on this site, as found in contexts [64], [65], [66] and [72]. Comprising 22 sherds from 17 vessels, this particular phase therefore yielded small-sized groups only (contexts contained less than 30 sherds) and is not particularly well-preserved. Although small sized sherds of medieval pottery were found in [64], [65] and [66], the most frequent pottery is later dated, with largely 16th- and 17th-century fabrics and forms present. This sequence therefore includes pottery that is common to London's archaeological sequences from this period, with Surrey-Hampshire border whitewares (fabric code BORD) porringers and dishes and the slip-coated products of the London coarse red earthenware industry (PMSRY/G)

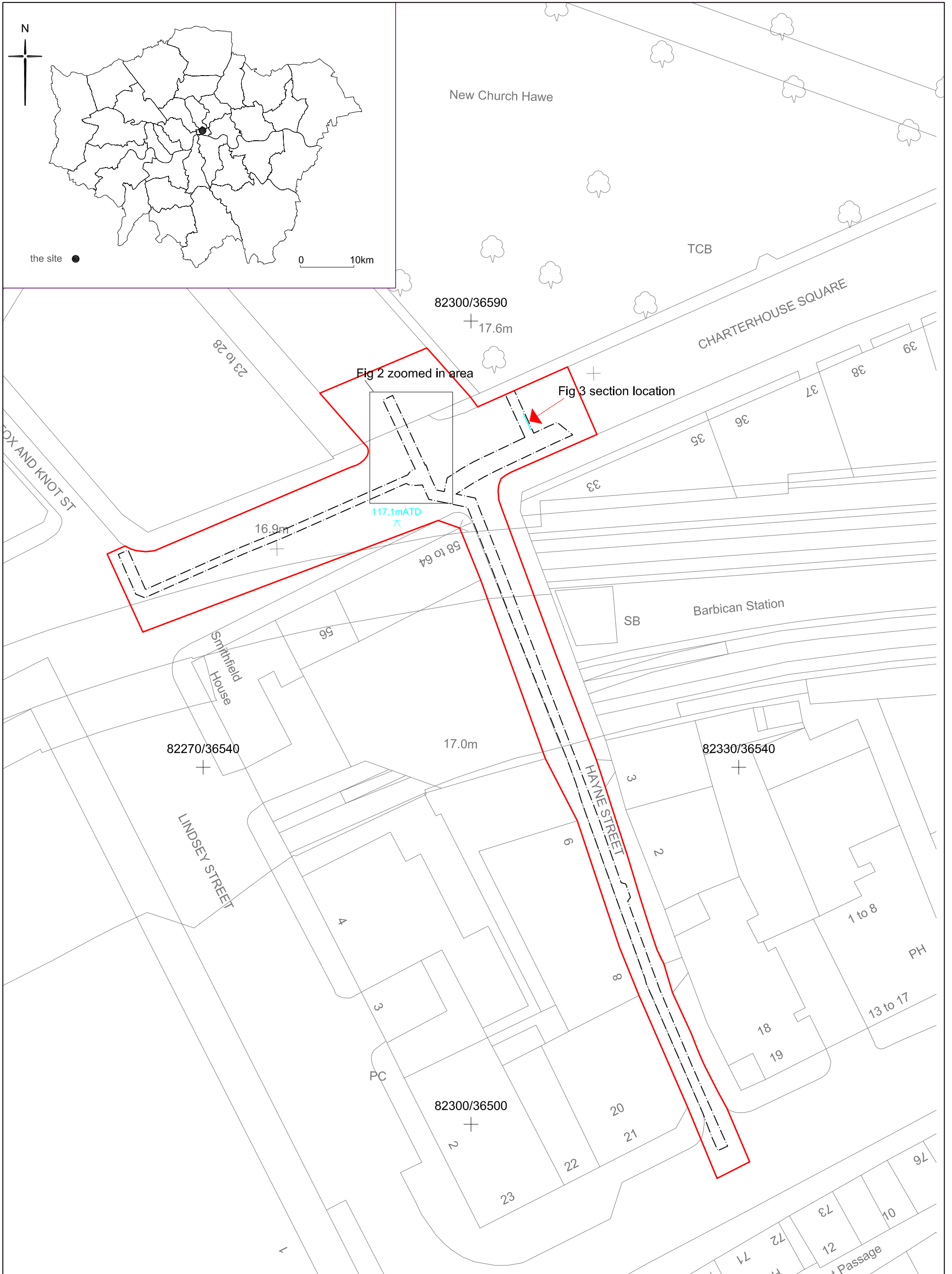


Fig 1 Location of utility diversions

- Site outline
- Watching brief area
- 110mATD ^ TBM in mATD (for mOD, subtract 100m)
- Section line

0 1:400 @ A3 20m

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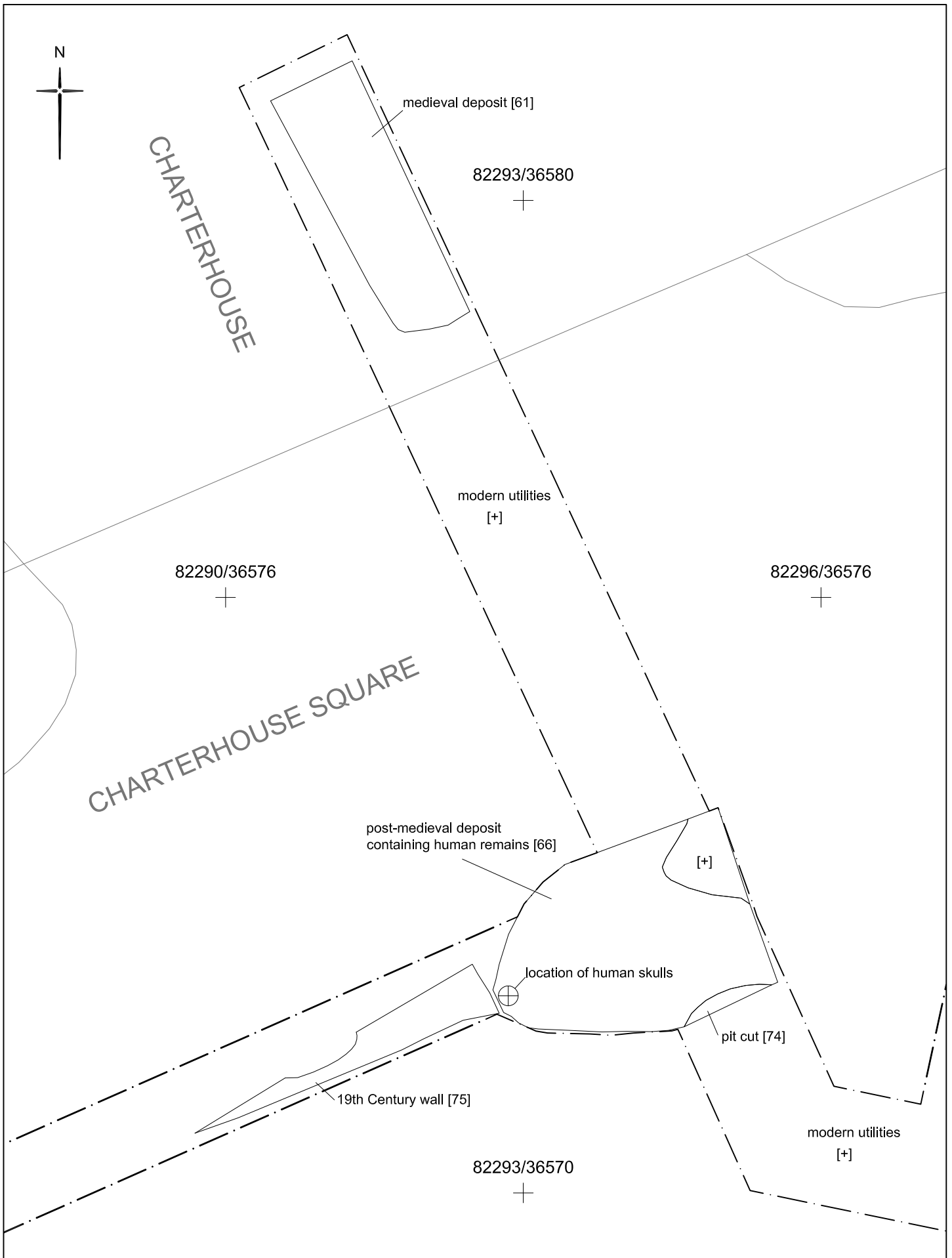


Fig 2 Archaeological features in the targeted watching brief area

- Watching brief area
- [11] Archaeological features

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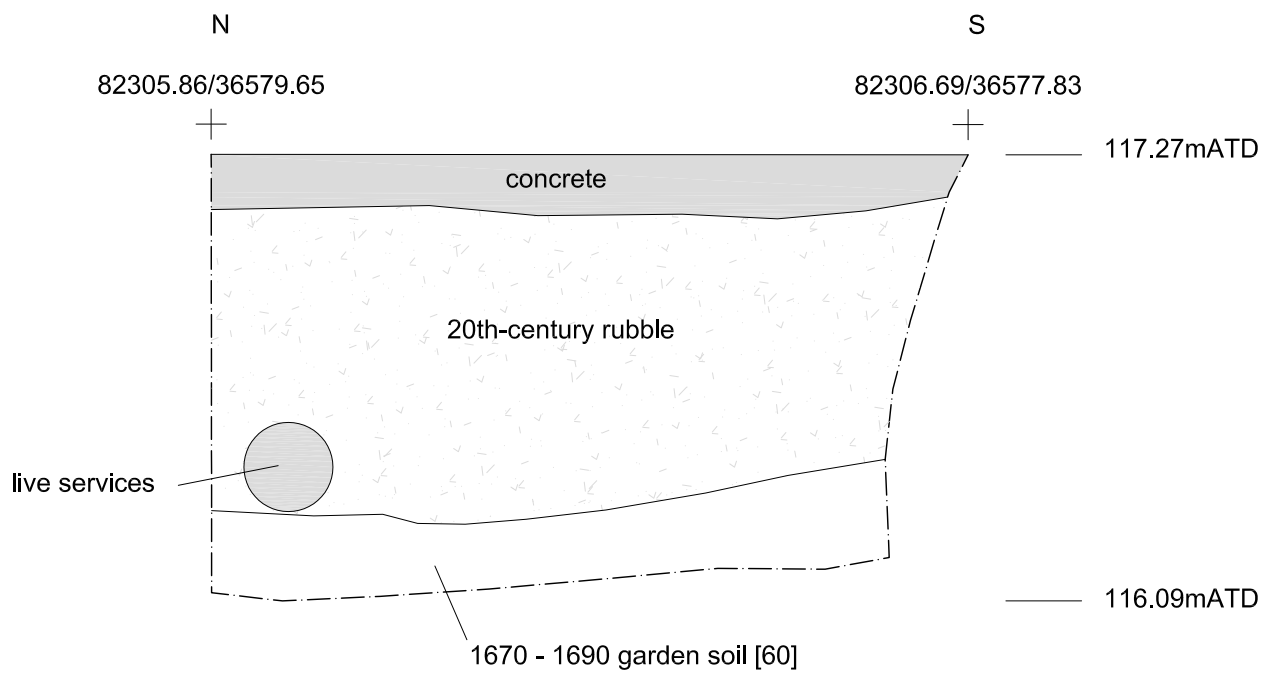




Fig 3 West facing section from general watching brief (see fig 1 for location)

-  Limit of excavation
-  Archaeological features

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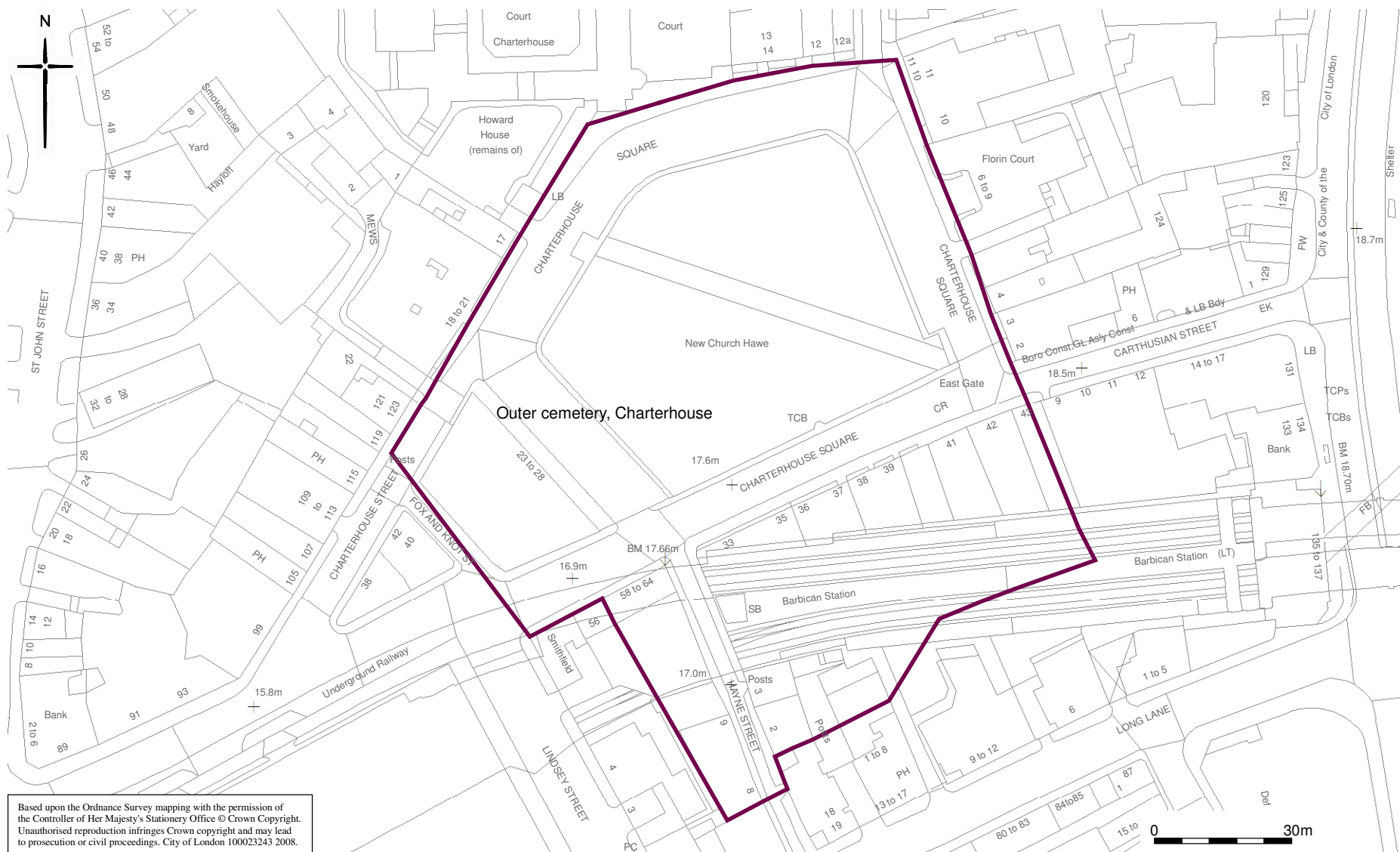


Fig 4 BG207 Charterhouse Outer Cemetery -- Hypothesised MAXIMUM extent, southern extent unknown, may not have extended south of Charterhouse Square